

European Technical Approval ETA-10/0200

Handelsbezeichnung Trade name	Befestigungsschrauben JA, JB, JT, JZ und JF Fastening screws JA, JB, JT, JZ and JF				
Zulassungsinhaber Holder of approval	EJOT Baubefestigungen GmbH In der Stockwiese 35 57334 Bad Laasphe DEUTSCHLAND				
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	27 June 2013				
bis to	27 June 2018				
Herstellwerk Manufacturing plant	EJOT Baubefestigungen GmbH In der Stockwiese 35 57334 Bad Laasphe DEUTSCHLAND				

English translation prepared by DIBt - Original version in German language

Diese Zulassung umfasst This Approval contains

Diese Zulassung ersetzt This Approval replaces



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117 pages including 104 annexes



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I LEGAL BASES AND GENERAL CONDITIONS

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 - 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;
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¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12

² 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 product/ products and intended use

1.1 Definition of the construction product

The EJOT fastening screws 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	Fastening screw	Comp. I	Comp.	Description
Annex 6	JT2-2-4,2 x L JT2-3-4,8 x L	steel	steel	with hexagon head or round head with Phillips®, Pozidriv® or Torx® drive system
Annex 7	JT2-2H/3-4,8 x L	steel	steel	with undercut, hexagon head and sealing washer ≥ Ø14 mm
Annex 8	JT2-2H-4,8 x L	steel	steel	with undercut and hexagon head
Annex 9	JT2-T-2H-4,8 x L	steel	steel	with undercut and round head with Torx® drive system
Annex 10	JT2-2H-5,5 x L	steel	steel	with undercut, hexagon head and sealing washer ≥ Ø16 mm
Annex 11	JT2-3H-5,5 x L	steel	steel	with undercut, hexagon head and sealing washer ≥ Ø16 mm
Annex 12	JT2-3H-5,5 x L	steel	steel	with undercut, hexagon head and sealing washer ≥ Ø16 mm
Annex 13	JT2-3-5,5 x L	steel	steel	with hexagon head
Annex 14	JT2-3-5,5 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 15	JT2-6-5,5 x L	steel	steel	with hexagon head
Annex 16	JT2-6-5,5 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 17	JT2-8-5,5 x L	steel	steel	with hexagon head
Annex 18	JT2-8-5,5 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 19	JT2-6-6,3 x L	steel	steel	with hexagon head
Annex 20	JT2-6-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 21	JT2-12-5,5 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 22	JT2-12-5,5 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 23	JT3-2H-4,8 x L JT6-2H-4,8 x L	steel	steel	with undercut and hexagon head and sealing washer ≥ Ø14 mm

 Table 1
 Different types of fastening screws



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Annex	Fastening screw	Comp. I	Comp. I	Description
Annex 24	JT3-3H-4,8 x L JT6-3H-4,8 x L	steel	steel	with undercut, hexagon head and sealing washer ≥ Ø14 mm
Annex 25	JT3-FR-2H-4,8 x L JT6-FR-2H-4,8 x L	steel	steel	with undercut, round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 26 ^{*)}	JT3- (FR-)2-4,9xL JT4- (FR-)2-4,9xL JT9- (FR-)2-4,9xL	alu 165 1)	timber	hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 27 ^{*)}	JT3- (FR-)2-4,9xL JT4- (FR-)2-4,9xL JT9- (FR-)2-4,9xL	Alu 215 2)	timber	hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 28	JT3-2H-5,5 x L JT6-2H-5,5 x L	steel	steel	with undercut, hexagon head and sealing washer ≥ Ø16 mm
Annex 29	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 165	alu 165	with hexagon or round head and sealing washer ≥ Ø14 mm
Annex 30	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 215	alu 215	with hexagon or round head and sealing washer ≥ Ø14 mm
Annex 31	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 165	steel	with hexagon or round head and sealing washer ≥ Ø14 mm
Annex 32	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 215	steel	with hexagon or round head and sealing washer ≥ Ø14 mm
Annex 33 ^{*)}	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 165	timber	with hexagon or round head and sealing washer ≥ Ø14 mm
Annex 34 ^{*)}	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 215	timber	with hexagon or round head and sealing washer ≥ Ø14 mm
Annex 35	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	steel	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 36	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	steel	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 37	JT3-FR-2H Plus-5,5 x L JT6-FR-2H Plus-5,5 x L	steel	steel	with undercut, round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 38	JT3-FR-2H Plus-5,5 x L JT6-FR-2H Plus-5,5 x L	steel	steel	with undercut, round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 39	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 165	alu 165	with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm



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Annex	Fastening screw	Comp. I	Comp.	Description
Annex 40	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 215	alu 215	with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 41	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 165	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 42	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 165	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 43	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 215	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 44	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 215	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 45	JT3-3-5,5xL JT3-FR-3-5,5xL JT6-3-5,5xL JT6-FR-3-5,5 x L	alu 165	alu 165	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 46	JT3-3-5,5xL JT3-FR-3-5,5xL JT6-3-5,5xL JT6-FR-3-5,5 x L	alu 215	alu 215	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 47	JT3-3-5,5xL JT3-FR-3-5,5xL JT6-3-5,5xL JT6-FR-3-5,5 x L	alu 165	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 48	JT3-3-5,5xL JT3-FR-3-5,5xL JT6-3-5,5xL JT6-FR-3-5,5 x L	alu 215	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 49	JT3-3H-5,5 x L JT6-3H-5,5 x L JT3-FR-3H-5,5 x L JT6-FR-3H-5,5 x L	steel	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 50	JT3-3H-5,5 x L JT6-3H-5,5 x L JT3-FR-3H-5,5 x L JT6-FR-3H-5,5 x L	steel	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 51	JT3-3-5,5 x L JT6-3-5,5 x L JT3-FR-3-5,5 x L JT6-FR-3-5,5 x L	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 52	JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm



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Annex	Fastening screw	Comp. I	Comp.	Description
Annex 53	JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	alu 165	alu 165	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 54	JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	alu 215	alu 215	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 55	JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	alu 165	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 56	JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	alu 215	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 57	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 58	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm
Annex 59	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	alu 165	alu 165	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 60	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	alu 215	alu 215	with hexagon head or round head with Torx® drive system and sealing washer $\ge \emptyset$ 11 mm
Annex 61	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	alu 165	steel	with hexagon head or round head with Torx® drive system and sealing washer $\ge \emptyset$ 11 mm
Annex 62	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	alu 215	steel	with hexagon head or round head with Torx® drive system and sealing washer $\ge \emptyset$ 11 mm
Annex 63	JT3-6-6,3 x L JT6-6-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 64	JT3-2-6,5 x L JT6-2-6,5 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 65 ^{*)}	JT3-2-6,5 x L JT6-2-6,5 x L	steel	timber	with hexagon head and sealing washer ≥ Ø16 mm
Annex 66 ^{*)}	JT3-2-6,5 x L JT6-2-6,5 x L	alu 165	timber	with hexagon head and sealing washer ≥ Ø16 mm
Annex 67 ^{*)}	JT3-2-6,5 x L JT6-2-6,5 x L	alu 215	timber	with hexagon head and sealing washer ≥ Ø16 mm
Annex 68 ^{*)}	JT3-2-6,5 x L JT6-2-6,5 x L	steel	timber	with hexagon head and sealing washer ≥ Ø16 mm



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Annex	Fastening screw	Comp. I	Comp. I	Description
Annex 69 ^{*)}	JT3-2-6,5 x L JT6-2-6,5 x L	steel	timber	with hexagon head and sealing washer ≥ Ø16 mm
Annex 70	JA1-6,5 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 71 ^{*)}	JA1-6,5 x L	steel	timber	with hexagon head and sealing washer ≥ Ø16 mm
Annex 72	JZ1-6,3 x L JB1-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 73	JZ1-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø22 mm
Annex 74	JA3-6,5 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 75 ^{*)}	JA3-6,5 x L	steel	timber	with hexagon head and sealing washer ≥ Ø16 mm
Annex 76	JA3-6,5 x L	alu 165	alu 165	with hexagon head and sealing washer ≥ Ø16 mm
Annex 77	JA3-6,5 x L	alu 215	alu 215	with hexagon head and sealing washer ≥ Ø16 mm
Annex 78	JA3-6,5 x L	alu 165	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 79	JA3-6,5 x L	alu 215	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 80	JZ3-6,3 x L JB3-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 81	JZ3-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø22 mm
Annex 82	JZ3-6,3 x L JB3-6,3 x L	alu 165	alu 165	with hexagon head and sealing washer ≥ Ø16 mm
Annex 83	JZ3-6,3 x L JB3-6,3 x L	alu 215	alu 215	with hexagon head and sealing washer ≥ Ø16 mm
Annex 84	JZ3-6,3 x L JB3-6,3 x L	alu 165	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 85	JZ3-6,3 x L JB3-6,3 x L	alu 215	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 86	JZ3-8,0 x L	steel	steel	with hexagon head and sealing washer ≥ Ø22 mm
Annex 87	JZ7-6,3 x L JB7-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 88	JZ7-6,3 x L JB7-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø22 mm
Annex 89	JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm
Annex 90	JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L	alu 165	alu 165	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm
Annex 91	JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L	alu 215	alu 215	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm



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Fastening screw	Comp. I	Comp.	Description
JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L	alu 165	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm
JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L	alu 215	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm
JF2-2H-4,8 x L	steel	steel	with hexagon head
JF3-2-5,5xL JF6-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 mm
JF3-2-5,5xL JF6-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm
JF3-2-5,5xL JF6-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL	alu 165	alu 165	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm
JF3-2-5,5xL JF6-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL	alu 215	alu 215	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm
JT3-LT-3-5,5xL JT6-LT-3-5,5xL	steel	steel	round head with Torx® drive system
JT3-LT-3-5,5xL JT6-LT-3-5,5xL	steel	steel	round head with Torx® drive system and sealing washer ≥ Ø11 mm
JT4-4-4,8xL JT9-4-4,8xL	alu 165	alu 165	with hexagon head
JT4-4-4,8xL JT9-4-4,8xL	alu 215	alu 215	with hexagon head
JT4-6-5,5xL JT9-6-5,5xL	alu 165	alu 165	with hexagon head
JT4-6-5,5xL JT9-6-5,5xL	alu 215	alu 215	with hexagon head
	JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L JF3-FR-2H-4,8 x L JF3-FR-2H-4,8 x L JF3-FR-2H-4,8 x L JF3-FR-2H-4,8 x L JF3-FR-2H-4,8 x L JF3-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL JF3-FR-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL JF3-FR-2-5,5xL	JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L alu 165 JF3-FR-2H-4,8 x L JF6-2H-4,8 x L JF3-2H-4,8 x L alu 215 JF3-FR-2H-4,8 x L JF0-2H-4,8 x L JF3-FR-2H-4,8 x L alu 215 JF6-FR-2H-4,8 x L steel JF3-FR-2H-4,8 x L steel JF2-2H-4,8 x L steel JF3-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-FR-2-5,5xL JF6-LT-3-5,5xL JF6-FR-2-5,5xL JT6-LT-3-5,5xL JT6-LT-3-5,5xL Steel JT3-LT-3-5,5xL steel JT6-LT-3-5,5xL alu 165 JT9-4-4,8xL alu 215 JT6-4-4,8xL <td< td=""><td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td></td<>	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

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

¹) Aluminum alloy with R_{m.min} of 165 N/mm²

²) Aluminum alloy with $R_{m,min}$ of 215 N/mm²

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 is component I and the substructure is component II.



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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.

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.

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The technical documentation to this European technical approval is deposited at Deutsches Institut für 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.



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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.

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 relating to this European technical approval" 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.

⁸ Official Journal of the European Communities L 80 of 18.03.1998.

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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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),
- 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:

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

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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.

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

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_g 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 $I_{ef} = I_g I_b$
- $N_{R,k}$ = $F_{ax,Rk} \cdot k_{mod}$
- $V_{R,k}$ = $F_{v,Rk} \cdot k_{mod}$

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

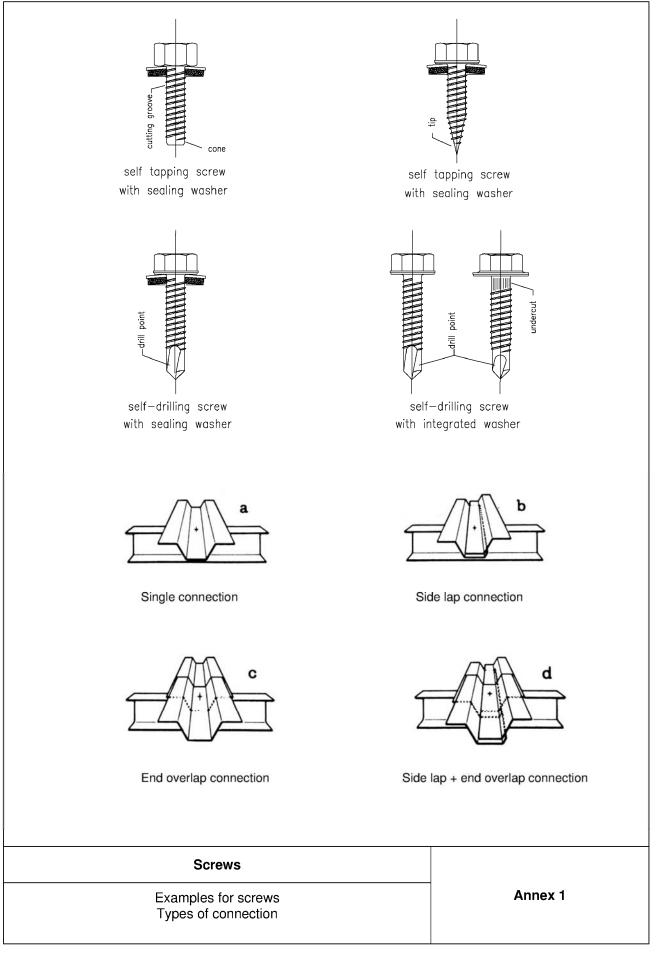
It is in the responsibility of the manufacturer to ensure that the information on the specific conditions according to 1, 2, 4.2 and 4.3 (including Annexes referred to) is given to those who are concerned. This information may be given by reproduction of the respective parts of the European technical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

Andreas Kummerow p. p. Head of Department *beglaubigt:* Ulbrich

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English translation prepared by DIBt





$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
	er einsilier
$\begin{bmatrix} \bigcirc \bigcirc$	or similar
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	
^{∞ 5,0} O, O, O, O, O, O, B ₁ Component I: S280GD, S320GD or S350)GD - EN 10346
$\begin{array}{c c} \bigcirc \bigcirc$	16 or
$ _{\frac{4}{4,0}}$ structural timber at least str	engin grade 024
Hole pattern I	

sheet / Ø washer		. r	nade of	ed sheet S280GI = 360 N/	C	i i	perforated sheets made of S320GD with R _{m,min} = 390 N/mm ²				perforated sheets made of S350GD with R _{m.min} = 420 N/mm ²			
ØW	asher				25 mm				25 mm					
M	t,nom					1	51	١m						
	0,50	_	_	—	—					_	_	_		
~	0,55	_	_	—	_	_			_	_	_	_	_	
V _{R,k} [kN] for t _{N,I} [mm]	0,63	_	_	_	_	_			_	_	_	_	_	
tn,ı	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	
3,× []	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	—	_	—	—	—			_	—	—	_	_	
ᄃ	0,55	_	—	-	—	—		—	—	—	—	—	_	
Ē	0,63	_	—	—	—	—	—	—	—	—	—	—	_	
ťn,i	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	
ξ	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	
N _{R,k} [kN] for t _{N,I} [mm]	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	
Ż	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 of perforated sheets



	<u>Type of</u> <u>Fastener</u>	self tapping screw Ø6,3 mm and Ø6,5 mm and self drilling screw from Ø5,5 mm to Ø6,3 mm
	<u>Materials</u>	
	Fastener:	stainless steel - EN 10088 or similiar
	Washer:	stainless steel - EN 10088 EPDM sealing washer
	Component I:	S280GD - EN 10346
	Component II	at least S235 - EN 10025-1 or at least S280GD - EN 10346 or structural timber at least strength grade C24
Hole pattern II		

	rew /	self drillin	g screws Ø	5,5 mm and	Ø6,0 mm		self tapping g screws Ø		
Ø w	asher	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm
м	t,nom	5 Nm							
	0,50	_	_	_	_		_	_	—
	0,55	—	_	_	—		—	—	_
<u><u></u></u>	0,63	—	_	_	—	_	—	_	_
for t _{N,I} [mm]	0,75	2,48	2,52	2,84	2,76	2,38	2,64	3,16	3,24
fo	0,88	3,04	3,12	3,42	3,32	3,02	3,28	3,78	3,88
V _{R,k} [kN]	1,00	3,56	3,70	3,84	3,84	3,64	3,96	4,36	4,50
<u> </u>	1,13	4,14	4,26	4,40	4,40	4,36	4,70	5,00	5,18
>	1,25	4,68	4,84	4,92	4,94	5,06	5,40	5,60	5,84
	1,50	5,76	6,04	5,90	6,10	6,62	6,94	6,88	7,16
	0,50	—	—	—	—	—	—	—	—
- -	0,55	—	—	—	—	—	—	—	_
<u><u> </u></u>	0,63	—	—	_	—	_	—	—	_
Ę,	0,75	2,88	3,16	3,24	3,14	2,86	3,46	3,72	3,92
Ę	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
÷ ا	1,13	4,46	4,86	4,88	4,72	4,44	5,12	5,38	5,48
z	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 of perforated sheets



	<u>Type of</u> Fastener	self tapping screw Ø6,3 mm and Ø6,5 mm and self drilling screw from Ø5,5 mm to Ø6,3 mm
	<u>Materials</u>	
	Fastener:	stainless steel - EN 10088 or similiar
	Washer:	stainless steel - EN 10088 EPDM sealing washer
	Component I:	S320GD - EN 10346
	•	at least S235 - EN 10025-1 or at least S280GD - EN 10346 or structural timber at least strength grade C24
Hole pattern II		

	rew /	self drillin	g screws Ø	5,5 mm and	Ø6,0 mm	self tapping screws and self drilling screws Ø6,3 mm and Ø6,5 mm					
Øw	asher	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm		
М	t,nom		1	1	51	١m		1	·		
	0,50								_		
_	0,55	—	_	_	_	_	—	_	_		
<u></u>	0,63	—	_	_	_	_	—	_	_		
for t _{N,I} [mm]	0,75	2,68	2,74	3,08	3,00	2,68	2,88	3,42	3,50		
fo	0,88	3,30	3,38	3,70	3,60	3,36	3,60	4,10	4,22		
Ţ	1,00	3,86	4,00	4,16	4,16	4,02	4,30	4,72	4,88		
V _{R,k} [kN]	1,13	4,48	4,62	4,76	4,76	4,76	5,08	5,42	5,60		
>	1,25	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	7,52	7,46	7,76		
	0,50	_	—	—			-	—	—		
=	0,55	—	_	_		—	—	_	-		
for t _{N,I} [mm]	0,63	—	_	_		—	—	_	_		
t,	0,75	3,12	3,42	3,50	3,40	3,12	3,68	4,06	4,26		
	0,88	3,70	4,04	4,08	4,00	3,70	4,32	4,68	4,86		
N _{R,k} [kN]	1,00	4,24	4,64	4,64	4,54	4,24	4,92	5,24	5,40		
H H	1,13	4,84	5,26	5,28	5,12	4,84	5,54	5,86	5,96		
ĮŹ	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 of perforated sheets



	<u>Type of</u> <u>Fastener</u>	self tapping screw Ø6,3 mm and Ø6,5 mm and self drilling screw from Ø5,5 mm to Ø6,3 mm
	<u>Materials</u>	
	Fastener:	stainless steel - EN 10088 or similiar
	Washer:	stainless steel - EN 10088 EPDM sealing washer
	Component I:	S350GD - EN 10346
	Component II	at least S235 - EN 10025-1 or at least S280GD - EN 10346 or structural timber at least strength grade C24
Hole pattern II		

sc	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
м	t,nom				51	۳ Nm			
	0,50	_	_			_	_	_	
-	0,55	—	_	_	—	_	—	_	_
V _{R,k} [kN] for t _{N,I} [mm]	0,63	—	_	_	—	_	—	_	_
t _{N,1}	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
ĮŹ	1,00	4,14	4,28	4,46	4,46	4,24	4,52	5,08	5,12
ד	1,13	4,80	4,94	5,10	5,10	4,92	5,24	5,78	5,74
>	1,25	5,44	5,62	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	_	—	—	—		—	—	-
_	0,55	—	_	_	—	_	—	_	-
<u> </u>	0,63	—	_	_	—	_	—	_	_
t,	0,75	3,34	3,66	3,76	3,64	3,52	4,16	4,52	4,64
ور	0,88	3,96	4,36	4,38	4,28	3,98	4,74	5,04	5,24
Ţ	1,00	4,54	4,98	4,96	4,86	4,40	5,24	5,50	5,76
N _{R,k} [kN] for t _{N,I} [mm]	1,13	5,16	5,64	5,64	5,48	4,86	5,76	5,96	6,32
Ź	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 of perforated sheets



03.1	₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩	Ø3.6	0 8 8 9 1 Ø3.6 Ø4.8	<u>Materials</u> Fastener: Washer: Component Component	none I: S280GD II: S235 - E	dened and (, S320GD o	r S350GD -		
LIN J2		AF8		Drilling capa	acity s	see remark	below		
		89. 24	32	<u>Timber sub</u>		ined			
t _{N,II} [mm]	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00]
		JT	2-4,2 x L:4	Nm			_		

-14,0	11	,				,		,		,		, í		,		,	
N	1 _{t,nom}					2-4,2 x	(L:4 N	١m						-	-		
	't,nom		JT	2-4,8 ×	(L:4 N	١m					JT	2-4,8 x	L:5 N	١m			
	0,50	—	—	—	—	—	—	-	—	-	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	-	—	-	—	—	—	-	—	-	—
2	0,63	1,50	—	1,90	—	1,90	—	1,90	—	1,90	—	1,90	ac	1,90	ac	1,90	ac
<u> </u>	0,75	1,50	—	1,90	—	2,00	—	2,00	—	2,00	—	2,00	ac	2,00	ac	2,00	ac
t _{N,I} [mm]	0,88	1,50	—	1,90	—	2,30		2,30	—	2,30	_	2,30	а	2,30	а	2,30	а
for	1,00	1,50	_	1,90	_	2,30	_	2,60	—	2,60	_	2,60	—	2,60	а	2,60	а
Ī	1,13	1,50	—	1,90	_	2,30	_	2,80	—	2,90	_	2,90	—	2,90	—	2,90	—
V _{R,k} [kN] for	1,25	1,50	_	1,90	_	2,30	—	2,80	—	2,90	—	3,20	—	3,20	—	3,20	—
>	1,50	1,50	_	1,90	_	2,30	_	2,80	_	2,90	—	3,20	—	3,70	—	3,70	—
	1,75	1,50	_	1,90	_	2,30	—	2,80	—	2,90	—	3,20	—	3,70	—	3,70	—
	2,00	1,50	—	1,90	—	2,30	—	2,80	—	2,90	—	3,20	—	3,70	—	3,70	—
	0,50	—	_	—	_	—	_	- 1	_	-	_	—	_	—	_	—	_
	0,55	—	_	—	—	I —	—	—	—	—	—	—	_	-	—	—	_
Ē	0,63	0,50	—	0,70	—	1,00	—	1,30	—	1,40	—	1,40	ac	1,40	ac	1,40	ac
t _{N,I} [mm]	0,75	0,50	—	0,70	_	1,00	—	1,30	—	1,50	—	1,50	ac	1,50	ac	1,50	ac
ţ,	0,88	0,50	_	0,70	_	1,00	—	1,30	—	1,50	_	1,60	а	1,60	а	1,60	а
for	1,00	0,50	_	0,70	_	1,00	_	1,30	—	1,50	_	1,70	—	1,80	а	1,80	а
Ŝ	1,13	0,50	_	0,70	_	1,00	_	1,30	_	1,50	_	1,70	—	1,90	—	1,90	—
N _{R,k} [kN]	1,25	0,50	_	0,70	_	1,00	_	1,30	—	1,50	—	1,70	—	2,00	—	2,00	—
ž	1,50	0,50	_	0,70	_	1,00	—	1,30	—	1,50	—	1,70	—	2,20	—	2,20	—
	1,75	0,50	_	0,70	_	1,00	—	1,30	—	1,50	—	1,70	—	2,20	—	2,20	—
	2,00	0,50	—	0,70	—	1,00	_	1,30	—	1,50	—	1,70	_	2,20	_	2,20	—

Grey highlighted values only for the fastener JT2-4,8 x L

JT2-2-4,2 x L: drilling capacity $\Sigma t_i \le 2,5$ mm JT2-3-4,8 x L: drilling capacity $\Sigma t_i \le 4,0$ mm

Self drilling screw

JT2-2-4,2 x L JT2-3-4,8 x L

Annex 6

JIZ-3-4,0 X L with hexagon head or round head with Phillips®, Pozidriv® or Torx® drive system

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	≥Ø Ø1 Ø3.58	14 0.5 4 0.5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	1 1 1		Compo	er: c c r: c nent I: S nent II: S	arbon st 280GD, 235 - El 280GD,	dened ar eel, galv S320GI N 10025	D or S35 -1 D or S35	60GD - E	N 10346
	AFB					substruc ormance		ned			
t _{n,II} [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75
M _{t,nom} 0,40 0,50 [uuu] [™] Joj (N N N N N N N N N N N N N N N N N N N	0,71 0,71 0,71 0,71 0,71 0,71 0,71 0,71	0,71 1,18 1,18 1,18 1,18 1,18 1,18 1,18 1	0,71 1,18 1,42 1,42 1,42 1,42 1,42 1,42 1,42 1,42	0,71 1,18 1,42 1,71 1,71 1,71 1,71 1,71 1,71 1,71	0,71 1,18 1,42 1,71 2,14 2,14 2,14 2,14 2,14 2,14 	 0,71 1,18 1,42 1,71 2,14 2,52 2,52 2,52 2,52 2,52 	0,71 1,18 1,42 1,71 2,14 2,52 2,86 2,86 	0,71 1,18 1,42 1,71 2,14 2,52 2,86 — — — — —	0,71 1,18 1,42 1,71 2,14 2,52 	0,71 1,18 1,42 1,71 — — — — — — — — — —	0,71
0,40 0,50 0,55 0,63 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75	0,42 0,42 0,42 0,42 0,42 0,42 0,42 0,42	0,62 0,62 0,62 0,62 0,62 0,62 0,62 0,62	0,72 0,72 0,72 0,72 0,72 0,72 0,72 0,72	0,88 0,88 0,88 0,88 0,88 0,88 0,88 0,88	1,08 1,12 1,12 1,12 1,12 1,12 1,12 1,12 1,1	1,08 1,38 1,38 1,38 1,38 1,38 1,38 1,38 1,3	1,08 1,54 1,62 1,62 1,62 1,62 1,62 1,62 	1,08 1,54 1,62 1,62 1,62 1,62 1,62 — — — —	1,08 1,54 1,62 1,62 1,62 1,62 — — — — —	1,08 1,54 1,62 1,62 — — — — — — —	1,08 — — — — — — — — — — — — — — — —

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

Self drilling screw

 $JT2-2H/3-4,8 \ x \ L$ with undercut, hexagon head and sealing washer $\geq \varnothing 14 \ mm$

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<u>e</u>	01 13.58	0.5 ⁶ <u>0.5</u> ⁶ <u>0.5</u> ⁶ <u>0.5</u> ⁶ <u>0.5</u> ⁶ <u>0.5</u> ⁶ <u>0.5</u> ⁶ <u>0.5</u> ⁶			Compo	c r: n nent I: S nent II: S	one 280GD, 235 - El 280GD,	dened ar S320GI N 10025	D or S35 -1 D or S35	50GD - E	N 10346 N 10346
	AF8	2				substruc ormance		ned			
t _{n,II} [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75
M _{t,nom} 0,40	0,92	0,92	0,92	0,92	0,92	0,92	0,92	0,92	0,92	0,92	0,92
0,50	0,92	1,42	1,42	1,42	1,42	1,42	1,42	1,42	1,42	1,42	-
E 0,55	0,92 0,92	1,42 1,42	1,67 1,67	1,67 1,87	1,67 1,87	1,67 1,87	1,67 1,87	1,67 1,87	1,67 1,87	1,67 1,87	_
<u> </u>	0,92	1,42	1,67	1,87	2,16	2,16	2,16	2,16	2,16		
<u>لم</u> 0,88	0,92	1,42	1,67	1,87	2,16	2,75	2,75	2,75	2,75	_	_
Z 1,00	0,92	1,42	1,67	1,87	2,16	2,75	3,30	3,30	_	_	_
[mm] 0,63 o,75 o,75 0,88 1,00 1,13 1,13	0,92	1,42	1,67	1,87	2,16	2,75	3,30	—	—	—	—
1,20	0,92	1,42	1,67	1,87	2,16	2,75	—	-	-	-	—
1,50	0,92	1,42	1,67	1,87	_	-	—	-	-	-	—
1,75 0,40	0,92 0,42	0,62	0,72	 0,81	0,81	 0,81	 0,81	 0,81	 0,81	0,81	 0,81
0,40	0,42	0,62	0,72	0,88	1,12	1,27	1,27	1,27	1,27	1,27	
	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	1,50	1,50	_
E 0,55	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	1,50	1,50	_
	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	1,50	-	_
0,75 50 0,88 NJ 1,00 1,13 N 1,13 N 1,25	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	1,50	-	—
Z 1,00	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	-	-	—
	0,42	0,62	0,72	0,88	1,12	1,38	1,50	-	-	-	—
Z 1,25	0,42	0,62	0,72	0,88	1,12	1,38	-	-	-	-	-
_ ,20	0,42	0,62	0,72	0,88							-
1,50	0,42										

Self drilling screw

 $JT2\mbox{-}2H\mbox{-}4,8\mbox{ x L}$ with undercut and hexagon head

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Ø	3.58 9	9.5 ¥: 9:1 Ø2.8			=	er: c c r: n nent I: S nent II: S	one 280GD, 235 - El	dened ar S320GI N 10025	D or S35 -1	60GD - E	N 10346 N 10346		
		Ø4.8 T25			<u>Drilling capacity</u> Σt _i ≤ 2,20 mm								
						<u>substruc</u> ormance		ned					
t _{n,II} [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75		
M _{t,nom}	0,40	0,00	0,00	0,00	0,75		1,00	1,10	1,20	1,00	1,73		
0,40	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69		
0,50	0,69	1,37	1,37	1,37	1,37	1,37	1,37	1,37	1,37	1,37			
0 5 5	0,69	1,37	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	_		
[mm] ^{0,53} ¹ 0,63 ¹ 0,75 0,88 1,00 1,13 1,25	0,69	1,37	1,70	1,96	1,96	1,96	1,96	1,96	1,96	1,96	_		
<u>,</u> <u>,</u> <u>,</u> <u>,</u> <u>,</u> <u>,</u> ,,75	0,69	1,37	1,70	1,96	2,35	2,35	2,35	2,35	2,35	—	_		
5 0,88	0,69	1,37	1,70	1,96	2,35	2,70	2,70	2,70	2,70	—	_		
Ę 1,00	0,69	1,37	1,70	1,96	2,35	2,70	3,02	3,02	—	—	—		
±	0,69	1,37	1,70	1,96	2,35	2,70	3,02	-	-	—	—		
1,20	0,69	1,37	1,70	1,96	2,35	2,70	-	-	-	-	—		
1,50	0,69	1,37	1,70	1,96	—	—	—	-	—	—	—		
1,75	0,69	—	—	_		—	—	—	—	—	—		
0,40	0,42	0,62	0,72	0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85		
0,50	0,42	0,62	0,72	0,88	1,12	1,38	1,38	1,38	1,38	1,38	-		
[ш 0,55 Щ 0,63	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	1,62			
	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	1,62	—		
N ^{X K} [kN] Jot ¹ NJ 0,88 1,00 1,13 1,13 1,25	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	-			
ັງ 0,88 [7] 1,00	0,42 0,42	0,62 0,62	0,72 0,72	0,88 0,88	1,12 1,12	1,38 1,38	1,62 1,62	1,62 1,62	1,62	-			
∠ 1,00 ≚ 1,13	0,42 0,42	0,62	0,72	0,88	1,12	1,38	1,62						
Z 1,13	0,42	0,62	0,72	0,88	1,12	1,38							
1,50	0,42	0,62	0,72	0,88									
					_	_	_	_	_	_			
1,50 1,75	0,42				5350GD1	he values	s may be	increase	d by 8,3%	6.			

