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Authorised and notified according to Article 29 of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011

MEMBER OF EOTA

European Technical Assessment ETA-20/0146 of 2020/09/17

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:	SPAX Angle Brackets SXAKR
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)
Manufacturer:	SPAX International GmbH & Co. KG Kölner Strasse 71-77 DE-58256 Ennepetal Tel. +49 23 33 799-0 Fax + 49 23 33 799-199 Internet www.spax.com
Manufacturing plant:	SPAX International production facilities
This European Technical Assessment contains:	74 pages including 2 annexes which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:	EAD 130186-00-0603 for Three-dimensional nailing plates
This version replaces:	

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

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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
The SPAX angle brackets SXAKR are one-piece, non-welded angle brackets that are connected to the timber members with screws or ringed shank nails and to the concrete and steel elements by bolts.

The angle brackets 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 A_{80} of 22 %.

Dimensions and holes are shown in Annex A. The angle brackets are made from steel with tolerances according to EN 10143.

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 structures, as a connection between a timber component and a concrete or steel 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.

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

The static and kinematic behaviour of the timber members or the supports shall be as described in Annex B.

The wood members can be of solid timber, glued laminated timber and similar glued members, or wood-based structural members with a characteristic density from 290 kg/m^3 to 420 kg/m^3. This requirement to the material of the wood members can be fulfilled by using the following materials:

- Structural solid timber classified to C24-C40 according to EN 338 / EN 14081,
- Glulam classified to GL24-GL36 according to EN 1194 / EN 14080,
- LVL according to EN 14374,
- Parallam PSL,
- Intrallam LSL,
- Layered wood plates,
- Plywood according to EN 636

Annex B states the characteristic values of the load-carrying capacities of the angle bracket connections for a characteristic density of 350 kg/m^3. For timber or wood based material with a lower characteristic density than 350 kg/m^3 the load-carrying capacities shall be reduced by the k_{dens} factor:

$$k_{dens} = \left(\frac{\rho_k}{350} \right)^2$$

Where ρ_k is he characteristic density of the timber in kg/m^3.

The design of the connections shall be in accordance with Eurocode 5 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 Eurocode 5 and for connections subject to static or quasi-static loading.

The angle brackets may also be used for connections between a timber member and a member of concrete or 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 performance class A1 in accordance with the provisions of Commission Delegated Regulation 2016/364 and EC decision 96/603/EC, amended by EC Decision 2000/605/EC.
3.7 Sustainable use of natural resources (BWR7)	No Performance Determined
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 and 2
Identification	See Annex A

*) See additional information in section 3.8 – 3.9.

3.9 Methods of verification

The characteristic load-carrying capacities 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} that takes into account the load duration class.

Thus, the characteristic values of the load–carrying capacity are determined also for timber failure $F_{Rk,H}$ (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.

$$F_{Rd} = \min\left\{\frac{k_{mod} \cdot F_{Rk,H}}{\gamma_{M,H}}; \frac{F_{Rk,S}}{\gamma_{M,S}}\right\}$$

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 also correctly taken into account.

3.10 Mechanical resistance and stability

See annex B for the characteristic load-carrying capacity in the different directions F_1 to F_5.

The characteristic capacities of the angle brackets are determined by calculation assisted by testing as described in the EAD 130186-00-0603 for Three-dimensional nailing plates. They should be used for designs in accordance with Eurocode 5 or a similar national Timber Code.

Threaded nails (ringed shank nails) in accordance to EN 14592

In the formulas in Annex B the capacities for threaded nails and fully threaded screws calculated from the formulas of Eurocode 5 should be applied assuming a thick steel plate when calculating the lateral load-carrying capacity, $R_{l,k}$.

The characteristic withdrawal capacity of the nails has to be determined by calculation in accordance with EN 1995-1-1: 2004, paragraph 8.3.2 (head pull-through is not relevant):

$F_{ax,Rk} = f_{ax,k} \times d \times t_{pen}$

Where:

$f_{ax,k}$ Characteristic value of the withdrawal parameter in N/mm²
d Nail diameter in mm
t_{pen} Penetration depth of the profiles shank in mm
$t_{pen} \geq 31$ mm

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

$f_{ax,k} = 50 \times 10^{-6} \times \sigma_k^2$

Where:

σ_k Characteristic density of the timber in kg/m³

The shape of the nail 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.
SPAX Connector nails according to ETA-20/0527 can be used instead.

Fully threaded screws in accordance with EN 14592

The capacity of SPAX Connector screws is in accordance with national German approval no. Z-9.1-375 issued by DIBt, and the load carrying capacities of joints with SPAX Connector screws apply in areas where the abovementioned national German approval is accepted as basis for the design.

Load bearing capacities for SPAX Connector screws 5,0x40 and 5,0x60 have been determined. If longer 5,0 mm Connector screws are used the capacities stated for SPAX Connector screw 5,0x60 are valid.
SPAX Connector screws according to ETA-20/0527 can be used instead.

Additionally, the angle brackets can be fastened to the concrete structure or steel member by bolts 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.

3.11 Aspects related to the performance of the product

3.11.1 Corrosion protection in service class 1 and 2.
In accordance with EAD 130186-00-0603 for Three-dimensional nailing plates shall the angle bracket have a zinc coating weight of Z275. The steel employed is S 250 GD + Z275, S 235 JR + Z275 or DX 51 D + Z275 according to EN 10346:2009.

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

SPAX angle brackets SXAKR 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 nailing pattern used shall be either the maximum or the minimum pattern as defined in Annex A.

The following provisions concerning installation apply:

Angle brackets can be fastened to wood-based members by nails or screws. Angle brackets shall be connected to headers made of wood-based panels using SPAX connector screws.

There shall be nails or screws in all holes or at least in holes as specified on technical drawings in accordance with this document.

All minimum spacing's and edge/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 – the components 1 and 2 shown in the figure on page 13 - to which the brackets are fixed shall be:

- Restrained against rotation.
- Strength class C24 or better, see section 1 of this ETA
- Free from wane under the bracket.
- The actual end bearing capacity of the timber member to be used in conjunction with the bracket is checked by the designer of the structure to ensure it is not less than the bracket capacity and, if necessary, the bracket capacity reduced accordingly.
- 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.

Wood to concrete or steel connections
The above mentioned rules for wood to wood connections are applicable also for the connection between the wooden element and the angle bracket.

The angle bracket shall be in close contact with the concrete or steel over the whole face. There shall be no intermediate layers in between.

When mounting a wooden element to concrete or steel, the gap between the end of the wooden element and the concrete or steel surface, where contact stresses can occur during loading, shall be limited to an absolute minimum. However, construction tolerances of up to a maximum of 3 mm on uneven surfaces can be accepted.

The bolt shall have a diameter not less than the minimum diameter in relation to the diameter of the bolt hole in accordance with Eurocode 5 or an appropriate national code.

There shall be bolts in all bolt holes or at least in holes as specified on technical drawings in accordance with this document. All minimum spacing's and edge/end distances in accordance with Eurocode 5 or an appropriate national code shall be complied with.

4 Attestation and verification of constancy of performance (AVCP)

4.1 AVCP system

According to the decision 97/638/EC of the European Commission, 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

Issued in Copenhagen on 2020-09-17 by

Thomas Bruun
Managing Director, ETA-Danmark

Annex A
Product details and definitions

Table A.1 materials specification

Bracket type	Thickness (mm)	Steel specifications*	Coating specification
SXAKR95 + SXAKRL95	4,0	S 250 GD + Z 275	Z275
SXAKR95X3 + SXAKRL95X3	3,0		
SXAKR9015 + SXAKR9015E	1,5	S 250 GD + Z 275	Z275
SXAKR135 + SXAKRL135	4,0	S 250 GD + Z 275	Z275
SXAKR135X3 + SXAKRL135X3	3,0		
SXAKR285 + SXAKRL285	4,0	S 250 GD + Z 275	Z275
SXAKR285X3 + SXAKRL285X3	3,0		

Table A.2 Range of sizes

Bracket type	Height (mm)		Width (mm)	
	min	**max**	**min**	**max**
SXAKR95 + SXAKRL95 **SXAKR9015 + SXAKR9015E**	94	96	64	66
SXAKR135 + SXAKRL135	134	136	64	66
SXAKR285 + SXAKRL285	284	286	64	66

Table A.3 Fastener specification

Fastener type**	Nail size (mm)		Finish
According to EN 14592	Diameter	Length	
Threaded nail	4,0	40	Electroplated zinc
Threaded nail	4,0	60	Electroplated zinc
SPAX Connector screw	5,0	40	Electroplated zinc
SPAX Connector screw	5,0	60	Electroplated zinc
10 mm bolt	In accordance with relevant Eurocode for design of anchor connections		Bolt type See specification of the manufacturer
12 mm bolt			

* Additionally, the angle brackets can be made from pre-galvanized steel S 235 JR + Z275 or DX 51 D + Z275 according to EN 10327:2004 with a minimum yield stress of 235 MPa, a minimum tensile strength R_m of 330 MPa and a minimum ultimate strain A_{80} of 22 %.

** SPAX Connector Screws or SPAX Connector Nails according to ETA-20/0527 can be used instead

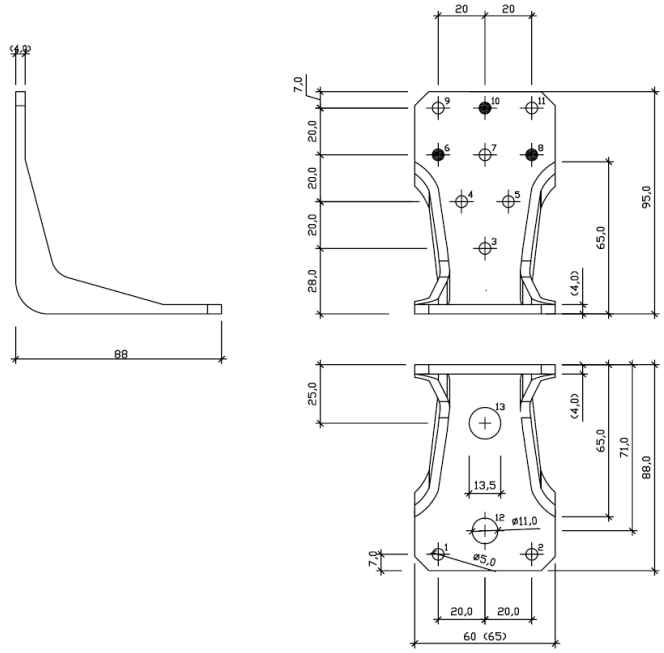


Figure A.1 Dimensions of Angle Bracket SXAKR95
For use in timber to steel/concrete

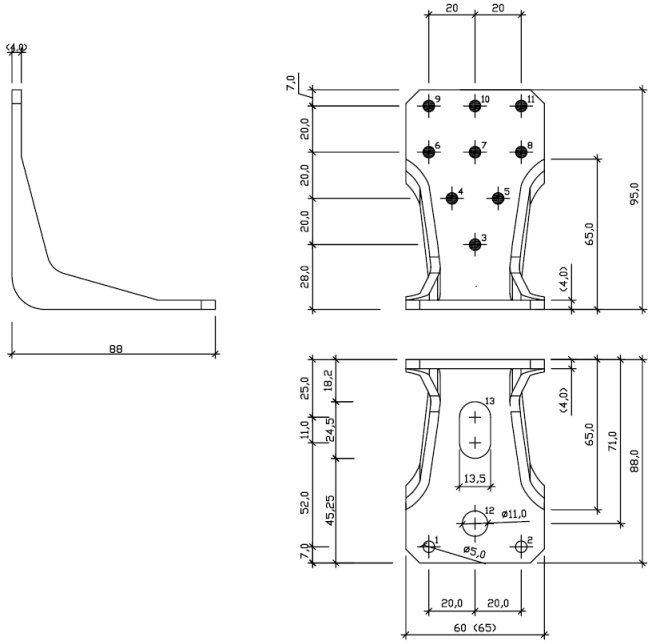


Figure A.2 Dimensions of Angle Bracket SXAKRL95
For use in timber to steel/concrete

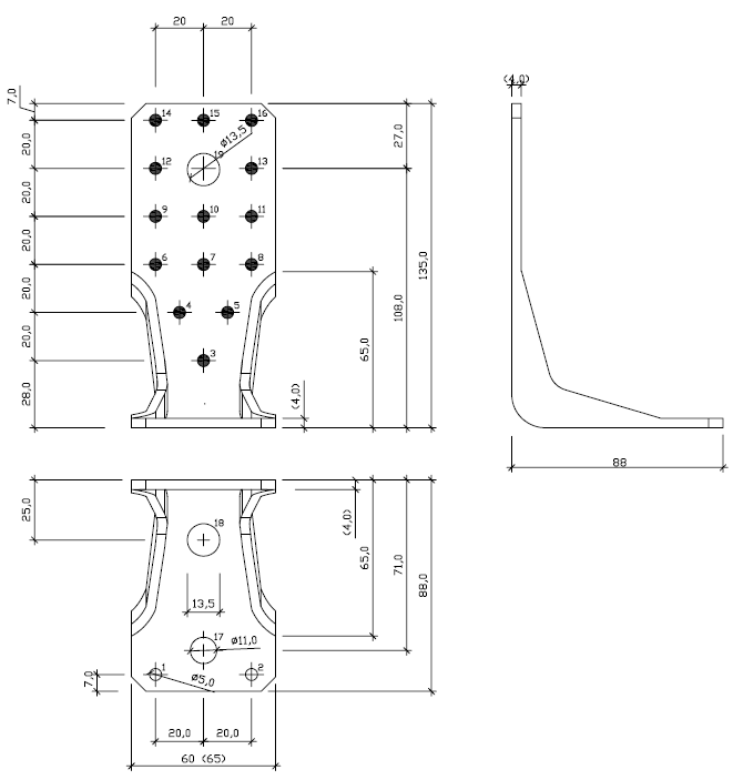


Figure A.3 Dimensions of Angle Bracket SXAKR135
For use in timber to steel/concrete

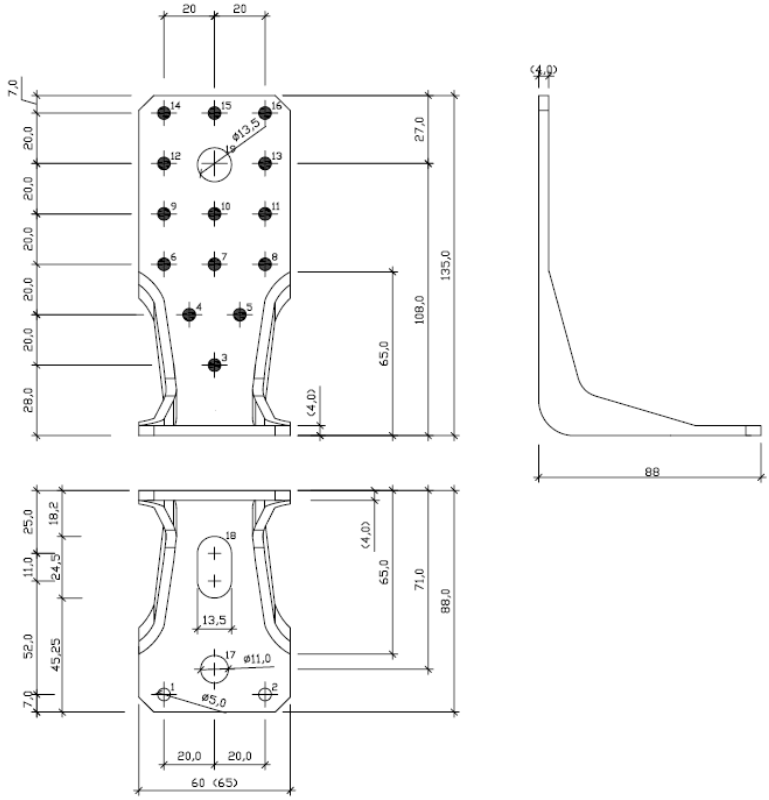
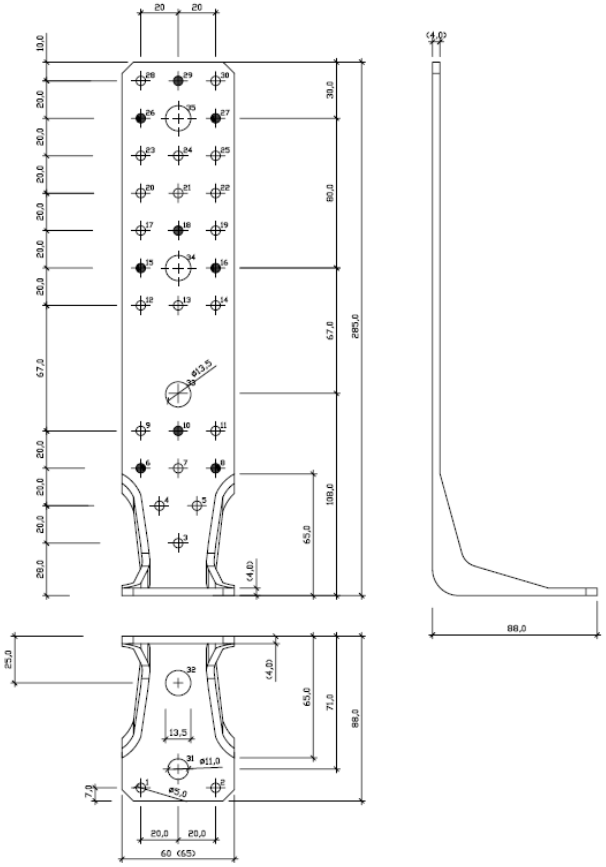


Figure A.4 Dimensions of Angle Bracket SXAKRL135
For use in timber to steel/concrete



A.5 Dimensions of Angle Bracket SXAKR285
For use in timber to steel/concrete

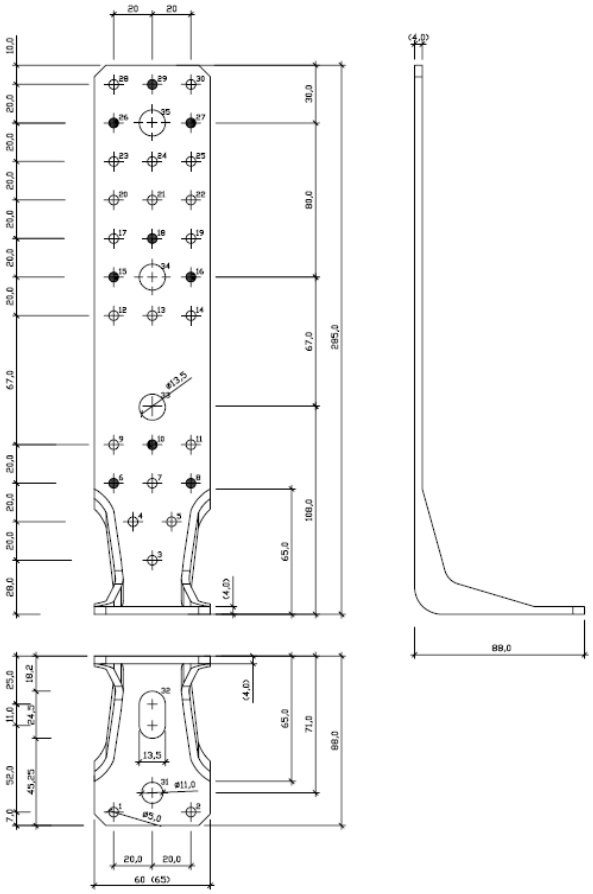
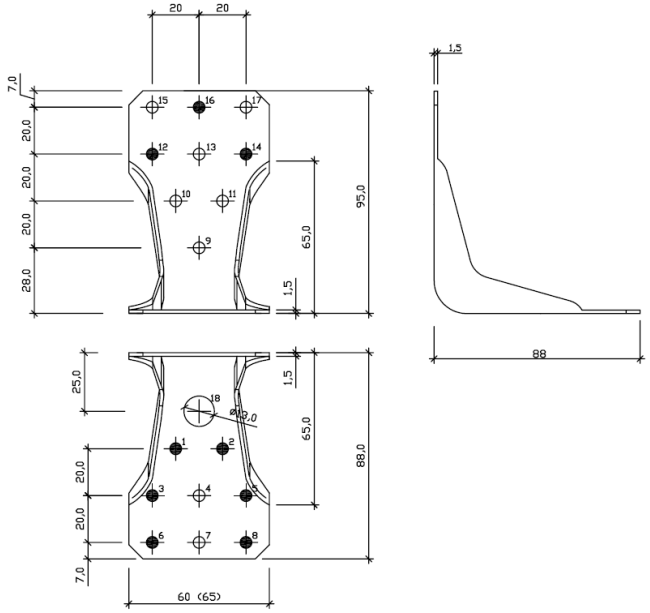
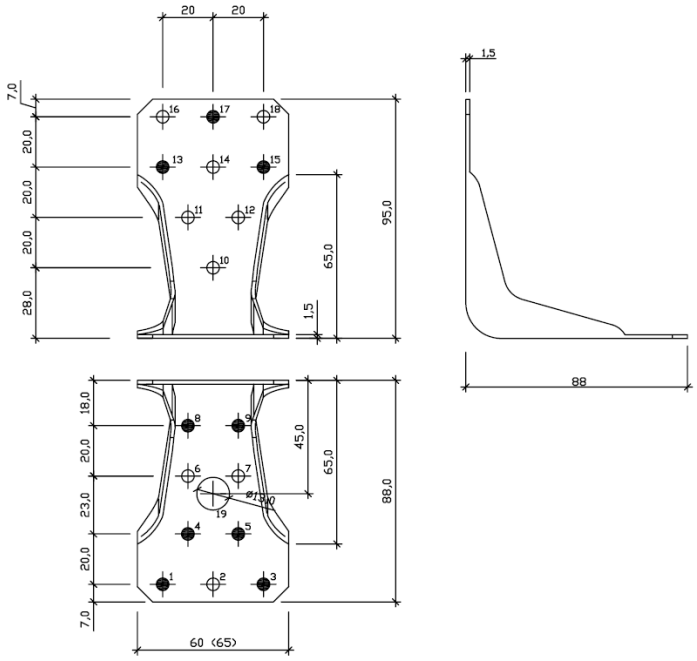


Figure A.6 Dimensions of Angle Bracket SXAKRL285
For use in timber to steel/concrete



A.7 Dimensions of Angle Bracket SXAKR9015E
For use in timber to timber connections or
timber to steel/concrete



A.8 Dimensions of Angle Bracket SXAKR9015
For use in timber to timber connections or
timber to steel/concrete

Annex B
Characteristic load-carrying capacities

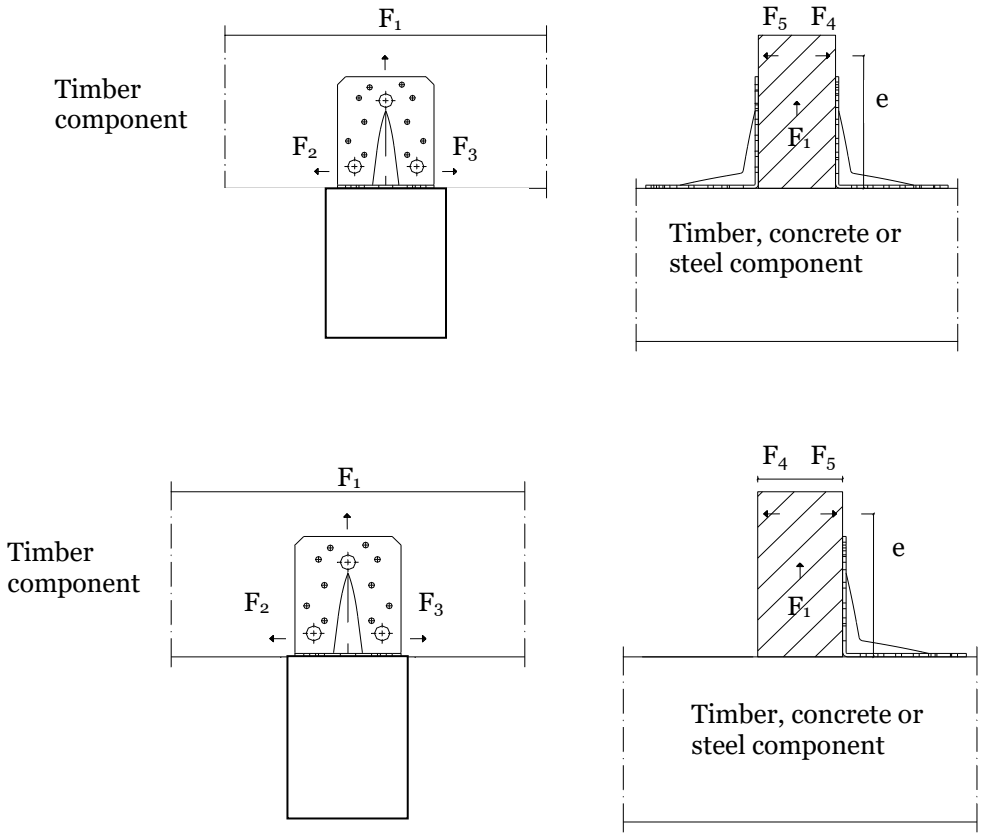


Figure B.1 Definitions of forces, their directions and eccentricity for timber to timber, timber to concrete and timber to steel connections

Fastener specification
Holes are marked with numbers referring to the nailing pattern in Annex A.

