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I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:

GH Angle Bracket 110095, 110095L, 1100953, 1100953L, 110135, 110135L, 1101353, 1101353L, 110285, 110285L, 1102853, 1102853L, 110090E, 110090E0, 112095, 112095L, 1120953, 1120953L, 112135, 112135L, 1121353, 1121353L, 112285, 112285L, 1122853, 1122853L, 112090E and 112090E0.

Product family to which the above construction product belongs:

Three-dimensional nailing plate (angle bracket for wood to wood connections, timber-to-steel and timber-to-concrete connections)

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This European Technical Assessment contains:

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product and intended use

Technical description of the product

GH Baubeschläge GmbH various angle brackets covers the following bracket types:

110095, 110095L, 1100953, 1100953L, 110135, 110135L, 1101353, 1101353L, 110285, 110285L, 1102853, 1102853L, 110090E, 110090E0, 112095, 112095L, 1120953, 1120953L, 112135, 112135L, 1121353, 1121353L, 112285, 112285L, 1122853, 1122853L, 112090E and 112090E0.

They are one-piece non-welded, face-fixed angle brackets to be used in timber to timber, timber to steel and timber to concrete connections. They are connected to the timber elements by a range of profiled nails, connector screws or bolts.

The angle brackets 110095, 110095L, 1100953, 1100953L, 110135, 110135L, 1101353, 1101353L, 110285, 110285L, 1102853, 1102853L, 110090E and 110090E0 are made from pre-galvanized steel S 250 GD + Z275, S 235 JR + Z275 or DX 51 D + Z275 according to EN 10346:2009 with a minimum yield stress of 235 MPa, a minimum tensile strength R_m of 330 MPa and a minimum ultimate strain A80 of 22 %. Additionally, this angle brackets can be made from stainless steel 1.4301, 1.4401, 1.4541 or 1.4571 according to EN 10088-2:2005 with a minimum yield stress of 190 MPa. For using the load-carrying capacity tables in Annex B, for angle brackets made from stainless steel, the characteristic steel load-carrying capacity, in rows marked by "S", must be multiplied with the factor 0,80. This compensates the difference in yield strength between the listed stainless steels and the standard material of the angle brackets. The characteristic embedding strength $f_{h,k}$, the characteristic withdrawal parameter $f_{ax,k}$ and the characteristic yield moment $M_{y,k}$ of the fasteners, which must be made from stainless steel, must be equal or higher than those of the fasteners used in the load-carrying capacity tables.

The angle brackets 112095, 112095L, 1120953, 1120953L, 112135, 112135L, 1121353, 1121353L, 112285, 112285L, 1122853, 1122853L, 112090E and 112090E0 are made from pre-galvanized steel S 350 GD + Z275 according to EN 10346:2009 with a minimum yield stress of 350 MPa, a minimum tensile strength R_m of 420 MPa and a minimum ultimate strain A80 of 16 %. The characteristic load-carrying capacities can be taken from the load-carrying capacity tables in Annex B for the angle brackets 110095, 110095L, 1100953, 1100953L, 110135, 110135L, 1101353, 1101353L, 110285, 110285L, 1102853, 1102853L, 110090E and 110090E0. The characteristic steel load-carrying capacities, in rows marked by "S", may be multiplied with the factor 1.49, for the first mentioned

angle brackets. The assignment of the angle connectors can be taken from Table B. 1.

Dimensions, hole positions and typical installations are shown in Annex A.

2 Specification of the intended use in accordance with the applicable EAD

The angle brackets are intended for use in making connections in load bearing timber structures, as a connection between two timber components or between a timber component and a steel or concrete component, where requirements for mechanical resistance and stability and safety in use in the sense of the Basic Works Requirements 1 and 4 of Regulation (EU) 305/2011 shall be fulfilled.

Connections of angle brackets to timber members with interlayers between the angle bracket and the timber member are possible. The influence of the interlayer on the load capacity has to be considered.

The connection may be with a single angle bracket or with an angle bracket on each side of the fastened timber member (see Annex A).

The wood members can be of solid timber, glued laminated timber and similar glued members, or wood-based structural members according to EN 1995-1-1 or a European Technical Assessment.

For connections to timber components, the connectors can be profiled nails with diameter 4 mm or connector screws with diameter 5 mm according to EN 14592 or a European Technical Assessment.

For connections to steel or concrete elements, bolts whose dimensioning is based on EN 1993 or metal anchors according to a European Technical Assessment can be used.

Annex B states the characteristic values of the load-carrying capacities of angle bracket connections with GH ring shanked nails and GH screws for a characteristic density of $\rho_k = 350 \text{ kg/m}^3$. For other connectors the load-carrying capacities of angle bracket connections have to be calculated with the load-carrying capacities of the used fasteners.

The design of the connections shall be in accordance with EN 1995 or a similar national Timber Code. The wood members shall have a thickness, which is larger than the penetration depth of the nails into the members.

The angle brackets are primarily for use in timber structures subject to the dry, internal conditions defined by service class 1 and 2 of EN 1995-1-1 and for connections subject to static or quasi-static loading. For use in service class 3 of EN 1995-1-1 the angle brackets, profiled nails and connector screws shall be produced from stainless steel.

The scope of the brackets regarding resistance to corrosion shall be defined according to national provisions that apply at the installation site considering environmental conditions.

The provisions made in this European Technical Assessment are based on an assumed intended working life of the connectors of 50 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

Characteristic	Assessment of characteristic
3.1 Mechanical resistance and stability*) (BWR1)	
Characteristic load-carrying capacity	See Annex B
Stiffness	No performance assessed
Ductility in cyclic testing	No performance assessed
3.2 Safety in case of fire (BWR2)	
Reaction to fire	The angle brackets are made from steel classified as Euroclass A1 in accordance with EN 13501-1 and Commission Delegated Regulation 2016/364 and EC decision 96/603/EC, amended by EC Decision 2000/605/EC
3.3 Hygiene, health and the environment (BWR3)	
Influence on air quality	No performance assessed
3.7 Sustainable use of natural resources (BWR7)	No performance assessed
3.8 General aspects related to the performance of the product	
	The angle brackets have been assessed as having satisfactory durability and serviceability when used in timber structures using the timber species described in Eurocode 5 and subject to the conditions defined by service class 1, 2 and 3 Identification See Annex A
Identification	See Annex A

*) See additional information in section 3.8 - 3.9.

3.9 Methods of verification

The characteristic load-carrying capacities of connections with angle brackets are based on the characteristic values of the connectors and the steel plates.

According to EN 1990 (Eurocode - Basis of design) paragraph 6.3.5 the design value of load-carrying capacity can be determined by reducing the characteristic values of the load-carrying capacity with different partial factors.

Therefore, to obtain design values according to the Eurocodes or appropriate national codes of practice, the capacities have to be multiplied with different partial factors for the material properties and - for the connectors mounted in wood - also the coefficient k_{mod} according to EN 1995-1-1 that takes into account the load duration class and the service class.

Thus, the characteristic values of the load-carrying capacity are determined also for timber failure $F_{Rk,T}$ (obtaining the embedment strength of connectors subjected to shear or the withdrawal capacity of the most loaded connector, respectively) as well as for steel plate failure $F_{Rk,S}$. The design value of the load-carrying capacity is the smaller value of both load-carrying capacities.

$$F_{Rd} = \min \{k_{mod} \cdot F_{Rk,T} / \gamma_{M,T}; F_{Rk,S} / \gamma_{M,S}\} \quad (1)$$

Therefore, for timber failure the load duration class and the service class are included. The different partial factors γ_M for steel or timber, respectively, are taken into account in formula (1).

3.10 Mechanical resistance and stability

See Annex B for the principal definition of the load-carrying capacities F_1 to F_5 and the verification of the load-carrying capacity.

The characteristic capacities of the angle brackets are partially determined by calculation assisted by testing as described in the EOTA Guideline 015 clause 5.1.2. They should be used for designs in accordance with Eurocode 5 or a similar national Timber Code.

The characteristic load-carrying capacities in Annex B are valid for GH ring shanked nails 4x40, 4x60 and GH screws 5x40, 5x60 according to ETA-13/0523 for an characteristic density of the timber element $\rho_k \geq 350 \text{ kg/m}^3$.

The characteristic load-carrying capacity of the angle brackets in combination with other lengths of the nails or screws and/or another density of the timber element can be calculated separately, taking into account the underlying failure mechanisms.

The shape of the nail and the screw directly under the head shall be in the form of a truncated cone with a diameter under the nail head which exceeds the hole diameter.

For the calculation of the lateral load-carrying capacity $R_{l,k}$ of profiled nails or connector screws according to EN 1995, a thick steel plate can be assumed under the following conditions:

- fasteners according to EN 14592 and thickness of the steel plate $t \geq 2 \text{ mm}$,
- fasteners according to ETA-13/0523 and thickness of the steel plate $t \geq 1,5 \text{ mm}$.

Depending on the hole diameter, the angle brackets can be fastened to concrete or steel member by bolts or metal anchors with a diameter of 10 mm or 12 mm.

No performance has been determined in relation to ductility of a joint under cyclic testing. The contribution to the performance of structures in seismic zones, therefore, has not been assessed.

No performance has been determined in relation to the joint's stiffness properties - to be used for the analysis of the serviceability limit state.

Axial load-carrying capacity of profiled nails or connector screws in accordance to EN 14592

The characteristic axial withdrawal capacity $F_{ax,Rk}$ of the nails has to be determined by calculation in accordance with EN 1995-1-1: 2010-12, 8.3.2. Head pull-through is not relevant.

$$F_{ax,Rk} = f_{ax,k} \cdot d \cdot t_{pen} \quad (2)$$

where

$f_{ax,k}$ Characteristic value of the withdrawal parameter in N/mm^2 ,

d Nail diameter in mm,

t_{pen} Penetration length of the profile shank in mm. The specifications according to EN 1995 or ETA shall be complied with.

If no characteristic value of the withdrawal resistance for the threaded nails used is declared in the ETA, it can be calculated as below.

Based on tests by Versuchsanstalt für Stahl, Holz und Steine, University of Karlsruhe, the characteristic value of the withdrawal resistance for the threaded nails used can be calculated as:

$$f_{ax,k} = 50 \cdot 10^{-6} \cdot \rho_k^2 \quad (3)$$

where

ρ_k Characteristic density of the timber in kg/m^3 .

3.11 Aspects related to the performance of the product

3.11.1 Corrosion protection in service class 1 and 2. In accordance with ETAG 015 the angle brackets are made from pre-galvanized steel S 250 GD + Z275, S 235 JR + Z275, DX 51 D + Z275 or S 350 GD + Z275 according to EN 10346:2009.

3.11.2 Corrosion protection in service class 3. In accordance with Eurocode 5 the angle brackets are made from stainless steel 1.4301, 1.4401, 1.4541 or 1.4571 according to EN 10088-2:2005 and the nails and screws shall be produced from stainless steel.

3.12 General aspects related to the fitness for use of the product

GH angle brackets are manufactured in accordance with the provisions of this European Technical Assessment using the manufacturing processes as identified in the inspection of the plant by the notified inspection body and laid down in the technical documentation.

The fastening pattern used shall be either the maximum or the partial pattern as defined in Annex A. There shall be fasteners in at least all holes defined in Annex A.

The edge and end distances in accordance with Eurocode 5 or an appropriate national code shall be complied with.

The angle bracket connection shall be designed in accordance with Eurocode 5 or an appropriate national code.

The cross section of the connected wooden elements shall have a plane surface against the whole angle bracket.

Zinc-coated angle brackets shall not be fastened with fasteners of stainless steel.

Nails or screws to be used shall have a diameter which fits the holes of the angle brackets.

The structural members to which the brackets are fixed shall be:

- Restrained against rotation.
- Free from wane under the bracket.
- The gap between the timber members does not exceed 3 mm.
- There are no specific requirements relating to preparation of the timber members.

The execution of the connection shall be in accordance with the approval holder's technical literature. For the installation of the angle brackets, the specifications according to EN 1995-1-1, paragraph 10 must be taken into account.

4 Attestation and verification of constancy of performance (AVCP)

4.1 AVCP system

According to the decision 97/638/EC of the European Commission¹, as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 2+.

5 Technical details necessary for the implementation of the AVCP system, as foreseen in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking.

Issued in Copenhagen on 2020-06-15 by


Thomas Bruun, CEO, ETA-Danmark A/S

Annex A

Product details and definitions

Table A. 1 Materials specification

Type	Thickness (mm)	Steel specifications*	Coating specification*	Figure	Table
110095	4,0	S 250 GD	Z 275	A.1	B.2-B.9
110095L	4,0	S 250 GD	Z 275	A.2	B.10-B.17
1100953	3,0	S 250 GD	Z 275	A.3	B.18-B.25
1100953L	3,0	S 250 GD	Z 275	A.4	B.26-B.33
110135	4,0	S 250 GD	Z 275	A.5	B.34-B.41
110135L	4,0	S 250 GD	Z 275	A.6	B.42-B.49
1101353	3,0	S 250 GD	Z 275	A.7	B.50-B.57
1101353L	3,0	S 250 GD	Z 275	A.8	B.58-B.65
110285	4,0	S 250 GD	Z 275	A.9	B.66-B.73
110285L	4,0	S 250 GD	Z 275	A.10	B.74-B.81
1102853	3,0	S 250 GD	Z 275	A.11	B.82-B.89
1102853L	3,0	S 250 GD	Z 275	A.12	B.90-B.97
110090E	1,5	S 250 GD	Z 275	A.13	B.98-B.113
110090E0	1,5	S 250 GD	Z 275	A.14	B.114-B.129
112095	4,0	S 350 GD	Z 275	A.1	-
112095L	4,0	S 350 GD	Z 275	A.2	-
1120953	3,0	S 350 GD	Z 275	A.3	-
1120953L	3,0	S 350 GD	Z 275	A.4	-
112135	4,0	S 350 GD	Z 275	A.5	-
112135L	4,0	S 350 GD	Z 275	A.6	-
1121353	3,0	S 350 GD	Z 275	A.7	-
1121353L	3,0	S 350 GD	Z 275	A.8	-
112285	4,0	S 350 GD	Z 275	A.9	-
112285L	4,0	S 350 GD	Z 275	A.10	-
1122853	3,0	S 350 GD	Z 275	A.11	-
1122853L	3,0	S 350 GD	Z 275	A.12	-
112090E	1,5	S 350 GD	Z 275	A.13	-
112090E0	1,5	S 350 GD	Z 275	A.14	-

Table A. 2 Range of sizes

See details in the following drawings.

Table A. 3 Fastener specification

According to	Type	Diameter (mm)	Finish
EN 14592 or ETA	Profiled nail	4,0	Electroplated zinc
EN 14592 or ETA	Connector screw	5,0	Electroplated zinc
ETA-13/0523	GH ring shanked nail	4,0	Electroplated zinc
ETA-13/0523	GH screw	5,0	Electroplated zinc

(*) According to clause 1 "Technical description of product and intended use" the angle brackets can be made from other steel grades.

Figure A. 1 Dimensions of Angle Brackets 110095 and 112095

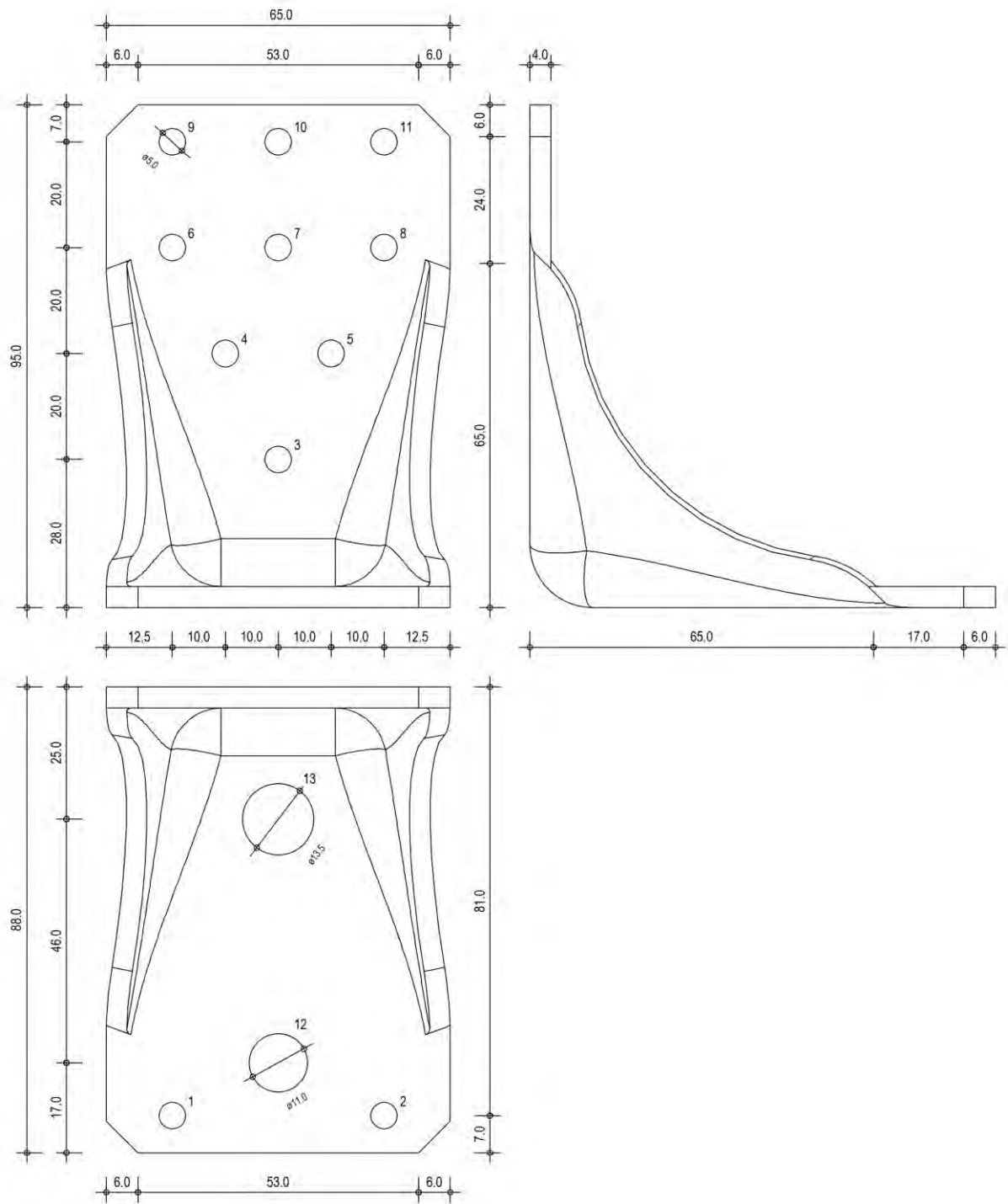


Figure A. 2 Dimensions of Angle Brackets 110095L and 112095L

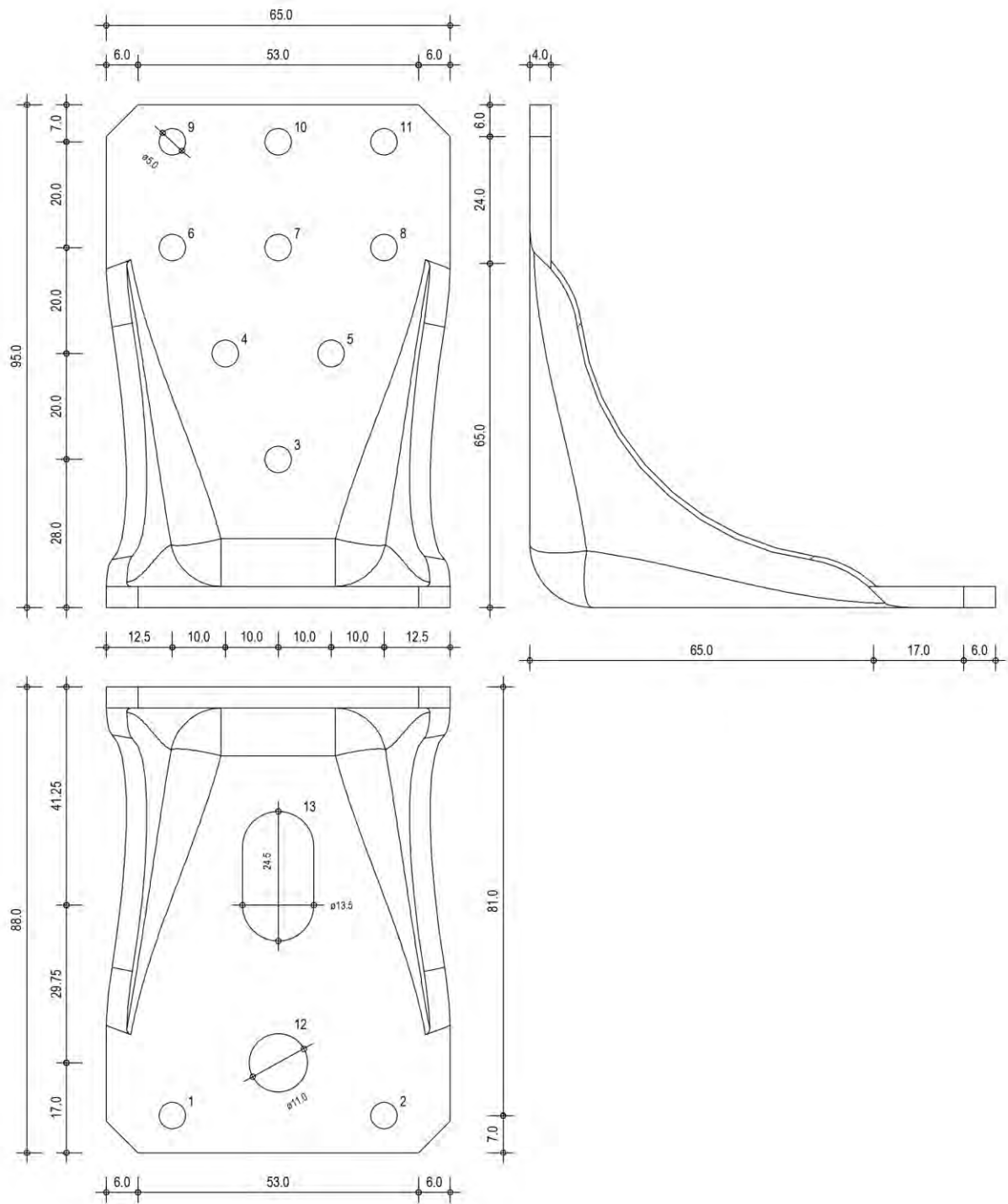


Figure A. 3 Dimensions of Angle Brackets 1100953 and 1120953

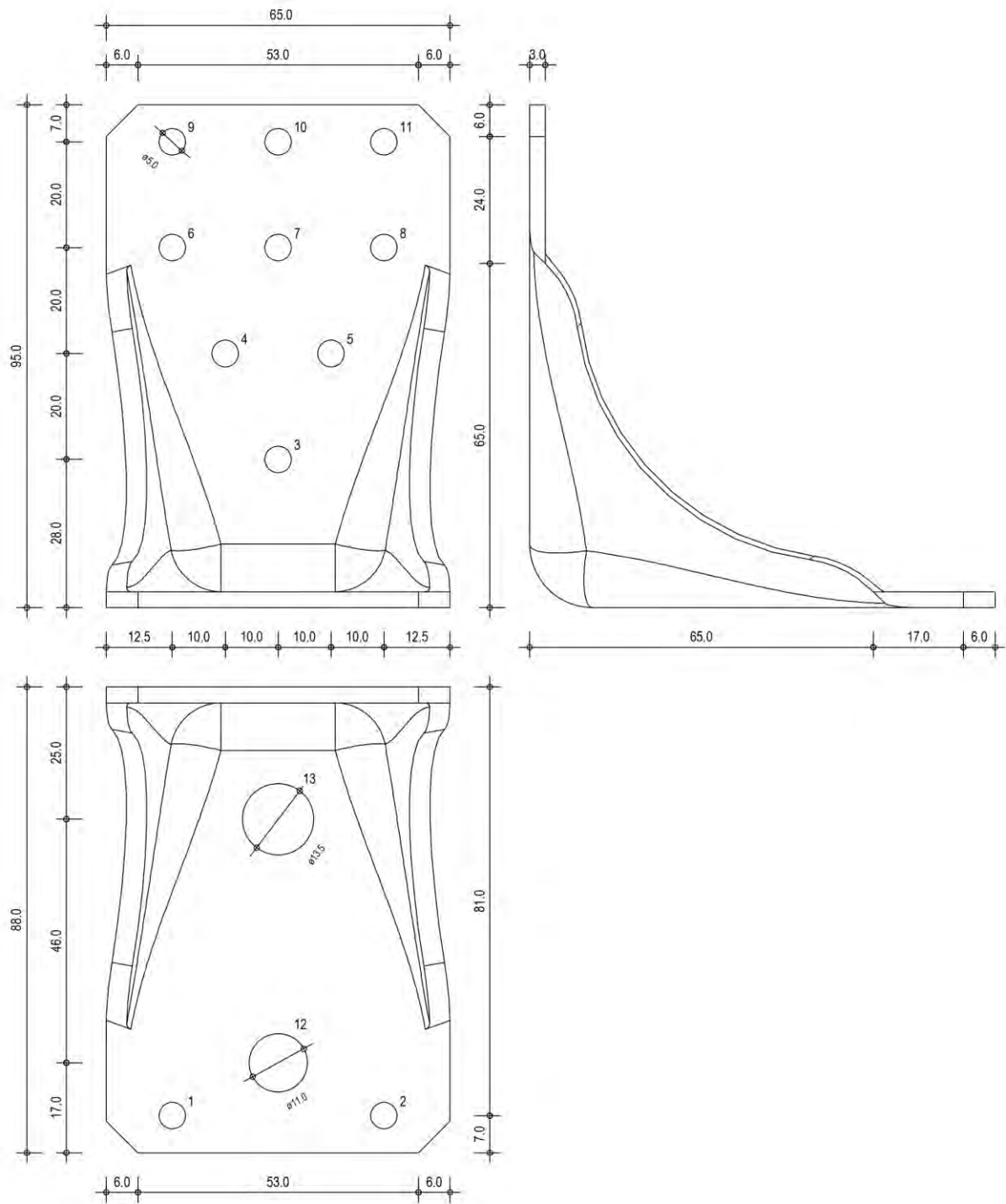


Figure A. 4 Dimensions of Angle Brackets 1100953L and 1120953L

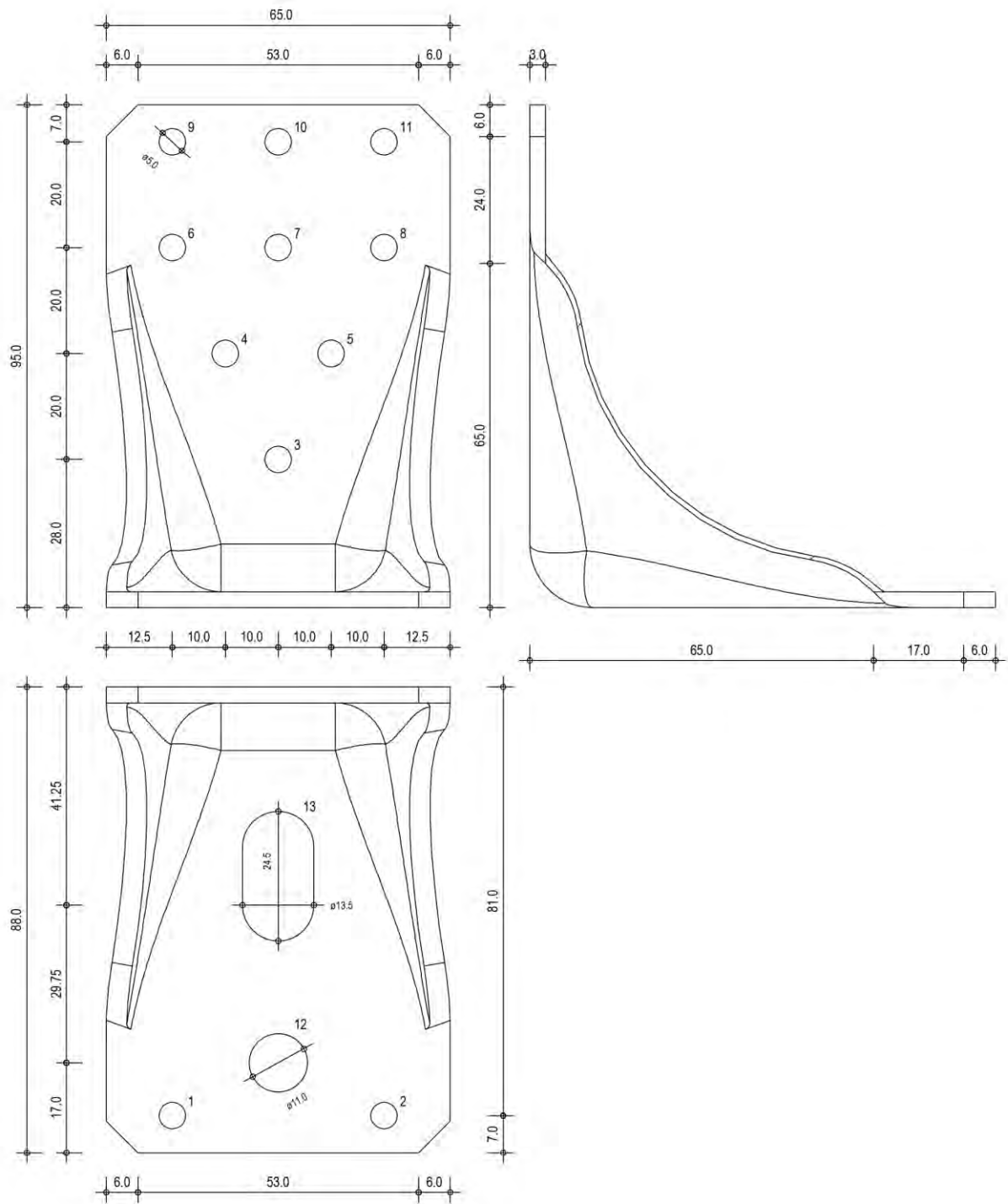


Figure A. 7 Dimensions of Angle Brackets 1101353 and 1121353

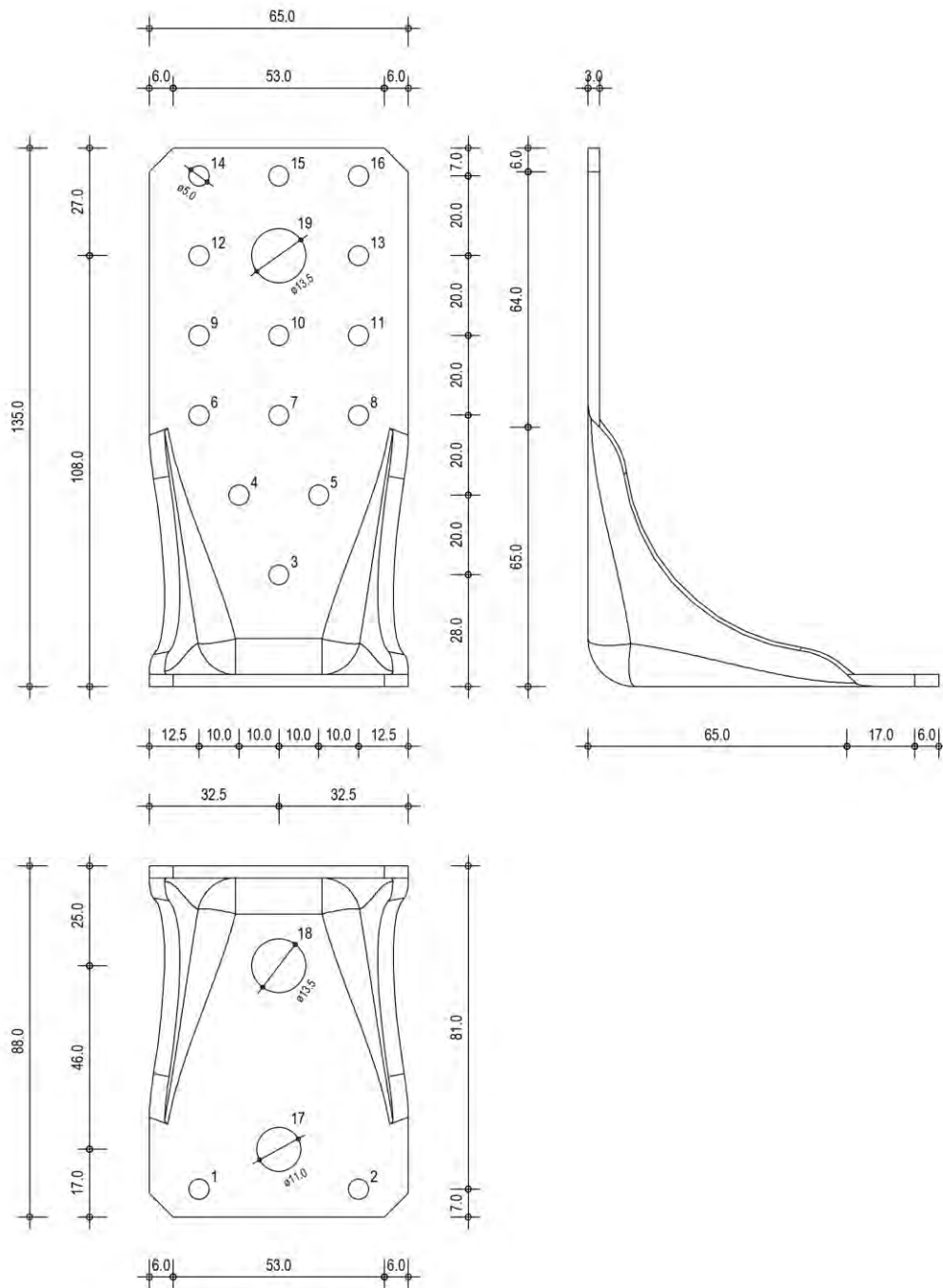


Figure A. 10 Dimensions of Angle Brackets 110285L and 112285L

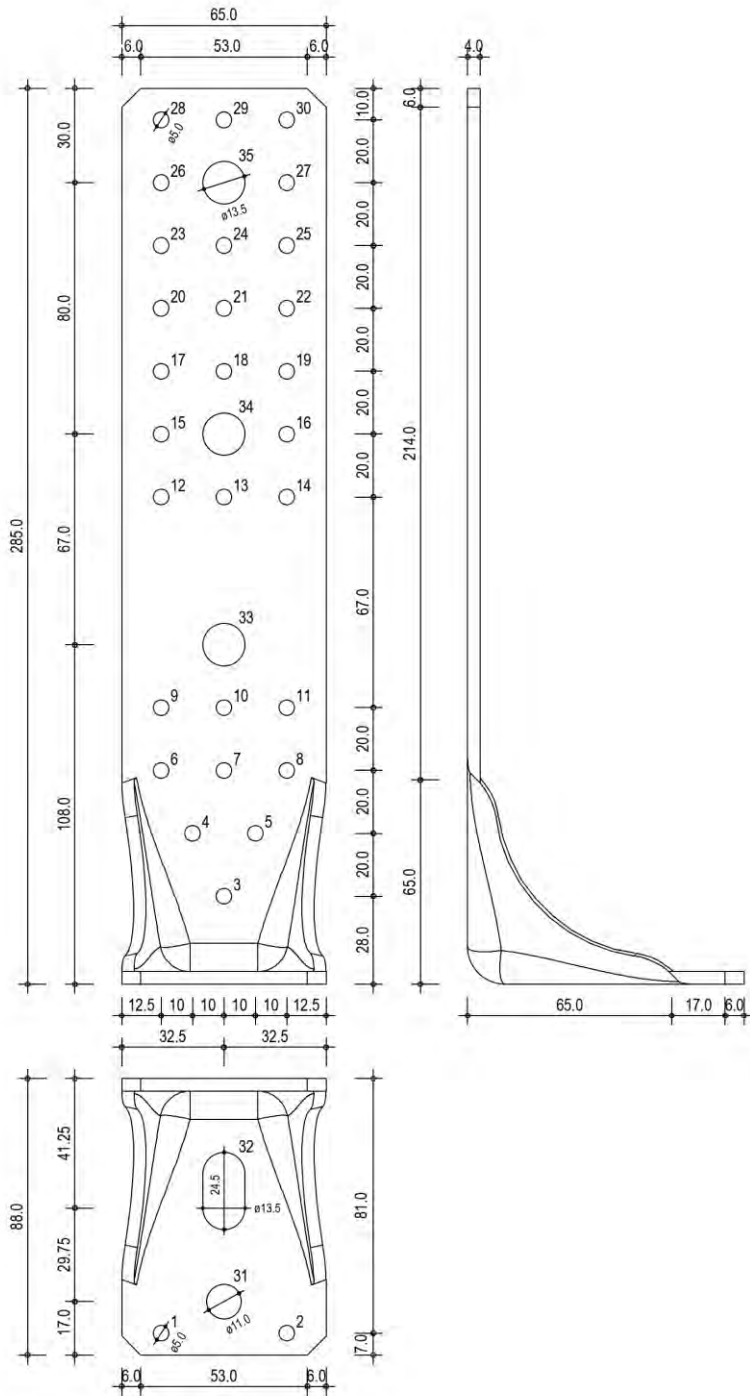


Figure A. 11 Dimensions of Angle Brackets 1102853 and 1122853

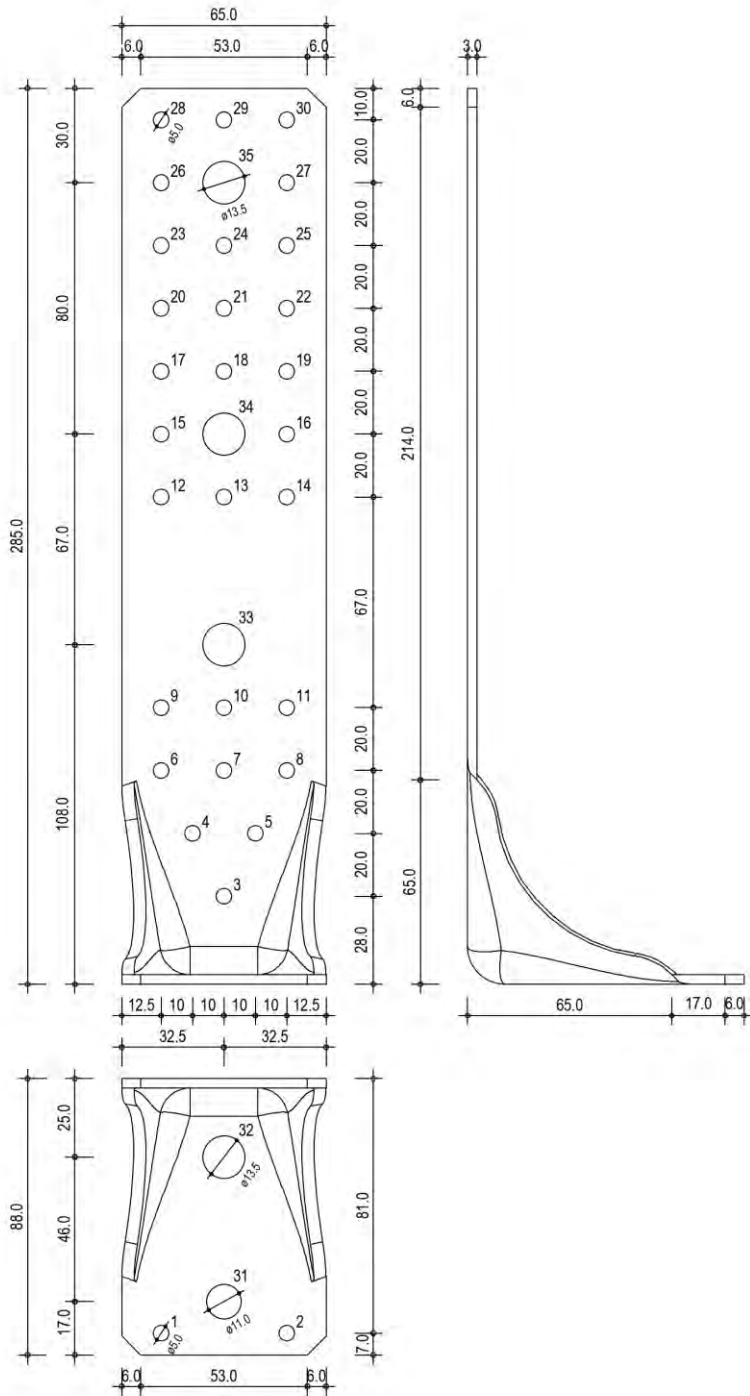


Figure A. 12 Dimensions of Angle Brackets 1102853L and 1122853L

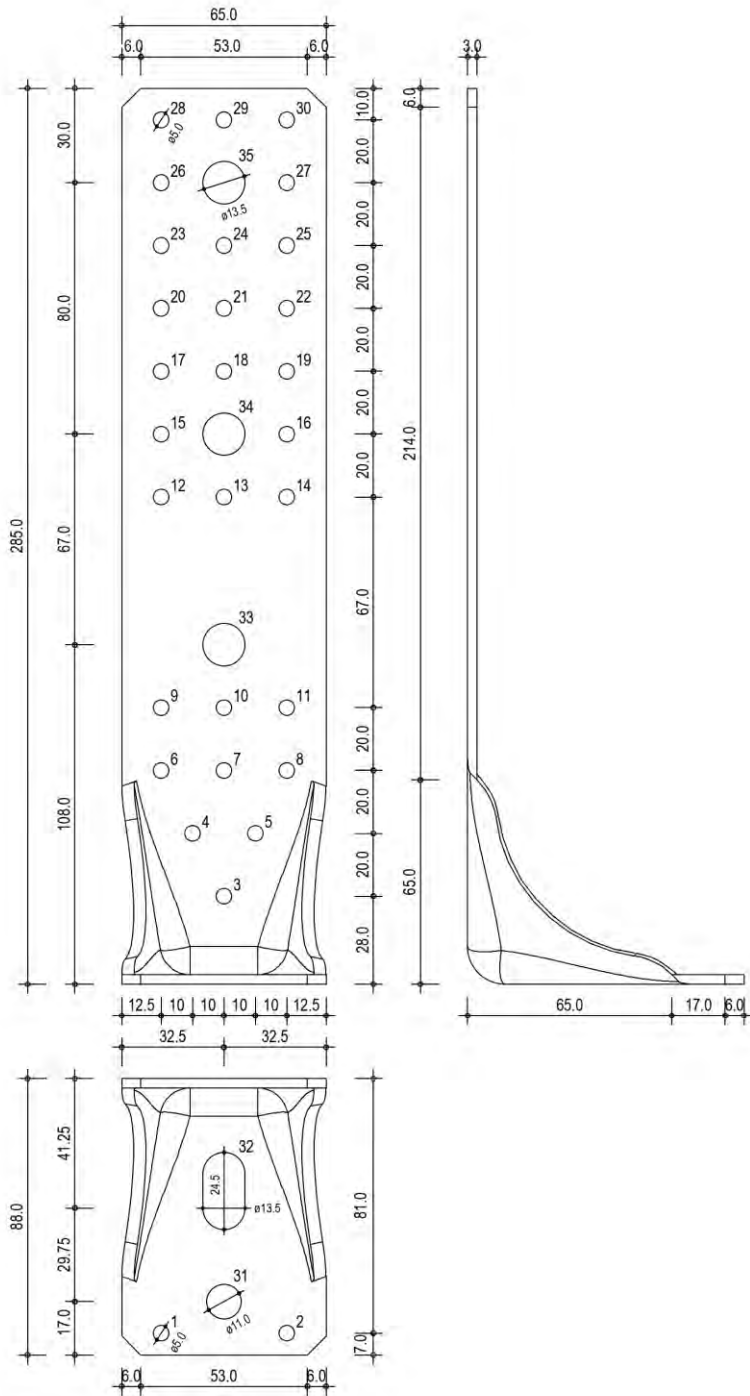


Figure A.13 Dimensions of Angle Brackets 110090E and 112090E

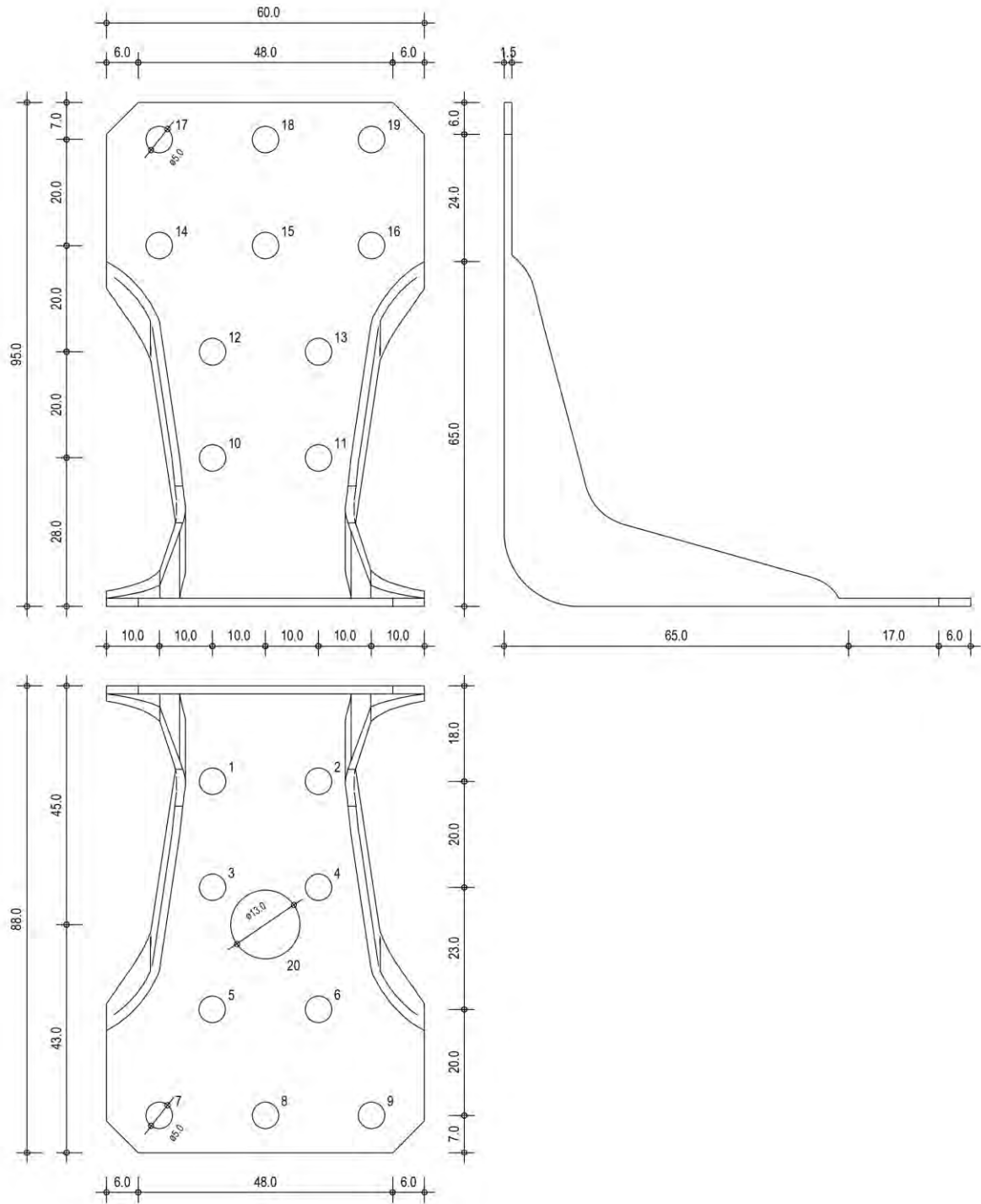
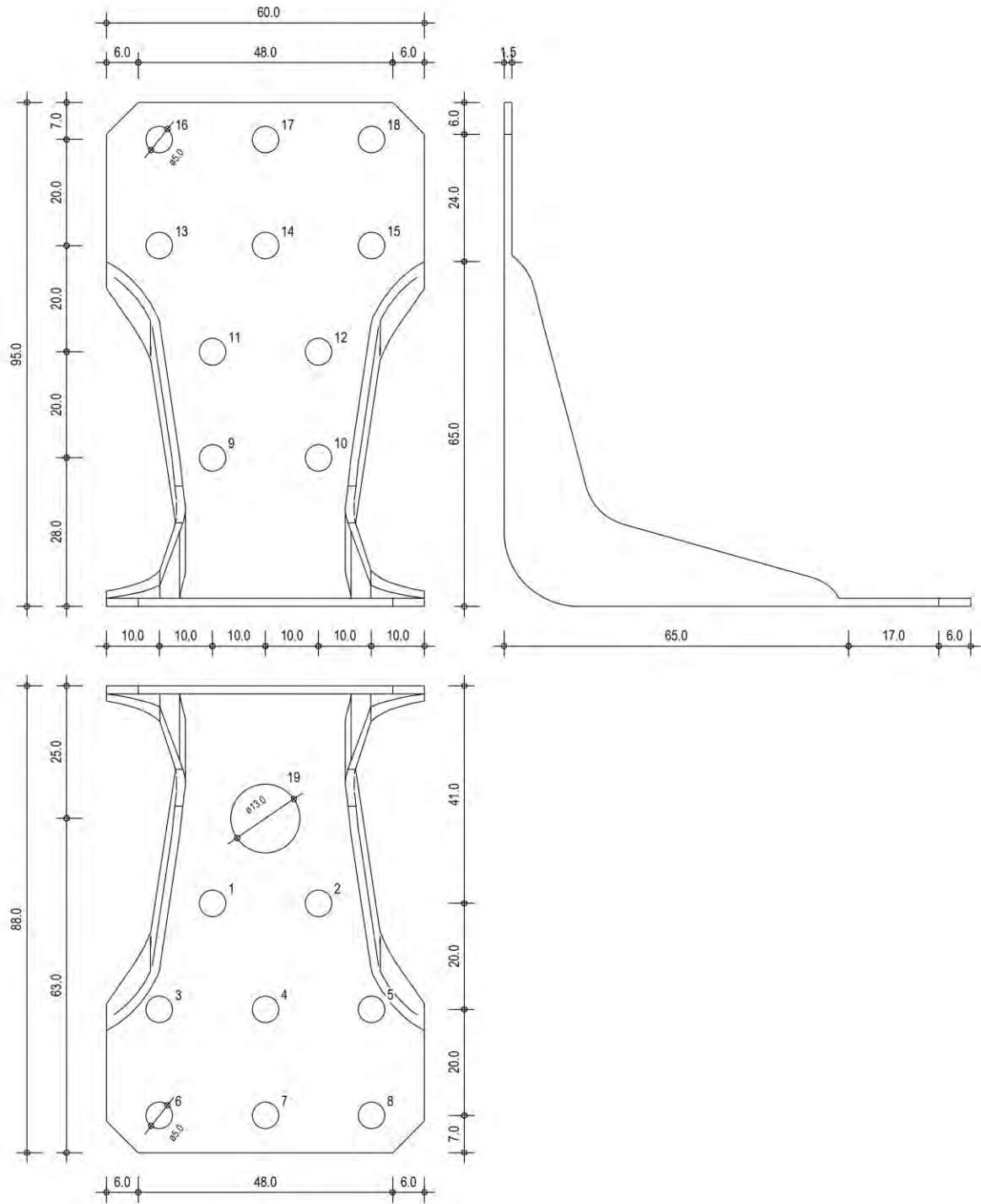