 $JT2\text{-}T\text{-}2H\text{-}4\text{,}8 \times L$ with undercut and round head with Torx® drive system

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≥Ø16 Ø14.5	<u>Materials</u> Fastener: carbon steel case hardened and galvanized
₹ <u>8</u> Ø4.17 ¹ ¹ ¹ ¹ ¹ ¹ ¹ ¹	Washer: carbon steel, galvanized 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
<u>Ø3.7</u> Ø5.46	<u>Drilling capacity</u> Σt _i ≤ 2,50 mm
A CLA	<u>Timber substructures</u> no performance determined

t _{N,II}	[m m]	0,6	3	0,7	75	0,8	88	1,0		1,1	3	1,2	25	1,5	50	2,0	0
N	t,nom								51	١m							
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—
	0,63	1,00	_	1,00		1,00	_	1,00	—	1,00	—	1,00	—	1,00	ac	—	
<u></u>	0,75	1,00	—	2,00	—	2,00	—	2,00	—	2,00	—	2,00	—	2,00	—	—	
t,	0,88	1,00	—	2,00	—	2,00	—	2,00	—	2,00	—	2,00	—	2,00	—	—	—
for	1,00	1,00	—	2,00	—	2,00	—	2,00	—	2,00	—	2,00	—	2,00	—	—	—
Ţ	1,13	1,00	—	2,00		2,00	—	2,00	—	2,00	—	2,00	—	-	—	—	—
V _{R,k} [kN] for t _{N,I} [mm]	1,25	1,00	—	2,00	—	2,00	—	2,00	—	2,00	_	2,00	_	—	—	-	—
>	1,50	1,00	—	2,00	—	2,00	—	2,00	—	—	—	—	—	—	—	—	—
	1,75	1,00	—	2,00		—	_	—	—	—	_	—	_	—	—	—	—
	2,00	—	—		—	—	—	—	—	—	—	—	—	—	—	_	—
	0,50	0,38	_	0,49	—	0,59	_	0,70	—	0,86	_	0,97	_	1,24	ac	1,24	ac
	0,55	0,48	—	0,61	—	0,75	—	0,89	—	1,09	—	1,23	—	1,57	ac	—	—
	0,63	0,70	—	0,90	—	1,10	—	1,30	—	1,60	—	1,80	—	2,30	ac	—	—
Ē	0,75	0,70	—	0,90	—	1,10	—	1,30	—	1,60	—	1,80	—	2,30	—	—	—
t, i	0,88	0,70	_	0,90	—	1,10	_	1,30	—	1,60	—	1,80	—	2,30	—	—	_
for	1,00	0,70	—	0,90	—	1,10	—	1,30	—	1,60	—	1,80	—	2,30	—	—	_
Ī	1,13	0,70	—	0,90	—	1,10	—	1,30	—	1,60	—	1,80	_	-	—	_	
N _{R,k} [kN] for t _{N,I} [mm]	1,25	0,70	_	0,90		1,10	_	1,30	—	1,60	_	1,80	—	—	—	—	—
ľž	1,50	0,70	—	0,90	—	1,10	—	1,30	—	-	—		—	-	—	—	_
	1,75	0,70	—	0,90	—	—	—	—	—	—	_	—	—	—	—	—	—
	2,00	—	—	—	_	—	—	—	_	—	_	—	_	—	_	—	_

Self	drilling	screw
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Annex 10

 $JT2\text{-}2H\text{-}5,5 \ x \ L$ with undercut, hexagon head and sealing washer $\geq \varnothing16 \ \text{mm}$

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	≥Ø16 Ø14.	-	-	<u>Materials</u> Fastener: Washer: Component Component <u>Drilling capa</u>	carbon s stainless I: S280GD II: S235 - E S280GD	dened and (teel, galvan Steel (1.43 , S320GD o	ized 01) - EN 10 r S350GD - r S350GD -	EN 10346	
	AF8			<u>Timber subs</u> no performa		ined			
t _{N,II} [mm] M _{t,nom}	1,00	1,13	1,25	1,50 5 Nm	2,00	2,50	3,00	4,00	
0,50 0,55						 			

	0,50										—		_		—		
	0,55	—	_	—	_	_	—	_	_		_	—	—	—	—	—	_
	0,63	1,40	_	1,50	_	1,60	ac	1,90	ac	2,30	ac	2,50	ac	—	—	—	_
t _{N,I} [mm]	0,75	1,80	—	1,90	—	2,00	ac	2,20	ac	2,70	ac	3,20	а	—	—	—	_
t,	0,88	2,20	—	2,30	—	2,50	—	2,80	—	3,40	—	3,90	а	—	—	—	_
for	1,00	2,60	—	2,80	—	3,00	—	3,40	—	4,20	—	4,60	а	—	—	—	_
	1,13	3,00	—	3,10	—	3,20	—	4,00	—	4,60	—	—	—	—	—	—	_
V _{R.k} [kN]	1,25	3,50	—	3,70	—	3,90	—	4,40	—	5,20	—	—	—	—	—	—	_
<u> ۴</u>	1,50	4,30	_	4,60	_	4,90	_	5,50	_	6,00	_	—	_	—	—	—	_
	1,75	4,30	—	4,60	_	4,90	—	5,50	—	—	—	—	—	—	—	—	_
	2,00	4,30	—	4,60	—	4,90	—	5,50	—	—	—	—	—	—	—	—	_
	0,50	0,70	_	0,81	_	0,97	ac	1,24	ac	1,62	ac	1,62	ac	1,62	ac	-	_
	0,55	0,89	—	1,02	—	1,23	ac	1,57	ac	2,05	ac	2,05	ac	—	—	—	—
Ē	0,63	1,30	—	1,50	—	1,80	ac	2,30	ac	3,00	ac	3,00	ac	—	—	—	—
for t _{N,I} [mm]	0,75	1,30	—	1,50	—	1,80	ac	2,30	ac	3,40	ac	4,00	а	—	—	—	—
ţŢ	0,88	1,30	—	1,50	—	1,80	—	2,30	—	3,40	—	4,60	а	—	—	—	—
for	1,00	1,30	—	1,50	_	1,80		2,30	—	3,40	—	4,60	а	—	—	—	—
Ţ	1,13	1,30	—	1,50	—	1,80	—	2,30	—	3,40	—	—	—	—	—	—	_
N _{R,k} [kN]	1,25	1,30	—	1,50	_	1,80	—	2,30	—	3,40	—	—		—	—	—	_
ΪŽ	1,50	1,30	—	1,50	—	1,80	—	2,30	—	3,40	—	—	—	—	—	—	_
	1,75	1,30	—	1,50	—	1,80		2,30	—	—	—	-	—	—	—	—	_
	2,00	1,30	—	1,50	—	1,80	—	2,30	—	—	—	—	—	—	—	—	—

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

Annex 11

 $JT2\text{-}3H\text{-}5,5 \ x \ L$ with undercut, hexagon head and sealing washer $\geq \varnothing16 \ \text{mm}$

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≥Ø16 Ø14.5 Ø4.17 Ø4.3 Ø5.46	$\begin{tabular}{ c c c c } \hline Materials \\ \hline Fastener: & carbon steel \\ case hardened and galvanized \\ \hline Washer: & carbon steel, galvanized \\ stainless Steel (1.4301) - EN 10088 \\ \hline Component II: S280GD, S320GD or S350GD - EN 10346 \\ \hline Component II: S280GD, S320GD or S350GD - EN 10346 \\ \hline Drilling capacity & \Sigma t_i \leq 3,50 \mbox{ mm} \end{tabular}$						
BH H	<u>Timber subst</u> no performar		ined				
t _{N,II} [mm] 2 x 0,63 2 x 0,75 2 x 0,88	2 x 1,00	2 x 1,13	2 x 1,25	2 x 1,50	2 x 1,75		

t _{N,II}	t _{N,II} [mm]		2 x 0,63		2 x 0,75		2 x 0,88		,00	2 x 1	2 x 1,13		2 x 1,25		,50	2 x 1,75	
N	1 _{t,nom}	_	-				5 Nm										-
	0,50	—	—	-	—	-	_	-	—	-	_	—	_	_	_	—	-
	0,55	—	—	—	—	—	—	-	—	—	—	—	—	—	—	—	-
	0,63	—	—	1,60	—	1,60	—	1,60	—	1,60	_	1,60	—	—		—	—
Ē	0,75	—	—	1,90	—	1,90	—	1,90	—	1,90	—	1,90	—	—	_	—	_
ţ,	0,88	—	—	2,20	—	2,20	—	2,20	—	2,20	—	2,20	—	—	—	—	_
for	1,00	—	—	2,60	—	2,60	—	2,60	—	2,60	—	2,60	—	—	—	—	_
Ξ	1,13	—	—	2,60	—	2,60	—	2,60	—	2,60	—	—	—	—	—	—	_
V _{R,k} [kN] for t _{N,I} [mm]	1,25	—	_	2,60	_	2,60	—	2,60	_	2,60	_	—	—	—	—	_	_
≯	1,50	—	—	2,60	—	2,60	—	2,60	—	_	_	—	_	—	—	_	_
	1,75	—	—	2,60	—	—		—	—	—	_	—	_	—	_	_	_
	2,00	—	_	2,60	_	_	—	_	—	_		—		_		_	_
	0,50		_	0,97	_	1,24		1,51		1,62		1,62		1,62		—	_
	0,55	—	—	1,23	—	1,57	—	1,91	—	2,05	—	2,05	—	—	—	—	—
	0,63	—	—	1,80	—	2,30	—	2,80	—	3,00	—	3,00	—	—	—	—	_
<u>تا</u>	0,75	_	_	1,80	_	2,30	—	2,80	_	3,30	—	3,80	—	—	—	_	_
ţ,	0,88	—	—	1,80	—	2,30	—	2,80	—	3,30	_	3,80	—	—	—	—	_
for	1,00	—	_	1,80	_	2,30	_	2,80	_	3,30	_	3,80	—	—	_	—	_
N _{R,k} [kN] for t _{N,I} [mm]	1,13	_	_	1,80	_	2,30	—	2,80	_	3,30						—	_
<u>ک</u>	1,25	—	_	1,80	_	2,30	—	2,80	—	3,30	_	_	—	_	—	—	_
۲	1,50	—	—	1,80	—	2,30	—	2,80	—	_	_		_	_	—	_	_
	1,75	—	_	1,80	_	_		_		_		—		—		—	_
	2,00	_	_	1,80		—		-	_	—	_	—	_	—		—	—

Self drilling screw

Annex 12

 $JT2\text{-}3H\text{-}5,5 \ x \ L$ with undercut, hexagon head and sealing washer $\geq \varnothing16 \ mm$

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Ø14.5 04.17	MaterialsFastener:carbon steel case hardened and galvanizedWasher:noneComponent I:S280GD, S320GD or S350GD - EN 10346Component II:S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
Ø4.3 Ø5.46	<u>Drilling capacity</u> Σt _i ≤ 3,50 mm
J2 BE	<u>Timber substructures</u> no performance determined

t _{n,II} [mm]		1,00 1,13		1,25 1,50			50	2,00		2,50		3,00		4,00			
N	l _{t,nom}						7 N	١m						_			
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	-	—	—	—	—	—	—	—	—	—
Ē	0,63	1,80	—	1,80		2,00	—	2,30	—	2,80	ac	2,80	ac	—	—	—	—
for t _{N,I} [mm]	0,75	2,20	—	2,20	—	2,60	—	2,80	—	3,30	ac	3,70	а	—	—	—	—
t,	0,88	2,60	—	2,60	—	3,00	—	3,30	—	3,60	—	4,30	а	—	—	—	—
for	1,00	3,00	—	3,00	—	3,40	_	3,80	—	4,40	—	4,90	а	—	_	—	_
z	1,13	3,50	—	3,50	—	3,60	_	4,30	—	4,90	_	—	—	—	_	—	_
V _{R.k} [kN]	1,25	4,00	—	4,00	_	4,40	_	4,80	_	5,40	_	—	_	_	_	_	_
2	1,50	4,80	—	4,80	—	5,40	_	5,80	—	6,40	—	—	—	—	—	_	—
	1,75	4,80	_	4,80	_	5,40	_	5,80	—	_	—	—	—	—	_	_	_
	2,00	4,80		4,80		5,40	—	5,80	_	_	_	—	_	—	_	_	—
	0,50	—	—	—	_	—	_	- 1	_	—	_	—	_	_	_	_	_
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	_	—	—
Ē	0,63	1,30	—	1,30	—	1,80	_	2,10	_	2,10	ac	2,10	ac	_	_	_	—
Ē	0,75	1,30	—	1,30	—	1,80	—	2,30	—	2,90	ac	2,90	а	—	—	_	—
ťn,	0,88	1,30	_	1,30		1,80	_	2,30	_	3,40	_	3,80	а	—	_	_	_
for	1,00	1,30	_	1,30	_	1,80	_	2,30	—	3,40	—	4,60	а	—	_	_	—
N _{R.k} [kN] for t _{N,I} [mm]	1,13	1,30		1,30		1,80	_	2,30		3,40	—		—	_	_		
¥.	1,25	1,30	_	1,30	_	1,80	_	2,30	—	3,40	—		—	_	_	_	—
ž	1,50	1,30	_	1,30	_	1,80	_	2,30	_	3,40	_	—	_	—	_		_
	1,75	1,30	_	1,30	_	1,80	_	2,30	_	—	_	—	—	—	_	_	_
	2,00	1,30	_	1,30		1,80		2,30		_		—	_	—	_	_	_

JT2-3-5,5 x L with hexagon head

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≥Ø16	Materials	
	Fastener: carbon steel case hardened and galvanized	
	Washer: carbon steel, galvanized stainless Steel (1.4301) - EN 10088	
	Component I: S280GD, S320GD or S350GD - EN 1034	16
<u>Ø4.17</u>	Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 1034	16
Ø4.3 Ø5.46	$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 3,50 \text{ mm}$	
	<u>Timber substructures</u> no performance determined	

t _{n,II} [mm]] 1,00 1,13		1,25 1,50			2,00 2,50			,50 3,00			4,00				
N	l _{t,nom}					7 N m									_	-	
	0,50	—	—	-	—	—	_	I —	—	—	_	—	_	—	_	—	_
	0,55	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—
Ē	0,63	1,40	—	1,40		1,70	_	2,00	—	2,50	ac	2,70	ac	—		—	_
<u>Ľ</u>	0,75	1,80	—	1,80	—	2,20	—	2,40	—	3,00	ac	3,50	а	—	—	—	—
t,	0,88	2,20	—	2,20	—	2,60	—	2,90	—	3,40	—	4,10	а	—	—	—	—
for	1,00	2,60	—	2,60	—	3,00	_	3,40	—	4,20	—	4,60	а	—	—	—	_
z	1,13	3,00	—	3,00	—	3,20	_	4,00	—	4,60	—	—	—	—	—	—	_
V _{R,k} [kN] for t _{N,I} [mm]	1,25	3,50	_	3,50	_	3,90	_	4,40	_	5,20	_	—	—	—	—	_	_
2	1,50	4,30	—	4,30	_	4,90	_	5,50	—	6,00	_	—	_	—	—	_	_
	1,75	4,30	_	4,30		4,90		5,50		_		—		—		_	—
	2,00	4,30	_	4,30	_	4,90	_	5,50	—	_		—		_		_	_
	0,50	0,70	_	0,70	_	0,97	_	1,24	_	1,62	ac	1,62	ac	1,62	ac	—	_
	0,55	0,89	—	0,89	—	1,23	_	1,57	—	2,05	ac	2,05	ac	—	—	—	—
Ē	0,63	1,30	—	1,30	—	1,80	—	2,30	—	3,00	ac	3,00	ac	—	—	—	—
Ľ	0,75	1,30	_	1,30	—	1,80	_	2,30	_	3,40	ac	4,20	а	—	—	_	_
t,	0,88	1,30	—	1,30	—	1,80	_	2,30	—	3,40	—	4,60	а	—	—	—	_
for	1,00	1,30	_	1,30	_	1,80	_	2,30	_	3,40	_	4,60	а	—	_	—	_
Ŝ	1,13	1,30	_	1,30		1,80		2,30	—	3,40	_	—		_		—	_
N _{R.k} [kN] for t _{N,I} [mm]	1,25	1,30	_	1,30	_	1,80	_	2,30	_	3,40	_			—		_	_
ž	1,50	1,30	—	1,30	—	1,80	—	2,30	—	3,40	_		_	_	—	—	—
	1,75	1,30	—	1,30		1,80		2,30	_	_	_	—		—	_	—	—
	2,00	1,30		1,30		1,80	_	2,30		_	_	—		_	_	_	_

Self drilling screw

 $JT2\mbox{-}3\mbox{-}5\mbox{,}5\mbox{ x L}$ with hexagon head and sealing washer \geq Ø16 mm

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Ø14.5 00 G	Materials Fastener: carbon steel case hardened and galvanized Washer: none
Ø4.17 00 -	Component I: S280GD, S320GD or S350GD - EN 10346 Component II: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
<u>Ø4.5</u> <u>Ø5.46</u>	<u>Drilling capacity</u> Σt _i ≤ 6,00 mm Timber substructures
	no performance determined
	50 2,00 2,50 3,00 4,00 5,00
M _{t,nom}	7 Nm

N	1 _{t,nom}					7 Nm											
	0,50	—	_	-	_	—	-	—	_	—	_	-	-	_	_	_	—
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-	0,63	—	—	—	—	2,60	ac	2,80	ac	2,80	ac	2,80	abcd	3,80	abcd	3,80	abcd
for t _{N,I} [mm]	0,75	—	—	—	—	3,00	—	3,50	ac	3,50	ac	3,50	ac	4,60	ac	4,60	ac
t,	0,88	—	—	—	—	3,40	—	4,20	—	4,20	ac	4,20	ac	5,30	ac	5,30	ac
for	1,00	—	—	—	—	3,80		4,50	—	4,50	ac	4,50	ac	6,00	ac	6,00	ac
Ī	1,13	—	—	—	—	4,20	—	4,90	—	4,90	—	4,90	ac	6,70	ac	—	—
V _{R,k} [kN]	1,25	—	—	—	—	4,60	—	5,30	—	5,30	—	5,30	ac	7,30	ac	—	—
>	1,50	—	—	—	—	5,30	—	6,00	—	6,00	—	6,00	—	8,10	—	—	—
	1,75	—	—	—	_	5,30	_	6,00	—	6,00	—	6,00	—	8,10	—	—	—
	2,00	—	—	—	—	5,30	—	6,00	—	6,00	—	6,00	—	8,10	—	—	—
	0,50	—	_	—	_	—	_	—	—	—	—	—	—	_		_	—
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ē	0,63	—	—	—	—	1,60	ac	2,20	ac	2,20	ac	2,20	abcd	2,20	abcd	2,20	abcd
for t _{N,I} [mm]	0,75	—	—	—	—	1,60	—	2,50	ac	2,90	ac	2,90	ac	2,90	ac	2,90	ac
t,	0,88	—	—	—	—	1,60	—	2,50	—	3,60	ac	3,60	ac	3,80	ac	3,80	ac
for	1,00	—	_	—	_	1,60		2,50	—	3,60	ac	4,70	ac	4,70	ac	4,70	ac
Ξ	1,13	—	—	—	—	1,60	—	2,50	—	3,60	—	4,80	ac	5,70	ac	—	—
N _{R,k} [kN]	1,25	—	_	—	—	1,60	—	2,50	—	3,60	—	4,80	ac	6,80	ac	—	—
ΪŻ	1,50	—	—	—	—	1,60	—	2,50	—	3,60	—	4,80	—	6,80	—	—	—
1	1,75	—	_	-	—	1,60		2,50	—	3,60	—	4,80	—	6,80	—	—	—
	2,00	—	—	—	—	1,60	—	2,50	—	3,60	—	4,80	—	6,80	—	—	-

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

JT2-6-5,5 x L with hexagon head

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$\overrightarrow{D14.5}$. 640	Materials								
Washer:carbon steel, galvanized 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 $\underline{04.5}$ $\underline{04.5}$ $\underline{05.46}$ $\underline{Drilling capacity}$ $\Sigma t_i \leq 6,00 \text{ mm}$ $1100000000000000000000000000000000000$	<u>≥</u> Ø16 Ø14.5 ∞			ed and galvanize	d					
\overrightarrow{old} <t< td=""><th></th><td>Washer:</td><td></td><td></td><td>10088</td></t<>		Washer:			10088					
$\boxed{\begin{array}{c} \hline \hline$		Component I:	S280GD, S3	20GD or S350GI	D - EN 10346					
Ø5.46 Timber substructures no performance determined t _{N,II} [m m] — 1,50 2,00 2,50 3,00 4,00 5,00		Component II								
J2 To performance determined [t _{N,II} [m m]] - 1,50 2,00 2,50 3,00 4,00 5,00		Drilling capac	<u>Drilling capacity</u> Σt _i ≤ 6,00 mm							
			0.50		<u> </u>					
		0 2,00		3,00 4,00	5,00					
	M _{t,nom}		7 Nm							

N	1 _{t,nom}										7 N	Im					
	0,50	—	—	—	—	—	—	—	_	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	_
	0,63	—	—	—	—	2,40	ac	2,50	ac	2,50	ac	2,50	abcd	3,40	abcd	3,40	abcd
<u> </u>	0,75	—	—	—	—	2,70	—	3,10	ac	3,10	ac	3,10	ac	4,00	ac	4,00	ac
ţ,	0,88	—	—	—	—	3,10	—	3,80	—	3,80	ac	3,80	ac	4,80	ac	4,80	ac
for	1,00	—	—	—	—	3,40		4,00	—	4,00	ac	4,00	ac	5,30	ac	5,30	ac
Ī	1,13	—	—	—	—	3,80	—	4,40	—	4,40	—	4,40	—	6,00	ac	—	_
V _{R.k} [kN] for t _{N,I} [mm]	1,25	—	—	—	—	4,10	—	4,80	—	4,80	—	4,80	—	6,60	ac	—	_
>	1,50	—	—	—	—	5,00	—	5,40	—	5,40	—	5,40	—	7,30	—	—	_
	1,75	—	—	—	_	5,00	_	5,40	—	5,40	—	5,40	—	7,30	—	—	_
	2,00	—	—	—	—	5,00	—	5,40	—	5,40	—	5,40	—	7,30	—	—	_
	0,50	—	—	—	_	0,86	ac	1,35	ас	1,62	ac	1,62	abcd	1,62	abcd	1,62	abcd
	0,55	—	—	—	—	1,09	ac	1,71	ac	2,05	ac	2,05	abcd	2,05	abcd	2,05	abcd
	0,63	—	—	—		1,60	ac	2,50	ac	3,00	ac	3,00	abcd	3,00	abcd	3,00	abcd
Ē	0,75	—	—	—	—	1,60	—	2,50	ac	3,60	ac	4,10	ac	4,10	ac	4,10	ac
ţ,	0,88	—	—	—	—	1,60	—	2,50	—	3,60	ac	4,70	ac	5,00	ac	5,00	ac
for	1,00	—	—	—	_	1,60	—	2,50	—	3,60	ac	4,70	ac	5,80	ac	5,80	ac
N _{R,k} [kN] for t _{N,I} [mm]	1,13	—	—		—	1,60	—	2,50	—	3,60	—	4,70	—	5,80	ac	—	—
, K	1,25	—	—	—	_	1,60	—	2,50	_	3,60	—	4,70	—	5,80	ac	—	_
z	1,50	—	—	—	—	1,60	—	2,50	—	3,60	—	4,70	—	5,80	—	—	—
	1,75	—	—	—	_	1,60	—	2,50		3,60		4,70	—	5,80	—	—	—
	2,00	—	—	—	_	1,60	_	2,50	_	3,60	_	4,70	—	5,80	_	_	—

JT2-6-5,5~x~L with hexagon head and sealing washer $\geq \varnothing16~\text{mm}$

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	MaterialsFastener:carbon steel case hardened and galvanizedWasher:noneComponent I:S280GD, S320GD or S350GD - EN 10346Component II:S235, S275 or S355 - EN 10025-1
Ø4.9 Ø5.49	<u>Drilling capacity</u> Σt _i ≤ 9,50 mm
	<u>Timber substructures</u> no performance determined

t _{n,II} [mm]		4,	00	0 5,00			6,00 8,00			10),0	12	,0	13	s,0	14	,0
N	M _{t,nom} 7 Nm								_	_							
	0,50	-	Ι	—	—	—	_	-		-	_	-	—	-	_	-	_
	0,55	—	—	—	—	—	—	-	—	—	—	—	—	—	—	-	—
Ē	0,63	3,80	abcd	3,80	ac	3,80	ac	3,80	ac	—	—	—	—	—	—	—	_
<u> </u>	0,75	4,60	ac	4,60	ac	4,60	ac	4,60	ac	—	—	—	—	—	—	-	_
ţ,	0,88	5,30	ac	5,30	ac	5,30	ac	5,30	а	—	—	—	—	—	—	_	—
for	1,00	6,00	ac	6,00	ac	6,00	ac	6,00	а	—	_	—	—	—	—	_	_
V _{R.k} [kN] for t _{N,I} [mm]	1,13	6,70	ac	6,70	ac	6,70	ac	6,70	а	—	—	—	—	—	—	_	—
×.	1,25	7,30	ac	7,30	ac	7,30	ac	7,30	_	—	_	—	—	_	_	_	_
2	1,50	8,10	—	8,10	—	8,10	—	8,10	—	—	—	_		—	—		_
	1,75	8,10	—	8,10	—	8,10		—	—	—	_	_	_	—	—		—
	2,00	8,10	—	8,10	—	8,10	—	_	—	—	_	_	_	—	—	_	—
	0,50	—	_	_	_	—	_	—	_	_	_	_		—		—	_
	0,55	—	—	_	_	—	_	_	—	—	—	—	_	—	_	—	_
	0,63	2,20	abcd	2,20	ac	2,20	ac	2,20	ac	—	—	—	_	—	—	_	—
L L	0,75	2,90	ac	2,90	ac	2,90	ac	2,90	ac	_	_	_	_	_	—	_	_
ľ'n,	0,88	3,80	ac	3,80	ac	3,80	ac	3,80	а	_	_	_	_	_	_		_
. Joj	1,00	4,70	ac	4,70	ac	4,70	ac	4,70	а	_	_	_	_	_	_	_	_
N _{R,k} [kN] for t _{N,I} [mm]	1,13	5,70	ac	5,70	ac	5,70	ac	5,70	а	_	_	_	_	_	_		_
₹	1,25	5,80	ac	6,30	ac	6,80	ac	6,80	_	_	_	_		_	_		_
Ľ	1,50	5,80	_	6,30	_	6,80		6,80	_	_	_	_	_	_	_		_
	1,75	5,80	_	6,30		6,80		<u> </u>	_	_	_	_		_	_		_
	2,00	5,80	_	6,30	_	6,80	_	_	_	_	_	_	_	_	_		_

Self	drilling	screw
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JT2-8-5,5 x L with hexagon head

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≥Ø16 Ø14.5 © 04.19 Ø4.19	MaterialsFastener:carbon steel case hardened and galvanizedWasher:carbon steel, galvanized stainless Steel (1.4301) - EN 10088Component I:S280GD, S320GD or S350GD - EN 10346 Component II: S235, S275 or S355 - EN 10025-1						
Ø4.9 Ø5.49	<u>Drilling capacity</u> Σt _i ≤ 9,50 mm						
J2 B H	<u>Timber substructures</u> no performance determined						

t _{n,II} [mm]		4,	00 5,00 6,00			00	8,	00	10	,0	12,0		13,0		14,0		
M _{t,nom}		7 Nm											_	-			
	0,50	_	-	_	-	_		_	—	_	-	_	Ι	—	_	-	_
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-	0,63	3,00	abcd	3,00	abcd	3,00	abcd	3,00	abcd	—	—	—	—	—	—	—	—
<u> </u>	0,75	3,70	ac	3,70	ac	3,70	ac	3,70	ac	—	—	—	—	—	—	—	—
ţ	0,88	4,20	ac	4,20	ac	4,20	ac	4,20	а	—	—	—	—	—	—	—	—
Ę.	1,00	4,80	ac	4,80	ac	4,80	ac	4,80	а	—	—	—	_	_	—	—	_
Ξ	1,13	5,40	ac	5,40	ac	5,40	ac	5,40	а	—	—	—	_	_	—	—	_
V _{R,k} [kN] for t _{N,I} [mm]	1,25	5,80	ac	5,80	ac	5,80	ac	5,80	а	—	—	—	—	—	—	—	—
12	1,50	6,70	_	6,70	_	6,70	—	6,70	—	_	_	—	_	—	—	—	_
	1,75	6,70	—	6,70	_	6,70	—	—	—	_	—	—	_	—	_	—	_
	2,00	6,70	—	6,70	_	6,70	—	—	_	_	_	—	_	—	—	_	_
	0,50	1,73	abcd	1,73	abcd	1,73	abcd	1,73	abcd	—	_	_	_	_	—	_	_
	0,55	2,18	abcd	2,18	abcd	2,18	abcd	2,18	abcd	_	—	—	_	—	_	—	_
2	0,63	3,20	abcd	3,20	abcd	3,20	abcd	3,20	abcd	—	—	—	—	—	—	_	—
<u> </u>	0,75	4,10	ac	4,10	ac	4,10	ac	4,10	ac	—	—	—	—	—	—	_	—
t,	0,88	5,00	ac	5,00	ac	5,00	ac	5,00	а	_	_	—	_	_		_	_
for	1,00	5,80	ac	5,80	ac	5,80	ac	5,80	а	_	_	—	_	_	_	_	_
N _{R,k} [kN] for t _{N,I} [mm]	1,13	5,80	ac	6,80	ac	6,80	ac	6,80	а	_	_	_	_	_	_	_	_
L ₹	1,25	5,80	ac	6,80	ac	7,60	ac	7,60	а		_	—	_	_		—	_
۲	1,50	5,80	_	6,80	_	9,30	_	9,30	_	_	_	_	_	_	_	_	_
	1,75	5,80	_	6,80	_	9,30	_	_	_	_	_	_	_	_	_		_
	2,00	5,80	—	6,80	_	9,30	—	—	—	_	_	_	_	—	_	—	_

Self drilling screw

 $JT2\text{-}8\text{-}5,5 \ x \ L$ with hexagon head and sealing washer $\geq \varnothing16 \ mm$

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Ø14.5	Materials	
	Fastener: carbon steel case hardened and galvania	zed
	Washer: none	
Ø4.88	Component I: S280GD, S320GD or S350	GD - EN 10346
	Component II: S235, S275 or S355 - EN 1 S280GD, S320GD or S350	
<u>ور گر گر</u>	<u>Drilling capacity</u> $\Sigma t_i \le 6,50 \text{ mm}$	
HE 3	<u>Timber substructures</u> no performance determined	

t _{N,II}	[m m]	1,	50	2,	00	2,	50	3,	00	4,	00	5,0	0	6,0	00	7,0	00
N	l _{t,nom}	-	—			7 Nm								_	_		
	0,50	—	_		_	_	_		_	_	-	_	_	_	-	_	_
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-	0,63	—	—	2,40	abcd	2,40	abcd	2,40	abcd	2,40	abcd	2,40	ac	—	—	—	—
<u> </u>	0,75	—	—	2,90	ac	3,10	ac	3,10	ac	3,10	ac	3,10	ac	—	—	—	—
ţŢ	0,88	—	—	3,50	ac	3,80	ac	3,80	ac	3,80	ac	3,80	а	—	—	—	—
V _{R.k} [kN] for t _{N,I} [mm]	1,00	—	—	4,00	ac	4,60	ac	4,60	ac	4,60	ac	4,60	а	—	_	—	—
Ξ	1,13	—	—	4,60	ac	5,20	ac	5,20	ac	5,20	ac	5,20	а	—	—	—	—
l ¥. ∵	1,25	—	—	5,20	—	5,80	ac	5,80	ac	5,80	ac	5,80	а	—	—	—	—
12	1,50	—	—	6,40	—	7,20	—	7,20	—	7,20	—	7,20	—	—	—	—	—
	1,75	—	_	6,40	—	7,20	_	7,20	—	7,20	—	—	—	—	_	—	—
	2,00	—	—	6,40	—	7,20	—	7,20	—	7,20	—	—	—	—	—	—	—
	0,50	—	—	—	—	_	—	—	—	_	—	—	—		—	_	—
	0,55	—	—	-	—	—	—	—	—	—	—	—	—	—	—	—	—
Ē	0,63	—	—	2,10	abcd	2,10	abcd	2,10	abcd	2,10	abcd	2,10	ac	—	—	—	—
Ē	0,75	—	—	2,80	ac	2,80	ac	2,80	ac	2,80	ac	2,80	ac	—	—	—	—
ť,	0,88	—	—	3,40	ac	3,60	ac	3,60	ac	3,60	ac	3,60	а	—	—	—	—
for	1,00	—	—	3,40	ac	4,30	ac	4,30	ac	4,30	ac	4,30	а	—	—	—	—
Ŝ	1,13	—	—	3,40	ac	4,70	ac	5,50	ac	5,50	ac	5,50	а	—	—	—	—
N _{R,k} [kN] for t _{N,I} [mm]	1,25	—	—	3,40	—	4,70	ac	6,20	ac	6,60	ac	6,60	а	—	_	—	_
ΪŽ	1,50	—	—	3,40	—	4,70	—	6,20	—	8,70	—	8,70	—	—	—	—	—
	1,75	—	—	3,40	—	4,70	—	6,20	—	8,70	—	—	—	—	_	—	—
	2,00	_		3,40	—	4,70	_	6,20	_	8,70	—	_	—	_		_	

 $JT2-6-6,3 \times L$ with hexagon head

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English translation prepared by DIBt



Ø14.5	<u>Materials</u>	
	Fastener:	carbon steel case hardened and galvanized
Ø4.88	Washer:	carbon steel, galvanized stainless Steel (1.4301) - EN 10088
	Component I:	S280GD, S320GD or S350GD - EN 10346
6. 0.2	Component II	: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
Ø5.3 Ø6.25	Drilling capac	<u>itγ</u> Σt _i ≤ 6,50 mm
J2	<u>Timber substr</u> no performan	

	[m m]	1,5	50	2,	00	2,	50	3,	00	4,	00	5,0	00	6,0	0	7,0	00
N	l _{t,nom}	_	-						7 N	lm						_	-
	0,50	—	_	-	_	—	—	—	_	-	_	_	_	—	—	-	Ι
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	0,63	—	—	2,40	abcd	2,40	abcd	2,40	abcd	2,40	abcd	2,40	ac	—	—	—	—
<u> </u>	0,75	—	—	2,90	ac	3,10	ac	3,10	ac	3,10	ac	3,10	ac	—	—	—	—
ţ,	0,88	—	—	3,50	ac	3,80	ac	3,80	ac	3,80	ac	3,80	а	—	—	—	_
for t _{N,I} [mm]	1,00	—	—	4,00	ac	4,60	ac	4,60	ac	4,60	ac	4,60	а	—	—	—	—
z	1,13	—	—	4,60	ac	5,20	ac	5,20	ac	5,20	ac	5,20	а	—	—	—	—
V _{R,k} [kN]	1,25	—	—	5,20	_	5,80	ac	5,80	ac	5,80	ac	5,80	а	—	—	—	_
<u>ج</u>	1,50	—	—	6,40	—	7,20	_	2,20	_	2,20	_	7,20	а	—	_	—	_
	1,75	—	_	6,40	_	7,20	_	7,20	_	2,20	_	—	_	—	_	—	_
	2,00	—	_	6,40	_	7,20	_	2,20	_	2,20	_	—	—	—		—	_
	0,50	—	—	1,13	abcd	1,13	abcd	1,13	abcd	1,13	abcd	1,13	ac	1,13	ac	_	_
	0,55	—	_	1,43	abcd	1,43	abcd	1,43	abcd	1,43	abcd	1,43	ac	—	—	—	—
	0,63	—	—	2,10	abcd	2,10	abcd	2,10	abcd	2,10	abcd	2,10	ac	—	—	—	—
L L	0,75	—	—	2,80	ac	2,80	ac	2,80	ac	2,80	ac	2,80	ac	—	—	—	_
ţ,	0,88	—	—	3,40	ac	3,60	ac	3,60	ac	3,60	ac	3,60	а	—	—	—	—
for t _{N,I} [mm]	1,00	—	—	3,40	ac	4,30	ac	4,30	ac	4,30	ac	4,30	а	_	_	—	_
Ţ	1,13	—	_	3,40	ac	4,70	ac	5,50	ac	5,50	ac	5,50	а			—	_
N _{R,k} [kN]	1,25	—	—	3,40	_	4,70	ac	6,20	ac	6,60	ac	6,60	а	_	_	—	_
ľž	1,50	—		3,40	_	4,70	_	6,20	—	8,70	_	8,70	а	_		_	_
	1,75	—	—	3,40	—	4,70	_	6,20	—	8,70	—	—	—	_	_	—	—
	2,00	_	_	3,40	—	4,70	_	6,20	_	8,70	_	—	—	_	_	—	—

JT2-6-6,3~x~L with hexagon head and sealing washer \geq Ø16 mm

Annex 20

Z56762.13

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English translation prepared by DIBt



≥Ø16 Ø14.5	<u>Materials</u>	
	Fastener:	carbon steel case hardened and galvanized
	Washer:	carbon steel, galvanized stainless Steel (1.4301) - EN 10088
Ø4.17	Component I	S280GD - EN 10346
	Component I	: S235, S275 or S355 - EN 10025-1
φ	Drilling capac	<u>city</u> Σt _i ≤ 13,00 mm
Ø5.0 Ø5.46	<u>Timber subst</u> no performan	<u>ructures</u> ce determined
t. [mm] 400 500 600	800	