Double angle brackets per connection (pair of brackets)
The angle brackets must be placed symmetrically to the component axis.

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 concrete or steel component and the timber component in the timber component direction
F_4 and F_5	Lateral force acting in the concrete or steel component 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.

Single angle bracket per connection
Acting forces

F_1	Lifting force acting in the central axis of the angle bracket. The timber component shall be prevented from rotation. If the timber component is prevented from rotation the load-carrying capacity will be half of a connection with double angle brackets.
F_2 and F_3	Lateral force acting in the joint between the concrete or steel component and the timber component in the timber component direction
F_4 and F_5	Lateral force acting in the concrete or steel component direction. In the height of the top edge of component 2. F_4 is the lateral force towards the angle bracket; F_5 is the lateral force away from the angle bracket.

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

Timber splitting
For the lifting force F_1 it must be checked in accordance with Eurocode 5 or a similar national Timber Code that splitting will not occur.

Combined forces

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

$$\left(\frac{F_{1,d}}{F_{Rd,1}}\right)^2+\left(\frac{F_{2,d}}{F_{Rd,2}}\right)^2+\left(\frac{F_{3,d}}{F_{Rd,3}}\right)^2+\left(\frac{F_{4,d}}{F_{Rd,4}}\right)^2+\left(\frac{F_{5,d}}{F_{Rd,5}}\right)^2 \leq 1$$

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.

The forces for these types of angle brackets which are indicated in the following tables are presumed to act as described in the below figures

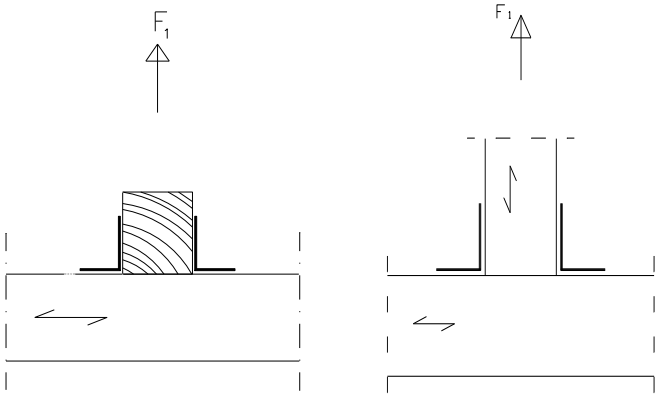


Figure B.2 Load F_1, purlin (left) and column (right)

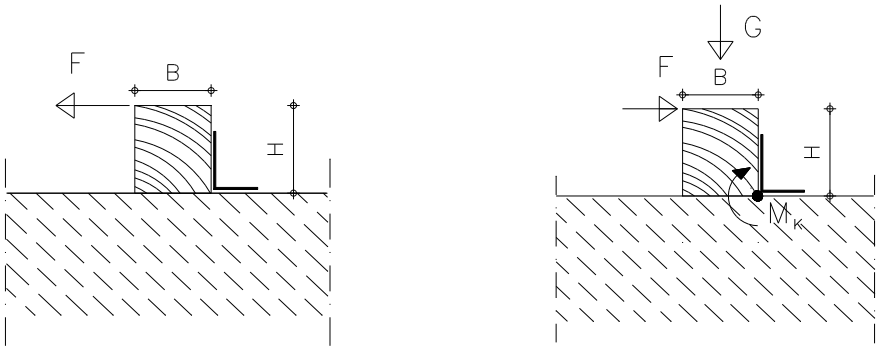


Figure B.3 Load F_2 (left) and Load F_3 (right)

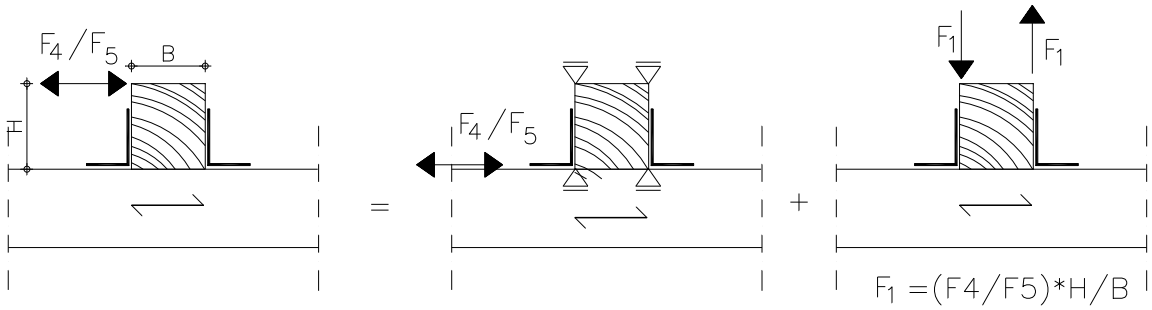


Figure B.4 Load Case F_4/F_5 reduced to two basic load cases

The below table indicates the nailing patterns in the horizontal and vertical leg of the brackets for full and partial nailing. The numbers refer to the hole numbers indicated in the drawings in Annex A.

Name	Connectors / Application	Horizontal bracket	Vertical bracket	F1	F2/3	F4	F5
SXAKR95	Column F1		6-8-10	✓			
SXAKR95	Purlin		3-4-5-6-7-8-9-10-11	✓	✓	✓	✓
SXAKR95X3	Column F1		6-8-10	✓			
SXAKR95X3	Purlin		3-4-5-6-7-8-9-10-11	✓	✓	✓	✓
SXAKRL95	Column F1		6-8-10	✓			
SXAKRL95	Purlin		3-4-5-6-7-8-9-10-11	✓	✓	✓	✓
SXAKRL95X3	Column F1		6-8-10	✓			
SXAKRL95X3	Purlin		3-4-5-6-7-8-9-10-11	✓	✓	✓	✓
SXAKR135	Column F1		6-7-8-12-13-15	✓			
SXAKR135	Purlin		3-4-5-6-7-8-9-10-11-12-13-14-15-16	✓	✓	✓	✓
SXAKR135X3	Column F1		6-7-8-12-13-15	✓			
SXAKR135X3	Purlin		3-4-5-6-7-8-9-10-11-12-13-14-15-16	✓	✓	✓	✓
SXAKRL135	Column F1		6-7-8-12-13-15	✓			
SXAKRL135	Purlin		3-4-5-6-7-8-9-10-11-12-13-14-15-16	✓	✓	✓	✓
SXAKRL135X3	Column F1		6-7-8-12-13-15	✓			
SXAKRL135X3	Purlin		3-4-5-6-7-8-9-10-11-12-13-14-15-16	✓	✓	✓	✓
SXAKR285	Column F1		6-8-10-15-16-18-26-27-29	✓			
SXAKR285X3	Column F1		6-8-10-15-16-18-26-27-29	✓			
SXAKRL285	Column F1		6-8-10-15-16-18-26-27-29	✓			
SXAKRL285X3	Column F1		6-8-10-15-16-18-26-27-29	✓			
SXAKR9015E	Column F1	1-2-3-5-6-8	12-14-16	✓	✓	✓	✓
SXAKR9015E	Purlin	1-2-3-4-5-6-7-8	9-10-11-12-13-14-15-16-17	✓	✓	✓	✓
SXAKR9015	Column F1	1-2-3-4-5-8-9	13-15-17	✓	✓	✓	✓
SXAKR9015	Purlin	1-2-3-4-5-6-7-8-9	10-11-12-13-14-15-16-17-18	✓	✓	✓	✓

The below figure describes the geometric factors used in the following tables for the load-carrying capacities.

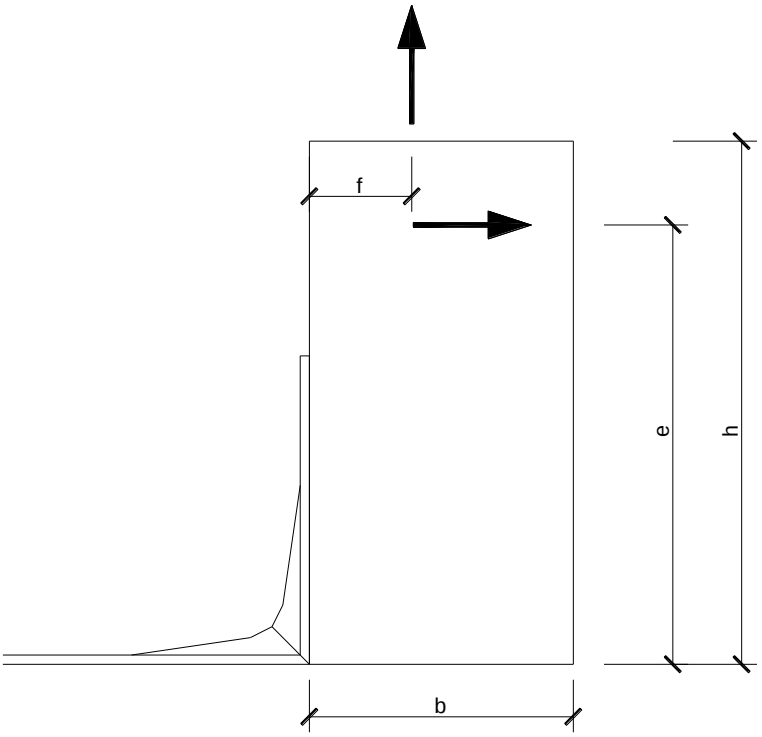


Table B.1 Characteristic load-carrying capacities bracket type SXAKR95X3 3 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3136	92	46	31	23	18	15	13	11	10	9	8	8

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	6273

Fastener 4,0x60mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3717	153	77	51	38	31	26	22	19	17	15	14	13

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	7435

Fastener 5,0x40mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	4458	337	168	112	84	67	56	48	42	37	34	31	28

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	8915

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	4727	547	274	182	137	109	91	78	68	61	55	50	46

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	9454

Table B.2 Characteristic load-carrying capacities bracket type SXAKR95X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	2718	1359	906	679	544	453	388	340	302	272	247	226

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	7307

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	14615

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	1842	1098	782	607	496	420	364	321	287	259	237	218

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	771	771	771	771	771	771	771	771	771	771	771	771	771
20	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076
40	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782
60	1852	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176
80	2603	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
100	2082	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
120	1735	3128	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
140	1487	2681	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
160	1301	2346	3390	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
180	1157	2085	3013	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
200	1041	1877	2712	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
220	946	1706	2466	3225	3545	3545	3545	3545	3545	3545	3545	3545	3545
240	868	1564	2260	2956	3545	3545	3545	3545	3545	3545	3545	3545	3545
260	801	1444	2086	2729	3372	3545	3545	3545	3545	3545	3545	3545	3545
280	744	1340	1937	2534	3131	3545	3545	3545	3545	3545	3545	3545	3545
300	694	1251	1808	2365	2922	3479	3545	3545	3545	3545	3545	3545	3545
320	651	1173	1695	2217	2739	3262	3545	3545	3545	3545	3545	3545	3545

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7571	15141	22712	30282	37853	45423	52994	60564	68135	75705	83276	90847
40		3785	7571	11356	15141	18926	22712	26497	30282	34067	37853	41638	45423
60		2524	5047	7571	10094	12618	15141	17665	20188	22712	25235	27759	30282
80		1893	3785	5678	7571	9463	11356	13248	15141	17034	18926	20819	22712
100		1514	3028	4542	6056	7571	9085	10599	12113	13627	15141	16655	18169
120		1262	2524	3785	5047	6309	7571	8832	10094	11356	12618	13879	15141
140		1082	2163	3245	4326	5408	6489	7571	8652	9734	10815	11897	12978
160		946	1893	2839	3785	4732	5678	6624	7571	8517	9463	10409	11356
180		841	1682	2524	3365	4206	5047	5888	6729	7571	8412	9253	10094
200		757	1514	2271	3028	3785	4542	5299	6056	6813	7571	8328	9085
220		688	1376	2065	2753	3441	4129	4818	5506	6194	6882	7571	8259
240		631	1262	1893	2524	3154	3785	4416	5047	5678	6309	6940	7571
260		582	1165	1747	2329	2912	3494	4076	4659	5241	5823	6406	6988
280		541	1082	1622	2163	2704	3245	3785	4326	4867	5408	5948	6489
300		505	1009	1514	2019	2524	3028	3533	4038	4542	5047	5552	6056
320		473	946	1419	1893	2366	2839	3312	3785	4258	4732	5205	5678

Table B.3 Characteristic load-carrying capacities bracket type SXAKR95X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	4529	2265	1510	1132	906	755	647	566	503	453	412	377

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	11362

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	22723

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	1830	1303	1012	827	700	606	534	478	432	395	363

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285
20	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794
40	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970
60	3086	7661	8627	8627	8627	8627	8627	8627	8627	8627	8627	8627	8627
80	3377	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
100	2701	4863	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
120	2251	4052	5853	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
140	1930	3473	5017	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
160	1688	3039	4390	5741	5909	5909	5909	5909	5909	5909	5909	5909	5909
180	1501	2701	3902	5103	5909	5909	5909	5909	5909	5909	5909	5909	5909
200	1351	2431	3512	4592	5673	5909	5909	5909	5909	5909	5909	5909	5909
220	1228	2210	3193	4175	5157	5909	5909	5909	5909	5909	5909	5909	5909
240	1126	2026	2927	3827	4728	5628	5909	5909	5909	5909	5909	5909	5909
260	1039	1870	2701	3533	4364	5195	5909	5909	5909	5909	5909	5909	5909
280	965	1737	2508	3280	4052	4824	5596	5909	5909	5909	5909	5909	5909
300	900	1621	2341	3062	3782	4502	5223	5909	5909	5909	5909	5909	5909
320	844	1520	2195	2870	3546	4221	4896	5572	5909	5909	5909	5909	5909

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7571	15141	22712	30282	37853	45423	52994	60564	68135	75705	83276	90847
40		3785	7571	11356	15141	18926	22712	26497	30282	34067	37853	41638	45423
60		2524	5047	7571	10094	12618	15141	17665	20188	22712	25235	27759	30282
80		1893	3785	5678	7571	9463	11356	13248	15141	17034	18926	20819	22712
100		1514	3028	4542	6056	7571	9085	10599	12113	13627	15141	16655	18169
120		1262	2524	3785	5047	6309	7571	8832	10094	11356	12618	13879	15141
140		1082	2163	3245	4326	5408	6489	7571	8652	9734	10815	11897	12978
160		946	1893	2839	3785	4732	5678	6624	7571	8517	9463	10409	11356
180		841	1682	2524	3365	4206	5047	5888	6729	7571	8412	9253	10094
200		757	1514	2271	3028	3785	4542	5299	6056	6813	7571	8328	9085
220		688	1376	2065	2753	3441	4129	4818	5506	6194	6882	7571	8259
240		631	1262	1893	2524	3154	3785	4416	5047	5678	6309	6940	7571
260		582	1165	1747	2329	2912	3494	4076	4659	5241	5823	6406	6988
280		541	1082	1622	2163	2704	3245	3785	4326	4867	5408	5948	6489
300		505	1009	1514	2019	2524	3028	3533	4038	4542	5047	5552	6056
320		473	946	1419	1893	2366	2839	3312	3785	4258	4732	5205	5678

Table B.4 Characteristic load-carrying capacities bracket type SXAKR95X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	6108	4980	3320	2490	1992	1660	1423	1245	1107	996	906	830

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	19629

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	39257

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	2251	1902	1477	1207	1021	884	780	697	631	576	530

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875
20	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617
40	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333
60	4502	8104	11706	12586	12586	12586	12586	12586	12586	12586	12586	12586	12586
80	3377	6078	8780	11481	12995	12995	12995	12995	12995	12995	12995	12995	12995
100	2701	4863	7024	9185	11346	12995	12995	12995	12995	12995	12995	12995	12995
120	2251	4052	5853	7654	9455	11256	12995	12995	12995	12995	12995	12995	12995
140	1930	3473	5017	6561	8104	9648	11192	12735	12995	12995	12995	12995	12995
160	1688	3039	4390	5741	7091	8442	9793	11144	12494	12995	12995	12995	12995
180	1501	2701	3902	5103	6303	7504	8705	9905	11106	12307	12995	12995	12995
200	1351	2431	3512	4592	5673	6754	7834	8915	9995	11076	12157	12995	12995
220	1228	2210	3193	4175	5157	6140	7122	8104	9087	10069	11051	12034	12995
240	1126	2026	2927	3827	4728	5628	6529	7429	8329	9230	10130	11031	11931
260	1039	1870	2701	3533	4364	5195	6026	6858	7689	8520	9351	10182	11014
280	965	1737	2508	3280	4052	4824	5596	6368	7140	7911	8683	9455	10227
300	900	1621	2341	3062	3782	4502	5223	5943	6664	7384	8104	8825	9545
320	844	1520	2195	2870	3546	4221	4896	5572	6247	6922	7598	8273	8949

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7571	15141	22712	30282	37853	45423	52994	60564	68135	75705	83276	90847
40		3785	7571	11356	15141	18926	22712	26497	30282	34067	37853	41638	45423
60		2524	5047	7571	10094	12618	15141	17665	20188	22712	25235	27759	30282
80		1893	3785	5678	7571	9463	11356	13248	15141	17034	18926	20819	22712
100		1514	3028	4542	6056	7571	9085	10599	12113	13627	15141	16655	18169
120		1262	2524	3785	5047	6309	7571	8832	10094	11356	12618	13879	15141
140		1082	2163	3245	4326	5408	6489	7571	8652	9734	10815	11897	12978
160		946	1893	2839	3785	4732	5678	6624	7571	8517	9463	10409	11356
180		841	1682	2524	3365	4206	5047	5888	6729	7571	8412	9253	10094
200		757	1514	2271	3028	3785	4542	5299	6056	6813	7571	8328	9085
220		688	1376	2065	2753	3441	4129	4818	5506	6194	6882	7571	8259
240		631	1262	1893	2524	3154	3785	4416	5047	5678	6309	6940	7571
260		582	1165	1747	2329	2912	3494	4076	4659	5241	5823	6406	6988
280		541	1082	1622	2163	2704	3245	3785	4326	4867	5408	5948	6489
300		505	1009	1514	2019	2524	3028	3533	4038	4542	5047	5552	6056
320		473	946	1419	1893	2366	2839	3312	3785	4258	4732	5205	5678

Table B.5 Characteristic load-carrying capacities bracket type SXAKR95X3 3 mm thick
Timber to steel/concrete - Purlin – Fastener 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	6108	5119	4405	3377	2701	2251	1930	1688	1501	1351	1228	1126

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	24217

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	48434

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	2251	1902	1477	1207	1021	884	780	697	631	576	530

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875
20	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617
40	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333
60	4502	8104	11706	12586	12586	12586	12586	12586	12586	12586	12586	12586	12586
80	3377	6078	8780	11481	14183	16884	19586	21116	21116	21116	21116	21116	21116
100	2701	4863	7024	9185	11346	13507	15668	17830	19991	21116	21116	21116	21116
120	2251	4052	5853	7654	9455	11256	13057	14858	16659	18460	20261	21116	21116
140	1930	3473	5017	6561	8104	9648	11192	12735	14279	15823	17366	18910	20454
160	1688	3039	4390	5741	7091	8442	9793	11144	12494	13845	15196	16546	17897
180	1501	2701	3902	5103	6303	7504	8705	9905	11106	12307	13507	14708	15909
200	1351	2431	3512	4592	5673	6754	7834	8915	9995	11076	12157	13237	14318
220	1228	2210	3193	4175	5157	6140	7122	8104	9087	10069	11051	12034	13016
240	1126	2026	2927	3827	4728	5628	6529	7429	8329	9230	10130	11031	11931
260	1039	1870	2701	3533	4364	5195	6026	6858	7689	8520	9351	10182	11014
280	965	1737	2508	3280	4052	4824	5596	6368	7140	7911	8683	9455	10227
300	900	1621	2341	3062	3782	4502	5223	5943	6664	7384	8104	8825	9545
320	844	1520	2195	2870	3546	4221	4896	5572	6247	6922	7598	8273	8949

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7571	15141	22712	30282	37853	45423	52994	60564	68135	75705	83276	90847
40		3785	7571	11356	15141	18926	22712	26497	30282	34067	37853	41638	45423
60		2524	5047	7571	10094	12618	15141	17665	20188	22712	25235	27759	30282
80		1893	3785	5678	7571	9463	11356	13248	15141	17034	18926	20819	22712
100		1514	3028	4542	6056	7571	9085	10599	12113	13627	15141	16655	18169
120		1262	2524	3785	5047	6309	7571	8832	10094	11356	12618	13879	15141
140		1082	2163	3245	4326	5408	6489	7571	8652	9734	10815	11897	12978
160		946	1893	2839	3785	4732	5678	6624	7571	8517	9463	10409	11356
180		841	1682	2524	3365	4206	5047	5888	6729	7571	8412	9253	10094
200		757	1514	2271	3028	3785	4542	5299	6056	6813	7571	8328	9085
220		688	1376	2065	2753	3441	4129	4818	5506	6194	6882	7571	8259
240		631	1262	1893	2524	3154	3785	4416	5047	5678	6309	6940	7571
260		582	1165	1747	2329	2912	3494	4076	4659	5241	5823	6406	6988
280		541	1082	1622	2163	2704	3245	3785	4326	4867	5408	5948	6489
300		505	1009	1514	2019	2524	3028	3533	4038	4542	5047	5552	6056
320		473	946	1419	1893	2366	2839	3312	3785	4258	4732	5205	5678