Figure A. 14 Dimensions of Angle Brackets 110090E0 and 112090E0



Characteristic load-carrying capacities

Figure B.1 Definitions of forces, their directions and eccentricity forces - Beam to beam connection

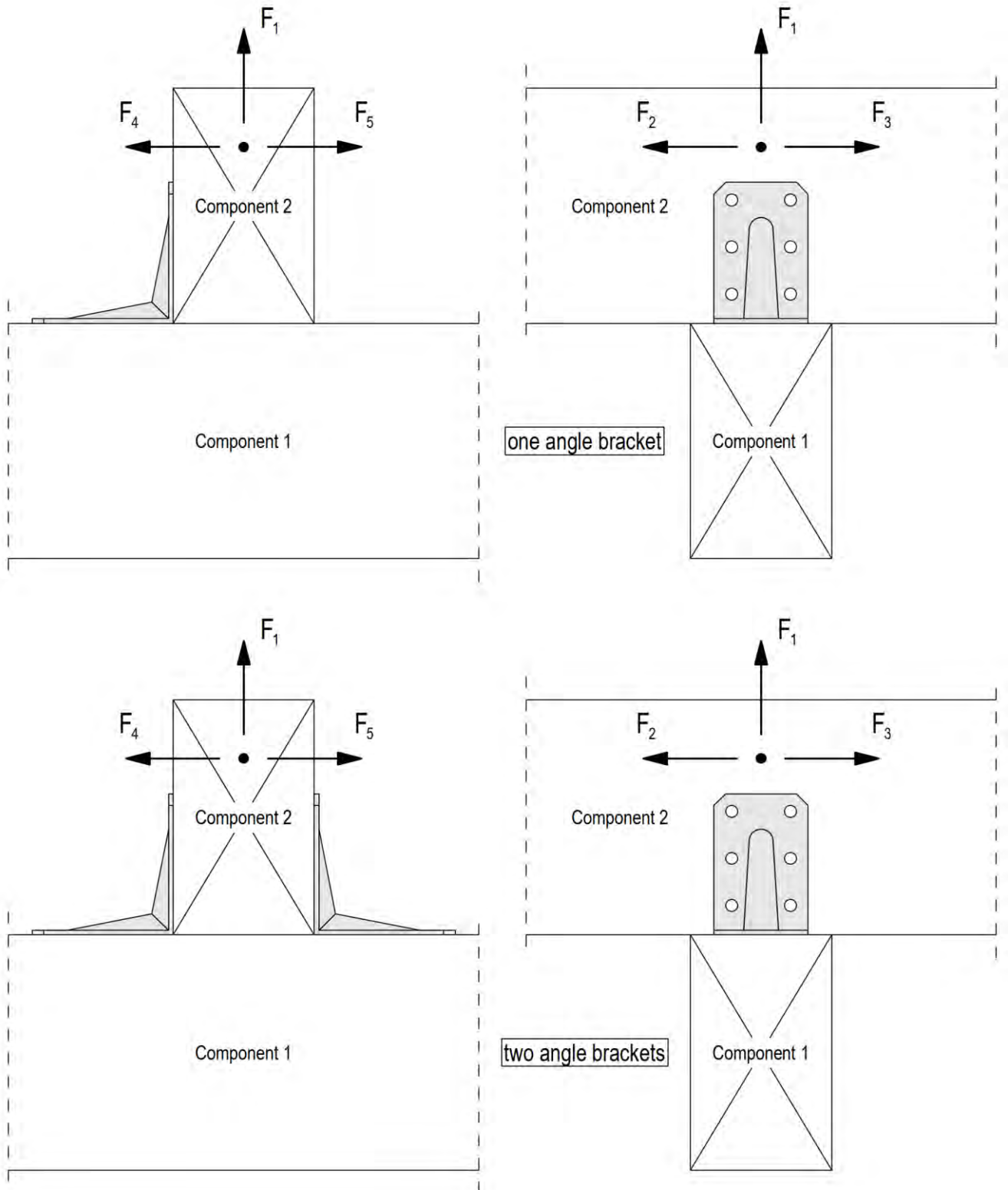
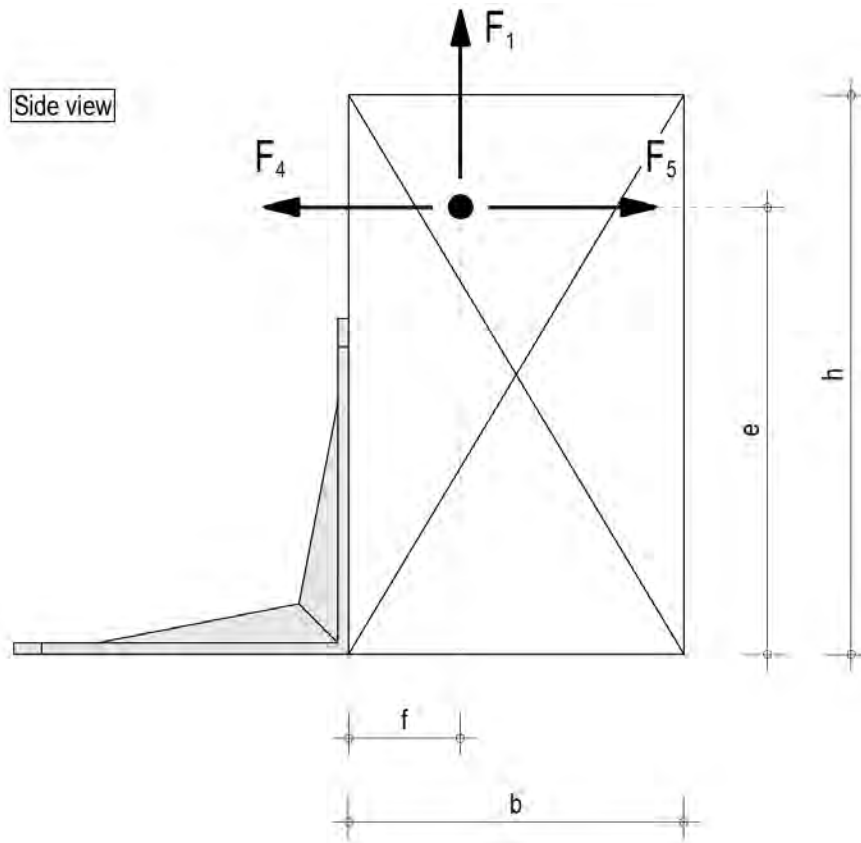


Figure B. 2 Definition of lever arms for forced with eccentricity



Single angle bracket per connection

The component No. 2 shall be prevented from rotation. Acting forces:

- F_1 Lifting force acting in the distance f to the angle bracket.
- F_2 and F_3 Lateral force acting in the joint between the component No. 2 and the component No. 1 in the component No. 2 direction.
- F_4 and F_5 Lateral force acting in the component No. 1 direction in the height of e . F_4 is the lateral force towards the angle bracket; F_5 is the lateral force away from the angle bracket.

Double angle brackets per connection

The angle brackets must be placed at each side opposite each other, symmetric to the component axis. The component 2 shall be prevented from rotation. Acting forces:

- F_1 Lifting force acting along the central axis of the joint.
- F_2 and F_3 Lateral force acting in the joint between the component No. 2 and component No. 1 in the component No. 2 direction.
- F_4 and F_5 Lateral force acting in the component No. 1 direction along the central axis of the joint. If the load is applied with an eccentricity e , a design for combined loading is required. The calculations applied for this ETA already contain the necessary input for eccentric loading.

Permitted load directions

Table B. 1 defines the permitted load directions for every angle bracket.

Proof of load-carrying capacities a single force acting in one direction

$$\eta = F_{i,Ed} / F_{i,Rd} \leq 1,0 \quad (4)$$

Where i is the index of the force direction, respectively of the corresponding load-carrying capacity.

Proof of load-carrying capacities for combined forces

If the forces F_1 or F_2 or F_3 or F_4 or F_5 act at the same time, the following inequality shall be fulfilled:

$$\text{Single angle bracket: } \eta = (F_{1,Ed} / F_{1,Rd})^2 + (F_{2,Ed} / F_{2/3,Rd})^2 + (F_{3,Ed} / F_{2/3,Rd})^2 + (F_{4,Ed} / F_{4,Rd})^2 + (F_{5,Ed} / F_{5,Rd})^2 \leq 1,0 \quad (5)$$

$$\text{Double angle bracket: } \eta = (F_{1,Ed} / F_{1,Rd})^2 + (F_{2,Ed} / F_{2/3,Rd})^2 + (F_{3,Ed} / F_{2/3,Rd})^2 + (F_{4,Ed} / F_{4/5,Rd})^2 + (F_{5,Ed} / F_{4/5,Rd})^2 \leq 1,0 \quad (6)$$

The forces F_2 and F_3 or F_4 and F_5 are forces with opposite direction. Therefore, only one force F_2 or F_3 , respectively, and F_4 or F_5 , respectively, is able to act simultaneously with F_1 , while the other shall be set to zero.

Wane

Wane is not allowed, the timber has to be sharp-edged in the area of the angle brackets.

Timber splitting

For all forces it must be checked in accordance with EN 1995 or a similar national Timber Code that splitting will not occur.

Fastening pattern

Table B. 1 indicates the fastening patterns in the horizontal and vertical leg of the brackets for maximum and partial fastening. The numbers refer to the hole numbers indicated in the drawings in Annex A.

TTM: Connection of a timber component No. 2 to a timber component No. 1 with a maximum fastening.

TTP: Connection of a timber component No. 2 to a timber component No. 1 with a partial fastening.

TCM: Connection of a timber component No. 2 to a concrete or steel component No. 1 with a maximum fastening.

TCP: Connection of a timber component No. 2 to a concrete or steel component No. 1 with a partial fastening.

Table B.1 Fastening pattern and permitted load directions

Type	Variant	Horizontal bracket	Vertical bracket	F ₁	F ₂	F ₃	F ₄	F ₅
110095, 112095	TCM	13	3-4-5-6-7-8-9-10-11	✓	✓	✓	✓	✓
110095, 112095	TCP	13	6-8-10	✓	✓	✓	✓	✓
110095L, 112095L	TCM	13	3-4-5-6-7-8-9-10-11	✓	✓	✓	✗	✗
110095L, 112095L	TCP	13	6-8-10	✓	✓	✓	✗	✗
1100953, 1120953	TCM	13	3-4-5-6-7-8-9-10-11	✓	✓	✓	✓	✓
1100953, 1120953	TCP	13	6-8-10	✓	✓	✓	✓	✓
1100953L, 1120953L	TCM	13	3-4-5-6-7-8-9-10-11	✓	✓	✓	✗	✗
1100953L, 1120953L	TCP	13	6-8-10	✓	✓	✓	✗	✗
110135, 112135	TCM	18	3-4-5-6-7-8-9-10-11-12-13-14-15-16	✓	✓	✓	✓	✓
110135, 112135	TCP	18	6-7-8-12-13-15	✓	✓	✓	✓	✓
110135L, 112135L	TCM	18	3-4-5-6-7-8-9-10-11-12-13-14-15-16	✓	✓	✓	✗	✗
110135L, 112135L	TCP	18	6-7-8-12-13-15	✓	✓	✓	✗	✗
1101353, 1121353	TCM	18	3-4-5-6-7-8-9-10-11-12-13-14-15-16	✓	✓	✓	✓	✓
1101353, 1121353	TCP	18	6-7-8-12-13-15	✓	✓	✓	✓	✓
1101353L, 1121353L	TCM	18	3-4-5-6-7-8-9-10-11-12-13-14-15-16	✓	✓	✓	✗	✗
1101353L, 1121353L	TCP	18	6-7-8-12-13-15	✓	✓	✓	✗	✗
110285, 112285	TCM	32	4-5-9-11-13-15-16-18-20-22-24-26-27-29	✓	✓	✓	✓	✓
110285, 112285	TCP	32	4-5-9-11-15-16-18-26-27-29	✓	✓	✓	✓	✓
110285L, 112285L	TCM	32	4-5-9-11-13-15-16-18-20-22-24-26-27-29	✓	✓	✓	✗	✗
110285L, 112285L	TCP	32	4-5-9-11-15-16-18-26-27-29	✓	✓	✓	✗	✗
1102853, 1122853	TCM	32	4-5-9-11-13-15-16-18-20-22-24-26-27-29	✓	✓	✓	✓	✓
1102853, 1122853	TCP	32	4-5-9-11-15-16-18-26-27-29	✓	✓	✓	✓	✓
1102853L, 1122853L	TCM	32	4-5-9-11-13-15-16-18-20-22-24-26-27-29	✓	✓	✓	✗	✗
1102853L, 1122853L	TCP	32	4-5-9-11-15-16-18-26-27-29	✓	✓	✓	✗	✗
110090E, 112090E	TCM	20	10-11-12-13-14-15-16-17-18-19	✓	✓	✓	✓	✓
110090E, 112090E	TCP	20	14-16-18	✓	✓	✓	✓	✓
110090E, 112090E	TTM	1-2-3-4-5-6-7-8-9	10-11-12-13-14-15-16-17-18-19	✓	✓	✓	✓	✓
110090E, 112090E	TTP	1-2-5-6-7-9	14-16-18	✓	✓	✓	✓	✓
110090E0, 112090E0	TCM	19	9-10-11-12-13-14-15-16-17-18	✓	✓	✓	✓	✓
110090E0, 112090E0	TCP	19	13-15-17	✓	✓	✓	✓	✓
110090E0, 112090E0	TTM	1-2-3-4-5-6-7-8	9-10-11-12-13-14-15-16-17-18	✓	✓	✓	✓	✓
110090E0, 112090E0	TTP	1-2-3-5-6-8	13-15-17	✓	✓	✓	✓	✓

The characteristic load-carrying capacity for connection with the angle brackets 110095, 110095L, 1100953, 1100953L, 110135, 110135L, 1101353, 1101353L, 110285, 110285L, 1102853, 1102853L, 110090E and 110090E0, given in the following tables, are based on calculations presuming brackets made from pre-galvanized steel S 250 GD + Z275 with a minimum yield stress of 235 MPa. According to clause 1 "Technical description of product and intended use" this angle brackets can be made from other steel grades.

The characteristic load-carrying capacity for connection with the angle brackets 112095, 112095L, 1120953, 1120953L, 112135, 112135L, 1121353, 1121353L, 112285, 112285L, 1122853, 1122853L, 112090E and 112090E0, are based on calculations presuming brackets made from pre-galvanized steel S 350 GD + Z275 with a minimum yield stress of 350 MPa. According to clause 1 "Technical description of product and intended use" the characteristic load capacities of these angle brackets can be calculated.

Interlayer

The characteristic capacities for connection with the angle brackets given in the following tables also apply in the case of an interlayer between the vertical leg of the angle bracket and the timber component. The following conditions must be observed:

- The interlayer must be immovable.
- The embedding depth of the profiled area of the nail or the thread length of the screw in the timber component 2 must be equal or higher. A correspondingly longer fastener must be used for this purpose.
- The characteristic embedding strength $f_{h,k}$ of the fastener in the interlayer must be equal or higher.

Connection to steel or concrete elements with bolts or metal anchors

The load $F_{B,Ed}$ for the design of one bolt or one metal anchor is calculated as:

$$F_{B,Ed} = k_t \cdot F_{i,Ed} \quad (7)$$

where

$F_{B,Ed}$ axial load on one bolt or one metal anchor,

k_t coefficient taking into account the lever arm,

$F_{i,Ed}$ load acting on the angle connector in the direction of index i.

Load-capacity values

The Figure B. 2 describes the geometric factors used in the following load-carrying capacity tables.

Table B.2 Angle bracket type 110095, Variant TCM, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	17010	6424	3399	2291	1725	1383	1153	989	866	770	693	630	577	34020
$F_{1,Rk}$ S	9961	8633	7617	5857	4392	3514	2928	2510	2196	1952	1757	1597	1464	19922
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3110	6220
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	7303	2351	1401	998	775	633	535	464	409	366	331	302	278
$F_{4,Rk}$ S	-	20233	10116	6744	5058	4047	3372	2528	1963	1605	1357	1175	1037	927	839	766	704
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	984	1373	2274	6607	3187	2549	2124	1821	1593	1416	1274	1158	1062	980	910	849	796
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	984	1373	2274	6607	2550	2040	1700	1457	1275	1133	1020	927	850	784	728	680	637
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	984	1373	2274	6607	2984	2387	1989	1705	1492	1326	1193	1085	994	918	852	795	746
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	984	1373	2274	6607	3092	2473	2061	1766	1546	1374	1236	1124	1030	951	883	824	773
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	984	1373	2274	6607	3132	2506	2088	1790	1566	1392	1253	1139	1044	963	895	835	783
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	984	1373	2274	6607	3151	2521	2101	1801	1575	1400	1260	1146	1050	969	900	840	787
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	984	1373	2274	6607	3162	2529	2108	1807	1581	1405	1264	1149	1054	973	903	843	790
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	984	1373	2274	6607	3168	2535	2112	1810	1584	1408	1267	1152	1056	975	905	845	792
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	984	1373	2274	6607	3173	2538	2115	1813	1586	1410	1269	1153	1057	976	906	846	793
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	984	1373	2274	6607	3176	2540	2117	1814	1588	1411	1270	1154	1058	977	907	846	794
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	984	1373	2274	6607	3178	2542	2118	1816	1589	1412	1271	1155	1059	977	908	847	794
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	984	1373	2274	6607	3179	2543	2119	1816	1589	1413	1271	1156	1059	978	908	847	794
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	984	1373	2274	6607	3180	2544	2120	1817	1590	1413	1272	1156	1060	978	908	848	795
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	16200	13816	8505	5670	4253	3402	2835	2430	2126	1890	1701	1546	1418	1308	1215	1134	1063
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	16200	14626	13816	11340	8505	6804	5670	4860	4253	3780	3402	3093	2835	2617	2430	2268	2126
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	16200	15440	13676	13816	12758	10206	8505	7290	6379	5670	5103	4639	4253	3925	3645	3402	3189
	S	-	29883	14942	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	16200	15759	14626	13182	13816	13608	11340	9720	8505	7560	6804	6185	5670	5234	4860	4536	4253
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	16200	15913	15138	14065	13336	13816	13711	12150	10631	9450	8505	7732	7088	6542	6075	5670	5316
	S	-	49805	24903	16602	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	16200	15999	15440	14626	13676	13471	13816	13756	12758	11340	10206	9278	8505	7851	7290	6804	6379
	S	-	59766	29883	19922	14942	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	16200	16052	15631	14998	14229	13394	13552	13816	13784	13230	11907	10825	9923	9159	8505	7938	7442
	S	-	69727	34864	23242	17432	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	16200	16086	15759	15256	14626	13920	13182	13605	13816	13800	13608	12371	11340	10468	9720	9072	8505
	S	-	79688	39844	26563	19922	15938	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	16200	16110	15848	15440	14918	14319	13676	13232	13642	13816	13811	13676	12758	11776	10935	10206	9568
	S	-	89649	44825	29883	22412	17930	14942	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	16200	16127	15913	15576	15138	14626	14065	13479	13336	13670	13816	13818	13711	13085	12150	11340	10631
	S	-	99610	49805	33203	24903	19922	16602	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	16200	16139	15962	15679	15307	14866	14375	13854	13317	13413	13690	13816	13823	13737	13365	12474	11694
	S	-	109571	54786	36524	27393	21914	18262	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	16200	16149	15999	15759	15440	15057	14626	14161	13676	13182	13471	13706	13816	13826	13756	13608	12758
	S	-	119533	59766	39844	29883	23907	19922	17076	14942	13281	11953	10866	9961	9194	8538	7968	7470
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B.3 Angle bracket type 110095, Variant TCM, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	21276	11563	5579	3792	2864	2299	1919	1646	1442	1282	1154	1049	962	42552
$F_{1,Rk}$ S	9961	8632	7617	5857	4392	3514	2928	2510	2196	1952	1757	1597	1464	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3980	7960
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	12172	3919	2336	1663	1292	1056	892	773	682	610	551	503	463
$F_{4,Rk}$ S	-	20233	10116	6744	5058	4047	3372	2528	1963	1605	1357	1175	1037	927	839	766	704
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
20	T	1640	2289	3791	11013	3758	3006	2505	2147	1879	1670	1503	1366	1252	1156	1073	1002	939
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	1640	2289	3791	11013	4752	3801	3168	2715	2376	2112	1900	1728	1584	1462	1357	1267	1188
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	1640	2289	3791	11013	5039	4031	3359	2879	2519	2239	2015	1832	1679	1550	1439	1343	1259
	S	2492	3479	5761	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	1640	2289	3791	11013	5251	4201	3501	3001	2625	2334	2101	1910	1750	1616	1500	1401	1313
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
100	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
120	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
140	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
160	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
180	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
200	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
220	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
240	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	26999	21276	10638	7092	5319	4255	3546	3039	2660	2364	2128	1934	1773	1637	1520	1418	1330
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	26999	26089	12176	14184	10638	8510	7092	6079	5319	4728	4255	3868	3546	3273	3039	2837	2660
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	26999	24866	27000	21276	15957	12766	10638	9118	7979	7092	6383	5803	5319	4910	4559	4255	3989
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	26999	25735	26089	27000	21276	17021	14184	12158	10638	9456	8510	7737	7092	6546	6079	5674	5319
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	26999	26170	24075	27000	26595	21276	17730	15197	13298	11820	10638	9671	8865	8183	7599	7092	6649
	S	-	49805	24903	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	26999	26415	24866	26089	27000	25531	21276	18237	15957	14184	12766	11605	10638	9820	9118	8510	7979
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	26999	26566	25383	24206	27000	27000	24822	21276	18617	16548	14893	13539	12411	11456	10638	9929	9308
	S	-	69727	34864	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	26999	26666	25735	24380	26089	27000	27000	24315	21276	18912	17021	15473	14184	13093	12158	11347	10638
	S	-	79688	39844	26563	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	26999	26735	25986	24866	24677	27000	27000	23936	21276	19148	17408	15957	14730	13677	12766	11968	
	S	-	89649	44825	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	26999	26785	26170	25233	24075	26089	27000	27000	26595	23640	21276	19342	17730	16366	15197	14184	13298
	S	-	99610	49805	33203	24903	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	26999	26822	26308	25515	24515	24961	26989	27000	27000	26004	23404	21276	19503	18003	16717	15602	14627
	S	-	109571	54786	36524	27393	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	26999	26850	26415	25735	24866	23868	26089	27000	27000	27000	25531	23210	21276	19639	18237	17021	15957
	S	-	119533	59766	39844	29883	23907	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B.4 Angle bracket type 110095, Variant TCM, Fastener GH Screw 5x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	18027	14570	6754	4689	3570	2876	2406	2067	1812	1612	1452	1320	1211	36054
	S	9961	8632	7617	5857	4392	3514	2928	2510	2196	1952	1757	1597	1464	19922
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	3430	6860
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$	T	-	-	-	15337	4939	2943	2096	1627	1330	1125	974	859	768	695	634	583
	S	-	20233	10116	6744	5058	4046	3372	2528	1963	1605	1357	1175	1037	927	839	766
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
20	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
40	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
60	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
80	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
100	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
120	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
140	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
160	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
180	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
200	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
220	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
240	T	2066	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2492	3479	5761	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	34019	18027	9014	6009	4507	3605	3005	2575	2253	2003	1803	1639	1502	1387	1288	1202	1127
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	34019	30732	18027	12018	9014	7211	6009	5151	4507	4006	3605	3278	3005	2773	2575	2404	2253
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	34019	28796	27041	18027	13520	10816	9014	7726	6760	6009	5408	4916	4507	4160	3863	3605	3380
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	34019	30767	30732	24036	18027	14422	12018	10301	9014	8012	7211	6555	6009	5547	5151	4807	4507
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	34019	31828	29606	30045	22534	18027	15023	12876	11267	10015	9014	8194	7511	6933	6438	6009	5633
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	34019	32452	28796	30732	27041	21632	18027	15452	13520	12018	10816	9833	9014	8320	7726	7211	6760
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	34019	32847	29944	30104	30698	25238	21032	18027	15774	14021	12619	11472	10516	9707	9014	8413	7887
	S	-	69727	34864	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	34019	33111	30767	29032	30732	28843	24036	20602	18027	16024	14422	13111	12018	11094	10301	9614	9014
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	34019	33295	31372	28796	30314	30751	27041	23178	20280	18027	16224	14749	13520	12480	11589	10816	10140
	S	-	89649	44825	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	34019	33429	31828	29604	29606	30732	30045	25753	22534	20030	18027	16388	15023	13867	12876	12018	11267
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	34019	33530	32178	30248	28725	30426	30773	28328	24787	22033	19830	18027	16525	15254	14164	13220	12394
	S	-	109571	54786	36524	27392	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	34019	33606	32452	30767	28796	29916	30732	30642	27041	24036	21632	19666	18027	16640	15452	14422	13520
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B.5 Angle bracket type 110095, Variant TCM, Fastener GH Screw 5x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	20385	20385	11332	7555	5666	4533	3777	3238	2833	2518	2266	2060	1889	40770
S	9961	8632	7617	5856	4392	3513	2928	2509	2196	1952	1756	1597	1464	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3900	7800
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	23857	7683	4579	3261	2532	2070	1750	1516	1337	1196	1082	988	908
S	-	20233	10116	6744	5058	4046	3372	2528	1963	1604	1356	1175	1036	927	838	765	704
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
20	T	3215	4488	7431	21585	4577	3661	3051	2615	2288	2034	1830	1664	1525	1408	1307	1220	1144
	S	2492	3479	5760	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	3215	4488	7431	21585	10193	8154	6795	5824	5096	4530	4077	3706	3398	3136	2912	2718	2548
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
60	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
80	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
100	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
120	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
140	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
160	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
180	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
200	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
220	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
240	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2492	3479	5760	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	52920	20385	10193	6795	5096	4077	3398	2912	2548	2265	2039	1853	1699	1568	1456	1359	1274
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	52920	40770	20385	13590	10193	8154	6795	5824	5096	4530	4077	3706	3398	3136	2912	2718	2548
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	52920	52920	30578	20385	15289	12231	10193	8736	7644	6795	6116	5560	5096	4704	4368	4077	3822
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	52920	49456	40770	27180	20385	16308	13590	11649	10193	9060	8154	7413	6795	6272	5824	5436	5096
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	52920	46966	50963	33975	25481	20385	16988	14561	12741	11325	10193	9266	8494	7840	7280	6795	6370
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	52920	48568	52920	40770	30578	24462	20385	17473	15289	13590	12231	11119	10193	9408	8736	8154	7644
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	52920	49617	51820	47565	35674	28539	23783	20385	17837	15855	14270	12972	11891	10977	10193	9513	8918
	S	-	69727	34863	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	52920	50336	49456	52920	40770	32616	27180	23297	20385	18120	16308	14825	13590	12545	11649	10872	10193
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	52920	50846	46877	52920	45866	36693	30578	26209	22933	20385	18347	16679	15289	14113	13105	12231	11467
	S	-	89649	44824	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	52920	51222	46966	52501	50963	40770	33975	29121	25481	22650	20385	18532	16988	15681	14561	13590	12741
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	52920	51505	47856	51076	52920	44847	37373	32034	28029	24915	22424	20385	18686	17249	16017	14949	14015
	S	-	109571	54786	36523	27392	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	52920	51723	48568	49456	52920	48924	40770	34946	30578	27180	24462	22238	20385	18817	17473	16308	15289
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B.6 Angle bracket type 110095, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	5669	448	224	149	112	89	74	64	56	49	44	40	37	11338
S	9961	1488	744	496	372	298	248	213	186	165	149	135	124	19922
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	980	1960
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	473	152	90	64	50	41	34	30	26	23	21	19	18
S	-	20233	10116	6744	1566	504	301	214	166	136	115	100	88	79	71	65	60
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
0 T	63	89	147	428	1530	1224	1020	874	764	679	611	556	509	470	437	407	382
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20 T	63	89	147	428	1039	831	693	594	519	462	415	378	346	319	297	277	259
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40 T	63	89	147	428	1346	1077	897	769	673	598	538	489	448	414	384	359	336
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60 T	63	89	147	428	1439	1151	959	822	719	639	575	523	479	442	411	383	359
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80 T	63	89	147	428	1477	1181	984	844	738	656	590	537	492	454	422	393	369
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100 T	63	89	147	428	1495	1196	997	854	747	664	598	543	498	460	427	398	373
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120 T	63	89	147	428	1505	1204	1003	860	752	669	602	547	501	463	430	401	376
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140 T	63	89	147	428	1512	1209	1008	864	756	672	604	549	504	465	432	403	378
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160 T	63	89	147	428	1516	1213	1010	866	758	673	606	551	505	466	433	404	379
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180 T	63	89	147	428	1519	1215	1012	868	759	675	607	552	506	467	434	405	379
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200 T	63	89	147	428	1521	1216	1014	869	760	676	608	553	507	468	434	405	380
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220 T	63	89	147	428	1522	1218	1015	870	761	676	609	553	507	468	435	406	380
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240 T	63	89	147	428	1523	1219	1015	870	761	677	609	554	507	468	435	406	380
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
0 T	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399
S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20 T	5399	3910	2510	1783	1371	1109	930	801	702	625	563	513	470	434	403	377	353
S	-	9961	4981	3320	2490	1992	1660	1423	1245	1107	996	906	830	766	712	664	623
40 T	5399	4875	3910	3096	2510	2091	1783	1551	1371	1227	1109	1012	930	861	801	748	702
S	-	19922	9961	6641	4981	3984	3320	2846	2490	2214	1992	1811	1660	1532	1423	1328	1245
60 T	5399	5146	4558	3910	3340	2878	2510	2215	1978	1783	1622	1486	1371	1271	1185	1109	1043
S	-	29883	14942	9961	7471	5977	4981	4269	3735	3320	2988	2717	2490	2299	2135	1992	1868
80 T	5399	5253	4875	4394	3910	3473	3096	2778	2510	2283	2091	1926	1783	1660	1551	1456	1371
S	-	39844	19922	13281	9961	7969	6641	5692	4981	4427	3984	3622	3320	3065	2846	2656	2490
100 T	5399	5304	5046	4688	4295	3910	3555	3240	2962	2720	2510	2325	2164	2022	1896	1783	1683
S	-	49805	24903	16602	12451	9961	8301	7115	6226	5534	4981	4528	4150	3831	3558	3320	3113
120 T	5399	5333	5146	4875	4558	4229	3910	3612	3340	3096	2878	2683	2510	2354	2215	2091	1978
S	-	59766	29883	19922	14942	11953	9961	8538	7471	6641	5977	5433	4981	4597	4269	3984	3735
140 T	5399	5350	5210	4999	4743	4464	4183	3910	3653	3415	3198	3000	2820	2657	2510	2376	2254
S	-	69727	34864	23242	17432	13945	11621	9961	8716	7747	6973	6339	5811	5364	4981	4648	4358
160 T	5399	5362	5253	5085	4875	4640	4394	4148	3910	3684	3473	3277	3096	2930	2778	2638	2510
S	-	79688	39844	26563	19922	15938	13281	11384	9961	8854	7969	7244	6641	6130	5692	5313	4981
180 T	5399	5370	5282	5146	4972	4773	4558	4339	4121	3910	3708	3518	3340	3175	3021	2878	2746
S	-	89649	44825	29883	22412	17930	14942	12807	11206	9961	8965	8150	7471	6896	6404	5977	5603
200 T	5399	5375	5304	5192	5046	4875	4688	4493	4295	4099	3910	3728	3555	3393	3240	3096	2962
S	-	99610	49805	33203	24903	19922	16602	14230	12451	11068	9961	9055	8301	7662	7115	6641	6226
220 T	5399	5379	5320	5226	5102	4955	4791	4618	4439	4259	4082	3910	3744	3586	3436	3294	3160
S	-	109571	54786	36524	27393	21914	18262	15653	13696	12175	10957	9961	9131	8429	7827	7305	6848
240 T	5399	5383	5333	5253	5146	5019	4875	4720	4558	4394	4229	4067	3910	3758	3612	3473	3340
S	-	119533	59766	39844	29883	23907	19922	17076	14942	13281	11953	10867	9961	9195	8538	7969	7471
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{t,Rk}$ load-carrying capacity of timber | S: $F_{s,Rk}$ load-carrying capacity of steel

Table B.7 Angle bracket type 110095, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	7091	745	374	249	187	149	124	107	93	83	74	68	62	14182
S	9961	1488	744	496	372	298	248	213	186	165	149	135	124	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	1310	2620
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	789	254	151	107	83	68	57	50	44	39	35	32	30
S	-	20233	10116	6744	1566	504	301	214	166	136	115	100	88	79	71	65	60
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
0 T	106	148	245	714	2550	2040	1700	1457	1275	1133	1020	927	849	784	728	679	637
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20 T	106	148	245	714	1455	1164	970	831	727	646	582	529	485	447	415	388	363
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40 T	106	148	245	714	2070	1656	1380	1183	1035	920	828	752	690	637	591	552	517
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60 T	106	148	245	714	2299	1839	1532	1313	1149	1021	919	836	766	707	656	613	574
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80 T	106	148	245	714	2399	1919	1599	1371	1199	1066	959	872	799	738	685	639	599
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100 T	106	148	245	714	2450	1960	1633	1400	1225	1089	980	891	816	754	700	653	612
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120 T	106	148	245	714	2479	1983	1653	1417	1239	1102	991	901	826	763	708	661	619
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140 T	106	148	245	714	2497	1998	1665	1427	1248	1110	999	908	832	768	713	666	624
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160 T	106	148	245	714	2509	2007	1673	1434	1254	1115	1003	912	836	772	717	669	627
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180 T	106	148	245	714	2518	2014	1678	1438	1259	1119	1007	915	839	774	719	671	629
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200 T	106	148	245	714	2524	2019	1682	1442	1262	1121	1009	917	841	776	721	673	631
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220 T	106	148	245	714	2528	2022	1685	1444	1264	1123	1011	919	842	777	722	674	632
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240 T	106	148	245	714	2531	2025	1687	1446	1265	1125	1012	920	843	779	723	675	632
S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
0 T	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999
S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20 T	8999	5570	3299	2286	1739	1401	1171	1006	882	784	707	643	589	544	505	472	442
S	-	9961	4981	3320	2490	1992	1660	1423	1245	1107	996	906	830	766	712	664	623
40 T	8999	7599	5570	4185	3299	2705	2286	1976	1739	1552	1401	1276	1171	1083	1006	940	882
S	-	19922	9961	6641	4981	3984	3320	2846	2490	2214	1992	1811	1660	1532	1423	1328	1245
60 T	8999	8288	6870	5570	4579	3846	3299	2879	2550	2286	2070	1891	1739	1610	1498	1401	1315
S	-	29883	14942	9961	7471	5977	4981	4269	3735	3320	2988	2717	2490	2299	2135	1992	1868
80 T	8999	8578	7599	6519	5570	4799	4185	3695	3299	2974	2705	2479	2286	2120	1976	1850	1739
S	-	39844	19922	13281	9961	7969	6641	5692	4981	4427	3984	3622	3320	3065	2846	2656	2490
100 T	8999	8723	8025	7160	6315	5570	4940	4414	3976	3609	3299	3034	2807	2610	2438	2286	2151
S	-	49805	24903	16602	12451	9961	8301	7115	6226	5534	4981	4528	4150	3831	3558	3320	3113
120 T	8999	8805	8288	7599	6870	6183	5570	5037	4579	4185	3846	3553	3299	3076	2879	2705	2550
S	-	59766	29883	19922	14942	11953	9961	8538	7471	6641	5977	5433	4981	4597	4269	3984	3735
140 T	8999	8855	8461	7906	7285	6668	6091	5570	5108	4702	4346	4034	3758	3515	3299	3106	2933
S	-	69727	34864	23242	17432	13945	11621	9961	8716	7747	6973	6339	5811	5364	4981	4648	4358
160 T	8999	8888	8578	8126	7599	7051	6519	6022	5570	5163	4799	4475	4185	3926	3695	3486	3299
S	-	79688	39844	26563	19922	15938	13281	11384	9961	8854	7969	7244	6641	6130	5692	5313	4981
180 T	8999	8911	8662	8288	7839	7355	6870	6405	5970	5570	5206	4876	4579	4310	4067	3846	3647
S	-	89649	44825	29883	22412	17930	14942	12807	11206	9961	8965	8150	7471	6896	6404	5977	5603
200 T	8999	8928	8723	8411	8025	7599	7160	6728	6315	5928	5570	5241	4940	4665	4414	4185	3976
S	-	99610	49805	33203	24903	19922	16602	14230	12451	11068	9961	9055	8301	7662	7115	6641	6226
220 T	8999	8940	8769	8505	8171	7795	7400	7001	6613	6243	5894	5570	5269	4992	4737	4503	4287
S	-	109571	54786	36524	27393	21914	18262	15653	13696	12175	10957	9961	9131	8429	7827	7305	6848
240 T	8999	8950	8805	8578	8288	7956	7599	7233	6870	6519	6183	5866	5570	5294	5037	4799	4579
S	-	119533	59766	39844	29883	23907	19922	17076	14942	13281	11953	10867	9961	9195	8538	7969	7471
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B.8 Angle bracket type 110095, Variant TCP, Fastener GH Screw 5x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	6008	933	471	314	236	188	157	134	118	104	94	85	78	12016
	S	9961	1488	744	496	372	298	248	213	186	165	149	135	124	19922
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	1180	2360
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$	T	-	-	-	994	320	190	135	105	86	72	63	55	49	45	41	37
	S	-	20233	10116	6744	1566	504	301	214	166	136	115	100	88	79	71	65
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	134	187	309	899	3213	2570	2142	1836	1606	1428	1285	1168	1071	988	917	856	803
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	134	187	309	899	1360	1088	907	777	680	604	544	494	453	418	388	362	340
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	134	187	309	899	2194	1755	1463	1254	1097	975	877	798	731	675	627	585	548
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	134	187	309	899	2616	2092	1744	1494	1308	1162	1046	951	872	804	747	697	654
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	134	187	309	899	2833	2266	1888	1619	1416	1259	1133	1030	944	871	809	755	708
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	134	187	309	899	2954	2363	1969	1688	1477	1312	1181	1074	984	908	844	787	738
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	134	187	309	899	3026	2421	2017	1729	1513	1345	1210	1100	1008	931	864	807	756
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	134	187	309	899	3072	2458	2048	1755	1536	1365	1229	1117	1024	945	877	819	768
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	134	187	309	899	3103	2483	2069	1773	1551	1379	1241	1128	1034	955	886	827	775
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	134	187	309	899	3125	2500	2083	1786	1562	1389	1250	1136	1041	961	893	833	781
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	134	187	309	899	3141	2513	2094	1795	1570	1396	1256	1142	1047	966	897	837	785
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	134	187	309	899	3153	2523	2102	1802	1576	1401	1261	1146	1051	970	901	841	788
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	134	187	309	899	3163	2530	2108	1807	1581	1405	1265	1150	1054	973	903	843	790
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	11340	5309	2904	1972	1489	1195	997	855	749	666	600	545	500	461	428	400	375
	S	-	9961	4981	3320	2490	1992	1660	1423	1245	1107	996	906	830	766	712	664	623
40	T	11340	8247	5309	3777	2904	2351	1972	1697	1489	1326	1195	1087	997	921	855	799	749
	S	-	19922	9961	6641	4981	3984	3320	2846	2490	2214	1992	1811	1660	1532	1423	1328	1245
60	T	11340	9598	7056	5309	4188	3435	2904	2511	2210	1972	1780	1621	1489	1376	1279	1195	1121
	S	-	29883	14942	9961	7471	5977	4981	4269	3735	3320	2988	2717	2490	2299	2135	1992	1868
80	T	11340	10255	8247	6543	5309	4425	3777	3286	2904	2599	2351	2145	1972	1824	1697	1586	1489
	S	-	39844	19922	13281	9961	7969	6641	5692	4981	4427	3984	3622	3320	3065	2846	2656	2490
100	T	11340	10609	9050	7506	6262	5309	4580	4014	3565	3202	2904	2655	2444	2264	2108	1972	1852
	S	-	49805	24903	16602	12451	9961	8301	7115	6226	5534	4981	4528	4150	3831	3558	3320	3113
120	T	11340	10817	9598	8247	7056	6084	5309	4689	4188	3777	3435	3148	2904	2693	2511	2351	2210
	S	-	59766	29883	19922	14942	11953	9961	8538	7471	6641	5977	5433	4981	4597	4269	3984	3735
140	T	11340	10949	9981	8817	7710	6756	5963	5309	4770	4321	3943	3623	3348	3111	2904	2722	2561
	S	-	69727	34864	23242	17432	13945	11621	9961	8716	7747	6973	6339	5811	5364	4981	4648	4358
160	T	11340	11037	10255	9256	8247	7333	6543	5874	5309	4832	4425	4077	3777	3515	3286	3084	2904
	S	-	79688	39844	26563	19922	15938	13281	11384	9961	8854	7969	7244	6641	6130	5692	5313	4981
180	T	11340	11098	10457	9598	8688	7826	7056	6384	5806	5309	4881	4510	4188	3905	3656	3435	3239
	S	-	89649	44825	29883	22412	17930	14942	12807	11206	9961	8965	8150	7471	6896	6404	5977	5603
200	T	11340	11143	10609	9868	9050	8247	7506	6844	6262	5753	5309	4921	4580	4280	4014	3777	3565
	S	-	99610	49805	33203	24903	19922	16602	14230	12451	11068	9961	9055	8301	7662	7115	6641	6226
220	T	11340	11176	10726	10082	9350	8607	7901	7256	6677	6164	5710	5309	4954	4639	4358	4107	3881
	S	-	109571	54786	36524	27393	21914	18262	15653	13696	12175	10957	9961	9131	8429	7827	7305	6848
240	T	11340	11202	10817	10255	9598	8914	8247	7624	7056	6543	6084	5675	5309	4982	4689	4425	4188
	S	-	119533	59766	39844	29883	23907	19922	17076	14942	13281	11953	10867	9961	9195	8538	7969	7471
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{t,Rk}$ load-carrying capacity of timber | S: $F_{s,Rk}$ load-carrying capacity of steel

