

European Technical Approval ETA-10/0198

Handelsbezeichnung Trade name	Befestigungsschrauben SFS Fastening screws SFS
Zulassungsinhaber Holder of approval	SFS intec AG Rosenbergsaustraße 10 9435 Heerbrugg SCHWEIZ
Zulassungsgegenstand und Verwendungszweck	Befestigungsschrauben für Bauteile und Bleche aus Metall
Generic type and use of construction product	Fastening screws for metal members and sheeting
Geltungsdauer: vom Validity: from	26 June 2013
bis to	26 June 2018
Herstellwerk Manufacturing plant	SFS intec AG Rosenbergsaustraße 10 9435 Heerbrugg SCHWEIZ

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Diese Zulassung umfasst This Approval contains

Diese Zulassung ersetzt This Approval replaces



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104 pages including 91 annexes

8.06.02-131/13



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I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by Article 2 of the law of 8 November 2011⁵;
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
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¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12

Official Journal of the European Communities L 220, 30 August 1993, p. 1

³ Official Journal of the European Union L 284, 31 October 2003, p. 25

⁴ Bundesgesetzblatt Teil I 1998, p. 812

⁵ Bundesgesetzblatt Teil I 2011, p. 2178

Official Journal of the European Communities L 17, 20 January 1994, p. 34



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II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of the product/products and intended use

1.1 Definition of the construction product

The fastening screws SFS are self drilling and self tapping screws listed in Table 1. The fastening screws are made of case hardened carbon steel or stainless steel. They are partly completed with metallic washers and EPDM sealing rings. For details see the appropriate Annexes.

Screws or washers for which the stainless steel grade A2 according to EN ISO 3506-1 is given in the respective Annexes (e. g. 1.4301 or 1.4567) may be made of stainless steel grade A4 (e. g. 1.4401 or 1.4578) as well.

Examples of fastening screws and the corresponding connections are shown in Annex 1.

The fastening screws and the corresponding connections are subject to tension and shear forces.

Annex	Application	Fastening screw	Description
Annex 6	Steel / Steel	SFS SX3 - A12 (S12) - 6,0 x L SFS SX3 - L12 - A12 (S12) - 6,0 x L SFS SX3 - D12 - A12 (S12) - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset 12 \text{ mm}$
Annex 7	Steel / Steel	SFS SX3 - S14 - 6,0 x L SFS SX3 - L12 - S14 - 6,0 x L SFS SX3 - D12 - S14 - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset$ 14 mm
Annex 8	Steel / Steel	SFS SX3 - S16 - 6,0 x L SFS SX3 - L12 - S16 - 6,0 x L SFS SX3 - D12 - S16 - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset 16 \text{ mm}$
Annex 9 Steel / Steel		SFS SX3 - S19 - 6,0 x L SFS SX3 - L12 - S19 - 6,0 x L SFS SX3 - D12 - S19 - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset$ 19 mm
Annex 10	Steel / Steel	SFS SX3 - S22 - 6,0 x L SFS SX3 - L12 - S22 - 6,0 x L SFS SX3 - D12 - S22 - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset 22 \text{ mm}$
Annex 11	Steel / Steel	SFS SX3 - A12 (S12) - 6,0 x L SFS SX3 - L12 - A12 (S12) - 6,0 x L SFS SX3 - D12 - A12 (S12) - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset 12 \text{ mm}$
Annex 12	Steel / Steel	SFS SX3 - S14 - 6,0 x L SFS SX3 - L12 - S14 - 6,0 x L SFS SX3 - D12 - S14 - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset$ 14 mm
Annex 13	Steel / Steel	SFS SX3 - S16 - 6,0 x L SFS SX3 - L12 - S16 - 6,0 x L SFS SX3 - D12 - S16 - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset 16 \text{ mm}$

Table 1 Different types of fastening screws



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Annex	Application	Fastening screw	Description					
Annex 14	Steel / Steel	SFS SX3 - S19 - 6,0 x L SFS SX3 - L12 - S19 - 6,0 x L SFS SX3 - D12 - S19 - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø19 mm					
Annex 15	Steel / Steel	SFS SX3 - S22 - 6,0 x L SFS SX3 - L12 - S22 - 6,0 x L SFS SX3 - D12 - S22 - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø22 mm					
Annex 16	Steel / Steel	SFS SX5 - A12 (S12) - 5,5 x L SFS SX5 - L12 - A12 (S12) - 5,5 x L SFS SX5 - D12 - A12 (S12) - 5,5 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø12 mm					
Annex 17	Steel / Steel	SFS SX5 - S14 - 5,5 x L SFS SX5 - L12 - S14 - 5,5 x L SFS SX5 - D12 - S14 - 5,5 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø14 mm					
Annex 18	Steel / Steel	SFS SX5 - S16 - 5,5 x L SFS SX5 - L12 - S16 - 5,5 x L SFS SX5 - D12 - S16 - 5,5 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø16 mm					
Annex 19	Steel / Steel	SFS SX5 - S19 - 5,5 x L SFS SX5 - L12 - S19 - 5,5 x L SFS SX5 - D12 - S19 - 5,5 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø19 mm					
Annex 20	Steel / Steel	SFS SX5 - S22 - 5,5 x L SFS SX5 - L12 - S22 - 5,5 x L SFS SX5 - D12 - S22 - 5,5 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø22 mm					
Annex 21	Steel / Steel	SFS SX14 - S16 - 5,5 x L SFS SX14 - L12 - S16 - 5,5 x L	with hexagon head or irius® Drive and sealing washer ≥ Ø16 mm					
Annex 22 ^{*)}	Steel / Timber	SFS SXW - S16 - 6,5 x L SFS SXW - L12 - S16 - 6,5 x L	with hexagon head or irius® Drive and sealing washer ≥ Ø16 mm					
Annex 23	Steel / Steel	SFS SXC5 - S19 - 5,5 x L SFS SXC5 - L12 - S19 - 5,5 x L	with hexagon head or irius® Drive and sealing washer ≥ Ø19 mm					
Annex 24	Steel / Steel	SFS SXC14 - S19 - 5,5 x L SFS SXC14 - L12 - S19 - 5,5 x L	with hexagon head or irius® Drive and sealing washer ≥ Ø19 mm					
Annex 25 ^{*)}	Steel / Timber	SFS SXCW - S19 - 6,5 x L SFS SXCW - L12 - S19 - 6,5 x L	with hexagon head or irius® Drive and sealing washer ≥ Ø19 mm					
Annex 26	Steel / Steel	SFS SL3/2 - 5 - S - SV16 - 6,0 x L	with thread free zone, Hexagon head and SV washer 13 x 16 mm					
Annex 27	Steel / Steel	SFS SL3/2 - 5 - S - SV16 - 6,0 x L	with thread free zone, Hexagon head and SV washer 13 x 16 mm					
Annex 28	Steel / Steel	SFS SL2 - S - S14 - 4,8 x L	with thread free zone, Hexagon head and Sealing washer ≥ Ø14 mm					



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Annex	Application	Fastening screw	Description						
Annex 29	Steel / Steel	SFS SL2 - S - S14 - 5,5 x L	with thread free zone, Hexagon head and Sealing washer ≥ Ø14 mm						
Annex 30	Steel / Steel	SFS SL2 - S - A14 - 5,5 x L	with thread free zone, Hexagon head and Sealing washer ≥ Ø14 mm						
Annex 31	Steel / Steel	SFS SL2 - S - S14 - 6,3 x L SFS SL2 - S - L12 - S14 - 6,3 x L	with thread free zone, Hexagon head or irius® Drive and sealing washer ≥ Ø14 mm						
Annex 32	Steel / Steel	SFS SLG - S - S14 - 4,8 x L	with thread free zone, Hexagon head and Sealing washer $\ge \emptyset$ 14 mm						
Annex 33	Steel / Steel	SFS TDA - S - S16 - 6,5 x L	with hexagon head and sealing washer ≥ Ø16 mm						
Annex 34	Steel / Steel	SFS TDB - S - S16 - 6,3 x L	with hexagon head and sealing washer ≥ Ø16 mm						
Annex 35	Steel / Steel	SFS TDB - S - S16 - 6,3 x L SFS TDB - S - S16 - 6,3 x L - W38	with hexagon head and sealing washer ≥ Ø16 mm						
Annex 36	Steel / Steel	SFS TDC - S - S16 - 6,3 x L	with hexagon head and sealing washer ≥ Ø16 mm						
Annex 37	Steel / Steel	SFS SD2 - T16 - 6,3 x L	with hexagon head and sealing washer ≥ Ø16 mm						
Annex 38	Steel / Steel	SFS SD3 - T15 - 4,8 x L SFS SD3 - L12 - T15 - 4,8 x L	with hexagon head or irius® Drive and sealing washer $\ge Ø15 \text{ mm}$						
Annex 39	Steel / Steel	SFS SD3/15 - T15 - 4,8 x L SFS SD3/15 - L12 - T15 - 4,8 x L	with hexagon head or irius® Drive and sealing washer ≥ Ø15 mm						
Annex 40	Steel / Steel	SFS SD3 - T15 - 5,5 x L SFS SD3 - L12 - T15 - 5,5 x L SFS SD3 - D12 - T15 - 5,5 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset 15 \text{ mm}$						
Annex 41	Steel / Steel	SFS SD3 - T16 - 6,3 x L SFS SD3 - L12 - T16 - 6,3 x L SFS SD3 - D12 - T16 - 6,3 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø16 mm						
Annex 42	Steel / Steel	SFS SDP3 - Z - 5,5 x L	mit Polyamid Hexagon head						
Annex 43	Steel / Steel	SFS SD5 - H15 - 5,5 x L	Hexagon head with flange Ø15 mm						
Annex 44	Steel / Steel	SFS SD6 - T15 - 5,5 x L SFS SD6 - L12 - T15 - 5,5 x L SFS SDZ6 - T15 (S16) - 5,5 x L	with hexagon head, Zamac or irius® Drive and sealing washer $\ge \emptyset15 \text{ mm}$						
Annex 45	Steel / Steel	SFS SD6 - T16 - 6,3 x L SFS SD6 - L12 - T16 - 6,3 x L	with hexagon head or irius® Drive and sealing washer $\ge \emptyset 16 \text{ mm}$						
Annex 46	Steel / Steel	SFS SD6 - H15 - 5,5 x L	Hexagon head with flange Ø15 mm						



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Annex	Application	Fastening screw	Description					
Annex 47	Steel / Steel	SFS SD8 - H15 - 5,5 x L	Hexagon head with flange Ø15 mm					
Annex 48	Steel / Steel	SFS SD14 - T15 (S16) - 5,5 x L SFS SD14 - L12 - T15 (S16)- 5,5 x L SFS SDZ14 - T15 (S16) - 5,5 x L	with hexagon head, Zamac or irius® Drive and sealing washer $\ge \emptyset15 \text{ mm}$					
Annex 49	Steel / Steel	SFS SD14 - H15 - 5,5 x L	Hexagon head with flange Ø15 mm					
Annex 50	Steel / Steel	SFS SL2 - T - A14 - 4,8 x L SFS SLZ2 - T - A14 - 4,8 x L	with thread free zone, Hexagon head or Zamac and Sealing washer ≥ Ø14 mm					
Annex 51	Steel / Steel	SFS SL2 - 4,8 x L	with thread free zone and Hexagon head					
Annex 52	Steel / Steel	SFS SL2 - H15 - 6,3 x L	with thread free zone and Hexagon head with flange Ø15 mm					
Annex 53	Steel / Steel	SFS SL3 - H15 - 6,3 x L	with thread free zone and Hexagon head with flange Ø15 mm					
Annex 54	Steel / Steel	SFS SDL3 - L12 - T15 - 5,5 x L	with thread free zone, irius® Drive and sealing washer $\ge \emptyset$ 15 mm					
Annex 55*)	Steel / Timber	SFS SW2 - S - S16 - 6 x 42	with hexagon head and sealing washer ≥ Ø16 mm					
Annex 56*)	Steel / Timber	SFS TDA - S - S16 - 6,5 x L	with hexagon head and sealing washer ≥ Ø16 mm					
	Steel / Steel							
Annex 57*)	Steel / Timber	SFS SW - T - A14 - 4,8 x L	with hexagon head and sealing washer ≥ Ø14 mm					
Annex 58*)	Steel / Timber	SFS SW3 - T - T16 - 6,5 x L SFS SW3 - T - L12 - T16 - 6,5 x L SFS SWZ3 - T - T16 (S16) - 6,5 x L	with hexagon head, Zamac or irius® Drive and sealing washer ≥ Ø16 mm					
Annex 59*)	Steel / Timber	SFS SW3 - T - H15 - 6,5 x L	Hexagon head with flange Ø15 mm					
Annex 60	Alu / Alu Rm ≥ 165 N/mm ²	SFS SX3 - A12 (S12) - 6,0 x L SFS SX3 - L12 - A12 (S12) - 6,0 x L SFS SX3 - D12 - A12 (S12) - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø12 mm					
Annex 61	Alu / Alu Rm \ge 215 N/mm ²	SFS SX3 - A12 (S12) - 6,0 x L SFS SX3 - L12 - A12 (S12) - 6,0 x L SFS SX3 - D12 - A12 (S12) - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø12 mm					
Annex 62	Alu / Alu Rm ≥ 165 N/mm ²	SFS SX5 - A12 (S12) - 5,5 x L SFS SX5 - L12 - A12 (S12) - 5,5 x L SFS SX5 - D12 - A12 (S12) - 5,5 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø12 mm					
Annex 63	Alu / Alu Rm ≥ 215 N/mm ²	SFS SX5 - A12 (S12) - 5,5 x L SFS SX5 - L12 - A12 (S12) - 5,5 x L SFS SX5 - D12 - A12 (S12) - 5,5 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø12 mm					
Annex 64	Alu / Alu Rm ≥ 165 N/mm ²	SFS SL2 - S - S14 - 5,5 x L	with thread free zone, Hexagon head and Sealing washer ≥ Ø14 mm					



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Annex	Application	Fastening screw	Description
Annex 65	Alu / Alu Rm \ge 215 N/mm ²	SFS SL2 - S - S14 - 5,5 x L	with thread free zone, Hexagon head and Sealing washer ≥ Ø14 mm
Annex 66	Alu / Alu Rm ≥ 165 N/mm ²	SFS SL2 - S - S14 - 6,3 x L SFS SL2 - S - L12 - S14 - 6,3 x L	with thread free zone, Hexagon head or irius® Drive and sealing washer ≥ Ø14 mm
Annex 67	Alu / Alu Rm ≥ 215 N/mm ²	SFS SL2 - S - S14 - 6,3 x L SFS SL2 - S - L12 - S14 - 6,3 x L	with thread free zone, Hexagon head or irius® Drive and sealing washer ≥ Ø14 mm
Annex 68	Alu / Alu Rm ≥ 165 N/mm ²	SFS TDA - S - S16 - 6,5 x L	with hexagon head and sealing washer ≥ Ø16 mm
Annex 69	Alu / Alu Rm ≥ 215 N/mm ²	SFS TDA - S - S16 - 6,5 x L	with hexagon head and sealing washer ≥ Ø16 mm
Annex 70	Alu / Alu Rm ≥ 165 N/mm ²	SFS TDB - S - S16 - 6,3 x L	with hexagon head and sealing washer ≥ Ø16 mm
Annex 71	Alu / Alu Rm \ge 215 N/mm ²	SFS TDB - S - S16 - 6,3 x L	with hexagon head and sealing washer ≥ Ø16 mm
Annex 72	Alu / Steel Rm ≥ 165 N/mm ²	SFS SX3 - A12 (S12) - 6,0 x L SFS SX3 - L12 - A12 (S12) - 6,0 x L SFS SX3 - D12 - A12 (S12) - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset 12 \text{ mm}$
Annex 73	Alu / Steel Rm ≥ 215 N/mm ²	SFS SX3 - A12 (S12) - 6,0 x L SFS SX3 - L12 - A12 (S12) - 6,0 x L SFS SX3 - D12 - A12 (S12) - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset 12 \text{ mm}$
Annex 74	Alu / Steel Rm ≥ 165 N/mm ²	SFS SX3 - A12 (S12) - 6,0 x L SFS SX3 - L12 - A12 (S12) - 6,0 x L SFS SX3 - D12 - A12 (S12) - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer $\ge \emptyset 12 \text{ mm}$
Annex 75	Alu / Steel Rm ≥ 215 N/mm ²	SFS SX3 - A12 (S12) - 6,0 x L SFS SX3 - L12 - A12 (S12) - 6,0 x L SFS SX3 - D12 - A12 (S12) - 6,0 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø12 mm
Annex 76	Alu / Steel Rm ≥ 165 N/mm ²	SFS SX5 - A12 (S12) - 5,5 x L SFS SX5 - L12 - A12 (S12) - 5,5 x L SFS SX5 - D12 - A12 (S12) - 5,5 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø12 mm
Annex 77	Alu / Steel Rm ≥ 215 N/mm ²	SFS SX5 - A12 (S12) - 5,5 x L SFS SX5 - L12 - A12 (S12) - 5,5 x L SFS SX5 - D12 - A12 (S12) - 5,5 x L	with hexagon head, torx or irius® Drive and sealing washer ≥ Ø12 mm
Annex 78	Alu / Steel Rm ≥ 165 N/mm ²	SFS SL3/2 - 5 - S - SV16 - 6,0 x L	with thread free zone, Hexagon head and SV washer 13 x 16 mm
Annex 79	Alu / Steel Rm ≥ 215 N/mm ²	SFS SL3/2 - 5 - S - SV16 - 6,0 x L	with thread free zone, Hexagon head and SV washer 13 x 16 mm



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Annex	Application	Fastening screw	Description
Annex 80	Alu / Steel Rm ≥ 165 N/mm ²	SFS SL3/2 - 5 - S - SV16 - 6,0 x L	with thread free zone, Hexagon head and SV washer 13 x 16 mm
Annex 81	Alu / Steel Rm ≥ 215 N/mm ²	SFS SL3/2 - 5 - S - SV16 - 6,0 x L	with thread free zone, Hexagon head and SV washer 13 x 16 mm
Annex 82	Alu / Steel Rm ≥ 165 N/mm ²	SFS TDA - S - S16 - 6,5 x L	with hexagon head and sealing washer ≥ Ø16 mm
Annex 83	Alu / Steel Rm \ge 215 N/mm ²	SFS TDA - S - S16 - 6,5 x L	with hexagon head and sealing washer ≥ Ø16 mm
Annex 84	Alu / Steel Rm ≥ 165 N/mm ²	SFS TDB - S - S16 - 6,3 x L	with hexagon head and sealing washer ≥ Ø16 mm
Annex 85	Alu / Steel Rm ≥ 215 N/mm ²	SFS TDB - S - S16 - 6,3 x L	with hexagon head and sealing washer ≥ Ø16 mm
Annex 86*)	Alu / Timber Rm ≥ 165 N/mm ²	SFS SXW - S16 - 6,5 x L SFS SXW - L12 - S16 - 6,5 x L	with hexagon head or irius® Drive and sealing washer ≥ Ø16 mm
Annex 87*)	Alu / Timber Rm ≥ 215 N/mm ²	SFS SXW - S16 - 6,5 x L SFS SXW - L12 - S16 - 6,5 x L	with hexagon head or irius® Drive and sealing washer ≥ Ø16 mm
Annex 88*)	Alu / Timber Rm ≥ 165 N/mm ²	SFS SW2 - S - S16 - 6 x 42	with hexagon head and sealing washer ≥ Ø16 mm
Annex 89*)	Alu / Timber Rm ≥ 215 N/mm ²	SFS SW2 - S - S16 - 6 x 42	with hexagon head and sealing washer ≥ Ø16 mm
Annex 90*)	Alu / Timber Rm ≥ 165 N/mm ²	SFS TDA - S - S16 - 6,5 x L	with hexagon head and sealing washer ≥ Ø16 mm
Annex 91*)	Alu / Timber Rm ≥ 215 N/mm ²	SFS TDA - S - S16 - 6,5 x L	with hexagon head and sealing washer ≥ Ø16 mm

*) These fastening screws are applicable for fastening to timber substructures

1.2 Intended use

The fastening screws are intended to be used for fastening steel sheeting to steel substructures and as far as stated in Table 1 to timber substructures. The sheeting can either be used as wall or roof cladding or as load bearing wall and roof element.

The fastening screws can also be used for the fastening of other thin gauge steel members.

The component to be fastened (adjacent to the screw-head) is component I and the substructure is component II.

The intended use comprises fastening screws and connections for indoor and outdoor applications. Fastening screws which are made of stainless steel are intended to be used in external environments with a high or very high corrosion category.



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The intended use comprises connections with predominantly static loads (e.g. wind loads, dead loads).

The provisions made in this European technical approval are based on an assumed working life of the fastening screws of 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, 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.

2 Characteristics of product and methods of verification

2.1 Characteristics of product

The fastening screws shall correspond to the drawings given in the appropriate Annexes (see Table 1).

The characteristic material values, dimensions and tolerances of the fastening screws neither indicated in this section nor in the Annexes shall correspond to the respective values laid down in the technical documentation⁷ to this European technical approval.

The characteristic values of the shear and tension resistance of the connections made with the fastening screws are given in the appropriate Annexes or in section 4.2.

The fastening screws are considered to satisfy the requirements of performance class A1 of the characteristic reaction to fire.

2.2 Methods of verification

The assessment of the fitness of the fastening screws for the intended use in relation to the Essential Requirements ER 1 (Mechanical resistance and stability), ER 2 (Safety in case of fire), ER 4 (Safety in use) and additional aspects of durability has been made in accordance with section 3.2 of the Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.

The assessment of the resistance to fire performance is only relevant to the assembled system (fastening screws, sheeting, substructure) which is not part of the ETA.

The fastening screws are considered to satisfy the requirements of performance class A 1 of the characteristic reaction to fire, in accordance with the provisions of the EC Decision 96/603/EC (as amended) without the need for testing on the basis of its listing in that decision.

Concerning Essential Requirements No. 1 (Mechanical resistance and stability) and No. 4 (Safety in use) the following applies:

The characteristic values of resistance given in the Annexes were determined by shear and tension tests.

The formulas to calculate the design resistance are given in clause 4.2.1.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the Decision 99/92 of the European Commission⁸ system 3 of the attestation of conformity applies.

The technical documentation to this European technical approval is deposited at Deutsches Institut f
ür Bautechnik and, as far as relevant fort the tasks of the approved bodies involved in the attestation of conformity procedure is handed over to the approved bodies.

Official Journal of the European Communities L 80 of 18.03.1998.



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This system of attestation of conformity is defined as follows:

System 3: Declaration of conformity of the product by the manufacturer on the basis of:

- (a) Tasks for the manufacturer:
 - (1) factory production control;
- (b) Tasks for the approved body:

(2) initial type-testing of the product.

Note: Approved bodies are also referred to as "notified bodies".

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The manufacturer may only use initial materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the "control plan" which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik.⁹

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 in the field of fastening screws in order to undertake the actions laid down in section 3.2.2. For this purpose, the control plan referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved body involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

3.2.2 Tasks for the approved bodies

The approved body shall perform the

initial type-testing of the product,

in accordance with the provisions laid down in the control plan.

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in written reports.

3.3 CE marking

The CE marking shall be affixed on each packaging of fastening screws. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and be accompanied by the following additional information:

the name and address of the producer (legal entity responsible for the manufacture),

9

The "control plan" is a confidential part of the European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.



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- the last two digits of the year in which the CE marking was affixed,
- the number of the European technical approval,
- the name of the product.

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The fastening screws are manufactured in accordance with the provisions of the European technical approval using the manufacturing process as laid down in the technical documentation.

The European technical approval is issued for the product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Design

4.2.1 General

Fastening screws completely or partly exposed to external weather or similar conditions are made of stainless steel or are protected against corrosion. For the corrosion protection the rules given in EN 1090-2:2008 + A1:2011, EN 1993-1-3:2006 + AC:2009 and EN 1993-1-4:2006 are taken into account.

For the types of connection (a, b, c, d) listed in the Annexes it is not necessary to take into account the effect of constraints due to temperature. For other types of connection it shall be considered for design as long as constraining forces due to temperature do not occur or are not significant (e. g. sufficient flexibility of the structure).

The loading is predominantly static. (Remark: Wind loads are regarded as predominantly static.) Dimensions, material properties, torque moments $M_{t,norm}$, minimum effective screw-in length I_{ef} and nominal material thicknesses t_N as stated in the ETA or in the Annexes are observed.

The verification concept stated in EN 1990:2002 + A1:2005 + A1:2005/AC:2010 is used for the design of the connections made with the fastening screws. The characteristic values (shear and tension resistance) stated in the Annexes are used for the design of the entire connections.

The following formulas are used to calculate the values of design resistance:

$$N_{Rd} = \frac{N_{Rk}}{\gamma_{M}}$$
$$V_{Rd} = \frac{V_{Rk}}{\gamma_{M}}$$

The recommended partial safety factor $\gamma_M = 1.33$ is used in order to determine the corresponding design resistances, provided no values are given in national regulations of the member state in which the fastening screws are used or in the respective National Annex to Eurocode 3.

In case of combined tension and shear forces the linear interaction formula according to EN 1993-1-3:2006 + AC:2009, section 8.3 (8) is taken into account.



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$$\frac{N_{Sd}}{N_{Rd}} + \frac{V_{Sd}}{V_{Rd}} \le 1.0$$

The possibly required reduction of the tension resistance (pull-through resistance) due to the position of the fastener is taken into account:

- in accordance with EN 1993 1 3:2006+ AC:2009, section 8.3 (7) and Fig. 8.2 (component I is made of steel) or EN 1999-1-4:2007 + A1:2011, section 8.1 (6) and Table 8.3 (component I is made of aluminium),
- of 0.7 if the supporting structure is an asymmetric profile (e.g. Z-profile) with t_{II} < 5 mm

4.2.2 Additional rules for connections with timber substructures

As far as no other provisions are made in the following EN 1995-1-1:2004 + A1:2008 applies. Drill points of self drilling screws are not taken into account for the effective screw-in length. The following terms are used:

- I_{a} Screw-in length part of thread screwed into component II including drill point.
- I_{b} Length of unthreaded part of the drill-point.
- I_{ef} effective screw-in length $I_{ef} = I_{a} I_{b}$
- $N_{R,k} = F_{ax,Rk} \cdot k_{mod}$
- $V_{R,k}$ = $F_{v,Rk} \cdot k_{mod}$

F_{ax,Rk} according to EN 1995-1-1:2004 + A1:2008, equation (8.40a)

Remark: $F_{ax,Rk} = F_{ax,\alpha,Rk}$ with $\alpha = 90^{\circ}$

F_{v.Rk} according to EN 1995-1-1:2004 + A1:2008, clause 8.2.3

k_{mod} according to EN 1995-1-1:2004 + A1:2008, Table 3.1

 $M_{y,Rk}$ in equation (8.9) of EN 1995-1-1:2004 + A1:2008 and $f_{ax,k}$ in equation (8.40a) of EN 1995-1-1:2004 + A1:2008 are given in the Annexes of this ETA.

The characteristic values for pullout and bearing resistance (timber substructure) calculated according to EN 1995-1-1:2004 + A1:2008 are compared with the characteristic values for component I (pull over and bearing resistance) stated in the right column of the table in the appropriate Annexes. The lower value is used for further calculations.

4.2.3 Additional rules for fastening of perforated sheets

For the fastening of perforated sheets (structural part I) only fastening screws with diameters given in Annexes 2, 3, 4 or 5 are used for which characteristic values are given in the following Annexes for unperforated sheets of same thickness and strength class as for the perforated sheets.

For the calculation of the connection the characteristic values for the connection of unperforated sheets according to the relevant Annex and the characteristic values for the connection of perforated sheets according to Annex 2, 3, 4 or 5 are determined. The lower values are used for further calculations.

The fastening to perforated sheets (structural part II) is not ruled in this ETA.



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4.3 Installation

The installation is only carried out according to the manufacturer's instructions. The manufacturer hands over the assembly instructions to the assembler.

It is guaranteed by the execution that no bimetallic corrosion will occur.

For regular shear forces the components I and II are directly connected to each other so that the fastening screws do not get additional bending. The use of compression resistant thermal insulation strips up to a thickness of 3 mm is allowed.

The fastening screws are fixed rectangular to the surface of the components to guarantee a correct load bearing and if necessary rain-proof connection.

Fastening screws for steel substructures are screwed in with the cylindrical part of the thread at least 6 mm if the substructure has a thickness over 6 mm unless otherwise declared in the manufacturer's instruction. Welded drill points are not taken into account for the screw-in length.

The conformity of the installed fasteners with the provisions of the ETA is attested by the executing company.

5 Indications to the manufacturer

It is in the responsibility of the manufacturer to ensure that the information on the specific conditions according to 1, 2, 4.2 and 4.3 (including Annexes referred to) is given to those who are concerned. This information may be given by reproduction of the respective parts of the European technical approval.

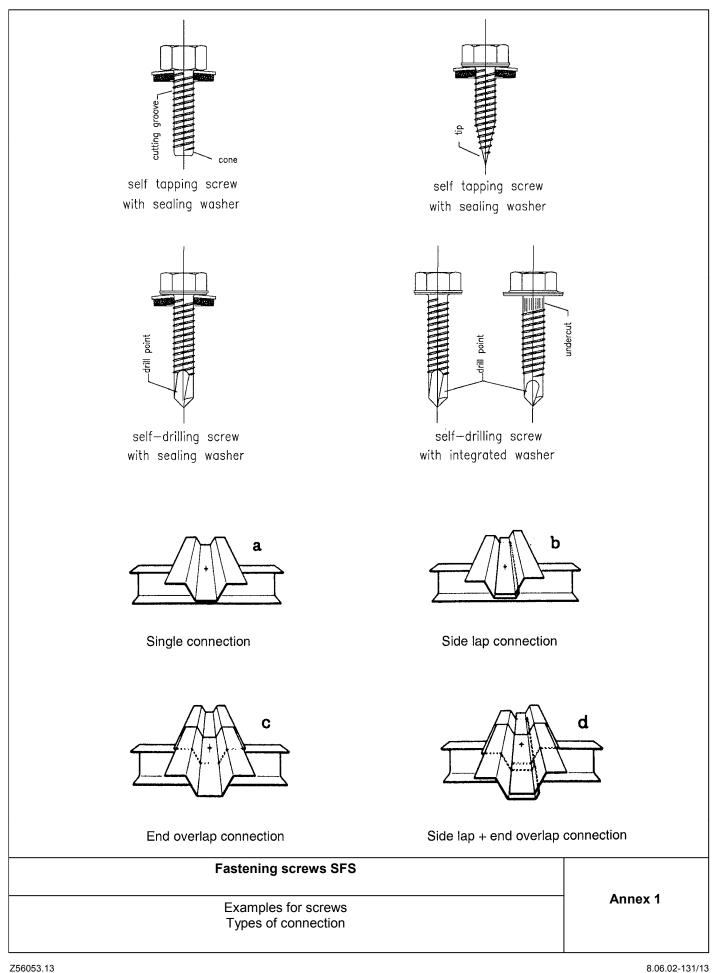
In addition all installation data (predrill diameter, torque moment, application limits) shall be shown clearly on the package and/or on an enclosed instruction sheet, preferably using illustration(s).

Uwe Bender Head of Department *beglaubigt:* Ulbrich

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English translation prepared by DIBt

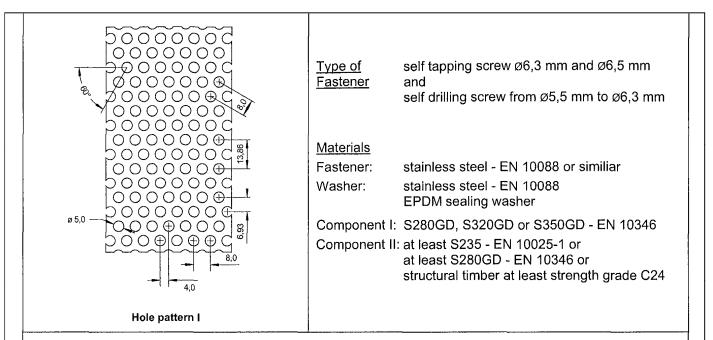




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English translation prepared by DIBt





sh	eet /			ed sheet S280GI				ed sheet S320G[ed sheet S350GI	
Øw	asher	with	R _{m,min} =	= 360 N/	mm²	with	R _{m,min} =	= 390 N/	mm²	with	R _{m,min} =	= 420 N/	mm²
		16 mm 19 mm 22 mm 25 mm 16		16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm		
Μ	t,nom						51	Nm					
	0,50	—							—	—		-	—
٦	0,55			_				_					
Ē	0,63										—		
ťn,i	0,75	2,16	2,22	2,24	2,38	2,34	2,40	2,44	2,58	2,54	2,60	2,62	2,78
for	0,88	2,56	2,64	2,64	2,78	2,78	2,86	2,86	3,02	3,00	3,10	3,10	3,26
Ŝ	1,00	2,92	3,04	3,02	3,16	3,16	3,30	3,26	3,42	3,42	3,56	3,52	3,68
V _{R.k} [kN] for t _{N,I} [mm]	1,13	3,32	3,48	3,42	3,56	3,60	3,76	3,70	3,86	3,88	4,10	4,00	4,16
>	1,25	3,70	3,88	3,80	3,94	4,00	4,20	4,10	4,26	4,32	4,54	4,42	4,60
	1,50	4,46	4,74	4,56	4,72	4,84	5,12	4,96	5,10	5,22	5,54	5,34	5,50
	0,50	—											
٦	0,55				—			— —		—			
Ē	0,63											_	
ť,	0,75	1,40	1,94	2,14	2,22	1,52	2,08	3,32	2,42	1,64	2,26	2,50	2,60
for	0,88	1,82	2,34	2,62	2,70	1,96	2,54	2,82	2,92	2,12	2,74	3,04	3,14
N _{R,k} [kN] for t _{N,I} [mm]	1,00	2,24	2,74	3,06	3,14	2,44	2,96	3,32	3,42	2,62	3,20	3,58	3,68
ς,k [1,13	2,74	3,18	3,58	3,64	2,98	3,44	3,88	3,96	3,20	3,70	4,18	4,26
ž	1,25	3,24	3,58	4,08	4,12	3,52	3,88	4,40	4,46	3,78	4,18	4,76	4,80
	1,50	4,36	4,46	5,12	5,12	4,74	4,84	5,56	5,56	5,10	5,22	5,98	5,98

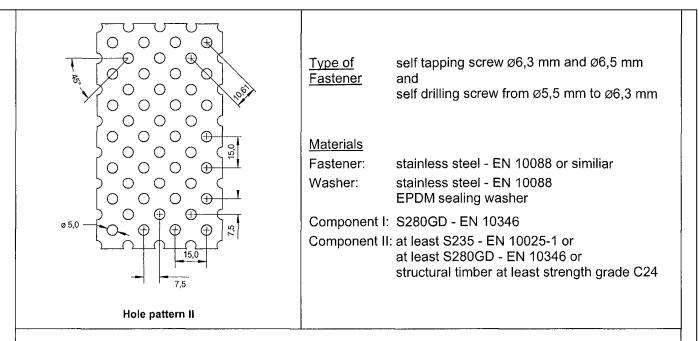
The thickness of the perforated sheets which are exposed to wind loads shall be at least 1,00 mm.

For intermediate values of the washer diameter the characteristic values for the washer with the smaller diameter shall be used.

Fastening screws SFS

Fastening of perforated sheets





	rew /	self drillin	g screws Ø	5,5 mm and	Ø6,0 mm			screws and 6,3 mm and	
Øw	asher	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm
M	t,nom				51	Nm			
	0,50	_		_			—	—	
Ē	0,55	—				—			
<u>E</u>	0,63			_			—	—	
ťn,I	0,75	2,48	2,52	2,84	2,76	2,38	2,64	3,16	3,24
V _{R.k} [kN] for t _{N,I} [mm]	0,88	3,04	3,12	3,42	3,32	3,02	3,28	3,78	3,88
	1,00	3,56	3,70	3,84	3,84	3,64	3,96	4,36	4,50
۲. ۲	1,13	4,14 4,26		4,40	4,40	4,36	4,70	5,00	5,18
>	1,25	4,68	4,68 4,84 4,92		4,94	5,06	5,40	5,60	5,84
	1,50	5,76 6,04 5,90		5,90	6,10	6,62	6,94	6,88	7,16
	0,50	_	—						-
Ē	0,55		_						
Ē	0,63								
ťn,i	0,75	2,88	3,16	3,24	3,14	2,86	3,46	3,72	3,92
for	0,88	3,42	3,72	3,76	3,70	3,40	4,02	4,30	4,46
N _{R,k} [kN] for t _{N,i} [mm]	1,00	3,92	4,28	4,28	4,20	3,90	4,56	4,82	4,96
₹,k []	1,13	4,46	4,86	4,88	4,72	4,44	5,12	5,38	5,48
ž	1,25	4,96	5,42	5,42	5,26	4,94	5,66	5,88	5,94
	1,50	6,04	6,60	6,60	6,38	6,00	6,74	6,92	6,90

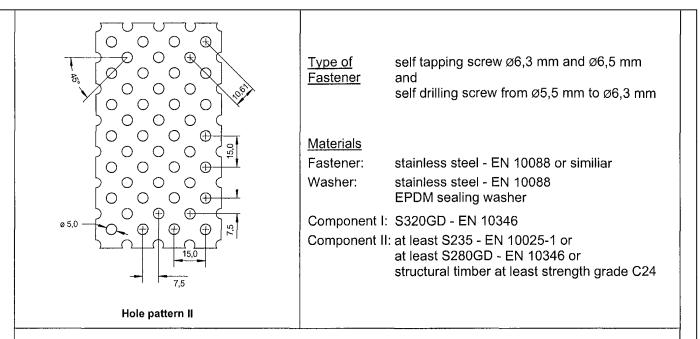
The thickness of the perforated sheets which are exposed to wind loads shall be at least 1,00 mm.