Table B.6 Characteristic load-carrying capacities bracket type SXAKR95 4 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3085	92	46	31	23	18	15	13	11	10	9	8	8

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	6170

Fastener 4,0x60 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3717	153	77	51	38	31	26	22	19	17	15	14	13

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	7435

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	4353	326	163	109	82	65	54	47	41	36	33	30	27

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	8706

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	4727	537	268	179	134	107	89	77	67	60	54	49	45

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	9454

Table B.7 Characteristic load-carrying capacities bracket type SXAKR95 4 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	2718	1359	906	679	544	453	388	340	302	272	247	226

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	7288,9

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	14578

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	1842	1098	782	607	496	420	364	321	287	259	237	218

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	771	771	771	771	771	771	771	771	771	771	771	771	771
20	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076
40	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782
60	1852	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176
80	2603	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
100	2082	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
120	1735	3105	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
140	1487	2661	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
160	1301	2329	3356	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
180	1157	2070	2983	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
200	1041	1863	2685	3507	3545	3545	3545	3545	3545	3545	3545	3545	3545
220	946	1694	2441	3188	3545	3545	3545	3545	3545	3545	3545	3545	3545
240	868	1553	2237	2922	3545	3545	3545	3545	3545	3545	3545	3545	3545
260	801	1433	2065	2698	3330	3545	3545	3545	3545	3545	3545	3545	3545
280	744	1331	1918	2505	3092	3545	3545	3545	3545	3545	3545	3545	3545
300	694	1242	1790	2338	2886	3434	3545	3545	3545	3545	3545	3545	3545
320	651	1164	1678	2192	2705	3219	3545	3545	3545	3545	3545	3545	3545

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		9777	19553	29330	39107	48884	58660	68437	78214	87991	97767	107544	117321
40		4888	9777	14665	19553	24442	29330	34219	39107	43995	48884	53772	58660
60		3259	6518	9777	13036	16295	19553	22812	26071	29330	32589	35848	39107
80		2444	4888	7333	9777	12221	14665	17109	19553	21998	24442	26886	29330
100		1955	3911	5866	7821	9777	11732	13687	15643	17598	19553	21509	23464
120		1629	3259	4888	6518	8147	9777	11406	13036	14665	16295	17924	19553
140		1397	2793	4190	5587	6983	8380	9777	11173	12570	13967	15363	16760
160		1222	2444	3666	4888	6110	7333	8555	9777	10999	12221	13443	14665
180		1086	2173	3259	4345	5432	6518	7604	8690	9777	10863	11949	13036
200		978	1955	2933	3911	4888	5866	6844	7821	8799	9777	10754	11732
220		889	1778	2666	3555	4444	5333	6222	7110	7999	8888	9777	10666
240		815	1629	2444	3259	4074	4888	5703	6518	7333	8147	8962	9777
260		752	1504	2256	3008	3760	4512	5264	6016	6769	7521	8273	9025
280		698	1397	2095	2793	3492	4190	4888	5587	6285	6983	7682	8380
300		652	1304	1955	2607	3259	3911	4562	5214	5866	6518	7170	7821
320		611	1222	1833	2444	3055	3666	4277	4888	5499	6110	6722	7333

Table B.8 Characteristic load-carrying capacities bracket type SXAKR95 4 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	4529	2265	1510	1132	906	755	647	566	503	453	412	377

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	11362

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	22723

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3071	1830	1303	1012	827	700	606	534	478	432	395	363

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285
20	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794
40	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970
60	3086	7661	8627	8627	8627	8627	8627	8627	8627	8627	8627	8627	8627
80	4338	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
100	3470	5451	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
120	2892	4542	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
140	2479	3894	5308	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
160	2169	3407	4645	5883	5909	5909	5909	5909	5909	5909	5909	5909	5909
180	1928	3028	4129	5229	5909	5909	5909	5909	5909	5909	5909	5909	5909
200	1735	2725	3716	4706	5696	5909	5909	5909	5909	5909	5909	5909	5909
220	1577	2478	3378	4278	5178	5909	5909	5909	5909	5909	5909	5909	5909
240	1446	2271	3096	3922	4747	5572	5909	5909	5909	5909	5909	5909	5909
260	1335	2097	2858	3620	4382	5144	5905	5909	5909	5909	5909	5909	5909
280	1239	1947	2654	3361	4069	4776	5483	5909	5909	5909	5909	5909	5909
300	1157	1817	2477	3137	3798	4458	5118	5778	5909	5909	5909	5909	5909
320	1084	1703	2322	2941	3560	4179	4798	5417	5909	5909	5909	5909	5909

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		9777	19553	29330	39107	48884	58660	68437	78214	87991	97767	107544	117321
40		4888	9777	14665	19553	24442	29330	34219	39107	43995	48884	53772	58660
60		3259	6518	9777	13036	16295	19553	22812	26071	29330	32589	35848	39107
80		2444	4888	7333	9777	12221	14665	17109	19553	21998	24442	26886	29330
100		1955	3911	5866	7821	9777	11732	13687	15643	17598	19553	21509	23464
120		1629	3259	4888	6518	8147	9777	11406	13036	14665	16295	17924	19553
140		1397	2793	4190	5587	6983	8380	9777	11173	12570	13967	15363	16760
160		1222	2444	3666	4888	6110	7333	8555	9777	10999	12221	13443	14665
180		1086	2173	3259	4345	5432	6518	7604	8690	9777	10863	11949	13036
200		978	1955	2933	3911	4888	5866	6844	7821	8799	9777	10754	11732
220		889	1778	2666	3555	4444	5333	6222	7110	7999	8888	9777	10666
240		815	1629	2444	3259	4074	4888	5703	6518	7333	8147	8962	9777
260		752	1504	2256	3008	3760	4512	5264	6016	6769	7521	8273	9025
280		698	1397	2095	2793	3492	4190	4888	5587	6285	6983	7682	8380
300		652	1304	1955	2607	3259	3911	4562	5214	5866	6518	7170	7821
320		611	1222	1833	2444	3055	3666	4277	4888	5499	6110	6722	7333

Table B.9 Characteristic load-carrying capacities bracket type SXAKR95 4 mm thick Timber to steel/concrete - Purlin – Fastener 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	7888	4825	3216	2412	1930	1608	1378	1206	1072	965	877	804

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	19097

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	38195

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3489	2907	2456	1907	1559	1318	1142	1007	901	815	744	684

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421
20	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380
40	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596
60	5815	10466	15118	16254	16254	16254	16254	16254	16254	16254	16254	16254	16254
80	4361	7850	11338	12588	12588	12588	12588	12588	12588	12588	12588	12588	12588
100	3489	6280	9071	11862	12588	12588	12588	12588	12588	12588	12588	12588	12588
120	2907	5233	7559	9885	12210	12588	12588	12588	12588	12588	12588	12588	12588
140	2492	4485	6479	8473	10466	12460	12588	12588	12588	12588	12588	12588	12588
160	2180	3925	5669	7414	9158	10902	12588	12588	12588	12588	12588	12588	12588
180	1938	3489	5039	6590	8140	9691	11241	12588	12588	12588	12588	12588	12588
200	1744	3140	4535	5931	7326	8722	10117	11513	12588	12588	12588	12588	12588
220	1586	2854	4123	5392	6660	7929	9198	10466	11735	12588	12588	12588	12588
240	1454	2617	3779	4942	6105	7268	8431	9594	10757	11920	12588	12588	12588
260	1342	2415	3489	4562	5636	6709	7783	8856	9929	11003	12076	12588	12588
280	1246	2243	3240	4236	5233	6230	7227	8223	9220	10217	11214	12210	12588
300	1163	2093	3024	3954	4884	5815	6745	7675	8605	9536	10466	11396	12327
320	1090	1962	2835	3707	4579	5451	6323	7195	8068	8940	9812	10684	11556

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		9777	19553	29330	39107	48884	58660	68437	78214	87991	97767	107544	117321
40		4888	9777	14665	19553	24442	29330	34219	39107	43995	48884	53772	58660
60		3259	6518	9777	13036	16295	19553	22812	26071	29330	32589	35848	39107
80		2444	4888	7333	9777	12221	14665	17109	19553	21998	24442	26886	29330
100		1955	3911	5866	7821	9777	11732	13687	15643	17598	19553	21509	23464
120		1629	3259	4888	6518	8147	9777	11406	13036	14665	16295	17924	19553
140		1397	2793	4190	5587	6983	8380	9777	11173	12570	13967	15363	16760
160		1222	2444	3666	4888	6110	7333	8555	9777	10999	12221	13443	14665
180		1086	2173	3259	4345	5432	6518	7604	8690	9777	10863	11949	13036
200		978	1955	2933	3911	4888	5866	6844	7821	8799	9777	10754	11732
220		889	1778	2666	3555	4444	5333	6222	7110	7999	8888	9777	10666
240		815	1629	2444	3259	4074	4888	5703	6518	7333	8147	8962	9777
260		752	1504	2256	3008	3760	4512	5264	6016	6769	7521	8273	9025
280		698	1397	2095	2793	3492	4190	4888	5587	6285	6983	7682	8380
300		652	1304	1955	2607	3259	3911	4562	5214	5866	6518	7170	7821
320		611	1222	1833	2444	3055	3666	4277	4888	5499	6110	6722	7333

Table B.10 Characteristic load-carrying capacities bracket type SXAKR95 4 mm thick
Timber to steel/concrete - Purlin – Fastener 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	7888	6610	5292	3969	3175	2646	2268	1984	1764	1587	1443	1323

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	24092

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	48185

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3489	2907	2456	1907	1559	1318	1142	1007	901	815	744	684

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421
20	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380
40	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596
60	5815	10466	15118	16254	16254	16254	16254	16254	16254	16254	16254	16254	16254
80	4361	7850	11338	14827	18316	20710	20710	20710	20710	20710	20710	20710	20710
100	3489	6280	9071	11862	14653	17444	20235	20710	20710	20710	20710	20710	20710
120	2907	5233	7559	9885	12210	14536	16862	19188	20710	20710	20710	20710	20710
140	2492	4485	6479	8473	10466	12460	14453	16447	18440	20434	20710	20710	20710
160	2180	3925	5669	7414	9158	10902	12647	14391	16135	17880	19624	20710	20710
180	1938	3489	5039	6590	8140	9691	11241	12792	14342	15893	17444	18994	20545
200	1744	3140	4535	5931	7326	8722	10117	11513	12908	14304	15699	17095	18490
220	1586	2854	4123	5392	6660	7929	9198	10466	11735	13003	14272	15541	16809
240	1454	2617	3779	4942	6105	7268	8431	9594	10757	11920	13083	14246	15408
260	1342	2415	3489	4562	5636	6709	7783	8856	9929	11003	12076	13150	14223
280	1246	2243	3240	4236	5233	6230	7227	8223	9220	10217	11214	12210	13207
300	1163	2093	3024	3954	4884	5815	6745	7675	8605	9536	10466	11396	12327
320	1090	1962	2835	3707	4579	5451	6323	7195	8068	8940	9812	10684	11556

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		9777	19553	29330	39107	48884	58660	68437	78214	87991	97767	107544	117321
40		4888	9777	14665	19553	24442	29330	34219	39107	43995	48884	53772	58660
60		3259	6518	9777	13036	16295	19553	22812	26071	29330	32589	35848	39107
80		2444	4888	7333	9777	12221	14665	17109	19553	21998	24442	26886	29330
100		1955	3911	5866	7821	9777	11732	13687	15643	17598	19553	21509	23464
120		1629	3259	4888	6518	8147	9777	11406	13036	14665	16295	17924	19553
140		1397	2793	4190	5587	6983	8380	9777	11173	12570	13967	15363	16760
160		1222	2444	3666	4888	6110	7333	8555	9777	10999	12221	13443	14665
180		1086	2173	3259	4345	5432	6518	7604	8690	9777	10863	11949	13036
200		978	1955	2933	3911	4888	5866	6844	7821	8799	9777	10754	11732
220		889	1778	2666	3555	4444	5333	6222	7110	7999	8888	9777	10666
240		815	1629	2444	3259	4074	4888	5703	6518	7333	8147	8962	9777
260		752	1504	2256	3008	3760	4512	5264	6016	6769	7521	8273	9025
280		698	1397	2095	2793	3492	4190	4888	5587	6285	6983	7682	8380
300		652	1304	1955	2607	3259	3911	4562	5214	5866	6518	7170	7821
320		611	1222	1833	2444	3055	3666	4277	4888	5499	6110	6722	7333

Table B.11 Characteristic load-carrying capacities bracket type SXAKRL95X3 3 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3136	92	46	31	23	18	15	13	11	10	9	8	8

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	6273

Fastener 4,0x60 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3717	153	77	51	38	31	26	22	19	17	15	14	13

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	7435

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	4458	337	168	112	84	67	56	48	42	37	34	31	28

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	8915

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	4727	547	274	182	137	109	91	78	68	61	55	50	46

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	9454

Table B.12 Characteristic load-carrying capacities bracket type SXAKRL95X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	2718	1359	906	679	544	453	388	340	302	272	247	226

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	6146

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	12291

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	1842	1098	782	607	496	420	364	321	287	259	237	218

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9
20	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076
40	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782
60	1852	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176
80	2603	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
100	2082	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
120	1735	3128	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
140	1487	2681	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
160	1301	2346	3390	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
180	1157	2085	3013	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
200	1041	1877	2712	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
220	946,5	1706	2466	3225	3545	3545	3545	3545	3545	3545	3545	3545	3545
240	867,6	1564	2260	2956	3545	3545	3545	3545	3545	3545	3545	3545	3545
260	800,9	1444	2086	2729	3372	3545	3545	3545	3545	3545	3545	3545	3545
280	743,6	1340	1937	2534	3131	3545	3545	3545	3545	3545	3545	3545	3545
300	694,1	1251	1808	2365	2922	3479	3545	3545	3545	3545	3545	3545	3545
320	650,7	1173	1695	2217	2739	3262	3545	3545	3545	3545	3545	3545	3545

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		5622	11244	16866	22488	28110	33732	39354	44976	50598	56220	61841	67463
40		2811	5622	8433	11244	14055	16866	19677	22488	25299	28110	30921	33732
60		1874	3748	5622	7496	9370	11244	13118	14992	16866	18740	20614	22488
80		1405	2811	4216	5622	7027	8433	9838	11244	12649	14055	15460	16866
100		1124	2249	3373	4498	5622	6746	7871	8995	10120	11244	12368	13493
120		937	1874	2811	3748	4685	5622	6559	7496	8433	9370	10307	11244
140		803	1606	2409	3213	4016	4819	5622	6425	7228	8031	8834	9638
160		703	1405	2108	2811	3514	4216	4919	5622	6325	7027	7730	8433
180		625	1249	1874	2499	3123	3748	4373	4997	5622	6247	6871	7496
200		562	1124	1687	2249	2811	3373	3935	4498	5060	5622	6184	6746
220		511	1022	1533	2044	2555	3067	3578	4089	4600	5111	5622	6133
240		468	937	1405	1874	2342	2811	3279	3748	4216	4685	5153	5622
260		432	865	1297	1730	2162	2595	3027	3460	3892	4325	4757	5189
280		402	803	1205	1606	2008	2409	2811	3213	3614	4016	4417	4819
300		375	750	1124	1499	1874	2249	2624	2998	3373	3748	4123	4498
320		351	703	1054	1405	1757	2108	2460	2811	3162	3514	3865	4216

Table B.13 Characteristic load-carrying capacities bracket type SXAKRL95X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	4529	2265	1510	1132	906	755	647	566	503	453	412	377

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	9742

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	19484

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	1830	1303	1012	827	700	606	534	478	432	395	363

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285
20	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794
40	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970
60	3086	7455	8627	8627	8627	8627	8627	8627	8627	8627	8627	8627	8627
80	3377	5591	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
100	2701	4473	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
120	2251	3727	5204	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
140	1930	3195	4460	5726	5909	5909	5909	5909	5909	5909	5909	5909	5909
160	1688	2796	3903	5010	5909	5909	5909	5909	5909	5909	5909	5909	5909
180	1501	2485	3469	4453	5437	5909	5909	5909	5909	5909	5909	5909	5909
200	1351	2236	3122	4008	4894	5779	5909	5909	5909	5909	5909	5909	5909
220	1228	2033	2838	3644	4449	5254	5909	5909	5909	5909	5909	5909	5909
240	1126	1864	2602	3340	4078	4816	5554	5909	5909	5909	5909	5909	5909
260	1039	1720	2402	3083	3764	4446	5127	5808	5909	5909	5909	5909	5909
280	964,8	1597	2230	2863	3495	4128	4761	5393	5909	5909	5909	5909	5909
300	900,5	1491	2081	2672	3262	3853	4443	5034	5624	5909	5909	5909	5909
320	844,2	1398	1951	2505	3059	3612	4166	4719	5273	5826	5909	5909	5909

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		5622	11244	16866	22488	28110	33732	39354	44976	50598	56220	61841	67463
40		2811	5622	8433	11244	14055	16866	19677	22488	25299	28110	30921	33732
60		1874	3748	5622	7496	9370	11244	13118	14992	16866	18740	20614	22488
80		1405	2811	4216	5622	7027	8433	9838	11244	12649	14055	15460	16866
100		1124	2249	3373	4498	5622	6746	7871	8995	10120	11244	12368	13493
120		937	1874	2811	3748	4685	5622	6559	7496	8433	9370	10307	11244
140		803	1606	2409	3213	4016	4819	5622	6425	7228	8031	8834	9638
160		703	1405	2108	2811	3514	4216	4919	5622	6325	7027	7730	8433
180		625	1249	1874	2499	3123	3748	4373	4997	5622	6247	6871	7496
200		562	1124	1687	2249	2811	3373	3935	4498	5060	5622	6184	6746
220		511	1022	1533	2044	2555	3067	3578	4089	4600	5111	5622	6133
240		468	937	1405	1874	2342	2811	3279	3748	4216	4685	5153	5622
260		432	865	1297	1730	2162	2595	3027	3460	3892	4325	4757	5189
280		402	803	1205	1606	2008	2409	2811	3213	3614	4016	4417	4819
300		375	750	1124	1499	1874	2249	2624	2998	3373	3748	4123	4498
320		351	703	1054	1405	1757	2108	2460	2811	3162	3514	3865	4216

Table B.14 Characteristic load-carrying capacities bracket type SXAKRL95X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	4536	3801	3271	2490	1992	1660	1423	1245	1107	996	906	830

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	17754

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	35509

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	2251	1902	1477	1207	1021	884	780	697	631	576	530

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875
20	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617
40	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333
60	4502	7455	10407	12586	12586	12586	12586	12586	12586	12586	12586	12586	12586
80	3377	5591	7805	10020	12234	12995	12995	12995	12995	12995	12995	12995	12995
100	2701	4473	6244	8016	9787	11559	12995	12995	12995	12995	12995	12995	12995
120	2251	3727	5204	6680	8156	9632	11108	12585	12995	12995	12995	12995	12995
140	1930	3195	4460	5726	6991	8256	9522	10787	12052	12995	12995	12995	12995
160	1688	2796	3903	5010	6117	7224	8331	9438	10546	11653	12760	12995	12995
180	1501	2485	3469	4453	5437	6421	7406	8390	9374	10358	11342	12326	12995
200	1351	2236	3122	4008	4894	5779	6665	7551	8437	9322	10208	11094	11979
220	1228	2033	2838	3644	4449	5254	6059	6864	7670	8475	9280	10085	10890
240	1126	1864	2602	3340	4078	4816	5554	6292	7030	7769	8507	9245	9983
260	1039	1720	2402	3083	3764	4446	5127	5808	6490	7171	7852	8534	9215
280	964,8	1597	2230	2863	3495	4128	4761	5393	6026	6659	7291	7924	8557
300	900,5	1491	2081	2672	3262	3853	4443	5034	5624	6215	6805	7396	7986
320	844,2	1398	1951	2505	3059	3612	4166	4719	5273	5826	6380	6934	7487

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		5622	11244	16866	22488	28110	33732	39354	44976	50598	56220	61841	67463
40		2811	5622	8433	11244	14055	16866	19677	22488	25299	28110	30921	33732
60		1874	3748	5622	7496	9370	11244	13118	14992	16866	18740	20614	22488
80		1405	2811	4216	5622	7027	8433	9838	11244	12649	14055	15460	16866
100		1124	2249	3373	4498	5622	6746	7871	8995	10120	11244	12368	13493
120		937	1874	2811	3748	4685	5622	6559	7496	8433	9370	10307	11244
140		803	1606	2409	3213	4016	4819	5622	6425	7228	8031	8834	9638
160		703	1405	2108	2811	3514	4216	4919	5622	6325	7027	7730	8433
180		625	1249	1874	2499	3123	3748	4373	4997	5622	6247	6871	7496
200		562	1124	1687	2249	2811	3373	3935	4498	5060	5622	6184	6746
220		511	1022	1533	2044	2555	3067	3578	4089	4600	5111	5622	6133
240		468	937	1405	1874	2342	2811	3279	3748	4216	4685	5153	5622
260		432	865	1297	1730	2162	2595	3027	3460	3892	4325	4757	5189
280		402	803	1205	1606	2008	2409	2811	3213	3614	4016	4417	4819
300		375	750	1124	1499	1874	2249	2624	2998	3373	3748	4123	4498
320		351	703	1054	1405	1757	2108	2460	2811	3162	3514	3865	4216

Table B.15 Characteristic load-carrying capacities bracket type SXAKRL95X3 3 mm thick
Timber to steel/concrete - Purlin – Fastener 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	4536	3801	3271	2871	2558	2251	1930	1688	1501	1351	1228	1126

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	22800

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	45601

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	2251	1902	1477	1207	1021	884	780	697	631	576	530

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875	1875
20	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617	2617
40	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333	4333
60	4502	7455	10407	12586	12586	12586	12586	12586	12586	12586	12586	12586	12586
80	3377	5591	7805	10020	12234	14448	16663	18877	21091	21116	21116	21116	21116
100	2701	4473	6244	8016	9787	11559	13330	15102	16873	18644	20416	21116	21116
120	2251	3727	5204	6680	8156	9632	11108	12585	14061	15537	17013	18489	19966
140	1930	3195	4460	5726	6991	8256	9522	10787	12052	13317	14583	15848	17113
160	1688	2796	3903	5010	6117	7224	8331	9438	10546	11653	12760	13867	14974
180	1501	2485	3469	4453	5437	6421	7406	8390	9374	10358	11342	12326	13310
200	1351	2236	3122	4008	4894	5779	6665	7551	8437	9322	10208	11094	11979
220	1228	2033	2838	3644	4449	5254	6059	6864	7670	8475	9280	10085	10890
240	1126	1864	2602	3340	4078	4816	5554	6292	7030	7769	8507	9245	9983
260	1039	1720	2402	3083	3764	4446	5127	5808	6490	7171	7852	8534	9215
280	964,8	1597	2230	2863	3495	4128	4761	5393	6026	6659	7291	7924	8557
300	900,5	1491	2081	2672	3262	3853	4443	5034	5624	6215	6805	7396	7986
320	844,2	1398	1951	2505	3059	3612	4166	4719	5273	5826	6380	6934	7487

