



Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments



European Technical Assessment

ETA-10/0198 of 25 January 2019

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the Deutsches Institut für Bautechnik **European Technical Assessment:** Trade name of the construction product SX, SLG, SL, TDA, TDB, TDC, SD, SXW, SW, CDM Product family Fastening screws for metal members and sheeting to which the construction product belongs SFS intec AG Manufacturer Rosenbergsaustraße 10 9435 Heerbrugg SCHWEIZ SFS plants 1, 5, 7, 16 and 18 Manufacturing plant This European Technical Assessment 76 pages including 69 annexes which form an integral contains part of this assessment EAD 330046-01-0602 This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of ETA-10/0198 issued on 29 June 2017 This version replaces



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Specific part

1 Technical description of the product

The fastening screws are self-drilling or self-tapping screws made of austenitic stainless steel or carbon steel with anticorrosion coating (listed in Table 1). The fastening screws are normally completed with sealing washers consisting of metal washer and EPDM-seal.

Table 1 – Fastening screws	for metal members and sheeting
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Annex	Fastening screw	Description	Fastener material	Application
3 / 4	Fastening screws for perforated sheeting	Hole pattern I Hole pattern II	Stainless steel	Perfoated Sheeting
5/6	SX3-S12-6,0 x L SX3-L12-S12-6,0 x L SX3-D12-S12-6,0 x L	Self-drilling screw with sealing washer Ø 12 mm	Stainless steel	Steel / Steel
7/8	SX3-S14-6,0 x L SX3-L12-S14-6,0 x L SX3-D12-S14-6,0 x L	Self-drilling screw with sealing washer Ø 14 mm	Stainless steel	Steel / Steel
9 / 10	SX3-S16-6,0 x L SX3-L12-S16-6,0 x L SX3-D12-S16-6,0 x L	Self-drilling screw with sealing washer Ø 16 mm	Stainless steel	Steel / Steel
11 / 12	SX3-S19-6,0 x L SX3-L12-S19-6,0 x L SX3-D12-S19-6,0 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 19 mm	Stainless steel	Steel / Steel
13	SX5-S12-5,5 x L SX5-L12-S12-5,5 x L SX5-D12-S12-5,5 x L	Self-drilling screw with sealing washer Ø 12 mm	Stainless steel	Steel / Steel
14	SX5-S14-5,5 x L SX5-L12-S14-5,5 x L SX5-D12-S14-5,5 x L	Self-drilling screw with sealing washer Ø 14 mm	Stainless steel	Steel / Steel
15	SX5-S16-5,5 x L SX5-L12-S16-5,5 x L SX5-D12-S16-5,5 x L	Self-drilling screw with sealing washer Ø 16 mm	Stainless steel	Steel / Steel
16	SX5-S19-5,5 x L SX5-L12-S19-5,5 x L SX5-D12-S19-5,5 x L	Self-drilling screw with sealing washer $\emptyset \ge 19$ mm	Stainless steel	Steel / Steel
17	SX14-S16-5,5 x L SX14-L12-S16-5,5 x L SX14-D12-S16-5,5 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm	Stainless steel	Steel / Steel
18 / 19	TDA-S-S16-6,5 x L	Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm	Stainless steel	Steel / Steel
20	TDB-S-S16-6,3 x L	Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm	Stainless steel	Steel / Steel
21	TDC-S-S16-6,3 x L	Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm	Stainless steel	Steel / Steel
22	SLG-S-S14-4.8 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm	Stainless steel	Steel / Steel
23	SL2-S-S14-4.8 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm	Stainless steel	Steel / Steel



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Table 1 - continued

Annex	Fastening screw	tening screw Description		Application	
24	SL2-S-S14-5.5 x L	Self-drilling screw with sealing washer ≥ Ø 14 mm	Stainless steel	Steel / Steel	
25	SL2-S-S14-6.3 x L SL2-S-L12-S14-6.3 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm	Stainless steel	Steel / Steel	
26	SLG-S-6.5 x L	Self-drilling screw	Stainless steel	Steel / Steel	
27 / 28	SL3/2-5-S-SV16-6.0 x L	Self-drilling screw mit SV-washer 13x16 mm	Stainless steel	Steel / Steel	
29	SD2-T16-6.3 x L	Self-drilling screw with sealing washer $\geq \emptyset$ 16 mm	Carbon steel	Steel / Steel	
30	SD3-T16-4,8 x L SD3-L12-T16-4,8 x L	Self-drilling screw with sealing washer $\geq \emptyset$ 16 mm	Carbon steel	Steel / Steel	
31	SD3/15-T16-4,8 x L SD3/15-L12-T16-4,8 x L	Self-drilling screw with sealing washer ≥ Ø 16 mm	Carbon steel	Steel / Steel	
32	SD3-T16-5.5 x L SD3-L12-T16-5.5 x L SD3-D12-T16-5.5 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm	Carbon steel	Steel / Steel	
33	SDP3-Z-5.5 x L	Self-drilling screw	Carbon steel	Steel / Steel	
34	SDL3-T16-5.5 x L SDL3-L12-T16-5.5 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm	Carbon steel	Steel / Steel	
35	SD3-T16-6.3 x L SD3-L12-T16-6.3 x L SD3-D12-T16-6.3 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm	Carbon steel	Steel / Steel	
36	SD6-T16-5.5 x L SD6-L12-T16-5.5 x L SD6-S16-5.5 x L SD6-L12-S16-5.5 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm	Carbon steel	Steel / Steel	
37	SD6-H15-5.5 x L	Self-drilling screw	Carbon steel	Steel / Steel	
38	SD6-T16-6.3 x L SD6-L12-T16-6.3 x L	Self-drilling screw with sealing washer ≥ Ø 16 mm	Carbon steel	Steel / Steel	
39	SD8-H15-5.5 x L	Self-drilling screw	Carbon steel	Steel / Steel	
40	SD14-T16-5.5 x L SD14-L12-T16-5.5 x L SD14-S16-5.5 x L SD14-L12-S16-5.5 x L	Self-drilling screw with sealing washer ≥ Ø 16 mm	Carbon steel	Steel / Steel	
41	SD14-H15-5.5 x L	Self-drilling screw	Carbon steel	Steel / Steel	
42	CDM-4.8 x L CDM-D12-4.8xL	Self-drilling screw	Carbon steel	Steel / Steel	
43	SLG-T-A14-4.8 x L	Self-drilling screw with sealing washer ≥ Ø 14 mm	Carbon steel	Steel / Steel	
44	SL2-T-A14-4.8 x L	Self-drilling screw with sealing washer ≥ Ø 14 mm	Carbon steel	Steel / Steel	
45	SL2-4.8 x L	Self-drilling screw	Carbon steel	Steel / Steel	
46	SL2-H15-6.3 x L	Self-drilling screw	Carbon steel	Steel / Steel	



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Table 1 - continued

Annex	Fastening screw	Description	Fastener material	Application
47	SL3-H15-6.3 x L	Self-drilling screw	Carbon steel	Steel / Steel
48	SW2-S-S16-6.0 x L SW2-S-L12-S16-6.0 x L	Self-drilling screw with sealing washer ≥ Ø 16 mm	Stainless steel	Steel / Timber
49	SXW-S16-6.5 x L SXW-L12-S16-6.5 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm	Stainless steel	Steel / Timber
50	TDA-S-S16-6,5 x L	Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm	Stainless steel	Steel / Timber
51	SW-T-A14-4.8 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm	Carbon steel	Steel / Timber
52	SW3-T-T16-6.5 x L SW3-T-L12-T16-6.5 x L SW3-T-S16-6.5 x L SW3-T-L12-S16-6.5 x L	Self-drilling screw with sealing washer ≥ Ø 16 mm	Carbon steel	Steel / Timber
53	SW3-T-H15-6.5 x L	Self-drilling screw	Carbon steel	Steel / Timber
54	SX3-S12-6,0 x L SX3-L12-S12-6,0 x L SX3-D12-S12-6,0 x L	Self-drilling screw with sealing washer ≥ Ø 12 mm	Stainless steel	Alu / Alu
55	SX5-S12-5,5 x L SX5-L12-S12-5,5 x L SX5-D12-S12-5,5 x L	Self-drilling screw with sealing washer ≥ Ø 12 mm	Stainless steel	Alu / Alu
56	TDA-S-S16-6,5 x L	Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm	Stainless steel	Alu / Alu
57	TDB-S-S16-6.3 x L	Self-tapping screw with sealing washer $\geq \emptyset$ 16 mm	Stainless steel	Alu / Alu
58	SL2-S-S14-5.5 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm	Stainless steel	Alu / Alu
59	SL2-S-S14-6.3 x L SL2-S-L12-S14-6.3 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm	Stainless steel	Alu / Alu
60 / 61	SX3-S12-6,0 x L SX3-L12-S12-6,0 x L SX3-D12-S12-6,0 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 12 mm	Stainless steel	Alu / Steel
62	SX5-S12-5,5 x L SX5-L12-S12-5,5 x L SX5-D12-S12-5,5 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 12 mm	Stainless steel	Alu / Steel
63	TDA-S-S16-6,5 x L	Self-tapping screw with sealing washer $\geq \emptyset$ 16 mm	Stainless steel	Alu / Steel
64	TDB-S-S16-6.3 x L	Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm	Stainless steel	Alu / Steel
65 / 66	SL3/2-5-S-SV16-6.0 x L	Self-drilling screw mit SV-washer 13x16 mm	Stainless steel	Alu / Steel
67	SW2-S-S16-6.0 x L SW2-S-L12-S16-6.0 x L	Self-drilling screw with sealing washer ≥ Ø 16 mm	Stainless steel	Alu / Timber
68	SXW-S16-6.5 x L SXW-L12-S16-6.5 x L	Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm	Stainless steel	Alu / Timber
69	TDA-S-S16-6,5 x L	Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm	Stainless steel	Alu / Timber



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2 Specification of the intended use in accordance with the applicable European Assessment Document

The fastening screws are intended to be used for fastening metal sheeting to metal or 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 any other thin gauge metal members. The intended use comprises fastening screws and connections for indoor and outdoor applications. Fastening screws which are intended to be used in external environments with \geq C2 corrosion according to the standard EN ISO 12944-2 are made of stainless steel. Furthermore the intended use comprises connections with predominantly static loads (e.g. wind loads, dead loads). The fastening screws are not intended for re-use.

The performances given in Section 3 are only valid if the fastening screws are used in compliance with the specifications and conditions given in Annex (1-69).

The verification and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the fastening screws of at least 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

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

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Shear Resistance of the Connection	see Annexes to this ETA
Tension Resistance of the Connection	see Annexes to this ETA
Design Resistance in combination of tension and shear forces (interaction)	see Annexes to this ETA
Check of Deformation Capacity in case of constraining forces due to temperature	No performance assessed
Durability	No performance assessed

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance	
Reaction to fire	Class A1	



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4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD 330046-01-0602, the applicable European legal act is: Commission Decision 1998/214/EC, amended by 2001/596/EC. The system to be applied is: 2+

5 Technical details necessary for the implementation of the AVCP system, as provided for

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 25 January 2019 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow Head of Department

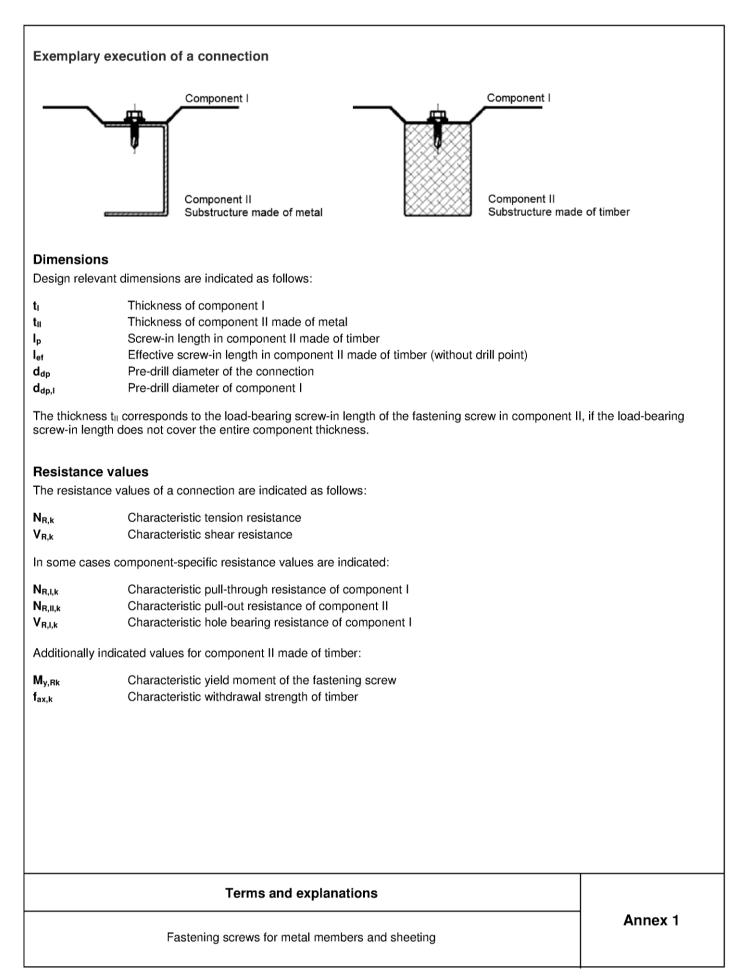
in the applicable EAD

beglaubigt: Hahn

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Design values

The design values of a connection have to be determined as follows:

$$N_{R,d} = \frac{N_{R,k}}{Y_M} \qquad \qquad V_{R,d} = \frac{V_{R,k}}{Y_M}$$

N_{R,d}Design value of tension resistanceV_{R,d}Design value of shear resistance

YM Partial safety factor

The recommended partial safety factor γ_M is 1.33, provided no partial safety factor is given in national regulations or national Annexes to Eurocode 3.

Special conditions

If the thickness of component I (t_I) or component II (t_{II}) is between two indicated thicknesses, the resistance values $N_{B,k}$ and $V_{B,k}$ can be determined by linear interpolation. The same applies to screw-in lengths I_{ef} and I_p .

If component II made of metal with thickness $t_{II} < 3$ mm leads to an asymmetric loading of the connection (e.g. Z-profile), the resistance values $N_{R,k}$ have to be reduced to 70%.

In case of combined loading of a connection by tension and shear forces the following interaction equation has to be taken into account:

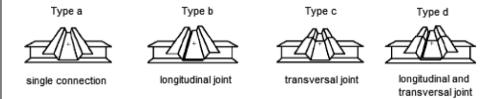
$$\frac{N_{S,d}}{N_{R,d}} + \frac{V_{S,d}}{V_{R,d}} \le 1.0$$

Ns,dDesign value of the applied tension forcesVs.dDesign value of the applied shear forces

Types of connection

For the types of connection (a, b, c, d), indicated in the Annexes of the fastening screws, it is not necessary to take into account the effect of constraints due to temperature.

For other types of connection or if no connection types are indicated, the effect of constraints have to be taken into account, unless they do not occur or are not significant (e.g. sufficient flexibility of the substructure).



Installation conditions

The installation is carried out according to manufacturer's instruction.

The load-bearing screw-in length of the fastening screw specified by the manufacturer has to be taken into account.

The fastening screws have to be processed with suitable drill driver (e.g. cordless drill driver with depth stop).

The fastening screws have to be fixed rectangular to the surface of the component.

Component I and component II have to be in direct contact to each other. The use of compression resistant thermal insulation strips up to a thickness of 3 mm is allowed.

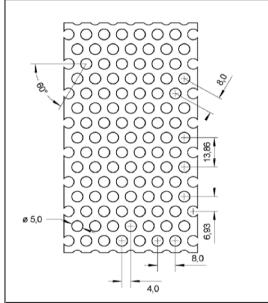
Design and installation

Fastening screws for metal members and sheeting

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 Fastening screws

 Self-drilling screws Ø 5.5 to 6.3 mm made of stainless steel

 with sealing washer made of stainless steel

 Self-tapping screws Ø 6.3 to 6.5 mm made of stainless steel

 with sealing washer made of stainless steel

 Materials

 Fastener:
 According to Annex of the fastening screw

	5
Washer:	According to Annex of the fastening screw
Component I:	S280GD to S450GD - EN 10346
Component II:	According to Annex of the fastening screw

		Sealing washer Ø [mm]						
		16						
	0.75	2.16	2.22	2.24				
V _{R,I,k} [kN]	0.88	2.56	2.64	2.64				
	1.00	2.92	3.04	3.02				
t _i [mm]	1.25	3.70	3.88	3.80				
	1.50	4.46	4.74	4.56				
	0.75	1.40	1.94	2.14				
N _{R,I,k} [kN]	0.88	1.82	2.34	2.62				
	1.00	2.24	2.74	3.06				
t _l [mm]	1.25	3.24	3.58	4.08				
	1.50	4.36	4.46	5.12				

Additional definitions

The resistance values $N_{R,k}$ and $V_{R,k}$ can be determined as follows: $N_{R,k} = \min \{N_{R,l,k} \mid N_{R,ll,k}\}$ and $V_{R,k} = \min \{V_{R,l,k} \mid V_{R,k}\}$. $N_{R,ll,k}$ and $V_{R,k}$ are indicated in the Annex of the fastening screw.

For component I made of S320GD the indicated resistance values $N_{R,l,k}$ and $V_{R,l,k}$ may be increased by 8.3% and for component I made of S350GD to S450GD by 16.6%.

If the connection is exposed to wind loads, the component thickness $t_{\rm l}$ must be at least 1 mm.

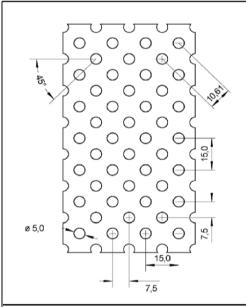
Hole pattern I

Fastening screws for perforated sheeting

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Self-drilling screws \emptyset 5.5 to 6.3 mm made of stainless steel with sealing washer made of stainless steel

Self-tapping screws \emptyset 6.3 to 6.5 mm made of stainless steel with sealing washer made of stainless steel

<u>Materials</u>

Fastening screws

Fastener:	According to Annex of the fastening screw
Washer:	According to Annex of the fastening screw
Component I:	S280GD to S450GD - EN 10346
Component II:	According to Annex of the fastening screw

		Sealing washer Ø [mm]				
		16	19	≥ 22		
	0.75	2.38	2.52	2.84		
V _{R,I,k} [kN]	0.88	3.02	3.12	3.42		
	1.00	3.56	3.70	3.84		
t _l [mm]	1.25	4.68	4.84	4.92		
	1.50	5.76	6.04	5.90		
	0.75	2.86	3.16	3.24		
N _{R,I,k} [kN]	0.88	3.40	3.72	3.76		
···	1.00	3.90	4.28	4.28		
t _l [mm]	1.25	4.94	5.42	5.42		
	1.50	6.00	6.60	6.60		

Additional definitions

The resistance values $N_{R,k}$ and $V_{R,k}$ can be determined as follows: $N_{R,k} = \min \{N_{R,l,k} \mid N_{R,ll,k}\}$ and $V_{R,k} = \min \{V_{R,l,k} \mid V_{R,k}\}$. $N_{R,ll,k}$ and $V_{R,k}$ are indicated in the Annex of the fastening screw.

For component I made of S320GD the indicated resistance values $N_{R,l,k}$ and $V_{R,l,k}$ may be increased by 8.3% and for component I made of S350GD to S450GD by 16.6%.

If the connection is exposed to wind loads, the component thickness t_l must be at least 1 mm.

Hole pattern II

Fastening screws for perforated sheeting

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ø12		<u>Materials</u>	
		Fastener:	Stainless steel A2 or A4 - EN ISO 3506
Ø10,5 SW8	ø12 L12	Washer:	Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal
5,3	3,3	Component I:	S280GD to S450GD - EN 10346
2,2,2	and the	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
ø6,0	ø12 D12		
9 e	2,3	Drilling-capacity	Σ(t _I + t _{II}) ≤ 3.00 mm
ø3,9			

			t _{ii} [mm]						
		0.63	0.75	0.88	1.00	1.25	1.50	1.75	2.00
	0.50	0.98 ^a -	1.20 ^a -	1.45 ^a -	1.61 ^a -	1.76 ^a -	1.90 ^a -	1.90 ^a -	1.90 ^a -
	0.55	1.03 ^a -	1.25 ^a -	1.53 ^a -	1.68 ^a -	1.91 ^a -	2.13 ^a -	2.13 ^a -	2.13 ^a -
V	0.63	1.11 ^a -	1.34 ^a -	1.66 ^a -	1.79 ^a -	2.15 ^a -	2.50 ^a -	2.50 ^a -	2.50 ^a -
V _{R,k} [kN]	0.75	1.11 ^a -	1.47 ^a -	1.85 ^a -	1.96 ^a -	2.51 ^a -	3.06 ^a -	3.06 ^a -	3.06 ^a -
t _l [mm]	0.88	1.11 ^a -	1.47 ^a -	1.85 ^a -	2.05 -	2.79 -	3.53 -	3.66 -	3.79 -
(((i)))	1.00	1.11 ^a -	1.47 ^a -	1.85 ^a -	2.14 -	3.05 -	3.96 -	4.21 -	4.46 -
	1.25	1.11 ^a -	1.47 ^a -	1.85 ^a -	2.32 -	3.59 -	4.86 -	5.36 -	
	1.50	1.11 ^a -	1.47 ^a -	1.85 ^a -	2.32 -	3.59 -	4.86 -		
	0.50	0.89 -	1.14 -	1.22 ^a -	1.22 ^a -	1.22 ^a -	1.22 ^a -	1.22 ^a -	1.22 ^a -
	0.55	0.89 -	1.14 -	1.54 -	1.54 ^a -	1.54 ^a -	1.54 ^a -	1.54 ^a -	1.54 ^a -
NI 71-NI3	0.63	0.89 -	1.14 -	1.66 -	1.81 -	2.04 ^a -	2.04 ^a -	2.04 ^a -	2.04 ^a -
N _{R,k} [kN]	0.75	0.89 -	1.14 -	1.66 -	1.81 -	2.38 -	2.80 ^a -	2.80 ^a -	2.80 ^a -
t _l [mm]	0.88	0.89 -	1.14 -	1.66 -	1.81 -	2.38 -	3.14 -	3.63 -	3.63 -
(((i))))	1.00	0.89 -	1.14 -	1.66 -	1.81 -	2.38 -	3.14 -	3.86 -	4.39 -
	1.25	0.89 -	1.14 -	1.66 -	1.81 -	2.38 -	3.14 -	3.86 -	
	1.50	0.89 -	1.14 -	1.66 -	1.81 -	2.38 -	3.14 -		
N _{R,II,k} [kN]		0.89	1.14	1.66	1.81	2.38	3.14	3.86	4.57

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer Ø 12 mm

Annex 5

SX3-S12-6,0 x L, SX3-L12-S12-6,0 x L, SX3-D12-S12-6,0 x L

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	Materials	
<u>≪ ø12</u>	Fastener:	Stainless steel A2 or A4 - EN ISO 3506
Ø10,5 SW8 Ø12 L12	Washer:	Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal
5,3	Component I:	S280GD to S450GD - EN 10346
2	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
9	Drilling-capacity	$\Sigma(t_{i} + t_{i}) \le 4.00 \text{ mm}$
ø 3,9		

							t _{ii} [n	nm]					
		2 x 0	.63	2 x 0	.75	2 x 0.	.88	2 x 1	.00	2 x 1	.25	2 x 1.	.50
	0.50	0.88 ^a	-	1.87 ^a	-	1.89 ^a	-	1.91 ^a	-	1.91 ^a	-	1.91 ^a	-
	0.55	0.98 ^a	-	2.01 ^a	-	2.05 ^a	-	2.08 ^a	-	2.12 ^a	-	2.12 ^a	-
	0.63	1.15 ^a	-	2.24 ^a	-	2.30 ^a	-	2.36 ^a	-	2.45 ^a	-	2.45 ^a	-
V _{R,k} [kN]	0.75	1.39 ^a	-	2.58 ^a	-	2.68 ^a	-	2.77 ^a	-	2.96 ^a	-	2.96 ^a	-
t _i [mm]	0.88	1.66	-	2.67	-	3.30	-	3.36	-	3.66	-	3.79	-
. [[]	1.00	1.90	-	2.75	-	3.36	-	4.01	-	4.01	-	4.01	-
	1.25	2.41	-	2.92	-	3.47	-	4.01	-	5.05	-	-	-
	1.50	2.41	-	2.92	-	3.47	-	4.01	-	5.05	-	-	-
	0.50	1.22 ^a	-	1.22 ^a	-	1.22 ^a	-	1.22 ^a	-	1.22 ^a	-	1.22 ^a	-
	0.55	1.40	-	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-
	0.63	1.40	-	1.98	-	2.04 ^a	-	2.04 ^a	-	2.04 ^a	-	2.04 ^a	-
N _{R,k} [kN]	0.75	1.40	-	1.98	-	2.61	-	2.80 ^a	-	2.80 ^a	-	2.80 ^a	-
t _i [mm]	0.88	1.40	-	1.98	-	2.61	-	3.19	-	3.63	-	3.63	-
	1.00	1.40	-	1.98	-	2.61	-	3.19	-	4.37	-	4.39	-
	1.25	1.40	-	1.98	-	2.61	-	3.19	-	4.37	-	-	-
	1.50	1.40	-	1.98	-	2.61	-	3.19	-	4.37	-	-	-
N _{R,II,k} [kN]		1.4	0	1.9	8	2.6	1	3.1	9	4.3	7	5.8	2

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer Ø 12 mm

Annex 6

SX3-S12-6,0 x L, SX3-L12-S12-6,0 x L, SX3-D12-S12-6,0 x L

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English translation prepared by DIBt



<u>Materials</u> Fastener: Washer: Component I: Component II: <u>Drilling-capacity</u>	Stainless steel A2 or A4 - EN ISO 3506 Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal S280GD to S450GD - EN 10346 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346 $\Sigma(t_l + t_{ll}) \leq 3.00 \text{ mm}$
	t _{II} [mm]

					t _{II} [I	nm]			
		0.63	0.75	0.88	1.00	1.25	1.50	1.75	2.00
	0.50	0.98 ^a -	1.20 ^a -	1.45 ^a ac	1.61 ^a ac	1.76 ^a ac	1.90 ^a ac	1.90 ^a ac	1.90 ^a ac
	0.55	1.03 ^a -	1.25 ^a -	1.53 ^a -	1.68 ^ª ac	1.91 ^a ac	2.13 ^a ac	2.13 ^ª ac	2.13 ^a a
	0.63	1.11 ^a -	1.34 ^a -	1.66 ^a -	1.79 ^a ac	2.15 ^ª ac	2.50 ^a ac	2.50 ^a a	2.50 ^a a
V _{R,k} [kN]	0.75	1.11 ^a -	1.47 ^a -	1.85 ^a -	1.96 ^a ac	2.51 ^a ac	3.06 ^a ac	3.06 ^a a	3.06 ^a a
t _i [mm]	0.88	1.11 ^a -	1.47 ^a -	1.85 ^a -	2.05 -	2.79 -	3.53 -	3.66 -	3.79 a
. [[]	1.00	1.11 ^a -	1.47 ^a -	1.85 ^a -	2.14 -	3.05 -	3.96 -	4.21 -	4.46 a
	1.25	1.11 ^a -	1.47 ^a -	1.85 ^a -	2.32 -	3.59 -	4.86 -	5.36 -	
	1.50	1.11 ^a -	1.47 ^a -	1.85 ^a -	2.32 -	3.59 -	4.86 -		
	0.50	0.89 -	1.14 -	1.34 ^a ac	1.34 ^ª ac	1.34 ^a ac	1.34 ^ª ac	1.34 ^a ac	1.34 ^a ac
	0.55	0.89 -	1.14 -	1.66 -	1.69 ^a ac	1.69 ^a ac	1.69 ^a ac	1.69 ^a ac	1.69 ^a a
NI 71-NI	0.63	0.89 -	1.14 -	1.66 -	1.81 ac	2.25 ac	2.25 ^a ac	2.25 ^a a	2.25 ^a a
N _{R,k} [kN]	0.75	0.89 -	1.14 -	1.66 -	1.81 ac	2.38 ac	3.09 ^a ac	3.09 ^a a	3.09 ^a a
t _i [mm]	0.88	0.89 -	1.14 -	1.66 -	1.81 -	2.38 -	3.14 -	3.86 -	4.00 a
	1.00	0.89 -	1.14 -	1.66 -	1.81 -	2.38 -	3.14 -	3.86 -	4.57 a
	1.25	0.89 -	1.14 -	1.66 -	1.81 -	2.38 -	3.14 -	3.86 -	
	1.50	0.89 -	1.14 -	1.66 -	1.81 -	2.38 -	3.14 -		
N _{R,II,k} [kN]		0.89	1.14	1.66	1.81	2.38	3.14	3.86	4.57