For intermediate values of the washer diameter the characteristic values for the washer with the smaller diameter shall be used.

Fastening screws SFS

Fastening of perforated sheets





	rew /	self drillin	g screws Ø	5,5 mm and	Ø6,0 mm		self tapping g screws Ø		
Øw	asher	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm
M	t,nom				51	١m		<u> </u>	
	0,50						—		
Ē	0,55	-					—		
Ĩ	0,63							—	
V _{R,k} [kN] for t _{N,I} [mm]	0,75	2,68	2,74	3,08	3,00	2,68	2,88	3,42	3,50
	0,88	3,30	3,38	3,70	3,60	3,36	3,60	4,10	4,22
Ŝ	1,00	3,86	4,00	4,16	4,16	4,02	4,02 4,30		4,88
ζ, F	1,13	4,48	,48 4,62		4,76	4,76	5,08	5,42	5,60
>	1,25	5,06	5,06 5,24 5,32		5,36	5,50	5,84	6,08	6,30
	1,50	6,24	6,54	6,40	6,60	7,10	7,10 7,52		7,76
	0,50		_	_	—		_	_	
_ ۲	0,55	—		—				—	
Ē	0,63	—	—						
ť'n,	0,75	3,12	3,42	3,50	3,40	3,12	3,68	4,06	4,26
for	0,88	3,70	4,04	4,08	4,00	3,70	4,32	4,68	4,86
N _{R,k} [kN] for t _{N,i} [mm]	1,00	4,24	4,64	4,64	4,54	4,24	4,92	5,24	5,40
R,k [1,13	4,84	5,26	5,28	5,12	4,84	5,54	5,86	5,96
ž	1,25	5,38	5,88	5,88	5,70	5,38	6,14	6,40	6,48
	1,50	6,54	7,16	7,16	6,92	6,54	7,38	7,54	7,52

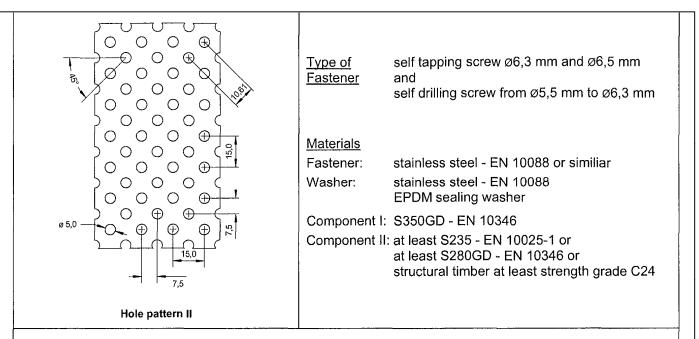
The thickness of the perforated sheets which are exposed to wind loads shall be at least 1,00 mm.

For intermediate values of the washer diameter the characteristic values for the washer with the smaller diameter shall be used.

Fastening screws SFS

Fastening of perforated sheets





	rew /	self drillin	g screws Ø	5,5 mm and	Ø6,0 mm		self tapping g screws Ø		
Øw	asher	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm
M	t,nom				51	٧m			
	0,50		—		_				
Ē	0,55		_		_	ļ —			
[mm]	0,63	—						—	
ť'n	0,75	2,88	2,92	3,30	3,20	2,98	3,20	3,72	3,92
for	0,88	3,54	3,62	3,96	3,86	3,62	3,88	4,42	4,54
R,k [kN] for t _{N,I}	1,00	4,14	4,28	4,46	4,46	4,24	4,52	5,08	5,12
Ľ ľ	1,13	4,80 4,94		5,10	5,10	4,92	5,24	5,78	5,74
>	1,25			5,70	5,72	5,56	5,92	6,46	6,32
	1,50	6,24	6,54	6,40	7,02	6,94	7,36	7,86	7,48
	0,50	_	—	_	-	_	-		—
Ē	0,55		_	_		—	—		
Ē	0,63		—		—				—
t,	0,75	3,34	3,66	3,76	3,64	3,52	4,16	4,52	4,64
for	0,88	3,96	4,36	4,38	4,28	3,98	4,74	5,04	5,24
N _{R,k} [kN] for t _{N,i} [mm]	1,00	4,54	4,98	4,96	4,86	4,40	5,24	5,50	5,76
Z, K	1,13	5,16	5,64	5,64	5,48	4,86	5,76	5,96	6,32
z	1,25	5,80	6,28	6,28	6,14	5,38	6,24	6,40	6,80
	1,50	6,54	7,16	7,16	7,46	6,54	7,38	7,54	7,80

The thickness of the perforated sheets which are exposed to wind loads shall be at least 1,00 mm.

For intermediate values of the washer diameter the characteristic values for the washer with the smaller diameter shall be used.

Fastening screws SFS

Fastening of perforated sheets



4,2-4,5 1 2 2 0 6	Fa Wa Co Dri 3 <u>Tin</u>	MaterialsFastener:stainless steel (1.4301) - EN 10088, stainless steel (1.4401) - EN 10088, stainless steel (1.4567) - EN 10088Washer:aluminium alloy AW-AIMg3 - EN 485, stainless Steel (1.4301) - EN 10088Component I:S280GD, S320GD or S350GD - EN 10346Component II:S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346Drilling capacity $\Sigma t_i \leq 3,00 \text{ mm}$ Timber substructures no performance determined																
	1,13 1,25 1,50 1,75 2,00 0,50	1,11 ^a 1,11 ^a 1,11 ^a 1,11 ^a 1,11 ^a 0,89	0,7 ⁴ 1,20 ^a 1,25 ^a 1,34 ^a 1,47 ^a 1,47 ^a 1,47 ^a 1,47 ^a 1,47 ^a 1,47 ^a	ac ac ac ac ac ac ac ac ac ac ac ac ac a	0,8 1,45 ^a 1,53 ^a 1,66 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,22 ^a	ac ac ac ac ac ac a a a a a	1,61 ^ª 1,68 ^ª 1,79 ^a 1,96 ^ª 2,05 2,14 2,32 2,32 2,32 1,22 ^a	ac ac ac ac ac ac ac a a a a a	2,44 2,62 2,80 2,98 2,98 1,22 ^a	ac ac ac ac ac ac a a a a a	· ·	ac ac ac ac ac a a a a a a		ac ac ac a a a a a a a a a a a	1,79 1,90 ^a 2,13 ^a 2,50 ^a 3,06 ^a 3,66 4,21 4,81 5,36 1,22 ^a 4,54 ^a	ac ac a a a a a a a a a a a a a a a a a	2,0 1,90 ^a 2,13 ^a 2,50 ^a 3,06 ^a 3,79 4,46 1,22 ^a 4,54 ^a	0 ac a a a a a
N _{R.k} [kN] for t _{N.I} [mm]	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	0,89 0,89 0,89 0,89 0,89 0,89 0,89 0,89	1,14 1,14 1,14 1,14 1,14 1,14 1,14 1,14	ac ac ac ac ac ac a a	1	ac ac ac ac a a a a		ac ac ac ac ac a a a		ac ac ac ac ac a a a 	1,54 ^a 2,04 ^a 2,38 2,38 2,38 2,38 2,38 2,38 2,38 	ac ac ac a a a a	1,54 ^a 2,04 ^a 2,80 ^a 3,14 3,14 3,14 3,14 3,14 	ac ac a a a a a	1,54 ^a 2,04 ^a 2,80 ^a 3,63 3,86 3,86 3,86 	ac a a a a a	1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a 4,39 — — — — — — — — — — — — —	a a a

Self drilling screw

SFS SX3 - A12 (S12) - 6,0 x L , SFS SX3 - L12 - A12 (S12) - 6,0 x L , SFS SX3 - D12 - A12 (S12) - 6,0 x L with hexagon head, torx or irius® Drive and sealing washer \geq Ø12 mm

Annex 6

Electronic copy of the ETA by DIBt: ETA-10/0198



4,2-4,5			8	Irius		14 5F5 S	3,3	Fa Wa Co Co	ompo	er: r: nent I:	sta sta sta S2 S2 S2	inless inless 80GD, 35, S2 80GD,	stee stee S32 75 o S32	l (1.43 l (1.44 l (1.45 l (1.43 20GD c r S355 20GD c 3,00 m	01) - 67) - 01) - or S3 5 - El or S3	- EN 1(- EN 1(- EN 1(50GD N 1002	0088 0088 0088 - EN 25-1	3, 3 3 N 1034	
	11	Ø3,9	20	Top T25		Ø 12 0,8	2;	no	perf	substi	ce d			1,5		1,7	5	<u> </u>	
M _{t,n}	<u> </u> = =	0,6		0,7	0	0,8	8	1,0		1,1	ა 	1,2	5	1,5	0	1,7	5	2,0	
V _{R,k} [kN] for t _{N,1} [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	0,98 ^a 1,03 ^a 1,11 ^a 1,11 ^a 1,11 ^a 1,11 ^a 1,11 ^a 1,11 ^a 1,11 ^a 1,11 ^a		1,20 ^a 1,25 ^a 1,34 ^a 1,47 ^a 1,47 ^a 1,47 ^a 1,47 ^a 1,47 ^a 1,47 ^a	ac ac ac ac ac ac ac ac a a	1,45 ^a 1,53 ^a 1,66 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a	ac ac ac ac ac ac a a a	1,61 ^ª 1,68 ^ª 1,79 ^ª 1,96 ^ª 2,05 2,14 2,23 2,32 2,32	ac ac ac ac ac ac ac a a a	1,69 ^a 1,80 ^a 1,98 ^a 2,25 ^a 2,44 2,62 2,80 2,98 2,98 	ac ac ac ac ac ac a a a a	1,76 ^ª 1,91 ^ª 2,15 ^ª 2,51 ^ª 2,79 3,05 3,33 3,59 3,59 	ac ac ac ac ac a a a a	1,90 ^a 2,13 ^a 2,50 ^a 3,06 ^a 3,53 3,96 4,43 4,86 4,86 	ac ac ac a a a a a a	2,50 ^a 3,06 ^a 3,66 4,21 4,81 5,36 — —	ac ac a a a a a a a a a	1,90 ^a 2,13 ^a 2,50 ^a 3,06 ^a 3,79 4,46 	
N _{R,k} [kN] for t _{N,1} [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	0,89 0,89 0,89 0,89 0,89 0,89 0,89 0,89		1,14 1,14 1,14 1,14 1,14 1,14 1,14 1,14	ac ac ac ac ac ac ac ac a	1,34 ^a 1,66 1,66 1,66 1,66 1,66 1,66 1,66 	ac ac ac ac ac a a a	1,34 ^a 1,69 1,81 1,81 1,81 1,81 1,81 1,81 1,81 	ac ac ac ac ac ac a a a	1,34 ^a 1,69 ^a 2,10 2,10 2,10 2,10 2,10 2,10 2,10 2,10	ac ac ac ac ac a a a -	1,34 ^a 1,69 ^a 2,25 2,38 2,38 2,38 2,38 2,38 2,38 2,38 2,38	ac ac ac ac a a a a 	1,34 ^a 1,69 ^a 2,25 ^a 3,09 3,14 3,14 3,14 3,14 3,14 3,14 	ac ac ac a a a a a	1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 3,86 3,86 3,86 3,86 	ac ac a a a a a 	1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 ^a 4,57 — — — — — — — — — —	ac a a a a a

Self drilling screw

Annex 7

SFS SX3 - S14 - 6,0 x L , SFS SX3 - L12 - S14 - 6,0 x L , SFS SX3 - D12 - S14 - 6,0 x L

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø14 mm



- <u></u>			Irius Irius Tor. T25	x	16 5F5 8 Ø 12 Ø 12	3,3	Fa Wa Co Dri	illing	er: r: onent I:	sta sta S2 : S2 S2 <u>S2</u>	inless inless 80GD, 35, S2 80GD, Σ	stee stee S32 75 o S32	l (1.44 l (1.45 l (1.43 20GD c r S355	01) - 67) - 01) - or S3 5 - El or S3	- EN 1(- EN 1(- EN 1(350GD N 1002 350GD	0088 0088 0088 - EN 5-1	3, 3 3 N 1034	
t _N	,,,, =	Ø <u>3,9</u> 0,63	0,7	5	0,8	8	no 1,0		orman		etermi		1,5	0	1,7	5	2,0	0
M _{t,}	_{nom} ≃ 0,50	0,98 ^a —	- 1,20ª	ac	1,45 ^ª	ac	1,61 ^a	ac	1,69ª	ac	1,76 ^a	ac	1,90 ^a	ac	1,90 ^ª	ac	1,90 ^a	ac
[mm] V _{R,k} [kN] for t _{N,i} [mm]	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75	0,89 — 0,89 —	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	ac ac ac ac ac ac ac ac ac ac ac ac ac a	1,53 ^a 1,66 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,52 ^a 1,66 1,66 1,66	ac ac ac ac ac ac ac ac ac ac ac ac ac a	1,68 ^ª 1,79 ^ª 2,05 2,14 2,23 2,32 2,32 2,32 1,52 ^ª 1,81 1,81 1,81	ac ac ac ac ac a a a a a a a a a c ac ac	1,80 ^a 1,98 ^a 2,25 ^a 2,44 2,62 2,80 2,98 2,98 	ac ac ac ac ac a a a a a ac ac ac ac ac	1,91 ^a 2,15 ^a 2,51 ^a 2,79 3,05 3,33 3,59 3,59 3,59 1,52 ^a 1,91 ^a 2,38 2,38	ac ac ac a a a a a a a a a a a a a a a	2,13 ^a 2,50 ^a 3,06 ^a 3,53 3,96 4,43 4,86 4,86 4,86 1,52 ^a 1,91 ^a 2,70 ^a 3,14	ac ac a a a a a a a a a a a a a a a a a	2,13 ^a 2,50 ^a 3,06 ^a 3,66 4,21 4,81 5,36 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a	ac ac a a a a a a a a a a ac ac ac ac	2,13 ^a 2,50 ^a 3,06 ^a 3,79 4,46 — — — — 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a	a a a a a a a a a a a a
N _{R.K} [kN] for t _{N.I} [mm]	0,88 1,00 1,13 1,25 1,50 1,75 2,00	0,89 0,89 0,89 0,89 0,89 0,89 0,89	- 1,14 - 1,14 - 1,14 - 1,14 - 1,14	ac ac a a a	1,66 1,66 1,66 1,66 1,66 	ac ac a a 	1,81 1,81 1,81 1,81 1,81 	ac ac a a a	2,10 2,10 2,10 2,10 2,10 	ac ac a a 	2,38 2,38 2,38 2,38 2,38 2,38 	ac a a a —	3,14 3,14 3,14 3,14 3,14 	a a a a	3,86 3,86 3,86 3,86 	a a a 	4,52 4,57 — — — — —	a

Self drilling screw

Annex 8

SFS SX3 - S16 - 6,0 x L , SFS SX3 - L12 - S16 - 6,0 x L , SFS SX3 - D12 - S16 - 6,0 x L

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø16 mm



4,2-4,5 1 3 Ø 6,		0,1	8	Irius 13 Torx T25		19 5F5 S Ø 12 Ø 12	3,3	Fa Wa Co Dri	mpo	er: r: nent I:	sta sta S28 : S28 : S28 : S28	inless inless 80GD, 35, S2 80GD, Σ	stee stee S32 75 o S32	I (1.44 I (1.45 I (1.43 20GD c r S355	01) - 67) - 01) - or S3 5 - El or S3	N 1002	0088 0088 0088 - EN 25-1	8, 3	
1-		<u>Ø3,9</u>	<u> </u>	0,7	5	0,8	2,: 1 8	S	perf	orman	ce d			1,5	0	1,7	5	2,0	0
M _{t,n}										· · · · · · · · · · · · · · · · · · ·									
V _{R,k} [kN] for t _{N,i} [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50	1,03 ^a 1,11 ^a 1,11 ^a 1,11 ^a 1,11 ^a		1,20 ^a 1,25 ^a 1,34 ^a 1,47 ^a 1,47 ^a 1,47 ^a 1,47 ^a 1,47 ^a 1,47 ^a 1,47 ^a	ac ac ac ac ac ac ac ac ac ac ac ac	1,45 ^a 1,53 ^a 1,66 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a 1,85 ^a	ac ac ac ac ac ac ac a a	1,61 ^a 1,68 ^a 1,79 ^a 1,96 ^a 2,05 2,14 2,23 2,32 2,32 1,81	ac ac ac ac ac ac ac a a a a	1,69 ^a 1,80 ^a 1,98 ^a 2,25 ^a 2,44 2,62 2,80 2,98 2,98 2,98 1,87 ^a	ac ac ac ac ac a a a a a	1,76 ^a 1,91 ^a 2,15 ^a 2,51 ^a 2,79 3,05 3,33 3,59 3,59 1,87 ^a	ac ac ac ac a a a a a a	1,90 ^a 2,13 ^a 2,50 ^a 3,06 ^a 3,53 3,96 4,43 4,86 4,86 — 1,87 ^a	ac ac ac a a a a a a	1,90 ^a 2,13 ^a 2,50 ^a 3,06 ^a 3,66 4,21 4,81 5,36 — — 1,87 ^a	ac ac a a a a a a a a a a a a	1,90 ^a 2,13 ^a 2,50 ^a 3,06 ^a 3,79 4,46 — — — — — — 1,87 ^a	ac a a a a a a a a a a a a a a a a a a
N _{R.k} [kN] for t _{N.I} [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	0,89 0,89 0,89 0,89 0,89 0,89 0,89 0,89		1,14 1,14 1,14 1,14 1,14 1,14 1,14 1,14	ac ac ac ac ac ac ac ac a a	1,66 1,66 1,66 1,66 1,66 1,66 1,66 1,66	ac ac ac ac ac a a	1,81 1,81 1,81 1,81 1,81 1,81 1,81 1,81	ac ac ac ac ac ac a a a	1,87 ^a 2,10 2,10 2,10 2,10 2,10 2,10 2,10 2,10	ac ac ac ac ac ac a a	1,87 ^a 2,36 2,38 2,38 2,38 2,38 2,38 2,38 2,38 2,38	ac ac ac ac a a a a	1,87° 2,36° 3,14 3,14 3,14 3,14 3,14 3,14 3,14 3,14	ac ac ac a a a a a	1,87° 2,36° 3,14° 3,86 3,86 3,86 3,86 3,86 	ac ac a a a a a a	1,87° 2,36° 3,14° 4,31 4,57 4,57 — 	ac a a a a

Self drilling screw

Annex 9

SFS SX3 - S19 - 6,0 x L , SFS SX3 - L12 - S19 - 6,0 x L , SFS SX3 - D12 - S19 - 6,0 x L

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø19 mm



2-4,5		Irius	912		Wa Co Co	•	r: onent I:	sta sta sta S28 : S23	inless inless inless 30GD, 35, S2	stee stee stee S32 75 o	I (1.44 I (1.45 I (1.43 20GD c r S355	01) - 67) - 01) - or S3 5 - El	N 1002	0088 0088 0088 - EN 25-1	3, 3	
Ø 6,0 11	2,2 - L≥20 Ø 3,9	13 Torx T25	Ø12		,3 <u>Tin</u>	nber	<u>capac</u> substi orman	uctu	res		3,00 m	m 				
t _{N,II} = M _{t,nom} =	0,63	0,7	5	0,88	1,0	0	1,1	3	1,2	5	1,5	0	1,7	5	2,0	0
0,50 0,55 [um] 0,63 0,75 1,00 1,00 1,13 1,25 1,50	1,03 ^a – 1,11 ^a – 1,11 ^a – 1,11 ^a – 1,11 ^a –	- 1,34 ^a - 1,47 ^a - 1,47 ^a - 1,47 ^a	ac 1,4 ac 1,5 ac 1,6 ac 1,8 ac 1,8 ac 1,8 ac 1,8 ac 1,8 ac 1,8	3 ^ª ac 6 ^ª ac 5 ^ª ac 5 ^ª ac 5 ^ª ac 5 ^ª a	1,61 ^ª 1,68 ^ª 1,79 ^ª 1,96 ^ª 2,05 2,14 2,23 2,32 2,32	ac ac ac ac ac ac ac a	1,69 ^a 1,80 ^a 1,98 ^a 2,25 ^a 2,44 2,62 2,80 2,98	ac ac ac ac ac ac ac ac ac	1,76 ^a 1,91 ^a 2,15 ^a 2,51 ^a 2,79 3,05 3,33 3,59	ac ac ac ac ac ac a a a	1,90 ^a 2,13 ^a 2,50 ^a 3,06 ^a 3,53 3,96 4,43 4,86		1,90 ^a 2,13 ^a 2,50 ^a 3,06 ^a 3,66 4,21 4,81 5,36	ac ac a a a a a a	1,90 ^a 2,13 ^a 2,50 ^a 3,06 ^a 3,79 4,46 —	ac a a a a

Self drilling screw

Annex 10

SFS SX3 - S22 - 6,0 x L , SFS SX3 - L12 - S22 - 6,0 x L , SFS SX3 - D12 - S22 - 6,0 x L

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø22 mm

Z56053.13



4,2-4,5 1 2 Ø E				Irius			t. .3	•	er: onent	staii staii alur staii I: S28 II: S23 S28	nless niniu nless 0GD 5 - E 0GD	steel (steel (m alloy Steel (, S3200 N 1002	1.440 1.456 AW- (1.430 GD of 25-1 GD of	01) - EN 01) - EN 07) - EN AIMg3 01) - EI r S3500 r S3500 m	N 100 N 100 - EN N 100 GD - I	88, 88 485, 988 EN 10	
t _N		Ø 3,9		T25			2,3		forma	structur ance de	term	ined	.25	2 x 1	.50		1,75
	10m =		- ,							I							<u> </u>
V _{R,k} [kN] for t _{N,i} [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50		ac ac ac 	1,87 ^a 2,01 ^a 2,24 ^a 2,58 ^a 2,67 2,75 2,84 2,92 2,92 1,22 ^a	ac ac ac 	1,89 ^a 2,05 ^a 2,30 ^a 2,68 ^a 3,30 3,36 3,41 3,47 3,47 1,22 ^a	ac ac ac — — — — — — — — — — — — — — — —	1,91 ^a 2,08 ^a 2,36 ^a 2,77 ^a 3,36 4,01 4,01 4,01 4,01 1,22 ^a	ac ac ac ac ac ac a a a a a a	1,91 ^a 2,10 ^a 2,41 ^a 2,87 ^a 3,44 4,01 4,55 4,55 4,55 4,55 1,22 ^a	ac ac ac ac a a a a a a	1,91 ^a 2,12 ^a 2,45 ^a 2,96 ^a 3,66 4,01 4,55 5,05 5,05 5,05 1,22 ^a	ac ac ac a a a a a a a a a a a a a a a	1,91 ^a 2,12 ^a 2,45 ^a 2,96 ^a 3,79 4,01 — — — — — — — 1,22 ^a	ac a a a a 		
N _{R,k} [KN] for t _{N,i} [mm]	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	1,40 1,40 1,40 1,40 1,40 1,40 1,40 1,40	ac ac ac 	1,54° 1,98 1,98 1,98 1,98 1,98 1,98 1,98 1,98	ac ac ac 	1,54 ^a 2,04 ^a 2,61 2,61 2,61 2,61 2,61 2,61 2,61 	ac ac ac — — — — —	1,54° 2,04° 2,80° 3,19 3,19 3,19 3,19 3,19 3,19 3,19 	ac ac ac ac ac ac a a	1,54 ^a 2,04 ^a 2,80 ^a 3,63 3,78 3,78 3,78 3,78 3,78 3,78 	ac ac ac ac a a a a	1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a 4,37 4,37 4,37 4,37 	ac ac ac a a a a	1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a 4,39 ^a — — — — —	a a a a 		

Self drilling screw



Self drilling screw

SFS SX3 - S14 - 6,0 x L , SFS SX3 - L12 - S14 - 6,0 x L , SFS SX3 - D12 - S14 - 6,0 x L

Annex 12

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø14 mm



			8	Irius 12 Torx T25		12	2,3		er: onent onent	stai stai stai II: S28 II: S28 S28 acity	nless nless 30GD 35 - E 30GD	steel (steel (steel (, S3200 , S3200 Σt _i ≤ 4,0	1.44(1.456 1.43(GD of 25-1 GD of	01) - EN 67) - EN 01) - EN r S3500 r S3500	N 100 N 100 N 100 GD -	88, 88 88 EN 10	
		Ø 3,9		27				no per									
	<u>1,11 =</u>	2 x (0,63	2 x (),75	2 x 0),88	2 x 1	,00	2 x 1	1,13	2 x 1	1,25	2 x 1	,50	2 X 1	1,75
	_{nom} = 0,50	0,88 ^ª	ac	1,87 ^a	ac	1,89 ^a	ac	1,91 ^a	ac	1,91 ^a	ac	1,91 ^a	ac	1,91 ^a	ac		
1	0,55		ac	2,01ª	ac	2,05 ^a	ac	2,08ª	ac	2,10 ^a	ac	2,12ª	ac	2,12 ^a	а	-	
E	0,63	1,15 ^ª	ac	2,24 ^a	ac	2,30 ^a	ac	2,36 ^a	ac	2,41 ^a	ac	2,45 ^ª	ac	2,45 ^a	а	-	—
V _{R,k} [kN] for t _{N,I} [mm]	0,75		ac	2,58ª	ac	2,68 ^ª	ac	2,77 ^a	ac	2,87 ^a	ac	2,96ª	ac	2,96 ^a	а	-	—
r tr	0,88	1,66		2,67		3,30	_	3,36	ac	3,44	ac	3,66	а	3,79	а	-	
15	1,00	1,90	—	2,75		3,36		4,01	ac	4,01	а	4,01	а	4,01	а	-	
N N	1,13	2,17		2,84		3,41	—	4,01	а	4,55	a	4,55	a		_		
۲. ۲.	1,25	2,41		2,92	—	3,47		4,01	a	4,55	a	5,05	a				_
>	1,50	2,41		2,92		3,47		4,01	а	4,55	а	5,05	а			-	
	1,75 2,00										_						
	0,50	 1,40	ac	1,52ª	ac	1,52ª	ac	1,52ª	ac	 1,52 ^a	ac	1,52ª	ac	1,52ª	ac		
	0,55	1,40	ac	1,91	ac	1,91 ^a	ac	1,91 ^a	ac	1,91 ^a	ac	1,92 1,91 ^a	ac	1,91 ^a	a		
	0,63	1,40 1,40	ac	1,98	ac	2,61	ac	2,70 ^a	ac	2,70 ^a	ac	2,70 ^a	ac	2,70 ^a	a		
	0,75	1,40	ac	1,98	ac	2,61	ac	3,19	ac	3,50	ac	3,50 ^a	ac	3,50 ^a	a	-	
ľ	0,88	1,40		1,98		2,61		3,19	ac	3,78	ac	4,37	a	4,52 ^a	a		_
ort	1,00	1,40	·	1,98		2,61	_	3,19	ac	3,78	a	4,37	a	5,47	a		
<u> </u>	1,13	1,40	_	1,98		2,61		3,19	a	3,78	a	4,37	a				
1 2	1,13	1,40		1,98		2,61	_	3,19	a	3,78	a	4,37	a				
[kN]	1,50	1,40		1,98		2,61	_	3,19	a	3,78	a	4,37	a				_
N _{R,k} [kN] for t _{N,I} [mm]		.,		.,		<u>_, `</u> '			~		~				_		
N _{R,k} [kN																	
N _{R,k} [kN	1,30 1,75 2,00	-						I	_								_

Self drilling screw

SFS SX3 - S16 - 6,0 x L , SFS SX3 - L12 - S16 - 6,0 x L , SFS SX3 - D12 - S16 - 6,0 x L

Annex 13

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø16 mm



2-4,5		Y		lrius	19 (SF) (S) (S) (S) (S) (S) (S) (S) (S) (S) (S	2	± ,3	•	er: er: onent	staii staii staii staii 11: S28 11: S23	nless nless nless 0GD 5 - E		1.44(1.456 1.43(GD o 25-1	01) - EN 67) - EN 01) - EN r S3504	N 100 N 100 N 100 GD - I	88, 88 88 EN 103	
3		2,2		3			1 _	Drilling	capa	acity	2	Σt _i ≤ 4,0	00 mr	n			
<u>ø 6,</u> 11	TIMUL	a 🕈 👘	20	Torx T25	Ø		2,3	<u>Timbe</u> no per				ined		4			
	= 10m =	2 x 0),63	2 x 0	,75	2 x C	,88	2 x 1	,00	2 x 1	,13	2 x 1	,25	2 x 1	,50	2 x ′	1,75
V _{R,k} [kN] for t _{N,1} [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88	0,88 ^a 0,98 ^a 1,15 ^a 1,39 ^a 1,66 1,90 2,17 2,41 2,41 2,41 1,40 1,40 1,40 1,40	ac ac ac ac ac ac ac	1,87 ^a 2,01 ^a 2,24 ^a 2,58 ^a 2,67 2,75 2,84 2,92 2,92 1,87 1,98 1,98 1,98 1,98	ac ac ac ac ac ac ac	1,89 ^a 2,05 ^a 2,30 ^a 2,68 ^a 3,30 3,36 3,41 3,47 3,47 1,87 ^a 2,36 ^a 2,61 2,61 2,61	ac ac ac ac ac ac ac ac ac ac	1,91 ^a 2,08 ^a 2,36 ^a 2,77 ^a 3,36 4,01 4,01 4,01 4,01 4,01 4,01 1,87 ^a 2,36 ^a 3,14 3,19 3,19	ac ac ac ac ac ac a a ac ac ac ac ac ac	1,91 ^a 2,10 ^a 2,41 ^a 2,87 ^a 3,44 4,01 4,55 4,55 4,55 4,55 	ac ac ac ac a a a a a ac ac ac ac ac	1,91 ^a 2,12 ^a 2,45 ^a 2,96 ^a 3,66 4,01 4,55 5,05 5,05 5,05 1,87 ^a 2,36 ^a 3,14 ^a 4,31 4,37	ac ac ac a a a a a ac ac ac ac ac ac	1,91 ^a 2,12 ^a 2,45 ^a 2,96 ^a 3,79 4,01 — — — 1,87 ^a 2,36 ^a 3,14 ^a 4,31 ^a 5,57	ac a a a a a a a a a a a a a a a a a a		
N _{R,k} [kN] for t _{N,i} [mm]	1,00 1,13 1,25 1,50 1,75 2,00	1,40 1,40 1,40 1,40 		1,98 1,98 1,98 1,98 1,98 —		2,61 2,61 2,61 2,61 		3,19 3,19 3,19 3,19 3,19 —	ac a a —	3,78 3,78 3,78 3,78 3,78 	a a a	4,37 4,37 4,37 4,37 	a a a	5,82 — — — —	a 		

Self drilling screw

Annex 14

SFS SX3 - S19 - 6,0 x L , SFS SX3 - L12 - S19 - 6,0 x L , SFS SX3 - D12 - S19 - 6,0 x L

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø19 mm



J ut	22			1 	22			Materi	al <u>s</u>								
(5F5 5				(SFS	5		Faster	ier:	stai	nless	steel (steel (steel (1.440)1) - EN	V 100	88,	
	S				S	\mathcal{I}		Maaba									
								Washe				steel (•			040
	8	**		® rius				•				, S320		r 53500	5D -	EN TU	340
1,2-4,5 🖡	ø 10;			rius	ø 12		<u>,</u> 3	Compo	onent			N 1002 , S320(r S350(GD -	EN 10	346
F			1 3	t I			Í	Drilling	ı capa	acity		Σt _i ≤ 4,(00 mr	n			
, ø 6,(, W	2,2		Torx			· [
<u>,,</u> ,	-6	!⊷ L≥	20	T25	Ø12	2											
	- 魯			, L			2,3	Timbe	r subs	structu	res						
11	1 h		1	1	3			no per	forma	nce de	eterm	ined					
		ø <u>3,9</u>	1 1	3	2	2											
t _N	,, =	2 x 0) 63	2 x () 75	2 x (88	2 x 1	00	2 x 1	13	2 x 1	25	2 x 1	.50	2 x	1,75
M _{t,n}			,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				,00								
	0,50	0,88 ^a	ac	1,87ª	ac	1,89 ^a	ac	1,91 ^a	ac	1,91 ^a	ac	1,91 ^ª		1,91 ^a	ac	—	_
	0,55	0,98 ^a	ac	2,01ª	ac	2,05 ^a	ac	2,08ª	ac	2,10 ^a	ac	2,12 ^a		2,12 ^a	а		-
Έ	0,63	1,15 ^ª	ac	2,24 ^a	ac	2,30 ^a	ac	2,36 ^a	ac	2,41 ^a	ac	2,45 ^a		2,45 ^a	а	—	
<u>_</u>	0,75	1,39 ^ª	ac	2,58ª	ac	2,68 ^a	ac	2,77 ^a	ac	2,87 ^a	ac	2,96 ^a	ac	2,96ª	а		-
V _{R.k} [kN] for t _{N,I} [mm]	0,88	1,66		2,67		3,30		3,36	ac	3,44	ac	3,66	ас	3,79	а		
Įõ	1,00	1,90	—	2,75	—	3,36	—	4,01	ac	4,01	а	4,01	а	4,01	а		-
Z Z	1,13	2,17		2,84	—	3,41	—	4,01	а	4,55	а	4,55	а	-			
X.	1,25	2,41		2,92		3,47		4,01	а	4,55	а	5,05	а			-	
>	1,50	2,41		2,92		3,47		4,01	а	4,55	а	5,05	а		—	-	
	1,75	-	—	-	—	-	—	-	—				_				-
<u> </u>	2,00	1 10										-				—	
	0,50	1,40	ac	1,98	ac	2,33ª	ac	2,33 ^a	ac	2,33 ^a	ac	2,33 ^a	—	2,33 ^a	ac	-	-
	0,55	1,40 1,40	ac	1,98 1,98	ac	2,61 2,61	ac	2,94 ^a	ac	2,94ª	ac	2,94 ^a		2,94 ^a	a	-	_
L E	0,63 0,75	1,40 1,40	ac ac	1,98	ac ac	2,61	ac ac	3,19 3,19	ac	3,78 3,78	ac ac	3,91 ^ª 4,37	 ac	3,91 ^ª 5,37 ^ª	a		
- <u>-</u>	0,75	1,40 1,40	ac	1,98	ac	2,61	ac —	3,19	ac ac	3,78	ac ac	4,37	ac	5,37	a a		
or t _i	0,00 1,00	1,40	_	1,98		2,61		3,19	ac	3,78	ac	4,37	ac a	5,82	a		
<u>ج</u> ا	1,13	1,40	-	1,98		2,61		3,19	ac a	3,78	a a	4,37	a		a 		
12	1,13	1,40		1,98		2,61		3,19	a	3,78	a	4,37	a				_
N _{R,k} [kN] for t _{N,I} [mm]	1,50	1,40		1,98	_	2,61		3,19	a	3,78	a	4,37	a			. <u> </u>	_
	1,75															_	
	2,00											_					_
L		L		A	<u> </u>	4		L		I		<u> </u>				.	

