

## **European Technical Approval ETA-10/0200**

Handelsbezeichnung <i>Trade name</i>	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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<sup>&</sup>lt;sup>1</sup> Official Journal of the European Communities L 40, 11 February 1989, p. 12

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

<sup>&</sup>lt;sup>3</sup> Official Journal of the European Union L 284, 31 October 2003, p. 25

<sup>&</sup>lt;sup>4</sup> Bundesgesetzblatt Teil I 1998, p. 812

<sup>&</sup>lt;sup>5</sup> 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. I	Description
Annex 6	JT2-2-4,2 x L JT2-3-4,8 x L	steel	Sleer	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	SIDDI	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		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	SIPPI	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	SIPPI	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.	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 <sup>*)</sup>	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 <sup>*)</sup>	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 <sup>*)</sup>	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 <sup>*)</sup>	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. I	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 ≥ Ø11 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 ≥ Ø11 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		with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø11 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 <sup>*)</sup>	JT3-2-6,5 x L JT6-2-6,5 x L	steel	timber	with hexagon head and sealing washer ≥ Ø16 mm
Annex 66 <sup>*)</sup>	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 <sup>*)</sup>	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 <sup>*)</sup>	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.	Description
Annex 69 <sup>*)</sup>	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 <sup>*)</sup>	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 <sup>*)</sup>	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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Annex	Fastening screw	Comp. I	Comp.	Description
Annex 92	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
Annex 93	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
Annex 94	JF2-2H-4,8 x L	steel	steel	with hexagon head
Annex 95	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
Annex 96	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
Annex 97	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
Annex 98	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
Annex 99	JT3-LT-3-5,5xL JT6-LT-3-5,5xL	steel	steel	round head with Torx® drive system
Annex 100	JT3-LT-3-5,5xL JT6-LT-3-5,5xL	steel	steel	round head with Torx® drive system and sealing washer ≥ Ø11 mm
Annex 101	JT4-4-4,8xL JT9-4-4,8xL	alu 165	alu 165	with hexagon head
Annex 102	JT4-4-4,8xL JT9-4-4,8xL	alu 215	alu 215	with hexagon head
Annex 103	JT4-6-5,5xL JT9-6-5,5xL	alu 165	alu 165	with hexagon head
Annex 104	JT4-6-5,5xL JT9-6-5,5xL	alu 215	alu 215	with hexagon head

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

<sup>1</sup>) Aluminum alloy with  $R_{m,min}$  of 165 N/mm<sup>2</sup>

<sup>2</sup>) Aluminum alloy with  $R_{m,min}$  of 215 N/mm<sup>2</sup>

### 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 documentation<sup>7</sup> 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/EC<sup>6</sup>.

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.

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 Commission<sup>8</sup> 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.<sup>9</sup>

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.

<sup>&</sup>lt;sup>8</sup> Official Journal of the European Communities L 80 of 18.03.1998.

<sup>&</sup>lt;sup>9</sup> 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<sub>g</sub> Screw-in length part of thread screwed into component II including drill point.
- I<sub>b</sub> 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<sub>ax,Rk</sub> 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<sub>v.Rk</sub> according to EN 1995-1-1:2004 + A1:2008, clause 8.2.3

k<sub>mod</sub> 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

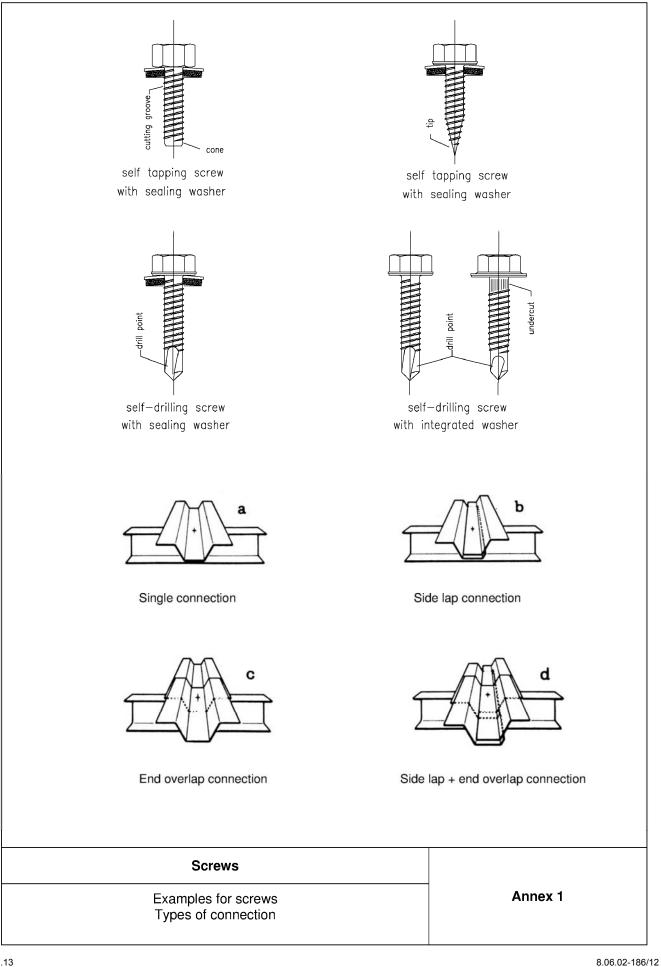
It is in the responsibility of the manufacturer to ensure that the information on the specific conditions according to 1, 2, 4.2 and 4.3 (including Annexes referred to) is given to those who are concerned. This information may be given by reproduction of the respective parts of the European technical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





	<u>Type of</u> <u>Fastener</u> Materials	self tapping screw Ø6,3 mm and Ø6,5 mm and self drilling screw from Ø5,5 mm to Ø6,3 mm
	Fastener:	stainless steel - EN 10088 or similiar
	Washer:	stainless steel - EN 10088 EPDM sealing washer
	Component I:	S280GD, S320GD or 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 I		

sheet /		.   r	perforate	S280GI	C	perforated sheets made of S320GD				perforated sheets made of S350GD with R <sub>m,min</sub> = 420 N/mm <sup>2</sup>			
Øw	asher		R <sub>m,min</sub> =				R <sub>m,min</sub> =						
		16 mm	19 mm	22 mm	25 mm	16 mm			25 mm	16 mm	19 mm	22 mm	25 mm
M	t,nom						51	١m					
	0,50	—	—	—	—	—	—	—	—	—	—	-	—
Ē	0,55	—	_	—	—	_	—	—	—	—	—	-	—
Ĕ	0,63	—	_	—	—	_	—	—	_	—	—	_	_
tx,I	0,75	2,16	2,22	2,24	2,38	2,34	2,40	2,44	2,58	2,54	2,60	2,62	2,78
for	0,88	2,56	2,64	2,64	2,78	2,78	2,86	2,86	3,02	3,00	3,10	3,10	3,26
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	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
×. 7	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	_	_				_			_		_	
~	0,55	_			_	_	—		_	—	—	_	_
Ш	0,63	_			_	_	—		_	—	_	_	
tn,	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
٦	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
Z	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 <sub>R,k</sub> [kN] for t <sub>N,I</sub> [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
Z	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>	
ĺo`o`o` <del>⊕Ì<sup>ײ</sup></del>	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		
	1	

screw / Ø washer		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				
		16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm	
M <sub>t,nom</sub>					51	Nm			•	
	0,50	_	_	_	—		_	_	_	
Ē	0,55	—	—	_	—	_	—	_	_	
Ĕ	0,63	—	—	_	—	_	—	_	_	
tn,	0,75	2,48	2,52	2,84	2,76	2,38	2,64	3,16	3,24	
for	0,88	3,04	3,12	3,42	3,32	3,02	3,28	3,78	3,88	
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,00	3,56	3,70	3,84	3,84	3,64	3,96	4,36	4,50	
,к [	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	_	—	—	—	—	—	—	—	
Ē	0,55	—	—	—	—		—	—	_	
Ē	0,63	—	—	_	—	—	—	—	_	
ťn,i	0,75	2,88	3,16	3,24	3,14	2,86	3,46	3,72	3,92	
for	0,88	3,42	3,72	3,76	3,70	3,40	4,02	4,30	4,46	
Ž	1,00	3,92	4,28	4,28	4,20	3,90	4,56	4,82	4,96	
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	4,46	4,86	4,88	4,72	4,44	5,12	5,38	5,48	
Ž	1,25	4,96	5,42	5,42	5,26	4,94	5,66	5,88	5,94	
	1,50	6,04	6,60	6,60	6,38	6,00	6,74	6,92	6,90	

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

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

Fastening 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:	S320GD - 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	screws and 6.3 mm and	
Øw	asher	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm
M	t,nom				51	١m			•
	0,50	_	_	_	_	_	_	_	_
ᄃ	0,55	—	—	_	—	—	—	_	—
Ĕ	0,63	—	—	_	—	—	—	—	_
t,	0,75	2,68	2,74	3,08	3,00	2,68	2,88	3,42	3,50
for	0,88	3,30	3,38	3,70	3,60	3,36	3,60	4,10	4,22
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,00	3,86	4,00	4,16	4,16	4,02	4,30	4,72	4,88
3,k []	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	_	—	—	—	—	—	—	—
ᄃ	0,55	—	—	_	—	—	—	_	_
Ē	0,63	—	—	_	—	_	—	_	_
ťn,	0,75	3,12	3,42	3,50	3,40	3,12	3,68	4,06	4,26
for	0,88	3,70	4,04	4,08	4,00	3,70	4,32	4,68	4,86
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,00	4,24	4,64	4,64	4,54	4,24	4,92	5,24	5,40
, F	1,13	4,84	5,26	5,28	5,12	4,84	5,54	5,86	5,96
Ž	1,25	5,38	5,88			5,38	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



Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,5 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,5 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,5 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,5 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,5 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,5 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,5 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,3 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,3 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,3 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,3 mm         Image: self tapping screw \$\vee\$6,3 mm and \$\vee\$6,3 mm         Image: self tapping screw \$\vee\$6,3 mm to \$\vee\$6,3 mm         Image: self tapping screw \$\vee\$ \$\vee\$1,0 mm         Image: self tapping screw \$\vee\$ \$\vee\$1,0 mm         Image: self tapping screw \$\vee\$ \$\vee\$1,0 mm         Image: self tapping screw \$\vee\$1,0 mm
Fastener: stainless steel - EN 10088 or similiar
O   O   Washer:   stainless steel - EN 10088     O   O   Image: Comparison of the stainless steel - EN 10088     EPDM sealing washer
$\circ$ 5,0 $\oplus$
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		
Øw	asher	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm
M	t,nom				51	١m			•
	0,50	_	_	_	_	_	_	_	_
ᄃ	0,55	—	_	_	—	—	—	_	—
Ĕ	0,63	—	—	_	—	—	—	—	_
t <sub>N,I</sub>	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
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,00	4,14	4,28	4,46	4,46	4,24	4,52	5,08	5,12
3,k []	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	_	—	—	—	—	-	—	—
Ē	0,55	—	—	—	—	—	—	—	_
Ē	0,63	—	_	_	—	_	—	_	_
ťn,	0,75	3,34	3,66	3,76	3,64	3,52	4,16	4,52	4,64
for	0,88	3,96	4,36	4,38	4,28	3,98	4,74	5,04	5,24
[Y	1,00	4,54	4,98	4,96	4,86	4,40	5,24	5,50	5,76
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	5,16	5,64	5,64	5,48	4,86	5,76	5,96	6,32
Ž	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



Ø9 to Ø3.1 to Ø3.2 Ø4.22	Ø3.6 Ø3.6	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
FT (JS)	GC AF8	Drilling capacity see remark below
	29.5 5 6	<u>Timber substructures</u> no performance determined

t <sub>N,II</sub>	[m m ]	0,6	3	0,7		0,8		1,0	0	1,1	3	1,2	25	1,5	50	2,0	0
l M	1 <sub>t,nom</sub>					2-4,2 x	L:4 N	١m						_	-		
	't,nom		JT	2-4,8 x	:L:4 N	١m					JT	2-4,8 x	:L:51	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
for t <sub>N,I</sub> [mm]	0,75	1,50	—	1,90	—	2,00	—	2,00	—	2,00	—	2,00	ac	2,00	ac	2,00	ac
Ţ	0,88	1,50	—	1,90	—	2,30	—	2,30	—	2,30	—	2,30	а	2,30	а	2,30	а
Ę	1,00	1,50	—	1,90	—	2,30	—	2,60	—	2,60	—	2,60	—	2,60	а	2,60	а
Ξ	1,13	1,50	—	1,90	—	2,30	—	2,80	—	2,90	—	2,90	—	2,90	—	2,90	—
V <sub>R,k</sub> [kN]	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	_	_	—	_	—	_	—	_	—	_	—	_	—	_	—	_
	0,55	—	_	—	—	I —	_	—	_	—	—	—	—	—	—	—	—
2	0,63	0,50	_	0,70	—	1,00	_	1,30	_	1,40	—	1,40	ac	1,40	ac	1,40	ac
Ē	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 t <sub>N,I</sub> [mm]	1,00	0,50	_	0,70	_	1,00	_	1,30	_	1,50	_	1,70	—	1,80	а	1,80	а
Ξ	1,13	0,50	_	0,70	_	1,00	_	1,30	_	1,50	_	1,70	—	1,90	—	1,90	_
N <sub>R,k</sub> [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

with hexagon head or round head with Phillips®, Pozidriv® or Torx® drive system

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		≥Ø Ø1 3.58	0.5 9 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1	1		Compo	er: c c r: c nent I: S nent II: S	arbon st 280GD, 235 - El 280GD,	dened ar eel, galv S320Gl N 10025 S320Gl	vanized D or S35 -1 D or S35	50GD - E	N 10346 N 10346
		AF8	2 Ø4.8			Timber	<u>substruc</u>	<u>tures</u>	Et <sub>i</sub> ≤ 2,20	mm		
t	[mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75
_	И <sub>t,nom</sub>	0,10		1 0,00		1 0,70		1,00	1,,,,,	,20	1,00	.,
	0,40	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71
	0,50	0,71	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	
_	0,55	0,71	1,18	1,42	1,42	1,42	1,42	1,42	1,42	1,42	1,42	
<u></u>	0,63	0,71	1,18	1,42	1,71	1,71	1,71	1,71	1,71	1,71	1,71	
ťn,	0,75	0,71	1,18	1,42	1,71	2,14	2,14	2,14	2,14	2,14	-	-
for	0,88	0,71	1,18	1,42	1,71	2,14	2,52	2,52	2,52	2,52	—	
V <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,00	0,71	1,18	1,42	1,71	2,14	2,52	2,86	2,86	—	-	—
₹.F	1,13	0,71	1,18	1,42	1,71	2,14	2,52	2,86	-	-	-	
~	1,25	0,71	1,18	1,42	1,71	2,14	2,52	-	-	-	—	-
	1,50	0,71	1,18	1,42	1,71	-	-	—	-	-	-	-
	1,75	0,71	<u> </u>			<u> </u>			<u> </u>			—
	0,40	0,42	0,62	0,72	0,88	1,08	1,08	1,08	1,08	1,08	1,08	1,08
	0,50	0,42	0,62	0,72	0,88	1,12	1,38	1,54	1,54	1,54	1,54	-
[mm]	0,55	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	1,62	
_	0,63	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	1,62	—
r t <sub>N</sub>	0,75	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	-	—
16	0,88	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	-	—
	1,00 1,13	0,42 0,42	0,62	0,72 0,72	0,88 0,88	1,12	1,38	1,62	1,62	-	-	
≚_	1,13		0,62 0,62	0,72	0,88	1,12 1,12	1,38 1,38	1,62	-		-	
N <sub>R,k</sub> [kN	1 25				. 0.00	1 1.14	1,30		. —		. —	. — I
N <sub>R,k</sub> [kN] for t <sub>N</sub>	1,25 1,50	0,42 0,42	0,62	0,72	0,88			_	_	_	_	

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>Ø</u> :	Ø1	0.5 87 9 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1 1 9 1	1		Fastener:carbon steel case hardened and galvanizedWasher:noneComponent I:S280GD, S320GD or S350GD - EN 103Component II:S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 103Drilling capacity $\Sigma t_i \le 2,20 \text{ mm}$								
			AF8				Timber	Timber substructures no performance determined							
F		[mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75		
ŀ	IVI	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		
l		0,50	0,92	1,42	1,42	1,42	1,42	1,42	1,42	1,42	1,42	1,42	—		
	Ē	0,55	0,92	1,42	1,67	1,67	1,67	1,67	1,67	1,67	1,67	1,67	—		
	Ē	0,63	0,92	1,42	1,67	1,87	1,87	1,87	1,87	1,87	1,87	1,87	—		
	V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	0,75	0,92	1,42	1,67	1,87	2,16	2,16	2,16	2,16	2,16	—	—		
	] Įo	0,88	0,92	1,42	1,67	1,87	2,16	2,75	2,75	2,75	2,75	—	-		
l	Z Y	1,00 1,13	0,92 0,92	1,42 1,42	1,67 1,67	1,87 1,87	2,16 2,16	2,75 2,75	3,30 3,30	3,30	_	_	_		
	<ul> <li>R,k</li> </ul>	1,13	0,92	1,42	1,67	1,87	2,10	2,75	3,30						
		1,50	0,92	1,42	1,67	1,87			_	_	_	_	_		
		1,75	0,92				_	_	_	_	_	_			
ſ		0,40	0,42	0,62	0,72	0,81	0,81	0,81	0,81	0,81	0,81	0,81	0,81		
		0,50	0,42	0,62	0,72	0,88	1,12	1,27	1,27	1,27	1,27	1,27			
	Ē	0,55	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	1,50	1,50			
	Ē	0,63	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	1,50	1,50			
	r t <sub>N.</sub>	0,75		0,62	0,72	0,88	1,12	1,38	1,50	1,50	1,50	-			
	] fo	0,88	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	1,50	-			
	Z Y	1,00	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	-	-			
	N <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13 1,25	0,42 0,42	0,62 0,62	0,72 0,72	0,88 0,88	1,12	1,38	1,50	-	-	-			
	2	1,25 1,50	0,42 0,42	0,62	0,72	0,88	1,12	1,38							
		1,75	0,42				_	_	_	_	_	_			
			- , - —			1	1	1	1						

both components I and II are made of \$320GD or \$350GD the values may be increased by 8

Self drilling screw

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

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	<u>ø</u> :	3.58	9.5 FE 0.5 FE 0.1 0.1 0.1 0.1 0.1 0.1 0.2.8 0.4.8 0.4.8 T25	1		Compo	er: c c r: n nent I: S nent II: S	one 280GD, 235 - E 280GD,	dened ar S320GI N 10025	D or S35 -1 D or S35	50GD - E	EN 10346 EN 10346	
			D)				<u>substruc</u> ormance		ned				
	mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75	]
M <sub>t,n</sub>	10m 0,40	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69	1
0	0,50	0,69	1,37	1,37	1,37	1,37	1,37	1,37	1,37	1,37	1,37	—	
E (	0,55	0,69	1,37	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	—	
	0,63	0,69	1,37	1,70	1,96	1,96	1,96	1,96	1,96	1,96	1,96	—	
, r	0,75	0,69	1,37	1,70	1,96	2,35	2,35	2,35	2,35	2,35	-	-	
19	0,88 1,00	0,69 0,69	1,37 1,37	1,70 1,70	1,96 1,96	2,35 2,35	2,70 2,70	2,70 3,02	2,70 3,02	2,70		_	
ĽY,	1,13	0,69	1,37	1,70	1,96	2,35	2,70	3,02	3,02				
, K	1,25	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	-	
<u>ک</u> آچ (	0,55	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	1,62	-	
	0,63 0,75	0,42 0.42	0,62	0,72	0,88 0,88	1,12	1,38	1,62	1,62	1,62	1,62		
rt (	0,75 0,88	0,42 0,42	0,62 0,62	0,72 0,72	0,88	1,12 1,12	1,38 1,38	1,62 1,62	1,62 1,62	1,62 1,62			1
	1,00	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62				1
È, 🗵	1,13	0,42	0,62	0,72	0,88	1,12	1,38	1,62		_	_	_	
Ž ź	1,25	0,42	0,62	0,72	0,88	1,12	1,38		_	_	_	_	
	1,50	0,42	0,62	0,72	0,88	_	_	—	_	_	_	—	
	1,75	0,42	—	—		—	—	—	—		—	—	
	1,25 1,50 1,75	0,42 0,42 0,42	0,62	0,72 0,72 —	0,88 0,88 —								 

Self drilling screw

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

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≥Ø16 Ø14.5 Ø4.17	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 - EN 10025-1
Ø3.7 Ø5.46	$\frac{\text{Drilling capacity}}{\text{Drilling capacity}} \qquad \Sigma t_i \le 2,50 \text{ mm}$
YER J2	<u>Timber substructures</u> no performance determined

t <sub>N,II</sub>	[m m ]	0,6	3	0,7	75	0,8	8	1,0	0	1,1	3	1,2	25	1,5	i0	2,0	0
N	l <sub>t,nom</sub>								51	١m							
	0,50	—	_	—	—	—	_	—	_	—	_	—	_	—	_	—	Ι
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-	0,63	1,00	—	1,00	—	1,00	—	1,00	—	1,00	—	1,00	—	1,00	ac	—	—
3	0,75	1,00	—	2,00	—	2,00	—	2,00	—	2,00	—	2,00	—	2,00	_	—	—
ty,	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		—	_
V <sub>R.k</sub> [kN] for t <sub>N.I</sub> [mm]	1,13	1,00	_	2,00		2,00	_	2,00	_	2,00	_	2,00	_	—		—	_
L X	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	ас
	0,55	0,48	_	0,61	_	0,75	_	0,89	_	1,09	_	1,23	_	1,57	ac	—	—
2	0,63	0,70	—	0,90	—	1,10	—	1,30	—	1,60	—	1,80	—	2,30	ac	—	—
E.	0,75	0,70	_	0,90	_	1,10	_	1,30	_	1,60	_	1,80	_	2,30	_	—	—
t,	0,88	0,70		0,90	_	1,10		1,30	_	1,60	_	1,80		2,30	_	—	—
for t <sub>N,I</sub> [mm]	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 <sub>R,k</sub> [kN]	1,25	0,70	_	0,90	_	1,10	_	1,30	_	1,60	_	1,80	_	_	_		_
Ϊz	1,50	0,70	_	0,90	_	1,10	_	1,30	_		_		_		_		_
	1,75	0,70	_	0,90	_	_	_	_	_	_	_		_	_	_		_
	2,00	—	—	—	_	—	_		_	—		—	_	—		_	—

Self drilling screw

Annex 10

 $JT2-2H-5,5 \ x \ L$  with undercut, hexagon head and sealing washer  $\geq \varnothing 16 \ mm$ 

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≥Ø16 Ø14.5 Z Ø4.17 S G	<u>Materials</u> Fastener: Washer: Component I: Component II	carbon st stainless S280GD : S235 - E	dened and g teel, galvani Steel (1.43 S320GD o	zed 01) - EN 10 r S350GD -	EN 10346	
Ø4.3 Ø5.46	Drilling capac	<u>ity</u> 2	Σt <sub>i</sub> ≤ 3,50 mi	n		
BJ2	<u>Timber substr</u> no performan		ined			
t <sub>N,II</sub> [m m] 1,00 1,13 1,25	1,50	2,00	2,50	3,00	4,00	
M <sub>t,nom</sub>	5 N m				—	
0,50 — — — — — — —		]				

L L	N,II	լՠՠֈ	1,0	0	1,1	3	],∠	25	1,5	50	2,0	10	2,5	0	3,6	10	4,0	10
	M	t,nom							5 N	m								-
		0,50	—	_	-	_	—	_	—	_	—	_	-	_	-	_	_	—
		0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	_
	-	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	—	—	—	_
	Ţ	0,88	2,20	—	2,30	—	2,50	—	2,80	—	3,40	—	3,90	а	—	—	—	_
	<u>lo</u>	1,00	2,60	—	2,80	_	3,00	—	3,40	_	4,20	_	4,60	а	—	—	—	_
1	Z	1,13	3,00	—	3,10	—	3,20	—	4,00	—	4,60	_	—	—	—	—	—	_
-	V <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	3,50	—	3,70	—	3,90	—	4,40	—	5,20	—	—	—	—	—	—	_
:	≥	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	—	—	—	_
	Ē	0,75	1,30	—	1,50	—	1,80	ac	2,30	ac	3,40	ac	4,00	а	—	—	—	_
	ţ,	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	—	_	—	_
1	N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	1,30	—	1,50	—	1,80	—	2,30	—	3,40	_	_	—	_	—	—	_
-	, X	1,25	1,30	—	1,50	—	1,80	—	2,30	_	3,40	_		—	_	—	—	_
2	ž	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
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Annex 11

 $JT2-3H-5,5 \ x \ L$  with undercut, hexagon head and sealing washer  $\geq \varnothing 16 \ mm$ 