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		5622	11244	16866	22488	28110	33732	39354	44976	50598	56220	61841	67463
40		2811	5622	8433	11244	14055	16866	19677	22488	25299	28110	30921	33732
60		1874	3748	5622	7496	9370	11244	13118	14992	16866	18740	20614	22488
80		1405	2811	4216	5622	7027	8433	9838	11244	12649	14055	15460	16866
100		1124	2249	3373	4498	5622	6746	7871	8995	10120	11244	12368	13493
120		937	1874	2811	3748	4685	5622	6559	7496	8433	9370	10307	11244
140		803	1606	2409	3213	4016	4819	5622	6425	7228	8031	8834	9638
160		703	1405	2108	2811	3514	4216	4919	5622	6325	7027	7730	8433
180		625	1249	1874	2499	3123	3748	4373	4997	5622	6247	6871	7496
200		562	1124	1687	2249	2811	3373	3935	4498	5060	5622	6184	6746
220		511	1022	1533	2044	2555	3067	3578	4089	4600	5111	5622	6133
240		468	937	1405	1874	2342	2811	3279	3748	4216	4685	5153	5622
260		432	865	1297	1730	2162	2595	3027	3460	3892	4325	4757	5189
280		402	803	1205	1606	2008	2409	2811	3213	3614	4016	4417	4819
300		375	750	1124	1499	1874	2249	2624	2998	3373	3748	4123	4498
320		351	703	1054	1405	1757	2108	2460	2811	3162	3514	3865	4216

Table B.16 Characteristic load-carrying capacities bracket type SXAKRL95 4 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3085	92	46	31	23	18	15	13	11	10	9	8	8

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	6170

Fastener 4,0x50 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3717	153	77	51	38	31	26	22	19	17	15	14	13

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	7435

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	4353	326	163	109	82	65	54	47	41	36	33	30	27

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	8706

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	4727	537	268	179	134	107	89	77	67	60	54	49	45

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	9454

Table B.17 Characteristic load-carrying capacities bracket type SXAKRL95 4 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	2718	1359	906	679	544	453	388	340	302	272	247	226

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	6134

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	12269

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	1842	1098	782	607	496	420	364	321	287	259	237	218

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9
20	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076
40	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782
60	1852	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176
80	2603	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
100	2082	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
120	1735	3105	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
140	1487	2661	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
160	1301	2329	3356	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
180	1157	2070	2983	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
200	1041	1863	2685	3507	3545	3545	3545	3545	3545	3545	3545	3545	3545
220	946,5	1694	2441	3188	3545	3545	3545	3545	3545	3545	3545	3545	3545
240	867,6	1553	2237	2922	3545	3545	3545	3545	3545	3545	3545	3545	3545
260	800,9	1433	2065	2698	3330	3545	3545	3545	3545	3545	3545	3545	3545
280	743,6	1331	1918	2505	3092	3545	3545	3545	3545	3545	3545	3545	3545
300	694,1	1242	1790	2338	2886	3434	3545	3545	3545	3545	3545	3545	3545
320	650,7	1164	1678	2192	2705	3219	3545	3545	3545	3545	3545	3545	3545

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7260	14521	21781	29041	36301	43562	50822	58082	65343	72603	79863	87124
40		3630	7260	10890	14521	18151	21781	25411	29041	32671	36301	39932	43562
60		2420	4840	7260	9680	12100	14521	16941	19361	21781	24201	26621	29041
80		1815	3630	5445	7260	9075	10890	12706	14521	16336	18151	19966	21781
100		1452	2904	4356	5808	7260	8712	10164	11616	13069	14521	15973	17425
120		1210	2420	3630	4840	6050	7260	8470	9680	10890	12100	13311	14521
140		1037	2074	3112	4149	5186	6223	7260	8297	9335	10372	11409	12446
160		907,5	1815	2723	3630	4538	5445	6353	7260	8168	9075	9983	10890
180		806,7	1613	2420	3227	4033	4840	5647	6454	7260	8067	8874	9680
200		726	1452	2178	2904	3630	4356	5082	5808	6534	7260	7986	8712
220		660	1320	1980	2640	3300	3960	4620	5280	5940	6600	7260	7920
240		605	1210	1815	2420	3025	3630	4235	4840	5445	6050	6655	7260
260		558,5	1117	1675	2234	2792	3351	3909	4468	5026	5585	6143	6702
280		518,6	1037	1556	2074	2593	3112	3630	4149	4667	5186	5705	6223
300		484	968	1452	1936	2420	2904	3388	3872	4356	4840	5324	5808
320		453,8	907,5	1361	1815	2269	2723	3176	3630	4084	4538	4991	5445

Table B.18 Characteristic load-carrying capacities bracket type SXAKRL95 4 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	4529	2265	1510	1132	906	755	647	566	503	453	412	377

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	9742

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	19484

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3071	1830	1303	1012	827	700	606	534	478	432	395	363

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285
20	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794
40	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970
60	3086	7661	8627	8627	8627	8627	8627	8627	8627	8627	8627	8627	8627
80	4338	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
100	3470	5451	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
120	2892	4542	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
140	2479	3894	5308	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
160	2169	3407	4645	5883	5909	5909	5909	5909	5909	5909	5909	5909	5909
180	1928	3028	4129	5229	5909	5909	5909	5909	5909	5909	5909	5909	5909
200	1735	2725	3716	4706	5696	5909	5909	5909	5909	5909	5909	5909	5909
220	1577	2478	3378	4278	5178	5909	5909	5909	5909	5909	5909	5909	5909
240	1446	2271	3096	3922	4747	5572	5909	5909	5909	5909	5909	5909	5909
260	1335	2097	2858	3620	4382	5144	5905	5909	5909	5909	5909	5909	5909
280	1239	1947	2654	3361	4069	4776	5483	5909	5909	5909	5909	5909	5909
300	1157	1817	2477	3137	3798	4458	5118	5778	5909	5909	5909	5909	5909
320	1084	1703	2322	2941	3560	4179	4798	5417	5909	5909	5909	5909	5909

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7260	14521	21781	29041	36301	43562	50822	58082	65343	72603	79863	87124
40		3630	7260	10890	14521	18151	21781	25411	29041	32671	36301	39932	43562
60		2420	4840	7260	9680	12100	14521	16941	19361	21781	24201	26621	29041
80		1815	3630	5445	7260	9075	10890	12706	14521	16336	18151	19966	21781
100		1452	2904	4356	5808	7260	8712	10164	11616	13069	14521	15973	17425
120		1210	2420	3630	4840	6050	7260	8470	9680	10890	12100	13311	14521
140		1037	2074	3112	4149	5186	6223	7260	8297	9335	10372	11409	12446
160		908	1815	2723	3630	4538	5445	6353	7260	8168	9075	9983	10890
180		807	1613	2420	3227	4033	4840	5647	6454	7260	8067	8874	9680
200		726	1452	2178	2904	3630	4356	5082	5808	6534	7260	7986	8712
220		660	1320	1980	2640	3300	3960	4620	5280	5940	6600	7260	7920
240		605	1210	1815	2420	3025	3630	4235	4840	5445	6050	6655	7260
260		558	1117	1675	2234	2792	3351	3909	4468	5026	5585	6143	6702
280		519	1037	1556	2074	2593	3112	3630	4149	4667	5186	5705	6223
300		484	968	1452	1936	2420	2904	3388	3872	4356	4840	5324	5808
320		454	908	1361	1815	2269	2723	3176	3630	4084	4538	4991	5445

Table B.19 Characteristic load-carrying capacities bracket type SXAKRL95 4 mm thick Timber to steel/concrete - Purlin – Fastener 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	5857	4825	3216	2412	1930	1608	1378	1206	1072	965	877	804

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	17260

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	34520

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3489	2907	2456	1907	1559	1318	1142	1007	901	815	744	684

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421
20	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380
40	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596
60	5815	9627	13440	16254	16254	16254	16254	16254	16254	16254	16254	16254	16254
80	4361	7220	10080	12588	12588	12588	12588	12588	12588	12588	12588	12588	12588
100	3489	5776	8064	10352	12588	12588	12588	12588	12588	12588	12588	12588	12588
120	2907	4814	6720	8626	10533	12439	12588	12588	12588	12588	12588	12588	12588
140	2492	4126	5760	7394	9028	10662	12296	12588	12588	12588	12588	12588	12588
160	2180	3610	5040	6470	7900	9329	10759	12189	12588	12588	12588	12588	12588
180	1938	3209	4480	5751	7022	8293	9564	10835	12106	12588	12588	12588	12588
200	1744	2888	4032	5176	6320	7464	8607	9751	10895	12039	12588	12588	12588
220	1586	2626	3665	4705	5745	6785	7825	8865	9905	10944	11984	12588	12588
240	1454	2407	3360	4313	5266	6220	7173	8126	9079	10032	10986	11939	12588
260	1342	2222	3102	3981	4861	5741	6621	7501	8381	9261	10141	11020	11900
280	1246	2063	2880	3697	4514	5331	6148	6965	7782	8599	9416	10233	11050
300	1163	1925	2688	3451	4213	4976	5738	6501	7263	8026	8788	9551	10314
320	1090	1805	2520	3235	3950	4665	5380	6095	6809	7524	8239	8954	9669

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7260	14521	21781	29041	36301	43562	50822	58082	65343	72603	79863	87124
40		3630	7260	10890	14521	18151	21781	25411	29041	32671	36301	39932	43562
60		2420	4840	7260	9680	12100	14521	16941	19361	21781	24201	26621	29041
80		1815	3630	5445	7260	9075	10890	12706	14521	16336	18151	19966	21781
100		1452	2904	4356	5808	7260	8712	10164	11616	13069	14521	15973	17425
120		1210	2420	3630	4840	6050	7260	8470	9680	10890	12100	13311	14521
140		1037	2074	3112	4149	5186	6223	7260	8297	9335	10372	11409	12446
160		908	1815	2723	3630	4538	5445	6353	7260	8168	9075	9983	10890
180		807	1613	2420	3227	4033	4840	5647	6454	7260	8067	8874	9680
200		726	1452	2178	2904	3630	4356	5082	5808	6534	7260	7986	8712
220		660	1320	1980	2640	3300	3960	4620	5280	5940	6600	7260	7920
240		605	1210	1815	2420	3025	3630	4235	4840	5445	6050	6655	7260
260		558	1117	1675	2234	2792	3351	3909	4468	5026	5585	6143	6702
280		519	1037	1556	2074	2593	3112	3630	4149	4667	5186	5705	6223
300		484	968	1452	1936	2420	2904	3388	3872	4356	4840	5324	5808
320		454	908	1361	1815	2269	2723	3176	3630	4084	4538	4991	5445

Table B.20 Characteristic load-carrying capacities bracket type SXAKRL95 4 mm thick
Timber to steel/concrete - Purlin – Fastener 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	5857	4909	4225	3708	3175	2646	2268	1984	1764	1587	1443	1323

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	22646

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	45292

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3489	2907	2456	1907	1559	1318	1142	1007	901	815	744	684

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421	2421
20	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380
40	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596	5596
60	5815	9627	13440	16254	16254	16254	16254	16254	16254	16254	16254	16254	16254
80	4361	7220	10080	12940	15799	18659	20710	20710	20710	20710	20710	20710	20710
100	3489	5776	8064	10352	12639	14927	17215	19502	20710	20710	20710	20710	20710
120	2907	4814	6720	8626	10533	12439	14346	16252	18158	20065	20710	20710	20710
140	2492	4126	5760	7394	9028	10662	12296	13930	15564	17198	18832	20467	20710
160	2180	3610	5040	6470	7900	9329	10759	12189	13619	15049	16478	17908	19338
180	1938	3209	4480	5751	7022	8293	9564	10835	12106	13377	14647	15918	17189
200	1744	2888	4032	5176	6320	7464	8607	9751	10895	12039	13183	14327	15470
220	1586	2626	3665	4705	5745	6785	7825	8865	9905	10944	11984	13024	14064
240	1454	2407	3360	4313	5266	6220	7173	8126	9079	10032	10986	11939	12892
260	1342	2222	3102	3981	4861	5741	6621	7501	8381	9261	10141	11020	11900
280	1246	2063	2880	3697	4514	5331	6148	6965	7782	8599	9416	10233	11050
300	1163	1925	2688	3451	4213	4976	5738	6501	7263	8026	8788	9551	10314
320	1090	1805	2520	3235	3950	4665	5380	6095	6809	7524	8239	8954	9669

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7260	14521	21781	29041	36301	43562	50822	58082	65343	72603	79863	87124
40		3630	7260	10890	14521	18151	21781	25411	29041	32671	36301	39932	43562
60		2420	4840	7260	9680	12100	14521	16941	19361	21781	24201	26621	29041
80		1815	3630	5445	7260	9075	10890	12706	14521	16336	18151	19966	21781
100		1452	2904	4356	5808	7260	8712	10164	11616	13069	14521	15973	17425
120		1210	2420	3630	4840	6050	7260	8470	9680	10890	12100	13311	14521
140		1037	2074	3112	4149	5186	6223	7260	8297	9335	10372	11409	12446
160		908	1815	2723	3630	4538	5445	6353	7260	8168	9075	9983	10890
180		807	1613	2420	3227	4033	4840	5647	6454	7260	8067	8874	9680
200		726	1452	2178	2904	3630	4356	5082	5808	6534	7260	7986	8712
220		660	1320	1980	2640	3300	3960	4620	5280	5940	6600	7260	7920
240		605	1210	1815	2420	3025	3630	4235	4840	5445	6050	6655	7260
260		558	1117	1675	2234	2792	3351	3909	4468	5026	5585	6143	6702
280		519	1037	1556	2074	2593	3112	3630	4149	4667	5186	5705	6223
300		484	968	1452	1936	2420	2904	3388	3872	4356	4840	5324	5808
320		454	908	1361	1815	2269	2723	3176	3630	4084	4538	4991	5445

Table B.21 Characteristic load-carrying capacities bracket type SXAKR135X3 3 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	173	86	58	43	35	29	25	22	19	17	16	14

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Fastener 4,0x50 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	288	144	96	72	58	48	41	36	32	29	26	24

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	633	316	211	158	127	105	90	79	70	63	58	53

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7090	1642	821	547	410	328	274	235	205	182	164	149	137

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14180

Table B.22 Characteristic load-carrying capacities bracket type SXAKR135X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	3079	1540	1026	770	616	513	440	385	342	308	280	257

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	14099

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	28199

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2088	1244	886	688	562	476	412	363	325	294	268	247

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	874	874	874	874	874	874	874	874	874	874	874	874	874
20	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219
40	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
60	2864	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865
80	2603	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
100	2082	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
120	1735	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
140	1487	3473	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
160	1301	3039	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
180	1157	2701	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
200	1041	2431	3512	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
220	946	2210	3193	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
240	868	2026	2927	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
260	801	1870	2701	3533	3545	3545	3545	3545	3545	3545	3545	3545	3545
280	744	1737	2508	3280	3545	3545	3545	3545	3545	3545	3545	3545	3545
300	694	1621	2341	3062	3545	3545	3545	3545	3545	3545	3545	3545	3545
320	651	1520	2195	2870	3545	3545	3545	3545	3545	3545	3545	3545	3545

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7571	15141	22712	30282	37853	45423	52994	60564	68135	75705	83276	90847
40		3785	7571	11356	15141	18926	22712	26497	30282	34067	37853	41638	45423
60		2524	5047	7571	10094	12618	15141	17665	20188	22712	25235	27759	30282
80		1893	3785	5678	7571	9463	11356	13248	15141	17034	18926	20819	22712
100		1514	3028	4542	6056	7571	9085	10599	12113	13627	15141	16655	18169
120		1262	2524	3785	5047	6309	7571	8832	10094	11356	12618	13879	15141
140		1082	2163	3245	4326	5408	6489	7571	8652	9734	10815	11897	12978
160		946	1893	2839	3785	4732	5678	6624	7571	8517	9463	10409	11356
180		841	1682	2524	3365	4206	5047	5888	6729	7571	8412	9253	10094
200		757	1514	2271	3028	3785	4542	5299	6056	6813	7571	8328	9085
220		688	1376	2065	2753	3441	4129	4818	5506	6194	6882	7571	8259
240		631	1262	1893	2524	3154	3785	4416	5047	5678	6309	6940	7571
260		582	1165	1747	2329	2912	3494	4076	4659	5241	5823	6406	6988
280		541	1082	1622	2163	2704	3245	3785	4326	4867	5408	5948	6489
300		505	1009	1514	2019	2524	3028	3533	4038	4542	5047	5552	6056
320		473	946	1419	1893	2366	2839	3312	3785	4258	4732	5205	5678

Table B.23 Characteristic load-carrying capacities bracket type SXAKR135X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	5132	2566	1711	1283	1026	855	733	641	570	513	467	428

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	20475

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	40950

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	1956	1393	1082	884	748	648	571	511	462	422	388

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373
20	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917
40	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174
60	4502	8104	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220
80	3377	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
100	2701	4863	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
120	2251	4052	5853	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
140	1930	3473	5017	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
160	1688	3039	4390	5741	5909	5909	5909	5909	5909	5909	5909	5909	5909
180	1501	2701	3902	5103	5909	5909	5909	5909	5909	5909	5909	5909	5909
200	1351	2431	3512	4592	5673	5909	5909	5909	5909	5909	5909	5909	5909
220	1228	2210	3193	4175	5157	5909	5909	5909	5909	5909	5909	5909	5909
240	1126	2026	2927	3827	4728	5628	5909	5909	5909	5909	5909	5909	5909
260	1039	1870	2701	3533	4364	5195	5909	5909	5909	5909	5909	5909	5909
280	965	1737	2508	3280	4052	4824	5596	5909	5909	5909	5909	5909	5909
300	900	1621	2341	3062	3782	4502	5223	5909	5909	5909	5909	5909	5909
320	844	1520	2195	2870	3546	4221	4896	5572	5909	5909	5909	5909	5909

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7571	15141	22712	30282	37853	45423	52994	60564	68135	75705	83276	90847
40		3785	7571	11356	15141	18926	22712	26497	30282	34067	37853	41638	45423
60		2524	5047	7571	10094	12618	15141	17665	20188	22712	25235	27759	30282
80		1893	3785	5678	7571	9463	11356	13248	15141	17034	18926	20819	22712
100		1514	3028	4542	6056	7571	9085	10599	12113	13627	15141	16655	18169
120		1262	2524	3785	5047	6309	7571	8832	10094	11356	12618	13879	15141
140		1082	2163	3245	4326	5408	6489	7571	8652	9734	10815	11897	12978
160		946	1893	2839	3785	4732	5678	6624	7571	8517	9463	10409	11356
180		841	1682	2524	3365	4206	5047	5888	6729	7571	8412	9253	10094
200		757	1514	2271	3028	3785	4542	5299	6056	6813	7571	8328	9085
220		688	1376	2065	2753	3441	4129	4818	5506	6194	6882	7571	8259
240		631	1262	1893	2524	3154	3785	4416	5047	5678	6309	6940	7571
260		582	1165	1747	2329	2912	3494	4076	4659	5241	5823	6406	6988
280		541	1082	1622	2163	2704	3245	3785	4326	4867	5408	5948	6489
300		505	1009	1514	2019	2524	3028	3533	4038	4542	5047	5552	6056
320		473	946	1419	1893	2366	2839	3312	3785	4258	4732	5205	5678

Table B.24 Characteristic load-carrying capacities bracket type SXAKR135X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	6108	5119	3762	2821	2257	1881	1612	1411	1254	1129	1026	940

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	35910

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	71820

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	1956	1393	1082	884	748	648	571	511	462	422	388

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373
20	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917
40	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174
60	4502	8104	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220
80	3377	6078	8780	11481	12995	12995	12995	12995	12995	12995	12995	12995	12995
100	2701	4863	7024	9185	11346	12995	12995	12995	12995	12995	12995	12995	12995
120	2251	4052	5853	7654	9455	11256	12995	12995	12995	12995	12995	12995	12995
140	1930	3473	5017	6561	8104	9648	11192	12735	12995	12995	12995	12995	12995
160	1688	3039	4390	5741	7091	8442	9793	11144	12494	12995	12995	12995	12995
180	1501	2701	3902	5103	6303	7504	8705	9905	11106	12307	12995	12995	12995
200	1351	2431	3512	4592	5673	6754	7834	8915	9995	11076	12157	12995	12995
220	1228	2210	3193	4175	5157	6140	7122	8104	9087	10069	11051	12034	12995
240	1126	2026	2927	3827	4728	5628	6529	7429	8329	9230	10130	11031	11931
260	1039	1870	2701	3533	4364	5195	6026	6858	7689	8520	9351	10182	11014
280	965	1737	2508	3280	4052	4824	5596	6368	7140	7911	8683	9455	10227
300	900	1621	2341	3062	3782	4502	5223	5943	6664	7384	8104	8825	9545
320	844	1520	2195	2870	3546	4221	4896	5572	6247	6922	7598	8273	8949

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7571	15141	22712	30282	37853	45423	52994	60564	68135	75705	83276	90847
40		3785	7571	11356	15141	18926	22712	26497	30282	34067	37853	41638	45423
60		2524	5047	7571	10094	12618	15141	17665	20188	22712	25235	27759	30282
80		1893	3785	5678	7571	9463	11356	13248	15141	17034	18926	20819	22712
100		1514	3028	4542	6056	7571	9085	10599	12113	13627	15141	16655	18169
120		1262	2524	3785	5047	6309	7571	8832	10094	11356	12618	13879	15141
140		1082	2163	3245	4326	5408	6489	7571	8652	9734	10815	11897	12978
160		946	1893	2839	3785	4732	5678	6624	7571	8517	9463	10409	11356
180		841	1682	2524	3365	4206	5047	5888	6729	7571	8412	9253	10094
200		757	1514	2271	3028	3785	4542	5299	6056	6813	7571	8328	9085
220		688	1376	2065	2753	3441	4129	4818	5506	6194	6882	7571	8259
240		631	1262	1893	2524	3154	3785	4416	5047	5678	6309	6940	7571
260		582	1165	1747	2329	2912	3494	4076	4659	5241	5823	6406	6988
280		541	1082	1622	2163	2704	3245	3785	4326	4867	5408	5948	6489
300		505	1009	1514	2019	2524	3028	3533	4038	4542	5047	5552	6056
320		473	946	1419	1893	2366	2839	3312	3785	4258	4732	5205	5678

Table B.25 Characteristic load-carrying capacities bracket type SXAKR135X3 3 mm thick
Timber to steel/concrete - Purlin – Fastener 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	6108	5119	4405	3377	2701	2251	1930	1688	1501	1351	1228	1126

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	44775

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	89549

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	1956	1393	1082	884	748	648	571	511	462	422	388

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373
20	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917
40	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174
60	4502	8104	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220
80	3377	6078	8780	11481	14183	16884	19586	21116	21116	21116	21116	21116	21116
100	2701	4863	7024	9185	11346	13507	15668	17830	19991	21116	21116	21116	21116
120	2251	4052	5853	7654	9455	11256	13057	14858	16659	18460	20261	21116	21116
140	1930	3473	5017	6561	8104	9648	11192	12735	14279	15823	17366	18910	20454
160	1688	3039	4390	5741	7091	8442	9793	11144	12494	13845	15196	16546	17897
180	1501	2701	3902	5103	6303	7504	8705	9905	11106	12307	13507	14708	15909
200	1351	2431	3512	4592	5673	6754	7834	8915	9995	11076	12157	13237	14318
220	1228	2210	3193	4175	5157	6140	7122	8104	9087	10069	11051	12034	13016
240	1126	2026	2927	3827	4728	5628	6529	7429	8329	9230	10130	11031	11931
260	1039	1870	2701	3533	4364	5195	6026	6858	7689	8520	9351	10182	11014
280	965	1737	2508	3280	4052	4824	5596	6368	7140	7911	8683	9455	10227
300	900	1621	2341	3062	3782	4502	5223	5943	6664	7384	8104	8825	9545
320	844	1520	2195	2870	3546	4221	4896	5572	6247	6922	7598	8273	8949