	[m m]	4,0	0	5,0	00	6,0	0	8,0	00	10	,0	12	,0	13	s,0	14	·,0
N	l _{t,nom}						7 N	١m							-	_	-
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0,55	—	—	-	—	-	—		—	—	—	—	—	—	—	-	—
-	0,63	2,20	ac	2,20	ac	2,20	ac	2,20	ac	2,20	ac	2,20	ac	—	—	—	—
Ē	0,75	2,80	ac	2,80	ac	2,80	ac	2,80	ac	2,80	ac	2,80	ac	—	—	—	—
ţŢ	0,88	3,50	ac	3,50	ac	3,50	ac	3,50	ac	3,50	ac	3,50	а	—	—	—	—
for t _{N,I} [mm]	1,00	4,20	_	4,20	ac	4,20	ac	4,20	ac	4,20	ac	4,20	а	—	_	_	_
	1,13	4,20	_	4,90	—	4,90	_	4,90	—	4,90	_	—	—	—	_	_	—
V _{R.k} [kN]	1,25	4,20	_	5,60	—	5,60	_	5,60	—	5,60	_	—	_	_	_	_	—
<u>چ</u>	1,50	4,20	_	6,40	_	7,20	_	7,20	—	7,20	—	—	—	—	—		_
	1,75	4,20	_	6,40	_	7,20	_	7,20	—	7,20	—	—	_	—	_		—
	2,00	4,20		6,40		7,20	—	7,20	_	7,20	_	—		—	—	_	_
	0,50	1,30	ac	1,30	ac	1,30	ac	1,30	ac	1,30	ac	1,30	ac	_	_	—	_
	0,55	1,64	ac	1,64	ac	1,64	ac	1,64	ac	1,64	ac	1,64	ac	—	_	_	—
-	0,63	2,40	ac	2,40	ac	2,40	ac	2,40	ac	2,40	ac	2,40	ac	_	_	_	_
<u> </u>	0,75	3,10	ac	3,10	ac	3,10	ac	3,10	ac	3,10	ac	3,10	ac	—	—	_	—
ţ,	0,88	3,90	ac	3,90	ac	3,90	ac	3,90	ac	3,90	ac	3,90	а	_	_	—	_
for t _{N,I} [mm]	1,00	4,70	_	4,70	ac	4,70	ac	4,70	ac	4,70	ac	4,70	а	_	_		_
N _{R,k} [kN]	1,13	4,70	_	5,60	_	5,60	_	5,60	_	5,60	_		_	—	_		_
L ₹	1,25	4,70	_	6,40	_	6,40	_	6,40	_	6,40	_		_	—	_		_
ž	1,50	4,70	_	6,40	_	6,40	_	6,40	_	6,40	_	_	_	_	_		_
	1,75	4,70	_	6,40	_	6,40	_	6,40	_	6,40	_			_	_		_
	2,00	4,70	_	6,40	_	6,40	_	6,40	_	6,40	_	_	_	_	_		_

 $JT2\text{-}12\text{-}5,5 \ x \ L$ with hexagon head and sealing washer $\geq \varnothing16 \ mm$

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		≥Ø16 Ø14.			<u>Materials</u>					
			2		Fastener:	carbon st case har	teel dened and g	galvanized		
					Washer:		teel, galvani Steel (1.43	ized 01) - EN 10(088	
	e	94.17			Component	I: S320GD	or S350GD	- EN 10346	i	
			<u>6</u> –		Component	II: S235, S2	275 or S355	- EN 10025	-1	
		+ 7			•	,				
		16			Drilling capa	acity 2	Σt _i ≤ 13,00 n	nm		
			Ø5.0 Ø5.46		<u>Timber subs</u> no performa		ined			
г		1.0.0	5.00	0.00						
	t _{N,II} [mm]	4,00	5,00	6,00	8,00	10,0	12,0	13,0	14,0	
ļ	M _{t,nom}			7 1	٧m				—	
	0,50									
	0,55									

	.,																
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	_	—
	0,55		—		_	_	_	_	_	—	—	—	—	—	—	—	—
	0,63	2,50	ac	_		_											
[mm]	0,75	3,20	ac	_	_	—	—										
ťn,I	0,88	3,90	ac	3,90	а	_	—	_	—								
for	1,00	4,20		4,60	ac	4,60	ac	4,60	ac	4,60	ac	4,60	а	_	_	_	_
	1,13	4,20		5,30	—	5,30	_	5,30		5,30	—	—	—	_	_	_	_
V _{R,k} [kN]	1,25	4,20	_	6,00	_	6,00	_	6,00	_	6,00	_	—	_	_	_	_	_
2	1,50	4,20	_	6,40	_	7,20	_	7,60	_	7,60	_	—	_	_	_	_	_
	1,75	4,20	_	6,40	_	7,20	_	7,60	_	7,60	_	_	_	_	_	_	_
	2,00	4,20	_	6,40	_	7,20	_	7,60	_	7,60	_	_	_	_	_	_	_
	0,50	1,40	ac	1,40	ac	1,40	ас	1,40	ас	1,40	ас	1,40	ас	_	_	_	_
	0,55	1,77	ac	_		_	_										
-	0,63	2,60	ac	—	—	—	—										
<u> </u>	0,75	3,30	ac	—	_	_	_										
t _{N,I} [mm]	0,88	4,20	ac	4,20	а	_	_	_	_								
for	1,00	4,70	_	5,00	ac	5,00	ac	5,00	ac	5,00	ac	5,00	а	_	_	_	_
	1,13	4,70	_	6,00	_	6,00	_	6,00	_	6,00	_	—	_	_	_	_	_
N _{R,k} [kN]	1,25	4,70	_	6,90	_	6,90	_	6,90		6,90	_	—	_	_	_	_	_
ž	1,50	4,70	_	6,90	_	6,90	_	6,90	_	6,90	_		_	_	_	_	_
	1,75	4,70		6,90	_	6,90	_	6,90		6,90		—	—	_		_	_
	2,00	4,70		6,90	_	6,90	_	6,90		6,90	_	—	—	_	_	_	_

Self drilling screw

 $JT2\text{-}12\text{-}5\text{,}5 \ x \ L$ with hexagon head and sealing washer $\geq \varnothing16 \ mm$



	≥Ø Ø1 Ø3.58	14 0.5 7 7 0.5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7			Compo	s :: s nent I: S nent II: S	5235 - El 5280GD,	steel (1. steel (1. S320GI N 10025	4404) - 4301) - D or S35 -1 D or S35	EN 1008 EN 1008 50GD - E	88
AF8	JJ)))			substruc ormance		ned			
_{N,II} [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75
M _{t,nom} 0,40 0,55 0,55 0,75 0,75 0,88 1,00 1,13 1,25 1,50 1,75	0,55 0,55 0,55 0,55 0,55 0,55 0,55 0,55	0,55 0,89 0,89 0,89 0,89 0,89 0,89 0,89 0,89	0,55 0,89 1,06 1,06 1,06 1,06 1,06 1,06 1,06	0,55 0,89 1,06 1,28 1,28 1,28 1,28 1,28 1,28 1,28 1,28	0,55 0,89 1,06 1,28 1,61 1,61 1,61 1,61 1,61 	0,55 0,89 1,06 1,28 1,61 1,86 1,86 1,86 1,86 1,86 	0,55 0,89 1,06 1,28 1,61 1,86 2,09 2,09 	0,55 0,89 1,06 1,28 1,61 1,86 2,09 	0,55 0,89 1,06 1,28 1,61 1,86 — — — — — — — —	0,55 0,89 1,06 1,28 — — — — — — — — — — — — — —	0,55
0,40 0,55 0,55 10 10 11 1,00 1,13 1,25 1,50 1,75	0,42 0,42 0,42 0,42 0,42 0,42 0,42 0,42	0,62 0,62 0,62 0,62 0,62 0,62 0,62 0,62	0,72 0,72 0,72 0,72 0,72 0,72 0,72 0,72	0,88 0,88 0,88 0,88 0,88 0,88 0,88 0,88	0,97 1,12 1,12 1,12 1,12 1,12 1,12 1,12 1,1	0,97 1,38 1,38 1,38 1,38 1,38 1,38 1,38 1,38	0,97 1,39 1,60 1,60 1,60 1,60 1,60 1,60 <u>—</u> 	0,97 1,39 1,60 1,60 1,60 1,60 1,60 	0,97 1,39 1,60 1,60 1,60 1,60 	0,97 1,39 1,60 1,60 — — — — — — —	0,97 — — — — — — — — — — — — —

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

Self drilling screw

JT3-2H-4,8 x L JT6-2H-4,8 x L with undercut and hexagon head and sealing washer ≥ Ø14 mm

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	<u>Materials</u>
≥Ø14 Ø10.5 4	Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - 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
Ø3.6 Ø4.8	<u>Drilling capacity</u> $\Sigma t_i \le 3,25 \text{ mm}$
	<u>Timber substructures</u> no performance determined

t _{n,II}	[m m]	0,6	33	0,7	'5	0,8	38	1,0	0	1,1		1,	25	1,	50	2,0	00
N	l _{t,nom}	-	-							3 N	lm						
	0,50	—	_	1,00	ac	1,10	ac	1,20	ac	1,20	ac	1,20	abcd	1,20	abc	1,20	abc
	0,55	—	—	1,15	—	1,25	—	1,40	ac	1,40	ac	1,45	ac	1,45	ac	1,45	ac
Ē	0,63	—	—	1,30	—	1,40	—	1,60	ac	1,60	ac	1,70	ac	1,70	ac	1,70	ac
<u> </u>	0,75	—	—	1,60	—	1,80	—	1,90	ac	2,00	ac	2,10	ac	2,10	ac	2,10	а
for t _{N,I} [mm]	0,88	—	—	1,60	—	1,90	—	2,30	—	2,50	—	2,70	—	2,70	—	2,70	а
for	1,00	—	—	1,60	—	2,10	—	2,60	—	2,90	—	3,10	—	3,10	—	3,10	а
z	1,13	—	—	1,60	—	2,10	—	2,60	—	2,90	—	3,40	—	3,40	—	3,50	—
V _{R.k} [kN]	1,25	—	—	1,60	—	2,10	—	2,60	—	2,90	—	3,70	—	3,70	—	3,80	—
2	1,50	—	—	1,60	—	2,10	—	2,60	—	2,90	—	3,70	—	3,70	—	—	—
	1,75	—	—	1,60	—	2,10	_	2,60	—	2,90	—	3,70	—	3,70	—	—	—
	2,00	—	—	1,60	—	2,10	—	2,60	—	2,90	—	3,70	—	—	—	_	—
	0,50	_	_	0,80	ac	1,10	ac	1,20	ac	1,50	ac	1,60	abcd	1,60	abc	1,60	abc
	0,55	—	—	0,80	—	1,10	_	1,20	ac	1,50	ac	1,65	ac	2,00	ac	2,05	ac
Ē	0,63	—	—	0,80	—	1,10	—	1,20	ac	1,50	ac	1,70	ac	2,40	ac	2,50	ac
for t _{N,I} [mm]	0,75	—	—	0,80	—	1,10	—	1,20	ac	1,50	ac	1,70	ac	2,40	ac	3,40	а
ţ,	0,88	—	_	0,80	—	1,10	_	1,20	—	1,50	_	1,70	—	2,40	—	3,40	а
	1,00	—	—	0,80	—	1,10	—	1,20	—	1,50	—	1,70	—	2,40	—	3,40	а
Ţ	1,13	—	_	0,80	_	1,10	_	1,20	_	1,50	_	1,70	—	2,40		3,40	—
N _{R,k} [kN]	1,25	—	_	0,80	_	1,10	_	1,20	_	1,50	_	1,70	_	2,40		3,40	_
ž	1,50	—	_	0,80	—	1,10	_	1,20		1,50	_	1,70	_	2,40		_	—
	1,75	_	_	0,80	_	1,10	_	1,20	_	1,50	_	1,70	—	2,40	_	_	_
	2,00	—	—	0,80		1,10		1,20	_	1,50	_	1,70	—	—	—	—	_

 $JT3-3H-4,8 \ x \ L$ $JT6-3H-4,8 \ x \ L$ with undercut, hexagon head and sealing washer $\geq \varnothing 14 \ mm$

English translation prepared by DIBt



	Ø ≥Ø 73.58	11 0 11			Compo	er: s s : s nent I: S nent II: S	tainless tainless 280GD, 235 - El 280GD,	steel (1. steel (1. S320GI N 10025	4404) - 4301) - D or S35 -1 D or S35		8				
	T25		T25		<u>Timber substructures</u> no performance determined										
t _{n,II} [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75				
Mt,nom 0,40 0,50 0,55 0,63 1,75 0,63 1,75 0,88 1,00 1,75 0,40 1,13 1,25 1,50 1,75 0,40 0,50 [mm] 1,13 0,50 0,50 [mm] 1,13 0,50 0,633 1,001 1,13 0,75 0,633 1,001 1,13 1,25 1,001 1,13 1,25 1,50 1,50 1,75	0,49 0,49 0,49 0,49 0,49 0,49 0,49 0,42 0,42 0,42 0,42 0,42 0,42 0,42 0,42	0,49 0,80 0,80 0,80 0,80 0,80 0,80 0,80 0,8	0,49 0,80 0,95 0,95 0,95 0,95 0,95 0,95 0,95 0,9	0,49 0,80 0,95 1,15 1,15 1,15 1,15 1,15 1,15 1,15 1	0,49 0,80 0,95 1,15 1,45 1,45 1,45 1,45 1,45 1,45 1,4		0,49 0,80 0,95 1,15 1,45 1,68 1,88 1,88 1,88 0,85 1,38 1,62 1,62 1,62 1,62 1,62 1,62 1,62	0,49 0,80 0,95 1,15 1,45 1,68 1,88 — — — — 0,85 1,38 1,62 1,62 1,62 1,62 1,62 1,62 1,62	0,49 0,80 0,95 1,15 1,45 1,68 — — — — 0,85 1,38 1,62 1,62 1,62 1,62 1,62 1,62 1,62	0,49 0,80 0,95 1,15 — — — — — — — 0,85 1,38 1,62 1,62 1,62 1,62 1,62 — — — — — — — — — — — — — — — — — — —	0,49				
both compone	•	I are ma	de of S32	20GD or 5	S350GD t	he values	s may be	increased	d by 8,3%	і					
		Self	drilling s	crew											
								1							

JT3-FR-2H-4,8 x L JT6-FR-2H-4,8 x L Annex 25

with undercut, round head with Torx® drive system and sealing washer $\ge \emptyset$ 11 mm



> (311	<i>(</i> 142)	Materials
Ø10.5 4	012 ≥Ø11	Fastener: JT3-(FR-)2-4,9xL and JT4-(FR-)2-4,9xL stainless steel (1.4301 /1.4567) – EN 10088
		JT9-(FR-)2-4,9xL
		stainless steel (1.4401 / 1.4578) – EN 10088 Washer: stainless steel (1.4301) – EN 10088
	FR-Head	with vulcanised EPDM seal Component I: aluminium alloy
<u>Ø3.4</u>	<u></u>	with R _{m,min} = 165 N/mm ² – EN 573 Component II: timber – EN 14081
		<u>_</u>
4		$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 2,00 \text{ mm}$
Ø3.4	T25	Timber substructures
<u>Ø4.9</u>	3	for timber substructures following performance were determined
EF (J3)	\bigcirc	$M_{y,k} = 4,672 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} ≥ 24,5 \text{ mm}$
		$I_{ax,k} = 0.07510/11111 101 I_{eff} \ge 24.011111$

	l _g =	25,	00	27,	00	29,0	00	31,	00	33,0	00	35,	00	37,	00	39,	00	41,	00		
M	t,nom =									_	-										
	0,50	0,50	-	0,50	-	0,50	-	0,50	-	0,50	-	0,50	-	0,50	-	0,50	-	0,50	-	0,50	-
	0,60	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	şut
	0,70	0,73	-	0,81	-	0,82	-	0,82	-	0,82	-	0,82	-	0,82	-	0,82	-	0,82	-	0,82	one
Ľ,	0,80	0,73	-	0,81	-	0,88	-	0,95	-	0,98	-	0,98	-	0,98	-	0,98	-	0,98	-	0,98	
V _{R,k} for .	0,90	0,73	-	0,81	-	0,88	-	0,95	-	0,99	-	0,99	-	0,99	-	0,99	-	0,99	-	0,99	comp aring)
,× Ľ	1,00	0,73	-	0,81	-	0,88	-	0,95	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	je ĝ
^	1,20	0,73	-	0,81	-	0,88	-	0,95	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	nre
	1,50	0,73	-	0,81	-	0,88	-	0,95	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	ailt
	2,00	0,73	-	0,81	-	0,88	-	0,95	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	Ť.
	N _{R,II,k} =	0,8	36	0,9	95	1,0	4	1,1	2	1,2	21	1,3	10	1,3	18	1,4	17	1,5	56	failure of component II	see chapter 4.2.2

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the

manufacturer of the aluminium structural sheeting. The values indicated above, depending on the screw depth I_{g} , shall apply to $k_{mod} = 0.90$ and the timber strength class C24 (ρ_k = 350 kg / m³). For other values of k_{mod} and strength classes see chapter 4.2.2 For k_{mod} < 0,90: failure of component I see right column and failure of component II see chapter 4.2.2 with f_{1,k} = 80 \cdot 10⁻⁶ \cdot ρ_k^2 (load carrying class 3, ρ_k in kg/m³, max. 500 kg/m³) and yield moment M_{y,k} = 5990 Nmm.

Self-drilling screw	
JT3-(FR-)2-4,9xL	
JT4-(FR-)2-4,9xL	Annex 26
JT9-(FR-)2-4,9xL	
With hexagon head or FR-head and seal washer $\geq \varnothing$ 11,0 mm	

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Ø12 ≥Ø11 ₩ FR-Head	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$
33	$\label{eq:static linear} \begin{array}{l} \hline \underline{Drilling\ capacity} & \Sigma t_i \leq 2,00\ \text{mm} \\ \hline \hline \underline{Timber\ substructures} \\ \text{for timber\ substructures\ following\ performance\ were} \\ \text{determined} \\ \hline M_{y,k} &= 4,672\ \text{Nm} \\ f_{ax,k} &= 8,575\ \text{N/mm}^2 & \text{for} I_{eff} &\geq 24,5\ \text{mm} \end{array}$

	l _g -	-	25,0	00	27,	00	29,0	00	31,	00	33,	00	35,	00	37,	00	39,	00	41,	00		
N	Л _{t,non}	n =									-	-										
	(0,50	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	_
	(0,60	0,73	-	0,81	-	0,87	-	0,87	-	0,87	-	0,87	-	0,87	-	0,87	-	0,87	-	0,87	ş
Ш "	. (0,70	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,07	-	1,07	-	1,07	-	1,07	-	1,07	one
_=	÷	0,80	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,28	-	1,28	component aring)
V _{B k} for	5 (0,90	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,29	-	1,29	col
د پ	×. Ľ	1,00	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,30	-	1,30	o (pe
^	•	1,20	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,30	-	1,30	nre
		1,50	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,30	-	1,30	ailt
	2	2,00	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,30	-	1,30	Ť.
	N _{R,II,k} =		0,8	6	0,9	95	1,0	14	1,1	2	1,2	21	1,3	0	1,3	18	1,4	17	1,5	56	failure of component II	see chapter 4.2.2

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

The values indicated above, depending on the screw depth I_{g} shall apply to $k_{mod} = 0.90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg} / \text{m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2

For $k_{mod} < 0.90$: failure of component I see right column and failure of component II see chapter 4.2.2 with $f_{1,k} = 80 \cdot 10^{-6} \cdot \rho_k^{-2}$ (load carrying class 3, ρ_k in kg/m³, max. 500 kg/m³) and yield moment M_{y,k} = 5990 Nmm.

Self-drilling screw	
JT3-(FR-)2-4,9xL	
JT4-(FR-)2-4,9xL	Annex 27
JT9-(FR-)2-4,9xL	
With hexagon head or FR-head and seal washer $\ge \emptyset$ 11,0 mm	

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≥Ø16	<u>Materials</u>
Ø10.5 °°.	Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088
	Washer: stainless steel (1.4301) - EN 10088
- N Ø4.17	Component I: S280GD, S320GD or S350GD - EN 10346 Component II: S235 - EN 10025-1
	S280GD, S320GD or S350GD - EN 10346
Ø3.7 Ø5.46	$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 2,50 \text{ mm}$
	<u>Timber substructures</u> no performance determined
t _{N II} [mm] 0,63 0,75 0,88	1,00 1,13 1,25 1,50 2,00

t _{n,II}	[m m]	0,6	3	0,7	75	0,8	88	1,0	0	1,1	3	1,2	25	1,5	i0	2,0	00
N	l _{t,nom}								51	١m							
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—	—	-	—	—	—	—	—	—	—
드	0,63	1,00	—	1,00	—	1,00	—	1,00	_	1,00	_	1,00	_	1,00	ac	—	_
Ľ	0,75	1,00	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	—	—
ţ,	0,88	1,00	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	—	—
for	1,00	1,00	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	—	—
z	1,13	1,00	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	—	—	—	—
V _{R,k} [kN] for t _{N,I} [mm]	1,25	1,00	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	—	—	—	—
≯	1,50	1,00	—	1,70	—	1,70	—	1,70	_	—	—	—	—	—	—	—	_
	1,75	1,00	_	1,70	_		—	—	_	—	_	—	_	—	—	—	_
	2,00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0,50	0,32	_	0,43	—	0,49	_	0,59	_	0,76	_	0,81	_	1,08	ac	1,08	ac
	0,55	0,41	—	0,55	—	0,61	—	0,75	—	0,95	—	1,02	—	1,36	ac	—	—
ᄃ	0,63	0,60	—	0,80	—	0,90	—	1,10	—	1,40	—	1,50	—	2,00	ac	—	—
Ē	0,75	0,60	—	0,80	_	0,90	—	1,10	_	1,40	_	1,50	—	2,00	—	—	_
ţ,	0,88	0,60		0,80	_	0,90	_	1,10	_	1,40	_	1,50		2,00	_	—	_
for	1,00	0,60	_	0,80	_	0,90	_	1,10	_	1,40	_	1,50	_	2,00	_	—	_
Ŝ	1,13	0,60		0,80	—	0,90	—	1,10		1,40	_	1,50	—	_	—		_
N _{R.k} [kN] for t _{N,I} [mm]	1,25	0,60	_	0,80	—	0,90	—	1,10		1,40	_	1,50	_	_	—		_
ž	1,50	0,60	_	0,80	—	0,90	—	1,10	—	_	—		_	_	—		—
	1,75	0,60		0,80	—	—	—	_		_	_	—	_	—	—	_	_
	2,00	—		_		_	_	_	_	_	_	—	_	—	_	_	_

Self drilling screw

 $JT3-2H-5,5 \ x \ L$ $JT6-2H-5,5 \ x \ L$ with undercut, hexagon head and sealing washer \geq Ø16 mm

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≥Ø14 m	≥Ø14	Materials
Ø10.5 ¹⁶	012	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
03.8	FR-Kopf	Component I: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573
P. 03.6		Component II: aluminium alloy with R _{m,min} = 165 N/mm² – EN 573 Timber – EN 14081
26	T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
at J3	Ő	Timber substructures
	T25	for timber substructures following performance were determined
Bay J6	\bigcirc	

t	N,II =	0,4	10	0,5	50	0,6	0	0,7	0	0,8	30	0,9	0	1,0	0	1,2	20	1,5	50		/
M	t,nom =									-	-										
	0,40	0,29	-	0,29	-	0,29	-	0,29	-	0,29	-	0,29	-	0,29	-	0,29	-	0,29	-	0,29	_
	0,50	0,29	-	0,42	-	0,51	-	0,60	-	0,69	-	0,75	-	0,81	-	0,81	-	0,81	-	0,81	sut
	0,60	0,29	-	0,42	-	0,53	-	0,63	-	0,71	-	0,78	-	0,85	-	0,85	-	-	-	0,85	one
Ī	0,70	0,29	-	0,42	-	0,53	-	0,65	-	0,74	-	0,82	-	0,89	-	0,89	-	-	-	0,89	of comp((bearing)
l j		0,29	-	0,42	-	0,53	-	0,65	-	0,76	-	0,85	-	0,92	-	0,92	-	-	-	0,92	cor
V _{R,k} for	0,90	0,29	-	0,42	-	0,55	-	0,68	-	0,81	-	0,88	-	0,97	-	0,97	-	-	-	0,97	f d
^	1,00	0,29	-	0,42	-	0,56	-	0,71	-	0,85	-	0,93	-	1,00	-	-	-	-	-	1,00	nre
	1,20	0,29	-	0,42	-	0,59	-	0,77	-	0,94	-	-	-	-	-	-	-	-	-	1,24	
	1,50	0,29	-	0,42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,59	-
N _{R,II,k} =		0,2	22	0,2	28	0,3	5	0,4	3	0,5	50	0,5	8	0,6	8	0,8	36	1,1	18	failure of component II	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

For other areas of application see allgemeinge bauaufsichtliche Zulassung Z-14.4-426.

The values indicated above, depending on the screw depth I_{g_i} shall apply to $k_{mod} = 0.90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg} / \text{m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2

Self-drilli	ng screw		
JT3-2-6,0xL	JT6-2-6,0xL	Annex 29	
JT3-FR-2-6,0xL	JT6-FR-2-6,0xL		
With hexagon head and s	seal washer ≥ Ø 14,0 mm		

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≥Ø14 m	≥Ø14	Materials
Ø10.5 G	012	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
-		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
03.8	FR-Kopf	Component I: aluminium alloy with R _{m,min} = 215 N/mm ² – EN 573
P. 03.6		Component II: aluminium alloy with R _{m,min} = 215 N/mm² – EN 573 Timber – EN 14081
06	T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
Set (J3)	Ô	Timber substructures
	T25	for timber substructures following performance were determined
J6	\bigcirc	$ \begin{array}{ll} M_{y,k} &= 7,911 \ \text{Nm} \\ f_{ax,k} &= 8,575 \ \text{N/mm}^2 & \text{for} & I_{eff} & \geq 26,0 \ \text{mm} \end{array} $

Г	t _{N.}	=	0,4	0	0,5	50	0,6	0	0,7	0	0,8	30	0,9	0	1,0	00	1,2	20	1,5	50		
		iom =									_	-										
IL		0,40	0,38	-	0,38	-	0,38	-	0,38	-	0,38	-	0,38	-	0,38	-	0,38	-	0,38	-	0,38	_
		0,50	0,38	-	0,55	-	0,67	-	0,78	-	0,90	-	0,98	-	1,05	-	1,05	-	1,05	-	1,05	ent
	ш	0,60	0,38	-	0,55	-	0,70	-	0,81	-	0,93	-	1,02	-	1,10	-	1,10	-	-	-	1,10	8
Ш.	Ī	0,70	0,38	-	0,55	-	0,70	-	0,84	-	0,96	-	1,07	-	1,15	-	1,15	-	-	-	1,15	compon aring)
	V _{R,k} for 1	0,80	0,38	-	0,55	-	0,70	-	0,84	-	0,99	-	1,11	-	1,20	-	1,20	-	-	-	1,20	of comp((bearing)
Ш.	/R.k.	0,90	0,38	-	0,55	-	0,72	-	0,88	-	1,05	-	1,15	-	1,25	-	1,25	-	-	-	1,25	be be
11		1,00	0,38	-	0,55	-	0,74	-	0,92	-	1,11	-	1,21	-	1,30	-	-	-	-	-	1,30	failure
11		1,20	0,38	-	0,55	-	0,78	-	1,00	-	1,23	-	-	-	-	-	-	-	-	-	1,61	failt
		1,50	0,38	-	0,55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,08	-
	N _{R.II.k} =		0,2	29	0,3	37	0,4	6	0,5	55	0,6	64	0,7	75	0,8	37	1,1	12	1,5	53	failure of component II	see chapter 4.2.2

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

For other areas of application see allgemeinge bauaufsichtliche Zulassung Z-14.4-426.

The values indicated above, depending on the screw depth I_{g} shall apply to $k_{mod} = 0.90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg} / \text{m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2

 Self-drilli	ng screw		
JT3-2-6,0xL JT3-FR-2-6,0xL With hexagon head and s	JT6-2-6,0xL JT6-FR-2-6,0xL seal washer ≥ Ø 14,0 mm	Annex 30	

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Fastener: stainless steel $(1.4301 / 1.4567) - EN 10088$ stainless steel $(1.4401 / 1.4578) - EN 10088$ Washer: stainless steel $(1.4401 / 1.4578) - EN 10088$ Washer: stainless steel $(1.4301) - EN 10088$ The stainless steel $(1.4301) - EN 10088$ Washer: stainless steel $(1.4301) - EN 10088$ Stainless steel $(1.4301) - EN 10088$ Washer: stainless steel $(1.4301) - EN 10088$ Washer: stainle	≥Ø14 ຕ	≥Ø14	Materials
with vulcanised EPDM seal $Component I: aluminium alloy with R_{m,min} = 165 \text{ N/mm}^2 - \text{EN 573}Component II: S235 - EN 10025-1S280GD, S320GD - EN 10346timber - EN14081Drilling capacity \Sigma t_i \le 2,00 \text{ mm}Timber substructuresfor timber substructures following performance weredeterminedM_{y,k} = 7,911 \text{ Nm}$	Ø10.5 6	012	
with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN } 573$ Component II: S235 - EN 10025-1 S280GD, S320GD - EN 10346 timber - EN14081 Drilling capacity $\Sigma t_i \le 2,00 \text{ mm}$ Timber substructures for timber substructures following performance were determined $M_{y,k} = 7,911 \text{ Nm}$			
S280GD, S320GD – EN 10346 timber – EN14081 Drilling capacity $\Sigma t_i \le 2,00 \text{ mm}$ Timber substructures for timber substructures following performance were determined $M_{y,k} = 7,911 \text{ Nm}$	N N N	FR-Kopf	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	- 3		S280GD, S320GD – EN 10346
for timber substructures following performance were determined $M_{y,k} = 7,911 \text{ Nm}$		T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
determined M _{y,k} = 7,911 Nm	B (J3)	Ô	Timber substructures
	7	125	
$I_{ax,k} = 8,575 \text{ N/mm}$ for $I_{eff} \ge 26,0 \text{ mm}$	BIE (JG)	Ó	$ \begin{array}{ll} M_{y,k} &= 7,911 \ \text{Nm} \\ f_{ax,k} &= 8,575 \ \text{N/mm}^2 & \text{for} & I_{\text{eff}} &\geq 26,0 \ \text{mm} \end{array} $

t.	N,II =	0,4	0	0,5	50	0,6	3	0,7	75	0,8	38	1,0	00	1,2	25	1,5	50		/
	,nom =		-	,-		0,0		•,.	-			.,.				.,.			
		0,29	-	0,29	-	0,29	-	0,29	-	0,29	-	0,29	-	0,29	-	0,29	-	0,29	_
	0,50	0,40	-	0,40	-	0,40	-	0,65	-	0,73	-	0,81	-	0,81	-	0,81	-	0,81	t
	0,60	0,40	-	0,50	-	0,50	-	0,67	-	0,76	-	0,85	-	0,85	-	-	-	0,85	one
ţ,	0,70	0,40	-	0,50	-	0,61	-	0,70	-	0,80	-	0,89	-	0,89	-	-	-	0,89	mponent ng)
ort	0,80	0,40	-	0,50	-	0,61	-	0,71	-	0,82	-	0,92	-	0,92	-	-	-	0,92	
V _{R,k} for t	0,90	0,40	-	0,50	-	0,61	-	0,75	-	0,86	-	0,97	-	-	-	-	-	0,97	of be
>	1,00	0,40	-	0,50	-	0,61	-	0,78	-	0,89	-	1,00	-	-	-	-	-	1,00	ar
	1,20	0,40	-	0,50	-	0,61	-	0,86	-	0,93	-	-	-	-	-	-	-	1,24	failure
	1,50	0,40	-	0,50	-	0,61	-	-	-	-	-	-	-	-	-	-	-	1,59	÷
N _{R,II,k} =		0,5	3	0,7	75	0,8	30	1,0)5	1,3	35	1,6	33	2,2	26	3,0)2	failure of component II	see chapter 4.2.2

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the

- manufacturer of the aluminium structural sheeting. Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance N_{R,II,k} can be increased by
- 8,0%.

For other areas of application see allgemeinge bauaufsichtliche Zulassung Z-14.4-426.

The values indicated above, depending on the screw depth I_{g_i} shall apply to $k_{mod} = 0.90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg} / \text{m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2

Self-drill	ing screw		
JT3-2-6,0xL JT3-FR-2-6,0xL With hexagon head or FR-hea	JT6-2-6,0xL JT6-FR-2-6,0xL d and seal washer $\ge \emptyset$ 14,0 mm	Annex 31	

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≥Ø14 mi	≥Ø14	Materials					
Ø10.5 G	012	Fastener:	stainless steel stainless steel				
		Washer:	stainless steel with vulcanised			0088	
03.8	FR-Kopf	Component I:	aluminium allow with $R_{m,min} = 21$	·	– EN :	573	
P 23.6		Component II:	S235 – EN 100 S280GD, S320 timber – EN140)GD – EN	10346	3	
06	T25	Drilling capaci	$\underline{ty} \qquad \Sigma t_i \leq 2,$,00 mm			
BE (J3)	Ô	Timber substr	uctures				
TZ	Star Star	for timber sub determined	structures follow	ving perfo	rmanc	e were	
BJY J6	\bigcirc	$M_{y,k} = 7,911$ $f_{ax,k} = 8,575$	Nm 5 N/mm ²	for	l _{eff}	≥ 26,0	mm

				-					1		1		1		1		1			~
	t _{N,I}	1=	0,4	0	0,5	50	0,6	53	0,7	75	0,8	38	1,0	00	1,2	25	1,5	50		/
N	И _{t,n}	-m =								-	—									
		0,40	0,38	-	0,38	-	0,38	-	0,38	-	0,38	-	0,38	-	0,38	-	0,38	-		_
		0,50	0,52	-	0,52	-	0,52	-	0,84	-	0,95	-	1,05	-	1,05	-	1,05	-		l ä
"		0,60	0,52	-	0,65	-	0,65	-	0,87	-	0,99	-	1,10	-	1,10	-	-	-		one
		0,70	0,52	-	0,65	-	0,79	-	0,90	-	1,03	-	1,15	-	1,15	-	-	-		component I aring)
ll j	5	0,80	0,52	-	0,65	-	0,79	-	0,92	-	1,06	-	1,20	-	1,20	-	-	-		cor
Ve tor tor	X, X,	0,90	0,52	-	0,65	-	0,79	-	0,97	-	1,11	-	1,25	-	-	-	-	-		of compo (bearing)
	>	1,00	0,52	-	0,65	-	0,79	-	1,02	-	1,16	-	1,30	-	-	-	-	-		failure
		1,20	0,52	-	0,65	-	0,79	-	1,12	-	1,21	-	-	-	-	-	-	-		ailt
		1,50	0,52	-	0,65	-	0,79	-	-	-	-	-	-	-	-	-	-	-		-
Nn 11 E	- X'II'X -		0,5	3	0,7	75	0,8	0	1,0)5	1,3	35	1,6	33	2,2	26	3,0)2	failure of component II	see chapter 4.2.2

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the

- manufacturer of the aluminium structural sheeting.
- Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance $N_{R,II,k}$ can be increased by 8,0%.

For other areas of application see allgemeinge bauaufsichtliche Zulassung Z-14.4-426.