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≥Ø16 Ø14.5 Ø4.17 ©0	MaterialsFastener:carbon steel case hardened and galvanizedWasher:carbon steel, galvanized stainless Steel (1.4301) - EN 10088Component I:S280GD, S320GD or S350GD - EN 10346Component II:S280GD, S320GD or S350GD - EN 10346
Ø4.3 Ø5.46	$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 3,50 \text{ mm}$
HE GL	<u>Timber substructures</u> no performance determined

t <sub>N,II</sub>	[m m]	2 x 0	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
N	l <sub>t,nom</sub>	_	-						51	١m						_	-
	0,50	_	_	—	_	—	_	—	_	—	_	—	_	—	_	—	_
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-	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	—	—	—	—	—
Ę.	1,00	_	—	2,60	—	2,60	_	2,60	—	2,60	—	2,60	—	—	—	—	_
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	_	—	2,60	—	2,60	_	2,60	—	2,60	_	—	—	—	—	—	_
×.	1,25	_	_	2,60	_	2,60	_	2,60	_	2,60	_	—	—	—	_	_	_
<u>چ</u>	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	—	—	_	—	_
2	0,63	_	_	1,80	_	2,30	_	2,80	_	3,00	_	3,00	—	—	_	_	_
<u> </u>	0,75	—	—	1,80	—	2,30	—	2,80	—	3,30	—	3,80	—	—	—	_	—
tn, I	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	_	—	_	_	_
Ξ	1,13	_	_	1,80	_	2,30	_	2,80	_	3,30	—	_	_	—	_	—	_
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	_	_	1,80	_	2,30	_	2,80	_	3,30		—		—	_	—	_
ž	1,50	_	—	1,80	_	2,30	_	2,80	_	_	—		_		_	—	—
	1,75	_	_	1,80	_	_	_	_	_	—		—		—	_	—	
	2,00	_		1,80		—		-		—		—		—		—	

Self drilling screw

Annex 12

 $JT2-3H-5,5 \ x \ L$  with undercut, hexagon head and sealing washer  $\geq \varnothing 16 \ mm$ 

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Ø14.5 Ø14.5 04.17 Ø4.17 Ø4.17	Materials         Fastener:       carbon steel case hardened and galvanized         Washer:       none         Component I:       S280GD, S320GD or S350GD - EN 10346         Component II:       S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$

	[m m ]	1,0	0	1,1	3	1,2	25	1,5	50	2,0	0	2,5	50	3,0	00	4,0	00
N	l <sub>t,nom</sub>						71	١m							-	-	
	0,50	—	_	—	_	—	_	—	_	—	_	—	-	_	-	-	_
	0,55	—	—	-	—	—	—	—	—	—	—	—	—	—	—	—	—
-	0,63	1,80	—	1,80	—	2,00	—	2,30	—	2,80	ac	2,80	ac	—	—	—	—
<u> </u>	0,75	2,20	—	2,20	—	2,60	—	2,80	—	3,30	ac	3,70	а	—	—	—	—
ţ,	0,88	2,60	—	2,60	—	3,00	—	3,30	—	3,60	—	4,30	а	—	—	—	—
Ę.	1,00	3,00	—	3,00	—	3,40	_	3,80	—	4,40	—	4,90	а	—	_	—	_
Ξ	1,13	3,50	—	3,50	—	3,60	_	4,30	—	4,90	_	—	—	—	_	—	_
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	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	—	_	—	_	—	_	—		—	_	—	_	_	_	_	_
	0,55	—	—	—	—	—	—	_	—	—	—	—	—	—	_	—	—
2	0,63	1,30	_	1,30	—	1,80	_	2,10	—	2,10	ac	2,10	ac	_	_	_	_
L L	0,75	1,30	_	1,30	_	1,80	_	2,30	_	2,90	ac	2,90	а	_	_	_	_
ţ,	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 <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	1,30	_	1,30		1,80	_	2,30		3,40	_	_	_	_	_	_	_
l Ž. Ž.	1,25	1,30	_	1,30		1,80	_	2,30	—	3,40	_	_	—	_	_	—	—
۳	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
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JT2-3-5,5 x L with hexagon head

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<u>≥</u> Ø16	<u>Materials</u>	
<u>Ø14.5</u> us	Fastener:	carbon steel case hardened and galvanized
	Washer:	carbon steel, galvanized stainless Steel (1.4301) - EN 10088
	Component I:	S280GD, S320GD or S350GD - EN 10346
<u>Ø4.17</u>	Component II:	: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
Ø4.3 Ø5.46	Drilling capac	<u>ity</u> Σt <sub>i</sub> ≤ 3,50 mm
	<u>Timber substr</u> no performano	

t <sub>n,II</sub>	[m m ]	1,C	0	1,1	3	1,2	25	1,5	50	2,0	0	2,5	0	3,0	)0	4,0	00
N	l <sub>t,nom</sub>							7 N	lm							-	_
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	-	—
	0,55	—	—	—	—	—	—	-	—	—	—	—	—	-	—	-	—
Ē	0,63	1,40	—	1,40	—	1,70	—	2,00	—	2,50	ac	2,70	ac	-	—	—	_
Ē	0,75	1,80	—	1,80	—	2,20	—	2,40	—	3,00	ac	3,50	а	-	—	—	—
ťn,	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	—	—	—	_
V <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	3,00	—	3,00	_	3,20	_	4,00	—	4,60	—	—	—	—	—	—	_
÷ ۲	1,25	3,50	—	3,50	—	3,90	—	4,40	—	5,20	—	—	—	—	—	—	—
۳	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	—	—	_	_
ᄃ	0,63	1,30	—	1,30	—	1,80	—	2,30	—	3,00	ac	3,00	ac	—	—	_	—
t <sub>N,I</sub> [mm]	0,75	1,30	_	1,30	_	1,80	_	2,30	_	3,40	ac	4,20	а	_	—	_	—
ţ,	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 <sub>R,k</sub> [kN]	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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Ø4.17 Ø4.5 Ø5.46	$\begin{tabular}{ c c c c } \hline Materials \\ \hline Fastener: & carbon steel \\ case hardened and galvanized \\ \hline Washer: & none \\ \hline Component I: $280GD, $320GD or $350GD - EN 10346 \\ \hline Component II: $235, $275 or $355 - EN 10025-1 \\ $280GD, $320GD or $350GD - EN 10346 \\ \hline \hline Drilling capacity $ $\Sigmat_i \le 6,00$ mm \end{tabular}$
	<u>Timber substructures</u> no performance determined

t <sub>N,II</sub>	[m m ]	_	-	-	-	1,5	i0	2,0	0	2,5			00	4,	00	5,	00
N	l <sub>t,nom</sub>										7 N	١m					
	0,50	—	_	-	_	—	_	—	_	—	_	-	—	-	—		_
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-	0,63	—	—	—	—	2,60	ac	2,80	ac	2,80	ac	2,80	abcd	3,80	abcd	3,80	abcd
	0,75	—	—	—	—	3,00	—	3,50	ac	3,50	ac	3,50	ac	4,60	ac	4,60	ac
ţ,	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
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	—	—	—	—	4,20	—	4,90	—	4,90	—	4,90	ac	6,70	ac	—	—
l ¥.	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	—	_	—	_	—	_	- 1	_	—	_	—	_	_	_	_	_
	0,55	—	_	—	—	—	_	—	—	—	_	—	—	—	—	—	—
Ē	0,63	—	—	_	—	1,60	ac	2,20	ac	2,20	ac	2,20	abcd	2,20	abcd	2,20	abcd
Ľ.	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
z	1,13	—	—	—	—	1,60	—	2,50	—	3,60	—	4,80	ac	5,70	ac	—	—
N <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	—	_	_	_	1,60	—	2,50	—	3,60	_	4,80	ac	6,80	ac	—	_
Ľ	1,50	—	_	_	_	1,60		2,50	_	3,60	_	4,80	_	6,80	_	_	_
	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
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JT2-6-5,5 x L with hexagon head

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			Timber substr	uctures				
<u>Ø5.46</u>	-	F		<u>,</u> 2	-, <u> </u>			$\neg$
Ø4.5	6	-	Drilling capac	itv Σ	t <sub>i</sub> ≤ 6,00 mr	m		-
<u>Ø4.17</u>	• • • • •		Component II			- EN 10025 r S350GD -		
			Component I:					
			Washer:		el, galvani	ized 01) - EN 10(	088	
<u>Ø14.5</u>	22 22 22		Fastener:	carbon ste case hard	el ened and g	galvanized		
≥Ø16	·							

	[m m ]	_	-		-	1,5	50	2,0	0	2,5			00	4,	00	5,	00
N	1 <sub>t,nom</sub>										7 N	lm					
	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
Ξ	1,13	—	_	—	_	3,80	—	4,40	—	4,40	—	4,40	—	6,00	ac	—	_
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	—	_	—	—	4,10	—	4,80	—	4,80	—	4,80	—	6,60	ac	—	_
<u>≈</u>	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	ac	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
E	0,63	—	—	—	—	1,60	ac	2,50	ac	3,00	ac	3,00	abcd	3,00	abcd	3,00	abcd
<u></u>	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
Ξ	1,13	—	_	—	—	1,60	—	2,50	—	3,60	—	4,70	—	5,80	ac		_
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	—	—	—	—	1,60		2,50	_	3,60	_	4,70	—	5,80	ac	—	_
۲Ľ	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	_	_	—

Self drilling screw

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

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Ø14.5 00 5 04.19 00 -	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 <sub>i</sub> ≤ 9,50 mm
	Timber substructures no performance determined

t <sub>N,II</sub> [mm]		4,	00	5,0	0	6,0	6,00 8,00			10	),0	12	,0	13	13,0		14,0	
N	t,nom				7١	۱m							-	-				
	0,50		_	_	_	—	_	—	-	-	_	—	Ι	-	_	—	_	
	0,55	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—	
-	0,63	3,80	abcd	3,80	ac	3,80	ac	3,80	ac	—	—	—	—	—	—	—	—	
Ľ.	0,75	4,60	ac	4,60	ac	4,60	ac	4,60	ac	—	—	—	—	—	—	—	—	
ťn, l	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	_	_	—	—	—	_	—	_	
Z	1,13	6,70	ac	6,70	ac	6,70	ac	6,70	а	_	_	—	—	—	_	—	_	
V <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	7,30	ac	7,30	ac	7,30	ac	7,30	—	—	—	—	—	—	—	_	—	
≥_	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	—	—	—	—	—	—	_	—	
Lm	0,75	2,90	ac	2,90	ac	2,90	ac	2,90	ac	—	—	—	—	—	—	_	—	
ťn, l	0,88	3,80	ac	3,80	ac	3,80	ac	3,80	а	_	_	_	—	_	_	—	_	
for	1,00	4,70	ac	4,70	ac	4,70	ac	4,70	а	_	_	_	_	_	_		_	
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [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	_	_	_		_	_	_		_	
ž	1,50	5,80	_	6,30	_	6,80	_	6,80	_	_	_		_	_	_		_	
	1,75	5,80	_	6,30	_	6,80	_		_	_	_	_	_	_	_		_	
	2,00	5,80	_	6,30	_	6,80	_	_	_	_	_	_	_	_	_		_	

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

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$ \overset{\geq \emptyset 16}{\emptyset 14.5} \overset{\otimes}{} \overset{\otimes}{} \overset{\circ}{} $	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 10346         Component II:       S235, S275 or S355 - EN 10025-1
<u>Ø4.9</u> <u>Ø5.49</u>	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$
Jere	no performance determined

t <sub>N,II</sub> [mm] M		4,	00	5,	00		00	8,	00	10	),0	12,0		13,0		14,0	
N	l <sub>t,nom</sub>				7 N	lm							-	-			
	0,50	-	_	_	_	-	_	_		_	_	—	Ι	_	_	—	_
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
근	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	—	—	—	—	—	—	—	—
for	1,00	4,80	ac	4,80	ac	4,80	ac	4,80	а	—	_	—	—	_	_	—	_
Z	1,13	5,40	ac	5,40	ac	5,40	ac	5,40	а	—	—	—	—	_	_	—	_
V <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	5,80	ac	5,80	ac	5,80	ac	5,80	а	—	_	—	—	—	_	_	—
≥	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	_	—	—	—	_	_	_	—
7	0,63	3,20	abcd	3,20	abcd	3,20	abcd	3,20	abcd	_	—	—	—	_	_	_	_
E.	0,75	4,10	ac	4,10	ac	4,10	ac	4,10	ac	_	_	_		_	_	_	_
[N,I	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 <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	5,80	ac	6,80	ac	6,80	ac	6,80	а		_	_	_	_	_	_	
¥	1,25	5,80	ac	6,80	ac	7,60	ac	7,60	а	_	_	_		_	_	_	_
Å	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	_	_	_		_	_	_	_	_	_	_

JT2-8-5,5~x~L with hexagon head and sealing washer  $\geq$  Ø16 mm

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Ø14.5	<u>Materials</u>	
	Fastener:	carbon steel case hardened and galvanized
	Washer:	none
Ø4.88	Component I:	S280GD, S320GD or S350GD - EN 10346
	Component II:	S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
<u>ور گرد گرد گرد گرد گرد گرد گرد گرد گرد گر</u>	Drilling capaci	<u>tγ</u> Σt <sub>i</sub> ≤ 6,50 mm
E H	<u>Timber substr</u> no performano	

t <sub>N,II</sub>	[m m]	1,	50	2,	00	2,	50	3,	00	4,	00	5,0	00	6,0	00	7,	00
N	l <sub>t,nom</sub>	—		7 Nm									-	_			
	0,50	_	—	-	Ι	-	—	-	—	—	—		Ι	-	—	—	_
	0,55	—	—	—	—	—		—		—	—	—	—	—	—	—	—
Ĺ	0,63	—	—	2,40	abcd	2,40	abcd	2,40	abcd	2,40	abcd	2,40	ac	—	—	—	—
Ē	0,75	—	—	2,90	ac	3,10	ac	3,10	ac	3,10	ac	3,10	ac	—	—	—	—
ťn,I	0,88	—	—	3,50	ac	3,80	ac	3,80	ac	3,80	ac	3,80	а	—	—	—	—
for t <sub>N,I</sub> [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 <sub>R.k</sub> [kN]	1,25	—	—	5,20	—	5,80	ac	5,80	ac	5,80	ac	5,80	а	—	—	—	—
>	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	—	—	—	—
Ľ	0,75	—	—	2,80	ac	2,80	ac	2,80	ac	2,80	ac	2,80	ac	—	—	—	—
ťn,i	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	—	_	—	_
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	_	_	3,40	ac	4,70	ac	5,50	ac	5,50	ac	5,50	а	_			_
, k F	1,25	_	_	3,40	_	4,70	ac	6,20	ac	6,60	ac	6,60	а	—	_	—	_
ž	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	—	—	—	—	—		—

Self drilling screw	
JT2-6-6,3 x L with hexagon head	Annex 19

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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
9.6	Component II	: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
Ø5.3 Ø6.25	Drilling capac	<u>ity</u> Σt <sub>i</sub> ≤ 6,50 mm
LA L	<u>Timber substr</u> no performan	<u>uctures</u> ce determined

t <sub>N,II</sub>	[m m ]	1,	50	2,	00	2,	50	3,	00	4,	00	5,0	0	6,0	0	7,0	00
N	1 <sub>t,nom</sub>	_	-						7 N	lm						_	-
	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	—	—	—	—
ţ,	0,88	—	—	3,50	ac	3,80	ac	3,80	ac	3,80	ac	3,80	а	—	—	_	—
for	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	—	—	—	—
V <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	—	—	5,20	—	5,80	ac	5,80	ac	5,80	ac	5,80	а	—	—	—	—
>	1,50	—	—	6,40	—	7,20		7,20	—	7,20	—	7,20	а	—	—	—	—
	1,75	—	—	6,40	—	7,20	—	7,20	—	7,20	—	—	_	—	_	—	—
	2,00	—	—	6,40	—	7,20	—	7,20	—	7,20	—	—	—	—	—	—	—
	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	—	—	—	—
Ē	0,63	—	—	2,10	abcd	2,10	abcd	2,10	abcd	2,10	abcd	2,10	ac	—	—	—	—
t <sub>N,I</sub> [mm]	0,75	—	—	2,80	ac	2,80	ac	2,80	ac	2,80	ac	2,80	ac	—	—	—	—
ťn,	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	—	_	—	—
Ξ	1,13	—	—	3,40	ac	4,70	ac	5,50	ac	5,50	ac	5,50	а	-	—	_	—
N <sub>R,k</sub> [kN]	1,25	—	—	3,40	—	4,70	ac	6,20	ac	6,60	ac	6,60	а	-	—	_	_
۳	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	—	—	—	—	—	—	—

Self drilling screw

 $JT2\text{-}6\text{-}6,3 \ x \ L$  with hexagon head and sealing washer  $\geq \varnothing16 \ mm$ 

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≥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 II: S235, S275 or S355 - EN 10025-1
9	<u>Drilling capacity</u> $\Sigma t_i \le 13,00 \text{ mm}$
	<u>Timber substructures</u> no performance determined

t <sub>n,II</sub> [mm]		4,0	4,00		4,00		4,00		4,00		4,00		4,00		4,00		4,00		4,00		0	6,0	0	8,0	0	10	,0	12	,0	13	5,0	14	l,0
M <sub>t,nom</sub>					7 Nm								—		—																		
Ē	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																
	0,55	—	—		—	-	—	-	—	—	—	—	—	—	—	-	_																
	0,63	2,20	ac	—	—	—	_																										
for t <sub>NJ</sub> [mm]	0,75	2,80	ac	—	—	—	_																										
ţ,	0,88	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	—	—	—																	
Ę	1,13	4,20	—	4,90	—	4,90	—	4,90	—	4,90	—	—	—	—	—	—																	
V <sub>R.k</sub> [kN]	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	_	_	—																											
	0,55	1,64	ac	—	_	_																											
Ξ	0,63	2,40	ac	—	—	_																											
Ē	0,75	3,10	ac	—	—	_																											
Ţ,	0,88	3,90	ac	3,90	а	_	_	_																									
for t <sub>N,I</sub> [mm]	1,00	4,70	_	4,70	ac	4,70	ac	4,70	ac	4,70	ac	4,70	а	_	_																		
N <sub>R.k</sub> [kN] 1	1,13	4,70	_	5,60	_	5,60	_	5,60	_	5,60	_		_	_	_	_																	
Ť.	1,25	4,70	_	6,40	_	6,40	_	6,40	_	6,40	_		_	_	_	_																	
å	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 drilling screw

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

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≥Ø16 Ø14.5	Materials
	Fastener: carbon steel case hardened and galvanized
	Washer: carbon steel, galvanized stainless Steel (1.4301) - EN 10088
Ø4.17	Component I: S320GD or S350GD - EN 10346
	Component II: S235, S275 or S355 - EN 10025-1
φ	<u>Drilling capacity</u> Σt <sub>i</sub> ≤ 13,00 mm
	<u>Timber substructures</u> no performance determined

t <sub>N,II</sub> [mm]		4,00		5,00		6,00		8,00		10,0		12,0		13,0		14,0		
M <sub>t,nom</sub>							7 N	١m	lm						—		—	
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	0,55	—	—	—	—	—	—	-	—	—	—	—	—	—	—	—	—	
ᄃ	0,63	2,50	ac	2,50	ac	2,50	ac	2,50	ac	2,50	ac	2,50	ac	—	—	—	_	
<u>n</u>	0,75	3,20	ac	3,20	ac	3,20	ac	3,20	ac	3,20	ac	3,20	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	4,20	—	4,60	ac	4,60	ac	4,60	ac	4,60	ac	4,60	а	—	_	—	_	
Z	1,13	4,20	—	5,30	—	5,30	—	5,30	—	5,30	_	—	—	—	_	—		
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [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	ac	_	_	—		
	0,55	1,77	ac	1,77	ac	1,77	ac	1,77	ac	1,77	ac	1,77	ac	—	_	—	_	
E	0,63	2,60	ac	2,60	ac	2,60	ac	2,60	ac	2,60	ac	2,60	ac	_	_	_	_	
Ē	0,75	3,30	ac	3,30	ac	3,30	ac	3,30	ac	3,30	ac	3,30	ac	—	—	_	—	
tn,I	0,88	4,20	ac	4,20	ac	4,20	ac	4,20	ac	4,20	ac	4,20	а	—	—	—	_	
for t <sub>N,I</sub> [mm]	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 <sub>R,k</sub> [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  $\geq \varnothing16 \ mm$ 

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≥Ø14 Ø10.5 ♥ ♥ ♥ ♥ ♥ ♥							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								
		*	<u>Ø2.8</u> Ø4.8		-	<u>Drilling capacity</u> $\Sigma t_i \le 2,20 \text{ mm}$									
L	AF8	VER CEL		))			<u>substruc</u> ormance	<u>ctures</u> determi	ned						
t <sub>N,II</sub> [r M <sub>t,n</sub>		0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75	]		
	0,40	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55			
	0,50	0,55	0,89	0,89	0,89	0,89	0,89	0,89	0,89	0,89	0,89	—			
E (	0,55	0,55	0,89	1,06	1,06	1,06	1,06	1,06	1,06	1,06	1,06	—			
	0,63	0,55	0,89	1,06	1,28	1,28	1,28	1,28	1,28	1,28	1,28	-			
rt (	0,75	0,55	0,89	1,06	1,28	1,61	1,61	1,61	1,61	1,61	_	—			
19	0,88 1,00	0,55	0,89	1,06	1,28	1,61	1,86	1,86	1,86	1,86	_	_			
Ľ×N	1,13	0,55 0,55	0,89 0,89	1,06 1,06	1,28 1,28	1,61 1,61	1,86 1,86	2,09 2,09	2,09						
	1,13	0,55	0,89	1,06	1,20	1,61	1,86	2,09							
-	1,50	0,55	0,89	1,06	1,28			_	_	_	_	_			
	1,75	0,55				_	_	_	_	_	_	—			
	0,40	0,42	0,62	0,72	0,88	0,97	0,97	0,97	0,97	0,97	0,97	0,97			
	0,50	0,42	0,62	0,72	0,88	1,12	1,38	1,39	1,39	1,39	1,39	—			
E (	0,55	0,42	0,62	0,72	0,88	1,12	1,38	1,60	1,60	1,60	1,60	-			
Ē	0,63	0,42	0,62	0,72	0,88	1,12	1,38	1,60	1,60	1,60	1,60	—			
	0,75	0,42	0,62	0,72	0,88	1,12	1,38	1,60	1,60	1,60	-	-			
] fo	0,88	0,42	0,62	0,72	0,88	1,12	1,38	1,60	1,60	1,60	-	-			
N N	1,00	0,42	0,62	0,72	0,88	1,12	1,38	1,60	1,60	-	-	-			
Z X	1,13	0,42	0,62	0,72	0,88	1,12	1,38	1,60	_	-		_			
	1,25 1,50	0,42 0,42	0,62 0,62	0,72 0,72	0,88 0,88	1,12	1,38								
	1,75	0,42 0,42													
	.,,,,	0,42	I —				_						]		

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  $\geq \varnothing 14 \ mm$ 

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English translation prepared by DIBt



	<u>Materials</u>
$ \begin{array}{c} \geq \emptyset 14 \\ \hline \emptyset 10.5 \\ \hline \end{array} $	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> $\Sigma t_i \le 3,25 \text{ mm}$
BIA (J3) BIA (J6)	<u>Timber substructures</u> no performance determined

	[m m ]	0,0	33	0,7	'5	0,8	88	1,0	0	1,1	3	1,	25	1,5	50	2,0	00
N	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
Ē	0,75	—	—	1,60	—	1,80	—	1,90	ac	2,00	ac	2,10	ac	2,10	ac	2,10	а
ťn,	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
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	—	—	1,60	—	2,10	—	2,60	—	2,90	—	3,40	—	3,40	—	3,50	—
۲, I	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	ас	1,20	ас	1,50	ас	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
Ē	0,75	—	—	0,80	—	1,10	—	1,20	ac	1,50	ac	1,70	ac	2,40	ac	3,40	а
ťn,i	0,88	—	—	0,80	—	1,10	—	1,20	—	1,50	—	1,70	—	2,40	—	3,40	а
for t <sub>N,I</sub> [mm]	1,00	—	—	0,80	—	1,10	—	1,20	—	1,50	—	1,70	—	2,40	—	3,40	а
Ŝ	1,13	_	—	0,80	_	1,10	—	1,20	_	1,50	_	1,70	_	2,40	—	3,40	_
N <sub>R,k</sub> [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	_	—	_	_	_

Self drilling screw

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

English translation prepared by DIBt



	≥Ø	12 11 12 11 12 11 12 12 12 12 12 12 12 1			Compo	s :: s nent I: S nent II: S	tainless tainless 280GD 235 - E 280GD	steel (1. steel (1. S320G N 10025	-1 D or S35	EN 1008 EN 1008 50GD - E	38
	T25		T25			substruc ormance	<u>ctures</u> determi	ined			
t <sub>n,II</sub> [mm] M <sub>t,nom</sub>	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75
0,40	0,49	0,49	0,49	0,49	0,49	0,49	0,49	0,49	0,49	0,49	0,49
0,50	0,49	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	-
ਿ <sup>0,55</sup>	0,49	0,80	0,95	0,95	0,95	0,95	0,95	0,95	0,95	0,95	-
<u>È</u> 0,63	0,49	0,80	0,95	1,15	1,15	1,15	1,15	1,15	1,15	1,15	-
<u>,</u> <u>,</u> , , , , , , , , , , , , , , , ,	0,49	0,80	0,95	1,15	1,45	1,45	1,45	1,45	1,45	-	-
[mm] <sup>1</sup> <sup>N</sup> lor <sup>1</sup> , 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1	0,49	0,80	0,95	1,15	1,45	1,68	1,68	1,68	1,68	-	
∑ 1,00 ≚ 1,13	0,49 0,49	0,80 0,80	0,95 0,95	1,15 1,15	1,45 1,45	1,68 1,68	1,88 1,88	1,88			
× 1,13 ≻ 1,25	0,49	0,80	0,95	1,15	1,45	1,68					
1,50	0,49	0,80	0,95	1,15			_	_	_	_	
1,75	0,49	_	_	<u> </u>	_	_	_	_	_	_	_
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	-
둔 <sup>0,55</sup>	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	1,62	-
Ē 0,63	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	1,62	—
<u> </u>		0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	-	-
<u> </u>	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	-	-
0,00 ↓ 0,75 ↓ 0,88 0,88		0,62	0,72 0,72	0,88 0,88	1,12	1,38	1,62	1,62	-	-	
L] 0,00 0,75 0,88 1,00 1,12	0,42			I U.OO	1,12	1,38	1,62	-		-	_
L 0,00 0,75 0,88 1,00 1,13 1,13	0,42	0,62			1 1 2	1 2 8	L _	L _		_	I _ I
V 1,00 0,88 0,88 1,00		0,62 0,62 0,62	0,72	0,88 0,88	1,12	1,38					