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7571	15141	22712	30282	37853	45423	52994	60564	68135	75705	83276	90847
40		3785	7571	11356	15141	18926	22712	26497	30282	34067	37853	41638	45423
60		2524	5047	7571	10094	12618	15141	17665	20188	22712	25235	27759	30282
80		1893	3785	5678	7571	9463	11356	13248	15141	17034	18926	20819	22712
100		1514	3028	4542	6056	7571	9085	10599	12113	13627	15141	16655	18169
120		1262	2524	3785	5047	6309	7571	8832	10094	11356	12618	13879	15141
140		1082	2163	3245	4326	5408	6489	7571	8652	9734	10815	11897	12978
160		946	1893	2839	3785	4732	5678	6624	7571	8517	9463	10409	11356
180		841	1682	2524	3365	4206	5047	5888	6729	7571	8412	9253	10094
200		757	1514	2271	3028	3785	4542	5299	6056	6813	7571	8328	9085
220		688	1376	2065	2753	3441	4129	4818	5506	6194	6882	7571	8259
240		631	1262	1893	2524	3154	3785	4416	5047	5678	6309	6940	7571
260		582	1165	1747	2329	2912	3494	4076	4659	5241	5823	6406	6988
280		541	1082	1622	2163	2704	3245	3785	4326	4867	5408	5948	6489
300		505	1009	1514	2019	2524	3028	3533	4038	4542	5047	5552	6056
320		473	946	1419	1893	2366	2839	3312	3785	4258	4732	5205	5678

Table B.26 Characteristic load-carrying capacities bracket type SXAKR135 4 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	8236	173	86	58	43	35	29	25	22	19	17	16	14

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	16472

Fastener 4,0x60 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	288	144	96	72	58	48	41	36	32	29	26	24

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	613	306	204	153	123	102	88	77	68	61	56	51

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	1008	504	336	252	202	168	144	126	112	101	92	84

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Table B.27 Characteristic load-carrying capacities bracket type SXAKR135 4 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	3079	1540	1026	770	616	513	440	385	342	308	280	257

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	13870

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	27740

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	2088	1244	886	688	562	476	412	363	325	294	268	247

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	874	874	874	874	874	874	874	874	874	874	874	874	874
20	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219
40	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
60	2864	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865
80	2603	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
100	2082	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
120	1735	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
140	1487	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
160	1301	3293	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
180	1157	2927	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
200	1041	2634	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
220	946	2395	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
240	868	2195	3523	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
260	801	2026	3252	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
280	744	1882	3020	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
300	694	1756	2818	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
320	651	1646	2642	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		9777	19553	29330	39107	48884	58660	68437	78214	87991	97767	107544	117321
40		4888	9777	14665	19553	24442	29330	34219	39107	43995	48884	53772	58660
60		3259	6518	9777	13036	16295	19553	22812	26071	29330	32589	35848	39107
80		2444	4888	7333	9777	12221	14665	17109	19553	21998	24442	26886	29330
100		1955	3911	5866	7821	9777	11732	13687	15643	17598	19553	21509	23464
120		1629	3259	4888	6518	8147	9777	11406	13036	14665	16295	17924	19553
140		1397	2793	4190	5587	6983	8380	9777	11173	12570	13967	15363	16760
160		1222	2444	3666	4888	6110	7333	8555	9777	10999	12221	13443	14665
180		1086	2173	3259	4345	5432	6518	7604	8690	9777	10863	11949	13036
200		978	1955	2933	3911	4888	5866	6844	7821	8799	9777	10754	11732
220		889	1778	2666	3555	4444	5333	6222	7110	7999	8888	9777	10666
240		815	1629	2444	3259	4074	4888	5703	6518	7333	8147	8962	9777
260		752	1504	2256	3008	3760	4512	5264	6016	6769	7521	8273	9025
280		698	1397	2095	2793	3492	4190	4888	5587	6285	6983	7682	8380
300		652	1304	1955	2607	3259	3911	4562	5214	5866	6518	7170	7821
320		611	1222	1833	2444	3055	3666	4277	4888	5499	6110	6722	7333

Table B.28 Characteristic load-carrying capacities bracket type SXAKR135 4 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	5132	2566	1711	1283	1026	855	733	641	570	513	467	428

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	20475

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	40950

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3479	2073	1477	1147	937	793	687	606	542	490	447	411

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1456	1456	1456	1456	1456	1456	1456	1456	1456	1456	1456	1456	1456
20	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032
40	3365	3365	3365	3365	3365	3365	3365	3365	3365	3365	3365	3365	3365
60	4773	9775	9775	9775	9775	9775	9775	9775	9775	9775	9775	9775	9775
80	4338	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
100	3470	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
120	2892	5233	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
140	2479	4485	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
160	2169	3925	5669	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
180	1928	3489	5039	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
200	1735	3140	4535	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
220	1577	2854	4123	5392	5909	5909	5909	5909	5909	5909	5909	5909	5909
240	1446	2617	3779	4942	5909	5909	5909	5909	5909	5909	5909	5909	5909
260	1335	2415	3489	4562	5636	5909	5909	5909	5909	5909	5909	5909	5909
280	1239	2243	3240	4236	5233	5909	5909	5909	5909	5909	5909	5909	5909
300	1157	2093	3024	3954	4884	5815	5909	5909	5909	5909	5909	5909	5909
320	1084	1962	2835	3707	4579	5451	5909	5909	5909	5909	5909	5909	5909

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		9777	19553	29330	39107	48884	58660	68437	78214	87991	97767	107544	117321
40		4888	9777	14665	19553	24442	29330	34219	39107	43995	48884	53772	58660
60		3259	6518	9777	13036	16295	19553	22812	26071	29330	32589	35848	39107
80		2444	4888	7333	9777	12221	14665	17109	19553	21998	24442	26886	29330
100		1955	3911	5866	7821	9777	11732	13687	15643	17598	19553	21509	23464
120		1629	3259	4888	6518	8147	9777	11406	13036	14665	16295	17924	19553
140		1397	2793	4190	5587	6983	8380	9777	11173	12570	13967	15363	16760
160		1222	2444	3666	4888	6110	7333	8555	9777	10999	12221	13443	14665
180		1086	2173	3259	4345	5432	6518	7604	8690	9777	10863	11949	13036
200		978	1955	2933	3911	4888	5866	6844	7821	8799	9777	10754	11732
220		889	1778	2666	3555	4444	5333	6222	7110	7999	8888	9777	10666
240		815	1629	2444	3259	4074	4888	5703	6518	7333	8147	8962	9777
260		752	1504	2256	3008	3760	4512	5264	6016	6769	7521	8273	9025
280		698	1397	2095	2793	3492	4190	4888	5587	6285	6983	7682	8380
300		652	1304	1955	2607	3259	3911	4562	5214	5866	6518	7170	7821
320		611	1222	1833	2444	3055	3666	4277	4888	5499	6110	6722	7333

Table B.29 Characteristic load-carrying capacities bracket type SXAKR135 4 mm thick Timber to steel/concrete - Purlin – Fastener 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	7888	5467	3644	2733	2187	1822	1562	1367	1215	1093	994	911

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	34931

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	69861

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3489	2526	1799	1397	1142	965	836	738	660	597	545	501

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773
20	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476
40	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099
60	5815	10466	11907	11907	11907	11907	11907	11907	11907	11907	11907	11907	11907
80	4361	7850	11338	12588	12588	12588	12588	12588	12588	12588	12588	12588	12588
100	3489	6280	9071	11862	12588	12588	12588	12588	12588	12588	12588	12588	12588
120	2907	5233	7559	9885	12210	12588	12588	12588	12588	12588	12588	12588	12588
140	2492	4485	6479	8473	10466	12460	12588	12588	12588	12588	12588	12588	12588
160	2180	3925	5669	7414	9158	10902	12588	12588	12588	12588	12588	12588	12588
180	1938	3489	5039	6590	8140	9691	11241	12588	12588	12588	12588	12588	12588
200	1744	3140	4535	5931	7326	8722	10117	11513	12588	12588	12588	12588	12588
220	1586	2854	4123	5392	6660	7929	9198	10466	11735	12588	12588	12588	12588
240	1454	2617	3779	4942	6105	7268	8431	9594	10757	11920	12588	12588	12588
260	1342	2415	3489	4562	5636	6709	7783	8856	9929	11003	12076	12588	12588
280	1246	2243	3240	4236	5233	6230	7227	8223	9220	10217	11214	12210	12588
300	1163	2093	3024	3954	4884	5815	6745	7675	8605	9536	10466	11396	12327
320	1090	1962	2835	3707	4579	5451	6323	7195	8068	8940	9812	10684	11556

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		9777	19553	29330	39107	48884	58660	68437	78214	87991	97767	107544	117321
40		4888	9777	14665	19553	24442	29330	34219	39107	43995	48884	53772	58660
60		3259	6518	9777	13036	16295	19553	22812	26071	29330	32589	35848	39107
80		2444	4888	7333	9777	12221	14665	17109	19553	21998	24442	26886	29330
100		1955	3911	5866	7821	9777	11732	13687	15643	17598	19553	21509	23464
120		1629	3259	4888	6518	8147	9777	11406	13036	14665	16295	17924	19553
140		1397	2793	4190	5587	6983	8380	9777	11173	12570	13967	15363	16760
160		1222	2444	3666	4888	6110	7333	8555	9777	10999	12221	13443	14665
180		1086	2173	3259	4345	5432	6518	7604	8690	9777	10863	11949	13036
200		978	1955	2933	3911	4888	5866	6844	7821	8799	9777	10754	11732
220		889	1778	2666	3555	4444	5333	6222	7110	7999	8888	9777	10666
240		815	1629	2444	3259	4074	4888	5703	6518	7333	8147	8962	9777
260		752	1504	2256	3008	3760	4512	5264	6016	6769	7521	8273	9025
280		698	1397	2095	2793	3492	4190	4888	5587	6285	6983	7682	8380
300		652	1304	1955	2607	3259	3911	4562	5214	5866	6518	7170	7821
320		611	1222	1833	2444	3055	3666	4277	4888	5499	6110	6722	7333

Table B.30 Characteristic load-carrying capacities bracket type SXAKR135 4 mm thick
Timber to steel/concrete - Purlin – Fastener 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	7888	6610	5689	4361	3489	2907	2492	2180	1938	1744	1586	1454

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	44525

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	89050

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3489	2526	1799	1397	1142	965	836	738	660	597	545	501

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773
20	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476
40	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099
60	5815	10466	11907	11907	11907	11907	11907	11907	11907	11907	11907	11907	11907
80	4361	7850	11338	14827	18316	20710	20710	20710	20710	20710	20710	20710	20710
100	3489	6280	9071	11862	14653	17444	20235	20710	20710	20710	20710	20710	20710
120	2907	5233	7559	9885	12210	14536	16862	19188	20710	20710	20710	20710	20710
140	2492	4485	6479	8473	10466	12460	14453	16447	18440	20434	20710	20710	20710
160	2180	3925	5669	7414	9158	10902	12647	14391	16135	17880	19624	20710	20710
180	1938	3489	5039	6590	8140	9691	11241	12792	14342	15893	17444	18994	20545
200	1744	3140	4535	5931	7326	8722	10117	11513	12908	14304	15699	17095	18490
220	1586	2854	4123	5392	6660	7929	9198	10466	11735	13003	14272	15541	16809
240	1454	2617	3779	4942	6105	7268	8431	9594	10757	11920	13083	14246	15408
260	1342	2415	3489	4562	5636	6709	7783	8856	9929	11003	12076	13150	14223
280	1246	2243	3240	4236	5233	6230	7227	8223	9220	10217	11214	12210	13207
300	1163	2093	3024	3954	4884	5815	6745	7675	8605	9536	10466	11396	12327
320	1090	1962	2835	3707	4579	5451	6323	7195	8068	8940	9812	10684	11556

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		9777	19553	29330	39107	48884	58660	68437	78214	87991	97767	107544	117321
40		4888	9777	14665	19553	24442	29330	34219	39107	43995	48884	53772	58660
60		3259	6518	9777	13036	16295	19553	22812	26071	29330	32589	35848	39107
80		2444	4888	7333	9777	12221	14665	17109	19553	21998	24442	26886	29330
100		1955	3911	5866	7821	9777	11732	13687	15643	17598	19553	21509	23464
120		1629	3259	4888	6518	8147	9777	11406	13036	14665	16295	17924	19553
140		1397	2793	4190	5587	6983	8380	9777	11173	12570	13967	15363	16760
160		1222	2444	3666	4888	6110	7333	8555	9777	10999	12221	13443	14665
180		1086	2173	3259	4345	5432	6518	7604	8690	9777	10863	11949	13036
200		978	1955	2933	3911	4888	5866	6844	7821	8799	9777	10754	11732
220		889	1778	2666	3555	4444	5333	6222	7110	7999	8888	9777	10666
240		815	1629	2444	3259	4074	4888	5703	6518	7333	8147	8962	9777
260		752	1504	2256	3008	3760	4512	5264	6016	6769	7521	8273	9025
280		698	1397	2095	2793	3492	4190	4888	5587	6285	6983	7682	8380
300		652	1304	1955	2607	3259	3911	4562	5214	5866	6518	7170	7821
320		611	1222	1833	2444	3055	3666	4277	4888	5499	6110	6722	7333

Table B.31 Characteristic load-carrying capacities bracket type SXAKRL135X3 3 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	173	86	58	43	35	29	25	22	19	17	16	14

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Fastener 4,0x60 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	288	144	96	72	58	48	41	36	32	29	26	24

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	633	316	211	158	127	105	90	79	70	63	58	53

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	1028	514	343	257	206	171	147	128	114	103	93	86

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Table B.32 Characteristic load-carrying capacities bracket type SXAKRL135X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	3079	1540	1026	770	616	513	440	385	342	308	280	257

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	14099

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	28199

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2088	1244	886	688	562	476	412	363	325	294	268	247

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	874	874	874	874	874	874	874	874	874	874	874	874	874
20	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219
40	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
60	2864	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865
80	2603	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
100	2082	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
120	1735	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
140	1487	3195	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
160	1301	2796	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
180	1157	2485	3469	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
200	1041	2236	3122	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
220	946	2033	2838	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
240	868	1864	2602	3340	3545	3545	3545	3545	3545	3545	3545	3545	3545
260	801	1720	2402	3083	3545	3545	3545	3545	3545	3545	3545	3545	3545
280	744	1597	2230	2863	3495	3545	3545	3545	3545	3545	3545	3545	3545
300	694	1491	2081	2672	3262	3545	3545	3545	3545	3545	3545	3545	3545
320	651	1398	1951	2505	3059	3545	3545	3545	3545	3545	3545	3545	3545

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		5622	11244	16866	22488	28110	33732	39354	44976	50598	56220	61841	67463
40		2811	5622	8433	11244	14055	16866	19677	22488	25299	28110	30921	33732
60		1874	3748	5622	7496	9370	11244	13118	14992	16866	18740	20614	22488
80		1405	2811	4216	5622	7027	8433	9838	11244	12649	14055	15460	16866
100		1124	2249	3373	4498	5622	6746	7871	8995	10120	11244	12368	13493
120		937	1874	2811	3748	4685	5622	6559	7496	8433	9370	10307	11244
140		803	1606	2409	3213	4016	4819	5622	6425	7228	8031	8834	9638
160		703	1405	2108	2811	3514	4216	4919	5622	6325	7027	7730	8433
180		625	1249	1874	2499	3123	3748	4373	4997	5622	6247	6871	7496
200		562	1124	1687	2249	2811	3373	3935	4498	5060	5622	6184	6746
220		511	1022	1533	2044	2555	3067	3578	4089	4600	5111	5622	6133
240		468	937	1405	1874	2342	2811	3279	3748	4216	4685	5153	5622
260		432	865	1297	1730	2162	2595	3027	3460	3892	4325	4757	5189
280		402	803	1205	1606	2008	2409	2811	3213	3614	4016	4417	4819
300		375	750	1124	1499	1874	2249	2624	2998	3373	3748	4123	4498
320		351	703	1054	1405	1757	2108	2460	2811	3162	3514	3865	4216

Table B.33 Characteristic load-carrying capacities bracket type SXAKRL135X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	4536	2566	1711	1283	1026	855	733	641	570	513	467	428

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	17492

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	34984

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	1956	1393	1082	884	748	648	571	511	462	422	388

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373
20	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917
40	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174
60	4502	7455	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220
80	3377	5591	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
100	2701	4473	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
120	2251	3727	5204	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
140	1930	3195	4460	5726	5909	5909	5909	5909	5909	5909	5909	5909	5909
160	1688	2796	3903	5010	5909	5909	5909	5909	5909	5909	5909	5909	5909
180	1501	2485	3469	4453	5437	5909	5909	5909	5909	5909	5909	5909	5909
200	1351	2236	3122	4008	4894	5779	5909	5909	5909	5909	5909	5909	5909
220	1228	2033	2838	3644	4449	5254	5909	5909	5909	5909	5909	5909	5909
240	1126	1864	2602	3340	4078	4816	5554	5909	5909	5909	5909	5909	5909
260	1039	1720	2402	3083	3764	4446	5127	5808	5909	5909	5909	5909	5909
280	965	1597	2230	2863	3495	4128	4761	5393	5909	5909	5909	5909	5909
300	900	1491	2081	2672	3262	3853	4443	5034	5624	5909	5909	5909	5909
320	844	1398	1951	2505	3059	3612	4166	4719	5273	5826	5909	5909	5909

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		5622	11244	16866	22488	28110	33732	39354	44976	50598	56220	61841	67463
40		2811	5622	8433	11244	14055	16866	19677	22488	25299	28110	30921	33732
60		1874	3748	5622	7496	9370	11244	13118	14992	16866	18740	20614	22488
80		1405	2811	4216	5622	7027	8433	9838	11244	12649	14055	15460	16866
100		1124	2249	3373	4498	5622	6746	7871	8995	10120	11244	12368	13493
120		937	1874	2811	3748	4685	5622	6559	7496	8433	9370	10307	11244
140		803	1606	2409	3213	4016	4819	5622	6425	7228	8031	8834	9638
160		703	1405	2108	2811	3514	4216	4919	5622	6325	7027	7730	8433
180		625	1249	1874	2499	3123	3748	4373	4997	5622	6247	6871	7496
200		562	1124	1687	2249	2811	3373	3935	4498	5060	5622	6184	6746
220		511	1022	1533	2044	2555	3067	3578	4089	4600	5111	5622	6133
240		468	937	1405	1874	2342	2811	3279	3748	4216	4685	5153	5622
260		432	865	1297	1730	2162	2595	3027	3460	3892	4325	4757	5189
280		402	803	1205	1606	2008	2409	2811	3213	3614	4016	4417	4819
300		375	750	1124	1499	1874	2249	2624	2998	3373	3748	4123	4498
320		351	703	1054	1405	1757	2108	2460	2811	3162	3514	3865	4216

Table B.34 Characteristic load-carrying capacities bracket type SXAKRL135X3 3 mm thick Timber to steel/concrete - Purlin – Fastener 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	4536	3801	3271	2821	2257	1881	1612	1411	1254	1129	1026	940

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	32308

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	64616

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	1956	1393	1082	884	748	648	571	511	462	422	388

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373
20	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917
40	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174
60	4502	7455	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220
80	3377	5591	7805	10020	12234	12995	12995	12995	12995	12995	12995	12995	12995
100	2701	4473	6244	8016	9787	11559	12995	12995	12995	12995	12995	12995	12995
120	2251	3727	5204	6680	8156	9632	11108	12585	12995	12995	12995	12995	12995
140	1930	3195	4460	5726	6991	8256	9522	10787	12052	12995	12995	12995	12995
160	1688	2796	3903	5010	6117	7224	8331	9438	10546	11653	12760	12995	12995
180	1501	2485	3469	4453	5437	6421	7406	8390	9374	10358	11342	12326	12995
200	1351	2236	3122	4008	4894	5779	6665	7551	8437	9322	10208	11094	11979
220	1228	2033	2838	3644	4449	5254	6059	6864	7670	8475	9280	10085	10890
240	1126	1864	2602	3340	4078	4816	5554	6292	7030	7769	8507	9245	9983
260	1039	1720	2402	3083	3764	4446	5127	5808	6490	7171	7852	8534	9215
280	965	1597	2230	2863	3495	4128	4761	5393	6026	6659	7291	7924	8557
300	900	1491	2081	2672	3262	3853	4443	5034	5624	6215	6805	7396	7986
320	844	1398	1951	2505	3059	3612	4166	4719	5273	5826	6380	6934	7487

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		5622	11244	16866	22488	28110	33732	39354	44976	50598	56220	61841	67463
40		2811	5622	8433	11244	14055	16866	19677	22488	25299	28110	30921	33732
60		1874	3748	5622	7496	9370	11244	13118	14992	16866	18740	20614	22488
80		1405	2811	4216	5622	7027	8433	9838	11244	12649	14055	15460	16866
100		1124	2249	3373	4498	5622	6746	7871	8995	10120	11244	12368	13493
120		937	1874	2811	3748	4685	5622	6559	7496	8433	9370	10307	11244
140		803	1606	2409	3213	4016	4819	5622	6425	7228	8031	8834	9638
160		703	1405	2108	2811	3514	4216	4919	5622	6325	7027	7730	8433
180		625	1249	1874	2499	3123	3748	4373	4997	5622	6247	6871	7496
200		562	1124	1687	2249	2811	3373	3935	4498	5060	5622	6184	6746
220		511	1022	1533	2044	2555	3067	3578	4089	4600	5111	5622	6133
240		468	937	1405	1874	2342	2811	3279	3748	4216	4685	5153	5622
260		432	865	1297	1730	2162	2595	3027	3460	3892	4325	4757	5189
280		402	803	1205	1606	2008	2409	2811	3213	3614	4016	4417	4819
300		375	750	1124	1499	1874	2249	2624	2998	3373	3748	4123	4498
320		351	703	1054	1405	1757	2108	2460	2811	3162	3514	3865	4216

Table B.35 Characteristic load-carrying capacities bracket type SXAKRL135X3 3 mm thick
Timber to steel/concrete - Purlin – Fastener 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	4536	3801	3271	2871	2558	2251	1930	1688	1501	1351	1228	1126

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	41961

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	83923

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		13507	6754	4502	3377	2701	1956	1393	1082	884	748	648	571	511	462	422	388

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373	1373
20	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917	1917
40	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174	3174
60	4502	7455	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220	9220
80	3377	5591	7805	10020	12234	14448	16663	18877	21091	21116	21116	21116	21116
100	2701	4473	6244	8016	9787	11559	13330	15102	16873	18644	20416	21116	21116
120	2251	3727	5204	6680	8156	9632	11108	12585	14061	15537	17013	18489	19966
140	1930	3195	4460	5726	6991	8256	9522	10787	12052	13317	14583	15848	17113
160	1688	2796	3903	5010	6117	7224	8331	9438	10546	11653	12760	13867	14974
180	1501	2485	3469	4453	5437	6421	7406	8390	9374	10358	11342	12326	13310
200	1351	2236	3122	4008	4894	5779	6665	7551	8437	9322	10208	11094	11979
220	1228	2033	2838	3644	4449	5254	6059	6864	7670	8475	9280	10085	10890
240	1126	1864	2602	3340	4078	4816	5554	6292	7030	7769	8507	9245	9983
260	1039	1720	2402	3083	3764	4446	5127	5808	6490	7171	7852	8534	9215
280	965	1597	2230	2863	3495	4128	4761	5393	6026	6659	7291	7924	8557
300	900	1491	2081	2672	3262	3853	4443	5034	5624	6215	6805	7396	7986
320	844	1398	1951	2505	3059	3612	4166	4719	5273	5826	6380	6934	7487