Self drilling screw

Annex 15

SFS SX3 - S22 - 6,0 x L , SFS SX3 - L12 - S22 - 6,0 x L , SFS SX3 - D12 - S22 - 6,0 x L

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø22 mm



	12	··· ›		12	÷	Mate	<u>rials</u>						
	(BES)			SFS S		Faste	ener:	stainl	ess ste	el (1.440	01) - El	N 10088 N 10088 N 10088	,
	ø10:1	1	(R) Irius	, ø12		Wasł	ner:					- EN 48 N 10088	
2-4,5		÷ 1			*	Com	ponent	I: S280	GD, S	320GD o	r S350	GD - EN	10346
2年		1,81	14		D 3,3	Com	ponent	II: S235 S280				0025-1 GD - EN	10346
ø <u>5,</u> ø4,2		L ≥20	Torx T25	, ø12	NAV Carlos C	Drillir	ng capa	acity	Σt _i ≤	≤ 5,00 m	m		
12			1		2,3								
4.	ø 4,5		£-			Timb	er sub	structure	<u>s</u>				
	L			ø12	-	no pe	erforma	ance dete	ermine	d			
				,,,,,									
t _N	_{1,11} =	1,5	i0	1,7	'5	2,0	0	2,5	0	3,0	00	4,0	00
	nom =					······································						<u></u>	
	0,50	1,57 ^a	ac	1,67 ^a	ac	1,76 ^ª	ac	1,76 ^a	ac	1,76 ^a	ac	1,76 ^a	ac
	0,55	1,71ª	ac	1,79 ^a	ac	1,86ª	ac	1,86ª	ac	1,86ª	ac	1,86 ^a	а
	0,63	1,94 ^a	ac	1,99 ^a	ac	2,03ª	~~						
E						-	ac	2,03ª	ac	2,03ª	ac	2,03 ^a	а
[mm]	0,75	2,28 ^ª	ac	2,28ª	ac	2,28 ^a	ac ac	2,28ª	ac ac	2,28ª	ac ac	2,28 ^a	a a
r t _{N,I} [mm]	0,75 0,88	2,28 ^ª 2,86 ^ª		2,28 ^a 2,86 ^a	ac ac	2,28 ^a 2,86 ^a		2,28 ^a 3,04 ^a		2,28 ^a 3,27 ^a		2,28 ^a 3,27 ^a	
for t _{N,I} [mm	0,75 0,88 1,00	2,28 ^ª 2,86 ^ª 3,43 ^ª	ac	2,28ª 2,86ª 3,43ª		2,28 ^ª 2,86 ^ª 3,43 ^ª	ac	2,28 ^ª 3,04 ^ª 3,74 ^ª	ac	2,28 ^a 3,27 ^a 4,18 ^a	ac	2,28 ^a	а
kN] for t _{N,I} [mm]	0,75 0,88 1,00 1,13	2,28 ^ª 2,86 ^ª 3,43 ^ª 3,43 ^ª	ac ac	2,28 ^ª 2,86 ^ª 3,43 ^ª 3,66 ^ª	ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a	ac ac	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a	ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a	ac ac	2,28 ^a 3,27 ^a	a a
_{R,k} [kN] for t _{N,I} [mm	0,75 0,88 1,00 1,13 1,25	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a	ac ac ac ac ac	2,28 ^ª 2,86 ^ª 3,43 ^ª 3,66 ^ª 3,87 ^ª	ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a	ac ac ac ac ac	2,28 ^ª 3,04 ^ª 3,74 ^ª 4,50 ^ª 5,20 ^ª	ac ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a	ac ac ac a a	2,28 ^a 3,27 ^a	a a
V _{R,k} [kN] for t _{N,I} [mm]	0,75 0,88 1,00 1,13 1,25 1,50	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a	ac ac ac ac ac ac	2,28 ^ª 2,86 ^ª 3,43 ^ª 3,66 ^ª 3,87 ^ª 3,87 ^ª	ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a	ac ac ac ac ac ac	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a	ac ac ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a	ac ac ac a a a	2,28 ^a 3,27 ^a	a a
V _{R,k} [kN] for t _{N,I} [mm]	0,75 0,88 1,00 1,13 1,25 1,50 1,75	2,28 [°] 2,86 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°]	ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a	ac ac ac ac ac a	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a	ac ac ac ac ac ac ac ac	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a	ac ac ac ac ac a a	$\begin{array}{c} 2,28^{a} \\ 3,27^{a} \\ 4,18^{a} \\ 5,17^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 6,08^{a} \end{array}$	ac ac a a a a	2,28 ^a 3,27 ^a	a a
V _{R,k} [kN] for t _{N,i} [mm]	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	2,28 [°] 2,86 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°]	ас ас ас ас ас ас ас ас ас	2,28 ^a 2,86 ^a 3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 3,87 ^a	ac ac ac ac ac a a	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a	ac ac ac ac ac ac a a a	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a	ac ac ac ac ac a a a a	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a	ac ac a a a a a a	2,28 ^a 3,27 ^a 4,18 ^a — — — — —	a a — — —
V _{R,k} [kN] for t _{N,I} [mm]	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,22 ^a	ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,22 ^a	ac ac ac ac ac a a a	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,22 ^a	ac ac ac ac ac ac a a a	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,22 ^a	ac ac ac ac ac a a a a	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a 6,08 ^a 1,22 ^a	ac ac a a a a a a a	2,28 ^a 3,27 ^a 4,18 ^a — — — — — 1,22 ^a	a a — — — — ас
	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,22 ^a 1,54 ^a	ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,22 ^a 1,54 ^a	ac ac ac ac ac a a ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,22 ^a 1,54 ^a	ac ac ac ac ac ac a ac ac ac ac	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,22 ^a 1,54 ^a	ac ac ac ac ac a a ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a 6,08 ^a 1,22 ^a 1,54 ^a	ac ac a a a a a ac ac	2,28 ^a 3,27 ^a 4,18 ^a — — — 1,22 ^a 1,54 ^a	a a — — —
	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63	2,28 ^ª 2,86 ^ª 3,43 ^ª 3,43 ^ª 3,43 ^ª 3,43 ^ª 3,43 ^a 1,22 ^ª 1,54 ^ª 2,04	ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,22 ^a 1,54 ^a 2,04 ^a	ac ac ac ac ac a ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,22 ^a 1,54 ^a 2,04 ^a	ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,22 ^a 1,54 ^a 2,04 ^a	ac ac ac ac ac a a ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a 6,08 ^a 1,22 ^a 1,54 ^a 2,04 ^a	ac ac a a a a a ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a — — — 1,22 ^a 1,54 ^a 2,04 ^a	a a — — — — ас
	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,22 ^a 1,54 ^a 2,04 2,09	ac ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,69	ac ac ac ac ac a a ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a	ac ac ac ac ac ac a ac ac ac ac	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a	ac ac ac ac ac a a ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a 6,08 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a	ac ac a a a a a ac ac	2,28 ^a 3,27 ^a 4,18 ^a — — — 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a	a a
	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,22 ^a 1,54 ^a 2,04 2,09 2,09	ac ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,69 2,69	ac ac ac ac ac a ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,28	ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a	ac ac ac ac ac a a ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a 6,08 ^a 1,22 ^a 1,54 ^a 2,80 ^a 3,63 ^a	ac ac a a a a a ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a — — — 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a	a a
	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88 1,00	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,22 ^a 1,54 ^a 2,04 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,69 2,69 2,69	ac ac ac ac ac a ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,28 3,28	ac ac ac ac ac ac a ac ac ac ac	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a 4,15	ac ac ac ac a a a ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a 6,08 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a 4,39 ^a	ac ac a a a a a ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a — — — 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a	a a
	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,55 0,63 0,75 0,88 1,00 1,13	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,22 ^a 1,54 ^a 2,04 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,87 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,69 2,69 2,69 2,69	ac ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,28 3,28 3,28	ac ac ac ac ac ac ac ac ac ac ac ac	$\begin{array}{c} 2,28^{a} \\ 3,04^{a} \\ 3,74^{a} \\ 4,50^{a} \\ 5,20^{a} \\ 5,20^{a} \\ 5,20^{a} \\ 5,20^{a} \\ 1,22^{a} \\ 1,54^{a} \\ 2,04^{a} \\ 2,80^{a} \\ 3,63^{a} \\ 4,15 \\ 4,15 \end{array}$	ac ac ac ac ac a ac ac ac ac ac ac	$\begin{array}{c} 2,28^{a} \\ 3,27^{a} \\ 4,18^{a} \\ 5,17^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 1,22^{a} \\ 1,54^{a} \\ 2,04^{a} \\ 2,04^{a} \\ 2,80^{a} \\ 3,63^{a} \\ 4,39^{a} \\ 5,02 \end{array}$	ac ac a a a a ac ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a — — — 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a	a a
	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,63 0,75 0,88 1,00 1,13 1,25	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,22 ^a 1,54 ^a 2,04 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,87 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,69 2,69 2,69 2,69 2,69	ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,28 3,28 3,28 3,28	ac ac ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a 4,15 4,15 4,15	ac ac ac ac a a ac ac ac ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a 6,08 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a 4,39 ^a 5,02 5,02	ac ac a a a a ac ac ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a — — — 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a	a a
$N_{R,k}$ [kN] for $t_{N,i}$ [mm] $V_{R,k}$ [kN] for $t_{N,i}$ [mm]	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,22 ^a 1,54 ^a 2,04 2,09 2,09 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac ac ac ac a	2,28 ^a 2,86 ^a 3,43 ^a 3,87 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,69 2,69 2,69 2,69 2,69 2,69 2,69	ac ac ac ac ac ac ac ac ac ac ac ac	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,28 3,28 3,28 3,28 3,28	ac ac ac ac ac ac ac ac ac ac ac ac ac a	$\begin{array}{c} 2,28^{a} \\ 3,04^{a} \\ 3,74^{a} \\ 4,50^{a} \\ 5,20^{a} \\ 5,20^{a} \\ 5,20^{a} \\ 5,20^{a} \\ 1,54^{a} \\ 2,04^{a} \\ 2,80^{a} \\ 3,63^{a} \\ 4,15 \\ 4,15 \\ 4,15 \\ 4,15 \\ 4,15 \end{array}$	ac ac ac ac ac a ac ac ac ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a 6,08 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a 4,39 ^a 5,02 5,02 5,02	ac ac a a a a ac ac ac ac ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a — — — 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a	a a
	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,63 0,75 0,88 1,00 1,13 1,25	2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,22 ^a 1,54 ^a 2,04 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac ac ac ac a	2,28 ^a 2,86 ^a 3,43 ^a 3,87 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,69 2,69 2,69 2,69 2,69	ac ac ac ac ac ac ac ac ac ac ac ac ac a	2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,28 3,28 3,28 3,28	ac ac ac ac ac ac ac ac ac ac ac ac ac a	2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a 4,15 4,15 4,15	ac ac ac ac ac a ac ac ac ac ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a 6,08 ^a 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a 4,39 ^a 5,02 5,02	ac ac a a a a ac ac ac ac ac ac ac ac ac	2,28 ^a 3,27 ^a 4,18 ^a — — — 1,22 ^a 1,54 ^a 2,04 ^a 2,80 ^a 3,63 ^a	a a

Index a: If component I is made of S320GD or S350GD the value may be increased by 8,0%.

Self drilling screw	
SFS SX5 - A12 (S12) - 5,5 x L , SFS SX5 - L12 - A12 (S12) - 5,5 x L , SFS SX5 - D12 - A12 (S12) - 5,5 x L with hexagon head, torx or irius® Drive and sealing washer \geq Ø12 mm	Annex 16

Z56053.13

8.06.02-131/13



2-4,5 1 2 Ø 5,5 4,2 12	14 (1953) 8 9 10:1 9 4.5 9 4.5	1 1 1,81 L ≥ 20	Irius	14 555 S Ø12 Ø12 Ø12 Ø12	2,3	Com Drillir Timb	ener: ponent ponent ng cap	stainl stainl stainl I: S280 II: S235 S280	ess ste ess ste GD, S3 , S275 GD, S3 Σt _i s <u>s</u>	or S355 320GD o ≤ 5,00 m	01) - El 67) - El 01) - El r S350 - EN 1 r S350	N 10088 N 10088 N 10088 GD - EN 0025-1	, 1034
	1,11 = nom =	1,5	0	1,7	5	2,0	0	2,5	60	3,0)0	4,(00
- WI(,	nom	1,57ª	ac	1,67ª	ac	1,76 ^a	ac	1,76ª	ac	1,76ª	ac	1,76ª	ac
	0,55	1,71 ^a	ac	1,07 1,79 ^a	ac	1,86°	ac	1,86ª	ac	1,86ª	ac	1,70 1,86 ^a	a
2	0,63	1,94 ^a	ac	1,99ª	ac	2,03 ^a	ac	2,03ª	ac	2,03 ^a	ac	2,03 ^a	a
<u></u>	0,75	2,28ª	ac	2,28ª	ac	2,28ª	ac	2,28ª	ac	2,28ª	ac	2,28ª	а
t, N.	0,88	2,86ª	ac	2,86 ^a	ac	2,86ª	ac	3,04ª	ac	3,27ª	ac	3,27ª	а
for	1,00	3,43 ^a	ac	3,43 ^a	ac	3,43ª	ac	3,74ª	ac	4,18 ^ª	ac	4,18 ^a	а
	1,13	3,43ª	ac	3,66 ^a	ac	3,89 ^a	ac	4,50 ^a	ac	5,17 ^a	а		_
Ţ	1 25	3,43ª	ac	3,87 ^a	ac	4,31 ^a	~~	۱ <u> </u>		0.008	~	1	
_{۲,k} [kN	1,25			-,			ac	5,20 ^a	ac	6,08 ^a	а		
V _{R,k} [kN] for t _{N,I} [mm]	1,50	3,43ª	ac	3,87ª	ac	4,31 ^a	ac ac	5,20 ^a	ac a	6,08 ^a	a		. <u></u>
V _{R,k} [kN	1,50 1,75	3,43 ^a 3,43 ^a	ac ac	3,87 ^a 3,87 ^a	ac a	4,31 ^a 4,31 ^a		5,20 ^a 5,20 ^a		6,08 ^a 6,08 ^a			
V _{R,k} [kN	1,50 1,75 2,00	3,43 ^ª 3,43 ^ª 3,43 ^ª		3,87ª 3,87ª 3,87ª		4,31 ^ª 4,31 ^ª 4,31 ^ª	ac	5,20 ^a 5,20 ^a 5,20 ^a	а	6,08 ^ª 6,08 ^ª 6,08 ^ª	а		
V _{R,k} [kN	1,50 1,75 2,00 0,50	3,43 ^a 3,43 ^a 3,43 ^a 1,34 ^a	ac	3,87ª 3,87ª 3,87ª 1,34ª	а	4,31 ^a 4,31 ^a 4,31 ^a 1,34 ^a	ac a	5,20 ^a 5,20 ^a 5,20 ^a 1,34 ^a	a a	6,08 ^a 6,08 ^a 6,08 ^a 1,34 ^a	a a	 1,34 ^a	 ac
	1,50 1,75 2,00 0,50 0,55	3,43 ^ª 3,43 ^ª <u>3,43^ª</u> 1,34 ^ª 1,69 ^ª	ac a	3,87 ^ª 3,87 ^ª 3,87 ^ª 1,34 ^ª 1,69 ^ª	a a	4,31 ^ª 4,31 ^ª 4,31 ^ª 1,34 ^ª 1,69 ^ª	ac a a	5,20 ^a 5,20 ^a 5,20 ^a 1,34 ^a 1,69 ^a	a a a	6,08 ^a 6,08 ^a 6,08 ^a 1,34 ^a 1,69 ^a	a a a	1,69 ^a	
	1,50 1,75 2,00 0,50 0,55 0,63	3,43 ^a 3,43 ^a <u>3,43^a</u> 1,34 ^a 1,69 ^a 2,09	ac a ac	3,87 ^a 3,87 ^a 3,87 ^a 1,34 ^a 1,69 ^a 2,25 ^a	a a ac	4,31 ^a 4,31 ^a 4,31 ^a 1,34 ^a 1,69 ^a 2,25 ^a	ac a a ac	5,20 ^a 5,20 ^a 5,20 ^a 1,34 ^a 1,69 ^a 2,25 ^a	a a a ac	6,08 ^a 6,08 ^a 6,08 ^a 1,34 ^a 1,69 ^a 2,25 ^a	a a a ac	1,69 ^a 2,25 ^a	
	1,50 1,75 2,00 0,50 0,55 0,63 0,75	3,43 ^ª 3,43 ^ª 3,43 ^ª 1,34 ^ª 1,69 ^ª 2,09 2,09	ac a ac ac ac ac	3,87 ^a 3,87 ^a 3,87 ^a 1,34 ^a 1,69 ^a 2,25 ^a 2,69	a a ac ac	4,31 ^a 4,31 ^a 4,31 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09	ac a a ac ac	5,20 ^a 5,20 ^a 5,20 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a	a a ac ac	6,08 ^a 6,08 ^a 6,08 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a	a a ac ac	1,69 ^a 2,25 ^a 3,09 ^a	а
	1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88	3,43 ^a 3,43 ^a <u>3,43^a</u> 1,34 ^a 1,69 ^a 2,09 2,09 2,09	ac a ac ac ac	3,87 ^a 3,87 ^a 3,87 ^a 1,34 ^a 1,69 ^a 2,25 ^a 2,69 2,69	a ac ac ac ac	4,31 ^a 4,31 ^a 4,31 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 3,28	ac a ac ac ac ac	5,20 ^a 5,20 ^a 5,20 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00	a a ac ac ac	6,08 ^a 6,08 ^a 6,08 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 ^a	a a ac ac ac	1,69 ^ª 2,25 ^ª 3,09 ^ª 4,00 ^ª	a a
	1,50 1,75 2,00 0,50 0,63 0,75 0,88 1,00	3,43 ^a 3,43 ^a 1,34 ^a 1,69 ^a 2,09 2,09 2,09 2,09	ac a ac ac ac ac	3,87 ^a 3,87 ^a 3,87 ^a 1,34 ^a 1,69 ^a 2,25 ^a 2,69 2,69 2,69	a ac ac ac ac ac	4,31 ^a 4,31 ^a 4,31 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 3,28 3,28	ac a ac ac ac ac ac	5,20 ^a 5,20 ^a 5,20 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 4,15	a a ac ac ac ac	6,08 ^a 6,08 ^a 6,08 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 ^a 4,84	a a ac ac ac ac ac	1,69 ^a 2,25 ^a 3,09 ^a	a a a
	1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13	3,43 ^ª 3,43 ^ª 1,34 ^ª 1,69 ^ª 2,09 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac	3,87 ^a 3,87 ^a 3,87 ^a 1,34 ^a 1,69 ^a 2,25 ^a 2,69 2,69 2,69 2,69	a ac ac ac ac ac ac	4,31 ^a 4,31 ^a 4,31 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 3,28 3,28 3,28 3,28	ac a ac ac ac ac ac ac	5,20 ^a 5,20 ^a 5,20 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 4,15 4,15	a a ac ac ac ac ac ac	6,08 ^a 6,08 ^a 6,08 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 ^a 4,84 5,02	a a ac ac ac ac ac ac	1,69 ^ª 2,25 ^ª 3,09 ^ª 4,00 ^ª	a a a
	1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13 1,25	3,43 ^a 3,43 ^a 1,34 ^a 1,69 ^a 2,09 2,09 2,09 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac	3,87 ^a 3,87 ^a 3,87 ^a 1,34 ^a 1,69 ^a 2,25 ^a 2,69 2,69 2,69 2,69 2,69	a ac ac ac ac ac ac ac ac	4,31 ^a 4,31 ^a 4,31 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 3,28 3,28	ac a ac ac ac ac ac ac ac	5,20 ^a 5,20 ^a 5,20 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 4,15	a a ac ac ac ac ac ac	6,08 ^a 6,08 ^a 6,08 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 ^a 4,84	a a ac ac ac ac ac ac	1,69 ^ª 2,25 ^ª 3,09 ^ª 4,00 ^ª	a a a
N _{R,k} [kN] for t _{N,i} [mm] V _{R,k} [kN	1,50 1,75 2,00 0,50 0,63 0,75 0,88 1,00 1,13 1,25 1,50	3,43 ^a 3,43 ^a 1,34 ^a 1,69 ^a 2,09 2,09 2,09 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac	3,87 ^a 3,87 ^a 3,87 ^a 1,34 ^a 1,69 ^a 2,25 ^a 2,69 2,69 2,69 2,69 2,69 2,69 2,69	a ac ac ac ac ac ac ac ac ac	4,31 ^a 4,31 ^a 4,31 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 3,28 3,28 3,28 3,28	ac a ac ac ac ac ac ac ac ac	5,20 ^a 5,20 ^a 5,20 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 4,15 4,15	a a ac ac ac ac ac ac ac ac	6,08 ^a 6,08 ^a 6,08 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 ^a 4,84 5,02 5,02 5,02	a a ac ac ac ac ac ac ac ac ac	1,69 ^ª 2,25 ^ª 3,09 ^ª 4,00 ^ª	a a a
	1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13 1,25	3,43 ^a 3,43 ^a 1,34 ^a 1,69 ^a 2,09 2,09 2,09 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac	3,87 ^a 3,87 ^a 3,87 ^a 1,34 ^a 1,69 ^a 2,25 ^a 2,69 2,69 2,69 2,69 2,69	a ac ac ac ac ac ac ac ac ac ac ac	4,31 ^a 4,31 ^a 4,31 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 3,28 3,28 3,28 3,28 3,28	ac a ac ac ac ac ac ac ac ac ac ac	5,20 ^a 5,20 ^a 5,20 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 4,15 4,15 4,15	a a ac ac ac ac ac ac ac ac ac	6,08 ^a 6,08 ^a 6,08 ^a 1,34 ^a 1,69 ^a 2,25 ^a 3,09 ^a 4,00 ^a 4,84 5,02 5,02	a a ac ac ac ac ac ac ac ac ac ac ac	1,69 ^ª 2,25 ^ª 3,09 ^ª 4,00 ^ª	a a a

Index a: If component I is made of S320GD or S350GD the value may be increased by 8,0%.

Self drilling screw

Annex 17

SFS SX5 - S14 - 5,5 x L , SFS SX5 - L12 - S14 - 5,5 x L , SFS SX5 - D12 - S14 - 5,5 x L

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø14 mm



(E S)		5 F5 S		<u>Mate</u> Faste	ener:	stainl stainl	ess ste ess ste	el (1.44) el (1.45)	01) - El 57) - El	N 10088 N 10088 N 10088	3
	. 8 .		(B) Irius	\sim		Wasł				el (1.43)			
2-4.5	ø10;1		L	rius Ø12 Component I: S280GD, S320GD or S350GD - EN 103 Component II: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 103									
ø <u>5,5</u> \$ 4,2		1,81 L ≥20	۲ 		AN LOUGH CT LO MAINLY COTTANY	Drillin	ng capa	acity	Σt _i ≤	≤ 5,00 m	m		
12			T25		2,3	Timb	er sub:	structure	<u>s</u>				
.1.	¢ 4,5		2		t t			ance dete		d			
	N,II =	1,5		1,7	75	2,0	0	2,5	50	3,0)()	4,0	00
	,nom =			· · · · ·									
	0,50	1,57ª	ac	1,67ª	ac	1,76ª	ac	1,76ª	ac	1,76 ^a	ac	1,76 ^a	ac
	0,55	1,71ª	ac	1,79 ^a	ac	1,86 ^a	ac	1,86ª	ac	1,86ª	ac	1,86 ^ª	а
Ē	0,63	1,94ª	ac	1,99 ^a	ac	2,03ª	ac	2,03 ^a	ac	2,03 ^a	ac	2,03ª	а
			ac	2,28ª	ac	2,28 ^a	ac	2,28 ^a	ac	2,28ª	ac	2,28 ^a	а
느	0,75	2,28 ^ª		~									
ir t _{N,I} [m	0,88	2,86ª	ac	2,86ª	ac	2,86 ^a	ac	3,04ª	ac	3,27 ^a	ac	3,27ª	а
] for t _{N,I} [m	0,88 1,00	2,86 ^ª 3,43 ^ª	ac	3,43 ^a	ac	3,43 ^a	ac	3,74 ^a	ac	4,18 ^a	ac	3,27 ^ª 4,18 ^ª	a a
[kN] for t _{N,I} [m	0,88 1,00 1,13	2,86ª 3,43ª 3,43ª	ac ac	3,43 ^a 3,66 ^a	ac ac	3,43 ^a 3,89 ^a	ac ac	3,74 ^a 4,50 ^a	ac ac	4,18 ^a 5,17 ^a	ac a		
/ _{R,k} [kN] for t _{N,i} [n	0,88 1,00 1,13 1,25	2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a	ac ac ac	3,43 ^a 3,66 ^a 3,87 ^a	ac ac ac	3,43 ^a 3,89 ^a 4,31 ^a	ac ac ac	3,74 ^a 4,50 ^a 5,20 ^a	ac ac ac	4,18 ^a 5,17 ^a 6,08 ^a	ac a a		
V _{R,k} [kN] for t _{N,I} [mm]	0,88 1,00 1,13 1,25 1,50	2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a	ac ac ac ac	3,43 ^ª 3,66 ^ª 3,87 ^ª 3,87 ^ª	ac ac ac ac	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a	ac ac ac ac	3,74 ^ª 4,50 ^ª 5,20 ^ª 5,20 ^ª	ac ac ac a	4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a	ac a a a		
V _{R,k} [kN] for t _{N,I} [n	0,88 1,00 1,13 1,25 1,50 1,75	2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a	ac ac ac ac ac	3,43 ^ª 3,66 ^ª 3,87 ^ª 3,87 ^ª 3,87 ^ª	ac ac ac ac a	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a	ac ac ac ac a	3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a	ac ac ac a a	4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a	ac a a a a		
V _{R.k} [kN] for t _{N,I} [r	0,88 1,00 1,13 1,25 1,50 1,75 2,00	2,86 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°]	ac ac ac ac ac ac a	3,43 ^ª 3,66 ^ª 3,87 ^ª 3,87 ^ª 3,87 ^ª 3,87 ^ª	ac ac ac ac a a a	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a	ac ac ac ac a a	3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a	ac ac ac a a a	4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a 6,08 ^a	ac a a a a a	4,18 ^ª — — — —	a
V _{R,k} [kN] for t _{N,I} [m	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50	2,86 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°] 3,43 [°] 1,52 [°]	ac ac ac ac ac ac ac a	3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,52 ^a	ac ac ac ac a a a	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,52 ^a	ac ac ac ac a a a	3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,52 ^a	ac ac a a a a	$\begin{array}{r} 4,18^{a} \\ 5,17^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 1,52^{a} \end{array}$	ac a a a a ac	4,18 ^a — — — 1,52 ^a	a ac
	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55	2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,52 ^a 1,91 ^a	ac ac ac ac ac ac ac ac ac	3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,52 ^a 1,91 ^a	ac ac ac ac a a a ac ac	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,52 ^a 1,91 ^a	ac ac ac ac a a a ac ac	3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,52 ^a 1,91 ^a	ac ac a a a a ac ac	$\begin{array}{c} 4,18^{a} \\ 5,17^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 1,52^{a} \\ 1,91^{a} \end{array}$	ac a a a a ac ac	4,18 ^a — — — 1,52 ^a 1,91 ^a	a ac a
	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63	2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,52 ^a 1,91 ^a 2,09	ac ac ac ac ac ac ac ac ac	3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,52 ^a 1,91 ^a 2,69	ac ac ac ac ac a ac ac ac ac	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,52 ^a 1,91 ^a 2,70 ^a	ac ac ac a a a ac ac ac ac	3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,52 ^a 1,91 ^a 2,70 ^a	ac ac a a a ac ac ac	$\begin{array}{c} 4,18^{a} \\ 5,17^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 6,08^{a} \\ 1,52^{a} \\ 1,91^{a} \\ 2,70^{a} \end{array}$	ac a a a ac ac ac	4,18 ^a — — — 1,52 ^a 1,91 ^a 2,70 ^a	a ac a a
	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75	2,86 ^ª 3,43 ^ª 3,43 ^ª 3,43 ^a 3,43 ^a 3,43 ^a 1,52 ^a 1,91 ^ª 2,09 2,09	ac ac ac ac ac ac ac ac ac	3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,52 ^a 1,91 ^a 2,69 2,69	ac ac ac ac a a a ac ac	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,09	ac ac ac ac a a ac ac ac ac	3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a	ac ac a a a ac ac ac ac	$\begin{array}{c} 4,18^{a}\\ 5,17^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 1,52^{a}\\ 1,91^{a}\\ 2,70^{a}\\ 3,50^{a}\\ \end{array}$	ac a a a a ac ac ac ac	4,18 ^a — — — 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a	a ac a a a
	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88	2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,52 ^a 1,91 ^a 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac	3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,52 ^a 1,91 ^a 2,69 2,69 2,69	ac ac ac a a a ac ac ac ac ac ac ac	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,09 3,28	ac ac ac ac a a ac ac ac ac ac	3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a 4,15	ac ac a a a ac ac ac ac ac	$\begin{array}{r} 4,18^{a}\\ 5,17^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 1,52^{a}\\ 1,91^{a}\\ 2,70^{a}\\ 3,50^{a}\\ 4,52^{a}\\ \end{array}$	ac a a a ac ac ac ac ac	4,18 ^a — — — 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a 4,52 ^a	a ac a a a a
	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75	2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,52 ^a 1,91 ^a 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac	3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,52 ^a 1,91 ^a 2,69 2,69 2,69 2,69	ac ac ac a a a ac ac ac ac ac	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,09 3,28 3,28	ac ac ac ac a a ac ac ac ac	3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,52 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a 4,15 4,15	ac ac a a a ac ac ac ac	$\begin{array}{c} 4,18^{a}\\ 5,17^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 1,52^{a}\\ 1,91^{a}\\ 2,70^{a}\\ 3,50^{a}\\ 4,52^{a}\\ 5,02 \end{array}$	ac a a a a ac ac ac ac	4,18 ^a — — — 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a	a ac a a a
	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50 0,55 0,63 0,75 0,88 1,00	2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,52 ^a 1,91 ^a 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac ac ac	3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,52 ^a 1,91 ^a 2,69 2,69 2,69	ac ac ac a a a ac ac ac ac ac ac ac ac a	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,09 3,28	ac ac ac a ac ac ac ac ac ac ac ac	3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a 4,15	ac ac a a a ac ac ac ac ac ac	$\begin{array}{r} 4,18^{a}\\ 5,17^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 1,52^{a}\\ 1,91^{a}\\ 2,70^{a}\\ 3,50^{a}\\ 4,52^{a}\\ \end{array}$	ac a a a ac ac ac ac ac ac ac	4,18 ^a — — — 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a 4,52 ^a	a ac a a a a
N _{R,k} [kN] for t _{N,I} [mm] V _{R,k} [kN] for t _{N,I} [m	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13	2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,52 ^a 1,91 ^a 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac ac ac ac	3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,52 ^a 1,91 ^a 2,69 2,69 2,69 2,69 2,69	ac ac ac a a ac ac ac ac ac ac ac ac ac	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,09 3,28 3,28 3,28 3,28	ac ac ac ac a ac ac ac ac ac ac ac ac	3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a 4,15 4,15 4,15	ac ac a a ac ac ac ac ac ac ac ac ac	$\begin{array}{c} 4,18^{a}\\ 5,17^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 1,52^{a}\\ 1,91^{a}\\ 2,70^{a}\\ 3,50^{a}\\ 4,52^{a}\\ 5,02\\ 5,02\\ \end{array}$	ac a a a ac ac ac ac ac ac ac ac ac	4,18 ^a — — — 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a 4,52 ^a	a ac a a a a
	0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13 1,25	2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 1,52 ^a 1,91 ^a 2,09 2,09 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac ac ac ac ac ac ac a	3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a 1,52 ^a 1,91 ^a 2,69 2,69 2,69 2,69 2,69 2,69	ac ac ac a a ac ac ac ac ac ac ac ac ac	3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a 4,31 ^a 1,52 ^a 1,91 ^a 2,70 ^a 3,09 3,28 3,28 3,28 3,28	ac ac ac ac a ac ac ac ac ac ac ac ac ac	$\begin{array}{c} 3,74^{a} \\ 4,50^{a} \\ 5,20^{a} \\ 5,20^{a} \\ 5,20^{a} \\ 5,20^{a} \\ 1,52^{a} \\ 1,91^{a} \\ 2,70^{a} \\ 3,50^{a} \\ 4,15 \\ 4,15 \\ 4,15 \\ 4,15 \\ 4,15 \end{array}$	ac ac a a ac ac ac ac ac ac ac ac ac ac	$\begin{array}{c} 4,18^{a}\\ 5,17^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 6,08^{a}\\ 1,52^{a}\\ 1,91^{a}\\ 2,70^{a}\\ 3,50^{a}\\ 4,52^{a}\\ 5,02\\ 5,02\\ 5,02\\ 5,02\\ \end{array}$	ac a a a ac ac ac ac ac ac ac ac ac ac a	4,18 ^a — — — 1,52 ^a 1,91 ^a 2,70 ^a 3,50 ^a 4,52 ^a	a ac a a a a

Self drilling screw

Annex 18

SFS SX5 - S16 - 5,5 x L , SFS SX5 - L12 - S16 - 5,5 x L , SFS SX5 - D12 - S16 - 5,5 x L

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø16 mm



,2-4,5 111- 25		1	Irius	19 5F5 5 912		Com	ener: ner: ponent	stainl stainl stainl I: S280 II: S235 S280	ess ste ess ste GD, S3 , S275 GD, S3	eel (1.44) eel (1.45) eel (1.43) 320GD o or S355	01) - E 67) - E 01) - E r S350 - EN 1 r S350	N 10088, N 10088 N 10088 N 10088 GD - EN 0025-1 GD - EN	10346		
ð 4,2- 12	¢ 4,5	L ≥20	T25	ø12	2,3	no pe	<u>Timber substructures</u> no performance determined								
$t_{N,II} = 1,50$ $M_{t,nom} =$		50	1,7	5	2,0	00	2,5	i0	3,0	0	4,00				
	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	1,57 ^a 1,71 ^a 2,28 ^a 2,86 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a 3,43 ^a	ac ac ac ac ac ac ac ac ac ac ac ac	1,67 ^a 1,79 ^a 1,99 ^a 2,28 ^a 2,86 ^a 3,43 ^a 3,66 ^a 3,87 ^a 3,87 ^a 3,87 ^a	ac ac ac ac ac ac ac ac ac ac ac ac a	1,76 ^a 1,86 ^a 2,03 ^a 2,28 ^a 2,86 ^a 3,43 ^a 3,89 ^a 4,31 ^a 4,31 ^a 4,31 ^a	ac ac ac ac ac ac ac ac ac ac ac a	1,76 ^a 1,86 ^a 2,03 ^a 2,28 ^a 3,04 ^a 3,74 ^a 4,50 ^a 5,20 ^a 5,20 ^a 5,20 ^a	ac ac ac ac ac ac ac ac ac a a a	1,76 ^a 1,86 ^a 2,03 ^a 2,28 ^a 3,27 ^a 4,18 ^a 5,17 ^a 6,08 ^a 6,08 ^a 6,08 ^a	ac ac ac ac ac a a a a a a	1,76 ^a 1,86 ^a 2,03 ^a 2,28 ^a 3,27 ^a 4,18 ^a 	ac a a a a 		
N [kN] for f [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	1,87 ^a 2,09 2,09 2,09 2,09 2,09 2,09 2,09 2,09	ас ас ас ас ас ас ас ас ас ас ас	1,87 ^a 2,36 ^a 2,69 2,69 2,69 2,69 2,69 2,69 2,69 2,69	ac ac ac ac ac ac ac ac ac ac ac a	1,87 ^a 2,36 ^a 3,14 3,28 3,28 3,28 3,28 3,28 3,28 3,28 3,28	ac ac ac ac ac ac ac ac ac ac ac ac ac	1,87 ^a 2,36 ^a 3,14 ^a 4,15 4,15 4,15 4,15 4,15 4,15 4,15 4,15	ac ac ac ac ac ac ac ac ac a a a	1,87 ^a 2,36 ^a 3,14 ^a 4,31 ^a 5,02 5,02 5,02 5,02 5,02 5,02 5,02 5,02	ac ac ac ac ac a a a a a a	1,87 ^a 2,36 ^a 3,14 ^a 4,31 ^a 5,57 ^a 6,74 ^a — — — —	ac a a a a 		