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

Self drilling screw

 $JT3\text{-}FR\text{-}2H\text{-}4,8 \times L$   $JT6\text{-}FR\text{-}2H\text{-}4,8 \times L$  with undercut, round head with Torx® drive system and sealing washer  $\geq \emptyset$ 11 mm

Annex 25

8.06.02-186/12



<u>≥Ø11</u> Ø10.5 ₹	Ø12 _≥Ø11	MaterialsFastener:JT3-(FR-)2-4,9xL and JT4-(FR-)2-4,9xL stainless steel (1.4301 /1.4567) - EN 10088
	3.4	JT9-(FR-)2-4,9xL stainless steel (1.4401 / 1.4578) – EN 10088 Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
Ø3.4	FR-Head	Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573 Component II: timber – EN 14081
4.5		<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
<u>Ø</u> 3.4 Ø4.9	T25 /	Timber substructures
	(B)	for timber substructures following performance were determined
		$ \begin{array}{ll} M_{y,k} &= 4,672 \ Nm \\ f_{ax,k} &= 8,575 \ N/mm^2 & \text{for} & I_{eff} &\geq 24,5 \ mm \end{array} $

I,	g —	25,	00	27,	00	29,0	00	0 31,00			00	35,0	00	37,	00	39,	00	41,0	00		/
M <sub>t,</sub>	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	ž
	0,70	0,73	-	0,81	-	0,82	-	0,82	-	0,82	-	0,82	-	0,82	-	0,82	-	0,82	-	0,82	un l
Ţ	0,80	0,73	-	0,81	-	0,88	-	0,95	-	0,98	-	0,98	-	0,98	-	0,98	-	0,98	-	0,98	mponer ing)
for	0,90	0,73	-	0,81	-	0,88	-	0,95	-	0,99	-	0,99	-	0,99	-	0,99	-	0,99	-	0,99	cor
V <sub>R,k</sub> 1	1,00	0,73	-	0,81	-	0,88	-	0,95	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	of be
>	1,20	0,73	-	0,81	-	0,88	-	0,95	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	ailure
	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	÷
	NR,II,k =	0,8	86	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 Ig, shall apply to kmod = 0,90 and the timber strength class C24 ( $\rho_k$  = 350 kg / m<sup>3</sup>). For other values of k<sub>mod</sub> and strength classes see chapter 4.2.2 For k<sub>mod</sub> < 0,90: failure of component I see right column and failure of component II see chapter 4.2.2 with f<sub>1,k</sub> = 80  $\cdot$  10<sup>-6</sup>  $\cdot$   $\rho_k^2$  (load carrying class 3,  $\rho_k$  in kg/m<sup>3</sup>, max. 500 kg/m<sup>3</sup>) and yield moment M<sub>y,k</sub> = 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 $\geq \emptyset$ 11,0 mm	

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English translation prepared by DIBt



<u>≥Ø11</u> Ø10.5 <del>v</del>	<u>Ø12</u> _≥Ø11	Materials 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
	3.4	stainless steel (1.4401 / 1.4578) – EN 10088           Washer:         stainless steel (1.4301) – EN 10088
Ø3.4	FR-Head	with vulcanised EPDM seal Component I: aluminium alloy with R <sub>m.min</sub> = 215 N/mm <sup>2</sup> – EN 573
2.12		Component II: timber – EN 14081
4.5		<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
Ø3.4	TOP	Timber substructures
Ø4.9	33	for timber substructures following performance were determined
Jan Star	Y	$\begin{array}{ll} M_{y,k} &= 4,672 \ \text{Nm} \\ f_{ax,k} &= 8,575 \ \text{N/mm}^2 & \text{for}  I_{eff} &\geq 24,5 \ \text{mm} \end{array}$

	l <sub>g</sub> =	25,0	0	27,	00	29,0	00	31,	00	33,	00	35,	00	37,0	00	39,	00	41,	00		/
	,nom =									_	-										
	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	sht
Ш.,	0,70	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,07	-	1,07	-	1,07	-	1,07	-	1,07	one
Ľ,	0,80	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,28	-	1,28	compone aring)
for	0,90	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,29	-	1,29	f comp earing)
V R,k	1,00	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,30	-	1,30	<u>p</u> 9
	1,20	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,30	-	1,30	ailure
	1,50	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,30	-	1,30	ailt
	2,00	0,73	-	0,81	-	0,88	-	0,95	-	1,03	-	1,10	-	1,17	-	1,25	-	1,30	-	1,30	ţ
	N <sub>R,II,k</sub> =	0,8	6	0,9	95	1,0	14	1,1	12	1,2	21	1,3	0	1,3	8	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,  $\rho_k$  in kg/m<sup>3</sup>, max. 500 kg/m<sup>3</sup>) and yield moment M<sub>y,k</sub> = 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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English translation prepared by DIBt



≥Ø16 Ø10.5 G Ø4.17	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
	$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 2,50 \text{ mm}$ $\underline{\text{Timber substructures}}$
	no performance determined

t <sub>N,II</sub>	[m m ]	0,6	33	0,7	75	0,8	38	1,0	0	1,1	3	1,2	25	1,5	i0	2,0	0
N	1 <sub>t,nom</sub>								51	١m							
	0,50	—	—	—	—	-	—	—	_	I —	—	I —	_	—	_	—	—
	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	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	—	—
for t <sub>N,I</sub> [mm]	0,88	1,00	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	—	—
٦	1,00	1,00	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	—	—
	1,13	1,00	—	1,70	—	1,70	—	1,70	—	1,70	—	1,70	—	—	—	—	—
V <sub>R,k</sub> [kN]	1,25	1,00	_	1,70	_	1,70	_	1,70	_	1,70	_	1,70	_	—	_	—	_
<u>ج</u>	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	—	—
2	0,63	0,60	—	0,80	—	0,90	—	1,10	—	1,40	—	1,50	—	2,00	ac	—	—
<u></u>	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 t <sub>N,I</sub> [mm]	1,00	0,60	_	0,80	_	0,90	_	1,10	_	1,40	_	1,50	_	2,00	_		_
	1,13	0,60		0,80	—	0,90	_	1,10		1,40	—	1,50	_	_	—		
N <sub>R,k</sub> [kN]	1,25	0,60	—	0,80	—	0,90	_	1,10	—	1,40	—	1,50	_	_	—		_
ľž	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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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 with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
Component II: aluminium alloy with R <sub>m,min</sub> = 165 N/mm² – EN 573 Timber – EN 14081
<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
Timber substructures
for timber substructures following performance were determined

<u> </u>																					
t <sub>N</sub>	I,II =	0,4	0	0,5	50	0,6	0	0,7	0	0,8	0	0,9	0	1,0	0	1,2	20	1,5	50		/
M,										_	-										
	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	, it
	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 component (bearing)
for	0,80	0,29	-	0,42	-	0,53	-	0,65	-	0,76	-	0,85	-	0,92	-	0,92	-	-	-	0,92	cor
V <sub>R,k</sub> 1	0,90	0,29	-	0,42	-	0,55	-	0,68	-	0,81	-	0,88	-	0,97	-	0,97	-	-	-	0,97	of (be
~	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	ailt
	1,50	0,29	-	0,42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,59	÷
N <sub>R,II,k</sub> =		0,2	22	0,2	28	0,3	5	0,4	3	0,5	0	0,5	8	0,6	8	0,8	36	1,1	18	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	JT6-2-6,0xL JT6-FR-2-6,0xL	Annex 29	
With hexagon head and s	seal washer $\geq \emptyset$ 14,0 mm		

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≥Ø14 ຕ	≥Ø14	Materials
Ø10.5 vo	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 <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573
P. 03.6		Component II: aluminium alloy with R <sub>m,min</sub> = 215 N/mm² – EN 573 Timber – EN 14081
	T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
Set (J3)	(	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} $

t <sub>N,II</sub> = 0,40 0,50		50	0,60			0	0.8	0		0	1 1 0	0	1 2	20	14	50	<u> </u>	_		
nom =	0,4	0	0,0		0,0		0,7	0	0,0	-	0,0		1,0		1,2		1,0			
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	sut
0,60	0,38	-	0,55	-	0,70	-	0,81	-	0,93	-	1,02	-	1,10	-	1,10	-	-	-	1,10	component aring)
0,70	0,38	-	0,55	-	0,70	-	0,84	-	0,96	-	1,07	-	1,15	-	1,15	-	-	-	1,15	of comp( (bearing)
0,80	0,38	-	0,55	-	0,70	-	0,84	-	0,99	-	1,11	-	1,20	-	1,20	-	-	-	1,20	cor
0,90	0,38	-	0,55	-	0,72	-	0,88	-	1,05	-	1,15	-	1,25	-	1,25	-	-	-	1,25	of (be
1,00	0,38	-	0,55	-	0,74	-	0,92	-	1,11	-	1,21	-	1,30	-	-	-	-	-	1,30	ailure
1,20	0,38	-	0,55	-	0,78	-	1,00	-	1,23	-	-	-	-	-	-	-	-	-	1,61	failı
1,50	0,38	-	0,55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,08	-
	0,2	9	0,3	37	0,4	6	0,5	5	0,6	64	0,7	75	0,8	37	1,1	12	1,5	53	failure of component II	see chapter 4.2.2
	0,40 0,50 0,60 0,70 0,80 0,90 1,00 1,20	nom         -           0,40         0,38           0,50         0,38           0,60         0,38           0,70         0,38           0,80         0,38           0,90         0,38           1,00         0,38           1,20         0,38           1,50         0,38	ann         ann           0,40         0,38         -           0,50         0,38         -           0,60         0,38         -           0,70         0,38         -           0,80         0,38         -           0,90         0,38         -           1,00         0,38         -           1,20         0,38         -	om =         0,40         0,38         -         0,38         0,55           0,50         0,38         -         0,55         0,55         0,55         0,55         0,55         0,55         0,55         0,55         0,55         0,50         0,38         -         0,55         0,55         0,50         0,38         -         0,55         0,55         0,90         0,38         -         0,55         1,00         0,38         -         0,55         1,20         0,38         -         0,55         1,50         0,38         -         0,55         1,50         0,38         -         0,55         1,50         0,38         -         0,55         1,50         0,38         -         0,55         1,50         0,38         -         0,55         1,50         0,38         -         0,55         1,50         0,38         -         0,55         1,50         0,38         -         0,55         1,50         0,38         -         0,55         1,50         0,55         1,50         0,38         -         0,55         1,50         0,55         1,50         0,55         1,50         0,55         1,50         0,55         1,50         0,55         1,50         0,55	Definition         Definition           0,40         0,38         -         0,38         -           0,50         0,38         -         0,55         -           0,60         0,38         -         0,55         -           0,70         0,38         -         0,55         -           0,80         0,38         -         0,55         -           0,90         0,38         -         0,55         -           1,00         0,38         -         0,55         -           1,20         0,38         -         0,55         -           1,50         0,38         -         0,55         -	0,40         0,38         -         0,38         -         0,38           0,50         0,38         -         0,55         -         0,67           0,60         0,38         -         0,55         -         0,70           0,70         0,38         -         0,55         -         0,70           0,70         0,38         -         0,55         -         0,70           0,80         0,38         -         0,55         -         0,70           0,90         0,38         -         0,55         -         0,72           1,00         0,38         -         0,55         -         0,74           1,20         0,38         -         0,55         -         0,78           1,50         0,38         -         0,55         -         -	Nom =         0.40         0.38         0.38         0.38         0.38         0.67         0.67         0.60         0.38         0.55         0.67         0.70         0.70         0.38         0.55         0.70         -         0.70         0.38         0.55         0.70         -         0.70         0.38         0.55         0.70         -         0.70         0.38         0.55         0.70         -         0.80         0.38         0.55         0.70         -         0.90         0.38         0.55         0.70         -         0.90         0.38         0.55         0.72         -         1.00         0.38         0.55         0.74         -         1.20         0.38         0.55         0.78         -         1.50         0.38         0.55         -         -         -	Nom =         0,40         0,38         -         0,38         -         0,38         -         0,38         -         0,38         -         0,38         -         0,38         -         0,38         -         0,78         0,67         -         0,78         0,70         -         0,81         0,55         -         0,70         -         0,81         0,70         0,38         -         0,55         -         0,70         -         0,84         0,84         0,80         0,38         -         0,55         -         0,70         -         0,84         0,90         0,38         -         0,55         -         0,70         -         0,84         0,90         0,38         -         0,55         -         0,70         -         0,84         0,90         0,38         -         0,55         -         0,72         -         0,88         1,00         0,38         -         0,55         -         0,74         -         0,92         1,20         0,38         -         0,55         -         -         -         -           1,50         0,38         -         0,55         -         -         -         -         -         -	Nom =         0.40         0.38         0.38         0.38         0.38         0.38         0.38         0.38         0.38         0.38         0.38         0.38         0.38         0.38         0.70         0.78         0.78         0.70         0.78         0.70         0.81         -         0.70         0.81         -         0.70         0.81         -         0.70         0.84         -         0.70         0.84         -         0.80         0.38         -         0.55         -         0.70         -         0.84         -         0.90         0.38         -         0.55         -         0.70         -         0.84         -         0.90         0.38         -         0.55         -         0.72         0.88         -           1,00         0.38         -         0.55         -         0.74         -         0.92         -           1,20         0.38         -         0.55         -         0.78         -         1.00         -           1,50         0.38         -         0.55         -         -         -         -         -	Nom =         -           0,40         0,38         -         0,38         -         0,38         -         0,38         -         0,38         -         0,38         -         0,90           0,50         0,38         -         0,55         -         0,67         -         0,78         -         0,90           0,60         0,38         -         0,55         -         0,70         -         0,81         -         0,93           0,70         0,38         -         0,55         -         0,70         -         0,84         -         0,96           0,80         0,38         -         0,55         -         0,70         -         0,84         -         0,99           0,90         0,38         -         0,55         -         0,72         -         0,88         -         1,05           1,00         0,38         -         0,55         -         0,74         -         0,92         -         1,11           1,20         0,38         -         0,55         -         -         -         -         -           1,50         0,38         -         0,55         -	mm =	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Image: Norm =       Image: Norm =<	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

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	JT6-2-6,0xL	Annex 30	
JT3-FR-2-6,0xL	JT6-FR-2-6,0xL		
With hexagon head and s			

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≅Ø14 mi	≥Ø14	<u>Materials</u>
Ø10.5 0	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 N	FR-Kopf	Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
× 2 03.6		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346 timber – EN14081
Ø6	T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
B (CJ)	Ô	Timber substructures
7	125	for timber substructures following performance were determined
BIE (J6)	$( \circ )$	$\begin{array}{ll} M_{y,k} & = 7,911 \ Nm \\ f_{ax,k} & = 8,575 \ N/mm^2 & \mbox{for} & I_{eff} & \geq 26,0 \ mm \end{array}$

t <sub>N</sub>	= 11,	0,4	0	0,5	50	0,6	63	0,7	75	0,8	8	1,0	0	1,2	25	1,5	0		/
M <sub>t,r</sub>	nom =								-	_									
	0,40	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	sut
	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	component aring)
for	0,80	0,40	-	0,50	-	0,61	-	0,71	-	0,82	-	0,92	-	0,92	-	-	-	0,92	of compo (bearing)
V <sub>R,k</sub> for	0,90	0,40	-	0,50	-	0,61	-	0,75	-	0,86	-	0,97	-	-	-	-	-	0,97	of (be
1	1,00	0,40	-	0,50	-	0,61	-	0,78	-	0,89	-	1,00	-	-	-	-	-	1,00	failure
	1,20	0,40	-	0,50	-	0,61	-	0,86	-	0,93	-	-	-	-	-	-	-	1,24	failt
	1,50	0,40	-	0,50	-	0,61	-	-	-	-	-	-	-	-	-	-	-	1,59	-
N <sub>R.II.k</sub> =		0,5	3	0,7	75	0,8	30	1,0	)5	1,3	5	1,6	3	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<sub>R,II,k</sub> 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  $I_{g}$  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			
JT3-2-6,0xL JT3-FR-2-6,0xL	JT6-2-6,0xL JT6-FR-2-6,0xL	Annex 31	
With hexagon head or FR-head			

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≥Ø14 m	≥Ø14	<u>Materials</u>
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 <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573
P. 23.6		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346 timber – EN14081
	T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
ST S		Timber substructures
	T25	for timber substructures following performance were determined
8JG	$\bigcirc$	$ \begin{array}{ll} M_{y,k} &= 7,911  \text{Nm} \\ f_{ax,k} &= 8,575  \text{N/mm}^2 & \text{for} & l_{\text{eff}} &\geq 26,0   \text{mm} \end{array} $

t <sub>N</sub>	= 11,11	0,4	0	0,5	50	0,6	63	0,7	75	0,8	8	1,0	0	1,2	25	1,5	50		/
M <sub>t,i</sub>	nom =								-	_									
	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	-		ili i
1	0,60	0,52	-	0,65	-	0,65	-	0,87	-	0,99	-	1,10	-	1,10	-	-	-		one
t <sub>n,1</sub>	0,70	0,52	-	0,65	-	0,79	-	0,90	-	1,03	-	1,15	-	1,15	-	-	-		component i aring)
ort	0,80	0,52	-	0,65	-	0,79	-	0,92	-	1,06	-	1,20	-	1,20	-	-	-		or comp (bearing)
V <sub>R,k</sub> for t	0,90	0,52	-	0,65	-	0,79	-	0,97	-	1,11	-	1,25	-	-	-	-	-	7	ID (be
>	1,00	0,52	-	0,65	-	0,79	-	1,02	-	1,16	-	1,30	-	-	-	-	-		railure
	1,20	0,52	-	0,65	-	0,79	-	1,12	-	1,21	-	-	-	-	-	-	-		all
	1,50	0,52	-	0,65	-	0,79	-	-	-	-	-	-	-	-	-	-	-		-
N <sub>R,II,k</sub> =		0,5	3	0,7	75	٥,٤	30	1,0	)5	1,3	5	1, <del>C</del>	3	2,2	26	3,0	)2		see cnapter 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<sub>R,II,k</sub> 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			
JT3-2-6,0xL	JT6-2-6,0xL	Annex 32	
JT3-FR-2-6,0xL	JT6-FR-2-6,0xL		
With hexagon head or FR-head			

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≥Ø14 m Ø10.5 9	≥Ø14 Ø12	<u>Materials</u>
m		Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
5 - 2 -	34	Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
@3.8	FR-Kopf	Component I: aluminium alloy with R <sub>m.min</sub> = 165 N/mm <sup>2</sup> – EN 573
1		Component II: timber – EN14081
Ø3.6 Ø6	T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
B (J3)	Ô	Timber substructures
	T25	for timber substructures following performance were determined
Je Je	Ó	$\begin{array}{ll} M_{y,k} &= 7,911 \ \text{Nm} \\ f_{ax,k} &= 8,575 \ \text{N/mm}^2 & \text{for} & I_{\text{eff}} &\geq 26,0 \ \text{mm} \end{array}$

1	<sub>g</sub> =	31,	00	32,	00	33,	00	34,	00	35,	00	36,	00	≥ 37	,00	
M <sub>t,</sub>	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 t
	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	-	28'0 66'0 component aring)
V <sub>R,k</sub> for t <sub>N,I</sub>	0,90	0,96	-	0,97	-	0,97	-	0,97	-	0,97	-	0,97	-	0,97	-	0,02 0,00 0f comp (bearing)
R,k <sup>†</sup>	1,00	0,96	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	-	1,00	-	
1	1,20	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,24 e.1 1,59 [ailure
	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 <sub>R,II,k</sub> =		1,2	27	1,3	32	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 ( $\rho_k$  = 350 kg / m<sup>3</sup>). For other values of k<sub>mod</sub> and strength classes see chapter 4.2.2 For k<sub>mod</sub> < 0,90: failure of component I see right column and failure of component II see chapter 4.2.2 with f<sub>1,k</sub> = 80  $\cdot$  10<sup>-6</sup>  $\cdot$   $\rho_k^2$  (load carrying class 3,  $\rho_k$  in kg/m<sup>3</sup>, max. 500 kg/m<sup>3</sup>) and yield moment M<sub>y,k</sub> = 7.911 Nmm.

Self-drilling	screw
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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 Ø12	Materials
	Fastener:         stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
R-Kop	Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
03.8	Component I: aluminium alloy with R <sub>m.min</sub> = 215 N/mm <sup>2</sup> – EN 573
P1 03.6	Component II: timber – EN 14081
Ø6 T2	$\frac{\text{Drilling capacity}}{\Sigma t_i} \leq 2,00 \text{ mm}$
BE (C)	Timber substructures
	for timber substructures following performance were determined
	$ \begin{array}{l} 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} $

1	<sub>g</sub> =	31,0	00	32,	00	33,0	00	34,	00	35,0	00	36,	00	≥ 37	,00	
M <sub>t,</sub>	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 분
	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 <sub>R,k</sub> for t <sub>N,I</sub>	0,90	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,20 du 1,25 of 1,30 (pearing)
R,k1	1,00	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,30 °5 🕰
>	1,20	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	1,61 9 2,08 [ailure
	1,50	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	2,08 ]
	2,00	0,96	-	1,00	-	1,04	-	1,08	-	1,12	-	1,16	-	1,20	-	2,08
N <sub>R,II,k</sub> =		1,2	?7	1,3	32	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 ( $\rho_k$  = 350 kg / m<sup>3</sup>). For other values of k<sub>mod</sub> and strength classes see chapter 4.2.2 For k<sub>mod</sub> < 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,  $\rho_k$  in kg/m<sup>3</sup>, max. 500 kg/m<sup>3</sup>) and yield moment M<sub>y,k</sub> = 7.911 Nmm.

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 © G 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 T25 T25	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$

	[mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00
N	1 <sub>t,nom</sub>		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
[m	0,75	0,62	0,74	0,86	0,97	1,15	1,33	1,51	1,51	1,51	1,51	1,51
t,	0,88	62,0	0,74	0,86	1,02	1,42	2,04	2,67	2,67	2,67	2,67	2,67
for	1,00	0,62	0,74	0,86	1,06	1,56	2,15	2,77	2,77	2,77	2,77	2,77
Ī	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 <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	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
긑	0,63	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,83	1,83	1,83
Ľ	0,75	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,23	2,23
ť,	0,88	0,30	0,41	0,47	0,56	0,73	1,06	1,40	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
Ŝ	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 <sub>R,k</sub> [kN] for t <sub>N,I</sub> [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 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
BLA BLA BLA BLA BLA BLA BLA BLA BLA BLA	T25	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$

	[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
Μ	t,nom	2 Nm	3 N	lm		4 N m	
	0,40	—	—	—	—	—	—
	0,50	—	—	—	—	—	—
-	0,55	—	—	—	—	—	—
Ē	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
<u>fo</u>	0,88	1,65	2,60	3,39	3,55	3,55	3,55
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,00	1,65	2,60	3,39	4,17	4,17	4,17
ž.	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
	0,55	1,01	1,78	1,83	1,83	1,83	1,83
Ē	0,63	1,01	1,78	2,23	2,23	2,23	2,23
ţ	0,75	1,01	1,78	2,31	2,84	2,84	2,84
ō	0,88	1,01	1,78	2,31	2,84	2,84	2,84
Ŝ	1,00	1,01	1,78	2,31	2,84	2,84	2,84
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	1,01	1,78	2,31	2,84	2,84	_
ž	1,25	1,01	1,78	2,31	2,84	_	_
Z	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

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

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		812 11 8: 8: 8: 8: 1. 8: 1. 8: 1. 8: 1. 8: 1. 8: 1. 8: 1. 8: 1. 1. 8: 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.			•	er: s s : s nent I: S nent II: S	tainless tainless 280GD, 235 - El	steel (1. steel (1. S320GI N 10025	4301) -   4404) -   4301) -   D or S35 -1 D or S35	EN 1008 EN 1008 50GD - E	38 38 EN 10346	
		Ø5.40	_	-	<u>Drilling</u>	capacity	Σ	Et <sub>i</sub> ≤ 3,50	mm			
			5			substruc ormance	<u>ctures</u> determi	ined				
t <sub>n,II</sub> [mn	i] 0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00	1
M <sub>t,nom</sub>		1 N m			2 Nm				2,5 Nm			
0,5	'	0,60	0,64	0,68	0,83	0,98	1,13	1,13	1,13	1,13	1,13	
					0,94	1,09	1,25	1,25	1,25	1,25	1,25	
<b>E</b> 0,63 0,60 0,71 0,82 0,87				0,87	1,04	1,21	1,38	1,38	1,38	1,38	1,38	
[0,0 0,7 0,8		0,74	0,86	0,97	1,15	1,33	1,51	1,51	1,51	1,51	1,51	
_ <u>₹</u> 0,8	8 0,62	0,74	0,86	1,02	1,42	2,04	2,67	2,67	2,67	2,67	2,67	

	-,	- ,	- ,	-,	-,	-,	-,	.,	.,	.,	.,	.,
	0,55	0,58	0,67	0,73	0,78	0,94	1,09	1,25	1,25	1,25	1,25	1,25
-	0,63	0,60	0,71	0,82	0,87	1,04	1,21	1,38	1,38	1,38	1,38	1,38
E.	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,	88,0	0,62	0,74	0,86	1,02	1,42	2,04	2,67	2,67	2,67	2,67	2,67
Jo	1,00	0,62	0,74	0,86	1,06	1,56	2,15	2,77	2,77	2,77	2,77	2,77
V <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92	3,92
×.	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	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
ᄃ	0,63	0,30	0,41	0,47	0,56	0,73	1,06	1,20	1,20	1,20	1,20	1,20
Ē	0,75	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,56	1,56	1,56	1,56
ťn,	88,0	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	2,32
for	1,00	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	2,32
Ŝ	1,13	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	2,32
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32	2,32
ž	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