Table B.9 Angle bracket type 110095, Variant TCP, Fastener GH Screw 5x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	6794	1436	730	488	366	293	244	209	183	163	146	133	122	13588
S	9961	1488	744	496	372	298	248	213	186	165	149	135	124	19922
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	1360	2720
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	1547	498	296	211	164	134	113	98	86	77	70	64	58
S	-	20233	10116	6744	1566	504	301	214	166	136	115	100	88	79	71	65	60
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	208	291	481	1400	4997	3998	3332	2856	2499	2221	1999	1817	1666	1537	1428	1332	1249
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	208	291	481	1400	1608	1286	1072	919	804	714	643	584	536	494	459	428	402
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	208	291	481	1400	2809	2247	1873	1605	1404	1248	1123	1021	936	864	802	749	702
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	208	291	481	1400	3568	2854	2378	2039	1784	1585	1427	1297	1189	1097	1019	951	892
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	208	291	481	1400	4026	3220	2684	2300	2013	1789	1610	1464	1342	1238	1150	1073	1006
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	208	291	481	1400	4307	3446	2871	2461	2153	1914	1723	1566	1435	1325	1230	1148	1076
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	208	291	481	1400	4487	3590	2991	2564	2243	1994	1795	1631	1495	1380	1282	1196	1121
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	208	291	481	1400	4607	3686	3071	2632	2303	2047	1843	1675	1535	1417	1316	1228	1151
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	208	291	481	1400	4690	3752	3127	2680	2345	2084	1876	1705	1563	1443	1340	1250	1172
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	208	291	481	1400	4750	3800	3167	2714	2375	2111	1900	1727	1583	1461	1357	1266	1187
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	208	291	481	1400	4794	3835	3196	2739	2397	2131	1917	1743	1598	1475	1369	1278	1198
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	208	291	481	1400	4828	3862	3218	2759	2414	2145	1931	1755	1609	1485	1379	1287	1207
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	208	291	481	1400	4854	3883	3236	2773	2427	2157	1941	1765	1618	1493	1386	1294	1213
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	17640	6340	3336	2246	1690	1354	1130	969	848	754	678	617	565	522	485	452	424
	S	-	9961	4981	3320	2490	1992	1660	1423	1245	1107	996	906	830	766	712	664	623
40	T	17640	10765	6340	4387	3336	2686	2246	1929	1690	1504	1354	1232	1130	1043	969	904	848
	S	-	19922	9961	6641	4981	3984	3320	2846	2490	2214	1992	1811	1660	1532	1423	1328	1245
60	T	17640	13339	8825	6340	4896	3972	3336	2873	2521	2246	2025	1843	1690	1561	1451	1354	1270
	S	-	29883	14942	9961	7471	5977	4981	4269	3735	3320	2988	2717	2490	2299	2135	1992	1868
80	T	17640	14796	10765	8059	6340	5194	4387	3792	3336	2976	2686	2447	2246	2076	1929	1802	1690
	S	-	39844	19922	13281	9961	7969	6641	5692	4981	4427	3984	3622	3320	3065	2846	2656	2490
100	T	17640	15655	12236	9530	7652	6340	5391	4679	4128	3691	3336	3042	2795	2585	2404	2246	2108
	S	-	49805	24903	16602	12451	9961	8301	7115	6226	5534	4981	4528	4150	3831	3558	3320	3113
120	T	17640	16189	13339	10765	8825	7401	6340	5530	4896	4387	3972	3627	3336	3087	2873	2686	2521
	S	-	59766	29883	19922	14942	11953	9961	8538	7471	6641	5977	5433	4981	4597	4269	3984	3735
140	T	17640	16539	14168	11791	9860	8373	7230	6340	5634	5062	4592	4199	3867	3582	3336	3120	2931
	S	-	69727	34864	23242	17432	13945	11621	9961	8716	7747	6973	6339	5811	5364	4981	4648	4358
160	T	17640	16778	14796	12639	10765	9255	8059	7107	6340	5714	5194	4758	4387	4068	3792	3549	3336
	S	-	79688	39844	26563	19922	15938	13281	11384	9961	8854	7969	7244	6641	6130	5692	5313	4981
180	T	17640	16948	15279	13339	11553	10051	8825	7828	7014	6340	5778	5302	4896	4545	4240	3972	3735
	S	-	89649	44825	29883	22412	17930	14942	12807	11206	9961	8965	8150	7471	6896	6404	5977	5603
200	T	17640	17074	15655	13917	12236	10765	9530	8504	7652	6940	6340	5830	5391	5011	4679	4387	4128
	S	-	99610	49805	33203	24903	19922	16602	14230	12451	11068	9961	9055	8301	7662	7115	6641	6226
220	T	17640	17168	15952	14396	12827	11404	10175	9134	8256	7513	6882	6340	5873	5466	5110	4795	4515
	S	-	109571	54786	36524	27393	21914	18262	15653	13696	12175	10957	9961	9131	8429	7827	7305	6848
240	T	17640	17241	16189	14796	13339	11974	10765	9720	8825	8059	7401	6833	6340	5909	5530	5194	4896
	S	-	119533	59766	39844	29883	23907	19922	17076	14942	13281	11953	10867	9961	9195	8538	7969	7471
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	17010	6938	3469	2291	1725	1383	1153	989	866	770	693	630	577	34020
	S	3584	3106	2741	2453	2219	2026	1864	1726	1607	1503	1412	1331	1259	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	2400	4800
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	21276	11563	5782	3854	2891	2313	1927	1646	1442	1282	1154	1049	962	42552
	S	3584	3106	2741	2452	2218	2026	1863	1726	1607	1503	1412	1331	1259	7168
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	3560	7120
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	18027	14570	7285	4857	3642	2914	2428	2081	1821	1619	1457	1320	1211	36054
	S	3584	3106	2741	2452	2218	2026	1863	1725	1606	1503	1412	1331	1259	7168
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	3350	6700
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	20385	20385	11332	7555	5666	4533	3777	3238	2833	2518	2266	2060	1889	40770
	S	3584	3106	2741	2452	2218	2026	1863	1725	1606	1503	1412	1331	1259	7168
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	3850	7700
	S	-	-

Table B. 14 Angle bracket type 110095L, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	5670	448	224	149	112	89	74	64	56	49	44	40	37	11340
	S	3584	1488	744	496	372	298	248	213	186	165	149	135	124	7168
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	790	1580
	S	-	-

Table B. 15 Angle bracket type 110095L, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	7092	745	374	249	187	149	124	107	93	83	74	68	62	14184
	S	3584	1488	744	496	372	298	248	213	186	165	149	135	124	7168
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	1140	2280
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	6009	933	471	314	236	188	157	134	118	104	94	85	78	12018
	S	3584	1488	744	496	372	298	248	213	186	165	149	135	124	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	1090	2180
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	6795	1436	730	488	366	293	244	209	183	163	146	133	122	13590
	S	3584	1488	744	496	372	298	248	213	186	165	149	135	124	7168
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	1300	2600
	S	-	-

Table B.18 Angle bracket type 1100953, Variant TCM, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	17010	6508	3399	2291	1725	1383	1153	989	866	770	693	630	577	34020
S	7317	6342	5596	4303	3227	2582	2151	1844	1613	1434	1291	1173	1076	14634
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3110	6220
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	7303	2351	1401	998	775	633	535	464	409	366	331	302	278
S	-	14864	7432	4954	3716	2973	2477	1857	1442	1179	997	863	762	681	616	562	517
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	984	1373	2274	6608	3187	2549	2124	1821	1593	1416	1274	1158	1062	980	910	849	796
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	984	1373	2274	6608	2550	2040	1700	1457	1275	1133	1020	927	850	784	728	680	637
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	984	1373	2274	6608	2984	2387	1989	1705	1492	1326	1193	1085	994	918	852	795	746
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	984	1373	2274	6608	3092	2473	2061	1766	1546	1374	1236	1124	1030	951	883	824	773
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	984	1373	2274	6608	3132	2506	2088	1790	1566	1392	1253	1139	1044	963	895	835	783
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	984	1373	2274	6608	3151	2521	2101	1801	1575	1400	1260	1146	1050	969	900	840	787
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	984	1373	2274	6608	3162	2529	2108	1807	1581	1405	1264	1149	1054	973	903	843	790
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	984	1373	2274	6608	3168	2535	2112	1810	1584	1408	1267	1152	1056	975	905	845	792
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	984	1373	2274	6608	3173	2538	2115	1813	1586	1410	1269	1153	1057	976	906	846	793
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	984	1373	2274	6608	3176	2540	2117	1814	1588	1411	1270	1154	1058	977	907	846	794
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	984	1373	2274	6608	3178	2542	2118	1816	1589	1412	1271	1155	1059	977	908	847	794
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	984	1373	2274	6608	3179	2543	2119	1816	1589	1413	1271	1156	1059	978	908	847	794
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	984	1373	2274	6608	3180	2544	2120	1817	1590	1413	1272	1156	1060	978	908	848	795
	S	1831	2556	4232	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	16200	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	16200	16200	8505	5670	4253	3402	2835	2430	2126	1890	1701	1546	1418	1308	1215	1134	1063
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	16200	14626	16200	11340	8505	6804	5670	4860	4253	3780	3402	3093	2835	2617	2430	2268	2126
	S	-	14636	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	16200	15440	16200	16200	12758	10206	8505	7290	6379	5670	5103	4639	4253	3925	3645	3402	3189
	S	-	21954	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	16200	15759	14626	16200	16200	13608	11340	9720	8505	7560	6804	6185	5670	5234	4860	4536	4253
	S	-	29271	14636	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	16200	15913	15138	16200	16200	16200	14175	12150	10631	9450	8505	7732	7088	6542	6075	5670	5316
	S	-	36589	18295	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	16200	15999	15440	14626	16200	16200	16200	14580	12758	11340	10206	9278	8505	7851	7290	6804	6379
	S	-	43907	21954	14636	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	16200	16052	15631	14998	15811	16200	16200	16200	14884	13230	11907	10825	9923	9159	8505	7938	7442
	S	-	51225	25612	17075	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	16200	16086	15759	15256	14626	16200	16200	16200	16200	15120	13608	12371	11340	10468	9720	9072	8505
	S	-	58543	29271	19514	14636	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	16200	16110	15848	15440	14918	15566	16200	16200	16200	16200	15309	13917	12758	11776	10935	10206	9568
	S	-	65861	32930	21954	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	16200	16127	15913	15576	15138	14626	16200	16200	16200	16200	16200	15464	14175	13085	12150	11340	10631
	S	-	73179	36589	24393	18295	14636	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	16200	16139	15962	15679	15307	14866	15405	16200	16200	16200	16200	16200	15593	14393	13365	12474	11694
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	16200	16149	15999	15759	15440	15057	14626	15987	16200	16200	16200	16200	16200	15702	14580	13608	12758
	S	-	87814	43907	29271	21954	17563	14636	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B.19 Angle bracket type 1100953, Variant TCM, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	21276	11563	5579	3792	2864	2299	1919	1646	1442	1282	1154	1049	962	42552
$F_{1,Rk}$ S	7317	6342	5596	4303	3227	2582	2151	1844	1613	1434	1291	1173	1076	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3980	7960
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	12172	3920	2336	1663	1292	1056	892	773	682	610	551	503	463
$F_{4,Rk}$ S	-	14864	7432	4954	3716	2972	2477	1857	1442	1179	997	863	762	681	616	562	517
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
20	T	1640	2289	3791	11013	3802	3042	2535	2173	1901	1690	1521	1383	1268	1170	1087	1015	950
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
40	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
60	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
80	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
100	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
120	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
140	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
160	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
180	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
200	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
220	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
240	T	1640	2289	3791	11013	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1831	2556	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	26999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	26999	21276	10638	7092	5319	4255	3546	3039	2660	2364	2128	1934	1773	1637	1520	1418	1330
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	26999	27000	21276	14184	10638	8510	7092	6079	5319	4728	4255	3868	3546	3273	3039	2837	2660
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	26999	27000	27000	21276	15957	12766	10638	9118	7979	7092	6383	5803	5319	4910	4559	4255	3989
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	26999	25735	27000	27000	21276	17021	14184	12158	10638	9456	8510	7737	7092	6546	6079	5674	5319
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	26999	26170	27000	27000	26595	21276	17730	15197	13298	11820	10638	9671	8865	8183	7599	7092	6649
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	26999	26415	27000	27000	27000	25531	21276	18237	15957	14184	12766	11605	10638	9820	9118	8510	7979
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	26999	26566	25383	27000	27000	27000	24822	21276	18617	16548	14893	13539	12411	11456	10638	9929	9308
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	26999	26666	25735	27000	27000	27000	27000	24315	21276	18912	17021	15473	14184	13093	12158	11347	10638
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	26999	26735	25986	27000	27000	27000	27000	23936	21276	19148	17408	15957	14730	13677	12766	11968	
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	26999	26785	26170	26103	27000	27000	27000	27000	26595	23640	21276	19342	17730	16366	15197	14184	13298
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	26999	26822	26308	25515	27000	27000	27000	27000	27000	26004	23404	21276	19503	18003	16717	15602	14627
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	26999	26850	26415	25735	27000	27000	27000	27000	27000	27000	25531	23210	21276	19639	18237	17021	15957
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	18027	14570	7285	4857	3642	2914	2428	2081	1821	1619	1457	1325	1214	36054
	S	7317	6342	5596	4302	3226	2581	2151	1843	1613	1434	1290	1173	1075	14634
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	3430	6860
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$	T	-	-	-	15337	4939	2943	2096	1628	1331	1125	975	860	769	695	635	584
	S	-	14864	7432	4954	3716	2972	2477	1857	1442	1178	996	863	761	681	616	562
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
20	T	2067	2885	4777	13876	3761	3009	2507	2149	1880	1672	1505	1368	1254	1157	1075	1004	940
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
40	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
60	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
80	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
100	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
120	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
140	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
160	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
180	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
200	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
220	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
240	T	2067	2885	4777	13876	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	34019	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	34019	18027	9014	6009	4507	3605	3005	2575	2253	2003	1803	1639	1502	1387	1288	1202	1127
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	34019	34020	18027	12018	9014	7211	6009	5151	4507	4006	3605	3278	3005	2773	2575	2404	2253
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	34019	34020	27041	18027	13520	10816	9014	7726	6760	6009	5408	4916	4507	4160	3863	3605	3380
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	34019	32341	34020	24036	18027	14422	12018	10301	9014	8012	7211	6555	6009	5547	5151	4807	4507
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	34019	31828	34020	30045	22534	18027	15023	12876	11267	10015	9014	8194	7511	6933	6438	6009	5633
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	34019	32452	34020	34020	27041	21632	18027	15452	13520	12018	10816	9833	9014	8320	7726	7211	6760
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	34019	32847	34020	34020	31547	25238	21032	18027	15774	14021	12619	11472	10516	9707	9014	8413	7887
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	34019	33111	32341	34020	34020	28843	24036	20602	18027	16024	14422	13111	12018	11094	10301	9614	9014
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	34019	33295	31372	34020	34020	32449	27041	23178	20280	18027	16224	14749	13520	12480	11589	10816	10140
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	34019	33429	31828	34020	34020	34020	30045	25753	22534	20030	18027	16388	15023	13867	12876	12018	11267
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	34019	33530	32178	34020	34020	34020	33050	28328	24787	22033	19830	18027	16525	15254	14164	13220	12394
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	34019	33606	32452	32341	34020	34020	34020	30903	27041	24036	21632	19666	18027	16640	15452	14422	13520
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	20385	20385	11332	7555	5666	4533	3777	3238	2833	2518	2266	2060	1889	40770
$F_{1,Rk}$ S	7317	6342	5596	4302	3226	2581	2151	1843	1613	1434	1290	1173	1075	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3900	7800
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	23857	7683	4579	3261	2532	2070	1750	1516	1337	1196	1082	988	908
$F_{4,Rk}$ S	-	14864	7432	4954	3716	2972	2477	1857	1442	1178	996	863	761	681	616	562	517
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
20	T	3215	4488	7431	21585	5096	4077	3398	2912	2548	2265	2039	1853	1699	1568	1456	1359	1274
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
40	T	3215	4488	7431	21585	10193	8154	6795	5824	5096	4530	4077	3706	3398	3136	2912	2718	2548
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
60	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
80	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
100	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
120	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
140	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
160	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
180	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
200	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
220	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
240	T	3215	4488	7431	21585	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1830	2555	4232	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	52920	20385	10193	6795	5096	4077	3398	2912	2548	2265	2039	1853	1699	1568	1456	1359	1274
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	52920	40770	20385	13590	10193	8154	6795	5824	5096	4530	4077	3706	3398	3136	2912	2718	2548
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	52920	52920	30578	20385	15289	12231	10193	8736	7644	6795	6116	5560	5096	4704	4368	4077	3822
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	52920	52920	40770	27180	20385	16308	13590	11649	10193	9060	8154	7413	6795	6272	5824	5436	5096
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	52920	52920	50963	33975	25481	20385	16988	14561	12741	11325	10193	9266	8494	7840	7280	6795	6370
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	52920	52920	52920	40770	30578	24462	20385	17473	15289	13590	12231	11119	10193	9408	8736	8154	7644
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	52920	49617	52920	47565	35674	28539	23783	20385	17837	15855	14270	12972	11891	10977	10193	9513	8918
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	52920	50336	52920	52920	40770	32616	27180	23297	20385	18120	16308	14825	13590	12545	11649	10872	10193
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	52920	50846	52920	52920	45866	36693	30578	26209	22933	20385	18347	16679	15289	14113	13105	12231	11467
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	52920	51222	52920	52920	50963	40770	33975	29121	25481	22650	20385	18532	16988	15681	14561	13590	12741
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	52920	51505	52920	52920	52920	44847	37373	32034	28029	24915	22424	20385	18686	17249	16017	14949	14015
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	52920	51723	52920	52920	52920	48924	40770	34946	30578	27180	24462	22238	20385	18817	17473	16308	15289
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 22 Angle bracket type 1100953, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	5669	448	224	149	112	89	74	64	56	49	44	40	37	11338
S	7318	1093	546	364	273	219	182	156	137	121	109	99	91	14636
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	980	1960
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	473	152	90	64	50	41	34	30	26	23	21	19	18
S	-	14864	7432	4954	1150	370	221	157	122	100	84	73	64	58	52	48	44
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	63	89	147	428	1530	1224	1020	874	764	679	611	556	509	470	437	407	382
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	63	89	147	428	1039	831	693	594	519	462	415	378	346	319	297	277	259
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	63	89	147	428	1346	1077	897	769	673	598	538	489	448	414	384	359	336
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	63	89	147	428	1439	1151	959	822	719	639	575	523	479	442	411	383	359
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	63	89	147	428	1477	1181	984	844	738	656	590	537	492	454	422	393	369
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	63	89	147	428	1495	1196	997	854	747	664	598	543	498	460	427	398	373
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	63	89	147	428	1505	1204	1003	860	752	669	602	547	501	463	430	401	376
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	63	89	147	428	1512	1209	1008	864	756	672	604	549	504	465	432	403	378
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	63	89	147	428	1516	1213	1010	866	758	673	606	551	505	466	433	404	379
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	63	89	147	428	1519	1215	1012	868	759	675	607	552	506	467	434	405	379
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	63	89	147	428	1521	1216	1014	869	760	676	608	553	507	468	434	405	380
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	63	89	147	428	1522	1218	1015	870	761	676	609	553	507	468	435	406	380
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	63	89	147	428	1523	1219	1015	870	761	677	609	554	507	468	435	406	380
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	5399	3910	2510	1783	1371	1109	930	801	702	625	563	513	470	434	403	377	353
	S	-	7318	3659	2439	1829	1464	1220	1045	915	813	732	665	610	563	523	488	457
40	T	5399	4875	3910	3096	2510	2091	1783	1551	1371	1227	1109	1012	930	861	801	748	702
	S	-	14636	7318	4879	3659	2927	2439	2091	1829	1626	1464	1331	1220	1126	1045	976	915
60	T	5399	5146	4558	3910	3340	2878	2510	2215	1978	1783	1622	1486	1371	1271	1185	1109	1043
	S	-	21954	10977	7318	5488	4391	3659	3136	2744	2439	2195	1996	1829	1689	1568	1464	1372
80	T	5399	5253	4875	4394	3910	3473	3096	2778	2510	2283	2091	1926	1783	1660	1551	1456	1371
	S	-	29271	14636	9757	7318	5854	4879	4182	3659	3252	2927	2661	2439	2252	2091	1951	1829
100	T	5399	5304	5046	4688	4295	3910	3555	3240	2962	2720	2510	2325	2164	2022	1896	1783	1683
	S	-	36589	18295	12196	9147	7318	6098	5227	4574	4065	3659	3326	3049	2815	2614	2439	2287
120	T	5399	5333	5146	4875	4558	4229	3910	3612	3340	3096	2878	2683	2510	2354	2215	2091	1978
	S	-	43907	21954	14636	10977	8781	7318	6272	5488	4879	4391	3992	3659	3377	3136	2927	2744
140	T	5399	5350	5210	4999	4743	4464	4183	3910	3653	3415	3198	3000	2820	2657	2510	2376	2254
	S	-	51225	25612	17075	12806	10245	8537	7318	6403	5692	5122	4657	4269	3940	3659	3415	3202
160	T	5399	5362	5253	5085	4875	4640	4394	4148	3910	3684	3473	3277	3096	2930	2778	2638	2510
	S	-	58543	29271	19514	14636	11709	9757	8363	7318	6505	5854	5322	4879	4503	4182	3903	3659
180	T	5399	5370	5282	5146	4972	4773	4558	4339	4121	3910	3708	3518	3340	3175	3021	2878	2746
	S	-	65861	32930	21954	16465	13172	10977	9409	8233	7318	6586	5987	5488	5066	4704	4391	4116
200	T	5399	5375	5304	5192	5046	4875	4688	4493	4295	4099	3910	3728	3555	3393	3240	3096	2962
	S	-	73179	36589	24393	18295	14636	12196	10454	9147	8131	7318	6653	6098	5629	5227	4879	4574
220	T	5399	5379	5320	5226	5102	4955	4791	4618	4439	4259	4082	3910	3744	3586	3436	3294	3160
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8050	7318	6708	6192	5750	5366	5031
240	T	5399	5383	5333	5253	5146	5019	4875	4720	4558	4394	4229	4067	3910	3758	3612	3473	3340
	S	-	87814	43907	29271	21954	17563	14636	12545	10977	9757	8781	7983	7318	6755	6272	5854	5488
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 23 Angle bracket type 1100953, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	7091	745	374	249	187	149	124	107	93	83	74	68	62	14182
S	7318	1093	546	364	273	219	182	156	137	121	109	99	91	14636
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	1310	2620
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	789	254	151	107	83	68	57	50	44	39	35	32	30
S	-	14864	7432	4954	1150	370	221	157	122	100	84	73	64	58	52	48	44
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	106	148	245	714	2550	2040	1700	1457	1275	1133	1020	927	849	784	728	679	637
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	106	148	245	714	1455	1164	970	831	727	646	582	529	485	447	415	388	363
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	106	148	245	714	2070	1656	1380	1183	1035	920	828	752	690	637	591	552	517
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	106	148	245	714	2299	1839	1532	1313	1149	1021	919	836	766	707	656	613	574
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	106	148	245	714	2399	1919	1599	1371	1199	1066	959	872	799	738	685	639	599
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	106	148	245	714	2450	1960	1633	1400	1225	1089	980	891	816	754	700	653	612
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	106	148	245	714	2479	1983	1653	1417	1239	1102	991	901	826	763	708	661	619
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	106	148	245	714	2497	1998	1665	1427	1248	1110	999	908	832	768	713	666	624
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	106	148	245	714	2509	2007	1673	1434	1254	1115	1003	912	836	772	717	669	627
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	106	148	245	714	2518	2014	1678	1438	1259	1119	1007	915	839	774	719	671	629
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	106	148	245	714	2524	2019	1682	1442	1262	1121	1009	917	841	776	721	673	631
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	106	148	245	714	2528	2022	1685	1444	1264	1123	1011	919	842	777	722	674	632
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	106	148	245	714	2531	2025	1687	1446	1265	1125	1012	920	843	779	723	675	632
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	8999	5570	3299	2286	1739	1401	1171	1006	882	784	707	643	589	544	505	472	442
	S	-	7318	3659	2439	1829	1464	1220	1045	915	813	732	665	610	563	523	488	457
40	T	8999	7599	5570	4185	3299	2705	2286	1976	1739	1552	1401	1276	1171	1083	1006	940	882
	S	-	14636	7318	4879	3659	2927	2439	2091	1829	1626	1464	1331	1220	1126	1045	976	915
60	T	8999	8288	6870	5570	4579	3846	3299	2879	2550	2286	2070	1891	1739	1610	1498	1401	1315
	S	-	21954	10977	7318	5488	4391	3659	3136	2744	2439	2195	1996	1829	1689	1568	1464	1372
80	T	8999	8578	7599	6519	5570	4799	4185	3695	3299	2974	2705	2479	2286	2120	1976	1850	1739
	S	-	29271	14636	9757	7318	5854	4879	4182	3659	3252	2927	2661	2439	2252	2091	1951	1829
100	T	8999	8723	8025	7160	6315	5570	4940	4414	3976	3609	3299	3034	2807	2610	2438	2286	2151
	S	-	36589	18295	12196	9147	7318	6098	5227	4574	4065	3659	3326	3049	2815	2614	2439	2287
120	T	8999	8805	8288	7599	6870	6183	5570	5037	4579	4185	3846	3553	3299	3076	2879	2705	2550
	S	-	43907	21954	14636	10977	8781	7318	6272	5488	4879	4391	3992	3659	3377	3136	2927	2744
140	T	8999	8855	8461	7906	7285	6668	6091	5570	5108	4702	4346	4034	3758	3515	3299	3106	2933
	S	-	51225	25612	17075	12806	10245	8537	7318	6403	5692	5122	4657	4269	3940	3659	3415	3202
160	T	8999	8888	8578	8126	7599	7051	6519	6022	5570	5163	4799	4475	4185	3926	3695	3486	3299
	S	-	58543	29271	19514	14636	11709	9757	8363	7318	6505	5854	5322	4879	4503	4182	3903	3659
180	T	8999	8911	8662	8288	7839	7355	6870	6405	5970	5570	5206	4876	4579	4310	4067	3846	3647
	S	-	65861	32930	21954	16465	13172	10977	9409	8233	7318	6586	5987	5488	5066	4704	4391	4116
200	T	8999	8928	8723	8411	8025	7599	7160	6728	6315	5928	5570	5241	4940	4665	4414	4185	3976
	S	-	73179	36589	24393	18295	14636	12196	10454	9147	8131	7318	6653	6098	5629	5227	4879	4574
220	T	8999	8940	8769	8505	8171	7795	7400	7001	6613	6243	5894	5570	5269	4992	4737	4503	4287
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8050	7318	6708	6192	5750	5366	5031
240	T	8999	8950	8805	8578	8288	7956	7599	7233	6870	6519	6183	5866	5570	5294	5037	4799	4579
	S	-	87814	43907	29271	21954	17563	14636	12545	10977	9757	8781	7983	7318	6755	6272	5854	5488
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	6008	933	471	314	236	188	157	134	118	104	94	85	78	12016
	S	7318	1093	546	364	273	219	182	156	137	121	109	99	91	14636
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	1180	2360
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$	T	-	-	-	994	320	190	135	105	86	72	63	55	49	45	41	37
	S	-	14864	7432	4954	1150	370	221	157	122	100	84	73	64	58	52	48
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	134	187	309	899	3213	2570	2142	1836	1606	1428	1285	1168	1071	988	917	856	803
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	134	187	309	899	1360	1088	907	777	680	604	544	494	453	418	388	362	340
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	134	187	309	899	2194	1755	1463	1254	1097	975	877	798	731	675	627	585	548
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	134	187	309	899	2616	2092	1744	1494	1308	1162	1046	951	872	804	747	697	654
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	134	187	309	899	2833	2266	1888	1619	1416	1259	1133	1030	944	871	809	755	708
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	134	187	309	899	2954	2363	1969	1688	1477	1312	1181	1074	984	908	844	787	738
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	134	187	309	899	3026	2421	2017	1729	1513	1345	1210	1100	1008	931	864	807	756
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	134	187	309	899	3072	2458	2048	1755	1536	1365	1229	1117	1024	945	877	819	768
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	134	187	309	899	3103	2483	2069	1773	1551	1379	1241	1128	1034	955	886	827	775
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	134	187	309	899	3125	2500	2083	1786	1562	1389	1250	1136	1041	961	893	833	781
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	134	187	309	899	3141	2513	2094	1795	1570	1396	1256	1142	1047	966	897	837	785
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	134	187	309	899	3153	2523	2102	1802	1576	1401	1261	1146	1051	970	901	841	788
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	134	187	309	899	3163	2530	2108	1807	1581	1405	1265	1150	1054	973	903	843	790
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	T	11340	5309	2904	1972	1489	1195	997	855	749	666	600	545	500	461	428	400	375
	S	-	7318	3659	2439	1829	1464	1220	1045	915	813	732	665	610	563	523	488	457
40	T	11340	8247	5309	3777	2904	2351	1972	1697	1489	1326	1195	1087	997	921	855	799	749
	S	-	14636	7318	4879	3659	2927	2439	2091	1829	1626	1464	1331	1220	1126	1045	976	915
60	T	11340	9598	7056	5309	4188	3435	2904	2511	2210	1972	1780	1621	1489	1376	1279	1195	1121
	S	-	21954	10977	7318	5488	4391	3659	3136	2744	2439	2195	1996	1829	1689	1568	1464	1372
80	T	11340	10255	8247	6543	5309	4425	3777	3286	2904	2599	2351	2145	1972	1824	1697	1586	1489
	S	-	29271	14636	9757	7318	5854	4879	4182	3659	3252	2927	2661	2439	2252	2091	1951	1829
100	T	11340	10609	9050	7506	6262	5309	4580	4014	3565	3202	2904	2655	2444	2264	2108	1972	1852
	S	-	36589	18295	12196	9147	7318	6098	5227	4574	4065	3659	3326	3049	2815	2614	2439	2287
120	T	11340	10817	9598	8247	7056	6084	5309	4689	4188	3777	3435	3148	2904	2693	2511	2351	2210
	S	-	43907	21954	14636	10977	8781	7318	6272	5488	4879	4391	3992	3659	3377	3136	2927	2744
140	T	11340	10949	9981	8817	7710	6756	5963	5309	4770	4321	3943	3623	3348	3111	2904	2722	2561
	S	-	51225	25612	17075	12806	10245	8537	7318	6403	5692	5122	4657	4269	3940	3659	3415	3202
160	T	11340	11037	10255	9256	8247	7333	6543	5874	5309	4832	4425	4077	3777	3515	3286	3084	2904
	S	-	58543	29271	19514	14636	11709	9757	8363	7318	6505	5854	5322	4879	4503	4182	3903	3659
180	T	11340	11098	10457	9598	8688	7826	7056	6384	5806	5309	4881	4510	4188	3905	3656	3435	3239
	S	-	65861	32930	21954	16465	13172	10977	9409	8233	7318	6586	5987	5488	5066	4704	4391	4116
200	T	11340	11143	10609	9868	9050	8247	7506	6844	6262	5753	5309	4921	4580	4280	4014	3777	3565
	S	-	73179	36589	24393	18295	14636	12196	10454	9147	8131	7318	6653	6098	5629	5227	4879	4574
220	T	11340	11176	10726	10082	9350	8607	7901	7256	6677	6164	5710	5309	4954	4639	4358	4107	3881
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8050	7318	6708	6192	5750	5366	5031
240	T	11340	11202	10817	10255	9598	8914	8247	7624	7056	6543	6084	5675	5309	4982	4689	4425	4188
	S	-	87814	43907	29271	21954	17563	14636	12545	10977	9757	8781	7983	7318	6755	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	6794	1470	735	490	368	294	245	210	184	163	147	134	123	13588
	S	7318	1092	546	364	273	218	182	156	136	121	109	99	91	14636
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	1360	2720
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$	T	-	-	-	1547	498	297	212	164	134	114	98	87	78	70	64	59
	S	-	14864	7432	4954	1150	370	220	157	122	99	84	73	64	57	52	47
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	209	291	482	1400	4998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250	
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
20	T	209	291	482	1400	1608	1286	1072	919	804	714	643	584	536	494	459	428	402
	S	155	216	358	1040	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	209	291	482	1400	2809	2247	1873	1605	1404	1248	1123	1021	936	864	802	749	702
	S	155	216	358	1040	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	209	291	482	1400	3568	2854	2378	2039	1784	1585	1427	1297	1189	1097	1019	951	892
	S	155	216	358	1040	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	209	291	482	1400	4362	3491	2909	2493	2181	1939	1745	1587	1455	1343	1247	1164	1091
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
100	T	209	291	482	1400	4993	3996	3329	2854	2497	2220	1998	1816	1665	1537	1428	1333	1248
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
120	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
140	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
160	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
180	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
200	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
220	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
240	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	T	17640	6340	3336	2246	1690	1354	1130	969	848	754	678	617	565	522	485	452	424
	S	-	7318	3659	2439	1829	1464	1220	1045	915	813	732	665	610	563	523	488	457
40	T	17640	10765	6340	4387	3336	2686	2246	1929	1690	1504	1354	1232	1130	1043	969	904	848
	S	-	14636	7318	4879	3659	2927	2439	2091	1829	1626	1464	1331	1220	1126	1045	976	915
60	T	17640	13339	8825	6340	4896	3972	3336	2873	2521	2246	2025	1843	1690	1561	1451	1354	1270
	S	-	21954	10977	7318	5488	4391	3659	3136	2744	2439	2195	1996	1829	1689	1568	1464	1372
80	T	17640	14796	10765	8059	6340	5194	4387	3792	3336	2976	2686	2447	2246	2076	1929	1802	1690
	S	-	29271	14636	9757	7318	5854	4879	4182	3659	3252	2927	2661	2439	2252	2091	1951	1829
100	T	17640	15655	12236	9530	7652	6340	5391	4679	4128	3691	3336	3042	2795	2585	2404	2246	2108
	S	-	36589	18295	12196	9147	7318	6098	5227	4574	4065	3659	3326	3049	2815	2614	2439	2287
120	T	17640	16189	13339	10765	8825	7401	6340	5530	4896	4387	3972	3627	3336	3087	2873	2686	2521
	S	-	43907	21954	14636	10977	8781	7318	6272	5488	4879	4391	3992	3659	3377	3136	2927	2744
140	T	17640	16539	14168	11791	9860	8373	7230	6340	5634	5062	4592	4199	3867	3582	3336	3120	2931
	S	-	51225	25612	17075	12806	10245	8537	7318	6403	5692	5122	4657	4269	3940	3659	3415	3202
160	T	17640	16778	14796	12639	10765	9255	8059	7107	6340	5714	5194	4758	4387	4068	3792	3549	3336
	S	-	58543	29271	19514	14636	11709	9757	8363	7318	6505	5854	5322	4879	4503	4182	3903	3659
180	T	17640	16948	15279	13339	11553	10051	8825	7828	7014	6340	5778	5302	4896	4545	4240	3972	3735
	S	-	65861	32930	21954	16465	13172	10977	9409	8233	7318	6586	5987	5488	5066	4704	4391	4116
200	T	17640	17074	15655	13917	12236	10765	9530	8504	7652	6940	6340	5830	5391	5011	4679	4387	4128
	S	-	73179	36589	24393	18295	14636	12196	10454	9147	8131	7318	6653	6098	5629	5227	4879	4574
220	T	17640	17168	15952	14396	12827	11404	10175	9134	8256	7513	6882	6340	5873	5466	5110	4795	4515
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8050	7318	6708	6192	5750	5366	5031
240	T	17640	17241	16189	14796	13339	11974	10765	9720	8825	8059	7401	6833	6340	5909	5530	5194	4896
	S	-	87814	43907	29271	21954	17563	14636	12545	10977	9757	8781	7983	7318	6755	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	17010	6938	3469	2313	1735	1383	1153	989	866	770	693	630	577	34020
	S	2633	2282	2013	1801	1630	1488	1369	1268	1180	1104	1037	978	925	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket		1	2
$F_{2/3,Rk}$	T	2400	4800
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	21276	11563	5782	3854	2891	2313	1927	1652	1445	1285	1156	1051	964	42552
	S	2633	2282	2013	1801	1630	1488	1369	1267	1180	1104	1037	978	925	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	3560	7120
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	18027	14570	7285	4857	3642	2914	2428	2081	1821	1619	1457	1325	1214	36054
	S	2633	2282	2013	1801	1630	1488	1369	1267	1180	1104	1037	978	925	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	3350	6700
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	20385	20385	11332	7555	5666	4533	3777	3238	2833	2518	2266	2060	1889	40770
	S	2633	2282	2013	1801	1630	1488	1369	1267	1180	1104	1037	978	925	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	3850	7700
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	5670	448	224	149	112	89	74	64	56	49	44	40	37	11340
	S	2633	1093	546	364	273	219	182	156	137	121	109	99	91	5266
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	790	1580
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	7092	745	374	249	187	149	124	107	93	83	74	68	62	14184
	S	2633	1093	546	364	273	219	182	156	137	121	109	99	91	5266
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	1140	2280
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	6009	933	471	314	236	188	157	134	118	104	94	85	78	12018
	S	2633	1093	546	364	273	219	182	156	137	121	109	99	91	5266
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	1090	2180
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	6795	1470	735	490	368	294	245	210	184	163	147	134	123	13590
	S	2633	1092	546	364	273	218	182	156	136	121	109	99	91	5266
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	1300	2600
	S	-	-

Table B. 34 Angle bracket type 110135, Variant TCM, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	26460	7251	3732	2502	1880	1505	1255	1076	941	837	753	685	628	52920
	S	9961	8633	7251	4834	3626	2900	2417	2072	1813	1611	1450	1318	1209	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	4920	9840
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
$F_{4,Rk}$	T	-	-	-	-	7938	2556	1523	1084	842	688	582	504	444	397	359	328	302
	S	-	20233	10116	6744	5058	4047	2930	2087	1620	1324	1120	970	856	765	692	632	581
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0	