Self drilling screw

SFS SX5 - S19 - 5,5 x L, SFS SX5 - L12 - S19 - 5,5 x L , SFS SX5 - D12 - S19 - 5,5 x L

Annex 19

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø19 mm



2-4,5 Ø 5 4,2		1,81 ↓ 220	Irius 1 3 Torx T25	22 \$555 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	3,3	Com Drillir	ener: bonent	stainl stainl stainl I: S280 II: S235 S280	ess ste ess ste GD, S3 , S275 GD, S3 Σt _i =	eel (1.440 eel (1.450 eel (1.430 320GD o or S355	01) - E 67) - E 01) - E r S350 - EN 1 r S350	N 10088, N 10088, N 10088 N 10088 IGD - EN I0025-1 IGD - EN	10346
12	ø 4,5	¥	13		2,:	,		ance dete		d			
	t _{N,II} = M _{t,nom} =	1,5	50	1,7	5	2,0	0	2,5	50	3,0)0	4,0	10
-'	0,50	1,57 ^a	ac	1,67 ^a	ac	1,76ª	ac	1,76 ^a	ac	1,76 ^a	ac	1,76ª	ac
	0,55	1,71 ^a	ac	1,79 ^a	ac	1,86 ^ª	ac	1,86 ^a	ac	1,86ª	ac	1,86ª	а
5		1,94 ^a	ac	1,99 ^a	ac	2,03ª	ac	2,03ª	ac	2,03ª	ac	2,03ª	а
j j	$\begin{bmatrix} 0,63 \\ 0,75 \\ 0,88 \\ 0 \\ 1,00 \\ 1,13 \\ 1,25 \\ 1,50 \\ 1$	2,28ª	ac	2,28ª	ac	2,28 ^ª	ac	2,28ª	ac	2,28ª	ac	2,28ª	а
.	<u>-</u> z 0,88	2,86ª	ac	2,86ª	ac	2,86ª	ac	3,04ª	ac	3,27 ^a	ac	3,27ª	а
j.	<u>5</u> 1,00	3,43 ^a	ac	3,43ª	ac	3,43ª	ac	3,74 ^a	ас	4,18 ^a	ac	4,18 ^a	а
	z 1,13	3,43ª	ac	3,66ª	ac	3,89 ^a	ac	4,50 ^a	ac	5,17 ^a	а	—	—
	±	3,43 ^a	ac	3,87 ^a	ac	4,31 ^a	ac	5,20 ^a	ac	6,08 ^a	а		
	>ີ້ 1,50	3,43ª	ac	3,87ª	ac	4,31ª	ac	5,20 ^a	а	6,08 ^a	а	—	—
>	1,75	3,43 ^a	ac	3,87 ^a	а	4,31ª	а	5,20ª	а	6,08 ^a	а	-	—
>	2 00	3,43 ^a	а	3,87 ^a	а	4,31 ^a	а	5,20 ^a	а	6,08 ^a	а	<u> </u>	_
	2,00		ac	2,33ª	ac	2,33ª	ac	2,33 ^a	ac	2,33ª	ac	2,33 ^a	ac
	0,50	2,09	a0							1 0 0 4 8	ac	2,94 ^a	а
	0,50 0,55	2,09	ac	2,69	ac	2,94 ^ª	ac	2,94 ^a	ac	2,94 ^a	uu		
_	0,50 0,55	2,09 2,09		2,69 2,69	ac ac	2,94 ^a 3,28	ac ac	3,91	ac ac	3,91 ^a	ac	3,91 ^a	а
_	0,50 0,55	2,09	ac	2,69 2,69 2,69		2,94 ^ª		3,91 4,15		3,91 ^a 5,02		3,91 ^a 5,37 ^a	a a
	0,50 0,55	2,09 2,09	ac ac	2,69 2,69	ac	2,94 ^a 3,28	ac	3,91	ac	3,91 ^a	ac	3,91 ^a	
_	0,50 0,55	2,09 2,09 2,09	ac ac ac	2,69 2,69 2,69	ac ac	2,94ª 3,28 3,28	ac ac	3,91 4,15	ac ac	3,91 ^a 5,02	ac ac	3,91 ^a 5,37 ^a	а
_	0,50 0,55	2,09 2,09 2,09 2,09	ac ac ac ac	2,69 2,69 2,69 2,69 2,69	ac ac ac	2,94 ^a 3,28 3,28 3,28	ac ac ac	3,91 4,15 4,15	ac ac ac	3,91ª 5,02 5,02	ac ac ac	3,91 ^a 5,37 ^a 6,95 ^a	a a
_	0,50 0,55	2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac	2,69 2,69 2,69 2,69 2,69 2,69	ac ac ac ac	2,94 ^ª 3,28 3,28 3,28 3,28 3,28	ac ac ac ac	3,91 4,15 4,15 4,15 4,15	ac ac ac ac	3,91 ^a 5,02 5,02 5,02	ac ac ac ac	3,91 ^a 5,37 ^a 6,95 ^a	a a
_	0,50 0,55 0,63 0,75 0,75 0,88 1,00	2,09 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac	2,69 2,69 2,69 2,69 2,69 2,69 2,69	ac ac ac ac ac	2,94 ^a 3,28 3,28 3,28 3,28 3,28 3,28	ac ac ac ac ac	3,91 4,15 4,15 4,15 4,15 4,15	ac ac ac ac ac	3,91 ^a 5,02 5,02 5,02 5,02 5,02	ac ac ac ac a	3,91 ^a 5,37 ^a 6,95 ^a	a a —
_	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25	2,09 2,09 2,09 2,09 2,09 2,09 2,09	ac ac ac ac ac ac ac	2,69 2,69 2,69 2,69 2,69 2,69 2,69 2,69	ac ac ac ac ac ac	2,94 ^a 3,28 3,28 3,28 3,28 3,28 3,28 3,28	ac ac ac ac ac ac	3,91 4,15 4,15 4,15 4,15 4,15 4,15	ac ac ac ac ac ac	3,91 ^a 5,02 5,02 5,02 5,02 5,02 5,02	ac ac ac ac a a	3,91 ^a 5,37 ^a 6,95 ^a	a a —

Self drilling screw	
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y

Annex 20

SFS SX5 - S22 - 5,5 x L , SFS SX5 - L12 - S22 - 5,5 x L , SFS SX5 - D12 - S22 - 5,5 x L

with hexagon head, torx or irius® Drive and sealing washer ≥ Ø22 mm



2-4,5 1 <u>1</u> 2 1	}*******					16 SES SW8)	<u>Mater</u> Faste Wash Comp	ner: er:	sta sta	inless inless	steel steel	(1.456 (1.430	01) - El 67) - El 01) - El r S350	N 100 N 100	88 88	346
Ø5 Ø4,	- "B		,81 ~57	L	17	16 5F5 S			onent g capa			-	S355 4,00 m	- EN 1	0025	-1	
17- 				11	irius				er subs rforma		<u>ires</u> etermi	ned					
	, =	4,	00	5,	00	6,	00	8,	00	1(0,0	12	2,0	13	,0	14	1,0
	nom = 0,50	2,20	abcd	2,20	abcd	2,20	abcd	2,20	abcd	2,20	abcd	2,20	abcd	2,20	ac		
	0,55	2,50	abcd	2,50	abcd	2,50	abcd	2,50	abcd	2,50	abcd	2,50	ac	2,50	ac		_
_ ح	0,63	2,80	abcd	2,80	abcd	2,80	abcd	2,80	abcd	2,80	abcd	2,80	ac	2,80	а	—	
Ē	0,75	3,40	abcd	3,40	abcd	3,40	abcd	3,40	abcd	3,40	abcd	3,40	ac	3,40	а		
t _{N.i}	0,88	4,00	abcd	4,00	abcd	4,00	abcd	4,00	abcd	4,00	abcd	4,00	ac	4,00	а		
V _{R,k} [kN] for t _{N,i} [mm]	1,00	4,50	abcd	4,50	abcd	4,50	abcd	4,50	abcd	4,50	abcd	4,50	ac	4,50	а		
ΣΞ	1,13	5,10	ac	5,10	ac	5,10	ac	5,10	ac	5,10	ac	5,10	а				—
R,k [1,25	5,60	ac	5,60	ac	5,60	ac	5,60	ac	5,60	ac	5,60	а				
>	1,50	6,40	ac	6,40	ac	6,90	ac	6,90	ac	6,90	ac	6,90	а			-	
	1,75	6,40	ac	6,40	ac	6,90	ac	6,90	ac	6,90	ac	6,90		-	_		_
	2,00 0,50	6,40 1,80	ac abcd	6,40 1,80	ac abcd	6,90 1,80	ac abcd	6,90 1,80	ac abcd	6,90 1,80	ac abcd	6,90 1,80	abcd	1,80	ac	$\vdash =$	
	0,50 0,55	2,10	abcd	2,10	abcd		abcd		abcd		abcd	2,10	ac	2,10	ac		_
	0,63	2,40	abcd	2,40	abcd		abcd				abcd	2,40	ac	2,40	a	_	
	0,75	3,00	abcd	3,00	abcd		abcd	3,00	abcd	3,00	abcd	3,00	ac	3,00	а	—	
I	0,88	3,60	abcd	3,60	abcd		abcd	3,60	abcd	3,60	abcd	3,60	ac	3,60	а		_
5 L	1,00	4,20	abcd	4,20	abcd	4,20	abcd	4,20	abcd	4,20	abcd	4,20	ac	4,20	а	—	
for t _N	1,13	5,40	ac	5,40	ac	5,40	ac	5,40	ac	5,40	ac	5,40	а	—			
<n] for="" t<sub="">N</n]>	1,10	6,60	ac	6,60	ac	6,60	ac	6,60	ac	6,60	ac	6,60	а		—		
_{3,k} [kN] for t _N	1,25					10,9	ac	10,9	ac	10,9	ac	10,9	а				—
N _{R,k} [kN] for t _{N,I} [mm]	1,25 1,50	7,10	ac	10,9	ac	•											
N _{R,k} [kN] for t _N	1,25		ac ac ac	10,9 10,9 10,9	ac ac ac	10,9 10,9 10,9	ac ac	10,9 10,9	ac ac	10,9 10,9	ac ac	10,9 10,9				-	

If both components I and II are made of S320GD or S350GD the values may be increased by 8,3%.

Self drilling screw

SFS SX14 - S16 - 5,5 x L , SFS SX14 - L12 - S16 - 5,5 x L

Annex 21

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	i4	16 555 5 3,3 1		ener: s ner: s ponent I: S		el (1.4301) S320GD - E	- EN 10088 N 10346	401) – EN 10088					
Ø 4,6 Ø 6,5 10 • Ø 3	L 8		<u>Timb</u> perfo M _{y,Rk}	$\label{eq:starses} \begin{array}{llllllllllllllllllllllllllllllllllll$									
L _{ef} =	26	32	39	60	64	71	78						
M _{t,nom} = 0,50													
0,55 0,63 0,75 0,75 0,88 0,75 1,00 0,75 1,00 0,75 1,00 0,75 1,00 1,13 1,25 1,50 1,50 1,75 2,00	 1,06 - 1,06 -	1,31 — 1,31 — 1,31 — 1,31 — 1,31 — 1,31 — 1,31 — 1,31 — 1,31 —	 1,60 1,60 1,60 1,60 1,60 1,60 1,60 1,60 1,60 1,60 1,60	 2,45 - 2,45 -	$\begin{array}{cccc} - & - \\ - & - \\ 2,61 & - \\ 2,61 & - \\ 2,61 & - \\ 2,61 & - \\ 2,61 & - \\ 2,61 & - \\ 2,61 & - \\ 2,61 & - \\ 2,61 & - \\ 2,61 & - \end{array}$	 2,90 - 2,90 -	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	- 2,90 3,50 4,00 4,50 5,00 5,40 5,70 5,70 5,70 5,70					
0,55 0,63 0,75 0,88 0,75 1,20 1,00 Ny 1,13 1,25 N 1,50 1,75	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	1,46 - 1,84 - 1,95 - 1,95 - 1,95 - 1,95 - 1,95 - 1,95 - 1,95 - 1,95 - 1,95 - 1,95 - 1,95 - 1,95 - 1,95 - 1,95 -	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	1,46 - 1,84 - 2,70 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 - 3,20 -	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	1,46 - 1,84 - 2,70 - 3,40 - 3,91 - 3,91 - 3,91 - 3,91 - 3,91 - 3,91 - 3,91 - 3,91 - 3,91 - 3,91 - 3,91 - 3,91 - 3,91 -	1,46 1,84 2,70 3,40 4,10 5,50 5,60 5,60 5,60 5,60 5,60					

- The values listed above in dependence on the screw-in length I_{ef} are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_a = 350 \text{ kg/m}^3$). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.

Self-drilling screw

SFS SXW - S16 - 6,5 x L, SFS SXW - L12 - S16 - 6,5 x L

with hexagon head or irius \mathbb{B} drive system and sealing washer $\geq \emptyset 16 \text{ mm}$



4,2:4,5 1 2 8 1 8 1,8	7,1		3÷1 1,85 L≥	30	19		Fast Was Corr	erials ener: sher: ponent	st : I: S: : II: S:		steel , S32 ?75 or	(1.430 0GD or \$355	1) - E S350 - EN	N 100 DGD - 10025-	88 EN 10	346		
ø	5,5	-					<u>Drilli</u>	ng-cap	acity:	2	Et _i ≤ 5	,00 mn	ı					
12		ø 4,7						oer sub erforma			ined							
	I,II =	1,5	50	2,0	0	2,5	50	3,0	0	4,0	0	_	-	_	-	_	-	
V _{B,k} [kN] for t _N , [mm]	nom = 0,40 0,50 0,63 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75																	
N _{B,k} [kN] for t _{N,I} [mm]	0,63 0,75 0,88 1,00 1,13 1,25 1,50	1,44 1,44 1,44 1,44 1,44 1,44 1,44 1,44		1,53 ^a 1,84 ^a 2,10 ^a 2,33 2,33 2,33 2,33 2,33 2,33 2,33 2,3		1,53 ^a 1,84 ^a 2,10 ^a 2,53 ^a 3,17 3,31 3,31 3,31 3,31 3,31 3,31 3,31		1,53 ^a 1,84 ^a 2,10 ^a 2,53 ^a 3,17 ^a 3,99 ^a 4,29 4,29 4,29 4,29 4,29 4,29		1,53 ^a 1,84 ^a 2,10 ^a 2,53 ^a 3,17 ^a 3,99 ^a 4,80 ^a — — — —								

If component I is made of S320GD or S350GD the values $N_{R,k}$ [kN] may be increased by 8,3%.

Self-drilling screw

SFS SXC5 - S19 - 5,5 x L, SFS SXC5 - L12 - S19 - 5,5 x L

with hexagon head or irius[®] drive system and sealing washer $\ge \emptyset$ 19 mm

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$ \begin{array}{c} 19\\ 8\\ 4,2-4,5\\ 1\\ 3\\ 0\\ 5,5\\ 1 \\ 0\\ 5,5\\ 1 \\ 1,81\\ $	19 012 3,3 3,3	Materials Fastener: stainless steel (1.4401, 1.4567) - EN 10088 Washer: stainless steel (1.4301) - EN 10088 Component I: S280GD, S320GD or S350GD - EN 10346 Component II: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
		$\label{eq:relation} \begin{array}{llllllllllllllllllllllllllllllllllll$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		$\begin{array}{c c c c c c c c c c c c c c c c c c c $
1,23 — — 0,40 — — 0,50 — — 0,55 — — 0,60 — — 1,13 — — 1,25 — —		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

- Index a: If component I is made of S320GD or S350GD the values may be increased by 8,0%.

Self-drilling screw

SFS SXC14 - S19 - 5,5 x L, SFS SXC14 - L12 - S19 - 5,5 x L

with hexagon head or irius® drive system and sealing washer $\ge \emptyset$ 19 mm

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10.11 0,9 - 1 10,5 2,54 2,54 2,54 10,5 0,9 - 1 10,5 0,9 - 1 10,5 10,5 0,9 - 1 10,5 0,9 - 1 10,5	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

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If component I is made of S350GD the values $N_{R,k}$ [kN] may be increased by 8,3%. The values listed above in dependence on the screw-in length I_{ef} are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_a = 350 \text{ kg/m}^3$). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.

Self-drilling screw

SFS SXCW - S19 - 6,5 x L, SFS SXCW - L12 - S19 - 6,5 x L

with hexagon head or irius[®] drive system and sealing washer $\ge \emptyset$ 19 mm

English translation prepared by DIBt



4,2-	4,5 1,81 Ø 6	~ Ø 10,	5	6	(16		13		ener: her:	st : I: S : II: S	tainles 280GE 235 - E	s ste 0, S3 EN 1(el (1.4: 20GD 0025-1	301) or S:	- EN 10 - EN 10 350GD 350GD	0088 - EN	10346	
	-, - T			- 2,		 -	-1		Drilli	ng cap	acity		Σt _i ≤	3,80 n	nm				
~	7,5	ø 3,6		<u>_</u>						er sub erforma			nined						
	i,ii =	0,6	0	0,6	3	0,7	5	0,8	38	1,0	0	1,1	3	1,2	25	1,5	50	2,0)0
M _{t,i}	nom =													<i>_</i>					
V _{R,k} [kN] for t _{N,I} [mm]	0,50 0,55 0,60 0,63 0,75 0,88 1,00 1,13 1,25 1,50 2,00 0,50 0,55	 0,99 ^b 0,99 ^b	 ac ac 		 ac ac			 1,88 ^b 1,88 ^b 1,88 ^b 1,88 ^b 1,88 ^b 			 ac ac ac ac ac	 1,66ª 1,96 2,28 2,60 	ac	 0,90 ^a 0,94 ^a 1,30 ^a 1,66 ^{a)} 2,01 2,48 2,97 	ac ac ac ac 	 0,90 ^a 0,94 ^a 1,30 ^a 1,66 ^a 	ac ac ac ac 	 0,90 ^a 0,94 ^a 1,30 ^a 1,66 ^a 	ac ac ac
N _{R,k} [kN] for t _{N,I} [mm]	0,60 0,63 0,75 0,88 1,00 1,13 1,25 1,50			 0,82 ^b 0,82 ^b 0,82 ^b		 1,15 ^b 1,15 ^b 1,15 ^b	ac ac	 1,49 ^b 1,49 ^b 1,49 ^b 1,49 ^b	ac ac ac ac ac ac	1,82 ^b 1,82 ^b 1,82 ^b 1,82 ^b 1,82 ^b	ac ac ac ac ac	 2,17 2,17 2,17 2,17 2,17 	ac	1,23 ^a 1,28 ^a 1,74 ^a 2,51 2,51 2,51 2,51 	ac ac ac ac — — — —	1,23 ^a 1,28 ^a 1,74 ^a 2,59 ^a — — — — — —	ac ac ac 	1,23 ^a 1,28 ^a 1,74 ^a 2,59 ^a — — — — — —	ac ac ac
		compo compo																	

Self drilling screw

SFS SL3/2 - 5 - S - SV16 - 6,0 x L

with thread free zone, Hexagon head and SV washer 13 x 16 mm

English translation prepared by DIBt



~ø1 ,2-4,5 1 1 1,81 Ø 6	6		Materials Fastener: stainless steel (1.4301) - EN 10088 Washer: stainless steel (1.4301) - EN 10088 Component I: S280GD, S320GD or S350GD - EN 10346 Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346											
~7,5	- ~	27 8			Drilling	сара	acity		Σt _i ≤ 3,8	30 mn	n			
ø3	,6	<u>+</u>			<u>Timber</u> no perf				ined					
t _{N,II} =	2 x 0,63	2 x 0,75	2 x 0,8	88	2 x 1	,00	2 x 1	1,13	2 x 1	,25	2 x '	1,50	2 x	1,75
$ \begin{array}{r c} M_{\text{t,nom}} &= \\ 0,50 \\ 0,55 \\ 0,60 \\ 0,63 \\ 1,00 \\ 0,75 \\ 0,88 \\ 1,00 \\ 1,13 \\ 1,25 \\ 1,50 \\ 2,00 \\ 0,55 \\ 0,60 \\ 0,63 \\ 0,75 \\ 0,60 \\ 0,63 \\ 1,00 \\ 0,63 \\ 1,00 \\ 1,13 \\ 1,25 \\ 1,$			2,57 ^a 2,92 ^a 3,61 ^a <u>3,61^a</u> — — — — —											

Self drilling screw

SFS SL3/2 - 5 - S - SV16 - 6,0 x L

with thread free zone, Hexagon head and SV washer 13 x 16 mm

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1	ø 1 3 3 1 3 1 3 1 3 5 9 3,5		3,6÷4,0 L 3,2 4,8	14 SFS 8		aterials astener: asher: omponent omponent <u>rilling capa</u> mber subs	stainles I: S280GI II: S280GI <u>city</u> tructures	D, S320G Σt _i ≤ 2,00	.4301) - E D or S350 D or S350	N 10088)GD - EN 1	
t _N	,II =	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50
M _{t,r}	^{10m} – 0,40	0,58	0,58	0,58	0,58	0,58	0,58	0,58	0,58	0,58	0,58
	0,50	0,58	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69
	0,55	0,58	0,69	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
<u></u>	0,63	0,58	0,69	0,80	0,98	0,98	0,98	0,98	0,98	0,98	_
V _{R,k} [kN] for t _{N,I} [mm]	0,75	0,58	0,69	0,80	0,98	1,26	1,26	1,26	1,26	1,26	
te	0,88	0,58	0,69	0,80	0,98	1,26	1,82	1,82	—		
Ę	1,00	0,58	0,69	0,80	0,98	1,26	1,82	2,35			
	1,13	0,58	0,69	0,80	0,98	1,26	—				-
>	1,25	0,58	0,69	0,80	0,98	1,26		—			
	1,50	0,58	0,69			-			-		
	1,75 0,40	0,30	0,42	0,49	0,59	0,76	0,96	1,07	1,07	1,07	1,07
	0,40	0,30	0,42	0,49 0,49	0,59 0,59	0,76	0,90 0,96	1,07	1,16	1,07	1,16
	0,55	0,30	0,42	0,49	0,59	0,76	0,96 0,96	1,16	1,10	1,16	
	0,63	0,30	0,42	0,49	0,59	0,76	0,96	1,16	1,16	1,16	_
t _{n,i}	0,75	0,30	0,42	0,49	0,59	0,76	0,96	1,16	1,16	1,16	
for	0,88	0,30	0,42	0,49	0,59	0,76	0,96	1,16	_		
ΙĮ	1,00	0,30	0,42	0,49	0,59	0,76	0,96	1,16			
N _{R,k} [kN] for t _{N,i} [mm	1,13	0,30	0,42	0,49	0,59	0,76					
z	1,25	0,30	0,42	0,49	0,59	0,76	—				
	1,50	0,30	0,42				—				
L	1,75				*****			<u> </u>			
				Self dril	ling screv	V					
			SF	S SL2 - S	- S14 - 4	.,8 x L				An	nex 28
		with thre	ad free zone	e, Hexagon h	nead and Se	ealing washer	[.] ≥ Ø14 mm				

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Ø 10 0,8 1,0 131 2,2 Ø 3,4	÷ 11 3, • Ø2,8 Ø5,5	6:4,0		Fa Wa Co Co Dri	•	stainle stainle I: S2800 II: S2800 acity	ess steel (ess steel (GD, S320 GD, S320 Σt _i ≤ 2,1 Σt _i ≤ 2,1	1.4401) 1.4301) GD or S3 GD or S3		38	
t _{N,II} =	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	
M _{t,nom} =							· · · · · · · · · · · · · · · · · · ·	· · · · · · · · ·			
0,40	0,48	0,48	0,48	0,48	0,48	0,48	0,48	0,48	0,48	0,48	
0,50	0,48	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75	
E 0,55	0,48	0,75	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	
					1,13	1,13	1,13	1,13 1,48	1,13 1,48	—	
			$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		- デ 0,75 0,48 0,75 0,90 1,1 こ 0,88 0,48 0,75 0,90 1,1		$\begin{vmatrix} z^2 & 0.75 \\ b & 0.88 \end{vmatrix}$ 0.48 0.75 0.90 1.13	」 デ 0,75 0,48 0,75 0,90 1,13 支 0,88 0,48 0,75 0,90 1,13	1,48 1,48	1,48 1,73	1,48 1,73
<u>5</u> 0,88 Z 1,00	0,48 0,48	0,75 0,75	0,90	1,13	1,48	1,73	1,73 1,97				
	0,48 0,48	0,75	0,90	1,13	1,48	1,73	1,97	-			
> 1,15	0,48	0,75	0,90	1,13	1,48	_					
1,50	0,48	0,75								_	_
1,75	_	, 	_				· —				
0,40	0,43	0,57	0,65	0,79	1,00	1,00	1,00	1,00	1,00	1,00	
0,50	0,43	0,57	0,65	0,79	1,03	1,32	1,61	1,61	1,61	1,61	
<u> </u>	0,43	0,57	0,65	0,79	1,03	1,32	1,61	1,61	1,61		
트 0,63	0,43	0,57	0,65	0,79	1,03	1,32	1,61	1,61	1,61	—	
[mm] 0,55 0,63 0,75 0,88 1,00 1,13 1,13 1,25	0,43	0,57	0,65	0,79	1,03	1,32	1,61	1,61	1,61	-	
<u>بة</u> 0,88 ح 1 00	0,43	0,57	0,65	0,79	1,03	1,32	1,61			-	
Z 1,00 ∠ 1,13	0,43 0,43	0,57 0,57	0,65 0,65	0,79 0,79	1,03 1,03	1,32	1,61				
ע 1,13 ע 1,25	0,43	0,57	0,65 0,65	0,79	1,03						
1,50	0,43	0,57				_	_				
1,75		,	_						_		
		955	Self drillin	-						Annex 29	
N	with thread fi		SL2 - S - Hexagon he			r ≥ Ø14 mn	1				

8.06.02-131/13

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- Ø14	Materials
	Fastener: stainless steel (1.4301) – EN 10088 stainless steel (1.4401) – EN 10088
S	Washer: aluminium alloy AW-AIMg3 – EN 485 with vulcanized EPDM
- 8-	Component I: S280GD, S320GD or S350GD – EN 10346
Ø 10÷11 0,8÷1,0	Component II: S235 – EN 10025 S280GD, S320GD or S350GD – EN 10346
3 Ø 3,4	<u>Drilling-capacity:</u> $\Sigma t_i \le 2,50 \text{ mm}$
~5 + 7 <u>Ø 5,5</u> Ø 2,8	<u>Timber substructures</u> no performance determined

	mml-	0.4	0,40 0,50 0,		0.5		0,63		0,7	5	0,88		1.0	0	1,1	3	1,2	5	1,5	~	
	[mm] =	0,4	0	0,3	0	0,3		0,0	.5	0,1	0,10		0,00		(,00		5	1,2	.5	1,0	
111,	nam =	0.40				0.40				0.40		-				0.40		0.40			
	0,50	0,48	-	0,48	-	0,48	-	0,48	-	0,48	-	0,48	-	0,48	-	0,48	-	0,48	-	0,48	-
	0,55	0,48	-	0,75	-	0,75	-	0,75	-	0,75	-	0,75	-	0,75	-	0,75	-	0,75	-	0,75	-
Ē	0,63	0,48	-	0,75	-	0,90	-	0,90	-	0,90	-	0,90	-	0,90	-	0,90	-	0,90	-	-	-
 7	0,75	0,48	-	0,75	-	0,90	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	-	-
of J	0,88	0,48	-	0,75	-	0,90	-	1,13	-	1,48	-	1,48	-	1,48	-	1,48	-	1,48	-	-	-
Ī	1,00	0,48	-	0,75	-	0,90	-	1,13	-	1,48	-	1,73	-	1,73	-	-	-	-	-	-	-
VR.k [kN] for tw. [mm]	1,13	0,48	-	0,75	-	0,90	-	1,13	-	1,48	-	1,73	-	1,97	-	-	-	-	-	-	-
5	1,25	0,48	-	0,75	-	0,90	-	1,13	-	1,48	-	-	-	-	-	-	-	-	-	-	-
	1,50	0,48	-	0,75	-	0,90	-	1,13	-	1,48	-	-	-	-	-	-	-	-	-	-	-
	2,00	0,48	-	0,75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0,50	0,43	-	0,57	-	0,65	-	0,79	-	1,03	-	1,32	-	1,37	-	1,37	-	1,37	-	1,37	-
	0,55	0,43	-	0,57	-	0,65	-	0,79	-	1,03	-	1,32	-	1,61	-	1,61	-	1,61	-	1,61	-
Ē	0,63	0,43	-	0,57	-	0,65	-	0,79	-	1,03	-	1,32	-	1,61	-	1,61	-	-	-	-	-
5	0,75	0,43	-	0,57	-	0,65	-	0,79	-	1,03	-	1,32	-	1,61	-	1.61	-	-	-	-	-
5	0,88	0,43	-	0,57	-	0,65	-	0,79	-	1,03	-	1,32	-	1,61	-	1,61	-	-	-	-	-
Ĩ	1,00	0,43	-	0,57	-	0,65	-	0,79	-	1,03	-	1,32	-	1,61	-	-	-	-	-	-	-
NR.k [kN] for tw. [mm]	1,13	0,43	-	0,57	-	0,65	-	0,79	-	1,03	-	1,32	-	1,61	-	-	-	-	-	-	-
۳, E	1,25	0,43	-	0,57	-	0,65	-	0,79	-	1,03	-	-	-	-	-	-	-	-	-	-	-
	1,50	0,43	-	0,57	-	0,65	-	0,79	-	1,03	-	-	-	-	-	-	-	-	-	-	-
	2,00	0,43	-	0,57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Self-drilling screw

SFS SL2-S-A14-5,5 x L

with hexagon head and sealing washer $\geq \emptyset$ 14 mm

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1 3		0,8-1 1 1,95 L≥22	14 555 S	3,3 ↑	Compo	er: st :: st wi nent I: S2	280GD, S	eel (1.430 ized EPD 320GD o	01) - EN M r S350GI r S350GI			
	10	<u>,9</u>			12.005	substruct	<u>ures</u> determine	ed				
	t _{N,II} =	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1
	$M_{t,nom} =$	0,10	0,00	0,00	0,00		-	1,00	1,10	,, <u>_</u> 0	1,00	1
	0,40	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	0,57	1
	0,50	0,57	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
	0.55	0,57	0,80	0,95	0,95	0,95	0,95	0,95	0,95	0,95		
	E 0,63	0,57	0,80	0,95	1,18	1,18	1,18	1,18	1,18	1,18	_	-
	<u>z</u> 0,75	0,57	0,80	0,95	1,18	1,55	1,55	1,55	1,55	1,55	_	
	[Lmu] ¹ ,	0,57	0,80	0,95	1,18	1,55	2,27	2,27	2,27		_	
	Ę 1,00	0,57	0,80	0,95	1,18	1,55	2,27	2,98		_	_	
	<u>논</u> 1,13	0,57	0,80	0,95	1,18	1,55	2,27		_	_	_	
	^ب ^۲ 5 − 1,25	0,57	0,80	0,95	1,18	1,55		_	_	_	_	
	1,50	0,57	0,80		_	_	_	_	_	_	_	
	1,75	—	_	_	—	—	—	—	—	_	_	
	0,40	0,57	0,74	0,84	0,99	1,23	1,28	1,28	1,28	1,28	1,28	1
	0,50	0,57	0,74	0,84	0,99	1,23	1,36	1,36	1,36	1,36	1,36	
	· - 0,55	0,57	0,74	0,84	0,99	1,23	1,50	1,50	1,50	1,50	—	
	<u>Ē</u> 0,63	0,57	0,74	0,84	0,99	1,23	1,61	1,73	1,73	1,73	—	
	<u>ź</u> 0,75	0,57	0,74	0,84	0,99	1,23	1,61	1,98	1,98	1,98	—	
	88,0 ق	0,57	0,74	0,84	0,99	1,23	1,61	1,98	1,98	-	—	
	Z 1,00	0,57	0,74	0,84	0,99	1,23	1,61	1,98	—	—	—	
	0,63 0,75 0,88 1,00 1,13 1,13 1,25	0,57	0,74	0,84	0,99	1,23	1,61	—	—	—	—	
	1,20	0,57	0,74	0,84	0,99	1,23	—	-	-	-	-	
	1,50	0,57	0,74	—	-	—	—	-	—	—	-	
	1,75	—	<u> </u>	—	—	—	—	—	—	—	—	

If both components I and II are made of S320GD or S350GD all values may be increased by 8,0%.

Self-drilling screw

SFS SL2 - S - S14 - 6,3 x L, SFS SL2 - S - L12 - S14 - 6,3 x L

Annex 31

_

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Ø14 Ø14 8 Ø 10+11 4,2+4,5 + 0,8+1,0 +	MaterialsFastener:stainless steel (1.4301) - EN 10088Washer:stainless steel (1.4301) - EN 10088with vulcanized EPDMComponent I:S280GD, S320GD or S350GD - EN 10346Component II:S235 or S355 - EN 10025-1S280GD, S320GD or S350GD - EN 10346
	$\label{eq:star} \begin{array}{llllllllllllllllllllllllllllllllllll$

t _{N,II} [mm] =	0,4	.0	0,5	60	0,5	5	0,6	3	0,7	'5	0,8	8	1,0	00	1,	13	1,	25
M _t ,	nom =									_	-								
	0,40	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	-	-	-	-	-	-
	0,50	0,66	-	0,80	-	0,80	-	0,80	-	0,80	-	0,80	-	-	-	-	-	-	-
Ξ	0,55	0,66	-	0,80	-	0,98	-	0,98	-	0,98	-	0,98	-	-	-	-	-	-	-
<u> </u>	0,63	0,66	-	0,80	-	0,98	-	1,28	-	1,28	-	1,28	-	-	-	-	-	-	-
or t _z	0,75	0,66	-	0,80	-	0,98	-	1,28	-	1,72	-	1,72	-	-	-	-	-	-	-
Σ	0,88	0,66	-	0,80	-	0,98	-	1,28	-	1,72	-	1,72	-	-	-	-	-	-	-
V _{R,k} [kN] for t _{N,i} [mm]	1,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
≯	1,13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1,25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1,50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0,40	0,52	-	0,73	-	0,82	-	0,95	-	0,95	-	0,95	-	-	-	-	-	-	-
	0,50	0,52	-	0,73	-	0,82	-	0,97	-	1,20	-	1,20	-	-	-	-	-	-	-
Ξ	0,55	0,52	-	0,73	-	0,82	-	0,97	-	1,20	-	1,20	-	-	-	-	-	-	-
<u> </u>	0,63	0,52	-	0,73	-	0,82	-	0,97	-	1,20	-	1,20	-	-	-	-	-	-	-
or t _N	0,75	0,52	-	0,73	-	0,82	-	0,97	-	1,20	-	1,20	-	-	-	-	-	-	-
N _{R.k} [kN] for t _{N.I} [mm]	0,88	0,52	-	0,73	-	0,82	-	0,97	-	1,20	-	1,20	-	-	-	-	-	-	-
ج ح	1,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
z	1,13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1,25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1,50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

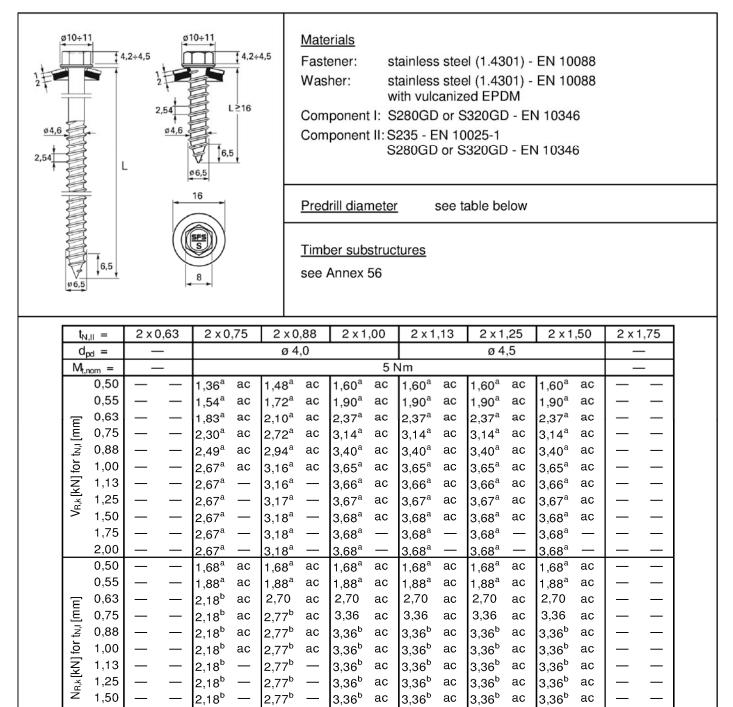
Self-tapping screw

SFS SLG – S – S14 – 4,8 x L

with hexagon head and sealing washer $\ge \emptyset 14 \text{ mm}$

English translation prepared by DIBt





Index a: If both components I and II are made of S320GD or S350GD the value may be increased by 8,0%.
 Index b: If component II is made of S320GD or S350GD the value may be increased by 8,0%.

3,36^b

<u>3,</u>36^b

3,36^b

<u>3,</u>36^b

3,36^b

3,36^b

3,36^b

3,36^b

Self-tapping screw

2,77^b

2,77^b

2,18^b

2.18^b

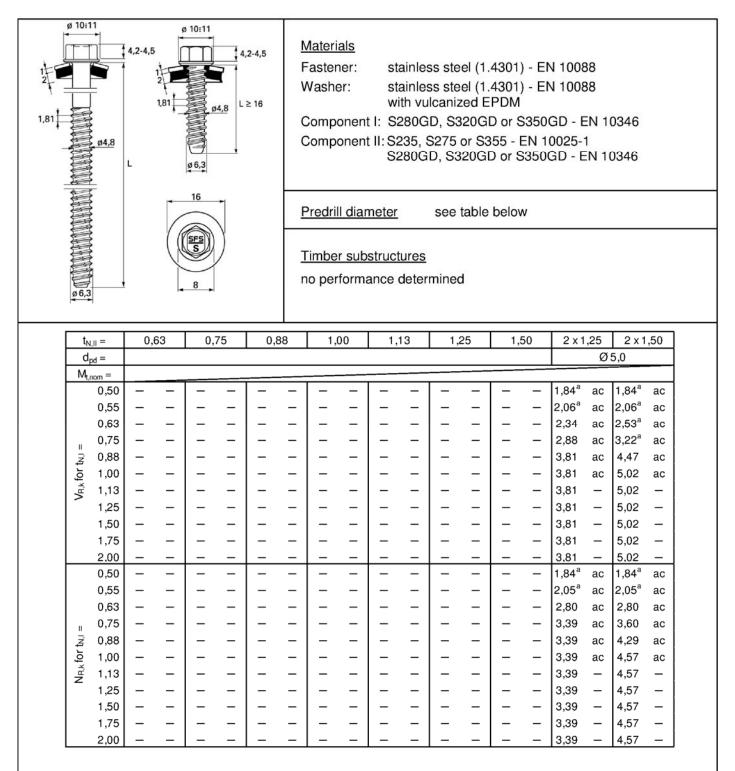
1,75

2,00

SFS TDA - S - S16 - 6,5 x L

with hexagon head and sealing washer $\geq \emptyset 16$ mm





If component I is made of S320GD or S350GD all values may be increased by 8,0%.