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer Ø 14 mm

Annex 7

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

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English translation prepared by DIBt



Ø14 Ø10,5 SW4 2,2 Ø6,0 9 Ø3,9	<u>Materials</u> Fastener: Washer: Component I: Component II: <u>Drilling-capacity</u>	Stainless steel A2 or A4 - EN ISO 3506 Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal S280GD to S450GD - EN 10346 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346 $\Sigma(t_i + t_{ij}) \leq 4.00 \text{ mm}$
		tıı [mm]

		2 x 0	.63	2 x 0	.75	2 x 0	.88	2 x 1	.00	2 x 1	.25	2 x 1	.50
	0.50	0.88 ^a	ac	1.87 ^a	ac	1.89 ^a	ac	1.91 ^a	ac	1.91 ^a	ac	1.91 ^a	ac
	0.55	0.98 ^a	ac	2.01 ^a	ac	2.05 ^a	ac	2.08 ^a	ac	2.12 ^a	ac	2.12 ^a	а
1/ FL-10	0.63	1.15 ^ª	ac	2.24 ^a	ac	2.30 ^a	ac	2.36 ^a	ac	2.45 ^a	ac	2.45 ^a	а
V _{R,k} [kN]	0.75	1.39 ^ª	ac	2.58 ^ª	ac	2.68 ^a	ac	2.77 ^a	ac	2.96 ^a	ac	2.96 ^a	а
t _i [mm]	0.88	1.66	-	2.67	-	3.30	-	3.36	ac	3.66	а	3.79	а
([f f f f f f f f f f f f f f f f f f	1.00	1.90	-	2.75	-	3.36	-	4.01	ac	4.01	а	4.01	а
	1.25	2.41	-	2.92	-	3.47	-	4.01	-	5.05	а	-	-
	1.50	2.41	-	2.92	-	3.47	-	4.01	-	5.05	а	-	-
	0.50	1.34	ac	1.34 ^a	ac								
	0.55	1.40	ac	1.69 ^a	а								
NI 71-NI	0.63	1.40	ac	1.98	ac	2.25 ^a	а						
N _{R,k} [kN]	0.75	1.40	ac	1.98	ac	2.61	ac	3.09	ac	3.09 ^a	ac	3.09 ^a	а
t _i [mm]	0.88	1.40	-	1.98	-	2.61	-	3.19	ac	4.00	а	4.00	а
ci [iiiii]	1.00	1.40	-	1.98	-	2.61	-	3.19	ac	4.37	а	4.84	а
	1.25	1.40	-	1.98	-	2.61	-	3.19	-	4.37	а	-	-
	1.50	1.40	-	1.98	-	2.61	-	3.19	-	4.37	а	-	-
N _{R,II,k} [kN]		1.4	0	1.9	8	2.6	1	3.1	9	4.3	7	5.8	2

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer Ø 14 mm

Annex 8

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

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English translation prepared by DIBt



4.21

5.36

-

1.52^a

1.91^a

2.70^a

3.50^a

3.86

3.86

3.86

-

-

-

-

ac

ac

а

а

-

-

-

-

3.86

4.46

-

-

1.52^a

1.91^a

2.70^a

3.50^a

4.52

4.57

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ac

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а

-

-

4.57

3.96

4.86

4.86

1.52^a

1.91^a

2.70^a

3.14

3.14

3.14

<u>3.1</u>4

3.14

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ac

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ac

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3.14

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ac

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2.38

		V8 07	3,3	<u>Materials</u> Fastener: Washer: Compone Compone	Sta wit nt I: S2 nt II: S2 HX	ainless steel A h EPDM-seal 80GD to S45 80GD to S45	0GD - EN 103 0GD - EN 103 X460LAD - EN	ISO 3506 46 46		
		0.63	0.75	0.88		mm] 1.25	1.50	1.75	2.0	0
	0.50	0.63 0.98 ^a -	0.75	0.88 1.45 ^ª ac	t⊪[1.00 1.61ª ac	1.25	1.50	1.75	2.0	0 ac
					1.00	1.25			2.0 1.90 ^a 2.13 ^a	-
	0.55	0.98 ^a -	1.20 ^a -	1.45 ^a ac	1.00 1.61 ^a ac	1.25 1.76 ^a ac	1.90 ^a ac	1.90 ^a ac	1.90 ^a	ac
V _{8,k} [kN]	0.55 0.63 0.75	0.98 ^a - 1.03 ^a -	1.20 ^a - 1.25 ^a -	1.45 ^a ac 1.53 ^a -	1.00 1.61 ^a ac 1.68 ^a ac	1.25 1.76 ^a ac 1.91 ^a ac	1.90 ^a ac 2.13 ^a ac	1.90 ^a ac 2.13 ^a ac	1.90 ^a 2.13 ^a	ac a

2.14

2.32

2.32

1.52^a

1.81

1.81

1.81

1.81

1.81

1.81

1.81

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ac

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1.81

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ac

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-

-

3.05

3.59

3.59

1.52^a

1.91^a

2.38

2.38

2.38

2.38

2.38

2.38

Additional definitions

t_l[mm]

N_{R,k} [kN]

t_l[mm]

N_{R,II,k} [kN]

1.00

1.25

1.50

0.50

0.55

0.63

0.75

0.88

1.00

1.25

1.50

1.11^a

1.11^a

1.11^a

0.89

0.89

0.89

0.89

0.89

0.89

0.89

0.89

0.89

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1.47^a

1.47^a

1.47^a

1.14

1.14

1.14

1.14

1.14

1.14

1.14

1.14

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

1.85^a

1.85^a

1.85^a

1.52^a

1.66

1.66

1.66

1.66

1.66

1.66

1.66

1.66

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1.14

Self-drilling screw with sealing washer Ø 16 mm

Annex 9

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

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English translation prepared by DIBt



Ø16 Ø10,5 V 2 Ø6,0 Ø 9 Ø Ø 3,9	W8 5,3 0 0 12 0 12 0 12	L12 3,3 D12 2,3	Comp	ner:	Sta with S28 S28 HX	inless stee EPDM-s 30GD to S 30GD to S	el A2 or eal 6450GD 6450GD 6450GD 6450GD 6450GD	A4 - EN IS A4 - EN IS - EN 1034 - EN 1034 JLAD - EN	SO 3506 6 6	-	
	2 x 0.63	2 x (75	2 x 0		nm]	00	2 x 1	25	2 x 1	50
0.50	2×0.03 0.88 ^a ac	1.87 ^a	ac	1.89 ^a	.00 ac	2 x 1 1.91 ^a	.00 ac	1.91^{a}	.25 ac	1.91 ^a	.50 ac
0.55	0.98 ^a ac	2.01 ^a	ac	2.05 ^a	ac	2.08 ^a	ac	2.12 ^a	ac	2.12 ^a	a

		2 x 0	.63	2 x 0	.75	2 x 0	.88	2 x 1	.00	2 x 1	.25	2 x 1	.50
	0.50	0.88 ^a	ac	1.87 ^a	ac	1.89 ^a	ac	1.91 ^a	ac	1.91 ^a	ac	1.91 ^a	ac
	0.55	0.98 ^a	ac	2.01 ^a	ac	2.05 ^a	ac	2.08 ^a	ac	2.12 ^a	ac	2.12 ^a	а
V	0.63	1.15 ^ª	ac	2.24 ^a	ac	2.30 ^a	ac	2.36 ^a	ac	2.45 ^a	ac	2.45 ^a	а
V _{R,k} [kN]	0.75	1.39 ^a	ac	2.58 ^ª	ac	2.68 ^a	ac	2.77 ^a	ac	2.96 ^a	ac	2.96 ^a	а
t _i [mm]	0.88	1.66	-	2.67	-	3.30	-	3.36	ac	3.66	а	3.79	а
	1.00	1.90	-	2.75	-	3.36	-	4.01	ac	4.01	а	4.01	а
	1.25	2.41	-	2.92	-	3.47	-	4.01	-	5.05	а	-	-
	1.50	2.41	-	2.92	-	3.47	-	4.01	-	5.05	а	-	-
	0.50	1.40	ac	1.52 ^a	ac	1.52 ^ª	ac						
	0.55	1.40	ac	1.91	ac	1.91 ^a	а						
NI PLAN	0.63	1.40	ac	1.98	ac	2.61	ac	2.70 ^a	ac	2.70 ^a	ac	2.70 ^a	а
N _{R,k} [kN]	0.75	1.40	ac	1.98	ac	2.61	ac	3.19	ac	3.50 ^a	ac	3.50 ^a	а
t _i [mm]	0.88	1.40	-	1.98	-	2.61	-	3.19	ac	4.37	а	4.52	а
	1.00	1.40	-	1.98	-	2.61	-	3.19	ac	4.37	а	5.47	а
	1.25	1.40	-	1.98	-	2.61	-	3.19	-	4.37	а	-	-
	1.50	1.40	-	1.98	-	2.61	-	3.19	-	4.37	а	-	-
N _{R,II,k} [kN]		1.4	0	1.9	8	2.6	1	3.1	9	4.3	7	5.8	2

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer Ø 16 mm

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

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English translation prepared by DIBt



$\begin{array}{c} \geq \emptyset 19 \\ \emptyset 10,5 \\ 2 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	<u>Materials</u> Fastener: Washer: Component I: Component II: <u>Drilling-capacity</u>	Stainless steel A2 or Stainless steel A2 or with EPDM-seal S280GD to S450GD S280GD to S450GD HX300LAD to HX460 $\Sigma(t_l + t_{ll}) \leq 3.00 \text{ mm}$	- EN 10346 - EN 10346	
0.63 0.75	0.88 1.0 1.45 ^a ac 1.61 ^a	t⊪[mm] 0 1.25 ac 1.76ª ac 1.90	1.50 1.75 10 ^a ac 1.90 ^a ac	2.00 1.90 ^a ac

		0.63	3	0.7	5	0.8	8	1.0	0	1.2	5	1.5	0	1.7	5	2.0	0
	0.50	0.98 ^a	-	1.20 ^a	-	1.45 ^a	ac	1.61 ^a	ac	1.76 ^a	ac	1.90 ^a	ac	1.90 ^a	ac	1.90 ^a	ac
	0.55	1.03 ^a	-	1.25 ^a	-	1.53 ^a	-	1.68 ^a	ac	1.91 ^a	ac	2.13 ^a	ac	2.13 ^a	ac	2.13 ^a	а
V	0.63	1.11 ^a	-	1.34 ^a	-	1.66 ^a	-	1.79 ^a	ac	2.15 ^a	ac	2.50 ^a	ac	2.50 ^a	а	2.50 ^a	а
V _{R,k} [kN]	0.75	1.11 ^a	-	1.47 ^a	-	1.85 ^a	-	1.96 ^a	ac	2.51 ^a	ac	3.06 ^a	ac	3.06 ^a	а	3.06 ^a	а
t _i [mm]	0.88	1.11 ^a	-	1.47 ^a	-	1.85 ^a	-	2.05	-	2.79	-	3.53	-	3.66	-	3.79	а
., []	1.00	1.11 ^a	-	1.47 ^a	-	1.85 ^a	-	2.14	-	3.05	-	3.96	-	4.21	-	4.46	а
	1.25	1.11 ^a	-	1.47 ^a	-	1.85 ^a	-	2.32	-	3.59	-	4.86	-	5.36	-	-	-
	1.50	1.11 ^a	-	1.47 ^a	-	1.85 ^a	-	2.32	-	3.59	-	4.86	-	-	-	-	-
	0.50	0.89	-	1.14	-	1.66	ac	1.81	ac	1.87 ^a	ac						
	0.55	0.89	-	1.14	-	1.66	-	1.81	ac	2.36	ac	2.36 ^a	ac	2.36 ^a	ac	2.36 ^a	а
	0.63	0.89	-	1.14	-	1.66	-	1.81	ac	2.38	ac	3.14	ac	3.14 ^a	а	3.14 ^a	а
N _{R,k} [kN]	0.75	0.89	-	1.14	-	1.66	-	1.81	ac	2.38	ac	3.14	ac	3.86	а	4.31	а
t _i [mm]	0.88	0.89	-	1.14	-	1.66	-	1.81	-	2.38	-	3.14	-	3.86	-	4.57	а
c, []	1.00	0.89	-	1.14	-	1.66	-	1.81	-	2.38	-	3.14	-	3.86	-	4.57	а
	1.25	0.89	-	1.14	-	1.66	-	1.81	-	2.38	-	3.14	-	3.86	-	-	-
	1.50	0.89	-	1.14	-	1.66	-	1.81	-	2.38	-	3.14	-	-	-	-	-
N _{R,II,k} [kN]		0.89)	1.1	4	1.6	6	1.8	31	2.3	8	3.1	4	3.8	6	4.5	7

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer $\ge \emptyset$ 19 mm

Annex 11

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

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English translation prepared by DIBt



			Mater	ials							
≥ø19			Faste	ner:	Sta	inless stee	el A2 or	A4 - EN IS	SO 3506	5	
ø10,5 SV	₩8 ¥ Ø12	_L12 ↓	Wash	er:		inless stee 1 EPDM-se		A4 - EN IS	SO 3506	6	
	5,3	3,3	Comp	onent I:	S28	30GD to S	450GD ·	- EN 1034	6		
1 2 2,2		~ †	Comp	onent II:				- EN 1034 LAD - EN	-		
ø6,0	L Ø12	_D12 ↓									
9		2,3	<u>Drillin</u>	g-capacity	Σ(t _l	+ t _{II}) ≤ 4.0	0 mm				
ø3,9											
					t _{ii} [r	nm]					
	2 x 0.63	2 x 0).75	2 x 0.8		2x1	.00	2 x 1	.25	2 x 1	.50
0.50	0.88 ^a ac	1.87 ^a	ac	1.89 ^a	ac	1.91 ^a	ac	1.91 ^a	ac	1.91 ^a	ac
0.55	0.00 ^a			0 0 F ^a		o o o a		0 1 0 ^a			

							կլ լո	mnj					
		2 x 0	.63	2 x 0	.75	2 x 0	.88	2 x 1	.00	2 x 1	.25	2 x 1	.50
	0.50	0.88 ^a	ac	1.87 ^a	ac	1.89 ^a	ac	1.91 ^a	ac	1.91 ^a	ac	1.91 ^a	ac
	0.55	0.98 ^a	ac	2.01 ^a	ac	2.05 ^a	ac	2.08 ^a	ac	2.12 ^a	ac	2.12 ^a	а
	0.63	1.15 ^a	ac	2.24 ^a	ac	2.30 ^a	ac	2.36 ^a	ac	2.45 ^a	ac	2.45 ^a	а
V _{R,k} [kN]	0.75	1.39 ^a	ac	2.58 ^a	ac	2.68 ^a	ac	2.77 ^a	ac	2.96 ^a	ac	2.96 ^a	а
t _i [mm]	0.88	1.66	-	2.67	-	3.30	-	3.36	ac	3.66	а	3.79	а
. ([f i i i i j	1.00	1.90	-	2.75	-	3.36	-	4.01	ac	4.01	а	4.01	а
	1.25	2.41	-	2.92	-	3.47	-	4.01	-	5.05	а	-	-
	1.50	2.41	-	2.92	-	3.47	-	4.01	-	5.05	а	-	-
	0.50	1.40	ac	1.87 ^a	ac	1.87 ^a	ac	1.87 ^a	ac	1.87 ^a	ac	1.87 ^a	ac
	0.55	1.40	ac	1.98	ac	2.36 ^a	ac	2.36 ^a	ac	2.36 ^a	ac	2.36 ^a	а
NI 11-NI	0.63	1.40	ac	1.98	ac	2.61	ac	3.14	ac	3.14 ^a	ac	3.14 ^a	а
N _{R,k} [kN]	0.75	1.40	ac	1.98	ac	2.61	ac	3.19	ac	4.31	ac	4.31	а
t _l [mm]	0.88	1.40	-	1.98	-	2.61	-	3.19	ac	4.37	а	5.57	а
c, []	1.00	1.40	-	1.98	-	2.61	-	3.19	ac	4.37	а	5.82	а
	1.25	1.40	-	1.98	-	2.61	-	3.19	-	4.37	а	-	-
	1.50	1.40	-	1.98	-	2.61	-	3.19	-	4.37	а	-	-
N _{R,II,k} [kN]		1.4	0	1.9	8	2.6	1	3.1	9	4.3	7	5.8	2

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer $\ge \emptyset$ 19 mm

Annex 12

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

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English translation prepared by DIBt



ø12	Materials Fastener:	Stainless steel A2 or A4 - EN ISO 3506
Ø10,5 SW8 Ø12 L12	Washer:	Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal
5,3 3,3	Component I:	S280GD to S450GD - EN 10346
2 1,8 Ø 5,5 0 12 0 12 0 12	Component II:	S235 to S355 - EN 10025 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
	Drilling-capacity	$\Sigma(t_{I} + t_{II}) \le 5.00 \text{ mm}$
Ø4,5		

							t _{II} [n	nm]					
		1.5	0	1.7	5	2.0	0	2.5	D	3.0	0	4.00	D
	0.50	1.57 ^a	-	1.67 ^a	-	1.76 ^a	-	1.76 ^a	-	1.76 ^a	-	1.76 ^a	-
	0.55	1.71 ^a	-	1.79 ^a	-	1.86 ^ª	-	1.86 ^a	-	1.86 ^a	-	1.86 ^a	-
V	0.63	1.94 ^a	-	1.99 ^a	-	2.03 ^a	-	2.03 ^a	-	2.03 ^a	-	2.03 ^a	-
V _{R,k} [kN]	0.75	2.28 ^a	-	2.28 ^a	-	2.28 ^a	-	2.28 ^a	-	2.28 ^a	-	2.28 ^a	-
t _i [mm]	0.88	2.86 ^a	-	2.86 ^a	-	2.86 ^a	-	3.04 ^a	-	3.27 ^a	-	3.27 ^a	-
4 [1111]	1.00	3.43	-	3.43	-	3.43	-	3.74	-	4.18	-	4.18	-
	1.25	3.43	-	3.87	-	4.31	-	5.20	-	6.08	-	-	-
	1.50	3.43	-	3.87	-	4.31	-	5.20	-	6.08	-	-	-
	0.50	1.22 ^a	-	1.22 ^a	-	1.22 ^a	-	1.22 ^a	-	1.22 ^a	-	1.22 ^a	-
	0.55	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-
NI 71-NI3	0.63	2.04	-	2.04 ^a	-	2.04 ^a	-	2.04 ^a	-	2.04 ^a	-	2.04 ^a	-
N _{R,k} [kN]	0.75	2.09	-	2.69	-	2.80 ^a	-	2.80 ^a	-	2.80 ^a	-	2.80 ^a	-
t _i [mm]	0.88	2.09	-	2.69	-	3.28	-	3.63	-	3.63	-	3.63	-
4 [iiiii]	1.00	2.09	-	2.69	-	3.28	-	4.15	-	4.39	-	4.39	-
	1.25	2.09	-	2.69	-	3.28	-	4.15	-	5.02	-	-	-
	1.50	2.09	-	2.69	-	3.28	-	4.15	-	5.02	-	-	-
N _{R,II,k} [kN]		2.0	9	2.6	9	3.2	8	4.1	5	5.0	2	8.32	2

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer Ø 12 mm

SX5-S12-5,5 x L, SX5-L12-S12-5,5 x L, SX5-D12-S12-5,5 x L

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English translation prepared by DIBt



1,8	Materials Fastener: L12 Washer: 3,3 Component I: Component II: D12	Stainless steel A2 or A4 - EN ISO 3506 Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal S280GD to S450GD - EN 10346 S235 to S355 - EN 10025 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
12 ø4,5	2,3 Drilling-capacity	Σ(t _I + t _{II}) ≤ 5.00 mm

							t _{II} [r	nm]					
		1.5	50	1.7	'5	2.0	00	2.5	0	3.0	0	4.0	0
	0.50	1.57 ^a	ac	1.67 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac
	0.55	1.71 ^a	ac	1.79 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	а
14 FL-517	0.63	1.94 ^a	ac	1.99 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	а
V _{R,k} [kN]	0.75	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	а
t _i [mm]	0.88	2.86 ^a	ac	2.86 ^a	ac	2.86 ^a	ac	3.04 ^a	ac	3.27 ^a	ac	3.27 ^a	а
d [mm]	1.00	3.43	ac	3.43	ac	3.43	ac	3.74	ac	4.18	ac	4.18	а
	1.25	3.43	-	3.87	-	4.31	-	5.20	-	6.08	а	-	-
	1.50	3.43	-	3.87	-	4.31	-	5.20	-	6.08	-	-	-
	0.50	1.34 ^a	ac	1.34 ^a	ac	1.34 ^a	ac	1.34 ^a	ac	1.34 ^a	ac	1.34 ^a	ac
	0.55	1.69 ^a	ac	1.69 ^a	ac	1.69 ^a	ac	1.69 ^a	ac	1.69 ^a	ac	1.69 ^a	а
NI 71-NI3	0.63	2.09	ac	2.25 ^a	ac	2.25 ^a	ac	2.25 ^a	ac	2.25 ^a	ac	2.25 ^a	а
N _{R,k} [kN]	0.75	2.09	ac	2.69	ac	3.09	ac	3.09 ^a	ac	3.09 ^a	ac	3.09 ^a	а
t _i [mm]	0.88	2.09	ac	2.69	ac	3.28	ac	4.00	ac	4.00	ac	4.00	а
4 [1111]	1.00	2.09	ac	2.69	ac	3.28	ac	4.15	ac	4.84	ac	4.84	а
	1.25	2.09	-	2.69	-	3.28	-	4.15	-	5.02	а	-	-
	1.50	2.09	-	2.69	-	3.28	-	4.15	-	5.02	-	-	-
N _{R,II,k} [kN]		2.0	9	2.6	69	3.2	28	4.1	5	5.0	2	8.3	2

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer Ø 14 mm

Annex 14

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

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English translation prepared by DIBt



Ø10,5 W8 0,5,5 1,8 0,5,5 0,5,5 0,12	Component II:	Stainless steel A2 or A4 - EN ISO 3506 Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal S280GD to S450GD - EN 10346 S235 to S355 - EN 10025 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346 $\Sigma(t_l + t_{ll}) \leq 5.00 \text{ mm}$
		t _{ii} [mm]

							t _{ii} [n	nm]					
		1.5	0	1.7	5	2.0	0	2.5	0	3.0	0	4.0	0
	0.50	1.57 ^a	ac	1.67 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac
	0.55	1.71 ^a	ac	1.79 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	а
	0.63	1.94 ^a	ac	1.99 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	а
V _{R,k} [kN]	0.75	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	а
t _i [mm]	0.88	2.86 ^a	ac	2.86 ^a	ac	2.86 ^a	ac	3.04 ^a	ac	3.27 ^a	ac	3.27 ^a	а
4 [1111]	1.00	3.43	ac	3.43	ac	3.43	ac	3.74	ac	4.18	ac	4.18	а
	1.25	3.43	-	3.87	-	4.31	-	5.20	-	6.08	а	-	-
	1.50	3.43	-	3.87	-	4.31	-	5.20	-	6.08	-	-	-
	0.50	1.52 ^a	ac	1.52 ^a	ac	1.52 ^a	ac	1.52 ^a	ac	1.52 ^a	ac	1.52 ^a	ac
	0.55	1.91 ^a	ac	1.91 ^a	ac	1.91 ^a	ac	1.91 ^a	ac	1.91 ^a	ac	1.91 ^a	а
NI 71-NI	0.63	2.09	ac	2.69	ac	2.70 ^a	ac	2.70 ^a	ac	2.70 ^a	ac	2.70 ^a	а
N _{R,k} [kN]	0.75	2.09	ac	2.69	ac	3.09	ac	3.50 ^a	ac	3.50 ^a	ac	3.50 ^a	а
t _i [mm]	0.88	2.09	ac	2.69	ac	3.28	ac	4.15	ac	4.52	ac	4.52	а
4 [mm]	1.00	2.09	ac	2.69	ac	3.28	ac	4.15	ac	5.02	ac	5.47	а
	1.25	2.09	-	2.69	-	3.28	-	4.15	-	5.02	а	-	-
	1.50	2.09	-	2.69	-	3.28	-	4.15	-	5.02	-	-	-
N _{R,II,k} [kN]		2.0	9	2.6	9	3.2	8	4.1	5	5.0	2	8.3	2

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer Ø 16 mm

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

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English translation prepared by DIBt



Ø10,5 SW8 5,3 0,5,5 0,12 1,8 0,12 0,12 0,12 0,12 0,12 0,12 0,12 0,12	Washer: Component I: Component II:	Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal S280GD to S450GD - EN 10346 S235 to S355 - EN 10025 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
Ø5,5 12 004,5	Drilling-capacity	Σ(t _I + t _{II}) ≤ 5.00 mm

							t _{ii} [r	nm]					
		1.5	0	1.7	'5	2.0	0	2.5	0	3.0	0	4.0	0
	0.50	1.57 ^a	ac	1.67 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac
	0.55	1.71 ^a	ac	1.79 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	а
V PLAD	0.63	1.94 ^a	ac	1.99 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	а
V _{R,k} [kN]	0.75	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	а
t _i [mm]	0.88	2.86 ^a	ac	2.86 ^a	ac	2.86 ^a	ac	3.04 ^a	ac	3.27 ^a	ac	3.27 ^a	а
4 [1111]	1.00	3.43	ac	3.43	ac	3.43	ac	3.74	ac	4.18	ac	4.18	а
	1.25	3.43	-	3.87	-	4.31	-	5.20	-	6.08	а	-	-
	1.50	3.43	-	3.87	-	4.31	-	5.20	-	6.08	-	-	-
	0.50	1.87 ^a	ac	1.87 ^a	ac	1.87 ^a	ac	1.87 ^a	ac	1.87 ^a	ac	1.87 ^a	ac
	0.55	2.09	ac	2.36 ^a	ac	2.36 ^a	ac	2.36 ^a	ac	2.36 ^a	ac	2.36 ^a	а
NI 71-NI3	0.63	2.09	ac	2.69	ac	3.14	ac	3.14 ^a	ac	3.14 ^a	ac	3.14 ^a	а
N _{R,k} [kN]	0.75	2.09	ac	2.69	ac	3.28	ac	4.15	ac	4.31	ac	4.31	а
t _i [mm]	0.88	2.09	ac	2.69	ac	3.28	ac	4.15	ac	5.02	ac	5.57	а
	1.00	2.09	ac	2.69	ac	3.28	ac	4.15	ac	5.02	ac	6.74	а
	1.25	2.09	-	2.69	-	3.28	-	4.15	-	5.02	а	-	-
	1.50	2.09	-	2.69	-	3.28	-	4.15	-	5.02	-	-	-
N _{R,II,k} [kN]		2.0	9	2.6	69	3.2	28	4.1	5	5.0	2	8.3	2

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer $\ge \emptyset$ 19 mm

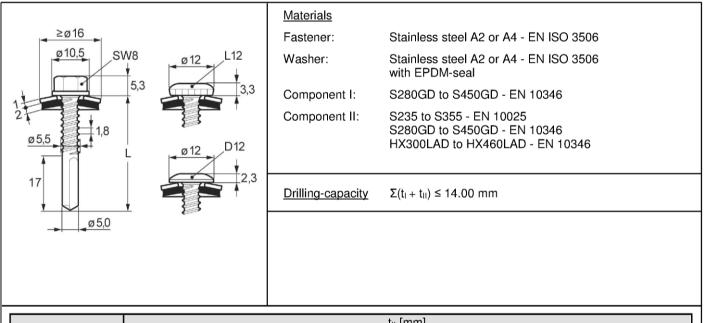
Annex 16

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

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							t _{ii} [r	nm]					
		4.0	0	5.0	0	6.0	0	8.0	0	10.0	00	12.0	00
	0.50	2.20	ac	2.20	ac	2.20	ac	2.20	ac	2.20	ac	2.20	ac
	0.55	2.50	ac	2.50	ac	2.50	ac	2.50	ac	2.50	ac	2.50	ac
V PLAIT	0.63	2.80	ac	2.80	ac	2.80	ac	2.80	ac	2.80	ac	2.80	ac
V _{R,k} [kN]	0.75	3.40	ac	3.40	ac	3.40	ac	3.40	ac	3.40	ac	3.40	ac
t _i [mm]	0.88	4.00	ac	4.00	ac	4.00	ac	4.00	ac	4.00	ac	4.00	ac
d [initi]	1.00	4.50	ac	4.50	ac	4.50	ac	4.50	ac	4.50	ac	4.50	ac
	1.25	5.60	ac	5.60	ac	5.60	ac	5.60	ac	5.60	ac	5.60	ac
	1.50	6.40	ac	6.40	ac	6.40	ac	6.40	ac	6.40	ac	6.40	ac
	0.50	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	ac
	0.55	2.10	ac	2.10	ac	2.10	ac	2.10	ac	2.10	ac	2.10	ac
NI 71-NI3	0.63	2.40	ac	2.40	ac	2.40	ac	2.40	ac	2.40	ac	2.40	ac
N _{R,k} [kN]	0.75	3.00	ac	3.00	ac	3.00	ac	3.00	ac	3.00	ac	3.00	ac
t _i [mm]	0.88	3.60	ac	3.60	ac	3.60	ac	3.60	ac	3.60	ac	3.60	ac
([initi]	1.00	4.20	ac	4.20	ac	4.20	ac	4.20	ac	4.20	ac	4.20	ac
	1.25	6.60	ac	6.60	ac	6.60	ac	6.60	ac	6.60	ac	6.60	ac
	1.50	7.10	ac	10.90	ac	10.90	ac	10.90	ac	10.90	ac	10.90	ac
N _{R,II,k} [kN]		7.1	0	10.9	90	10.9	90	10.9	90	10.9	90	10.9	90