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1069	1493	2472	7182	3187	2549	2124	1821	1593	1416	1274	1158	1062	980	910	849	796
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	1069	1493	2472	7182	2871	2296	1914	1640	1435	1276	1148	1044	957	883	820	765	717
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	1069	1493	2472	7182	3098	2478	2065	1770	1549	1377	1239	1126	1032	953	885	826	774
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	1069	1493	2472	7182	3146	2517	2097	1798	1573	1398	1258	1144	1048	968	899	839	786
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	1069	1493	2472	7182	3164	2531	2109	1808	1582	1406	1265	1150	1054	973	904	843	791
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	1069	1493	2472	7182	3172	2537	2114	1812	1586	1409	1268	1153	1057	976	906	845	793
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	1069	1493	2472	7182	3176	2541	2117	1815	1588	1411	1270	1155	1058	977	907	847	794
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	1069	1493	2472	7182	3179	2543	2119	1816	1589	1413	1271	1156	1059	978	908	847	794
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	1069	1493	2472	7182	3181	2545	2120	1817	1590	1413	1272	1156	1060	978	908	848	795
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	1069	1493	2472	7182	3182	2546	2121	1818	1591	1414	1273	1157	1060	979	909	848	795
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	1069	1493	2472	7182	3183	2546	2122	1819	1591	1414	1273	1157	1061	979	909	848	795
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	1069	1493	2472	7182	3184	2547	2122	1819	1592	1415	1273	1157	1061	979	909	849	796
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	1069	1493	2472	7182	3184	2547	2122	1819	1592	1415	1273	1157	1061	979	909	849	796
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	25199	25200	13230	8820	6615	5292	4410	3780	3308	2940	2646	2405	2205	2035	1890	1764	1654
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	25199	25200	25200	17640	13230	10584	8820	7560	6615	5880	5292	4811	4410	4071	3780	3528	3308
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	25199	24018	25200	25200	19845	15876	13230	11340	9923	8820	7938	7216	6615	6106	5670	5292	4961
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	25199	24514	25200	25200	25200	21168	17640	15120	13230	11760	10584	9622	8820	8142	7560	7056	6615
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	25199	24754	23549	25200	25200	25200	22050	18900	16538	14700	13230	12027	11025	10177	9450	8820	8269
	S	-	49805	24903	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	25199	24888	24018	25200	25200	25200	22680	19845	17640	15876	14433	13230	12212	11340	10584	9923	9375
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	25199	24969	24315	23421	25200	25200	25200	23153	20580	18522	16838	15435	14248	13230	12348	11576	10820
	S	-	69727	34864	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	25199	25023	24514	23731	25200	25200	25200	25200	25200	23520	21168	19244	17640	16283	15120	14112	13230
	S	-	79688	39844	26563	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	25199	25060	24653	24018	24030	25200	25200	25200	25200	25200	23814	21649	19845	18318	17010	15876	14884
	S	-	89649	44825	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	25199	25086	24754	24230	23549	25200	25200	25200	25200	25200	25200	24055	22050	20354	18900	17640	16538
	S	-	99610	49805	33203	24903	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	25199	25106	24830	24390	23812	24405	25200	25200	25200	25200	25200	25200	24255	22389	20790	19404	18191
	S	-	109571	54786	36524	27393	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	25199	25121	24888	24514	24018	23423	25200	25200	25200	25200	25200	25200	25200	24425	22680	21168	19845
	S	-	119533	59766	39844	29883	23907	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 35 Angle bracket type 110135, Variant TCM, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	33096	12568	6173	4156	3127	2506	2090	1792	1569	1395	1255	1141	1046	66192
S	9961	8632	7251	4834	3626	2900	2417	2072	1813	1611	1450	1318	1209	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	6380	12760
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	13229	4260	2538	1808	1404	1147	970	840	741	663	599	547	503
S	-	20233	10116	6744	5058	4046	2930	2087	1620	1324	1120	970	856	765	692	632	581
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
20	T	1782	2488	4120	11969	4469	3575	2979	2554	2234	1986	1787	1625	1489	1375	1277	1191	1117
	S	2057	2872	4755	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	1782	2488	4120	11969	5057	4046	3372	2890	2530	2249	2023	1839	1687	1556	1445	1349	1265
	S	2057	2872	4755	6744	5058	4047	3371	2890	2528	2247	2023	1839	1685	1556	1445	1348	1264
60	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
80	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
100	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
120	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
140	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
160	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
180	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
200	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
220	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
240	T	1782	2488	4120	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	2057	2872	4755	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	42000	33096	16548	11032	8274	6619	5516	4728	4137	3677	3310	3009	2758	2546	2364	2206	2069
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	42000	42000	33096	22064	16548	13238	11032	9456	8274	7355	6619	6017	5516	5092	4728	4413	4137
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	42000	42000	42000	33096	24822	19858	16548	14184	12411	11032	9929	9026	8274	7638	7092	6619	6206
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	42000	40224	42000	42000	33096	26477	22064	18912	16548	14709	13238	12035	11032	10183	9456	8826	8274
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	42000	40709	42000	42000	41370	33096	27580	23640	20685	18387	16548	15044	13790	12729	11820	11032	10343
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	42000	41090	42000	42000	42000	39715	33096	28368	24822	22064	19858	18052	16548	15275	14184	13238	12411
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	42000	41326	42000	42000	42000	38612	33096	28959	25741	23167	21061	19306	17821	16548	15445	14480	
	S	-	69727	34863	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	42000	41481	40224	42000	42000	42000	37824	33096	29419	26477	24070	22064	20367	18912	17651	16548	
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	42000	41588	40423	42000	42000	42000	42000	37233	33096	29786	27079	24822	22913	21276	19858	18617	
	S	-	89649	44825	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	42000	41665	40709	42000	42000	42000	42000	41370	36773	33096	30087	27580	25458	23640	22064	20685	
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	42000	41723	40924	42000	42000	42000	42000	42000	40451	36406	33096	30338	28004	26004	24270	22754	
	S	-	109571	54786	36523	27392	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	42000	41767	41090	40224	42000	42000	42000	42000	42000	42000	39715	36105	33096	30550	28368	26477	24822
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	28042	15835	7918	5278	3959	3167	2639	2262	1979	1759	1584	1440	1320	56084
S	9961	8632	7251	4834	3625	2900	2417	2071	1812	1611	1450	1318	1208	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	5490	10980
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	16669	5368	3199	2278	1769	1446	1223	1059	934	836	756	690	635
S	-	20233	10116	6744	5058	4046	2929	2086	1620	1324	1119	970	855	765	692	631	581
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
20	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
40	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
60	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
80	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
100	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
120	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
140	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
160	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
180	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
200	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
220	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
240	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	52920	28042	14021	9347	7011	5608	4674	4006	3505	3116	2804	2549	2337	2157	2003	1869	1753
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	52920	52920	28042	18695	14021	11217	9347	8012	7011	6232	5608	5099	4674	4314	4006	3739	3505
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	52920	52920	42063	28042	21032	16825	14021	12018	10516	9347	8413	7648	7011	6471	6009	5608	5258
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	52920	52920	52920	37389	28042	22434	18695	16024	14021	12463	11217	10197	9347	8628	8012	7478	7011
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	52920	49510	52920	46737	35053	28042	23368	20030	17526	15579	14021	12746	11684	10785	10015	9347	8763
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	52920	50481	52920	52920	42063	33650	28042	24036	21032	18695	16825	15296	14021	12942	12018	11217	10516
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	52920	51095	52920	52920	49074	39259	32716	28042	24537	21810	19629	17845	16358	15100	14021	13086	12268
	S	-	69727	34863	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	52920	51506	52920	52920	52920	44867	37389	32048	28042	24926	22434	20394	18695	17257	16024	14956	14021
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	52920	51793	52920	52920	52920	50476	42063	36054	31547	28042	25238	22943	21032	19414	18027	16825	15774
	S	-	89649	44824	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	52920	52002	49510	52920	52920	52920	46737	40060	35053	31158	28042	25493	23368	21571	20030	18695	17526
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	52920	52157	50055	52920	52920	52920	51410	44066	38558	34274	30846	28042	25705	23728	22033	20564	19279
	S	-	109571	54786	36523	27392	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	52920	52277	50481	52920	52920	52920	52920	48072	42063	37389	33650	30591	28042	25885	24036	22434	21032
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	31710	24633	12316	8211	6158	4927	4105	3519	3079	2737	2463	2239	2053	63420
S	9961	8632	7251	4834	3625	2900	2417	2071	1812	1611	1450	1318	1208	19922
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	6250	12500
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	25929	8350	4976	3544	2752	2250	1902	1648	1453	1300	1176	1073	987
S	-	20233	10116	6744	5058	4046	2929	2086	1620	1324	1119	970	855	765	692	631	581
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
20	T	3494	4878	8076	23460	7865	6292	5243	4495	3932	3495	3146	2860	2622	2420	2247	2099	1967
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
40	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
60	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
80	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
100	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
120	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
140	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
160	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
180	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
200	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
220	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
240	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	2057	2871	4754	6744	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	82319	31710	15855	10570	7928	6342	5285	4530	3964	3523	3171	2883	2643	2439	2265	2114	1982
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	82319	63420	31710	21140	15855	12684	10570	9060	7928	7047	6342	5765	5285	4878	4530	4228	3964
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	82319	82320	47565	31710	23783	19026	15855	13590	11891	10570	9513	8648	7928	7318	6795	6342	5946
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	82319	82320	63420	42280	31710	25368	21140	18120	15855	14093	12684	11531	10570	9757	9060	8456	7928
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	82319	82320	79275	52850	39638	31710	26425	22650	19819	17617	15855	14414	13213	12196	11325	10570	9909
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	82319	82320	82320	63420	47565	38052	31710	27180	23783	21140	19026	17296	15855	14635	13590	12684	11891
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	82319	82320	82320	73990	55493	44394	36995	31710	27746	24663	22197	20179	18498	17075	15855	14798	13873
	S	-	69727	34863	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	82319	78300	82320	82320	63420	50736	42280	36240	31710	28187	25368	23062	21140	19514	18120	16912	15855
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	82319	79095	82320	82320	71348	57078	47565	40770	35674	31710	28539	25945	23783	21953	20385	19026	17837
	S	-	89649	44824	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	82319	79678	82320	82320	79275	63420	52850	45300	39638	35233	31710	28827	26425	24392	22650	21140	19819
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	82319	80119	82320	82320	82320	69762	58135	49830	43601	38757	34881	31710	29068	26832	24915	23254	21801
	S	-	109571	54785	36523	27392	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	82319	80458	82320	82320	82320	76104	63420	54360	47565	42280	38052	34593	31710	29271	27180	25368	23783
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 38 Angle bracket type 110135, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	11340	673	337	224	168	134	112	96	84	74	67	61	56	22680
$F_{1,Rk}$ S	9961	1488	744	496	372	298	248	213	186	165	149	135	124	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2190	4380
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	710	228	136	97	75	61	52	45	39	35	32	29	27
$F_{4,Rk}$ S	-	20233	10116	6744	1566	504	301	214	166	136	115	100	88	79	71	65	60
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	95	133	221	642	2295	1836	1530	1311	1147	1020	917	834	764	706	655	611	573
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	95	133	221	642	1783	1427	1189	1019	891	792	713	648	594	548	509	475	445
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	95	133	221	642	2127	1701	1418	1215	1063	945	850	773	709	654	607	567	531
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	95	133	221	642	2215	1772	1477	1266	1107	984	886	805	738	681	633	590	553
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	95	133	221	642	2249	1799	1499	1285	1124	999	899	817	749	692	642	599	562
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	95	133	221	642	2265	1812	1510	1294	1132	1006	906	823	755	697	647	604	566
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	95	133	221	642	2274	1819	1516	1299	1137	1010	909	827	758	699	649	606	568
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	95	133	221	642	2279	1823	1519	1302	1139	1013	911	829	759	701	651	607	569
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	95	133	221	642	2283	1826	1522	1304	1141	1014	913	830	761	702	652	608	570
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	95	133	221	642	2285	1828	1523	1306	1142	1015	914	831	761	703	653	609	571
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	95	133	221	642	2287	1830	1525	1307	1143	1016	915	831	762	703	653	610	571
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	95	133	221	642	2288	1831	1525	1307	1144	1017	915	832	762	704	653	610	572
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	95	133	221	642	2289	1831	1526	1308	1144	1017	915	832	763	704	654	610	572
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	10800	7820	5061	3780	2835	2268	1890	1620	1418	1260	1134	1031	945	872	810	756	709
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	10800	9750	7820	6193	5061	4390	3780	3240	2835	2520	2268	2062	1890	1745	1620	1512	1418
	S	-	19922	9961	6641	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	10800	10293	9117	7820	6681	5756	5061	4601	4192	3780	3402	3093	2835	2617	2430	2268	2126
	S	-	29883	14942	9961	7471	5977	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	10800	10506	9750	8788	7820	6946	6193	5556	5061	4712	4390	4097	3780	3489	3240	3024	2835
	S	-	39844	19922	13281	9961	7969	6641	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	10800	10609	10092	9377	8590	7820	7111	6479	5925	5441	5061	4780	4515	4269	4043	3780	3544
	S	-	49805	24903	16602	12451	9961	8301	7115	6226	5534	4980	4527	4150	3831	3557	3320	3112
120	T	10800	10666	10293	9750	9117	8459	7820	7224	6681	6193	5756	5367	5061	4826	4601	4390	4192
	S	-	59766	29883	19922	14942	11953	9961	8538	7471	6641	5977	5433	4980	4597	4269	3984	3735
140	T	10800	10701	10421	9999	9486	8929	8366	7820	7306	6831	6396	6000	5640	5315	5061	4859	4665
	S	-	69727	34864	23242	17432	13945	11621	9961	8716	7747	6973	6339	5811	5364	4980	4648	4357
160	T	10800	10724	10506	10170	9750	9280	8788	8296	7820	7369	6946	6554	6193	5861	5556	5276	5061
	S	-	79688	39844	26563	19922	15938	13281	11384	9961	8854	7969	7244	6641	6130	5692	5313	4980
180	T	10800	10740	10565	10293	9945	9546	9117	8678	8242	7820	7417	7037	6681	6350	6042	5756	5492
	S	-	89649	44825	29883	22412	17930	14942	12807	11206	9961	8965	8150	7471	6896	6404	5977	5603
200	T	10800	10751	10609	10384	10092	9750	9377	8986	8590	8199	7820	7457	7111	6786	6479	6193	5925
	S	-	99610	49805	33203	24903	19922	16602	14230	12451	11068	9961	9055	8301	7662	7115	6641	6226
220	T	10800	10759	10641	10453	10205	9911	9583	9236	8878	8519	8164	7820	7489	7173	6872	6589	6321
	S	-	109571	54786	36524	27393	21914	18262	15653	13696	12175	10957	9961	9131	8429	7827	7305	6848
240	T	10800	10766	10666	10506	10293	10038	9750	9440	9117	8788	8459	8135	7820	7516	7224	6946	6681
	S	-	119533	59766	39844	29883	23907	19922	17076	14942	13281	11953	10867	9961	9195	8538	7969	7471
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 39 Angle bracket type 110135, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	14184	1121	562	374	281	224	187	160	140	124	112	102	93	28368
S	9961	1488	744	496	372	298	248	213	186	165	149	135	124	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2800	5600
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	1184	381	227	161	125	102	86	75	66	59	53	49	45
S	-	20233	10116	6744	1566	504	301	214	166	136	115	100	88	79	71	65	60
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	159	222	368	1071	3825	3060	2550	2185	1912	1700	1530	1390	1275	1176	1092	1020	956
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	159	222	368	1071	2600	2080	1733	1485	1300	1155	1040	945	866	800	742	693	650
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	159	222	368	1071	3366	2693	2244	1923	1683	1496	1346	1224	1122	1035	961	897	841
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	159	222	368	1071	3599	2879	2399	2056	1799	1599	1439	1308	1199	1107	1028	959	899
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	159	222	368	1071	3693	2954	2462	2110	1846	1641	1477	1342	1231	1136	1055	984	923
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	159	222	368	1071	3738	2991	2492	2136	1869	1661	1495	1359	1246	1150	1068	997	934
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	159	222	368	1071	3764	3011	2509	2151	1882	1673	1505	1368	1254	1158	1075	1003	941
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	159	222	368	1071	3780	3024	2520	2160	1890	1680	1512	1374	1260	1163	1080	1008	945
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	159	222	368	1071	3790	3032	2527	2166	1895	1684	1516	1378	1263	1166	1083	1010	947
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	159	222	368	1071	3797	3038	2531	2170	1898	1687	1519	1381	1265	1168	1085	1012	949
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	159	222	368	1071	3802	3042	2535	2173	1901	1690	1521	1382	1267	1170	1086	1014	950
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	159	222	368	1071	3806	3045	2537	2175	1903	1691	1522	1384	1268	1171	1087	1015	951
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	159	222	368	1071	3809	3047	2539	2176	1904	1693	1523	1385	1269	1172	1088	1015	952
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	18000	12460	7092	4728	3546	2837	2364	2026	1773	1576	1418	1289	1182	1091	1013	946	887
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	18000	15198	12460	9456	7092	5674	4728	4053	3546	3152	2837	2579	2364	2182	2026	1891	1773
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	18000	16577	13741	12460	10638	8510	7092	6079	5319	4728	4255	3868	3546	3273	3039	2837	2660
	S	-	29883	14942	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	18000	17157	15198	13038	12460	11347	9456	8105	7092	6304	5674	5158	4728	4364	4053	3782	3546
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	18000	17446	16050	14321	12814	12460	11761	10131	8865	7880	7092	6447	5910	5455	5066	4728	4433
	S	-	49805	24903	16602	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	18000	17610	16577	15198	13741	12796	12460	11888	10638	9456	8510	7737	7092	6546	6079	5674	5319
	S	-	59766	29883	19922	14942	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	18000	17711	16922	15812	14571	13336	12771	12460	11979	11032	9929	9026	8274	7638	7092	6619	6206
	S	-	69727	34864	23242	17432	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	18000	17777	17157	16253	15198	14102	13038	12746	12460	12044	11347	10316	9456	8729	8105	7565	7092
	S	-	79688	39844	26563	19922	15938	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	18000	17823	17324	16577	15678	14711	13741	12814	12723	12460	12096	11605	10638	9820	9118	8510	7979
	S	-	89649	44825	29883	22412	17930	14942	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	18000	17856	17446	16822	16050	15198	14321	13457	12814	12704	12460	12135	11761	10911	10131	9456	8865
	S	-	99610	49805	33203	24903	19922	16602	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	18000	17881	17539	17010	16343	15591	14800	14003	13227	12807	12686	12460	12168	11831	11145	10402	9752
	S	-	109571	54786	36524	27393	21914	18262	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	18000	17900	17610	17157	16577	15912	15198	14467	13741	13038	12796	12671	12460	12194	11888	11347	10638
	S	-	119533	59766	39844	29883	23907	19922	17076	14942	13281	11953	10866	9961	9194	8538	7968	7470
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 40 Angle bracket type 110135, Variant TCP, Fastener GH Screw 5x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	12018	1407	707	472	354	283	236	202	177	157	141	128	118	24036
$F_{1,Rk}$ S	9961	1488	744	496	372	298	248	213	186	165	149	135	124	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2410	4820
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	1492	480	286	203	158	129	109	94	83	74	67	61	56
$F_{4,Rk}$ S	-	20233	10116	6744	1566	504	301	214	166	136	115	100	88	79	71	65	60
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	201	280	464	1350	4819	3855	3213	2754	2409	2142	1927	1752	1606	1482	1377	1285	1204
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	201	280	464	1350	2549	2039	1699	1456	1274	1133	1019	927	849	784	728	679	637
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	201	280	464	1350	3759	3007	2506	2148	1879	1670	1503	1367	1253	1156	1074	1002	939
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	201	280	464	1350	4250	3400	2833	2428	2125	1888	1700	1545	1416	1307	1214	1133	1062
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	201	280	464	1350	4473	3578	2982	2556	2236	1988	1789	1626	1491	1376	1278	1192	1118
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	201	280	464	1350	4589	3671	3059	2622	2294	2039	1835	1668	1529	1412	1311	1223	1147
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	201	280	464	1350	4655	3724	3103	2660	2327	2069	1862	1693	1551	1432	1330	1241	1163
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	201	280	464	1350	4697	3758	3131	2684	2348	2087	1879	1708	1565	1445	1342	1252	1174
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	201	280	464	1350	4725	3780	3150	2700	2362	2100	1890	1718	1575	1453	1350	1260	1181
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	201	280	464	1350	4744	3795	3163	2711	2372	2108	1897	1725	1581	1459	1355	1265	1186
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	201	280	464	1350	4758	3806	3172	2719	2379	2114	1903	1730	1586	1464	1359	1268	1189
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	201	280	464	1350	4769	3815	3179	2725	2384	2119	1907	1734	1589	1467	1362	1271	1192
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	201	280	464	1350	4777	3821	3184	2729	2388	2123	1910	1737	1592	1469	1364	1273	1194
	S	211	295	488	1417	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	22679	11321	6009	4006	3005	2404	2003	1717	1502	1335	1202	1093	1002	924	858	801	751
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	22679	16495	11321	8012	6009	4807	4006	3434	3005	2671	2404	2185	2003	1849	1717	1602	1502
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	22679	19197	14112	11321	9014	7211	6009	5151	4507	4006	3605	3278	3005	2773	2575	2404	2253
	S	-	29883	14942	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	22679	20511	16495	13087	11321	9614	8012	6867	6009	5341	4807	4370	4006	3698	3434	3205	3005
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	22679	21218	18101	15013	12598	11321	10015	8584	7511	6677	6009	5463	5008	4622	4292	4006	3756
	S	-	49805	24903	16602	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	22679	21635	19197	16495	14112	12390	11321	10301	9014	8012	7211	6555	6009	5547	5151	4807	4507
	S	-	59766	29883	19922	14942	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	22679	21898	19963	17634	15421	13512	12239	11321	10443	9347	8413	7648	7011	6471	6009	5608	5258
	S	-	69727	34864	23242	17432	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	22679	22074	20511	18513	16495	14666	13087	12125	11321	10549	9614	8740	8012	7396	6867	6410	6009
	S	-	79688	39844	26563	19922	15938	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	22679	22197	20915	19197	17376	15653	14112	12769	12035	11321	10633	9833	9014	8320	7726	7211	6760
	S	-	89649	44825	29883	22412	17930	14942	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	22679	22286	21218	19736	18101	16495	15013	13688	12598	11964	11321	10699	10015	9245	8584	8012	7511
	S	-	99610	49805	33203	24903	19922	16602	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	22679	22353	21452	20165	18700	17214	15803	14512	13355	12486	11905	11321	10755	10169	9443	8813	8262
	S	-	109571	54786	36524	27393	21914	18262	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	22679	22404	21635	20511	19197	17828	16495	15249	14112	13087	12390	11857	11321	10801	10301	9614	9014
	S	-	119533	59766	39844	29883	23907	19922	17076	14942	13281	11953	10866	9961	9194	8538	7968	7470
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 41 Angle bracket type 110135, Variant TCP, Fastener GH Screw 5x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1														2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$ T	13590	2205	1103	735	551	441	368	315	276	245	221	200	184	27180	
S	9961	1487	743	495	371	297	247	212	185	165	148	135	123	19922	
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2740	5480
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	2321	747	445	317	246	201	170	147	130	116	105	96	88
S	-	20233	10116	6744	1566	504	300	214	166	135	114	99	87	78	71	64	59
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
20	T	313	437	723	2100	3094	2475	2063	1768	1547	1375	1237	1125	1031	952	884	825	773
	S	211	294	487	1416	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	313	437	723	2100	5034	4027	3356	2876	2517	2237	2013	1830	1678	1549	1438	1342	1258
	S	211	294	487	1416	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	313	437	723	2100	7211	5769	4807	4121	3605	3205	2885	2623	2404	2219	2060	1924	1803
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
80	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
100	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
120	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
140	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
160	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
180	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
200	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
220	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
240	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	211	294	487	1416	5058	4046	3372	2890	2529	2248	2023	1839	1686	1556	1445	1348	1264
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	35279	13590	6795	4530	3398	2718	2265	1941	1699	1510	1359	1235	1133	1045	971	906	849
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	35279	23271	13590	9060	6795	5436	4530	3883	3398	3020	2718	2471	2265	2091	1941	1812	1699
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	35279	26678	20385	13590	10193	8154	6795	5824	5096	4530	4077	3706	3398	3136	2912	2718	2548
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	35279	29593	23271	18120	13590	10872	9060	7766	6795	6040	5436	4942	4530	4182	3883	3624	3398
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	35279	31311	24472	21883	16988	13590	11325	9707	8494	7550	6795	6177	5663	5227	4854	4530	4247
	S	-	49805	24903	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	35279	32379	26678	23271	20385	16308	13590	11649	10193	9060	8154	7413	6795	6272	5824	5436	5096
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	35279	33078	28336	23931	22310	19026	15855	13590	11891	10570	9513	8648	7928	7318	6795	6342	5946
	S	-	69727	34864	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	35279	33557	29593	25279	23271	21500	18120	15531	13590	12080	10872	9884	9060	8363	7766	7248	6795
	S	-	79688	39844	26563	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	35279	33897	30559	26678	23823	22539	20385	17473	15289	13590	12231	11119	10193	9408	8736	8154	7644
	S	-	89649	44825	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	35279	34148	31311	27834	24472	23271	21883	19414	16988	15100	13590	12355	11325	10454	9707	9060	8494
	S	-	99610	49805	33203	24903	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	35279	34336	31904	28793	25654	23741	22682	21323	18686	16610	14949	13590	12458	11499	10678	9966	9343
	S	-	109571	54786	36524	27393	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	35279	34482	32379	29593	26678	23993	23271	22133	20385	18120	16308	14825	13590	12545	11649	10872	10193
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	26460	7541	3770	2514	1880	1505	1255	1076	941	837	753	685	628	52920
	S	3584	3106	2741	2452	2219	2026	1864	1726	1607	1503	1412	1318	1209	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	3840	7680
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	33096	12568	6284	4189	3142	2514	2095	1795	1569	1395	1255	1141	1046	66192
	S	3584	3106	2741	2452	2218	2026	1863	1725	1607	1503	1412	1318	1209	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	5620	11240
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	28042	15835	7918	5278	3959	3167	2639	2262	1979	1759	1584	1440	1320	56084
	S	3584	3106	2741	2452	2218	2026	1863	1725	1606	1503	1412	1318	1208	7168
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	5370	10740
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	31710	24633	12316	8211	6158	4927	4105	3519	3079	2737	2463	2239	2053	63420
	S	3584	3106	2741	2452	2218	2026	1863	1725	1606	1503	1412	1318	1208	7168
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	6180	12360
	S	-	-

Table B. 46 Angle bracket type 110135L, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	11340	673	337	224	168	134	112	96	84	74	67	61	56	22680
	S	3584	1488	744	496	372	298	248	213	186	165	149	135	124	7168
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	1710	3420
	S	-	-

Table B. 47 Angle bracket type 110135L, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	14184	1121	562	374	281	224	187	160	140	124	112	102	93	28368
	S	3584	1488	744	496	372	298	248	213	186	165	149	135	124	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	2500	5000
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	12018	1407	707	472	354	283	236	202	177	157	141	128	118	24036
	S	3584	1488	744	496	372	298	248	213	186	165	149	135	124	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	2360	4720
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1														2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	13590	2205	1103	735	551	441	368	315	276	245	221	200	184	27180
	S	3584	1487	743	495	371	297	247	212	185	165	148	135	123	7168
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	2710	5420
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	26460	7541	3732	2502	1880	1505	1255	1076	941	837	753	685	628	52920
$F_{1,Rk}$ S	7317	6342	5327	3551	2663	2131	1776	1522	1332	1184	1065	969	888	14634
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	4920	9840
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	7938	2556	1523	1084	842	688	582	504	444	397	359	328	302
$F_{4,Rk}$ S	-	14864	7432	4954	3716	2973	2152	1533	1190	973	823	713	629	562	509	464	427
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1069	1493	2472	7182	3187	2549	2124	1821	1593	1416	1274	1158	1062	980	910	849	796
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	1069	1493	2472	7182	2871	2296	1914	1640	1435	1276	1148	1044	957	883	820	765	717
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	1069	1493	2472	7182	3098	2478	2065	1770	1549	1377	1239	1126	1032	953	885	826	774
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	1069	1493	2472	7182	3146	2517	2097	1798	1573	1398	1258	1144	1048	968	899	839	786
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	1069	1493	2472	7182	3164	2531	2109	1808	1582	1406	1265	1150	1054	973	904	843	791
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	1069	1493	2472	7182	3172	2537	2114	1812	1586	1409	1268	1153	1057	976	906	845	793
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	1069	1493	2472	7182	3176	2541	2117	1815	1588	1411	1270	1155	1058	977	907	847	794
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	1069	1493	2472	7182	3179	2543	2119	1816	1589	1413	1271	1156	1059	978	908	847	794
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	1069	1493	2472	7182	3181	2545	2120	1817	1590	1413	1272	1156	1060	978	908	848	795
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	1069	1493	2472	7182	3182	2546	2121	1818	1591	1414	1273	1157	1060	979	909	848	795
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	1069	1493	2472	7182	3183	2546	2122	1819	1591	1414	1273	1157	1061	979	909	848	795
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	1069	1493	2472	7182	3184	2547	2122	1819	1592	1415	1273	1157	1061	979	909	849	796
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	1069	1493	2472	7182	3184	2547	2122	1819	1592	1415	1273	1157	1061	979	909	849	796
	S	1511	2110	3493	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	25199	25200	13230	8820	6615	5292	4410	3780	3308	2940	2646	2405	2205	2035	1890	1764	1654
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	25199	25200	25200	17640	13230	10584	8820	7560	6615	5880	5292	4811	4410	4071	3780	3528	3308
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	25199	25200	25200	25200	19845	15876	13230	11340	9923	8820	7938	7216	6615	6106	5670	5292	4961
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	25199	24514	25200	25200	25200	21168	17640	15120	13230	11760	10584	9622	8820	8142	7560	7056	6615
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	25199	24754	25200	25200	25200	25200	22050	18900	16538	14700	13230	12027	11025	10177	9450	8820	8269
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	25199	24888	25200	25200	25200	25200	22680	19845	17640	15876	14433	13230	12212	11340	10584	9923	
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	25199	24969	24315	25200	25200	25200	25200	23153	20580	18522	16838	15435	14248	13230	12348	11576	
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	25199	25023	24514	25200	25200	25200	25200	25200	23520	21168	19244	17640	16283	15120	14112	13230	
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	25199	25060	24653	25200	25200	25200	25200	25200	25200	23814	21649	19845	18318	17010	15876	14884	
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	25199	25086	24754	24230	25200	25200	25200	25200	25200	25200	25200	24055	22050	20354	18900	17640	16538
	S	-	73179	36589	24393	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	25199	25106	24830	24390	25200	25200	25200	25200	25200	25200	25200	25200	24255	22389	20790	19404	18191
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	25199	25121	24888	24514	25200	25200	25200	25200	25200	25200	25200	25200	25200	24425	22680	21168	19845
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B.51 Angle bracket type 1101353, Variant TCM, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	33096	12568	6284	4189	3142	2514	2095	1795	1571	1396	1257	1143	1047	66192
$F_{1,Rk}$ S	7317	6342	5326	3551	2663	2130	1775	1521	1331	1183	1065	968	887	14634
k_1 (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	6380	12760
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	13229	4260	2539	1808	1404	1148	970	841	741	663	600	548	504
$F_{4,Rk}$ S	-	14864	7432	4954	3716	2972	2152	1532	1190	972	822	712	628	562	508	464	427
k_1 (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
20	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
40	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
60	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
80	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
100	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
120	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
140	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
160	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
180	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
200	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
220	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
240	T	1783	2489	4121	11969	5312	4249	3541	3035	2656	2361	2125	1932	1771	1634	1518	1416	1328
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
$k_1 \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	42000	33096	16548	11032	8274	6619	5516	4728	4137	3677	3310	3009	2758	2546	2364	2206	2069
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	42000	42000	33096	22064	16548	13238	11032	9456	8274	7355	6619	6017	5516	5092	4728	4413	4137
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	42000	42000	42000	33096	24822	19858	16548	14184	12411	11032	9929	9026	8274	7638	7092	6619	6206
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	42000	42000	42000	42000	33096	26477	22064	18912	16548	14709	13238	12035	11032	10183	9456	8826	8274
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	42000	42000	42000	42000	41370	33096	27580	23640	20685	18387	16548	15044	13790	12729	11820	11032	10343
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	42000	41090	42000	42000	42000	39715	33096	28368	24822	22064	19858	18052	16548	15275	14184	13238	12411
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	42000	41326	42000	42000	42000	38612	33096	28959	25741	23167	21061	19306	17821	16548	15445	14480	
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	42000	41481	42000	42000	42000	42000	42000	37824	33096	29419	26477	24070	22064	20367	18912	17651	16548
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	42000	41588	42000	42000	42000	42000	42000	42000	37233	33096	29786	27079	24822	22913	21276	19858	18617
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	42000	41665	42000	42000	42000	42000	42000	42000	41370	36773	33096	30087	27580	25458	23640	22064	20685
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	42000	41723	41613	42000	42000	42000	42000	42000	42000	40451	36406	33096	30338	28004	26004	24270	22754
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	42000	41767	41090	42000	42000	42000	42000	42000	42000	42000	39715	36105	33096	30550	28368	26477	24822
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_1 \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	28042	15835	7918	5278	3959	3167	2639	2262	1979	1759	1584	1440	1320	56084
$F_{1,Rk}$ S	7317	6342	5326	3551	2663	2130	1775	1521	1331	1183	1065	968	887	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	5490	10980
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	16669	5368	3199	2278	1769	1446	1223	1059	934	836	756	690	635
$F_{4,Rk}$ S	-	14864	7432	4954	3716	2972	2152	1532	1190	972	822	712	628	562	508	464	427
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
20	T	2246	3136	5192	15081	6306	5047	4205	3604	3153	2804	2523	2294	2103	1941	1803	1683	1577
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
40	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
60	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
80	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
100	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
120	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
140	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
160	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
180	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
200	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
220	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
240	T	2246	3136	5192	15081	6693	5354	4462	3824	3346	2975	2677	2434	2231	2059	1912	1785	1673
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	52920	28042	14021	9347	7011	5608	4674	4006	3505	3116	2804	2549	2337	2157	2003	1869	1753
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	52920	52920	28042	18695	14021	11217	9347	8012	7011	6232	5608	5099	4674	4314	4006	3739	3505
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	52920	52920	42063	28042	21032	16825	14021	12018	10516	9347	8413	7648	7011	6471	6009	5608	5258
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	52920	52920	52920	37389	28042	22434	18695	16024	14021	12463	11217	10197	9347	8628	8012	7478	7011
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	52920	52920	52920	46737	35053	28042	23368	20030	17526	15579	14021	12746	11684	10785	10015	9347	8763
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	52920	52920	52920	52920	42063	33650	28042	24036	21032	18695	16825	15296	14021	12942	12018	11217	10516
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	52920	51095	52920	52920	49074	39259	32716	28042	24537	21810	19629	17845	16358	15100	14021	13086	12268
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	52920	51506	52920	52920	52920	44867	37389	32048	28042	24926	22434	20394	18695	17257	16024	14956	14021
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	52920	51793	52920	52920	52920	50476	42063	36054	31547	28042	25238	22943	21032	19414	18027	16825	15774
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	52920	52002	52920	52920	52920	52920	46737	40060	35053	31158	28042	25493	23368	21571	20030	18695	17526
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	52920	52157	52920	52920	52920	52920	51410	44066	38558	34274	30846	28042	25705	23728	22033	20564	19279
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	52920	52277	52920	52920	52920	52920	52920	48072	42063	37389	33650	30591	28042	25885	24036	22434	21032
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	31710	24633	12316	8211	6158	4927	4105	3519	3079	2737	2463	2239	2053	63420
$F_{1,Rk}$ S	7317	6342	5326	3551	2663	2130	1775	1521	1331	1183	1065	968	887	14634
k_1 (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	6250	12500
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	25929	8350	4976	3544	2752	2250	1902	1648	1453	1300	1176	1073	987
$F_{4,Rk}$ S	-	14864	7432	4954	3716	2972	2152	1532	1190	972	822	712	628	562	508	464	427
k_1 (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
20	T	3494	4878	8076	23460	7928	6342	5285	4530	3964	3523	3171	2883	2643	2439	2265	2114	1982
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
40	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
60	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
80	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
100	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
120	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
140	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
160	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
180	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
200	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
220	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
240	T	3494	4878	8076	23460	10411	8329	6941	5949	5206	4627	4164	3786	3470	3203	2975	2776	2603
	S	1511	2109	3493	4954	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
$k_1 \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	82319	31710	15855	10570	7928	6342	5285	4530	3964	3523	3171	2883	2643	2439	2265	2114	1982
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	82319	63420	31710	21140	15855	12684	10570	9060	7928	7047	6342	5765	5285	4878	4530	4228	3964
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	82319	82320	47565	31710	23783	19026	15855	13590	11891	10570	9513	8648	7928	7318	6795	6342	5946
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	82319	82320	63420	42280	31710	25368	21140	18120	15855	14093	12684	11531	10570	9757	9060	8456	7928
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	82319	82320	79275	52850	39638	31710	26425	22650	19819	17617	15855	14414	13213	12196	11325	10570	9909
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	82319	82320	82320	63420	47565	38052	31710	27180	23783	21140	19026	17296	15855	14635	13590	12684	11891
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	82319	82320	82320	73990	55493	44394	36995	31710	27746	24663	22197	20179	18498	17075	15855	14798	13873
	S	-	51224	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	82319	82320	82320	82320	63420	50736	42280	36240	31710	28187	25368	23062	21140	19514	18120	16912	15855
	S	-	58542	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	82319	82320	82320	82320	71348	57078	47565	40770	35674	31710	28539	25945	23783	21953	20385	19026	17837
	S	-	65860	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	82319	82320	82320	82320	79275	63420	52850	45300	39638	35233	31710	28827	26425	24392	22650	21140	19819
	S	-	73178	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	82319	80119	82320	82320	82320	69762	58135	49830	43601	38757	34881	31710	29068	26832	24915	23254	21801
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	82319	80458	82320	82320	82320	76104	63420	54360	47565	42280	38052	34593	31710	29271	27180	25368	23783
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_1 \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 54 Angle bracket type 1101353, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	11340	673	337	224	168	134	112	96	84	74	67	61	56	22680
S	7317	1093	546	364	273	219	182	156	137	121	109	99	91	14634
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2190	4380
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	710	228	136	97	75	61	52	45	39	35	32	29	27
S	-	14864	7432	4954	1150	370	221	157	122	100	84	73	64	58	52	48	44
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	95	133	221	642	2295	1836	1530	1311	1147	1020	917	834	764	706	655	611	573
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	95	133	221	642	1783	1427	1189	1019	891	792	713	648	594	548	509	475	445
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	95	133	221	642	1217	1701	1418	1215	1063	945	850	773	709	654	607	567	531
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	95	133	221	642	2215	1772	1477	1266	1107	984	886	805	738	681	633	590	553
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	95	133	221	642	2249	1799	1499	1285	1124	999	899	817	749	692	642	599	562
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	95	133	221	642	2265	1812	1510	1294	1132	1006	906	823	755	697	647	604	566
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	95	133	221	642	2274	1819	1516	1299	1137	1010	909	827	758	699	649	606	568
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	95	133	221	642	2279	1823	1519	1302	1139	1013	911	829	759	701	651	607	569
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	95	133	221	642	2283	1826	1522	1304	1141	1014	913	830	761	702	652	608	570
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	95	133	221	642	2285	1828	1523	1306	1142	1015	914	831	761	703	653	609	571
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	95	133	221	642	2287	1830	1525	1307	1143	1016	915	831	762	703	653	610	571
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	95	133	221	642	2288	1831	1525	1307	1144	1017	915	832	762	704	653	610	572
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	95	133	221	642	2289	1831	1526	1308	1144	1017	915	832	763	704	654	610	572
	S	155	216	358	1041	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	10800	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	10800	8359	5670	3780	2835	2268	1890	1620	1418	1260	1134	1031	945	872	810	756	709
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	10800	9750	8359	7560	5670	4536	3780	3240	2835	2520	2268	2062	1890	1745	1620	1512	1418
	S	-	14636	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	10800	10293	9117	8359	8135	6804	5670	4860	4253	3780	3402	3093	2835	2617	2430	2268	2126
	S	-	21954	10977	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	10800	10506	9750	8788	8359	8243	7560	6480	5670	5040	4536	4124	3780	3489	3240	3024	2835
	S	-	29271	14636	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	10800	10609	10092	9377	8590	8359	8294	8033	7088	6300	5670	5155	4725	4362	4050	3780	3544
	S	-	36589	18295	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	10800	10666	10293	9750	9117	8459	8359	8322	8135	7560	6804	6185	5670	5234	4860	4536	4253
	S	-	43907	21954	14636	10977	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	10800	10701	10421	9999	9486	8929	8366	8359	8338	8200	7938	7216	6615	6106	5670	5292	4961
	S	-	51225	25612	17075	12806	10245	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	10800	10724	10506	10170	9750	9280	8788	8296	8359	8349	8243	8073	7560	6978	6480	6048	5670
	S	-	58543	29271	19514	14636	11709	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	10800	10740	10565	10293	9945	9546	9117	8678	8254	8359	8355	8273	8135	7851	7290	6804	6379
	S	-	65861	32930	21954	16465	13172	10977	9409	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	10800	10751	10609	10384	10092	9750	9377	8986	8590	8271	8359	8360	8294	8181	8033	7560	7088
	S	-	73179	36589	24393	18295	14636	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	10800	10759	10641	10453	10205	9911	9583	9236	8878	8519	8283	8359	8362	8310	8217	8091	7796
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	10800	10766	10666	10506	10293	10038	9750	9440	9117	8788	8459	8292	8359	8365	8322	8243	8135
	S	-	87814	43907	29271	21954	17563	14636	12545	10977	9757	8781	7983	7317	6754	6272	5854	5488
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B.55 Angle bracket type 1101353, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	14184	1125	563	375	281	225	188	161	141	125	113	102	94	28368
$F_{1,Rk}$ S	7317	1092	546	364	273	218	182	156	136	121	109	99	91	14634
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2800	5600
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	1184	381	227	162	126	103	87	75	66	59	54	49	45
$F_{4,Rk}$ S	-	14864	7432	4954	1150	370	220	157	122	99	84	73	64	57	52	47	43
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	160	223	369	1071	3825	3060	2550	2186	1913	1700	1530	1391	1275	1177	1093	1020	956
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
20	T	160	223	369	1071	2600	2080	1733	1485	1300	1155	1040	945	866	800	742	693	650
	S	155	216	358	1040	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	160	223	369	1071	3366	2693	2244	1923	1683	1496	1346	1224	1122	1035	961	897	841
	S	155	216	358	1040	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	160	223	369	1071	3599	2879	2399	2056	1799	1599	1439	1308	1199	1107	1028	959	899
	S	155	216	358	1040	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	160	223	369	1071	3693	2954	2462	2110	1846	1641	1477	1342	1231	1136	1055	984	923
	S	155	216	358	1040	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	160	223	369	1071	3762	3010	2508	2150	1881	1673	1505	1368	1255	1158	1076	1004	941
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
120	T	160	223	369	1071	3814	3052	2543	2180	1907	1696	1526	1387	1272	1174	1090	1018	953
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
140	T	160	223	369	1071	3825	3060	2550	2186	1913	1700	1530	1391	1275	1177	1093	1020	956
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
160	T	160	223	369	1071	3825	3060	2550	2186	1913	1700	1530	1391	1275	1177	1093	1020	956
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
180	T	160	223	369	1071	3825	3060	2550	2186	1913	1700	1530	1391	1275	1177	1093	1020	956
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
200	T	160	223	369	1071	3825	3060	2550	2186	1913	1700	1530	1391	1275	1177	1093	1020	956
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
220	T	160	223	369	1071	3825	3060	2550	2186	1913	1700	1530	1391	1275	1177	1093	1020	956
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
240	T	160	223	369	1071	3825	3060	2550	2186	1913	1700	1530	1391	1275	1177	1093	1020	956
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	18000	14184	7092	4728	3546	2837	2364	2026	1773	1576	1418	1289	1182	1091	1013	946	887
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	18000	15784	14184	9456	7092	5674	4728	4053	3546	3152	2837	2579	2364	2182	2026	1891	1773
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	18000	16577	17205	14184	10638	8510	7092	6079	5319	4728	4255	3868	3546	3273	3039	2837	2660
	S	-	21954	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	18000	17157	15784	17423	14184	11347	9456	8105	7092	6304	5674	5158	4728	4364	4053	3782	3546
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	18000	17446	16050	16817	17443	14184	11820	10131	8865	7880	7092	6447	5910	5455	5066	4728	4433
	S	-	36589	18295	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	18000	17610	16577	15784	17205	17021	14184	12158	10638	9456	8510	7737	7092	6546	6079	5674	5319
	S	-	43907	21954	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	18000	17711	16922	15812	16581	17362	16548	14184	12411	11032	9929	9026	8274	7638	7092	6619	6206
	S	-	51225	25612	17075	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	18000	17777	17157	16253	15784	16987	17423	16210	14184	12608	11347	10316	9456	8729	8105	7565	7092
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	18000	17823	17324	16577	15678	16431	17205	17444	15957	14184	12766	11605	10638	9820	9118	8510	7979
	S	-	65861	32930	21954	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	18000	17856	17446	16822	16050	15784	16817	17323	17443	15760	14184	12895	11820	10911	10131	9456	8865
	S	-	73179	36589	24393	18295	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	18000	17881	17539	17010	16343	15591	16327	17054	17389	17336	15602	14184	13002	12002	11145	10402	9752
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	18000	17900	17610	17157	16577	15912	15784	16685	17205	17423	17021	15473	14184	13093	12158	11347	10638
	S	-	87814	43907	29271	21954	17563	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	12018	1418	709	473	354	284	236	203	177	158	142	129	118	24036
	S	7317	1092	546	364	273	218	182	156	136	121	109	99	91	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	2410	4820
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
$F_{4,Rk}$	T	-	-	-	-	1492	481	286	204	158	129	109	95	84	75	68	62	57
	S	-	14864	7432	4954	1150	370	220	157	122	99	84	73	64	57	52	47	43
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0	

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
20	T	201	281	465	1350	2549	2039	1699	1456	1274	1133	1019	927	849	784	728	679	637
	S	155	216	358	1040	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	201	281	465	1350	3804	3044	2536	2174	1902	1691	1522	1383	1269	1171	1088	1015	951
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
60	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
80	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
100	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
120	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
140	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
160	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
180	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
200	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
220	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
240	T	201	281	465	1350	4820	3856	3213	2754	2410	2142	1928	1753	1607	1483	1377	1285	1205
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	22679	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	22679	12018	6009	4006	3005	2404	2003	1717	1502	1335	1202	1093	1002	924	858	801	751
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	22679	18593	12018	8012	6009	4807	4006	3434	3005	2671	2404	2185	2003	1849	1717	1602	1502
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	22679	19197	18027	12018	9014	7211	6009	5151	4507	4006	3605	3278	3005	2773	2575	2404	2253
	S	-	21954	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	22679	20511	18593	16024	12018	9614	8012	6867	6009	5341	4807	4370	4006	3698	3434	3205	3005
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	22679	21218	18101	18481	15023	12018	10015	8584	7511	6677	6009	5463	5008	4622	4292	4006	3756
	S	-	36589	18295	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	22679	21635	19197	18593	18027	14422	12018	10301	9014	8012	7211	6555	6009	5547	5151	4807	4507
	S	-	43907	21954	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	22679	21898	19963	18213	18571	16825	14021	12018	10516	9347	8413	7648	7011	6471	6009	5608	5258
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	22679	22074	20511	18513	18593	18374	16024	13735	12018	10683	9614	8740	8012	7396	6867	6410	6009
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	22679	22197	20915	19197	18339	18603	18027	15452	13520	12018	10816	9833	9014	8320	7726	7211	6760
	S	-	65861	32930	21954	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	22679	22286	21218	19736	18101	18593	18481	17169	15023	13353	12018	10925	10015	9245	8584	8012	7511
	S	-	73179	36589	24393	18295	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	22679	22353	21452	20165	18700	18407	18616	18316	16525	14689	13220	12018	11017	10169	9443	8813	8262
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	22679	22404	21635	20511	19197	18099	18593	18539	18027	16024	14422	13111	12018	11094	10301	9614	9014
	S	-	87814	43907	29271	21954	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	13590	2205	1103	735	551	441	368	315	276	245	221	200	184	27180
	S	7317	1092	546	364	273	218	182	156	136	121	109	99	91	14634
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	2740	5480
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$	T	-	-	-	2321	747	445	317	246	201	170	147	130	116	105	96	88
	S	-	14864	7432	4954	1150	370	220	157	122	99	84	73	64	57	52	47
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
20	T	313	437	723	2100	3094	2475	2063	1768	1547	1375	1237	1125	1031	952	884	825	773
	S	155	216	358	1040	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	313	437	723	2100	6795	5436	4530	3883	3398	3020	2718	2471	2265	2091	1941	1812	1699
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
60	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
80	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
100	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
120	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
140	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
160	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
180	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
200	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
220	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
240	T	313	437	723	2100	7497	5998	4998	4284	3749	3332	2999	2726	2499	2307	2142	1999	1874
	S	155	216	358	1040	3716	2972	2477	2123	1858	1651	1486	1351	1238	1143	1061	990	929
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	35279	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	35279	13590	6795	4530	3398	2718	2265	1941	1699	1510	1359	1235	1133	1045	971	906	849
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	35279	27180	13590	9060	6795	5436	4530	3883	3398	3020	2718	2471	2265	2091	1941	1812	1699
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	35279	32420	20385	13590	10193	8154	6795	5824	5096	4530	4077	3706	3398	3136	2912	2718	2548
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	35279	29920	27180	18120	13590	10872	9060	7766	6795	6040	5436	4942	4530	4182	3883	3624	3398
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	35279	31311	32737	22650	16988	13590	11325	9707	8494	7550	6795	6177	5663	5227	4854	4530	4247
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	35279	32379	32420	27180	20385	16308	13590	11649	10193	9060	8154	7413	6795	6272	5824	5436	5096
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	35279	33078	31350	31710	23783	19026	15855	13590	11891	10570	9513	8648	7928	7318	6795	6342	5946
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	35279	33557	29920	32748	27180	21744	18120	15531	13590	12080	10872	9884	9060	8363	7766	7248	6795
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	35279	33897	30559	32420	30578	24462	20385	17473	15289	13590	12231	11119	10193	9408	8736	8154	7644
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	35279	34148	31311	31763	32737	27180	22650	19414	16988	15100	13590	12355	11325	10454	9707	9060	8494
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	35279	34336	31904	30899	32705	29898	24915	21356	18686	16610	14949	13590	12458	11499	10678	9966	9343
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	35279	34482	32379	29920	32420	32616	27180	23297	20385	18120	16308	14825	13590	12545	11649	10872	10193
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	26460	7541	3770	2514	1885	1508	1255	1076	941	837	753	685	628	52920
	S	2633	2282	2013	1801	1630	1488	1369	1268	1180	1104	1037	969	888	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	3840	7680
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	33096	12568	6284	4189	3142	2514	2095	1795	1571	1396	1257	1143	1047	66192
	S	2633	2282	2013	1801	1630	1488	1369	1267	1180	1104	1037	968	887	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	5620	11240
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	28042	15835	7918	5278	3959	3167	2639	2262	1979	1759	1584	1440	1320	56084
	S	2633	2282	2013	1801	1630	1488	1369	1267	1180	1104	1037	968	887	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	5370	10740
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	31710	24633	12316	8211	6158	4927	4105	3519	3079	2737	2463	2239	2053	63420
	S	2633	2282	2013	1801	1630	1488	1369	1267	1180	1104	1037	968	887	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	6180	12360
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	11340	673	337	224	168	134	112	96	84	74	67	61	56	22680
	S	2633	1093	546	364	273	219	182	156	137	121	109	99	91	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	1710	3420
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	14184	1125	563	375	281	225	188	161	141	125	113	102	94	28368
	S	2633	1092	546	364	273	218	182	156	136	121	109	99	91	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket		1	2
$F_{2/3,Rk}$	T	2500	5000
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	12018	1418	709	473	354	284	236	203	177	158	142	129	118	24036
	S	2633	1092	546	364	273	218	182	156	136	121	109	99	91	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	2360	4720
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	13590	2205	1103	735	551	441	368	315	276	245	221	200	184	27180
	S	2633	1092	546	364	273	218	182	156	136	121	109	99	91	5266
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	2710	5420
	S	-	-