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		5622	11244	16866	22488	28110	33732	39354	44976	50598	56220	61841	67463
40		2811	5622	8433	11244	14055	16866	19677	22488	25299	28110	30921	33732
60		1874	3748	5622	7496	9370	11244	13118	14992	16866	18740	20614	22488
80		1405	2811	4216	5622	7027	8433	9838	11244	12649	14055	15460	16866
100		1124	2249	3373	4498	5622	6746	7871	8995	10120	11244	12368	13493
120		937	1874	2811	3748	4685	5622	6559	7496	8433	9370	10307	11244
140		803	1606	2409	3213	4016	4819	5622	6425	7228	8031	8834	9638
160		703	1405	2108	2811	3514	4216	4919	5622	6325	7027	7730	8433
180		625	1249	1874	2499	3123	3748	4373	4997	5622	6247	6871	7496
200		562	1124	1687	2249	2811	3373	3935	4498	5060	5622	6184	6746
220		511	1022	1533	2044	2555	3067	3578	4089	4600	5111	5622	6133
240		468	937	1405	1874	2342	2811	3279	3748	4216	4685	5153	5622
260		432	865	1297	1730	2162	2595	3027	3460	3892	4325	4757	5189
280		402	803	1205	1606	2008	2409	2811	3213	3614	4016	4417	4819
300		375	750	1124	1499	1874	2249	2624	2998	3373	3748	4123	4498
320		351	703	1054	1405	1757	2108	2460	2811	3162	3514	3865	4216

Table B.36 Characteristic load-carrying capacities bracket type SXAKRL135 4 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	173	86	58	43	35	29	25	22	19	17	16	14

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Fastener 4,0x60 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	288	144	96	72	58	48	41	36	32	29	26	24

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	613	306	204	153	123	102	88	77	68	61	56	51

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	1008	504	336	252	202	168	144	126	112	101	92	84

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Table B.37 Characteristic load-carrying capacities bracket type SXAKRL135 4 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	3079	1540	1026	770	616	513	440	385	342	308	280	257

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	13870

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	27740

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	2088	1244	886	688	562	476	412	363	325	294	268	247

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	873,5	873,5	873,5	873,5	873,5	873,5	873,5	873,5	873,5	873,5	873,5	873,5	873,5
20	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219	1219
40	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
60	2864	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865	5865
80	2603	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
100	2082	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
120	1735	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
140	1487	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
160	1301	3293	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
180	1157	2927	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
200	1041	2634	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
220	946,5	2395	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
240	867,6	2195	3360	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
260	800,9	2026	3102	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
280	743,6	1882	2880	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
300	694,1	1756	2688	3451	3545	3545	3545	3545	3545	3545	3545	3545	3545
320	650,7	1646	2520	3235	3545	3545	3545	3545	3545	3545	3545	3545	3545

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7260	14521	21781	29041	36301	43562	50822	58082	65343	72603	79863	87124
40		3630	7260	10890	14521	18151	21781	25411	29041	32671	36301	39932	43562
60		2420	4840	7260	9680	12100	14521	16941	19361	21781	24201	26621	29041
80		1815	3630	5445	7260	9075	10890	12706	14521	16336	18151	19966	21781
100		1452	2904	4356	5808	7260	8712	10164	11616	13069	14521	15973	17425
120		1210	2420	3630	4840	6050	7260	8470	9680	10890	12100	13311	14521
140		1037	2074	3112	4149	5186	6223	7260	8297	9335	10372	11409	12446
160		908	1815	2723	3630	4538	5445	6353	7260	8168	9075	9983	10890
180		807	1613	2420	3227	4033	4840	5647	6454	7260	8067	8874	9680
200		726	1452	2178	2904	3630	4356	5082	5808	6534	7260	7986	8712
220		660	1320	1980	2640	3300	3960	4620	5280	5940	6600	7260	7920
240		605	1210	1815	2420	3025	3630	4235	4840	5445	6050	6655	7260
260		558	1117	1675	2234	2792	3351	3909	4468	5026	5585	6143	6702
280		519	1037	1556	2074	2593	3112	3630	4149	4667	5186	5705	6223
300		484	968	1452	1936	2420	2904	3388	3872	4356	4840	5324	5808
320		454	908	1361	1815	2269	2723	3176	3630	4084	4538	4991	5445

Table B.38 Characteristic load-carrying capacities bracket type SXAKRL135 4 mm thick Timber to steel/concrete - Purlin – Fastener 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	5132	2566	1711	1283	1026	855	733	641	570	513	467	428

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	17492

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	34984

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3479	2073	1477	1147	937	793	687	606	542	490	447	411

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1456	1456	1456	1456	1456	1456	1456	1456	1456	1456	1456	1456	1456
20	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032	2032
40	3365	3365	3365	3365	3365	3365	3365	3365	3365	3365	3365	3365	3365
60	4773	9627	9775	9775	9775	9775	9775	9775	9775	9775	9775	9775	9775
80	4338	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
100	3470	5776	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
120	2892	4814	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
140	2479	4126	5760	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
160	2169	3610	5040	5909	5909	5909	5909	5909	5909	5909	5909	5909	5909
180	1928	3209	4480	5751	5909	5909	5909	5909	5909	5909	5909	5909	5909
200	1735	2888	4032	5176	5909	5909	5909	5909	5909	5909	5909	5909	5909
220	1577	2626	3665	4705	5745	5909	5909	5909	5909	5909	5909	5909	5909
240	1446	2407	3360	4313	5266	5909	5909	5909	5909	5909	5909	5909	5909
260	1335	2222	3102	3981	4861	5741	5909	5909	5909	5909	5909	5909	5909
280	1239	2063	2880	3697	4514	5331	5909	5909	5909	5909	5909	5909	5909
300	1157	1925	2688	3451	4213	4976	5738	5909	5909	5909	5909	5909	5909
320	1084	1805	2520	3235	3950	4665	5380	5909	5909	5909	5909	5909	5909

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7260	14521	21781	29041	36301	43562	50822	58082	65343	72603	79863	87124
40		3630	7260	10890	14521	18151	21781	25411	29041	32671	36301	39932	43562
60		2420	4840	7260	9680	12100	14521	16941	19361	21781	24201	26621	29041
80		1815	3630	5445	7260	9075	10890	12706	14521	16336	18151	19966	21781
100		1452	2904	4356	5808	7260	8712	10164	11616	13069	14521	15973	17425
120		1210	2420	3630	4840	6050	7260	8470	9680	10890	12100	13311	14521
140		1037	2074	3112	4149	5186	6223	7260	8297	9335	10372	11409	12446
160		908	1815	2723	3630	4538	5445	6353	7260	8168	9075	9983	10890
180		807	1613	2420	3227	4033	4840	5647	6454	7260	8067	8874	9680
200		726	1452	2178	2904	3630	4356	5082	5808	6534	7260	7986	8712
220		660	1320	1980	2640	3300	3960	4620	5280	5940	6600	7260	7920
240		605	1210	1815	2420	3025	3630	4235	4840	5445	6050	6655	7260
260		558	1117	1675	2234	2792	3351	3909	4468	5026	5585	6143	6702
280		519	1037	1556	2074	2593	3112	3630	4149	4667	5186	5705	6223
300		484	968	1452	1936	2420	2904	3388	3872	4356	4840	5324	5808
320		454	908	1361	1815	2269	2723	3176	3630	4084	4538	4991	5445

Table B.39 Characteristic load-carrying capacities bracket type SXAKRL135 4 mm thick Timber to steel/concrete - Purlin – Fastener 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	5857	4909	3644	2733	2187	1822	1562	1367	1215	1093	994	911

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	31402

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	62805

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3489	2526	1799	1397	1142	965	836	738	660	597	545	501

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773
20	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476
40	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099
60	5815	9627	11907	11907	11907	11907	11907	11907	11907	11907	11907	11907	11907
80	4361	7220	10080	12588	12588	12588	12588	12588	12588	12588	12588	12588	12588
100	3489	5776	8064	10352	12588	12588	12588	12588	12588	12588	12588	12588	12588
120	2907	4814	6720	8626	10533	12439	12588	12588	12588	12588	12588	12588	12588
140	2492	4126	5760	7394	9028	10662	12296	12588	12588	12588	12588	12588	12588
160	2180	3610	5040	6470	7900	9329	10759	12189	12588	12588	12588	12588	12588
180	1938	3209	4480	5751	7022	8293	9564	10835	12106	12588	12588	12588	12588
200	1744	2888	4032	5176	6320	7464	8607	9751	10895	12039	12588	12588	12588
220	1586	2626	3665	4705	5745	6785	7825	8865	9905	10944	11984	12588	12588
240	1454	2407	3360	4313	5266	6220	7173	8126	9079	10032	10986	11939	12588
260	1342	2222	3102	3981	4861	5741	6621	7501	8381	9261	10141	11020	11900
280	1246	2063	2880	3697	4514	5331	6148	6965	7782	8599	9416	10233	11050
300	1163	1925	2688	3451	4213	4976	5738	6501	7263	8026	8788	9551	10314
320	1090	1805	2520	3235	3950	4665	5380	6095	6809	7524	8239	8954	9669

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7260	14521	21781	29041	36301	43562	50822	58082	65343	72603	79863	87124
40		3630	7260	10890	14521	18151	21781	25411	29041	32671	36301	39932	43562
60		2420	4840	7260	9680	12100	14521	16941	19361	21781	24201	26621	29041
80		1815	3630	5445	7260	9075	10890	12706	14521	16336	18151	19966	21781
100		1452	2904	4356	5808	7260	8712	10164	11616	13069	14521	15973	17425
120		1210	2420	3630	4840	6050	7260	8470	9680	10890	12100	13311	14521
140		1037	2074	3112	4149	5186	6223	7260	8297	9335	10372	11409	12446
160		908	1815	2723	3630	4538	5445	6353	7260	8168	9075	9983	10890
180		807	1613	2420	3227	4033	4840	5647	6454	7260	8067	8874	9680
200		726	1452	2178	2904	3630	4356	5082	5808	6534	7260	7986	8712
220		660	1320	1980	2640	3300	3960	4620	5280	5940	6600	7260	7920
240		605	1210	1815	2420	3025	3630	4235	4840	5445	6050	6655	7260
260		558	1117	1675	2234	2792	3351	3909	4468	5026	5585	6143	6702
280		519	1037	1556	2074	2593	3112	3630	4149	4667	5186	5705	6223
300		484	968	1452	1936	2420	2904	3388	3872	4356	4840	5324	5808
320		454	908	1361	1815	2269	2723	3176	3630	4084	4538	4991	5445

Table B.40 Characteristic load-carrying capacities bracket type SXAKRL135 4 mm thick
Timber to steel/concrete - Purlin – Fastener 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	5857	4909	4225	3708	3304	2907	2492	2180	1938	1744	1586	1454

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	0
$F_{2/3}$ [N]	41656

$F_{2/3,k}$ - two angle brackets

Δs [mm]	0
$F_{2/3}$ [N]	83313

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]		17444	8722	5815	4361	3489	2526	1799	1397	1142	965	836	738	660	597	545	501

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773	1773
20	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476
40	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099	4099
60	5815	9627	11907	11907	11907	11907	11907	11907	11907	11907	11907	11907	11907
80	4361	7220	10080	12940	15799	18659	20710	20710	20710	20710	20710	20710	20710
100	3489	5776	8064	10352	12639	14927	17215	19502	20710	20710	20710	20710	20710
120	2907	4814	6720	8626	10533	12439	14346	16252	18158	20065	20710	20710	20710
140	2492	4126	5760	7394	9028	10662	12296	13930	15564	17198	18832	20467	20710
160	2180	3610	5040	6470	7900	9329	10759	12189	13619	15049	16478	17908	19338
180	1938	3209	4480	5751	7022	8293	9564	10835	12106	13377	14647	15918	17189
200	1744	2888	4032	5176	6320	7464	8607	9751	10895	12039	13183	14327	15470
220	1586	2626	3665	4705	5745	6785	7825	8865	9905	10944	11984	13024	14064
240	1454	2407	3360	4313	5266	6220	7173	8126	9079	10032	10986	11939	12892
260	1342	2222	3102	3981	4861	5741	6621	7501	8381	9261	10141	11020	11900
280	1246	2063	2880	3697	4514	5331	6148	6965	7782	8599	9416	10233	11050
300	1163	1925	2688	3451	4213	4976	5738	6501	7263	8026	8788	9551	10314
320	1090	1805	2520	3235	3950	4665	5380	6095	6809	7524	8239	8954	9669

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0													
20		7260	14521	21781	29041	36301	43562	50822	58082	65343	72603	79863	87124
40		3630	7260	10890	14521	18151	21781	25411	29041	32671	36301	39932	43562
60		2420	4840	7260	9680	12100	14521	16941	19361	21781	24201	26621	29041
80		1815	3630	5445	7260	9075	10890	12706	14521	16336	18151	19966	21781
100		1452	2904	4356	5808	7260	8712	10164	11616	13069	14521	15973	17425
120		1210	2420	3630	4840	6050	7260	8470	9680	10890	12100	13311	14521
140		1037	2074	3112	4149	5186	6223	7260	8297	9335	10372	11409	12446
160		908	1815	2723	3630	4538	5445	6353	7260	8168	9075	9983	10890
180		807	1613	2420	3227	4033	4840	5647	6454	7260	8067	8874	9680
200		726	1452	2178	2904	3630	4356	5082	5808	6534	7260	7986	8712
220		660	1320	1980	2640	3300	3960	4620	5280	5940	6600	7260	7920
240		605	1210	1815	2420	3025	3630	4235	4840	5445	6050	6655	7260
260		558	1117	1675	2234	2792	3351	3909	4468	5026	5585	6143	6702
280		519	1037	1556	2074	2593	3112	3630	4149	4667	5186	5705	6223
300		484	968	1452	1936	2420	2904	3388	3872	4356	4840	5324	5808
320		454	908	1361	1815	2269	2723	3176	3630	4084	4538	4991	5445

Table B.41 Characteristic load-carrying capacities bracket type SXAKR285X3 3 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	155	78	52	39	31	26	22	19	17	16	14	13

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Fastener 4,0x60 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	259	129	86	65	52	43	37	32	29	26	24	22

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	569	284	190	142	114	95	81	71	63	57	52	47

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7571	924	462	308	231	185	154	132	116	103	92	84	77

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	15141

Table B.42 Characteristic load-carrying capacities bracket type SXAKR285 4 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	155	78	52	39	31	26	22	19	17	16	14	13

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Fastener 4,0x60 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	259	129	86	65	52	43	37	32	29	26	24	22

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	551	275	184	138	110	92	79	69	61	55	50	46

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	9777	906	453	302	227	181	151	129	113	101	91	82	76

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	19553

Table B.43 Characteristic load-carrying capacities bracket type SXAKRL285X3 3 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	155	78	52	39	31	26	22	19	17	16	14	13

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Fastener 4,0x60 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	259	129	86	65	52	43	37	32	29	26	24	22

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	569	284	190	142	114	95	81	71	63	57	52	47

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	5622	1094	547	365	274	219	182	156	137	122	109	99	91

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	11244

Table B.44 Characteristic load-carrying capacities bracket type SXAKRL285 4 mm thick Timber to steel/concrete - Column

Fastener 4,0x40 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	184	92	61	46	37	31	26	23	20	18	17	15

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Fastener 4,0x60 mm nail - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	306	153	102	77	61	51	44	38	34	31	28	26

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Fastener 5,0x40 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	652	326	217	163	130	109	93	82	72	65	59	54

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Fastener 5,0x60 mm screw - Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	7260	1073	537	358	268	215	179	153	134	119	107	98	89

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	14521

Table B.45 Characteristic load-carrying capacities bracket type SXAKR9015E 1,5 mm thick Timber to steel/concrete - Column – Faster 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	982	92	46	31	23	18	15	13	11	10	9	8	8

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	1965

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	43,9
$F_{2/3}$ [N]	1822

$F_{2/3,k}$ - two angle brackets

Δs [mm]	43,9
$F_{2/3}$ [N]	3643

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	5809	4101	2051	1367	193	62	37	26	21	17	14	12	11	10	9	8	7

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06
20	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39
40	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25
60	175	175	175	175	175	175	175	175	175	175	175	175	175
80	624,8	735	735	735	735	735	735	735	735	735	735	735	735
100	499,8	735	735	735	735	735	735	735	735	735	735	735	735
120	416,5	735	735	735	735	735	735	735	735	735	735	735	735
140	357	735	735	735	735	735	735	735	735	735	735	735	735
160	312,4	714,1	735	735	735	735	735	735	735	735	735	735	735
180	277,7	634,8	735	735	735	735	735	735	735	735	735	735	735
200	249,9	571,3	735	735	735	735	735	735	735	735	735	735	735
220	227,2	519,3	735	735	735	735	735	735	735	735	735	735	735
240	208,3	476,1	735	735	735	735	735	735	735	735	735	735	735
260	192,2	439,4	686,7	735	735	735	735	735	735	735	735	735	735
280	178,5	408,1	637,6	735	735	735	735	735	735	735	735	735	735
300	166,6	380,9	595,1	735	735	735	735	735	735	735	735	735	735
320	156,2	357,1	557,9	735	735	735	735	735	735	735	735	735	735

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		9668	9668	9668	9668	9668	9668	9668	9668	9668	9668	9668	9668
20		9418	9541	9583	9604	9617	9625	9631	9636	9639	9642	9644	9646
40		9180	9418	9500	9541	9566	9583	9595	9604	9611	9617	9621	9625
60		8955	9298	9418	9479	9516	9541	9559	9572	9583	9591	9598	9604
80		8740	9180	9337	9418	9467	9500	9523	9541	9555	9566	9575	9583
100		8535	9066	9258	9357	9418	9458	9488	9510	9527	9541	9552	9562
120		8340	8955	9180	9298	9369	9418	9453	9479	9500	9516	9530	9541
140		8153	8846	9104	9239	9321	9377	9418	9448	9472	9491	9507	9520
160		7975	8740	9029	9180	9274	9337	9383	9418	9445	9467	9485	9500
180		7804	8636	8955	9123	9227	9298	9349	9387	9418	9442	9462	9479
200		7640	8535	8882	9066	9180	9258	9314	9357	9391	9418	9440	9458
220		7483	8436	8810	9010	9134	9219	9281	9327	9364	9393	9418	9438
240		7333	8340	8740	8955	9089	9180	9247	9298	9337	9369	9396	9418
260		7188	8245	8671	8900	9044	9142	9214	9268	9311	9345	9374	9397
280		7049	8153	8602	8846	8999	9104	9180	9239	9284	9321	9352	9377
300		6915	8063	8535	8793	8955	9066	9147	9209	9258	9298	9330	9357
320		6786	7975	8469	8740	8911	9029	9115	9180	9232	9274	9308	9337

Table B.46 Characteristic load-carrying capacities bracket type SXAKR9015E 1,5 mm thick Timber to steel/concrete - Column – Faster 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	1556	153	77	51	38	31	26	22	19	17	15	14	13

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	3112

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	35,6
$F_{2/3}$ [N]	2388

$F_{2/3,k}$ - two angle brackets

Δs [mm]	35,6
$F_{2/3}$ [N]	4776

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	7950	6496	3248	2165	322	104	62	44	34	28	24	20	18	16	15	13	12

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44
20	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64
40	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4
60	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7
80	1041	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
100	833	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
120	694,2	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
140	595	1126	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
160	520,6	985,3	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
180	462,8	875,8	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
200	416,5	788,2	1160	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
220	378,6	716,6	1055	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
240	347,1	656,9	966,6	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
260	320,4	606,3	892,3	1178	1225	1225	1225	1225	1225	1225	1225	1225	1225
280	297,5	563	828,5	1094	1225	1225	1225	1225	1225	1225	1225	1225	1225
300	277,7	525,5	773,3	1021	1225	1225	1225	1225	1225	1225	1225	1225	1225
320	260,3	492,6	725	957,3	1190	1225	1225	1225	1225	1225	1225	1225	1225

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		11195	11195	11195	11195	11195	11195	11195	11195	11195	11195	11195	11195
20		10891	11041	11092	11118	11133	11144	11151	11156	11161	11164	11167	11169
40		10603	10891	10991	11041	11072	11092	11107	11118	11126	11133	11139	11144
60		10330	10745	10891	10966	11011	11041	11063	11079	11092	11102	11111	11118
80		10071	10603	10794	10891	10951	10991	11020	11041	11058	11072	11083	11092
100		9824	10465	10698	10818	10891	10941	10977	11003	11024	11041	11055	11067
120		9589	10330	10603	10745	10833	10891	10934	10966	10991	11011	11028	11041
140		9365	10199	10511	10674	10774	10842	10891	10928	10958	10981	11000	11016
160		9152	10071	10420	10603	10717	10794	10849	10891	10924	10951	10973	10991
180		8947	9946	10330	10534	10660	10745	10808	10855	10891	10921	10945	10966
200		8752	9824	10242	10465	10603	10698	10766	10818	10859	10891	10918	10941
220		8565	9705	10156	10397	10548	10650	10725	10782	10826	10862	10891	10916
240		8386	9589	10071	10330	10492	10603	10684	10745	10794	10833	10865	10891
260		8214	9476	9987	10264	10438	10557	10644	10710	10761	10803	10838	10867
280		8049	9365	9905	10199	10384	10511	10603	10674	10729	10774	10811	10842
300		7891	9257	9824	10134	10330	10465	10563	10639	10698	10745	10785	10818
320		7739	9152	9745	10071	10277	10420	10524	10603	10666	10717	10759	10794

Table B.47 Characteristic load-carrying capacities bracket type SXAKR9015E 1,5 mm thick
Timber to steel/concrete - Column – Faster 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	1556	353	176	118	88	71	59	50	44	39	35	32	29

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	3112

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	24,9
$F_{2/3}$ [N]	3538

$F_{2/3,k}$ - two angle brackets

Δs [mm]	24,9
$F_{2/3}$ [N]	7076

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	13138	6496	3248	2165	742	239	142	101	79	64	54	47	42	37	34	31	28

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	100	100	100	100	100	100	100	100	100	100	100	100	100
20	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6
40	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2
60	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5
80	2397	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820
100	1918	2690	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820
120	1598	2241	2784	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820
140	1370	1921	2386	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820
160	1199	1681	2088	2499	2820	2820	2820	2820	2820	2820	2820	2820	2820
180	1065	1494	1856	2222	2590	2820	2820	2820	2820	2820	2820	2820	2820
200	958,9	1345	1671	2000	2331	2663	2820	2820	2820	2820	2820	2820	2820
220	871,7	1223	1519	1818	2119	2421	2724	2820	2820	2820	2820	2820	2820
240	799,1	1121	1392	1666	1942	2219	2497	2775	2820	2820	2820	2820	2820
260	737,6	1035	1285	1538	1793	2048	2305	2562	2819	2820	2820	2820	2820
280	684,9	960,6	1193	1428	1665	1902	2140	2379	2617	2820	2820	2820	2820
300	639,3	896,6	1114	1333	1554	1775	1997	2220	2443	2666	2820	2820	2820
320	599,3	840,6	1044	1250	1457	1664	1873	2081	2290	2499	2709	2820	2820