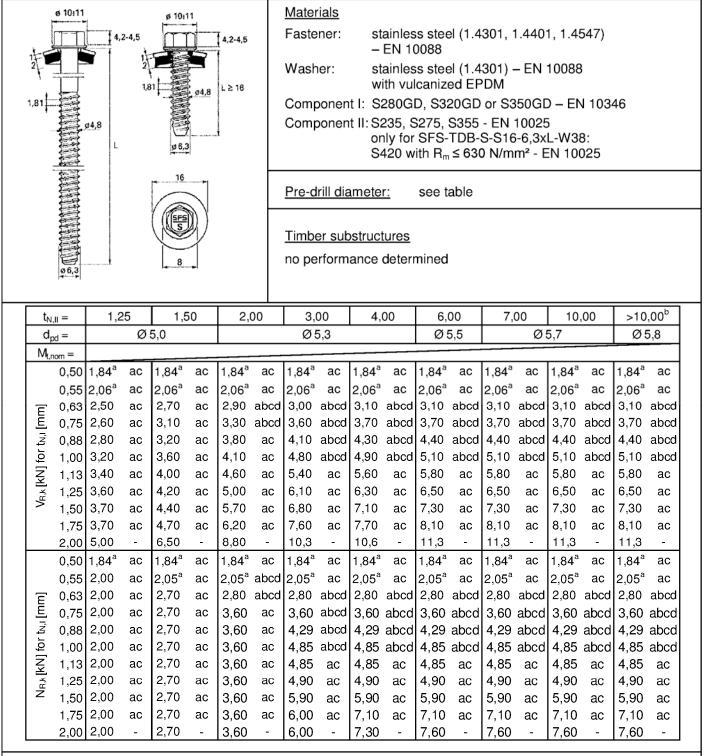
Self-tapping screw

SFS TDB - S - S16 - 6,3 x L

with hexagon head and sealing washer $\geq \emptyset 16 \text{ mm}$

English translation prepared by DIBt





Index a: For component I of S320GD or S350GD the indicated values of V_{R,k} can be increased by 8,3 %.
 Index b: Only for SFS TDB-S-S16-6,3xL-W38 and for component II made of S235 or S280GD. For component II made of S275, S355, S420, S320GD, S350GD the maximum screw-in depth of the fully threaded part is 25,0 mm.

Self-tapping screw

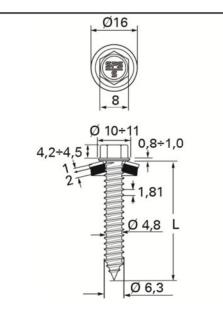
SFS TDB - S - S16 - 6,3 x L, SFS TDB - S - S16 - 6,3 x L - W 38

with hexagon head and sealing washer $\geq \emptyset$ 16 mm (W38 with wax coating)

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English translation prepared by DIBt





Materials	
Fastener:	stainless steel (1.4301) – EN 10088, stainless steel (1.4401) – EN 10088, stainless steel (1.4547) – EN 10088
Washer:	stainless steel (1.4301) – EN 10088 with vulcanized EPDM
Component I:	S280GD, S320GD or S350GD – EN 10346
Component II	: S235, S275, S355 – EN 10025

Predrill diameter

ameter see table below

Timber substructures

no performance determined

t _N	I,II =	1,2	5	1,5	0	2,0	00	3,0	00	4,	00
	- =		5,0	Ø5,3							
	0,50	1,84°	ac	1,84°	ас	1,84°	ac	1,84°	ас	1,84°	ac
	0,55	2,06°	ас	2,06°	ас	2,06°	ас	2,06°	ас	2,06°	ас
	0,63	2,50	ac	2,70	ac	2,90	abod	3,00	abod	3,10	abod
Ē	0,75	2,60	ac	3,10	ас	3,30	abod	3,60	abcd	3,70	abod
Ī	0,88	2,80	ac	3,20	ас	3,80	ас	4,10	abcd	4,30	abod
VR.4 [kN] for thi [mm]	1,00	3,20	ac	3,60	ас	4,10	ас	4,80	abcd	4,90	abod
<u>×</u>	1,13	3,40	ac	4,00	ас	4,60	ас	5,40	ас	5,60	ас
Š.	1,25	3,60	ac	4,20	ас	5,00	ас	6,10	ас	6,30	ас
-	1,50	3,70	ac	4,40	ac	5,70	ac	6,80	ac	7,10	ac
	1,75	3,70	ac	4,70	ас	6,20	ас	7,60	ас	7,70	ас
	2,00	5,00	-	6,50	-	8,80		10,3	-	10,6	-
	0,50	1,84°	ac	1,84°	ас	1,84°	ac	1,84°	ас	1,84°	ac
	0,55	2,00	ac	2,05°	ас	2,05°	abod	2,05°	ас	2,05°	ac
	0,63	2,00	ac	2,70	ac	2,80	abod	2,80	abcd	2,80	abod
Ē	0,75	2,00	ac	2,70	ac	3,60	ac	3,60	abcd	3,60	abcd
CH,I	0,88	2,00	ac	2,70	ac	3,60	ac	4,29	abod	4,29	abcd
يو ا	1,00	2,00	ac	2,70	ас	3,60	ac	4,85	abcd	4,85	abcd
EKN	1,13	2,00	ac	2,70	ac	3,60	ас	4,85	ac	4,85	ac
Ne.k [kN] for th,I [mm]	1,25	2,00	ac	2,70	ac	3,60	ac	4,90	ac	4,90	ac
_	1,50	2,00	ac	2,70	ac	3,60	ac	5,90	ac	5,90	ac
	1,75	2,00	ac	2,70	ac	3,60	ac	6,00	ac	7,10	ac
	2,00	2,00	-	2,70	-	3,60	-	6,00	-	7,30	-

Index a: For component I of S320GD or S350GD the indicated values can be increased by 8,0 %.

Self-tapping screw

SFS TDC – S – S16 – 6,3 × L

with hexagon head and sealing washer $\geq \emptyset$ 16 mm

Annex 36

-

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English translation prepared by DIBt



Ø 10÷11 4,2÷4,5 1 0,8÷1,0 1 1,81 1,81 0 0,3,95

Materials	
Fastener:	carbon steel case hardened and galvanized
Washer:	carbon steel with vulcanized EPDM
Component I:	S280GD, S320GD or S350GD – EN 10346
Component II	: S235, S355 – EN 10025
	S280GD, S320GD or S350GD – EN 10346

Drilling-capacity:

Σt_i ≤ 3,00 mm

Timber substructures

no performance determined

ta n l	mm] =	0,7	'5	0,8	8	1,0	0	1,1	3	1,5	0	1,7	'5	2,0)0
			_							.,-			_		
	0,50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0,55	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ē	0,63	1,54	-	1,54	-	1,54	-	1,54	-	1,54	-	1,54	-	1,54	-
트	0,75	1,54	-	1,54	-	1,54	-	1,54	-	1,54	-	-	-	-	-
5 ō	0,88	1,54	-	2,39	-	2,39	-	2,39	-	-	-	-	-	-	-
ŝ	1,00	1,54	-	2,39	-	2,39	-	-	-	-	-	-	-	-	-
Ve.k [kN] for tw. [mm]	1,13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	1,25	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1,50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0,50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0,55	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ē	0,63	1,17	-	1,60	-	1,92	-	1,92	-	1,92	-	1,92	-	1,92	-
5	0,75	1,17	-	1,60	-	1,92	-	1,92	-	1,92	-	-	-	-	-
5	0,88	1,17	-	1,60	-	1,92	-	1,92	-	-	-	-	-	-	-
N ^{g,k} [kN] for tn, [mm]	1,00	1,17	-	1,60	-	1,92	-	-	-	-	-	-	-	-	-
R,k []	1,13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Z	1,25	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1,50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-

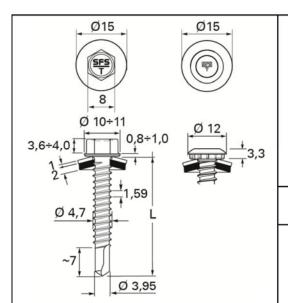
SFS SD2 - T16 - 6,3 x L

with hexagon head or irius[®] drive system and sealing washer $\geq \emptyset$ 16 mm

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English translation prepared by DIBt





Materials	
Fastener:	carbon steel case hardened and galvanized
Washer:	carbon steel with vulcanized EPDM
Component I:	S280GD, S320GD or S350GD – EN 10346
Component II	: S235 – EN 10025
	S280GD or S320GD – EN 10346

 $\Sigma t_i \leq 3,25 \text{ mm}$

Drilling-capacity:

Timber substructures

no performance determined

tuu	[mm] =	1,0	10	1,2	5	1,5	0	2,0	0	2,5	:0
				1,2	<u> </u>		<u> </u>	2,0	<u> </u>	2,0	
	0,50	-	-	1,57*)	ac	1,57*)	ac	1,57°)	ac	1,57°)	ac
	0,55	-	-	1,63*)	ac	1,63*)	ac	1,63°)	ac	1,63*)	ac
Ē	0,63	-	-	1,72*)	ac	1,72*)	ac	1,72*)	ac	-	-
VR.k [kN] for thi [mm]	0,75	-	-	2,43°)	ac	2,43*)	ac	2,43*)	ac	-	-
÷ ح	0,88	-	-	2,92	-	3,11	-	3,49	ac	-	-
Į Ž	1,00	-	-	3,37	-	3,73	-	4,46	ac	-	-
L A	1,13	-	-	3,64	-	3,90	-	-	-	-	-
15	1,25	-	_	3,89	-	4,07	-	-	-	-	-
	1,50		-	4,40	-	4,40	-		-	-	-
	2,00	-	-	4,40	-	-	-	-	-	-	-
	0,50	-	-	1,53	ac	1,53	ac	1,53	ac	1,53	ac
	0,55	0 0	-	1,65	ac	1,71	ac	1,71	ac	1,71	ac
Ē	0,63	-	-	1,65	ac	1,98	ac	1,98	ac	÷	-
57	0,75	-	-	1,65	ac	2,16	ac	2,41	ac	-	-
or tr	0,88	-	-	1,65	-	2,16	-	2,86	ac	-	-
Į Į	1,00	-	-	1,65	-	2,16	-	3,03	ac	=	-
NR.k [kN] for thu [mm]	1,13	-	-	1,65	1	2,16	-	-	-	-	-
2	1,25	-	-	1,65	-	2,16	-	-	-	-	-
	1,50	-	-	1,65	-	2,16	-	-	-	-	-
	2,00	-	-	1,65	-	-	-	-	-	-	-

Index a): for component I of S320GD the indicated values can be increased by 8,3 %.

Self-drilling screw

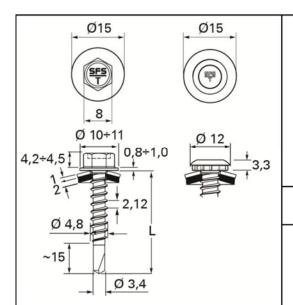
SFS SD3 – T15 – 4,8 x L, SFS SD3 – L12 – T15 – 4,8 x L

with hexagon head or irius $^{\ensuremath{\mathbb{B}}}$ drive system and sealing washer \geq Ø 15 mm

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English translation prepared by DIBt





Materials	
Fastener:	carbon steel case hardened and galvanized
Washer:	carbon steel with vulcanized EPDM
Component I:	S280GD, S320GD or S350GD – EN 10346
Component II:	S235, S355 – EN 10025
	S280GD, S320GD or S350GD – EN 10346
Drilling-capaci	<u>ty:</u> Σt _i ≤ 3,50 mm

Timber substructures

no performance determined

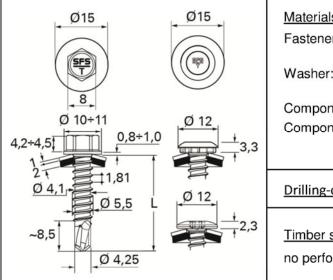
t _{N,II} [mm] =	2×0	,63	2x 0,	,88	2x1,	,00,	2×1	,13	2x1	,25
						_	-				
	0,50	-	-	-	-	-	-	-	-	-	-
	0,55	-	-	-	-	-	-	-	-	-	-
Ē	0,63	1,64	-	1,64	-	1,64	-	1,64	-	1,64	-
VR.k [kN] for tn, [mm]	0,75	2,22	-	2,22	-	2,22	-	2,22	-	-	-
D L	0,88	2,84	-	2,84	-	2,84	-	2,84	-	-	-
Ī	1,00	2,87	-	3,06	-	3,06	-	-	-	-	-
1) *'8	1,13	2,90	-	3,29	-	3,29	-	-	-	-	-
5	1,25	2,90	-	3,29	-	3,29	-	-	-	-	-
	1,50	2,90	-	3,29	-	3,29	-	-	-	-	-
	2,00	-	-	-	-	-	-	-	-	-	-
	0,50	-	-	-	-	-	-	-	-	-	-
	0,55	-	-	-	-	-	-	-	-	-	-
Ē	0,63	1,41	-	1,98	-	1,98	-	1,98	-	1,98	-
5	0,75	1,41	-	2,41	-	2,41	-	2,41	-	-	-
jo Jo	0,88	1,41	-	2,58	-	2,71	-	2,71	-	-	-
Ns.k [kN] for tn.I [mm]	1,00	1,41	-	2,58	-	2,71	-	-	-	-	-
B,k []	1,13	1,41	-	2,58	-	2,71	-	-	-	-	-
2	1,25	1,41	-	2,58	-	2,71	-	-	-	-	-
	1,50	1,41	-	2,58	-	2,71	-	-	-	-	-
	2,00	-	-	-	-	-	-	-	-	-	-

Self-drilling screw

SFS SD3/15 – T15 – 4,8 L, SFS SD3/15 – L12 – T15 – 4,8 x L

with hexagon head or irius $^{\ensuremath{\text{\tiny B}}}$ drive system and sealing washer $\geq \ensuremath{\varnothing}$ 15 mm





	<u>Materials</u>	
	Fastener:	carbon steel case hardened and galvanized
	Washer:	carbon steel with vulcanized EPDM
	Component I:	S280GD, S320GD or S350GD – EN 10346
	Component II:	S235 – EN 10025 S280GD or S320GD – EN 10346
_		

 $\Sigma t_i \leq 3,25 \text{ mm}$

Drilling-capacity:

Timber substructures

no performance determined

t _{м,0} [mm] =	1.0	00	1,2	25	1,5	50	2,0)0	2,5	50
M _{t,t}						-	-				
	0,50	-	-	1,19	ac	1,19	ac	1,19	ac	1,19	ac
	0,55	-	-	1,30	-	1,30	-	1,30	ac	1,30	ac
Ē	0,63	-	-	1,47	-	1,47	-	1,47	ac	2	-
틒	0,75	-	-	1,72	-	1,72	-	1,72	ac	-	-
<i>‡</i> ठ	0,88	-	-	2,49	-	2,62	-	2,87	ac	-	-
VR.k [kN] for tw. [mm]	1,00	-	-	3,20	-	3,45	-	3,94	ac	-	-
11	1,13	-	- 1	3,63	-	3,81	-	-	-		-
5	1,25	-	2	4,03	_	4,14	-	-	-	-	-
	1,50	-	-	4,82	-	4,82	-	-	-	-	-
	2,00	-	-	4,82	-	-	-	-	-	-	-
	0,50	-	-	1,53	ac	1,53	ac	1,53	ac	1,53	ac
	0,55	-	-	1,71	-	1,71	-	1,71	ac	1,71	ac
Ē	0,63	-	-	1,71	-	1,98	-	1,98	ac	-	-
틐	0,75	-	-	1,71	-	2,36	-	2,41	ac		-
5	0,88	-	-)	1,71	-	2,36	-	2,86	ac		-
Ns.k [kN] for tw. [mm]	1,00	- <u>-</u>	-	1,71	-	2,36	-	3,16	ac	<u> </u>	-
3,k [k	1,13	-	-	1,71	_	2,36	_	-	-	- 1	_
Ż	1,25	-	-	1,71	-	2,36	-	-	-	-	-
	1,50	-	-	1,71	-	2,36	-	-	-	-	-
	2,00	-	-	1,71	-	-	-	-	-	-	-

Self-drilling screw

SFS SD3–T15–5,5 x L, SFS SD3–L12–T15–5,5 x L, SFS SD3–D12–T15–5,5 x L

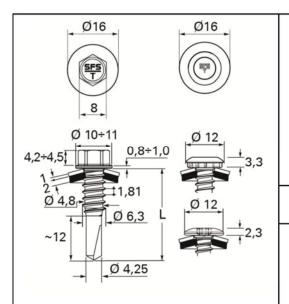
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with hexagon head, torx head or irius[®] drive system and sealing washer $\geq \oslash$ 15 mm

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English translation prepared by DIBt





Materials	
Fastener:	carbon steel case hardened and galvanized
Washer:	carbon steel with vulcanized EPDM
Component I:	S280GD, S320GD or S350GD – EN 10346
Component II	: S235 – EN 10025
	S280GD or S320GD – EN 10346
Drilling-capac	<u>ity:</u> Σt _i ≤ 3,25 mm

Timber substructures no performance determined

t _{N II} [mm] =	1.0	00	1,2	25	1,5	50	2,0	00	2,5	50
	nom =					-	-				
	0,50	-	-	1,61	ac	1,61	ac	1,61	ac	1,61	ac
	0,55	-	-	1,86	-	1,86	-	1,86	-	1,86	-
Ē	0,63	-	-	2,27	-	2,27	-	2,27	-	-	-
5	0,75	-	-	2,88	-	2,88	-	2,88	-	-	-
VR.k [kN] for thi [mm]	0,88	-	-	3,42	-	3,65	-	4,10	-	-	-
Įĥ,	1,00	-	-	3,92	-	4,36	-	5,23	-	-	-
1	1,13	-	-	4,02	-	4,36	-	-	-	-	-
5	1,25	-	-	4,12	-	4,36	-	-	-	-	-
	1,50	-	-	4,32	-	4,36	-	-	-	-	-
	2,00	-	-	4,32	-	-	-	-	-	-	-
	0,50	-	-	1,70	ac	1,70	ac	1,70	ac	1,70	ac
	0,55	-	-	1,93	-	1,93	-	1,93	-	1,93	-
Ē	0,63	-	-	2,29	-	2,29	-	2,29	-	-	-
5	0,75	-	-	2,42	-	2,83	-	2,83	-	-	-
5 D	0,88	-	-	2,42	-	3,36	-	3,77	-	-	-
N ^{g, k} [kN] for thit [mm]	1,00	-	-	2,42	-	3,36	-	3,91	-	-	-
R,k []	1,13	-	-	2,42	2	3,36	-		_	-	-
ź	1,25	-	-	2,42	-	3,36	-	-	-	-	-
	1,50	-	-	2,42	-	3,36	-	-	-	-	-
	2,00	-	-	2,42	-	-	-	-	-	-	-

Self-drilling screw

SFS SD3-T16-6,3 x L, SFS SD3-L12-T16-6,3 x L, SFS SD3-D12-T16-6,3 x L

Annex 41

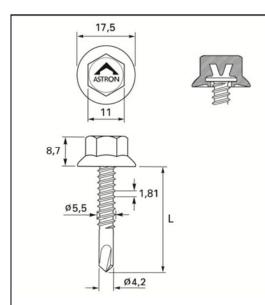
with hexagon head, torx head or irius[®] drive system and sealing washer $\geq \emptyset$ 16 mm

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MaterialsFastener:carbon steel
case hardened and galvanizedWasher:noneComponent I:S280GD or S320GD - EN 10346Component II:S235 - EN 10025-1
S280GD or S320GD - EN 10346

Drilling-capacity:

city: $\Sigma t_i \leq 3,22 \text{ mm}$

Timber substructures

no performance determined

t _N	,ii =	1,0	00	1,1	13	1,2	25	1,3	0	1,7	'5	2,7	72	3,0	00	4,0	00
M _{t,r}	nom =																
	0,50	—	I	Ι	-	I	—	1,76	ac	2,04	ac	2,04	ac	Ι	-	-	-
	0,55	—	_	_	-	_	_	1,76	ac	2,04	ac	_	_	-	_	_	$\sim - 1$
2	0,63	<u></u>	<u></u>	<u> </u>	<u> </u>	- <u></u>		1,76	ac	2,04	ac	<u> 10 - 1</u> 4		с. <u>—</u> с			<u> </u>
L L	0,75	—	_	—	—	—	—	1,76	ac	2,04	ac		_	—	—	—	_
ťn,i	0,88	—	—	—	—	—	—	1,76	ac	2,04	ac	—	—	—	—	—	—
for	1,00	—	_	—	—	—	—	1,76	ac	2,04	ac	I —	—	—	—	—	—
V _{R,k} [kN] for t _{N,I} [mm]	1,13	—	—	—	—	—	_	1,76	ac	2,04	ac	_	—	—	—	—	—
₹	1,25	—	—	—	—	—	_	1,76	ac	2,04	ac	_	—	—	—	—	—
>	1,50	—	_	—	—	—	—	1,76	ac	I —	—	I —	—	—	—	—	_
	1,75	_	_	—	_	_	—	1,76	ac		—		—	_	_	—	_
	2,00	—	_	—	_	—	—	—	_		—	_	—	—	_	—	_
	0,50	—	-	_	_	_	_	1,34	ac	1,94	ac	1,94	ac	_	_	—	_
	0,55	—	_	—	—	—	—	1,34	ac	1,94	ac	I —	—	—	—	—	_
	0,63	—	_	—	_	—	—	1,34	ac	1,94	ac	_	—	_	_	—	_
<u> </u>	0,75	—	—	—	—	—	—	1,34	ac	1,94	ac	I —	—	—	—	—	_
ťn,i	0,88	_	_	—	_	_	—	1,34	ac	1,94	ac		—	_	—	—	_
for	1,00	_	_	—	—	—	—	1,34	ac	1,94	ac		—	_	_	—	_
N _{R,k} [kN] for t _{N,I} [mm]	1,13		—	—	—	_		1,34	ac	1,94	ac		_	—		—	_
3,K [J	1,25	_	_	—	—	_	—	1,34	ac	1,94	ac		_	—	—	_	_
ľ	1,50	_	—	—	_	_	_	1,34	ac	—	_	—	—	—	_	—	_
	1,75		—	—	_	_		1,34	ac					—		_	_
	2,00	—	_	—	—	_	—	—	_	_	_	_	—	_	—	—	_

- If both components I and II are made of S350GD all values may be increased by 17,0%.

Self-drilling screw

SFS SDP3 - Z - 5,5 x L with polyamid hexagon head



$4 \div 4,5$ $7 \div 0 / 13,5$ $1,81 \div 0 / 4,1 L \ge 20$ $12 \checkmark 0 / 4,7$ 0 / 4,7 0 / 5,5		Component Drilling-capa		0GD or S35 r S355 - EN	0GD - EN 1 10025-1	
t _{N,II} = 1,50	2,00	2,50 3,0	0 4,00	5,00	6,00	7,00
M _{t,nom} =						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			

Self-drilling screw

SFS SD5 - H15 - 5,5 x L hexagon flange head Ø15 mm

Electronic copy of the ETA by DIBt: ETA-10/0198

1,25

1,50

2,00

2,20

2,20

ac

а



	√4,5, ~11 Ø 5,5 ~11 Ø 4,75													
SFET 8	÷11 ±11,8°	5 5		2	3,3 7111	Com Drillir <u>Timb</u>	ener: ner: ponent ponent ng capa er subs	cas car witi I: S2 II: S2 S2 acity acity	35, S27 80GD, Σt	ened eel nized S3200 75 or S3200 $S_{i} \leq 6,0$	EPDM GD or \$ \$355 -	S3500 EN 10	3D – El	
									01-					
	t _{N,II} [mm] =	1,5	50	2	,00	2,5	50	3,0	00	4,0	00	5,0	00
	M _{to}	nam =												
		0,50	1,57	ac	1,76	ac	1,76	ac	1,76	ac	1,76	ac	1,76	ac
		0,55	1,71	ac	1,86	ac	1,86	ac	1,86	ac	1,86	ac	1,86	а
	Ē	0,63	1,94	80	2,03	ac	2,03	ac	2,03	ac	2,03	ac	2,03	а
	- T'H	0,75	2,28	ac	2,28	ac	2,28	ac	2,28	ac	2,28	ac	2,28	а
	VR.k [kN] for tru [mm]	0,88	2,86	ac	2,86	ac	3,04	ac	3,27	ac	3,27	ac	3,27	а
	EN I	1,00	3,43	ac	3,43		3,74	ac	4,18	ac	4,18	ac	4,18	а
	18,8	1,13	3,43	ac	3,89	ac	4,50	ac	5,17	а	5,17	8	-	-
	>	1,25	3,43	ac	4,31	ac	5,20	а	6,08	а	6,08	а	-	-
		1,50	3,43	ac	4,31	а	5,20	а	6,08	a	6,08	а	-	-
		2,00	3,43	а	4,31	8	5,20	а	6,08	а	6,08	a	-	-
		0,50	1,53	ac	1,53	ac	1,53	ac	1,53	ac	1,53	ac	1,53	ac
		0,55	1,71	ac	1,71	ac	1,71	ac	1,71	ac	1,71	ac	1,71	а
	Ē	0,63	2,20	ac	1,98	ac	1,98	ac	1,98	ac	1,98	ac	1,98	а
	L I	0,75	2,20	ac	2,41	ac	2,41	ac	2,41	ac	2,41	ac	2,41	а
	Ę.	0,88	2,20	ac	2,86	ac	2,86	ac	2,86	ac	2,86	ac	2,86	а
	NB.k [kN] for tw. [mm]	1,00	2,20	ac	3,20	ac	3,20	ac	3,29	ac	3,29	ac	3,29	а
	B.k [1,13	2,20	ac	3,20	ac	3,20	ac	3,73	а	3,73	а	-	-
	Z	1,25	2,20	ac	3,20	ac	3,20	а	4,10	а	4,10	а		-

For component I made of S320GD or S350GD the indicated values of $V_{B,k}$ can be increased by 8,0 %.

3,20

3,20

3,20

a

a

4,10

5,00

5,40

8

a

a

4,10

5,00

5,40

а

a

-

-

Self-drilling screw

3,20

3,20

3,20

a

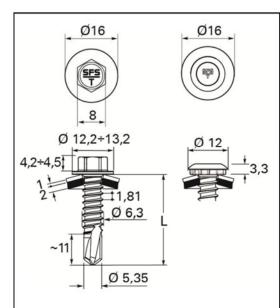
a

SFS SD6-T15(S16)-5,5xL, SFS SD6-L12-T15(S16)-5,5xL, SFS SDZ6-T15(S16)-5,5xL with hexagon head, irius[®] drive system or Zamac head and sealing washer $\geq \emptyset$ 15 mm

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English translation prepared by DIBt





Materials	
Fastener:	carbon steel case hardened and galvanized
Washer:	carbon steel with vulcanized EPDM
Component I:	S280GD, S320GD or S350GD – EN 10346
Component II	: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346

 $\Sigma t_i \leq 6,00 \text{ mm}$

Drilling capacity

<u>Timber substructures</u> no performance determined

t _{н,0} [mm]=	1,5	50	2,0	0	2,5	50	3,0	00	4,0)0	5,0	0
M _{k,r}								_					
	0,50	1,97	ac	1,97	-	1,97	-	1,99	-	1,99	-	1,99	-
	0,55	1,99	-	2,05	-	2,13	-	2,19	-	2,19	-	2,19	-
Ē	0,63	2,27	-	2,35	-	2,44	-	2,51	-	2,51	-	2,51	-
느	0,75	2,71	-	2,80	-	2,90	-	2,99	-	2,99	-	2,99	-
t) IO	0,88	3,18	-	3,36	-	3,54	-	3,72	-	3,72	-	3,72	-
ž	1,00	3,61	-	3,87	-	4,13	-	4,39	ac	4,39	ac	4,39	а
VR.k [kN] for thi [mm]	1,13	3,61	-	3,87	-	4,13	-	4,39	ac	4,39	а	-	-
5	1,25	3,61	-	3,87	-	4,13	-	4,39	ac	4,39	а		-
	1,50	3,61	-	3,87	-	4,13	-	4,39	ac	4,39	а	-	-
	2,00	3,61	-	3,87	-	4,13	-	4,39	ac	4,39	а	-	-
	0,50	1,95	ac	1,95	-	1,95	_	1,95	2	1,95	-	1,95	-
	0,55	2,13	-	2,33	-	2,33	-	2,33	-	2,33	-	2,33	-
Ē	0,63	2,13	-	2,93	-	2,93	-	2,93	-	2,93	-	2,93	-
느	0,75	2,13	-	3,20	-	3,83	-	3,83	-	3,83	-	3,83	-
£ 5	0,88	2,13	-	3,20	-	4,59	-	4,59	-	4,59	-	4,59	-
N.	1,00	2,13	-	3,20	-	4,63	-	5,29	ac	5,29	ac	5,29	а
NR.k [kN] for tw. [mm]	1,13	2,13	-	3,20	_	4,63	_	5,29	ac	5,29	а		-
Ż	1,25	2,13	-	3,20	-	4,63	-	5,29	ac	5,29	а		-
	1,50	2,13	-	3,20	-	4,63	-	5,29	ac	5,29	а	-	-
	2,00	2,13	_	3,20	_	4,63	-	5,29	ac	5,29	а	-	-

Self-drilling screw

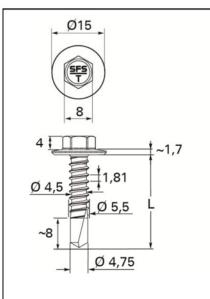
SFS SD6 – T16 – 6,3 x L, SFS SD6 – L12 – T16 – 6,3 x L

with hexagon head or $\mbox{ irius}^{\mbox{${\mathbb P}$}}$ drive system and sealing washer $\geq \ensuremath{{\varnothing}}$ 16 mm

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English translation prepared by DIBt





Materials	
Fastener:	carbon steel case hardened and galvanized
Washer:	none
Component I:	S280GD, S320GD or S350GD – EN 10346
Component II	: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346

Drilling capacity

Σt_i ≤ 6,00 mm

Timber substructures

no performance determined

		-0-				2		2					
t _{н,0} [mm]=	1,5	50	2,0)0	2,5	50	3,0)0	4,0)0	5,0)0
M _N	nam =												
	0,50	1,57	ac	1,76	ac								
	0,55	1,71	ac	1,86	а								
Ē	0,63	1,94	ac	2,03	а								
느	0,75	2,28	ac	2,28	а								
đ đ	0,88	2,86	ac	2,86	ac	3,04	ac	3,27	ac	3,27	ac	3,27	а
ž	1,00	3,43	ac	3,43	ac	3,74	ac	4,18	ac	4,18	ac	4,18	а
VR.k [kN] for tw, [mm]	1,13	3,43	ac	3,89	ac	4,50	ac	5,17	а	5,17	а	-	-
5	1,25	3,43	ac	4,31	ac	5,20	а	6,08	а	6,08	а	-	-
	1,50	3,43	ac	4,31	а	5,20	а	6,08	а	6,08	а	-	-
	2,00	3,43	a	4,31	а	5,20	а	6,08	а	6,08	а	-	-
	0,50	1,15	ac										
	0,55	1,28	ac	1,28	а								
Ē	0,63	1,80	ac	1,80	а								
느	0,75	2,20	ac	3,20	а								
5 Ö	0,88	2,20	ac	3,20	ac	3,20	ac	4,00	ac	4,00	ac	4,00	а
N.	1,00	2,20	ac	3,20	ac	3,20	ac	4,80	ac	4,80	ac	4,80	а
NB.k [kN] for thi [mm]	1,13	2,20	ac	3,20	ac	3,20	ac	5,20	а	5,20	а	-	-
ž	1,25	2,20	ac	3,20	ac	3,20	а	5,40	а	5,60	а	-	-
	1,50	2,20	ac	3,20	а	3,20	а	5,40	а	5,80	а	-	-
	2,00	2,20	а	3,20	а	3,20	a	5,40	a	5,80	а	-	-

SFS SD6 – H15 – 5,5 x L

with hexagon flange head $\ensuremath{\textit{\varnothing}15}\xspace$ mm



4 ÷ 4, 1,7 * 1,81	5	言	ø 4,1 ø 4,1 ø 5,5	-				Fast Was Com Com <u>Drilli</u>	iponen iponen ng cap	t I: S t II: S s pacity		rdene 0 or S 275 o 0, S32 Σt _i ≤ {	320GE r S355) - EN - EN or S35	10340 10025	5-1	0346		
	$\begin{array}{c c} t_{\rm N,II} = & 1,50 \\ M_{\rm t,nom} = & & \\ 0,50 & & \\ 0,55 & & \end{array}$			2,0	2,00		,50	3,0	00	4,0	00	5,0)0	6,0)0	7,0	0]	
	M _{t,}																		
	V _{R,k} [kN] for t _{N,i} [mm]		2,00 2,40 2,60 3,00 3,40 3,80 4,60 4,60 4,60	ac ac 	2,40 2,80 3,20 3,80 4,20 4,80 5,20 5,20 5,20	ac ac 	 2,40 2,80 3,20 3,80 4,20 4,80 5,20 5,20 5,20	ac — — — —	2,80 3,20 3,80 4,40 5,00 5,60 5,80 5,80 5,80	ac ac 	2,80 3,40 4,00 4,60 5,20 5,80 6,40 6,40 6,40	ac ac ac 	3,00 3,40 4,20 4,80 5,40 6,00 7,00 7,00 7,00 7,00	ac ac ac 	3,00 3,60 4,20 4,80 5,40 6,40 7,20 7,20 7,20	ac ac ac aa			
	N _{R,k} [kN] for t _{N,i} [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75	1,80 2,20 2,20 2,20 2,20 2,20 2,20 2,20	 ac 	1,80 3,20 3,20 3,20 3,20 3,20 3,20 3,20 3,2		1,80 3,20 3,20 3,20 3,20 3,20 3,20 3,20 3,2	 ac ac 	1,80 3,20 4,00 4,80 5,20 5,40 5,40 5,40 5,40 5,40		5,80 3,20 4,00 4,80 5,20 5,60 5,80 5,80 5,80		1,80 3,20 4,00 4,80 5,20 5,60 6,00 6,00 6,00	 ac ac ac 	1,80 3,20 4,00 4,80 5,20 5,60 6,00 6,00 6,00	 ac ac ac a 			

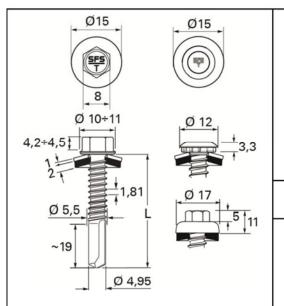
Self-drilling screw

SFS SD8 - H15 - 5,5 x L hexagon flange head Ø15 mm

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English translation prepared by DIBt





Materials	
Fastener:	carbon steel case hardened and galvanized
Washer:	carbon steel with vulcanized EPDM
Component I:	S280GD, S320GD or S350GD – EN 10346
Component II:	S235, S275 or S355 – EN 10025

 $\Sigma t_i \leq 14,00 \text{ mm}$

Drilling capacity

<u>Timber substructures</u> no performance determined

t _{М,П} [mm] =	4,0	00	5,0)0	6,0	00	8,0	00	10,	00	12,	00
	nam =							_					
	0,50	0,75	-	0,75	-	0,75	-	0,75	-	0,75	-	0,75	-
	0,55	0,88	-	0,88	-	0,88	-	0,88	-	0,88	-	0,88	-
Ē	0,63	2,63	ac										
VR.k [kN] for tn,i [mm]	0,75	5,25	ac										
di ta	0,88	6,22	ac	6,35	ac	6,49	ac	6,49	ac	6,49	ac	6,49	а
Ĩ	1,00	7,19	ac	7,46	ac	7,72	ac	7,72	ac	7,72	ac	7,72	а
1	1,13	7,19	-	7,46	-	7,72	-	7,97	-	7,97	-	7,97	-
5	1,25	7,19	-	7,46	-	7,72	-	8,22	-	8,22	-	8,22	-
	1,50	7,19	-	7,46	-	7,72	-	8,72	-	8,72	-	8,72	-
	2,00	7,19	-	7,46	-	7,72	-	8,72	-	8,72	-	8,72	-
	0,50	1,53	-	1,53	-	1,53	-	1,53	-	1,53	1	1,53	-
	0,55	1,71	-	1,71	-	1,71	-	1,71	-	1,71	-	1,71	-
Ē	0,63	1,98	ac										
트	0,75	2,41	ac										
5 5	0,88	2,86	ac	2,86	а								
L.	1,00	3,29	ac	3,29	а								
NB.k [kN] for tn,I [mm]	1,13	3,73	2	3,73	-	3,73	-	3,73	-	3,73	-	3,73	-
Ž	1,25	4,10	-	4,10	-	4,10	-	4,10	-	4,10	-	4,10	-
	1,50	5,00	-	5,00	-	5,00	-	5,00	-	5,00	-	5,00	-
	2,00	6,77	-	6,77	-	6,77	-	6,77	-	6,77	-	6,77	-

For component I of S320GD or S350GD the indicated values of $V_{B,k}$ can be increased by 8,0 %.