The values indicated above, depending on the screw depth I_{g_i} shall apply to $k_{mod} = 0.90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg} / \text{m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2

 Self-drilli	ng screw		
JT3-2-6,0xL JT3-FR-2-6,0xL With hexagon head or FR-head	JT6-2-6,0xL JT6-FR-2-6,0xL and seal washer $\ge \emptyset$ 14,0 mm	Annex 32	

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≥Ø14 m Ø10.5	≥Ø14 Ø12	<u>Materials</u>
m		Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
2	34	Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
@3.8	FR-Kopf	Component I: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573
1		Component II: timber – EN14081
Ø3.6 Ø6	T25	<u>Drilling capacity</u> Σt _i ≤ 2,00 mm
E (J3)	Ô	Timber substructures
	T25	for timber substructures following performance were determined
Bay (J6)	Ó	$\begin{array}{ll} M_{y,k} &= 7,911 \ Nm \\ f_{ax,k} &= 8,575 \ N/mm^2 & \mbox{for} & \ I_{eff} &\geq 26,0 \ \ mm \end{array}$

	_g =	31,0	00	32,0	00	33,0	00	34,	00	35,	00	36,	00	≥ 37	,00	
M	nom =							_	-							
	0,50	0,81	-	0,81	-	0,81	-	0,81	-	0,81	-	0,81	-	0,81	-	0,81 _
	0,60	0,85	-	0,85	-	0,85	-	0,85	-	0,85	-	0,85	-	0,85	-	0,85 분
	0,70	0,89	-	0,89	-	0,89	-	0,89	-	0,89	-	0,89	-	0,89	-	0,89 🖉
	0,80	0,92	-	0,92	-	0,92	-	0,92	-	0,92	-	0,92	-	0,92	-	0,85 0,89 0,92 0,90 aring)
V _{R,k} for t _{N,I}	0,90	0,96	-	0,97	-	0,97	-	0,97	-	0,97	-	0,97	-	0,97	-	0,92 0,0 0 comb (bearing)
R,k [†]	1,00	0,96	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	-	
~	1,20	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,24 1,59 jai
	1,50	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,59 jii
	2,00	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,59
N _{R.II,k} =		1,2	27	1,3	2	1,3	8	1,4	13	1,4	.8	1,5	53	1,5	9	failure of component II see chapter 4.2.2

For timber substructures the indicated values of the shear force resistance $V_{R,k}$ shall apply with and without washer. For other areas of application see allgemeinge bauaufsichtliche Zulassung Z-14.4-426. The values indicated above, depending on the screw depth I_{g} shall apply to $k_{mod} = 0.90$ and the timber strength class C24 (ρ_k = 350 kg / m³). For other values of k_{mod} and strength classes see chapter 4.2.2 For k_{mod} < 0,90: failure of component I see right column and failure of component II see chapter 4.2.2 with $f_{1,k} = 80 \cdot 10^{-6} \cdot \rho_k^2$ (load carrying class 3, ρ_k in kg/m³, max. 500 kg/m³) and yield moment M_{y,k} = 7.911 Nmm.

Self-drilling screw

JT3-2-6,0xL JT3-FR-2-6,0xL

JT6-2-6,0xL JT6-FR-2-6,0xL With hexagon head or FR-head and seal washer $\ge \emptyset$ 14,0 mm



≥Ø14 °? Ø10.5 °Ö	≥ Ø14 Ø12	Materials
		Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
2	FR-Kopf	Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
03.8		Component I: aluminium alloy with R _{m.min} = 215 N/mm ² – EN 573
P. 03.6		Component II: timber – EN 14081
Ø5.6	T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
Jar Are	Ô	Timber substructures
	725 38	for timber substructures following performance were determined
J6	\bigcirc	$\begin{array}{ll} M_{y,k} & = 7,911 \ Nm \\ f_{ax,k} & = 8,575 \ N/mm^2 & \mbox{for} & I_{eff} & \geq 26,0 \ \ mm \end{array}$

	l _g =	31,	00	32,0	00	33,0	00	34,	00	35,0	00	36,	00	≥ 37	,00	
M	t,nom =							_								
	0,50	0,96	-	1,00	-	1,04	-	1,05	-	1,05	-	1,05	-	1,05	-	1,05 _
	0,60	0,96	-	1,00	-	1,04	-	1,08	-	1,10	-	1,10	-	1,10	-	1,10 넕
	0,70	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,15	-	1,15	-	1,15 🖉
	0,80	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,10 1,15 1,20 1,20 1,25
V _{R,k} for t _{N,I}	0,90	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,20 du 1,25 1 1,25 (pearing)
, X,	1,00	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	
>	1,20	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,61 월
	1,50	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,61 2,08 1,01 1
	2,00	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	2,08
N _{R,II,k} =		1,2	27	1,3	2	1,3	8	1,4	13	1,4	.8	1,5	53	1,5	9	failure of component II see chapter 4.2.2

For timber substructures the indicated values of the shear force resistance $V_{R,k}$ shall apply with and without washer. For other areas of application see allgemeinge bauaufsichtliche Zulassung Z-14.4-426. The values indicated above, depending on the screw depth I_{g} shall apply to $k_{mod} = 0.90$ and the timber strength class C24 (ρ_k = 350 kg / m³). For other values of k_{mod} and strength classes see chapter 4.2.2 For k_{mod} < 0,90: failure of component I see right column and failure of component II see chapter 4.2.2 with f_{1,k} = 80 \cdot 10⁻⁶ \cdot ρ_k^2 (load carrying class 3, ρ_k in kg/m³, max. 500 kg/m³) and yield moment M_{y,k} = 7.911 Nmm.

Self-drilling screw

JT3-2-6,0xL JT3-FR-2-6,0xL

JT6-2-6,0xL JT6-FR-2-6,0xL With hexagon head or FR-head and seal washer $\ge \emptyset$ 14,0 mm



≥Ø16 Ø10.5 © © © Ø4.17 © Ø3.9	≥Ø16 Ø12 € FR-Head	Materials Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - 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
Ø5.46	T25	<u>Drilling capacity</u> Σt _i ≤ 3,50 mm
BJE J3	T25	<u>Timber substructures</u> no performance determined

	[mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00
N	l _{t,nom}		1 N m			2 Nm				2,5 Nm		
	0,50	0,56	0,60	0,64	0,68	0,83	0,98	1,13	1,13	1,13	1,13	1,13
	0,55	0,58	0,67	0,73	0,78	0,94	1,09	1,25	1,25	1,25	1,25	1,25
Ē	0,63	0,60	0,71	0,82	0,87	1,04	1,21	1,38	1,38	1,38	1,38	1,38
<u>E</u>	0,75	0,62	0,74	0,86	0,97	1,15	1,33	1,51	1,51	1,51	1,51	1,51
ţ,	0,88	0,62	0,74	0,86	1,02	1,42	2,04	2,67	2,67	2,67	2,67	2,67
V _{R,k} [kN] for t _{N,I} [mm]	1,00	0,62	0,74	0,86	1,06	1,56	2,15	2,77	2,77	2,77	2,77	2,77
Z	1,13	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	3,92
×. č	1,25	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	3,92
≯	1,50	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	3,92
	1,75	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	—
	2,00	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	—
	0,50	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,48	1,48	1,48	1,48
	0,55	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,65	1,65	1,65	1,65
ᄃ	0,63	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,83	1,83	1,83
<u>L</u>	0,75	0,30	0,41	0,47	0,56	0,73	1,06	1, 4 0	1,71	1,99	2,23	2,23
ţ,	0,88	0,30	0,41	0,47	0,56	0,73	1,06	1, 4 0	1,71	1,99	2,59	2,59
for	1,00	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59	2,59
Ξ	1,13	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59	2,59
N _{R,k} [kN] for t _{N,I} [mm]	1,25	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59	2,59
ž	1,50	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59	2,59
	1,75	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59	—
	2,00	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59	—

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

 Self drilling screw

 JT3-2H Plus - 5,5 x L

 JT6-2H Plus - 5,5 x L

 JT3-FR-2H Plus - 5,5 x L

 JT6-FR-2H Plus - 5,5 x L

 JT6-FR-2H Plus - 5,5 x L

 with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm



≥Ø16 Ø10.5 © N Ø4.17 © Ø3.9	≥Ø16 Ø12 € FR-Head	Materials Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - 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
	T25	<u>Drilling capacity</u> Σt _i ≤ 3,50 mm
BIA (J6)	T25	<u>Timber substructures</u> no performance determined

	[mm]	2 x 0,63	2 x 0,75	2 x 0,88	2 x 1,00	2 x 1,13	2 x 1,25
N	1 _{t,nom}	2 Nm	3 N	l m		4 N m	
	0,40	—	—	—	—	_	_
	0,50	—	—	—	—	—	—
Ē	0,55	—	—	—	—		—
Ľ	0,63	1,65	1,78	1,91	2,04	2,04	2,04
Ţ,	0,75	1,65	2,60	2,76	2,92	2,92	2,92
for	0,88	1,65	2,60	3,39	3,55	3,55	3,55
Z	1,00	1,65	2,60	3,39	4,17	4,17	4,17
V _{R,k} [kN] for t _{N,I} [mm]	1,13	1,65	2,60	3,39	4,17	4,17	—
≯	1,25	1,65	2,60	3,39	4 ,17	_	_
	1,50	1,65	2,60	3,39	4,17	_	—
	1,75	1,65	2,60	_	_	_	—
	0,40	1,01	1,48	1,48	1,48	1,48	1,48
	0,50	1,01	1,65	1,65	1,65	1,65	1,65
Ē	0,55	1,01	1,78	1,83	1,83	1,83	1,83
<u>ل</u>	0,63	1,01	1,78	2,23	2,23	2,23	2,23
ťn,i	0,75	1,01	1,78	2,31	2,84	2,84	2,84
for	0,88	1,01	1,78	2,31	2,84	2,84	2,84
N _{R,k} [kN] for t _{N,I} [mm]	1,00	1,01	1,78	2,31	2,84	2,84	2,84
ž,	1,13	1,01	1,78	2,31	2,84	2,84	_
Ľ	1,25	1,01	1,78	2,31	2,84	_	_
	1,50	1,01	1,78	2,31	2,84	_	—
	1,75	1,01	1,78	_	_	_	_

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

 Self drilling screw

 JT3-2H Plus - 5,5 x L

 JT6-2H Plus - 5,5 x L

 JT3-FR-2H Plus - 5,5 x L

 JT6-FR-2H Plus - 5,5 x L

 JT6-FR-2H Plus - 5,5 x L

 with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm

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English translation prepared by DIBt



	≥ 1.17 9	1.8	1 		•	er: s s : s nent I: S nent II: S	tainless tainless 280GD, 235 - El	steel (1. steel (1. S320GI N 10025	-1	EN 1008 EN 1008 50GD - E	88		
		Ø3.9 Ø5.46				capacity substruc		Σt _i ≤ 3,50) mm				
			5 T2	5			ormance		ined				
t _{n,II} [n	nm1	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00	1
M _{t,no}		5,10	1 Nm		- 0,00	2 Nm		,,	<u> </u>	2,5 Nm		,	
0),50	0,56	0,60	0,64	0,68	0,83	0,98	1,13	1,13	1,13	1,13	1,13	
c),55	0,58	0,67	0,73	0,78	0,94	1,09	1,25	1,25	1,25	1,25	1,25	
ᆝᇢ᠐	,63	0,60	0,71	0,82	0,87	1,04	1,21	1,38	1,38	1,38	1,38	1,38	
<u> </u> <u>Ĕ</u> 0),75	0,62	0,74	0,86	0,97	1,15	1,33	1,51	1,51	1,51	1,51	1,51	
	88,0	0,62	0,74	0,86	1,02	1,42	2,04	2,67	2,67	2,67	2,67	2,67	
	,00	0,62	0,74	0,86	1,06	1,56	2,15	2,77	2,77	2,77	2,77	2,77	
<u>Z</u> 1 <u>×</u> 1	,13 25	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	3,92	
	,25 ,50	0,62 0,62	0,74 0,74	0,86 0,86	1,11	1,70 1,70	2,28 2,28	2,87 2,87	3,22 3,22	3,57 3,57	3,92 3,92	3,92 3,92	
	,50	0,0∠	0,74	1 0,00	1,11	1,10	_ ∠,∠o	2,07	J 3,22	1 3,37	ວ, ອ ∠	5,82	1

Ξ	1,13	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	3,92
V _{R,k} [kN]	1,25	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	3,92
1	1,50	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	3,92
	1,75	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	_
	2,00	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	—
	0,50	0,30	0,41	0,47	0,56	0,73	0,86	0,86	0,86	0,86	0,86	0,86
	0,55	0,30	0,41	0,47	0,56	0,73	1,04	1,04	1,04	1,04	1,04	1,04
ਿ	0,63	0,30	0,41	0,47	0,56	0,73	1,06	1,20	1,20	1,20	1,20	1,20
for t _{N,I} [mm]	0,75	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,56	1,56	1,56	1,56
ţ,	0,88	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	2,32
fo	1,00	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	2,32
N _{R,k} [kN]	1,13	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	2,32
×.	1,25	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	2,32
z	1,50	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	2,32
	1,75	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	—
	2,00	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	—

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

Self drilling screw

JT3-FR-2H Plus-5,5 x L

Annex 37

JT6-FR-2H Plus-5,5 x L

with undercut, round head with Torx® drive system and sealing washer $\ge \emptyset$ 11 mm

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English translation prepared by DIBt



	<u>ø</u> 4	N		Materials Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088 Washer: stainless steel (1.4301) - EN 10088 Component I: S280GD, S320GD or S350GD - EN 103 Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 103					
		Ő		Drilling cap		≤ 3,50 mm ed			
	t _{n,II} [mm]	2 x 0,63	2 x 0,75	2 x 0,88	2 x 1,00	2 x 1,13	2 x 1,25	1	
	M _{t,nom}	2 Nm	31	Nm		4 Nm			
	0,40		—		—	_	_]	
	0,50	_	-	-	-	-	-		
	둔 ^{0,55}		-	-	-	-	-		
	U,55 E 0,63	1,65	1,78	1,91	2,04	2,04	2,04		
1					1	1	1	1	

	0,55	_	_	_	_	_	_
V _{R,k} [kN] for t _{N,I} [mm]	0,63	1,65	1,78	1,91	2,04	2,04	2,04
ťn,	0,75	1,65	2,60	2,76	2,92	2,92	2,92
Lo L	0,88	1,65	2,60	3,39	3,55	3,55	3,55
Ī	1,00	1,65	2,60	3,39	4,17	4,17	4,17
× ×	1,13	1,65	2,60	3,39	4,17	4,17	_
2	1,25	1,65	2,60	3,39	4,17	—	_
	1,50	1,65	2,60	3,39	4,17	—	_
	1,75	1,65	2,60	—	—	—	_
	0,40	0,86	0,86	0,86	0,86	0,86	0,86
	0,50	1,01	1,04	1,04	1,04	1,04	1,04
ਵ	0,55	1,01	1,20	1,20	1,20	1,20	1,20
<u><u> </u></u>	0,63	1,01	1,56	1,56	1,56	1,56	1,56
ť,	0,75	1,01	1,78	2,31	2,32	2,32	2,32
for	0,88	1,01	1,78	2,31	2,32	2,32	2,32
Ξ	1,00	1,01	1,78	2,31	2,32	2,32	2,32
N _{R,k} [kN] for t _{N,I} [mm]	1,13	1,01	1,78	2,31	2,32	2,32	_
Ž	1,25	1,01	1,78	2,31	2,32	—	_
	1,50	1,01	1,78	2,31	2,32	—	_
	1,75	1,01	1,78	—	—	—	_

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

Self drilling screw

JT3-FR-2H Plus-5,5 x L JT6-FR-2H Plus-5,5 x L

Annex 38

with undercut, round head with Torx® drive system and sealing washer $\geq \emptyset$ 11 mm

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English translation prepared by DIBt



≥Ø11	≥Ø11	Materials
Ø10.5	Ø12 *	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
- N <u>Ø4.17</u>	FR-Head	Component I: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573
<u>ه</u> (03,9		Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN 573}$
05.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
BA (J3)	(C) T25	
BE (JG)	()	Timber substructures for timber substructures no performance determined

t _N	,II =	0,4	0	0,5	0	0,40 0,50 0,60					0	0,90		1,0	00	1,2	20	1,5	50
M _{t,r}	-mem									_	-								
	0,40	0,19	-	0,19	-	0,19	-	0,19	-	0,19	-	0,19	-	0,19	ac	0,19	ac	0,19	ac
	0,50	0,19	-	0,27	-	0,32	-	0,37	-	0,43	-	0,48	-	0,53	ac	0,53	ac	0,53	ac
	0,60	0,19	-	0,27	-	0,38	-	0,44	-	0,49	-	0,55	-	0,61	-	0,63	-	0,76	ac
Ę,	0,70	0,19	-	0,27	-	0,38	-	0,50	-	0,55	-	0,62	-	0,68	-	0,74	-	0,99	ac
for	0,80	0,19	-	0,27	-	0,38	-	0,50	-	0,61	-	0,69	-	0,76	-	0,84	-	1,22	ac
V _{R,k} for	0,90	0,19	-	0,27	-	0,38	-	0,50	-	0,61	-	0,76	-	0,83	-	0,95	-	1,34	-
	1,00	0,19	-	0,27	-	0,38	-	0,50	-	0,61	-	0,76	-	0,91	-	1,05	-	1,47	-
	1,20	0,19	-	0,27	-	0,38	-	0,50	-	0,61	-	0,76	-	0,91	-	1,26	-	1,71	-
	1,50	0,19	-	0,27	-	0,38	-	0,50	-	0,61	-	0,76	-	0,91	-	1,26	-	2,08	-
N _{R,II,k} =		0,1	4	0,2	21	0,2	8	0,3	86	0,4	3	0,5	0	0,5	56	0,7	73	0,9	91

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-2H Plus 5,5xL JT3-FR-2H Plus 5,5xL

JT6-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL With hexagon head or FR-head and seal washer $\ge \emptyset$ 11,0 mm

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English translation prepared by DIBt



≥Ø11	≥Ø11	Materials
Ø10.5 9	Ø12 te	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
- N 04.17	FR-Head	Component I: aluminium alloy with R _{m,min} = 215 N/mm ² – EN 573
φ , ∞ , ∞, φ		Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN 573}$
Ø5.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
HA (J3)	(U) T25	
BE (J6)	() B	Timber substructures for timber substructures no performance determined

t _N	,II =	0,4	0	N,II = 0,40 0,50 0,60				0,7	'0	0,8	0	0,9	0	1,0	0	1,2	20	1,5	50
M _{t,r}	nom =									_	-								
	0,40	0,24	-	0,24	-	0,24	-	0,24	-	0,24	-	0,24	-	0,24	ac	0,24	ac	0,24	ac
	0,50	0,24	-	0,35	-	0,42	-	0,49	-	0,55	-	0,62	-	0,69	ac	0,69	ac	0,69	ac
	0,60	0,24	-	0,35	-	0,50	-	0,57	-	0,63	-	0,71	-	0,79	-	0,83	-	0,99	ac
tr.,	0,70	0,24	-	0,35	-	0,50	-	0,65	-	0,72	-	0,81	-	0,86	-	0,96	-	1,29	ac
0 T	0,80	0,24	-	0,38	-	0,50	-	0,65	-	0,80	-	0,90	-	0,93	-	1,08	-	1,59	ac
V _{R,k} for	0,90	0,24	-	0,38	-	0,50	-	0,65	-	0,80	-	0,99	-	1,00	-	1,23	-	1,75	-
>	1,00	0,24	-	0,38	-	0,50	-	0,65	-	0,80	-	0,99	-	1,18	-	1,37	-	1,91	-
	1,20	0,24	-	0,38	-	0,50	-	0,65	-	0,80	-	0,99	-	1,18	-	1,64	-	2,23	-
	1,50	0,24	-	0,38	-	0,50	-	0,65	-	0,80	-	0,99	-	1,18	-	1,64	-	2,71	-
N _{R,II,k} =		0,1	9	0,2	8	0,3	37	0,4	17	0,5	6	0,6	5	0,7	73	0,9	95	1,1	9

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-2H Plus 5,5xL JT3-FR-2H Plus 5,5xL

JT6-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL With hexagon head or FR-head and seal washer $\ge \emptyset$ 11,0 mm

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English translation prepared by DIBt



≥Ø11	≥Ø11	Materials
Ø10.5	Ø12 *	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
- N Ø4.17	FR-Head	Component I: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573
۵ ۵ ۵ ۵ 3.9		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
Ø5.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
EL (J3)	U T25	
	JE	Timber substructures
EF (J6)		for timber substructures no performance determined

t _N	, =	0,4	0	0,5	0	0,6	3	0,7	'5	0,8	8	1,00		1,2	25	1,5	50	2,0	00
M _{t,i}	nom =										-								
	0,40	0,19	-	0,19	-	0,19	-	0,19	-	0,19	-	0,19	ac	0,19	ac	0,19	ac	0,19	ac
	0,50	0,35	-	0,35	-	0,35	-	0,40	-	0,47	-	0,53	ac	0,53	ac	0,53	ac	0,53	ac
	0,60	0,35	-	0,42	-	0,42	-	0,47	-	0,54	-	0,61	-	0,69	-	0,76	ac	0,76	ac
tr, "	0,70	0,35	-	0,42	-	0,49	-	0,53	-	0,61	-	0,68	-	0,84	-	0,99	ac	0,99	ac
l j	0,80	0,35	-	0,42	-	0,49	-	0,56	-	0,66	-	0,76	-	0,99	-	1,22	ac	1,22	a
V _{R,k} for	0,90	0,35	-	0,42	-	0,49	-	0,56	-	0,70	-	0,83	-	1,03	-	1,34	-	1,34	-
	1,00	0,35	-	0,42	-	0,49	-	0,56	-	0,74	-	0,91	-	1,19	-	1,47	-	1,47	-
	1,20	0,35	-	0,42	-	0,49	-	0,56	-	0,74	-	0,91	-	1,31	-	1,71	-	1,71	-
	1,50	0,35	-	0,42	-	0,49	-	0,56	-	0,74	-	0,91	-	1,50	-	2,08	-	2,08	-
N _{R,II,k} =		0,3	0	0,4	1	0,5	6	0,7	'3	1,0	6	1,4	10	1,9	99	2,5	59	2,5	59

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance N_{R,II,k} can be increased by 8,0%.

Self-drilling screw

JT3-2H Plus 5,5xL JT3-FR-2H Plus 5,5xL

JT6-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL With hexagon head or FR-head and seal washer $\ge \emptyset$ 11,0 mm

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English translation prepared by DIBt



≥Ø11 Ø10.5	≥Ø11 Ø12 ↔	Materials Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
- N <u>Ø4.17</u> ∞ <u>∞</u>	FR-Head	Component I: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573 Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
05.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
BH (J3) BH	125 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	<u>Timber substructures</u> for timber substructures no performance determined

t _N	,II =	2x0,	63	2x0	,75	2x0	,88	2x1	,00	2x1	,13	2x1	,25
M _{t,i}	nom =						_	_					
	0,40	0,58	-	0,58	ac								
	0,50	0,73	-	0,73	ac	0,74	ac	0,77	ac	0,77	ac	0,77	ac
п	0,60	0,80	-	0,80	ac	0,87	ac	0,94	ac	0,94	ac	0,94	а
	0,70	0,87	-	0,87	ac	0,99	ac	1,12	ac	1,12	ac	1,12	а
V _{R,k} for t _{N,I}	0,80	0,94	-	0,94	ac	1,12	ac	1,29	а	1,29	а	1,29	а
,R,K	0,90	1,12	-	1,19	-	1,36	-	1,51	а	1,51	а	1,51	а
_	1,00	1,29	-	1,44	-	1,60	-	1,75	а	1,75	а	1,75	а
	1,20	1,29	-	1,51	-	1,74	-	1,96	а	1,96	а	-	-
	1,50	1,29	-	1,62	-	1,94	-	2,27	а	-	-	-	-
1 1													
N _{R,II,K}		1,0)1	1,7	78	2,3	31	2,8	34	2,8	34	2,8	34

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance N_{R,II,k} can be increased by 8,0%.

Self-drilling screw

JT3-2H Plus 5,5xL JT3-FR-2H Plus 5,5xL

JT6-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL With hexagon head or FR-head and seal washer $\ge \emptyset$ 11,0 mm

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English translation prepared by DIBt



≥Ø11	≥Ø11	Materials
Ø10.5 S	Ø12 T	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
- N Ø4.17	FR-Head	Component I: aluminium alloy with R _{m,min} = 215 N/mm ² – EN 573
۵ (۵ (۵ (۵) (۵) (۵) (۵) (۵) (۵)		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
Ø5.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
	T25	Tinkanakatun
	36	Timber substructures
BE JO		for timber substructures no performance determined

t _N	I,II =					3	0,7	0,8	8	1,00		1,2	25	1,5	50	2,0	00		
M _{t,i}	nom =									_	-								
	0,40	0,24	-	0,24	-	0,24	-	0,24	-	0,24	-	0,24	ac	0,24	ac	0,24	ac	0,24	ac
	0,50	0,46	-	0,46	-	0,46	-	0,53	-	0,61	-	0,69	ac	0,69	ac	0,69	ac	0,69	ac
	0,60	0,46	-	0,55	-	0,55	-	0,60	-	0,70	-	0,79	-	0,89	-	0,99	ac	0,99	ac
t _{n,i}	0,70	0,46	-	0,55	-	0,64	-	0,69	-	0,78	-	0,86	-	1,08	-	1,29	ac	1,29	ac
j.	0,80	0,46	-	0,55	-	0,64	-	0,73	-	0,83	-	0,93	-	1,26	-	1,59	ac	1,59	а
V _{R,k} for	0,90	0,46	-	0,55	-	0,64	-	0,73	-	0,87	-	1,00	-	1,38	-	1,75	-	1,75	-
	1,00	0,46	-	0,55	-	0,64	-	0,73	-	0,96	-	1,18	-	1,55	-	1,91	-	1,91	-
	1,20	0,46	-	0,55	-	0,64	-	0,73	-	0,96	-	1,18	-	1,71	-	2,23	-	2,23	-
	1,50	0,46	-	0,55	-	0,64	-	0,73	-	0,96	-	1,18	-	1,95	-	2,71	-	2,71	-
N _{R,II,k} =		0,3	0	0,4	1	0,5	6	0,7	'3	1,0	6	1,4	10	1,9	99	2,5	59	2,5	59

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance N_{R,II,k} can be increased by 8,0%.

Self-drilling screw

JT3-2H Plus 5,5xL JT3-FR-2H Plus 5,5xL

JT6-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL With hexagon head or FR-head and seal washer $\ge \emptyset$ 11,0 mm

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English translation prepared by DIBt



≥Ø11 Ø10.5	≥Ø11 ©	Materials Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
⊷ <u>Ø4.17</u>	FR-Head	Component I: aluminium alloy with R _{m,min} = 215 N/mm ² – EN 573
03.9	T25	Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
et ((J3))		$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 3,50 \text{ mm}$
BH (JG)	T25	<u>Timber substructures</u> for timber substructures no performance determined

t _N	,II =	2x0,	63	2x0	,75	2x0	,88	2x1	,00	2x1	,13	2x1	,25
M _{t,r}	nom =						_						
	0,40	0,77	-	0,77	ac								
	0,50	0,96	-	0,97	ac	0,99	ac	1,00	ac	1,00	ac	1,00	ac
п	0,60	1,05	-	1,06	ac	1,15	ac	1,23	ac	1,23	ac	1,23	а
Ľ,	0,70	1,14	-	1,14	ac	1,30	ac	1,46	ac	1,46	а	1,46	а
V _{R,k} for t _{N,I}	0,80	1,23	-	1,23	ac	1,46	ac	1,68	а	1,68	а	1,68	а
', '''''''''''''''''''''''''''''''''''	0,90	1,46	-	1,56	-	1,77	-	1,98	а	1,98	а	1,98	а
_	1,00	1,68	-	1,88	-	2,08	-	2,28	а	2,28	а	2,28	а
	1,20	1,68	-	1,97	-	2,26	-	2,55	а	2,55	а	-	-
	1,50	1,68	-	2,11	-	2,53	-	2,96	а	-	-	-	-
N _{R,II,k} =		1,0	1	1,7	78	2,3	31	2,8	34	2,8	34	2,8	34

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance N_{R,II,k} can be increased by 8,0%.

Self-drilling screw

JT3-2H Plus 5,5xL JT3-FR-2H Plus 5,5xL

JT6-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL With hexagon head or FR-head and seal washer $\ge \emptyset$ 11,0 mm

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English translation prepared by DIBt



≥Ø16	≥Ø16	Materials
Ø10.5	Ø12 *	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
04.17	FR-Head	Component I: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573
9 N Ø4.3		Component II: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573
05.46	13 T25	<u>Drilling capacity</u> $\Sigma t_i \le 4,20 \text{ mm}$
HA (J3)		
	725	Timber substructures
BH (J6)		for timber substructures no performance determined

t _∧	_{I,II} =	1,50		2,0	2,00		2,50		3,00	
M _{t,}	nom =				-	_				
	0,50	0,77	ac	0,77	ac	0,77	abcd	0,77	abcd	
	0,60	0,84	-	0,96	ac	0,96	ac	0,96	ac	
	0,70	0,92	-	1,15	-	1,15	ac	1,15	а	
V _{R,k} for t _{N,I} =	0,80	1,07	-	1,23	-	1,30	-	1,30	а	
<u>ē</u>	0,90	1,19	-	1,34	-	1,46	-	1,50	-	
, H, K	1,00	1,30	-	1,46	-	1,61	-	1,69	-	
_	1,20	1,53	-	1,69	-	1,84	-	2,00	-	
	1,50	2,15	-	2,23	-	2,30	-	-	-	
	2,00	2,15	-	2,23	2,23 -		-	-	-	
N _{R,II,k} =		0,6	69	1,(1,07		61	2,15		

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-3-5,5xL JT6-3-5,5xL JT3-FR-3-5,5xL JT6-FR-3-5,5xL With hexagon head or FR-head and seal washer ≥∅ 16 mm

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English translation prepared by DIBt



- 310		Materials
≥Ø16 Ø10.5	≥Ø16 Ø12 ↔	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
Ø4.17	FR-Head	Component I: aluminium alloy with R _{m,min} = 215 N/mm ² – EN 573
9		Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN } 573$
05.46		<u>Drilling capacity</u> $\Sigma t_i \le 4,20 \text{ mm}$
SH (J3)		
	T25	Timber substructures
BH (J6)		for timber substructures no performance determined

t _N	,II =	1,50		2,0	2,00		2,50		3,00	
M _{t,r}	_{iom} =				_					
	0,50	1,00	ac	1,00	ac	1,00	abcd	1,00	abcd	
	0,60	1,10	-	1,25	ac	1,25	ac	1,25	ac	
	0,70	1,20	-	1,50	-	1,50	ac	1,50	а	
V _{R,k} for t _{N,I} =	0,80	1,40	-	1,60	-	1,70	-	1,70	а	
j.	0,90	1,55	-	1,75	-	1,90	-	1,95	-	
'A'H	1,00	1,70	-	1,90	-	2,10	-	2,20	-	
_	1,20	2,00	-	2,20	-	2,40	-	2,60	-	
	1,50	2,80	-	2,90	-	3,00	-	-	-	
	2,00	2,80	-	2,90	-	-	-	-	-	
N _{R,II,k} =		0,9	90	1,4	40	2,	10	2,80		

Self-drilli	ng screw					
JT3-3-5,5xL	JT6-3-5,5xL	Annex 46				
JT3-FR-3-5,5xL	JT3-FR-3-5,5xL JT6-FR-3-5,5xL					
With hexagon head or FR-hea	d and seal washer $\ge \emptyset$ 16 mm					

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English translation prepared by DIBt



≥Ø16	≥Ø16	Materials
Ø10.5	Ø12 *	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
Ø4.17	FR-Head	Component I: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573
29 20 04.3		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
Ø5.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
BHY (J3)	(O) T25	
84 ((J6))	J6 125	<u>Timber substructures</u> for timber substructures no performance determined
		for timber substructures no performance determined

t _N	t _{N,II} =		1,50		2,00		50			
M _{t,i}	nom =									
	0,50	0,77	ac	0,77	ac	0,77	abcd			
	0,60	0,84	-	0,96	ac	0,96	а			
	0,70	0,92	-	1,15	-	1,15	а			
V _{R,k} for t _{N,I} =	0,80	1,07	-	1,23	-	1,30	-			
lo,	0,90	1,19	-	1,34	-	1,46	-			
/R.k	1,00	1,30	-	1,46	-	1,61	-			
_	1,20	1,53	-	1,69	-	1,84	-			
	1,50	2,15	-	2,23	-	2,30	-			
	2,00	2,15	-	2,23	-	-	-			
N _{R,II,k} =		2,0	00	2,9	90	3,	90			

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

 $\begin{array}{ll} JT3-3-5,5xL & JT6-3-5,5xL \\ JT3-FR-3-5,5xL & JT6-FR-3-5,5xL \\ \mbox{With hexagon head or FR-head and seal washer} \geq \ensuremath{\varnothing}\ 16,0\ \mbox{mm} \end{array}$

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English translation prepared by DIBt



≥Ø16 Ø10.5	≥Ø16 Ø12	Materials Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
2.00		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
04.17	FR-Head	Component I: aluminium alloy with R _{m.min} = 215 N/mm ² – EN 573
9 7- 04.3		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
05.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
Wei (J3)	T25	Timber substructures
BH (J6)		for timber substructures no performance determined

	t _{n,II} =	1,5	50	2,0	00	2,50				
Ν	∕I _{t,nom} =									
	0,50	1,00	ac	1,00	ac	1,00	abcd			
	0,60	1,10	-	1,25	ac	1,25	а			
	0,70	1,20	-	1,50	-	1,50	а			
Vev for t _{NU} =	, 2 0,80	1,40	-	1,60	-	1,70	-			
ŗ	0,90	1,55	-	1,75	-	1,90	-			
- - -	ž 1,00	1,70	-	1,90	-	2,10	-			
	1,20	2,00	-	2,20	-	2,40	-			
	1,50	2,80	-	2,90	-	3,00	-			
	2,00	2,80	-	2,90	-	-	-			
Ne = 1	- x'ii'.	2,0	00	2,9	90	3,	90			

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-3-5,5xL JT3-FR-3-5,5xL With hexagon head or FR-head and seal washer $\geq \varnothing$ 16,0 mm

JT6-3-5,5xL JT6-FR-3-5,5xL



≥Ø16 Ø10.5 °° °° Ø4.17 Ø4.3	≥Ø16 Ø12 FR-Head	Materials Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088 Washer: stainless steel (1.4301) - EN 10088 Component I: S280GD, S320GD or S350GD - EN 10346 Component II: S280GD, S320GD or S350GD - EN 10346
	T25	$\frac{\text{Drilling capacity}}{\text{Timber substructures}} \Sigma t_i \leq 3,50 \text{ mm}$
Here and the second sec	J6	no performance determined