Additional definitions

Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm

Annex 17

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

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English translation prepared by DIBt



						Mat	erials										
≥ø1	6																
•						Fast	ener:		Sta	inless s	teel A	2, A4 o	r 1.45	47 - EN	ISO 3	3506	
ø10,		₩8 ¥				Was	sher:			iinless s n EPDN		2 or A4	- EN	ISO 350)6		
	<u> </u>	5,3				Con	ipone	ent I:	S28	BOGD to	S450)GD - E	N 103	46			
2		T				Con	Ipone	nt II.	629		\$ \$450)GD - E	NI 103	46			
	2,5						ipone							N 10346	5		
ø6,5		L															
1	L .	ļ															
v		<u> </u>				<u>Drill</u>	ing-ca	apacity	-								
										nm]							
		0.6		0.7	5	0.8	8	1.0	0	1.2	25	1.5	50	2.0	0	3.0	0
d _{pd} [mm]		3.5	5	4.0)			4.	5	-				5.0	0		
	0.50	0.82	-	1.07 ^a	-	1.35 ^a	-	1.60 ^a	ac	1.60 ^a	ac	1.60 ^a	ac	1.60 ^a	ac	1.60 ^a	ac
	0.55	1.00	-	1.24	-	1.52	-	1.75	ac	1.95	ac	2.10	ac	2.10	ac	2.10	ac
V _{R,k} [kN]	0.63	1.30	-	1.50	-	1.80	-	2.00	ac	2.50	ac	2.90	ac	2.90	ac	2.90	ac
VR,K [KIN]	0.75	1.40	-	1.60	-	1.90	-	2.20	ac	2.70	ac	3.10	ac	3.40	ac	3.50	ac
t _i [mm]	0.88	1.50	-	1.70	-	2.00	-	2.30	-	2.80	ac	3.20	ac	3.90	ac	4.00	
																	ac
	1.00	1.60	-	1.80	-	2.10	-	2.50	-	3.10	-	3.60	-	4.40	-	4.50	ac ac
	1.25	1.60	-	1.80 1.82	-	2.10 2.30	-	2.70	-	3.10 3.30	-	3.60 4.00	-	4.70	-	5.40	
	1.25 1.50					2.30 2.40		2.70 2.80	-					4.70 4.90	-	5.40 5.70	
	1.25	1.60	-	1.82	-	2.30	-	2.70	-	3.30 3.50 1.68 ^a	-	4.00 4.00 1.68 ^a	-	4.70 4.90 1.68 ^a	- - - ac	5.40 5.70 1.68 ^a	
	1.25 1.50	1.60 1.60	-	1.82 1.83	-	2.30 2.40	-	2.70 2.80	-	3.30 3.50	-	4.00 4.00	-	4.70 4.90	-	5.40 5.70	ac -
N _{R,k} [kN]	1.25 1.50 0.50	1.60 1.60 1.00	- -	1.82 1.83 1.20	-	2.30 2.40 1.40	-	2.70 2.80 1.50	- - ac	3.30 3.50 1.68 ^a	- - ac	4.00 4.00 1.68 ^a	- - ac	4.70 4.90 1.68 ^a	- - ac	5.40 5.70 1.68 ^a	ac - - ac

1.50

1.50

1.50

1.50

-

-

-

-

1.50

1.90

1.90

1.90

1.90

ac

-

-

-

1.90

2.30

2.30

2.30

2.30

ac

-

-

-

2.30

3.80

3.80

3.80

3.80

3.80

ac

-

-

-

4.10

4.80

5.60

5.60

ac

ac

-

-

5.60

Additional definitions

t_I [mm]

N_{R,II,k} [kN]

0.88

1.00

1.25

1.50

1.00

1.00

1.00

1.00

1.00

-

-

-

-

1.20

1.20

1.20

1.20

-

-

-

-

1.20

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

1.40

1.40

1.40

1.40

-

-

-

-

1.40

Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm

TDA-S-S16-6,5 x L

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English translation prepared by DIBt



				Ma	aterials						
<u></u> ≥ø1	6			Fa	stener:	Stai	nless stee	I A2, A4 or	1.4547 - E	EN ISO 3506	3
ø10,	5 sv	¥		W	asher:	Stai		A2 or A4 -			
	1	5,3		Co	omponent l	: S28	0GD to S4	450GD - EN	10346		
$\frac{1}{2}$		Î			omponent l			450GD - EN			
	2.5				mponent			HX460LAD		46	
ø6,5		L									
	2										
V		▼		Dr	illing-capa	citv -					
						t. In	ml				
		2 x 0	.75	2 x ().88	t _{ii} [n 2 x 1		2 x 1	.25	2 x 1	.50
d _{pd} [mm]		2 x 0	.75	2 x 0 4.		t _{ii} [n 2 x 1		2 x 1		2 x 1	.50
d _{pd} [mm]	0.50	2 x 0 1.36 ^a	.75 ac	2 x 0 4.				2 x 1			.50 ac
d _{pd} [mm]	0.50			4.	0	2 x 1 1.60 ^a 1.90 ^a	.00	1.60 ^a 1.90 ^a	4	.5 1.60 ^a 1.90 ^a	
		1.36 ^a 1.54 ^a 1.83 ^a	ac	4. 1.48 ^a	0 ac	2 x 1 1.60 ^a	ac	1.60 ^a	4 ac	.5 1.60 ^a 1.90 ^a 2.37 ^a	ac
d _{pd} [mm] V _{R,k} [kN]	0.55	1.36 ^a 1.54 ^a 1.83 ^a 2.30 ^a	ac ac	4. 1.48 ^a 1.72 ^a 2.10 ^a 2.72 ^a	0 ac ac	2 x 1 1.60 ^a 1.90 ^a	ac ac	1.60 ^a 1.90 ^a	4 ac ac	.5 1.60 ^a 1.90 ^a	ac ac
V _{R,k} [kN]	0.55 0.63	1.36 ^a 1.54 ^a 1.83 ^a	ac ac ac	4. 1.48 ^a 1.72 ^a 2.10 ^a 2.72 ^a 2.94 ^a	0 ac ac ac	2 x 1 1.60 ^a 1.90 ^a 2.37 ^a	ac ac ac ac	1.60 ^a 1.90 ^a 2.37 ^a	4 ac ac ac	.5 1.60 ^a 1.90 ^a 2.37 ^a	ac ac ac
	0.55 0.63 0.75	1.36 ^a 1.54 ^a 1.83 ^a 2.30 ^a	ac ac ac ac	4. 1.48 ^a 1.72 ^a 2.10 ^a 2.72 ^a	0 ac ac ac ac	2 x 1 1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a	ac ac ac ac ac ac	1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a	4 ac ac ac ac	.5 1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a	ac ac ac ac
V _{R,k} [kN]	0.55 0.63 0.75 0.88	1.36 ^a 1.54 ^a 1.83 ^a 2.30 ^a 2.49 ^a	ac ac ac ac ac	4. 1.48 ^a 1.72 ^a 2.10 ^a 2.72 ^a 2.94 ^a	0 ac ac ac ac -	2 x 1 1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a	ac ac ac ac ac ac ac	1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a	4 ac ac ac ac ac ac	.5 1.60 ^a 2.37 ^a 3.14 ^a 3.40 ^a	ac ac ac ac ac
V _{R,k} [kN]	0.55 0.63 0.75 0.88 1.00	1.36 ^a 1.54 ^a 1.83 ^a 2.30 ^a 2.49 ^a 2.67 ^a	ac ac ac ac -	4. 1.48 ^a 1.72 ^a 2.10 ^a 2.72 ^a 2.94 ^a 3.16 ^a	0 ac ac ac ac - -	2 x 1 1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65	ac ac ac ac ac ac ac ac	1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65	4 ac ac ac ac ac ac ac	.5 1.60 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65	ac ac ac ac ac ac ac
V _{R,k} [kN]	0.55 0.63 0.75 0.88 1.00 1.25	1.36 ^a 1.54 ^a 1.83 ^a 2.30 ^a 2.49 ^a 2.67 ^a 2.67 ^a	ac ac ac ac - - -	4. 1.48 ^a 1.72 ^a 2.10 ^a 2.72 ^a 2.94 ^a 3.16 ^a 3.17 ^a	0 ac ac ac ac - - -	2 x 1 1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65 3.67	1.00 ac ac ac ac ac ac ac -	1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65 3.67	4 ac ac ac ac ac ac -	.5 1.60 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65 3.67	ac ac ac ac ac ac ac
V _{R,k} [kN]	0.55 0.63 0.75 0.88 1.00 1.25 1.50	1.36 ^a 1.54 ^a 1.83 ^a 2.30 ^a 2.49 ^a 2.67 ^a 2.67 ^a	ac ac ac ac - - - - - - - ac	4. 1.48 ^a 1.72 ^a 2.10 ^a 2.72 ^a 2.94 ^a 3.16 ^a 3.17 ^a 3.18 ^a	0 ac ac ac - - - - - - ac	2 x 1 1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65 3.67 3.68	1.00 ac ac ac ac ac ac ac ac - -	1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65 3.67 3.68	4 ac ac ac ac ac ac ac - -	.5 1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65 3.67 3.68 1.68 ^a	ac ac ac ac ac ac ac - -
V _{R,k} [kN]	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.50	1.36 ^a 1.54 ^a 1.83 ^a 2.30 ^a 2.49 ^a 2.67 ^a 2.67 ^a 1.68 ^a	ac ac ac ac - - -	$\begin{array}{r} 4.\\ 1.48^{a}\\ 1.72^{a}\\ 2.10^{a}\\ 2.72^{a}\\ 2.94^{a}\\ 3.16^{a}\\ 3.17^{a}\\ 3.18^{a}\\ 1.68^{a}\\ \end{array}$	0 ac ac ac ac - - - -	2 x 1 1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65 3.65 3.67 3.68 1.68 ^a	1.00 ac ac ac ac ac ac ac ac ac ac	1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65 3.67 3.68 1.68 ^a	4 ac ac ac ac ac ac ac - - - ac	.5 1.60 ^a 1.90 ^a 2.37 ^a 3.14 ^a 3.40 ^a 3.65 3.67 3.68	ac ac ac ac ac ac ac ac - ac

Additional definitions

N_{R,k} [kN]

t_I [mm]

N_{R,II,k} [kN]

0.75

0.88

1.00

1.25

1.50

2.18

2.18

2.18

2.18

2.18

2.18

ac

-

-

-

-

2.77

2.77

2.77

2.77

2.77

2.77

ac

-

-

-

-

3.36

3.36

3.36

3.36

3.36

ac

ac

ac

-

-

3.36

3.36

3.36

3.36

3.36

3.36

n/a

ac

ac

ac

-

-

3.36

3.36

3.36

3.36

3.36

ac

ac

ac

-

-

n/a

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

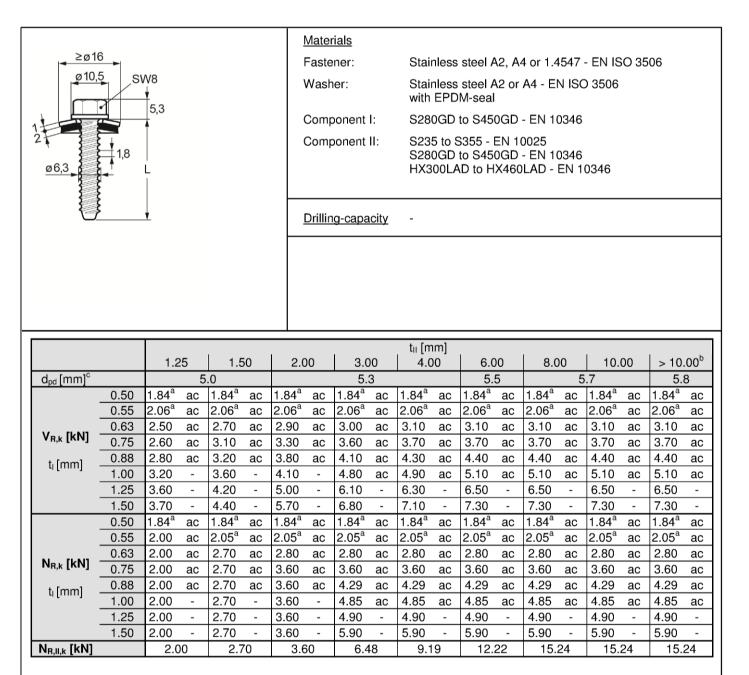
Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm

TDA-S-S16-6,5 x L

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English translation prepared by DIBt





Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Index ^b: Only valid for component II made of S235, S280GD or HX300LAD.

Index ^c: The pre-drill diameter d_{pd} for not indicated thicknesses t_{II} is defined as follows:

 $d_{pd} = 5.3 \text{ mm}$ for $t_{II} = 1.6 - 4.0 \text{ mm}$, $d_{pd} = 5.5 \text{ mm}$ for $t_{II} = 4.1 - 6.0 \text{ mm}$, $d_{pd} = 5.7 \text{ mm}$ for $t_{II} = 6.1 - 10.0 \text{ mm}$

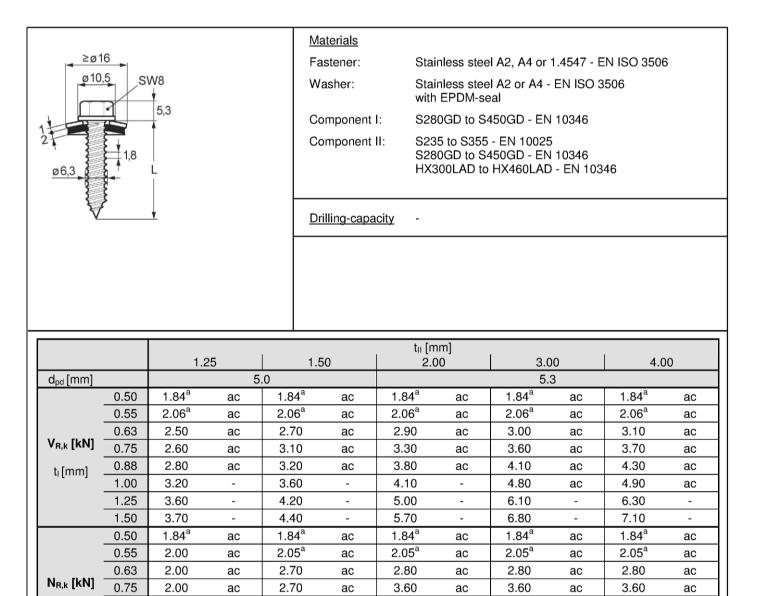
Self-tapping screw with sealing washer $\ge Ø$ 16 mm

TDB-S-S16-6,3 x L

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English translation prepared by DIBt





3.60

3.60

3.60

3.60

ac

-

-

_

4.29

4.85

4.90

5.90

6.48

ac

-

_

_

3.60

Additional definitions

t_l[mm]

N_{R,II,k} [kN]

0.88

1.00

1.25

1.50

2.00

2.00

2.00

2.00

2.00

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

2.70

2.70

2.70

2.70

2.70

ac

-

-

_

Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm

TDC-S-S16-6,3 x L

Annex 21

4.29

4.85

4.90

5.90

9.19

ac

ac

-

-

ac

ac

-

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English translation prepared by DIBt



				<u>Materials</u>						
<u></u> ≥ø14	1			Fastener:	Stainless s	teel A2 or A4 - E	EN ISO 3506			
ø10,5				Washer:	Stainless s with EPDM	teel A2 or A4 - E I-seal	EN ISO 3506			
	1	4,7		Component I:	S280GD to S450GD - EN 10346					
1				Component II:	S280GD to S450GD - EN 10346					
<u>ø4,8</u>	1,3 - L	-		Component II.		to HX460LAD				
V		<u>_</u>		Drilling-capacity	$\Sigma(t_I + t_{II}) \leq 2$	2.00 mm				
					t _{ii} [mm]					
		0.40	0.50	0.55	0.63	0.75	0.88	1.00		
	0.40	0.66	0.66	0.66	0.66	0.66	0.66	0.66		
	0.50	0.66	0.80	0.80	0.80	0.80	0.80	0.80		
V _{R,k} [kN]	0.55	0.66	0.80	0.98	0.98	0.98	0.98	0.98		
	0.63	0.66	0.80	0.98	1.28	1.28	1.28	1.28		
t _l [mm]	0.75	0.66	0.80	0.98	1.28	1.72	1.72	1.72		
	0.88	0.66	0.80	0.98	1.28	1.72	1.72	1.72		
	0.88	0.66	0.80	0.98	1.28 1.28	1.72 1.72	1.72 1.72	1.72 1.72		
	1.00	0.66	0.80	0.98	1.28	1.72	1.72	1.72		
	1.00 0.40	0.66 0.52	0.80 0.73	0.98	1.28 0.95	1.72 0.95	1.72 0.95	1.72 0.95		
N _{R,k} [kN]	1.00 0.40 0.50	0.66 0.52 0.52	0.80 0.73 0.73	0.98 0.82 0.82	1.28 0.95 0.97	1.72 0.95 1.20	1.72 0.95 1.20	1.72 0.95 1.20		
	1.00 0.40 0.50 0.55	0.66 0.52 0.52 0.52	0.80 0.73 0.73 0.73	0.98 0.82 0.82 0.82	1.28 0.95 0.97 0.97	1.72 0.95 1.20 1.20	1.72 0.95 1.20 1.20	1.72 0.95 1.20 1.20		
N _{R,k} [kN]	1.00 0.40 0.50 0.55 0.63	0.66 0.52 0.52 0.52 0.52	0.80 0.73 0.73 0.73 0.73 0.73	0.98 0.82 0.82 0.82 0.82 0.82	1.28 0.95 0.97 0.97 0.97	1.72 0.95 1.20 1.20 1.20	1.72 0.95 1.20 1.20 1.20	1.72 0.95 1.20 1.20 1.20		
N _{R,k} [kN]	1.00 0.40 0.50 0.55 0.63 0.75	0.66 0.52 0.52 0.52 0.52 0.52 0.52	0.80 0.73 0.73 0.73 0.73 0.73 0.73	0.98 0.82 0.82 0.82 0.82 0.82 0.82	1.28 0.95 0.97 0.97 0.97 0.97 0.97	1.72 0.95 1.20 1.20 1.20 1.20 1.20	1.72 0.95 1.20 1.20 1.20 1.20 1.20	1.72 0.95 1.20 1.20 1.20 1.20		

Additional definitions

Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm

Annex 22

SLG-S-S14-4,8 x L

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English translation prepared by DIBt



	↓		Drillin	oonent II:		to S450GD D to HX460 2.50 mm		0346	
	0.40	0.50	0.55	0.63	t⊪ [mm] 0.75	0.88	1.00	1.25	1.50
0.40			0.58	0.58	0.58	0.58	0.58	0.58	0.58
0.50			0.69	0.69	0.69	0.69	0.69	0.69	0.69
0.5	5 0.58	0.69	0.80	0.80	0.80	0.80	0.80	0.80	0.80
V _{R,k} [kN] 0.63		0.69	0.80	0.98	0.98	0.98	0.98	0.98	0.98
0.75	5 0.58	0.69	0.80	0.98	1.26	1.26	1.26	1.26	1.26
t _i [mm] 0.88	B 0.58	0.69	0.80	0.98	1.26	1.82	1.82	1.82	1.82
1.00			0.80	0.98	1.26	1.82	2.35	2.35	2.35
1.2			0.80	0.98	1.26	1.82	2.35	2.35	-
1.50			0.80	0.98	1.26	1.82	2.35	-	-
0.40			0.49	0.59	0.76	0.96	1.07	1.07	1.07
0.50			0.49	0.59	0.76	0.96	1.16	1.16	1.16
0.58			0.49	0.59	0.76	0.96	1.16	1.16	1.16
N _{R,k} [kN] 0.63			0.49	0.59	0.76	0.96	1.16	1.16	1.16
0.75			0.49	0.59	0.76	0.96	1.16	1.16	1.16
t _l [mm] 0.88			0.49	0.59	0.76	0.96	1.16	1.16	1.16
1.00			0.49	0.59	0.76	0.96	1.16	1.16	1.16
1.2			0.49	0.59	0.76	0.96	1.16	1.16	-
1.50			0.49	0.59	0.76	0.96	1.16	-	-
N _{R,II,k} [kN]	0.30	0.42	0.49	0.59	0.76	0.96	1.16	n/a	n/a

Additional definitions

Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm

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English translation prepared by DIBt



≥ø14	L			<u>Mate</u> Faste		Stainless	steel A2 or		3506			
ø10,5		/8										
		1		Wash	ier:	with EPD	steel A2 or M-seal	A4 - EN ISC	3506			
		4,7		Com	oonent I:	S280GD to S450GD - EN 10346						
3	-			Com	Component II:		S280GD to S450GD - EN 10346					
ø5,5	2,2	-				HX300LAD to HX460LAD - EN 10346						
7		<u>r</u>		Drillin	Drilling-capacity		2.50 mm					
	<u>ø2,8</u>											
		0.40	0.50	0.55	0.63	t _{ll} [mm] 0.75	0.88	1.00	1.25	1.50		
	0.40	0.40	0.50	0.55	0.63	0.75	0.88	0.48	0.48	0.48		
	0.40	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		
					0.90		0.90		0.90	0.73		
	0.55	0.48	0 75									
V [[4]]	0.55	0.48	0.75	0.90		0.90		0.90				
V _{R,k} [kN]	0.63	0.48	0.75	0.90	1.13	1.13	1.13	1.13	1.13	1.13		
	0.63 0.75	0.48 0.48	0.75 0.75	0.90 0.90	1.13 1.13	1.13 1.48	1.13 1.48	1.13 1.48	1.13 1.48	1.13 1.48		
V_{R,к} [kN] t _i [mm]	0.63 0.75 0.88	0.48 0.48 0.48	0.75 0.75 0.75	0.90 0.90 0.90	1.13 1.13 1.13	1.13 1.48 1.48	1.13 1.48 1.73	1.13 1.48 1.73	1.13 1.48 1.73	1.13 1.48 1.73		
	0.63 0.75 0.88 1.00	0.48 0.48 0.48 0.48	0.75 0.75 0.75 0.75	0.90 0.90 0.90 0.90	1.13 1.13 1.13 1.13 1.13	1.13 1.48 1.48 1.48	1.13 1.48 1.73 1.73	1.13 1.48 1.73 1.97	1.13 1.48 1.73 1.97	1.13 1.48		
	0.63 0.75 0.88 1.00 1.25	0.48 0.48 0.48 0.48 0.48	0.75 0.75 0.75 0.75 0.75	0.90 0.90 0.90 0.90 0.90	1.13 1.13 1.13 1.13 1.13 1.13	1.13 1.48 1.48 1.48 1.48 1.48	1.13 1.48 1.73 1.73 1.73	1.13 1.48 1.73 1.97 1.97	1.13 1.48 1.73	1.13 1.48 1.73 1.97		
	0.63 0.75 0.88 1.00 1.25 1.50	0.48 0.48 0.48 0.48 0.48 0.48	0.75 0.75 0.75 0.75 0.75 0.75 0.75	0.90 0.90 0.90 0.90 0.90 0.90	1.13 1.13 1.13 1.13 1.13 1.13 1.13	1.13 1.48 1.48 1.48 1.48 1.48 1.48	1.13 1.48 1.73 1.73 1.73 1.73 1.73	1.13 1.48 1.73 1.97 1.97 1.97	1.13 1.48 1.73 1.97 1.97 -	1.13 1.48 1.73 1.97 - -		
	0.63 0.75 0.88 1.00 1.25 1.50 0.40	0.48 0.48 0.48 0.48 0.48 0.48 0.48 0.43	0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.57	0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.65	1.13 1.13 1.13 1.13 1.13 1.13 1.13 0.79	1.13 1.48 1.48 1.48 1.48 1.48 1.48 1.00	1.13 1.48 1.73 1.73 1.73 1.73 1.73 1.00	1.13 1.48 1.73 1.97 1.97 1.97 1.00	1.13 1.48 1.73 1.97 1.97 - 1.00	1.13 1.48 1.73 1.97 - - 1.00		
	0.63 0.75 0.88 1.00 1.25 1.50 0.40 0.50	0.48 0.48 0.48 0.48 0.48 0.48 0.48 0.43 0.43	0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.57 0.57	0.90 0.90 0.90 0.90 0.90 0.90 0.65 0.65	1.13 1.13 1.13 1.13 1.13 1.13 1.13 0.79 0.79	1.13 1.48 1.48 1.48 1.48 1.48 1.48 1.00 1.03	1.13 1.48 1.73 1.73 1.73 1.73 1.73 1.00 1.32	1.13 1.48 1.73 1.97 1.97 1.97 1.00 1.61	1.13 1.48 1.73 1.97 1.97 - 1.00 1.61	1.13 1.48 1.73 1.97 - - 1.00 1.61		
t _i [mm]	0.63 0.75 0.88 1.00 1.25 1.50 0.40	0.48 0.48 0.48 0.48 0.48 0.48 0.48 0.43	0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.57	0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.65	1.13 1.13 1.13 1.13 1.13 1.13 1.13 0.79	1.13 1.48 1.48 1.48 1.48 1.48 1.48 1.00	1.13 1.48 1.73 1.73 1.73 1.73 1.73 1.00	1.13 1.48 1.73 1.97 1.97 1.97 1.00	1.13 1.48 1.73 1.97 1.97 - 1.00	1.13 1.48 1.73 1.97 - - 1.00 1.61 1.61		
	0.63 0.75 0.88 1.00 1.25 1.50 0.40 0.50 0.55	0.48 0.48 0.48 0.48 0.48 0.48 0.43 0.43 0.43 0.43	0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.57 0.57	0.90 0.90 0.90 0.90 0.90 0.90 0.65 0.65 0.65	1.13 1.13 1.13 1.13 1.13 1.13 1.13 0.79 0.79 0.79	1.13 1.48 1.48 1.48 1.48 1.48 1.48 1.00 1.03 1.03	1.13 1.48 1.73 1.73 1.73 1.73 1.73 1.73 1.00 1.32 1.32	1.13 1.48 1.73 1.97 1.97 1.97 1.00 1.61 1.61	1.13 1.48 1.73 1.97 1.97 - 1.00 1.61 1.61	1.13 1.48 1.73 1.97 - - 1.00 1.61		
t _i [mm]	0.63 0.75 0.88 1.00 1.25 1.50 0.40 0.50 0.55 0.63	0.48 0.48 0.48 0.48 0.48 0.48 0.43 0.43 0.43 0.43 0.43	0.75 0.75 0.75 0.75 0.75 0.75 0.57 0.57	0.90 0.90 0.90 0.90 0.90 0.65 0.65 0.65 0.65	1.13 1.13 1.13 1.13 1.13 1.13 1.13 0.79 0.79 0.79 0.79 0.79	1.13 1.48 1.48 1.48 1.48 1.48 1.48 1.00 1.03 1.03 1.03	1.13 1.48 1.73 1.73 1.73 1.73 1.73 1.73 1.00 1.32 1.32 1.32	1.13 1.48 1.73 1.97 1.97 1.97 1.00 1.61 1.61 1.61	1.13 1.48 1.73 1.97 - 1.00 1.61 1.61 1.61	1.13 1.48 1.73 1.97 - - 1.00 1.61 1.61 1.61		
t _i [mm] N _{R,k} [kN]	0.63 0.75 0.88 1.00 1.25 1.50 0.40 0.50 0.55 0.63 0.75	0.48 0.48 0.48 0.48 0.48 0.48 0.43 0.43 0.43 0.43 0.43 0.43	0.75 0.75 0.75 0.75 0.75 0.75 0.57 0.57	0.90 0.90 0.90 0.90 0.90 0.65 0.65 0.65 0.65 0.65	1.13 1.13 1.13 1.13 1.13 1.13 1.13 0.79 0.79 0.79 0.79 0.79 0.79 0.79	1.13 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.03 1.03 1.03 1.03	1.13 1.48 1.73 1.73 1.73 1.73 1.73 1.00 1.32 1.32 1.32 1.32	$ \begin{array}{r} 1.13\\ 1.48\\ 1.73\\ 1.97\\ 1.97\\ 1.97\\ 1.00\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ \end{array} $	1.13 1.48 1.73 1.97 - 1.00 1.61 1.61 1.61 1.61	1.13 1.48 1.73 1.97 - 1.00 1.61 1.61 1.61 1.61		
t _i [mm] N _{R,k} [kN]	0.63 0.75 0.88 1.00 1.25 1.50 0.40 0.50 0.55 0.63 0.75 0.88	0.48 0.48 0.48 0.48 0.48 0.48 0.43 0.43 0.43 0.43 0.43 0.43 0.43	0.75 0.75 0.75 0.75 0.75 0.57 0.57 0.57	0.90 0.90 0.90 0.90 0.90 0.65 0.65 0.65 0.65 0.65 0.65	1.13 1.13 1.13 1.13 1.13 1.13 1.13 0.79 0.79 0.79 0.79 0.79 0.79 0.79 0.79	$ \begin{array}{r} 1.13\\ 1.48\\ 1.48\\ 1.48\\ 1.48\\ 1.48\\ 1.00\\ 1.03$	1.13 1.48 1.73 1.73 1.73 1.73 1.73 1.00 1.32 1.32 1.32 1.32 1.32	$ \begin{array}{r} 1.13\\ 1.48\\ 1.73\\ 1.97\\ 1.97\\ 1.97\\ 1.00\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ \end{array} $	1.13 1.48 1.73 1.97 - 1.00 1.61 1.61 1.61 1.61 1.61 1.61	1.13 1.48 1.73 1.97 - - 1.00 1.61 1.61 1.61 1.61 1.61		
t _i [mm] N _{R,k} [kN]	0.63 0.75 0.88 1.00 1.25 1.50 0.40 0.50 0.55 0.63 0.75 0.88 1.00	0.48 0.48 0.48 0.48 0.48 0.43 0.43 0.43 0.43 0.43 0.43 0.43 0.43	0.75 0.75 0.75 0.75 0.75 0.57 0.57 0.57	0.90 0.90 0.90 0.90 0.90 0.65 0.65 0.65 0.65 0.65 0.65 0.65 0.6	1.13 1.13 1.13 1.13 1.13 1.13 0.79 0.79 0.79 0.79 0.79 0.79 0.79 0.79	$ \begin{array}{r} 1.13\\ 1.48\\ 1.48\\ 1.48\\ 1.48\\ 1.48\\ 1.00\\ 1.03$	1.13 1.48 1.73 1.73 1.73 1.73 1.73 1.00 1.32 1.32 1.32 1.32 1.32 1.32 1.32	$ \begin{array}{r} 1.13\\ 1.48\\ 1.73\\ 1.97\\ 1.97\\ 1.97\\ 1.00\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ 1.61\\ \end{array} $	1.13 1.48 1.73 1.97 - 1.00 1.61 1.61 1.61 1.61 1.61 1.61 1.61	1.13 1.48 1.73 1.97 - 1.00 1.61 1.61 1.61 1.61 1.61 1.61		

Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm

Annex 24

SL2-S-S14-5,5 x L

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English translation prepared by DIBt



≥ø14 ø10,5 ø6,3		/8 ø	12 L12 3,3		ner:	Stainless steel A2 or A4 - EN ISO 3506 Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal S280GD to S450GD - EN 10346 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346				
9	<u>ø3,9</u>	_		Drillin	<u>g-capacity</u>	Σ(t _I + t _{II}) ≤	2.50 mm			
				-		t _{II} [mm]				
		0.40	0.50	0.55	0.63	0.75	0.88	1.00	1.25	1.50
	0.40	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
	0.50	0.57	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
	0.55	0.57	0.80	0.95	0.95	0.95	0.95	0.95	0.95	0.95
V _{R,k} [kN]	0.63	0.57	0.80	0.95	1.18	1.18	1.18	1.18	1.18	1.18
	0.75	0.57	0.80	0.95	1.18	1.55	1.55	1.55	1.55	1.55
t _i [mm]	0.88	0.57	0.80	0.95	1.18	1.55	2.27	2.27	2.27	2.27
	1.00	0.57	0.80	0.95	1.18	1.55	2.27	2.98	2.98	2.98
	1.25	0.57	0.80	0.95	1.18	1.55	2.27	2.98	2.98	-
	1.50	0.57	0.80	0.95	1.18	1.55	2.27	2.98	-	-
	1.50		0.74	0.84	0.99	1.23	1.28	1.28	1.28	1.28
	0.40	0.57	0.74						1.00	1.00
		0.57 0.57	0.74	0.84	0.99	1.23	1.36	1.36	1.36	1.36
	0.40			0.84 0.84		1.23 1.23	1.36 1.50	1.36 1.50	1.36	1.36 1.50
N _{R.k} [kN]	0.40 0.50	0.57	0.74		0.99					
, <u> </u>	0.40 0.50 0.55	0.57 0.57	0.74 0.74	0.84	0.99 0.99	1.23	1.50	1.50	1.50	1.50
N_{в,к} [kN] t _i [mm]	0.40 0.50 0.55 0.63	0.57 0.57 0.57	0.74 0.74 0.74	0.84 0.84	0.99 0.99 0.99	1.23 1.23	1.50 1.61	1.50 1.73	1.50 1.73	1.50 1.73
,	0.40 0.50 0.55 0.63 0.75	0.57 0.57 0.57 0.57	0.74 0.74 0.74 0.74	0.84 0.84 0.84	0.99 0.99 0.99 0.99	1.23 1.23 1.23	1.50 1.61 1.61	1.50 1.73 1.98	1.50 1.73 1.98	1.50 1.73 1.98
,	0.40 0.50 0.63 0.75 0.88 1.00 1.25	0.57 0.57 0.57 0.57 0.57	0.74 0.74 0.74 0.74 0.74 0.74 0.74 0.74	0.84 0.84 0.84 0.84	0.99 0.99 0.99 0.99 0.99 0.99 0.99	1.23 1.23 1.23 1.23 1.23 1.23 1.23	1.50 1.61 1.61 1.61	1.50 1.73 1.98 1.98	1.50 1.73 1.98 1.98	1.50 1.73 1.98 1.98
, <u> </u>	0.40 0.50 0.55 0.63 0.75 0.88 1.00	0.57 0.57 0.57 0.57 0.57 0.57	0.74 0.74 0.74 0.74 0.74 0.74	0.84 0.84 0.84 0.84 0.84	0.99 0.99 0.99 0.99 0.99 0.99 0.99	1.23 1.23 1.23 1.23 1.23 1.23	1.50 1.61 1.61 1.61 1.61	1.50 1.73 1.98 1.98 1.98	1.50 1.73 1.98 1.98 1.98	1.50 1.73 1.98 1.98 1.98

Self-drilling screw with sealing washer $\ge Ø$ 14 mm

Annex 25

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

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English translation prepared by DIBt



			<u>Materials</u>						
			Fastener:	Stainless stee	I A2 or A4 - EN ISO 3	506			
ø12,	5 sv	V8	Washer:	-					
			Component	. 6005 to 6055	S235 to S355 - EN 10025				
	<u> </u>	5,3	Component		S235 to S355 - EN 10025 S280GD to S450GD - EN 10346				
ø6,5	1,8 ↓	 - 	Component	Component II: S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346					
		<u>v</u>	Drilling-capa	<u>city</u> Σ(t _{ll}) ≤ 1.25 m	m				
				t _{ii} [mm]					
		0.63	0.75	t _{II} [mm] 0.88	1.00	1.25			
d _{pd,1} [mm]		0.63	0.75		1.00	1.25			
d _{pd,I} [mm]	2.00	0.63	0.75	0.88	1.00	1.25			
	2.00			0.88 6.50 - 7.20					
d _{pd,I} [mm] V_{R,k} [kN]		1.49	2.29	0.88 6.50 - 7.20 3.16	3.38	3.62			
	2.50	1.49 1.49	2.29 2.29	0.88 6.50 - 7.20 3.16 3.16	3.38 3.38	3.62 3.62			
V _{R,k} [kN]	2.50 3.00	1.49 1.49 1.49	2.29 2.29 2.29 2.29	0.88 6.50 - 7.20 3.16 3.16 3.16	3.38 3.38 3.38	3.62 3.62 3.62			
V _{R,k} [kN]	2.50 3.00 3.50	1.49 1.49 1.49 1.49 1.49	2.29 2.29 2.29 2.29 2.29	0.88 6.50 - 7.20 3.16 3.16 3.16 3.16 3.16	3.38 3.38 3.38 3.38 3.38	3.62 3.62 3.62 3.62 3.62			
V_{R,k} [kN] t _i [mm]	2.50 3.00 3.50 4.00	1.49 1.49 1.49 1.49 1.49 1.49	2.29 2.29 2.29 2.29 2.29 2.29 2.29	0.88 6.50 - 7.20 3.16 3.16 3.16 3.16 3.16 3.16	3.38 3.38 3.38 3.38 3.38 3.38 3.38	3.62 3.62 3.62 3.62 -			
V _{R,k} [kN]	2.50 3.00 3.50 4.00 2.00	1.49 1.49 1.49 1.49 1.49 1.49 1.49 1.07	2.29 2.29 2.29 2.29 2.29 2.29 2.29 1.48	0.88 6.50 - 7.20 3.16 3.16 3.16 3.16 3.16 1.93	3.38 3.38 3.38 3.38 3.38 3.38 2.19	3.62 3.62 3.62 3.62 - 2.47			
V_{R,k} [kN] t _i [mm]	2.50 3.00 3.50 4.00 2.00 2.50	1.49 1.49 1.49 1.49 1.49 1.49 1.07 1.07	2.29 2.29 2.29 2.29 2.29 2.29 1.48 1.48	0.88 6.50 - 7.20 3.16 3.16 3.16 3.16 3.16 1.93 1.93	3.38 3.38 3.38 3.38 3.38 3.38 2.19 2.19 2.19	3.62 3.62 3.62 3.62 - 2.47 2.47			
V _{R,k} [kN] t _i [mm] N _{R,k} [kN]	2.50 3.00 3.50 4.00 2.00 2.50 3.00	1.49 1.49 1.49 1.49 1.49 1.49 1.07 1.07 1.07	2.29 2.29 2.29 2.29 2.29 2.29 1.48 1.48 1.48	0.88 6.50 - 7.20 3.16 3.16 3.16 3.16 3.16 1.93 1.93 1.93	3.38 3.38 3.38 3.38 3.38 3.38 2.19 2.19 2.19 2.19	3.62 3.62 3.62 3.62 - 2.47 2.47 2.47 2.47			

Additional definitions

Self-drilling screw

SLG-S-6,5 x L

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English translation prepared by DIBt



SV16		₩8 5,3 L		ener: Sta ner: Sta ponent I: S23 ponent II: S23		- EN 10346	
7	ø 3,7	Ļ	Drillin	n <u>g-capacity</u> Σ(t _i	+ t _{ii}) ≤ 3.00 mm		
			I	+. Fr			
		0.63	0.75	0.88	nm] 1.00	1.25	1.50
	1.00	-	-	1.88	1.88	2.01	2.01
V _{R,k} [kN]	1.25	1.03	1.46	1.88	2.22	2.97	2.97
	1.50	1.03	1.46	1.88	2.22	2.97	2.97
t _i [mm]	1.75	1.03	1.46	1.88	2.22	2.97	-
	2.00	1.03	1.46	1.88	2.22	-	-
	1.00	-	-	1.49	1.82	2.51	
							3.21
N _{R,k} [kN]	1.25	0.82	1.15	1.49	1.82	2.51	3.21 3.21
,	1.50	0.82	1.15	1.49	1.82	2.51	
N_{R,k} [kN] t _i [mm]							3.21

1.49

1.82

2.51

Additional definitions

N_{R,II,k} [kN]

Self-drilling screw with SV-washer 13x16 mm

1.15

0.82

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

Annex 27

3.21

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English translation prepared by DIBt



SV16 Ø10 1 Ø6,0 Ø		V8 5,3 L	<u>Materials</u> Fastener: Washer: Component I: Component II:	Stainless steel A2 or A4 - EN Stainless steel A2 or A4 - EN S280GD to S450GD - EN 103 S280GD to S450GD - EN 103 HX300LAD to HX460LAD - EI	ISO 3506 346 346					
7	ø3,7	V	Drilling-capacity	<u>Drilling-capacity</u> $\Sigma(t_l + t_{ll}) \le 4.00 \text{ mm}$						
				t _{ii} [mm]						
		2 x 0.75	2 x 0.88	2 x 1.00	2 x 1.25					
	1.00	2.10	2.23	2 x 1.00 2.35	3.23					
V _{R,k} [kN]	1.25	2.10 2.60	2.23 2.92	2 x 1.00 2.35 3.24	3.23 4.01					
	1.25 1.50	2.10	2.23 2.92 3.61	2 x 1.00 2.35	3.23					
V_{R,k} [kN] t _i [mm]	1.25 1.50 1.75	2.10 2.60	2.23 2.92 3.61 3.61	2 x 1.00 2.35 3.24 4.12 4.12	3.23 4.01					
	1.25 1.50	2.10 2.60 3.09	2.23 2.92 3.61 3.61 3.61	2 x 1.00 2.35 3.24 4.12 4.12 4.12 4.12	3.23 4.01 4.12 - -					
	1.25 1.50 1.75 2.00 1.00	2.10 2.60 3.09 3.09	2.23 2.92 3.61 3.61	2 x 1.00 2.35 3.24 4.12 4.12 4.12 4.12 3.45	3.23 4.01 4.12 - - 3.69					
	1.25 1.50 1.75 2.00	2.10 2.60 3.09 3.09 3.09	2.23 2.92 3.61 3.61 3.61	2 x 1.00 2.35 3.24 4.12 4.12 4.12 4.12	3.23 4.01 4.12 - - 3.69 4.38					
t _i [mm] N _{R,k} [kN]	1.25 1.50 1.75 2.00 1.00 1.25 1.50	2.10 2.60 3.09 3.09 3.09 2.43	2.23 2.92 3.61 3.61 3.61 2.94	2 x 1.00 2.35 3.24 4.12 4.12 4.12 4.12 3.45	3.23 4.01 4.12 - - 3.69					
t _i [mm]	1.25 1.50 1.75 2.00 1.00 1.25 1.50 1.75	2.10 2.60 3.09 3.09 2.43 2.43 2.43 2.43 2.43	2.23 2.92 3.61 3.61 2.94 2.94 2.94 2.94 2.94	2 x 1.00 2.35 3.24 4.12 4.12 4.12 3.45 3.45 3.45 3.45 3.45	3.23 4.01 4.12 - - 3.69 4.38					
t _i [mm] N _{R,k} [kN]	1.25 1.50 1.75 2.00 1.00 1.25 1.50	2.10 2.60 3.09 3.09 2.43 2.43 2.43 2.43	2.23 2.92 3.61 3.61 2.94 2.94 2.94	2 x 1.00 2.35 3.24 4.12 4.12 4.12 3.45 3.45 3.45	3.23 4.01 4.12 - - 3.69 4.38 4.38					

Additional definitions

Self-drilling screw with SV-washer 13x16 mm

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

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English translation prepared by DIBt



<u>→ ≥ø16</u>				<u>aterials</u> astener:	Cart	oon steel	with anticor	osion coa	iting	
Ø10,5 SV	₩8 • 5,3			asher:		on steel EPDM-se	with anticori eal	rosion coa	ting	
1	1					S280GD to S450GD - EN 10346				
2 <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,3</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ø6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u>ө6,5</u> <u></u> <u>ө6,5</u> <u></u>	C	omponent		S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346						
7 ø3,9	V		D	rilling-capa	<u>city</u> Σ(t _l -	- t _{II}) ≤ 2.5	0 mm			
	0.75	1	0	88	t _{ii} [m 1.0		1.2)E	1.5	0
0.50	0.75	-	0. 	-	n/a	-	n/a	-	n/a	-
0.55	n/a	-	n/a	-	n/a	-	n/a	-	n/a	-
0.63	1.54	-	1.54	-	1.54	-	1.54	-	1.54	-

		0.75 0.88		8	1.00		1.25		1.50		
	0.50	n/a	-	n/a	-	n/a	-	n/a	-	n/a	-
	0.55	n/a	-	n/a	-	n/a	-	n/a	-	n/a	-
	0.63	1.54	-	1.54	-	1.54	-	1.54	-	1.54	-
V _{R,k} [kN]	0.75	1.54	-	1.54	-	1.54	-	1.54	-	1.54	-
t _l [mm]	0.88	1.54	-	2.39	-	2.39	-	2.39	-	2.39	-
([· · · · ·]	1.00	1.54	-	2.39	-	2.39	-	2.39	-	2.39	-
	1.25	1.54	-	2.39	-	2.39	-	2.39	-	-	-
	1.50	1.54	-	2.39	-	2.39	-	-	-	-	-
	0.50	n/a	-	n/a	-	n/a	-	n/a	-	n/a	-
	0.55	n/a	-	n/a	-	n/a	-	n/a	-	n/a	-
	0.63	1.17	-	1.60	-	1.92	-	1.92	-	1.92	-
N _{R,k} [kN]	0.75	1.17	-	1.60	-	1.92	-	1.92	-	1.92	-
t _l [mm]	0.88	1.17	-	1.60	-	1.92	-	1.92	-	1.92	-
ci (i i i i i i j	1.00	1.17	-	1.60	-	1.92	-	1.92	-	1.92	-
	1.25	1.17	-	1.60	-	1.92	-	1.92	-	-	-
	1.50	1.17	-	1.60	-	1.92	-	-	-	-	-
N _{R,II,k} [kN]		1.1	7	1.6	0	1.9	2	n/a	a	n/a	a

Additional definitions

Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm

Annex 29

SD2-T16-6.3 x L

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English translation prepared by DIBt



≥ø16 Ø10,5 SW8 4,7 ↓ Ø12 ↓ 1,6 Ø12 ↓ 1,6 Ø12 ↓ 1,6 Ø12 ↓ 0,5 ↓ 0 ↓ 0 ↓ 0, ↓ 0 ↓ 0 ↓ 0 ↓ 0 ↓ 0, ↓ ↓	Materials Fastener: Washer: Component I: Component II: Drilling-capacity	Carbon steel with anticorrosion coating Carbon steel with anticorrosion coating with EPDM-seal S280GD to S450GD - EN 10346 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346 $\Sigma(t_l + t_{ll}) \leq 3.00 \text{ mm}$
1.25	1.50	t _{II} [mm] 1.75 2.00 2.50

		1.2	5	1.5	50	1.7	'5	2.0	0	2.5	0	
	0.50	1.57 ^a	ac	1.57 ^a	ac	1.57 ^a	ac	1.57 ^a	а	1.57 ^a	а	
	0.55	1.63 ^a	ac	1.63 ^a	ac	1.63 ^a	ac	1.63 ^a	а	-	-	
	0.63	1.72 ^a	ac	1.72 ^a	ac	1.72 ^a	а	1.72 ^a	а	-	-	
V _{R,k} [kN]	0.75	2.43 ^a	ac	2.43 ^a	ac	2.43 ^a	а	2.43 ^a	а	-	-	
t _i [mm]	0.88	2.92	-	3.11	-	3.30	-	3.49	а	-	-	
4 [1111]	1.00	3.37	-	3.73	-	4.10	-	4.46	а	-	-	
	1.25	3.89	-	4.07	-	4.10	-	-	-	-	-	
	1.50	4.40	-	4.40	-	-	-	-	-	-	-	
	0.50	1.53	ac	1.53	ac	1.53	ac	1.53	а	1.53	а	
	0.55	1.65	ac	1.71	ac	1.71	ac	1.71	а	-	-	
	0.63	1.65	ac	1.98	ac	1.98	а	1.98	а	-	-	
N _{R,k} [kN]	0.75	1.65	ac	2.16	ac	2.41	а	2.41	а	-	-	
t _i [mm]	0.88	1.65	-	2.16	-	2.60	-	2.86	а	-	-	
4 [1111]	1.00	1.65	-	2.16	-	2.60	-	3.03	а	-	-	
	1.25	1.65	-	2.16	-	2.60	-	-	-	-	-	
	1.50	1.65	-	2.16	-	-	-	-	-	-	-	
N _{R,II,k} [kN]	N _{R,II,k} [kN] 1.65 2.16		2.6	60	3.0	3	n/a					

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm

SD3-T16-4,8 x L, SD3-L12-T16-4,8 x L

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English translation prepared by DIBt



≥ø1 ø10, 2 ø4,8		V8 5,3	a 12 L 12	2 3,3	<u>Materials</u> Fastener: Washer: Component Component	Car with I: S28	bon steel v EPDM-se 0GD to S4 0GD to S4	with anticorr with anticorr al 150GD - EN 150GD - EN HX460LAD	osion coa 10346 10346	ting	
15	<u>ø3,4</u>	•		-	<u>Drilling-capa</u>	<u>city</u> Σ(tı	+ t _{II}) ≤ 3.50) mm			
						t _{II} [n	าm]				
		2 x 0	.63		2 x 0.75	2 x (0.88	2 x 1	.00	2 x 1	.25
	0.50	-	-	-	-	-	-	-	-	-	-
	0.55	-	-	-	-	-	-	-	-	-	-
V _{R,k} [kN]	0.63	1.64	-	1.6		1.64	-	1.64	-	1.64	-
WR,K [IVIN]	0.75	2.22	-	2.2		2.22	-	2.22	-	2.22	-
t _i [mm]	0.88	2.84	-	2.8		2.84	-	2.84	-	2.84	-
	1.00	2.87	-	2.9		3.06	-	3.06	-	3.06	-
	1.25	2.90	-	3.1		3.29	-	3.29	-	-	-
	1.50	2.90	-	3.1		3.29	-	3.29	-	-	-
	0.50	-	-	-	-	-	-	-	-	-	-
	0.55	-	-	-	-	-	-	-	-	-	-

1.98

2.41

2.58

2.58

2.58

2.58

2.58

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-

-

-

-

-

1.98

2.41

2.71

2.71

2.71

2.71

2.71

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-

-

-

-

-

Additional definitions

0.63

0.75

0.88

1.00

1.25

1.50

N_{R,k} [kN]

t_I [mm]

N_{R,II,k} [kN]

1.41

1.41

1.41

1.41

1.41

1.41

1.41

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-

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-

-

-

Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm

1.98

2.00

2.00

2.00

2.00

2.00

2.00

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Annex 31

1.98

2.41

2.71

2.71

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n/a

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SD3/15-T16-4,8 x L, SD3/15-L12-T16-4,8 x L

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English translation prepared by DIBt



≥ø1 ø10, 12 ø5,5 9	-	5,3	ø12 D1	3,3	<u>Materials</u> Fastener: Washer: Component Component I	Carl with I: S28 HX3	bon steel $(EPDM-set)$ 0GD to S ² 0GD to S ² 800LAD to + t ₁₁) ≤ 3.50	450GD - EN 450GD - EN HX460LAD	osion coa 10346 10346	ting	
		1.3	25		1.50	t _{ii} [m 1.7		2.0	00	2.5	0
	0.50	1.19	ac	1.1		1.19	ac	1.19	ac	1.19	ac
	0.55	1.30	-	1.3		1.30	-	1.30	ac	1.30	a
	0.63	1.47	-	1.4	-7 -	1.47	-	1.47	ac	1.47	а

		1.2	25	1.5	50	1.7	-	2.0	00	2.5	50
	0.50	1.19	ac	1.19	ac	1.19	ac	1.19	ac	1.19	ac
	0.55	1.30	-	1.30	-	1.30	-	1.30	ac	1.30	а
17 FL-NIT	0.63	1.47	-	1.47	-	1.47	-	1.47	ac	1.47	а
V _{R,k} [kN]	0.75	1.72	-	1.72	-	1.72	-	1.72	ac	1.72	а
t _i [mm]	0.88	2.49	-	2.62	-	2.75	-	2.87	а	2.87	а
4 []	1.00	3.20	-	3.45	-	3.70	-	3.94	а	3.94	а
	1.25	4.03	-	4.14	-	4.14	-	4.14	-	-	-
	1.50	4.82	-	4.82	-	4.82	-	4.82	-	-	-
	0.50	1.53	ac	1.53	ac	1.53	ac	1.53	ac	1.53	ac
	0.55	1.71	-	1.71	-	1.71	-	1.71	ac	1.71	а
	0.63	1.71	-	1.98	-	1.98	-	1.98	ac	1.98	а
N _{R,k} [kN]	0.75	1.71	-	2.36	-	2.41	-	2.41	ac	2.41	а
t _l [mm]	0.88	1.71	-	2.36	-	2.76	-	2.86	а	2.86	а
4 []	1.00	1.71	-	2.36	-	2.76	-	3.16	а	3.16	а
	1.25	1.71	-	2.36	-	2.76	-	3.16	-	-	-
	1.50	1.71	-	2.36	-	2.76	-	3.16	-	-	-
N _{R,II,k} [kN]	I _{R,II,k} [kN] 1.71 2.36		2.76		3.1	6	n/a				

Additional definitions

Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm

Annex 32

SD3-T16-5,5 x L, SD3-L12-T16-5.5 x L, SD3-D12-T16-5,5 x L

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	<u>Materials</u>	
Ø17,5 SW11	Fastener:	Carbon steel with anticorrosion coating with polyamide screw head
8,7	Washer:	-
	Component I:	S280GD to S450GD - EN 10346
<u>ø5,5</u> L	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
	Drilling-capacity	Σ(t _I + t _{II}) ≤ 3.50 mm
→ 04,3		

		t _{ii} [mm]										
		1.2	25	1.5	50	1.7	-	2.0	0	2.5	0	
	0.50	1.76	ac	1.90	ac	2.04	ac	2.04	ac	2.04	ac	
	0.55	1.76	-	1.90	-	2.04	-	2.04	-	2.04	-	
1/ PL-517	0.63	1.76	-	1.90	-	2.04	-	2.04	-	2.04	-	
V _{R,k} [kN]	0.75	1.76	-	1.90	-	2.04	-	2.04	-	2.04	-	
t _l [mm]	0.88	1.76	-	1.90	-	2.04	-	2.04	-	2.04	-	
., []	1.00	1.76	-	1.90	-	2.04	-	2.04	-	2.04	-	
	1.25	1.76	-	1.90	-	2.04	-	2.04	-	-	-	
	1.50	1.76	-	1.90	-	2.04	-	2.04	-	-	-	
	0.50	1.34	ac	1.64	ac	1.94	ac	1.94	ac	1.94	ac	
	0.55	1.34	-	1.64	-	1.94	-	1.94	-	1.94	-	
NI 71-NI7	0.63	1.34	-	1.64	-	1.94	-	1.94	-	1.94	-	
N _{R,k} [kN]	0.75	1.34	-	1.64	-	1.94	-	1.94	-	1.94	-	
t _l [mm]	0.88	1.34	-	1.64	-	1.94	-	1.94	-	1.94	-	
	1.00	1.34	-	1.64	-	1.94	-	1.94	-	1.94	-	
	1.25	1.34	-	1.64	-	1.94	-	1.94	-	-	-	
	1.50	1.34	-	1.64	-	1.94	-	1.94	-	-	-	
N _{R,II,k} [kN]		1.7	'1	2.3	36	2.7	76	3.1	6	n/a		

Additional definitions

For component I and II made of S320GD the indicated resistance values $N_{R,k}$ (and $N_{R,II,k}$) and $V_{R,k}$ may be increased by 8.3% and for component I and II made of S350GD to S450GD by 16.6%.