Self-drilling screw

SFS SD14–T15 (S16)–5,5 x L, SFS SD14–L12–T15 (S16)–5,5 x L, SFS SDZ14–T15 (S16)–5,5 x L with hexagon head, irius[®] drive system or Zamac head and sealing washer $\ge \emptyset$ 15 mm

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English translation prepared by DIBt



4 1,5÷1	Ţ	5,5		1,81	1÷1,2			Fast Was Corr Corr	iponent	ca nd t I: S t II:S: S:	one 280GD 235, S2 280GD	dene , S32 275 o , S32	r S355 0GD or	r S35 - EN ⁻ S35	nized 0GD - I 10025- 0GD - E	1			
	Ľ	\square	ø4	,9 ,9					ng cap	acity	2	⊆ų ⊃ 1	4,00 m						
			_ _					Tim	ber sub	struc	<u>tures</u>								
								no p	erforma	ance	determ	ined							ļ
]	t _N	II =	4,0	0	5,0	0	6,0	0	8,0	0	10	,0	12	,0	13,	0	14	.,0	
										-	_			-					
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				-	_	-	_	—	_	-	_	-	_	-	Ι	_	-	
			—	—	-		-	—	— _	—	-		-	—	-	—	—	—	
	[mn]					ac	2,63 ^a 5,25 ^a	ac ac	2,63 ^a	ac ac	2,63 ^a 5,25 ^a	ac	2,63 ^a 5,25 ^a	ac ac	2,63 ^a	_	_		
	N,I [r					ac ac	5,25 6,49 ^a	ac	5,25 ^a 6,49 ^a	ac	5,25 6,49 ^a	ac ac	5,25 6,49 ^a	ac	5,25 ^a 6,49 ^a	_			
	for t					ac	7,72 ^a	ac	7,72 ^a	ac	7,72 ^a	ac	7,72 ^a	a	7,72 ^a	_	_	_	
	Ŝ		,		7,46 ^a	ac	7,72 ^a	_	7,97		7,97		7,97	_		—	—	—	
	В, Г			—	7,46 ^a	ac	7,72 ^a	—	8,22	—	8,22	—	8,22	—	-	—	—	—	
	>			—	7,46 ^a	ac	7,72 ^a	—	8,72	—	8,72	—	8,72	—	-	—	—	-	
				—	7,46 ^a	ac	7,72 ^a	—	8,72	—	8,72	—	8,72	—	-	—		-	
		2,00	7,19 ^a	_	7,46 ^a	ac	7,72 ^a		8,72	_	8,72		8,72	_					
		0,55		_		_		_		_		_		_					
			2,00 ^a	ac	2,00 ^a	ac	2,00 ^a	ac	2,00 ^a	ac	2,00 ^a	ac	2,00 ^a	ac	2,00 ^a	_	_	_	
			2,90 ^a	ac	2,90 ^a	ac	2,90 ^a	ac	2,90 ^a	ac	2,90 ^a	ac	2,90 ^a	ac	2,90 ^a	_	_	_	
	.t		3,62 ^a	ac	3,62 ^a	ac	3,62 ^a	ac	3,62 ^a	ac	3,62 ^a	ac	3,62 ^a	а	3,62 ^a	—	_	—	
] for		4,33 ^a	ac	4,33 ^a	ac	4,33 ^a	ac	4,33 ^a	ac	4,33 ^a	ac	4,33 ^a	а	4,33 ^a	—	—	—	
	N _{R,k} [kN] for t _{N,I} [m		5,23	—	5,23	—	5,23	—	5,23	—	5,23	—	5,23	—	-	—	—	-	
	N _{R,k}		6,13 6,99	_	6,13 8,75	_	6,13 9,62	_	6,13 9,62	_	6,13 9,62	_	6,13 9,62			_		_	
		1,50		_	8,75 8,75	_	9,62	_	9,62 9,62	_	9,62 9,62	_	9,62 9,62	_					
			6,99	_	8,75	_	9,62	_	9,62	_	9,62	_	9,62	_		_	_	_	
L		_,••	-,		1-,				,		1 - ,		1 - ,		1				1

- Index a: If component I is made of S320GD or S350GD the value may be increased by 8,0%.

Self-drilling screw

SFS SD14 – H15 – 5,5 x L hexagon flange head Ø15 mm



Ø14 Ø17 Ø17 8 Ø17 Ø17 8 8 Ø17 8 8 Ø17 8 8 9 10+11 3,6+4,0 1 0,8+1,0	MaterialsFastener:carbon steel case hardened and galvanizedWasher:aluminium alloy AW-AIMg3 – EN 485 with vulcanized EPDMComponent I:S280GD, S320GD or S350GD – EN 10346Component II:S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
3,5,7,4,0,7,7,7,7,7,7,7,7,7,7,7,7,7,7,7,7,7	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$

۱.																						
	t _{N,II} [n	nm]=	0,4	0	0,5	0	0,5	5	0,6	33	0,7	5	0,8	8	1,0	0	1,1	3	1,2	5	1,5	0
	M _{t,n}	om =										-										
		0,40	0,58	-	0,58	-	0,58	-	0,58	-	0,58	-	0,58	-	0,58	-	0,58	-	0,58	-	0,58	-
		0,50	0,58	-	0,69	-	0,69	-	0,69	-	0,69	-	0,69	-	0,69	-	0,69	-	0,69	-	0,69	-
	Ē	0,55	0,58	-	0,69	-	0,80	-	0,80	-	0,80	-	0,80	-	0,80	-	0,80	-	0,80	-	-	-
	Ē	0,63	0,58	-	0,69	-	0,80	-	0,98	-	0,98	-	0,98	-	0,98	-	0,98	-	0,98	-	-	-
	V _{R.k} [kN] for t _{N,I} [mm]	0,75	0,58	-	0,69	-	0,80	-	0,98	-	1,26	-	1,26	-	1,26	-	1,26	-	1,26	-	-	-
	4] fo	0,88	0,58	-	0,69	-	0,80	-	0,98	-	1,26	-	1,82	-	1,82	-	-	-	-	-	-	-
	× ×	1,00	0,58	-	0,69	-	0,80	-	0,98	-	1,26	-	1,82	-	2,35	-	-	-	-	-	-	-
	°,	1,13	0,58	-	0.69	-	0.80	-	0.98	-	1,26	-	-	-	-	-	-	-	-	-	-	-
		1,25	0,58	-	0.69	_	0.80	-	0,98	-	1,26	-	-	_	- 1	-	-	_	- 1	_	- 1	-
		1,50	0.58	-	0.69	_	-	-	-	_	-	-	-	-	l .	-	-	-	- 1	_	-	-
		0,40	0,30	-	0,42	-	0,49	-	0,80	-	1,00	-	1.09	-	1,09	-	1,09	-	1,09	-	1,09	-
		0,50	0,30	-	0,42	_	0.49	-	0.80	-	1,00	-	1,40	-	1.70	-	1,90	-	1,92	_	1.92	-
	-	0.55	0,30	_	0,42	_	0,49	-	0,80	-	1,00	-	1,40	-	1,70	-	1,90	-	2,10	_	-	_
	ш,	0,63	0,30	-	0,42	_	0,49	-	0.80	-	1,00	-	1,40	_	1,70	-	1.90	-	2,10	_		
	tn,i	0,75	0,30	-	0,42	_	0,49	-	0.80	-	1,00	-	1,40	-	1,70	-	1,90	-	2,10	_	_	.
] for	0,75	0,30	_	0,42	_	0,49	_	0.80	_	1,00	_	1,40	-	1,70	-	1,50	_	2,10	-	- I	-
	NY]				· ·		· ·		, i		, í		,	-	, i		-	-	-	-	-	-
	N _{R,k} [kN] for t _{N,I} [mm]	1,00	0,30	-	0,42	-	0,49	-	0,80	-	1,00	-	1,40	-	1,70	-	-	-	-	-	-	-
	2	1,13	0,30	-	0,42	-	0,49	-	0,80	-	1,00	-	-	-	-	-	-	-	-	-	-	-
		1,25	0,30	-	0,42	-	0,49	-	0,80	-	1,00	-	-	-	-	-	-	-	-	-	-	-
Ιl		1,50	0,30	-	0,42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Self-drilling	screw
---------------	-------

Annex 50

 $SFS \ SL2 - T - A14 - 4,8 \ x \ L, \ SFS \ SLZ2 - T - A14 - 4,8 \ x \ L$ with hexagon head or Zamac head and sealing washer $\geq \oslash \ 14 \ mm$

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59 3,5 ,5		3,; _2,8 ↓ ↓	<u>B</u> 1 20		10:1 (SFS SW (Fast Was Corr	iponen	ca no tI:Sa	one 280GD	dene , S32		r S35	nized 0GD – 0GD –			
, U <u>¥</u>		ø 2,8 ø 4,8					Tim	ng cap ber sub erform	struct	ures		.,50 mn	n				
t,	N,II =	0,6	63	0,7	5	0,8	8	1,0)0	1,1	3	1,2	25	1,5	50	2,(00
	t,nom =	,		,						_							
V _{R,k} [kN] for t _{N,i} [mm]	1,50 1,75 2,00 0,50	1,80 2,10		1,40 1,90 2,50 2,50 2,50 2,50 2,50 2,50 		1,90 1,90 2,80 2,80 2,80 2,80 2,80 		2,40 2,60 2,80 3,60 3,60 3,60 3,60 		 2,40 2,80 3,60 3,60 3,60 		 2,40 2,80 3,60 3,60 3,60 		 2,40 2,60 2,80 3,60 			
N _{R,k} [kN] for t _{N,i} [mm]	1,00	0,80 0,80 0,80 0,80		1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00		 1,40 1,40 1,40 1,40 1,40 1,40 				1,90 1,90 1,90 1,90 1,90 1,90 		 2,10 2,10 2,10 2,10 2,10 		 2,10 2,10 2,10 			

Self-drilling screw

SFS SL2 – 4,8 x L

with threadfree zone and hexagon flange head Ø15 mm

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7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-	3 [↑] , ★		Ø 13,5	4,5 ↓				Fast Was Corr	erials ener: her: ponen ponen	ca no t I: Sa		dene , S32	0GD o	r S35	0GD -			
8,5 0 0 0 0 0 0 0 0																		
									erform			ined						
[,II =	0,6	63	0,7	5	0,8	8	1,0	0	1,1	3	1,2	25	1,	50	2,0	00
	M _{t,r}	m = 0.50								_			-				1	
	V _{R,k} [kN] for t _{N,I} [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,50	0,90 0,90 0,90 0,90						— 1,30 2,70 3,60 3,90 — — — — — — — —	a 		a 		a a 				
	N _{R,k} [kN] for t _{N,I} [mm]	0,55 0,63 0,75 0,88	0,80 0,80		1,10 1,10 1,10 1,10 1,10 1,10 1,10 		 1,40 1,40 1,40 1,40 1,40 		 1,60 1,60 1,60 1,60 	a 	 1,80 1,90 1,90 	a 	 1,80 1,90 1,90 1,90 	a a 				

Self-drilling screw

SFS SL2 – H15 – 6,3 x L

with threadfree zone and hexagon flange head Ø15 mm

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	4;4,5 13,5 L≥22		Fa W Co	aterials istener: asher: omponent omponent	case none 1: S280)GD, S32	0GD or 3	S350GI	D – EN 1		
	Ø 4,7 Ø 6,3		<u></u>	illing capa mber suba performa	structure	es	3,00 mm				
t _{N,II} =	0,75	0,88	1,00	1,1	3	1,25	1,50)	1,75	2,0	00
$\begin{tabular}{ c c c c c c c } \hline M_{1,nom} &= & 0,50 & 0,55 & 0,63 & 0,75 & 0,88 & 0,75 & 0,88 & 1,00 & 1,13 & 1,25 & 1,50 & 0,55 & 0,63 & 0,55 & 0,63 & 0,75 & 0,63 & 0,75 & 0,88 & 1,00 & 0,75 & 0,88 & 1,00 & 1,13 & 1,25 & 1,50 & 1,50 & 0,50 & 0,50 & 0,50 & 0,55 & 0,63 & 0,75 & 0,63 & 0,75 & 0,88 & 1,00 & 0,75 & 0,88 & 1,00 & 0,55 & 0,63 & 0,75 & 0,88 & 0,75 &$			3,20 3,20 3,20 3,20 3,20 3,20 3,20 3,20 1,40 1,40 1,40	- 3,40					10 — 10 — — — — — — — — — — — — — — — — — — —		

Self-drilling screw

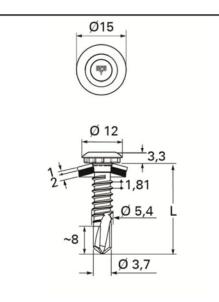
SFS SL3 - H15 - 6,3 x L

with threadfree zone and hexagon flange head \emptyset 15 mm

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Materials	
Fastener:	carbon steel case hardened and galvanized
Washer:	carbon steel with vulcanized EPDM
Component I:	S280GD, S320GD or S350GD – EN 10346
Component II:	S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346

Drilling capacity

<u>γ</u>Σt_i ≤ 3,25 mm

Timber substructures

no performance determined

t [mm]=	1,2	5	1,5	0	2,0	10	2,50		
		1,1						- E,		
	0,50	1,79	ac	1,79	ac	1,79	ac	1,79	ac	
	0,55	1,92	ac	1,92	ac	1,92	ac	1,92	а	
Ē	0,63	2,13	ac	2,13	ac	2,13	а	-	-	
V8.k [kN] for twi [mm]	0,75	2,44	ac	2,44	ac	2,44	а	-	-	
5	0,88	2,57	-	2,57	-	2,57	-	-	-	
Į.	1,00	3,11	-	3,11	-	3,11	-	· –	-	
1	1,13	3,43	-	3,43	-	-	-	-	-	
5	1,25	3,72	-	3,72	-	- 1	-	÷-	-	
	1,50	4,33	-	4,33	-	-	-	· 7	-	
	2,00	4,33	-	_	-	-	-	<u>_</u>	-	
	0,50	1,90	ac	1,90	ac	1,90	ac	1,90	ac	
	0,55	2,12	ac	2,12	ac	2,12	ac	2,12	а	
Ē	0,63	2,18	ac	2,47	ac	2,47	а	-	-	
Ę	0,75	2,18	ac	2,93	ac	3,00	а	-	-	
ō	0,88	2,18	-	2,93	-	3,47	-	-	-	
Ĩ.	1,00	2,18	-	2,93	-	3,90	-	-	-	
NB.k [kN] for tw. [mm]	1,13	2,18	-	2,93	-	-	-	-	-	
Z	1,25	2,18	-	2,93	-	-	-	-	-	
	1,50	2,18	-	2,93	-	-	-	-	-	
	2,00	2,18	-	2,93	-	-	-	-	-	

Self-drilling screw

SFS SDL3 – L12 – T15 – 5,5 x L

with irius $^{\ensuremath{\mathbb{B}}}$ drive system and sealing washer $\geq \ensuremath{\varnothing}$ 15 mm

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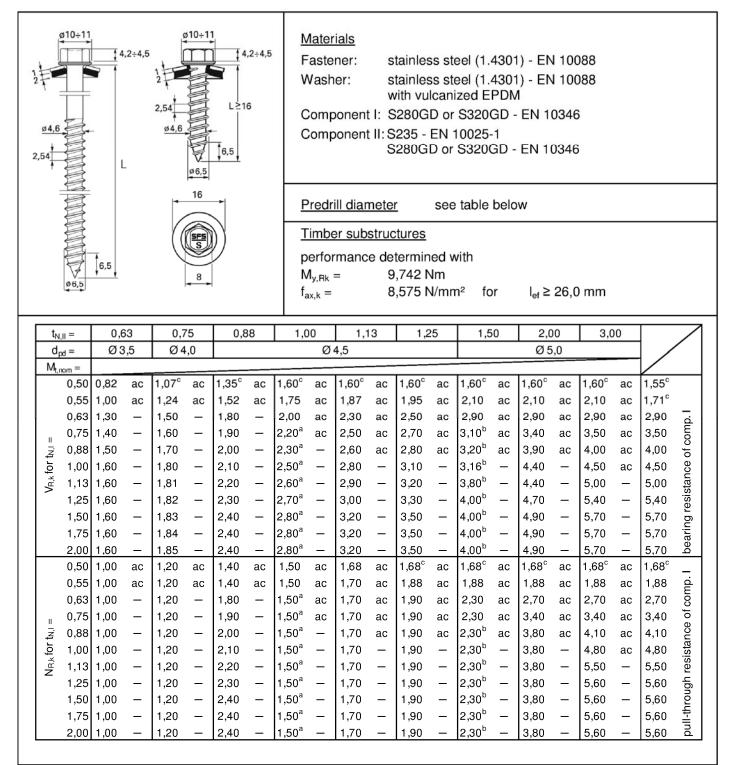
Ø 10:11 4,2-4,5; 1 3 1 1,95 L≥42 0,8 1 1,95 L≥42	MaterialsFastener:stainless steel (1.4301) - EN 10088Washer:stainless steel (1.4301) - EN 10088with vulcanized EPDMComponent I:S280GD, S320GD or S350GD - EN 10346Component II:structural timber - EN 14081
~7.0	$\label{eq:predrilldiameter} \hline Predrill diameter & see table below \\ \hline \hline Timber substructures \\ performance determined with \\ M_{y,Rk} = 7,911 \ Nm \\ f_{ax,k} = 9,800 \ N/mm^2 \ for \ l_{ef} \geq 24,0 \ mm \\ \hline \end{array}$

L,	_{əf} =	24	4	25	5	2	6	2	7	2	В	29	9	30)	31	1	32	2		
M _{t,r}	iom =																			\sim	
	0,50	0,96	—	1,00	—	1,02	—	1,02	—	1,02 ^a											
	0,55	0,96	—	1,00	—	1,04	—	1,08	—	1,10	—	1,10	—	1,10 ^a							
Έ	0,63	0,96	—	1,00	_	1,04	_	1,08	_	1,12	_	1,16	—	1,20	_	1,21	_	1,21	—	1,21 ^a	j.
<u>Ē</u>	0,75	0,96	_	1,00	_	1,04	_	1,08	_	1,12	_	1,16	_	1,20	_	1,24	_	1,28	_	1,40 ^a	t l
t.	0,88	—	—	_	_	-	_	-	_	_	_	-	—	-	_	_	_	_	_	-	star nen
V _{R,k} [KN] for t _{N,I} [mm]	1,00	—	—	-	_	-	—	-	—	-	—	-	—	-	_	—	—	-	—	-	ng resistance component l
Ϊ	1,13	—	_	-	_	-	_	-	_	-	_	-	—	-	_	—	—	-	—	-	i ng i
R.k [1,25	—	—	—	—	—	—	—	—	-	—	-	—	-	—	—	—	-	—	-	bearing I con
>	1,50	—	—	-	_	-	_	-	—	-	—	-	—	-	_	-	—	-	—	-	٩
	1,75	—	—	—	—	-	_	—	_	-	_	-	_	-	_	—	—	-	—	-	
	2,00	_	_	_	_	_	_	_	_		_		_		_	_	_		_	_	
	0,50	1,30	—	1.35	_	1,40	_	1,46	_	1,51	—	1,57	_	1,59	_	1,59	_	1,59ª	—	1,59ª	
	0,55	1,30	—	1.35	_	1,40	—	1,46	—	1,51	—	1,57	—	1,62	—	1,67	—	1,73	—	1,93 ^a	
Έ	0,63	1,30	_	1.35	_	1,40	—	1,46	—	1,51	—	1,57	—	1,62	_	1,67	—	1,73	—	2,44 ^a	ce
<u>_</u>	0,75	1,30	—	1.35	_	1,40	_	1,46	_	1,51	_	1,57	_	1,62	_	1,67	_	1,73	—	3,28 ^a	star t I
ţ	0,88	—	_	_	_	-	_	-	_	_	_	-	_	_	_	_	_	-	_	-	rough resist
<u>[</u>	1,00	—	_	-	_	-	—	-	—	-	—	-	—	-	_	—	—	-	—	-	l your
N _{R,k} [KN] for t _{N,I} [mm]	1,13	—	—	-	—		—	-	—	-	—	-	—	-	—	—	—	-	—	-	pull-through resistance component l
R,k [1,25	—	—	-	_	-	—	—	—	-	—	-	—	-	—	—	—	-	—	-	-t-
z	1,50	—	—	-	_	-	_	-	—	-	_	-	—	-	_	—	—	-	_	-	ы
	1,75	-	—	-	-	-	-	-	_	-	_	-	—	-	_	-	—	-	—	-	
	2,00	_	_	_	—	—	—	—	—	—	—	—	—	_	_	—	_	-	_	-	

Index a: For component I of S320GD or S350GD the indicated values can be increased by 8,0 %.
 The values listed above in dependence on the screw-in length l_{ef} are valid for k_{mod} = 0,90 and timber strength grade C24 (ρ_a = 350 kg/m³). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.

Self-drilling screw	
SFS SW2 - S - S16 - 6 x 42	Annex 55
with hexagon head and sealing washer $\geq \emptyset$ 16 mm	





- Index a: If predrill diameter d_{pd} = 4,0 mm the values N_{B,k} [kN] and V_{B,k} [kN] may be increased by 7,0%.

Index b: If predrill diameter d_{pd} = 4,5 mm the values N_{R,k} [kN] may be increased by 15,0% and the values V_{R,k} [kN] may be increased by 10,0%.

- Index c: If component I is made of S320GD or S350GD the value may be increased by 8,0%. The values listed above in dependence on the screw-in length I_{ef} are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_a = 350 \text{ kg/m}^3$). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.

Self-tapping screw

SFS TDA - S - S16 - 6,5 x L

with hexagon head and sealing washer $\ge \emptyset 16 \text{ mm}$

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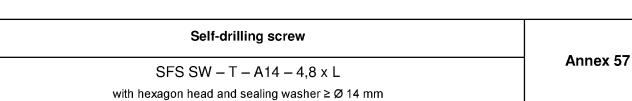
English translation prepared by DIBt



	Ø14			<u>Materials</u> Fastener:			Fastener: carbon steel case hardened and galvanized										
ø	8 10÷11			Washer: aluminium alloy AW-AIMg3 – EN 485 with vulcaniszed EPDM seal Component I: S280GD, S320GD or S350GD – EN 10346													
3,6+4	0,8	2	_	Component													
~41	Ø 4,	⁸ ∟	-	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$													
_	Ø 2,	8		$M_{y,Rk} = f_{ax,k} =$			l _{ef} ≥ 24	4,0 mm									
	L _{ef} =	24	29	38	48	58											
	A _{t,nom} = 0,50	0,87 -	1,05 -	1,19 -	1,19 -	1,19 -		1,19									
Ē	0,55 0,63 0,75	0,87 — 0,87 — 0.87 —	1,05 — 1,05 — 1.05 —	1,28 — 1,37 — 1,37 —	1,28 — 1,42 — 1,63 —	1,28 — 1,42 — 1,63 —		1,28 1,42 5									

	0,55	0,87	-	1,05	-	1,28	_	1,28	—	1,28	-	-	—	1,28	
Ē	0,63	0,87	- 1	1,05	-	1,37	_	1,42	—	1,42	-	-	—	1,42	of
Ē	0,75	0,87	—	1,05	—	1,37	—	1,63	—	1,63	—	i –	—	1.63	8 – 1
t _{N,I}	0,88	0,87	_	1,05	_	1,37	_	1,72	—	1,72	_	-	_	1,72	stan
for	1,00	0,87	_	1,05	—	1,37	_	1,73	—	1,81	_	-	—	1,81	resistance nponent I
Σ	1,13	0,87	—	1,05	—	1,37	—	1,73	—	1,81	_	-	—	1,81	ng resistan component
V _{R,k} [KN] for t _{N,i} [mm]	1,25	0,87	—	1,05	—	1,37	_	1,73	_	1,81	—	-	—	1,81	bearing cor
>	1,50	0,87	_	1,05	_	1,37	_	1,73	_	1,81	_	-	_	1,81	å
	1,75	0,87	_	1,05	—	1,37	_	1,73	—	1,81	—	-	—	1,81	
	2,00	0,87	—	1,05	_	1,37	_	1,73	_	1,81	—	-	—	1,81	
	0,50	1,38	_	1,66	_	1,92	—	1,92	_	1,92	_	-	_	1.92	
	0,55	1,38	—	1,66	—	2,14	—	2,14	—	2,14	—	-	—	2.14	
Ē	0,63	1,38	—	1,66	—	2,18	—	2,49	—	2,49	—	-	—	2.49	e Ce
N _{R,k} [KN] for t _{N,I} [mm]	0,75	1,38	—	1,66	—	2,18	—	2,76	—	3,02	—	-	—	3.02	resistance nent I
t,	0,88	1,38	—	1,66	—	2,18	—	2,76	—	3,33	—	-	—	3.62	esis
for	1,00	1,38	—	1,66	—	2,18	—	2,76	—	3,33	—	—	—	4.18	rough resis component
ĮŽ	1,13	1,38	—	1,66	—	2,18	—	2,76	—	3,33	—	—	—	4.18	pull-through compo
] X.E	1,25	1,38	—	1,66	—	2,18	—	2,76	—	3,33	—	—	—	4.18	- th
Ž	1,50	1,38	_	1,66	_	2,18	_	2,76	_	3,33	—	-	—	4.18	nd
	1,75	1,38	—	1,66	—	2,18	—	2,76	—	3,33	—	-	—	4.18	
	2,00	1,38	_	1,66	_	2,18	_	2,76	_	3,33	_	-	_	4.18	

- The values listed above in dependence on the screw-in length I_{ef} are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_a = 350 \text{ kg/m}^3$). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.

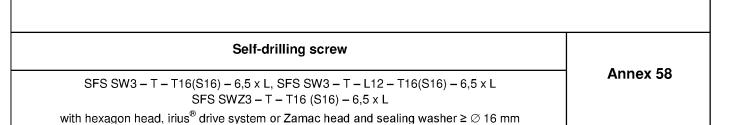




Ø16 Ø16 Ø16 Ø16 Ø16 Ø16 Ø16 Ø16 Ø16 Ø16	MaterialsFastener:carbon steel case hardened and galvanizedWasher:carbon steel with vulcanized EPDMComponent I:S280GD, S320GD or S350GD – EN 10346Component II:Timber – EN 14081
~7,5 Ø 4,35	$\label{eq:star} \begin{array}{llllllllllllllllllllllllllllllllllll$

L	L _{ef} = 32 39				6	0	64	4	7	1	78	8				
M _{t,}	nom =														0.4-0	
	0,50	1,57	I	1,58	-	1,58	-	1,58	-	1,58	1	1,58	Ι	1,58		
	0,55	1,57	-	1,73	-	1,73	—	1,73	—	1,73	—	1,73	—	1,73		
Ē	0,63	1,57	_	1,91	-	1,97	_	1,97	_	1,97	—	1,97	_	1,97	of	
Ē	0,75	1,57	—	1,91	—	2,33	—	2,33	—	2,33	—	2,33	—	2,33		
t,	0,88	1,57	—	1,91	—	2,33	—	2,33	-	2,33	—	2,33	—	2,33	star	
for	1,00	1,57	—	1,91	_	2,33	_	2,33	_	2,33	_	2,33	_	2,33	bearing resistance component I	
Ź	1,13	1,57	_	1,91	_	2,33	_	2,33	_	2,33	_	2,33	_	2,33	ng r	
V _{R.k} [KN] for t _{N,I} [mm]	1,25	1,57	_	1,91	_	2,33	_	2,33	_	2,33	_	2,33	_	2,33	eari	
	1,50	1,57	—	1,91	—	2,33	—	2,33	—	2,33	—	2,33	—	2,33	å	
	1,75	1,57	—	1,91	—	2,33	—	2,33	—	2,33	—	2,33	—	2,33		
	2,00	1,57	—	1,91	_	2,33	_	2,33	_	2,33	_	2,33	_	2,33		
	0,50	1,63	—	1,63	_	1,63	_	1,63	_	1,63	—	1,63	—	1,63		
	0,55	1,93	—	1,93	_	1,93	—	1,93	_	1,93	_	1,93	_	1,93		
Ē	0,63	2,41	—	2,41	—	2,41	—	2,41	—	2,41	—	2,41	—	2,41	ce	
Ē	0,75	2,46	—	3,00	—	3,13	—	3,13	—	3,13	—	3,13	—	3,13	star	
ţ,	0,88	2,46	—	3,00	—	3,91	—	3,91	—	3,91	—	3,91	—	3,91	esis	
ð	1,00	2,46	—	3,00	—	4,62	_	4,68	—	4,68	—	4,68	_	4,68	gh r	
N _{R,k} [KN] for t _{N,I} [mm]	1,13	2,46	—	3,00	—	4,62	—	4,68	—	4,68	—	4,68	_	4,68	pull-through resistance component I	
, k L	1,25	2,46	—	3,00	—	4,62	—	4,68	—	4,68	—	4,68	—	4,68	l-th	
z	1,50	2,46	—	3,00	—	4,62	—	4,68	—	4,68	—	4,68	—	4,68	nd	
	1,75	2,46	—	3,00	—	4,62	—	4,68	—	4,68	—	4,68	—	4,68		
	2,00	2,46	—	3,00	_	4,62	_	4,68	_	4,68	_	4,68	_	4,68		

The values listed above in dependence on the screw-in length I_{ef} are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_a = 350 \text{ kg/m}^3$). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.



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English translation prepared by DIBt



	C2						22153												
Ø 14÷15								MaterialsFastener:carbon steel case hardened and galvanizedWasher:noneComponent I:S280GD, S320GD or S350GD – EN 10346Component II: Timber – EN 14081											
Ø 4,5+4,7								<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$											
~7,5								$\begin{array}{llllllllllllllllllllllllllllllllllll$											
		L _{ef} = 32			3	9	60		64		7	71		78					
		M _{t,}	nom =																
		V _{R,k} [KN] for t _{N,i} [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	1,57 1,57 1,57 1,57 1,57 1,57 1,57 1,57		1,58 1,73 1,91 1,91 1,91 1,91 1,91 1,91 1,91 1,9		1,58 1,73 1,97 2,33 2,33 2,33 2,33 2,33 2,33 2,33 2,3		1,58 1,73 1,97 2,33 2,33 2,33 2,33 2,33 2,33 2,33 2,3		1,58 1,73 1,97 2,33 2,33 2,33 2,33 2,33 2,33 2,33 2,3		1,58 1,73 1,97 2,33 2,33 2,33 2,33 2,33 2,33 2,33 2,3		1,58 1,73 1,97 2,33 2,33 2,33 2,33 2,33 2,33 2,33 2,3	bearing resistance of component I		
		N _{R,k} [KN] for t _{N,i} [mm]	0,75 0,88 1,00 1,13 1,25 1,50	1,84 2,01 2,29 2,46 2,46 2,46 2,46 2,46 2,46 2,46		1,84 2,01 2,29 2,71 3,00 3,00 3,00 3,00 3,00 2,00		1,84 2,01 2,29 2,71 3,55 4,33 4,33 4,33 4,33		1,84 2,01 2,29 2,71 3,55 4,33 4,33 4,33 4,33		1,84 2,01 2,29 2,71 3,55 4,33 4,33 4,33 4,33		1,84 2,01 2,29 2,71 3,55 4,33 4,33 4,33 4,33		1,84 2,01 2,29 2,71 3,55 4,33 4,33 4,33 4,33	pull-through resistance component I		

The values listed above in dependence on the screw-in length I_{ef} are valid for $k_{mod} = 0.90$ and timber strength grade C24 ($\rho_a = 350 \text{ kg/m}^3$). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.

4,33

4,33

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4,33

4,33

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4,33

4,33

4,33

4,33

Self-drilling screw

4,33

4,33

—

2,46

2,46

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1,75

2,00

3,00

3,00

_

SFS SW3 - T - H15 - 6,5 x L

with hexagon head with flange \oslash 15 mm



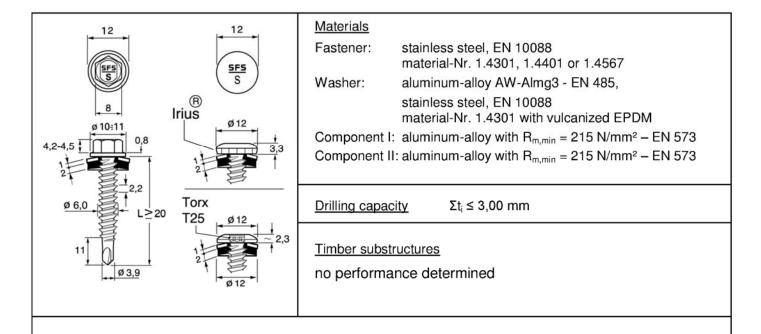
12 12	Materials
SFS S	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401 or 1.4567
B Irius	Washer: aluminum-alloy AW-Almg3 - EN 485, stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
	Component I: aluminum-alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN 573}$ Component II: aluminum-alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN 573}$
	<u>Drilling capacity</u> $\Sigma t_i \le 3,00 \text{ mm}$
11 11 11 11 11 11 11 11 11 11	<u>Timber substructures</u> no performance determined

tr	1,II =	1,00 1		1,2	20	1,5	50	2,0	00	2,5	0	3,0	00	4,0	00	5,0	00	6,0	00
Mt	nom =																		
	0,50	0,65	ac	0,69	ac	0,69	ac	0,69	ac	0,69	а	_	I	_	I	_	-	-	-
	0,60	0,80	ac	0,80	ac	0,86	ac	0,97	а	-	-	—	—	—	—	—	-	—	-
1	0,70	0,99	ac	0,99	ac	1,04	ac	1,25	а	-	-	—	—	—	—	—	-	—	-
Ľ,	0,80	1,19	ac	1,19	ac	1,21	а	1,53	а	—	-	—	—	_	—	—	—	—	-
V _{R,k} for	0,90	1,31	ac	1,31	ac	1,38	а	1,81	а	-	-	—	-	-	—	-	-	—	-
A,k	1,00	1,42	ac	1,42	а	1,55	а	2,08	а	-	-	—	-	-	-	-	-	—	-
-	1,20	1,42	а	1,45	а	1,90	а	-	_	-	-	—	-	—	—	—	-	—	-
	1,50	1,42	а	1,45	а	1,90	а	-	-	-	-	—	-	-	-	-	-	—	-
	2,00	_	_		_	_	_	_	_	_	-	_	-	_	-	_	—	_	_
N _{R,II,k} =		0,7	72	0,8	32	1,2	26	1,8	35	2,6	5	-	-	-	-	-	-	-	-

- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw	
SFS SX3 - A12 (S12) - 6,0 x L, SFS SX3 - L12 - A12 (S12) - 6,0 x L,	Annex 60
SFS SX3 - D12 - A12 (S12) - 6,0 x L	
with hexagon head. torx head or irius [®] drive system and sealing washer $\geq \emptyset$ 12 mm	





t⊵	t _{N,II} = 1,00		00	1,2	20	1,50		2,0	00	2,5	50	3,	00	4,0	00	5,	00	6,0	00
M _{t,}	nom =																		
	0,50	0,85	ac	0,90	ac	0,90	ac	0,90	ac	0,90	а	-	I	-	Ι	-	I	-	-
	0,60	1,04	ac	1,04	ac	1,12	ac	1,26	а	—	-	—	—	—	—	-	—	—	-
1	0,70	1,30	ac	1,30	ac	1,35	ac	1,63	а	—	-	—	—	—	—	-	—	—	-
Ţ,	0,80	1,55	ac	1,55	ac	1,57	а	1,99	а	_	-	—	—	—	—	-	—	—	-
V _{R,k} for	0,90	1,70	ac	1,70	ac	1,80	а	2,35	а	-	-	-	-	-	-	-	-	—	-
/R,k	1,00	1,85	ac	1,85	а	2,02	а	2,71	а	_	-	—	-	—	_	-	-	_	-
-	1,20	1,85	а	1,89	а	2,47	а	-	-	-	-	—	-	—	—	-	-	—	-
	1,50	1,85	а	1,89	а	2,47	а	-	-	-	-	-	-	-	-	-	-	—	-
	2,00	_	_	_	_	_	_		_	_	-	_	-	_	_	_	-	_	_
× 																			
N _{R,II,k} =		0,9	93	1,0)6	1,6	64	2,4	11	3,4	5	-	-	-	-	-	-	-	-
Ľ																			

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw	
SFS SX3 - A12 (S12) - 6,0 x L, SFS SX3 - L12 - A12 (S12) - 6,0 x L,	Annex 61
SFS SX3 - D12 - A12 (S12) - 6,0 x L	
with hexadon head. torx head or irius [®] drive system and sealind washer $\geq \emptyset$ 12 mm	