Table B. 66 Angle bracket type 110285, Variant TCM, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	26460	3039	1527	1019	764	611	509	437	382	339	305	278	254	52920
$F_{1,Rk}$ S	9961	8633	7166	4777	3583	2866	2389	2047	1791	1592	1433	1303	1194	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	4950	9900
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	2040	874	556	407	322	266	226	197	174	156	142	130	119
$F_{4,Rk}$ S	-	20233	10116	6744	5058	4047	2606	1911	1509	1246	1062	925	819	735	667	610	562
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	470	679	1224	6119	1080	863	719	617	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	470	679	1224	6119	1065	852	710	609	532	473	426	387	355	327	304	284	266
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	470	679	1224	6119	1076	861	717	615	538	478	430	391	358	331	307	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	470	679	1224	6119	1078	862	718	616	539	479	431	392	359	331	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	470	679	1224	6119	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	470	679	1224	6119	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	470	679	1224	6119	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	470	679	1224	6119	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	470	679	1224	6119	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	470	679	1224	6119	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	470	679	1224	6119	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	470	679	1224	6119	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	470	679	1224	6119	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	25199	25200	13230	8820	6615	5292	4410	3780	3308	2940	2646	2405	2205	2035	1890	1764	1654
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	25199	25200	25200	17640	13230	10584	8820	7560	6615	5880	5292	4811	4410	4071	3780	3528	3308
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	25199	24018	25200	25200	19845	15876	13230	11340	9923	8820	7938	7216	6615	6106	5670	5292	4961
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	25199	24514	25200	25200	25200	21168	17640	15120	13230	11760	10584	9622	8820	8142	7560	7056	6615
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	25199	24754	23549	25200	25200	25200	22050	18900	16538	14700	13230	12027	11025	10177	9450	8820	8269
	S	-	49805	24903	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	25199	24888	24018	25200	25200	25200	22680	19845	17640	15876	14433	13230	12212	11340	10584	9923	
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	25199	24969	24315	23421	25200	25200	25200	23153	20580	18522	16838	15435	14248	13230	12348	11576	
	S	-	69727	34864	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	25199	25023	24514	23731	25200	25200	25200	25200	25200	23520	21168	19244	17640	16283	15120	14112	13230
	S	-	79688	39844	26563	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	25199	25060	24653	24018	24030	25200	25200	25200	25200	25200	23814	21649	19845	18318	17010	15876	14884
	S	-	89649	44825	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	25199	25086	24754	24230	23549	25200	25200	25200	25200	25200	25200	24055	22050	20354	18900	17640	16538
	S	-	99610	49805	33203	24903	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	25199	25106	24830	24390	23812	24405	25200	25200	25200	25200	25200	25200	24255	22389	20790	19404	18191
	S	-	109571	54786	36524	27393	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	25199	25121	24888	24514	24018	23423	25200	25200	25200	25200	25200	25200	25200	24425	22680	21168	19845
	S	-	119533	59766	39844	29883	23907	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 67 Angle bracket type 110285, Variant TCM, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	33096	5040	2542	1697	1274	1019	849	728	637	566	509	463	424	66192
S	9961	8633	7166	4777	3583	2866	2389	2047	1791	1592	1433	1303	1194	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	6500	13000
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	3400	1457	927	679	536	443	377	329	291	261	237	217	199
S	-	20233	10116	6744	5058	4047	2606	1911	1509	1246	1062	925	819	735	667	610	562
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	784	1133	2040	10200	1800	1440	1200	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	784	1133	2040	10200	1758	1407	1172	1005	879	781	703	639	586	541	502	469	439
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	784	1133	2040	10200	1789	1431	1192	1022	894	795	715	650	596	550	511	477	447
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	784	1133	2040	10200	1795	1436	1196	1025	897	797	718	652	598	552	512	478	448
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	784	1133	2040	10200	1797	1437	1198	1027	898	798	718	653	599	553	513	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	784	1133	2040	10200	1798	1438	1198	1027	899	799	719	653	599	553	513	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	784	1133	2040	10200	1798	1439	1199	1027	899	799	719	654	599	553	513	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_b \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	42000	33096	16548	11032	8274	6619	5516	4728	4137	3677	3310	3009	2758	2546	2364	2206	2069
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	42000	42000	33096	22064	16548	13238	11032	9456	8274	7355	6619	6017	5516	5092	4728	4413	4137
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	42000	42000	42000	33096	24822	19858	16548	14184	12411	11032	9929	9026	8274	7638	7092	6619	6206
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	42000	40224	42000	42000	33096	26477	22064	18912	16548	14709	13238	12035	11032	10183	9456	8826	8274
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	42000	40709	42000	42000	41370	33096	27580	23640	20685	18387	16548	15044	13790	12729	11820	11032	10343
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	42000	41090	42000	42000	42000	39715	33096	28368	24822	22064	19858	18052	16548	15275	14184	13238	12411
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	42000	41326	42000	42000	42000	38612	33096	28959	25741	23167	21061	19306	17821	16548	15445	14480	
	S	-	69727	34863	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	42000	41481	40224	42000	42000	42000	37824	33096	29419	26477	24070	22064	20367	18912	17651	16548	
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	42000	41588	40423	42000	42000	42000	42000	37233	33096	29786	27079	24822	22913	21276	19858	18617	
	S	-	89649	44825	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	42000	41665	40709	42000	42000	42000	42000	41370	36773	33096	30087	27580	25458	23640	22064	20685	
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	42000	41723	40924	42000	42000	42000	42000	42000	40451	36406	33096	30338	28004	26004	24270	22754	
	S	-	109571	54786	36523	27392	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	42000	41767	41090	40224	42000	42000	42000	42000	42000	42000	39715	36105	33096	30550	28368	26477	24822
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_b \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	28042	6263	3192	2135	1603	1283	1070	917	802	713	642	584	535	56084
	S	9961	8633	7166	4777	3583	2866	2389	2047	1791	1592	1433	1303	1194	19922
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	5720	11440
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$	T	-	-	-	4284	1836	1168	856	676	558	475	414	367	329	298	273	251
	S	-	20233	10116	6744	5058	4047	2606	1911	1509	1246	1062	925	819	735	667	610
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	988	1428	2570	12852	2268	1814	1512	1296	1134	1008	907	824	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	988	1428	2570	12852	2157	1726	1438	1233	1078	959	863	784	719	663	616	575	539
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	988	1428	2570	12852	2238	1791	1492	1279	1119	995	895	814	746	688	639	597	559
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	988	1428	2570	12852	2254	1803	1503	1288	1127	1002	901	819	751	693	644	601	563
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	988	1428	2570	12852	2260	1808	1507	1291	1130	1004	904	822	753	695	645	602	565
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	988	1428	2570	12852	2263	1810	1508	1293	1131	1005	905	823	754	696	646	603	565
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	988	1428	2570	12852	2264	1811	1509	1294	1132	1006	905	823	754	696	647	603	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	988	1428	2570	12852	2265	1812	1510	1294	1132	1006	906	823	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	988	1428	2570	12852	2266	1812	1510	1294	1133	1007	906	824	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	988	1428	2570	12852	2266	1813	1511	1295	1133	1007	906	824	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	988	1428	2570	12852	2266	1813	1511	1295	1133	1007	906	824	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	988	1428	2570	12852	2267	1813	1511	1295	1133	1007	906	824	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	988	1428	2570	12852	2267	1813	1511	1295	1133	1007	906	824	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	52920	28042	14021	9347	7011	5608	4674	4006	3505	3116	2804	2549	2337	2157	2003	1869	1753
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	52920	52920	28042	18695	14021	11217	9347	8012	7011	6232	5608	5099	4674	4314	4006	3739	3505
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	52920	52920	42063	28042	21032	16825	14021	12018	10516	9347	8413	7648	7011	6471	6009	5608	5258
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	52920	52920	52920	37389	28042	22434	18695	16024	14021	12463	11217	10197	9347	8628	8012	7478	7011
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	52920	49510	52920	46737	35053	28042	23368	20030	17526	15579	14021	12746	11684	10785	10015	9347	8763
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	52920	50481	52920	52920	42063	33650	28042	24036	21032	18695	16825	15296	14021	12942	12018	11217	10516
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	52920	51095	52920	52920	49074	39259	32716	28042	24537	21810	19629	17845	16358	15100	14021	13086	12268
	S	-	69727	34863	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	52920	51506	52920	52920	52920	44867	37389	32048	28042	24926	22434	20394	18695	17257	16024	14956	14021
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	52920	51793	52920	52920	52920	50476	42063	36054	31547	28042	25238	22943	21032	19414	18027	16825	15774
	S	-	89649	44824	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	52920	52002	49510	52920	52920	52920	46737	40060	35053	31158	28042	25493	23368	21571	20030	18695	17526
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	52920	52157	50055	52920	52920	52920	51410	44066	38558	34274	30846	28042	25705	23728	22033	20564	19279
	S	-	109571	54786	36523	27392	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	52920	52277	50481	52920	52920	52920	52920	48072	42063	37389	33650	30591	28042	25885	24036	22434	21032
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 69 Angle bracket type 110285, Variant TCM, Fastener GH Screw 5x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	31710	9996	4937	3313	2491	1995	1663	1426	1248	1109	999	908	832	63420
S	9961	8632	7166	4777	3583	2866	2389	2047	1791	1592	1433	1303	1194	19922
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	6570	13140
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	6664	2856	1817	1332	1052	869	740	644	571	512	464	425	391
S	-	20233	10116	6744	5058	4047	2606	1911	1509	1246	1062	925	819	735	667	610	562
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1537	2221	3998	19992	3528	2822	2352	2016	1764	1568	1411	1282	1176	1085	1008	940	881
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	1537	2221	3998	19992	3223	2578	2148	1841	1611	1432	1289	1172	1074	991	920	859	805
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	1537	2221	3998	19992	3443	2755	2295	1967	1721	1530	1377	1252	1147	1059	983	918	860
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	1537	2221	3998	19992	3489	2791	2326	1994	1744	1551	1395	1269	1163	1073	997	930	872
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	1537	2221	3998	19992	3506	2805	2337	2003	1753	1558	1402	1275	1168	1078	1001	935	876
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	1537	2221	3998	19992	3514	2811	2342	2008	1757	1561	1405	1277	1171	1081	1004	937	878
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	1537	2221	3998	19992	3518	2814	2345	2010	1759	1563	1407	1279	1172	1082	1005	938	879
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	1537	2221	3998	19992	3520	2816	2347	2011	1760	1564	1408	1280	1173	1083	1005	938	880
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	1537	2221	3998	19992	3522	2818	2348	2012	1761	1565	1409	1280	1174	1083	1006	939	880
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	1537	2221	3998	19992	3523	2818	2349	2013	1761	1566	1409	1281	1174	1084	1006	939	880
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	1537	2221	3998	19992	3524	2819	2349	2014	1762	1566	1409	1281	1174	1084	1007	939	881
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	1537	2221	3998	19992	3525	2820	2350	2014	1762	1566	1410	1281	1175	1084	1007	940	881
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	1537	2221	3998	19992	3525	2820	2350	2014	1762	1566	1410	1282	1175	1084	1007	940	881
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	82319	31710	15855	10570	7928	6342	5285	4530	3964	3523	3171	2883	2643	2439	2265	2114	1982
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	82319	63420	31710	21140	15855	12684	10570	9060	7928	7047	6342	5765	5285	4878	4530	4228	3964
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	82319	82320	47565	31710	23783	19026	15855	13590	11891	10570	9513	8648	7928	7318	6795	6342	5946
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	82319	82320	63420	42280	31710	25368	21140	18120	15855	14093	12684	11531	10570	9757	9060	8456	7928
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	82319	82320	79275	52850	39638	31710	26425	22650	19819	17617	15855	14414	13213	12196	11325	10570	9909
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	82319	82320	82320	63420	47565	38052	31710	27180	23783	21140	19026	17296	15855	14635	13590	12684	11891
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	82319	82320	82320	73990	55493	44394	36995	31710	27746	24663	22197	20179	18498	17075	15855	14798	13873
	S	-	69727	34863	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	82319	78300	82320	82320	63420	50736	42280	36240	31710	28187	25368	23062	21140	19514	18120	16912	15855
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	82319	79095	82320	82320	71348	57078	47565	40770	35674	31710	28539	25945	23783	21953	20385	19026	17837
	S	-	89649	44824	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	82319	79678	82320	82320	79275	63420	52850	45300	39638	35233	31710	28827	26425	24392	22650	21140	19819
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	82319	80119	82320	82320	82320	69762	58135	49830	43601	38757	34881	31710	29068	26832	24915	23254	21801
	S	-	109571	54785	36523	27392	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	82319	80458	82320	82320	82320	76104	63420	54360	47565	42280	38052	34593	31710	29271	27180	25368	23783
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 70 Angle bracket type 110285, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1														2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$ T	18900	3020	1525	1018	764	611	509	437	382	339	305	278	254	37800	
S	9961	8633	7166	4777	3583	2866	2389	2047	1791	1592	1433	1303	1194	19922	
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	4200	8400
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	2040	874	556	407	322	266	226	197	174	156	142	130	119
S	-	20233	10116	6744	5058	4047	2606	1911	1509	1246	1062	925	819	735	667	610	562
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	470	679	1224	6119	1080	863	719	617	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	470	679	1224	6119	1052	842	701	601	526	467	421	382	350	323	300	280	263
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	470	679	1224	6119	1073	858	715	613	536	476	429	390	357	330	306	286	268
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	470	679	1224	6119	1076	861	717	615	538	478	430	391	358	331	307	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	470	679	1224	6119	1078	862	718	616	539	479	431	392	359	331	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	470	679	1224	6119	1078	863	719	616	539	479	431	392	359	331	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	470	679	1224	6119	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	470	679	1224	6119	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	470	679	1224	6119	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	470	679	1224	6119	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	470	679	1224	6119	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	470	679	1224	6119	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	470	679	1224	6119	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	18000	17056	9450	6300	4725	3780	3150	2700	2363	2100	1890	1718	1575	1454	1350	1260	1181
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	18000	16251	17056	12600	9450	7560	6300	5400	4725	4200	3780	3436	3150	2908	2700	2520	2363
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	18000	17156	15455	17056	14175	11340	9450	8100	7088	6300	5670	5155	4725	4362	4050	3780	3544
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	18000	17510	16251	16154	17056	15120	12600	10800	9450	8400	7560	6873	6300	5815	5400	5040	4725
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	18000	17682	16820	15628	16464	17056	15750	13500	11813	10500	9450	8591	7875	7269	6750	6300	5906
	S	-	49805	24903	16602	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	18000	17777	17156	16251	15455	16631	17056	16200	14175	12600	11340	10309	9450	8723	8100	7560	7088
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	18000	17835	17368	16665	15810	15884	16731	17056	16538	14700	13230	12027	11025	10177	9450	8820	8269
	S	-	69727	34864	23242	17432	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	18000	17873	17510	16951	16251	15467	16154	16797	17056	16800	15120	13745	12600	11631	10800	10080	9450
	S	-	79688	39844	26563	19922	15938	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	18000	17900	17609	17156	16576	15910	15455	16335	16843	17056	17010	15464	14175	13085	12150	11340	10631
	S	-	89649	44825	29883	22412	17930	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	18000	17918	17682	17307	16820	16251	15628	15763	16464	16877	17056	17059	15750	14538	13500	12600	11813
	S	-	99610	49805	33203	24903	19922	16602	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	18000	17932	17736	17421	17008	16518	15973	15393	15987	16559	16901	17056	17066	15992	14850	13860	12994
	S	-	109571	54786	36524	27393	21914	18262	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	18000	17943	17777	17510	17156	16730	16251	15734	15455	16154	16631	16921	17056	17070	16200	15120	14175
	S	-	119533	59766	39844	29883	23907	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{t,Rk}$ load-carrying capacity of timber | S: $F_{s,Rk}$ load-carrying capacity of steel

Table B. 71 Angle bracket type 110285, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	23640	4985	2535	1695	1273	1019	849	728	637	566	509	463	424	47280
S	9961	8633	7166	4777	3583	2866	2389	2047	1791	1592	1433	1303	1194	19922
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	5950	11900
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	3400	1457	927	679	536	443	377	329	291	261	237	217	199
S	-	20233	10116	6744	5058	4047	2606	1911	1509	1246	1062	925	819	735	667	610	562
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	784	1133	2040	10200	1800	1440	1200	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	784	1133	2040	10200	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	784	1133	2040	10200	1779	1423	1186	1016	889	790	711	647	593	547	508	474	444
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	784	1133	2040	10200	1790	1432	1193	1023	895	795	716	651	596	551	511	477	447
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	784	1133	2040	10200	1794	1435	1196	1025	897	797	717	652	598	552	512	478	448
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	784	1133	2040	10200	1796	1437	1197	1026	898	798	718	653	598	552	513	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	784	1133	2040	10200	1797	1438	1198	1027	898	798	719	653	599	553	513	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	784	1133	2040	10200	1798	1438	1198	1027	899	799	719	653	599	553	513	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	784	1133	2040	10200	1798	1438	1199	1027	899	799	719	654	599	553	513	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	784	1133	2040	10200	1798	1439	1199	1027	899	799	719	654	599	553	513	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_x \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	29999	23640	11820	7880	5910	4728	3940	3377	2955	2627	2364	2149	1970	1818	1689	1576	1478
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	29999	30000	23640	15760	11820	9456	7880	6754	5910	5253	4728	4298	3940	3637	3377	3152	2955
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	29999	27629	30000	23640	17730	14184	11820	10131	8865	7880	7092	6447	5910	5455	5066	4728	4433
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	29999	28595	30000	30000	23640	18912	15760	13509	11820	10507	9456	8596	7880	7274	6754	6304	5910
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	29999	29078	28737	30000	29550	23640	19700	16886	14775	13133	11820	10745	9850	9092	8443	7880	7388
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	29999	29350	27629	30000	30000	28368	23640	20263	17730	15760	14184	12895	11820	10911	10131	9456	8865
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	29999	29518	28203	29884	30000	30000	27580	23640	20685	18387	16548	15044	13790	12729	11820	11032	10343
	S	-	69727	34864	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	29999	29629	28595	27626	30000	30000	30000	27017	23640	21013	18912	17193	15760	14548	13509	12608	11820
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	29999	29706	28873	27629	30000	30000	30000	30000	26595	23640	21276	19342	17730	16366	15197	14184	13298
	S	-	89649	44825	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	29999	29761	29078	28036	28737	30000	30000	30000	29550	26267	23640	21491	19700	18185	16886	15760	14775
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	29999	29802	29231	28350	27239	30000	30000	30000	30000	28893	26004	23640	21670	20003	18574	17336	16253
	S	-	109571	54786	36524	27393	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	29999	29833	29350	28595	27629	29421	30000	30000	30000	30000	28368	25789	23640	21822	20263	18912	17730
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_x \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{1,Rk}$ load-carrying capacity of timber | S: $F_{1,S,Rk}$ load-carrying capacity of steel

Table B. 72 Angle bracket type 110285, Variant TCP, Fastener GH Screw 5x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	20030	6118	3172	2129	1601	1282	1069	917	802	713	642	583	535	40060
S	9961	8633	7166	4777	3583	2866	2389	2047	1791	1592	1433	1303	1194	19922
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	5350	10700
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	4284	1836	1168	856	676	558	475	414	367	329	298	273	251
S	-	20233	10116	6744	5058	4047	2606	1911	1509	1246	1062	925	819	735	667	610	562
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	988	1428	2570	12852	2268	1814	1512	1296	1134	1008	907	824	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	988	1428	2570	12852	2065	1652	1377	1180	1032	918	826	751	688	635	590	550	516
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	988	1428	2570	12852	2211	1769	1474	1263	1105	983	884	804	737	680	631	589	552
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	988	1428	2570	12852	2242	1794	1495	1281	1121	996	897	815	747	690	640	598	560
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	988	1428	2570	12852	2253	1802	1502	1287	1126	1001	901	819	751	693	643	600	563
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	988	1428	2570	12852	2258	1807	1505	1290	1129	1003	903	821	752	695	645	602	564
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	988	1428	2570	12852	2261	1809	1507	1292	1130	1005	904	822	753	695	646	603	565
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	988	1428	2570	12852	2263	1810	1508	1293	1131	1005	905	823	754	696	646	603	565
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	988	1428	2570	12852	2264	1811	1509	1293	1132	1006	905	823	754	696	646	603	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	988	1428	2570	12852	2265	1812	1510	1294	1132	1006	906	823	755	696	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	988	1428	2570	12852	2265	1812	1510	1294	1132	1006	906	823	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	988	1428	2570	12852	2266	1812	1510	1294	1133	1007	906	824	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	988	1428	2570	12852	2266	1813	1510	1295	1133	1007	906	824	755	697	647	604	566
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	37799	20030	10015	6677	5008	4006	3338	2861	2504	2226	2003	1821	1669	1541	1431	1335	1252
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	37799	37800	20030	13353	10015	8012	6677	5723	5008	4451	4006	3642	3338	3082	2861	2671	2504
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	37799	34258	30045	20030	15023	12018	10015	8584	7511	6677	6009	5463	5008	4622	4292	4006	3756
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	37799	34186	37800	26707	20030	16024	13353	11446	10015	8902	8012	7284	6677	6163	5723	5341	5008
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	37799	35364	36551	33383	25038	20030	16692	14307	12519	11128	10015	9105	8346	7704	7154	6677	6259
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	37799	36058	34258	37800	30045	24036	20030	17169	15023	13353	12018	10925	10015	9245	8584	8012	7511
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	37799	36496	33271	37165	35053	28042	23368	20030	17526	15579	14021	12746	11684	10785	10015	9347	8763
	S	-	69727	34864	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	37799	36790	34186	35842	37800	32048	26707	22891	20030	17804	16024	14567	13353	12326	11446	10683	10015
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	37799	36995	34858	34258	37425	36054	30045	25753	22534	20030	18027	16388	15023	13867	12876	12018	11267
	S	-	89649	44825	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	37799	37144	35364	32894	36551	37800	33383	28614	25038	22256	20030	18209	16692	15408	14307	13353	12519
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	37799	37255	35753	33609	35462	37563	36722	31476	27541	24481	22033	20030	18361	16948	15738	14689	13771
	S	-	109571	54786	36524	27392	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	37799	37341	36058	34186	34258	36933	37800	34337	30045	26707	24036	21851	20030	18489	17169	16024	15023
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 73 Angle bracket type 110285, Variant TCP, Fastener GH Screw 5x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	22650	9689	4880	3296	2483	1991	1661	1425	1247	1109	998	907	832	45300
S	9961	8632	7166	4777	3583	2866	2389	2047	1791	1592	1433	1303	1194	19922
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	6210	12420
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	6664	2856	1817	1332	1052	869	740	644	571	512	464	425	391
S	-	20233	10116	6744	5058	4047	2606	1911	1509	1246	1062	925	819	735	667	610	562
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1537	2221	3998	19992	3528	2822	2352	2016	1764	1568	1411	1282	1176	1085	1008	940	881
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
20	T	1537	2221	3998	19992	2994	2395	1996	1711	1497	1330	1197	1088	998	921	855	798	748
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
40	T	1537	2221	3998	19992	3368	2694	2245	1924	1684	1497	1347	1224	1122	1036	962	898	842
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
60	T	1537	2221	3998	19992	3454	2763	2302	1973	1727	1535	1381	1256	1151	1062	986	921	863
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
80	T	1537	2221	3998	19992	3485	2788	2323	1991	1742	1549	1394	1267	1161	1072	995	929	871
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
100	T	1537	2221	3998	19992	3500	2800	2333	2000	1750	1555	1400	1273	1166	1077	1000	933	875
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
120	T	1537	2221	3998	19992	3509	2807	2339	2005	1754	1559	1403	1276	1169	1079	1002	935	877
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
140	T	1537	2221	3998	19992	3514	2811	2342	2008	1757	1561	1405	1277	1171	1081	1004	937	878
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
160	T	1537	2221	3998	19992	3517	2813	2344	2009	1758	1563	1406	1279	1172	1082	1004	937	879
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
180	T	1537	2221	3998	19992	3519	2815	2346	2011	1759	1564	1407	1279	1173	1082	1005	938	879
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
200	T	1537	2221	3998	19992	3521	2816	2347	2012	1760	1564	1408	1280	1173	1083	1006	938	880
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
220	T	1537	2221	3998	19992	3522	2817	2348	2012	1761	1565	1408	1280	1174	1083	1006	939	880
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
240	T	1537	2221	3998	19992	3523	2818	2348	2013	1761	1565	1409	1281	1174	1084	1006	939	880
	S	2205	3185	5733	6744	5058	4047	3372	2890	2529	2248	2023	1839	1686	1556	1445	1349	1265
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	58800	22650	11325	7550	5663	4530	3775	3236	2831	2517	2265	2059	1888	1742	1618	1510	1416
	S	-	9961	4980	3320	2490	1992	1660	1423	1245	1106	996	905	830	766	711	664	622
40	T	58800	45300	22650	15100	11325	9060	7550	6471	5663	5033	4530	4118	3775	3485	3236	3020	2831
	S	-	19922	9961	6640	4980	3984	3320	2846	2490	2213	1992	1811	1660	1532	1423	1328	1245
60	T	58800	58800	33975	22650	16988	13590	11325	9707	8494	7550	6795	6177	5663	5227	4854	4530	4247
	S	-	29883	14941	9961	7470	5976	4980	4269	3735	3320	2988	2716	2490	2298	2134	1992	1867
80	T	58800	58800	45300	30200	22650	18120	15100	12943	11325	10067	9060	8236	7550	6969	6471	6040	5663
	S	-	39844	19922	13281	9961	7968	6640	5692	4980	4427	3984	3622	3320	3064	2846	2656	2490
100	T	58800	54679	56625	37750	28313	22650	18875	16179	14156	12583	11325	10295	9438	8712	8089	7550	7078
	S	-	49805	24902	16601	12451	9961	8300	7115	6225	5533	4980	4527	4150	3831	3557	3320	3112
120	T	58800	53965	58800	45300	33975	27180	22650	19414	16988	15100	13590	12355	11325	10454	9707	9060	8494
	S	-	59766	29883	19922	14941	11953	9961	8538	7470	6640	5976	5433	4980	4597	4269	3984	3735
140	T	58800	55130	58800	52850	39638	31710	26425	22650	19819	17617	15855	14414	13213	12196	11325	10570	9909
	S	-	69727	34863	23242	17431	13945	11621	9961	8715	7747	6972	6338	5810	5363	4980	4648	4357
160	T	58800	55928	58800	58800	45300	36240	30200	25886	22650	20133	18120	16473	15100	13938	12943	12080	11325
	S	-	79688	39844	26562	19922	15937	13281	11384	9961	8854	7968	7244	6640	6129	5692	5312	4980
180	T	58800	56496	57873	58800	50963	40770	33975	29121	25481	22650	20385	18532	16988	15681	14561	13590	12741
	S	-	89649	44824	29883	22412	17929	14941	12807	11206	9961	8964	8149	7470	6896	6403	5976	5603
200	T	58800	56913	54679	58800	56625	45300	37750	32357	28313	25167	22650	20591	18875	17423	16179	15100	14156
	S	-	99610	49805	33203	24902	19922	16601	14230	12451	11067	9961	9055	8300	7662	7115	6640	6225
220	T	58800	57227	53174	58800	58800	49830	41525	35593	31144	27683	24915	22650	20763	19165	17796	16610	15572
	S	-	109571	54786	36523	27392	21914	18261	15653	13696	12174	10957	9961	9130	8428	7826	7304	6848
240	T	58800	57470	53965	58800	58800	54300	38829	33975	30200	27180	24709	22650	20908	19414	18120	16988	
	S	-	119533	59766	39844	29883	23906	19922	17076	14941	13281	11953	10866	9961	9194	8538	7968	7470
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 74 Angle bracket type 110285L, Variant TCM, Fastener GH Nail 4x40, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	26460	3039	1527	1019	764	611	509	437	382	339	305	278	254	52920
	S	3584	3107	2741	2453	2219	2026	1864	1726	1607	1503	1412	1303	1194	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	4080	8160
	S	-	-

Table B. 75 Angle bracket type 110285L, Variant TCM, Fastener GH Nail 4x60, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	33096	5100	2542	1697	1274	1019	849	728	637	566	509	463	424	66192
	S	3584	3106	2741	2453	2219	2026	1864	1726	1607	1503	1412	1303	1194	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	5880	11760
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	28042	6426	3213	2135	1603	1283	1070	917	802	713	642	584	535	56084
	S	3584	3106	2741	2453	2219	2026	1864	1726	1607	1503	1412	1303	1194	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	5430	10860
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	31710	9996	4998	3332	2499	1995	1663	1426	1248	1109	999	908	832	63420
	S	3584	3106	2741	2452	2218	2026	1864	1726	1607	1503	1412	1303	1194	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	6380	12760
	S	-	-

Table B. 78 Angle bracket type 110285L, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	18900	3020	1525	1018	764	611	509	437	382	339	305	278	254	37800
	S	3584	3107	2741	2453	2219	2026	1864	1726	1607	1503	1412	1303	1194	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	3080	6160
	S	-	-

Table B. 79 Angle bracket type 110285L, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	23640	5100	2535	1695	1273	1019	849	728	637	566	509	463	424	47280
	S	3584	3106	2741	2453	2219	2026	1864	1726	1607	1503	1412	1303	1194	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	4670	9340
	S	-	-

Table B. 80 Angle bracket type 110285L, Variant TCP, Fastener GH Screw 5x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	20030	6426	3213	2129	1601	1282	1069	917	802	713	642	583	535	40060
	S	3584	3106	2741	2453	2219	2026	1864	1726	1607	1503	1412	1303	1194	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	4840	9680
	S	-	-

Table B. 81 Angle bracket type 110285L, Variant TCP, Fastener GH Screw 5x60, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	22650	9996	4998	3332	2499	1991	1661	1425	1247	1109	998	907	832	45300
	S	3584	3106	2741	2452	2218	2026	1864	1726	1607	1503	1412	1303	1194	7168
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4
Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets															
angle bracket		1	2												
$F_{2/3,Rk}$	T	5920	11840												
	S	-	-												

Table B. 82 Angle bracket type 1102853, Variant TCM, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	26460	3039	1527	1019	764	611	509	437	382	339	305	278	254	52920
S	7317	6342	5264	3510	2632	2106	1755	1504	1316	1170	1053	957	877	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	4950	9900
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	2040	874	556	407	322	266	226	197	174	156	142	130	119
S	-	14864	7432	4954	3716	2973	1914	1404	1108	916	780	679	602	540	490	448	413
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	470	679	1224	6120	1080	863	719	617	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	470	679	1224	6120	1065	852	710	609	532	473	426	387	355	327	304	284	266
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	470	679	1224	6120	1076	861	717	615	538	478	430	391	358	331	307	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	470	679	1224	6120	1078	862	718	616	539	479	431	392	359	331	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	470	679	1224	6120	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	470	679	1224	6120	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	470	679	1224	6120	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	470	679	1224	6120	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	470	679	1224	6120	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	470	679	1224	6120	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	470	679	1224	6120	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	470	679	1224	6120	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	470	679	1224	6120	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	25199	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	25199	25200	13230	8820	6615	5292	4410	3780	3308	2940	2646	2405	2205	2035	1890	1764	1654
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	25199	25200	25200	17640	13230	10584	8820	7560	6615	5880	5292	4811	4410	4071	3780	3528	3308
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	25199	25200	25200	25200	19845	15876	13230	11340	9923	8820	7938	7216	6615	6106	5670	5292	4961
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	25199	24514	25200	25200	25200	21168	17640	15120	13230	11760	10584	9622	8820	8142	7560	7056	6615
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	25199	24754	25200	25200	25200	22050	18900	16538	14700	13230	12027	11025	10177	9450	8820	8269	
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	25199	24888	25200	25200	25200	25200	22680	19845	17640	15876	14433	13230	12212	11340	10584	9923	
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	25199	24969	24315	25200	25200	25200	25200	23153	20580	18522	16838	15435	14248	13230	12348	11576	
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	25199	25023	24514	25200	25200	25200	25200	25200	23520	21168	19244	17640	16283	15120	14112	13230	
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	25199	25060	24653	25200	25200	25200	25200	25200	25200	23814	21649	19845	18318	17010	15876	14884	
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	25199	25086	24754	24230	25200	25200	25200	25200	25200	25200	25200	24055	22050	20354	18900	17640	16538
	S	-	73179	36589	24393	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	25199	25106	24830	24390	25200	25200	25200	25200	25200	25200	25200	25200	24255	22389	20790	19404	18191
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	25199	25121	24888	24514	25200	25200	25200	25200	25200	25200	25200	25200	25200	24425	22680	21168	19845
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 83 Angle bracket type 1102853, Variant TCM, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	33096	5040	2542	1697	1274	1019	849	728	637	566	509	463	424	66192
	S	7317	6342	5264	3510	2632	2106	1755	1504	1316	1170	1053	957	877	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	6500	13000
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$	T	-	-	-	3400	1457	927	679	536	443	377	329	291	261	237	217	199
	S	-	14864	7432	4954	3716	2973	1914	1404	1108	916	780	679	602	540	490	448
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	784	1133	2040	10200	1800	1440	1200	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	784	1133	2040	10200	1758	1407	1172	1005	879	781	703	639	586	541	502	469	439
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	784	1133	2040	10200	1789	1431	1192	1022	894	795	715	650	596	550	511	477	447
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	784	1133	2040	10200	1795	1436	1196	1025	897	797	718	652	598	552	512	478	448
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	784	1133	2040	10200	1797	1437	1198	1027	898	798	718	653	599	553	513	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	784	1133	2040	10200	1798	1438	1198	1027	899	799	719	653	599	553	513	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	784	1133	2040	10200	1798	1439	1199	1027	899	799	719	654	599	553	513	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	42000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	42000	33096	16548	11032	8274	6619	5516	4728	4137	3677	3310	3009	2758	2546	2364	2206	2069
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	42000	42000	33096	22064	16548	13238	11032	9456	8274	7355	6619	6017	5516	5092	4728	4413	4137
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	42000	42000	42000	33096	24822	19858	16548	14184	12411	11032	9929	9026	8274	7638	7092	6619	6206
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	42000	42000	42000	42000	33096	26477	22064	18912	16548	14709	13238	12035	11032	10183	9456	8826	8274
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	42000	42000	42000	42000	41370	33096	27580	23640	20685	18387	16548	15044	13790	12729	11820	11032	10343
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	42000	41090	42000	42000	42000	39715	33096	28368	24822	22064	19858	18052	16548	15275	14184	13238	12411
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	42000	41326	42000	42000	42000	38612	33096	28959	25741	23167	21061	19306	17821	16548	15445	14480	
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	42000	41481	42000	42000	42000	42000	42000	37824	33096	29419	26477	24070	22064	20367	18912	17651	16548
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	42000	41588	42000	42000	42000	42000	42000	37233	33096	29786	27079	24822	22913	21276	19858	18617	
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	42000	41665	42000	42000	42000	42000	42000	41370	36773	33096	30087	27580	25458	23640	22064	20685	
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	42000	41723	41613	42000	42000	42000	42000	42000	40451	36406	33096	30338	28004	26004	24270	22754	
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	42000	41767	41090	42000	42000	42000	42000	42000	42000	42000	39715	36105	33096	30550	28368	26477	24822
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	28042	6263	3192	2135	1603	1283	1070	917	802	713	642	584	535	56084
	S	7317	6342	5264	3510	2632	2106	1755	1504	1316	1170	1053	957	877	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	5720	11440
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$	T	-	-	-	4284	1836	1168	856	676	558	475	414	367	329	298	273	251
	S	-	14864	7432	4954	3716	2973	1914	1404	1108	916	780	679	602	540	490	448
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	988	1428	2570	12852	2268	1814	1512	1296	1134	1008	907	824	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	988	1428	2570	12852	2157	1726	1438	1233	1078	959	863	784	719	663	616	575	539
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	988	1428	2570	12852	2238	1791	1492	1279	1119	995	895	814	746	688	639	597	559
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	988	1428	2570	12852	2254	1803	1503	1288	1127	1002	901	819	751	693	644	601	563
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	988	1428	2570	12852	2260	1808	1507	1291	1130	1004	904	822	753	695	645	602	565
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	988	1428	2570	12852	2263	1810	1508	1293	1131	1005	905	823	754	696	646	603	565
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	988	1428	2570	12852	2264	1811	1509	1294	1132	1006	905	823	754	696	647	603	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	988	1428	2570	12852	2265	1812	1510	1294	1132	1006	906	823	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	988	1428	2570	12852	2266	1812	1510	1294	1133	1007	906	824	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	988	1428	2570	12852	2266	1813	1511	1295	1133	1007	906	824	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	988	1428	2570	12852	2266	1813	1511	1295	1133	1007	906	824	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	988	1428	2570	12852	2267	1813	1511	1295	1133	1007	906	824	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	988	1428	2570	12852	2267	1813	1511	1295	1133	1007	906	824	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	52920	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	T	52920	28042	14021	9347	7011	5608	4674	4006	3505	3116	2804	2549	2337	2157	2003	1869	1753
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	52920	52920	28042	18695	14021	11217	9347	8012	7011	6232	5608	5099	4674	4314	4006	3739	3505
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	52920	52920	42063	28042	21032	16825	14021	12018	10516	9347	8413	7648	7011	6471	6009	5608	5258
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	52920	52920	52920	37389	28042	22434	18695	16024	14021	12463	11217	10197	9347	8628	8012	7478	7011
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	52920	52920	52920	46737	35053	28042	23368	20030	17526	15579	14021	12746	11684	10785	10015	9347	8763
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	52920	52920	52920	52920	42063	33650	28042	24036	21032	18695	16825	15296	14021	12942	12018	11217	10516
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	52920	51095	52920	52920	49074	39259	32716	28042	24537	21810	19629	17845	16358	15100	14021	13086	12268
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	52920	51506	52920	52920	52920	44867	37389	32048	28042	24926	22434	20394	18695	17257	16024	14956	14021
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	52920	51793	52920	52920	52920	50476	42063	36054	31547	28042	25238	22943	21032	19414	18027	16825	15774
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	52920	52002	52920	52920	52920	52920	46737	40060	35053	31158	28042	25493	23368	21571	20030	18695	17526
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	52920	52157	52920	52920	52920	52920	51410	44066	38558	34274	30846	28042	25705	23728	22033	20564	19279
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	52920	52277	52920	52920	52920	52920	52920	48072	42063	37389	33650	30591	28042	25885	24036	22434	21032
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 85 Angle bracket type 1102853, Variant TCM, Fastener GH Screw 5x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	31710	9996	4937	3313	2491	1995	1663	1426	1248	1109	999	908	832	63420
S	7317	6342	5264	3510	2632	2106	1755	1504	1316	1170	1053	957	877	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	6570	13140
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	6664	2856	1817	1332	1052	869	740	644	571	512	464	425	391
S	-	14864	7432	4954	3716	2973	1914	1404	1108	916	780	679	602	540	490	448	413
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1537	2221	3998	19992	3528	2822	2352	2016	1764	1568	1411	1282	1176	1085	1008	940	881
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	1537	2221	3998	19992	3223	2578	2148	1841	1611	1432	1289	1172	1074	991	920	859	805
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	1537	2221	3998	19992	3443	2755	2295	1967	1721	1530	1377	1252	1147	1059	983	918	860
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	1537	2221	3998	19992	3489	2791	2326	1994	1744	1551	1395	1269	1163	1073	997	930	872
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	1537	2221	3998	19992	3506	2805	2337	2003	1753	1558	1402	1275	1168	1078	1001	935	876
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	1537	2221	3998	19992	3514	2811	2342	2008	1757	1561	1405	1277	1171	1081	1004	937	878
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	1537	2221	3998	19992	3518	2814	2345	2010	1759	1563	1407	1279	1172	1082	1005	938	879
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	1537	2221	3998	19992	3520	2816	2347	2011	1760	1564	1408	1280	1173	1083	1005	938	880
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	1537	2221	3998	19992	3522	2818	2348	2012	1761	1565	1409	1280	1174	1083	1006	939	880
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	1537	2221	3998	19992	3523	2818	2349	2013	1761	1566	1409	1281	1174	1084	1006	939	880
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	1537	2221	3998	19992	3524	2819	2349	2014	1762	1566	1409	1281	1174	1084	1007	939	881
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	1537	2221	3998	19992	3525	2820	2350	2014	1762	1566	1410	1281	1175	1084	1007	940	881
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	1537	2221	3998	19992	3525	2820	2350	2014	1762	1566	1410	1282	1175	1084	1007	940	881
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	82319	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	82319	31710	15855	10570	7928	6342	5285	4530	3964	3523	3171	2883	2643	2439	2265	2114	1982
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	82319	63420	31710	21140	15855	12684	10570	9060	7928	7047	6342	5765	5285	4878	4530	4228	3964
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	82319	82320	47565	31710	23783	19026	15855	13590	11891	10570	9513	8648	7928	7318	6795	6342	5946
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	82319	82320	63420	42280	31710	25368	21140	18120	15855	14093	12684	11531	10570	9757	9060	8456	7928
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	82319	82320	79275	52850	39638	31710	26425	22650	19819	17617	15855	14414	13213	12196	11325	10570	9909
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	82319	82320	82320	63420	47565	38052	31710	27180	23783	21140	19026	17296	15855	14635	13590	12684	11891
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	82319	82320	82320	73990	55493	44394	36995	31710	27746	24663	22197	20179	18498	17075	15855	14798	13873
	S	-	51224	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	82319	82320	82320	82320	63420	50736	42280	36240	31710	28187	25368	23062	21140	19514	18120	16912	15855
	S	-	58542	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	82319	82320	82320	82320	71348	57078	47565	40770	35674	31710	28539	25945	23783	21953	20385	19026	17837
	S	-	65860	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	82319	82320	82320	82320	79275	63420	52850	45300	39638	35233	31710	28827	26425	24392	22650	21140	19819
	S	-	73178	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	82319	80119	82320	82320	82320	69762	58135	49830	43601	38757	34881	31710	29068	26832	24915	23254	21801
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	82319	80458	82320	82320	82320	76104	63420	54360	47565	42280	38052	34593	31710	29271	27180	25368	23783
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 86 Angle bracket type 1102853, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	18900	3020	1525	1018	764	611	509	437	382	339	305	278	254	37800
$F_{1,Rk}$ S	7317	6342	5264	3510	2632	2106	1755	1504	1316	1170	1053	957	877	14634
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	4200	8400
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	2040	874	556	407	322	266	226	197	174	156	142	130	119
$F_{4,Rk}$ S	-	14864	7432	4954	3716	2973	1914	1404	1108	916	780	679	602	540	490	448	413
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	470	679	1224	6120	1080	863	719	617	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	470	679	1224	6120	1052	842	701	601	526	467	421	382	350	323	300	280	263
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	470	679	1224	6120	1073	858	715	613	536	476	429	390	357	330	306	286	268
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	470	679	1224	6120	1076	861	717	615	538	478	430	391	358	331	307	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	470	679	1224	6120	1078	862	718	616	539	479	431	392	359	331	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	470	679	1224	6120	1078	863	719	616	539	479	431	392	359	331	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	470	679	1224	6120	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	470	679	1224	6120	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	470	679	1224	6120	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	470	679	1224	6120	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	470	679	1224	6120	1079	863	719	616	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	470	679	1224	6120	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	470	679	1224	6120	1079	863	719	617	539	479	431	392	359	332	308	287	269
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	18000	18000	9450	6300	4725	3780	3150	2700	2363	2100	1890	1718	1575	1454	1350	1260	1181
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	18000	18000	18000	12600	9450	7560	6300	5400	4725	4200	3780	3436	3150	2908	2700	2520	2363
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	18000	17156	18000	18000	14175	11340	9450	8100	7088	6300	5670	5155	4725	4362	4050	3780	3544
	S	-	21954	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	18000	17510	18000	18000	15120	12600	10800	9450	8400	7560	6873	6300	5815	5400	5040	4725	
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	18000	17682	16820	18000	18000	15750	13500	11813	10500	9450	8591	7875	7269	6750	6300	5906	
	S	-	36589	18295	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	18000	17777	17156	18000	18000	18000	16200	14175	12600	11340	10309	9450	8723	8100	7560	7088	
	S	-	43907	21954	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	18000	17835	17368	16665	18000	18000	18000	16538	14700	13230	12027	11025	10177	9450	8820	8269	
	S	-	51225	25612	17075	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	18000	17873	17510	16951	18000	18000	18000	18000	16800	15120	13745	12600	11631	10800	10080	9450	
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	18000	17900	17609	17156	16688	18000	18000	18000	18000	18000	17010	15464	14175	13085	12150	11340	10631
	S	-	65861	32930	21954	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	18000	17918	17682	17307	16820	18000	18000	18000	18000	18000	18000	17182	15750	14538	13500	12600	11813
	S	-	73179	36589	24393	18295	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	18000	17932	17736	17421	17008	16949	18000	18000	18000	18000	18000	18000	17325	15992	14850	13860	12994
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	18000	17943	17777	17510	17156	16730	18000	18000	18000	18000	18000	18000	18000	17446	16200	15120	14175
	S	-	87814	43907	29271	21954	17563	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 87 Angle bracket type 1102853, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	23640	4985	2535	1695	1273	1019	849	728	637	566	509	463	424	47280
S	7317	6342	5264	3510	2632	2106	1755	1504	1316	1170	1053	957	877	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	5950	11900
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	3400	1457	927	679	536	443	377	329	291	261	237	217	199
S	-	14864	7432	4954	3716	2973	1914	1404	1108	916	780	679	602	540	490	448	413
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	784	1133	2040	10200	1800	1440	1200	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	784	1133	2040	10200	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	784	1133	2040	10200	1779	1423	1186	1016	889	790	711	647	593	547	508	474	444
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	784	1133	2040	10200	1790	1432	1193	1023	895	795	716	651	596	551	511	477	447
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	784	1133	2040	10200	1794	1435	1196	1025	897	797	717	652	598	552	512	478	448
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	784	1133	2040	10200	1796	1437	1197	1026	898	798	718	653	598	552	513	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	784	1133	2040	10200	1797	1438	1198	1027	898	798	719	653	599	553	513	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	784	1133	2040	10200	1798	1438	1198	1027	899	799	719	653	599	553	513	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	784	1133	2040	10200	1798	1438	1199	1027	899	799	719	654	599	553	513	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	784	1133	2040	10200	1798	1439	1199	1027	899	799	719	654	599	553	513	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	784	1133	2040	10200	1799	1439	1199	1028	899	799	719	654	599	553	514	479	449
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320		
0	T	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999		
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
20	T	29999	23640	11820	7880	5910	4728	3940	3377	2955	2627	2364	2149	1970	1818	1689	1576	1478	
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457	
40	T	29999	30000	23640	15760	11820	9456	7880	6754	5910	5253	4728	4298	3940	3637	3377	3152	2955	
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914	
60	T	29999	30000	30000	23640	17730	14184	11820	10131	8865	7880	7092	6447	5910	5455	5066	4728	4433	
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372	
80	T	29999	28595	30000	30000	23640	18912	15760	13509	11820	10507	9456	8596	7880	7274	6754	6304	5910	
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829	
100	T	29999	29078	30000	30000	29550	23640	19700	16886	14775	13133	11820	10745	9850	9092	8443	7880	7388	
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286	
120	T	29999	29350	30000	30000	30000	28368	23640	20263	17730	15760	14184	12895	11820	10911	10131	9456	8865	
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744	
140	T	29999	29518	30000	30000	30000	27580	23640	20685	18387	16548	15044	13790	12729	11820	11032	10343		
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201	
160	T	29999	29629	28595	30000	30000	30000	30000	27017	23640	21013	18912	17193	15760	14548	13509	12608	11820	
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658	
180	T	29999	29706	28873	30000	30000	30000	30000	30000	26595	23640	21276	19342	17730	16366	15197	14184	13298	
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116	
200	T	29999	29761	29078	30000	30000	30000	30000	30000	29550	26267	23640	21491	19700	18185	16886	15760	14775	
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573	
220	T	29999	29802	29231	29954	30000	30000	30000	30000	30000	28893	26004	23640	21670	20003	18574	17336	16253	
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031	
240	T	29999	29833	29350	28595	30000	30000	30000	30000	30000	30000	30000	28368	25789	23640	21822	20263	18912	17730
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488	
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0		