	[m m]	2 x (0,63	2 x 0	,75	2 x 0	,88	2 x 1		2 x 1	,13	2 x 1	,25	2 x 1	,50	2 x 1	1,75
N	1 _{t,nom}	-	-				5 Nm						_	-			
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	-	—
	0,55	—	—	—	—	—	—	—	—	—	—	-	—	—	—	—	—
2	0,63		—	1,60	—	1,60	_	1,60	_	1,60	—	1,60	—	—	—	—	_
<u></u>	0,75	_	—	1,90	—	1,90	—	1,90	—	1,90	—	1,90	—	—	—	—	—
ţ,	0,88	—	—	2,20	—	2,20	—	2,20	—	2,20	—	2,20	—	—	—	—	—
for	1,00	—	—	2,50	—	2,50	—	2,50	—	2,50	—	2,50	—	—	—	—	—
Ξ	1,13	—	—	2,50	—	2,50	—	2,50	—	2,50	—	-	—	—	—	—	—
V _{R,k} [kN] for t _{N,I} [mm]	1,25		—	2,50	—	2,50	_	2,50	_	2,50	_	_	_	—	_	_	_
<u>چ</u>	1,50	_	_	2,50	_	2,50	_	2,50	_	—	_	—	_	—	_	—	_
	1,75		_	2,50	_	_	_	_	_		_	_	_	_	_	_	_
	2,00		_	2,50	—	_	_	_	_		_	_	_	_	—	_	_
	0,50		_	0,81	—	0,97	_	1,19	_	1,51	_	1,62	_	1,62	_	_	
	0,55	_	—	1,02	—	1,23	—	1,50	—	1,91	—	2,05	—	—	—	—	_
2	0,63	_	—	1,50	_	1,80	_	2,20	—	2,80	_	3,00	_	—	—	—	—
<u> </u>	0,75	—	—	1,50	—	1,80	—	2,20	—	2,80	—	3,20	—	—	—	—	—
ţ,	0,88	_	—	1,50	_	1,80	_	2,20	_	2,80	_	3,20	_	—	_	_	_
N _{R,k} [kN] for t _{N,I} [mm]	1,00	_	—	1,50	—	1,80	_	2,20	—	2,80	—	3,20	_	—	—	_	_
Ξ	1,13	—	_	1,50	—	1,80	_	2,20	_	2,80	_	_	_	—	—	_	_
l≚. ∵	1,25	—	—	1,50	—	1,80	—	2,20	—	2,80	—	_	—	—	—	—	—
ž	1,50	—	—	1,50	—	1,80	—	2,20	_	—	_	_	—	—	—	_	—
	1,75		_	1,50		_	_	—	_	—	_	_	_	—	_	_	_
	2,00		_	1,50		_		—	_	_	_	_	_	—	_	—	_

Self drilling screw	
JT3-3H-5,5 x L JT6-3H-5,5 x L JT3-FR-3H-5,5 x L JT6-FR-3H-5,5 x L with undercut, hexagon head or round head with Torx® drive system and sealing	Annex 49

washer ≥ Ø16 mm



≥Ø16 Ø10.5 © 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	≥Ø16 Ø12 FR-Head	Materials Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - 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
	T25	$\label{eq:star} \frac{Drilling \ capacity}{Timber \ substructures} $ no performance determined

t _{N,II} [mm] 1,00 1,13			1,25 1,50 2,00			2,5	2,50		3,00		4,00						
N	1 _{t,nom}							5 N	lm							-	-
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	-	—
	0,55	—	—		—	—	—	—	—	-	—	—	—	—	—	-	—
Ē	0,63	1,40	—	1,50	—	1,60	ac	1,90	ac	2,30	ac	2,50	ac	—	—	-	—
Ē	0,75	1,80	—	1,90	—	2,00	ac	2,20	ac	2,70	ac	3,20	а	—	_	-	—
V _{R,k} [kN] for t _{N,I} [mm]	0,88	2,20	—	2,30	—	2,50	—	2,70	—	3,30		3,70	а	—	—	—	—
for	1,00	2,50	—	2,70	—	2,90	—	3,30	—	4,00	—	4,40	а	—	—	-	—
Ŝ	1,13	2,90	—	3,00	—	3,10	—	3,80	—	4,40	—	—	—	—	—	-	—
ζ, []	1,25	3,40	—	3,50	—	3,80	—	4,20	_	5,00	—	—	—	—	—	-	—
7	1,50	4,10	—	4,40	—	4,70	—	5,30	—	5,80	—	—	—	-	—	—	—
	1,75	4,10	—	4,40	—	4,70	—	5,30	—	—	—	—	—	-	—	-	—
	2,00	4,10	—	4,40	—	4,70	—	5,30	—	—	—	—	—	—	—	—	—
	0,50	0,59	_	0,76	_	0,81	ac	1,08	ac	1,57	ac	1,62	ac	1,62	ac	—	_
	0,55	0,75	—	0,95	—	1,02	ac	1,36	ac	1,98	ac	2,05	ac	—	—	-	—
Ē	0,63	1,10	—	1,40	—	1,50	ac	2,00	ac	2,90	ac	3,00	ac	-	—	-	—
N _{R,k} [kN] for t _{N,I} [mm]	0,75	1,10	—	1,40	—	1,50	ac	2,00	ac	2,90	ac	3,90	а	-	—	-	—
ťn,	0,88	1,10	—	1,40	—	1,50	—	2,00	_	2,90	—	3,90	а	—	—	—	—
for	1,00	1,10	—	1,40	—	1,50	—	2,00	—	2,90	—	3,90	а	—	—	—	—
Ŝ	1,13	1,10	—	1,40	—	1,50	—	2,00	—	2,90	—	—	—	—	—	—	—
۶. []	1,25	1,10	—	1,40	—	1,50	—	2,00	—	2,90	_	—	—	—	—	—	—
z	1,50	1,10	—	1,40	—	1,50	—	2,00	—	2,90	—	—	—	—	—	—	—
	1,75	1,10	—	1,40	—	1,50	—	2,00	_	—	_	—	_	—	_	—	—
	2,00	1,10	—	1,40	—	1,50	—	2,00	—	—	—	—	—	—	—	—	—
	Self drilling screw																

JT3-3H-5,5 x L JT6-3H-5,5 x L JT3-FR-3H-5,5 x L

 $JT6\text{-}FR\text{-}3H\text{-}5\text{,}5 \ x \ L$ with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \emptyset16 \ mm$

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English translation prepared by DIBt



≥Ø16 Ø10.5 Ø4.17 Q4.17 Q4.2	≥Ø16 Ø12 ♥ M FR-Head	Materials Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - 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
Ø4.3 Ø5.46	13 T25 T25 16 16 16 16 17 125	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$

	[m m]	1,0	00	1,1	3	1,2	25	1,5		2,0	00	2,5	50	3,0	00	4,0	00
Ν	/I _{t,nom}							7 N	m							-	-
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	 1,40 1,80 2,10 2,50 2,90 3,40		 1,40 1,80 2,10 2,50 2,90 3,40		 1,70 2,20 2,50 2,90 3,10 3,80		 2,00 2,40 2,90 3,20 3,80 4,20		 2,50 3,00 3,30 4,00 4,40 5,00	 ac 	 2,70 3,50 3,60 4,40 	 ac a a				
>	1,50 1,75 2,00 0,50	4,10 4,10 4,10 0,59		4,10 4,10 4,10 0,59		4,70 4,70 4,70 0,81		5,30 5,30 5,30 1,08		5,80 — — 1,57	 ac	— — — 1,62	 ac	— — — 1,62	 ac	_ _ _	
N _{R,k} [kN] for t _{N1} [mm]	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	0,75 1,10 1,10 1,10 1,10 1,10 1,10 1,10 1,1		0,75 1,10 1,10 1,10 1,10 1,10 1,10 1,10 1,1		1,02 1,50 1,50 1,50 1,50 1,50 1,50 1,50 1,50		1,36 2,00 2,00 2,00 2,00 2,00 2,00 2,00 2,0		1,98 2,90 2,90 2,90 2,90 2,90 2,90 2,90 2,90	ac ac — — — — — — — — —	2,05 3,00 3,90 3,90 3,90 	ac ac a a 				
				Self	drillir	ng scre	w										
				JT JT3-	6-3-5 FR-3	5,5 x L 5,5 x L 3-5,5 x	- ‹ L					An	nex {	51			

 $JT6\text{-}FR\text{-}3\text{-}5,5 \ x \ L$ with hexagon head or round head with Torx® drive system and sealing washer \geq Ø16 mm



$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Materials
	Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088
	Washer: stainless steel (1.4301) - EN 10088
PR-Head	Component I: S280GD, S320GD or S350GD - EN 10346
	Component II: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
	<u>Drilling capacity</u> $\Sigma t_i \le 6,00 \text{ mm}$
	<u>Timber substructures</u> no performance determined

	[m m]	1,5	1,50 2,00		2,5		3,0	0	4,0	0		-	2 x 1				
N	t,nom					5 Nm					—		-	5 N	m		-
	0,50	—	—	-	—	—	—	—	—	—		—	—	—	—	-	—
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
드	0,63	2,10	ac	2,40	ac	2,60	ac	2,90	ac	2,90	ac	—	—	2,40	ac	—	—
<u>Ľ</u>	0,75	2,50	—	2,80	ac	3,10	ac	3,30	ac	3,30	ac	—	—	3,10	ac	—	_
ţ,	88,0	2,90	—	3,20	—	3,40	ac	3,70	ac	3,70	ac	—	—	3,70	ac	—	—
for	1,00	3,10	_	3,40	—	4,00	—	4,20	ac	4,20	ac	—	_	3,70	_		—
Z	1,13	3,30	—	3,80	—	4,50	—	4,60	—	4,60	—	—	_	3,70	—	_	_
V _{R.k} [kN] for t _{N.I} [mm]	1,25	3,40	_	3,90	_	4,70	_	4,90	_	4,90	_	_	_	3,70			_
≯	1,50	3,80	—	4,40	—	5,00	—	5,50	_	5,50	_	_	_	3,70	_		_
	1,75	3,80	—	4,40	—	5,00	—	5,50	—	5,50	—	_	—	3,70	—		_
	2,00	3,80	_	4,40	_	5,00	—	5,50	_	5,50			_	3,70		_	_
	0,50	0,92	ac	1,30	ac	1,30	ac	1,30	ac	1,30	ac	_	_	1,30	ac	—	
	0,55	1,16	ac	1,64	ac	1,64	ac	1,64	ac	1,64	ac	—	_	1,64	ac	—	_
Ē	0,63	1,70	ac	2,40	ac	2,40	ac	2,40	ac	2,40	ac	—	_	2,40	ac	_	—
Ľ Ľ	0,75	1,70	—	2,60	ac	2,90	ac	2,90	ac	2,90	ac	_	—	2,70	ac	_	
ţ,	0,88	1,70	_	2,60	—	3,50	ac	3,50	ac	3,50	ac	_	_	2,70	ac		_
for	1,00	1,70	_	2,60		3,50	_	4,10	ac	4,10	ac	_	_	2,70	_		
Z	1,13	1,70	_	2,60	_	3,50	_	4,10	_	4,10	_		_	2,70	_	_	_
N _{R,k} [kN] for t _{N,I} [mm]	1,25	1,70	_	2,60	_	3,50		4,10	_	4,10		—	_	2,70	_		
ž	1,50	1,70	_	2,60	_	3,50	_	4,50	_	4,50	_		_	2,70	_	_	_
	1,75	1,70	_	2,60	_	3,50	_	4,50	_	4,50	_	_	_	2,70	_	_	_
	2,00	1,70	_	2,60	_	3,50	_	4,50	_	4,50		_	_	2,70	_		

Self drilling screw	
JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	Annex 52
with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm	

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English translation prepared by DIBt



≥Ø11 Ø10.5 Ø10.5 Ø10.5 Ø12	Materials Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
	stainless steel (1.4401 / 1.4578) – EN 10088Washer:stainless steel (1.4301) – EN 10088with vulcanised EPDM seal
₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩	Component I: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573
04.5 0	Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN 573}$
Ø5.46	<u>Drilling capacity</u> $\Sigma t_i \le 6,50 \text{ mm}$
	<u>Timber substructures</u> for timber substructures no performance determined

t _N	t _{N,II} =)0	2,5	50	3,0	3,00)0
M _{t,r}	10m =				-	_			
	0,50	0,71	ac	0,71	ac	0,71	ac	0,71	ac
	0,60	0,89	ac	0,91	ac	0,93	ac	0,93	ac
	0,70	1,07	ac	1,11	ac	1,15	ac	1,15	ac
ĽN, I	0,80	1,25	ac	1,31	ac	1,36	ac	1,36	ac
j.	0,90	1,43	ac	1,51	ac	1,58	ac	1,58	ac
V _{R,k} for t _{N,I} =	1,00	1,61	ac	1,71	ac	1,80	ac	1,80	ac
_	1,20	1,80	-	1,93	-	2,06	-	2,17	ac
	1,50	2,09	-	2,27	-	2,45	-	2,72	а
	2,00	2,56	-	2,83	-	3,10	-	3,63	а
N _{R,II,k} =		1,03		1,68		2,3	33	3,63	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

 $\begin{array}{ll} JT3-6-5,5xL & JT6-6-5,5xL \\ JT3-FR-6-5,5xL & JT6-FR-6-5,5xL \\ \mbox{With hexagon head or FR-head and seal washer} \geq \ensuremath{\varnothing}\ 11,0\ \mbox{mm} \end{array}$

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English translation prepared by DIBt



ר11 Ø10.5 Ø10.5 Ø10.5 Ø10.5 Ø10.5 Ø10.5 Ø12 Ø12	Materials Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088 Washer: stainless steel (1.4301) – EN 10088
- N Ø4.17 Ø4.17 Ø4.5 Ø4.5 Ø4.5	with vulcanised EPDM seal Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN 573}$ Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN 573}$
	<u>Drilling capacity</u> $\Sigma t_i \le 6,50 \text{ mm}$
	<u>Timber substructures</u> for timber substructures no performance determined

t _N	t _{N,II} =)0	2,5	50	3,0)0	4,0)0
M _{t,r}	nom =				-	_			
	0,50	0,93	ac	0,93,	ac	0,93	ac	0,93	ac
	0,60	1,16	ac	1,19	ac	1,21	ac	1,21	ac
	0,70	1,39	ac	1,45	ac	1,50	ac	1,50	ac
	0,80	1,63	ac	1,70	ac	1,78	ac	1,78	ac
V _{R,k} for t _{N,I}	0,90	1,86	ac	1,96	ac	2,07	ac	2,07	ac
, Y'H	1,00	2,09	ac	2,22	ac	2,35	ac	2,35	ac
-	1,20	2,34	-	2,51	-	2,69	-	2,72	ac
	1,50	2,71	-	2,95	-	3,19	-	3,48	а
	2,00	3,33	-	3,68	-	4,03	-	4,73	а
N _{R,II,k} =		1,35		2,2	2,20)4	4,7	73

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

 $\begin{array}{ll} JT3-6-5,5xL & JT6-6-5,5xL \\ JT3-FR-6-5,5xL & JT6-FR-6-5,5xL \\ \mbox{With hexagon head or FR-head and seal washer} \geq \ensuremath{\varnothing}\ 11,0\ \mbox{mm} \end{array}$

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English translation prepared by DIBt



ר11 ר11 ר11	Materials
	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
	Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
04.17 04.17 FR-Head	Component I: aluminium alloy with R _{m.min} = 165 N/mm ² – EN 573
04.5 00 04.5	Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
Ø5.46 T25	<u>Drilling capacity</u> $\Sigma t_i \le 6,50 \text{ mm}$
05.46	Timber substructures
BY JG	for timber substructures no performance determined

t _N	t _{N,II} =		50	1,7	75	2,0)0	2,5	50	3,0)0	4,0)0	-	•	2x1	,50
M _{t,r}	nom =								-	_							
	0,50	0,71	ac	-	-	0,71	ac										
	0,60	0,91	ac	0,91	ac	0,91	ac	0,92	ac	0,93	ac	0,93	ac	-	-	0,91	ac
1	0,70	1,10	ac	1,11	ac	1,12	ac	1,13	ac	1,15	ac	1,15	ac	-	-	1,10	ac
ţ,	0,80	1,30	ac	1,31	ac	1,32	ac	1,34	ac	1,36	ac	1,36	ac	-	-	1,30	ac
j	0,90	1,49	ac	1,51	ac	1,53	ac	1,55	ac	1,58	ac	1,58	ac	-	-	1,49	ac
V _{R,k} for	1,00	1,69	ac	1,71	ac	1,73	ac	1,76	ac	1,80	ac	1,80	ac	-	-	1,69	ac
1	1,20	1,69	-	1,79	-	1,90	-	1,97	-	2,06	-	2,17	ac	-	-	1,69	-
	1,50	1,69	-	1,92	-	2,15	-	2,30	-	2,45	-	2,72	а	-	-	1,69	-
	2,00	1,69	-	2,13	-	2,56	-	2,83	-	3,10	-	3,63	а	-	-	1,69	-
N _{R,II,k} =	<u> </u>		70	2,1	5	2,6	50	3,5	50	4,5	50	4,5	50	-		2,7	70

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

 $\begin{array}{ccc} JT3\text{-}6\text{-}5\text{,}5xL & JT6\text{-}6\text{-}5\text{,}5xL \\ JT3\text{-}FR\text{-}6\text{-}5\text{,}5xL & JT6\text{-}FR\text{-}6\text{-}5\text{,}5xL \\ \end{array}$ With hexagon head or FR-head and seal washer $\geq \varnothing$ 11,0 mm

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English translation prepared by DIBt



ר11 ר11 ר11	Materials
	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
	Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
04.17 04.17 FR-Head	Component I: aluminium alloy with R _{m.min} = 215 N/mm ² – EN 573
04.5 00 04.5 00 00 00 00 00 00 00 00 00 00 00 00 00	Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
Ø5.46 T25	<u>Drilling capacity</u> $\Sigma t_i \le 6,50 \text{ mm}$
<u>Ø5.46</u>	Timber substructures
BE JG	for timber substructures no performance determined

t _{N,II} =		1,5	50	1,7	'5	2,0)0	2,5	50	3,0)0	4,0)0	-	•	2x1	,50
M _{t,r}	nom =								-	_							
	0,50	0,93	ac	-	-	0,93	ac										
	0,60	1,18	ac	1,19	ac	1,19	ac	1,20	ac	1,21	ac	1,21	ac	-	-	1,18	ac
П	0,70	1,44	ac	1,45	ac	1,46	ac	1,48	ac	1,50	ac	1,50	ac	-	-	1,44	ac
ţ,	0,80	1,69	ac	1,71	ac	1,72	ac	1,75	ac	1,78	ac	1,78	ac	-	-	1,69	ac
j	0,90	1,95	ac	1,97	ac	1,99	ac	2,03	ac	2,07	ac	2,07	ac	-	-	1,95	ac
V _{R,k} for	1,00	2,20	ac	2,23	ac	2,25	ac	2,30	ac	2,35	ac	2,35	ac	-	-	2,20	ac
_	1,20	2,20	-	2,32	-	2,45	-	2,58	-	2,69	-	2,72	ac	-	-	2,20	-
	1,50	2,20	-	2,45	-	2,79	-	2,99	-	3,19	-	3,48	а	-	-	2,20	-
	2,00	2,20	-	2,67	-	3,33	-	3,68	-	4,03	-	4,73	а	-	-	2,20	-
N _{R,II,k} =			70	2,1	5	2,6	60	3,5	50	4,5	50	4,5	50	-		2,7	70

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

 $\begin{array}{ll} JT3-6-5,5xL & JT6-6-5,5xL \\ JT3-FR-6-5,5xL & JT6-FR-6-5,5xL \\ \mbox{With hexagon head or FR-head and seal washer} \geq \ensuremath{\varnothing}\ 11,0\ \mbox{mm} \end{array}$

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	$\begin{array}{c} \geq \emptyset 16 \\ \emptyset 10.5 \\ \hline \\ 0 10.5 \\ \hline \\ \hline \\ FR-Head \\ \hline \\ 0 0 \\ \hline \hline \\ 0 0 \\ \hline 0 0 \\ \hline \\ 0 0 \\ \hline 0$	$\begin{tabular}{ c c c c c } \hline Materials \\ \hline Fastener: stainless steel (1.4301) - EN 10088, \\ stainless steel (1.4404) - EN 10088 \\ \hline Washer: stainless steel (1.4301) - EN 10088 \\ \hline Component I: S280GD - EN 10346 \\ \hline Component II: S235, S275 or S355 - EN 10025-1 \\ \hline \hline Drilling capacity & \Sigma t_i \leq 13,00 \mmmode mmmode mmmmode mmmode mmmmode mmmode mmmode mmmode mmmode mm$
--	--	---

	[m m]	4,0	0	5,0	0	6,0		8,0	0	10	,0	12	,0	13	B,0	14	· ,0
Ν	1 _{t,nom}						7 N	l m						-	_	-	_
	0,50	-	—	—	—	-	—	-	—	—	_	—	—	-	—	-	_
	0,55	—	—	—	—	-	—	-	—	—	—	—	—	-	—	-	—
ľ	0,63	2,20	ac	2,20	ac	2,20	ac	2,20	ac	2,20	ac	2,20	ac	-	—	-	—
Ē	0,75	2,80	ac	2,80	ac	2,80	ac	2,80	ac	2,80	ac	2,80	ac	—	—	-	—
ťn,	0,88	3,50	ac	3,50	ac	3,50	ac	3,50	ac	3,50	ac	3,50	а	-	—	-	—
for	1,00	4,20	—	4,20	ac	4,20	ac	4,20	ac	4,20	ac	4,20	а	-	—	-	—
V _{R,k} [kN] for t _{N,I} [mm]	1,13	4,20	—	4,90	—	4,90	—	4,90	—	4,90	—	-	—	-	—	-	—
Ϋ́, Η	1,25	4,20	—	5,60	—	5,60	—	5,60		5,60	—	—	—	—	—	—	—
>	1,50	4,20	—	6,40	—	7,20	—	7,20	—	7,20	—	—	—	—	—	—	—
	1,75	4,20	—	6,40	—	7,20	—	7,20	—	7,20	—	—	—	—	—	—	—
	2,00	4,20	—	6,40	—	7,20	—	7,20	—	7,20	—	—	—	—	—	—	—
	0,50	1,30	ac	1,30	ac	1,30	ас	1,30	ac	1,30	ac	1,30	ac	—	_	—	_
	0,55	1,64	ac	1,64	ac	1,64	ac	1,64	ac	1,64	ac	1,64	ac	—	—	-	—
Ē	0,63	2,40	ac	2,40	ac	2,40	ac	2,40	ac	2,40	ac	2,40	ac	-	—	-	—
N _{R,k} [kN] for t _{N,I} [mm]	0,75	3,10	ac	3,10	ac	3,10	ac	3,10	ac	3,10	ac	3,10	ac	—	—	—	—
ťn,	0,88	3,90	ac	3,90	ac	3,90	ac	3,90	ac	3,90	ac	3,90	а	—	—	—	—
for	1,00	4,70	—	4,70	ac	4,70	ac	4,70	ac	4,70	ac	4,70	а	—	—	—	—
Ŝ	1,13	4,70	—	5,60	—	5,60	—	5,60	—	5,60	—	—	—	-	—	-	—
۲. ۲	1,25	4,70	—	6,40	—	6,40	—	6,40	—	6,40	—	—	—	—	—	—	—
z	1,50	4,70	—	6,40	—	6,40	—	6,40	—	6,40	—	—	—		—	—	—
	1,75	4,70	—	6,40	—	6,40	—	6,40		6,40	—	—	—	—	—	-	—
	2,00	4,70	—	6,40	—	6,40	—	6,40		6,40	—	—	—	—	—	—	—
				Self	drillir	ng scre	w										
				JT:	3-12-	5,5 x						1					

JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm

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$\begin{array}{c} \underline{\geq} @16 \\ @10.5 \\ \hline @10.5 \\ $	MaterialsFastener:stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088Washer:stainless steel (1.4301) - EN 10088Component I:S320GD or S350GD - EN 10346Component II:S235, S275 or S355 - EN 10025-1
	$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 13,00 \text{ mm}$ $\underline{\text{Timber substructures}}$
	no performance determined

	[m m]	4,0	0	5,0	0	6,0		8,0	0	10	,0	12	,0	13	3,0	14	,0
M	l _{t,nom}						7 N	۱m						_	_	_	_
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—	—		—	-	—	—	—	—	—
2	0,63	2,50	ac	2,50	ac	2,50	ac	2,50	ac	2,50	ac	2,50	—	—	—	—	—
<u>Ē</u>	0,75	3,20	ac	3,20	ac	3,20	ac	3,20	ac	3,20	ac	3,20	—	—	—	-	—
ţ,	0,88	3,90	ac	3,90	ac	3,90	ac	3,90	ac	3,90	ac	3,90	—	-	—	-	—
l ja	1,00	4,20	—	4,60	ac	4,60	ac	4,60	ac	4,60	ac	4,60	—	-	—	-	—
Σ	1,13	4,20	—	5,30	—	5,30	—	5,30	—	5,30	—		—	-	—	-	—
V _{R,k} [kN] for t _{N,I} [mm]	1,25	4,20	—	6,00	—	6,00	—	6,00	—	6,00	—	-	—	—	—	-	—
>	1,50	4,20	—	6,40	—	7,20	—	7,60	—	7,60	—	-	—	—	—	—	—
	1,75	4,20	—	6,40	—	7,20	—	7,60	—	7,60	—	-	—	—	—	-	—
	2,00	4,20		6,40	—	7,20		7,60	_	7,60	—	-	—	—	—	—	
	0,50	1,40	ac	1,40	ac	1,40	ac	1,40	ac	1,40	ac	1,40	—	—	—	-	—
	0,55	1,77	ac	1,77	ac	1,77	ac	1,77	ac	1,77	ac	1,77	—	—	—	-	—
Έ	0,63	2,60	ac	2,60	ac	2,60	ac	2,60	ac	2,60	ac	2,60	—	-	—	-	—
트	0,75	3,30	ac	3,30	ac	3,30	ac	3,30	ac	3,30	ac	3,30	—	-	_	-	_
N _{R,k} [kN] for t _{N,I} [mm]	0,88	4,20	ac	4,20	ac	4,20	ac	4,20	ac	4,20	ac	4,20	_	—	—	-	—
<u>ē</u>	1,00	4,70	—	5,00	ac	5,00	ac	5,00	ac	5,00	ac	5,00	_	—	_	-	—
Z.	1,13	4,70	—	6,00	—	6,00	—	6,00	_	6,00	_	-	—	_	—	-	—
ж,	1,25	4,70	—	6,90	—	6,90	—	6,90	—	6,90	—	-	—	-	—	-	—
Z	1,50	4,70	—	6,90	—	6,90	—	6,90	—	6,90	—	-	—	-	—	-	—
	1,75	4,70	—	6,90	—	6,90	—	6,90	_	6,90	—	-	—	-	—	-	_
	2,00	4,70	—	6,90	—	6,90	_	6,90	—	6,90	—	—	—	—	—	—	—
					.1.202							T					

Self drilling screw	
JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	Annex 58
with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm	

Z56764.13



≥Ø11 Ø10.5 Ø4.17 Ø4.17 Ø5.0 Ø5.46	04.17 94.17	11 10.5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	2011 012 T25	Compor	er: .: nent capa sub:	stainless stainless with vulo t: aluminiu with R _m , t II: aluminiu with R _m ,	s steel (1.4 s steel (1.4 canised EF im alloy min = 165 N m alloy $\Sigma t_i \le 13,00$	401 / 1 301) – PDM se I/mm ² - I/mm ² -	. 457 EN 1 al - EN - EN	573 573		
	t _{n,II} =	4,00	5,00	6,00)	8,00	10,00	12,	00			
	M _{t,nom} =											
	0,60 0,70 0,70 1,2 0,90 1,00 1,20 1,20 1,50	0,77 ac 0,94 ac 1,10 ac 1,27 ac 1,48 ac 1,69 ac 1,94 - 2,32 - 2,91 -	0,77 ac 0,94 ac 1,10 ac 1,27 ac 1,48 ac 1,69 ac 1,94 - 2,32 - 3,00 -	0,94 1,10 1,27 1,48	ac ac ac ac ac ac - -	0,77 ac 0,94 ac 1,10 ac 1,27 ac 1,48 ac 1,69 ac 1,94 ac 2,32 ac 3,26 ac	0,77 ac 0,94 ac 1,10 ac 1,27 ac 1,48 ac 1,69 ac 1,94 ac 2,32 ac 3,26 a	0,77 0,94 1,10 1,27 1,48 1,69 - - - -	ac a a a a			
	N _{R,II,k} =	1,11	1,58	2,21	1	3,48	3,48	3,4	48			
Pull-through ree manufacturer of	the alumir		al sheeting.	o EN 199	9-1-	4, chapter 8.	3.3.1 or spe	cificatio	ons of	the		
	JT3-12- 3-FR-12- exagon head		JT6-12- JT6-FR and seal wash	-12-5,5>		n	Annex	Annex 59				



≥Ø11 Ø10.5 Ø4_17 Ø4_17 Ø5.0 Ø5.0 Ø5.46	AF8			F	≥Ø11 Ø12 R-Head	34	Materi Faster Washe Compo Compo Drilling Timbe for tim	ner: pr: ponent onent <u>a cap</u>	sta sta with I: alu with II: alu with acity structu	inless inless h vulo miniu h R _m , miniu h R _m ,	s steel s steel canise im allo min = 2 im allo $\min = 2$ $\Sigma t_i \le 1$	(1.4 (1.4 d EP y 15 N y 15 N 3,00	401 / 1 301) – DM se /mm ² - /mm ² - mm	.457 EN 1 al - EN - EN	573	
	V _{R,k} for t _{N,I} =	n = 0,50 0,60 0,70 0,80 0,90 1,00 1,20 1,50	4,0 1,22 1,44 1,66 1,93 2,20 2,52 3,02 3,79 1,4	ac ac ac ac ac ac - -	5,0 1,00 1,22 1,44 1,66 1,93 2,20 2,52 3,02 3,91 2,0	ac ac ac ac ac ac - -	6,0 1,00 1,22 1,44 1,66 1,93 2,20 2,52 3,02 4,02 2,8	ac ac ac ac ac ac ac - -	8,0 1,00 1,22 1,44 1,66 1,93 2,20 2,52 3,02 4,25 4,25	ac ac ac ac ac ac ac ac ac ac	10, 1,22 1,44 1,66 1,93 2,20 2,52 3,02 4,25 4,25	ac ac ac ac ac ac ac ac ac ac a	12, 1,00 1,22 1,44 1,66 1,93 2,20 - - - - - 4,5	ac a a a a		
	JT3- 3-FR-	umini •12-{ •12-{	um stru Self-dr 5,5xL 5,5xL	illing	g scre JT6- JT6-	ting. w -12-{ -FR-	5,5xL 12-5,5 er ≥ Ø 1	ōxL		ter 8.	-	r spec		ns of	the	



04.17 81 81	Ø4.1	I	0.5 0.5 0.5	E.G	≥Ø11 Ø12 R-Head	3.4	<u>Materi</u> Faster Washe Compe Compe	ner: or: onent	sta sta witi I: alu witi II: S2: S2:	inles: inles: h vulo miniu h R _{m,} 35 –	s steel s steel canise um allo min = 1 EN 10	(1.4 (1.4 d EP y 65 N 025- 0GD	– EN ⁻	.4578 EN 1 al - EN	3) – E 0088 573	N 100	
€ Ø5.0 Ø5.46	AF8						<u>Timbe</u> for tim				s no p	erfor	mance	dete	rmine	d	
		,II =	4,0	00	5,0	00	6,0	00	8,0	00	10,	00	12,	00			
	$V_{R,II,k} = V_{R,k}$ for $t_{N,I} = \frac{1}{2}$	0,60 0,70 0,80 0,90 1,00 1,20 1,50	0,77 0,94 1,10 1,27 1,48 1,69 1,94 2,32 2,91 4,7	ac ac ac ac ac - - - - -	0,77 0,94 1,10 1,27 1,48 1,69 1,94 2,32 3,00	ac ac ac ac ac - - - -	0,77 0,94 1,10 1,27 1,48 1,69 1,94 2,32 3,09 6,4	ac ac ac ac ac ac ac - -	0,77 0,94 1,10 1,27 1,48 1,69 1,94 2,32 3,26	ac ac ac ac ac ac ac ac ac ac	0,77 0,94 1,10 1,27 1,48 1,69 1,94 2,32 3,26	ac ac ac ac ac ac ac ac ac a	0,77 0,94 1,10 1,27 1,48 1,69 - - - - 6,4	ac a a a - -			

Self-drilling screw

 $\begin{array}{ll} JT3\text{-}12\text{-}5\text{,}5xL & JT6\text{-}12\text{-}5\text{,}5xL \\ JT3\text{-}FR\text{-}12\text{-}5\text{,}5xL & JT6\text{-}FR\text{-}12\text{-}5\text{,}5xL \\ \end{array}$ With hexagon head or FR-head and seal washer $\geq \varnothing$ 11,0 mm



≥Ø11 Ø10.5 © 24_17 91 92	04.17 91		≥Ø11 Ø12 ₩ R-Head	Materials Fastener: Washer: Component Component	stainles stainles with vulue t I: aluminiu with R _m , t II: S235 – S280GE	s steel (1.44 s steel (1.43 canised EP im alloy min = 215 N/ EN 10025-1	401 / 1.4578 301) – EN 1 DM seal /mm ² – EN 1 – EN 10346	573
25.0	Will Will Will Will Will Will Will Will	J6) (*	Timber sub for timber s		s no perforr	mance dete	rmined
ľ	t _{N,II} =	4,00	5,00	6,00	8,00	10,00	12,00	ľ
	M _{t,nom} =			-	- 			
	0,60 0,70 1,20 0,90 0,90 1,20 1,20 1,20 2,00	1,00 ac 1,22 ac 1,44 ac 1,66 ac 1,93 ac 2,20 ac 2,52 - 3,02 - 3,79 -	1,00 ac 1,22 ac 1,44 ac 1,66 ac 1,93 ac 2,20 ac 2,52 - 3,02 - 3,91 -	1,44 ac 1,66 ac 1,93 ac	1,00ac1,22ac1,44ac1,66ac1,93ac2,20ac2,52ac3,02ac4,25ac	1,00ac1,22ac1,44ac1,66ac1,93ac2,20ac2,52ac3,02ac4,25a	1,00 ac 1,22 a 1,44 a 1,66 a 1,93 a 2,20 a 	
	N _{R,II,k} =	4,70	6,40	6,40	6,40	6,40	6,40	

Self-drilling screw

 $\begin{array}{ll} JT3\text{-}12\text{-}5\text{,}5xL & JT6\text{-}12\text{-}5\text{,}5xL \\ JT3\text{-}FR\text{-}12\text{-}5\text{,}5xL & JT6\text{-}FR\text{-}12\text{-}5\text{,}5xL \\ \end{array}$ With hexagon head or FR-head and seal washer $\geq \varnothing$ 11,0 mm

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English translation prepared by DIBt



<u>≥Ø16</u> Ø13	<u>Materials</u>
	Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088
	Washer: stainless steel (1.4301) - EN 10088
Ø4.88	Component I: S280GD, S320GD or S350GD - EN 10346
w w w w w w w w w w w w w w w w w w w	Component II: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
<u> </u>	<u>Drilling capacity</u> Σt _i ≤ 6,50 mm
BY W J J G J G	<u>Timber substructures</u> no performance determined
t [mm]] 150 200 250	

	[m m]	1,5	50	2,	00	2,	50	3,	00	4,	00	5,0	00	6,0	0	7,0	00
N	1 _{t,nom}		-						7 N							-	-
	0,50	—	_	1,80	abcd	1,80	abcd	1,80	abcd	1,80	abcd	1,80	abc	1,80	а	—	—
	0,55	—	—	2,20	abcd	2,20	abcd	2,20	abcd	2,20	abcd	2,20	abc	—	—	—	—
-	0,63	—	—	2,60	abcd	2,60	abcd	2,60	abcd	2,60	abcd	2,60	abc	—	—	—	—
<u></u>	0,75	—	—	3,40	ac	3,40	ac	3,40	ac	3,40	ac	3,40	ac	—	—	—	—
ţ,	0,88	—	—	3,80	ac	3,90	ac	4,10	ac	4,10	ac	4,10	а	—	—	—	—
٦	1,00	—	—	4,20	ac	4,40	ac	4,70	ac	4,70	ac	4,70	а	—	—	—	_
Ī	1,13	—	—	4,70	ac	5,00	ac	5,40	ac	5,70	ac	5,70	а	—	—	—	—
V _{R,k} [kN] for t _{N,I} [mm]	1,25	—	—	5,10	ac	5,50	ac	6,00	ac	6,60	ac	6,60	а	—	—	—	—
>	1,50	—	_	5,70	ac	6,40	ac	7,00	ac	7,50	а	7,90	а	—	—	—	_
	1,75	—	—	5,70	ac	6,40	ac	7,00	ac	7,50	—	_	—	—	—	—	_
	2,00	—	—	5,70	ac	6,40	ac	7,00	ac	7,50	—	—	—	—	—	—	_
	0,50	_	_	1,50	abcd	1,50	abcd	1,50	abcd	1,50	abcd	1,50	abc	1,50	а	—	—
	0,55	—	—	2,10	abcd	2,10	abcd	2,10	abcd	2,10	abcd	2,10	abc	—	—	—	—
2	0,63	—	—	2,70	abcd	2,70	abcd	2,70	abcd	2,70	abcd	2,70	abc	—	—	—	_
<u></u>	0,75	—	—	3,00	ac	3,70	ac	3,70	ac	3,70	ac	3,70	ac	—	—	—	_
ţ,	0,88	—	—	3,00	ac	4,20	ac	4,20	ac	4,20	ac	4,20	а	—	—	—	_
fo	1,00	—	—	3,00	ac	4,20	ac	4,70	ac	4,70	ac	4,70	а	—	—	—	_
N _{R,k} [kN] for t _{N,I} [mm]	1,13	—	—	3,00	ac	4,20	ac	4,80	ac	5,60	ac	5,60	а	_	—	—	_
۲.	1,25	—	_	3,00	ac	4,20	ac	4,80	ac	6,40	ac	6,40	а	—	—	—	_
ΪŽ	1,50	—	—	3,00	ac	4,20	ac	4,80	ac	8,30	а	8,30	а	_	—	—	_
	1,75	—	—	3,00	ac	4,20	ac	4,80	ac	8,30	—	—	—	—	—	—	_
	2,00	—	_	3,00	ac	4,20	ac	4,80	ac	8,30	—	_	_	—	_	—	—

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

 $\label{eq:JT3-6-6,3 x L} JT6-6-6,3 x L$ with hexagon head and sealing washer \geq Ø16 mm

0,63 0,80

0,75 0,80

0,88 0,80

1,00 0,80

1,13 0,80

1,25 0,80

0,80

1,50

1,75 2,00

N_{R,k} [kN] for t_{N,I} [mm]

1,00

1,00

1,00

1,00

1,00

1,00

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Ø				+ +++++++++++++++++++++++++++++++++++	<u>Ø4.</u>				Comp	ner: er: ponent	st st I: S II: S S	ainles ainles 280GI 235 - I	s ste s ste D - El EN 1 D, S3	el (1.4 el (1.4 N 103 0025- 20GE	4404 4301) 46 1 9 or S	/ 1.45 - EN	78) - 1008	EN 10088 EN 10088 88 EN 10346			
					9		 Ø4		$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 2,00 \text{ mm}$												
<u>Ø</u> 4 Ø6			AF8	J6			Ø).5 - - - - - - - - -		- 9	e det ,742	ermin		ith or	l _{ef} ≥ 2	26,0 r	nm				
t _{N.II}	[mm]	0,6	33	0,7	75	0,8	38	1.	00	1,1	3	1,2	25	1,5	50	2,0	00		7		
	I _{t,nom}					,		3 N							-		_				
V _{R,k} [kN] for t _N , [mm]	0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00	1,30 1,30 1,30								 1,30 1,80 2,60 0,86											
	0,55		_	0,68	_	0,89	_	1,09	_	1,09	_	1,09	_	- ·	_	_	_	1,50			

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 section 4.2.2.