Self-drilling screw

SDP3-Z-5,5 x L

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-	9				<u>Materials</u> Fastener: Washer: Component Component Drilling-capa	Car with I: S28 II: S28 HX:	bon steel v EPDM-se 30GD to S4 30GD to S4	50GD - EN 50GD - EN HX460LAD	osion coa 10346 10346	ting	
	ø3,7										
				1		t _{ii} [n					
	0.50		25		1.50	1.		2.0		2.5	
	0.50	1.79	ac	1.79	ac	1.79	ac	1.79	ac	1.79	а
	0.55	1.92	ac	1.92	ac	1.92	ac	1.92	a	-	-
V _{R,k} [kN]	0.63	2.13	ac	2.13	ac	2.13	<u>a</u>	2.13	a	-	-
	0.75	2.44 2.57	ac -	2.44 2.57	ac	2.44 2.57	a	2.44 2.57	a	-	-
t _i [mm]	1.00	3.11	-	3.11	-	3.11	-	3.11	-	-	-
	1.25	3.72	-	3.72		3.72	-			-	-
	1.50	0.72		1.00		0.72					

1.90

2.12

2.47

3.00

3.42

3.42

3.42

-

3.42

ac

ac

а

а

-

-

-

-

1.90

2.12

2.47

3.00

3.47

3.90

-

-

3.90

ac

а

а

а

-

-

-

-

Additional definitions

1.50

0.50

0.55

0.63

0.75

0.88

1.00

1.25

1.50

N_{R,k} [kN]

t_I [mm]

N_{R,II,k} [kN]

4.33

1.90

2.12

2.18

2.18

2.18

2.18

2.18

2.18

2.18

ac

ac

ac

ac

-

-

-

-

Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm

4.33

1.90

2.12

2.47

2.93

2.93

2.93

2.93

2.93

2.93

ac

ac

ac

ac

-

-

-

-

Annex 34

SDL3-T16-5,5 x L, SDL3-L12-T16-5,5 x L

1.90

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n/a

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English translation prepared by DIBt



E.										
				<u>Materials</u>						
	<u>≥ø16</u>			Fastener:	Cart	on steel v	with anticorr	osion coa	ting	
	ø10,5 SV		2	Washer:		on steel v EPDM-se	with anticorr eal	osion coa	ting	
		5,3	3,3	Component I	: S28	0GD to S₄	450GD - EN	10346		
	2, 1,8			Component I			450GD - EN HX460LAD		46	
	ø6,3	ø12 D1								
	12		2,3	Drilling-capa	<u>city</u> Σ(t⊢	- t _{II}) ≤ 3.00	0 mm			
	ø4,3									
ŀ										
		1.25		1.50	t _{ii} [m 1.7		2.0	0	2.5	50
	0.50	1.61 ac	1.61	ac	1.61	ac	1.61	ac	1.61	a
	0.55	1.86 -	1.86	-	1.86	-	1.86	-	-	-
	0.63	2 27 -	2 27	-	2 27		2 27		-	-

	1.25 1.50		1.75		2.0	0	2.50				
	0.50	1.61	ac	1.61	ac	1.61	ac	1.61	ac	1.61	а
	0.55	1.86	-	1.86	-	1.86	-	1.86	-	-	-
	0.63	2.27	-	2.27	-	2.27	-	2.27	-	-	-
V _{R,k} [kN]	0.75	2.88	-	2.88	-	2.88	-	2.88	-	-	-
t _i [mm]	0.88	3.42	-	3.65	-	3.88	-	4.10	-	-	-
	1.00	3.92	-	4.36	-	4.80	-	5.23	-	-	-
	1.25	4.12	-	4.36	-	4.80	-	-	-	-	-
	1.50	4.32	-	4.36	-	-	-	-	-	-	-
	0.50	1.70	ac	1.70	ac	1.70	ac	1.70	ac	1.70	а
	0.55	1.93	-	1.93	-	1.93	-	1.93	-	-	-
	0.63	2.29	-	2.29	-	2.29	-	2.29	-	-	-
N _{R,k} [kN]	0.75	2.42	-	2.83	-	2.83	-	2.83	-	-	-
t _i [mm]	0.88	2.42	-	3.36	-	3.64	-	3.77	-	-	-
., []	1.00	2.42	-	3.36	-	3.64	-	3.91	-	-	-
	1.25	2.42	-	3.36	-	3.64	-	-	-	-	-
	1.50	2.42	-	3.36	-	-	-	-	-	-	-
N _{R,II,k} [kN]	R,II,k [kN] 2.42 3.36		3.64		3.91		n/a				

Additional definitions

Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm

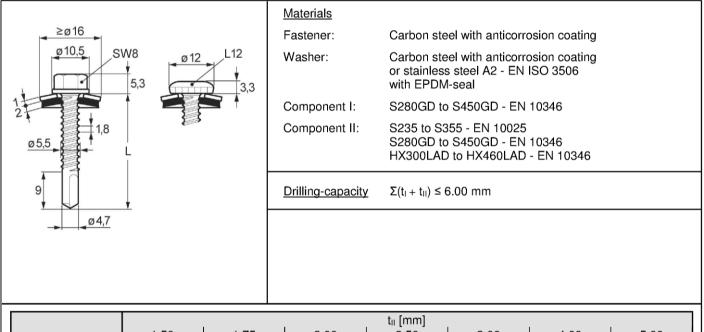
Annex 35

SD3-T16-6,3 x L, SD3-L12-T16-6.3 x L, SD3-D12-T16-6,3 x L

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		1.5	0	1.7	5	2.0	0	2.5	50	3.0	0	4.0	0	5.0	0
	0.50	1.57 ^a	ac	1.67 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac
	0.55	1.71 ^a	ac	1.79 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	а
	0.63	1.94 ^a	ac	1.99 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	а
V _{R,k} [kN]	0.75	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	а
t _i [mm]	0.88	2.86 ^a	ac	2.86 ^a	ac	2.86 ^a	ac	3.04 ^a	ac	3.27 ^a	ac	3.27 ^a	ac	3.27 ^a	а
	1.00	3.43	ac	3.43	ac	3.43	ac	3.74	ac	4.18	ac	4.18	ac	4.18	а
	1.25	3.43	-	3.87	-	4.31	-	5.20	-	6.08	ac	6.08	а	-	-
	1.50	3.43	-	3.87	-	4.31	-	5.20	-	6.08	-	6.08	-	-	-
	0.50	1.53	ac	1.53	ac	1.53	ac	1.53	ac	1.53	ac	1.53	ac	1.53	ac
	0.55	1.71	ac	1.71	ac	1.71	ac	1.71	ac	1.71	ac	1.71	ac	1.71	а
N. 11-NI3	0.63	1.98	ac	1.98	ac	1.98	ac	1.98	ac	1.98	ac	1.98	ac	1.98	а
N _{R,k} [kN]	0.75	2.20	ac	2.41	ac	2.41	ac	2.41	ac	2.41	ac	2.41	ac	2.41	а
t _i [mm]	0.88	2.20	ac	2.70	ac	2.86	ac	2.86	ac	2.86	ac	2.86	ac	2.86	а
	1.00	2.20	ac	2.70	ac	3.20	ac	3.29	ac	3.29	ac	3.29	ac	3.29	а
	1.25	2.20	-	2.70	-	3.20	-	4.10	-	4.10	ac	4.10	а	-	-
	1.50	2.20	-	2.70	-	3.20	-	4.30	-	5.00	-	5.00	-	-	-
N _{R,II,k} [kN]		2.2	20	2.7	0	3.2	3.20 4		4.30		0	n/a		n/a	

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm

Annex 36

SD6-T16-5,5 x L, SD6-L12-T16-5,5 x L, SD6-S16-5,5 x L, SD6-L12-S16-5,5 x L

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English translation prepared by DIBt



	Materials	
	Fastener:	Carbon steel with anticorrosion coating
H15	Washer:	-
5,5	Component I:	S280GD to S450GD - EN 10346
ø 5,5	Component II:	S235 to S355 - EN 10025 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
e le	Drilling-capacity	$\Sigma(t_i + t_{ii}) \leq 6.00 \text{ mm}$
ø4,7		
	•	+ [mmm]

								t _{ii} [m	ım]						
		1.5	50	1.7	5	2.0	0	2.5	0	3.0	0	4.0	0	5.0	0
	0.50	1.57 ^a	ac	1.67 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac
	0.55	1.71 ^a	ac	1.79 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	а
V	0.63	1.94 ^a	ac	1.99 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	ac	2.03 ^a	а
V _{R,k} [kN]	0.75	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	ac	2.28 ^a	а
t _i [mm]	0.88	2.86 ^a	ac	2.86 ^a	ac	2.86 ^a	ac	3.04 ^a	ac	3.27 ^a	ac	3.27 ^a	ac	3.27 ^a	а
([f f f f f f f f f f f f f f f f f f	1.00	3.43	ac	3.43	ac	3.43	ac	3.74	ac	4.18	ac	4.18	ac	4.18	а
	1.25	3.43	-	3.87	-	4.31	-	5.20	-	6.08	ac	6.08	а	-	-
	1.50	3.43	-	3.87	-	4.31	-	5.20	-	6.08	-	6.08	-	-	-
	0.50	1.15	ac	1.15	ac	1.15	ac	1.15	ac	1.15	ac	1.15	ac	1.15	ac
	0.55	1.28	ac	1.28	ac	1.28	ac	1.28	ac	1.28	ac	1.28	ac	1.28	а
NI 71-NI3	0.63	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	а
N _{R,k} [kN]	0.75	2.20	ac	2.70	ac	3.20	ac	3.20	ac	3.20	ac	3.20	ac	3.20	а
t _i [mm]	0.88	2.20	ac	2.70	ac	3.20	ac	4.00	ac	4.00	ac	4.00	ac	4.00	а
	1.00	2.20	ac	2.70	ac	3.20	ac	4.30	ac	4.80	ac	4.80	ac	4.80	а
	1.25	2.20	-	2.70	-	3.20	-	4.30	-	5.40	ac	5.60	а	-	-
	1.50	2.20	-	2.70	-	3.20	-	4.30	-	5.40	-	5.80	-	-	-
N _{R,II,k} [kN]		2.2	20	2.7	0	3.2	20	4.3	0	5.4	-0	n/a	a	n/a	a

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

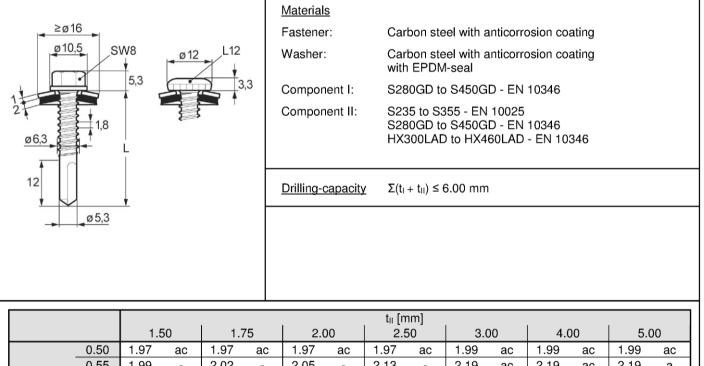
Self-drilling screw

SD6-H15-5,5 x L

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								. en L.,							
		1.5	50	1.7	'5	2.0	0	2.5	50	3.0	00	4.0	00	5.0	0
	0.50	1.97	ac	1.97	ac	1.97	ac	1.97	ac	1.99	ac	1.99	ac	1.99	ac
	0.55	1.99	-	2.02	-	2.05	-	2.13	-	2.19	ac	2.19	ac	2.19	а
	0.63	2.27	-	2.31	-	2.35	-	2.44	-	2.51	ac	2.51	ac	2.51	а
V _{R,k} [kN]	0.75	2.71	-	2.76	-	2.80	-	2.90	-	2.99	ac	2.99	ac	2.99	а
t _i [mm]	0.88	3.18	-	3.27	-	3.36	-	3.54	-	3.72	ac	3.72	ac	3.72	а
([f i i i i j	1.00	3.61	-	3.74	-	3.87	-	4.13	-	4.39	ac	4.39	ac	4.39	а
	1.25	3.61	-	3.74	-	3.87	-	4.13	-	4.39	-	4.39	-	-	-
	1.50	3.61	-	3.74	-	3.87	-	4.13	-	4.39	-	4.39	-	-	-
	0.50	1.95	ac	1.95	ac	1.95	ac	1.95	ac	1.95	ac	1.95	ac	1.95	ac
	0.55	2.13	-	2.33	-	2.33	-	2.33	-	2.33	ac	2.33	ac	2.33	а
	0.63	2.13	-	2.66	-	2.93	-	2.93	-	2.93	ac	2.93	ac	2.93	а
N _{R,k} [kN]	0.75	2.13	-	2.66	-	3.20	-	3.83	-	3.83	ac	3.83	ac	3.83	а
t _l [mm]	0.88	2.13	-	2.66	-	3.20	-	4.59	-	4.59	ac	4.59	ac	4.59	а
	1.00	2.13	-	2.66	-	3.20	-	4.63	-	5.29	ac	5.29	ac	5.29	а
	1.25	2.13	-	2.66	-	3.20	-	4.63	-	5.29	-	5.29	-	-	-
	1.50	2.13	-	2.66	-	3.20	-	4.63	-	5.29	-	5.29	-	-	-
N _{R,II,k} [kN]		2.1	3	2.6	6	3.2	20	4.6	63	5.2	29	n/a	a	n/a	a

Additional definitions

Self-drilling screw with sealing washer $\ge \emptyset$ 16 mm

SD6-T16-6,3 x L, SD6-L12-T16-6,3 x L

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English translation prepared by DIBt



	<u>Materials</u>	
	Fastener:	Carbon steel with anticorrosion coating
● ^{Ø15} H15	Washer:	-
5,5	Component I:	S280GD to S450GD - EN 10346
<u>ø5,5</u> L	Component II:	S235 to S355 - EN 10025 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
12	Drilling-capacity	$\Sigma(t_i + t_{ii}) \leq 8.00 \text{ mm}$
<u>→</u> Ø4,8		

								t _{ii} [m	ım]						
		2.0)0	2.5	0	3.0	00	4.0	00	5.0	00	6.0	0	7.0	0
	0.50	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^{a)}	ac
	0.55	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^{a)}	а
V	0.63	2.40	ac	2.40	ac	2.80	ac	2.80	ac	3.00	ac	3.00	ac	3.00	а
V _{R,k} [kN]	0.75	2.80	ac	2.80	ac	3.40	ac	3.40	ac	3.40	ac	3.60	ac	3.60	а
t _l [mm]	0.88	3.20	-	3.20	-	4.00	ac	4.00	ac	4.20	ac	4.20	ac	4.20	а
q [1111]	1.00	3.80	-	3.80	-	4.40	-	4.60	ac	4.80	ac	4.80	ac	4.80	а
	1.25	4.80	-	4.80	-	5.80	-	5.80	-	6.00	-	6.40	-	-	-
	1.50	5.20	-	5.20	-	6.40	-	6.40	-	7.00	-	7.20	-	-	-
	0.50	1.15	ac	1.15	ac	1.15	ac	1.15	ac	1.15	ac	1.15	ac	1.15	ac
	0.55	1.28	ac	1.28	ac	1.28	ac	1.28	ac	1.28	ac	1.28	ac	1.28	а
NI FI-NIT	0.63	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	а
N _{R,k} [kN]	0.75	3.20	ac	3.20	ac	3.20	ac	3.20	ac	3.20	ac	3.20	ac	3.20	а
t _l [mm]	0.88	3.20	-	4.00	-	4.00	ac	4.00	ac	4.00	ac	4.00	ac	4.00	а
q [1111]	1.00	3.20	-	4.30	-	4.80	-	4.80	ac	4.80	ac	4.80	ac	4.80	а
	1.25	3.20	-	4.30	-	5.40	-	5.60	-	5.60	-	5.60	-	-	-
	1.50	3.20	-	4.30	-	5.40	-	5.80	-	6.00	-	6.00	-	-	-
N _{R,II,k} [kN]		3.2	20	4.3	0	5.4	0	n/a	a	n/:	a	n/a	a	n/a	a

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

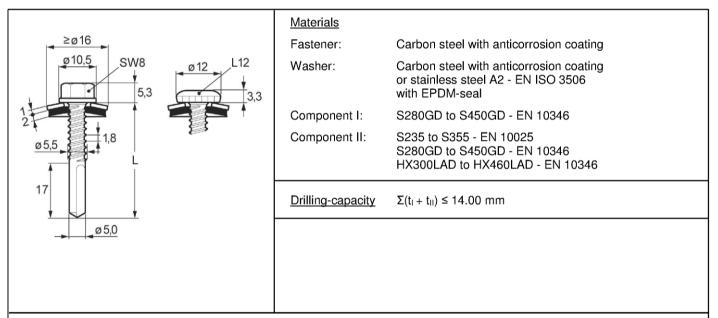
Self-drilling screw

SD8-H15-5,5 x L

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							t _{II} [r	nm]					
		4.0	00	5.0	0	6.0	00	8.0	00	10.	00	12.	00
	0.50	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^{a)}	ac
	0.55	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^{a)}	ac
V PLAN	0.63	2.63	ac	2.63	ac	2.63	ac	2.63	ac	2.63	ac	2.63	ac
V _{R,k} [kN]	0.75	5.25	ac	5.25	ac	5.25	ac	5.25	ac	5.25	ac	5.25	ac
t _l [mm]	0.88	6.22	ac	6.35	ac	6.49	ac	6.49	ac	6.49	ac	6.49	ac
., []	1.00	7.19	ac	7.46	ac	7.72	ac	7.72	ac	7.72	ac	7.72	ac
	1.25	7.19	-	7.46	-	7.72	-	8.22	-	8.22	-	8.22	-
	1.50	7.19	-	7.46	-	7.72	-	8.72	-	8.72	-	8.72	-
	0.50	1.53	ac	1.53	ac	1.53	ac	1.53	ac	1.53	ac	1.53	ac
	0.55	1.71	ac	1.71	ac	1.71	ac	1.71	ac	1.71	ac	1.71	ac
N. 71-N.17	0.63	1.98	ac	1.98	ac	1.98	ac	1.98	ac	1.98	ac	1.98	ac
N _{R,k} [kN]	0.75	2.41	ac	2.41	ac	2.41	ac	2.41	ac	2.41	ac	2.41	ac
t _i [mm]	0.88	2.86	ac	2.86	ac	2.86	ac	2.86	ac	2.86	ac	2.86	ac
a (ining	1.00	3.29	ac	3.29	ac	3.29	ac	3.29	ac	3.29	ac	3.29	ac
	1.25	4.10	-	4.10	-	4.10	-	4.10	-	4.10	-	4.10	-
	1.50	5.00	-	5.00	-	5.00	-	5.00	-	5.00	-	5.00	-
N _{R,II,k} [kN]		6.9	9	8.7	'5	9.6	62	n/a	a	n/:	a	n/:	a

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

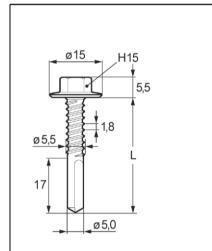
Self-drilling screw with sealing washer $\ge Ø$ 16 mm

SD14-T16-5,5 x L, SD14-L12-T16-5,5 x L, SD14-S16-5,5 x L, SD14-L12-S16-5,5 x L

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English translation prepared by DIBt





Materials	
Fastener:	Carbon steel with anticorrosion coating
Washer:	-
Component I:	S280GD to S450GD - EN 10346
Component II:	S235 to S355 - EN 10025 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
Drilling-capacity	$\Sigma(t_{I} + t_{II}) \leq 14.00 \text{ mm}$

							t _{ii} [r	nm]					
		4.0	00	5.0	00	6.0	0	8.0	00	10.	00	12.	00
	0.50	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac
	0.55	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac
	0.63	2.63	ac	2.63	ac	2.63	ac	2.63	ac	2.63	ac	2.63	ac
V _{R,k} [kN]	0.75	5.25	ac	5.25	ac	5.25	ac	5.25	ac	5.25	ac	5.25	ac
t _i [mm]	0.88	6.22	ac	6.35	ac	6.49	ac	6.49	ac	6.49	ac	6.49	ac
4 [1111]	1.00	7.19	ac	7.46	ac	7.72	ac	7.72	ac	7.72	ac	7.72	ac
	1.25	7.19	-	7.46	-	7.72	-	8.22	-	8.22	-	8.22	-
	1.50	7.19	-	7.46	-	7.72	-	8.72	-	8.72	-	8.72	-
	0.50	1.15	ac	1.15	ac	1.15	ac	1.15	ac	1.15	ac	1.15	ac
	0.55	1.28	ac	1.28	ac	1.28	ac	1.28	ac	1.28	ac	1.28	ac
NI 71-NI	0.63	2.00	ac	2.00	ac	2.00	ac	2.00	ac	2.00	ac	2.00	ac
N _{R,k} [kN]	0.75	2.90	ac	2.90	ac	2.90	ac	2.90	ac	2.90	ac	2.90	ac
t _i [mm]	0.88	3.62	ac	3.62	ac	3.62	ac	3.62	ac	3.62	ac	3.62	ac
4 [1111]	1.00	4.33	ac	4.33	ac	4.33	ac	4.33	ac	4.33	ac	4.33	ac
	1.25	6.13	-	6.13	-	6.13	-	6.13	-	6.13	-	6.13	-
	1.50	6.99	-	8.75	-	9.62	-	9.62	-	9.62	-	9.62	-
N _{R,II,k} [kN]		6.9	9	8.7	75	9.6	2	n/	a	n/a	a	n/a	a

Additional definitions

Index ^a: For component I made of S320GD to S450GD the resistance value may be increased by 8.3%.

Self-drilling screw

SD14-H15-5,5 x L

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English translation prepared by DIBt



Ø10,5	SW8 4,7 1,3 L	Ø12 D12 2,	Fastener: Washer: 3 Component I: Component II:	- S280GD to S4 S280GD to S4	with anticorrosion coa 450GD - EN 10346 450GD - EN 10346 HX460LAD - EN 103	-
	•		Drilling-capaci	$\underline{ty} \qquad \Sigma(t_{I} + t_{II}) \leq 2.56$	0 mm	
		0.00	0.75	t _{ii} [mm]		
	0.62	0.63	0.75	0.88	1.00	1.25
	0.63	1.48	1.48	0.88	1.48	1.48
V _{R,k} [kN]	0.75	1.48 1.48	1.48 2.90	0.88 1.48 2.90	1.48 2.90	1.48 2.90
	0.75 0.88	1.48 1.48 1.48	1.48 2.90 2.90	0.88 1.48 2.90 3.78	1.48 2.90 3.78	1.48 2.90 3.78
V_{R,k} [kN] t _i [mm]	0.75 0.88 1.00	1.48 1.48 1.48 1.48 1.48	1.48 2.90 2.90 2.90	0.88 1.48 2.90 3.78 3.78	1.48 2.90 3.78 4.59	1.48 2.90 3.78 4.59
	0.75 0.88 1.00 1.25	1.48 1.48 1.48 1.48 1.48 1.48	1.48 2.90 2.90 2.90 2.90 2.90	0.88 1.48 2.90 3.78 3.78 3.78 3.78	1.48 2.90 3.78 4.59 4.59	1.48 2.90 3.78 4.59 4.59
t _i [mm]	0.75 0.88 1.00 1.25 0.63	1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48	1.48 2.90 2.90 2.90 2.90 1.34	0.88 1.48 2.90 3.78 3.78 3.78 1.65	1.48 2.90 3.78 4.59 4.59 1.88	1.48 2.90 3.78 4.59 4.59 1.88
t _i [mm]	0.75 0.88 1.00 1.25 0.63 0.75	1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.16 1.16	1.48 2.90 2.90 2.90 2.90 1.34 1.34	0.88 1.48 2.90 3.78 3.78 3.78 1.65 1.65	1.48 2.90 3.78 4.59 4.59 1.88 1.94	1.48 2.90 3.78 4.59 4.59 1.88 2.35
t _i [mm] N _{R,k} [kN]	0.75 0.88 1.00 1.25 0.63 0.75 0.88	1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.16 1.16 1.16	1.48 2.90 2.90 2.90 2.90 1.34 1.34 1.34 1.34	0.88 1.48 2.90 3.78 3.78 3.78 1.65 1.65 1.65 1.65	1.48 2.90 3.78 4.59 4.59 1.88 1.94 1.94	1.48 2.90 3.78 4.59 4.59 1.88 2.35 2.35
V _{R.k} [kN] t _i [mm] N _{R,k} [kN] t _i [mm]	0.75 0.88 1.00 1.25 0.63 0.75	1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.16 1.16	1.48 2.90 2.90 2.90 2.90 1.34 1.34	0.88 1.48 2.90 3.78 3.78 3.78 1.65 1.65	1.48 2.90 3.78 4.59 4.59 1.88 1.94	1.48 2.90 3.78 4.59 4.59 1.88 2.35

Additional definitions

Self-drilling screw

CDM-4,8 x L, CDM-D12-4,8 x L

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English translation prepared by DIBt



				<u>Materials</u>				
_≥ø14	1			Fastener:	Carbon ste	el with anticorro	osion coating	
ø10,5				Washer:	Aluminum with EPDM	alloy - EN 573 1-seal		
	1	4,7		Component I:	S280GD to	S450GD - EN	10346	
				Component II:	S280GD to) S450GD - EN	10346	
<u>ø4,8</u>	1,3 ▲ L	-		component II.		to HX460LAD		
		<u>_</u>		Drilling-capacity	$\Sigma(t_{I} + t_{II}) \leq 2$	2.00 mm		
					t _{ii} [mm]			
		0.40	0.50	0.55	t∥ [mm] 0.63	0.75	0.88	1.00
	0.40	0.40 0.74	0.50	0.55		0.75	0.88 0.74	1.00
	0.40				0.63			
V _{R.k} [kN]		0.74	0.74	0.74	0.63 0.74	0.74	0.74	0.74
V _{R,k} [kN]	0.50	0.74 0.74	0.74 0.94	0.74 0.94	0.63 0.74 0.94	0.74 0.94	0.74 0.94	0.74 0.94
V_{в,к} [кN] t _i [mm]	0.50 0.55	0.74 0.74 0.74	0.74 0.94 0.94	0.74 0.94 1.06	0.63 0.74 0.94 1.06	0.74 0.94 1.06	0.74 0.94 1.06	0.74 0.94 1.06
	0.50 0.55 0.63	0.74 0.74 0.74 0.74	0.74 0.94 0.94 0.94	0.74 0.94 1.06 1.06	0.63 0.74 0.94 1.06 1.25	0.74 0.94 1.06 1.25	0.74 0.94 1.06 1.25	0.74 0.94 1.06 1.25
	0.50 0.55 0.63 0.75	0.74 0.74 0.74 0.74 0.74	0.74 0.94 0.94 0.94 0.94 0.94	0.74 0.94 1.06 1.06 1.06	0.63 0.74 0.94 1.06 1.25 1.25	0.74 0.94 1.06 1.25 2.29	0.74 0.94 1.06 1.25 2.29	0.74 0.94 1.06 1.25 2.29
	0.50 0.55 0.63 0.75 0.88	0.74 0.74 0.74 0.74 0.74 0.74	0.74 0.94 0.94 0.94 0.94 0.94	0.74 0.94 1.06 1.06 1.06 1.06	0.63 0.74 0.94 1.06 1.25 1.25 1.25	0.74 0.94 1.06 1.25 2.29 2.29	0.74 0.94 1.06 1.25 2.29 2.98	0.74 0.94 1.06 1.25 2.29 2.98
	0.50 0.55 0.63 0.75 0.88 1.00	0.74 0.74 0.74 0.74 0.74 0.74 0.74 0.74	0.74 0.94 0.94 0.94 0.94 0.94 0.94 0.94	0.74 0.94 1.06 1.06 1.06 1.06 1.06	0.63 0.74 0.94 1.06 1.25 1.25 1.25 1.25 1.25	0.74 0.94 1.06 1.25 2.29 2.29 2.29 2.29	0.74 0.94 1.06 1.25 2.29 2.98 2.98	0.74 0.94 1.06 1.25 2.29 2.98 3.61
tı [mm]	0.50 0.55 0.63 0.75 0.88 1.00 0.40	0.74 0.74 0.74 0.74 0.74 0.74 0.74 0.74	0.74 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.89	0.74 0.94 1.06 1.06 1.06 1.06 1.06 1.06 1.00	0.63 0.74 0.94 1.06 1.25 1.25 1.25 1.25 1.25 1.25 1.16	0.74 0.94 1.06 1.25 2.29 2.29 2.29 2.29 1.34	0.74 0.94 1.06 1.25 2.29 2.98 2.98 2.98 1.58	0.74 0.94 1.06 1.25 2.29 2.98 3.61 1.58
t _i [mm] N _{R,k} [kN]	0.50 0.55 0.63 0.75 0.88 1.00 0.40 0.50	0.74 0.74 0.74 0.74 0.74 0.74 0.74 0.74	0.74 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.89 0.89	0.74 0.94 1.06 1.06 1.06 1.06 1.06 1.06 1.00 1.00	0.63 0.74 0.94 1.06 1.25 1.25 1.25 1.25 1.25 1.16 1.16	0.74 0.94 1.06 1.25 2.29 2.29 2.29 2.29 1.34 1.34	0.74 0.94 1.06 1.25 2.29 2.98 2.98 1.58 1.65	0.74 0.94 1.06 1.25 2.29 2.98 3.61 1.58 1.77
tı [mm]	0.50 0.55 0.63 0.75 0.88 1.00 0.40 0.50 0.55	0.74 0.74 0.74 0.74 0.74 0.74 0.74 0.74	0.74 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.89 0.89 0.89	0.74 0.94 1.06 1.06 1.06 1.06 1.06 1.00 1.00 1.00	0.63 0.74 0.94 1.06 1.25 1.25 1.25 1.25 1.25 1.16 1.16 1.16	0.74 0.94 1.06 1.25 2.29 2.29 2.29 2.29 1.34 1.34 1.34	0.74 0.94 1.06 1.25 2.29 2.98 2.98 1.58 1.65 1.65	0.74 0.94 1.06 1.25 2.29 2.98 3.61 1.58 1.77 1.94
t _i [mm] N _{R,k} [kN]	0.50 0.55 0.63 0.75 0.88 1.00 0.40 0.50 0.55 0.63	0.74 0.74 0.74 0.74 0.74 0.74 0.74 0.74	0.74 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.89 0.89 0.89 0.89	0.74 0.94 1.06 1.06 1.06 1.06 1.06 1.00 1.00 1.00	0.63 0.74 0.94 1.06 1.25 1.25 1.25 1.25 1.25 1.16 1.16 1.16 1.16 1.16	0.74 0.94 1.06 1.25 2.29 2.29 2.29 2.29 1.34 1.34 1.34	0.74 0.94 1.06 1.25 2.29 2.98 2.98 1.58 1.65 1.65 1.65	0.74 0.94 1.06 1.25 2.29 2.98 3.61 1.58 1.77 1.94 1.94
t _i [mm] N _{R,k} [kN]	0.50 0.55 0.63 0.75 0.88 1.00 0.40 0.50 0.55 0.63 0.75	0.74 0.74 0.74 0.74 0.74 0.74 0.74 0.69 0.69 0.69 0.69 0.69	0.74 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.89 0.89 0.89 0.89 0.89	0.74 0.94 1.06 1.06 1.06 1.06 1.06 1.00 1.00 1.00	0.63 0.74 0.94 1.06 1.25 1.25 1.25 1.25 1.25 1.16 1.16 1.16 1.16 1.16 1.16	0.74 0.94 1.06 1.25 2.29 2.29 2.29 2.29 1.34 1.34 1.34 1.34 1.34	0.74 0.94 1.06 1.25 2.29 2.98 2.98 1.58 1.65 1.65 1.65 1.65	0.74 0.94 1.06 1.25 2.29 2.98 3.61 1.58 1.77 1.94 1.94 1.94