 $JT3\text{-}FR\text{-}2H\ Plus\text{-}5,5\ x\ L$   $JT6\text{-}FR\text{-}2H\ Plus\text{-}5,5\ x\ L$  with undercut, round head with Torx® drive system and sealing washer  $\geq$  Ø11 mm

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<u>≥Ø12</u> Ø11	;	<u>Materials</u>				
	↓ ↓ ↓	Fastener:		eel (1.4301) - E eel (1.4404) - E		
		Washer:	stainless ste	eel (1.4301) - E	EN 10088	
<u>Ø4.17</u>		Component	I: S280GD, S3	320GD or S350	0GD - EN 10346	3
		Component	II: S235 - EN 1	0025-1		
ω -	ŧ	-	S280GD, S	320GD or S35	0GD - EN 10346	3
Ø3.9						
Ø5.4	6	Drilling capa	<u>acity</u> Σt <sub>i</sub> ≤	≤ 3,50 mm		
	5	Timbor cubr				
<u> </u>	5	Timber subs				
	-	no performa	ince determine	d		
				•		
t <sub>N,II</sub> [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	
M <sub>t,nom</sub> 2 Nm	3 N	Im		4 Nm		
0,40 —	—	—	—	-	-	

чN , II		,	=,	=,	= ~ . ,	= /	= ^ ' ,= •	
M	t,nom	2 Nm	3 N	lm		4 N m	-	
	0,40	—	—	—	—	—	—	
	0,50	—	—	—		—	—	
-	0,55	—	—	—	_	—	—	
Ē	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 <sub>R,k</sub> [kN] for t <sub>N,I</sub> [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	0,86	0,86	0,86	0,86	0,86	0,86	
	0,50	1 ,0 1	1,04	1,04	1,04	1,04	1,04	
ľ	0,55	1,01	1,20	1,20	1,20	1,20	1,20	
Ē	0,63	1,01	1,56	1,56	1,56	1,56	1,56	
ťn,i	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	
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,00	1,01	1,78	2,31	2,32	2,32	2,32	
ζ, []	1,13	1 ,0 1	1,78	2,31	2,32	2,32	—	
ž	1,25	1,01	1,78	2,31	2,32	—	_	
	1,50	1 ,0 1	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

 $JT3\text{-}FR\text{-}2H\ Plus\text{-}5,5\ x\ L$   $JT6\text{-}FR\text{-}2H\ Plus\text{-}5,5\ x\ L$  with undercut, round head with Torx® drive system and sealing washer  $\geq \emptyset$ 11 mm

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		Mataiala
-011	-011	<u>Materials</u>
≥Ø11 Ø10.5 %	≥Ø11 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 <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
۵ ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )		Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN 573}$
05.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
HA (J3)	(C) 125	
BY JG	()	<u>Timber substructures</u> for timber substructures no performance determined
	$\sim$	

= n =	0,4	0	0,5	0	0,6	0		<u> </u>										
					0,0	0	0,7	0	0,8	0	0,9	0	1,0	0	1,2	20	1,5	i0
0.40									_									
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
0,70	0,19	-	0,27	-	0,38	-	0,50	-	0,55	-	0,62	-	0,68	-	0,74	-	0,99	ac
0,80	0,19	-	0,27	-	0,38	-	0,50	-	0,61	-	0,69	-	0,76	-	0,84	-	1,22	ac
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	-
	0,1	4	0,2	1	0,2	8	0,3	6	0,4	3	0,5	0	0,5	6	0,7	'3	0,9	)1
	),50 ),60 ),70 ),80 ),90 I,00 I,20	0,50         0,19           0,60         0,19           0,70         0,19           0,80         0,19           0,90         0,19           0,90         0,19           1,00         0,19           1,20         0,19           1,50         0,19	0,50       0,19       -         0,60       0,19       -         0,70       0,19       -         0,80       0,19       -         0,90       0,19       -         1,00       0,19       -         1,20       0,19       -	0,50         0,19         -         0,27           0,60         0,19         -         0,27           0,70         0,19         -         0,27           0,80         0,19         -         0,27           0,80         0,19         -         0,27           0,90         0,19         -         0,27           1,00         0,19         -         0,27           1,20         0,19         -         0,27           1,50         0,19         -         0,27	0,50       0,19       -       0,27       -         0,60       0,19       -       0,27       -         0,70       0,19       -       0,27       -         0,80       0,19       -       0,27       -         0,90       0,19       -       0,27       -         0,90       0,19       -       0,27       -         1,00       0,19       -       0,27       -         1,20       0,19       -       0,27       -         1,50       0,19       -       0,27       -	0,50       0,19       -       0,27       -       0,32         0,60       0,19       -       0,27       -       0,38         0,70       0,19       -       0,27       -       0,38         0,70       0,19       -       0,27       -       0,38         0,80       0,19       -       0,27       -       0,38         0,90       0,19       -       0,27       -       0,38         0,90       0,19       -       0,27       -       0,38         1,00       0,19       -       0,27       -       0,38         1,20       0,19       -       0,27       -       0,38         1,50       0,19       -       0,27       -       0,38	0,50       0,19       -       0,27       -       0,32       -         0,60       0,19       -       0,27       -       0,38       -         0,70       0,19       -       0,27       -       0,38       -         0,70       0,19       -       0,27       -       0,38       -         0,80       0,19       -       0,27       -       0,38       -         0,90       0,19       -       0,27       -       0,38       -         0,90       0,19       -       0,27       -       0,38       -         1,00       0,19       -       0,27       -       0,38       -         1,20       0,19       -       0,27       -       0,38       -         1,50       0,19       -       0,27       -       0,38       -	0,50       0,19       -       0,27       -       0,32       -       0,37         0,60       0,19       -       0,27       -       0,38       -       0,44         0,70       0,19       -       0,27       -       0,38       -       0,50         0,80       0,19       -       0,27       -       0,38       -       0,50         0,90       0,19       -       0,27       -       0,38       -       0,50         0,90       0,19       -       0,27       -       0,38       -       0,50         0,90       0,19       -       0,27       -       0,38       -       0,50         1,00       0,19       -       0,27       -       0,38       -       0,50         1,20       0,19       -       0,27       -       0,38       -       0,50         1,50       0,19       -       0,27       -       0,38       -       0,50	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0,50       0,19       -       0,27       -       0,32       -       0,37       -       0,43       -       0,48       -         0,60       0,19       -       0,27       -       0,38       -       0,44       -       0,49       -       0,55       -         0,70       0,19       -       0,27       -       0,38       -       0,50       -       0,55       -       0,62       -         0,80       0,19       -       0,27       -       0,38       -       0,50       -       0,61       -       0,69       -         0,90       0,19       -       0,27       -       0,38       -       0,50       -       0,61       -       0,69       -         0,90       0,19       -       0,27       -       0,38       -       0,50       -       0,61       -       0,76       -         1,00       0,19       -       0,27       -       0,38       -       0,50       -       0,61       -       0,76       -         1,20       0,19       -       0,27       -       0,38       -       0,50       -       0,61	0,50       0,19       -       0,27       -       0,32       -       0,37       -       0,43       -       0,48       -       0,53         0,60       0,19       -       0,27       -       0,38       -       0,44       -       0,49       -       0,55       -       0,61         0,70       0,19       -       0,27       -       0,38       -       0,50       -       0,55       -       0,62       -       0,68         0,80       0,19       -       0,27       -       0,38       -       0,50       -       0,61       -       0,69       -       0,76         0,90       0,19       -       0,27       -       0,38       -       0,50       -       0,61       -       0,69       -       0,76         0,90       0,19       -       0,27       -       0,38       -       0,50       -       0,61       -       0,76       -       0,83         1,20       0,19       -       0,27       -       0,38       -       0,50       -       0,61       -       0,76       -       0,91         1,50       0,19       -	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

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 G	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 $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN 573}$
∞ <sup>∞</sup> Ø3.9		Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN } 573$
Ø5.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
EF (J3)	(O) T25	
₩ (JG))	<b>16</b>	<u>Timber substructures</u> for timber substructures no performance determined

t.	,   =	0,4	-0	0,5	0	0,6	0	0,7	'0	0,8	0	0,9	0	1,0	0	1,2	20	1,5	50
	,11 10m =	•,•	-		-	0,0	-	•,,	-		-	,-	-	.,.		.,-		.,.	
		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
Ι.	0,60	0,24	-	0,35	-	0,50	-	0,57	-	0,63	-	0,71	-	0,79	-	0,83	-	0,99	ac
ţ, "	0,70	0,24	-	0,35	-	0,50	-	0,65	-	0,72	-	0,81	-	0,86	-	0,96	-	1,29	ac
ort I	0,80	0,24	-	0,38	-	0,50	-	0,65	-	0,80	-	0,90	-	0,93	-	1,08	-	1,59	ac
V <sub>R,k</sub> 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 <sub>R,II,k</sub> =		0,1	9	0,2	8	0,3	7	0,4	17	0,5	6	0,6	5	0,7	73	0,9	95	1,1	19

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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≥Ø11	-011	Materials
Ø10.5 G	≥011 012 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 <u>Ø4.17</u>	FR-Head	Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
∞ <u>∞</u>		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
Ø5.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
BY (J3)	(C) 125	
₩ ((J6))		<u>Timber substructures</u> for timber substructures no performance determined

		23 KGA 10														-			
t <sub>N</sub>	,11 =	0,4	0	0,5	0	0,6	3	0,7	'5	0,8	8	1,0	00	1,2	25	[ 1,5	50	2,0	00
M <sub>t,r</sub>	iom =										-								
	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, i	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	а
V <sub>R,k</sub> for	0,90	0,35	-	0,42	-	0,49	-	0,56	-	0,70	-	0,83	-	1,03	-	1,34	-	1,34	-
<b>_</b>	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 <sub>R,II,k</sub> =		0,3	0	0,4	1	0,5	6	0,7	'3	1,0	6	1,4	10	1,9	)9	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<sub>R,II,k</sub> can be increased by 8,0%.

### Self-drilling screw

JT3-2H Plus 5,5xL JT3-FR-2H Plus 5,5xL With hexagon head or FR-head and seal washer  $\ge \emptyset$  11,0 mm

JT6-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL

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≥Ø11	≥Ø11	Materials
Ø10.5 0	012 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 <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
∞ <u>∞</u> <u>∞</u> <u>∞</u> <u>∞</u> <u>∞</u>		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
05.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
BY (J3)	(O) T25	
84 (J6))		<u>Timber substructures</u> for timber substructures no performance determined

t <sub>N</sub>	, <sub>II</sub> =	2x0,	63	2x0	,75	2x0	,88	2x1	,00	2x1	,13	2x1	,25
M <sub>t,</sub>	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
u II	0,60	0,80	-	0,80	ac	0,87	ac	0,94	ac	0,94	ac	0,94	a
	0,70	0,87	-	0,87	ac	0,99	ac	1,12	ac	1,12	ac	1,12	а
V <sub>R,k</sub> for t <sub>N,I</sub>	0,80	0,94	-	0,94	ac	1,12	ac	1,29	а	1,29	а	1,29	а
/ <sub>R,k</sub> 1	0,90	1,12	-	1,19	-	1,36	-	1,51	а	1,51	а	1,51	a
-	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	-	-	-	-
N <sub>R,II,k</sub>		1,0	1	1,7	78	2,3	31	2,8	34	2,8	34	2,8	34
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<sub>R,II,k</sub> 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 G	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 <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573
∞ <u>∞</u>		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
Ø5.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
BY (J3)	(O) 125	
₩ ((J6))	( B	<u>Timber substructures</u> for timber substructures no performance determined

l +		0.4	0,40 0,50 0,63 0,75				E	0,88		1 1 0	0	1.0	)E	1 1 5	0	0	0		
ι ι <sub>N</sub>	,   =	0,4	Đ	0,5	U	0,6	3	0,7	5	υ,8	8	[ 1,0	10	1,2	:5	1,5	50	2,0	10
M <sub>t,r</sub>	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
Ι.	0,60	0,46	-	0,55	-	0,55	-	0,60	-	0,70	-	0,79	-	0,89	-	0,99	ac	0,99	ac
tr	0,70	0,46	-	0,55	-	0,64	-	0,69	-	0,78	-	0,86	-	1,08	-	1,29	ac	1,29	ac
l 2	0,80	0,46	-	0,55	-	0,64	-	0,73	-	0,83	-	0,93	-	1,26	-	1,59	ac	1,59	а
V <sub>R,k</sub> 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 <sub>R,II,k</sub> =		0,3	80	0,4	.1	0,5	6	0,7	'3	1,0	6	1,4	10	1,9	9	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<sub>R,II,k</sub> 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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ר11 Ø10.5 N Ø4.17	≥Ø11 Ø12 FR-Head	MaterialsFastener:stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088Washer:stainless steel (1.4401 / 1.4578) – EN 10088 with vulcanised EPDM sealOperations of the doministry of the do
(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	T25	$\label{eq:component_limit} \begin{array}{ll} \text{Component I: aluminium alloy} \\ & \text{with } R_{\text{m,min}} = 215 \ \text{N/mm}^2 - \text{EN 573} \\ \text{Component II: S235 - EN 10025-1} \\ & \text{S280GD, S320GD - EN 10346} \\ \hline \\ $
	T25	<u>Timber substructures</u> for timber substructures no performance determined

t <sub>N</sub>	, <sub>II</sub> =	2x0,	63	2x0	,75	2x0	,88	2x1	,00	2x1	,13	2x1	,25
M <sub>t,i</sub>	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
	0,70	1,14	-	1,14	ac	1,30	ac	1,46	ac	1,46	а	1,46	а
V <sub>R,k</sub> for t <sub>N,I</sub>	0,80	1,23	-	1,23	ac	1,46	ac	1,68	а	1,68	а	1,68	а
,R,K	0,90	1,46	-	1,56	-	1,77	-	1,98	а	1,98	а	1,98	a
_	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 <sub>R,II,k</sub> =		1,0	01	1,7	78	2,3	31	2,8	34	2,8	34	2,8	34
Z													

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<sub>R,II,k</sub> 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
Ø4.17	FR-Head	Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
29 N 04.3		Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN } 573$
05.46		<u>Drilling capacity</u> $\Sigma t_i \le 4,20 \text{ mm}$
BH (J3)		
	725	Timber substructures
J6		for timber substructures no performance determined

t <sub>N,II</sub> =		1,50		2,00		2,50		3,00	
M <sub>t,r</sub>	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 <sub>R,k</sub> for t <sub>N,I</sub> =	0,80	1,07	-	1,23	-	1,30	-	1,30	а
j.	0,90	1,19	-	1,34	-	1,46	-	1,50	-
, H, H	1,00	1,30	-	1,46	-	1,61	-	1,69	-
<b>_</b>	1,20	1,53	-	1,69	-	1,84	-	2,00	-
	1,50	2,15	-	2,23	-	2,30	-	-	-
	2,00	2,15	-	2,23	-	-	-	-	-
N <sub>R,II,k</sub> =	0,69		1,(	)7	1,	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
---------------	-------

 $JT3-3-5,5xL \qquad JT6-3-5,5xL \\ JT3-FR-3-5,5xL \qquad JT6-FR-3-5,5xL \\ With hexagon head or FR-head and seal washer <math display="inline">\geq \varnothing$  16 mm

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English translation prepared by DIBt



≥Ø16	≥Ø16	Materials
Ø10.5	Ø12 e	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
5:3		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
Ø4.17 😤 🖉	FR-Head	Component I: aluminium alloy with R <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573
01 N 04.3		Component II: aluminium alloy with R <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573
05.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 4,20 \text{ mm}$
BH (J3)	(O) T25	
	(JE)	Timber substructures for timber substructures no performance determined

t <sub>N,II</sub> =		1,50		2,00		2,50		3,00	
M <sub>t,r</sub>	<sub>iom</sub> =				_	_			
	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 <sub>R,k</sub> for t <sub>N,I</sub> =	0,80	1,40	-	1,60	-	1,70	-	1,70	а
j	0,90	1,55	-	1,75	-	1,90	-	1,95	-
,R,H	1,00	1,70	-	1,90	-	2,10	-	2,20	-
<b>_</b>	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 <sub>R,II,k</sub> =		0,90		1,40		2,	10	2,	80

Self-drilli	ng screw		
	ng screw JT6-3-5,5xL	Annex 46	
	JT6-3-5,5xL	Annex 46	

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English translation prepared by DIBt



≥Ø16	≥Ø16	Materials
Ø10.5	Ø12 m	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
53		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
Ø4.17	FR-Head	Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
29. 20. 004.3		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
05.46	13 T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
BH (J3)	(O) 	
	J6 125	Timber substructures
Je Je		for timber substructures no performance determined

t <sub>N</sub>	t <sub>n,II</sub> =		1,50		2,00		50
M <sub>t,r</sub>	nom =				-		
	0,50	0,77	ac	0,77	ac	0,77	abcd
	0,60	0,84	-	0,96	ac	0,96	а
п	0,70	0,92	-	1,15	-	1,15	а
Ľ,	0,80	1,07	-	1,23	-	1,30	-
V <sub>R,k</sub> for t <sub>N,I</sub>	0,90	1,19	-	1,34	-	1,46	-
/R,k 1	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 <sub>R,II,k</sub> =	N <sub>R,II,k</sub> =		00	2,9	90	3,	90

Self-drilli			
JT3-3-5,5xL	JT6-3-5,5xL	Annex 47	
JT3-FR-3-5,5xL	JT6-FR-3-5,5xL		
With hexagon head or FR-head			

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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 (1.4301 / 1.4567) – EN 10088
		stainless steel (1.4401 / 1.4578) – EN 10088Washer:stainless steel (1.4301) – EN 10088with vulcanised EPDM seal
Ø4.17 👷	FR-Head	Component I: aluminium alloy with R <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573
9 2 0 4.3		Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
05.46	T25	<u>Drilling capacity</u> $\Sigma t_i \le 3,50 \text{ mm}$
BIAN (J3)	T25	<u>Timber substructures</u> for timber substructures no performance determined

t <sub>N</sub>	t <sub>n,II</sub> =		1,50		2,00		50
M <sub>t,r</sub>	M <sub>t,nom</sub> =		_				
	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
V <sub>R,k</sub> for t <sub>N,I</sub> =	0,80	1,40	-	1,60	-	1,70	-
0.	0,90	1,55	-	1,75	-	1,90	-
'R,k 1	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	-	-	-
N <sub>R,II,k</sub> =	N <sub>R,II,k</sub> =		00	2,9	90	3,	90

Sel	f-drilling screw	
JT3-3-5,5 JT3-FR-3-5,5	,	Annex 48
	FR-head and seal washer $\geq \emptyset$ 16,0 mm	



$\begin{array}{c c} & \underbrace{194.3} \\ & \underbrace{05.46} \\ & 05.46$	$\begin{array}{c} \geq \varnothing 16 \\ \varnothing 10.5 \\ \odot \\ \odot \\ \odot \\ \odot \\ \end{array}$	<u>≥Ø16</u> <u>Ø12</u> ER-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 Timber substructures no performance determined		725	<u>Timber substructures</u>

	[m m ]	2 x t	0,63	2 x 0	,75	2 x 0	88,0	2 x 1		2 x 1	,13	2 x 1	,25	2 x 1	,50	2 x ′	1,75
M	t,nom	-	-						51	١m						-	_
	0,50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	-	—	—	—	—	—	—	—	—	—	-	—
Ē	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	—	—	—	—	—
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	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	—	—	—	—	—
z	1,13	—	—	2,50	—	2,50	—	2,50	—	2,50	—	—	—	—	—		—
× ×	1,25	_	_	2,50	_	2,50	_	2,50	_	2,50	_	I —		—	_	—	_
2	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	—	—	_	—	_
F	0,63	—	—	1,50	—	1,80	—	2,20	—	2,80	—	3,00	—	—	—	—	—
Ē	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	_	—	_		
for	1,00	_	_	1,50	_	1,80	_	2,20	_	2,80	_	3,20	_	—	_	_	_
Z	1,13	_	_	1,50	_	1,80	_	2,20	_	2,80	_	—	_	—	_		_
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	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		_	_	_	_	_	_	_	_	—	_		
						1		1								1	

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	Annex 49
with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm	



≥Ø16 Ø10.5 °° 9 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	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$

	[m m ]	1,0	0	1,1	3	1,2	25	1,5		2,0	0	2,5	50	3,0	0	4,0	00
N	/I <sub>t,nom</sub>							5 N	m					-		-	
	0,50	—	—		—	—	—	-	—	—	—		—	—	—	—	—
	0,55	—	—	—	—	-	—	-	—	—	—	—	—	—	—	-	—
ᄃ	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	—	—	-	—
t,	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	—	—	—	—
z	1,13	2,90	—	3,00	—	3,10	—	3,80	—	4,40	—	—	—	—	—	—	_
V <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	3,40	_	3,50	—	3,80	_	4,20	_	5,00	_	I —		—	_	—	_
≥	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	ас	1,62	ac	1,62	ac	—	
	0,55	0,75	_	0,95	_	1,02	ac	1,36	ac	1,98	ac	2,05	ac	—	_	_	_
E	0,63	1,10	—	1,40	—	1,50	ac	2,00	ac	2,90	ac	3,00	ac	_	—	_	—
Ē.	0,75	1,10	_	1,40	_	1,50	ac	2,00	ac	2,90	ac	3,90	а		_	_	_
ţ,	0,88	1,10	_	1,40	_	1,50	_	2,00	_	2,90	_	3,90	а		_	_	_
jo L	1,00	1,10	_	1,40		1,50	_	2,00	_	2,90	_	3,90	а		_	_	
Z	1,13	1,10	_	1,40	_	1,50	_	2,00	_	2,90	_	—	_		_		_
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	1,10		1,40		1,50	_	2,00	_	2,90	_	—	_		_	_	_
ž	1,50	1,10	_	1,40	_	1,50	_	2,00	_	2,90	_	—	_		_	_	_
	1,75	1,10	_	1,40	_	1,50	_	2,00	_		_	I —	_		_	_	_
	2,00	1,10	_	1,40	_	1,50	_	2,00	_		_		_	_	_	_	_
						1								I		1	

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	Annex 50
with undercut, hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm	



≥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:         S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
Ø5.46	T25	$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 3,50 \text{ mm}$
BH H H H H H H H H H H H H H H H H H H	T25	<u>Timber substructures</u> no performance determined

,0 ,0, ,0, ,0, ,1,	,50 - ,55 - ,63 1, ,75 1,	40		  1,40	_	_	_	7 N	m 	_		_	_	—	_		
0,	,55 - ,63 1, ,75 1,	 40		1_40	_	_	_		_	-		-	—	—	—	—	—
0	,63 1, ,75 1,		_	140	—	—	—	I —									
[] for t <sub>N1</sub> [mm] , 0 , 1 , 1	,75 1,		—	1 40						-	_		—	—	—	—	—
] for t <sub>N,I</sub> [m 1, 1,		80		· ·	—	1,70	—	2,00	—	2,50	ac	2,70	ac	—	—	—	—
, 0 , 1 , 1	.88 2.	00	—	1,80	—	2,20	—	2,40	—	3,00	—	3,50	а	—	—	—	—
ຼັງ 1, [	,,	10	—	2,10	—	2,50	—	2,90	—	3,30	—	3,60	а	—	—	—	—
<b>—</b> 1	,00 2,	50	—	2,50	—	2,90	—	3,20	—	4,00	—	4,40	а	—	—	—	—
- <u>г</u> ,	,13 2,	90	—	2,90	—	3,10	—	3,80	—	4,40	—	—	—	—	—	—	—
, 1,	,25 3,	40	_	3,40	—	3,80	—	4,20	—	5,00	—	—	—	—	—	—	—
≓ 1,	,50 4,	10	—	4,10	—	4,70	—	5,30	—	5,80	—	—	_	—	—	—	_
1,	,75 4,	10	_	4,10	—	4,70	—	5,30	—		—		_	—	_	—	_
2,	,00 4,	10	_	4,10	_	4,70	—	5,30	—		—	_	—	_	—	_	—
0,	,50 0,	59	_	0,59	_	0,81	_	1,08	_	1,57	ac	1,62	ac	1,62	ac	_	_
0,	,55 0,	75	—	0,75	—	1,02	—	1,36	—	1,98	ac	2,05	ac	—	—	—	_
· _ 0,	,63 1,	10	_	1,10	—	1,50	—	2,00	—	2,90	ac	3,00	ac	_	—	—	—
<u>ال</u> ٥,	,75 1,	10	_	1,10	—	1,50	—	2,00	—	2,90	—	3,90	а	_	—	—	—
, 	,88   1,	10	_	1,10	_	1,50	_	2,00		2,90		3,90	а	_	_	_	_
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm] 0, 0, 1, 1, 1, 1, 1	,00   1,	10	_	1,10	_	1,50	_	2,00	_	2,90	_	3,90	а	_	_	_	_
Ę 1,	,13 1,	10	_	1,10	_	1,50	_	2,00	_	2,90	_	_	_	_	_	_	_
≚1,	,25 1,	10	_	1,10	_	1,50	_	2,00	_	2,90	_	_	_	—	_	_	_
<del>ت</del> 1,	,50 1,	10	_	1,10	_	1,50	_	2,00	_	2,90	_	—	_	_	_	_	_
1,	,75 1,	10	_	1,10	_	1,50	_	2,00	_		_	—	_	_	_	_	_
2,	,00   1,	10	_	1,10	_	1,50	_	2,00	_		_	—	_	_	_	_	_

– L		
	Self drilling screw	
	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	Annex 51
	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø16 mm	