Self drilling screw

1,30

1,30

1,30

1,30

1,30

_

_

_

1,60

1,60

1,60

1,60

_

1.60

1,60

1,60

1,60

1,60

JT3-2-6,5 x L JT6-2-6,5 x L with hexagon head and sealing washer $\geq Ø16$ mm

Annex 64

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_

5,90 ln

of component l



~	6 8 2,54 2		16 5 08 Ø4,3 Ø6,5	0 2		SW8 59 21,54 AM MANUN		<u>Material</u> Fastene Washer Compor Compor Drilling <u>Drilling</u> Timber perform M _{y,Rk} = f _{ax,k} =	substrue ance de 9,742	stainles: stainles: S280GE structura <u>/</u> ctures etermine	s steel (s steel (D - EN al timbe $\Sigma t_i \le 2,$	r – EN '	/ 1.457 - EN 1 14081	8) – EN	
		, =	32	38	42	48	52	58	62	68	72	78	82		
		nom =						_						/	
		0,50	_	-			_	-	—	—	-	-	-	-	
		0,55	—	-	-	-	-	-	-	-	-	-	-	-	of
		0,63 0,75	1,30 1,80	1,30 1,80	1,30 1,80	1,30 1,80	1,30 1,80	1,30	1,30 1,80	1,30 1,80	1,30 1,80	1,30 1,80	1,30 1,80	1,30 1,80	bearing resistance of component l
	<u> </u>	0,75 0,88	1,80 2,04	2.10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,60	2,60	stan ent l
	V _{R,k} for t _{N,I} =	1,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,40	2,54	2,60	2,60	3,30	ıring resistar component l
	я,к fc	1,13	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,30	ug r
	2	1,25	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,30	earii co
		1,50		2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,30	þе

	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	e
Ш	0,75	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	resistance oonent l
Ľ.	0,88	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,60	2,60	tring resistan component l
V _{R,k} for t _{N,I}	1,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,30	Son
'n,k1	1,13	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,30	<u>B</u>
~	1,25	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,30	bearing com
	1,50	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,30	ă
	1,75	—	—	—	—	—	—	—		—	—	—	—	
	2,00	—		—	—	—	—	—		—	_	—	—	
	0,50	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	
	0,55	1,30	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	of
	0,63	1,30	1,56	1,81	2,06	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	
Ш	0,75	1,30	1,56	1,81	2,06	2,31	2,56	2,80	2,80	2,80	2,80	2,80	2,80	resistance onent l
t,	0,88	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,50	3,50	3,50	sist Ien
N _{R,k} for t _{N,I}	1,00	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	4,20	
Ч п,к	1,13	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,00	luo
2	1,25	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,90	c tro
	1,50	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,90	pull-trough comp
	1,75	—	—	—	—	—	—	—	—	—	—	—	-	<u>م</u>
	2,00	_	—	—	—	—	—	—	—	—	—	—	_	

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

Self drilling screw

JT3-2-6,5 x L JT6-2-6,5 x L with hexagon head and sealing washer $\geq Ø$ 16 mm

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English translation prepared by DIBt



	$\begin{tabular}{ c c c c c c c } \hline \underline{Materials} \\ \hline Fastener: & stainless steel (1.4301 / 1.4567) - EN 10088 \\ stainless steel (1.4401 / 1.4578) - EN 10088 \\ \hline Washer: & stainless steel (1.4301) - EN 10088 \\ & with vulcanised EPDM seal \\ \hline Component I: aluminium alloy \\ & with R_{m,min} = 165 \ N/mm^2 - EN 573 \\ \hline Component II: timber - EN 14081 \\ \hline \end{tabular}$
φ4,7 φ4,7 φ4,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5 φ6,5	$\label{eq:star} \begin{array}{ c c c } \hline \underline{Drilling\ capacity} & \Sigma t_i \leq 2,00\ \text{mm} \end{array}$

	l _g =	33,	00	36,0	00	39,0	00	42,	00	45,	00	48,	00	51,0	00	54,	00	60,	00		/
	t,nom =										-										
	0,50	0,54	-	0,54	-	0,54	-	0,54	-	0,54	-	0,54	-	0,54	-	0,54	-	0,54	-	0,54	_
	0,60	0,74	-	0,74	-	0,74	-	0,74	-	0,74	-	0,74	-	0,74	-	0,74	-	0,74	-	0,74	ţ
"	0,70	0,93	-	0,93	-	0,93	-	0,93	-	0,93	-	0,93	-	0,93	-	0,93	-	0,93	-	0,93	θuθ
ļ	0,80	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	
Πē	0,90	1,25	-	1,25	-	1,25	-	1,25	-	1,25	-	1,25	-	1,25	-	1,25	-	1,25	-	1,25	cor
V _{R.k} for	1,00	1,30	-	1,37	-	1,37	-	1,37	-	1,37	-	1,37	-	1,37	-	1,37	-	1,37	-	1,37	o be
>	1,20	1,30	-	1,45	-	1,60	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	nre
	1,50	1,30	-	1,45	-	1,60	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	ailt
	2,00	1,30	-	1,45	-	1,60	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	t
	N _{R,II,k} =	1,1	2	1,2	5	1,3	8	1,5	51	1,6	64	1,7	7	1,9	90	2,0)3	2,1	6	failure of component II	see chapter 4.2.2

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting. The values indicated above, depending on the screw depth I_{g} , shall apply to $k_{mod} = 0.90$ and the timber strength class

C24 (ρ_k = 350 kg / m³). For other values of k_{mod} and strength classes see chapter 4.2.2 For k_{mod} < 0,90: failure of component I see right column and failure of component II see chapter 4.2.2 with f_{1,k} = 80 \cdot 10⁻⁶ \cdot ρ_k^2 (load carrying class 3, ρ_k in kg/m³, max. 500 kg/m³) and yield moment M_{y,k} = 13830 Nmm.

Self-drilling screw

With hexagon head and seal washer $\geq \emptyset$ 16,0 mm

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English translation prepared by DIBt



≥ 0.16 0.10,5 0.05	Materials Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
	stainless steel (1.4401 / 1.4578) – EN 10088
	Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
	Component I: aluminium alloy
7.5.5 °	with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN } 573$ Component II: timber - EN 14081
Ø4,7 8 Ø6,5	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
	Timber substructures
Ø4,5	for timber substructures following performance were determined
Ø6,5	

	l _g =	33,	00	36,0	00	39,0	00	42,	00	45,	00	48,	00	51,	00	54,	00	60,	00		/
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	١
	0,60	0,96	-	0,96	-	0,96	-	0,96	-	0,96	-	0,96	-	0,96	-	0,96	-	0,96	-	0,96	, ut
	0,70	1,21	-	1,21	-	1,21	-	1,21	-	1,21	-	1,21	-	1,21	-	1,21	-	1,21	-	1,21	onent
Ľ,	0,80	1,30	-	1,45	-	1,47	-	1,47	-	1,47	-	1,47	-	1,47	-	1,47	-	1,47	-	1,47	d (g
l j	0,90	1,30	-	1,45	-	1,60	-	1,63	-	1,63	-	1,63	-	1,63	-	1,63	-	1,63	-	1,63	
V _{R,k} for	1,00	1,30	-	1,45	-	1,60	-	1,75	-	1,78	-	1,78	-	1,78	-	1,78	-	1,78	-	1,78	of (be
>	1,20	1,30	-	1,45	-	1,60	-	1,75	-	1,90	-	2,05	-	2,20	-	2,22	-	2,22	-	2,22	ure
	1,50	1,30	-	1,45	-	1,60	-	1,75	-	1,90	-	2,05	-	2,20	-	2,22	-	2,22	-	2,22	
	2,00	1,30	-	1,45	-	1,60	-	1,75	-	1,90	-	2,05	-	2,20	-	2,22	-	2,22	-	2,22	f
	N _{R,II,k} =	1,1	2	1,2	25	1,3	8	1,5	51	1,6	64	1,7	7	1,9	10	2,0)3	2,1	6	failure of component II	see chapter 4.2.2

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

The values indicated above, depending on the screw depth I_{a} shall apply to $k_{mod} = 0.90$ and the timber strength class C24 (ρ_k = 350 kg / m³). For other values of k_{mod} and strength classes see chapter 4.2.2

For $k_{mod} < 0.90$: failure of component I see right column and failure of component II see chapter 4.2.2 with $f_{1,k} = 80 \cdot 10^{-6} \cdot \rho_k^2$ (load carrying class 3, ρ_k in kg/m³, max. 500 kg/m³) and yield moment M_{y,k} = 13830 Nmm.

Self-drilling screw

JT3-2-6,5xL JT6-2-6,5xL

With hexagon head and seal washer $\geq \emptyset$ 16,0 mm

0,50

0,55

N_{R,k} [kN] for t_{N,I} [mm]

0,63 0,80

0,75 0,80

0,88 0,80

1,00 0,80

1,13 0,80

1,25 0,80

1,50 0,80

1,75

2,00

0,43

0,55

_

0,54

0,68

1,00

1,00

1,00

1,00

1,00

1,00

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≥Ø16 Ø10.5 © Ø4.7 Ø4.7 Ø4.3 Ø6.5 Ø4.3	2016 010.5 0 0 0 0 0 0 0 0 0 0 0 0 0	Timber substructures performance determined with
t _{N,II} [mm] 0,63	0,75 0,88	1,00 1,13 1,25 1,50 2,00
M _{t,nom}		3 Nm –
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{vmatrix} 1,80 & - & 2,00 & - & 2, \\ 1,80 & - & 2,60 & - & 2, \end{vmatrix}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

The values listed above in dependence on the screw-in length lef are valid for kmod = 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 section 4.2.2.

0,86

1,09

1,60

1,60

1,60

0,86

1,09

1,60

1,60

0,86

1,30

1,64

6,30 ln

of component l

Self drilling screw

0,70

0,89

1,30

1,30

1,30

1,30

1,30

_

_

_

_

0,86

1,09

1,60

1,60

1,60

1,60

_

_

_

JT3-2-6,5 x L JT6-2-6,5 x L with hexagon head and sealing washer ≥ Ø16 mm

2,00



	\$\$4,7 \$\$\$ \$\$\$ \$\$\$ \$\$\$ \$\$\$ \$\$\$ \$\$\$ \$\$\$ \$\$ \$\$						$\frac{Material}{Fastene}$ $Washer$ $Compor$ $Compor$ $\frac{Drilling}{Drilling}$ $\frac{Timber}{fax,k} =$	r: s hent I: s capacity substrue ance de 9,742	stainless stainless S320GE structura <u>2</u> ctures stermine	s steel (s steel () or S35 al timbe $\Sigma t_i \le 2, 0$	1.4401 1.4301) 50GD – r – EN	14081	8) – EN 0088		
	l _g =	32	38	42	48	52	58	62	68	72	78	82			
	1 _{t,nom} = 0,50	_	_	_		_		_	_	_		_	_		
	0,55	_	_	_	_	_	_	_	_	_	_	_	_		
	0,63	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	e of	
l II	0,75	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	ano	
V _{R.k} for t _{N.I} =	0,88	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	2,80	ring resistan component l	
k for	1,00		2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,30	g re	
>	1,13 1,25	2,04 2,04	2,10 2,10	2,17 2,17	2,23 2,23	2,29 2,29	2,35 2,35	2,42 2,42	2,48 2,48	2,54 2,54	2,60 2,60	2,67 2,67	3,30 3,30	bearing resistance of component l	
	1,25 1,50	2,04 2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,40 2,48	2,54	2,60	2,67	3,30	be	
	1,75														
	2,00				_						_				
	0,50	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30		
	0,55	1,30	1,56	1,64	1,64	1,64	1,64	1,64	1,64	1,64	1,64	1,64	1,64	ot	
	0,63	1,30	1,56	1,81	2,06	2,31	2,40	2,40	2,40	2,40	2,40	2,40	2,40	ec	
"	0,75 0,88	1,30 1,30	1,56 1,56	1,81 1,81	2,06 2,06	2,31 2,31	2,56 2,56	2,81 2,81	3,06 3,06	3,10 3,31	3,10 3,56	3,10 3,80	3,10 3,80	star int l	
N _{R.k} for t _{N.I}	1,00		1,56	1,81	2,00	2,31	2,56	2,81	3,00	3,31	3,56	3,80	4,60	ough resista component l	
, F	1,13	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,50	gh mp	
Ī	1,25	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	6,30	C C	
	1,50	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	6,30	pull-trough resistance of component l	
	1,75	—	—	—	—	—	-	_	_	—	—	—	—	٩	

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

Self drilling screw

JT3-2-6,5 x L JT6-2-6,5 x L with hexagon head and sealing washer $\geq \emptyset$ 16 mm

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English translation prepared by DIBt



Materials

 Fastener:
 stainless steel (1.4529) - 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

Predrill diameter see table below

Timber substructures

performance determined with

 $M_{y,Rk} = 9,742 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2 \text{ for } I_{ef} \ge 26,$

or l _{ef} ≥ 26,0 mm	
------------------------------	--

t _{N,I}	_l [mm]	0,6	33	0,7	75	0,8	88	1,0	0	1,1	3	1,2	25	1,5	i0	2,0	0		
	յ [mm]	ø3	3,5	ø 4	·,0				ø	4,5				ø 5	,0	ø 5	i,3		
	VI _{t,nom}			_		3 N	m							5 N	m				
	0,50	—	—	—	—		—	—	—	-	—	—	—		—	-	—	-	
	0,55	—	—	—	—	—	—		—	—	—	—	—	—	—	-	—	—	
17	0,63	1,30		1,50	—	1,80	—	2,00	ac	2,30	ас	2,50	ac	2,90	ac	2,90	ас	2,90	e l
Ē	0,75	1,40	—	1,60	—	1,90	—	2,20	ac	2,50	ac	2,70	ac	3,10	ac	3,10	ac	3,10	ntl
Ţ	88,0	1,50	—	1,70	—	2,00	—	2,30	—	2,60	—	2,80	ac	3,20	ac	3,20	ac	3,20	resistano ponent l
fo	1,00	1,50	—	1,80	—	2,10	—	2,50	—	2,80	—	3,10	—	3,60	—	3,60	—	3,60	npo
ĮŹ	1,13	1,60	—	1,80	—	2,20	—	2,60	—	2,90	—	3,20	—	3,80	—	3,80	—	3,80	ing resistand component l
V _{R.k} [kN] for t _{N,I} [mm]	1,25	1,60	—	1,90	—	2,30	—	2,70	—	3,00	—	3,30	—	4,00	—	4,00	—	4,00	earing of com
>	1,50	1,60	—	1,90	—	2,40	—	2,80	—	3,20	—	3,50	—	4,00	—	4,00	—	4,00	ā
	1,75	1,60	—	1,90	—	2,40	—	2,80	—	3,20	—	3,50	—	4,00	—	4,00	—	4,00	
	2,00	1,60		1,90		2,40	_	2,80		3,20		3,50		4,00	_	4,00	_	4,00	
	0,50	0,49	-	0,59	-	0,70		0,76	ac	0,86	ac	0,97	ac	1,13	ac	1,13	ac	1,19	
	0,55	0,61	—	0,75	—	0,89	—	0,95	ac	1,09	ac	1,23	ac	1,43	ac	1,43	ac	1,50	
12	0,63	0,90	—	1,10	—	1,30	—	1,40	ac	1,60	ac	1,80	ac	2,10	ac	2,10	ac	2,20	stance nt I
Ē	0,75	0,90	—	1,10	—	1,30	—	1,40	ac	1,60	ac	1,80	ac	2,10	ac	2,10	ac	2,80	sta ht l
Ę	88,0	0,90	—	1,10	—	1,30	—	1,40	—	1,60	—	1,80	ac	2,10	ac	2,10	ac	3,50	ough resist component
for	1,00	0,90	—	1,10	—	1,30	—	1,40	—	1,60	—	1,80	—	2,20	—	2,20	—	4,20	r de
ĮŹ	1,13	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90		2,30	—	2,30	—	5,00	Sno
N _{R,k} [kN] for t _{N,I} [mm]	1,25	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	5,90	ام أ
z	1,50	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	5,90	Ind
	1,75	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	5,90	<u> </u>
	2,00	1,00	_	1,20		1,40	—	1,50		1,70	—	1,90		2,30	—	2,30	_	5,90	

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 ($\rho_a = 350 \text{ kg/m}^3$). For other combinations of k_{mod} and timber strength grades see section 4.2.2.

Self tapping screw

 $JA1\text{-}6,5 \ x \ L$ with hexagon head and sealing washer $\geq \varnothing16 \ mm$



	anthruthing high the state			2,54 2,54 2,6,5		SW 3/8"	$\frac{Material}{Fastene}$ Washer Compor Compor $\frac{Predrill}{fax,k} = f_{ax,k} = 0$	er: s nent I: s nent II: s <u>diamete</u> substrue ance de 9,742	stainless S280GE structura er ctures stermine	s steel (), S320 al timbe see tab	1.4304 GD or S r – EN	14081 w	0088	10346
	g =	26	31	36	41	46	51	56	61	66	71	76		/
-	[mm]						Ø4,5 mn	n					/	
IVI _{t,r}	_{nom} = 0,50	_	_	_	_	_		_	_	_	_	_	_	
	0,55	_	_	_		_	_	_	_	—	_	_	_	
	0,63	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	2,90	bearing resistance of component l
Ш	0,75	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,10	tanc ht l
tr,	0,88	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,20	sist
V _{R,k} for t _{N,I}	1,00	2,04 2,04	2,10	2,17 2,17	2,23	2,29 2,29	2,35 2,35	2,42	2,48 2,48	2,54 2,54	2,60 2,60	2,67 2,67	3,60 3,80	tring resistar component l
N, N	1,13 1,25	2,04 2,04	2,10 2,10	2,17	2,23 2,23	2,29	2,35	2,42 2,42	2,40 2,48	2,54 2,54	2,60	2,67	4,00	arin cor
	1,50	2,04 2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	4,00	be
	1,75	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	4,00	
	2,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	4,00	
	0,50	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	
	0,55	1,30	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	of
	0,63	1,30	1,56	1,81	2,06	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	Jce
" 	0,75 0,88	1,30 1,30	1,56 1,56	1,81 1,81	2,06 2,06	2,31 2,31	2,56 2,56	2,80 2,81	2,80 3,06	2,80 3,31	2,80 3,50	2,80 3,50	2,80 3,50	star nt I
or t _N	1,00	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06 3,06	3,31	3,50	3,81	4,20	resi
N _{R,k} for t _{N,I}	1,13	1,30	1,56	1,81	2,00	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,00	ough resista component
Z	1,25	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,90	co co
	1,50	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,90	pull-trough resistance of component l
	4 70	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,90	d
	1,75 2,00	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,90	

The values listed above in dependence on the screw-in length I_g are valid for k $_{mod}$ = 0,90 and timber strength grade C24 (ρ_k = 350 kg/m³). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self tapping screw

JA1-6,5 x L

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



	1.8			.88			0 0 0 0 0 0 0 0 0 0 0 0 0 0	88 25	Comp <u>Predr</u> <u>Timbe</u>	ner: er:	sta I: S2 II: S2 S2 <u>neter</u>	inless 80GD 35 - E 80GD 	steel , S320 N 100 , S320 see ta	(1.430 DGD o)25-1	01) - E r S350 r S350	EN 100 EN 100 0GD - 0GD -)88 EN 1(
t,	1,II [[mm]	1,2	:5	1,5	50	2,	00	3,	00	4,	00	6,	00	≥ 7	,00	_	_	
d		[mm]		ø	5,0					5,3			ø	5,5	ø	5,7		-	
	Mt	t,nom							51	١m								-	
		0,50	_		-	_	-	—	-	_	_	—		_	_	_	—	_	
	_	0,55 0,63	 2,50	 ac	2,70	 ac	2,90	— abcd	3,00	— abcd	 3,10	— abcd	3,10	— abcd	3 10	— abcd			
Ve., [kN] for t., [mm]	Ē	0,03	2,60	ac	3,10	ac		abcd	3,60	abcd	3,70	abcd	3,70	abcd	3,70	abcd			
	Ľ	0,88	2,80	ac	3,20	ac	3,80	ac	4,10			abcd	4,40	abcd	4,40		_	_	
or t	5	1,00	3,20	ac	3,60	ac	4,10	ac	4,80	ac	4,90	ac	5,10	ac	5,10	ac	_	_	
Į	-	1,13	3,40	ac	4,00	ac	4,60	ac	5,40	ac	5,60	ac	5,80	ac	5,80	ac	—	_	
	2 *	1,25	3,60	ac	4,20	ac	5,00	ac	6,10	ac	6,30	ac	6,50	ac	6,50	ac	—	—	
>	>	1,50	3,70	ac	4,40	ac	5,70	ac	6,80	ac	7,10	ac	7,30	ac	7,30	ac	—	—	
		1,75	3,70	ac	4,70	ac	6,20	ac	7,60	ac	7,70	ac	8,10	ac	8,10	ac	—	—	
		2,00	5,00		6,50		8,80		10,3		10,6		11,3		11,3		_	—	
		0,50	0,97	ac	1,35 1,71	ac	1,51	abcd	1,51	abcd abcd	1,51	abcd	1,51	abcd	1,51	abcd	_	_	
	_	0,55 0,63	1,23	ac ac	2,50	ac ac				abcd									
Nev. [kN] for tw. [mm]		0,03		ac	2,60	ac				abcd							_	_	
	, L	0,88		ac	2,70	ac	3,30	ac		abcd							_	_	
pr t	2		2,00	ac	2,70	ac	3,40	ac	4,00	ac	4,00	ac	4,00	ac	4,00	ac	_	_	
Į	2	1,13		ac	2,70	ac	3,60	ac	4,40	ac	4,40	ac	4,40	ac	4,40	ac	_	—	
	Ľ × Y	1,25		ac	2,70	ac	3,60	ac	4,80	ac	4,90	ac	4,90	ac	4,90	ac	—	—	
Ż	2		2,00	ac	2,70	ac	3,60	ac	5,60	ac	5,90	ac	5,90	ac	5,90	ac	—	—	
		1,75		ac	2,70	ac	3,60	ac	5,80	ac	6,90	ac	7,10	ac	7,10	ac	-	—	
		2,00	2,00	—	2,70	_	3,60		6,00	_	7,30	—	7,60		7,60	—		_	
					ts II wit ts II wit Self	h t _{il} ≤ :		nm											

 $\label{eq:JZ1-6,3} \begin{array}{c} x \ L \\ JB1-6,3 \ x \ L \end{array}$ with hexagon head and sealing washer \geq Ø16 mm



3025		≥ Ø2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Comp Predr Timbe	ner:	sta I: S2 II: S2 S2 <u>neter</u>	inless 80GD 35 - E 80GD	steel , S320 N 100 , S320 see ta		01) - E r S350 r S350	N 100 DGD -	88 EN 10		
t _{n,ii} [mm]	1,50	2,00	<u>AF 3/8.</u>		00	5	00		00	≥ 7	00		1	
d _{pd} [mm]	1,50		3,00	,	00 ø t				5,5		,00 5,7		_	1
M _{t,nom}							5 N					_	-	1
0,50				-	—	—	—	—	—	-	_	—	—	1
0,55				-	—	-	— abad	-	—	-		—	—	1
[0,63 臣0,75				4,20	abcd ac	3,40 4,20	abcd ac	4,20	abcd ac	3,40 4,20	abcd ac	_		1
[mm] ¹ ¹ ¹ ¹ Joj (N) ¹ ¹ ¹ ¹ Joj (N) ¹ ¹ ¹ ¹ Joj (N) ¹				4,70	ac	4,70	ac	4,70	ac	4,70	ac	_	_	1
jo 1,00				5,00	ac	5,00	ac	5,10	ac	5,10	ac		_	I
Z 1,13				5,60	ac	5,60	ac	5,80	ac	5,80	ac	—	_	I
<u>لل</u> 1,25				6,30	—	6,40	—	6,50	ac	6,50	ac	—	_	I
1,00				7,10	—	7,20	—	7,30	—	7,30	—	—	-	I
1,75				7,70	—	7,90	—	8,10	—	8,10	_		—	I
2,00				7,70		7,90		8,10		8,10		—	—	I
0,50					abcd	1,67	abcd		abcd		abcd	—	—	I
0,55					abcd	2,11	abcd				abcd		_	I
0,63 E 0,75					abcd ac	4,00	abcd ac	4,00	abcd ac	4,00	abco ac	_		1
<u> </u>				4,00	ac	4,00	ac	4,00	ac	4,00	ac	_		I
0,75 0,88 1,00 1,13 1,25 1,20				4,60	ac	4,60	ac	4,60	ac	4,60	ac		_	1
<u> </u>				5,10	ac	5,10	ac	5,10	ac	5,10	ac	_	_	1
<u>₹</u> 1,25				5,10	_	5,10	_	5,10	ac	5,10	ac	_	_	1
± 1,50				5,90	—	5,90	—	5,90	—	5,90	—	—	_	1
1,75				6,90	—	6,90	—	7,10	—	7,10	—	—	—	1
2,00				8,80	—	11,6	—	13,4		13,4	—	—	—	ı
		Self tappi	ng screw											

 $JZ1\text{-}6,3 \ x \ L$ with hexagon head and sealing washer $\geq \varnothing22 \ \text{mm}$

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English translation prepared by DIBt



	≥016 5916	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
2.54	4.7	Predrill diameter see table below
	4F 3/8".	Timber substructuresperformance determined with $M_{y,Rk} = 9,742 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{ef} \ge 26,0 \text{ mm}$
t _{N,II} [mm] 0,63 0,75	-	1,00 1,13 1,25 1,50 2,00

	t _{N,II}	[mm]	0,6	33	0,7	'5	0,8	88	1,0	00	1,1	3	1,2	25	1,5	i0	2,0	00		
		[mm]	ø3	,5	ø4	,0				ø	4,5				ø 5	1997 - The State of S	ø5	i,3		
	N	I _{t,nom}					3 N	lm							5 N	m				
		0,50	—	—	-	_	-	—	-	—	—	—	-	—	-	—	<u> </u>	—	—	
		0,55		$\overline{\mathbb{C}}_{n-1}$			-	-			- 			-	2 .				- 1 5	
	ਵ	0,63	1,30	_	1,50	_	1,80	_	2,00	ac	2,30	ac	2,50	ac	2,90	ac	2,90	ac	2,90	e
	for t _{N,I} [mm]	0,75	1,40	—	1,60	—	1,90	—	2,20	ac	2,50	ac	2,70	ac	3,10	ac	3,10	ac	3,10	ing resistanc component l
	t,	88,0	1,50	—	1,70	—	2,00	—	2,30	—	2,60	—	2,80	ac	3,20	ac	3,20	ac	3,20	sist
		1,00	1,50	_	1,80	_	2,10		2,50		2,80	_	3,10	—	3,60	_	3,60	_	3,60	
	V _{R.k} [kN]	1,13	1,60	—	1,80	—	2,20	—	2,60	—	2,90	—	3,20	—	3,80	—	3,80	—	3,80	earing of corr
	۲,×	1,25	1,60	_	1,90	—	2,30		2,70		3,00	—	3,30	—	4,00	_	4,00	—	4,00	of
	>	1,50	1,60	—	1,90	—	2,40	—	2,80	—	3,20	—	3,50	—	4,00	_	4,00	—	4,00	ڡ
		1,75	1,60	—	1,90	—	2,40	—	2,80	—	3,20	—	3,50	—	4,00	—	4,00	—	4,00	
		2,00	1,60	_	1,90	_	2,40	_	2,80	_	3,20	_	3,50	_	4,00	_	4,00	_	4,00	
		0,50	0,49	—	0,59	—	0,70	—	0,76	ac	0,86	ac	0,97	ac	1,13	ac	1,13	ac	1,19	
		0,55	0,61	—	0,75	—	0,89	—	0,95	ac	1,09	ac	1,23	ac	1,43	ac	1,43	ac	1,50	
	Έ	0,63	0,90	—	1,10	—	1,30	—	1,40	ac	1,60	ac	1,80	ac	2,10	ac	2,10	ac	2,20	nce
	E	0,75	0,90	—	1,10	—	1,30	—	1,40	ac	1,60	ac	1,80	ac	2,10	ac	2,10	ac	2,80	ista nt I
	for t _{N,I} [mm]	88,0	0,90	—	1,10	—	1,30	—	1,40	—	1,60	—	1,80	ac	2,10	ac	2,10	ac	3,50	ough resistal component l
		1,00	0,90	—	1,10	—	1,30	—	1,40	—	1,60	—	1,80	—	2,20	—	2,20	—	4,20	gh
	Ž	1,13	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	_	2,30	—	5,00	ino,
	N _{R,k} [kN]	1,25	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	5,90	ull-through of comp
	z	1,50	1,00	—	1,20	_	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	_	5,90	Ind
		1,75	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	5,90	
		2,00	1,00	_	1,20	_	1,40		1,50		1,70	_	1,90		2,30		2,30	_	5,90	

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 ($\rho_a = 350 \text{ kg/m}^3$). For other combinations of k_{mod} and timber strength grades see section 4.2.2.