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		13784	13784	13784	13784	13784	13784	13784	13784	13784	13784	13784	13784
20		12952	13355	13495	13566	13609	13638	13659	13674	13686	13696	13704	13711
40		12214	12952	13218	13355	13439	13495	13535	13566	13590	13609	13625	13638
60		11556	12572	12952	13150	13272	13355	13415	13460	13495	13523	13547	13566
80		10965	12214	12696	12952	13110	13218	13296	13355	13401	13439	13469	13495
100		10432	11876	12450	12759	12952	13083	13179	13252	13309	13355	13393	13425
120		9948	11556	12214	12572	12797	12952	13064	13150	13218	13272	13317	13355
140		9507	11253	11986	12390	12646	12823	12952	13050	13128	13191	13242	13286
160		9103	10965	11767	12214	12499	12696	12841	12952	13039	13110	13168	13218
180		8733	10692	11556	12043	12355	12572	12732	12855	12952	13030	13095	13150
200		8391	10432	11352	11876	12214	12450	12625	12759	12865	12952	13023	13083
220		8075	10184	11155	11714	12076	12331	12520	12665	12780	12874	12952	13017
240		7782	9948	10965	11556	11942	12214	12416	12572	12696	12797	12881	12952
260		7509	9722	10781	11402	11810	12099	12314	12481	12613	12721	12811	12887
280		7255	9507	10604	11253	11682	11986	12214	12390	12531	12646	12742	12823
300		7018	9301	10432	11107	11556	11876	12115	12302	12450	12572	12673	12759
320		6796	9103	10265	10965	11433	11767	12018	12214	12371	12499	12606	12696

Table B.48 Characteristic load-carrying capacities bracket type SXAKR9015E 1,5 mm thick Timber to steel/concrete - Column – Faster 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	1556	563	282	188	141	113	94	80	70	63	56	51	47

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	3112

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	21,3
$F_{2/3}$ [N]	3942

$F_{2/3,k}$ - two angle brackets

Δs [mm]	21,3
$F_{2/3}$ [N]	7883

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	13964	6496	3248	2165	794	256	152	109	84	69	58	50	44	40	36	33	30

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	107	107	107	107	107	107	107	107	107	107	107	107	107
20	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4
40	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3
60	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3
80	2564	3362	4176	4504	4504	4504	4504	4504	4504	4504	4504	4504	4504
100	2052	2690	3341	3999	4504	4504	4504	4504	4504	4504	4504	4504	4504
120	1710	2241	2784	3333	3884	4438	4504	4504	4504	4504	4504	4504	4504
140	1465	1921	2386	2857	3329	3804	4280	4504	4504	4504	4504	4504	4504
160	1282	1681	2088	2499	2913	3329	3745	4162	4504	4504	4504	4504	4504
180	1140	1494	1856	2222	2590	2959	3329	3700	4071	4443	4504	4504	4504
200	1026	1345	1671	2000	2331	2663	2996	3330	3664	3999	4334	4504	4504
220	932,5	1223	1519	1818	2119	2421	2724	3027	3331	3635	3940	4244	4504
240	854,8	1121	1392	1666	1942	2219	2497	2775	3054	3332	3611	3891	4170
260	789,1	1035	1285	1538	1793	2048	2305	2562	2819	3076	3334	3591	3849
280	732,7	960,6	1193	1428	1665	1902	2140	2379	2617	2856	3095	3335	3574
300	683,9	896,6	1114	1333	1554	1775	1997	2220	2443	2666	2889	3112	3336
320	641,1	840,6	1044	1250	1457	1664	1873	2081	2290	2499	2709	2918	3127

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		14287	14287	14287	14287	14287	14287	14287	14287	14287	14287	14287	14287
20		13368	13813	13967	14046	14094	14126	14148	14166	14179	14190	14199	14206
40		12560	13368	13661	13813	13905	13967	14012	14046	14072	14094	14111	14126
60		11844	12952	13368	13587	13721	13813	13878	13928	13967	13999	14024	14046
80		11206	12560	13088	13368	13542	13661	13747	13813	13864	13905	13939	13967
100		10632	12192	12818	13157	13368	13513	13619	13699	13762	13813	13854	13889
120		10115	11844	12560	12952	13198	13368	13492	13587	13661	13721	13771	13813
140		9645	11516	12312	12753	13033	13226	13368	13477	13562	13631	13688	13736
160		9217	11206	12074	12560	12871	13088	13246	13368	13464	13542	13607	13661
180		8826	10911	11844	12373	12714	12952	13127	13262	13368	13455	13526	13587
200		8466	10632	11623	12192	12560	12818	13010	13157	13273	13368	13447	13513
220		8135	10367	11411	12015	12410	12688	12894	13053	13180	13283	13368	13440
240		7828	10115	11206	11844	12264	12560	12781	12952	13088	13198	13291	13368
260		7544	9874	11008	11678	12121	12435	12670	12851	12997	13115	13214	13297
280		7280	9645	10817	11516	11981	12312	12560	12753	12907	13033	13138	13226
300		7033	9426	10632	11359	11844	12192	12453	12656	12818	12952	13063	13157
320		6803	9217	10454	11206	11711	12074	12347	12560	12731	12871	12988	13088

Table B.49 Characteristic load-carrying capacities bracket type SXAKR9015E 1,5 mm thick Timber to steel/concrete - Purlin – Faster 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	1099	887	743	640	561	500	451	388	340	302	272	247	226

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	2199

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	60,6
$F_{2/3}$ [N]	2984

$F_{2/3,k}$ - two angle brackets

Δs [mm]	60,6
$F_{2/3}$ [N]	5967

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	8713	4590	2295	1530	1147	918	765	656	574	496	420	364	321	287	259	237	218

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9
20	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076
40	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782
60	1852	4449	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176
80	2564	3337	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
100	2052	2669	3298	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
120	1710	2224	2748	3276	3545	3545	3545	3545	3545	3545	3545	3545	3545
140	1465	1907	2356	2808	3264	3545	3545	3545	3545	3545	3545	3545	3545
160	1282	1668	2061	2457	2856	3255	3545	3545	3545	3545	3545	3545	3545
180	1140	1483	1832	2184	2538	2894	3250	3545	3545	3545	3545	3545	3545
200	1026	1335	1649	1966	2284	2604	2925	3246	3545	3545	3545	3545	3545
220	932,5	1213	1499	1787	2077	2367	2659	2950	3243	3535	3545	3545	3545
240	854,8	1112	1374	1638	1904	2170	2437	2705	2972	3240	3509	3545	3545
260	789,1	1027	1268	1512	1757	2003	2250	2497	2744	2991	3239	3486	3545
280	732,7	953,3	1178	1404	1632	1860	2089	2318	2548	2777	3007	3237	3467
300	683,9	889,8	1099	1311	1523	1736	1950	2164	2378	2592	2807	3021	3236
320	641,1	834,2	1031	1229	1428	1628	1828	2028	2229	2430	2631	2833	3034

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		13626	13626	13626	13626	13626	13626	13626	13626	13626	13626	13626	13626
20		8010	10089	11045	11594	11950	12200	12385	12528	12641	12733	12810	12874
40		5672	8010	9285	10089	10641	11045	11352	11594	11789	11950	12085	12200
60		4390	6641	8010	8930	9591	10089	10477	10789	11045	11258	11439	11594
80		3581	5672	7042	8010	8729	9285	9728	10089	10388	10641	10858	11045
100		3024	4949	6283	7261	8010	8600	9079	9474	9806	10089	10333	10545
120		2617	4390	5672	6641	7399	8010	8511	8930	9285	9591	9856	10089
140		2306	3945	5169	6118	6876	7495	8010	8445	8817	9140	9422	9670
160		2061	3581	4748	5672	6421	7042	7564	8010	8394	8729	9024	9285
180		1864	3279	4390	5286	6023	6641	7166	7617	8010	8354	8658	8930
200		1701	3024	4083	4949	5672	6283	6807	7261	7659	8010	8321	8600
220		1564	2806	3815	4653	5359	5962	6483	6937	7337	7692	8010	8294
240		1447	2617	3581	4390	5079	5672	6188	6641	7042	7399	7720	8010
260		1347	2452	3374	4155	4826	5409	5918	6369	6769	7128	7451	7744
280		1260	2306	3189	3945	4598	5169	5672	6118	6517	6876	7200	7495
300		1183	2177	3024	3754	4390	4949	5445	5886	6283	6641	6965	7261
320		1115	2061	2875	3581	4200	4748	5235	5672	6065	6421	6746	7042

Table B.50 Characteristic load-carrying capacities bracket type SXAKR9015E 1,5 mm thick Timber to steel/concrete - Purlin – Faster 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	1374	1109	929	800	702	625	564	513	471	435	405	378	355

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	2748

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	60,3
$F_{2/3}$ [N]	3465

$F_{2/3,k}$ - two angle brackets

Δs [mm]	60,3
$F_{2/3}$ [N]	6929

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	13032	5737	2868	1912	1434	1147	956	820	717	637	574	522	478	441	410	382	359

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285
20	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794
40	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970
60	3086	4449	5496	6553	7615	8627	8627	8627	8627	8627	8627	8627	8627
80	2564	3337	4122	4915	5711	5909	5909	5909	5909	5909	5909	5909	5909
100	2052	2669	3298	3932	4569	5208	5849	5909	5909	5909	5909	5909	5909
120	1710	2224	2748	3276	3807	4340	4874	5409	5909	5909	5909	5909	5909
140	1465	1907	2356	2808	3264	3720	4178	4636	5095	5555	5909	5909	5909
160	1282	1668	2061	2457	2856	3255	3656	4057	4459	4861	5263	5665	5909
180	1140	1483	1832	2184	2538	2894	3250	3606	3963	4320	4678	5036	5394
200	1026	1335	1649	1966	2284	2604	2925	3246	3567	3888	4210	4532	4854
220	932,5	1213	1499	1787	2077	2367	2659	2950	3243	3535	3827	4120	4413
240	854,8	1112	1374	1638	1904	2170	2437	2705	2972	3240	3509	3777	4045
260	789,1	1027	1268	1512	1757	2003	2250	2497	2744	2991	3239	3486	3734
280	732,7	953,3	1178	1404	1632	1860	2089	2318	2548	2777	3007	3237	3467
300	683,9	889,8	1099	1311	1523	1736	1950	2164	2378	2592	2807	3021	3236
320	641,1	834,2	1031	1229	1428	1628	1828	2028	2229	2430	2631	2833	3034

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		16154	16154	16154	16154	16154	16154	16154	16154	16154	16154	16154	16154
20		8348	11008	12316	13093	13609	13976	14251	14464	14634	14773	14889	14986
40		5628	8348	9951	11008	11757	12316	12748	13093	13375	13609	13807	13976
60		4245	6724	8348	9495	10348	11008	11533	11960	12316	12615	12872	13093
80		3408	5628	7190	8348	9241	9951	10528	11008	11412	11757	12055	12316
100		2846	4840	6314	7448	8348	9079	9685	10196	10631	11008	11336	11625
120		2444	4245	5628	6724	7612	8348	8967	9495	9951	10348	10698	11008
140		2141	3781	5077	6127	6996	7726	8348	8885	9352	9763	10128	10453
160		1905	3408	4624	5628	6472	7190	7809	8348	8822	9241	9615	9951
180		1716	3102	4245	5204	6021	6724	7335	7873	8348	8772	9152	9495
200		1561	2846	3924	4840	5628	6314	6916	7448	7923	8348	8732	9079
220		1431	2630	3648	4523	5284	5951	6542	7067	7539	7963	8348	8698
240		1322	2444	3408	4245	4979	5628	6206	6724	7190	7612	7997	8348
260		1228	2282	3198	4000	4708	5338	5903	6412	6872	7291	7674	8025
280		1146	2141	3012	3781	4465	5077	5628	6127	6581	6996	7376	7726
300		1075	2016	2846	3585	4245	4840	5378	5867	6314	6724	7100	7448
320		1012	1905	2698	3408	4046	4624	5149	5628	6068	6472	6845	7190

Table B.51 Characteristic load-carrying capacities bracket type SXAKR9015E 1,5 mm thick Timber to steel/concrete - Purlin – Faster 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	1374	1109	929	800	702	625	564	513	471	435	405	378	355

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	2748

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	60
$F_{2/3}$ [N]	4268

$F_{2/3,k}$ - two angle brackets

Δs [mm]	60
$F_{2/3}$ [N]	8536

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	17868	5737	2868	1912	1434	1147	956	820	717	637	574	522	478	441	410	382	359

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424
20	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987
40	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291
60	3419	4449	5496	6553	7615	8681	9559	9559	9559	9559	9559	9559	9559
80	2564	3337	4122	4915	5711	6510	7311	8114	8917	9721	10526	11331	12136
100	2052	2669	3298	3932	4569	5208	5849	6491	7134	7777	8420	9064	9709
120	1710	2224	2748	3276	3807	4340	4874	5409	5945	6481	7017	7554	8091
140	1465	1907	2356	2808	3264	3720	4178	4636	5095	5555	6015	6475	6935
160	1282	1668	2061	2457	2856	3255	3656	4057	4459	4861	5263	5665	6068
180	1140	1483	1832	2184	2538	2894	3250	3606	3963	4320	4678	5036	5394
200	1026	1335	1649	1966	2284	2604	2925	3246	3567	3888	4210	4532	4854
220	932,5	1213	1499	1787	2077	2367	2659	2950	3243	3535	3827	4120	4413
240	854,8	1112	1374	1638	1904	2170	2437	2705	2972	3240	3509	3777	4045
260	789,1	1027	1268	1512	1757	2003	2250	2497	2744	2991	3239	3486	3734
280	732,7	953,3	1178	1404	1632	1860	2089	2318	2548	2777	3007	3237	3467
300	683,9	889,8	1099	1311	1523	1736	1950	2164	2378	2592	2807	3021	3236
320	641,1	834,2	1031	1229	1428	1628	1828	2028	2229	2430	2631	2833	3034

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		19669	19669	19669	19669	19669	19669	19669	19669	19669	19669	19669	19669
20		9660	12957	14620	15623	16293	16773	17133	17414	17639	17822	17976	18106
40		6403	9660	11634	12957	13906	14620	15177	15623	15988	16293	16551	16773
60		4788	7701	9660	11068	12129	12957	13621	14165	14620	15005	15336	15623
80		3824	6403	8259	9660	10755	11634	12355	12957	13468	13906	14287	14620
100		3183	5479	7213	8570	9660	10556	11304	11939	12484	12957	13372	13738
120		2726	4788	6403	7701	8768	9660	10418	11068	11634	12129	12567	12957
140		2383	4252	5756	6992	8027	8905	9660	10317	10892	11401	11854	12260
160		2118	3824	5227	6403	7401	8259	9006	9660	10239	10755	11217	11634
180		1905	3474	4788	5905	6866	7701	8434	9083	9660	10178	10645	11068
200		1731	3183	4417	5479	6403	7213	7931	8570	9143	9660	10129	10556
220		1587	2936	4099	5110	5998	6784	7484	8112	8679	9193	9660	10088
240		1464	2726	3824	4788	5641	6403	7085	7701	8259	8768	9233	9660
260		1359	2543	3583	4504	5325	6062	6727	7329	7879	8381	8842	9267
280		1269	2383	3371	4252	5042	5756	6403	6992	7531	8027	8483	8905
300		1189	2243	3183	4026	4788	5479	6108	6684	7213	7701	8152	8570
320		1119	2118	3014	3824	4558	5227	5840	6403	6921	7401	7846	8259

Table B.52 Characteristic load-carrying capacities bracket type SXAKR9015E 1,5 mm thick Timber to steel/concrete - Purlin – Faster 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	1374	1109	929	800	702	625	564	513	471	435	405	378	355

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	2748

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	60
$F_{2/3}$ [N]	4423

$F_{2/3,k}$ - two angle brackets

Δs [mm]	60
$F_{2/3}$ [N]	8846

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	18756	5737	2868	1912	1434	1147	956	820	717	637	574	522	478	441	410	382	359

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424
20	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987
40	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291
60	3419	4449	5496	6553	7615	8681	9559	9559	9559	9559	9559	9559	9559
80	2564	3337	4122	4915	5711	6510	7311	8114	8917	9721	10526	11331	12136
100	2052	2669	3298	3932	4569	5208	5849	6491	7134	7777	8420	9064	9709
120	1710	2224	2748	3276	3807	4340	4874	5409	5945	6481	7017	7554	8091
140	1465	1907	2356	2808	3264	3720	4178	4636	5095	5555	6015	6475	6935
160	1282	1668	2061	2457	2856	3255	3656	4057	4459	4861	5263	5665	6068
180	1140	1483	1832	2184	2538	2894	3250	3606	3963	4320	4678	5036	5394
200	1026	1335	1649	1966	2284	2604	2925	3246	3567	3888	4210	4532	4854
220	932,5	1213	1499	1787	2077	2367	2659	2950	3243	3535	3827	4120	4413
240	854,8	1112	1374	1638	1904	2170	2437	2705	2972	3240	3509	3777	4045
260	789,1	1027	1268	1512	1757	2003	2250	2497	2744	2991	3239	3486	3734
280	732,7	953,3	1178	1404	1632	1860	2089	2318	2548	2777	3007	3237	3467
300	683,9	889,8	1099	1311	1523	1736	1950	2164	2378	2592	2807	3021	3236
320	641,1	834,2	1031	1229	1428	1628	1828	2028	2229	2430	2631	2833	3034

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		20331	20331	20331	20331	20331	20331	20331	20331	20331	20331	20331	20331
20		9985	13393	15112	16148	16841	17337	17710	18000	18232	18422	18581	18715
40		6618	9985	12025	13393	14374	15112	15687	16148	16526	16841	17108	17337
60		4949	7960	9985	11441	12537	13393	14079	14642	15112	15510	15852	16148
80		3952	6618	8537	9985	11117	12025	12770	13393	13921	14374	14767	15112
100		3290	5663	7456	8859	9985	10911	11684	12340	12904	13393	13822	14201
120		2817	4949	6618	7960	9063	9985	10768	11441	12025	12537	12990	13393
140		2464	4395	5949	7227	8297	9205	9985	10664	11259	11784	12253	12672
160		2189	3952	5403	6618	7650	8537	9309	9985	10584	11117	11595	12025
180		1969	3591	4949	6103	7097	7960	8718	9388	9985	10521	11004	11441
200		1790	3290	4565	5663	6618	7456	8198	8859	9451	9985	10470	10911
220		1640	3035	4237	5282	6200	7012	7736	8385	8971	9502	9985	10428
240		1514	2817	3952	4949	5831	6618	7324	7960	8537	9063	9544	9985
260		1405	2629	3704	4655	5504	6266	6953	7576	8144	8663	9140	9579
280		1311	2464	3484	4395	5212	5949	6618	7227	7785	8297	8769	9205
300		1229	2318	3290	4162	4949	5663	6314	6909	7456	7960	8426	8859
320		1157	2189	3116	3952	4711	5403	6036	6618	7154	7650	8110	8537

Table B.53 Characteristic load-carrying capacities bracket type SXAKR9015 1,5 mm thick Timber to steel/concrete - Column – Faster 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	1310	92	46	31	23	18	15	13	11	10	9	8	8

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	2621

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	41,6
$F_{2/3}$ [N]	1883

$F_{2/3,k}$ - two angle brackets

Δs [mm]	41,6
$F_{2/3}$ [N]	3766

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	6163	5471	2735	1824	193	62	37	26	21	17	14	12	11	10	9	8	7

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06	26,06
20	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39	36,39
40	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25	60,25
60	175	175	175	175	175	175	175	175	175	175	175	175	175
80	624,8	735	735	735	735	735	735	735	735	735	735	735	735
100	499,8	735	735	735	735	735	735	735	735	735	735	735	735
120	416,5	735	735	735	735	735	735	735	735	735	735	735	735
140	357	735	735	735	735	735	735	735	735	735	735	735	735
160	312,4	714,1	735	735	735	735	735	735	735	735	735	735	735
180	277,7	634,8	735	735	735	735	735	735	735	735	735	735	735
200	249,9	571,3	735	735	735	735	735	735	735	735	735	735	735
220	227,2	519,3	735	735	735	735	735	735	735	735	735	735	735
240	208,3	476,1	735	735	735	735	735	735	735	735	735	735	735
260	192,2	439,4	686,7	735	735	735	735	735	735	735	735	735	735
280	178,5	408,1	637,6	735	735	735	735	735	735	735	735	735	735
300	166,6	380,9	595,1	735	735	735	735	735	735	735	735	735	735
320	156,2	357,1	557,9	735	735	735	735	735	735	735	735	735	735

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		9668	9668	9668	9668	9668	9668	9668	9668	9668	9668	9668	9668
20		9479	9572	9604	9620	9629	9636	9640	9644	9646	9648	9650	9652
40		9298	9479	9541	9572	9591	9604	9613	9620	9625	9629	9633	9636
60		9123	9387	9479	9525	9554	9572	9586	9596	9604	9610	9615	9620
80		8955	9298	9418	9479	9516	9541	9559	9572	9583	9591	9598	9604
100		8793	9210	9357	9433	9479	9510	9532	9549	9562	9572	9581	9588
120		8637	9123	9298	9387	9442	9479	9505	9525	9541	9554	9564	9572
140		8486	9038	9239	9342	9406	9448	9479	9502	9520	9535	9547	9557
160		8340	8955	9181	9298	9369	9418	9453	9479	9500	9516	9530	9541
180		8200	8873	9123	9253	9333	9387	9426	9456	9479	9498	9513	9525
200		8064	8793	9066	9210	9298	9357	9400	9433	9459	9479	9496	9510
220		7932	8714	9010	9166	9262	9327	9375	9410	9438	9461	9479	9494
240		7805	8637	8955	9123	9227	9298	9349	9387	9418	9442	9462	9479
260		7681	8561	8900	9081	9192	9268	9323	9365	9398	9424	9446	9464
280		7562	8486	8846	9038	9158	9239	9298	9342	9377	9406	9429	9448
300		7446	8413	8793	8996	9123	9210	9272	9320	9357	9387	9412	9433
320		7334	8340	8740	8955	9089	9181	9247	9298	9337	9369	9396	9418

Table B.54 Characteristic load-carrying capacities bracket type SXAKR9015 1,5 mm thick Timber to steel/concrete - Column – Faster 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	2184	153	77	51	38	31	26	22	19	17	15	14	13

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	4368

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	32,4
$F_{2/3}$ [N]	2517

$F_{2/3,k}$ - two angle brackets

Δs [mm]	32,4
$F_{2/3}$ [N]	5035

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	7128	7128	4559	3039	322	104	62	44	34	28	24	20	18	16	15	13	12

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44	43,44
20	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64	60,64
40	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4	100,4
60	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7	291,7
80	1041	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
100	833	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
120	694,2	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
140	595	1126	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
160	520,6	985,3	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
180	462,8	875,8	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
200	416,5	788,2	1160	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
220	378,6	716,6	1055	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
240	347,1	656,9	966,6	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
260	320,4	606,3	892,3	1178	1225	1225	1225	1225	1225	1225	1225	1225	1225
280	297,5	563	828,5	1094	1225	1225	1225	1225	1225	1225	1225	1225	1225
300	277,7	525,5	773,3	1021	1225	1225	1225	1225	1225	1225	1225	1225	1225
320	260,3	492,6	725	957,3	1190	1225	1225	1225	1225	1225	1225	1225	1225