Additional definitions

Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm

SLG-T-A14-4,8 x L

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English translation prepared by DIBt



≥ø14 ø10,5 ø4,8 5	5W 1,6	/8 4,7		Comp	ner:	Aluminum with EPDI S280GD t S280GD t	to S450GD to S450GD D to HX460	573 - EN 10346 - EN 10346	Ū	
		0.40	0.50	0.55	0.63	t _∥ [mm] 0.75	0.88	1.00	1.25	1.50
	0.40	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
-	0.50	0.58	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
_	0.55	0.58	0.69	0.80	0.80	0.80	0.80	0.80	0.80	0.80
V _{R,k} [kN]	0.63	0.58	0.69	0.80	0.98	0.98	0.98	0.98	0.98	0.98
- [] -	0.75	0.58	0.69	0.80	0.98	1.26	1.26	1.26	1.26	1.26
t _I [mm]	0.88	0.58	0.69	0.80	0.98	1.26	1.82	1.82	1.82	1.82
-	1.00	0.58	0.69	0.80	0.98	1.26	1.82	2.35	2.35	2.35
-	1.25 1.50	0.58	0.69	0.80	0.98 0.98	1.26	1.82 1.82	2.35 2.35	2.35	-
	0.40	0.58	0.69	0.80	0.98	1.26 1.00	1.82	1.09	- 1.09	- 1.09
-	0.40	0.30	0.42	0.49	0.80	1.00	1.40	1.70	1.92	1.09
-	0.55	0.30	0.42	0.49	0.80	1.00	1.40	1.70	2.10	2.10
- N _{R,k} [kN]	0.63	0.30	0.42	0.49	0.80	1.00	1.40	1.70	2.10	2.10
	0.75	0.30	0.42	0.49	0.80	1.00	1.40	1.70	2.10	2.10
t _i [mm]	0.88	0.30	0.42	0.49	0.80	1.00	1.40	1.70	2.10	2.10
	1.00	0.30	0.42	0.49	0.80	1.00	1.40	1.70	2.10	2.10
	1.25	0.30	0.42	0.49	0.80	1.00	1.40	1.70	2.10	-
_	1.50	0.30	0.42	0.49	0.80	1.00	1.40	1.70	-	-
	1.00	0.30	0.42	0.49	0.80	1.00	1.40	1.70	2.10	n/a

Additional definitions

Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm

Annex 44

SL2-T-A14-4,8 x L

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English translation prepared by DIBt



			Mat	<u>erials</u>			
			Fas	tener: Ca	rbon steel with an	ticorrosion coating	
ø10,5	,SW	/8	Was	sher: -			
	1	4,7	Con	nponent I: S2	80GD to S450GD	- EN 10346	
Ø4,8	1,6	-	Con		80GD to S450GD 300LAD to HX460		
5	ø2,8	<u>_</u>	Drill	<u>ing-capacity</u> Σ(t	ı + t _{II}) ≤ 2.50 mm		
				+ [mml		
		0.63	0.75		mm]	1 25	1.50
	0.63	0.63	0.75	0.88	1.00	1.25	1.50
	0.63	1.40	1.40	0.88	1.00 2.40	2.40	2.40
V _{R,k} [kN]	0.75	1.40 1.40	1.40 1.90	0.88 1.90 1.90	1.00 2.40 2.60	2.40 2.60	2.40 2.60
		1.40	1.40	0.88	1.00 2.40	2.40	2.40
V_{R,k} [kN] t _i [mm]	0.75 0.88	1.40 1.40 1.80	1.40 1.90 1.90	0.88 1.90 1.90 2.80	1.00 2.40 2.60 2.80	2.40 2.60 2.80	2.40 2.60 2.80
	0.75 0.88 1.00	1.40 1.40 1.80 2.10	1.40 1.90 1.90 2.50	0.88 1.90 1.90 2.80 2.80	1.00 2.40 2.60 2.80 3.60	2.40 2.60 2.80 3.60	2.40 2.60 2.80 3.60
	0.75 0.88 1.00 1.25	1.40 1.40 1.80 2.10 2.10	1.40 1.90 1.90 2.50 2.50	0.88 1.90 2.80 2.80 2.80 2.80	1.00 2.40 2.60 2.80 3.60 3.60	2.40 2.60 2.80 3.60 3.60	2.40 2.60 2.80 3.60 -
t _i [mm]	0.75 0.88 1.00 1.25 1.50	1.40 1.40 1.80 2.10 2.10 2.10	1.40 1.90 2.50 2.50 2.50 2.50	0.88 1.90 2.80 2.80 2.80 2.80 2.80	1.00 2.40 2.60 2.80 3.60 3.60 3.60 3.60	2.40 2.60 2.80 3.60 3.60 -	2.40 2.60 2.80 3.60 - -
	0.75 0.88 1.00 1.25 1.50 0.63	1.40 1.40 1.80 2.10 2.10 2.10 0.80	1.40 1.90 2.50 2.50 2.50 2.50 1.00	0.88 1.90 2.80 2.80 2.80 2.80 2.80 1.40	1.00 2.40 2.60 2.80 3.60 3.60 3.60 1.70	2.40 2.60 2.80 3.60 3.60 - 2.10	2.40 2.60 2.80 3.60 - - 2.10
t _i [mm] N _{R,k} [kN]	0.75 0.88 1.00 1.25 1.50 0.63 0.75	1.40 1.40 2.10 2.10 2.10 0.80 0.80	1.40 1.90 2.50 2.50 2.50 1.00 1.00	0.88 1.90 2.80 2.80 2.80 2.80 2.80 1.40 1.40	1.00 2.40 2.60 2.80 3.60 3.60 1.70 1.70	2.40 2.60 2.80 3.60 - 2.10 2.10	2.40 2.60 2.80 3.60 - - 2.10 2.10
t _i [mm]	0.75 0.88 1.00 1.25 1.50 0.63 0.75 0.88	1.40 1.40 1.80 2.10 2.10 2.10 0.80 0.80 0.80 0.80	1.40 1.90 2.50 2.50 2.50 1.00 1.00 1.00	0.88 1.90 2.80 2.80 2.80 2.80 2.80 1.40 1.40 1.40	1.00 2.40 2.60 2.80 3.60 3.60 1.70 1.70 1.70	2.40 2.60 2.80 3.60 - 2.10 2.10 2.10 2.10	2.40 2.60 2.80 3.60 - - 2.10 2.10 2.10 2.10
t _i [mm] N _{R,k} [kN]	0.75 0.88 1.00 1.25 1.50 0.63 0.75 0.88 1.00	1.40 1.40 1.80 2.10 2.10 2.10 0.80 0.80 0.80 0.80 0.80	1.40 1.90 2.50 2.50 2.50 1.00 1.00 1.00 1.00	0.88 1.90 2.80 2.80 2.80 2.80 2.80 1.40 1.40 1.40 1.40	1.00 2.40 2.60 2.80 3.60 3.60 1.70 1.70 1.70 1.70 1.70	2.40 2.60 2.80 3.60 - 2.10 2.10 2.10 2.10 2.10	2.40 2.60 2.80 3.60 - - 2.10 2.10 2.10 2.10

Additional definitions

Self-drilling screw

Annex 45

SL2-4,8 x L

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English translation prepared by DIBt



			Ma	terials			
			Fa	stener: Ca	arbon steel with an	ticorrosion coating	
ø15		5	Wa	sher: -			
			Co	mponent I: Sa	280GD to S450GD	- EN 10346	
		6					
Ø6,3	1,8		Co		280GD to S450GD X300LAD to HX460		
7	ø 3,9	_	Dri	ling-capacity Σ((t _l + t _{ll}) ≤ 2.50 mm		
				tu	ſmml		
		0.63	0.75		[mm] 1.00	1.25	1.50
	0.63	0.63	0.75	t _{II} 0.88 1.10	[mm] 1.00 1.30	1.25	1.50
	0.63			0.88	1.00		
V _{R,k} [kN]		0.90	1.00	0.88	1.00 1.30	1.60	1.60
	0.75	0.90 0.90	1.00 2.70	0.88 1.10 2.70	1.00 1.30 2.70	1.60 2.70	1.60 2.70
V_{R,k} [kN] t _i [mm]	0.75 0.88	0.90 0.90 0.90	1.00 2.70 2.70	0.88 1.10 2.70 3.60	1.00 1.30 2.70 3.60	1.60 2.70 3.60	1.60 2.70 3.60
	0.75 0.88 1.00	0.90 0.90 0.90 0.90	1.00 2.70 2.70 2.70 2.70	0.88 1.10 2.70 3.60 3.60	1.00 1.30 2.70 3.60 3.90	1.60 2.70 3.60 4.10	1.60 2.70 3.60 4.10
	0.75 0.88 1.00 1.25	0.90 0.90 0.90 0.90 0.90	1.00 2.70 2.70 2.70 2.70 2.70	0.88 1.10 2.70 3.60 3.60 3.60	1.00 1.30 2.70 3.60 3.90 3.90	1.60 2.70 3.60 4.10 4.10	1.60 2.70 3.60 4.10 -
t _i [mm]	0.75 0.88 1.00 1.25 1.50	0.90 0.90 0.90 0.90 0.90 0.90	1.00 2.70 2.70 2.70 2.70 2.70 2.70	0.88 1.10 2.70 3.60 3.60 3.60 3.60 3.60	1.00 1.30 2.70 3.60 3.90 3.90 3.90	1.60 2.70 3.60 4.10 4.10 -	1.60 2.70 3.60 4.10 - -
	0.75 0.88 1.00 1.25 1.50 0.63	0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.80	1.00 2.70 2.70 2.70 2.70 2.70 2.70 1.10	0.88 1.10 2.70 3.60 3.60 3.60 3.60 1.40	1.00 1.30 2.70 3.60 3.90 3.90 3.90 1.60	1.60 2.70 3.60 4.10 4.10 - 2.10	1.60 2.70 3.60 4.10 - - 2.10
t _i [mm] N _{R,k} [kN]	0.75 0.88 1.00 1.25 1.50 0.63 0.75	0.90 0.90 0.90 0.90 0.90 0.90 0.80 0.80	1.00 2.70 2.70 2.70 2.70 2.70 1.10 1.10	0.88 1.10 2.70 3.60 3.60 3.60 1.40 1.40	1.00 1.30 2.70 3.60 3.90 3.90 1.60 1.60	1.60 2.70 3.60 4.10 4.10 - 2.10 2.10	1.60 2.70 3.60 4.10 - - 2.10 2.10
t _i [mm]	0.75 0.88 1.00 1.25 1.50 0.63 0.75 0.88	0.90 0.90 0.90 0.90 0.90 0.90 0.80 0.80	1.00 2.70 2.70 2.70 2.70 2.70 1.10 1.10 1.10	0.88 1.10 2.70 3.60 3.60 3.60 1.40 1.40 1.40	1.00 1.30 2.70 3.60 3.90 3.90 3.90 1.60 1.60	1.60 2.70 3.60 4.10 4.10 - 2.10 2.10 2.10 2.10	1.60 2.70 3.60 4.10 - - 2.10 2.10 2.10 2.10
t _i [mm] N _{R,k} [kN]	0.75 0.88 1.00 1.25 1.50 0.63 0.75 0.88 1.00	0.90 0.90 0.90 0.90 0.90 0.90 0.80 0.80	1.00 2.70 2.70 2.70 2.70 2.70 1.10 1.10 1.10 1.10	0.88 1.10 2.70 3.60 3.60 3.60 1.40 1.40 1.40 1.40	1.00 1.30 2.70 3.60 3.90 3.90 1.60 1.60 1.60 1.60	1.60 2.70 3.60 4.10 4.10 - 2.10 2.10 2.10 2.10 2.10	1.60 2.70 3.60 4.10 - - 2.10 2.10 2.10 2.10 2.10

Additional definitions

Self-drilling screw

SL2-H15-6,3 x L

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English translation prepared by DIBt



			<u>Materials</u>			
			Fastener:	Carbon steel v	with anticorrosion coa	ting
ø15	H15		Washer:	-		
		-	Component I:	S280GD to S4	450GD - EN 10346	
	<u> </u>	0	Component II		450GD - EN 10346	
ø6,3	1,8 L		Component in		HX460LAD - EN 103	46
12	_ø4,8		Drilling-capac	$ity \qquad \Sigma(t_1 + t_{11}) \le 3.50$	0 mm	
				t _{ii} [mm]		
		1.00	1.25	1.50	1.75	2.00
	1.00	-	3.50	1.50 4.10	4.10	4.10
V _{R,k} [kN]	1.25	- 3.20	3.50 3.60	1.50 4.10 4.10	4.10 4.10	4.10 4.10
	1.25 1.50	- 3.20 3.20	3.50 3.60 3.60	1.50 4.10 4.10 5.40	4.10 4.10 5.40	4.10 4.10 4.10
V_{R,k} [kN] t _i [mm]	1.25 1.50 1.75	- 3.20 3.20 3.20 3.20	3.50 3.60 3.60 3.60	1.50 4.10 4.10 5.40 5.40	4.10 4.10 5.40 5.40	4.10 4.10 4.10 -
	1.25 1.50 1.75 2.00	- 3.20 3.20 3.20 3.20 3.20	3.50 3.60 3.60 3.60 3.60 3.60	1.50 4.10 4.10 5.40 5.40 5.40 5.40	4.10 4.10 5.40 5.40 -	4.10 4.10 4.10 - -
	1.25 1.50 1.75 2.00 1.00	- 3.20 3.20 3.20 3.20 -	3.50 3.60 3.60 3.60 3.60 2.20	1.50 4.10 4.10 5.40 5.40 5.40 5.40 2.60	4.10 4.10 5.40 - 2.60	4.10 4.10 4.10 - - 2.60
	1.25 1.50 1.75 2.00 1.00 1.25	- 3.20 3.20 3.20 3.20 - 1.40	3.50 3.60 3.60 3.60 2.20 2.20 2.20	1.50 4.10 4.10 5.40 5.40 2.60 2.60	4.10 4.10 5.40 - 2.60 2.60	4.10 4.10 - - 2.60 2.60
t _i [mm] N _{R,k} [kN]	1.25 1.50 1.75 2.00 1.00 1.25 1.50	- 3.20 3.20 3.20 3.20 - 1.40 1.40	3.50 3.60 3.60 3.60 2.20 2.20 2.20 2.20	1.50 4.10 4.10 5.40 5.40 2.60 2.60 2.60 2.60	4.10 4.10 5.40 - 2.60 2.60 2.60 2.60	4.10 4.10 4.10 - - 2.60
t _i [mm]	1.25 1.50 1.75 2.00 1.00 1.25 1.50 1.75	- 3.20 3.20 3.20 3.20 - 1.40 1.40 1.40 1.40	3.50 3.60 3.60 3.60 2.20 2.20 2.20 2.20 2.20 2.20	1.50 4.10 4.10 5.40 5.40 2.60 2.60 2.60 2.60 2.60 2.60	4.10 4.10 5.40 - 2.60 2.60	4.10 4.10 - - 2.60 2.60
t _i [mm] N _{R,k} [kN]	1.25 1.50 1.75 2.00 1.00 1.25 1.50	- 3.20 3.20 3.20 3.20 - 1.40 1.40	3.50 3.60 3.60 3.60 2.20 2.20 2.20 2.20	1.50 4.10 4.10 5.40 5.40 2.60 2.60 2.60 2.60	4.10 4.10 5.40 - 2.60 2.60 2.60 2.60	4.10 4.10 - - 2.60 2.60 2.60

Additional definitions

Self-drilling screw

SL3-H15-6,3 x L

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≥ø1 ø10, 2 <u>ø6,0</u> 7		V8 5,3	eel A2 or A4 - EN I eel A2 or A4 - EN I seal S450GD - EN 1034 iferous timber) - El nm	SO 3506 46				
-	ø3,5	<u>Y</u>		$(I_{ef}=25~mm,~\rho_a=$	350 kg/m ³)			
				l _{ef} [mm]				
		25	30	35	40	45		
	0.50	1.02	1.02	1.02	1.02	1.02	1.02	
	0.55	1.02	1.10	1.10	1.10	1.10	1.10	
V _{R,k} [kN]	0.63	1.02	1.21	1.21	1.21	1.21	1.21	
V R,K [KIN]	0.75	1.02	1.23	1.40	1.40	1.40	1.40 V _{R,I,k} [kN]	
t _l [mm]	0.88	1.02	1.23	1.40	1.40	1.40	1.40	
	1.00	1.02	1.23	1.40	1.40	1.40	1.40	
	1.50	1.02	1.23	1.40	1.40	1.40	1.40	
	0.50	1.59	1.59	1.59	1.59	1.59	1.59	
	0.55	1.78	1.93	1.93	1.93	1.93	1.93	
	0.63	1.78	2.14	2.44	2.44	2.44	2.44	
N _{R,k} [kN]	0.75	1.78	2.14	2.49	2.85	3.21	3.28 N _{R,I,k} [kN]	
t _i [mm]	0.88	1.78	2.14	2.49	2.85	3.21	3.28	
	1.00	1.78	2.14	2.49	2.85	3.21	3.28	
	1.25	1.78	2.14	2.49	2.85	3.21	3.28	
Nous [kN]	1.50						3.20	
N _{R,II,k} [kN]	1.50	1.78 1.78	2.14 2.14	2.49 2.49	2.85 2.85	3.21 3.21	3.28	
I he indicated or ρ _k can be	determin	ed as follows: N	$_{\mathrm{R},\mathrm{k}}(\mathrm{k}_{\mathrm{mod}},\mathrm{p}_{\mathrm{k}})$	pplies to componer = min {N _{R,I,k} N _{R,II,k} sealing washer ≥	$*\frac{k_{\text{mod}}}{0.9}*\frac{\rho_k}{350}\Big\}.$	0.9 and ρ _k = 350 k	kg/m ³ . N _{R,k} for other k _{mod}	
		SW2-S-S	16-6,0 x L, S	SW2-S-L12-S16-6,0		Annex 48		

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≥ø1 ø10, 2 ø6,5	-	V8 5,3	L12	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	Stainless sta with EPDM- S280GD to 3 Timber (con Σ(t _l) ≤ 2.00 r	S450GD - EN 1034 iferous timber) - Et	SO 3506 46 N 14081		
	0.50	35 1.55 1.71	45 1.55 1.71	l _{ef} [mm] 55 1.55 1.71	65 1.55 1.71	75 1.55 1.71	1.55 1.71		
V_{R,k} [kN] t _i [mm]	0.63 0.75 0.88 1.00 1.25 1.50	1.73 1.73 1.73 1.73 1.73 1.73 1.73	2.23 2.23 2.23 2.23 2.23 2.23 2.23	2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73	2.90 3.14 3.14 3.14 3.14 3.14 3.14 3.14	2.90 3.34 3.34 3.34 3.34 3.34 3.34	2.90 3.50 4.00 4.50 5.40 5.70		
N_{R,k} [kN] t _i [mm]	0.50 0.55 0.63 0.75 0.88 1.00 1.25 1.50	1.68 1.88 2.70 2.70 2.70 2.70 2.70 2.70 2.70	1.68 1.88 2.70 3.40 3.47 3.47 3.47 3.47 3.47	1.68 1.88 2.70 3.40 4.10 4.25 4.25 4.25	1.68 1.88 2.70 3.40 4.10 4.80 5.02 5.02	1.68 1.88 2.70 3.40 4.10 4.80 5.60 5.60	1.68 1.88 2.70 3.40 4.10 4.80 5.60 5.60		
N _{R,II,k} [kN]	1.25	2.70 2.70 2.70	<u>3.47</u> <u>3.47</u> <u>3.47</u>	4.25 4.25 4.25	5.02 5.02 5.02	5.60 5.60 5.79	5.60		
Additional de The indicateo or pk can be	d resistar determine	ed as follows: N	$_{\mathrm{R},\mathrm{k}}(\mathrm{k}_{\mathrm{mod}},\mathrm{p}_{\mathrm{k}}) =$	oplies to componer ₌ min {N _{R,I,k} N _{R,II,k} ealing washer ≥	$*\frac{k_{\text{mod}}}{0.9}*\frac{\rho_{\text{K}}}{350}\Big\}.$	0.9 and ρ _k = 350 k	g/m ³ . N _{R,k} for other k _{mod}		
				XW-L12-S16-6,5 x			Annex 49		

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≥ø1 ø10, 2 ø6,5	5 SM	/8 5,3		Materials Fastener: Washer: Component I: Component II: Drilling-capacity Characteristics	dasher: Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal omponent I: S280GD to S450GD - EN 10346 omponent II: Timber (coniferous timber) - EN 14081 rilling-capacity - haracteristics 13.9 Nm						
						(l _{ef} = 29 mm, ρ_a =	350 kg/m ³)				
		35	45	l _p [mm] 55	65	75					
d _{pd} [mm] V _{R,k} [kN] t _i [mm] t _i [mm] N _{R,ii,k} [kN]	0.50 0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.55 0.63 0.75 1.50 0.55 0.63 0.75 0.88 1.00 1.25 1.50	1.55 1.71 1.73 1.73 1.73 1.73 1.73 1.73 1.73 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70 2.70	1.55 1.71 2.23 2.23 2.23 2.23 2.23 2.23 2.23 3.40 3.47 3.47 3.47 3.47 3.47 3.47 3.47	4.0 1.55 1.71 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 4.25 4.25 4.25 4.25 4.25 4.25	$ \begin{array}{r} 1.55\\ 1.71\\ 2.90\\ 3.14\\ 3.14\\ 3.14\\ 3.14\\ 3.14\\ 1.68\\ 1.88\\ 2.70\\ 3.40\\ 4.10\\ 4.80\\ 5.02\\ 5.02\\ 5.02\\ 5.02 \end{array} $	$ \begin{array}{c} 1.55\\ 1.71\\ 2.90\\ 3.34\\ 3.34\\ 3.34\\ 3.34\\ 3.34\\ 1.68\\ 1.88\\ 2.70\\ 3.40\\ 4.10\\ 4.80\\ 5.60\\ 5.60\\ 5.79\\ \end{array} $	1.55 1.71 2.90 3.50 4.00 4.50 5.40 5.70 1.68 1.88 2.70 3.40 4.10 4.80 5.60				
<u>additional de</u> he indicate r ρ _k can be	d resistan determine	ed as follows: N	$_{\mathrm{R},\mathrm{k}}(\mathrm{k}_{\mathrm{mod}},\mathrm{p}_{\mathrm{k}}) =$	olies to compone min {N _{R,I,k} N _{R,II,}	$k * \frac{k_{mod}}{0.9} * \frac{\rho_k}{350} \}$	0.9 and ρ _k = 350 k	g/m ³ . N _{R,k} for other k _{moc}				
			TDA-S-S1		Annex 50						

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≥ø12 Ø10,5 Ø4,8 5	ş sw	/8 4,7		Materials Fastener: Washer: Component I: Component II: Drilling-capacity Characteristics My,Rk = f _{ax,k} =	Aluminum al with EPDM-s S280GD to S Timber (coni Σ(t _i) ≤ 2.00 n 6.1 Nm	seal 6450GD - EN 1034 ferous timber) - Et	46 N 14081	
V _{R,k} [kN] t _i [mm] t _i [mm] N _{R,ii,k} [kN]	0.50 0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.55 0.63 0.75 0.88 1.00 1.25 1.50	25 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43	30 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.71 1.71 1.71 1.71 1.71 1.71 1.71 1.71 1.71 1.71 1.71 1.71	Ief [mm] 35 1.19 1.26 1.26 1.26 1.26 1.26 1.26 1.26 1.26 1.26 1.26 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	40 1.19 1.28 1.42 1.44 1.44 1.44 1.44 1.44 1.44 1.92 2.15 2.28 2.28 2.28 2.28 2.28 2.28 2.28 2.28 2.28 2.28	45 1.19 1.28 1.42 1.62 1.62 1.62 1.62 1.62 1.62 1.62 1.92 2.15 2.49 2.57 2.57 2.57 2.57 2.57 2.57 2.57	$ \begin{array}{r} 1.19\\ 1.28\\ 1.42\\ 1.63\\ 1.72\\ 1.81\\ 1.81\\ 1.81\\ 1.81\\ 1.92\\ 2.15\\ 2.49\\ 3.02\\ 3.62\\ 4.18\\ 4.18\\ 4.18\\ \end{array} $	V _{R,I,k} [kN]
<u>Additional de</u> The indicate or ρ _k can be	d resistan determine	ed as follows: N	$_{R,k}(k_{mod},p_{k}) =$	min {N _{R,I,k} N _{R,II,k} aling washer ≥	$\frac{k_{mod}}{0.9} * \frac{\rho_{k}}{350}$	0.9 and ρ _k = 350 k	g/m ³ . N _{R,k} for o	

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≥ø10 ø10,9 0 0 0 0 0 0 0 0 0 0 0 0 0	-	/8 5,3	L12 3,3	Materials Fastener: Washer: Component I: Component II: Drilling-capacity <u>Characteristics</u> M _{y,Rk} = f _{ax,k} =	II: Timber (coniferous timber) - EN 14081 city $\Sigma(t_i) \le 2.00 \text{ mm}$					
	0.50	35	45	l _{ef} [mm] 55 1.58	65	75	1 58			
V _{R,k} [kN] - t _i [mm] -	0.50 0.55 0.63 0.75 0.88 1.00 1.25 1.50	1.58 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73	1.58 1.73 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 2.33	1.58 1.73 2.33 2.33 2.33 2.33 2.33 2.33 2.33	1.58 1.73 2.33 2.33 2.33 2.33 2.33 2.33	– V _{R,I,k} [kN]		
N _{R,k} [kN] - t _i [mm] -	0.50 0.55 0.63 0.75 0.88 1.00 1.25	1.63 1.93 2.41 2.70 2.70 2.70 2.70 2.70	1.63 1.93 2.41 3.13 3.47 3.47 3.47 3.47	1.63 1.93 2.41 3.13 3.91 4.25 4.25	1.63 1.93 2.41 3.13 3.91 4.68 4.68	1.63 1.93 2.41 3.13 3.91 4.68 4.68	1.63 1.93 2.41 3.13 3.91 4.68 4.68	– N _{R,I,k} [kN]		
N _{R,II,k} [kN]	1.50	2.70 2.70	3.47 3.47	4.25 4.25	4.68 5.02	4.68 5.79	4.68			
	l resistan			pplies to componer ⊧ min {N _{R,I,k} N _{R,II,} ,		0.9 and ρ _k = 350	kg/m ³ . N _{R,k} fo	r other k _{mod}		
					Ø 16 mm					