Self tapping screw

JA3-6,5~x~L with hexagon head and sealing washer $\geq \varnothing16~\text{mm}$



2,54				2,54 2,54 ×		L 5	Material Fastene Washer Compor Compor	er: s : s nent I: s nent II: s	stainless S280GE structura	s steel (), S320 al timbe	1.4301) GD or S	14081	0088	
		11		(EL	SW 3/8"	$\frac{\text{Timber s}}{\text{perform}}$ $M_{y,Rk} = f_{ax,k} =$	ance de 9,742	etermine		l _{ef} ≥26	mm		
l _g = d _{pd} [m		26	31	36	41	46	51 Ø 4,5 m n	56 n	61	66	71	76		
M _{t,nom}							_							
V _{R.k} for t _{N.1} = 1 1 0 0 0 2 1),50),55),63),75),88 ,00 ,13 ,25 ,50 ,75 2,00													bearing resistance of component l
N _{R,k} for t _{N,1} = 1 1 0 0 1 1),50),55),63),75),88 ,00 ,13 ,25 ,50 ,75 2,00	1,19 1,30 1,30 1,30 1,30 1,30 1,30 1,30 1,30	1,19 1,50 1,56 1,56 1,56 1,56 1,56 1,56 1,56 1,56	1,19 1,50 1,81 1,81 1,81 1,81 1,81 1,81 1,81 1,8	1,19 1,50 2,06 2,06 2,06 2,06 2,06 2,06 2,06 2,0	1,19 1,50 2,20 2,31 2,31 2,31 2,31 2,31 2,31 2,31 2,31	1,19 1,50 2,20 2,56 2,56 2,56 2,56 2,56 2,56 2,56 2,56	1,19 1,50 2,20 2,81 2,81 2,81 2,81 2,81 2,81 2,81 2,81	1,19 1,50 2,20 3,06 3,06 3,06 3,06 3,06 3,06 3,06 3,0	1,19 1,50 2,20 3,31 3,31 3,31 3,31 3,31 3,31 3,31 3,3	1,19 1,50 2,20 3,50 3,56 3,56 3,56 3,56 3,56 3,56 3,56	1,19 1,50 2,20 2,80 3,50 3,81 3,81 3,81 3,81 3,81 3,81	1,19 1,50 2,20 2,80 3,50 4,20 5,00 5,90 5,90 5,90 5,90	pull-trough resistance of component I

The values listed above in dependence on the screw-in length I_g are valid for k $_{mod}$ = 0,90 and timber strength grade C24 (ρ_k = 350 kg/m³). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self tapping screw

JA3-6,5~x~L with hexagon head and sealing washer $\geq \varnothing$ 16 mm

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English translation prepared by DIBt



≥Ø16 → → ● ● Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: Stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Washer: Stainless steel (1.4301 / 1.4567) – EN 10088 Washer: stainless steel (1.4301 / 1.4567) – EN 10088 Component I: aluminium alloy With R _{m,min} = 165 N/mm² – EN 573 With R _{m,min} = 165 N/m² – EN 14081 Pre-drill diameter see table
with vulcanised EPDM seal Component I: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573 Component II: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573 timber – EN 14081
with R _{m,min} = 165 N/mm ² – EN 573 Component II: aluminium alloy with R _{m,min} = 165 N/mm ² – EN 573 timber – EN 14081
with R _{m,min} = 165 N/mm² - EN 573 with R _{m,min} = 165 N/mm² - EN 573 with R _{m,min} = 165 N/mm² - EN 573 with R _{m,min} = 165 N/mm² - EN 573
Timber substructures
for timber substructures following performance were
$M_{y,k} = 9,742 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2 \text{ for } l_{eff} \ge 32,5 \text{ mm}$

t,	N,II =	0,5	0	0,7	0	0,9	0	1,0	00	1,2	20	1,5	50	2,0	00	2,	50	3,	00		/
C	pd =		Ø	4,0							Ø	4,5						Ø	5,0		
M	, _{nom} =									_	-										
	0,50	0,24	-	0,40	-	0,57	-	0,65	-	0,82	-	0,92	ac	0,92	ac	0,92	abcd	0,92	abcd	0,92	_
	0,60	0,24	-	0,40	-	0,57	-	0,65	-	0,82	-	1,00	-	1,15	ac	1,15	ac	1,15	ac	1,15	sht
	0,70	0,24	-	0,40	-	0,57	-	0,65	-	0,82	-	1,07	-	1,38	-	1,38	ac	1,38	ac	1,38	onent
Ţ,	0,80	0,24	-	0,40	-	0,57	-	0,65	-	0,82	-	1,15	-	1,46	-	1,61	-	1,61	ac	1,61	d g
V _{R,k} for t _{N,I}	0,90	0,24	-	0,40	-	0,57	-	0,65	-	0,82	-	1,27	-	1,61	-	1,77	-	1,84	-	1,84	col
/ _{R,k}	1,00	0,24	-	0,40	-	0,57	-	0,67	-	0,82	-	1,38	-	1,77	-	1,92	-	2,07	-	2,07	ق م
-	1,20	0,24	-	0,40	-	0,57	-	0,67	-	0,88	-	1,61	-	1,84	-	2,15	-	2,38	-	2,38	nre
	1,50	0,24	-	0,40	-	0,57	-	0,67	-	0,88	-	2,15	-	2,30	-	2,53	-	2,76	-	2,76	failı
	2,00	0,24	-	0,40	-	0,57	-	0,67	-	0,88	-	2,15	-	2,30	-	2,53	-	2,76	-	2,76	
N _{R,II,k} =		-		-		0,3	86	0,4	12	0,5	5	0,7	77	1,2	23	1,	77	2,	38	failure of component II	see chapter 4.2.2

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

The values indicated above, depending on the screw depth I_g, shall apply to $k_{mod} = 0.90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg} / \text{m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2 Timber substructures (component II): predrilling the holes with Ø 4.80 mm is necessary.

Self-tapping screw

JA3-6,5xL-E16

With hexagon head and seal washer $\geq \emptyset$ 16,0 mm

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English translation prepared by DIBt



ר16 0 0	≥Ø16 5	$\begin{tabular}{ c c c c c c } \hline \underline{Materials} \\ \hline Fastener: stainless steel (1.4301 / 1.4567) - EN 10088 \\ \hline Washer: stainless steel (1.4301) - EN 10088 \\ \hline with vulcanised EPDM seal \\ \hline Component I: aluminium alloy \\ \hline with $R_{m,min}$ = 215 $N/mm^2 - EN 573 \\ \hline Component II: aluminium alloy \\ \hline with $R_{m,min}$ = 215 $N/mm^2 - EN 573 \\ \hline \end{array}$
	Ø4.7 Ø6.5	With $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN 573}$ timber - EN 14081 <u>Pre-drill diameter</u> see table <u>Timber substructures</u> for timber substructures following performance weredetermined $M_{y,k} = 9,742 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \ge 32,5 \text{ mm}$

t	_{4,11} =	0,5	0	0,7	0	0,9	0	1,0	0	1,2	20	1,5	50	2,0	00	2,	50	3,	00		/
d	pd =		Ø	4,0							Ø	4,5						Ø	5,0		
M _{t,}	,nom =									_	-										
	0,50	0,31	-	0,53	-	0,74	-	0,85	-	1,06	-	1,20	ac	1,20	ac	1,20	abcd	1,20	abcd	1,20	I
	0,60	0,31	-	0,53	-	0,74	-	0,85	-	1,06	-	1,30	-	1,50	ac	1,50	ac	1,50	ac	1,50	ent
1	0,70	0,31	-	0,53	-	0,74	-	0,85	-	1,06	-	1,40	-	1,80	-	1,80	ac	1,80	ac	1,80	u
"'. L	0,80	0,31	-	0,53	-	0,74	-	0,85	-	1,06	-	1,50	-	1,90	-	2,10	-	2,10	ac	2,10	ng)
for	0,90	0,31	-	0,53	-	0,75	-	0,85	-	1,06	-	1,65	-	2,10	-	2,30	-	2,40	-	2,40	ari So
V _{R,k} for t _{N,I}	1,00	0,31	-	0,53	-	0,75	-	0,88	-	1,06	-	1,80	-	2,30	-	2,50	-	2,70	-	2,70	of ((be:
/ /	1,20	0,31	-	0,53	-	0,75	-	0,88	-	1,15	-	2,10	-	2,40	-	2,80	-	3,10	-	3,10	ure
	1,50	0,31	-	0,53	-	0,75	-	0,88	-	1,15	-	2,80	-	3,00	-	3,30	-	3,60	-	3,60	
	2,00	0,31	-	0,53	-	0,75	-	0,88	-	1,15	-	2,80	-	3,00	-	3,30	-	3,60	-	3,60	-
N _{R,II,k} =		-		-		0,4	-7	0,5	55	0,7	'1	1,0	00	1,6	60	2,	30	3,	10	failure of component II	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

The values indicated above, depending on the screw depth I_g, shall apply to $k_{mod} = 0.90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg} / \text{m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2 Timber substructures (component II): predrilling the holes with Ø 4.80 mm is necessary.

Self-tapping screw

JA3-6,5xL-E16

With hexagon head and seal washer $\geq \emptyset$ 16,0 mm



≥Ø16	≥Ø16	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$
	04.7 06.5	$\begin{array}{c} S280 \text{GD}, S320 \text{GD} - \text{EN 10346} \\ \hline \text{timber} - \text{EN 14081} \end{array}$ $\begin{array}{c} \hline Pre-drill \ diameter & \text{see table} \end{array}$ $\begin{array}{c} \hline \hline \text{Timber substructures} \\ \text{for timber substructures following performance were} \\ \hline \text{determined} \end{array}$ $\begin{array}{c} M_{y,k} &= 9,742 \ \text{Nm} \\ f_{ax,k} &= 8,575 \ \text{N/mm}^2 & \text{for} I_{eff} \geq 32,5 \ \text{mm} \end{array}$

		1 22.02		1		1	720 7	1	1.21	1		1		1			0.02		202		
t	N,II =	0,6	53	0,7	75	0,8	38	1,0	00	1,2	25	1,5	50	2,0	00	2,	50	3,	00		/
	d _{pd =}	ØЗ	3,5	Ø4	ŀ,0			Ø4	-,5			Ø5	i,0			Ø	5,3				
M	t,nom =									_	-										
	0,50	0,35	-	0,44	-	0,55	-	0,65	-	0,86	-	0,92	ac	0,92	ac	0,92	abcd	0,92	abcd	0,92	_
	0,60	0,35	-	0,44	-	0,55	-	0,65	-	0,86	-	1,00	-	1,15	ac	1,15	ac	1,15	ac	1,15	ent
Ι.	0,70	0,35	-	0,44	-	0,55	-	0,65	-	0,86	-	1,07	-	1,38	-	1,38	ac	1,38	ac	1,38	5
	0,80	0,35	-	0,44	-	0,55	-	0,65	-	0,86	-	1,15	-	1,46	-	1,61	-	1,61	ac	1,61	ng)
l ē	0,90	0,35	-	0,44	-	0,56	-	0,65	-	0,86	-	1,27	-	1,61	-	1,77	-	1,84	-	1,84	cor
V _{R,k} for t _{N,I}	1,00	0,35	-	0,44	-	0,56	-	0,67	-	0,86	-	1,38	-	1,77	-	1,92	-	2,07	-	2,07	of comp((bearing)
>	1,20	0,35	-	0,44	-	0,56	-	0,67	-	0,92	-	1,61	-	1,84	-	2,15	-	2,38	-	2,38	nre
	1,50	0,35	-	0,44	-	0,56	-	0,67	-	0,94	-	2,15	-	2,30	-	2,53	-	2,76	-	2,76	
	2,00	0,35	-	0,44	-	0,56	-	0,67	-	0,94	-	2,15	-	2,30	-	2,53	-	2,76	-	2,76	+
N _{R,II,k} =		1,0	00	1,2	20	1,4	łO	1,5	50	1,9	90	2,3	30	2,3	30	2,	30	2,	30	failure of component II	see chapter 4.2.2

The values indicated above, depending on the screw depth I_g, shall apply to $k_{mod} = 0.90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg} / \text{m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2 Timber substructures (component II): predrilling the holes with Ø 4.80 mm is necessary.

Self-tapping screw

JA3-6,5xL-E16

With hexagon head and seal washer $\geq \varnothing$ 16,0 mm



		Washer: Component I:	stainless steel stainless steel with vulcanised aluminium alloy with $R_{m,min} = 21$ S235 – EN 100 S280GD, S320 timber – EN 14	(1.4301 5 EPDM 15 N/mn 025-1 0GD – E) – EN 1 seal n² – EN	573	0088
PS 72 04.7 06.5	SW 348"	Pre-drill diameTimber substrufor timber substrudetermined $M_{y,k} = 9,742$ $f_{ax,k} = 8,575$	e <u>ter</u> see tal uctures structures follow	ble	formanc I _{eff}	e were ≥ 32,5	mm

t	N,II =	0,6	3	0,7	75	0,8	8	1,0	00	1,2	25	1,5	50	2,0	00	2,	50	3,	00		/
	d _{pd =}	Ø3	,5	Ø4	,0			Ø4	-,5			ØS	i,0			Ø	5,3			1 /	
M	t,nom =									_	-										
	0,50	0,45	-	0,58	-	0,72	-	0,85	-	1,12	-	1,20	ac	1,20	ac	1,20	abcd	1,20	abcd	1,20	١
	0,60	0,45	-	0,58	-	0,72	-	0,85	-	1,12	-	1,30	-	1,50	ac	1,50	ac	1,50	ac	1,50	ent
Ι.	0,70	0,45	-	0,58	-	0,72	-	0,85	-	1,12	-	1,40	-	1,80	-	1,80	ac	1,80	ac	1,80	ŝ
Ľ,	0,80	0,45	-	0,58	-	0,72	-	0,85	-	1,12	-	1,50	-	1,90	-	2,10	-	2,10	ac	2,10	of compone (bearing)
V _{R,k} for	0,90	0,45	-	0,58	-	0,72	-	0,85	-	1,12	-	1,65	-	2,10	-	2,30	-	2,40	-	2,40	col
Ľ,	1,00	0,45	-	0,58	-	0,72	-	0,88	-	1,12	-	1,80	-	2,30	-	2,50	-	2,70	-	2,70	
^	1,20	0,45	-	0,58	-	0,72	-	0,88	-	1,20	-	2,10	-	2,40	-	2,80	-	3,10	-	3,10	nre
	1,50	0,45	-	0,58	-	0,72	-	0,88	-	1,23	-	2,80	-	3,00	-	3,30	-	3,60	-	3,60	fail
	2,00	0,45	-	0,58	-	0,72	-	0,88	-	1,23	-	2,80	-	3,00	-	3,30	-	3,60	-	3,60	-
N _{R,II,k} =		1,0	0	1,2	20	1,4	-0	1,5	50	1,9	90	2,3	30	2,3	30	2,	30	2,	30	failure of component II	see chapter 4.2.2

The values indicated above, depending on the screw depth I_g, shall apply to $k_{mod} = 0.90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg} / \text{m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2 Timber substructures (component II): predrilling the holes with Ø 4.80 mm is necessary.

Self-tapping screw

JA3-6,5xL-E16

With hexagon head and seal washer $\geq \emptyset$ 16,0 mm



			.88			Ø4. Ø4. Ø6.	88 25	Comp Predr Timbe	ner: er: onent	sta I: S2 II: S2 S2 <u>neter</u>	inless 80GD 35, S2 80GD 	steel , S320 275, S , S320 see ta	(1.430 DGD o 355 -	01) - E r S35 EN 10 r S35	EN 100 EN 100 0GD - 0025-1 0GD -)88 EN 1(
t _{N II}	[mm]	1,2	25	1,5	50	2.	00	3.	00	4.	00	6.	00	> 7	<i>'</i> ,00	_]
	[mm]	.,.		<u> </u>	-	-,	-		5,3		-		5,5		5,7	-	-
	/I _{t,norn}							5 1	١m					·		-	-
ır t _{N,I} [mm]	0,50 0,55 0,63 0,75 0,88 1,00	2,80	 ac ac ac		 ac ac ac	 2,90 3,30 3,80 4,10	abcd ac	 3,00 3,60 4,10 4,80	abcd abcd abcd abcd ac			3,70	abcd abcd abcd	 3,10 3,70 4,40 5,10			
V _{R.k} [kN] for t _{N,i} [mm]	1,13 1,25 1,50 1,75 2,00	3,40 3,60 3,70 3,70	ac ac ac ac	4,00 4,20 4,40 4,70 6,50	ac ac ac ac	4,60 5,00 5,70 6,20 8,80	ac ac ac ac ac	5,40 6,10 6,80 7,60 10,3	ac ac ac ac	4,90 5,60 6,30 7,10 7,70 10,6	ac ac ac ac ac	5,80 6,50 7,30 8,10 11,3	ac ac ac ac ac	5,80 6,50 7,30 8,10 11,3	ac ac ac ac ac		
N _{R,k} [kN] for t _{N,l} [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50	0,97 1,23 1,80 2,00 2,00 2,00 2,00 2,00 2,00 2,00	ac ac ac ac ac ac ac ac ac ac	1,35 1,71 2,50 2,70 2,70 2,70 2,70 2,70 2,70 2,70 2,7	ac ac ac ac ac ac ac ac ac ac	1,51 1,91 2,80	abcd	1,51 1,91 2,80 3,60	abcd abcd abcd abcd ac ac ac ac ac	1,51 1,91 2,80 3,60	abcd	1,51 1,91 2,80 3,60		1,51 1,91 2,80 3,60	abcd abcd abcd abcd ac ac ac ac ac		
	,3 x L fr ,3 x L fr			ts II wit Self J	h t _{il} ≤ : tappir Z3-6,		IM					An	nex 8	0			

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



≥Ø22 5 1 8 1 8 1 8 1 1 1 1 1 1 1 1 1 1 1 1 1	≥Ø22 m m m m m m m m m m m m m		omponent redrill dian imber subs	stainless I: S280GD II: S235, S2 S280GD neter	steel (1.430 , S320GD o 275, S355 - 1 , S320GD o see table be	r S350GD -	88 EN 1034	
t _{N,II} [mm] 1,50	2,00 3,	00	4,00	5,00	6,00	≥ 7,00	—	
d _{pd} [mm]	_		ø	-	ø 5,5	ø 5,7	—	
M _{t,nom}				5 N	lm		—	
0,50 — —	-	_						-
0,55 — —	-		— —					-
[0,63			3,40 abcd 1,20 ac	3,40 abcd 4,20 ac	3,40 abcd 4,20 ac	3,40 abcd 4,20 ac		
			1,70 ac	4,20 ac 4,70 ac	4,20 ac 4,70 ac	4,20 ac 4,70 ac		
1,00 — —			5,00 ac	5,00 ac	5,10 ac	5,10 ac		
z 1,13 — —			5,60 ac	5,60 ac	5,80 ac	5,80 ac		_
<u>⊥</u> 1,25 — —			6,30 —	6,40 —	6,50 ac	6,50 ac		_
l ≫ 1,50 — —			7,10 —	7,20 —	7,30 —	7,30 —		-
1,75 — —		_ 7	,70 —	7,90 —	8,10 —	8,10 —		-
2,00 — —		_ 7	7,70 —	7,90 —	8,10 —	8,10 —		-
0,50 — —	-		,67 abcd	1,67 abcd	1,67 abcd	1,67 abcd		-
0,55 — —	-		2,11 abcd		2,11 abcd		— –	-
[^{0,63}] — —	-				3,10 abcd			-
<u>Ē</u> 0,75 — — <u>ī</u> 0,88 — —	-		1,00 ac	4,00 ac		4,00 ac		-
0,00			1,40 ac 1,60 ac	4,40 ac 4,60 ac	4,40 ac 4,60 ac	4,40 ac 4,60 ac		
Z 1,13 — —			5,10 ac	4,80 ac 5,10 ac	4,00 ac 5,10 ac	4,80 ac 5,10 ac		
[mu] 0,03 0,75 1,00 NJ 1,13 1,25 NN 1,50	_		5,10 <u>u</u> c	5,10 ac	5,10 ac	5,10 ac		_
Ž 1,50 — —			5,90 —	5,90 —	5,90 —	5,90 —		-
1,75 — —			6,90 —	6,90 —	7,10 —	7,10 —		-
2,00 — —	-	— 8	3,80 —	11,6 —	13,4 —	13,4 —		-
1,75 — —	Self tapping scr	5 6 8	5,90 — 5,90 —	5,90 — 6,90 —	5,90 — 7,10 —	5,90 — 7,10 —		_
with hex	JZ3-6,3 x L gon head and sealing w	/asher≥Ø	ð22 mm		Annex 8	1		



	MaterialsFastener:stainless steel $(1.4301) - EN 10088$ Washer:stainless steel $(1.4301) - EN 10088$ with vulcanised EPDM sealComponent I:aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2 - EN 573$ Component II:aluminium alloy with $R_{m,min} = 105 \text{ N/mm}^2 - EN 573$
0 0 0 0 0 0 0 0 0 0 0 0 0 0	with R _{m,min} = 165 N/mm² – EN 573 <u>Pre-drill diameter</u> see table <u>Timber substructures</u> for timber substructures no performance determined

t,	N.II =	1,2	1,20 1,50					2,	50	3,	00	4,	00	5,	00	6,	00	≥ 7	,00,
d	pd =				Ø	4,5				Ø	5,0			Ø	5,3			ø	5,5
M	,nom =									-	_								
	0,50	0,79	-	0,84	ac	0,84	ac	0,84	abcd										
	0,60	0,79	-	0,96	-	1,07	ac	1,07	ac	1,07	ac	1,07	abcd	1,07	abcd	1,07	abcd	1,07	abcd
	0,70	0,79	-	1,07	-	1,30	-	1,30	ac	1,30	ac	1,30	abcd	1,30	abcd	1,30	abcd	1,30	abcd
l	0,80	0,79	-	1,15	-	1,46	-	1,53	-	1,53	-	1,53	ac	1,53	abcd	1,53	abcd	1,53	abcd
V _{R.k} for t _{N.I}	0,90	0,79	-	1,27	-	1,53	-	1,73	-	1,77	-	1,77	ac	1,77	ac	1,77	abcd	1,77	abcd
, X, X	1,00	0,80	-	1,38	-	1,61	-	1,92	-	2,00	-	2,00	ac	2,00	ac	2,00	abcd	2,00	abcd
_	1,20	0,87	-	1,61	-	1,84	-	2,07	-	2,30	-	2,38	ac	2,38	ac	2,38	abcd	2,38	abcd
	1,50	0,87	-	2,15	-	2,30	-	2,53	-	2,69	-	3,07	ac	3,07	ac	3,07	ac	3,07	ac
	2,00	0,87	-	2,15	-	2,30	-	2,53	-	2,69	-	3,07	-	3,07	-	3,07	-	3,33	-
N _{R,II,k} =		0,5	4	0,7	7	1,2	23	1,	77	2,	38	3,	68	5,	30	7,	06	7,	06

Pull-through resistance of component I according to E	EN 1999-1-4,	chapter 8.3.3.1	or specifications of the
manufacturer of the aluminium structural sheeting.			

Self-tapping screw

JZ3-6,3xL-E16

JB3-6,3xL-E16

With hexagon head and seal washer $\geq \varnothing$ 16,0 mm



≥Ø16 vo	Materials
	Fastener: stainless steel (1.4301) – EN 10088
	Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
	Component I: aluminium alloy with R _{m.min} = 215 N/mm ² – EN 573
	Component II: aluminium alloy
04.5 04.5	with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN } 573$
- Ø4.88 Ø6.25	Pre-drill diameter see table
Ø4.88 Ø6.25 Typ JB	<u>Timber substructures</u> for timber substructures no performance determined

t _N	1.II =	1,2	0	1,5	50	2,0	0	2,	50	3,	00	4,	00	5,	00	6,	00	≥ 7	,00,
d	pd =				ø	4,5				Ø	5,0			Ø	5,3			Ø	5,5
M _{t,}	nom =									-	_								
	0,50	1,03	-	1,10	ac	1,10	ac	1,10	abcd										
	0,60	1,03	-	1,25	ac	1,40	ac	1,40	ac	1,40	ac	1,40	abcd	1,40	abcd	1,40	abcd	1,40	abcd
	0,70	1,03	-	1,40	-	1,70	-	1,70	ac	1,70	ac	1,70	abcd	1,70	abcd	1,70	abcd	1,70	abcd
Ē	0,80	1,03	-	1,50	-	1,90	-	2,00	-	2,00	-	2,00	ac	2,00	abcd	2,00	abcd	2,00	abcd
V _{R,k} for	0,90	1,03	-	1,65	-	2,00	-	2,25	-	2,30	-	2,30	ac	2,30	ac	2,30	abcd	2,30	abcd
Å.,	1,00	1,04	-	1,80	-	2,10	-	2,50	-	2,60	-	2,60	ac	2,60	ac	2,60	abcd	2,60	abcd
[1,20	1,14	-	2,10	-	2,40	-	2,70	-	3,00	-	3,10	ac	3,10	ac	3,10	abcd	3,10	abcd
	1,50	1,14	-	2,80	-	3,00	-	3,30	-	3,50	-	4,00	ac	4,00	ac	4,00	ac	4,00	ac
	2,00	1,14	-	2,80	-	3,00	-	3,30	-	3,50	-	4,00	-	4,00	-	4,00	-	4,33	-
N _{R,II,k} =		0,7	1	1,0	00	1,6	0	2,	30	3,	10	4,	80	6,	90	9,	20	9,	20

Self-tapping screw

JZ3-6,3xL-E16

JB3-6,3xL-E16

With hexagon head and seal washer $\geq \varnothing$ 16,0 mm



	MaterialsFastener:stainless steel (1.4301) – EN 10088Washer:stainless steel (1.4301) – EN 10088with vulcanised EPDM sealComponent I:aluminium alloy
8 ⁻ 8 ⁻ 8 ⁻ 8 ⁻ 0 ⁻	with R _{m,min} = 165 N/mm ² – EN 573 Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
Ø4.88 Ø6.25	Pre-drill diameter see table Timber substructures for timber substructures no performance determined
Typ JB 🔊	

t _N	.,II =	1,2	5	1,5	0	2,0	0	2,	50	3,	00	4,	00	5,	00	6,	00	≥7,	00
d	pd =		Ø	5,0						Ø	5,3					Ø	5,5	Ø5	,7
M _{t,}	nom =									-	_								
	0,50	0,83	-	0,84	ac	0,84	ac	0,84	abcd	0,84	-								
	0,60	0,83	-	0,96	-	1,07	ac	1,07	ac	1,07	ac	1,07	abcd	1,07	abcd	1,07	abcd	1,07	-
	0,70	0,83	-	1,07	-	1,30	-	1,30	ac	1,30	ac	1,30	abcd	1,30	abcd	1,30	abcd	1,30	-
	0,80	0,83	-	1,15	-	1,46	-	1,53	-	1,53	-	1,53	ac	1,53	abcd	1,53	abcd	1,53	-
Į į	0,90	0,83	-	1,27	-	1,53	-	1,73	-	1,77	-	1,77	ac	1,77	ac	1,77	abcd	1,77	-
V _{R.k} for t _{N.I}	1,00	0,83	-	1,38	-	1,61	-	1,92	-	2,00	-	2,00	ac	2,00	ac	2,00	abcd	2,00	-
1	1,20	0,90	-	1,61	-	1,84	-	2,07	-	2,30	-	2,38	ac	2,38	ac	2,38	abcd	2,38	-
	1,50	0,93	-	2,15	-	2,30	-	2,53	-	2,69	-	3,07	ac	3,07	ac	3,07	ac	3,07	-
	2,00	0,93	-	2,15	-	2,30	-	2,53	-	2,69	-	3,07	-	3,07	-	3,07	-	3,33	-
N _{R,II,k} =		2,0	0	2,7	70	3,6	0	3,	60	6,	00	7,	30	7,	45	7,	60	7,6	50

Self-tapping screw

JZ3-6,3xL-E16

JB3-6,3xL-E16

With hexagon head and seal washer $\geq \varnothing$ 16,0 mm



	MaterialsFastener:stainless steel (1.4301) – EN 10088Washer:stainless steel (1.4301) – EN 10088
2	with vulcanised EPDM seal Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN 573}$ Component II: S235 - EN 10025-1 S280GD, S320GD - EN 10346
© 04.5 Ø4.88 Ø6.25	Pre-drill diameter see table
Ø4.88 Ø6.25 Typ JB	<u>Timber substructures</u> for timber substructures no performance determined

t _N	.,II =	1,2	5	1,5	0	2,0	0	2,	50	3,	00	4,	00	5,	00	6,	00	≥7,	00
d	pd =		Ø	5,0						Ø	5,3					Ø	5,5	Ø5	,7
M _{t,}	nom =									-	_								
	0,50	1,08	-	1,10	ac	1,10	ac	1,10	abcd	1,10	-								
	0,60	1,08	-	1,25	-	1,40	ac	1,40	ac	1,40	ac	1,40	abcd	1,40	abcd	1,40	abcd	1,40	-
	0,70	1,08	-	1,40	-	1,70	-	1,70	ac	1,70	ac	1,70	abcd	1,70	abcd	1,70	abcd	1,70	-
Ę.	0,80	1,08	-	1,50	-	1,90	-	2,00	-	2,00	-	2,00	ac	2,00	abcd	2,00	abcd	2,00	-
0 L	0,90	1,08	-	1,65	-	2,00	-	2,25	-	2,30	-	2,30	ac	2,30	ac	2,30	abcd	2,30	-
V _{R,k} for	1,00	1,08	-	1,80	-	2,10	-	2,50	-	2,60	-	2,60	ac	2,60	ac	2,60	abcd	2,60	-
1	1,20	1,18	-	2,10	-	2,40	-	2,70	-	3,00	-	3,10	ac	3,10	ac	3,10	abcd	3,10	-
	1,50	1,21	-	2,80	-	3,00	-	3,30	-	3,50	-	4,00	ac	4,00	ac	4,00	ac	4,00	-
	2,00	1,21	-	2,80	-	3,00	-	3,30	-	3,50	-	4,00	-	4,00	-	4,00	-	4,33	-
N _{R,II,k} =		2,0	0	2,7	70	3,6	0	3,	60	6,	00	7,	30	7,	45	7,	60	7,6	50

Self-tapping screw

JZ3-6,3xL-E16

JB3-6,3xL-E16

With hexagon head and seal washer $\geq \varnothing$ 16,0 mm



			L 5.8	e e		1-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7		Comp Predr Timbe	ner: er:	sta I: S2 II: S2 S2 <u>neter</u>	inless 80GD 35 - E 80GD 	steel , S320 N 100 , S320 see ta	(1.430)GD o)25-1	01) - E r S35 r S35	EN 100 EN 100 0GD - 0GD -)88 EN 1(
T _M	"[mm]	1,5	50	2,0	<u> </u>	3,0	0	4	00	6,0	00	8	00	> 1	0,0		1	_
	_d [mm]	',`		<u>، ح</u> , د		<u> 3,0</u> 6,8		, ,			7,0		7,2		7,4			
	M _{t,nom}				~	- ,-		10	Nm	~	.,-	~	,—	<u> </u>	- , -	_		
	0,50	<u> </u>	_	_	_	_		T —		_	_	_	_		_			
	0,55							_	_	_	_	_	_				_	
	0.62	3,80		3,80		3,80	~~~	2 00	abcd	3,80	abcd	3,80	abcd	3,80	abcd			
Ē	0,03		ac		ac		ac									_	_	
트	0,75		ac	4,70	ac	4,70	ac	4,70	ac		abcd		abcd		abcd	_	_	
V _{R.k} [kN] for t _{N.I} [mm]	0,88		—	5,30	ac	5,30	ac	5,30	ac	5,30	ac	5,30	ac	5,30	ac	—	-	
for	1,00	5,90	—	5,90	—	5,90	—	5,90	ac	5,90	ac	5,90	ac	5,90	ac	—	_	
Ī	1,13	6,40	_	6,60	_	6,60	_	6,60		6,60		6,60		6,60	_	—	_	
	1,25			6,60	_	6,60	_	6,60		6,60		6,60		6,60	_	_	_	
, S	1,50		_	7,00	_	7,00	_	7,00	_	7,00	_	7,00	_	7,00		_	_	
-	1,75			7,00		7,00		7,00		7,00		7,00		7,00				
			—		_		_				_				_	_	_	
	2,00			7,00	_	7,00		7,00		7,00		7,00		7,00		_		
	0,50		ac	1,84	ac	2,38	ac		abcd				abcd	2,38		—	-	
	0,55		ac	2,32	ac	3,00	ac		abcd					3,00		—	-	
2	0,63	2,20	ac	3,40	ac	4,40	ac						abcd			—	-	
N _{R.k} [kN] for t _{N.I} [mm]	0,75	2,20	ac	3,40	ac	5,10	ac	5,30	ac	5,30	abcd	5,30	abcd	5,30	abcd	—	—	
Ĭ	0,88			3,40	ac	5,40	ac	5,70	ac	5,70	ac	5,70	ac	5,70	ac	_	_	
or	1,00			3,40	_	5,80	_	6,20	ac	6,20	ac	6,20	ac	6,20	ac	_	_	
	1.13	2,20		3,40	_	5,80	_	6,70	_	6,70	_	6,70	_	6,70	_		_	
¥	1,13		_	3,40		5,80	_	6,80	_	6,80	_	6,80	_	6,80	_			
Å, Å	1,20		_				_		_				_		_		-	
~	.,	2,20	_	3,40	_	5,80	_	6,80		6,80	—	6,80	_	6,80	_	_	-	
		2,20	—	3,40	—	5,80	_	6,80	—	6,80	—	6,80	—	6,80	—		-	
	2,00	2,20	_	3,40	—	5,80	_	6,80	_	6,80	_	6,80	_	6,80	—	—	—	
	Self tapping screw																	
		with	hexag	J. on head		,0 x L ealing wa	asher	≥ Ø22 n	ım			Ar	inex 8	36				



≥Ø16				≥Ø16	AF 3/8''	8	Comp Predr <u>Timbe</u>	ner: er: oonent	sin sta I: S2 II: S2 S2 <u>neter</u>	niliar to inless 80GD 35, S2 80GD	o stair steel , S320 275 or , S320 See ta	(1.430)GD o S355	iteel (* 01) - E r S350 - EN r S350	(S® 1.4301 EN 100 0GD - 10025 0GD -	88 EN 10 -1)346	8
t _{n,II} [mm]	1,2	!5	1,5	50	2,	00	3,	00	4,	00	6,	00	≥ 7	,00	_	-	
d _{pd} [mm]		ø	5,0					5,3			ø	5,5	ø	5,7		-	
M _{t,nom}							51	١m								-	
0,50 0,55	_	_			_	_	_	_	_	_	_	_		_	_	_	
0.62	2,50	ac	2,70	ac	2,80	abcd	3,00	abcd	3,10	 abcd	3,10	abcd	3,10	— abcd			
	2,60	ac	3,10	ac		abcd		abcd	3,70	abcd		abcd	3,70	abcd			
[Luc 0,03 0,75 1,10 [N] 1,00 [N] 1,13 1,25 1,50		ac	3,20	ac	3,80	ac		abcd		abcd		abcd		abcd			
ja 1,00	3,20	ac	3,60	ac	4,10	ac	4,80	ac	4,90	ac	5,10	ac	5,10	ac	_	_	
Z 1,13		ac	4,00	ac	4,60	ac	5,40	ac	5,60	ac	5,80	ac	5,80	ac	_	_	
<u>≚</u> 1,25		ac	4,20	ac	5,00	ac	6,10	ac	6,30	ac	6,50	ac	6,50	ac	_	_	
≯ 1,50	3,70	ac	4,40	ac	5,70	ac	6,80	ac	7,10	ac	7,30	ac	7,30	ac	—	_	
1,75	3,70	ac	4,70	ac	6,20	ac	7,60	ac	7,70	ac	8,10	ac	8,10	ac	—	—	
2,00	5,00	_	6,50		8,80	_	10,3	_	10,6	—	11,3	_	11,3	—	_	—	
0,50	0,97	ac	1,35	ac			1 ·	abcd	1,51	abcd	1,51		1,51	abcd	_	Ι	
0,55	1,23	ac	1,71	ac		abcd		abcd	1,91	abcd		abcd	1,91		-	—	
표 0,63 표 0,75	1,80	ac	2,50	ac				abcd					2,80		_	—	
	2,00	ac	2,70	ac				abcd							-	—	
<u>,</u> 0,88		ac	2,70	ac	3,30	ac		abcd	3,80	abcd		abcd		abcd	—	—	
្រុក 1,00		ac	2,70	ac	3,40	ac	4,00	ac	4,00	ac	4,00	ac	4,00	ac	_	—	
Image: Non-state 1,13 Image: Non-state 1,25		ac ac	2,70 2,70	ac ac	3,60 3,60	ac	4,40	ac ac	4,40 4,90	ac ac	4,40 4,90	ac	4,40 4,90	ac ac		_	
0,88 0,100 0,11,00 1,13 1,25 1,50		ac ac	2,70	ac ac	3,60 3,60	ac ac	4,00	ac ac	4,90	ac ac	4,90 5,90	ac ac	4,90	ac ac	_		
1,75		ac	2,70	ac	3,60	ac	5,80	ac	6,90	ac	5,90 7,10	ac	7,10	ac			
2,00		_	2,70		3,60		6,00	_	7,30		7,60		7,60	_		_	
	,		, . <u>-</u>		,		1,55		,		,		, - -				
JZ7 - 6,3 x L f JB7 - 6,3 x L f			ts II wit	h t _{ii} ≤ :	2,00 m	ım					T						
			Self	tappir	ig scr	ew					4						