	≥Ø16 Ø10.5 Ø4.17 Ø4.17 Ø4.5 Ø5.46	≥Ø16 Ø12 FR-Head T25 30 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	$\begin{tabular}{ c c c c c c c } \hline Materials \\ \hline Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088 \\ \hline Washer: stainless steel (1.4301) - EN 10088 \\ \hline Component I: S280GD, S320GD or S350GD - EN 100 \\ \hline Component II: S235, S275 or S355 - EN 10025-1 \\ S280GD, S320GD or S350GD - EN 100 \\ \hline \hline Drilling capacity & \Sigma t_i \leq 6,00 \mm \\ \hline \hline Timber substructures \\ no performance determined \\ \hline \end{tabular}$	
		<sup>15</sup> J6	no performance determined	

	[mm]	1,5	50	2,0	0	2,5		3,0	0	4,0	00		_	2 x 1			-
IV	/I <sub>t,nom</sub>					5 N	m					_	_	5 N	m		-
	0,50	_	—	-		—		-	—	-			—	—	—		—
	0,55	_	—	-	—	—	—	—	—	-	—	—	—	—	—	-	—
ᄃ	0,63	2,10	ac	2,40	ac	2,60	ac	2,90	ac	2,90	ac	—	—	2,40	ac	—	—
Ē	0,75	2,50	—	2,80	ac	3,10	ac	3,30	ac	3,30	ac	—	—	3,10	ac	—	—
ţ,	0,88	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	—	—	—
Ŝ	1,13	3,30	—	3,80	—	4,50	—	4,60	—	4,60	—	—	—	3,70	—	—	—
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [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	_	_
E	0,63	1,70	ac	2,40	ac	2,40	ac	2,40	ac	2,40	ac	—	_	2,40	ac	_	—
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 <sub>R,k</sub> [kN] for t <sub>N,I</sub> [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 $\geq$ Ø16 mm	

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English translation prepared by DIBt



≥Ø11 ≥Ø11 ≥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
04.17 04.17 FR-Head	Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
8 99 Ø4.5 € 6	Component II: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
Ø5.46	<u>Drilling capacity</u> $\Sigma t_i \le 6,50 \text{ mm}$
<u>Ø5.46</u>	Timber substructures
Branch and a state of the state	for timber substructures no performance determined

t <sub>N,II</sub> =		2,0	)0	2,5	50	3,0	)0	4,00	
M <sub>t,r</sub>	nom =				_				
	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
<u>ē</u>	0,90	1,43	ac	1,51	ac	1,58	ac	1,58	ac
V <sub>R,k</sub> for t <sub>N,I</sub> =	1,00	1,61	ac	1,71	ac	1,80	ac	1,80	ac
<b>_</b>	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 <sub>R,II,k</sub> =		1,0	)3	1,6	88	2,3	33	3,6	63

	Self-drill	ing screw		
	JT3-6-5,5xL	JT6-6-5,5xL	Annex 53	
	JT3-FR-6-5,5xL	JT6-FR-6-5,5xL		
Wit	th hexagon head or FR-head	d and seal washer ≥ Ø 11.0 mm		

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English translation prepared by DIBt



	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 m m	Component I: aluminium alloy with R <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573
04.5	Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN 573}$
	<u>Drilling capacity</u> $\Sigma t_i \le 6,50 \text{ mm}$
Ø5.46	Timber substructures
	for timber substructures no performance determined

t <sub>N,II</sub> =		2,0	)0	2,5	50	3,0	0	4,00	
M <sub>t,r</sub>	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
1	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 <sub>R,k</sub> for t <sub>N,I</sub>	0,90	1,86	ac	c 1,96	ac	2,07	ac	2,07	ac
'A'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 <sub>R,II,k</sub> =		1,3	35	2,2	20	3,0	)4	4,7	73

Self-drilli	ing screw	
JT3-6-5,5xL	JT6-6-5,5xL	Annex 54
JT3-FR-6-5,5xL	JT6-FR-6-5,5xL	

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English translation prepared by DIBt



≥Ø11 ≥Ø11 ≥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
04.17 04.17 m FR-Head 0	Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
04.5 m	Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
	<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 <sub>N,II</sub> =	1,5	50	1,7	75	2,0	0	2,5	50	3,0	0	4,0	)0	-	•	2x1	,50	
Ν	1 <sub>t,nom</sub> =	,=									_							
	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	
	0,70	1,10	ac	1,11	ac	1,12	ac	1,13	ac	1,15	ac	1,15	ac	-	-	1,10	ac	
Ę	0,80	1,30	ac	1,31	ac	1,32	ac	1,34	ac	1,36	ac	1,36	ac	-	-	1,30	ac	
Į į		1,49	ac	1,51	ac	1,53	ac	1,55	ac	1,58	ac	1,58	ac	-	-	1,49	ac	
	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 <sub>B IIk</sub> =	= *::" Z		70	2,1	15	2,6	50	3,5	50	4,5	50	4,5	50	-		2,7	70	

Annex 55

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English translation prepared by DIBt



≥Ø11 ≥Ø11 ≥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
04.17 04.17 0 FR-Head	Component I: aluminium alloy with R <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573
∞ 04.5 ∞ 05.46	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 CONTRACTOR	for timber substructures no performance determined

		1,5	50	1,7	75	2,0	0	2,5	50	3,0	0	4,0	)0	-	-		,50
N	t,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
	0,70	1,44	ac	1,45	ac	1,46	ac	1,48	ac	1,50	ac	1,50	ac	-	-	1,44	ac
, z	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 <sub>R.k</sub> 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 <sub>R.II.k</sub> =		1,7	70	2,1	15	2,6	60	3,5	50	4,5	50	4,5	50	-	-	2,7	70

Self-drillir	ng screw	
JT3-6-5,5xL	JT6-6-5,5xL	Annex 56
JT3-FR-6-5,5xL	JT6-FR-6-5,5xL	

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$= \underbrace{\emptyset16}_{010.5}$ $= \underbrace{\emptyset16}_{010.5}$ $= \underbrace{\emptyset10}_{010.5}$ $= \underbrace{\emptyset10}_{010.5}$ $= \underbrace{\emptyset10}_{010.5}$ $= \underbrace{\emptyset10}_{010.5}$ $= \underbrace{\emptyset12}_{010.5}$ $= \underbrace{\emptyset12}_{00.5}$ $=$	MaterialsFastener:stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088Washer:stainless steel (1.4301) - EN 10088Component I:S280GD - EN 10346Component II:S235, S275 or S355 - EN 10025-1
Ø5.46 T25	<u>Drilling capacity</u> $\Sigma t_i \le 13,00 \text{ mm}$
<u>Ø5.0</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>84</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46</u> <u>Ø5.46}</u> <u>Ø5.46</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø5.46}</u> <u>Ø</u>	<u>Timber substructures</u> no performance determined

	[m m ]	4,0	0	5,0	0	6,0		8,0	0	10	,0	12	,0	13	,0	14	· ,0
N	1 <sub>t,nom</sub>						7 N	١m						-	-	-	-
	0,50	—	—	—	—	-	—	—	—	—	—		—	-	—	-	—
	0,55	—	—	—	—	-	—	—	—	—	—	—	—	—	—	-	—
Ē	0,63	2,20	ac	2,20	ac	2,20	ac	2,20	ac	2,20	ac	2,20	ac	—	—	—	
<u>L</u>	0,75	2,80	ac	2,80	ac	2,80	ac	2,80	ac	2,80	ac	2,80	ac	—	—	—	—
tr,	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	—	—	—	—
Z	1,13	4,20	—	4,90	—	4,90	—	4,90	—	4,90	—	—	—	—	—	-	—
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	4,20	_	5,60	_	5,60	—	5,60		5,60	_	I —	_	_	_	—	_
≥	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	—	—	—	_
긑	0,63	2,40	ac	2,40	ac	2,40	ac	2,40	ac	2,40	ac	2,40	ac	_	_	_	_
Ē	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	_	_	—	_
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,00	4,70	_	4,70	ac	4,70	ac	4,70	ac	4,70	ac	4,70	а	_	_	—	—
Z	1,13	4,70	_	5,60	—	5,60	—	5,60	_	5,60	_	—	—	_	_	—	_
ž.	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	—	—	—	—	_	—	_
		-												-			

┢		
L	Self drilling screw	
	JT3-12-5,5 x L	
	JT6-12-5,5 x L	Annex 57
	JT3-FR-12-5,5 x L	Annex 57
	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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$\begin{array}{c} \geq 016 \\ 010.5 \\ 000.5 \\$	Materials           Fastener:         stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088           Washer:         stainless steel (1.4301) - EN 10088           Component I:         S320GD or S350GD - EN 10346           Component II:         S235, S275 or S355 - EN 10025-1
	<u>Drilling capacity</u> Σt <sub>i</sub> ≤ 13,00 mm
	<u>Timber substructures</u> no performance determined

	[m m ]	4,0	0	5,0	00	6,0		8,0	0	10	,0	12	,0	13	,0	14	,0
IV	1 <sub>t,nom</sub>						7 1	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	—	—	—	—	_
Ē	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		—	—	_	—
lor i	1,00	4,20	_	4,60	ac	4,60	ac	4,60	ac	4,60	ac	4,60	—	_	—	_	_
Ī	1,13	4,20	—	5,30	_	5,30	_	5,30	_	5,30	_		—	_	—	_	_
V <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	4,20	_	6,00	_	6,00	_	6,00	_	6,00	_	_	_	_	_		_
$\geq$	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	_	_	_		_
Ξ	0,63	2,60	ac	2,60	ac	2,60	ac	2,60	ac	2,60	ac	2,60	_	_	_		
шu	0,75	3,30	ac	3,30	ac	3,30	ac	3,30	ac	3,30	ac	3,30	_	_	_		
] ľų	0.88	4,20	ac	4,20	ac	4,20	ac	4.20	ac	4,20	ac	4,20		_	_		_
ort	1,00	4,70	_	5,00	ac	5,00	ac	5,00	ac	5,00	ac	5,00	_	_	_		_
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,13	4.70	_	6,00		6.00		6.00	_	6.00				_	_		_
¥.	1,25	4,70	_	6,90	_	6,90	_	6,90	_	6,90	_		_	_	_		_
Å,	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	
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	



≥Ø11 ≥Ø11 ≥Ø11 Ø10.5 Ø10.5 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
04.17 04.17 FR-Head	Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
9 _ Ø5.0 8 _ Ø5.0	Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2 - \text{EN 573}$
φ φ	<u>Drilling capacity</u> $\Sigma t_i \le 13,00 \text{ mm}$
Ø5.0 Ø5.46	Timber substructures
	for timber substructures no performance determined

t <sub>N</sub>	, <sub>II</sub> =	4,0	00	5,0	0	6,0	0	8,0	)0	10,	00	12,0	00
M <sub>t,i</sub>	nom =						-	_					
	0,50	0,77	ac										
	0,60	0,94	ac	0,94	а								
1	0,70	1,10	ac	1,10	a								
	0,80	1,27	ac	1,27	a								
V <sub>R,k</sub> for t <sub>N,I</sub>	0,90	1,48	ac	1,48	a								
, Y.H	1,00	1,69	ac	1,69	a								
1	1,20	1,94	-	1,94	-	1,94	-	1,94	ac	1,94	ac	-	
	1,50	2,32	-	2,32	-	2,32	-	2,32	ac	2,32	ac	-	
	2,00	2,91	-	3,00	-	3,09	-	3,26	ac	3,26	а	-	
N <sub>R,II,k</sub> =		1,1	1	1,5	58	2,2	21	3,4	18	3,4	18	3,4	8
z		,				,		,				,	

Self-drillir		
JT3-12-5,5xL	JT6-12-5,5xL	Annex 59
JT3-FR-12-5,5xL	JT6-FR-12-5,5xL	Annex 33



≥Ø11 ≥Ø11 ≥Ø11 Ø10.5 Ø10.5 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
04.17 @4.17 FR-Head	Component I: aluminium alloy with R <sub>m.min</sub> = 215 N/mm <sup>2</sup> – EN 573
9 _ Ø5.0 8 Ø	Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN 573}$
Q5.46 T25	<u>Drilling capacity</u> $\Sigma t_i \le 13,00 \text{ mm}$
Ø5.0 Ø5.46	Timber substructures
BE JG	for timber substructures no performance determined

t <sub>N</sub>	, <sub>II</sub> =	4,0	00	0 5,00		6,0	0	8,0	)0	10,	00	12,00	
M <sub>t,i</sub>	nom =						-	_					
	0,50	1,00	ac	1,00	ac	1,00	ac	1,00	ac	1,00	ac	1,00	ac
	0,60	1,22	ac	1,22	ac	1,22	ac	1,22	ac	1,22	ac	1,22	а
п	0,70	1,44	ac	1,44	ac	1,44	ac	1,44	ac	1,44	ac	1,44	а
	0,80	1,66	ac	1,66	ac	1,66	ac	1,66	ac	1,66	ac	1,66	a
V <sub>R,k</sub> for t <sub>N,I</sub>	0,90	1,93	ac	1,93	ac	1,93	ac	1,93	ac	1,93	ac	1,93	a
, H, H	1,00	2,20	ac	2,20	ac	2,20	ac	2,20	ac	2,20	ac	2,20	a
-	1,20	2,52	-	2,52	-	2,52	-	2,52	ac	2,52	ac	-	
	1,50	3,02	-	3,02	-	3,02	-	3,02	ac	3,02	ac	-	
	2,00	3,79	-	3,91	-	4,02	-	4,25	ac	4,25	а	-	
N <sub>R,II,k</sub> =		1,4	15	2,0	)6	2,8	39	4,5	54	4,5	54	4,5	54

Self-drill	ing screw	
JT3-12-5,5xL	JT6-12-5,5xL	Annex 60
JT3-FR-12-5,5xL	JT6-FR-12-5,5xL	



≥Ø11 ≥Ø11 ≥Ø11 Ø10.5 Ø10.5 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
04.17 04.17 FR-Head	Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
9 Ø5.0	Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
φ φ	<u>Drilling capacity</u> $\Sigma t_i \le 13,00 \text{ mm}$
Ø5.0 Ø5.46	Timber substructures
	for timber substructures no performance determined

t <sub>N</sub>	, <sub>II</sub> =	4,0	00	5,0	5,00		0	8,0	00	10,	00	12,00	
M <sub>t,i</sub>	nom =						-	_					
	0,50	0,77	ac	0,77	ac	0,77	ac	0,77	ac	0,77	ac	0,77	ac
	0,60	0,94	ac	0,94	ac	0,94	ac	0,94	ac	0,94	ac	0,94	а
1	0,70	1,10	ac	1,10	ac	1,10	ac	1,10	ac	1,10	ac	1,10	a
Ē	0,80	1,27	ac	1,27	ac	1,27	ac	1,27	ac	1,27	ac	1,27	а
V <sub>R,k</sub> for 1	0,90	1,48	ac	1,48	ac	1,48	ac	1,48	ac	1,48	ac	1,48	a
, Y.H	1,00	1,69	ac	1,69	ac	1,69	ac	1,69	ac	1,69	ac	1,69	a
1	1,20	1,94	-	1,94	-	1,94	-	1,94	ac	1,94	ac	-	-
	1,50	2,32	-	2,32	-	2,32	-	2,32	ac	2,32	ac	-	-
	2,00	2,91	-	3,00	-	3,09	-	3,26	ac	3,26	а	-	-
IJ													
NR,II, K		4,7	70	6,4	10	6,4	10	6,4	40	6,4	40	6,4	-0
Z													

Self-drilli	ng screw	
JT3-12-5,5xL	JT6-12-5,5xL	Annex 61
JT3-FR-12-5,5xL	JT6-FR-12-5,5xL	



≥Ø11 ≥Ø11 ≥Ø11 Ø10.5 Ø10.5 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
04.17 04.17 FR-Head	Component I: aluminium alloy with R <sub>m.min</sub> = 215 N/mm <sup>2</sup> – EN 573
9 Ø5.0 8 99	Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
φ φ	<u>Drilling capacity</u> $\Sigma t_i \le 13,00 \text{ mm}$
Ø5.0 Ø5.46	Timber substructures
	for timber substructures no performance determined

t <sub>N</sub>	,II =	4,0	)0	5,0	5,00		)0	8,0	)0	10,	10,00		00	
M <sub>t,i</sub>	nom =													
	0,50	1,00	ac	1,00	ac	1,00	ac	1,00	ac	1,00	ac	1,00	ac	
	0,60	1,22	ac	1,22	ac	1,22	ac	1,22	ac	1,22	ac	1,22	а	
п	0,70	1,44	ac	1,44	ac	1,44	ac	1,44	ac	1,44	ac	1,44	а	
Ţ.	0,80	1,66	ac	1,66	ac	1,66	ac	1,66	ac	1,66	ac	1,66	a	
V <sub>R,k</sub> for 1	0,90	1,93	ac	1,93	ac	1,93	ac	1,93	ac	1,93	ac	1,93	a	
, H, H	1,00	2,20	ac	2,20	ac	2,20	ac	2,20	ac	2,20	ac	2,20	a	
-	1,20	2,52	-	2,52	-	2,52	-	2,52	ac	2,52	ac	-	-	
	1,50	3,02	-	3,02	-	3,02	-	3,02	ac	3,02	ac	-	-	
	2,00	3,79	-	3,91	-	4,02	-	4,25	ac	4,25	а	-	-	
N <sub>R,II,k</sub> =		4,7	70	6,4	10	6,4	10	6,4	40	6,4	10	6,4	10	
Ī														

Self-drilli	ng screw	
JT3-12-5,5xL	JT6-12-5,5xL	Annex 62
JT3-FR-12-5,5xL	JT6-FR-12-5,5xL	

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English translation prepared by DIBt



≥Ø16 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
∞ ∞ ∞ ∞ ∞ ∞ ∞ ∞ ∞ ∞ ∞ ∞ ∞ ∞ ∞ ∞	Component II: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
Ø6.25	<u>Drilling capacity</u> Σt <sub>i</sub> ≤ 6,50 mm
BE (J)	Timber substructures
BA JG	no performance determined

	[m m ]	] 1,50		2,	00	2,	50	3,	00	4,00 5,00				6,00		7,00	
N	1 <sub>t,nom</sub>	_	_						7 N	lm						_	_
	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	—	—	—	—
드	0,63	—	—	2,60	abcd	2,60	abcd	2,60	abcd	2,60	abcd	2,60	abc			—	_
Ľ	0,75	—	—	3,40	ac	3,40	ac	3,40	ac	3,40	ac	3,40	ac	—	—	—	_
t,	0,88	—	—	3,80	ac	3,90	ac	4,10	ac	4,10	ac	4,10	а	—	—	—	—
for t <sub>N,I</sub> [mm]	1,00	—	—	4,20	ac	4,40	ac	4,70	ac	4,70	ac	4,70	а	—	—	—	—
Ŝ	1,13	—	—	4,70	ac	5,00	ac	5,40	ac	5,70	ac	5,70	а	—	—	—	—
V <sub>R,k</sub> [kN]	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	—	—	—	—
ᄃ	0,63	—	—	2,70	abcd	2,70	abcd	2,70	abcd	2,70	abcd	2,70	abc	—	—	—	—
Ē	0,75	_	—	3,00	ac	3,70	ac	3,70	ac	3,70	ac	3,70	ac	—	—	_	_
t <sub>N,I</sub> [mm]	0,88	_	—	3,00	ac	4,20	ac	4,20	ac	4,20	ac	4,20	а	—	—	—	_
for	1,00	_	_	3,00	ac	4,20	ac	4,70	ac	4,70	ac	4,70	а	—	_		_
	1,13	_	—	3,00	ac	4,20	ac	4,80	ac	5,60	ac	5,60	а	_	—	_	_
N <sub>R,k</sub> [kN]	1,25	_	—	3,00	ac	4,20	ac	4,80	ac	6,40	ac	6,40	а	_	—	_	_
ž	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

 $JT3-6-6,3 \ x \ L$   $JT6-6-6,3 \ x \ L$  with hexagon head and sealing washer  $\geq$  Ø16 mm



≥Ø16 Ø10.5	Materials           Fastener:         stainless steel (1.4301 / 1.4567) - EN 10088, stainless steel (1.4404 / 1.4578) - EN 10088           Washer:         stainless steel (1.4301) - EN 10088           Component I:         S280GD - EN 10346           Component II:         S235 - EN 10025-1 S280GD or S350GD - EN 10346
	$\label{eq:relation} \begin{array}{llllllllllllllllllllllllllllllllllll$

,	[m m ]	0,6	63	0,7	'5	0,8	38	1,0		1,1	3	1,2	25	1,5	50	2,	00		
M	t,nom							3 N	١m							-	_		
	0,50	—	—	—	—	-	—	—	—	—	—	—	—	—	—	—	—	—	
	0,55	—		—	—	-	—	—		—		—	—	—		—		—	
Ē	0,63	1,30	—	1,30	—	1,30	—	1,30	_	1,30	—	1,30	—	—		—	_	1,30	θ
<u></u>	0,75	1,30	—	1,80	—	1,80	—	1,80	—	1,80	—	1,80	—	—	—	—	—	1,80	resistanc ponent l
ţ,	0,88	1,30		1,80	—	2,60	—	2,60	—	2,60		—	—	—	—	—		2,60	sistă nei
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,00	1,30	—	1,80	—	2,60	—	3,30	—	—	—	—	—	—	—	—	—	3,30	ing resistanc component l
Ξ	1,13	1,30	—	1,80	—	2,60	—	—	_	—	_	—		—		—	—	3,30	earing of com
1 2 2	1,25	1,30	—	1,80	—	—	—	—	—	—	—	—	—	—	—	—	—	3,30	eari of c
∽	1,50	1,30	—	1,80	—	—	—	—	—	—	—	—	—	—	—	—	—	3,30	q
	1,75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	_	_	—		_	—	—		—		—	
	0,50	0,43		0,54		0,70		0,86		0,86	—	0,86		0,86		—		1,19	
	0,55	0,55	—	0,68	—	0,89	—	1,09	—	1,09	—	1,09	—	—	—	—	—	1,50	
2	0,63	0,80	—	1,00	—	1,30		1,60	—	1,60	—	1,60	—	—	—	—	—	2,20	nce
<u></u>	0,75	0,80	—	1,00	_	1,30	_	1,60		1,60	—	1,60		—		—	—	2,80	sta ht I
t <sub>N,I</sub>	0,88	0,80	—	1,00	—	1,30	—	1,60		1,60	—	—		—		—		3,50	esi ner
for	1,00	0,80	—	1,00	—	1,30	—	1,60	—	—	—	—	—	—	—	—	—	4,20	h r Do
N <sub>R,k</sub> [kN] for t <sub>N,i</sub> [mm]	1,13	0,80	—	1,00	—	1,30	—	—	—	-	—	—	—	—	—	—	—	5,00	ough resista component l
<u>ب</u> چ	1,25	0,80	—	1,00		-	—	—	—	-		—	—	—	—	—	—	5,90	of o
Ϊ	1,50	0,80	—	—	—	-	—	—	—	-			—	—	—	—	—	5,90	pull-through resista of component I
	1,75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	٩
	2,00	_	_	_	_	—		_	_	_			_	_	_	_	_	—	

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

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



6 2,54 2,54 2,54 1	≥ Ø16 Ø10,5 00,5 00,5 000 000 000 000 000 000 00			88 SW8 22,54		$\frac{Material}{Fastene}$ $Washer$ $Compor$ $Compor$ $Drilling of the second se$	r: s nent I: s <u>capacity</u> substrue ance de 9,742	stainless stainless S280GE structura <u>ctures</u> etermine	s steel ( s steel ( $D - EN^{-1}$ al timbe $\Sigma t_i \le 2, i$ ed with	1.4401 (1.4301) 10346 r – EN 00 mm	/ 1.457   - EN 1  4081	7) – EN 8) – EN 0088		
I <sub>g</sub> =	32	38	42	48	52	58	62	68	72	78	82		/	í I
M <sub>t,nom</sub>						_								
	0,50 —				_		_							

M <sub>t,r</sub>	nom =						—							61
	0,50	_	-	-		_	—	—	-	_	—	—	-	
	0,55	_	_	_	-		_	_	_	-	_		_	<u> </u>
	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	6 0
[	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	anc t I
	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	bearing resistance of component l
for	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	por
V <sub>R,k</sub> for t <sub>N,I</sub>	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	ing
-	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	o
	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	Ā
	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	đ
	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	ě
	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	an(
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
N <sub>R,k</sub> for t <sub>N,I</sub>	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	ough resistar component l
L <sub>R,k</sub>	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	ngh om b
_	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	o 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 resistance of component l
	1,75	—	—	—	—	—	—	—	—	—	—		—	0
	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  $\geq \varnothing$  16 mm

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$\phi_{6,5}$ $M_{y,k} = 9,742 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \ge 32,5 \text{ mm}$	2016 010.5 10.	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$
		for timber substructures following performance were determined $M_{y,k} = 9,742 \text{ Nm}$

1	g =	33,	00	36,	00	39,	00	42,	00	45,	00	48,	00	51,0	00	54,	00	60,	00		/
Mt	,nom =									_	-										
		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	ş
	0,70	0,93	-	0,93	-	0,93	-	0,93	-	0,93	-	0,93	-	0,93	-	0,93	-	0,93	-	0,93	
ţ,	0,80	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	-	1,13	of comp (bearing)
for	0,90	1,25	-	1,25	-	1,25	-	1,25	-	1,25	-	1,25	-	1,25	-	1,25	-	1,25	-	1,25	cor
V <sub>R,k</sub> 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	ure
	1,50	1,30	-	1,45	-	1,60	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	failt
	2,00	1,30	-	1,45	-	1,60	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	-	1,70	Ŧ
= Xilia N		1,1	2	1,2	25	1,3	8	1,5	51	1,6	64	1,7	7	1,9	0	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 ( $\rho_k$  = 350 kg / m<sup>3</sup>). For other values of k<sub>mod</sub> and strength classes see chapter 4.2.2 For k<sub>mod</sub> < 0,90: failure of component I see right column and failure of component II see chapter 4.2.2 with f<sub>1,k</sub> = 80  $\cdot$  10<sup>-6</sup>  $\cdot$   $\rho_k^2$  (load carrying class 3,  $\rho_k$  in kg/m<sup>3</sup>, max. 500 kg/m<sup>3</sup>) and yield moment M<sub>y,k</sub> = 13830 Nmm.