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		11195	11195	11195	11195	11195	11195	11195	11195	11195	11195	11195	11195
20		10977	11085	11122	11140	11151	11158	11164	11168	11171	11173	11175	11177
40		10767	10977	11049	11085	11107	11122	11132	11140	11146	11151	11155	11158
60		10565	10871	10977	11031	11063	11085	11101	11113	11122	11129	11135	11140
80		10370	10767	10906	10977	11020	11049	11070	11085	11097	11107	11115	11122
100		10183	10665	10836	10924	10977	11013	11039	11058	11073	11085	11095	11103
120		10002	10565	10767	10871	10934	10977	11008	11031	11049	11063	11075	11085
140		9827	10467	10699	10819	10892	10942	10977	11004	11025	11042	11055	11067
160		9658	10370	10631	10767	10850	10906	10947	10977	11001	11020	11036	11049
180		9496	10276	10565	10716	10808	10871	10916	10950	10977	10999	11016	11031
200		9338	10183	10499	10665	10767	10836	10886	10924	10953	10977	10997	11013
220		9186	10091	10434	10615	10726	10802	10856	10897	10930	10956	10977	10995
240		9038	10002	10370	10565	10685	10767	10826	10871	10906	10934	10958	10977
260		8895	9914	10307	10516	10645	10733	10797	10845	10883	10913	10938	10959
280		8757	9827	10244	10467	10605	10699	10767	10819	10859	10892	10919	10942
300		8623	9742	10183	10418	10565	10665	10738	10793	10836	10871	10900	10924
320		8493	9658	10122	10370	10525	10631	10709	10767	10813	10850	10881	10906

Table B.55 Characteristic load-carrying capacities bracket type SXAKR9015 1,5 mm thick
Timber to steel/concrete - Column – Faster 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3685	353	176	118	88	71	59	50	44	39	35	32	29

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	7370

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	21,5
$F_{2/3}$ [N]	3788

$F_{2/3,k}$ - two angle brackets

Δs [mm]	21,5
$F_{2/3}$ [N]	7576

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	12028	10258	5129	3419	742	239	142	101	79	64	54	47	42	37	34	31	28

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	100	100	100	100	100	100	100	100	100	100	100	100	100
20	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6	139,6
40	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2	231,2
60	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5	671,5
80	2397	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820
100	1918	2705	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820
120	1598	2255	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820
140	1370	1932	2431	2820	2820	2820	2820	2820	2820	2820	2820	2820	2820
160	1199	1691	2127	2577	2820	2820	2820	2820	2820	2820	2820	2820	2820
180	1065	1503	1890	2290	2698	2820	2820	2820	2820	2820	2820	2820	2820
200	958,9	1353	1701	2061	2428	2799	2820	2820	2820	2820	2820	2820	2820
220	871,7	1230	1547	1874	2207	2545	2820	2820	2820	2820	2820	2820	2820
240	799,1	1127	1418	1718	2024	2333	2644	2820	2820	2820	2820	2820	2820
260	737,6	1041	1309	1586	1868	2153	2441	2730	2820	2820	2820	2820	2820
280	684,9	966,2	1215	1472	1734	2000	2267	2535	2805	2820	2820	2820	2820
300	639,3	901,8	1134	1374	1619	1866	2116	2366	2618	2820	2820	2820	2820
320	599,3	845,4	1063	1288	1518	1750	1983	2218	2454	2691	2820	2820	2820

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		13784	13784	13784	13784	13784	13784	13784	13784	13784	13784	13784	13784
20		13420	13599	13660	13691	13710	13722	13731	13737	13743	13747	13750	13753
40		13074	13420	13539	13599	13636	13660	13678	13691	13701	13710	13716	13722
60		12746	13245	13420	13509	13563	13599	13626	13645	13660	13673	13683	13691
80		12434	13074	13303	13420	13491	13539	13574	13599	13620	13636	13649	13660
100		12137	12908	13187	13332	13420	13479	13522	13554	13579	13599	13616	13630
120		11854	12746	13074	13245	13349	13420	13471	13509	13539	13563	13583	13599
140		11583	12588	12963	13159	13279	13361	13420	13464	13499	13527	13550	13569
160		11325	12434	12854	13074	13210	13303	13369	13420	13459	13491	13517	13539
180		11078	12284	12746	12991	13142	13245	13319	13376	13420	13455	13485	13509
200		10841	12137	12640	12908	13074	13187	13270	13332	13381	13420	13452	13479
220		10615	11994	12536	12827	13007	13131	13220	13288	13341	13384	13420	13449
240		10398	11854	12434	12746	12941	13074	13171	13245	13303	13349	13388	13420
260		10189	11717	12333	12667	12875	13018	13123	13202	13264	13314	13356	13390
280		9989	11583	12234	12588	12810	12963	13074	13159	13226	13279	13324	13361
300		9796	11453	12137	12511	12746	12908	13026	13117	13187	13245	13292	13332
320		9611	11325	12041	12434	12683	12854	12979	13074	13150	13210	13261	13303

Table B.56 Characteristic load-carrying capacities bracket type SXAKR9015 1,5 mm thick Timber to steel/concrete - Column – Faster 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3685	563	282	188	141	113	94	80	70	63	56	51	47

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	7370

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	17,2
$F_{2/3}$ [N]	4310

$F_{2/3,k}$ - two angle brackets

Δs [mm]	17,2
$F_{2/3}$ [N]	8620

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	13574	10258	5129	3419	794	256	152	109	84	69	58	50	44	40	36	33	30

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	107	107	107	107	107	107	107	107	107	107	107	107	107
20	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4	149,4
40	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3	247,3
60	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3	718,3
80	2564	3382	4253	4504	4504	4504	4504	4504	4504	4504	4504	4504	4504
100	2052	2705	3403	4123	4504	4504	4504	4504	4504	4504	4504	4504	4504
120	1710	2255	2836	3436	4047	4504	4504	4504	4504	4504	4504	4504	4504
140	1465	1932	2431	2945	3469	3999	4504	4504	4504	4504	4504	4504	4504
160	1282	1691	2127	2577	3035	3499	3967	4437	4504	4504	4504	4504	4504
180	1140	1503	1890	2290	2698	3110	3526	3944	4363	4504	4504	4504	4504
200	1026	1353	1701	2061	2428	2799	3173	3549	3927	4306	4504	4504	4504
220	932,5	1230	1547	1874	2207	2545	2885	3227	3570	3914	4259	4504	4504
240	854,8	1127	1418	1718	2024	2333	2644	2958	3273	3588	3904	4221	4504
260	789,1	1041	1309	1586	1868	2153	2441	2730	3021	3312	3604	3897	4190
280	732,7	966,2	1215	1472	1734	2000	2267	2535	2805	3076	3347	3618	3890
300	683,9	901,8	1134	1374	1619	1866	2116	2366	2618	2870	3124	3377	3631
320	641,1	845,4	1063	1288	1518	1750	1983	2218	2454	2691	2928	3166	3404

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		14287	14287	14287	14287	14287	14287	14287	14287	14287	14287	14287	14287
20		13884	14083	14150	14184	14205	14219	14228	14236	14241	14246	14250	14253
40		13503	13884	14016	14083	14123	14150	14170	14184	14196	14205	14212	14219
60		13143	13691	13884	13983	14043	14083	14112	14134	14150	14164	14175	14184
80		12801	13503	13755	13884	13963	14016	14054	14083	14105	14123	14138	14150
100		12476	13320	13628	13787	13884	13950	13997	14033	14061	14083	14101	14117
120		12168	13143	13503	13691	13806	13884	13940	13983	14016	14043	14065	14083
140		11874	12969	13381	13597	13729	13819	13884	13933	13972	14003	14028	14049
160		11594	12801	13261	13503	13653	13755	13829	13884	13928	13963	13992	14016
180		11327	12636	13143	13411	13578	13691	13773	13835	13884	13924	13956	13983
200		11073	12476	13027	13320	13503	13628	13718	13787	13841	13884	13920	13950
220		10829	12320	12913	13231	13430	13565	13664	13739	13798	13845	13884	13917
240		10596	12168	12801	13143	13357	13503	13610	13691	13755	13806	13849	13884
260		10372	12019	12691	13055	13285	13442	13556	13644	13712	13768	13813	13852
280		10158	11874	12583	12969	13213	13381	13503	13597	13670	13729	13778	13819
300		9953	11733	12476	12885	13143	13320	13451	13550	13628	13691	13743	13787
320		9755	11594	12372	12801	13073	13261	13398	13503	13586	13653	13708	13755

Table B.57 Characteristic load-carrying capacities bracket type SXAKR9015 1,5 mm thick Timber to steel/concrete - Purlin – Faster 4,0x40 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	1882	1519	1273	906	679	544	453	388	340	302	272	247	226

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	3765

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	48,5
$F_{2/3}$ [N]	3546

$F_{2/3,k}$ - two angle brackets

Δs [mm]	48,5
$F_{2/3}$ [N]	7091

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	8412	7859	3930	2620	1965	1572	1098	782	607	496	420	364	321	287	259	237	218

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9	770,9
20	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076	1076
40	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782
60	1852	4607	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176
80	2564	3455	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
100	2052	2764	3523	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
120	1710	2303	2936	3545	3545	3545	3545	3545	3545	3545	3545	3545	3545
140	1465	1974	2516	3075	3545	3545	3545	3545	3545	3545	3545	3545	3545
160	1282	1728	2202	2690	3187	3545	3545	3545	3545	3545	3545	3545	3545
180	1140	1536	1957	2391	2833	3280	3545	3545	3545	3545	3545	3545	3545
200	1026	1382	1761	2152	2550	2952	3356	3545	3545	3545	3545	3545	3545
220	932,5	1256	1601	1957	2318	2683	3051	3421	3545	3545	3545	3545	3545
240	854,8	1152	1468	1794	2125	2460	2797	3136	3476	3545	3545	3545	3545
260	789,1	1063	1355	1656	1962	2271	2582	2895	3208	3523	3545	3545	3545
280	732,7	987,2	1258	1537	1821	2108	2397	2688	2979	3271	3545	3545	3545
300	683,9	921,4	1174	1435	1700	1968	2238	2509	2781	3053	3327	3545	3545
320	641,1	863,8	1101	1345	1594	1845	2098	2352	2607	2863	3119	3375	3545

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		13626	13626	13626	13626	13626	13626	13626	13626	13626	13626	13626	13626
20		9667	11310	11990	12361	12595	12756	12873	12963	13033	13090	13137	13177
40		7491	9667	10704	11310	11708	11990	12199	12361	12490	12595	12682	12756
60		6114	8441	9667	10424	10938	11310	11592	11812	11990	12135	12257	12361
80		5165	7491	8814	9667	10264	10704	11042	11310	11528	11708	11860	11990
100		4471	6733	8098	9013	9667	10159	10542	10849	11101	11310	11488	11640
120		3941	6114	7491	8441	9136	9667	10086	10424	10704	10938	11138	11310
140		3524	5600	6968	7937	8661	9221	9667	10031	10334	10590	10809	10999
160		3186	5165	6513	7491	8232	8814	9282	9667	9990	10264	10499	10704
180		2908	4793	6114	7092	7844	8441	8926	9328	9667	9956	10206	10424
200		2674	4471	5761	6733	7491	8098	8597	9013	9365	9667	9929	10159
220		2475	4190	5447	6409	7168	7783	8291	8717	9081	9394	9667	9907
240		2304	3941	5165	6114	6872	7491	8006	8441	8814	9136	9418	9667
260		2155	3721	4911	5846	6599	7220	7740	8181	8562	8892	9182	9439
280		2024	3524	4681	5600	6348	6968	7491	7937	8324	8661	8957	9221
300		1908	3347	4471	5374	6114	6733	7257	7708	8098	8441	8743	9013
320		1804	3186	4279	5165	5897	6513	7038	7491	7885	8232	8539	8814

Table B.58 Characteristic load-carrying capacities bracket type SXAKR9015 1,5 mm thick Timber to steel/concrete - Purlin – Faster 4,0x60 mm nail

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3137	2531	2121	1510	1132	906	755	647	566	503	453	412	377

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	6275

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	45,2
$F_{2/3}$ [N]	4323

$F_{2/3,k}$ - two angle brackets

Δs [mm]	45,2
$F_{2/3}$ [N]	8646

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	9730	9730	5129	3419	2564	2052	1710	1303	1012	827	700	606	534	478	432	395	363

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285	1285
20	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794	1794
40	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970	2970
60	3086	4607	5871	7174	8500	8627	8627	8627	8627	8627	8627	8627	8627
80	2564	3455	4403	5381	5909	5909	5909	5909	5909	5909	5909	5909	5909
100	2052	2764	3523	4305	5100	5904	5909	5909	5909	5909	5909	5909	5909
120	1710	2303	2936	3587	4250	4920	5594	5909	5909	5909	5909	5909	5909
140	1465	1974	2516	3075	3643	4217	4795	5376	5909	5909	5909	5909	5909
160	1282	1728	2202	2690	3187	3690	4195	4704	5214	5725	5909	5909	5909
180	1140	1536	1957	2391	2833	3280	3729	4181	4634	5089	5544	5909	5909
200	1026	1382	1761	2152	2550	2952	3356	3763	4171	4580	4990	5400	5812
220	932,5	1256	1601	1957	2318	2683	3051	3421	3792	4164	4536	4910	5283
240	854,8	1152	1468	1794	2125	2460	2797	3136	3476	3817	4158	4500	4843
260	789,1	1063	1355	1656	1962	2271	2582	2895	3208	3523	3838	4154	4470
280	732,7	987,2	1258	1537	1821	2108	2397	2688	2979	3271	3564	3857	4151
300	683,9	921,4	1174	1435	1700	1968	2238	2509	2781	3053	3327	3600	3874
320	641,1	863,8	1101	1345	1594	1845	2098	2352	2607	2863	3119	3375	3632

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		16154	16154	16154	16154	16154	16154	16154	16154	16154	16154	16154	16154
20		11461	13409	14214	14654	14931	15122	15261	15368	15451	15519	15574	15621
40		8880	11461	12690	13409	13880	14214	14462	14654	14807	14931	15035	15122
60		7249	10007	11461	12358	12968	13409	13742	14004	14214	14387	14531	14654
80		6123	8880	10449	11461	12168	12690	13091	13409	13667	13880	14060	14214
100		5300	7982	9601	10685	11461	12044	12498	12862	13160	13409	13619	13799
120		4673	7249	8880	10007	10831	11461	11957	12358	12690	12968	13205	13409
140		4178	6639	8261	9410	10267	10931	11461	11893	12252	12555	12815	13039
160		3778	6123	7722	8880	9759	10449	11004	11461	11843	12168	12447	12690
180		3447	5682	7249	8407	9299	10007	10582	11059	11461	11804	12100	12358
200		3170	5300	6830	7982	8880	9601	10192	10685	11102	11461	11772	12044
220		2934	4967	6457	7598	8498	9227	9829	10335	10766	11137	11461	11745
240		2731	4673	6123	7249	8147	8880	9491	10007	10449	10831	11166	11461
260		2554	4411	5822	6930	7824	8559	9176	9699	10150	10542	10886	11190
280		2399	4178	5549	6639	7525	8261	8880	9410	9868	10267	10619	10931
300		2262	3968	5300	6371	7249	7982	8604	9138	9601	10007	10365	10685
320		2139	3778	5073	6123	6992	7722	8344	8880	9348	9759	10124	10449

Table B.59 Characteristic load-carrying capacities bracket type SXAKR9015 1,5 mm thick Timber to steel/concrete - Purlin – Faster 5,0x40 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3422	2761	2314	1991	1748	1557	1404	1279	1174	1084	1008	933	855

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	6844

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	40,7
$F_{2/3}$ [N]	5727

$F_{2/3,k}$ - two angle brackets

Δs [mm]	40,7
$F_{2/3}$ [N]	11455

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	17350	10258	5129	3419	2564	2052	1710	1444	1121	917	775	671	592	530	479	437	402

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424
20	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987
40	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291
60	3419	4607	5871	7174	8500	9559	9559	9559	9559	9559	9559	9559	9559
80	2564	3455	4403	5381	6375	7379	8391	9407	10427	11450	12475	13501	13604
100	2052	2764	3523	4305	5100	5904	6713	7526	8342	9160	9980	10801	11623
120	1710	2303	2936	3587	4250	4920	5594	6272	6952	7633	8317	9001	9686
140	1465	1974	2516	3075	3643	4217	4795	5376	5959	6543	7128	7715	8302
160	1282	1728	2202	2690	3187	3690	4195	4704	5214	5725	6237	6751	7264
180	1140	1536	1957	2391	2833	3280	3729	4181	4634	5089	5544	6001	6457
200	1026	1382	1761	2152	2550	2952	3356	3763	4171	4580	4990	5400	5812
220	932,5	1256	1601	1957	2318	2683	3051	3421	3792	4164	4536	4910	5283
240	854,8	1152	1468	1794	2125	2460	2797	3136	3476	3817	4158	4500	4843
260	789,1	1063	1355	1656	1962	2271	2582	2895	3208	3523	3838	4154	4470
280	732,7	987,2	1258	1537	1821	2108	2397	2688	2979	3271	3564	3857	4151
300	683,9	921,4	1174	1435	1700	1968	2238	2509	2781	3053	3327	3600	3874
320	641,1	863,8	1101	1345	1594	1845	2098	2352	2607	2863	3119	3375	3632

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		19669	19669	19669	19669	19669	19669	19669	19669	19669	19669	19669	19669
20		13890	16282	17274	17816	18158	18394	18566	18697	18800	18883	18952	19010
40		10736	13890	15398	16282	16863	17274	17580	17816	18005	18158	18286	18394
60		8750	12111	13890	14992	15740	16282	16693	17015	17274	17487	17665	17816
80		7383	10736	12652	13890	14758	15398	15891	16282	16600	16863	17085	17274
100		6386	9642	11616	12940	13890	14606	15163	15610	15977	16282	16541	16763
120		5626	8750	10736	12111	13120	13890	14499	14992	15398	15740	16031	16282
140		5028	8009	9981	11382	12430	13242	13890	14420	14861	15233	15552	15828
160		4545	7383	9325	10736	11809	12652	13331	13890	14359	14758	15100	15398
180		4146	6849	8750	10160	11247	12111	12815	13398	13890	14311	14674	14992
200		3812	6386	8241	9642	10736	11616	12337	12940	13451	13890	14272	14606
220		3527	5982	7789	9174	10270	11159	11894	12512	13039	13494	13890	14239
240		3283	5626	7383	8750	9842	10736	11481	12111	12652	13120	13529	13890
260		3069	5310	7018	8363	9449	10345	11096	11736	12286	12765	13186	13559
280		2882	5028	6687	8009	9086	9981	10736	11382	11941	12430	12860	13242
300		2717	4774	6386	7683	8750	9642	10399	11050	11616	12111	12550	12940
320		2569	4545	6111	7383	8437	9325	10082	10736	11307	11809	12254	12652

Table B.60 Characteristic load-carrying capacities bracket type SXAKR9015 1,5 mm thick Timber to steel/concrete - Purlin – Faster 5,0x60 mm screw

Load capacity $F_{1,k}$ - one angle bracket

f [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240
F_1 [N]	3422	2761	2314	1991	1748	1557	1404	1279	1174	1084	1008	933	855

$F_{1,k}$ - two angle brackets

f [mm]	
F_1 [N]	6844

Load capacity $F_{2/3,k}$ - one angle bracket

Δs [mm]	38,9
$F_{2/3}$ [N]	6131

$F_{2/3,k}$ - two angle brackets

Δs [mm]	38,9
$F_{2/3}$ [N]	12261

Load capacity $F_{4,k}$ - one angle bracket

e [mm]	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320
F_4 [N]	18554	10258	5129	3419	2564	2052	1710	1444	1121	917	775	671	592	530	479	437	402

Load capacity $F_{5,k}$ [N] - one angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424	1424
20	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987
40	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291	3291
60	3419	4607	5871	7174	8500	9559	9559	9559	9559	9559	9559	9559	9559
80	2564	3455	4403	5381	6375	7379	8391	9407	10427	11450	12475	13501	14529
100	2052	2764	3523	4305	5100	5904	6713	7526	8342	9160	9980	10801	11623
120	1710	2303	2936	3587	4250	4920	5594	6272	6952	7633	8317	9001	9686
140	1465	1974	2516	3075	3643	4217	4795	5376	5959	6543	7128	7715	8302
160	1282	1728	2202	2690	3187	3690	4195	4704	5214	5725	6237	6751	7264
180	1140	1536	1957	2391	2833	3280	3729	4181	4634	5089	5544	6001	6457
200	1026	1382	1761	2152	2550	2952	3356	3763	4171	4580	4990	5400	5812
220	932,5	1256	1601	1957	2318	2683	3051	3421	3792	4164	4536	4910	5283
240	854,8	1152	1468	1794	2125	2460	2797	3136	3476	3817	4158	4500	4843
260	789,1	1063	1355	1656	1962	2271	2582	2895	3208	3523	3838	4154	4470
280	732,7	987,2	1258	1537	1821	2108	2397	2688	2979	3271	3564	3857	4151
300	683,9	921,4	1174	1435	1700	1968	2238	2509	2781	3053	3327	3600	3874
320	641,1	863,8	1101	1345	1594	1845	2098	2352	2607	2863	3119	3375	3632

Load capacity $F_{4+5,k}$ [N] - two angle bracket

beam height [mm]	beam width [mm]												
	0	20	40	60	80	100	120	140	160	180	200	220	240
0		20331	20331	20331	20331	20331	20331	20331	20331	20331	20331	20331	20331
20		14358	16830	17855	18416	18769	19013	19190	19326	19433	19519	19590	19650
40		11098	14358	15917	16830	17430	17855	18171	18416	18610	18769	18901	19013
60		9044	12519	14358	15496	16270	16830	17255	17587	17855	18075	18259	18416
80		7632	11098	13077	14358	15254	15917	16426	16830	17158	17430	17659	17855
100		6601	9966	12006	13376	14358	15097	15674	16136	16514	16830	17098	17327
120		5815	9044	11098	12519	13561	14358	14987	15496	15917	16270	16571	16830
140		5197	8278	10317	11766	12848	13688	14358	14905	15361	15746	16075	16361
160		4697	7632	9638	11098	12206	13077	13780	14358	14842	15254	15609	15917
180		4286	7079	9044	10501	11626	12519	13246	13849	14358	14792	15168	15496
200		3940	6601	8518	9966	11098	12006	12752	13376	13904	14358	14752	15097
220		3646	6183	8051	9483	10615	11534	12294	12933	13478	13948	14358	14718
240		3393	5815	7632	9044	10174	11098	11868	12519	13077	13561	13984	14358
260		3173	5489	7254	8644	9767	10693	11470	12131	12700	13195	13630	14015
280		2979	5197	6912	8278	9392	10317	11098	11766	12343	12848	13293	13688
300		2808	4935	6601	7942	9044	9966	10749	11422	12006	12519	12972	13376
320		2656	4697	6317	7632	8721	9638	10421	11098	11687	12206	12666	13077