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{t,Rk}$ load-carrying capacity of timber | S: $F_{s,Rk}$ load-carrying capacity of steel

Table B. 88 Angle bracket type 1102853, Variant TCP, Fastener GH Screw 5x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	20030	6118	3172	2129	1601	1282	1069	917	802	713	642	583	535	40060
S	7317	6342	5264	3510	2632	2106	1755	1504	1316	1170	1053	957	877	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	5350	10700
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	4284	1836	1168	856	676	558	475	414	367	329	298	273	251
S	-	14864	7432	4954	3716	2973	1914	1404	1108	916	780	679	602	540	490	448	413
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	988	1428	2570	12852	2268	1814	1512	1296	1134	1008	907	824	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	988	1428	2570	12852	2065	1652	1377	1180	1032	918	826	751	688	635	590	550	516
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	988	1428	2570	12852	2211	1769	1474	1263	1105	983	884	804	737	680	631	589	552
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	988	1428	2570	12852	2242	1794	1495	1281	1121	996	897	815	747	690	640	598	560
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	988	1428	2570	12852	2253	1802	1502	1287	1126	1001	901	819	751	693	643	600	563
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	988	1428	2570	12852	2258	1807	1505	1290	1129	1003	903	821	752	695	645	602	564
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	988	1428	2570	12852	2261	1809	1507	1292	1130	1005	904	822	753	695	646	603	565
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	988	1428	2570	12852	2263	1810	1508	1293	1131	1005	905	823	754	696	646	603	565
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	988	1428	2570	12852	2264	1811	1509	1293	1132	1006	905	823	754	696	646	603	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	988	1428	2570	12852	2265	1812	1510	1294	1132	1006	906	823	755	696	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	988	1428	2570	12852	2265	1812	1510	1294	1132	1006	906	823	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	988	1428	2570	12852	2266	1812	1510	1294	1133	1007	906	824	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	988	1428	2570	12852	2266	1813	1510	1295	1133	1007	906	824	755	697	647	604	566
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	37799	20030	10015	6677	5008	4006	3338	2861	2504	2226	2003	1821	1669	1541	1431	1335	1252
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	37799	37800	20030	13353	10015	8012	6677	5723	5008	4451	4006	3642	3338	3082	2861	2671	2504
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	37799	37800	30045	20030	15023	12018	10015	8584	7511	6677	6009	5463	5008	4622	4292	4006	3756
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	37799	37800	37800	26707	20030	16024	13353	11446	10015	8902	8012	7284	6677	6163	5723	5341	5008
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	37799	35364	37800	33383	25038	20030	16692	14307	12519	11128	10015	9105	8346	7704	7154	6677	6259
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	37799	36058	37800	37800	30045	24036	20030	17169	15023	13353	12018	10925	10015	9245	8584	8012	7511
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	37799	36496	37800	37800	35053	28042	23368	20030	17526	15579	14021	12746	11684	10785	10015	9347	8763
	S	-	51225	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	37799	36790	37800	37800	37800	32048	26707	22891	20030	17804	16024	14567	13353	12326	11446	10683	10015
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	37799	36995	36900	37800	37800	36054	30045	25753	22534	20030	18027	16388	15023	13867	12876	12018	11267
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	37799	37144	35364	37800	37800	37800	33383	28614	25038	22256	20030	18209	16692	15408	14307	13353	12519
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	37799	37255	35753	37800	37800	37800	36722	31476	27541	24481	22033	20030	18361	16948	15738	14689	13771
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	37799	37341	36058	37800	37800	37800	37800	34337	30045	26707	24036	21851	20030	18489	17169	16024	15023
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 89 Angle bracket type 1102853, Variant TCP, Fastener GH Screw 5x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	22650	9996	4880	3296	2483	1991	1661	1425	1247	1109	998	907	832	45300
$F_{1,Rk}$ S	7317	6342	5264	3510	2632	2106	1755	1504	1316	1170	1053	957	877	14634
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	6210	12420
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	6664	2856	1817	1332	1052	869	740	644	571	512	464	425	391
$F_{4,Rk}$ S	-	14864	7432	4954	3716	2973	1914	1404	1108	916	780	679	602	540	490	448	413
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1537	2221	3998	19992	3528	2822	2352	2016	1764	1568	1411	1282	1176	1085	1008	940	881
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
20	T	1537	2221	3998	19992	2994	2395	1996	1711	1497	1330	1197	1088	998	921	855	798	748
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
40	T	1537	2221	3998	19992	3368	2694	2245	1924	1684	1497	1347	1224	1122	1036	962	898	842
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
60	T	1537	2221	3998	19992	3454	2763	2302	1973	1727	1535	1381	1256	1151	1062	986	921	863
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
80	T	1537	2221	3998	19992	3485	2788	2323	1991	1742	1549	1394	1267	1161	1072	995	929	871
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
100	T	1537	2221	3998	19992	3500	2800	2333	2000	1750	1555	1400	1273	1166	1077	1000	933	875
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
120	T	1537	2221	3998	19992	3509	2807	2339	2005	1754	1559	1403	1276	1169	1079	1002	935	877
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
140	T	1537	2221	3998	19992	3514	2811	2342	2008	1757	1561	1405	1277	1171	1081	1004	937	878
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
160	T	1537	2221	3998	19992	3517	2813	2344	2009	1758	1563	1406	1279	1172	1082	1004	937	879
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
180	T	1537	2221	3998	19992	3519	2815	2346	2011	1759	1564	1407	1279	1173	1082	1005	938	879
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
200	T	1537	2221	3998	19992	3521	2816	2347	2012	1760	1564	1408	1280	1173	1083	1006	938	880
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
220	T	1537	2221	3998	19992	3522	2817	2348	2012	1761	1565	1408	1280	1174	1083	1006	939	880
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
240	T	1537	2221	3998	19992	3523	2818	2348	2013	1761	1565	1409	1281	1174	1084	1006	939	880
	S	1620	2340	4212	4954	3716	2973	2477	2123	1858	1652	1486	1351	1239	1143	1062	991	929
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	58800	22650	11325	7550	5663	4530	3775	3236	2831	2517	2265	2059	1888	1742	1618	1510	1416
	S	-	7317	3658	2439	1829	1463	1219	1045	914	813	731	665	609	562	522	487	457
40	T	58800	45300	22650	15100	11325	9060	7550	6471	5663	5033	4530	4118	3775	3485	3236	3020	2831
	S	-	14635	7317	4878	3658	2927	2439	2090	1829	1626	1463	1330	1219	1125	1045	975	914
60	T	58800	58800	33975	22650	16988	13590	11325	9707	8494	7550	6795	6177	5663	5227	4854	4530	4247
	S	-	21953	10976	7317	5488	4390	3658	3136	2744	2439	2195	1995	1829	1688	1568	1463	1372
80	T	58800	58800	45300	30200	22650	18120	15100	12943	11325	10067	9060	8236	7550	6969	6471	6040	5663
	S	-	29271	14635	9757	7317	5854	4878	4181	3658	3252	2927	2661	2439	2251	2090	1951	1829
100	T	58800	58800	56625	37750	28313	22650	18875	16179	14156	12583	11325	10295	9438	8712	8089	7550	7078
	S	-	36589	18294	12196	9147	7317	6098	5227	4573	4065	3658	3326	3049	2814	2613	2439	2286
120	T	58800	58800	58800	45300	33975	27180	22650	19414	16988	15100	13590	12355	11325	10454	9707	9060	8494
	S	-	43907	21953	14635	10976	8781	7317	6272	5488	4878	4390	3991	3658	3377	3136	2927	2744
140	T	58800	58800	58800	52850	39638	31710	26425	22650	19819	17617	15855	14414	13213	12196	11325	10570	9909
	S	-	51224	25612	17074	12806	10244	8537	7317	6403	5691	5122	4656	4268	3940	3658	3414	3201
160	T	58800	55928	58800	58800	45300	36240	30200	25886	22650	20133	18120	16473	15100	13938	12943	12080	11325
	S	-	58543	29271	19514	14635	11708	9757	8363	7317	6504	5854	5322	4878	4503	4181	3902	3658
180	T	58800	56496	58800	58800	50963	40770	33975	29121	25481	22650	20385	18532	16988	15681	14561	13590	12741
	S	-	65861	32930	21953	16465	13172	10976	9408	8232	7317	6586	5987	5488	5066	4704	4390	4116
200	T	58800	56913	58800	58800	56625	45300	37750	32357	28313	25167	22650	20591	18875	17423	16179	15100	14156
	S	-	73179	36589	24392	18294	14635	12196	10454	9147	8130	7317	6652	6098	5629	5227	4878	4573
220	T	58800	57227	58800	58800	58800	49830	41525	35593	31144	27683	24915	22650	20763	19165	17796	16610	15572
	S	-	80496	40248	26832	20124	16099	13416	11499	10062	8944	8049	7317	6708	6192	5749	5366	5031
240	T	58800	57470	58800	58800	58800	54360	45300	38829	33975	30200	27180	24709	22650	20908	19414	18120	16988
	S	-	87814	43907	29271	21953	17562	14635	12544	10976	9757	8781	7983	7317	6754	6272	5854	5488
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	26460	3060	1527	1019	764	611	509	437	382	339	305	278	254	52920
	S	2633	2282	2014	1802	1630	1488	1369	1268	1180	1104	1037	957	877	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	4080	8160
	S	-	-

Table B. 91 Angle bracket type 1102853L, Variant TCM, Fastener GH Nail 4x60, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	33096	5100	2550	1697	1274	1019	849	728	637	566	509	463	424	66192
	S	2633	2282	2013	1802	1630	1488	1369	1268	1180	1104	1037	957	877	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4
Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets															
angle bracket		1	2												
$F_{2/3,Rk}$	T	5880	11760												
	S	-	-												

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	28042	6426	3213	2142	1603	1283	1070	917	802	713	642	584	535	56084
	S	2633	2282	2013	1801	1630	1488	1369	1268	1180	1104	1037	957	877	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	5430	10860
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	31710	9996	4998	3332	2499	1999	1666	1428	1250	1111	999	908	832	63420
	S	2633	2282	2013	1801	1630	1488	1369	1267	1180	1104	1037	957	877	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	6380	12760
	S	-	-

Table B. 94 Angle bracket type 1102853L, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	18900	3060	1525	1018	764	611	509	437	382	339	305	278	254	37800
	S	2633	2282	2014	1802	1630	1488	1369	1268	1180	1104	1037	957	877	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	3080	6160
	S	-	-

Table B. 95 Angle bracket type 1102853L, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets															
angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	23640	5100	2550	1695	1273	1019	849	728	637	566	509	463	424	47280
	S	2633	2282	2013	1802	1630	1488	1369	1268	1180	1104	1037	957	877	5266
k_t (-)	2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets			
angle bracket	1	2	
$F_{2/3,Rk}$	T	4670	9340
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	20030	6426	3213	2142	1601	1282	1069	917	802	713	642	583	535	40060
	S	2633	2282	2013	1801	1630	1488	1369	1268	1180	1104	1037	957	877	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	4840	9680
	S	-	-

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket		1													2
f (mm)		0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$	T	22650	9996	4998	3332	2499	1999	1666	1428	1250	1111	998	907	832	45300
	S	2633	2282	2013	1801	1630	1488	1369	1267	1180	1104	1037	957	877	5266
k_t (-)		2,7	3,2	3,6	4,0	4,4	4,8	5,3	5,7	6,1	6,5	6,9	7,4	7,8	1,4

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket		1	2
$F_{2/3,Rk}$	T	5920	11840
	S	-	-

Table B. 98 Angle bracket type 110090E, Variant TCM, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	18900	10763	5382	3588	2691	2153	1794	1538	1345	1196	1076	978	897	37800
S	941	816	720	644	583	532	489	453	422	394	371	349	330	1882
k_t (-)	3,3	3,8	4,3	4,8	5,3	5,8	6,3	6,8	7,3	7,8	8,3	8,8	9,3	1,6

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2560	5120
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	11330	3648	2174	1549	1203	983	831	720	635	568	514	469	431
S	-	3061	1530	1020	765	612	510	437	382	340	306	278	255	235	218	204	191
k_t (-)	0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	16,8	33,7	50,5	67,4	84,2	101,1	117,9	134,7	151,6	168,4	185,3	202,1	218,9	235,8	252,6	269,5	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	18000	18000	9450	6300	4725	3780	3150	2700	2363	2100	1890	1718	1575	1454	1350	1260	1181
	S	-	941	470	313	235	188	156	134	117	104	94	85	78	72	67	62	58
40	T	18000	18000	18000	12600	9450	7560	6300	5400	4725	4200	3780	3436	3150	2908	2700	2520	2363
	S	-	1883	941	627	470	376	313	269	235	209	188	171	156	144	134	125	117
60	T	18000	18000	18000	18000	14175	11340	9450	8100	7088	6300	5670	5155	4725	4362	4050	3780	3544
	S	-	2825	1412	941	706	565	470	403	353	313	282	256	235	217	201	188	176
80	T	18000	18000	18000	18000	15120	12600	10800	9450	8400	7560	6873	6300	5815	5400	5040	4725	
	S	-	3767	1883	1255	941	753	627	538	470	418	376	342	313	289	269	251	235
100	T	18000	18000	18000	18000	18000	15750	13500	11813	10500	9450	8591	7875	7269	6750	6300	5906	
	S	-	4709	2354	1569	1177	941	784	672	588	523	470	428	392	362	336	313	294
120	T	18000	18000	18000	18000	18000	18000	16200	14175	12600	11340	10309	9450	8723	8100	7560	7088	
	S	-	5651	2825	1883	1412	1130	941	807	706	627	565	513	470	434	403	376	353
140	T	18000	18000	18000	18000	18000	18000	18000	16538	14700	13230	12027	11025	10177	9450	8820	8269	
	S	-	6593	3296	2197	1648	1318	1098	941	824	732	659	599	549	507	470	439	412
160	T	18000	18000	18000	18000	18000	18000	18000	18000	16800	15120	13745	12600	11631	10800	10080	9450	
	S	-	7535	3767	2511	1883	1507	1255	1076	941	837	753	685	627	579	538	502	470
180	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	17010	15464	14175	13085	12150	11340	10631	
	S	-	8476	4238	2825	2119	1695	1412	1210	1059	941	847	770	706	652	605	565	529
200	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	17182	15750	14538	13500	12600	11813
	S	-	9418	4709	3139	2354	1883	1569	1345	1177	1046	941	856	784	724	672	627	588
220	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	17325	15992	14850	13860	12994
	S	-	10360	5180	3453	2590	2072	1726	1480	1295	1151	1036	941	863	796	740	690	647
240	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	17446	16200	15120	14175
	S	-	11302	5651	3767	2825	2260	1883	1614	1412	1255	1130	1027	941	869	807	753	706
$k_t \times b$ (-)	0,0	65,0	130,0	195,0	260,0	325,0	390,0	455,0	520,0	585,0	650,0	715,0	780,0	845,0	910,0	975,0	1040,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 99 Angle bracket type 110090E, Variant TCM, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	23640	17938	8969	5979	4485	3588	2990	2563	2242	1993	1794	1631	1495	47280
S	941	816	720	644	583	532	489	453	422	394	371	349	330	1882
k_t (-)	3,3	3,8	4,3	4,8	5,3	5,8	6,3	6,8	7,3	7,8	8,3	8,8	9,3	1,6

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3890	7780
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	18883	6081	3624	2581	2004	1638	1385	1200	1058	947	856	782	719
S	-	3061	1530	1020	765	612	510	437	382	340	306	278	255	235	218	204	191
k_t (-)	0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	16,8	33,7	50,5	67,4	84,2	101,1	117,9	134,7	151,6	168,4	185,3	202,1	218,9	235,8	252,6	269,5	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	29999	23640	11820	7880	5910	4728	3940	3377	2955	2627	2364	2149	1970	1818	1689	1576	1478
	S	-	941	470	313	235	188	156	134	117	104	94	85	78	72	67	62	58
40	T	29999	30000	23640	15760	11820	9456	7880	6754	5910	5253	4728	4298	3940	3637	3377	3152	2955
	S	-	1883	941	627	470	376	313	269	235	209	188	171	156	144	134	125	117
60	T	29999	30000	30000	23640	17730	14184	11820	10131	8865	7880	7092	6447	5910	5455	5066	4728	4433
	S	-	2825	1412	941	706	565	470	403	353	313	282	256	235	217	201	188	176
80	T	29999	30000	30000	30000	23640	18912	15760	13509	11820	10507	9456	8596	7880	7274	6754	6304	5910
	S	-	3767	1883	1255	941	753	627	538	470	418	376	342	313	289	269	251	235
100	T	29999	30000	30000	30000	29550	23640	19700	16886	14775	13133	11820	10745	9850	9092	8443	7880	7388
	S	-	4709	2354	1569	1177	941	784	672	588	523	470	428	392	362	336	313	294
120	T	29999	30000	30000	30000	30000	28368	23640	20263	17730	15760	14184	12895	11820	10911	10131	9456	8865
	S	-	5651	2825	1883	1412	1130	941	807	706	627	565	513	470	434	403	376	353
140	T	29999	30000	30000	30000	30000	30000	27580	23640	20685	18387	16548	15044	13790	12729	11820	11032	10343
	S	-	6593	3296	2197	1648	1318	1098	941	824	732	659	599	549	507	470	439	412
160	T	29999	30000	30000	30000	30000	30000	30000	27017	23640	21013	18912	17193	15760	14548	13509	12608	11820
	S	-	7535	3767	2511	1883	1507	1255	1076	941	837	753	685	627	579	538	502	470
180	T	29999	30000	30000	30000	30000	30000	30000	30000	26595	23640	21276	19342	17730	16366	15197	14184	13298
	S	-	8476	4238	2825	2119	1695	1412	1210	1059	941	847	770	706	652	605	565	529
200	T	29999	30000	30000	30000	30000	30000	30000	30000	29550	26267	23640	21491	19700	18185	16886	15760	14775
	S	-	9418	4709	3139	2354	1883	1569	1345	1177	1046	941	856	784	724	672	627	588
220	T	29999	30000	30000	30000	30000	30000	30000	30000	30000	28893	26004	23640	21670	20003	18574	17336	16253
	S	-	10360	5180	3453	2590	2072	1726	1480	1295	1151	1036	941	863	796	740	690	647
240	T	29999	30000	30000	30000	30000	30000	30000	30000	30000	30000	28368	25789	23640	21822	20263	18912	17730
	S	-	11302	5651	3767	2825	2260	1883	1614	1412	1255	1130	1027	941	869	807	753	706
$k_t \times b$ (-)	0,0	65,0	130,0	195,0	260,0	325,0	390,0	455,0	520,0	585,0	650,0	715,0	780,0	845,0	910,0	975,0	1040,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{t,Rk}$ load-carrying capacity of timber | S: $F_{s,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	13640	13640	11301	7534	5651	4520	3767	3229	2825	2511	2260	2055	1884	27280
$F_{1,Rk}$ S	941	816	720	644	583	532	489	453	422	394	371	349	330	1882
k_t (-)	3,3	3,8	4,3	4,8	5,3	5,8	6,3	6,8	7,3	7,8	8,3	8,8	9,3	1,6

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3040	6080
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	23792	7662	4566	3252	2525	2064	1745	1512	1333	1193	1079	985	906
$F_{4,Rk}$ S	-	3061	1530	1020	765	612	510	437	382	340	306	278	255	235	218	204	191
k_t (-)	0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	3206	4476	7411	21526	3410	2728	2273	1949	1705	1516	1364	1240	1137	1049	974	909	853
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	3206	4476	7411	21526	6820	5456	4547	3897	3410	3031	2728	2480	2273	2098	1949	1819	1705
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	16,8	33,7	50,5	67,4	84,2	101,1	117,9	134,7	151,6	168,4	185,3	202,1	218,9	235,8	252,6	269,5	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	37799	13640	6820	4547	3410	2728	2273	1949	1705	1516	1364	1240	1137	1049	974	909	853
	S	-	941	470	313	235	188	156	134	117	104	94	85	78	72	67	62	58
40	T	37799	27280	13640	9093	6820	5456	4547	3897	3410	3031	2728	2480	2273	2098	1949	1819	1705
	S	-	1883	941	627	470	376	313	269	235	209	188	171	156	144	134	125	117
60	T	37799	37800	20460	13640	10230	8184	6820	5846	5115	4547	4092	3720	3410	3148	2923	2728	2558
	S	-	2825	1412	941	706	565	470	403	353	313	282	256	235	217	201	188	176
80	T	37799	37800	27280	18187	13640	10912	9093	7794	6820	6062	5456	4960	4547	4197	3897	3637	3410
	S	-	3767	1883	1255	941	753	627	538	470	418	376	342	313	289	269	251	235
100	T	37799	37800	34100	22733	17050	13640	11367	9743	8525	7578	6820	6200	5683	5246	4871	4547	4263
	S	-	4709	2354	1569	1177	941	784	672	588	523	470	428	392	362	336	313	294
120	T	37799	37800	37800	27280	20460	16368	13640	11691	10230	9093	8184	7440	6820	6295	5846	5456	5115
	S	-	5651	2825	1883	1412	1130	941	807	706	627	565	513	470	434	403	376	353
140	T	37799	37800	37800	31827	23870	19096	15913	13640	11935	10609	9548	8680	7957	7345	6820	6365	5968
	S	-	6593	3296	2197	1648	1318	1098	941	824	732	659	599	549	507	470	439	412
160	T	37799	37800	37800	36373	27280	21824	18187	15589	13640	12124	10912	9920	9093	8394	7794	7275	6820
	S	-	7535	3767	2511	1883	1507	1255	1076	941	837	753	685	627	579	538	502	470
180	T	37799	37800	37800	37800	30690	24552	20460	17537	15345	13640	12276	11160	10230	9443	8769	8184	7673
	S	-	8476	4238	2825	2119	1695	1412	1210	1059	941	847	770	706	652	605	565	529
200	T	37799	37800	37800	37800	34100	27280	22733	19486	17050	15156	13640	12400	11367	10492	9743	9093	8525
	S	-	9418	4709	3139	2354	1883	1569	1345	1177	1046	941	856	784	724	672	627	588
220	T	37799	37800	37800	37800	37510	30008	25007	21434	18755	16671	15004	13640	12503	11542	10717	10003	9378
	S	-	10360	5180	3453	2590	2072	1726	1480	1295	1151	1036	941	863	796	740	690	647
240	T	37799	37800	37800	37800	37800	32736	27280	23383	20460	18187	16368	14880	13640	12591	11691	10912	10230
	S	-	11302	5651	3767	2825	2260	1883	1614	1412	1255	1130	1027	941	869	807	753	706
$k_t \times b$ (-)	0,0	65,0	130,0	195,0	260,0	325,0	390,0	455,0	520,0	585,0	650,0	715,0	780,0	845,0	910,0	975,0	1040,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	18170	18170	17580	11720	8790	7032	5860	5023	4395	3907	3516	3196	2930	36340
S	941	816	720	644	583	532	489	453	422	394	371	349	330	1882
k_t (-)	3,3	3,8	4,3	4,8	5,3	5,8	6,3	6,8	7,3	7,8	8,3	8,8	9,3	1,6

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	4120	8240
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	37010	11918	7103	5059	3928	3211	2715	2352	2074	1855	1678	1532	1409
S	-	3061	1530	1020	765	612	510	437	382	340	306	278	255	235	218	204	191
k_t (-)	0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	4987	6962	11528	33485	4543	3634	3028	2596	2271	2019	1817	1652	1514	1398	1298	1211	1136
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	4987	6962	11528	33485	9085	7268	6057	5191	4543	4038	3634	3304	3028	2795	2596	2423	2271
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_x \times b$ (-)	0,0	16,8	33,7	50,5	67,4	84,2	101,1	117,9	134,7	151,6	168,4	185,3	202,1	218,9	235,8	252,6	269,5	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	58800	18170	9085	6057	4543	3634	3028	2596	2271	2019	1817	1652	1514	1398	1298	1211	1136
	S	-	941	470	313	235	188	156	134	117	104	94	85	78	72	67	62	58
40	T	58800	36340	18170	12113	9085	7268	6057	5191	4543	4038	3634	3304	3028	2795	2596	2423	2271
	S	-	1883	941	627	470	376	313	269	235	209	188	171	156	144	134	125	117
60	T	58800	54510	27255	18170	13628	10902	9085	7787	6814	6057	5451	4955	4543	4193	3894	3634	3407
	S	-	2825	1412	941	706	565	470	403	353	313	282	256	235	217	201	188	176
80	T	58800	58800	36340	24227	18170	14536	12113	10383	9085	8076	7268	6607	6057	5591	5191	4845	4543
	S	-	3767	1883	1255	941	753	627	538	470	418	376	342	313	289	269	251	235
100	T	58800	58800	45425	30283	22713	18170	15142	12979	11356	10094	9085	8259	7571	6988	6489	6057	5678
	S	-	4709	2354	1569	1177	941	784	672	588	523	470	428	392	362	336	313	294
120	T	58800	58800	54510	36340	27255	21804	18170	15574	13628	12113	10902	9911	9085	8386	7787	7268	6814
	S	-	5651	2825	1883	1412	1130	941	807	706	627	565	513	470	434	403	376	353
140	T	58800	58800	58800	42397	31798	25438	21198	18170	15899	14132	12719	11563	10599	9784	9085	8479	7949
	S	-	6593	3296	2197	1648	1318	1098	941	824	732	659	599	549	507	470	439	412
160	T	58800	58800	58800	48453	36340	29072	24227	20766	18170	16151	14536	13215	12113	11182	10383	9691	9085
	S	-	7535	3767	2511	1883	1507	1255	1076	941	837	753	685	627	579	538	502	470
180	T	58800	58800	58800	54510	40883	32706	27255	23361	20441	18170	16353	14866	13628	12579	11681	10902	10221
	S	-	8476	4238	2825	2119	1695	1412	1210	1059	941	847	770	706	652	605	565	529
200	T	58800	58800	58800	58800	45425	36340	30283	25957	22713	20189	18170	16518	15142	13977	12979	12113	11356
	S	-	9418	4709	3139	2354	1883	1569	1345	1177	1046	941	856	784	724	672	627	588
220	T	58800	58800	58800	58800	49968	39974	33312	28553	24984	22208	19987	18170	16656	15375	14276	13325	12492
	S	-	10360	5180	3453	2590	2072	1726	1480	1295	1151	1036	941	863	796	740	690	647
240	T	58800	58800	58800	58800	54510	43608	36340	31149	27255	24227	21804	19822	18170	16772	15574	14536	13628
	S	-	11302	5651	3767	2825	2260	1883	1614	1412	1255	1130	1027	941	869	807	753	706
$k_x \times b$ (-)	0,0	65,0	130,0	195,0	260,0	325,0	390,0	455,0	520,0	585,0	650,0	715,0	780,0	845,0	910,0	975,0	1040,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 102 Angle bracket type 110090E, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	5670	448	224	149	112	89	74	64	56	49	44	40	37	11340
S	941	506	253	169	127	101	84	72	63	56	51	46	42	1882
k_t (-)	3,3	3,8	4,3	4,8	5,3	5,8	6,3	6,8	7,3	7,8	8,3	8,8	9,3	1,6

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	760	1520
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	473	152	90	64	50	41	34	30	26	23	21	19	18
S	-	3061	1530	1020	533	172	102	73	57	46	39	34	30	27	24	22	20
k_t (-)	0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	63	89	147	428	1530	1224	1020	874	764	679	611	556	509	470	437	407	382
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
20	T	63	89	147	428	1039	831	693	594	519	462	415	378	346	319	297	277	259
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	63	89	147	428	1346	1077	897	769	673	598	538	489	448	414	384	359	336
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
60	T	63	89	147	428	1439	1151	959	822	719	639	575	523	479	442	411	383	359
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
80	T	63	89	147	428	1477	1181	984	844	738	656	590	537	492	454	422	393	369
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
100	T	63	89	147	428	1495	1196	997	854	747	664	598	543	498	460	427	398	373
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
120	T	63	89	147	428	1505	1204	1003	860	752	669	602	547	501	463	430	401	376
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
140	T	63	89	147	428	1512	1209	1008	864	756	672	604	549	504	465	432	403	378
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
160	T	63	89	147	428	1516	1213	1010	866	758	673	606	551	505	466	433	404	379
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
180	T	63	89	147	428	1519	1215	1012	868	759	675	607	552	506	467	434	405	379
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
200	T	63	89	147	428	1521	1216	1014	869	760	676	608	553	507	468	434	405	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
220	T	63	89	147	428	1522	1218	1015	870	761	676	609	553	507	468	435	406	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
240	T	63	89	147	428	1523	1219	1015	870	761	677	609	554	507	468	435	406	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
$k_t \times b$ (-)	0,0	16,8	33,7	50,5	67,4	84,2	101,1	117,9	134,7	151,6	168,4	185,3	202,1	218,9	235,8	252,6	269,5	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	5399	5400	2835	1890	1418	1134	945	810	709	630	567	515	473	436	405	378	354
	S	-	941	470	313	235	188	156	134	117	104	94	85	78	72	67	62	58
40	T	5399	5400	5400	3780	2835	2268	1890	1620	1418	1260	1134	1031	945	872	810	756	709
	S	-	1883	941	627	470	376	313	269	235	209	188	171	156	144	134	125	117
60	T	5399	5400	5400	5400	4253	3402	2835	2430	2126	1890	1701	1546	1418	1308	1215	1134	1063
	S	-	2825	1412	941	706	565	470	403	353	313	282	256	235	217	201	188	176
80	T	5399	5400	5400	5400	4536	3780	3240	2835	2520	2268	2062	1890	1745	1620	1512	1418	1347
	S	-	3767	1883	1255	941	753	627	538	470	418	376	342	313	289	269	251	235
100	T	5399	5400	5400	5400	5400	4725	4050	3544	3150	2835	2577	2363	2181	2025	1890	1772	1674
	S	-	4709	2354	1569	1177	941	784	672	588	523	470	428	392	362	336	313	294
120	T	5399	5333	5400	5400	5400	5400	4860	4253	3780	3402	3093	2835	2617	2430	2268	2126	2000
	S	-	5651	2825	1883	1412	1130	941	807	706	627	565	513	470	434	403	376	353
140	T	5399	5350	5400	5400	5400	5400	5400	4961	4410	3969	3608	3308	3053	2835	2646	2481	2331
	S	-	6593	3296	2197	1648	1318	1098	941	824	732	659	599	549	507	470	439	412
160	T	5399	5362	5400	5400	5400	5400	5400	5400	5040	4536	4124	3780	3489	3240	3024	2835	2664
	S	-	7535	3767	2511	1883	1507	1255	1076	941	837	753	685	627	579	538	502	470
180	T	5399	5370	5400	5400	5400	5400	5400	5400	5400	5103	4639	4253	3925	3645	3402	3189	3000
	S	-	8477	4238	2825	2119	1695	1412	1210	1059	941	847	770	706	652	605	565	529
200	T	5399	5375	5400	5400	5400	5400	5400	5400	5400	5400	5155	4725	4362	4050	3780	3544	3324
	S	-	9419	4709	3139	2354	1883	1569	1345	1177	1046	941	856	784	724	672	627	588
220	T	5399	5379	5400	5400	5400	5400	5400	5400	5400	5400	5400	5198	4798	4455	4158	3898	3654
	S	-	10361	5180	3453	2590	2072	1726	1480	1295	1151	1036	941	863	796	740	690	647
240	T	5399	5383	5333	5400	5400	5400	5400	5400	5400	5400	5400	5400	5234	4860	4536	4253	4000
	S	-	11303	5651	3767	2825	2260	1883	1614	1412	1255	1130	1027	941	869	807	753	706
$k_t \times b$ (-)	0,0	65,0	130,0	195,0	260,0	325,0	390,0	455,0	520,0	585,0	650,0	715,0	780,0	845,0	910,0	975,0	1040,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 103 Angle bracket type 110090E, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	7092	750	375	250	188	150	125	107	94	83	75	68	63	14184
S	941	506	253	168	126	101	84	72	63	56	50	46	42	1882
k_t (-)	3,3	3,8	4,3	4,8	5,3	5,8	6,3	6,8	7,3	7,8	8,3	8,8	9,3	1,6

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	1100	2200
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	789	254	152	108	84	68	58	50	44	40	36	33	30
S	-	3061	1530	1020	533	171	102	72	56	46	39	33	29	26	24	22	20
k_t (-)	0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	106	149	246	714	1455	1164	970	831	727	646	582	529	485	447	415	388	363
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	106	149	246	714	2490	1992	1661	1424	1246	1107	997	905	831	767	713	664	623
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	16,8	33,7	50,5	67,4	84,2	101,1	117,9	134,7	151,6	168,4	185,3	202,1	218,9	235,8	252,6	269,5	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	8999	7092	3546	2364	1773	1418	1182	1013	887	788	709	645	591	546	507	473	443
	S	-	941	470	313	235	188	156	134	117	104	94	85	78	72	67	62	58
40	T	8999	9000	7092	4728	3546	2837	2364	2026	1773	1576	1418	1289	1182	1091	1013	946	887
	S	-	1883	941	627	470	376	313	269	235	209	188	171	156	144	134	125	117
60	T	8999	9000	9000	7092	5319	4255	3546	3039	2660	2364	2128	1934	1773	1637	1520	1418	1330
	S	-	2825	1412	941	706	565	470	403	353	313	282	256	235	217	201	188	176
80	T	8999	9000	9000	9000	7092	5674	4728	4053	3546	3152	2837	2579	2364	2182	2026	1891	1773
	S	-	3767	1883	1255	941	753	627	538	470	418	376	342	313	289	269	251	235
100	T	8999	9000	9000	9000	8865	7092	5910	5066	4433	3940	3546	3224	2955	2728	2533	2364	2216
	S	-	4709	2354	1569	1177	941	784	672	588	523	470	428	392	362	336	313	294
120	T	8999	9000	9000	9000	9000	8510	7092	6079	5319	4728	4255	3868	3546	3273	3039	2837	2660
	S	-	5651	2825	1883	1412	1130	941	807	706	627	565	513	470	434	403	376	353
140	T	8999	9000	9000	9000	9000	8274	7092	6206	5516	4964	4513	4137	3819	3546	3310	3103	
	S	-	6593	3296	2197	1648	1318	1098	941	824	732	659	599	549	507	470	439	412
160	T	8999	9000	9000	9000	9000	9000	8105	7092	6304	5674	5158	4728	4364	4053	3782	3546	
	S	-	7535	3767	2511	1883	1507	1255	1076	941	837	753	685	627	579	538	502	470
180	T	8999	9000	9000	9000	9000	9000	9000	7979	7092	6383	5803	5319	4910	4559	4255	3989	
	S	-	8476	4238	2825	2119	1695	1412	1210	1059	941	847	770	706	652	605	565	529
200	T	8999	8928	9000	9000	9000	9000	9000	8865	7880	7092	6447	5910	5455	5066	4728	4433	
	S	-	9419	4709	3139	2354	1883	1569	1345	1177	1046	941	856	784	724	672	627	588
220	T	8999	8940	9000	9000	9000	9000	9000	9000	8668	7801	7092	6501	6001	5572	5201	4876	
	S	-	10361	5180	3453	2590	2072	1726	1480	1295	1151	1036	941	863	796	740	690	647
240	T	8999	8950	9000	9000	9000	9000	9000	9000	9000	8510	7737	7092	6546	6079	5674	5319	
	S	-	11303	5651	3767	2825	2260	1883	1614	1412	1255	1130	1027	941	869	807	753	706
$k_t \times b$ (-)	0,0	65,0	130,0	195,0	260,0	325,0	390,0	455,0	520,0	585,0	650,0	715,0	780,0	845,0	910,0	975,0	1040,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{t,Rk}$ load-carrying capacity of timber | S: $F_{s,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	4092	945	473	315	236	189	158	135	118	105	95	86	79	8184
S	941	506	253	168	126	101	84	72	63	56	50	46	42	1882
k_t (-)	3,3	3,8	4,3	4,8	5,3	5,8	6,3	6,8	7,3	7,8	8,3	8,8	9,3	1,6

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	780	1560
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	995	320	191	136	106	86	73	63	56	50	45	41	38
S	-	3061	1530	1020	533	171	102	72	56	46	39	33	29	26	24	22	20
k_t (-)	0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	134	187	310	900	974	779	649	557	487	433	389	354	324	299	278	259	243
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	134	187	310	900	1731	1384	1154	989	866	769	693	629	578	533	495	461	433
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	134	187	310	900	2862	2289	1908	1636	1432	1272	1145	1040	955	881	819	763	716
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	16,8	33,7	50,5	67,4	84,2	101,1	117,9	134,7	151,6	168,4	185,3	202,1	218,9	235,8	252,6	269,5	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	11340	4092	2046	1364	1023	818	682	585	512	455	409	372	341	315	292	273	256
	S	-	941	470	313	235	188	156	134	117	104	94	85	78	72	67	62	58
40	T	11340	8184	4092	2728	2046	1637	1364	1169	1023	909	818	744	682	630	585	546	512
	S	-	1883	941	627	470	376	313	269	235	209	188	171	156	144	134	125	117
60	T	11340	11340	6138	4092	3069	2455	2046	1754	1535	1364	1228	1116	1023	944	877	818	767
	S	-	2825	1412	941	706	565	470	403	353	313	282	256	235	217	201	188	176
80	T	11340	11340	8184	5456	4092	3274	2728	2338	2046	1819	1637	1488	1364	1259	1169	1091	1023
	S	-	3767	1883	1255	941	753	627	538	470	418	376	342	313	289	269	251	235
100	T	11340	11340	10230	6820	5115	4092	3410	2923	2558	2273	2046	1860	1705	1574	1461	1364	1279
	S	-	4709	2354	1569	1177	941	784	672	588	523	470	428	392	362	336	313	294
120	T	11340	11340	11340	8184	6138	4910	4092	3507	3069	2728	2455	2232	2046	1889	1754	1637	1535
	S	-	5651	2825	1883	1412	1130	941	807	706	627	565	513	470	434	403	376	353
140	T	11340	11340	11340	9548	7161	5729	4774	4092	3581	3183	2864	2604	2387	2203	2046	1910	1790
	S	-	6593	3296	2197	1648	1318	1098	941	824	732	659	599	549	507	470	439	412
160	T	11340	11340	11340	10912	8184	6547	5456	4677	4092	3637	3274	2976	2728	2518	2338	2182	2046
	S	-	7535	3767	2511	1883	1507	1255	1076	941	837	753	685	627	579	538	502	470
180	T	11340	11340	11340	11340	9207	7366	6138	5261	4604	4092	3683	3348	3069	2833	2631	2455	2302
	S	-	8476	4238	2825	2119	1695	1412	1210	1059	941	847	770	706	652	605	565	529
200	T	11340	11340	11340	11340	10230	8184	6820	5846	5115	4547	4092	3720	3410	3148	2923	2728	2558
	S	-	9418	4709	3139	2354	1883	1569	1345	1177	1046	941	856	784	724	672	627	588
220	T	11340	11340	11340	11340	11253	9002	7502	6430	5627	5001	4501	4092	3751	3462	3215	3001	2813
	S	-	10360	5180	3453	2590	2072	1726	1480	1295	1151	1036	941	863	796	740	690	647
240	T	11340	11049	11340	11340	11340	9821	8184	7015	6138	5456	4910	4464	4092	3777	3507	3274	3069
	S	-	11303	5651	3767	2825	2260	1883	1614	1412	1255	1130	1027	941	869	807	753	706
$k_t \times b$ (-)	0,0	65,0	130,0	195,0	260,0	325,0	390,0	455,0	520,0	585,0	650,0	715,0	780,0	845,0	910,0	975,0	1040,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	5451	1470	735	490	368	294	245	210	184	163	147	134	123	10902
S	941	506	253	168	126	101	84	72	63	56	50	46	42	1882
k_t (-)	3,3	3,8	4,3	4,8	5,3	5,8	6,3	6,8	7,3	7,8	8,3	8,8	9,3	1,6

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	1060	2120
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	1547	498	297	212	164	134	114	98	87	78	70	64	59
S	-	3061	1530	1020	533	171	102	72	56	46	39	33	29	26	24	22	20
k_t (-)	0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	209	291	482	1400	1314	1051	876	751	657	584	525	478	438	404	375	350	328
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	209	291	482	1400	2726	2180	1817	1557	1363	1211	1090	991	909	839	779	727	681
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	209	291	482	1400	4088	3271	2726	2336	2044	1817	1635	1487	1363	1258	1168	1090	1022
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	16,8	33,7	50,5	67,4	84,2	101,1	117,9	134,7	151,6	168,4	185,3	202,1	218,9	235,8	252,6	269,5	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	17640	5451	2726	1817	1363	1090	909	779	681	606	545	496	454	419	389	363	341
	S	-	941	470	313	235	188	156	134	117	104	94	85	78	72	67	62	58
40	T	17640	10902	5451	3634	2726	2180	1817	1557	1363	1211	1090	991	909	839	779	727	681
	S	-	1883	941	627	470	376	313	269	235	209	188	171	156	144	134	125	117
60	T	17640	16353	8177	5451	4088	3271	2726	2336	2044	1817	1635	1487	1363	1258	1168	1090	1022
	S	-	2825	1412	941	706	565	470	403	353	313	282	256	235	217	201	188	176
80	T	17640	17640	10902	7268	5451	4361	3634	3115	2726	2423	2180	1982	1817	1677	1557	1454	1363
	S	-	3767	1883	1255	941	753	627	538	470	418	376	342	313	289	269	251	235
100	T	17640	17640	13628	9085	6814	5451	4543	3894	3407	3028	2726	2478	2271	2097	1947	1817	1703
	S	-	4709	2354	1569	1177	941	784	672	588	523	470	428	392	362	336	313	294
120	T	17640	17640	16353	10902	8177	6541	5451	4672	4088	3634	3271	2973	2726	2516	2336	2180	2044
	S	-	5651	2825	1883	1412	1130	941	807	706	627	565	513	470	434	403	376	353
140	T	17640	17640	17640	12719	9539	7631	6360	5451	4770	4240	3816	3469	3180	2935	2726	2544	2385
	S	-	6593	3296	2197	1648	1318	1098	941	824	732	659	599	549	507	470	439	412
160	T	17640	17640	17640	14536	10902	8722	7268	6230	5451	4845	4361	3964	3634	3354	3115	2907	2726
	S	-	7535	3767	2511	1883	1507	1255	1076	941	837	753	685	627	579	538	502	470
180	T	17640	17640	17640	16353	12265	9812	8177	7008	6132	5451	4906	4460	4088	3774	3504	3271	3066
	S	-	8476	4238	2825	2119	1695	1412	1210	1059	941	847	770	706	652	605	565	529
200	T	17640	17640	17640	17640	13628	10902	9085	7787	6814	6057	5451	4955	4543	4193	3894	3634	3407
	S	-	9418	4709	3139	2354	1883	1569	1345	1177	1046	941	856	784	724	672	627	588
220	T	17640	17640	17640	17640	14990	11992	9994	8566	7495	6662	5996	5451	4997	4612	4283	3997	3748
	S	-	10360	5180	3453	2590	2072	1726	1480	1295	1151	1036	941	863	796	740	690	647
240	T	17640	17640	17640	17640	16353	13082	10902	9345	8177	7268	6541	5947	5451	5032	4672	4361	4088
	S	-	11302	5651	3767	2825	2260	1883	1614	1412	1255	1130	1027	941	869	807	753	706
$k_t \times b$ (-)	0,0	65,0	130,0	195,0	260,0	325,0	390,0	455,0	520,0	585,0	650,0	715,0	780,0	845,0	910,0	975,0	1040,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	1878	1627	1436	1285	1162	1061	976	904	842	787	739	697	659	3756
S	2093	1814	1601	1432	1296	1183	1088	1008	938	878	801	729	668	4186

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	4760	9520
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	17010	5745	3004	2020	1520	1217	1015	870	762	677	610	555	509	470	436	407	382
S	-	6803	3401	2268	1701	1361	1134	972	850	732	619	536	472	422	382	349	321