#### Self-drilling screw

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

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

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	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 with $R_{m,min} = 215 \text{ N/mm}^2 - \text{EN } 573$
75'Z	Component II: timber – EN 14081
<u>\$\$4.7</u>	$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 2,00 \text{ mm}$
	Timber substructures
Ø4,5	for timber substructures following performance were determined
Ø 6,5	$ \begin{array}{ll} M_{y,k} &= 9,742 \ Nm \\ f_{ax,k} &= 8,575 \ N/mm^2 & \mbox{for} & \ l_{eff} &\geq 32,5 \ mm \end{array} $

I	g =	33,	00	36,	00	39,0	00	42,	00	45,	00	48,0	00	51,0	00	54,	00	60,	00		
M <sub>t,</sub>	nom =									_	-										
		0,70	-	0,70	-	0,70	-	0,70	-	0,70	-	0,70	-	0,70	-	0,70	-	0,70	-	0,70	_
	0,60	0,96	-	0,96	-	0,96	-	0,96	-	0,96	-	0,96	-	0,96	-	0,96	-	0,96	-	0,96	ş
	0,70	1,21	-	1,21	-	1,21	-	1,21	-	1,21	-	1,21	-	1,21	-	1,21	-	1,21	-	1,21	one
Ľ,	0,80	1,30	-	1,45	-	1,47	-	1,47	-	1,47	-	1,47	-	1,47	-	1,47	-	1,47	-	1,47	component aring)
for	0,90	1,30	-	1,45	-	1,60	-	1,63	-	1,63	-	1,63	-	1,63	-	1,63	-	1,63	-	1,63	comp aring)
V. N. H.	1,00	1,30	-	1,45	-	1,60	-	1,75	-	1,78	-	1,78	-	1,78	-	1,78	-	1,78	-	1,78	စ် ရိ
	1,20	1,30	-	1,45	-	1,60	-	1,75	-	1,90	-	2,05	-	2,20	-	2,22	-	2,22	-	2,22	nre
	1,50	1,30	-	1,45	-	1,60	-	1,75	-	1,90	-	2,05	-	2,20	-	2,22	-	2,22	-	2,22	ailt
	2,00	1,30	-	1,45	-	1,60	-	1,75	-	1,90	-	2,05	-	2,20	-	2,22	-	2,22	-	2,22	Ť.
	N <sub>R,II,k</sub> =	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	16	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 ( $\rho_k$  = 350 kg / m<sup>3</sup>). For other values of k<sub>mod</sub> 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,  $\rho_k$  in kg/m<sup>3</sup>, max. 500 kg/m<sup>3</sup>) and yield moment M<sub>y,k</sub> = 13830 Nmm.

#### Self-drilling screw

JT3-2-6,5xL

JT6-2-6,5xL With hexagon head and seal washer  $\geq \emptyset$  16,0 mm



≥Ø16 Ø10.5 °° Ø10.5 °°	Materials           Fastener:         stainless steel (1.4301 / 1.4567) - EN 10088, stainless steel (1.4404 / 1.4578) - EN 10088           Washer:         stainless steel (1.4301) - EN 10088           Component I:         S320GD or S350GD - EN 10346           Component II:         S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346
Ø4.3 Ø6.5 Ø6.5	$\label{eq:star} \begin{array}{ c c c } \hline \underline{Drilling\ capacity} & \Sigma t_i \leq 2,00\ mm \end{array}$

t	N,II	[m m ]	0,6	63	0,7	75	0,8	38	1,0	00	1,1	3	1,2	25	1,5	50	2,	00		
	М	t,nom							3 N	lm							-	-		-
		0,50	-	_	—	_	-	_	—	_	-	_	—	_	-	_	—	_	—	
		0,55	—	—	—	—	-	—	—	—	—	—	—	—	—	—	—	—	—	
	Ē	0,63	1,30		1,40	—	1,40	—	1,40	_	1,40		1,40	—	—	—	—	—	1,40	υ
Ì	Ē	0,75	1,30	—	1,80	—	2,00	—	2,00	—	2,00	—	2,00	—	—	—	—	—	2,00	anc
.	Ľ,	0,88	1,30	—	1,80	—	2,60	—	2,60	—	2,80	—	—	—	—	—	—	—	2,80	resistanc ponent l
, c	5	1,00	1,30	—	1,80	—	2,60	—	3,30	—	—	—	—	—	—	—	—	—	3,30	ing resistanc component l
	z	1,13	1,30	_	1,80	—	2,60	—	—	—	—		—	—	—	—	—	—	3,30	ing Son
	v <sub>R,k</sub> [KIN] IOF I <sub>N,I</sub> [mm]	1,25	1,30	_	1,80	—	—	_	—	—	—	—	—	—	—	—	—	—	3,30	earing of com
>	5	1,50	1,30	—	—	—	-	—	—	—	—	—	—	—	—	—	—	—	3,30	ă
		1,75	—	_	—	—	—	_	—	—	—	—	—	—	—	—	—	—	—	
		2,00	—	—	—	—	—	—	—	_	—	—	—	—	—	—	—	—	—	
		0,50	0,43	_	0,54	—	0,70	_	0,86	_	0,86		0,86	_	0,86	_	—	—	1,30	
		0,55	0,55	—	0,68	—	0,89	—	1,09	—	1,09	—	1,09	—	—	—	—	—	1,64	
	Ξ	0,63	0,80	—	1,00	—	1,30	—	1,60	—	1,60	—	1,60	—	—	—	—	—	2,40	nce
į	Ē	0,75	0,80	—	1,00	—	1,30	—	1,60	—	1,60	—	1,60	—	—	—	—	—	3,10	stai nt I
.	Ľ,	0,88	0,80	—	1,00	—	1,30	—	1,60	—	1,60	—	—	—	—	—	—	—	3,80	esi nei
ļ	5	1,00	0,80	—	1,00	—	1,30	—	1,60	—	—	—	—	—	—	—	—	—	4,60	r g
	ואאא ואא ואא אא ואא אא וואן אישא	1,13	0,80	—	1,00	—	1,30	—	-	—	—	—	-	—	—	—	-	—	5,50	through resista of component I
			0,80	—	1,00	—	-	—		—	—			—	—	—	—	—	6,30	le H
2	Ž		0,80	—	—		-		—		—	—	—		—	—	—		6,30	pull-through resi of componer
		1,75	—	—	—	—	-	—	-	—	—	—	-	—	—	—	—	_	-	-
		2,00	—	_	—	_	-	—	—	_	—	_	-	_	—	_	—	_	—	

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

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



-	6 2,54 - 2-11-		16 5 6 6 5 7 08 08 08 04,3 06,5			88 Sw8		Material Fastene Washer Compor Compor Drilling Drilling Timber perform M <sub>y,Rk</sub> = f <sub>ax,k</sub> =	er: s s nent I: s capacity substrue ance de 9,742	stainless stainless S320GE structura <u>ctures</u> stermine Nm	s steel ( s steel ( ) or S35 al timbe $\Sigma t_i \le 2,0$ ed with	r – EN 1	/ 1.4576 - EN 1 EN 103 14081	8) – EN 0088		
	I,	, =	32	38	42	48	52	58	62	68	72	78	82		/	
		, nom =												/		
		0,50		-				-	_	—		_	-			
		0,55	_	—	_			-	-	—	-	—	<u> </u>	-	щ.	
		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	ng resistance of mponent l	
	Ш	0,75		2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	anc	
	в,к for t <sub>N,I</sub>	0,88	-	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	2,80	ng resistan mponent l	
	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	jo l	
	цщ.	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	E E	

		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 o
	Ι	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	resistance oonent l
	t, 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	ien
	or	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
	V <sub>R,k</sub> for	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	tring resista component
	<b>_</b>	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	å
		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	of
		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	
		0,75	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,10	3,10	3,10	3,10	resistance onent l
	ţ,	0,88	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,80	3,80	sist
	for	1,00	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	4,60	
	N <sub>R,k</sub> for t	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	ough resista component
	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	6,30	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	6,30	pull-trough comp
		1,75	—	-	—	—	—	—	—	—	—	—	—	_	<u>م</u>
		2,00				—					_	—			
L															

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  $\geq \varnothing$  16 mm

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### <u>Materials</u>

 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

 $\begin{array}{lll} M_{y,Rk} = & 9,742 \ Nm \\ f_{ax,k} = & 8,575 \ N/mm^2 \ \ for & \ \ l_{ef} \geq 26,0 \ mm \end{array}$ 

t <sub>N,II</sub>	[mm]	0,6	63	0,7	75	0,8	38	1,0	0	1,1	3	1,2	25	1,5	i0	2,0	0		
d <sub>pd</sub>	[mm]	ø3	i,5	ø 4	· ,0				ø	4,5				ø 5	,0	ø5	i,3		
N	l <sub>t,nom</sub>					3 N	lm			_				5 N	m				
	0,50		—	-	—	-	—	—	—	—	—	—	—	-	—	-	—	-	
	0,55	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	
	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 Q
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	anc nt l
ţ,	0,88	1,50	—	1,70	—	2,00	—	2,30	—	2,60	—	2,80	ac	3,20	ac	3,20	ac	3,20	resistanc ponent l
fo	1,00	1,50	—	1,80	—	2,10	—	2,50	—	2,80	—	3,10	—	3,60	—	3,60	—	3,60	res
Ξ	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 <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	1,60	_	1,90	—	2,30	_	2,70	—	3,00	_	3,30	—	4,00	_	4,00	—	4,00	earing of con
>	1,50	1,60	_	1,90	—	2,40	—	2,80	—	3,20	—	3,50	_	4,00	_	4,00	—	4,00	p
	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	esistance nent l
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	stal nt I
ţŢ	88,0	0,90	—	1,10	—	1,30	_	1,40	_	1,60	_	1,80	ac	2,10	ac	2,10	ac	3,50	esi
for	1,00	0,90	—	1,10	—	1,30	—	1,40	—	1,60	—	1,80	_	2,20	—	2,20	—	4,20	r d
Ī	1,13	1,00	—	1,20	—	1,40	_	1,50	—	1,70	_	1,90	—	2,30	_	2,30	_	5,00	ough resista component l
N <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,25	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	5,90	pull-thre
۱ž	1,50	1,00	_	1,20	—	1,40	_	1,50	—	1,70	_	1,90	—	2,30	_	2,30	—	5,90	
	1,75	1,00	_	1,20	—	1,40	_	1,50	—	1,70	_	1,90	—	2,30	_	2,30	—	5,90	<u>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  $I_{ef}$  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 tapping screw

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

### Page 84 of European technical approval ETA-10/0200 of 27 June 2013



	2				2,54 2,54 2,54 ×		L	Material Fastene Washer Compor Compor	er: s : s nent I: s nent II: s	stainles S280GE structura	al timbe	1.4304 GD or S	) - EN 1 3350GD 14081	0088	10346
					6	-	[	Timber	substru	ctures					
						(( IL		perform	ance de	etermine	ed with				
		9	7	_1	6		SW 3/8"	M <sub>y,Rk</sub> = f <sub>ax,k</sub> =	9,742			l <sub>ef</sub> ≥26	mm		
┝┍							1								
╞		=	26	31	36	41	46	51	56	61	66	71	76		
╞	10.00	[mm]						Ø4,5 mn	n					/	
∣⊦	IVI <sub>t,n</sub>	<sub>iom</sub> = 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	e of
	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	t I
	V <sub>R,k</sub> for t <sub>N,I</sub> =	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	tring resistan component l
	for	1,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,60	por
	V <sub>R,k</sub>	1,13	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,80	ing
	-	1,25	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	4,00	bearing resistance of component l
		1,50	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	4,00	
		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 0,50	2,04 1,19	2,10	2,17 1,19	2,23 1,19	2,29 1,19	2,35 1,19	2,42	2,48 1,19	2,54 1,19	2,60 1,19	2,67 1,19	4,00	
		0,50	1,19	1,19 1,50	1,19	1,19	1,19	1,19	1,19 1,50	1,19	1,19	1,19	1,19	1,19 1,50	
		0,55	1,30	1,50	1,81	2,06	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	e of
		0,03	1,30	1,56	1,81	2,00	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	
	  デ	0,88	1,30	1,56	1,81	2,00	2,31	2,56	2,81	3,06	3,31	3,50	3,50	3,50	ista ent
	N <sub>R,k</sub> for t <sub>N,I</sub>	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	pull-trough resistance of component l
	R,k 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	5,00	dm d
	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	c trou
		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	-In
		1,75	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,90	<u>م</u>
		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 ( $\rho_k$  = 350 kg/m<sup>3</sup>). 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  $\geq \varnothing$  16 mm



18						8 8 8 8 8 8 8 8 8 8 8 8 8 8	<u>5</u> 88	Comp	ner: er:	sta I: S2 II: S2 S2	ainless 80GD 35 - E 80GD	steel , S320 N 100 , S320	(1.452 (1.430 0GD 0 025-1 0GD 0 	01) - E r S350 r S350	N 100 DGD -	)88 EN 10	
		<u>Ø4</u> <u>Ø6</u>	.25 Typ	JB		AF 3/8'		no pe	er subs rforma	ince d	leterm						
	[mm]	1,2		1,5 5,0	50	2,	00		00 5,3	4,	00		00		,00 5,7	_	-
	[mm] 4		Ø:	5,0					5,5 Nm			Ø	5,5	Ø:	5,7		_
	/I <sub>t,nom</sub> 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	_	_
Ē	0,75	2,60	ac	3,10	ac	3,30				3,70	abcd	3,70	abcd		abcd	_	_
ţ,	0,88	2,80	ac	3,20	ac	3,80	ac	4,10	abcd	4,30	abcd	4,40	abcd	4,40	abcd	—	_
for	1,00	3,20	ac	3,60	ac	4,10	ac	4,80	ac	4,90	ac	5,10	ac	5,10	ac	_	_
Ţ	1,13	3,40	ac	4,00	ac	4,60	ac	5,40	ac	5,60	ac	5,80	ac	5,80	ac	—	—
V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	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	ac	1,51	abcd	· ·	abcd	1,51	abcd	1,51			abcd	—	—
	0,55	1,23	ac	1,71	ac	1,91	abcd	1 '	abcd	1,91	abcd	1,91	abcd		abcd	—	—
[uuu]	0,63	1,80	ac	2,50	ac	2,80					abcd	2,80			abcd	-	—
-	0,75		ac	2,60	ac								abcd			—	—
Ţ,	0,88		ac	2,70	ac	3,30	ac				abcd		abcd			—	—
L L	1,00		ac	2,70	ac	3,40	ac	4,00	ac	4,00	ac	4,00	ac	4,00	ac	—	—
] for	1,13		ac	2,70	ac	3,60	ac	4,40	ac	4,40	ac	4,40	ac	4,40	ac	—	—
[kN] for		2,00	ac	2,70	ac	3,60	ac	4,80	ac	4,90	ac	4,90	ac	4,90	ac	-	-
I <sub>R,k</sub> [kN] for	1,25	0.00		2,70	ac	3,60	ac	5,60	ac	5,90	ac	5,90	ac	5,90	ас		—
N <sub>R,k</sub> [kN] for t <sub>N,I</sub>	1,50		ac		_	0.00	-		-								
N <sub>R,k</sub> [kN] for	1,50	2,00 2,00 2,00	ac ac	2,70 2,70	ac	3,60 3,60	ac	5,80 6,00	ac —	6,90 7,30	ас —	7,10 7,60	ac —	7,10 7,60	ac	—	—

JZ1 - 6,3 x L for components II with  $t_{II} \ge$  1,25 mm JB1 - 6,3 x L for components II with  $t_{II} \le$  2,00 mm

Self tapping screw

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



1.8	≥Ø22	264		8	≥022	2 0 0 0 0 0 0 0 0 0 0 0 0 0	Comp	ner:	sta I: S2 II: S2 S2	iinless 80GD 35 - E 80GD	steel , S320 N 100 , S320	(1.430 DGD 0 )25-1	01) - E r S350 r S350	EN 100 EN 100 DGD - DGD -	88 EN 10		
					JI	AF 3/8''	no pe	er subs rforma	ince d	leterm							
	[mm]	1,	50	2,0	00	3,00	4,	00		00		00		,00			
	[ <b>mm]</b> I <sub>t,nom</sub>							øţ	د, <i>د</i>	5 N		5,5	ы. M	5,7			
V <sub>R,k</sub> [kN] for t <sub>N,i</sub> [mm] ∃	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00							ас ас ас — —	4,20 4,70 5,00 5,60 6,40 7,20 7,90 7,90	abcd ac ac ac ac ac — —		abcd ac ac ac ac ac ac ac	3,40 4,20 4,70 5,10 5,80 6,50 7,30 8,10 8,10	abcd ac ac ac ac ac ac		- - - - - - - - - - - - - - - - - - -	
N <sub>R.k</sub> [kN] for t <sub>N.i</sub> [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00							abcd abcd ac ac ac ac 	1,67 2,11 3,10 4,00 4,40 4,60 5,10 5,10 5,90 6,90 11,6	abcd abcd ac ac ac ac ac 	2,11	abcd abcd ac ac ac ac ac ac 		abcd abcd ac ac ac ac ac ac 			

Self tapping screw

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

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English translation prepared by DIBt



t <sub>N</sub>	,11	[mm]	0,6	33	0,7	75	0,8	88	1,0	00	1,1	3	1,2	25	1,5	50	2,0	00		/
d	pd [	mm]	ø3	8,5	ø4	,0				ø	4,5				ø 5	i,0	ø 5	i,3		
	M	,nom					3 N	lm							5 N	m			/	
		0,50	—	—	—	_		—	—	—	—	—	-	—	_	—	÷	—	—	
		0,55						_	-		- <u>-</u> -	_	-	_	2.00		1000	_	- <del>19</del> 10	
17		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	9
Va v [kN] for two [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	resistanci iponent l
4	Ş	0,88	1,50	—	1,70	—	2,00	—	2,30	—	2,60	—	2,80	ac	3,20	ac	3,20	ac	3,20	aring resistand of component l
p	2	1,00	1,50	—	1,80	—	2,10	—	2,50	—	2,80	—	3,10	—	3,60	—	3,60	—	3,60	
ĮŽ	7	1,13	1,60	—	1,80	—	2,20	—	2,60	—	2,90	—	3,20	—	3,80	—	3,80	—	3,80	ing
		1,25	1,60	—	1,90	—	2,30	—	2,70	—	3,00	—	3,30	—	4,00	—	4,00	—	4,00	earing of con
>		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	ас	0,97	ac	1,13	ас	1,13	ас	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	
17	2	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
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 nt I
for t <sub>N</sub> - [mm]	Ż	88,0	0,90	—	1,10	—	1,30	—	1,40	—	1,60	—	1,80	ac	2,10	ac	2,10	ac	3,50	esi
Ę	5	1,00	0,90	—	1,10	—	1,30	—	1,40	—	1,60	—	1,80	—	2,20	—	2,20	—	4,20	r de
ĮŽ	5	1,13	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	5,00	through resista of component l
N <sub>b</sub> [kN]		1,25	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90		2,30	—	2,30	—	5,90	ull-through resi of componer
z		1,50	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	5,90	in l
		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  $I_{ef}$  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 tapping screw

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

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	AN MANANA W			2,90 0 2,54 2 2,27 7,27 2,54 2 2,90 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		L	Material Fastene Washer Compor Compor	er: s : s nent I: s nent II: s	stainles S280GE structura	s steel ( D, S320 al timbe		) - EN 1 3350GD 14081	0088	
			ŗ		EL	SW 3/8"	<u>Timber s</u> perform $M_{y,Rk} = f_{ax,k} =$	ance de 9,742	etermine		l <sub>ef</sub> ≥26	mm		
	g =	26	31	36	41	46	51	56	61	66	71	76		
	[mm]						Ø4,5 mn	n					/	
M <sub>t,r</sub>	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	of
	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	bearing resistance of component I
V <sub>R,k</sub> for t <sub>N,I</sub> =	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	rring resistar component l
ort	1,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,60	Jon
'n, k f	1,13	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	3,80	j mg
/	1,25	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	4,00	ear) c(
	1,50	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	4,00	ă
	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	l e
	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	ance of t I
<u> </u>	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	nt I
N <sub>R,k</sub> for t <sub>N,I</sub>	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	ough resistar component l
,× fo	1,00	1,30 1,20	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	4,20	n hr
Z R	1,13 1,25	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	3,31 3,31	3,56 3,56	3,81 3,81	5,00 5,90	pull-trough resist componen
	1,25	1,30 1,30	1,56	1,81	2,06 2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,90 5,90	II-tr
	1,75	1,30	1,56	1,81	2,00	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,90	nd
	2,00	1,30	1,56	1,81	2,00	2,31	2,56	2,81	3,06	3,31	3,56	3,81	5,90	
	2,00	1,00	1,00	1,01	2,00	,01	2,00	<u>_</u> ,01	0,00	0,01	0,00	0,01	0,00	

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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 kg/m<sup>3</sup>). For other values of k<sub>mod</sub> 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



Materials
Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
Component II: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573 timber – EN 14081
Pre-drill diameter see table
Timber substructures
for timber substructures following performance were determined
$ \begin{array}{ll} 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} $

							-													
4,II =	0,5	0	0,7	70	0,9	0	1,0	00	1,2	20	1,5	50	2,0	00	2,	50	3,	00		/
pd =		Ø	4,0							Ø	4,5						Ø	5,0		
,nom =									_	-										
	0,24	-	0,40	-	0,57	-	0,65	-	0,82	-	0,92	ac	0,92	ac	0,92	abcd	0,92	abcd	0,92	Ι
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	ent
0,70	0,24	-	0,40	-	0,57	-	0,65	-	0,82	-	1,07	-	1,38	-	1,38	ac	1,38	ac	1,38	component aring)
0,80	0,24	-	0,40	-	0,57	-	0,65	-	0,82	-	1,15	-	1,46	-	1,61	-	1,61	ac	1,61	comp. aring)
0,90	0,24	-	0,40	-	0,57	-	0,65	-	0,82	-	1,27	-	1,61	-	1,77	-	1,84	-	1,84	col
1,00	0,24	-	0,40	-	0,57	-	0,67	-	0,82	-	1,38	-	1,77	-	1,92	-	2,07	-	2,07	of (be
1,20	0,24	-	0,40	-	0,57	-	0,67	-	0,88	-	1,61	-	1,84	-	2,15	-	2,38	-	2,38	ailure
1,50	0,24	-	0,40	-	0,57	-	0,67	-	0,88	-	2,15	-	2,30	-	2,53	-	2,76	-	2,76	ailı
2,00	0,24	-	0,40	-	0,57	-	0,67	-	0,88	-	2,15	-	2,30	-	2,53	-	2,76	-	2,76	-
	-		-		0,3	86	0,4	12	0,5	55	0,7	77	1,2	23	1,	77	2,	38	failure of component II	see chapter 4.2.2
	pd = nom = 0,50 0,60 0,70 0,80 0,90 1,00 1,20 1,50	pd =	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

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  $\geq \varnothing$  16,0 mm

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English translation prepared by DIBt



≥Ø16	≥Ø16	Materials
	01	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
		Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
N	2	Component I: aluminium alloy with R <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573
	254	Component II: aluminium alloy with R <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573 timber – EN 14081
75	<u>Ø4.7</u> Ø6.5	Pre-drill diameter see table
1		Timber substructures
<u> </u>		for timber substructures following performance were determined
	8/8/8/	$\begin{array}{ll} M_{y,k} &= 9,742 \ \text{Nm} \\ f_{ax,k} &= 8,575 \ \text{N/mm}^2 & \text{for} & I_{eff} &\geq 32,5 \ \text{mm} \end{array}$

		1		1	2011	1	2.915	1				1		1							
t <sub>N</sub>	4,II =	0,5	i0	0,7	70	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 <sub>t,</sub>	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	_
	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	snt
	0,70	0,31	-	0,53	-	0,74	-	0,85	-	1,06	-	1,40	-	1,80	-	1,80	ac	1,80	ac	1,80	onent
Ľ,	0,80	0,31	-	0,53	-	0,74	-	0,85	-	1,06	-	1,50	-	1,90	-	2,10	-	2,10	ac	2,10	mp( ng)
or 1	0,90	0,31	-	0,53	-	0,75	-	0,85	-	1,06	-	1,65	-	2,10	-	2,30	-	2,40	-	2,40	cor arii
V <sub>R,k</sub> for	1,00	0,31	-	0,53	-	0,75	-	0,88	-	1,06	-	1,80	-	2,30	-	2,50	-	2,70	-	2,70	of comp( (bearing)
>	1,20	0,31	-	0,53	-	0,75	-	0,88	-	1,15	-	2,10	-	2,40	-	2,80	-	3,10	-	3,10	ar
İ	1,50	0,31	-	0,53	-	0,75	-	0,88	-	1,15	-	2,80	-	3,00	-	3,30	-	3,60	-	3,60	ailure
	2,00	0,31	-	0,53	-	0,75	-	0,88	-	1,15	-	2,80	-	3,00	-	3,30	-	3,60	-	3,60	f
N <sub>R,II,k</sub> =		-		-		0,4	-7	0,5	5	0,7	71	1,0	00	1,6	60	2,	30	3,	10	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<sub>g</sub>, 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