 $\label{eq:JZ7-6,3} \begin{array}{c} x \ L \\ JB7-6,3 \ x \ L \end{array}$ with hexagon head and sealing washer \geq Ø16 mm

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English translation prepared by DIBt



				<i>Ø</i> 4. <i>Ø</i> 4. <i>Ø</i> 6.	88	1.8	AF 3/8'' L 5	Comp Predr Timbe	ner: er: ponent ill dian	sin sta I: S2 II: S2 S2 <u>neter</u>	iinless 80GD 35, S2 80GD	o stair steel , S320 275 or , S320 see ta	1ess s (1.430)GD o S355	teel (* 01) - E r S350 - EN r S350	1.4301 EN 100 0GD - 10025)88 EN 10 -1		В
t	[mm]	1	50	2,0	າດ	3,0	0	4	00	5	00	6	00	> 7	,00	_		
	[mm]				-	0,0			ø				5,5		,00 5,7	_		
	A _{t,nom}										5 N		- , -		- ,-	- 1		
	0,50	_	_	—	—	—	_	—	—	—	_	—	_	—	_	—	_	
	0,55	—	_	—	—	—	_	-	—	—	—	—	—	_	—	_	_	
- - -	0,63	—	—	—	—	—	—	3,40	abcd		abcd		abcd	3,40	abcd	-	—	
<u> </u>	0,75	—	—	—	—	—	—	4,20	ac	4,20	ac	4,20	ac	4,20	ac	—	—	
V _{R.k} [kN] for t _{N.I} [mm]	0,88	—	—	-	—	—	—	4,70	ac	4,70	ac	4,70	ac	4,70	ac	-	—	
for	1,00	—	—	-	—	—	—	5,00	ac	5,00	ac	5,10	ac	5,10	ac	—	-	
Į Į	1,13	—	—	—	—	—	—	5,60	ac	5,60	ac	5,80	ac	5,80	ac	—	—	
/R,k [1,25	—	—	-	—	—	_	6,30	—	6,40	—	6,50	ac	6,50	ac	-	-	
	1,50	_	_	-	—	—	_	7,10	—	7,20	_	7,30	_	7,30	_	-	_	
	1,75 2,00	_	_	_				7,70	—	7,90 7,90	_	8,10 8,10	_	8,10 8,10		-	_	
	0,50							1,67	abcd	1,67	abcd	1,67	abcd		abcd			
	0,55	_	_	_	_	_		2,11	abcd	2,11	abcd	2,11	abcd	2,11	abcd		_	
	0,63	_	_	_	_	_	_	3,10	abcd	3,10	abcd	3,10	abcd	3,10	abcd		_	
[uuu]	0,75	_	_	_	_	_	_	4,00	ac	4,00	ac	4,00	ac	4,00	ac		_	
	0,88	—	_	—	—	—	_	4,40	ac	4,40	ac	4,40	ac	4,40	ac		_	
for	1,00	—	—	—	—	—	—	4,60	ac	4,60	ac	4,60	ac	4,60	ac	—	_	
N _{R,k} [kN] for t _N	1,13	—	—	—	—	—	—	5,10	ac	5,10	ac	5,10	ac	5,10	ac	—	-	
R, K	1,25		—		—	—	—	5,10	—	5,10	—	5,10	ac	5,10	ac	—	-	
Z	1,50		—	—	—	—	_	5,90	—	5,90	_	5,90	—	5,90	—	-	—	
	1,75	-	—		—	—	_	6,90	—	6,90	—	7,10	_	7,10	—	—	-	
	2,00				_			8,80		11,6		13,4		13,4			_	
	JZ7 - 6,3 x L for components II with $t_{II} \ge 1,25$ mm JB7 - 6,3 x L for components II with $t_{II} \ge 2,00$ mm																	
				Self	tappir	ng scre	w											
					Z7-6, B7-6,							An	inex 8	38				

English translation prepared by DIBt



		Ø14 Ø12	3.4		ener: ner: ponent l	stainle stainle : S2800	ess ste ess ste GD, S3	el (1.440 el (1.430 20GD or	1) – EN 10088 4) – EN 10088 1) – EN 10088 [•] S350GD – EN 10346 • S350GD – EN 10346
Here and the second sec	((EL O	T25	<u>Drillir</u>	ng capa	<u>city</u>	Σt _i ≤	2,00 mn	n
BIA (JG)	(())		<u>er subst</u> nber sul		_	performa	ance determined
	t _N	., =	0,40	0,50	0,55	0,63	0,75	0,88	
		nom =		·		_	· · ·	<u> </u>	
		0,40	0,65	0,65	0,65	0,65	0,65	0,65	
		0,50	0,65	0,81	0,81	0,81	0,81	0,81	
		0,55	0,65	0,81	0,99	0,99	0,99	0,99	
	<u> </u>	0,63 0,75	0,65 0,65	0,81 0,81	0,99	1,26	1,26	1,26	
	ir t _N	0,75 0,88	0,65 0,65	0,81 0,81	0,99 0,99	1,26 1,26	1,71 1,71	1,71 2,46	
	V _{R,k} für t _{N,I}	1,00	0,00		0,99	-,20		2,40	
	>	1,13		_		_			
		1,25	_	_	_	_	_	_	
		1,50	_	_		_	_	_	
		2,00	_	_	_	_	_	_	
		0,40	0,45	0,67	0,78	0,94	1,21	1,46	
		0,50	0,45	0,67	0,78	0,94	1,21	1,50	
		0,55	0,45	0,67	0,78	0,94	1,21	1,50	
	– 11	0,63	0,45	0,67	0,78	0,94	1,21	1,50	
	tr	0,75	0,45	0,67	0,78	0,94	1,21	1,50	
	N _{R,k} für t _{N,I}	0,88	0,45	0,67	0,78	0,94	1,21	1,50	
	R R	1,00 1.13	_	_		_		_	
		1,13 1,25				_			
		1,50	_	_		_			
		2,00	_	_	_	_	_	_	
If both components I and	ll are n	nade of	S320GD	or S350)GD all v	alues ma	ay be ind	creased b	y 8,3%.
	Self	tapping	g screw						
JF3-2H JF6-2H			3-FR-2H 6-FR-2H				4	Annex 8	9

with hexagon head or round head with Torx® drive system and sealing washer $\geq \oslash$ 14 mm

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English translation prepared by DIBt



	014 012 ER-Head	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$
BY (J3)	³³ T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
BHA (J6)	T25	<u>Timber substructures</u> for timber substructures no performance determined
$t_{N,II} =$ $M_{t,nom} =$	0,50 0,60	0,70 0,80 0,90 1,00
0,50 = 0,60 1 0,70 0,80 0,80 0,90	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0,66 - 0,66 - 0,66 - 0,88 - 0,88 - 0,88 - 0,88 - 1,09 - 1,09 - 0,88 - 1,09 - 1,09 - 0,88 - 1,46 - 1,46 -
N _{B,II,k}	0,32 0,42	0,51 0,61 0,71 0,80

Pull-trough resistance of component I according to EN 1999-1-4, section 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

self-tapping screw	
JF3-2H-4,8xL JF6-2H-4,8xL JF3-FR-2H-4,8xL JF6-FR-2H-4,8xL	Annex 90
with hexagon head or FR head and seal washer $\geq \varnothing$ 14 mm	

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English translation prepared by DIBt



	FR-Head	3.4	<u>Materials</u> Fastener: Washer: Component Component	stainless stainless I: aluminiu with R _{m,i} II: aluminiu	s steel (1.44 s steel (1.43 m-Alloy min = 215 N/ m-Alloy	801) – EN 1 404) – EN 1 801) – EN 1 ′mm² – EN 1 ′mm² – EN	0088 0088 573
BHA (J3)			Drilling capa	acity	Σt _i ≤ 2,00 n	nm	
₩ E E E E E E E E E E E E E E E E E E E))	<u>Timber subs</u> for timber su		s no perforr	nance dete	rmined
t _{N,II} =	0,50	0,60	0,70	0,80	0,90	1,00	
= 0,60 ↓↓ ↓0,70 ↓↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	0,58 - 0,58 - 0,58 - 0,58 -	0,58 - 0,86 - 0,86 - 0,86 - 0,86 - 0,86 - 0,86 -			0,58 - 0,86 - 1,14 - 1,42 - 1,90 - 1,90 - 0,92	0,58 - 0,86 - 1,14 - 1,42 - 1,90 - 2,38 - 1,04	

Pull-trough resistance of component I according to EN 1999-1-4, section 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

self-tapping :	screw

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English translation prepared by DIBt



8		FR-Head	3.4	<u>Materials</u> Fastener: Washer: Component	stainles stainles I: aluminiu with R _m ,	s steel (1.44 s steel (1.43 um-Alloy _{min} = 165 N/	401 / 1.4578 301) – EN 1 ′mm² – EN 4	
AF (C)		13	T25	Drilling cap	acity	Σt _i ≤ 2,00 n	nm	
A GO				<u>Timber sub</u> for timber s		s no perforr	nance dete	rmined
			I					
	t	0,50	0,55	0,63	0,75	0,88	1,00	1
	t _{N,II} = M _{t,nom} =	0,00	0,55			0,00	1,00	
	0,50 = 0,60 V tor to 0,70 0,80 0,80 0,90	0,45 - 0,45 - 0,45 - 0,45 - 0,45 - 0,45 - 0,45 -	0,45 - 0,45 - 0,45 - 0,45 - 0,45 - 0,45 -	0,45 - 0,66 - 0,66 - 0,66 - 0,66 - 0,66 -	0,45 - 0,66 - 0,88 - 0,88 - 0,88 - 0,88 - 0,88 -	0,45 - 0,66 - 0,88 - 1,09 - 1,09 - 1,09 -	0,45 - 0,66 - 0,88 - 1,09 - 1,46 - 1,83 -	
	N _{R,II,k} =	0,67	0,78	0,94	1,21	1,50	1,78	

Pull-trough resistance of component I according to EN 1999-1-4, section 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

sel	f-tapping	screw

JF6-2H-4,8xL

JF6-FR-2H-4,8xL

JF3-2H-4,8xL JF3-FR-2H-4,8xL with hexagon head or FR head and seal washer $\geq \varnothing$ 14 mm

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English translation prepared by DIBt



8	8.4 <u>8</u>	Ø14 Ø12 FR-Hea	d	<u>Materials</u> Fastener: Washer: Componen Componen	stainles stainles t I: aluminiu with R _m	s steel (1.4 s steel (1.4 um-Alloy _{min} = 215 N	301) – EN 1 404) – EN 1 301) – EN 1 /mm² – EN or S350GD	0088 0088
AF8		13	T25	Drilling cap	acity	Σt _i ≤ 2,00 r	nm	
AF () () () () () () () () () () () () ()	. Ø ¹⁴	36))	<u>Timber sub</u> for timber s		s no perfor	mance dete	rmined
	t _{N,II} =	0,50	0,60	0,70	0,80	0,90	1,00]
	M _{t,nom} = 0,50	0,58 -	0,58 -	- 0,58	0,58 -	0,58 -	0,58 -	
	<u> </u>	0,58 -	0,58 - 0,58 -	0,86 - 0,86 -	0,86 - 1,14 -	0,86 - 1,14 -	0,86 - 1,14 -	
	2	0,58 -	0,58 - 0,58 -	0,86 - 0,86 -	1,14 - 1,14 -	1,42 - 1,42 -	1,42 - 1,90 -	
		0,58 -	0,58 -	0,86 -	1,14 -	1,42 -	2,38 -	
	NR,II,k =	0,67	0,78	0,94	1,21	1,50	1,78	
Pull-trough resi of the aluminiu		l sheeting.	-	EN 1999-1-4	, section 8.3	.3.1 or speci	fications of th	e manufacturer
		self-tappin	_			-		
		-4,8xL	JF6-2H-	4 0.1		Annex		

English translation prepared by DIBt



210.5 1 22 905 905 905	Frank	omponent rilling cap	case none I: S2800 II: S2800 acity acity	GD, S320 Σt _i ≤ 2 <u>S</u>	0GD or S 0GD or S 2 x 0,88 n	350 GD – EN 10346 350 GD – EN 10346
t _{N,II} =	0,40 0,50	0,55	0,63	0,75	0,88	
$\begin{array}{c} M_{1,nom} = \\ 0,40 \\ 0,50 \\ 0,55 \\ 0,63 \\ \parallel 0,75 \\ 1,00 \\ 1,13 \\ 1,25 \\ 1,50 \\ 1,75 \\ 2,00 \\ 0,40 \\ 0,50 \\ 0,55 \\ 0,63 \\ \parallel 0,75 \\ 1,75 \\ 2,00 \\ 0,40 \\ 0,50 \\ 0,55 \\ 0,63 \\ \parallel 0,75 \\ 1,00 \\ N \\ 1,13 \\ 1,25 \\ 1,00 \\ N \\ 1,13 \\ 1,25 \\ 1,50 \\ 1,75 \\ 2,00 \\ \end{array}$	0,79 0,79 0,79 1,18 0,79 1,18 0,79 1,18 0,79 1,18 0,79 1,18 0,79 1,18 0,79 1,18 0,79 1,18 0,52 0,71 0,52 0,71 0,52 0,71 0,52 0,71 0,52 0,71 <th>- 0,79 1,27 1,41 1,41 1,41 1,41 1,41 - - - - - - - - - - - - - - - - - - -</th> <th>0,79 1,42 1,56 1,77 1,77 1,77</th> <th>0,79 1,65 1,79 2,00 2,35 2,35 1,30 1,30 1,30 1,30 1,30 1,30 1,30 -</th> <th>0,79 1,65 1,79 2,00 2,35 2,84 — — — — — 1,64 1,64 1,64 1,64 1,64 1,64 1,64 1,64</th> <th></th>	- 0,79 1,27 1,41 1,41 1,41 1,41 1,41 - - - - - - - - - - - - - - - - - - -	0,79 1,42 1,56 1,77 1,77 1,77	0,79 1,65 1,79 2,00 2,35 2,35 1,30 1,30 1,30 1,30 1,30 1,30 1,30 -	0,79 1,65 1,79 2,00 2,35 2,84 — — — — — 1,64 1,64 1,64 1,64 1,64 1,64 1,64 1,64	
If component I and component II are	e made of S320GI	D or S350G	SD, the va	lues may	be increas	sed by 8,3%.
	H-4,8 x L xagon head			Ar	ınex 94	

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	≥ Ø1 Ø10,		L 5,3	F	≥ Ø11 Ø12	3,4			ner: er: onent	sta sta I: S2	ainless ainless 80GD	s stee s stee , S32	l (1.44 l (1.43 20GD (01 / 01) - or S3	1.4578 - EN 1 50GD	8) – El 0088 – EN	N 10088 N 10088 10346 10346
Ø5,5		-				Tot		Drillin	g capa	city		Σt _i ≤ :	2 x 1,0	0 mr	n		
SW8 SW8	EL eL			(30	T2!	5 -		er subs Iber su			s no p	berforn	nanco	e dete	rmine	d
	t _{N,I}	ı =	0,4	10	0,5	50	0,	55	0,6	63	0,	75	0,8	38	1,	00	
	M _{t,nc}	m =							-	-							
	V _{R.k} for t _{N.I} =	0,63 0,75 0,88 1,00 1,13 1,25	0,88 0,88 0,88 0,88 0,88 0,88 0,88 		0,88 1,56 1,56 1,56 1,56 1,56 1,56 		0,88 1,56 1,76 1,76 1,76 1,76 1,76 	 	0,88 1,56 1,76 2,09 2,09 2,09 2,09 		0,88 1,56 1,76 2,09 2,57 2,57 2,57 		0,88 1,56 1,76 2,09 2,57 3,11 3,11 —		0,88 1,56 1,76 2,09 2,57 3,11 3,61 —		
	N _{R,k} for t _{N,I} =	0,55 0,63 0,75 0,88	0,60 0,60 0,60 0,60 0,60 0,60		0,82 0,82 0,82 0,82 0,82 0,82 0,82 0,82	—	0,94 0,94 0,94 0,94 0,94 0,94 0,94 	_		—	1,00 1,44 1,44 1,44 1,44 1,44 1,44 	—	1,00 1,67 1,80 1,80 1,80 1,80 1,80 	—	1,00 1,67 1,87 2,14 2,14 2,14 2,14 2,14 	—	
If both co	mpone	ents I			ade of Irilling			S350	GD all v	values	s may k	be inci	reased	by 8,	3%.		
	16				-				хI			Ar	nnex (95			

with hexagon head or round head with Torx®-drive and sealing washer $\ge \emptyset$ 11 mm

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≥ Ø 14 Ø 10,5 Ø 5,5		≥ Ø 14 Ø 12 m R-Kopf	Comp	ner: sta sta er: sta ponent I: S2	ainless stee ainless stee 80GD, S32 80GD, S32	el (1.4401 / el (1.4301) - 20GD or S3	1.4567) – EN 1.4578) – EN - EN 10088 50GD – EN 50GD – EN	10088 10346
8MS	((5	er substructe aber substru		performance	e determined	1
	0.40	0.50	0.55	0.00	0.75	0.00		
t _{N,II} = M _{t,nom} =	0,40	0,50	0,55	0,63	0,75	0,88	1,00	
0,50 0,55 1 0,63 0,75 0,88 1,00 1,13 1,25 0,40 0,55 1 0,55 1 0,63 0,55 0,50 0,55 1,2 0,63 0,55 0,55 0,88 1,00 1,13 1,25 0,63 1,00 1,13 1,25 0,63 1,00 1,13 1,25 0,63 1,00 1,13 1,25 0,55 1,00 0,75 1,00 1,00 1,13 1,25 0,63 1,00 1,13 1,25 0,55 1,00 0,55 1,00 1,13 1,25 0,40 0,55 1,00 1,13 1,25 0,63 1,00 1,13 1,25 0,55 0,55 0,58 1,00 0,55 0,55 1,00 0,55 0,63 1,00 0,55 0,63 1,00 0,55 0,50 0,55 0,63 1,00 0,55 0,58 0,55 0,55 0,58 0,55 0,58 0,58 0,55 0,55 0,58 0,58 0,58 0,58 0,55 0,58	0,60 — 0,60 — 0,60 — 0,60 — 0,60 — 0,60 — 0,60 — 0,60 — 0,60 — 0,60 — 0,60 — 0,60 — 0,60 — 0,60 —	0,82 — 0,82 —		$\begin{array}{cccccccccccccccccccccccccccccccccccc$		$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
If both components I		hade of S320 frilling scre		GD all values	s may be inc	reased by 8,	3%.	

with hexagon head or round head with Torx®-drive and sealing washer $\ge \emptyset$ 14 mm

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K.	SW8 SW8 & 2	10 10 5 5 5 5 5 5 5 5 5 5 5 5 5		L 5,3		≥ Ø11 Ø12 ■	T25		Comp Drilling	ner: onent onent g capa r subs	sta sta I: alu wit II: alu wit acity	ainless ainless uminiu th R _{m,r} uminiu th R _{m,r}	s stee s stee m-All m-All m-All rin = 1 $\Sigma t_i \le 2$	65 N/	01 / ⁻ 01) – mm ² · mm ² ·	1.4578 - EN 1 - EN { - EN {	3) – E 0088 573 573	N 100	
t,	ı, ıı =	0,4	40	0,5	50	0,6	60	0,7	70	0,8	30	0,9	90	1,0	00	1,2	20	1,	50
	nom =	0,4	40	0,5	50	0,43	60	0,7	70	0,8	30	0,9	90	0,43	00	1,2	20	0,43	50

Pull-trough resistance of component I according to EN 1999-1-4, section 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

0,69

0,80

0,91

1,13

1,63

self drilling screw

0,45

0,58

JF3-2-5,5 x L JF3-FR-2-5,5 x L

0,35

_ JF6-2-5,5 x L _ JF6-FR-2-5,5 x L

Annex 97

with hexagon head or round head with Torx®-drive and sealing washer $\ge \emptyset$ 11 mm

N_{R,II,k} =

0,24

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English translation prepared by DIBt



≥Ø11 Ø10,5	≥Ø11 Ø12 +	<u>Materials</u> Fastener: stainless steel (1.4301) – EN 10088 stainless steel (1.4404) – EN 10088
KL	FR-Kopf	$ \begin{array}{ll} \text{Washer:} & \text{stainless steel (1.4301)} - \text{EN 10088} \\ \text{Component I: aluminium-Alloy} & \text{with } R_{\text{m,min}} = 215 \ \text{N/mm^2} - \text{EN 573} \\ \text{Component II: aluminium-Alloy} & \text{with } R_{\text{m,min}} = 215 \ \text{N/mm^2} - \text{EN 573} \\ \end{array} $
ø5,5	T25	<u>Drilling capacity</u> $\Sigma t_i \le 2 \times 1,50 \text{ mm}$
8MS BMS	125 T25	<u>Timber substructures</u> for timber substructures no performance determined

t _N	.,II =	0,40 0,50 0,60		0,70 0,80		0,90		1,0	00	1,20		1,50							
	M _{t,nom} =		_	-															
		0,55	_	0,55	_	0,55	_	0,55	_	0,55	_	0,55	_	0,55	_	0,55	_	0,55	—
	0,50	0,55	_	0,79	_	0,79	_	0,79	_	0,79	_	0,79	_	0,79	_	0,79	_	0,79	_
	0,60	0,55	—	0,79	_	0,91	_	0,91	_	0,91	_	0,91	_	0,91	_	0,91	_	0,91	_
t _{N,I} =	0,70	0,55	—	0,79	_	0,91	_	1,03	_	1,03	_	1,03	_	1,03	—	1,03	_	1,03	_
or	0,80	0,55	—	0,79	—	0,91	—	1,03	—	1,15	_	1,15	_	1,15	—	1,15	—	1,15	-
V _{R,k} for	0,90	0,55	—	0,79	_	0,91	_	1,03	_	1,15	—	1,35	_	1,35	—	1,35	_	1,35	-
>	1,00	0,55	—	0,79	_	0,91	_	1,03	_	1,15	—	1,35	_	1,54	_	1,54	_	1,54	-
	1,20	0,55	—	0,79	_	0,91	_	1,03	_	1,15	_	1,35	_	1,54	—	1,62	_	1,62	-
	1,50	0,55	—	0,79	—	0,91	—	1,03	_	1,15	—	1,35	—	1,54	_	1,62	—	2,44	—
N _{R,II,k} =		0,31 0,46 0,60 0,75		0,89 1,0		1,04 1,18		1,47		2,1	2								

Pull-trough resistance of component I according to EN 1999-1-4, section 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

self drilling screw

JF3-2-5,5 x L JF3-FR-2-5,5 x L

L JF6-2-5,5 x L JF6-FR-2-5,5 x L

Annex 98

with hexagon head or round head with $\text{Torx} \mathbb{B}$ -drive and sealing washer $\geq \emptyset$ 11 mm

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Ø 4,17 Ø 4,17 Ø 4,3 Ø 5,46 T 25 T 25	$\begin{tabular}{ c c c c c } \hline Materials \\ \hline Fastener: stainless steel (1.4301 / 1.4567) - EN 10088 \\ stainless steel (1.4401 / 1.4578) - EN 10088 \\ \hline Washer: none \\ \hline Component I: S280GD, S320GD or S350GD - EN 10346 \\ \hline Component II: S280GD, S320GD or S350GD - EN 10346 \\ \hline \hline Drilling capacity $ $\Sigma t_i \leq 3,50 mm $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $$
	for timber substructures no performance determined
t _{N,II} = 1,00 1,13 1,25	1,50 1,75 2,00 2,50 3,00
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
If component I is made of S320GD or S350GD, the Self drilling screw	e values marked with ^{a)} may be increased by 8,3%.
_	-3-5,5 x L /e Annex 99

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Ø ¹² Ø ¹¹ Ø ^{4,17} Ø ^{4,3} Ø ^{5,46} T ²⁵ T ²⁵								Materia Faster Washe Compo Compo Drilling	er: onent onent	sta sta t I: S28 t II: S28 acity	inles: inles: BOGE	s steel s steel), S320	(1.4 (1.4 0GD 0GD	or S35	.457 EN 1 50GD	8) – El 0088 – EN	N 100 1034)88 6
										<u>structu</u> ubstrue		s no p	erfor	mance	dete	rmine	d	
	t _{N,II} =	1,0	00	1,1	3	1,2	5	1,5	50	1,7	'5	2,0	00	2,5	50	3,0	00	
	t,nom =								-	_		<u> </u>		· · ·				
N _{R.k} for t _{N.I} =	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 1,00 1,13 1,25 1,50 1,75	1,60 1,68 1,98 2,17 2,35 2,71 3,07 3,78 3,78 3,78 3,78 3,78 1,04 1,10 1,10 1,10 1,10 1,10 1,10 1,10		1,60 1,69 1,84 2,06 2,30 2,52 2,90 3,28 4,03 4,03 4,03 4,03 0,86 ^{a)} 1,04 1,10 1,10 1,10 1,10 1,10 1,10 1,10		$\begin{array}{c} 1,60\\ 1,71\\ 1,88\\ 2,14\\ 2,42\\ 2,67\\ 3,07\\ 3,47\\ 4,26\\ 4,26\\ 4,26\\ 4,26\\ 1,04^{a)}\\ 1,50\\ $		$\begin{array}{c} 1,60\\ 1,82\\ 2,16\\ 2,68\\ 3,24\\ 3,76\\ 4,01\\ 4,25\\ 4,74\\ 4,74\\ 4,74\\ 4,74\\ 1,04^{a)}\\ 1,04^{a)}\\ 1,56^{a)}\\ 2,00\\ 2,$		$\begin{array}{c} 1,60\\ 1,84\\ 2,21\\ 2,78\\ 3,39\\ 3,96\\ 4,28\\ 4,59\\ 5,22\\ 5,22\\ 5,22\\ 5,22\\ 0.86^{a)}\\ 1,04^{a)}\\ 1,20^{a)}\\ 1,56^{a)}\\ 2,32^{a)}\\ 2,32^{a}\\ 2,32^{a)}\\ 2,32^{a}\\ 2$	 	$\begin{array}{c} 1,60\\ 1,86\\ 2,26\\ 2,88\\ 3,54\\ 4,15\\ 4,54\\ 4,93\\ 5,70\\\\\\ 0,86^{a)}\\ 1,04^{a)}\\ 1,20^{a)}\\ 1,56^{a)}\\ 2,32^{a)}\\ 2,32^{a)}\\ 2,32^{a)}\\ 2,32^{a)}\\ 2,32^{a)}\\\\\\\\\\\\\\\\\\\\ -$		1,60 1,89 2,36 3,07 3,83 4,54 1,04 ^a) 1,20 ^a) 1,56 ^a) 2,32 ^a) 2,32 ^a) 		1,60 — — — — — — — — — — — — — — — — — — —		
If comp		1,10 is mac						2,00	mark	ed with	^{a)} ma	y be in	creas	ed by 8	3,3%.	L		
	Self drilling screw JT3-LT-3-5,5 x L JT6-LT- with pan head with Torx®-drive and sealing wa							3-5,5 x L Annex 100 asher ≥ Ø 11 mm										

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English translation prepared by DIBt



	Materials
¢10 FR-Head T25 T25	$\begin{array}{ll} \mbox{Fastener:} & JT4-4-4,8xL: \\ & stainless steel (1.4301 / 14567) - EN 10088 \\ & JT9-4-4,8xL: \\ & stainless steel (1.4401 / 1.4578) - EN 10088 \\ \mbox{Component I: aluminium alloy} \\ & with R_{m,min} = 165 \ N/mm^2 - EN 573 \\ \mbox{Component II: aluminium alloy} \\ & with R_{m,min} = 165 \ N/mm^2 - EN 573 \\ \end{array}$
	$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 4,50 \text{ mm}$
	<u>Timber substructures</u> for timber substructures no performance determined

t _N	,II =	2,0)0	2,5	50	3,00		
M _{t,i}	nom =							
	0,50	0,67	ac	0,67	ac	0,67	ac	
	0,60	0,87	ac	0,87	ac	0,87	ac	
	0,70	1,06	ac	1,06	ac	1,06	ac	
V _{R,k} for t _{N,I} =	0,80	1,37	-	1,37	-	1,37	ac	
lor.	0,90	1,67	-	1,67	-	1,67	а	
/ _{R.k}	1,00	1,98	-	1,98	-	1,98	а	
_	1,20	2,21	-	2,41	-	2,60	а	
	1,50	2,56	-	3,04	-	3,52	а	
	2,00	-	-	-	-	-	-	
N _{R,II,k} =		1,4	10	1,9	90	2,3	39	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT4-(FR-)4-4,8xL JT9-(FR-)4-4,8xL With hexagon head or FR-head

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English translation prepared by DIBt



	<u>Materials</u>
FR-Head	$\label{eq:stainless} \begin{array}{l} Fastener: & JT4-4-4,8xL: \\ & stainless steel (1.4301 / 1.4567) - EN 10088 \\ & JT9-4-4,8xL: \\ & stainless steel (1.4401 / 1.4578) - EN 10088 \\ \hline \\ Component I: aluminium alloy \\ & with R_{m,min} = 215 \ N/mm^2 - EN 573 \\ \hline \\ \hline \\ Component II: aluminium alloy \\ & with R_{m,min} = 215 \ N/mm^2 - EN 573 \\ \hline \\ $
	<u>Timber substructures</u> for timber substructures no performance determined

	t _N	,II =	2,0)0	2,5	50	3,00		
	M _{t,r}	nom =			_	-			
Γ		0,50	0,87	ac	0,87	ac	0,87	ac	
		0,60	1,13	ac	1,13	ac	1,13	ac	
	Ш	0,70	1,38	ac	1,38	ac	1,38	ac	
	V _{R,k} for t _{N,I} =	0,80	1,78	-	1,78	-	1,78	ac	
	õ	0,90	2,18	-	2,18	-	2,18	а	
	, ^R , ^K	1,00	2,58	-	2,58	-	2,58	а	
	-	1,20	2,88	-	3,14	-	3,39	а	
		1,50	3,33	-	3,96	-	4,59	а	
		2,00	-	-	-	-	-	-	
	N _{R,II,k} =		1,8	33	2,4	18	3,12		

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Further particulars:

- Component I and II of aluminium with a tensile strength of $R_m \ge 245 \text{ N/mm}^2$: For $R_m \ge 215 \text{ N/mm}^2$ the indicated values of the shear force resistance $V_{B,k}$ can be increased by 14%.
- Compontent II of aluminium with a tensile strength of $R_m \ge 245 \text{ N/mm}^2$: For $R_m \ge 215 \text{ N/mm}^2$ the indicated values of the pull-out resistance $N_{R,II,k}$ can be increased by 14%.

values of the pull-out resistance $M_{R,II,k}$ can be increased by 1478 .	
Self-drilling screw	
JT4-(FR-)4-4,8xL JT9-(FR-)4-4,8xL	Annex 102
With hexagon head or FR-head	

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English translation prepared by DIBt



BIO. 5 BIO. 5 BI	$\label{eq:matrix} \begin{array}{ c c c } \hline \underline{Materials} \\ \hline Fastener: & JT4-6-5,5xL \\ & stainless steel (1.4301 / 1.4567) - EN 10088 \\ & JT9-6-5,5xL \\ & stainless steel (1.4401 / 1.4578) - EN 10088 \\ \hline Component I: aluminium alloy \\ & with R_{m,min} = 165 \ N/mm^2 - EN 573 \\ \hline Component II: aluminium alloy \\ & with R_{m,min} = 165 \ N/mm^2 - EN 573 \\ \hline \hline Drilling capacity \\ \hline \Sigma t_i \leq 6,50 \ mm \\ \hline \end{array}$
Ø4.5	<u>Timber substructures</u>
Ø5.46	for timber substructures no performance determined

t _N	I,II =	2,0)0	2,50		3,0	00	4,00		5,00		
M _{t,r}	nom =					_	-					
	0,50	0,71	ac	0,71	ac	0,71	ac	0,71	ac	0,71	ac	
	0,60	0,94	ac	0,94	ac	0,94	ac	0,94	ac	0,94	ac	
п	0,70	1,17	ac	1,17	ac	1,17	ac	1,17	ac	1,17	ac	
Ľ,	0,80	1,40	-	1,40	-	1,40	ac	1,40	ac	1,40	а	
V _{R,k} for t _{N,I}	0,90	1,62	-	1,62	-	1,62	ac	1,62	ac	1,62	а	
', H, H	1,00	1,84	-	1,84	-	1,84	ac	1,84	ac	1,84	а	
_	1,20	2,16	-	2,21	-	2,26	-	2,35	-	2,44	a	
	1,50	2,65	-	2,76	-	2,88	-	3,11	-	3,34	а	
	2,00	2,65	-	2,76	-	2,88	-	3,11	-	-	-	
N _{R,II,k} =		1,3	36	1,7	1,77		2,16		3,43		4,70	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT4-6-5,5xL JT9-6-5,5xL With hexagon head



The second secon	$\begin{tabular}{ c c c c c } \hline Materials \\ \hline Materials \\ \hline Fastener: JT4-6-5,5xL \\ stainless steel (1.4301 / 1.4567) - EN 10088 \\ JT9-6-5,5xL \\ stainless steel (1.4401 / 1.4578) - EN 10088 \\ \hline Component I: aluminium alloy \\ with R_{m,min} = 215 \ N/mm^2 - EN 573 \\ \hline Component II: aluminium alloy \\ with R_{m,min} = 215 \ N/mm^2 - EN 573 \\ \hline \hline Drilling capacity \ \Sigma t_i \leq 6,50 \ mm \\ \hline \hline Timber substructures \\ \hline \hline \end{tabular}$	
	for timber substructures no performance determined	

t _{n,II} =		2,00		2,50		3,00		4,00		5,00		
M _{t,nom} =		_										
V _{R,k} for t _{N,I} =	0,50	0,93	ac									
	0,60	1,23	ac									
	0,70	1,53	ac									
	0,80	1,82	-	1,82	-	1,82	ac	1,82	ac	1,82	a	
	0,90	2,11	-	2,11	-	2,11	ac	2,11	ac	2,11	a	
	1,00	2,40	-	2,40	-	2,40	ac	2,40	ac	2,40	a	
	1,20	2,82	-	2,88	-	2,94	-	3,06	-	3,18	a	
	1,50	3,45	-	3,60	-	3,75	-	4,05	-	4,35	a	
	2,00	3,45	-	3,60	-	3,75	-	4,05	-	-	-	
N _{R,II,k} =		1,77		2,30		2,82		4,47		6,12		

Further particulars:

- Component I and II of aluminium with a tensile strength of $R_m \ge 245 \text{ N/mm}^2$: For $R_m \ge 215 \text{ N/mm}^2$ the indicated values of the shear force resistance $V_{R,k}$ can be increased by 14%.
- Component II of aluminium with a tensile strength of R_m ≥ 245 N/mm²: For R_m ≥ 215 N/mm² the indicated values of the pull-out resistance N_{B,II,k} can be increased by 14%.

Self-drilling screw		
JT4-6-5,5xL	Annex 104	
JT9-6-5,5xL		
With hexagon head		