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1527	2131	3529	2700	2025	1620	1350	1157	1012	900	810	736	675	623	578	540	506
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	1527	2131	3529	4211	3158	2526	2105	1805	1579	1404	1263	1148	1053	972	902	842	790
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	1527	2131	3529	5836	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	1527	2131	3529	7520	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	1527	2131	3529	9236	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	18000	1875	938	626	469	375	313	268	234	208	187	170	156	144	134	125	117
	S	-	2093	1047	698	523	419	349	299	262	233	209	190	174	161	150	140	131
40	T	18000	3733	1875	1251	938	751	626	536	469	417	375	341	313	288	268	250	234
	S	-	4186	2093	1395	1047	837	698	598	523	465	419	381	349	322	299	279	262
60	T	18000	5559	2807	1875	1407	1126	938	804	704	626	563	512	469	433	402	375	352
	S	-	6280	3140	2093	1570	1256	1047	897	785	698	628	571	523	483	449	419	392
80	T	18000	7336	3733	2497	1875	1501	1251	1072	938	834	751	682	626	577	536	500	469
	S	-	8373	4186	2791	2093	1675	1395	1196	1047	930	837	761	698	644	598	558	523
100	T	18000	9053	4651	3117	2342	1875	1563	1340	1173	1043	938	853	782	722	670	626	586
	S	-	10466	5233	3489	2617	2093	1744	1495	1308	1163	1047	951	872	805	748	698	654
120	T	18000	10698	5559	3733	2807	2249	1875	1608	1407	1251	1126	1024	938	866	804	751	704
	S	-	12559	6280	4186	3140	2512	2093	1794	1570	1395	1256	1142	1047	966	897	837	785
140	T	18000	12264	6454	4346	3271	2621	2186	1875	1641	1459	1313	1194	1095	1010	938	876	821
	S	-	14652	7326	4884	3663	2930	2442	2093	1832	1628	1465	1332	1221	1127	1047	977	916
160	T	18000	13745	7336	4955	3733	2993	2497	2142	1875	1667	1501	1364	1251	1155	1072	1001	938
	S	-	16746	8373	5582	4186	3349	2791	2392	2093	1861	1675	1522	1395	1288	1196	1116	1047
180	T	18000	15138	8203	5559	4194	3364	2807	2408	2109	1875	1688	1535	1407	1299	1206	1126	1056
	S	-	18839	9419	6280	4710	3768	3140	2691	2355	2093	1884	1713	1570	1449	1346	1256	1177
200	T	18000	16443	9053	6157	4651	3733	3117	2675	2342	2083	1875	1705	1563	1443	1340	1251	1173
	S	-	20932	10466	6977	5233	4186	3489	2990	2617	2326	2093	1903	1744	1610	1495	1395	1308
220	T	18000	17659	9885	6750	5106	4102	3426	2940	2575	2290	2062	1875	1719	1587	1474	1376	1290
	S	-	23025	11513	7675	5756	4605	3838	3289	2878	2558	2303	2093	1919	1771	1645	1535	1439
240	T	18000	17943	10698	7336	5559	4468	3733	3205	2807	2497	2249	2045	1875	1731	1608	1501	1407
	S	-	25119	12559	8373	6280	5024	4186	3588	3140	2791	2512	2284	2093	1932	1794	1675	1570

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	3131	2713	2394	2142	1938	1769	1628	1507	1403	1313	1233	1163	1100	6261
S	2093	1814	1600	1432	1295	1183	1088	1007	938	877	801	728	667	4186

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	5970	11940
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	21275	10174	5087	3391	2544	2035	1696	1453	1272	1130	1017	925	848	783	727	678	636
S	-	6802	3401	2267	1700	1360	1133	971	850	731	618	536	472	422	382	349	321

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	2544	3552	5881	4499	3374	2700	2250	1928	1687	1500	1350	1227	1125	1038	964	900	844
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	2544	3552	5881	7018	5263	4211	3509	3008	2632	2339	2105	1914	1754	1620	1504	1404	1316
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	2544	3552	5881	9727	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	2544	3552	5881	12533	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	2544	3552	5881	15393	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	29999	3131	1565	1044	783	626	522	447	391	348	313	285	261	241	224	209	196
	S	-	2093	1046	697	523	418	348	299	261	232	209	190	174	161	149	139	130
40	T	29999	6261	3131	2087	1565	1252	1044	894	783	696	626	569	522	482	447	417	391
	S	-	4186	2093	1395	1046	837	697	598	523	465	418	380	348	322	299	279	261
60	T	29999	9392	4696	3131	2348	1878	1565	1342	1174	1044	939	854	783	722	671	626	587
	S	-	6279	3139	2093	1569	1255	1046	897	784	697	627	570	523	483	448	418	392
80	T	29999	12522	6261	4174	3131	2504	2087	1789	1565	1391	1252	1138	1044	963	894	835	783
	S	-	8372	4186	2790	2093	1674	1395	1196	1046	930	837	761	697	644	598	558	523
100	T	29999	15653	7826	5218	3913	3131	2609	2236	1957	1739	1565	1423	1304	1204	1118	1044	978
	S	-	10466	5233	3488	2616	2093	1744	1495	1308	1162	1046	951	872	805	747	697	654
120	T	29999	18783	9392	6261	4696	3757	3131	2683	2348	2087	1878	1708	1565	1445	1342	1252	1174
	S	-	12559	6279	4186	3139	2511	2093	1794	1569	1395	1255	1141	1046	966	897	837	784
140	T	29999	21914	10957	7305	5478	4383	3652	3131	2739	2435	2191	1992	1826	1686	1565	1461	1370
	S	-	14652	7326	4884	3663	2930	2442	2093	1831	1628	1465	1332	1221	1127	1046	976	915
160	T	29999	25044	12522	8348	6261	5009	4174	3578	3131	2783	2504	2277	2087	1926	1789	1670	1565
	S	-	16745	8372	5581	4186	3349	2790	2392	2093	1860	1674	1522	1395	1288	1196	1116	1046
180	T	29999	28175	14087	9392	7044	5635	4696	4025	3522	3131	2817	2561	2348	2167	2012	1878	1761
	S	-	18838	9419	6279	4709	3767	3139	2691	2354	2093	1883	1712	1569	1449	1345	1255	1177
200	T	29999	30000	15653	10435	7826	6261	5218	4472	3913	3478	3131	2846	2609	2408	2236	2087	1957
	S	-	20932	10466	6977	5233	4186	3488	2990	2616	2325	2093	1902	1744	1610	1495	1395	1308
220	T	29999	30000	17218	11479	8609	6887	5739	4919	4305	3826	3444	3131	2870	2649	2460	2296	2152
	S	-	23025	11512	7675	5756	4605	3837	3289	2878	2558	2302	2093	1918	1771	1644	1535	1439
240	T	29999	30000	18783	12522	9392	7513	6261	5367	4696	4174	3757	3415	3131	2890	2683	2504	2348
	S	-	25118	12559	8372	6279	5023	4186	3588	3139	2790	2511	2283	2093	1932	1794	1674	1569

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	3944	3419	3016	2699	2442	2229	2051	1899	1768	1654	1554	1465	1386	7889
$F_{1,Rk}$ S	2093	1814	1600	1432	1295	1183	1088	1007	938	877	801	728	667	4186

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3460	6920
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	12276	11557	6410	4273	3205	2564	2137	1831	1602	1424	1282	1165	1068	986	916	855	801
$F_{4,Rk}$ S	-	6802	3401	2267	1700	1360	1133	971	850	731	618	536	472	422	382	349	321

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	3206	4476	7411	5669	4252	3401	2834	2430	2126	1890	1701	1546	1417	1308	1215	1134	1063
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	3206	4476	7411	8843	3410	2728	2273	1949	1705	1516	1364	1240	1137	1049	974	909	853
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	3206	4476	7411	12256	6820	5456	4547	3897	3410	3031	2728	2480	2273	2098	1949	1819	1705
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	3206	4476	7411	12276	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	3206	4476	7411	12276	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	3206	4476	7411	12276	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	3206	4476	7411	12276	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	3206	4476	7411	12276	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	3206	4476	7411	12276	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	3206	4476	7411	12276	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	3206	4476	7411	12276	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	3206	4476	7411	12276	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	3206	4476	7411	12276	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	24551	24551	24551	24551	24551	24551	24551	24551	24551	24551	24551	24551	24551	24551	24551	24551	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	24551	3944	1972	1315	986	789	657	563	493	438	394	359	329	303	282	263	247
	S	-	2093	1046	697	523	418	348	299	261	232	209	190	174	161	149	139	130
40	T	24551	7889	3944	2630	1972	1578	1315	1127	986	877	789	717	657	607	563	526	493
	S	-	4186	2093	1395	1046	837	697	598	523	465	418	380	348	322	299	279	261
60	T	24551	11833	5917	3944	2958	2367	1972	1690	1479	1315	1183	1076	986	910	845	789	740
	S	-	6279	3139	2093	1569	1255	1046	897	784	697	627	570	523	483	448	418	392
80	T	24551	15778	7889	5259	3944	3156	2630	2254	1972	1753	1578	1434	1315	1214	1127	1052	986
	S	-	8372	4186	2790	2093	1674	1395	1196	1046	930	837	761	697	644	598	558	523
100	T	24551	19722	9861	6574	4931	3944	3287	2817	2465	2191	1972	1793	1644	1517	1409	1315	1233
	S	-	10466	5233	3488	2616	2093	1744	1495	1308	1162	1046	951	872	805	747	697	654
120	T	24551	23118	11833	7889	5917	4733	3944	3381	2958	2630	2367	2152	1972	1821	1690	1578	1479
	S	-	12559	6279	4186	3139	2511	2093	1794	1569	1395	1255	1141	1046	966	897	837	784
140	T	24551	22975	13806	9204	6903	5522	4602	3944	3451	3068	2761	2510	2301	2124	1972	1841	1726
	S	-	14652	7326	4884	3663	2930	2442	2093	1831	1628	1465	1332	1221	1127	1046	976	915
160	T	24551	22424	15778	10519	7889	6311	5259	4508	3944	3506	3156	2869	2630	2427	2254	2104	1972
	S	-	16745	8372	5581	4186	3349	2790	2392	2093	1860	1674	1522	1395	1288	1196	1116	1046
180	T	24551	21646	17750	11833	8875	7100	5917	5071	4438	3944	3550	3227	2958	2731	2536	2367	2219
	S	-	18838	9419	6279	4709	3767	3139	2691	2354	2093	1883	1712	1569	1449	1345	1255	1177
200	T	24551	20844	19722	13148	9861	7889	6574	5635	4931	4383	3944	3586	3287	3034	2817	2630	2465
	S	-	20932	10466	6977	5233	4186	3488	2990	2616	2325	2093	1902	1744	1610	1495	1395	1308
220	T	24551	21368	21695	14463	10847	8678	7232	6198	5424	4821	4339	3944	3616	3338	3099	2893	2712
	S	-	23025	11512	7675	5756	4605	3837	3289	2878	2558	2302	2093	1918	1771	1644	1535	1439
240	T	24551	21794	23118	15778	11833	9467	7889	6762	5917	5259	4733	4303	3944	3641	3381	3156	2958
	S	-	25119	12559	8372	6279	5023	4186	3588	3139	2790	2511	2283	2093	1932	1794	1674	1569

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	6136	5318	4692	4198	3798	3468	3191	2954	2751	2573	2417	2279	2156	12272
$F_{1,Rk}$ S	2093	1814	1600	1432	1295	1183	1088	1007	938	877	801	728	667	4186

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	4620	9240
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	16353	16353	9971	6647	4985	3988	3324	2849	2493	2216	1994	1813	1662	1534	1424	1329	1246
$F_{4,Rk}$ S	-	6802	3401	2267	1700	1360	1133	971	850	731	618	536	472	422	382	349	321

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	4987	6962	11528	8818	6614	5291	4409	3779	3307	2939	2646	2405	2205	2035	1890	1764	1653
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	4987	6962	11528	13755	4543	3634	3028	2596	2271	2019	1817	1652	1514	1398	1298	1211	1136
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	4987	6962	11528	16353	9085	7268	6057	5191	4543	4038	3634	3304	3028	2795	2596	2423	2271
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	4987	6962	11528	16353	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	4987	6962	11528	16353	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	4987	6962	11528	16353	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	4987	6962	11528	16353	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	4987	6962	11528	16353	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	4987	6962	11528	16353	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	4987	6962	11528	16353	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	4987	6962	11528	16353	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	4987	6962	11528	16353	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	4987	6962	11528	16353	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	32705	32705	32705	32705	32705	32705	32705	32705	32705	32705	32705	32705	32705	32705	32705	32705	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	32705	6136	3068	2045	1534	1227	1023	877	767	682	614	558	511	472	438	409	383
	S	-	2093	1046	697	523	418	348	299	261	232	209	190	174	161	149	139	130
40	T	32705	12272	6136	4091	3068	2454	2045	1753	1534	1364	1227	1116	1023	944	877	818	767
	S	-	4186	2093	1395	1046	837	697	598	523	465	418	380	348	322	299	279	261
60	T	32705	18408	9204	6136	4602	3682	3068	2630	2301	2045	1841	1673	1534	1416	1315	1227	1150
	S	-	6279	3139	2093	1569	1255	1046	897	784	697	627	570	523	483	448	418	392
80	T	32705	24544	12272	8181	6136	4909	4091	3506	3068	2727	2454	2231	2045	1888	1753	1636	1534
	S	-	8372	4186	2790	2093	1674	1395	1196	1046	930	837	761	697	644	598	558	523
100	T	32705	30679	15340	10226	7670	6136	5113	4383	3835	3409	3068	2789	2557	2360	2191	2045	1917
	S	-	10466	5233	3488	2616	2093	1744	1495	1308	1162	1046	951	872	805	747	697	654
120	T	32705	32706	18408	12272	9204	7363	6136	5259	4602	4091	3682	3347	3068	2832	2630	2454	2301
	S	-	12559	6279	4186	3139	2511	2093	1794	1569	1395	1255	1141	1046	966	897	837	784
140	T	32705	32706	21476	14317	10738	8590	7159	6136	5369	4772	4295	3905	3579	3304	3068	2863	2684
	S	-	14652	7326	4884	3663	2930	2442	2093	1831	1628	1465	1332	1221	1127	1046	976	915
160	T	32705	32706	24544	16362	12272	9817	8181	7012	6136	5454	4909	4462	4091	3776	3506	3272	3068
	S	-	16745	8372	5581	4186	3349	2790	2392	2093	1860	1674	1522	1395	1288	1196	1116	1046
180	T	32705	32706	27611	18408	13806	11045	9204	7889	6903	6136	5522	5020	4602	4248	3944	3682	3451
	S	-	18838	9419	6279	4709	3767	3139	2691	2354	2093	1883	1712	1569	1449	1345	1255	1177
200	T	32705	32706	30679	20453	15340	12272	10226	8766	7670	6818	6136	5578	5113	4720	4383	4091	3835
	S	-	20932	10466	6977	5233	4186	3488	2990	2616	2325	2093	1902	1744	1610	1495	1395	1308
220	T	32705	32706	32706	22498	16874	13499	11249	9642	8437	7499	6749	6136	5625	5192	4821	4500	4218
	S	-	23025	11512	7675	5756	4605	3837	3289	2878	2558	2302	2093	1918	1771	1644	1535	1439
240	T	32705	32706	32706	24544	18408	14726	12272	10519	9204	8181	7363	6694	6136	5664	5259	4909	4602
	S	-	25118	12559	8372	6279	5023	4186	3588	3139	2790	2511	2283	2093	1932	1794	1674	1569

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 110 Angle bracket type 110090E, Variant TTP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	1344	448	224	149	112	89	74	64	56	49	44	40	37	2688
S	2477	506	253	169	127	101	84	72	63	56	51	46	42	4954

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	1990	3980
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	11340	4076	2144	1444	473	152	90	64	50	41	34	30	26	23	21	19	18
S	-	6887	3444	2296	533	172	102	73	57	46	39	34	30	27	24	22	20

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	63	89	147	428	1479	1187	990	850	744	661	595	541	496	458	425	397	372
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
20	T	63	89	147	428	1039	831	693	594	519	462	415	378	346	319	297	277	259
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	63	89	147	428	1346	1077	897	769	673	598	538	489	448	414	384	359	336
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
60	T	63	89	147	428	1439	1151	959	822	719	639	575	523	479	442	411	383	359
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
80	T	63	89	147	428	1477	1181	984	844	738	656	590	537	492	454	422	393	369
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
100	T	63	89	147	428	1495	1196	997	854	747	664	598	543	498	460	427	398	373
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
120	T	63	89	147	428	1505	1204	1003	860	752	669	602	547	501	463	430	401	376
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
140	T	63	89	147	428	1512	1209	1008	864	756	672	604	549	504	465	432	403	378
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
160	T	63	89	147	428	1516	1213	1010	866	758	673	606	551	505	466	433	404	379
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
180	T	63	89	147	428	1519	1215	1012	868	759	675	607	552	506	467	434	405	379
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
200	T	63	89	147	428	1521	1216	1014	869	760	676	608	553	507	468	434	405	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
220	T	63	89	147	428	1522	1218	1015	870	761	676	609	553	507	468	435	406	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
240	T	63	89	147	428	1523	1219	1015	870	761	677	609	554	507	468	435	406	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	5399	1341	671	448	336	268	224	192	168	149	134	122	112	103	96	89	84
	S	-	2477	1239	826	619	495	413	354	310	275	248	225	206	191	177	165	155
40	T	5399	2669	1341	895	671	537	448	384	336	298	268	244	224	206	192	179	168
	S	-	4954	2477	1651	1239	991	826	708	619	550	495	450	413	381	354	330	310
60	T	5399	3970	2008	1341	1007	806	671	575	503	448	403	366	336	310	288	268	252
	S	-	7431	3716	2477	1858	1486	1239	1062	929	826	743	676	619	572	531	495	464
80	T	5399	5232	2669	1786	1341	1074	895	767	671	597	537	488	448	413	384	358	336
	S	-	9909	4954	3303	2477	1982	1651	1416	1239	1101	991	901	826	762	708	661	619
100	T	5399	5304	3324	2229	1675	1341	1118	959	839	746	671	610	559	516	479	448	420
	S	-	12386	6193	4129	3096	2477	2064	1769	1548	1376	1239	1126	1032	953	885	826	774
120	T	5399	5333	3970	2669	2008	1609	1341	1150	1007	895	806	732	671	620	575	537	503
	S	-	14863	7431	4954	3716	2973	2477	2123	1858	1651	1486	1351	1239	1143	1062	991	929
140	T	5399	5350	4606	3107	2339	1875	1564	1341	1174	1044	940	854	783	723	671	627	587
	S	-	17340	8670	5780	4335	3468	2890	2477	2168	1927	1734	1576	1445	1334	1239	1156	1084
160	T	5399	5362	5232	3540	2669	2141	1786	1532	1341	1193	1074	976	895	826	767	716	671
	S	-	19817	9909	6606	4954	3963	3303	2831	2477	2202	1982	1802	1651	1524	1416	1321	1239
180	T	5399	5370	5282	3970	2998	2406	2008	1723	1508	1341	1208	1098	1007	929	863	806	755
	S	-	22294	11147	7431	5574	4459	3716	3185	2787	2477	2229	2027	1858	1715	1592	1486	1393
200	T	5399	5375	5304	4395	3324	2669	2229	1913	1675	1490	1341	1220	1118	1032	959	895	839
	S	-	24772	12386	8257	6193	4954	4129	3539	3096	2752	2477	2252	2064	1906	1769	1651	1548
220	T	5399	5379	5320	4816	3648	2932	2450	2103	1842	1638	1475	1341	1230	1136	1055	984	923
	S	-	27249	13624	9083	6812	5450	4541	3893	3406	3028	2725	2477	2271	2096	1946	1817	1703
240	T	5399	5383	5333	5232	3970	3194	2669	2292	2008	1786	1609	1463	1341	1239	1150	1074	1007
	S	-	29726	14863	9909	7431	5945	4954	4247	3716	3303	2973	2702	2477	2287	2123	1982	1858

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 111 Angle bracket type 110090E, Variant TTP, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	2240	750	375	250	188	150	125	107	94	83	75	68	63	4480
S	2477	506	253	168	126	101	84	72	63	56	50	46	42	4954

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2760	5520
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	14184	6477	3612	2427	789	254	152	108	84	68	58	50	44	40	36	33	30
S	-	6887	3443	2295	533	171	102	72	56	46	39	33	29	26	24	22	20

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	106	149	246	714	2487	1989	1658	1421	1243	1105	995	904	829	765	710	663	622
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	106	149	246	714	1455	1164	970	831	727	646	582	529	485	447	415	388	363
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	106	149	246	714	2490	1992	1661	1424	1246	1107	997	905	831	767	713	664	623
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	8999	2233	1119	746	560	448	373	320	280	248	224	203	186	172	160	149	140
	S	-	2477	1239	826	619	495	413	354	310	275	248	225	206	191	177	165	155
40	T	8999	4426	2233	1491	1119	895	746	639	560	497	448	407	373	344	320	298	280
	S	-	4954	2477	1651	1239	991	826	708	619	550	495	450	413	381	354	330	310
60	T	8999	6540	3337	2233	1677	1342	1119	959	839	746	671	610	560	516	480	448	420
	S	-	7431	3716	2477	1858	1486	1239	1062	929	826	743	676	619	572	531	495	464
80	T	8999	8545	4426	2970	2233	1788	1491	1278	1119	995	895	814	746	689	639	597	560
	S	-	9909	4954	3303	2477	1982	1651	1416	1239	1101	991	901	826	762	708	661	619
100	T	8999	8723	5495	3702	2787	2233	1863	1597	1398	1243	1119	1017	933	861	799	746	699
	S	-	12386	6193	4129	3096	2477	2064	1769	1548	1376	1239	1126	1032	953	885	826	774
120	T	8999	8805	6540	4426	3337	2676	2233	1915	1677	1491	1342	1220	1119	1033	959	895	839
	S	-	14863	7431	4954	3716	2973	2477	2123	1858	1651	1486	1351	1239	1143	1062	991	929
140	T	8999	8855	7558	5141	3883	3117	2602	2233	1955	1739	1565	1423	1305	1205	1119	1044	979
	S	-	17340	8670	5780	4335	3468	2890	2477	2168	1927	1734	1576	1445	1334	1239	1156	1084
160	T	8999	8888	8545	5846	4426	3556	2970	2550	2233	1986	1788	1626	1491	1377	1278	1193	1119
	S	-	19817	9909	6606	4954	3963	3303	2831	2477	2202	1982	1802	1651	1524	1416	1321	1239
180	T	8999	8911	8662	6540	4963	3992	3337	2865	2510	2233	2011	1829	1677	1548	1438	1342	1259
	S	-	22294	11147	7431	5574	4459	3716	3185	2787	2477	2229	2027	1858	1715	1592	1486	1393
200	T	8999	8928	8723	7222	5495	4426	3702	3180	2787	2479	2233	2031	1863	1720	1597	1491	1398
	S	-	24772	12386	8257	6193	4954	4129	3539	3096	2752	2477	2252	2064	1906	1769	1651	1548
220	T	8999	8940	8769	7890	6020	4856	4065	3493	3062	2725	2455	2233	2048	1891	1756	1640	1538
	S	-	27249	13624	9083	6812	5450	4541	3893	3406	3028	2725	2477	2271	2096	1946	1817	1703
240	T	8999	8950	8805	8545	6540	5282	4426	3806	3337	2970	2676	2435	2233	2062	1915	1788	1677
	S	-	29726	14863	9909	7431	5945	4954	4247	3716	3303	2973	2702	2477	2287	2123	1982	1858

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	2823	945	473	315	236	189	158	135	118	105	95	86	79	5646
$F_{1,Rk}$ S	2477	506	253	168	126	101	84	72	63	56	50	46	42	4954

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2120	4240
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	8183	6107	4587	3058	995	320	191	136	106	86	73	63	56	50	45	41	38
$F_{4,Rk}$ S	-	6887	3443	2295	533	171	102	72	56	46	39	33	29	26	24	22	20

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	134	187	310	900	3133	2507	2089	1790	1567	1393	1253	1139	1044	964	895	836	783
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	134	187	310	900	974	779	649	557	487	433	389	354	324	299	278	259	243
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	134	187	310	900	1731	1384	1154	989	866	769	693	629	578	533	495	461	433
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	134	187	310	900	2862	2289	1908	1636	1432	1272	1145	1040	955	881	819	763	716
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	11340	2823	1411	941	706	565	470	403	353	314	282	257	235	217	202	188	176
	S	-	2477	1238	825	619	495	412	353	309	275	247	225	206	190	176	165	154
40	T	11340	5646	2823	1882	1411	1129	941	807	706	627	565	513	470	434	403	376	353
	S	-	4954	2477	1651	1238	990	825	707	619	550	495	450	412	381	353	330	309
60	T	11340	7613	4234	2823	2117	1694	1411	1210	1059	941	847	770	706	651	605	565	529
	S	-	7431	3715	2477	1857	1486	1238	1061	928	825	743	675	619	571	530	495	464
80	T	11340	9294	5646	3764	2823	2258	1882	1613	1411	1255	1129	1027	941	869	807	753	706
	S	-	9909	4954	3302	2477	1981	1651	1415	1238	1100	990	900	825	762	707	660	619
100	T	11340	9918	6783	4705	3529	2823	2352	2016	1764	1568	1411	1283	1176	1086	1008	941	882
	S	-	12386	6192	4128	3096	2477	2064	1769	1548	1376	1238	1125	1032	952	884	825	774
120	T	11340	10294	7613	5646	4234	3388	2823	2420	2117	1882	1694	1540	1411	1303	1210	1129	1059
	S	-	14863	7431	4954	3715	2972	2477	2123	1857	1651	1486	1351	1238	1143	1061	990	928
140	T	11340	10543	8458	6460	4940	3952	3293	2823	2470	2196	1976	1796	1647	1520	1411	1317	1235
	S	-	17340	8670	5780	4335	3468	2890	2477	2167	1926	1734	1576	1445	1333	1238	1156	1083
160	T	11340	10715	9294	7082	5646	4517	3764	3226	2823	2509	2258	2053	1882	1737	1613	1506	1411
	S	-	19817	9909	6605	4954	3963	3302	2831	2477	2201	1981	1801	1651	1524	1415	1321	1238
180	T	11340	10837	9655	7613	6292	5081	4234	3630	3176	2823	2541	2310	2117	1954	1815	1694	1588
	S	-	22294	11147	7431	5573	4458	3715	3184	2786	2477	2229	2026	1857	1714	1592	1486	1393
200	T	11340	10928	9918	8157	6783	5646	4705	4033	3529	3137	2823	2566	2352	2172	2016	1882	1764
	S	-	24772	12386	8257	6192	4954	4128	3538	3096	2752	2477	2251	2064	1905	1769	1651	1548
220	T	11340	10996	10127	8748	7222	6188	5175	4436	3882	3450	3105	2823	2588	2389	2218	2070	1941
	S	-	27249	13624	9083	6812	5449	4541	3892	3406	3027	2724	2477	2270	2096	1946	1816	1703
240	T	11340	11049	10294	9294	7613	6592	5646	4839	4234	3764	3388	3080	2823	2606	2420	2258	2117
	S	-	29726	14863	9909	7431	5945	4954	4246	3715	3302	2972	2702	2477	2286	2123	1981	1857

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	4391	1470	735	490	368	294	245	210	184	163	147	134	123	8783
S	2477	506	253	168	126	101	84	72	63	56	50	46	42	4954

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2970	5940
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	10902	10898	7136	4757	1547	498	297	212	164	134	114	98	87	78	70	64	59
S	-	6887	3443	2295	533	171	102	72	56	46	39	33	29	26	24	22	20

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	209	291	482	1400	4874	3899	3249	2785	2437	2166	1950	1772	1625	1500	1393	1300	1218
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	209	291	482	1400	1314	1051	876	751	657	584	525	478	438	404	375	350	328
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	209	291	482	1400	2726	2180	1817	1557	1363	1211	1090	991	909	839	779	727	681
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	209	291	482	1400	4088	3271	2726	2336	2044	1817	1635	1487	1363	1258	1168	1090	1022
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	17640	4391	2196	1464	1098	878	732	627	549	488	439	399	366	338	314	293	274
	S	-	2477	1238	825	619	495	412	353	309	275	247	225	206	190	176	165	154
40	T	17640	8783	4391	2928	2196	1757	1464	1255	1098	976	878	798	732	676	627	586	549
	S	-	4954	2477	1651	1238	990	825	707	619	550	495	450	412	381	353	330	309
60	T	17640	13174	6587	4391	3293	2635	2196	1882	1647	1464	1317	1198	1098	1013	941	878	823
	S	-	7431	3715	2477	1857	1486	1238	1061	928	825	743	675	619	571	530	495	464
80	T	17640	17565	8783	5855	4391	3513	2928	2509	2196	1952	1757	1597	1464	1351	1255	1171	1098
	S	-	9908	4954	3302	2477	1981	1651	1415	1238	1100	990	900	825	762	707	660	619
100	T	17640	17640	10978	7319	5489	4391	3659	3137	2745	2440	2196	1996	1830	1689	1568	1464	1372
	S	-	12385	6192	4128	3096	2477	2064	1769	1548	1376	1238	1125	1032	952	884	825	774
120	T	17640	16219	13174	8783	6587	5270	4391	3764	3293	2928	2635	2395	2196	2027	1882	1757	1647
	S	-	14862	7431	4954	3715	2972	2477	2123	1857	1651	1486	1351	1238	1143	1061	990	928
140	T	17640	16011	15369	10246	7685	6148	5123	4391	3842	3415	3074	2794	2562	2365	2196	2049	1921
	S	-	17340	8670	5780	4335	3468	2890	2477	2167	1926	1734	1576	1445	1333	1238	1156	1083
160	T	17640	16352	17565	11710	8783	7026	5855	5019	4391	3903	3513	3194	2928	2702	2509	2342	2196
	S	-	19817	9908	6605	4954	3963	3302	2831	2477	2201	1981	1801	1651	1524	1415	1321	1238
180	T	17640	16599	17640	13174	9880	7904	6587	5646	4940	4391	3952	3593	3293	3040	2823	2635	2470
	S	-	22294	11147	7431	5573	4458	3715	3184	2786	2477	2229	2026	1857	1714	1592	1486	1393
200	T	17640	16783	17640	14638	10978	8783	7319	6273	5489	4879	4391	3992	3659	3378	3137	2928	2745
	S	-	24772	12385	8257	6192	4954	4128	3538	3096	2752	2477	2251	2064	1905	1769	1651	1548
220	T	17640	16922	16966	16101	12076	9661	8051	6901	6038	5367	4830	4391	4025	3716	3450	3220	3019
	S	-	27249	13624	9082	6812	5449	4541	3892	3406	3027	2724	2477	2270	2096	1946	1816	1703
240	T	17640	17031	16219	17565	13174	10539	8783	7528	6587	5855	5270	4790	4391	4053	3764	3513	3293
	S	-	29726	14862	9908	7431	5945	4954	4246	3715	3302	2972	2702	2477	2286	2123	1981	1857

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	18900	10763	5382	3588	2691	2153	1794	1538	1345	1196	1076	978	897	37800
$F_{1,Rk}$ S	3390	2938	2592	2319	2003	1602	1335	1144	1001	890	801	728	667	6780
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3650	7300
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	11330	3648	2174	1549	1203	983	831	720	635	568	514	469	431
$F_{4,Rk}$ S	-	6887	3443	2295	1721	1377	1147	983	860	731	618	536	472	422	382	349	321
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	18000	18000	9450	6300	4725	3780	3150	2700	2363	2100	1890	1718	1575	1454	1350	1260	1181
	S	-	3390	1695	1130	847	678	565	484	423	376	339	308	282	260	242	226	211
40	T	18000	18000	18000	12600	9450	7560	6300	5400	4725	4200	3780	3436	3150	2908	2700	2520	2363
	S	-	6781	3390	2260	1695	1356	1130	968	847	753	678	616	565	521	484	452	423
60	T	18000	18000	18000	18000	14175	11340	9450	8100	7088	6300	5670	5155	4725	4362	4050	3780	3544
	S	-	10172	5086	3390	2543	2034	1695	1453	1271	1130	1017	924	847	782	726	678	635
80	T	18000	18000	18000	18000	18000	15120	12600	10800	9450	8400	7560	6873	6300	5815	5400	5040	4725
	S	-	13563	6781	4521	3390	2712	2260	1937	1695	1507	1356	1233	1130	1043	968	904	847
100	T	18000	18000	18000	18000	18000	18000	15750	13500	11813	10500	9450	8591	7875	7269	6750	6300	5906
	S	-	16953	8476	5651	4238	3390	2825	2421	2119	1883	1695	1541	1412	1304	1210	1130	1059
120	T	18000	17777	18000	18000	18000	18000	16200	14175	12600	11340	10309	9450	8723	8100	7560	7088	6708
	S	-	20345	10172	6781	5086	4068	3390	2906	2543	2260	2034	1849	1695	1564	1453	1356	1271
140	T	18000	17835	18000	18000	18000	18000	18000	16538	14700	13230	12027	11025	10177	9450	8820	8269	7829
	S	-	23735	11867	7911	5933	4747	3955	3390	2966	2637	2373	2157	1977	1825	1695	1582	1483
160	T	18000	17873	18000	18000	18000	18000	18000	18000	16800	15120	13745	12600	11631	10800	10080	9450	8950
	S	-	27126	13563	9042	6781	5425	4521	3875	3390	3014	2712	2466	2260	2086	1937	1808	1695
180	T	18000	17900	18000	18000	18000	18000	18000	18000	18000	18000	17010	15464	14175	13085	12150	11340	10631
	S	-	30517	15258	10172	7629	6103	5086	4359	3814	3390	3051	2774	2543	2347	2179	2034	1907
200	T	18000	17918	18000	18000	18000	18000	18000	18000	18000	18000	18000	17182	15750	14538	13500	12600	11813
	S	-	33908	16953	11302	8476	6781	5651	4843	4238	3767	3390	3082	2825	2608	2421	2260	2119
220	T	18000	17932	17736	18000	18000	18000	18000	18000	18000	18000	18000	18000	17325	15992	14850	13860	12994
	S	-	37298	18649	12432	9324	7459	6216	5328	4662	4144	3729	3390	3108	2869	2664	2486	2331
240	T	18000	17943	17777	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	17446	16200	15120	14175
	S	-	40689	20345	13563	10172	8137	6781	5812	5086	4521	4068	3699	3390	3129	2906	2712	2543
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	23640	17938	8969	5979	4485	3588	2990	2563	2242	1993	1794	1631	1495	47280
S	3390	2938	2592	2319	2003	1602	1335	1144	1001	890	801	728	667	6780
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	5100	10200
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	18883	6081	3624	2581	2004	1638	1385	1200	1058	947	856	782	719
S	-	6887	3443	2295	1721	1377	1147	983	860	731	618	536	472	422	382	349	321
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	29999	23640	11820	7880	5910	4728	3940	3377	2955	2627	2364	2149	1970	1818	1689	1576	1478
	S	-	3390	1695	1130	847	678	565	484	423	376	339	308	282	260	242	226	211
40	T	29999	30000	23640	15760	11820	9456	7880	6754	5910	5253	4728	4298	3940	3637	3377	3152	2955
	S	-	6781	3390	2260	1695	1356	1130	968	847	753	678	616	565	521	484	452	423
60	T	29999	30000	30000	23640	17730	14184	11820	10131	8865	7880	7092	6447	5910	5455	5066	4728	4433
	S	-	10172	5086	3390	2543	2034	1695	1453	1271	1130	1017	924	847	782	726	678	635
80	T	29999	30000	30000	30000	23640	18912	15760	13509	11820	10507	9456	8596	7880	7274	6754	6304	5910
	S	-	13563	6781	4521	3390	2712	2260	1937	1695	1507	1356	1233	1130	1043	968	904	847
100	T	29999	30000	30000	30000	29550	23640	19700	16886	14775	13133	11820	10745	9850	9092	8443	7880	7388
	S	-	16953	8476	5651	4238	3390	2825	2421	2119	1883	1695	1541	1412	1304	1210	1130	1059
120	T	29999	30000	30000	30000	30000	28368	23640	20263	17730	15760	14184	12895	11820	10911	10131	9456	8865
	S	-	20344	10172	6781	5086	4068	3390	2906	2543	2260	2034	1849	1695	1564	1453	1356	1271
140	T	29999	30000	30000	30000	30000	30000	27580	23640	20685	18387	16548	15044	13790	12729	11820	11032	10343
	S	-	23735	11867	7911	5933	4747	3955	3390	2966	2637	2373	2157	1977	1825	1695	1582	1483
160	T	29999	30000	30000	30000	30000	30000	30000	27017	23640	21013	18912	17193	15760	14548	13509	12608	11820
	S	-	27126	13563	9042	6781	5425	4521	3875	3390	3014	2712	2466	2260	2086	1937	1808	1695
180	T	29999	29706	30000	30000	30000	30000	30000	30000	26595	23640	21276	19342	17730	16366	15197	14184	13298
	S	-	30517	15258	10172	7629	6103	5086	4359	3814	3390	3051	2774	2543	2347	2179	2034	1907
200	T	29999	29761	30000	30000	30000	30000	30000	30000	29550	26267	23640	21491	19700	18185	16886	15760	14775
	S	-	33908	16953	11302	8476	6781	5651	4843	4238	3767	3390	3082	2825	2608	2421	2260	2119
220	T	29999	29802	30000	30000	30000	30000	30000	30000	30000	28893	26004	23640	21670	20003	18574	17336	16253
	S	-	37298	18649	12432	9324	7459	6216	5328	4662	4144	3729	3390	3108	2869	2664	2486	2331
240	T	29999	29833	30000	30000	30000	30000	30000	30000	30000	30000	28368	25789	23640	21822	20263	18912	17730
	S	-	40689	20344	13563	10172	8137	6781	5812	5086	4521	4068	3699	3390	3129	2906	2712	2543
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	13640	13640	11301	7534	5651	4520	3767	3229	2825	2511	2260	2055	1884	27280
$F_{1,Rk}$ S	3390	2938	2592	2319	2003	1602	1335	1144	1001	890	801	728	667	6780
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3180	6360
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	23792	7662	4566	3252	2525	2064	1745	1512	1333	1193	1079	985	906
$F_{4,Rk}$ S	-	6887	3443	2295	1721	1377	1147	983	860	731	618	536	472	422	382	349	321
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	3206	4476	7411	21526	3410	2728	2273	1949	1705	1516	1364	1240	1137	1049	974	909	853
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	3206	4476	7411	21526	6820	5456	4547	3897	3410	3031	2728	2480	2273	2098	1949	1819	1705
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	3206	4476	7411	21526	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	37799	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	37799	13640	6820	4547	3410	2728	2273	1949	1705	1516	1364	1240	1137	1049	974	909	853
	S	-	3390	1695	1130	847	678	565	484	423	376	339	308	282	260	242	226	211
40	T	37799	27280	13640	9093	6820	5456	4547	3897	3410	3031	2728	2480	2273	2098	1949	1819	1705
	S	-	6781	3390	2260	1695	1356	1130	968	847	753	678	616	565	521	484	452	423
60	T	37799	37800	20460	13640	10230	8184	6820	5846	5115	4547	4092	3720	3410	3148	2923	2728	2558
	S	-	10172	5086	3390	2543	2034	1695	1453	1271	1130	1017	924	847	782	726	678	635
80	T	37799	37800	27280	18187	13640	10912	9093	7794	6820	6062	5456	4960	4547	4197	3897	3637	3410
	S	-	13563	6781	4521	3390	2712	2260	1937	1695	1507	1356	1233	1130	1043	968	904	847
100	T	37799	37800	34100	22733	17050	13640	11367	9743	8525	7578	6820	6200	5683	5246	4871	4547	4263
	S	-	16953	8476	5651	4238	3390	2825	2421	2119	1883	1695	1541	1412	1304	1210	1130	1059
120	T	37799	37800	37800	27280	20460	16368	13640	11691	10230	9093	8184	7440	6820	6295	5846	5456	5115
	S	-	20344	10172	6781	5086	4068	3390	2906	2543	2260	2034	1849	1695	1564	1453	1356	1271
140	T	37799	37800	37800	31827	23870	19096	15913	13640	11935	10609	9548	8680	7957	7345	6820	6365	5968
	S	-	23735	11867	7911	5933	4747	3955	3390	2966	2637	2373	2157	1977	1825	1695	1582	1483
160	T	37799	37800	37800	36373	27280	21824	18187	15589	13640	12124	10912	9920	9093	8394	7794	7275	6820
	S	-	27126	13563	9042	6781	5425	4521	3875	3390	3014	2712	2466	2260	2086	1937	1808	1695
180	T	37799	37800	37800	37800	30690	24552	20460	17537	15345	13640	12276	11160	10230	9443	8769	8184	7673
	S	-	30516	15258	10172	7629	6103	5086	4359	3814	3390	3051	2774	2543	2347	2179	2034	1907
200	T	37799	37800	37800	37800	34100	27280	22733	19486	17050	15156	13640	12400	11367	10492	9743	9093	8525
	S	-	33907	16953	11302	8476	6781	5651	4843	4238	3767	3390	3082	2825	2608	2421	2260	2119
220	T	37799	36654	37800	37800	37510	30008	25007	21434	18755	16671	15004	13640	12503	11542	10717	10003	9378
	S	-	37298	18649	12432	9324	7459	6216	5328	4662	4144	3729	3390	3108	2869	2664	2486	2331
240	T	37799	36830	37800	37800	37800	32736	27280	23383	20460	18187	16368	14880	13640	12591	11691	10912	10230
	S	-	40689	20344	13563	10172	8137	6781	5812	5086	4521	4068	3699	3390	3129	2906	2712	2543
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	18170	18170	17580	11720	8790	7032	5860	5023	4395	3907	3516	3196	2930	36340
S	3390	2938	2592	2319	2003	1602	1335	1144	1001	890	801	728	667	6780
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	4270	8540
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	37010	11918	7103	5059	3928	3211	2715	2352	2074	1855	1678	1532	1409
S	-	6887	3443	2295	1721	1377	1147	983	860	731	618	536	472	422	382	349	321
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	4987	6962	11528	33485	4543	3634	3028	2596	2271	2019	1817	1652	1514	1398	1298	1211	1136
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	4987	6962	11528	33485	9085	7268	6057	5191	4543	4038	3634	3304	3028	2795	2596	2423	2271
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	4987	6962	11528	33485	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	58800	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	58800	18170	9085	6057	4543	3634	3028	2596	2271	2019	1817	1652	1514	1398	1298	1211	1136
	S	-	3390	1695	1130	847	678	565	484	423	376	339	308	282	260	242	226	211
40	T	58800	36340	18170	12113	9085	7268	6057	5191	4543	4038	3634	3304	3028	2795	2596	2423	2271
	S	-	6781	3390	2260	1695	1356	1130	968	847	753	678	616	565	521	484	452	423
60	T	58800	54510	27255	18170	13628	10902	9085	7787	6814	6057	5451	4955	4543	4193	3894	3634	3407
	S	-	10172	5086	3390	2543	2034	1695	1453	1271	1130	1017	924	847	782	726	678	635
80	T	58800	58800	36340	24227	18170	14536	12113	10383	9085	8076	7268	6607	6057	5591	5191	4845	4543
	S	-	13563	6781	4521	3390	2712	2260	1937	1695	1507	1356	1233	1130	1043	968	904	847
100	T	58800	58800	45425	30283	22713	18170	15142	12979	11356	10094	9085	8259	7571	6988	6489	6057	5678
	S	-	16953	8476	5651	4238	3390	2825	2421	2119	1883	1695	1541	1412	1304	1210	1130	1059
120	T	58800	58800	54510	36340	27255	21804	18170	15574	13628	12113	10902	9911	9085	8386	7787	7268	6814
	S	-	20344	10172	6781	5086	4068	3390	2906	2543	2260	2034	1849	1695	1564	1453	1356	1271
140	T	58800	58800	58800	42397	31798	25438	21198	18170	15899	14132	12719	11563	10599	9784	9085	8479	7949
	S	-	23735	11867	7911	5933	4747	3955	3390	2966	2637	2373	2157	1977	1825	1695	1582	1483
160	T	58800	58800	58800	48453	36340	29072	24227	20766	18170	16151	14536	13215	12113	11182	10383	9691	9085
	S	-	27126	13563	9042	6781	5425	4521	3875	3390	3014	2712	2466	2260	2086	1937	1808	1695
180	T	58800	58800	58800	54510	40883	32706	27255	23361	20441	18170	16353	14866	13628	12579	11681	10902	10221
	S	-	30516	15258	10172	7629	6103	5086	4359	3814	3390	3051	2774	2543	2347	2179	2034	1907
200	T	58800	58800	58800	58800	45425	36340	30283	25957	22713	20189	18170	16518	15142	13977	12979	12113	11356
	S	-	33907	16953	11302	8476	6781	5651	4843	4238	3767	3390	3082	2825	2608	2421	2260	2119
220	T	58800	58800	58800	58800	49968	39974	33312	28553	24984	22208	19987	18170	16656	15375	14276	13325	12492
	S	-	37298	18649	12432	9324	7459	6216	5328	4662	4144	3729	3390	3108	2869	2664	2486	2331
240	T	58800	58800	58800	58800	54510	43608	36340	31149	27255	24227	21804	19822	18170	16772	15574	14536	13628
	S	-	40689	20344	13563	10172	8137	6781	5812	5086	4521	4068	3699	3390	3129	2906	2712	2543
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 118 Angle bracket type 110090EO, Variant TCP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	5670	448	224	149	112	89	74	64	56	49	44	40	37	11340
S	3390	506	253	169	127	101	84	72	63	56	51	46	42	6780
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	980	1960
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	473	152	90	64	50	41	34	30	26	23	21	19	18
S	-	6887	3443	2295	533	172	102	73	57	46	39	34	30	27	24	22	20
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	63	89	147	428	1530	1224	1020	874	764	679	611	556	509	470	437	407	382
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
20	T	63	89	147	428	1039	831	693	594	519	462	415	378	346	319	297	277	259
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	63	89	147	428	1346	1077	897	769	673	598	538	489	448	414	384	359	336
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
60	T	63	89	147	428	1439	1151	959	822	719	639	575	523	479	442	411	383	359
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
80	T	63	89	147	428	1477	1181	984	844	738	656	590	537	492	454	422	393	369
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
100	T	63	89	147	428	1495	1196	997	854	747	664	598	543	498	460	427	398	373
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
120	T	63	89	147	428	1505	1204	1003	860	752	669	602	547	501	463	430	401	376
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
140	T	63	89	147	428	1512	1209	1008	864	756	672	604	549	504	465	432	403	378
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
160	T	63	89	147	428	1516	1213	1010	866	758	673	606	551	505	466	433	404	379
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
180	T	63	89	147	428	1519	1215	1012	868	759	675	607	552	506	467	434	405	379
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
200	T	63	89	147	428	1521	1216	1014	869	760	676	608	553	507	468	434	405	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
220	T	63	89	147	428	1522	1218	1015	870	761	676	609	553	507	468	435	406	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
240	T	63	89	147	428	1523	1219	1015	870	761	677	609	554	507	468	435	406	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	5399	4511	2835	1890	1418	1134	945	810	709	630	567	515	473	436	405	378	354
	S	-	3390	1695	1130	847	678	565	484	423	376	339	308	282	260	242	226	211
40	T	5399	4875	4511	3780	2835	2268	1890	1620	1418	1260	1134	1031	945	872	810	756	709
	S	-	6782	3390	2260	1695	1356	1130	968	847	753	678	616	565	521	484	452	423
60	T	5399	5146	4558	4511	4253	3402	2835	2430	2126	1890	1701	1546	1418	1308	1215	1134	1063
	S	-	10172	5086	3390	2543	2034	1695	1453	1271	1130	1017	924	847	782	726	678	635
80	T	5399	5253	4875	4394	4511	4448	3780	3240	2835	2520	2268	2062	1890	1745	1620	1512	1418
	S	-	13563	6782	4521	3390	2712	2260	1937	1695	1507	1356	1233	1130	1043	968	904	847
100	T	5399	5304	5046	4688	4353	4511	4476	4050	3544	3150	2835	2577	2363	2181	2025	1890	1772
	S	-	16954	8477	5651	4238	3390	2825	2421	2119	1883	1695	1541	1412	1304	1210	1130	1059
120	T	5399	5333	5146	4875	4558	4398	4511	4491	4253	3780	3402	3093	2835	2617	2430	2268	2126
	S	-	20345	10172	6782	5086	4068	3390	2906	2543	2260	2034	1849	1695	1564	1453	1356	1271
140	T	5399	5350	5210	4999	4743	4464	4425	4511	4500	4410	3969	3608	3308	3053	2835	2646	2481
	S	-	23735	11868	7912	5934	4747	3955	3390	2966	2637	2373	2157	1977	1825	1695	1582	1483
160	T	5399	5362	5253	5085	4875	4640	4394	4441	4511	4504	4448	4124	3780	3489	3240	3024	2835
	S	-	27126	13563	9042	6782	5425	4521	3875	3390	3014	2712	2466	2260	2086	1937	1808	1695
180	T	5399	5370	5282	5146	4972	4773	4558	4339	4454	4511	4509	4464	4253	3925	3645	3402	3189
	S	-	30517	15258	10172	7629	6103	5086	4360	3814	3390	3051	2774	2543	2347	2179	2034	1907
200	T	5399	5375	5304	5192	5046	4875	4688	4493	4353	4462	4511	4511	4476	4362	4050	3780	3544
	S	-	33908	16954	11303	8477	6782	5651	4844	4238	3767	3390	3082	2825	2608	2421	2260	2119
220	T	5399	5379	5320	5226	5102	4955	4791	4618	4439	4378	4469	4511	4512	4484	4433	4158	3898
	S	-	37298	18649	12433	9325	7460	6216	5328	4662	4144	3729	3390	3108	2869	2664	2486	2331
240	T	5399	5383	5333	5253	5146	5019	4875	4720	4558	4394	4398	4474	4511	4514	4491	4448	4253
	S	-	40689	20345	13563	10172	8138	6782	5813	5086	4521	4068	3699	3390	3129	2906	2712	2543
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 119 Angle bracket type 110090EO, Variant TCP, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	7092	750	375	250	188	150	125	107	94	83	75	68	63	14184
S	3390	506	253	168	126	101	84	72	63	56	50	46	42	6780
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	1310	2620
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	789	254	152	108	84	68	58	50	44	40	36	33	30
S	-	6887	3443	2295	533	171	102	72	56	46	39	33	29	26	24	22	20
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	106	149	246	714	1455	1164	970	831	727	646	582	529	485	447	415	388	363
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	106	149	246	714	2490	1992	1661	1424	1246	1107	997	905	831	767	713	664	623
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	8999	7092	3546	2364	1773	1418	1182	1013	887	788	709	645	591	546	507	473	443
	S	-	3390	1695	1130	847	678	565	484	423	376	339	308	282	260	242	226	211
40	T	8999	8516	7092	4728	3546	2837	2364	2026	1773	1576	1418	1289	1182	1091	1013	946	887
	S	-	6781	3390	2260	1695	1356	1130	968	847	753	678	616	565	521	484	452	423
60	T	8999	8288	9000	7092	5319	4255	3546	3039	2660	2364	2128	1934	1773	1637	1520	1418	1330
	S	-	10172	5086	3390	2543	2034	1695	1453	1271	1130	1017	924	847	782	726	678	635
80	T	8999	8578	8516	9000	7092	5674	4728	4053	3546	3152	2837	2579	2364	2182	2026	1891	1773
	S	-	13563	6781	4521	3390	2712	2260	1937	1695	1507	1356	1233	1130	1043	968	904	847
100	T	8999	8723	8025	9000	8865	7092	5910	5066	4433	3940	3546	3224	2955	2728	2533	2364	2216
	S	-	16954	8477	5651	4238	3390	2825	2421	2119	1883	1695	1541	1412	1304	1210	1130	1059
120	T	8999	8805	8288	8516	9000	8510	7092	6079	5319	4728	4255	3868	3546	3273	3039	2837	2660
	S	-	20345	10172	6781	5086	4068	3390	2906	2543	2260	2034	1849	1695	1564	1453	1356	1271
140	T	8999	8855	8461	7906	8947	9000	8274	7092	6206	5516	4964	4513	4137	3819	3546	3310	3103
	S	-	23735	11868	7912	5933	4747	3955	3390	2966	2637	2373	2157	1977	1825	1695	1582	1483
160	T	8999	8888	8578	8126	8516	9000	9000	8105	7092	6304	5674	5158	4728	4364	4053	3782	3546
	S	-	27126	13563	9042	6781	5425	4521	3875	3390	3014	2712	2466	2260	2086	1937	1808	1695
180	T	8999	8911	8662	8288	8055	8866	9000	9000	7979	7092	6383	5803	5319	4910	4559	4255	3989
	S	-	30517	15258	10172	7629	6103	5086	4359	3814	3390	3051	2774	2543	2347	2179	2034	1907
200	T	8999	8928	8723	8411	8025	8516	9000	9000	8865	7880	7092	6447	5910	5455	5066	4728	4433
	S	-	33908	16954	11303	8477	6781	5651	4843	4238	3767	3390	3082	2825	2608	2421	2260	2119
220	T	8999	8940	8769	8505	8171	8148	8810	9000	9000	8668	7801	7092	6501	6001	5572	5201	4876
	S	-	37298	18649	12433	9325	7459	6216	5328	4662	4144	3729	3390	3108	2869	2664	2486	2331
240	T	8999	8950	8805	8578	8288	7956	8516	9000	9000	9000	8510	7737	7092	6546	6079	5674	5319
	S	-	40689	20345	13563	10172	8138	6781	5812	5086	4521	4068	3699	3390	3129	2906	2712	2543
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	4092	945	473	315	236	189	158	135	118	105	95	86	79	8184
S	3390	506	253	168	126	101	84	72	63	56	50	46	42	6780
k_f (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	820	1640
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	-	-	-	-	995	320	191	136	106	86	73	63	56	50	45	41	38
S	-	6887	3443	2295	533	171	102	72	56	46	39	33	29	26	24	22	20
k_f (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	134	187	310	900	974	779	649	557	487	433	389	354	324	299	278	259	243
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	134	187	310	900	1731	1384	1154	989	866	769	693	629	578	533	495	461	433
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	134	187	310	900	2862	2289	1908	1636	1432	1272	1145	1040	955	881	819	763	716
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_f \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	11340	4092	2046	1364	1023	818	682	585	512	455	409	372	341	315	292	273	256
	S	-	3390	1695	1130	847	678	565	484	423	376	339	308	282	260	242	226	211
40	T	11340	6636	4092	2728	2046	1637	1364	1169	1023	909	818	744	682	630	585	546	512
	S	-	6782	3390	2260	1695	1356	1130	968	847	753	678	616	565	521	484	452	423
60	T	11340	8329	5729	4092	3069	2455	2046	1754	1535	1364	1228	1116	1023	944	877	818	767
	S	-	10172	5086	3390	2543	2034	1695	1453	1271	1130	1017	924	847	782	726	678	635
80	T	11340	9321	6636	5347	4092	3274	2728	2338	2046	1819	1637	1488	1364	1259	1169	1091	1023
	S	-	13563	6782	4521	3390	2712	2260	1937	1695	1507	1356	1233	1130	1043	968	904	847
100	T	11340	9918	7595	6045	5115	4092	3410	2923	2558	2273	2046	1860	1705	1574	1461	1364	1279
	S	-	16954	8477	5651	4238	3390	2825	2421	2119	1883	1695	1541	1412	1304	1210	1130	1059
120	T	11340	10294	8329	6636	5729	4910	4092	3507	3069	2728	2455	2232	2046	1889	1754	1637	1535
	S	-	20345	10172	6782	5086	4068	3390	2906	2543	2260	2034	1849	1695	1564	1453	1356	1271
140	T	11340	10543	8890	7303	6179	5508	4774	4092	3581	3183	2864	2604	2387	2203	2046	1910	1790
	S	-	23735	11868	7912	5933	4747	3955	3390	2966	2637	2373	2157	1977	1825	1695	1582	1483
160	T	11340	10715	9321	7862	6636	5926	5347	4677	4092	3637	3274	2976	2728	2518	2338	2182	2046
	S	-	27126	13563	9042	6782	5425	4521	3875	3390	3014	2712	2466	2260	2086	1937	1808	1695
180	T	11340	10837	9655	8329	7147	6252	5729	5225	4604	4092	3683	3348	3069	2833	2631	2455	2302
	S	-	30517	15258	10172	7629	6103	5086	4359	3814	3390	3051	2774	2543	2347	2179	2034	1907
200	T	11340	10928	9918	8720	7595	6636	6045	5575	5115	4547	4092	3720	3410	3148	2923	2728	2558
	S	-	33908	16954	11303	8477	6782	5651	4843	4238	3767	3390	3082	2825	2608	2421	2260	2119
220	T	11340	10996	10127	9046	7987	7050	6298	5872	5449	5001	4501	4092	3751	3462	3215	3001	2813
	S	-	37298	18649	12433	9325	7460	6216	5328	4662	4144	3729	3390	3108	2869	2664	2486	2331
240	T	11340	11049	10294	9321	8329	7423	6636	6123	5729	5347	4910	4464	4092	3777	3507	3274	3069
	S	-	40689	20345	13563	10172	8138	6782	5812	5086	4521	4068	3699	3390	3129	2906	2712	2543
$k_f \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	5451	1470	735	490	368	294	245	210	184	163	147	134	123	10902
	S	3390	506	253	168	126	101	84	72	63	56	50	46	42	6780
k_t (-)	1,6	1,9	2,1	2,4	2,6	2,9	3,1	3,4	3,6	3,9	4,1	4,4	4,6	0,8	