	9 F 9 V 1 C	Vasher: component I: component II:	stainless steel stainless steel with vulcanised aluminium alloy with $R_{m,min} = 16$ S235 – EN 100 S280GD, S320 timber – EN 14	(1.4301 d EPDN y 65 N/mr )25-1 )GD – E	) – EN I seal m² – EN	10088 573	10088
N 12 004.7 006.5	fc d MSMS	re-drill diame	<u>iter</u> see tal <u>uctures</u> structures follow Nm	ble	formand	ce were ≥ 32,5	mm

t <sub>N</sub>	I,II =	0,6	3	0,7	75	0,8	38	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	5,0			Ø	5,3				
M <sub>t,</sub>	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	١
	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
	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
Ę.	0,80	0,35	-	0,44	-	0,55	-	0,65	-	0,86	-	1,15	-	1,46	-	1,61	-	1,61	ac	1,61	of compone (bearing)
lor.	0,90	0,35	-	0,44	-	0,56	-	0,65	-	0,86	-	1,27	-	1,61	-	1,77	-	1,84	-	1,84	col
V <sub>R,k</sub> for	1,00	0,35	-	0,44	-	0,56	-	0,67	-	0,86	-	1,38	-	1,77	-	1,92	-	2,07	-	2,07	of (be
^	1,20	0,35	-	0,44	-	0,56	-	0,67	-	0,92	-	1,61	-	1,84	-	2,15	-	2,38	-	2,38	ure
	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	0	1,2	20	1,4	10	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<sub>g</sub>, 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



32 <u>Ø4.7</u> <u>Ø6.5</u> <u>P</u>	Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346 timber – EN 14081 Pre-drill diameter see table
	Timber substructuresfor timber substructures following performance weredetermined $M_{y,k} = 9,742 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 32,5 \text{ mm}$

t <sub>N</sub>	I.II =	0,6	3	0,7	75	0,8	38	1,0	00	1,2	25	1,5	50	2,0	00	2,	50	3,	00		/
d	pd =	Ø3	,5	Ø4	ŀ,0			Ø4	-,5			ØS	i,0			Ø	5,3				
M <sub>t,</sub>	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	_
	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
	0,70	0,45	-	0,58	-	0,72	-	0,85	-	1,12	-	1,40	-	1,80	-	1,80	ac	1,80	ac	1,80	5
Ę.	0,80	0,45	-	0,58	-	0,72	-	0,85	-	1,12	-	1,50	-	1,90	-	2,10	-	2,10	ac	2,10	ng)
V <sub>R,k</sub> for	0,90	0,45	-	0,58	-	0,72	-	0,85	-	1,12	-	1,65	-	2,10	-	2,30	-	2,40	-	2,40	of comp( (bearing)
, A, H	1,00	0,45	-	0,58	-	0,72	-	0,88	-	1,12	-	1,80	-	2,30	-	2,50	-	2,70	-	2,70	jo €
^	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	aili
	2,00	0,45	-	0,58	-	0,72	-	0,88	-	1,23	-	2,80	-	3,00	-	3,30	-	3,60	-	3,60	-
N <sub>R,II,k</sub> =		1,0	0	1,2	20	1,4	10	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<sub>g</sub>, 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



Ø6.25 <u>Predrill diameter</u> see table below	346
Ø4.88     Ø4.88       Ø6.25     Typ JB         Timber substructures       no performance determined	
$t_{N,II} [mm]$ 1,25 1,50 2,00 3,00 4,00 6,00 $\geq$ 7,00 -	
d <sub>pd</sub> [mm] ø 5,0 ø 5,3 ø 5,5 ø 5,7 —	-
M <sub>t,nom</sub> 5 Nm —	
0,50	-
	-
E 0,63 2,50 ac 2,70 ac 2,90 abcd 3,00 abcd 3,10 abcd 3,10 abcd 3,10 abcd -	-
$ \begin{bmatrix} 0,03 & 2,30 & ac & 2,70 & ac & 2,90 & abcd & 3,00 & abcd & 3,10 & abcd & 3,70 & abcd & 3,70 & abcd & 3,70 & abcd & 3,70 & abcd &$	-
$\vec{z}$ 0,88 2,80 ac 3,20 ac 3,80 ac 4,10 abcd 4,30 abcd 4,40 abcd 4,40 abcd -	-
<u>ن</u> 1,00 3,20 ac 3,60 ac 4,10 ac 4,80 ac 4,90 ac 5,10 ac 5,10 ac —	-
<b>∑</b> 1,13 3,40 ac 4,00 ac 4,60 ac 5,40 ac 5,60 ac 5,80 ac 5,80 ac —	-
$\frac{1}{2}$ 1,25 3,60 ac 4,20 ac 5,00 ac 6,10 ac 6,30 ac 6,50 ac 6,50 ac -	-
	-
1,75 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 1,51 abcd 1,51 abcd 1,51 abcd 1,51 abcd 1,51 abcd -	-
0,55 1,23 ac 1,71 ac 1,91 abcd 1,91 abcd 1,91 abcd 1,91 abcd 1,91 abcd -	-
E         0,63         1,80         ac         2,50         ac         2,80         abcd         3,60         abcd         3,60 </td <td>-  </td>	-
<u>Ε</u> 0,75 2,00 ac 2,60 ac 3,10 abcd 3,60 abcd 3,60 abcd 3,60 abcd 3,60 abcd -	-
$\vec{z}$ 0,88 2,00 ac 2,70 ac 3,30 ac 3,80 abcd 3,80 abcd 3,80 abcd 3,80 abcd -	-
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	-
∑ 1,13 2,00 ac 2,70 ac 3,60 ac 4,40 ac 4,40 ac 4,40 ac 4,40 ac −	-
<u>→</u> 1,25 2,00 ac 2,70 ac 3,60 ac 4,80 ac 4,90 ac 4,90 ac 4,90 ac −	-
	-
1,75 2,00 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 — —	—

Self tapping screw

 $JZ3\text{-}6,3 \times L$   $JB3\text{-}6,3 \times L$  with hexagon head and sealing washer  $\geq$  Ø16 mm

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English translation prepared by DIBt



α Φ Φ Φ Φ Φ Φ Φ Φ Φ Φ Φ Φ Φ	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, S275, S355 - EN 10025-1         S280GD, S320GD or S350GD - EN 10346         Predrill diameter       see table below         Timber substructures         no performance determined									
t <sub>N,II</sub> [mm] 1,50 2,00 3,00	<b>4</b> ,00 <b>5</b> ,00 <b>6</b> ,00 ≥ 7,00 —									
d <sub>pd</sub> [mm] —	ø 5,3 ø 5,5 ø 5,7 —									
M <sub>t,nom</sub> —	5 Nm —									
0,50 — — — — — —										
0,55 — — — — — —										
E     0,63	- 3,40 abcd 3,40 abcd 3,40 abcd 3,40 abcd									
	- 4,20 ac 4,20 ac 4,20 ac 4,20 ac									
	- 4,70 ac 4,70 ac 4,70 ac 4,70 ac									
$\begin{bmatrix} 0,03 & - & - & - & - & - & - & - & - & - & $	- 5,00 ac 5,00 ac 5,10 ac 5,10 ac — —									
	- 5,60 ac 5,60 ac 5,80 ac 5,80 ac — —									
	- 6,30 — 6,40 — 6,50 ac 6,50 ac — —									
	- 7,10 - 7,20 - 7,30 - 7,30									
	- 7,70 — 7,90 — 8,10 — 8,10 — — —									
2,00	- 7,70 — 7,90 — 8,10 — 8,10 — — —									
0,50 — — — — — —	- 1,67 abcd 1,67 abcd 1,67 abcd 1,67 abcd									
	- 2,11 abcd 2,11 abcd 2,11 abcd 2,11 abcd — —									
	- 3,10 abcd 3,10 abcd 3,10 abcd 3,10 abcd									
$\begin{bmatrix} 0,03 & - & - & - & - & - & - & - & - & - & $	- 4,00 ac 4,00 ac 4,00 ac 4,00 ac									
	- 4,60 ac 4,60 ac 4,60 ac 4,60 ac									
$\begin{vmatrix} \vec{x} \\ \vec{x} \end{vmatrix}$ 1,25										
	- 6,90 $-$ 6,90 $-$ 7,10 $-$ 7,10 $      -$ 8,80 $-$ 11,6 $-$ 13,4 $-$ 13,4 $   -$									
2,00 = = = = = = =										

Self tapping screw

JZ3-6,3~x~L with hexagon head and sealing washer  $\geq \varnothing22~mm$ 



	<u>Materials</u> Fastener: stainless steel (1.4301) – EN 10088
	Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
	Component I: aluminium alloy with R <sub>m.min</sub> = 165 N/mm <sup>2</sup> – EN 573
	Component II: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
- Ø4.88 Ø6.25	Pre-drill diameter see table
<u>Ø4.88</u> <u>Ø6.25</u> Typ JB	<u>Timber substructures</u> for timber substructures no performance determined

	t.	=	1.20 1.50			50	2,00 2,50		50	3.00		4	00	5	00	6,00		≥ 7,00			
⊪—	ΨΝ,	<sub>  </sub> =	2,1	0	1,5				Ζ,	50			- <del>4</del> ,	00			0,	00	<u> </u>		
	dp	d =	Ø 4,5								Ø	5,0			Ø	5,3			Ø 5,5		
1	M <sub>t,n</sub>	om =									-	-									
		0,50	0,79	-	0,84	ac	0,84	ac	0,84	abcd	0,84	abcd	0,84	abcd	0,84	abcd	0,84	abcd	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	
	Z	0,80	0,79	-	1,15	-	1,46	-	1,53	-	1,53	-	1,53	ac	1,53	abcd	1,53	abcd	1,53	abcd	
į	5	0,90	0,79	-	1,27	-	1,53	-	1,73	-	1,77	-	1,77	ac	1,77	ac	1,77	abcd	1,77	abcd	
	VR,k IUI	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	-	
Т	Ĭ																				
	INR,II,K -		0,5	4	0,7	7	1,2	23	1,	77	2,	38	3,	68	5,	30	7,	06	7,	06	

Self-tapping screw

JZ3-6,3xL-E16

JB3-6,3xL-E16

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



	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 <sub>m,min</sub> = 215 N/mm <sup>2</sup> – EN 573
	Component II: aluminium alloy with R <sub>m,min</sub> = 215 N/mm <sup>2</sup> – 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

+	-	1,20 1,50 2,00			0	2	50	3	00	4,00		5	00	6	00	. 7	,00			
4	N,II =	1,2	0	1,5			0	Ζ,	50	5,	00	-4,	00	5,	00	0,	00	21	,00	
d	pd =	ø 4,5								Ø	5,0	Ø 5,3						Ø	Ø 5,5	
M	,nom =									-	-									
	0,50	1,03	-	1,10	ac	1,10	ac	1,10	abcd	1,10	abcd	1,10	abcd	1,10	abcd	1,10	abcd	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 <sub>R,k</sub> for		1,03	-	1,65	-	2,00	-	2,25	-	2,30	-	2,30	ac	2,30	ac	2,30	abcd	2,30	abcd	
А, <del>К</del>	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 <sub>R,II,k</sub> =		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



ص <u>→ 2016</u> م	<u>Materials</u>
	Fastener: stainless steel (1.4301) – EN 10088
	Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal
	Component I: aluminium alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
- <del>•</del>	Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346
- Ø4.88 Ø6.25	Pre-drill diameter see table
<u>Ø4.88</u> Ø6.25 Typ JB	<u>Timber substructures</u> for timber substructures no performance determined

+	, <sub>II</sub> =	1,25 1,50			0	2,00		2,50		3	00	Δ	00	5	00	6	00	≥7,	00
4N	,11	2,1				2,0	0	2,	50			4,	00	5,	00			<u> </u>	
d	pd =		Ø	5,0						Ø	5,3					Ø	5,5	Ø5	,7
M <sub>t,r</sub>	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	-
ţ,	0,80	0,83	-	1,15	-	1,46	-	1,53	-	1,53	-	1,53	ac	1,53	abcd	1,53	abcd	1,53	-
fort	0,90	0,83	-	1,27	-	1,53	-	1,73	-	1,77	-	1,77	ac	1,77	ac	1,77	abcd	1,77	-
V <sub>R.k</sub> for	1,00	0,83	-	1,38	-	1,61	-	1,92	-	2,00	-	2,00	ac	2,00	ac	2,00	abcd	2,00	-
	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 <sub>R,II,k</sub> =		2,0	0	2,7	0	3,6	0	3,	60	6,	00	7,	30	7,	45	7,	60	7,6	60

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 seal
04.5	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
- Ø4.88 Ø6.25	Pre-drill diameter see table
<u>Ø4.88</u> <u>Ø6.25</u> Typ JB	<u>Timber substructures</u> for timber substructures no performance determined

t <sub>N</sub>	,II =	1,2	5	1,5	50	2,0	0	2,	50	3,	00	4,	00	5,	00	6,	00	≥7,	00
	pd =		Ø	5,0						Ø	5,3					ø	5,5	Ø5	ō,7
M <sub>t,i</sub>	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	-
ţ,	0,80	1,08	-	1,50	-	1,90	-	2,00	-	2,00	-	2,00	ac	2,00	abcd	2,00	abcd	2,00	-
fort	0,90	1,08	-	1,65	-	2,00	-	2,25	-	2,30	-	2,30	ac	2,30	ac	2,30	abcd	2,30	-
V <sub>R,k</sub> for	1,00	1,08	-	1,80	-	2,10	-	2,50	-	2,60	-	2,60	ac	2,60	ac	2,60	abcd	2,60	-
	1,20	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 <sub>R,II,k</sub> =		2,0	0	2,7	70	3,6	0	3,	60	6,	00	7,	30	7,	45	7,	60	7,6	30

Self-tapping screw

JZ3-6,3xL-E16

JB3-6,3xL-E16

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



2.1	≥02		- E	e ( (		17. Ø5.4 Ø6.2 Ø8		Comp Predr Timbe	ner: er:	sta I: S2 II: S2 S2 <u>neter</u>	inless 80GD 35 - E 80GD 	steel , S32( N 100 , S32( see ta	(1.430 DGD o )25-1	01) - E r S35 r S35	EN 100 EN 100 0GD - 0GD -	)88 EN 10	
t <sub>N II</sub>	[mm]	1,5	50	2,0	0	3,0	00	4,	00	6,	00	8,	00	≥ 1	0,0	- 1	]
	[mm]	,,,		· · ·		5,8		,			7,0		7,2		7,4	- 1	
N	И <sub>t,nom</sub>							10	Nm			•					
NR,k [kN] for t <sub>N1</sub> [mm] VR,k [kN] for t <sub>N1</sub> [mm]	0,50 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75								abcd ac ac ac ac ac ac ac abcd abcd abcd	4,70 5,30 5,90 6,60 7,00 7,00 7,00 2,38 3,00	abcd abcd ac ac ac ac ac abcd abcd abcd	4,70 5,30 5,90 6,60 7,00 7,00 7,00 2,38 3,00 4,40	abcd abcd ac ac ac ac ac abcd abcd abcd	4,70 5,30 5,90 6,60 7,00 7,00 7,00 2,38 3,00 4,40	abcd abcd ac ac ac   abcd abcd abcd abcd abcd ac ac         -		
	Self tapping screw         JZ3-8,0 x L         with hexagon head and sealing washer ≥ Ø22 mm																



18	$\geq 016$ $\otimes							Comp		sin sta I: S2 II: S2 S2	iinless 80GD 35, S2 80GD	o stair steel , S320 ?75 or , S320	1ess s (1.430 )GD o S355	teel (* 01) - E r S35 - EN r S35	1.4301 EN 100 0GD -	88 EN 10 -1	)346	8
	Ø4.88     J7       Ø4.88     J7       Ø6.25     \$000000000000000000000000000000000000								er subs rforma			ined						
	.,					00	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$							_				
			ø 5,0									Ø	5,5	Ø	5,7		_	
_  '	M <sub>t,nom</sub> 0,50			<u> </u>		-		51	١m								_	
	0,50						_											
	0.00	2,50	ac	2,70	ac	2 80	abcd	3,00	abcd	2 10	abcd	3,10	abcd	3,10	abcd	_		
Ē	0,75	2,60	ac	3,10	ac		abcd		abcd		abcd	3,70	abcd		abcd			
V <sub>R.k</sub> [kN] for t <sub>N.I</sub> [mm]	0,88		ac	3,20	ac	3,80	ac		abcd		abcd				abcd	_		
or 15	1,00		ac	3,60	ac	4,10	ac	4,80	ac	4,90	ac	5,10	ac	5,10	ac			
	1,13	3,40	ac	4,00	ac	4,60	ac	5,40	ac	5,60	ac	5,80	ac	5,80	ac	_	_	
ا بخ	1,25	3,60	ac	4,20	ac	5,00	ac	6,10	ac	6,30	ac	6,50	ac	6,50	ac	_	_	
K, K	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	1,51	abcd		abcd	1,51	abcd		abcd		abcd	_		
	0,55	1,23	ac	1,71	ac		abcd			1,91					abcd	_		
	0,63	1,80	ac	2,50	ac		abcd				abcd				abcd		_	
[mm]	0,75	2,00	ac	2,70	ac				abcd								_	
			ac	2,70	ac	3,30	ac		abcd				abcd				_	
ort	1,00		ac	2,70	ac	3,40	ac	4,00	ac	4,00	ac	4,00	ac	4,00	ac			
=	1,13		ac	2,70	ac	3,60	ac	4,40	ac	4,40	ac	4,40	ac	4,40	ac			
N <sub>R,k</sub> [kN] for t <sub>N,I</sub>	1,25		ac	2,70	ac	3,60	ac	4,80	ac	4,90	ac	4,90	ac	4,90	ac			
Z Z	1,50		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	_		_	
	,					,		I ,		,		,		,				1

JZ7 - 6,3 x L for components II with  $t_{II} \ge$  1,25 mm JB7 - 6,3 x L for components II with  $t_{II} \le$  2,00 mm

Self tapping screw

 $JZ7\text{-}6,3 \times L \\ JB7\text{-}6,3 \times L \\ \label{eq:JB7-}$  with hexagon head and sealing washer  $\geq$  Ø16 mm

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- + - -										ials ner: oonent oonent <u>ill dian</u> er subs	sin sta I: S2 II: S2 S2 <u>neter</u>	niliar to iinless 80GD 35, S2 80GD	o stair steel , S320 275 or , S320 see ta		teel (* 01) - E r S35 - EN r S35	1.4301 EN 100 0GD - 10025	)88 EN 10 -1	)346	8
	$d_{pd}$	[mm] [mm]	1,	50	2,(	00	3,0	0	4,	00 ø 5		00 5 N	ø	00 5,5		,00 5,7			
		0,50	—		—	_	_	_	—		—	_	<u> </u>	_	—		_	_	
		0,55	—	—	—	—	—	—	-	—	—	—	-	—	—	—	—	—	
	Ē	0,63	—	—	—		—	—	3,40	abcd	3,40	abcd	3,40		3,40	abcd	—	—	
	<u></u>	0,75	_	_	-	—	—	—	4,20	ac	4,20	ac	4,20	ac	4,20	ac	—	—	
	ţ	0,88	_	—	-	—	—	—	4,70	ac	4,70	ac	4,70	ac	4,70	ac	—	—	
	V <sub>R,k</sub> [kN] for t <sub>N,I</sub> [mm]	1,00	-	—	-	—	-	—	5,00	ac	5,00	ac	5,10	ac	5,10	ac	-	—	
	N N	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	_	—	-		-		7,70	—	7,90	_	8,10		8,10	—	-	—	
		2,00		_		_			7,70		7,90		8,10		8,10			_	
		0,50	-	—	-		—		1,67	abcd	1,67	abcd	1,67	abcd	1,67	abcd	_	—	
		0,55	_		-		_	_	1 1	abcd	2,11	abcd	2,11	abcd	2,11	abcd	-	—	
	Ē	0,63	_	—				—		abcd	3,10	abcd		abcd		abcd	-	—	
	Ē	0,75	-	—	-	—	-	—	4,00	ac	4,00	ac	4,00	ac	4,00	ac	-	—	
	N <sub>R.k</sub> [kN] for t <sub>N,I</sub> [mm]	0,88	-	—	-	—	—	—	4,40	ac	4,40	ac	4,40	ac	4,40	ac	-	—	
	]Q	1,00		—		—		—	4,60	ac	4,60	ac	4,60	ac	4,60	ac	—	—	
	Ž.	1,13		—		—	—	—	5,10	ac	5,10	ac	5,10	ac	5,10	ac		—	
	Ъ,	1,25		—		—		—	5,10	—	5,10	—	5,10	ac	5,10	ac	—	—	
	z	1,50	-		—	—	—	—	5,90	—	5,90		5,90	—	5,90	—	—	—	

JZ7 - 6,3 x L for components II with  $t_{II} \ge$  1,25 mm JB7 - 6,3 x L for components II with  $t_{II} \le$  2,00 mm

\_\_\_\_

1,75

2,00

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\_\_\_\_

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Self tapping screw

JZ7-6,3 x L JB7-6,3 x L with hexagon head and sealing washer  $\ge \emptyset 22 \text{ mm}$ 

Annex 88

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7,10

13,4

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\_\_\_\_

6,90

11,6

7,10

13,4

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6,90

8,80

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		Ø14 Ø12 FR-Head	3.4	Faste Wast Com	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									
He B							Σt <sub>i</sub> ≤	2,00 mm	n					
AFR ()							<u>Timber substructures</u> for timber substructures no performance determined							
	t <sub>N,II</sub> = 0,40						0,75	0,88						
	$M_{t,nom} =$						•	·						
	-,	0,40 0,50	0,65 0,65	0,65 0,81	0,65 0,81	0,65 0,81	0,65 0,81	0,65 0,81						
		0,55	0,65	0,81	0,99	0,99	0,99	0,99						
	1	0,63	0,65	0,81	0,99	1,26	1,26	1,26						
	V <sub>R,k</sub> für t <sub>N,I</sub> =	0,75	0,65	0,81	0,99	1,26	1,71	1,71						
		0,88	0,65	0,81	0,99	1,26	1,71	2,46						
		1,00	_	_	-	_	_	_						
		1,13 1 25	_	_	-		_	_						
		1,25 1,50	_	_	-		-	-						
		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						
		0,63	0,45	0,67	0,78	0,94	1,21	1,50						
	 	0,75	0,45	0,67	0,78	0,94	1,21	1,50						
	ürt	0,88	0,45	0,67	0,78	0,94	1,21	1,50						
	N <sub>R,k</sub> für t <sub>N,I</sub>	1,00												
	Ϊ	1,13	_	_	_	_	_	_						
		1,25	_	_	_	_	_	_						
		1,50	_	_	—	_	_	_						
	2,00 —													
If both components I and	ll are r	nade of	S320GD	) or S35(	)GD all v	alues ma	ay be inc	reased b	y 8,3%.					
	Self	tappin	g screw											
JF3-2H JF6-2H			3-FR-2H 6-FR-2H				A	nnex 8	9					

Z56765.13

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

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Ø14 Ø10.5 R R R R R R R R R R R R R R R R R R R	Ø14 Ø12 ER-Head	$\label{eq:matrix} \begin{array}{l} \underline{Materials} \\ Fastener: stainless steel (1.4301 / 1.4567) - EN 10088 \\ stainless steel (1.4401 / 1.4578) - EN 10088 \\ Washer: stainless steel (1.4301) - EN 10088 \\ Component I: aluminium-Alloy \\ with R_{m,min} = 165 \ N/mm^2 - EN 573 \\ Component II: aluminium-Alloy \\ with R_{m,min} = 165 \ N/mm^2 - EN 573 \\ \end{array}$
ST CI	33 T25	$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 2,00 \text{ mm}$
BE JO	725 T25	<u>Timber substructures</u> for timber substructures no performance determined

t <sub>N</sub>	, <sub>II</sub> =	0,50		0,6	0	0,7	0	0,8	0	0,9	0	1,0	0
M <sub>t,r</sub>	nom =						-	_					
	0,50	0,45	-	0,45	-	0,45	-	0,45	-	0,45	-	0,45	-
<u> </u>	0,60	0,45	-	0,66	-	0,66	-	0,66	-	0,66	-	0,66	-
r fr	0,70	0,45	-	0,66	-	0,88	-	0,88	-	0,88	-	0,88	-
V <sub>R,k</sub> for t <sub>N,I</sub>	0,80	0,45	-	0,66	-	0,88	-	1,09	-	1,09	-	1,09	-
2	0,90	0,45	-	0,66	-	0,88	-	1,09	-	1,46	-	1,46	-
	1,00	0,45	-	0,66	-	0,88	-	1,09	-	1,46	-	1,83	-
N <sub>R,II,k</sub> =		0,3	2	0,4	2	0,5	1	0,6	1	0,7	1	0,8	0

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 JF3-FR-2H-4,8xL

JF6-2H-4,8xL JF6-FR-2H-4,8xL with hexagon head or FR head and seal washer  $\geq \varnothing$  14 mm

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-2		Ø14 Ø12 FR-Head	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$
	ALL	13 T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
	AF8	725	<u>Timber substructures</u> for timber substructures no performance determined

t <sub>N</sub>	, <sub>II</sub> =	0,5	0,50		0	0,7	0	0,8	0	0,9	0	1,0	0
M <sub>t,r</sub>	nom =						-	_					
	0,50	0,58	-	0,58	-	0,58	-	0,58	-	0,58	-	0,58	-
<u> </u>	0,60	0,58	-	0,86	-	0,86	-	0,86	-	0,86	-	0,86	-
r tr	0,70	0,58	-	0,86	-	1,14	-	1,14	-	1,14	-	1,14	-
V <sub>R,k</sub> for t <sub>N,I</sub>	0,80	0,58	-	0,86	-	1,14	-	1,42	-	1,42	-	1,42	-
2	0,90	0,58	-	0,86	-	1,14	-	1,42	-	1,90	-	1,90	-
	1,00	0,58	-	0,86	-	1,14	-	1,42	-	1,90	-	2,38	-
N <sub>R,II,k</sub> =		0,4	2	0,5	4	0,6	7	0,7	9	0,9	2	1,0	4