	Materials Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401 or 1.4567
4.2-4.5 4.2-4.5 1 4.2-4.5 1 1 1 1 1 1 1 1 1 1 1 1 1	Washer: aluminum-alloy AW-Almg3 - EN 485, stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM Component I: aluminum-alloy with R _{m,min} = 165 N/mm ² – EN 573 Component II: aluminum-alloy with R _{m,min} = 165 N/mm ² – EN 573
$\emptyset \begin{array}{c} 0 \\ 5,5 \\ 0 \\ 4,2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ $	<u>Drilling capacity</u> $\Sigma t_i \le 5,00 \text{ mm}$
12 9 4.5 9 12 0 12 0 12	<u>Timber substructures</u> no performance determined

t⊳	t _{N,II} = 1,		50	2,0	00	2,50		3,0	3,00		3,50		4,00		00	6,00		8,00	
M _{t,}	_{nom} =																		
	0,50	0,71	ac	0,89	ac	0,89	ac	0,89	ac	0,89	ac	0,89	ac	_	Ι	-	-	-	-
	0,60	0,83	ac	1,06	ac	1,06	ac	1,06	ac	1,06	ac	1,06	а	—	—	-	—	—	-
	0,70	0,95	ac	1,23	ac	1,23	ac	1,23	ac	1,23	ac	1,23	а	—	_	-	_	—	-
tr,	0,80	1,06	ac	1,40	ac	1,40	ac	1,40	ac	1,40	а	1,40	а	—	—	-	—	—	-
V _{R,k} for	0,90	1,18	ac	1,49	ac	1,52	ac	1,55	ac	1,58	а	1,60	а	-	—	-	-	-	-
A,k	1,00	1,30	ac	1,57	ac	1,63	ac	1,69	ac	1,75	а	1,80	а	—	—	-	-	-	-
-	1,20	1,30	ac	1,74	ac	1,86	ac	1,97	а	2,09	а	-	—	—	—	-	-	-	-
	1,50	1,30	ac	1,74	ac	1,86	а	1,97	а	2,09	а	-	—	-	-	-	-	-	-
	2,00	1,30	а	1,74	а	1,86	а	1,97	а	2,09	а	_	-	_	-	_	_	_	_
N _{R,II,k} =		1,(00	1,1	3	1,7	74	2,3	35	3,1	12	3,8	38	-	-	-	-	-	-

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw	
SFS SX5 - A12 (S12) - 5,5 x L, SFS SX5 - L12 - A12 (S12) - 5,5 x L, SFS SX5 - D12 - A12 (S12) - 5,5 x L	Annex 62
with hexadon head. torx head or irius [®] drive system and sealing washer $\geq \emptyset$ 12 mm	



	Materials
	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401 or 1.4567
Ø 10:11 Irius Ø 12	Washer: aluminum-alloy AW-Almg3 - EN 485, stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
4.2-4.5 4.2-4.5 4.2-4.5 1 1,81	Component I: aluminum-alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN } 573$ Component II: aluminum-alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN } 573$
	<u>Drilling capacity</u> $\Sigma t_i \le 5,00 \text{ mm}$
9 <u>4.5</u> 9 <u>4.5</u> Ø12	<u>Timber substructures</u> no performance determined

	t _{N,II} = 1,50		2,0	00	2,5	50	3,0	00	3,5	50	4,0	00	5,	00	6,0	00	8,	00		
Ν	1 t,nom	n =																		
	C	0,50	0,76	ac	1,16	ac	Ι	_	-	-	-	-								
	C	0,60	0,90	ac	1,38	а	—	—	-	—	—	-								
"	C	0,70	1,04	ac	1,60	ac	1,61	ac	1,61	ac	1,61	ac	1,61	а	_	—	-	_	—	-
z.	; C	0,80	1,18	ac	1,82	ac	1,83	ac	1,83	ac	1,83	а	1,83	а	—	—	-	—	—	-
V _{R.k} for	Ċ	0,90	1,32	ac	1,93	ac	1,98	ac	2,02	ac	2,06	а	2,09	а	-	—	-	-	-	-
A R	1	1,00	1,46	ac	2,04	ac	2,13	ac	2,20	ac	2,28	а	2,35	а	-	—	-	_	—	-
-	<u> </u>	1,20	1,46	ac	2,26	ac	2,42	ac	2,57	а	2,72	а	-	-	-	—	-	—	-	-
	1	1,50	1,46	ac	2,26	ac	2,42	а	2,57	а	2,72	а	-	-	-	—	-	-	-	-
	2	2,00	1,46	а	2,26	а	2,42	а	2,57	а	2,72	а	_	-	_	_	_	_	_	-
	<u> </u>																			
N _{B.II.k} =			1,3	31	1,4	18	2,2	28	3,0)7	4,0)6	5,0)5	-	-	-	-	-	-
2																				

- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw	
SFS SX5 - A12 (S12) - 5,5 x L, SFS SX5 - L12 - A12 (S12) - 5,5 x L,	Annex 63
SFS SX5 - D12 - A12 (S12) - 5,5 x L	
with hexadon head. torx head or irius [®] drive system and sealind washer $\geq \emptyset$ 12 mm	

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English translation prepared by DIBt



	Materials	
Ø 10 ÷ 11 1		nless steel, EN 10088 erial-Nr. 1.4301 or 1.4401
		nless steel, EN 10088 erial-Nr. 1.4301 with vulcanized EPDM
2,2	Component I: alum with	ninum-Alloy R _{m,min} = 165 N/mm² – EN 573
ø 3,4	Component II: alum with	ninum-Alloy R _{m,min} = 165 N/mm² – EN 573
	Drilling capacity	Σt _i ≤ 2,00 mm
 Ø2,8 Ø5,5 	Timber substructure no performance de	

t⊦	1,II –	0,4	40	0,5	50	0,6	50	0,7	70	0,8	30	0,9	0	1,0	0	1,2	20	1,5	50
Mt	_{nom} =						_												
		0,17	_	0,17	_	0,17	_	0,17	_	0,17	_	0,17	_	0,17	_	0,17	_	0,17	-
	0,50	0,17	—	0,31	—	0,31	—	0,31	—	0,31	—	0,31	—	0,31	—	0,31	—	0,31	-
	0,60	0,17	—	0,31	_	0,45	_	0,45	_	0,45	_	0,45	—	0,45	—	0,45	—	-	-
Ľ,	0,70	0,17	—	0,31	_	0,45	_	0,59	_	0,59	_	0,59	—	0,59	—	0,59	—	-	-
ē	0,80	0,17	—	0,31	—	0,45	—	0,59	—	0,73	—	0,73	—	0,73	—	0,73	—	-	-
V _{R,k} for	0,90	0,17	—	0,31	_	0,45	_	0,59	_	0,73	_	0,82	—	0,82	—	-	—	-	-
1	1,00	0,17	—	0,31	—	0,45	—	0,59	—	0,73	—	0,82	—	0,91	—	-	—	-	-
	1,20	0,17	—	0,31	_	0,45	—	0,59	_	0,73	_	-	—	-	—	-	—	-	-
	1,50	0,17	_	0,31	_	_	_		_	—	_	-	_	-	_	-	_	-	_
Ű																			
N _{R,II,k} =		0,1	16	0,2	26	0,3	36	0,4	17	0,5	57	0,6	67	0,7	7	0,7	77	0,7	7
Z	ž																		

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw

SFS SL2 - S - S14 - 5,5 x L

with threadfree zone and hexagon head and sealing washer $\ge \emptyset$ 14 mm

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English translation prepared by DIBt



	Materials	
Ø 10 ÷ 11 1 3,6÷4,0 14	Fastener: stainless steel, EN 10088 material-Nr. 1.4301 or 1.4401	
	Washer: stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM	
2,2	Component I: aluminum-Alloy with R _{m,min} = 215 N/mm ² – EN 573	
ø 3,4	Component II: aluminum-Alloy with R _{m,min} = 215 N/mm ² – EN 573	
T.	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$	
 ✓ ✓ Ø2,8 Ø5,5 	Timber substructures no performance determined	

t _N	ı,ıı –	0,4	0	0,5	50	0,6	50	0,7	70	0,8	30	0,9	0	1,0	00	1,2	20	1,5	50
M _{t,}	nom =																		
	0,40	0,22	_	0,22	_	0,22	_	0,22	_	0,22	_	0,22	_	0,22	_	0,22	_	0,22	-
	0,50	0,22	_	0,40	—	0,40	-	0,40	—	0,40	—	0,40	—	0,40	—	0,40	_	0,40	-
	0,60	0,22	_	0,40	_	0,58	_	0,58	—	0,58	_	0,58	_	0,58	_	0,58	_	-	-
Ľ,	0,70	0,22	_	0,40	_	0,58	_	0,77	—	0,77	_	0,77	_	0,77	_	0,77	_	-	-
ē	0,80	0,22	_	0,40	_	0,58	_	0,77	-	0,95	_	0,95	—	0,95	—	0,95	—	-	-
V.k	0,90	0,22	_	0,40	_	0,58	_	0,77	—	0,95	_	1,07	_	1,07	_	-	_	-	-
-	1,00	0,22	—	0,40	—	0,58	—	0,77	—	0,95	—	1,07	—	1,18	—	-	—	-	-
	1,20	0,22	—	0,40	—	0,58	—	0,77	-	0,95	—	-	—	—	—	-	—	-	-
	1,50	0,22	—	0,40	—	—	—	—	—	_	—	—	—	—	—	—	—	-	—
N _{R,II,k} =		0,2	21	0,3	34	0,4	18	0,6	61	0,7	'5	0,8	88	1,0	00	1,0	00	1,0	00

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw

SFS SL2 - S - S14 - 5,5 x L

with threadfree zone and hexagon head and sealing washer $\geq \emptyset$ 14 mm

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English translation prepared by DIBt



	Materials
	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401, 1.4567 or 1.4578
STS S	Washer: stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
ø 10÷11 ø 12	Component I: aluminum-Alloy with R _{m,min} = 165 N/mm ² – EN 573
	Component II: aluminum-Alloy with R _{m,min} = 165 N/mm² – EN 573
Ø 6,3 Ø 4,5 L≥22	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
10 Ø 3,9	<u>Timber substructures</u> no performance determined

tr	_{1,11} =	0,4	10	0,5	50	0,6	60	0,7	70	0,8	30	0,9	0	1,0	0	1,2	20	1,5	50
M	$A_{t,nom} = \frac{1}{0,40 \ 0,10 \ - \ 0,10 \ $																		
	0,40	0,10	_	0,10	_	0,10	_	0,10	_	0,10	—	0,10	_	0,10	_	0,10	_	0,10	—
	0,50	0,10	-	0,28	—	0,28	_	0,28	_	0,28	—	0,28	—	0,28	—	0,28	—	0,28	-
"	0,60	0,10	-	0,28	—	0,45	—	0,45	-	0,45	—	0,45	—	0,45	—	0,45	—	-	-
Ľ,	0,70	0,10	—	0,28	—	0,45	—	0,62	—	0,62	—	0,62	—	0,62	—	0,62	—	-	-
to	0,80	0,10	-	0,28	—	0,45	—	0,62	-	0,79	—	0,79	—	0,79	—	0,79	—	-	-
V _{R,k} for	0,90	0,10	—	0,28	—	0,45	—	0,62	—	0,79	—	0,97	—	0,97	—	-	—	-	-
1	1,00	0,10	—	0,28	—	0,45	—	0,62	—	0,79	—	0,97	—	1,15	—	-	—	-	-
	1,20	0,10	-	0,28	—	0,45	—	0,62	-	0,79	—	-	—	-	—	-	—	-	-
	1,50	0,10	-	0,28	_	_	_		-	_	_	-	_	-	_	_	_	-	_
N _{R,II,k} =	<u> </u>		0,44		0,5	0,54		0,63		0,75		0,87		0,87		37			
	z																		

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw

with threadfree zone and hexagon head or irius $^{\textcircled{B}}$ drive system and sealing washer $\geq \oslash$ 14 mm



	Materials
	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401, 1.4567 or 1.4578
SFS S	Washer: stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
Ø 10÷11	Component I: aluminum-Alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN } 573$
	Component II: aluminum-Alloy with R _{m,min} = 215 N/mm² – EN 573
Ø 6,3 Ø 4,5 L≥22	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
10 Ø 3,9	<u>Timber substructures</u> no performance determined

	t _{ℕ,}	II =	0,4	10	0,5	50	0,6	50 0	0,7	70	0,8	30	0,9	0	1,0	0	1,2	20	1,5	50
	M _{t,n}	_{om} =																		
Γ		0,40	0,13	_	0,13	_	0,13	_	0,13	_	0,13	_	0,13	_	0,13	_	0,13	_	0,13	-
		0,50	0,13	—	0,36	—	0,36	—	0,36	—	0,36	—	0,36	—	0,36	—	0,36	—	0,36	-
	п	0,60	0,13	—	0,36	_	0,58	—	0,58	—	0,58	—	0,58	—	0,58	—	0,58	—	-	-
	Ľ,	0,70	0,13	—	0,36	_	0,58	—	0,81	—	0,81	—	0,81	—	0,81	—	0,81	—	-	-
.	ğ	0,80	0,13	-	0,36	-	0,58	_	0,81	-	1,03	-	1,03	_	1,03	—	1,03	—	-	-
.	V _{R,k} tor	0,90	0,13	—	0,36	_	0,58	—	0,81	—	1,03	—	1,26	—	1,26	—	-	—	-	-
1	_	1,00	0,13	—	0,36	_	0,58	_	0,81	-	1,03	_	1,26	—	1,49	_	-	—	-	-
		1,20	0,13	-	0,36	—	0,58	—	0,81	-	1,03	—	-	—	-	—	-	—	-	-
L		1,50	0,13	_	0,36	_	_	_		_	_	_	_	_	_	_		_	-	_
.	NR,II,k =		0,3	37	0,4	6	0,5	58	0,7	70	0,8	32	0,9	8	1,1	4	1,1	4	1,1	4
Ľ	د																			

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw



ø10÷11	ø10÷11	Materials
1 4,2÷4,5	1 2 4,2÷4,5	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401 or 1.4547
	2,54	Washer: stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
2,54	6,5	Component I: aluminum-Alloy with R _{m,min} = 165 N/mm ² – EN 573
	Ø6,5	Component II: aluminum-Alloy with R _{m,min} = 165 N/mm ² – EN 573
	ø16	Drilling capacity see table below
9 6.5 9 6.5	8	<u>Timber substructures</u> see Annex 56

t _N	I,II =	0,5	0	0,7	'0	0,8	30	0,9	9 0	1,0	00	1,2	20	1,5	50	2,0	0	3,0	00
d	_{pd} =		Ø	4,0						Ø4	l,5					Ø5	,0	Ø5	5,3
	0,50	0,24	_	0,40	_	0,49	_	0,57	_	0,65	_	0,82	_	0,86	_	0,86	_	0,86	-
	0,60	0,24	—	0,40	—	0,49	—	0,57	-	0,65	—	0,82	—	1,03	—	1,03	—	1,03	-
1	0,70	0,24	—	0,40	_	0,49	_	0,57	_	0,65	_	0,82	_	1,03	_	1,20	_	1,20	—
ţ,	0,80	0,24	—	0,40	—	0,49	_	0,57	_	0,65	_	0,82	_	1,03	_	1,37	—	1,37	—
V _{R,k} for	0,90	0,24	—	0,40	—	0,49	_	0,57	-	0,65	—	0,82	—	1,03	—	1,37	—	1,54	-
/R,k	1,00	0,24	—	0,40	—	0,49	—	0,57	_	0,67	—	0,82	_	1,03	_	1,37	_	1,72	—
	1,20	0,24	-	0,40	_	0,49	_	0,57	-	0,67	-	0,88	—	1,08	—	1,41	—	2,06	-
	1,50	0,24	—	0,40	—	0,49	_	0,57	-	0,67	-	0,88	—	1,24	—	1,53	—	2,13	-
	2,00	0,24	_	0,40	_	0,49	_	0,57	-	0,67	_	0,88	_	1,24	_	1,90	_	2,40	_
N _{R,II,k} =				_		0,3	36	0,4	12	0,55		0,77		1,19		2,1	19		

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-tapping screw

SFS TDA - S - S16 - 6,5 x L

with hexagon head and sealing washer $\ge \emptyset$ 16 mm

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English translation prepared by DIBt



ø10÷11	Ø10÷11	Materials
1 4,2÷4,5	1 2 4,2÷4,5	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401 or 1.4547
	2,54	Washer: stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
2,54	6,5	Component I: aluminum-Alloy with R _{m,min} = 215 N/mm ² – EN 573
	Ø6,5	Component II: aluminum-Alloy with R _{m,min} = 215 N/mm ² – EN 573
	ø16	Drilling capacity see table below
Ø 6,5	8	<u>Timber substructures</u> see Annex 56

t _N	I,II =	0,5	50	0,7	'0	0,8	0	0,9) 0	1,0	00	1,2	20	1,5	50	2,0	00	3,0	00
d	_{pd} =		Ø	4,0						Ø4	·,5					Ø5	i,0	Ø 5,3	
	0,50	0,31	_	0,53	_	0,63	_	0,74	_	0,85	_	1,06	_	1,12	_	1,12	_	1,12	-
	0,60	0,31	—	0,53	—	0,63	—	0,74	—	0,85	—	1,06	—	1,34	—	1,34	—	1,34	-
1	0,70	0,31	_	0,53	_	0,63	—	0,74	—	0,85	—	1,06	—	1,34	—	1,57	—	1,57	-
Ľ,	0,80	0,31	_	0,53	_	0,63	—	0,74	—	0,85	—	1,06	—	1,34	—	1,79	—	1,79	-
Į Į	0,90				—	0,63	—	0,75	—	0,85	—	1,06	—	1,34	—	1,78	—	2,01	-
V _{R,k} for	1,00	0,31	_	0,53	_	0,63	—	0,75	—	0,88	—	1,06	—	1,34	—	1,78	—	2,24	-
	1,20	0,31	_	0,53	_	0,63	—	0,75	-	0,88	_	1,15	—	1,41	—	1,83	—	2,68	-
	1,50	0,31	—	0,53	—	0,63	—	0,75	_	0,88	—	1,15	—	1,61	—	2,00	—	2,77	-
	2,00	0,31	_	0,53	_	0,63	_	0,75	_	0,88	_	1,15	_	1,61	_	2,48	_	3,14	_
N _{R,II,k} =				_		0,4	17	0,5	55	0,71		1,01		1,55		2,8	35		

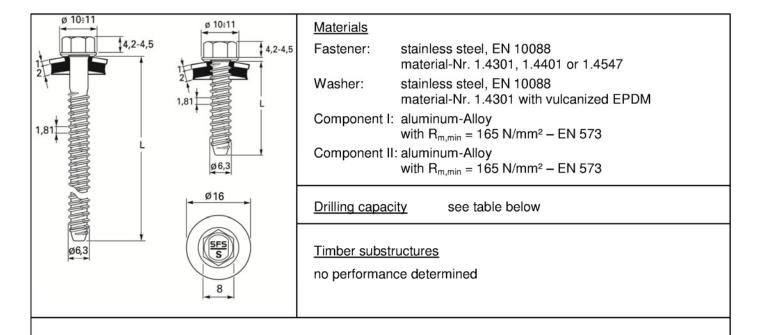
Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations
of the aluminium profile producers

Self-tapping screw

SFS TDA - S - S16 - 6,5 x L

with hexagon head and sealing washer $\ge \emptyset$ 16 mm





t⊳	1,II =	1,2	20	1,5	50	2,0	00	2,5	50	3,0	0	4,0	0	5,0	00	6,0	0	≥7,	00
d	_{pd} =		Ø	4,5				Ø5	5,0				Ø	5,3			Ø	5,5	
	0,50	0,79	-	0,83	-	0,83	-	0,83	-	0,83	-	0,83	_	0,83	_	0,83	-	0,83	—
	0,60	0,79	—	1,00	—	1,00	_	1,00	—	1,00	—	1,00	—	1,00	—	1,00	—	1,00	-
	0,70	0,79	—	1,00	—	1,16	—	1,16	—	1,16	—	1,16	—	1,16	—	1,16	—	1,16	-
tr,	0,80	0,79	—	1,00	_	1,33	_	1,33	_	1,33	—	1,33	—	1,33	—	1,33	—	1,33	-
ē	0,90	0,79	—	1,00	—	1,33	_	1,50	—	1,50	—	1,50	—	1,50	—	1,50	—	1,50	-
V _{R,k} for	1,00	0,80	—	1,00	—	1,33	—	1,66	_	1,66	—	1,66	—	1,66	—	1,66	—	1,66	-
-	1,20	0,87	_	1,06	_	1,37	-	1,68	_	2,00	—	2,00	_	2,00	—	2,00	—	2,00	-
	1,50	0,87	—	1,22	—	1,50	_	1,79	_	2,07	—	2,49	—	2,49	—	2,49	—	2,49	-
	2,00	0,87	_	1,22	_	1,87	_	2,12	_	2,36	_	2,84	_	3,33	—	3,33	_	3,33	—
N _{R,II,k} =		0,5	54	0,7	'6	1,1	7	1,6	64	2,1	5	4,2	:1	4,6	63	6,0)9	6,0)9

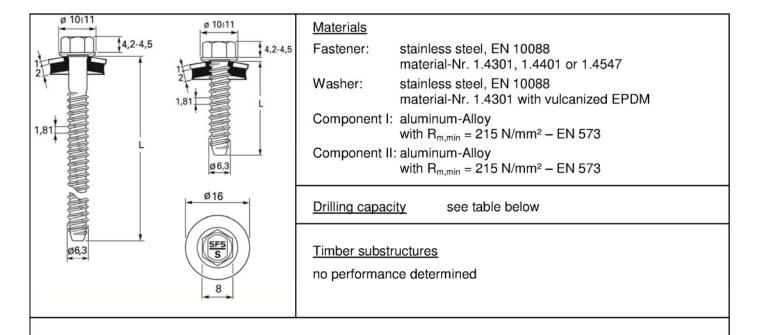
Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-tapping screw

SFS TDB - S - S16 - 6,3 x L

with hexagon head and sealing washer $\geq \emptyset$ 16 mm





t _N	1,II =	1,2	20	1,5	50	2,0	0	2,5	50	3,0	0	4,0	0	5,0	0	6,0	0	≥ 7,	00
d	pd =		Ø	4,5				Ø5	5,0				Ø	5,3			Ø	5,5	
	0,50	1,03	_	1,08	_	1,08	_	1,08	_	1,08	_	1,08	_	1,08	_	1,08	_	1,08	-
	0,60	1,03	—	1,30	—	1,30	—	1,30	-	1,30	—	1,30	—	1,30	—	1,30	—	1,30	-
1	0,70	1,03	—	1,30	_	1,52	_	1,52	—	1,52	—	1,52	_	1,52	—	1,52	—	1,52	-
Ľ,	0,80	1,03	—	1,30	_	1,73	—	1,73	—	1,73	—	1,73	—	1,73	—	1,73	—	1,73	-
ē	0,90	1,03	—	1,30	—	1,73	_	1,95	-	1,95	—	1,95	—	1,95	—	1,95	—	1,95	-
V _{R,k} for	1,00	1,04	_	1,30	_	1,73	_	2,17	_	2,17	—	2,17	_	2,17	—	2,17	—	2,17	-
-	1,20	1,14	—	1,38	—	1,79	—	2,19	—	2,60	—	2,60	_	2,60	—	2,60	—	2,60	-
	1,50	1,14	—	1,59	—	1,96	—	2,33	-	2,70	—	3,25	—	3,25	—	3,25	—	3,25	-
	2,00	1,14	_	1,59	_	2,44	_	2,76	_	3,07	_	3,70	_	4,33	_	4,33	_	4,33	—
N _{R,II,k} =		0,7	'1	0,9	99	1,5	53	2, ²	13	2,8	80	5,4	8	6,0)3	7,9)3	7,9)3

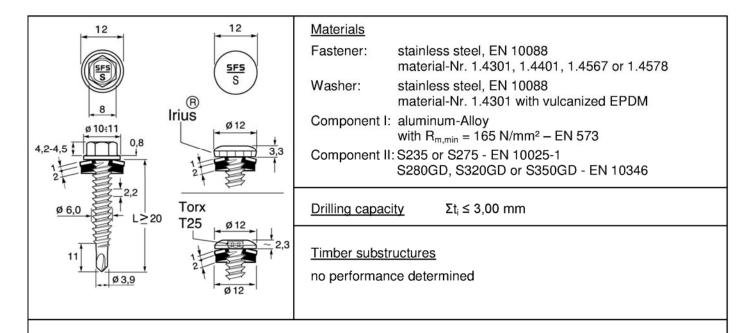
Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-tapping screw

SFS TDB - S - S16 - 6,3 x L

with hexagon head and sealing washer $\geq \emptyset$ 16 mm





t _N	I,II —									1,2	25	1,5	50	1,7	75	2,0	0	2,5	2,50	
M _{t,i}	nom =																			
	0,50	0,56	ac	0,73	ac	0,78	ac	0,78	ac	0,78	ac	0,78	ac	0,78	ac	0,78	ac	0,78	а	
	0,60	0,76	ac	0,86	ac	0,92	ac	0,92	ac	0,93	ac	0,97	ac	0,98	ac	0,98	а	-	-	
1	0,70	0,96	ac	0,98	ac	1,06	ac	1,06	ac	1,07	ac	1,16	ac	1,17	а	1,18	а	-	-	
tz'	0,80	1,06	ac	1,11	ac	1,20	ac	1,20	ac	1,22	ac	1,35	а	1,37	а	1,38	а	-	-	
V _{R,k} for	0,90	1,06	ac	1,24	ac	1,34	ac	1,34	ac	1,37	а	1,54	а	1,57	а	1,59	а	-	-	
/R,k	1,00	1,06	ac	1,36	ac	1,48	ac	1,48	а	1,51	а	1,73	а	1,76	а	1,79	а	-	-	
_	1,20	1,06	а	1,36	а	1,48	а	1,64	а	1,80	а	2,11	а	2,15	а	-	—	-	-	
	1,50	1,06	а	1,36	а	1,48	а	1,64	а	1,80	а	2,11	а	-	-	-	—	-	-	
	2,00	-	-		-	—	_	—	-	—	_		_	—	_	-	_	_	_	
N _{R,II,k} =		1,14	4 ^{a)}	1,60	6 ^{a)}	1,8	1 ^{a)}	2,1	0	2,3	88	3,1	4	3,8	36	4,5	57	5,7	71	
2																				

- Index a: If component t_{II} is made of S320GD or S350GD the value may be increased by 8,0%

- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw	
SFS SX3 - A12 (S12) - 6,0 x L, SFS SX3 - L12 - A12 (S12) - 6,0 x L,	Annex 72
SFS SX3 - D12 - A12 (S12) - 6,0 x L	
with hexadon head. torx head or irius [®] drive system and sealind washer $\geq \emptyset$ 12 mm	



	Materials
	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401, 1.4567 or 1.4578
SFS S	Washer: aluminum-alloy AW-Almg3 - EN 485,
B Irius Ø12	stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
	Component I: aluminum-Alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN 573}$ Component II: S235 or S275 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
	<u>Drilling capacity</u> $\Sigma t_i \le 3,00 \text{ mm}$
	<u>Timber substructures</u> no performance determined

t _N	.,ı . =	0,7	75	0,8	38	1,0	00	1,1	3	1,2	25	1,5	50	1,7	75	2,0	00	2,5	50
M _{t,i}	nom =																		
	0,50	0,74	ac	0,95	ac	1,02	ac	1,02	ac	1,02	ac	1,02	ac	1,02	ac	1,02	ac	1,02	а
	0,60	0,99	ac	1,11	ac	1,20	ac	1,20	ac	1,21	ac	1,27	ac	1,27	ac	1,28	а	-	-
1	0,70	1,25	ac	1,28	ac	1,38	ac	1,38	ac	1,40	ac	1,51	ac	1,53	а	1,54	а	-	-
tz.	0,80	1,37	ac	1,44	ac	1,57	ac	1,57	ac	1,59	ac	1,76	а	1,78	а	1,80	а	-	-
V _{R,k} for	0,90	1,37	ac	1,61	ac	1,75	ac	1,75	ac	1,78	а	2,01	а	2,04	а	2,07	а	-	-
A,k	1,00	1,37	ac	1,77	ac	1,93	ac	1,93	а	1,96	а	2,26	а	2,29	а	2,33	а	-	-
_	1,20	1,37	а	1,77	а	1,93	а	2,14	а	2,34	а	2,75	а	2,80	а	-	_	-	-
	1,50	1,37	а	1,77	а	1,93	а	2,14	а	2,34	а	2,75	а	-	—	-	_	-	-
	2,00	_	_		-	—	_		-	_	_	_	_	—	_	—	_	_	_
N _{R,II,k} =		1,14	4 ^{a)}	1,6	6 ^{a)}	1,8	1 ^{a)}	2,1	0	2,3	38	3,1	4	3,8	36	4,5	57	5,7	'1
2																			

- Index a: If component t_{II} is made of S320GD or S350GD the value may be increased by 8,0%

- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw	
SFS SX3 - A12 (S12) - 6,0 x L, SFS SX3 - L12 - A12 (S12) - 6,0 x L,	Annex 73
SFS SX3 - D12 - A12 (S12) - 6,0 x L	
with hexadon head. torx head or irius [®] drive system and sealind washer $\geq \emptyset$ 12 mm	



	Materials
(SES) SES	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401, 1.4567 or 1.4578
SFS S	Washer: aluminum-alloy AW-Almg3 - EN 485,
	stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
4,2-4,5 1 2 4,2-4,5 1 1 2 4,2-4,5 1 4,2-4,5 1 4,2-4,5 4,2-4,5 1 1 1 1 1 1 1 1 1 1 1 1 1	Component I: aluminum-Alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN } 573$ Component II: S280GD, S320GD or S350GD - EN 10346
	<u>Drilling-capacity:</u> $\Sigma t_i \le 4,00 \text{ mm}$
	<u>Timber substructures</u> no performance determined

t _N	,II =	2x0	,63	2x0	,75	2x0	,88	2x1	,00	2x1	,13	2x1	,25	2x1	,50	_	-	_	-
M _{t,i}	nom =																		
	0,50	0,65	ac	0,70	ac	0,75	ac	0,78	ac	0,78	ac	0,78	ac	0,78	ac	_	-	_	-
	0,60	0,65	ac	1,02	ac	1,07	ac	1,10	ac	1,10	ac	1,10	ac	1,10	а	—	—	—	-
	0,70	0,65	ac	1,18	ac	1,39	ac	1,42	ac	1,42	ac	1,42	ac	1,42	а	—	—	—	-
ţ,	0,80	0,65	ac	1,18	ac	1,71	ac	1,74	ac	1,74	ac	1,74	а	1,74	а	-	-	—	-
to	0,90	0,65	ac	1,18	ac	1,71	ac	1,90	ac	1,90	а	1,90	а	1,90	а	—	—	—	-
<pre>K</pre>	1,00	0,65	ac	1,18	ac	1,71	ac	2,06	ac	2,06	а	2,06	а	2,06	а	-	-	—	-
_	1,20	0,65	ac	1,18	ac	1,71	а	2,06	а	2,06	а	2,06	а	-	—	—	—	—	-
	1,50	0,65	ac	1,18	а	1,71	а	2,06	а	2,06	а	2,06	а	-	_	-	-	—	-
	2,00	_	_		_		-		-	_	_	_	_		-	_	_	_	_
N _{R,II,k} =		1,4	0 ^{a)}	1,98	8 ^{a)}	2,6	1 ^{a)}	3,1	9 ^{a)}	3,7	78	4,3	37	5,8	32	-	-	-	-

Index a: If component t_{\parallel} is made of S320GD or S350GD the value may be increased by 8,0%

- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

 Self-drilling screw
 Annex 74

 SFS SX3 - A12 (S12) - 6,0 x L, SFS SX3 - L12 - A12 (S12) - 6,0 x L, SFS SX3 - D12 - A12 (S12) - 6,0 x L
 Annex 74

 with hexadon head. torx head or irius[®] drive system and sealing washer ≥ Ø 12 mm
 12 mm

-



Materials
Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401, 1.4567 or 1.4578
Washer: aluminum-alloy AW-Almg3 - EN 485,
stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
Component I: aluminum-Alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN } 573$ Component II: S280GD, S320GD or S350GD - EN 10346
<u>Drilling capacity</u> $\Sigma t_i \le 4,00 \text{ mm}$
<u>Timber substructures</u> no performance determined

t _N	I,II —	2x0	,63	2x0	,75	2x0	,88	2x1	,00	2x1	,13	2x1	,25	2x1	,50	_	-	-	-
M _{t,i}	nom =				_														
	0,50	0,85	ac	0,92	ac	0,98	ac	1,02	ac	1,02	ac	1,02	ac	1,02	ac	_	-	-	-
	0,60	0,85	ac	1,33	ac	1,40	ac	1,44	ac	1,44	ac	1,44	ac	1,44	а	—	—	—	-
	0,70	0,85	ac	1,33	ac	1,81	ac	1,85	ac	1,85	ac	1,85	ac	1,85	а	—	—	—	-
tz.	0,80	0,85	ac	1,33	ac	2,22	ac	2,27	ac	2,27	ac	2,27	а	2,27	а	-	-	-	-
to	0,90	0,85	ac	1,33	ac	2,22	ac	2,48	ac	2,48	а	2,48	а	2,48	а	—	—	—	-
V _{R,k} for	1,00	0,85	ac	1,33	ac	2,22	ac	2,68	ac	2,68	а	2,68	а	2,68	а	-	-	-	-
_	1,20	0,85	ac	1,33	ac	2,22	а	2,68	а	2,68	а	2,72	а	-	—	—	—	—	-
	1,50	0,85	ac	1,33	а	2,22	а	2,68	а	2,68	а	2,72	а	-	—	-	-	-	-
	2,00	_	_		_		_		-	_	_	—	_	—	—	_	_	_	_
N _{R,II,k} =		1,40	0 ^{a)}	1,9	8 ^{a)}	2,6	1 ^{a)}	3,1	9 ^{a)}	3,7	78	4,3	37	5,8	32	-	-	-	-

- Index a: If component t_{\parallel} is made of S320GD or S350GD the value may be increased by 8,0%

- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

 Self-drilling screw
 Annex 75

 SFS SX3 - A12 (S12) - 6,0 x L, SFS SX3 - L12 - A12 (S12) - 6,0 x L, SFS SX3 - D12 - A12 (S12) - 6,0 x L
 Annex 75

 with hexadon head. torx head or irius[®] drive system and sealing washer ≥ Ø 12 mm
 12 mm



	Materials
	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401, 1.4567 or 1.4578
BES SFS S	Washer: aluminum-alloy AW-Almg3 - EN 485, stainless steel, EN 10088
ø10:11 Irius ø12	material-Nr. 1.4301 with vulcanized EPDM
4.2-4,5	Component I: aluminum-Alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN 573}$
2 Ø 5,5	Component II: S235, S275, S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
\emptyset 4,2 $L \ge 20$ Torx T25 \emptyset 12 12	<u>Drilling capacity</u> $\Sigma t_i \le 5,00 \text{ mm}$
	Timber substructures no performance determined

t _N	ı, ı ı =	1,5	50	1,7	75	2,0	00	2,5	50	3,0	00	4,0	00	5,0	00	6,0	00	7,	00
M _t ,	nom =					_													
	0,50	0,70	ac	0,80	ac	0,89	ac	0,89	ac	0,89	ac	0,89	ac	_	_	-	-	_	-
	0,60	0,95	ac	1,01	ac	1,07	ac	1,07	ac	1,07	ac	1,07	а	—	—	-	—	—	-
	0,70	1,19	ac	1,23	ac	1,26	ac	1,26	ac	1,26	ac	1,26	а	—	—	-	_	—	-
Ţ	0,80	1,44	ac	1,44	а	—	—	-	—	—	-								
V _{R,k} for	0,90	1,55	ac	1,55	ac	1,55	ac	1,55	ac	1,58	ac	1,63	а	—	—	-	-	-	-
/R,k	1,00	1,66	ac	1,66	ac	1,66	ac	1,66	ac	1,72	ac	1,82	а	—	_	—	—	—	-
-	1,20	1,66	ac	1,72	ac	1,77	ac	1,88	ac	1,99	а	-	—	—	—	-	—	—	-
	1,50	1,66	ac	1,72	ac	1,77	ac	1,88	а	1,99	а	-	—	—	—	-	-	-	-
	2,00	1,66	а	1,72	а	1,77	а	1,88	а	1,99	а	-	—	_	_	_	_	_	—
I II																			
N _{R,II,k} =		1,8	38	2,3	38	2,8	37	4,3	34	5,8	31	7,2	28	-	-	-	-	-	-

- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw	
SFS SX5 - A12 (S12) - 5,5 x L, SFS SX5 - L12 - A12 (S12) - 5,5 x L,	Annex 76
SFS SX5 - D12 - A12 (S12) - 5,5 x L with hexagon head. torx head or irius [®] drive system and sealing washer $\ge \emptyset$ 12 mm	