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$	T	1100
	S	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$	T	-	-	-	1547	498	297	212	164	134	114	98	87	78	70	64	59
	S	-	6887	3443	2295	533	171	102	72	56	46	39	33	29	26	24	22
k_t (-)	0,0	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	209	291	482	1400	1314	1051	876	751	657	584	525	478	438	404	375	350	328
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	209	291	482	1400	2726	2180	1817	1557	1363	1211	1090	991	909	839	779	727	681
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	209	291	482	1400	4088	3271	2726	2336	2044	1817	1635	1487	1363	1258	1168	1090	1022
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
$k_t \times b$ (-)	0,0	18,1	36,2	54,3	72,5	90,6	108,7	126,8	144,9	163,0	181,1	199,2	217,4	235,5	253,6	271,7	289,8	

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	17640	5451	2726	1817	1363	1090	909	779	681	606	545	496	454	419	389	363	341
	S	-	3390	1695	1130	847	678	565	484	423	376	339	308	282	260	242	226	211
40	T	17640	10902	5451	3634	2726	2180	1817	1557	1363	1211	1090	991	909	839	779	727	681
	S	-	6781	3390	2260	1695	1356	1130	968	847	753	678	616	565	521	484	452	423
60	T	17640	14139	8177	5451	4088	3271	2726	2336	2044	1817	1635	1487	1363	1258	1168	1090	1022
	S	-	10172	5086	3390	2543	2034	1695	1453	1271	1130	1017	924	847	782	726	678	635
80	T	17640	13867	10902	7268	5451	4361	3634	3115	2726	2423	2180	1982	1817	1677	1557	1454	1363
	S	-	13563	6781	4521	3390	2712	2260	1937	1695	1507	1356	1233	1130	1043	968	904	847
100	T	17640	14808	13628	9085	6814	5451	4543	3894	3407	3028	2726	2478	2271	2097	1947	1817	1703
	S	-	16954	8476	5651	4238	3390	2825	2421	2119	1883	1695	1541	1412	1304	1210	1130	1059
120	T	17640	15525	14139	10902	8177	6541	5451	4672	4088	3634	3271	2973	2726	2516	2336	2180	2044
	S	-	20345	10172	6781	5086	4068	3390	2906	2543	2260	2034	1849	1695	1564	1453	1356	1271
140	T	17640	16011	14136	12719	9539	7631	6360	5451	4770	4240	3816	3469	3180	2935	2726	2544	2385
	S	-	23735	11867	7911	5933	4747	3955	3390	2966	2637	2373	2157	1977	1825	1695	1582	1483
160	T	17640	16352	13867	13918	10902	8722	7268	6230	5451	4845	4361	3964	3634	3354	3115	2907	2726
	S	-	27126	13563	9042	6781	5425	4521	3875	3390	3014	2712	2466	2260	2086	1937	1808	1695
180	T	17640	16599	14321	14139	12265	9812	8177	7008	6132	5451	4906	4460	4088	3774	3504	3271	3066
	S	-	30517	15258	10172	7629	6103	5086	4359	3814	3390	3051	2774	2543	2347	2179	2034	1907
200	T	17640	16783	14808	14174	13628	10902	9085	7787	6814	6057	5451	4955	4543	4193	3894	3634	3407
	S	-	33908	16954	11302	8476	6781	5651	4843	4238	3767	3390	3082	2825	2608	2421	2260	2119
220	T	17640	16922	15203	14070	13994	11992	9994	8566	7495	6662	5996	5451	4997	4612	4283	3997	3748
	S	-	37298	18649	12432	9324	7459	6216	5328	4662	4144	3729	3390	3108	2869	2664	2486	2331
240	T	17640	17031	15525	13867	14139	13082	10902	9345	8177	7268	6541	5947	5451	5032	4672	4361	4088
	S	-	40689	20345	13563	10172	8137	6781	5812	5086	4521	4068	3699	3390	3129	2906	2712	2543
$k_t \times b$ (-)	0,0	32,5	65,0	97,5	130,0	162,5	195,0	227,5	260,0	292,5	325,0	357,5	390,0	422,5	455,0	487,5	520,0	

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	760	659	581	520	471	430	395	366	341	319	299	282	267	1520
S	621	538	475	425	384	351	323	299	278	260	244	230	218	1242

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3490	6980
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	15120	2470	1235	823	618	494	412	353	309	274	247	225	206	190	176	165	154
S	-	2020	1010	673	505	404	336	288	252	224	202	183	168	155	144	134	126

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	1527	2131	3529	3572	2679	2143	1786	1531	1339	1191	1072	974	893	824	765	714	670
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	1527	2131	3529	5023	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	1527	2131	3529	6494	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	1527	2131	3529	7974	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	1527	2131	3529	9460	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	1527	2131	3529	10251	3317	2653	2211	1895	1658	1474	1327	1206	1106	1021	948	884	829
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	18000	760	380	253	190	152	127	109	95	84	76	69	63	58	54	51	48
	S	-	621	310	207	155	124	103	88	77	69	62	56	51	47	44	41	38
40	T	18000	1520	760	507	380	304	253	217	190	169	152	138	127	117	109	101	95
	S	-	1243	621	414	310	248	207	177	155	138	124	113	103	95	88	82	77
60	T	18000	2280	1140	760	570	456	380	326	285	253	228	207	190	175	163	152	143
	S	-	1865	932	621	466	373	310	266	233	207	186	169	155	143	133	124	116
80	T	18000	3040	1520	1013	760	608	507	434	380	338	304	276	253	234	217	203	190
	S	-	2486	1243	828	621	497	414	355	310	276	248	226	207	191	177	165	155
100	T	18000	3800	1900	1267	950	760	633	543	475	422	380	345	317	292	271	253	238
	S	-	3108	1554	1036	777	621	518	444	388	345	310	282	259	239	222	207	194
120	T	18000	4560	2280	1520	1140	912	760	651	570	507	456	415	380	351	326	304	285
	S	-	3730	1865	1243	932	746	621	532	466	414	373	339	310	286	266	248	233
140	T	18000	5320	2660	1773	1330	1064	887	760	665	591	532	484	443	409	380	355	333
	S	-	4351	2175	1450	1087	870	725	621	543	483	435	395	362	334	310	290	271
160	T	18000	6081	3040	2027	1520	1216	1013	869	760	676	608	553	507	468	434	405	380
	S	-	4973	2486	1657	1243	994	828	710	621	552	497	452	414	382	355	331	310
180	T	18000	6841	3420	2280	1710	1368	1140	977	855	760	684	622	570	526	489	456	428
	S	-	5595	2797	1865	1398	1119	932	799	699	621	559	508	466	430	399	373	349
200	T	18000	7601	3800	2534	1900	1520	1267	1086	950	845	760	691	633	585	543	507	475
	S	-	6216	3108	2072	1554	1243	1036	888	777	690	621	565	518	478	444	414	388
220	T	18000	8361	4180	2787	2090	1672	1393	1194	1045	929	836	760	697	643	597	557	523
	S	-	6838	3419	2279	1709	1367	1139	976	854	759	683	621	569	526	488	455	427
240	T	18000	9121	4560	3040	2280	1824	1520	1303	1140	1013	912	829	760	702	651	608	570
	S	-	7460	3730	2486	1865	1492	1243	1065	932	828	746	678	621	573	532	497	466

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	1267	1098	969	867	784	716	659	610	568	531	499	471	445	2534
S	621	538	475	425	384	351	323	299	278	260	244	230	218	1242

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	4370	8740
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	18911	4117	2059	1372	1029	823	686	588	515	457	412	374	343	317	294	274	257
S	-	2020	1010	673	505	404	336	288	252	224	202	183	168	155	144	134	126

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	2544	3552	5881	5953	4465	3572	2976	2551	2232	1984	1786	1624	1488	1374	1276	1191	1116
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	2544	3552	5881	8372	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	2544	3552	5881	10823	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	2544	3552	5881	13290	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	2544	3552	5881	15767	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	2544	3552	5881	17084	5528	4422	3685	3159	2764	2457	2211	2010	1843	1701	1579	1474	1382
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	29999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	29999	1267	633	422	317	253	211	181	158	141	127	115	106	97	90	84	79
	S	-	621	310	207	155	124	103	88	77	69	62	56	51	47	44	41	38
40	T	29999	2534	1267	845	633	507	422	362	317	282	253	230	211	195	181	169	158
	S	-	1243	621	414	310	248	207	177	155	138	124	113	103	95	88	82	77
60	T	29999	3800	1900	1267	950	760	633	543	475	422	380	345	317	292	271	253	238
	S	-	1865	932	621	466	373	310	266	233	207	186	169	155	143	133	124	116
80	T	29999	5067	2534	1689	1267	1013	845	724	633	563	507	461	422	390	362	338	317
	S	-	2486	1243	828	621	497	414	355	310	276	248	226	207	191	177	165	155
100	T	29999	6334	3167	2111	1583	1267	1056	905	792	704	633	576	528	487	452	422	396
	S	-	3108	1554	1036	777	621	518	444	388	345	310	282	259	239	222	207	194
120	T	29999	7601	3800	2534	1900	1520	1267	1086	950	845	760	691	633	585	543	507	475
	S	-	3730	1865	1243	932	746	621	532	466	414	373	339	310	286	266	248	233
140	T	29999	8867	4434	2956	2217	1773	1478	1267	1108	985	887	806	739	682	633	591	554
	S	-	4351	2175	1450	1087	870	725	621	543	483	435	395	362	334	310	290	271
160	T	29999	10134	5067	3378	2534	2027	1689	1448	1267	1126	1013	921	845	780	724	676	633
	S	-	4973	2486	1657	1243	994	828	710	621	552	497	452	414	382	355	331	310
180	T	29999	11401	5700	3800	2850	2280	1900	1629	1425	1267	1140	1036	950	877	814	760	713
	S	-	5595	2797	1865	1398	1119	932	799	699	621	559	508	466	430	399	373	349
200	T	29999	12668	6334	4223	3167	2534	2111	1810	1583	1408	1267	1152	1056	974	905	845	792
	S	-	6216	3108	2072	1554	1243	1036	888	777	690	621	565	518	478	444	414	388
220	T	29999	13935	6967	4645	3484	2787	2322	1991	1742	1548	1393	1267	1161	1072	995	929	871
	S	-	6838	3419	2279	1709	1367	1139	976	854	759	683	621	569	526	488	455	427
240	T	29999	15201	7601	5067	3800	3040	2534	2172	1900	1689	1520	1382	1267	1169	1086	1013	950
	S	-	7460	3730	2486	1865	1492	1243	1065	932	828	746	678	621	573	532	497	466

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{1,Rk}$ load-carrying capacity of timber | S: $F_{1,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	1596	1383	1221	1092	988	902	830	769	716	669	629	593	561	3192
S	621	538	475	425	384	351	323	299	278	260	244	230	218	1242

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2520	5040
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	10912	5187	2594	1729	1297	1037	865	741	648	576	519	472	432	399	371	346	324
S	-	2020	1010	673	505	404	336	288	252	224	202	183	168	155	144	134	126

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	3206	4476	7411	7501	5625	4500	3750	3215	2813	2500	2250	2046	1875	1731	1607	1500	1406
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	3206	4476	7411	10549	3410	2728	2273	1949	1705	1516	1364	1240	1137	1049	974	909	853
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	3206	4476	7411	10912	6820	5456	4547	3897	3410	3031	2728	2480	2273	2098	1949	1819	1705
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	3206	4476	7411	10912	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	3206	4476	7411	10912	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	3206	4476	7411	10912	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	3206	4476	7411	10912	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	3206	4476	7411	10912	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	3206	4476	7411	10912	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	3206	4476	7411	10912	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	3206	4476	7411	10912	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	3206	4476	7411	10912	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	3206	4476	7411	10912	6965	5572	4643	3980	3483	3096	2786	2533	2322	2143	1990	1857	1741
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	21823	21823	21823	21823	21823	21823	21823	21823	21823	21823	21823	21823	21823	21823	21823	21823	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	21823	1596	798	532	399	319	266	228	200	177	160	145	133	123	114	106	100
	S	-	621	310	207	155	124	103	88	77	69	62	56	51	47	44	41	38
40	T	21823	3192	1596	1064	798	638	532	456	399	355	319	290	266	246	228	213	200
	S	-	1243	621	414	310	248	207	177	155	138	124	113	103	95	88	82	77
60	T	21823	4788	2394	1596	1197	958	798	684	599	532	479	435	399	368	342	319	299
	S	-	1865	932	621	466	373	310	266	233	207	186	169	155	143	133	124	116
80	T	21823	6385	3192	2128	1596	1277	1064	912	798	709	638	580	532	491	456	426	399
	S	-	2486	1243	828	621	497	414	355	310	276	248	226	207	191	177	165	155
100	T	21823	7981	3990	2660	1995	1596	1330	1140	998	887	798	726	665	614	570	532	499
	S	-	3108	1554	1036	777	621	518	444	388	345	310	282	259	239	222	207	194
120	T	21823	9577	4788	3192	2394	1915	1596	1368	1197	1064	958	871	798	737	684	638	599
	S	-	3730	1865	1243	932	746	621	532	466	414	373	339	310	286	266	248	233
140	T	21823	11173	5586	3724	2793	2235	1862	1596	1397	1241	1117	1016	931	859	798	745	698
	S	-	4351	2175	1450	1087	870	725	621	543	483	435	395	362	334	310	290	271
160	T	21823	12769	6385	4256	3192	2554	2128	1824	1596	1419	1277	1161	1064	982	912	851	798
	S	-	4973	2486	1657	1243	994	828	710	621	552	497	452	414	382	355	331	310
180	T	21823	14365	7183	4788	3591	2873	2394	2052	1796	1596	1437	1306	1197	1105	1026	958	898
	S	-	5595	2797	1865	1398	1119	932	799	699	621	559	508	466	430	399	373	349
200	T	21823	15961	7981	5320	3990	3192	2660	2280	1995	1773	1596	1451	1330	1228	1140	1064	998
	S	-	6216	3108	2072	1554	1243	1036	888	777	690	621	565	518	478	444	414	388
220	T	21823	17558	8779	5853	4389	3512	2926	2508	2195	1951	1756	1596	1463	1351	1254	1171	1097
	S	-	6838	3419	2279	1709	1367	1139	976	854	759	683	621	569	526	488	455	427
240	T	21823	19154	9577	6385	4788	3831	3192	2736	2394	2128	1915	1741	1596	1473	1368	1277	1197
	S	-	7460	3730	2486	1865	1492	1243	1065	932	828	746	678	621	573	532	497	466

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{1,T,Rk}$ load-carrying capacity of timber | S: $F_{1,S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	2483	2152	1899	1699	1537	1403	1291	1195	1113	1041	978	922	872	4966
$F_{1,Rk}$ S	621	538	475	425	384	351	323	299	278	260	244	230	218	1242

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	3360	6720
$F_{2/3,Rk}$ S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	14536	8069	4035	2690	2017	1614	1345	1153	1009	897	807	734	672	621	576	538	504
$F_{4,Rk}$ S	-	2020	1010	673	505	404	336	288	252	224	202	183	168	155	144	134	126

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	4987	6962	11528	11668	8751	7001	5834	5000	4375	3889	3500	3182	2917	2693	2500	2334	2188
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	4987	6962	11528	14536	4543	3634	3028	2596	2271	2019	1817	1652	1514	1398	1298	1211	1136
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
40	T	4987	6962	11528	14536	9085	7268	6057	5191	4543	4038	3634	3304	3028	2795	2596	2423	2271
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	4987	6962	11528	14536	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	4987	6962	11528	14536	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	4987	6962	11528	14536	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	4987	6962	11528	14536	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	4987	6962	11528	14536	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	4987	6962	11528	14536	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	4987	6962	11528	14536	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	4987	6962	11528	14536	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	4987	6962	11528	14536	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	4987	6962	11528	14536	10835	8668	7223	6191	5417	4815	4334	3940	3612	3334	3096	2889	2709
	S	1136	1586	2627	2295	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	29071	29071	29071	29071	29071	29071	29071	29071	29071	29071	29071	29071	29071	29071	29071	29071	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	29071	2483	1241	828	621	497	414	355	310	276	248	226	207	191	177	166	155
	S	-	621	310	207	155	124	103	88	77	69	62	56	51	47	44	41	38
40	T	29071	4966	2483	1655	1241	993	828	709	621	552	497	451	414	382	355	331	310
	S	-	1243	621	414	310	248	207	177	155	138	124	113	103	95	88	82	77
60	T	29071	7449	3724	2483	1862	1490	1241	1064	931	828	745	677	621	573	532	497	466
	S	-	1865	932	621	466	373	310	266	233	207	186	169	155	143	133	124	116
80	T	29071	9932	4966	3311	2483	1986	1655	1419	1241	1104	993	903	828	764	709	662	621
	S	-	2486	1243	828	621	497	414	355	310	276	248	226	207	191	177	165	155
100	T	29071	12414	6207	4138	3104	2483	2069	1773	1552	1379	1241	1129	1035	955	887	828	776
	S	-	3108	1554	1036	777	621	518	444	388	345	310	282	259	239	222	207	194
120	T	29071	14897	7449	4966	3724	2979	2483	2128	1862	1655	1490	1354	1241	1146	1064	993	931
	S	-	3730	1865	1243	932	746	621	532	466	414	373	339	310	286	266	248	233
140	T	29071	17380	8690	5793	4345	3476	2897	2483	2173	1931	1738	1580	1448	1337	1241	1159	1086
	S	-	4351	2175	1450	1087	870	725	621	543	483	435	395	362	334	310	290	271
160	T	29071	19863	9932	6621	4966	3973	3311	2838	2483	2207	1986	1806	1655	1528	1419	1324	1241
	S	-	4973	2486	1657	1243	994	828	710	621	552	497	452	414	382	355	331	310
180	T	29071	22346	11173	7449	5586	4469	3724	3192	2793	2483	2235	2031	1862	1719	1596	1490	1397
	S	-	5595	2797	1865	1398	1119	932	799	699	621	559	508	466	430	399	373	349
200	T	29071	24829	12414	8276	6207	4966	4138	3547	3104	2759	2483	2257	2069	1910	1773	1655	1552
	S	-	6216	3108	2072	1554	1243	1036	888	777	690	621	565	518	478	444	414	388
220	T	29071	27312	13656	9104	6828	5462	4552	3902	3414	3035	2731	2483	2276	2101	1951	1821	1707
	S	-	6838	3419	2279	1709	1367	1139	976	854	759	683	621	569	526	488	455	427
240	T	29071	29072	14897	9932	7449	5959	4966	4256	3724	3311	2979	2709	2483	2292	2128	1986	1862
	S	-	7460	3730	2486	1865	1492	1243	1065	932	828	746	678	621	573	532	497	466

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{1,T,Rk}$ load-carrying capacity of timber | S: $F_{1,S,Rk}$ load-carrying capacity of steel

Table B. 126 Angle bracket type 110090EO, Variant TTP, Fastener GH Nail 4x40, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	728	448	224	149	112	89	74	64	56	49	44	40	37	1456
S	733	506	253	169	127	101	84	72	63	56	51	46	42	1466

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	1990	3980
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	11340	2316	1177	787	473	152	90	64	50	41	34	30	26	23	21	19	18
S	-	2382	1191	794	533	172	102	73	57	46	39	34	30	27	24	22	20

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	63	89	147	428	1530	1224	1020	874	764	679	611	556	509	470	437	407	382
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
20	T	63	89	147	428	1039	831	693	594	519	462	415	378	346	319	297	277	259
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	63	89	147	428	1346	1077	897	769	673	598	538	489	448	414	384	359	336
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
60	T	63	89	147	428	1439	1151	959	822	719	639	575	523	479	442	411	383	359
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
80	T	63	89	147	428	1477	1181	984	844	738	656	590	537	492	454	422	393	369
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
100	T	63	89	147	428	1495	1196	997	854	747	664	598	543	498	460	427	398	373
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
120	T	63	89	147	428	1505	1204	1003	860	752	669	602	547	501	463	430	401	376
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
140	T	63	89	147	428	1512	1209	1008	864	756	672	604	549	504	465	432	403	378
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
160	T	63	89	147	428	1516	1213	1010	866	758	673	606	551	505	466	433	404	379
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
180	T	63	89	147	428	1519	1215	1012	868	759	675	607	552	506	467	434	405	379
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
200	T	63	89	147	428	1521	1216	1014	869	760	676	608	553	507	468	434	405	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
220	T	63	89	147	428	1522	1218	1015	870	761	676	609	553	507	468	435	406	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
240	T	63	89	147	428	1523	1219	1015	870	761	677	609	554	507	468	435	406	380
	S	72	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	5399	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	5399	727	364	242	182	145	121	104	91	80	72	66	60	56	52	48	45
	S	-	733	366	244	183	147	122	105	92	81	73	67	61	56	52	49	46
40	T	5399	1453	727	485	364	291	242	208	182	161	145	132	121	112	104	97	91
	S	-	1466	733	489	366	293	244	209	183	163	147	133	122	113	105	98	92
60	T	5399	2174	1091	727	546	436	364	312	273	242	218	198	182	168	156	145	136
	S	-	2199	1099	733	550	440	366	314	275	244	220	200	183	169	157	147	137
80	T	5399	2889	1453	970	727	582	485	416	364	323	291	264	242	224	208	194	182
	S	-	2932	1466	977	733	586	489	419	366	326	293	267	244	226	209	195	183
100	T	5399	3595	1814	1212	909	727	606	520	455	404	364	330	303	280	260	242	227
	S	-	3664	1832	1221	916	733	611	523	458	407	366	333	305	282	262	244	229
120	T	5399	4290	2174	1453	1091	873	727	623	546	485	436	397	364	336	312	291	273
	S	-	4397	2199	1466	1099	879	733	628	550	489	440	400	366	338	314	293	275
140	T	5399	4973	2532	1694	1272	1018	849	727	636	566	509	463	424	392	364	339	318
	S	-	5130	2565	1710	1283	1026	855	733	641	570	513	466	428	395	366	342	321
160	T	5399	5362	2889	1934	1453	1163	970	831	727	647	582	529	485	448	416	388	364
	S	-	5863	2932	1954	1466	1173	977	838	733	651	586	533	489	451	419	391	366
180	T	5399	5370	3243	2174	1634	1308	1091	935	818	727	655	595	546	504	468	436	409
	S	-	6596	3298	2199	1649	1319	1099	942	825	733	660	600	550	507	471	440	412
200	T	5399	5375	3595	2413	1814	1453	1212	1039	909	808	727	661	606	560	520	485	455
	S	-	7329	3664	2443	1832	1466	1221	1047	916	814	733	666	611	564	523	489	458
220	T	5399	5379	3944	2651	1994	1598	1332	1142	1000	889	800	727	667	615	572	533	500
	S	-	8062	4031	2687	2015	1612	1344	1152	1008	896	806	733	672	620	576	537	504
240	T	5399	5383	4290	2889	2174	1742	1453	1246	1091	970	873	793	727	671	623	582	546
	S	-	8795	4397	2932	2199	1759	1466	1256	1099	977	879	800	733	677	628	586	550

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Table B. 127 Angle bracket type 110090E0, Variant TTP, Fastener GH Nail 4x60, Density 350 kg/m³Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	1214	750	375	250	188	150	125	107	94	83	75	68	63	2427
S	732	506	253	168	126	101	84	72	63	56	50	46	42	1464

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2710	5420
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	14184	3945	1972	1315	789	254	152	108	84	68	58	50	44	40	36	33	30
S	-	2381	1190	793	533	171	102	72	56	46	39	33	29	26	24	22	20

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	106	149	246	714	1455	1164	970	831	727	646	582	529	485	447	415	388	363
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	106	149	246	714	2490	1992	1661	1424	1246	1107	997	905	831	767	713	664	623
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	106	149	246	714	2550	2040	1700	1457	1275	1133	1020	927	850	785	729	680	638
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	8999	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	8999	1214	607	405	303	243	202	173	152	135	121	110	101	93	87	81	76
	S	-	732	366	244	183	146	122	104	91	81	73	66	61	56	52	48	45
40	T	8999	2427	1214	809	607	485	405	347	303	270	243	221	202	187	173	162	152
	S	-	1465	732	488	366	293	244	209	183	162	146	133	122	112	104	97	91
60	T	8999	3641	1821	1214	910	728	607	520	455	405	364	331	303	280	260	243	228
	S	-	2198	1099	732	549	439	366	314	274	244	219	199	183	169	157	146	137
80	T	8999	4855	2427	1618	1214	971	809	694	607	539	485	441	405	373	347	324	303
	S	-	2931	1465	977	732	586	488	418	366	325	293	266	244	225	209	195	183
100	T	8999	6069	3034	2023	1517	1214	1011	867	759	674	607	552	506	467	433	405	379
	S	-	3664	1832	1221	916	732	610	523	458	407	366	333	305	281	261	244	229
120	T	8999	7282	3641	2427	1821	1456	1214	1040	910	809	728	662	607	560	520	485	455
	S	-	4397	2198	1465	1099	879	732	628	549	488	439	399	366	338	314	293	274
140	T	8999	8496	4248	2832	2124	1699	1416	1214	1062	944	850	772	708	654	607	566	531
	S	-	5130	2565	1710	1282	1026	855	732	641	570	513	466	427	394	366	342	320
160	T	8999	9000	4855	3237	2427	1942	1618	1387	1214	1079	971	883	809	747	694	647	607
	S	-	5863	2931	1954	1465	1172	977	837	732	651	586	533	488	451	418	390	366
180	T	8999	9000	5462	3641	2731	2185	1821	1561	1365	1214	1092	993	910	840	780	728	683
	S	-	6596	3298	2198	1649	1319	1099	942	824	732	659	599	549	507	471	439	412
200	T	8999	9000	6069	4046	3034	2427	2023	1734	1517	1349	1214	1103	1011	934	867	809	759
	S	-	7328	3664	2442	1832	1465	1221	1046	916	814	732	666	610	563	523	488	458
220	T	8999	9000	6676	4450	3338	2670	2225	1907	1669	1483	1335	1214	1113	1027	954	890	834
	S	-	8061	4030	2687	2015	1612	1343	1151	1007	895	806	732	671	620	575	537	503
240	T	8999	9000	7282	4855	3641	2913	2427	2081	1821	1618	1456	1324	1214	1120	1040	971	910
	S	-	8794	4397	2931	2198	1758	1465	1256	1099	977	879	799	732	676	628	586	549

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{1,Rk}$ load-carrying capacity of timber | S: $F_{1,S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2	
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0	
$F_{1,Rk}$	T	1529	945	473	315	236	189	158	135	118	105	95	86	79	3059
	S	732	506	253	168	126	101	84	72	63	56	50	46	42	1464

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2	
$F_{2/3,Rk}$	T	1900	3800
	S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
$F_{4,Rk}$	T	8183	4970	2485	1657	995	320	191	136	106	86	73	63	56	50	45	41	38
	S	-	2381	1190	793	533	171	102	72	56	46	39	33	29	26	24	22	20

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	134	187	310	900	974	779	649	557	487	433	389	354	324	299	278	259	243
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	134	187	310	900	1731	1384	1154	989	866	769	693	629	578	533	495	461	433
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	134	187	310	900	2862	2289	1908	1636	1432	1272	1145	1040	955	881	819	763	716
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	134	187	310	900	3213	2570	2142	1836	1607	1428	1285	1168	1071	989	918	857	803
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	11340	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	11340	1529	765	510	382	306	255	218	191	170	153	139	127	118	109	102	96
	S	-	732	366	244	183	146	122	104	91	81	73	66	61	56	52	48	45
40	T	11340	3059	1529	1020	765	612	510	437	382	340	306	278	255	235	218	204	191
	S	-	1465	732	488	366	293	244	209	183	162	146	133	122	112	104	97	91
60	T	11340	4588	2294	1529	1147	918	765	655	573	510	459	417	382	353	328	306	287
	S	-	2198	1099	732	549	439	366	314	274	244	219	199	183	169	157	146	137
80	T	11340	6117	3059	2039	1529	1223	1020	874	765	680	612	556	510	471	437	408	382
	S	-	2931	1465	977	732	586	488	418	366	325	293	266	244	225	209	195	183
100	T	11340	7647	3823	2549	1912	1529	1274	1092	956	850	765	695	637	588	546	510	478
	S	-	3664	1832	1221	916	732	610	523	458	407	366	333	305	281	261	244	229
120	T	11340	9176	4588	3059	2294	1835	1529	1311	1147	1020	918	834	765	706	655	612	573
	S	-	4397	2198	1465	1099	879	732	628	549	488	439	399	366	338	314	293	274
140	T	11340	10705	5353	3568	2676	2141	1784	1529	1338	1189	1071	973	892	823	765	714	669
	S	-	5130	2565	1710	1282	1026	855	732	641	570	513	466	427	394	366	342	320
160	T	11340	11340	6117	4078	3059	2447	2039	1748	1529	1359	1223	1112	1020	941	874	816	765
	S	-	5863	2931	1954	1465	1172	977	837	732	651	586	533	488	451	418	390	366
180	T	11340	11340	6882	4588	3441	2753	2294	1966	1720	1529	1376	1251	1147	1059	983	918	860
	S	-	6596	3298	2198	1649	1319	1099	942	824	732	659	599	549	507	471	439	412
200	T	11340	11340	7647	5098	3823	3059	2549	2185	1912	1699	1529	1390	1274	1176	1092	1020	956
	S	-	7328	3664	2442	1832	1465	1221	1046	916	814	732	666	610	563	523	488	458
220	T	11340	11340	8411	5608	4206	3365	2804	2403	2103	1869	1682	1529	1402	1294	1202	1122	1051
	S	-	8061	4030	2687	2015	1612	1343	1151	1007	895	806	732	671	620	575	537	503
240	T	11340	11340	9176	6117	4588	3670	3059	2622	2294	2039	1835	1668	1529	1412	1311	1223	1147
	S	-	8794	4397	2931	2198	1758	1465	1256	1099	977	879	799	732	676	628	586	549

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel

Characteristic load-carrying capacity $F_{1,Rk}$ (N) for one / two angle brackets

angle bracket	1													2
f (mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	0
$F_{1,Rk}$ T	2379	1470	735	490	368	294	245	210	184	163	147	134	123	4758
S	732	506	253	168	126	101	84	72	63	56	50	46	42	1464

Characteristic load-carrying capacity $F_{2/3,Rk}$ (N) for one / two angle brackets

angle bracket	1	2
$F_{2/3,Rk}$ T	2600	5200
S	-	-

Characteristic load-carrying capacity $F_{4,Rk}$ (N) for one angle bracket

e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
$F_{4,Rk}$ T	10902	7732	3866	2577	1547	498	297	212	164	134	114	98	87	78	70	64	59
S	-	2381	1190	793	533	171	102	72	56	46	39	33	29	26	24	22	20

Characteristic load-carrying capacity $F_{5,Rk}$ (N) for one angle bracket

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
20	T	209	291	482	1400	1314	1051	876	751	657	584	525	478	438	404	375	350	328
	S	71	100	166	482	1722	1377	1148	984	861	765	689	626	574	530	492	459	430
40	T	209	291	482	1400	2726	2180	1817	1557	1363	1211	1090	991	909	839	779	727	681
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
60	T	209	291	482	1400	4088	3271	2726	2336	2044	1817	1635	1487	1363	1258	1168	1090	1022
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
80	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
100	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
120	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
140	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
160	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
180	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
200	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
220	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430
240	T	209	291	482	1400	4998	3998	3332	2856	2499	2221	1999	1817	1666	1538	1428	1333	1250
	S	71	100	166	482	1721	1377	1147	983	860	765	688	626	573	529	491	459	430

Characteristic load-carrying capacity $F_{4/5,Rk}$ (N) for two angle brackets

b / e (mm)	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	
0	T	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	17640	
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	T	17640	2379	1189	793	595	476	396	340	297	264	238	216	198	183	170	159	149
	S	-	732	366	244	183	146	122	104	91	81	73	66	61	56	52	48	45
40	T	17640	4758	2379	1586	1189	952	793	680	595	529	476	433	396	366	340	317	297
	S	-	1465	732	488	366	293	244	209	183	162	146	133	122	112	104	97	91
60	T	17640	7137	3568	2379	1784	1427	1189	1020	892	793	714	649	595	549	510	476	446
	S	-	2198	1099	732	549	439	366	314	274	244	219	199	183	169	157	146	137
80	T	17640	9516	4758	3172	2379	1903	1586	1359	1189	1057	952	865	793	732	680	634	595
	S	-	2931	1465	977	732	586	488	418	366	325	293	266	244	225	209	195	183
100	T	17640	11895	5947	3965	2974	2379	1982	1699	1487	1322	1189	1081	991	915	850	793	743
	S	-	3664	1832	1221	916	732	610	523	458	407	366	333	305	281	261	244	229
120	T	17640	14274	7137	4758	3568	2855	2379	2039	1784	1586	1427	1298	1189	1098	1020	952	892
	S	-	4397	2198	1465	1099	879	732	628	549	488	439	399	366	338	314	293	274
140	T	17640	16653	8326	5551	4163	3331	2775	2379	2082	1850	1665	1514	1388	1281	1189	1110	1041
	S	-	5130	2565	1710	1282	1026	855	732	641	570	513	466	427	394	366	342	320
160	T	17640	17640	9516	6344	4758	3806	3172	2719	2379	2115	1903	1730	1586	1464	1359	1269	1189
	S	-	5863	2931	1954	1465	1172	977	837	732	651	586	533	488	451	418	390	366
180	T	17640	17640	10705	7137	5353	4282	3568	3059	2676	2379	2141	1946	1784	1647	1529	1427	1338
	S	-	6596	3298	2198	1649	1319	1099	942	824	732	659	599	549	507	471	439	412
200	T	17640	17640	11895	7930	5947	4758	3965	3398	2974	2643	2379	2163	1982	1830	1699	1586	1487
	S	-	7328	3664	2442	1832	1465	1221	1046	916	814	732	666	610	563	523	488	458
220	T	17640	17640	13084	8723	6542	5234	4361	3738	3271	2908	2617	2379	2181	2013	1869	1745	1636
	S	-	8061	4030	2687	2015	1612	1343	1151	1007	895	806	732	671	620	575	537	503
240	T	17640	17640	14274	9516	7137	5709	4758	4078	3568	3172	2855	2595	2379	2196	2039	1903	1784
	S	-	8794	4397	2931	2198	1758	1465	1256	1099	977	879	799	732	676	628	586	549

TTM: Timber-Timber-Maximum | TTP: Timber-Timber-Partial | TCM: Timber-Concrete-Maximum | TCP: Timber-Concrete-Partial

T: $F_{T,Rk}$ load-carrying capacity of timber | S: $F_{S,Rk}$ load-carrying capacity of steel