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 JF3-FR-2H-4,8xL

JF6-2H-4,8xL JF6-FR-2H-4,8xL with hexagon head or FR head and seal washer  $\geq \varnothing$  14 mm

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	Ø14 Ø12 FR-Head	$\label{eq:matrix} \begin{array}{l} \underline{Materials} \\ Fastener: stainless steel (1.4301 / 1.4567) - EN 10088 \\ stainless steel (1.4401 / 1.4578) - EN 10088 \\ Washer: stainless steel (1.4301) - EN 10088 \\ Component I: aluminium-Alloy \\ with R_{m,min} = 165 \ N/mm^2 - EN 573 \\ Component II: S280GD, S320GD or S350GD - EN 10346 \\ \end{array}$
BE (J3)	13 T25	<u>Drilling capacity</u> $\Sigma t_i \le 2,00 \text{ mm}$
AFR () () () () () () () () () () () () ()	725	<u>Timber substructures</u> for timber substructures no performance determined

Т

t <sub>N</sub>	, <sub>II</sub> =	0,5	0	0,5	0,55		0,63		5	0,88		1,0	0
M <sub>t,r</sub>	nom =						-	_					
	0,50	0,45	-	0,45	-	0,45	-	0,45	-	0,45	-	0,45	-
<u> </u>	0,60	0,45	-	0,45	-	0,66	-	0,66	-	0,66	-	0,66	-
Ľ Ľ	0,70	0,45	-	0,45	-	0,66	-	0,88	-	0,88	-	0,88	-
V <sub>R,k</sub> for t	0,80	0,45	-	0,45	-	0,66	-	0,88	-	1,09	-	1,09	-
2	0,90	0,45	-	0,45	-	0,66	-	0,88	-	1,09	-	1,46	-
	1,00	0,45	-	0,45	-	0,66	-	0,88	-	1,09	-	1,83	-
N <sub>R,II,k</sub> =		0,6	7	0,7	8	0,9	4	1,2	1	1,5	0	1,7	8

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 JF3-FR-2H-4,8xL

JF6-2H-4,8xL JF6-FR-2H-4,8xL with hexagon head or FR head and seal washer  $\geq \varnothing$  14 mm

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Ø14 Ø10.5 014 Ø12 014 Ø12 014 Ø12 0 FR-Head	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$
REF J3	$\underline{\text{Drilling capacity}} \qquad \Sigma t_i \leq 2,00 \text{ mm}$
BU JG	<u>Timber substructures</u> for timber substructures no performance determined
. Ø <sup>14</sup> .	

t <sub>N</sub>	,II =	0,5	0	0,6	0	0,7	0	0,8	0	0,9	0	1,0	0
M <sub>t,r</sub>	nom =						-	_					
	0,50	0,58	-	0,58	-	0,58	-	0,58	-	0,58	-	0,58	-
<u> </u>	0,60	0,58	-	0,58	-	0,86	-	0,86	-	0,86	-	0,86	-
ŗ,	0,70	0,58	-	0,58	-	0,86	-	1,14	-	1,14	-	1,14	-
V <sub>R,k</sub> for	0,80	0,58	-	0,58	-	0,86	-	1,14	-	1,42	-	1,42	-
1	0,90	0,58	-	0,58	-	0,86	-	1,14	-	1,42	-	1,90	-
	1,00	0,58	-	0,58	-	0,86	-	1,14	-	1,42	-	2,38	-
NR,II,k =		0,6	7	0,7	8	0,9	4	1,2	1	1,5	0	1,7	8

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 JF3-FR-2H-4,8xL

JF6-2H-4,8xL JF6-FR-2H-4,8xL with hexagon head or FR head and seal washer  $\geq \varnothing$  14 mm

English translation prepared by DIBt



010.5 0-18 04.8		L 4.3	Fa Wa Co Dr <u>Dr</u>	illing cap	case none I: S2800 II: S2800 acity acity	GD, S32 GD, S32 Σt <sub>i</sub> ≤ 2 <u>s</u>	0GD or S 2 x 0,88 n	6350 GD – EN 10346 6350 GD – EN 10346
Γ	t <sub>N,II</sub> =	0,40	0,50	0,55	0,63	0,75	0,88	
	Mt,nom = 0,40 0,50 0,55 0,63 1,00 1,13 1,25 1,50 1,75 2,00 0,40 0,55 0,63	0,79 0,79 0,79 0,79 0,79 0,79 0,79             -	0,79 1,18 1,18 1,18 1,18 1,18 1,18 1,18        -	0,80 0,79 1,27 1,41 1,41 1,41 1,41 1,41    0,82 0,92 0,9	- 0,79 1,42 1,56 1,77 1,77 1,77 - - - - - - - - - - - - -	0,79 1,65 1,79 2,00 2,35 2,35      0,92 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      0,92 1,64 1,64 1,64 1,64 1,64 1,64 1,64          -	
If component I and compor		e made o Iling scre		or S350G	SD, the va	lues may	be increas	sed by 8,3%.
		H-4,8 x <sub>xagon hea</sub>				Ar	nex 94	

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MI1 Ø10,5 E S MI W V M V V V V V V V V V V V V V	≥ Ø 11 Ø 12 m FR-Kopf	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           Component I:         S280GD, S320GD or S350GD – EN 10346           Component II:         S280GD, S320GD or S350GD – EN 10346
ø5,5	TOF	<u>Drilling capacity</u> $\Sigma t_i \le 2 \times 1,00 \text{ mm}$
BM COM	125 T25	<u>Timber substructures</u> for timber substructures no performance determined

t <sub>N</sub>	,II =	0,4	10	0,5	50	0,5	55	0,6	63	0,7	75	0,8	88	1,0	00
M <sub>t,r</sub>	= mon							-							
	0,40	0,88	_	0,88	-	0,88	_	0,88	_	0,88	-	0,88		0,88	1
1	0,50	0,88	_	1,56	—	1,56	—	1,56	_	1,56	_	1,56	—	1,56	—
1	0,55	0,88	—	1,56	—	1,76	—	1,76	—	1,76	—	1,76	—	1,76	—
	0,63	0,88	—	1,56	—	1,76	—	2,09	_	2,09	_	2,09	_	2,09	—
V <sub>R,k</sub> for t <sub>N,I</sub>	0,75	0,88	_	1,56	_	1,76	_	2,09	_	2,57	_	2,57	_	2,57	_
, Y, H	0,88	0,88	—	1,56		1,76	_	2,09	_	2,57	_	3,11	_	3,11	_
<b>_</b>	1,00	0,88	_	1,56	_	1,76	_	2,09	_	2,57	_	3,11	_	3,61	—
	1,13	—	_	—		_	—	—	_	_	_	_	_	_	—
	1,25	—	—	—	—	—	—		—		—	—	—	-	_
	0,40	0,60	_	0,82	_	0,94	_	1,00	_	1,00	_	1,00	_	1,00	_
	0,50	0,60	—	0,82	—	0,94	—	1,14	—	1,44	—	1,67	—	1,67	—
1	0,55	0,60	_	0,82	_	0,94	_	1,14	_	1,44	_	1,80	_	1,87	—
Ē	0,63	0,60	—	0,82	_	0,94	—	1,14	—	1,44	_	1,80	—	2,14	—
ğ	0,75	0,60	_	0,82	_	0,94	_	1,14	_	1,44	_	1,80		2,14	—
N <sub>R,k</sub> for	0,88	0,60	_	0,82		0,94	_	1,14	_	1,44	_	1,80		2,14	—
~	1,00	0,60	—	0,82	_	0,94	—	1,14	—	1,44	_	1,80	_	2,14	_
	1,13	—	_	—	_	—	_	—	_		_	_	_	_	—
	1,25	—	—	—	—		—		—		—		—	_	—

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

Self drilling screw

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

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

Annex 95

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

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FR-Kopf	I 10088 I 10088 10346 10346
$\phi_{5,5}$ $\Sigma_{i} \leq 2 \times 1,00 \text{ mm}$	
Image: Total state     Total state     Total state       Image: Total state     Total state     Timber substructures       Image: Total state     Total state     Timber substructures       Image: Total state     Total state     Timber substructures       Image: Total state     Total state     Total state	

t <sub>N</sub>	,II =	0,4	10	0,5	50	0,5	55	0,6	63	0,7	75	0,8	38	1,0	00
M <sub>t,r</sub>	nom =							-	-						
	0,40	0,96	_	0,96	-	0,96	_	0,96	_	0,96	-	0,96	_	0,96	-
1	0,50	0,96	_	1,56	—	1,56	—	1,56	—	1,56	—	1,56	—	1,56	-
1	0,55	0,96	—	1,56	—	1,76	—	1,76	—	1,76	—	1,76	—	1,76	-
	0,63	0,96	—	1,56	—	1,76		2,09	—	2,09	—	2,09	_	2,09	_
V <sub>R,k</sub> for t <sub>N,I</sub>	0,75	0,96	—	1,56	—	1,76	—	2,09	—	2,57	—	2,57	—	2,57	_
, H, K	0,88	0,96	—	1,56	—	1,76	—	2,09	—	2,57	—	3,11	—	3,11	_
-	1,00	0,96		1,56	—	1,76	—	2,09	—	2,57	—	3,11	—	3,61	_
	1,13	—	—	—	—	—	—	—	—	_	—	—	—	—	-
	1,25	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0,40	0,60	_	0,82	_	0,94	_	1,14	_	1,44	_	1,46	_	1,46	—
	0,50	0,60	—	0,82	—	0,94	—	1,14	—	1,44	—	1,76	_	1,76	_
	0,55	0,60	—	0,82	—	0,94	—	1,14	—	1,44	—	1,80	—	2,02	_
Ę,	0,63	0,60	—	0,82	—	0,94	—	1,14	—	1,44	—	1,80	—	2,14	-
Į	0,75	0,60	—	0,82	—	0,94	—	1,14	—	1,44	—	1,80	_	2,14	_
N <sub>R,k</sub> for	0,88	0,60	—	0,82	—	0,94	—	1,14	—	1,44	—	1,80	—	2,14	—
2	1,00	0,60	—	0,82	—	0,94	—	1,14	—	1,44	—	1,80	—	2,14	—
	1,13	—	—	—		—	—	—	_	—	—			—	—
	1,25	—	_	—		—	_	_			—			—	_

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

Self drilling screw

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

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

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

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≥Ø11	≥Ø11	<u>Materials</u>
Ø 10,5 m	Ø12 + m	Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088
		Washer: stainless steel (1.4301) - EN 10088
Z Z		Component I: aluminium-Alloy with R <sub>m,min</sub> = 165 N/mm <sup>2</sup> – EN 573
	FR-Kopf	Component II: aluminium-Alloy with R <sub>m.min</sub> = 165 N/mm <sup>2</sup> – EN 573
Ŧ		
Ø5,5	T25	<u>Drilling capacity</u> $\Sigma t_i \le 2 \times 1,50 \text{ mm}$
S C C S	T25	Timber substructures
BANK (J6)		for timber substructures no performance determined

102				a				-124								-15			
t <sub>N</sub> ,	,II =	0,4	40	0,5	50	0,6	60	0,7	70	0,8	30	0,9	90	1,0	00	1,2	20	1,5	50
M <sub>t,n</sub>	iom =									_	-								
	0,40	0,43	_	0,43	_	0,43	_	0,43	_	0,43	—	0,43	_	0,43	_	0,43	_	0,43	—
	0,50	0,43	_	0,62	_	0,62	—	0,62	—	0,62	—	0,62	_	0,62	_	0,62	_	0,62	_
	0,60	0,43	_	0,62	_	0,71	_	0,71	—	0,71	—	0,71	_	0,71	_	0,71	_	0,71	_
tv, =	0,70	0,43	_	0,62	_	0,71	_	0,79	_	0,79	—	0,79	_	0,79	_	0,79	_	0,79	_
ort	0,80	0,43	_	0,62	_	0,71	_	0,79	—	0,88	—	0,88	_	0,88	_	0,88	_	0,88	_
V <sub>R,k</sub> for	0,90	0,43	—	0,62	_	0,71	—	0,79	—	0,88	—	1,04	_	1,04	_	1,04	_	1,04	_
>	1,00	0,43	—	0,62	_	0,71	—	0,79	—	0,88	—	1,04	_	1,19	_	1,19	_	1,19	—
	1,20	0,43	_	0,62	_	0,71	_	0,79	—	0,88	—	1,04	_	1,19	_	1,24	_	1,24	_
	1,50	0,43	_	0,62	—	0,71	—	0,79	—	0,88	—	1,04	—	1,19	_	1,24	—	1,87	—
N <sub>R,II,k</sub> =	"≚ ™ Z 0,24 0,35 0,45		45	0,5	58	0,6	69	0,8	30	0,91		1,13		1,6	63				

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

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

Annex 97

JF3-FR-2-5,5 x L JF6-FR-2-5,5 x L

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

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KL 2 10,5 2,3 2,3 2,3 2,3 2,3 2,3 2,3 2,3 2,3 2,3	≥Ø11 Ø12 ₩	MaterialsFastener:stainless steel $(1.4301) - EN 10088$ stainless steel $(1.4404) - EN 10088$ Washer:stainless steel $(1.4301) - EN 10088$ Component I:aluminium-Alloy with $R_{m,min} = 215$ N/mm² – EN 573Component II:aluminium-Alloy
Ø 5,5 BMS BMS SMB	<u>FR-Kopf</u> T25 T25	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$

t <sub>N,</sub>	,II =	0,4	10	0,5	50	0,6	60	0,7	70	0,8	30	0,9	90	1,0	00	1,2	20	1,5	50
M <sub>t,n</sub>	om =									_	-								
	0,40	0,55	_	0,55	_	0,55	_	0,55	_	0,55		0,55	_	0,55	_	0,55	_	0,55	Ι
	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	_
tr, :	0,70	0,55	—	0,79	_	0,91	—	1,03	—	1,03	—	1,03	_	1,03	—	1,03	_	1,03	—
ort	0,80	0,55	—	0,79	—	0,91	—	1,03	—	1,15	—	1,15	_	1,15	—	1,15	—	1,15	_
V <sub>R,k</sub> for	0,90	0,55	—	0,79	_	0,91	—	1,03	—	1,15	—	1,35	_	1,35	_	1,35	—	1,35	_
1	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 <sub>R,II,k</sub> =		0,3	31	0,4	46	0,6	60	0,7	75	0,8	39	1,0	)4	1,1	18	1,4	17	2,1	12

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

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

Annex 98

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

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		L 1 2					Materia Fasten Washe Compo Compo	er: onent	sta nor 1: S28 11: S28	inles ne 80G[	s steel D, S32 D, S32	(1.4 0GD 0GD	or S35	.457	8) – El	N 1008 10346
	¢4,3 ¢5,4	- 6_ 25			T 25		<u>Drilling</u> <u>Timber</u> for timl	r sub	structu		Σt <sub>i</sub> ≤ 3			dete	rmined	4
t <sub>N,II</sub> = M <sub>t.nom</sub>	_	00	1,	13	1,2	25	1,5	50	1,7	'5	2,0	00	2,5	50	3,0	00
V <sub>Rik</sub> for t <sub>V,1</sub> = 0 1 V <sub>Rik</sub> for t <sub>V,1</sub> = 1 1 1 1	,50         1,21           ,55         1,32           ,63         1,51           ,75         1,78           ,88         2,08           ,00         2,35           ,13         2,71           ,25         3,07           ,50         3,78           ,75         3,78           ,00         2,00		1,30 1,42 1,62 1,91 2,23 2,52 2,90 3,28 4,03 4,03 4,03		1,39 1,52 1,72 2,03 2,36 2,67 3,07 3,47 4,26 4,26 4,26		1,57 1,71 1,94 2,28 2,65 3,00 3,43 3,87 4,74 4,74 4,74		1,57 1,74 2,02 2,44 2,90 3,32 3,79 4,27 5,22 5,22 		1,57 1,78 2,11 2,61 3,14 3,64 4,16 4,68 5,70 —		1,57 1,84 2,28 2,93 3,63 4,29      		1,57 — — — — — — — — — —	
0 0 1 1 1 1 1 1 1 1 1 1	1,10           ,50         1,10           ,55         1,10           ,63         1,10           ,75         1,10           ,88         1,10           ,00         1,10           ,13         1,10           ,25         1,10           ,50         1,10           ,75         1,10           ,75         1,10           ,50         1,10           ,75         1,10           ,00         1,10		1,10 1,10 1,10 1,10 1,10 1,10 1,10 1,10		1,50 1,50 1,50 1,50 1,50 1,50 1,50 1,50		1,59 <sup>a)</sup> 1,82 <sup>a)</sup> 2,00 2,00 2,00 2,00 2,00 2,00 2,00 2,0		1,59 <sup>a)</sup> 1,82 <sup>a)</sup> 2,16 <sup>a)</sup> 2,45 2,45 2,45 2,45 2,45 2,45 2,45 2,45		1,59 <sup>a)</sup> 1,82 <sup>a)</sup> 2,16 <sup>a)</sup> 2,90 2,90 2,90 2,90 2,90 2,90 		1,59 <sup>a)</sup> 1,82 <sup>a)</sup> 2,16 <sup>a)</sup> 2,72 <sup>a)</sup> 3,35 3,40 — — — — — —		1,59 <sup>a)</sup> — — — — — — — — — — —	           

If component I is made of S320GD or S350GD, the values marked with <sup>a)</sup> may be increased by 8,3%.

Self drilling screw

JT3-LT-3-5,5 x L JT6-LT-3-5,5 x L with pan head with Torx®-drive

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44 5 <u>7</u>								<u>Materia</u> Fasten Washe Compo Compo	ier: er: oneni	stai stai t I: S28	inles inles 80G[		(1.4 (1.4 0GD	401 / 1 301) – or S35	.457 EN 1 50GD	8) – E 0088 ) – EN	N 100 1034	)88 6
		Ø4 Ø5	<u>,3</u> ,46 T 25		<b>A</b>	_ T 25	5	Drilling Timber for timl	r sub	structu		Σt <sub>i</sub> ≤ 3			dete	rmine	d	
t	I.II =	1,0	00	1,1	13	1,2	25	1,5	50	1,7	<b>'</b> 5	2,0	00	2,5	50	3,0	00	1
	nom =	. ,				.,.		.,.	-			_,				- 1		
N <sub>R,k</sub> for t <sub>N,I</sub> = V <sub>R,k</sub> for t <sub>N,I</sub> =	0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75 2,00 0,55 0,63 0,75 0,88 1,00 1,13 1,25 1,50 1,75	1,60 1,68 1,80 1,98 2,17 2,35 2,71 3,07 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 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\\ $		$\begin{array}{c} 1,60\\ 1,82\\ 2,16\\ 2,68\\ 3,24\\ 3,76\\ 4,01\\ 4,25\\ 4,74\\ 4,74\\ 4,74\\ 1,04^{a)}\\ 1,20^{a)}\\ 1,20^{a)}\\ 1,56^{a)}\\ 2,00\\ 2,0$		1,60 1,84 2,21 2,78 3,39 3,96 4,28 4,59 5,22 5,22 		$\begin{array}{c} 1,60\\ 1,86\\ 2,26\\ 2,88\\ 3,54\\ 4,15\\ 4,54\\ 4,93\\ 5,70\\\\\\ 0,86^{a)}\\ 1,04^{a)}\\ 1,20^{a)}\\ 1,20^{a)}\\ 2,32^{a)}\\ 2,32^{a)}\\ 2,32^{a)}\\ 2,32^{a)}\\ 2,32^{a)}\\\\\\\\\\\\\\\\\\\\ -$		1,60 1,89 2,36 3,07 3,83 4,54    1,04 <sup>a)</sup> 1,20 <sup>a)</sup> 1,20 <sup>a)</sup> 1,20 <sup>a)</sup> 2,32 <sup>a)</sup> 2,32 <sup>a)</sup>             		1,60 — — — — — — — — — — — — —		
f compo	onent I	is mac				350GD g screv		e values	mark	ed with	<sup>a)</sup> ma	ay be in	creas	ed by {	3,3%.			
				5,5 x L Torx®-d				3-5,5 x ısher ≥ Ø		m		An	nex	100				

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English translation prepared by DIBt



	<u>Materials</u>
ER-Head T25	$\begin{array}{lll} \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 $N/mm^2 - EN 573$ & \\ \mbox{Component II: aluminium alloy} & with $R_{m,min} = 165 $N/mm^2 - EN 573$ & \\ \mbox{Figure 165 } N/mm^2 - EN 573$ & \\ \mbox$
+ + +	<u>Drilling capacity</u> $\Sigma t_i \le 4,50 \text{ mm}$
	<u>Timber substructures</u> for timber substructures no performance determined

t,	t <sub>N,II</sub> =		)0	2,50		3,00			
M	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 <sub>R,k</sub> for t <sub>N,I</sub> =	0,80	1,37	-	1,37	-	1,37	ac		
Į0	0,90	1,67	-	1,67	-	1,67	а		
'A,R	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 <sub>R,II,k</sub> =		1,40		1,90		2,39			

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 T25	$\begin{array}{ll} \mbox{Fastener:} & JT4-4-4,8xL: & stainless steel (1.4301 / 1.4567) - EN 10088 & JT9-4-4,8xL: & stainless steel (1.4401 / 1.4578) - EN 10088 & Component I: aluminium alloy & with R_{m,min} = 215 \ N/mm^2 - EN 573 & Component II: aluminium alloy & with R_{m,min} = 215 \ N/mm^2 - EN 573 & Max \\ \end{array}$
	<u>Drilling capacity</u> $\Sigma t_i \le 4,50 \text{ mm}$
	<u>Timber substructures</u> for timber substructures no performance determined

t <sub>N</sub>	t <sub>N,II</sub> =		)0	2,50		3,00			
M <sub>t,i</sub>	nom =								
	0,50	0,87	ac	0,87	ac	0,87	ac		
	0,60	1,13	ac	1,13	ac	1,13	ac		
	0,70	1,38	ac	1,38	ac	1,38	ac		
V <sub>R,k</sub> for t <sub>N,I</sub> =	0,80	1,78	-	1,78	-	1,78	ac		
ō	0,90	2,18	-	2,18	-	2,18	а		
'R,k 1	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 <sub>R,II,k</sub> =		1,83		2,48		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  $V_{R,k}$  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%.

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



Materials
$\label{eq:stainless} \begin{array}{l} \mbox{Fastener:} & JT4-6-5,5xL \\ & \mbox{stainless steel} (1.4301 / 1.4567) - EN 10088 \\ & \mbox{JT9-6-5,5xL} \\ & \mbox{stainless steel} (1.4401 / 1.4578) - EN 10088 \\ \mbox{Component I: aluminium alloy} \\ & \mbox{with $R_{m,min}$ = 165 $N/mm^2 - EN 573$ \\ \mbox{Component II: aluminium alloy} \\ & \mbox{with $R_{m,min}$ = 165 $N/mm^2 - EN 573$ \\ \hline \hline \\ \hline $

t <sub>N</sub>	,II =	2,00 2,50		3,0	)0	4,00		5,00			
M <sub>t,r</sub>	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 <sub>R,k</sub> for t <sub>N,I</sub>	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
<b>_</b>	1,20	2,16	-	2,21	-	2,26	-	2,35	-	2,44	а
	1,50	2,65	-	2,76	-	2,88	-	3,11	-	3,34	а
	2,00	2,65	-	2,76	-	2,88	-	3,11	-	-	-
N <sub>R,II,k</sub> =		1,3	36	1,7	77	2,1	6	3,4	13	4,7	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

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



Materials
$\label{eq:statemetric} \begin{array}{ll} Fastener: & JT4-6-5,5xL\\ & stainless steel (1.4301 / 1.4567) - EN 10088\\ & JT9-6-5,5xL\\ & stainless steel (1.4401 / 1.4578) - EN 10088\\ \hline Component I: aluminium alloy\\ & with R_{m,min} = 215 \ N/mm^2 - EN 573\\ \hline Component II: aluminium alloy\\ & with R_{m,min} = 215 \ N/mm^2 - EN 573\\ \hline \hline Drilling capacity \qquad \Sigma t_i \leq 6,50 \ mm\\ \hline \hline \hline Timber substructures no performance determined\\ \hline \end{array}$

t <sub>N</sub>	,II =	2,00 2,50		3,0	)0	4,00		5,00			
M <sub>t,r</sub>	nom =					_	-				
	0,50	0,93	ac	0,93	ac	0,93	ac	0,93	ac	0,93	ac
	0,60	1,23	ac	1,23	ac	1,23	ac	1,23	ac	1,23	ac
1	0,70	1,53	ac	1,53	ac	1,53	ac	1,53	ac	1,53	ac
	0,80	1,82	-	1,82	-	1,82	ac	1,82	ac	1,82	а
V <sub>R,k</sub> for t <sub>N,I</sub>	0,90	2,11	-	2,11	-	2,11	ac	2,11	ac	2,11	а
, Y.H	1,00	2,40	-	2,40	-	2,40	ac	2,40	ac	2,40	а
-	1,20	2,82	-	2,88	-	2,94	-	3,06	-	3,18	а
	1,50	3,45	-	3,60	-	3,75	-	4,05	-	4,35	а
	2,00	3,45	-	3,60	-	3,75	-	4,05	-	-	-
N <sub>R,II,k</sub> =		1,7	77	2,3	30	2,8	32	4,4	17	6,1	2

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  $R_m \ge 245 \text{ N/mm}^2$ : For  $R_m \ge 215 \text{ N/mm}^2$  the indicated values of the pull-out resistance  $N_{B,II,k}$  can be increased by 14%.

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