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ø15	H15	3		<u>Materials</u> Fastener: Washer: Component I: Component II:	- S280GD to s	l with anticorrosic S450GD - EN 103 iferous timber) - F	346	
ł	Ī			Drilling-capacity	Σ(t _l) ≤ 2.00 r	nm		
			-	Characteristics				
7								
	ø4,3			M _{y,Rk} =	14.9 Nm 12.2 N/mm ²	$(I_{ef} = 35 \text{ mm}, \rho_a =$	$250 ka/m^{3}$	
	~ .,0			f _{ax,k} =	13.2 IV/MM ⁻	$(r_{ef} = 35 \text{ mm}, \rho_a =$	= 350 kg/m²)	
				l _{ef} [mm]				
		35	45	55	65	75		
	0.50	1.58	1.58	1.58	1.58	1.58	1.58	
	0.55	1.73	1.73	1.73	1.73	1.73	1.73	_
V _{R,k} [kN]	0.63	1.73	1.97	1.97	1.97	1.97	1.97	
	0.75 0.88	1.73 1.73	2.23	2.33	2.33 2.33	2.33 2.33	2.33 2.33	V _{R,I,k} [kN]
t _I [mm]	1.00	1.73	2.23	2.33	2.33	2.33	2.33	
	1.25	1.73	2.23	2.33	2.33	2.33	2.33	
	1.50	1.73	2.23	2.33	2.33	2.33	2.33	
	0.50	1.84	1.84	1.84	1.84	1.84	1.84	
	0.55	2.01	2.01	2.01	2.01	2.01	2.01	
N _{R,k} [kN]	0.63	2.29	2.29	2.29	2.29	2.29	2.29	
NR,K [KIN]	0.75	2.70	2.71	2.71	2.71	2.71	2.71	N _{R,I,k} [kN]
t _l [mm]	0.88	2.70	3.47	3.55	3.55	3.55	3.55	
	1.00	2.70 2.70	<u>3.47</u> 3.47	4.25	4.33 4.33	4.33 4.33	4.33 4.33	
	1.50	2.70	3.47	4.25	4.33	4.33	4.33	-
N _{R,II,k} [kN]	1.00	2.70	3.47	4.25	5.02	5.79	4.00	
<u>additional de</u> he indicated r ρ _κ can be	d resistand	ce values N _{R,k} (d as follows: N	and N _{R,II,k}) ap _{R,k} (k _{mod} , ρ _k) =	plies to componer min {N _{R,I,k} N _{R,II,k}	$t \text{ II with } k_{mod} = \frac{k_{mod}}{0.9} * \frac{\rho_k}{350} $	0.9 and ρ _k = 350	kg/m ³ . N _{R,k} fo	or other k _{mod}
			Self-drillin SW3-T-H ⁻				An	nex 53

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English translation prepared by DIBt



				Τ	<u>Materials</u>							
_ ≥ø12					Fastener:	S	tainless stee	A2 or A4 ·	EN ISO 3	3506		
ø10,5	sw	8 _ ø12	L12		Washer:	S	tainless stee	A2 or A4	EN ISO 3	3506		
		5,3				v	ith EPDM-se	eal				
		,s		,3	Component	t I: Aluminum alloy - EN 573						
2	∎ ↓				Component	II: A	luminum alle	oy - EN 573				
) E	2,2 0 0 12 D12											
ø6,0	⊢ Ļ	ø12										
• 7		\sim	$\leq 1_2$,3 -								
9					Drilling-capa	<u>city</u> Σ	$I(t_I + t_{II}) \leq 3.0$	0 mm				
* •	Ø3,9											
	9,50											
Component R _m ≥ 165 M	I and II				1.00		[mm]	1				
rí _m ≤ 165 l		1.00		0.00	1.20		1.50	2.0		2.50		
	0.50	0.65	-	0.69		0.69	-	0.69	-	0.69	-	
	0.00	0.99	-	0.99		1.04		1.25	-	-	-	
V _{R,k} [kN]	0.80	1.19	-	1.19		1.21	-	1.53	-	-	-	
t _l [mm]	0.90	1.31	-	1.3		1.38	-	1.81	-	-	-	
	1.00	1.42	-	1.42		1.55	-	2.08	-	-	-	
	1.20	1.42	-	1.4		1.90	-	-	-	-	-	
NI	1.50	1.42	-	1.4		1.90	-	-	-	-	-	
N _{R,II,k} [kN]		0.72			0.82		1.26	1.8	35	2.65)	
Component	I and II					tı	[mm]					
R _m ≥ 215 N		1.00			1.20		1.50	2.0	00	2.50	1	
	0.50	0.85	-	0.90		0.90	-	0.90	-	0.90	-	
	0.60	1.04	-	1.04		1.12	-	1.26	-	-	-	
V _{R,k} [kN]	0.70	1.30	-	1.30		1.35	-	1.63	-	-	-	
	0.80	1.55	-	1.5		1.57	-	1.99	-	-	-	
t _l [mm]	0.90	1.70	-	1.70		1.80	-	2.35	-	-	-	
	1.00	1.85	-	1.8		2.02	-	2.71	-	-	-	
	1.20	1.85	-	1.89		2.47	-	-	-	-	-	
Nous (kN)	1.50	1.85	-	1.89	9 - 1.06	2.47	-			- 3.45	-	
N _{R,II,k} [kN] 0.93				1.00	1.64 2.41 3.45)		

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-drilling screw with sealing washer $\ge \emptyset$ 12 mm

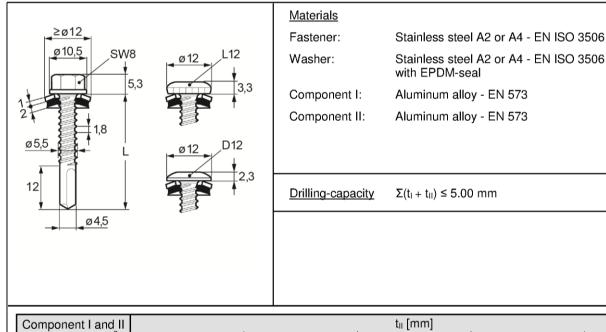
Annex 54

SX3-S12-6,0 x L, SX3-L12-S12-6,0 x L, SX3-D12-S12-6,0 x L

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Component	I and II					τ _{ii} լm	ımj				
R _m ≥ 165 l	N/mm ²	1.5	0	2.0	0	2.5	50	3.0	0	4.0	0
	0.50	0.71	-	0.89	-	0.89	-	0.89	-	0.89	-
	0.60	0.83	-	1.06	-	1.06	-	1.06	-	1.06	-
	0.70	0.95	-	1.23	-	1.23	-	1.23	-	1.23	-
V _{R,k} [kN]	0.80	1.06	-	1.40	-	1.40	-	1.40	-	1.40	-
t _l [mm]	0.90	1.18	-	1.49	-	1.52	-	1.55	-	1.60	-
([· · · · ·]	1.00	1.30	-	1.57	-	1.63	-	1.69	-	1.80	-
	1.20	1.30	-	1.74	-	1.86	-	1.97	-	-	-
	1.50	1.30	-	1.74	-	1.86	-	1.97	-	-	-
N _{R,II,k} [kN]		1.0	0	1.1	3	1.7	'4	2.3	5	3.8	8
						t Free					
Component R _m ≥ 215 I	I and II	1 5	0		0	t _{ii} [m	-		0	1 10	0
nm = 2131		1.5	0	2.0	0	2.5	0	3.0	0	4.0	0
	0.50	0.76	-	1.16	-	1.16	-	1.16	-	1.16	-
	0.60	0.90	-	1.38	-	1.38	-	1.38	-	1.38	-
	0.70	1.04	-	1.60	-	1.61	-	1.61	-	1.61	-
V _{R,k} [kN]	0.80	1.18	-	1.82	-	1.83	-	1.83	-	1.83	-
t _i [mm]	0.90	1.32	-	1.93	-	1.98	-	2.02	-	2.09	-
([· · · · ·]	1.00	1.46	-	2.04	-	2.13	-	2.20	-	2.35	-
	1.20	1.46	-	2.26	-	0.40	-	2.57	-	-	-
	1.20	1.40	-	2.20	-	2.42	-	2.57	-		

Additional definitions

1.31

N_{R,II,k} [kN]

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

2.28

3.07

Self-drilling screw with sealing washer $\ge \emptyset$ 12 mm

1.48

Annex 55

SX5-S12-5,5 x L, SX5-L12-S12-5,5 x L, SX5-D12-S12-5,5 x L

5.05

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≥ø1 ø10, 2 ø6,5		V8 5,3		-	Comp	ner:	Sta with Alu Alu	inless stee n EPDM-se minum allo minum allo	el A2 or eal by - EN	A4 - EN IS 573			
Component	t I and II						-	nm]					
R _m ≥ 165	N/mm²	1.0	0	1.2		1.5	0	2.00 2.50				3.00	
d _{pd} [mm]				4.5				5.0				5.3	
	0.50	0.65	-	0.82	-	0.86	-	0.86	-	0.86	-	0.00	-
	0.60	0.65	-	0.82	-	1.03	-	1.03	-	1.03	-	1.00	-
V _{R,k} [kN]	0.70	0.65	-	0.82	-	1.03	-	1.20	-	1.20	-	1120	-
	0.80	0.65	-	0.82	-	1.03	-	1.37	-	1.37	-	1.07	-
t _l [mm]	0.90	0.65	-	0.82	-	1.03	-	1.37	-	1.46	-		-
	1.00	0.67	-	0.82	-	1.03	-	1.37	-	1.55	-	=	-
	1.20	0.67	-	0.88	-	1.08	-	1.41	-	1.74	-	2.00	-
	1.50	0.67	-	0.88	-	1.24	-	1.53	-	1.83	-	2.10	-
N _{R,II,k} [kN]		0.4	2	0.5	5	0.7	7	1.19	9	1.6	9	2.19	
Component R _m ≥ 215		1.0	0	1.2		1.5		nm] 2.00		2.5	0	3.00	
d _{pd} [mm]				4.5	5				5	.0		5.3	
	0.50	0.85	-	1.06	-	1.12	-	1.12	-	1.12	-	1.12	-
	0.60 0.85 - 0.06					1.34	-	1.34	-	1.34	-		-
V. ILNI	0.70 0.85 - 1.06					1.34	-	1.57	-	1.57	-		-
	V _{R,k} [kN] 0.80 0.85 - 1.06					1.34	-	1.79	-	1.79	-		-
t _i [mm]	t [mm] 0.90 0.85 - 1.06				-	1.34	-	1.78	-	1.90	-		-
	1.00	0.88	-	1.06	-	1.34	-	1.78	-	2.01	-		-
	1.20	0.88	-	1.15	-	1.41	-	1.83	-	2.26	-		-
	1.50 0.88 - 1.15					1.61	-	2.00	-	2.39	-		-
N _{R,II,k} [kN]						1.0	1	1.5	5	2.2	0	2.85	

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm

TDA-S-S16-6,5 x L

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≥ø10, 0,10,10,10,10,10,10,10,10,10,10,10,10,10	5 SV	V8 5,3			Materials Fastener: Stainless steel A2, A4 or 1.45 Washer: Stainless steel A2 or A4 - EN with EPDM-seal Component I: Aluminum alloy - EN 573 Component II: Aluminum alloy - EN 573 Drilling-capacity - turing turing					A4 - EN IS 573			
Component R _m ≥ 165 ľ	V/mm ²	1.5	0	2.0	t _{II} [mm] 2.00 2.50 3.00				0	4.0	0	≥ 6.00	
d _{pd} [mm]		4.5				5.			5.3		5.5		
	0.50	0.83	-	0.83	-	0.83	-	0.83	-	0.83	-	0.83	-
	0.60	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-
	0.70	1.00	-	1.16	-	1.16	-	1.16	-	1.16	-	1.16	-
V _{R,k} [kN]	0.80	1.00	-	1.33	-	1.33	-	1.33	-	1.33	-	1.33	-
t _i [mm]	0.90	1.00	-	1.33	-	1.50	-	1.50	-	1.50	-	1.50	-
a [mm]	1.00	1.00	-	1.33	-	1.66	-	1.66	-	1.66	-	1.66	-
	1.20	1.06	-	1.37	-	1.68	-	2.00	-	2.00	-	2.00	-
	1.50	1.22	-	1.50	-	1.79	-	2.07	-	2.49	-	2.49	-
N _{R,II,k} [kN]		0.7	6	1.1	7	1.6	64	2.1	5	4.2	1	6.0	9
Component R _m ≥ 215 M	I and II N/mm ²	1.5		2.0	0	2.5	50	mm] 3.0	0	4.0		≥ 6.	
d _{pd} [mm]		4.5	5			5.	0			5.3	3	5.5	5
	0.50	1.08	-	1.08	-	1.08	-	1.08	-	1.08	-	1.08	-
	0.60	1.30	-	1.30	-	1.30	-	1.30	-	1.30	-	1.30	-
	0.70	1.30	-	1.52	-	1.52	-	1.52	-	1.52	-	1.52	-
VR,K [KIV]	V _{R,k} [kN] 0.80 1.30 - 1.73				-	1.73	-	1.73	-	1.73	-	1.73	-
t _I [mm]	0.90	1.30	-	1.73	-	1.95	-	1.95	-	1.95	-	1.95	-
	1.00	1.30	-	1.73	-	2.17	-	2.17	-	2.17	-	2.17	-
	1.20	1.38	-	1.79	-	2.19	-	2.60	-	2.60	-	2.60	-
	1.50 1.59 - 1.96				-	2.33	-	2.70	-	3.25	-	3.25	-
N _{R,II,k} [kN]		0.9	9	1.5	3	2.1	3	2.8	0	5.4	8	7.9	3

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm

TDB-S-S16-6,3 x L

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≥ø14 ø10,5		/8		<u>Materials</u> Fastener: Washer:	S	Stainless steel A2 or A4 - EN ISO 3506 Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal					
	<u> 1</u>	4,7		Compone			EN 573				
1		ī				Aluminum alloy - EN 573					
ø5,5	2,2	-		Compone	nt II: A	Numinum alloy -	EN 573				
7	ø2,8	<u>_</u>		Drilling-ca	<u>pacity</u> Σ	Σ(t _I + t _{II}) ≤ 2.50 m	ım				
Component	landI		I.	_		۱ [mm]	I	I	1		
R _m ≥ 165 N		0.50	0.60	0.70	0.80	0.90	1.00	1.20	1.50		
	0.50	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31		
	0.60	0.31	0.45	0.45	0.45	0.45	0.45	0.45	0.45		
V _{R,k} [kN]	0.70	0.31	0.45	0.59	0.59	0.59	0.59	0.59	0.59		
	0.80	0.31	0.45	0.59	0.73	0.73	0.73	0.73	0.73		
t _l [mm]	0.90	0.31	0.45	0.59	0.73	0.82	0.82	0.82	0.82		
	1.00	0.31	0.45	0.59	0.73	0.82	0.91	0.91	0.91		
	1.20	0.31	0.45	0.59	0.73	0.82	0.91	0.91	-		
	1.50	0.31	0.45	0.59	0.73	0.82	0.91	-	-		
N _{R,II,k} [kN]		0.26	0.36	0.47	0.57	0.67	0.77	n/a	n/a		
Component	land				t.	ı [mm]					
R _m ≥ 215 N	N/mm^2	0.50	0.60	0.70	0.80	0.90	1.00	1.20	1.50		
	0.50	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40		
	0.60	0.40	0.58	0.58	0.58	0.58	0.58	0.58	0.58		
	0.70	0.40	0.58	0.77	0.77	0.77	0.77	0.77	0.77		
V _{R,k} [kN]	0.80	0.40	0.58	0.77	0.95	0.95	0.95	0.95	0.95		
t. [m.m.]	0.90	0.40	0.58	0.77	0.95	1.07	1.07	1.07	1.07		
t _i [mm]	1.00	0.40	0.58	0.77	0.95	1.07	1.18	1.18	1.18		
	1.20	0.40	0.58	0.77	0.95	1.07	1.18	1.18	-		
	1.50 0.40 0.58				0.95	1.07	1.18	-	-		
N _{R,II,k} [kN]		0.34	0.48	0.77 0.61	0.75	0.88	1.00	n/a	n/a		

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-drilling screw with sealing washer $\ge \emptyset$ 14 mm

SL2-S-S14-5,5 x L

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English translation prepared by DIBt



≥ø1 ø10,9 9	5 SW	/8 ø12 5,3	2 L12 3,3	<u>Materials</u> Fastener: Washer: Compone Compone	Sta wit nt I: Alu nt II: Alu		- EN 573 - EN 573		
Component	ø 3,9 t I and II	0.50			-	mm]			
R _m ≥ 165 I		0.50	0.60	0.70	0.80	0.90	1.00	1.20	1.50
	0.50	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
	0.60	0.28	0.45	0.45	0.45	0.45	0.45	0.45	0.45
V _{R,k} [kN]	0.70	0.28	0.45	0.62	0.62	0.62	0.62	0.62	0.62
	0.80	0.28	0.45	0.62	0.79 0.79	0.79	0.79	0.79	0.79 0.97
t _i [mm]	0.90	0.28	0.45				0.97	0.97	
	1.20	0.28	0.45	0.62	0.79	0.97	1.15	1.15	1.15
	1.50	0.28	0.45	0.62	0.79	0.97	1.15	1.15	-
N _{R,II,k} [kN]	1.50	0.28	0.45	0.62	0.79	0.97	0.87	n/a	n/a
		0.30	0.44	0.04	0.03	0.75	0.07	n/a	11/a
Component					tii [mm]			
R _m ≥ 215 I		0.50	0.60	0.70	0.80	0.90	1.00	1.20	1.50
	0.50	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
	0.60	0.36	0.58	0.58	0.58	0.58	0.58	0.58	0.58
	0.70	0.36	0.58	0.81	0.81	0.81	0.81	0.81	0.81
V [KN]			0.58	0.81	1.03	1.03	1.03	1.03	1.03
V _{R,k} [kN]	0.80	0.36			1 00	1.26	1.26	1.26	1.26
	0.80 0.90	0.36 0.36	0.58	0.81	1.03	1.20	1.20		
V_{R,k} [kN] t _i [mm]	0.80	0.36 0.36	0.58 0.58	0.81 0.81	1.03	1.26	1.49	1.49	1.49
	0.80 0.90 1.00 1.20	0.36 0.36 0.36	0.58 0.58 0.58	0.81 0.81	1.03 1.03	1.26 1.26	1.49 1.49		
	0.80 0.90 1.00	0.36 0.36	0.58 0.58	0.81	1.03	1.26	1.49	1.49	1.49

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-drilling screw with sealing washer $\ge Ø$ 14 mm

Annex 59

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

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				<u>Materials</u>				
<mark>_</mark> ≥ø12				Fastener:	Stainless :	steel A2 or A4 -	EN ISO 3506	
ø10,5			L12 ↓	Washer:	Stainless with EPDN	steel A2 or A4 - ⁄I-seal	EN ISO 3506	
		5,3	3,3	Component I:	Aluminum	alloy - EN 573		
2 ø6,0	2,2	ø12		Component II:		o S450GD - EN D to HX460LAD		
9	v		2,3	Drilling-capacity	$\Sigma(t_{i}+t_{ii})\leq$	3.00 mm		
Compon	ent l				t _{ii} [mm]			
R _m ≥ 165 I	N/mm ²	0.75	0.88	1.00	1.25	1.50	1.75	2.00
	0.50	0.56 -	0.73 -	0.78 -	0.78 -	0.78 -	0.78 -	0.78 -
	0.60	0.76 -	0.86 -	0.92 -	0.93 -	0.97 -	0.98 -	0.98 -
	0.70	0.96 -	0.98 -	1.06 -	1.07 -	1.16 -	1.17 -	1.18 -
V _{R,k} [kN]	0.80	1.06 -	1.11 -	1.20 -	1.22 -	1.35 -	1.37 -	1.38 -
t _i [mm]	0.90	1.06 -	1.24 -	1.34 -	1.37 -	1.54 -	1.57 -	1.59 -
. []	1.00	1.06 -	1.36 -	1.48 -	1.51 -	1.73 -	1.76 -	1.79 -
	1.20	1.06 -	1.36 -	1.48 -	1.80 -	2.11 -	2.15 -	
	1.50	1.06 -	1.36 -	1.48 -	1.80 -	2.11 -		
N _{R,II,k} [kN]		1.14	1.66	1.81	2.38	3.14	3.86	4.57
Compon	ent I				t _{II} [mm]			
R _m ≥ 215	N/mm ²	0.75	0.88	1.00	1.25	1.50	1.75	2.00
	0.50	0.74 -	0.95 -	1.02 -	1.02 -	1.02 -	1.02 -	1.02 -
	0.60	0.99 -	1.11 -	1.20 -	1.21 -	1.27 -	1.27 -	1.28 -
	0.70	1.25 -	1.28 -	1.38 -	1.40 -	1.51 -	1.53 -	1.54 -
V _{R,k} [kN]	0.80	1.37 -	1.44 -	1.57 -	1.59 -	1.76 -	1.78 -	1.80 -
t _i [mm]	0.90	1.37 -	1.61 -	1.75 -	1.78 -	2.01 -	2.04 -	2.07 -
et [min]	1.00	1.37 -	1.77 -	1.93 -	1.96 -	2.26 -	2.29 -	2.33 -
	1.20	1.37 -	1.77 -	1.93 -	2.34 -	2.75 -	2.80 -	
		1.97	1.77 -	1.93 -	2.34 -	2.75 -		
	1.50	1.37 -	1.77	1.00				

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-drilling screw with sealing washer $\ge \emptyset$ 12 mm

Annex 60

SX3-S12-6,0 x L, SX3-L12-S12-6,0 x L, SX3-D12-S12-6,0 x L

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					Mater	<u>ials</u>							
_≥ø12					Faste	ner:	Sta	inless ste	el A2 or	A4 - EN I	SO 3506	6	
ø10,5		•	ø12 l	L12 ↓	Wash	er:		inless ste 1 EPDM-s		A4 - EN IS	SO 3506	3	
		5,3		3,3	Comp	onent I:	Alu	minum all	oy - EN	573			
2	Ţ		3	т				S280GD to S450GD - EN 10346					
ø6,0	‡2,2 ► L	 	ø12	D12	HX300LAD to HX460LAD - EN 10346								
9			2,3 Drilling-capacity $\Sigma(t_1 + t_{11}) \le 4.00 \text{ mm}$										
	ø3,9		2										
Compon	ent I						tu [r	nm]					
R _m ≥ 165 I	N/mm ²	2 x 0	0.63	2 x 0).75	2 x 0	-	_ 2 x 1	.00	2 x 1	.25	2 x 1.	.50
	0.50	0.65	-	0.70	-	0.75	-	0.78	-	0.78	-	0.78	-
	0.60	0.65	-	1.02	-	1.07	-	1.10	-	1.10	-	1.10	-
	0.70	0.65	-	1.18	-	1.39	-	1.42	-	1.42	-	1.42	-
V _{R,k} [kN]	0.80	0.65	-	1.18	-	1.71	-	1.74	-	1.74	-	1.74	-
t _i [mm]	0.90	0.65	-	1.18	-	1.71	-	1.90	-	1.90	-	1.90	-
	1.00	0.65	-	1.18	-	1.71	-	2.06	-	2.06	-	2.06	-
	1.20	0.65	-	1.18	-	1.71	-	2.06	-	2.06	-	-	-
	1.50	0.65	-	1.18	-	1.71	-	2.06	-	2.06	-	-	-
N _{R,II,k} [kN]		1.4	-0	1.9	98	2.6	1	3.1	9	4.3	37	5.8	2
Compon	ent I						tu fr	nm]					
R _m ≥ 215 N	N/mm ²	2 x 0	0.63	2 x 0	0.75	2 x 0		2 x 1	.00	2 x 1	.25	2 x 1.	.50
	0.50	0.85	-	0.92	-	0.98	-	1.02	-	1.02	-	1.02	-
			-	1.33	-	1.40	-	1.44	-	1.44	-	1.44	-
			-	1.33	-	1.81	-	1.85	-	1.85	-	1.85	-
	0.70	0.85						2.27		2.27	-	2.27	-
V _{R,k} [kN]	0.70	0.85 0.85	-	-	-	2.22	-	2.21	-	6.61	-		
	0.80	0.85		1.33	-	2.22 2.22	-		-		-		-
V_{R,k} [kN] t _i [mm]	0.80 0.90	0.85 0.85	-	1.33 1.33		2.22		2.48		2.48		2.48	
	0.80 0.90 1.00	0.85 0.85 0.85	-	1.33 1.33 1.33	-	2.22 2.22	-	2.48 2.68	-	2.48 2.68	-		-
	0.80 0.90	0.85 0.85		1.33 1.33	-	2.22	-	2.48	-	2.48	-	2.48 2.68	-

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-drilling screw with sealing washer $\ge \emptyset$ 12 mm

Annex 61

SX3-S12-6,0 x L, SX3-L12-S12-6,0 x L, SX3-D12-S12-6,0 x L

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<u>≥ø12</u>	-				<u>Mater</u> Faste		Sta	inless stee	el A2 or	A4 - EN I	SO 350	6	
ø10,5	Ø 10,5 SW8 5,3 Ø 12 L12 3,3					ier:		iinless stee n EPDM-se		A4 - EN IS	SO 350	6	
	ljt`	^{5,3}		3,3	Comp	onent I:	Alu	minum allo	by - EN	573			
ø5,5	■ = 1,8 = L		<u>212</u>	D12	Comp	oonent II:	S28	35 to S355 80GD to S4 300LAD to	450GD	- EN 1034			
12				1 2,3	<u>Drillin</u>	g-capacity	Σ(t _l	+ t _{II}) ≤ 5.0	0 mm				
Compon	ient I						t _{II} [r	mm]					
Compon R _m ≥ 165 I	N/mm ²	1.5	50	1.7	75	2.00	t _{II} [r	2.5	0	3.0	00	4.0	0
Compon R _m ≥ 165 I	N/mm ² 0.50	0.70	50	0.80	75 -	0.89	tıı (r -	2.5 0.89	0	0.89	00 -	0.89	0
Compon R _m ≥ 165 I	N/mm ² 0.50 0.60	0.70 0.95	-	0.80 1.01	-	0.89 1.07	-	2.5 0.89 1.07	-	0.89 1.07	-	0.89 1.07	
R _m ≥ 165 I	N/mm ² 0.50 0.60 0.70	0.70 0.95 1.19		0.80 1.01 1.23		0.89 1.07 1.26	-	2.5 0.89 1.07 1.26	-	0.89 1.07 1.26	-	0.89 1.07 1.26	-
R _m ≥ 165 I	N/mm ² 0.50 0.60 0.70 0.80	0.70 0.95 1.19 1.44		0.80 1.01 1.23 1.44		0.89 1.07 1.26 1.44	-	2.5 0.89 1.07 1.26 1.44		0.89 1.07 1.26 1.44		0.89 1.07 1.26 1.44	-
R _m ≥ 165 I	N/mm ² 0.50 0.60 0.70 0.80 0.90	0.70 0.95 1.19 1.44 1.55		0.80 1.01 1.23 1.44 1.55	- - - -	0.89 1.07 1.26 1.44 1.55	-	2.5 0.89 1.07 1.26 1.44 1.55	-	0.89 1.07 1.26 1.44 1.58	-	0.89 1.07 1.26 1.44 1.63	-
R _m ≥ 165 V _{R,k} [kN]	N/mm ² 0.50 0.60 0.70 0.80 0.90 1.00	0.70 0.95 1.19 1.44 1.55 1.66		0.80 1.01 1.23 1.44 1.55 1.66	- - - - -	0.89 1.07 1.26 1.44 1.55 1.66		2.50 0.89 1.07 1.26 1.44 1.55 1.66	- - - - -	0.89 1.07 1.26 1.44 1.58 1.72		0.89 1.07 1.26 1.44 1.63 1.82	
R _m ≥ 165 V _{R,k} [kN]	N/mm ² 0.50 0.60 0.70 0.80 0.90 1.00 1.20	0.70 0.95 1.19 1.44 1.55 1.66 1.66	- - - - - -	0.80 1.01 1.23 1.44 1.55 1.66 1.72	- - - - - - -	0.89 1.07 1.26 1.44 1.55 1.66 1.77	- - - - -	2.5 0.89 1.07 1.26 1.44 1.55 1.66 1.88	- - - - - -	0.89 1.07 1.26 1.44 1.58 1.72 1.99	- - - -	0.89 1.07 1.26 1.44 1.63	
R _m ≥ 165 V _{R,k} [kN] t _i [mm]	N/mm ² 0.50 0.60 0.70 0.80 0.90 1.00	0.70 0.95 1.19 1.44 1.55 1.66 1.66 1.66	- - - - - - -	0.80 1.01 1.23 1.44 1.55 1.66 1.72 1.72	- - - - - - -	0.89 1.07 1.26 1.44 1.55 1.66 1.77 1.77		2.5 0.89 1.07 1.26 1.44 1.55 1.66 1.88 1.88	- - - - - - -	0.89 1.07 1.26 1.44 1.58 1.72 1.99 1.99	- - - - - - - - - - -	0.89 1.07 1.26 1.44 1.63 1.82 - -	
R _m ≥ 165 V _{R,k} [kN]	N/mm ² 0.50 0.60 0.70 0.80 0.90 1.00 1.20	0.70 0.95 1.19 1.44 1.55 1.66 1.66	- - - - - - -	0.80 1.01 1.23 1.44 1.55 1.66 1.72	- - - - - - -	0.89 1.07 1.26 1.44 1.55 1.66 1.77	- - - - -	2.5 0.89 1.07 1.26 1.44 1.55 1.66 1.88	- - - - - - -	0.89 1.07 1.26 1.44 1.58 1.72 1.99	- - - - - - - - - - -	0.89 1.07 1.26 1.44 1.63 1.82 -	
R _m ≥ 165 I V _{R,k} [kN] t _i [mm]	N/mm ² 0.50 0.60 0.70 0.80 0.90 1.00 1.20 1.50	0.70 0.95 1.19 1.44 1.55 1.66 1.66 1.66	- - - - - - -	0.80 1.01 1.23 1.44 1.55 1.66 1.72 1.72	- - - - - - -	0.89 1.07 1.26 1.44 1.55 1.66 1.77 1.77	- - - - - -	2.5 0.89 1.07 1.26 1.44 1.55 1.66 1.88 1.88	- - - - - - -	0.89 1.07 1.26 1.44 1.58 1.72 1.99 1.99	- - - - - - - - - - -	0.89 1.07 1.26 1.44 1.63 1.82 - -	