	Materials
	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4401, 1.4567 or 1.4578
8 8 8 8 8 8 8 8 8 8 8 8 8 8	Washer: aluminum-alloy AW-Almg3 - EN 485, stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
4,2-4,5 1 2 0 5,5 1,81 1,81 0 12 0 12 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	Component I: aluminum-Alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN } 573$ Component II: S235, S275, S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
\emptyset 4,2 \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow	<u>Drilling capacity</u> $\Sigma t_i \le 5,00 \text{ mm}$
	<u>Timber substructures</u> no performance determined

t _N	I,II –	1,	50	1,7	75	2,0	00	2,5	50	3,0	0	4,0	00	5,	00	6,0	00	7,	00
M _{t,}	nom =																		
	0,50	0,91	ac	1,03	ac	1,16	ac	1,16	ac	1,16	ac	1,16	ac	—	_	-	Ι	-	-
	0,60	1,23	ac	1,31	ac	1,40	ac	1,40	ac	1,40	ac	1,40	а	—	—	-	—	—	-
"	0,70	1,56	ac	1,60	ac	1,64	ac	1,64	ac	1,64	ac	1,64	а	—	—	-	—	—	-
Ţ,	0,80	1,88	ac	1,88	а	—	—	-	—	—	-								
V _{R,k} for	0,90	2,03	ac	2,03	ac	2,03	ac	2,03	ac	2,06	ac	2,13	а	-	—	-	-	-	-
/R,k	1,00	2,17	ac	2,17	ac	2,17	ac	2,17	ac	2,24	ac	2,38	а	—	—	-	_	—	-
-	1,20	2,17	ac	2,24	ac	2,31	ac	2,46	ac	2,60	а	-	—	—	—	-	—	-	-
	1,50	2,17	ac	2,24	ac	2,31	ac	2,46	а	2,60	а	-	—	-	—	-	-	-	-
	2,00	2,17	а	2,24	а	2,31	а	2,46	а	2,60	а		_	_	_	_	_	_	_
N _{R,II,k} =		1,8	38	2,3	38	2,8	37	4,3	34	5,8	31	7,2	28	-	_	-	-	-	-

- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw	
SFS SX5 - A12 (S12) - 5,5 x L, SFS SX5 - L12 - A12 (S12) - 5,5 x L, SFS SX5 - D12 - A12 (S12) - 5,5 x L	Annex 77
with hexagon head. torx head or irius [®] drive system and sealing washer $\geq \emptyset$ 12 mm	

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English translation prepared by DIBt



4,2-4,5	<u>Materials</u> Fastener: stainless steel, EN 10088 material-Nr. 1.4301 Washer: stainless steel, EN 10088
7,5	$\begin{array}{ll} \mbox{material-Nr. 1.4301} \\ \mbox{Component I: aluminum-Alloy} \\ \mbox{with } R_{m,min} = 165 \ \mbox{N/mm}^2 - \mbox{EN 573} \\ \mbox{Component II: S235 - EN 10025-1} \\ \mbox{S280GD, S320GD or S350GD - EN 10346} \\ \hline \mbox{Drilling capacity} \qquad \Sigma t_i \leq 3,90 \ \mbox{mm} \end{array}$
	<u>Timber substructures</u> no performance determined

t⊳	I,II –	0,6	50	0,6	63	0,7	75	0,8	38	1,0	00	1,1	3	1,2	25	1,5	50	2,0	00
M _{t,}	nom =																		
	0,80	—	-	_	-	-	-	-	-	_	-	_	-	-	-	-	-	-	—
	1,00	—	-	—	-	-	-	-	-	-	-	-	_	-	—	-	—	-	-
п	1,20	—	—	—	—	-	—	-	—	—	—	—	—	-	—	-	—	-	-
Ţ	1,50	1,20	ac	1,20	ac	1,40	ac	1,57	ac	1,74	ac	1,76	ac	1,77	ac	1,77	ac	1,77	ac
V _{R,k} for	2,00	1,20	ac	1,20	ac	1,83	ac	2,04	ac	2,25	ac	2,41	ac	2,57	ac	2,88	ac	2,88	ac
/R,k	2,50	1,20	ac	1,20	ac	1,83	ac	2,43	ac	2,43	ac	2,50	ac	2,57	ac	-	—	-	-
-	3,00	1,20	ac	1,20	ac	2,01	ac	2,81	ac	-	-	-	-	-	—	-	—	-	-
	3,50	—	-	-	—	-	-	-	-	-	-	-	-	-	—	-	—	-	-
	4,00	_	-	_	-	—	-		-	_	_	-	_	-	_	-	_	-	_
II																			
N _{R,II,k} =		0,7	79	0,8	32	1,1	15	1,4	19	1,8	32	2,1	7	2,5	51	3,2	21	3,2	21
2																			

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw

SFS SL3/2 - 5 - S - SV16 - 6,0 x L

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4,2-4,5 1,1,81 0 = -27 -7,5 0 = 3,6 0 = -27 0	$\begin{tabular}{ c c c c c c } \hline \underline{Materials} \\ Fastener: stainless steel, EN 10088 \\ material-Nr. 1.4301 \\ Washer: stainless steel, EN 10088 \\ material-Nr. 1.4301 \\ Component I: aluminum-Alloy \\ with R_{m,min} = 215 \ N/mm^2 - EN 573 \\ Component II: S235 - EN 10025-1 \\ S280GD, S320GD \ or S350GD - EN 10346 \\ \hline \hline \underline{Drilling \ capacity} \qquad \Sigma t_i \leq 3,90 \ mm \\ \hline \hline \underline{Timber \ substructures} \\ no \ performance \ determined \\ \hline \end{tabular}$
---	---

t _N	I,II =	0,6	50	0,6	33	0,7	75	0,8	38	1,0	00	1,1	3	1,2	25	1,5	50	2,0	00
M _{t,}	nom =																		
	0,80	Ι	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	-	-
	1,00	—	-	—	-	-	-	-	-	-	-	-	-	-	_	-	-	-	-
II	1,20	_	_	—	_	—	_	-	_	—	_	-	_	-	_	-	_	-	-
ţ,	1,50	1,20	ac	1,20	ac	1,60	ac	1,93	ac	2,26	ac	2,28	ac	2,30	ac	2,30	ac	2,30	ac
V _{R,k} for	2,00	1,20	ac	1,20	ac	1,83	ac	2,35	ac	2,87	ac	3,09	ac	3,31	ac	3,75	ac	3,75	ac
/R,k	2,50	1,20	ac	1,20	ac	1,83	ac	2,58	ac	2,87	ac	3,09	_	3,31	_	-	_	-	-
-	3,00	1,20	ac	1,20	ac	2,01	ac	2,81	ac	-	—	-	—	-	—	-	—	-	-
	3,50	—	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4,00	_	-	_	_	—	-	_	-	_	-	-	_	_	_	-	_	-	—
I II																			
N _{R,II,k} =		0,7	79	0,8	32	1,1	15	1,4	19	1,8	32	2,1	7	2,5	51	3,2	21	3,2	21

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw

SFS SL3/2 - 5 - S - SV16 - 6,0 x L

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no performance determined

t _N	ı,ı ı =	_	_	_	_	2x0	,75	2x0	,88	2x1	,00	2x1	,13	2x1	,25	_	-	_	-
M _{t,i}	nom =																		
	0,80	-	Ι	—	_	_	-	-	-	-	-	-	-	-	Ι	_	Ι	-	-
	1,00	_	-	—	—	-	-	-	-	-	-	-	-	-	—	-	-	-	-
1	1,20	_	—	—	—	—	_	-	_	-	_	-	_	-	—	—	_	—	-
V _{R,k} for t _{N,I} =	1,50	—	-	—	—	1,40	ac	1,57	ac	1,74	ac	1,76	ac	1,77	ac	—	—	—	-
lo l	2,00	—	-	—	—	1,83	ac	2,04	ac	2,25	ac	2,41	ac	2,57	ac	—	-	-	-
, Å,	2,50	—	-	—	—	1,83	ac	2,43	ac	2,43	ac	2,50	ac	2,57	ac	—	-	-	-
-	3,00	—	—	—	—	2,01	ac	2,81	ac	-	-	-	—	-	—	—	—	—	-
	3,50	—	-	—	—	-	-	-	-	-	-	-	-	-	—	—	-	-	-
	4,00	_	-	_	_	_	_		_	_	_	-	_	-	_	_	_	_	_
N _{R,II,k} =		-	-	-	-	2,4	43	2,9	94	3,4	15	3,9	92	4,3	38	_	_	-	-

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw

SFS SL3/2 - 5 - S - SV16 - 6,0 x L

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|--|

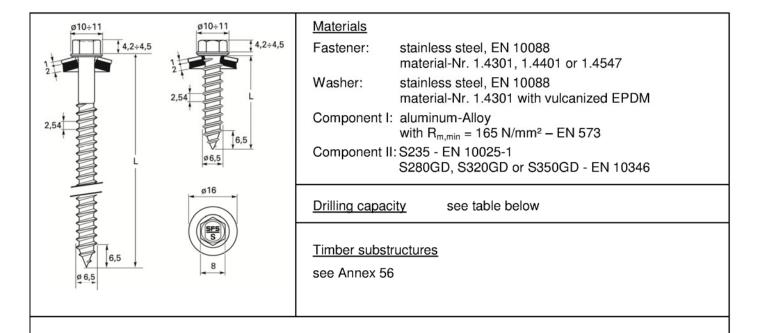
t _N	ı,ıı –		-	_	-	2x0	,75	2x0	,88	2x1	,00	2x1	,13	2x1	,25		-	_	-
M _{t,}	nom =																		
	0,80	-	_	-	_	-	_	-	_	_	_	-	_	-	Ι	-	-	-	-
	1,00	_	—	—	—	-	-	-	-	-	-	-	—	-	—	-	-	-	-
п	1,20	_	—	_	—	-	_	-	_	-	_	-	_	-	—	—	_	—	-
ţ,	1,50	—	—	—	—	1,60	ac	1,93	ac	2,26	ac	2,28	ac	2,30	ac	—	—	—	-
V _{R,k} for t _{N,I}	2,00	-	—	—	—	1,83	ac	2,35	ac	2,87	ac	3,09	ac	3,31	ac	-	-	-	-
/R,k	2,50	_	—	—	—	1,83	ac	2,58	ac	2,87	ac	3,09	ac	3,31	ac	-	_	—	-
-	3,00	—	—	—	—	2,01	ac	2,81	ac	-	-	-	—	-	—	-	—	-	-
	3,50	-	—	—	-	-	-	-	-	-	-	-	—	-	—	-	-	-	-
	4,00	_	_	_	_		-		-	_	-		_	-	—	_	_	_	-
N _{R,II,k} =		-	-	-	-	2,4	43	2,9	94	3,4	15	3,9	92	4,3	38	_	_	-	-

Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-drilling screw

SFS SL3/2 - 5 - S - SV16 - 6,0 x L





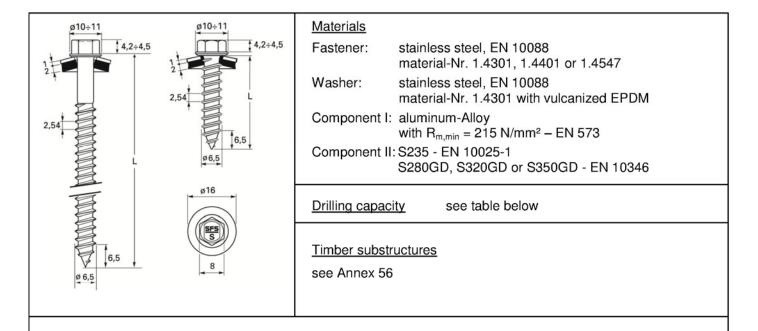
t⊦	_{1,11} =	0,6	33	0,7	75	0,8	38	1,0	00	1,1	3	1,2	25	1,5	50	2,0	0	3,0	00
d	_{pd} =	Ø3	5,5	Ø4	,0				Ø	4,5						Ø5	,0		
	0,50	0,35	_	0,44	-	0,55	_	0,65	-	0,76	_	0,86	-	0,86	-	0,86	-	0,86	-
	0,60	0,35	—	0,44	—	0,55	—	0,65	—	0,76	—	0,86	—	1,03	—	1,03	—	1,03	-
	0,70	0,35	—	0,44	—	0,55	—	0,65	—	0,76	—	0,86	—	1,03	—	1,20	—	1,20	-
Ľ,	0,80	0,35	—	0,44	—	0,55	—	0,65	—	0,76	—	0,86	—	1,03	—	1,37	—	1,37	-
for	0,90	0,35	—	0,44	_	0,56	—	0,65	—	0,76	—	0,86	—	1,03	—	1,37	—	1,54	-
V _{R,k} for	1,00	0,35	—	0,44	—	0,56	—	0,67	—	0,76	—	0,86	—	1,03	—	1,37	—	1,72	-
-	1,20	0,35	—	0,44	_	0,56	—	0,67	—	0,81	—	0,92	—	1,08	—	1,41	—	2,06	-
	1,50	0,35	_	0,44	-	0,56	_	0,67	_	0,81	—	0,94	—	1,24	—	1,53	—	2,13	-
	2,00	0,35	_	0,44	-	0,56	_	0,67	-	0,81	_	0,94	_	1,24	_	1,90	_	2,40	_
N _{R,II,k} =		1,0	00	1,2	20	1,4	10	1,50	0 1)	1,7	'0	1,9	90	2,30	0 ²⁾	3,8	80	5,6	50

- Index 1): If predrill diameter $d_{pd} = 4.0$ mm the values $N_{R,II,k}$ may be increased by 7.0%
- Index 2): If predrill diameter $d_{pd} = 4,5$ mm the values $N_{B,II,k}$ may be increased by 15,0%
- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-tapping screw	

Annex 82



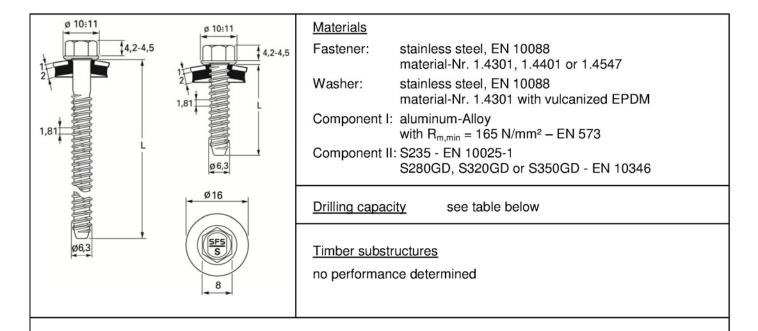


t	_{1,11} =	0,6	33	0,7	75	0,8	38	1,0	00	1,1	3	1,2	25	1,5	50	2,0	00	3,0	00
d	_{pd} =	ØЗ	3,5	Ø4	,0				Ø	4,5						Ø5	i,0		
	0,50	0,45	-	0,58	-	0,72	-	0,85	_	0,99	-	1,12	-	1,12	-	1,12	-	1,12	-
	0,60	0,45	—	0,58	—	0,72	—	0,85	—	0,99	—	1,12	—	1,34	—	1,34	—	1,34	-
	0,70	0,45	—	0,58	—	0,72	—	0,85	—	0,99	—	1,12	—	1,34	—	1,57	—	1,57	-
Ľ,	0,80	0,45	—	0,58	—	0,72	—	0,85	—	0,99	—	1,12	—	1,34	—	1,79	—	1,79	-
Į d	0,90	0,45	—	0,58	_	0,72	_	0,85	_	0,99	_	1,12	—	1,34	—	1,78	—	2,01	-
V _{R,k} for	1,00	0,45	—	0,58	-	0,72	-	0,88	-	1,05	_	1,12	—	1,34	—	1,78	_	2,24	-
-	1,20	0,45	—	0,58	-	0,72	-	0,88	_	1,05	_	1,20	—	1,41	—	1,83	_	2,68	-
	1,50	0,45	—	0,58	—	0,72	—	0,88	_	1,05	—	1,23	—	1,61	—	2,00	—	2,77	-
	2,00	0,45	—	0,58	—	0,72	—	0,88	—	1,05	—	1,23	—	1,61	—	2,48	—	3,14	—
N _{R,II,k} =		1,0	00	1,2	20	1,4	10	1,50	0 ¹⁾	1,7	70	1,9	0	2,30	0 ²⁾	3,8	30	5,6	50

- Index 1): If predrill diameter $d_{pd} = 4,0$ mm the values $N_{R,II,k}$ may be increased by 7,0%
- Index 2): If predrill diameter $d_{pd} = 4,5$ mm the values $N_{B,II,k}$ may be increased by 15,0%
- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations
 of the aluminium profile producers

Self-tapping screw	
SFS TDA - S - S16 - 6,5 x L	Annex 83
with hexagon head and sealing washer $\ge \emptyset$ 16 mm	





t _N	I,II =	1,2	25	1,5	50	2,0	0	2,5	50	3,0	00	4,0	00	5,0	0	6,0	00	8,0 -	10,0	≥ 10,	00 ^a
d	pd =		Ø	5,0						ØS	5,3					Ø5	5,5	Ø5	5,7	Ø5	5,8
	0,50	0,83	_	0,83	_	0,83	_	0,83	_	0,83	_	0,83	_	0,83	_	0,83	_	0,83	_	0,83	-
	0,60	0,83	—	1,00	—	1,00	—	1,00	—	1,00	—	1,00	—	1,00	_	1,00	—	1,00	—	1,00	-
1	0,70	0,83	—	1,00	—	1,16	—	1,16	—	1,16	-	1,16	—	1,16	—	1,16	—	1,16	—	1,16	-
Ţ,	0,80	0,83	—	1,00	—	1,33	—	1,33	_	1,33	_	1,33	—	1,33	_	1,33	_	1,33	_	1,33	-
ξ	0,90	0,83	—	1,00	—	1,33	—	1,50	_	1,50	-	1,50	—	1,50	_	1,50	—	1,50	—	1,50	-
<pre></pre>	1,00	0,83	—	1,00	_	1,33	—	1,66	_	1,66	-	1,66	—	1,66	_	1,66	—	1,66	—	1,66	-
	1,20	0,90	_	1,06	-	1,37	_	1,68	-	2,00	-	2,00	—	2,00	-	2,00	—	2,00	-	2,00	-
	1,50	0,93	_	1,22	_	1,50	_	1,79	_	2,07	_	2,49	—	2,49	-	2,49	—	2,49	—	2,49	-
	2,00	0,93	_	1,22	-	1,87	_	2,12	_	2,36	-	2,84	—	3,33	_	3,33	_	3,33	-	3,33	—
N _{R,II,k} =		2,0	0	2,7	70	3,6	60	3,6	60	6,0	00	7,3	30	7,3	30	7,6	60	7,6	60	7,6	50

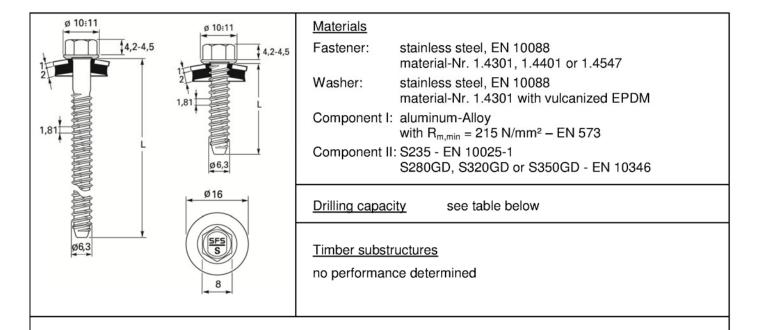
- Index a): only for component II made of S235 or S280GD

- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-tapping screw

with hexagon head and sealing washer $\geq \emptyset$ 16 mm





t _N	I,II =	1,2	25	1,5	50	2,0	0	2,5	50	3,0	00	4,0	00	5,0	0	6,0	00	8,0 -	10,0	≥ 10,	,00 ^a
d	pd =		Ø	4,5						Ø5	5,3					Ø5	5,5	Ø5	5,7	Ø5	5,8
	0,50	1,08	_	1,08	_	1,08	_	1,08	_	1,08	_	1,08	_	1,08	_	1,08	_	1,08	_	1,08	-
	0,60	1,08	—	1,30	—	1,30	—	1,30	—	1,30	—	1,30	—	1,30	—	1,30	—	1,30	—	1,30	-
1	0,70	1,08	_	1,30	—	1,52	—	1,52	—	1,52	_	1,52	—	1,52	_	1,52	_	1,52	_	1,52	-
Ţ,	0,80	1,08	_	1,30	—	1,73	—	1,73	—	1,73	_	1,73	—	1,73	_	1,73	_	1,73	_	1,73	-
ξ	0,90	1,08	_	1,30	—	1,73	—	1,95	—	1,95	—	1,95	—	1,95	_	1,95	—	1,95	—	1,95	-
<pre></pre>	1,00	1,08	_	1,30	_	1,73	—	2,17	—	2,17	—	2,17	—	2,17	_	2,17	—	2,17	—	2,17	-
	1,20	1,18	_	1,38	-	1,79	_	2,19	—	2,60	-	2,60	—	2,60	-	2,60	—	2,60	-	2,60	-
	1,50	1,21	_	1,59	_	1,96	_	2,33	_	2,70	-	3,25	—	3,25	_	3,25	—	3,25	—	3,25	-
	2,00	1,21	_	1,59	-	2,44	_	2,76	_	3,07	-	3,70	—	4,33	_	4,33	_	4,33	-	4,33	—
N _{R,II,k} =		2,0	00	2,7	70	3,6	60	3,6	60	6,0	00	7,3	30	7,3	30	7,6	60	7,6	60	7,6	50

- Index a): only for component II made of S235 or S280GD

- Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

Self-tapping screw

with hexagon head and sealing washer $\geq \emptyset$ 16 mm

English translation prepared by DIBt



		Materials
	(SFS S)	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4567 or 1.4401
8		Washer: stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
Ø 10+11 4,2-4,5		Component I: aluminum-Alloy with R _{m,min} = 165 N/mm ² – EN 573
3		Component II: structural timber - EN 14081
Ø 4,6 Ø 6,5		<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
		Timber substructures
10		performance determined with
		$M_{y,Rk} = 9,742 \text{ Nm}$
● + Ø 3,9		$f_{ax,k} = 8,575 \text{ N/mm}^2 \text{ for } l_{ef} \ge 26,0 \text{ mm}$

L	ef =	2	6	3:	2	3	9	4	5	5	2	58	8	64	4	7	1	78	8		
M _t ,	nom =																				
	0,50	0,86	_	0,86	_	0,86	-	0,86	_	0,86	_	0,86	_	0,86	_	0,86	_	0,86	_	0,86	. I
	0,60	1,03	—	1,03	—	1,03	—	1,03	—	1,03	_	1,03	—	1,03	_	1,03	—	1,03	_	1,03	du
1	0,70	1,06	—	1,20	—	1,20	—	1,20	—	1,20	—	1,20	—	1,20	_	1,20	—	1,20	—	1,20	bearing resistance of comp.
Ţ	0,80	1,06	—	1,31	—	1,37	—	1,37	—	1,37	—	1,37	—	1,37	—	1,37	—	1,37	—	1,37	o ec
ξ	0,90	1,06	—	1,31	—	1,54	—	1,54	—	1,54	—	1,54	—	1,54	—	1,54	—	1,54	—	1,54	tanc
V _{R,k} for	1,00	1,06	—	1,31	—	1,60	_	1,72	_	1,72	_	1,72	—	1,72	_	1,72	—	1,72	_	1,72	sist
1	1,20	1,06	—	1,31	—	1,60	—	1,84	—	2,06	—	2,06	—	2,06	—	2,06	—	2,06	—	2,06	g re
	1,50	1,06	—	1,31	—	1,60	—	1,84	_	2,13	_	2,37	—	2,46	_	2,55	—	2,57	—	2,57	arin
	2,00	1,06	_	1,31	_	1,60	_	1,84	_	2,13	_	2,37	_	2,46	_	2,55	_	2,64	_	3,43	pe
N _{R,II,k} =		1,3	30	1,6	60	1,9	95	2,2	26	2,6	61	2,9	91	3,2	21	3,5	56	3,9	91		

The values listed above in dependence on the screw-in length l_{ef} are valid for k_{mod} = 0,90 and timber strength grade C24 (ρ_a = 350 kg/m³). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.
 Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations

of the aluminium profile producers

Self-drilling screw

with hexagon head or irius[®] drive system and sealing washer $\geq \emptyset$ 16 mm

English translation prepared by DIBt



16	16	Materials
	SFS S	Fastener: stainless steel, EN 10088 material-Nr. 1.4301, 1.4567 or 1.4401
8		Washer: stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDM
Ø 10+11 4,2-4,5		Component I: aluminum-Alloy with R _{m,min} = 215 N/mm ² – EN 573
3		Component II: structural timber - EN 14081
Ø 4,6		<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
		Timber substructures
10 7		performance determined with
		$M_{y,Rk} = 9,742 \text{ Nm}$
		$f_{ax,k} = 8,575 \text{ N/mm}^2 \text{ for } l_{ef} \ge 26,0 \text{ mm}$

L	.ef =	2	6	32	2	3	9	4	5	5	2	5	8	64	4	7	1	78	8		\nearrow
M _t ,	nom =						_						_								
	0,50	1,06	_	1,12	_	1,12	_	1,12	_	1,12	_	1,12	_	1,12	_	1,12	_	1,12	_	1,12	
	0,60	1,06	_	1,31	—	1,34	—	1,34	_	1,34	—	1,34	—	1,34	_	1,34	—	1,34	—	1,34	bearing resistance of comp
	0,70	1,06	—	1,31	—	1,57	—	1,57	_	1,57	—	1,57	—	1,57	_	1,57	—	1,57	—	1,57	fc
tr, I	0,80	1,06	—	1,31	—	1,60	—	1,79	—	1,79	—	1,79	—	1,79	—	1,79	—	1,79	—	1,79	e e
<u>ē</u>	0,90	1,06	—	1,31	—	1,60	—	1,84	—	2,01	—	2,01	—	2,01	—	2,01	—	2,01	—	2,01	and
R, K	1,00	1,06	—	1,31	—	1,60	—	1,84	—	2,13	—	2,24	—	2,24	—	2,24	—	2,24	—	2,24	sist
[1,20	1,06	—	1,31	_	1,60	_	1,84	_	2,13	-	2,37	—	2,46	_	2,55	—	2,64	—	2,68	g re
	1,50	1,06	—	1,31	—	1,60	—	1,84	—	2,13	—	2,37	—	2,46	-	2,55	—	2,64	—	3,35	arin
	2,00	1,06	_	1,31	_	1,60	_	1,84	_	2,13	_	2,37	_	2,46	_	2,55	_	2,64	_	4,47	þe
$N_{R,II,k} =$		1,3	30	1,6	61	1,9	96	2,2	26	2,6	61	2,9	91	3,2	21	3,5	56	3,9	91		

The values listed above in dependence on the screw-in length l_{ef} are valid for k_{mod} = 0,90 and timber strength grade C24 (ρ_a = 350 kg/m³). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.
 Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations

of the aluminium profile producers

Self-drilling screw

SFS SXW - S16 - 6,5 x L, SFS SXW - L12 - S16 - 6,5 x I	L
--	---

with hexagon head or irius[®] drive system and sealing washer $\geq \emptyset$ 16 mm

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English translation prepared by DIBt



	MaterialsFastener:stainless steel, EN 10088 material-Nr. 1.4301Washer:stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDMComponent I:aluminum-Alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN 573}$ Component II:structural timber - EN 14081
~7.0	$\label{eq:star} \begin{array}{c} \underline{Drilling\ capacity} & \Sigma t_i \leq 2,00\ mm \end{array}$ $\label{eq:star} \\ \hline \underline{Timber\ substructures} \\ performance\ determined\ with \\ M_{y,Rk} = & 7,911\ Nm \\ f_{ax,k} = & 9,800\ N/mm^2 \ for l_{ef} \geq 24,0\ mm \end{array}$

L	ef =	24	4	2	5	26		27		28		29		30		3	1	3:	2		
M _t ,	nom =												<u> </u>								
		0,59	—	0,59	—	0,59	-	0,59	—	0,59	_	0,59	—	0,59	_	0,59	—	0,59	—	0,59	-
	0,60	0,80	—	0,80	—	0,80	—	0,80	—	0,80	—	0,80	—	0,80	_	0,80	—	0,80	—	0,80	du
1	0,70	0,96	—	1,00	—	1,01	—	1,01	—	1,01	—	1,01	—	1,01	_	1,01	—	1,01	—	1,01	bearing resistance of comp
Ţ	0,80	0,96	—	1,00	—	1,04	—	1,08	—	1,12	—	1,14	—	1,14	—	1,14	—	1,14	—	1,14	e o
V _{R,k} for	0,90	0,96	—	1,00	—	1,04	—	1,08	—	1,12	—	1,16	—	1,20	—	1,24	—	1,26	—	1,26	anc
/ _{R,k}	1,00	0,96	—	1,00	—	1,04	—	1,08	—	1,12	—	1,16	—	1,20	—	1,24	—	1,26	—	1,26	sis
[_	1,20	0,96	—	1,00	-	1,04	_	1,08	_	1,12	-	1,16	—	1,20	_	1,24	_	1,26	-	1,26	g re
	1,50	0,96	_	1,00	—	1,04	—	1,08	—	1,12	—	1,16	—	1,20	_	1,24	—	1,26	—	1,26	arin
	2,00	0,96	_	1,00	_	1,04	_	1,08	_	1,12	_	1,16	_	1,20	_	1,24	_	1,26	_	1,26	þe
N _{R,II,k} =		1,27				1,38		1,43		1,48		1,53		1,59		1,64		1,69			

The values listed above in dependence on the screw-in length l_{ef} are valid for k_{mod} = 0,90 and timber strength grade C24 (ρ_a = 350 kg/m³). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.
 Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations

of the aluminium profile producers

Self-drilling screw

with hexagon head and sealing washer $\ge \emptyset$ 16 mm

Annex 88

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English translation prepared by DIBt



Ø 10:11 4,2-4,5; 1 3 1,95 L>42 8	MaterialsFastener:stainless steel, EN 10088 material-Nr. 1.4301Washer:stainless steel, EN 10088 material-Nr. 1.4301 with vulcanized EPDMComponent I:aluminum-Alloy with Rmmin = 215 N/mm² – EN 573Component II:structural timber - EN 14081
~7.0	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
Ø 3,5	Timber substructures
	$\begin{array}{ll} \text{performance determined with} \\ M_{y,\text{Rk}} = & 7,911 \text{ Nm} \\ f_{ax,k} = & 9,800 \text{ N/mm}^2 \text{for} \ \ l_{ef} \geq 24,0 \text{ mm} \end{array}$

				r –										1				1		r –	
	ef =	24	1	2!	5	26		27		28		29		30		31		32	2		
M _{t,}	nom =																				
	0,50	0,70	_	0,70	_	0,70	_	0,70	_	0,70	—	0,70	—	0,70	_	0,70	—	0,70	—	0,70	-
	0,60	0,80	_	0,93	—	0,93	—	0,93	—	0,93	—	0,93	—	0,93	_	0,93	—	0,93	—	0,93	du
1	0,70	0,96	_	1,00	—	1,04	_	1,08	—	1,12	—	1,16	—	1,16	_	1,16	—	1,16	—	1,16	of comp
tr T	0,80	0,96	—	1,00	—	1,04	—	1,08	—	1,12	—	1,16	—	1,20	_	1,24	—	1,26	—	1,34	e o
<u>ē</u>	0,90	0,96	—	1,00	—	1,04	—	1,08	—	1,12	—	1,16	—	1,20	—	1,24	—	1,26	—	1,52	bearing resistance
, A, H	1,00	0,96	—	1,00	—	1,04	—	1,08	—	1,12	—	1,16	—	1,20	—	1,24	—	1,26	—	1,52	sis
-	1,20	0,96	_	1,00	_	1,04	_	1,08	_	1,12	-	1,16	_	1,20	_	1,24	—	1,26	_	1,52	g re
	1,50	0,96	—	1,00	—	1,04	—	1,08	—	1,12	—	1,16	—	1,20	-	1,24	—	1,26	—	1,52	arin
	2,00	0,96	_	1,00	_	1,04	_	1,08	_	1,12	_	1,16	_	1,20	_	1,24	_	1,26	_	1,52	þe
N _{R,II,k} =		1,27				1,43		1,48		1,53		1,59		1,64		1,69					

The values listed above in dependence on the screw-in length l_{ef} are valid for k_{mod} = 0,90 and timber strength grade C24 (ρ_a = 350 kg/m³). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.
 Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations

of the aluminium profile producers

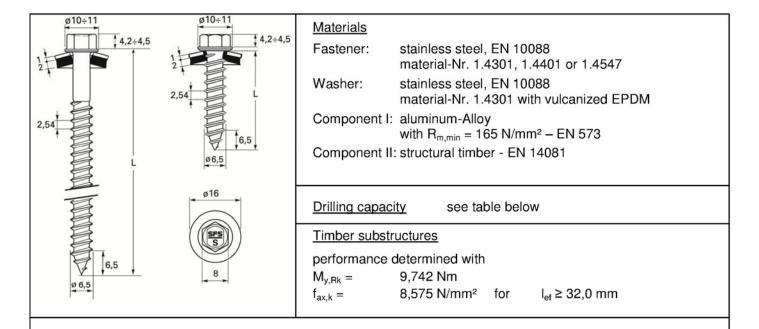
Self-drilling screw

Annex 89

with hexagon head and sealing washer $\ge \emptyset$ 16 mm

English translation prepared by DIBt





t _N	t _{N,II} =		32		39		60		64		71		78		
d _p	_{bd} =							Ø4	,8						
	0,50	0,86	_	0,86	_	0,86	_	0,86	—	0,86	_	0,86	_	0,86	-
	0,60	1,03	_	1,03	_	1,03	—	1,03	—	1,03	—	1,03	—	1,03	of comp.
	0,70	1,20	—	1,20	—	1,20	—	1,20	—	1,20	—	1,20	—	1,20	fcc
ţ,	0,80	1,37	—	1,37	—	1,37	—	1,37	—	1,37	—	1,37	—	1,37	e o
V _{R,k} for	0,90	1,54	—	1,54	—	1,54	—	1,54	—	1,54	—	1,54	—	1,54	bearing resistance
/R,k	1,00	1,57	—	1,72	_	1,72	—	1,72	—	1,72	—	1,72	—	1,72	sist
-	1,20	1,57	—	1,91	—	2,06	—	2,06	—	2,06	—	2,06	_	2,06	g re
	1,50	1,57	—	1,91	—	2,27	—	2,31	—	2,38	—	2,45	_	2,57	arin
	2,00	1,57	_	1,91	_	2,27	_	2,31	_	2,38	_	2,45	_	3,43	þe
N _{R,II,k} =	" " [¥] " " ¹ " Z		1,90		3,0	3,00		3,20		3,56		3,91			

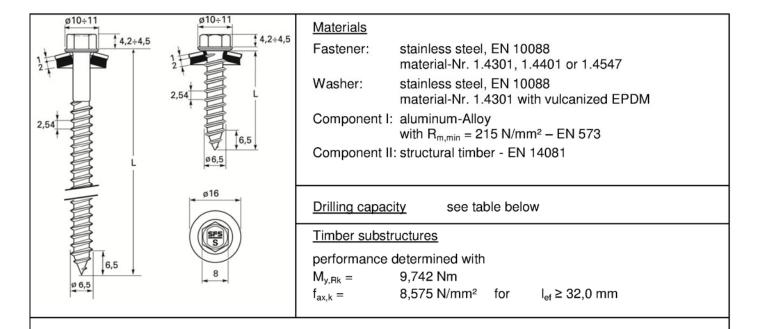
The values listed above in dependence on the screw-in length l_{ef} are valid for k_{mod} = 0,90 and timber strength grade C24 (ρ_a = 350 kg/m³). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.
 Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

 Self-tapping screw
 Annex 90

 SFS TDA - S - S16 - 6,5 x L
 with hexagon head and sealing washer $\ge \emptyset$ 16 mm

English translation prepared by DIBt





t _N	1,II =	32	Т	39	39 60			64	1	71		78		-	
d	_{pd} =	Ø 4,8													
	0,50	1,12 –	Т	1,12	-	1,12	_	1,12	_	1,12	_	1,12	_	1,12	
	0,60	1,23 –		1,34	—	1,34	—	1,34	—	1,34	—	1,34	—	1,34	bearing resistance of comp.
	0,70	1,57 –		1,57	—	1,57	_	1,57	—	1,57	—	1,57	—	1,57	f cc
	0,80	1,57 –		1,79	_	1,79	_	1,79	_	1,79	_	1,79	_	1,79	e o
V _{R,k} for t _{N,I}	0,90	1,57 –		1,91	_	2,01	_	2,01	_	2,01	—	2,01	_	2,01	tanc
A,R	1,00	1,57 –		1,91	—	2,24	_	2,24	_	2,24	—	2,24	—	2,24	sis'
_	1,20	1,57 –		1,91	—	2,27	-	2,31	—	2,38	—	2,45	—	2,68	g re
	1,50	1,57 –		1,91	—	2,27	-	2,31	—	2,38	—	2,45	—	3,35	arin
	2,00	1,57 –		1,91	_	2,27	_	2,31	_	2,38	_	2,45	_	4,47	þe
N _{R,II,k} =		1,60		1,90		3,00		3,20		3,56		3,91			\land

The values listed above in dependence on the screw-in length l_{ef} are valid for k_{mod} = 0,90 and timber strength grade C24 (ρ_a = 350 kg/m³). For other combinations of k_{mod} and timber strength grades see chapter 4.2.2.
 Pull-through of component I according to EN 1999-1-4, chapter 8.3.3.1 or according to the recommendations of the aluminium profile producers

 Self-tapping screw
 Annex 91

 SFS TDA - S - S16 - 6,5 x L
 with hexagon head and sealing washer $\geq \emptyset$ 16 mm