Compor	ienti											1	
R _m ≥ 215	N/mm ²	1.5	0	1.7	5	2.0	0	2.5	0	3.0	0	4.0	0
	0.50	0.91	-	1.03	-	1.16	-	1.16	-	1.16	-	1.16	-
	0.60	1.23	-	1.31	-	1.40	-	1.40	-	1.40	-	1.40	-
	0.70	1.56	-	1.60	-	1.64	-	1.64	-	1.64	-	1.64	-
V _{R,k} [kN]	0.80	1.88	-	1.88	-	1.88	-	1.88	-	1.88	-	1.88	-
t _l [mm]	0.90	2.03	-	2.03	-	2.03	-	2.03	-	2.06	-	2.13	-
	1.00	2.17	-	2.17	-	2.17	-	2.17	-	2.24	-	2.38	-
	1.20	2.17	-	2.24	-	2.31	-	2.46	-	2.60	-	-	-
	1.50	2.17	-	2.24	-	2.31	-	2.46	-	2.60	-	-	-
N _{R,II,k} [kN]		1.8	8	2.3	8	2.8	7	4.3	4	5.8	1	7.2	8

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-drilling screw with sealing washer $\ge \emptyset$ 12 mm

Annex 62

SX5-S12-5,5 x L, SX5-L12-S12-5,5 x L, SX5-D12-S12-5,5 x L

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English translation prepared by DIBt



≥ø10 ø10,9 2 ø6,5		₩8 5 ,3 L		Materials Fastener: Washer: Compone Compone	s w ent I: A ent II: S H	tainless steel A tainless steel A ith EPDM-seal luminum alloy 280GD to S45(X300LAD to H	A2 or A4 - EN - EN 573 0GD - EN 103	ISO 3506 146	3506
Compon R _m ≥ 165 N	ent I	0.63	0.75	0.88	1	[mm] 1.25	1.50	2.00	2.00
d _{pd} [mm]	N/11111	3.5	4.0	0.00	1.00 4.5	1.25	1.50	5.0	3.00
sibo [11111]	0.50	0.35 -	0.44 -	0.55 -	0.65 -	0.86 -	0.86 -	0.86 -	0.86 -
	0.60	0.35 -	0.44 -	0.55 -	0.65 -	0.86 -	1.03 -	1.03 -	1.03 -
	0.70	0.35 -	0.44 -	0.55 -	0.65 -	0.86 -	1.03 -	1.20 -	1.20 -
V _{R,k} [kN]	0.80	0.35 -	0.44 -	0.55 -	0.65 -	0.86 -	1.03 -	1.37 -	1.37 -
t _i [mm]	0.90	0.35 -	0.44 -	0.56 -	0.65 -	0.86 -	1.03 -	1.37 -	1.54 -
. []	1.00	0.35 -	0.44 -	0.56 -	0.67 -	0.86 -	1.03 -	1.37 -	1.72 -
	1.20	0.35 -	0.44 -	0.56 -	0.67 -	0.92 -	1.08 -	1.41 -	2.06 -
	1.50	0.35 -	0.44 -	0.56 -	0.67 -	0.94 -	1.24 -	1.53 -	2.13 -
N _{R,II,k} [kN]		1.00	1.20	1.40	1.50	1.90	2.30	3.80	5.60
Compon R _m ≥ 215 N	ent I N/mm ²	0.63	0.75	0.88	t _{ii} 1.00	[mm] 1.25	1.50	2.00	3.00
d _{pd} [mm]		3.5	4.0		4.5			5.0	
	0.50	0.45 -	0.58 -	0.72 -	0.85 -	1.12 -	1.12 -	1.12 -	1.12 -
	0.60	0.45 -	0.58 -	0.72 -	0.85 -	1.12 -	1.34 -	1.34 -	1.34 -
V _{R,k} [kN]	0.70	0.45 -	0.58 -	0.72 -	0.85 -	1.12 -	1.34 -	1.57 -	1.57 -
, n,k [iviv]	0.80	0.45 -	0.58 -	0.72 -	0.85 -	1.12 -	1.34 -	1.79 -	1.79 -
t _l [mm]	0.90	0.45 -	0.58 -	0.72 -	0.85 -	1.12 -	1.34 -	1.78 -	2.01 -
	1.00	0.45 -	0.58 -	0.72 -	0.88 -	1.12 -	1.34 -	1.78 -	2.24 -
1.20 0.45 - 0.58 -				0.72 -	0.88 -	1.20 -	1.41 -	1.83 -	2.68 -
	1.50	0.45 -	0.58 -	0.72 -	0.88 -	1.23 -	1.61 -	2.00 -	2.77 -

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm

TDA-S-S16-6,5 x L

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English translation prepared by DIBt



≥ø16 ø10,5 0 12 ø6,3		₩8 1 5,3 1 L		Comp	ener:	Stainless with EPD Aluminun S235 to S S280GD	steel A2 or M-seal n alloy - EN 6355 - EN 10 to S450GD	A4 - EN ISC 573 0025		.06
Compon R _m ≥ 165 N	ent I V/mm ²	1.25	1.50	2.00	3.00	t _{ll} [mm] 4.00	6.00	8.00	10.00	> 10.00 ^a
d _{pd} [mm] ^b			5.0		5.3		5.5	5	5.7	5.8
	0.50	0.83 -	0.83 -	0.83 -	0.83 -	0.83 -	0.83 -	0.83 -	0.83 -	0.83 -
	0.60	0.83 -	1.00 -	1.00 -	1.00 -	1.00 -	1.00 -	1.00 -	1.00 -	1.00 -
V TENIT	0.70	0.83 -	1.00 -	1.16 -	1.16 -	1.16 -	1.16 -	1.16 -	1.16 -	1.16 -
V _{R,k} [kN]	0.80	0.83 -	1.00 -	1.33 -	1.33 -	1.33 -	1.33 -	1.33 -	1.33 -	1.33 -
t _l [mm]	0.90	0.83 -	1.00 -	1.33 -	1.50 -	1.50 -	1.50 -	1.50 -	1.50 -	1.50 -
	1.00	0.83 -	1.00 -	1.33 -	1.66 -	1.66 -	1.66 -	1.66 -	1.66 -	1.66 -
	1.20	0.90 -	1.06 -	1.37 -	2.00 -	2.00 -	2.00 -	2.00 -	2.00 -	2.00 -
	1.50	0.93 -	1.22 -	1.50 -	2.07 -	2.49 -	2.49 -	2.49 -	2.49 -	2.49 -
N _{R,II,k} [kN]		2.00	2.70	3.60	6.00	9.19	12.22	15.24	15.24	15.24
Compon R _m ≥ 215 N	ent I N/mm ²	1.25	1.50	2.00	3.00	t _{ii} [mm] 4.00	6.00	8.00	10.00	> 10.00 ^a
d _{pd} [mm] ^b		5	5.0		5.3		5.5	5	5.7	5.8
	0.50	1.08 -	1.08 -	1.08 -	1.08 -	1.08 -	1.08 -	1.08 -	1.08 -	1.08 -
	0.60	1.08 -	1.30 -	1.30 -	1.30 -	1.30 -	1.30 -	1.30 -	1.30 -	1.30 -
V 71 N 17	0.70	1.08 -	1.30 -	1.52 -	1.52 -	1.52 -	1.52 -	1.52 -	1.52 -	1.52 -
V _{R,k} [kN]	0.80	1.08 -	1.30 -	1.73 -	1.73 -	1.73 -	1.73 -	1.73 -	1.73 -	1.73 -
t _l [mm]	0.90	1.08 -	1.30 -	1.73 -	1.95 -	1.95 -	1.95 -	1.95 -	1.95 -	1.95 -
dfuuri -	1.00	1.08 -	1.30 -	1.73 -	2.17 -	2.17 -	2.17 -	2.17 -	2.17 -	2.17 -
	1.20	1.18 -	1.38 -	1.79 -	2.60 -	2.60 -	2.60 -	2.60 -	2.60 -	2.60 -
	1.50	1.21 -	1.59 -	1.96 -	2.70 -	3.25 -	3.25 -	3.25 -	3.25 -	3.25 -
N _{R,II,k} [kN]		2.00	2.70	3.60	6.00	9.19	12.22	15.24	15.24	15.24

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Index ^a: Only valid for component II made of S235, S280GD or HX300LAD.

Index ^b: The pre-drill diameter d_{pd} for not indicated thicknesses t_{II} is defined as follows: $d_{pd} = 5.3 \text{ mm}$ for $t_{II} = 1.6 - 4.0 \text{ mm}$, $d_{pd} = 5.5 \text{ mm}$ for $t_{II} = 4.1 - 6.0 \text{ mm}$, $d_{pd} = 5.7 \text{ mm}$ for $t_{II} = 6.1 - 10.0 \text{ mm}$

Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm

TDB-S-S16-6,3 x L

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English translation prepared by DIBt



$\frac{\text{Materials}}{\text{Fastener:}}$ Stainless steel A2 or A4 - EN ISO 3506 Washer: Stainless steel A2 or A4 - EN ISO 3506 Component I: Aluminum alloy - EN 573 Component II: S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346 Drilling-capacity $\Sigma(t_i + t_{il}) \le 4.00 \text{ mm}$									
Compon	ent I			tı	ı [mm]				
Compon R _m ≥ 165 N	ent I V/mm²	0.63	0.75	t _i 0.88	[mm] 1.00	1.25	1.50		
R _m ≥ 165 N	ent I N/mm ² 1.50	0.63	0.75	1	· · · ·	1.25	1.50 1.77		
Compon R _m ≥ 165 N V _{R,k} [kN]	N/mm ²			0.88	1.00				
R _m ≥ 165 N V _{R,k} [kN]	N/mm ² 1.50	1.20	1.40	0.88 1.57	1.00	1.77	1.77		
R _m ≥ 165 N	N/mm ² 1.50 2.00	1.20 1.20	1.40 1.83	0.88 1.57 2.04	1.00 1.74 2.25	1.77 2.57	1.77 2.88		
R _m ≥ 165 N V _{R,k} [kN]	V/mm ² 1.50 2.00 2.50	1.20 1.20 1.20	1.40 1.83 1.83	0.88 1.57 2.04 2.43	1.00 1.74 2.25 2.43	1.77 2.57 2.57	1.77 2.88 2.88		
R _m ≥ 165 N V _{R,k} [kN] t _i [mm] N _{R,II,k} [kN]	V/mm ² 1.50 2.00 2.50 3.00	1.20 1.20 1.20 1.20	1.40 1.83 1.83 2.01	0.88 1.57 2.04 2.43 2.81 1.49	1.00 1.74 2.25 2.43 2.81 1.82	1.77 2.57 2.57 -	1.77 2.88 2.88 -		
R _m ≥ 165 N V _{R,k} [kN] t _i [mm] N _{R,II,k} [kN] Compon	V/mm ² 1.50 2.00 2.50 3.00 ent I	1.20 1.20 1.20 1.20 0.82	1.40 1.83 1.83 2.01 1.15	0.88 1.57 2.04 2.43 2.81 1.49	1.00 1.74 2.25 2.43 2.81 1.82	1.77 2.57 2.57 - 2.51	1.77 2.88 2.88 - 3.21		
R _m ≥ 165 N V _{R,k} [kN] t _i [mm] N _{R,II,k} [kN]	√/mm ² 1.50 2.00 2.50 3.00 ent I √/mm ²	1.20 1.20 1.20 1.20 0.82 0.63	1.40 1.83 1.83 2.01 1.15 0.75	0.88 1.57 2.04 2.43 2.81 1.49 t _l 0.88	1.00 1.74 2.25 2.43 2.81 1.82 [mm] 1.00	1.77 2.57 2.57 - 2.51 1.25	1.77 2.88 2.88 - 3.21 1.50		
R _m ≥ 165 N V _{R,k} [kN] t _i [mm] N _{R,II,k} [kN] Compon	V/mm ² 1.50 2.00 2.50 3.00 ent I V/mm ² 1.50	1.20 1.20 1.20 1.20 0.82 0.63 1.20	1.40 1.83 1.83 2.01 1.15 0.75 1.60	0.88 1.57 2.04 2.43 2.81 1.49 t _l 0.88 1.93	1.00 1.74 2.25 2.43 2.81 1.82 [mm] 1.00 2.26	1.77 2.57 2.57 - 2.51 1.25 2.30	1.77 2.88 2.88 - 3.21 1.50 2.30		
R _m ≥ 165 N V _{R,k} [kN] t _i [mm] N _{R,II,k} [kN] Compon R _m ≥ 215 N V _{R,k} [kN]	V/mm ² 1.50 2.00 2.50 3.00 ent I V/mm ² 1.50 2.00	1.20 1.20 1.20 1.20 0.82 0.63 1.20 1.20	1.40 1.83 1.83 2.01 1.15 0.75 1.60 1.83	0.88 1.57 2.04 2.43 2.81 1.49 t ₁ 0.88 1.93 2.35	1.00 1.74 2.25 2.43 2.81 1.82 [mm] 1.00 2.26 2.87	1.77 2.57 2.57 - 2.51 1.25 2.30 3.31	1.77 2.88 2.88 - 3.21 1.50 2.30 3.75		
R _m ≥ 165 M V _{R,k} [kN] t _i [mm] N _{R,II,k} [kN] Componi R _m ≥ 215 M	V/mm ² 1.50 2.00 2.50 3.00 ent I V/mm ² 1.50	1.20 1.20 1.20 1.20 0.82 0.63 1.20	1.40 1.83 1.83 2.01 1.15 0.75 1.60	0.88 1.57 2.04 2.43 2.81 1.49 t _l 0.88 1.93	1.00 1.74 2.25 2.43 2.81 1.82 [mm] 1.00 2.26	1.77 2.57 2.57 - 2.51 1.25 2.30	1.77 2.88 2.88 - 3.21 1.50 2.30		

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-drilling screw with SV-washer 13x16 mm

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

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English translation prepared by DIBt



			<u>Materials</u>		
SV 16	x13		Fastener:	Stainless steel A2 or A4 - EN I	SO 3506
ø10,	,5SV	V8	Washer:	Stainless steel A2 or A4 - EN I	SO 3506
	7	5,3	Component I:	Aluminum alloy - EN 573	
€,0 0	1,8	L	Component II:	S280GD to S450GD - EN 1034 HX300LAD to HX460LAD - EN	
7	ø3,7	<u> </u>	Drilling-capacity	$\Sigma(t_l + t_{ll}) \leq 4.00 \text{ mm}$	
Compon B. > 165	nent I	2 × 0 75	2×0.99	t⊪ [mm]	0 v 1 05
Compon R _m ≥ 165 I	N/mm ²	2 x 0.75	2 x 0.88	2 x 1.00	2 x 1.25
R _m ≥ 165	N/mm ² 1.50	1.40	1.57	2 x 1.00 1.74	1.77
R _m ≥ 165 V _{R,k} [kN]	N/mm ² 1.50 2.00	1.40 1.83	1.57 2.04	2 x 1.00 1.74 2.25	1.77 -
R _m ≥ 165	N/mm ² 1.50 2.00 2.50	1.40	1.57	2 x 1.00 1.74	1.77
R _m ≥ 165 V _{R,k} [kN]	N/mm ² 1.50 2.00	1.40 1.83 1.83	1.57 2.04 -	2 x 1.00 1.74 2.25	1.77 - -
R _m ≥ 165 I V _{R,k} [kN] t _i [mm] N _{R,ii,k} [kN] Compon	N/mm ² 1.50 2.00 2.50 3.00 ment I	1.40 1.83 1.83 -	1.57 2.04 - -	2 x 1.00 1.74 2.25 -	1.77 - - -
R _m ≥ 165 V _{R,k} [kN] t _i [mm]	N/mm ² 1.50 2.00 2.50 3.00 ment I	1.40 1.83 1.83 -	1.57 2.04 - -	2 x 1.00 1.74 2.25 - - 3.45	1.77 - - -
R _m ≥ 165 I V _{R,k} [kN] t _i [mm] N _{R,II,k} [kN] Compon R _m ≥ 215 I	N/mm ² 1.50 2.00 2.50 3.00 ment I	1.40 1.83 1.83 - 2.43	1.57 2.04 - - 2.94	2 x 1.00 1.74 2.25 - - 3.45 t _{II} [mm]	1.77 - - 4.38
R _m ≥ 165 I V _{R,k} [kN] t _i [mm] N _{R,ii,k} [kN] Compon	N/mm ² 1.50 2.00 2.50 3.00 nent I N/mm ²	1.40 1.83 1.83 - 2.43 2 x 0.75	1.57 2.04 - - 2.94 2 x 0.88	2 x 1.00 1.74 2.25 - - 3.45 t _{II} [mm] 2 x 1.00	1.77 - - 4.38 2 x 1.25
R _m ≥ 165 V _{R,k} [kN] t _i [mm] N _{R,II,k} [kN] Compon R _m ≥ 215 V _{R,k} [kN]	N/mm ² 1.50 2.00 2.50 3.00 nent I N/mm ² 1.50	1.40 1.83 1.83 - 2.43 2 x 0.75 1.60	1.57 2.04 - - 2.94 2 x 0.88 1.93	2 x 1.00 1.74 2.25 - 3.45 t _{II} [mm] 2 x 1.00 2.26	1.77 - - 4.38 2 x 1.25 2.30
R _m ≥ 165 I V _{R,k} [kN] t _i [mm] N _{R,II,k} [kN] Compon R _m ≥ 215 I	N/mm ² 1.50 2.00 2.50 3.00 ent I N/mm ² 1.50 2.00	1.40 1.83 1.83 - 2.43 2 x 0.75 1.60 1.83	1.57 2.04 - 2.94 2.94 2 x 0.88 1.93 2.35	2 x 1.00 1.74 2.25 - 3.45 t _{II} [mm] 2 x 1.00 2.26 2.87	1.77 - - 4.38 2 x 1.25 2.30 -

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

Self-drilling screw with SV-washer 13x16 mm

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

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English translation prepared by DIBt



5,3 2 L	3,3	Fastener: Washer: Component I: Component II:	Stainless ste with EPDM- Aluminum a	eel A2 or A4 - E eel A2 or A4 - E seal Iloy - EN 573 iferous timber) ·	N ISO 3506	
•		Drilling-capacity Characteristics M _{y,Rk} = fax k =	7.9 Nm		$a = 350 \text{ kg/m}^{3}$	
		-un _i n —		(-or o, Pa	,	
		l _{ef} [mm]			1	
2 25	30		40	45		
					0.59	
	0.80	0.80	0.80	0.80	0.80	
	1.01	1.01	1.01	1.01	1.01	
	1.14	1.14	1.14	1.14	1 1 1 4	
) 1.02	1.23	1.26	1.26	1.26	1.26 V	t,I,K [kN]
	1.23	1.26	1.26	1.26	1.26	
) 1.02	1.23	1.26	1.26	1.26	1.26	
) 1.02	1.23	1.26	1.26	1.26	1.26	
1.78	2.14	2.49	2.85	3.21		
		L. [mm]			1	
2 25	30		40	45		
					0.70	
					1 34	
						i,i,k [kN]
	_					
1.78	2.14	2.49	2.85	3.21		
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\frac{1}{2} \frac{1}{25} \frac{1}{30} \frac{1}{35} \frac{1}{102} \frac{1}{123} \frac{1}{1} \frac{1}{1}$	$\frac{1}{2} \frac{1}{25} \frac{1}{30} \frac{1}{35} \frac{1}{40} \frac{1}{5} $	$\frac{1}{10} = \frac{1}{100} = \frac{1}{$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

SW2-S-S16-6,0 x L, SW2-S-L12-S16-6,0 x L

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≥ø1 ø10, 12 ø6,5	5 SW	/8 5,3	L12 3,3	F V C	<u>faterials</u> Vasher: Component I: Component II:	Stainless st with EPDM- Aluminum a	eel A2 or A4 - E eel A2 or A4 - E seal Iloy - EN 573 iferous timber) -	IN ISO 3506	
7	ø3,9		-	<u>C</u> N	haracteristics haracteristics M _{y,Rk} = x,k =	Σ(t _i) ≤ 2.00 f 12.1 Nm 13.2 N/mm ²	mm (l _{ef} = 35 mm, ρ _έ	_a = 350 kg/m ³)	
-				_	1. []				
Compon R _m ≥ 165 ľ	ent I N/mm ²	35	45		l _{ef} [mm] 55	65	75		
nm = 1001	0.50	0.86	0.86		0.86	0.86	0.86	0.86	
	0.60	1.03	1.03		1.03	1.03	1.03	1.03	
	0.70	1.20	1.20		1.20	1.20	1.20	1.20	
V _{R,k} [kN]	0.80	1.37	1.37		1.37	1.37	1.37	1.37	
t Francia I	0.90	1.54	1.54		1.54	1.54	1.54	1.54	V _{R,I,k} [kN]
t _l [mm]	1.00	1.72	1.72		1.72	1.72	1.72	1.72	
	1.20	1.73	2.06		2.06	2.06	2.06	2.06	
	1.50	1.73	2.23		2.57	2.57	2.57	2.57	
N _{R,II,k} [kN]		2.70	3.47		4.25	5.02	5.79		
Compon	ent I				l _{ef} [mm]		1	1	
R _m ≥ 215 I		35	45		55	65	75		
	0.50	1.12	1.12		1.12	1.12	1.12	1.12	
	0.60	1.34	1.34		1.34	1.34	1.34	1.34	
V _{R,k} [kN]	0.70	1.57	1.57		1.57	1.57	1.57	1.57	
	0.80	<u>1.73</u> 1.73	1.79		1.79	1.79	1.79	1.79	V _{R,I,k} [kN]
t _i [mm]	0.90	1.73	2.01 2.23		2.01 2.24	2.01 2.24	2.01	2.01 2.24	
	1.20	1.73	2.23		2.24	2.24	2.24	2.24	
								_	
N _{B,ILk} [kN]	1.00								
N _{R,II,k} [kN] Additional de The resistand 1999-1-4:200	ce value N	1.73 2.70 J _{R,k} can be dete on (8.13).	2.23 3.47 ermined as f	ollo	2.73 4.25 ws: N _{R,k} = min {	3.22 5.02 N _{R,I,k} N _{R,II,k} }.	3.35 5.79 N _{R,I,k} is to be cal	3.35	to EN
The indicated	d resistan	. ,	$(applies to c, p_k) = N_{R,II,k}$	* km	ponent II with k_{rr} $\frac{\rho_k}{9} * \frac{\rho_k}{350}$.	_{lod} = 0.9 and ρ	_s = 350 kg/m ³ . Ν	$J_{R,II,k}$ for other k_m	_{lod} or ρ _k can

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

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	0			Materials				
<u></u> ≥ø1				Fastener:	Stainless st	eel A2, A4 or 1.4	1547 - EN ISO 3	3506
ø10,	s si	N8 ∳		Washer:	Stainless st with EPDM	eel A2 or A4 - E -seal	N ISO 3506	
1		5,3 •		Component I:	Aluminum a	alloy - EN 573		
2				Component II:	Timber (cor	niferous timber) -	EN 14081	
ø6,5	2,5	 L 		·	, ,	,		
V		¥		Drilling-capacity	<u> </u>			
				Characteristics				
				M _{y,Rk} =	13.9 Nm			
				f _{ax,k} =		² (l _{ef} = 29 mm, ρ _a	-350 kg/m^{3}	
				ι _{ax,κ} –	13.2 14/11/1	(lef – 23 mm, Pa	– 550 kg/m /	
Compon	iont I			l _p [mm]			1	
R _m ≥ 165 l	N/mm^2	35	45	55	65	75		
d _{pd} [mm]				4.80				
	0.50	0.86	0.86	0.86	0.86	0.86	0.86	
	0.60	1.03	1.03	1.03	1.03	1.03	1.03	
	0.70	1.20	1.20	1.20	1.20	1.20	1.20	
V _{R,k} [kN]	0.80	1.37	1.37	1.37	1.37	1.37	1.37	V _{R,I,k} [kN]
t _i [mm]	0.90	1.54	1.54	1.54	1.54	1.54	1.54	
-, []	1.00	1.72	1.72	1.72	1.72	1.72	1.72	
	1.20	1.73	2.06	2.06	2.06	2.06	2.06	
	1.50	1.73	2.23	2.57	2.57	2.57	2.57	
N _{R,II,k} [kN]		2.70	3.47	4.25	5.02	5.79	J	
Compon	ent I			l₀ [mm]			1	
R _m ≥ 215	N/mm ²	35	45	55	65	75		
d _{pd} [mm]				4.80				
	0.50	1.12	1.12	1.12	1.12	1.12	1.12	
	0.60	1.34	1.34	1.34	1.34	1.34	1.34	
	0.70	1.57	1.57	1.57	1.57	1.57	1.57	
V _{R,k} [kN]	0.80	1.73	1.79	1.79	1.79	1.79	1.79	V ILNI
t _l [mm]	0.90	1.73	2.01	2.01	2.01	2.01	2.01	V _{R,I,k} [kN]
d [inni]	1.00	1.73	2.23	2.24	2.24	2.24	2.24	
	1.20	1.73	2.23	2.68	2.68	2.68	2.68	
	1.50	1.73	2.23	2.73	3.22	3.35	3.35	
N _{R,II,k} [kN]		2.70	3.47	4.25	5.02	5.79		
N _{R,II,k} [kN] Additional de	1.20 1.50	1.73 1.73	2.23 2.23	2.68 2.73	2.68 3.22	2.68 3.35	2.68	-

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = \min \{N_{R,l,k} \mid N_{R,l,k}\}$. $N_{R,l,k}$ is to be calculate according to EN 1999-1-4:2007, equation (8.13).

The indicated resistance values $N_{R,II,k}$ applies to component II with $k_{mod} = 0.9$ and $\rho_k = 350 \text{ kg/m}^3$. $N_{R,II,k}$ for other k_{mod} or ρ_k can be determined as follows: $N_{R,II,k}(k_{mod}, \rho_k) = N_{R,II,k} * \frac{k_{mod}}{0.9} * \frac{\rho_k}{350}$.

Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm

TDA-S-S16-6,5 x L