



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 6 January 2021

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** Manufacturing plant SFS plants 1, 5, 7, 16 and 18 This European Technical Assessment 78 pages including 71 annexes which form an integral contains part of this assessment This European Technical Assessment is EAD 330046-01-0602 issued in accordance with Regulation (EU) No 305/2011, on the basis of This version replaces ETA-10/0198 issued on 25 January 2019



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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

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				
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 ≥ Ø 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				
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	Description	Fastener material	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 $\geq \emptyset$ 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 ≥ Ø 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 ≥ Ø 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 ≥ Ø 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				
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 ≥ Ø 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	06-T16-5.5 x L 06-T16-5.5 x L 06-L12-T16-5.5 x L Self-drilling screw 06-S16-5.5 x L with sealing washer ≥ Ø 16 mm		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 $\ge \emptyset$ 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

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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 $\ge \emptyset$ 16 mm	Carbon steel	Steel / Timber			
53	SW3-T-H15-6.5 x L	SW3-T-H15-6.5 x L Self-drilling screw Carbon steel					
54	SX3-S12-6,0 x L SX3-L12-S12-6,0 x L SX3-D12-S12-6,0 x L	SX3-L12-S12-6,0 x L					
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 $\ge \emptyset$ 12 mm	Stainless steel	Aluminum alloy - EN 573 / Aluminum alloy - EN 573			
56	TDA-S-S16-6,5 x L	-S-S16-6,5 x L Self-tapping screw with sealing washer ≥ Ø 16 mm Stainless steel		Aluminum alloy - EN 573 / Aluminum alloy - EN 573			
57	TDB-S-S16-6.3 x L	Self-tapping screw with sealing washer ≥ Ø 16 mm	Stainless steel	Aluminum alloy - EN 573 / Aluminum alloy - EN 573			
58	SL2-S-S14-5.5 x L	Self-drilling screw with sealing washer ≥ Ø 14 mm	Stainless steel	Aluminum alloy - EN 573 / Aluminum alloy - EN 573			
59	SL2-S-S14-6.3 x L SL2-S-L12-S14-6.3 x L	Self-drilling screw with sealing washer ≥ Ø 14 mm	Stainless steel	Aluminum alloy - EN 573 / Aluminum alloy - EN 573			
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 ≥ Ø 12 mm	Stainless steel	Aluminum alloy - EN 573 / Steel			
62	SX5-S12-5,5 x L SX5-L12-S12-5,5 x L SX5-D12-S12-5,5 x L			Aluminum alloy - EN 573 / Steel			
63	TDA-S-S16-6,5 x L	Self-tapping screw with sealing washer $\geq \emptyset$ 16 mm					
64	TDB-S-S16-6.3 x L	Self-tapping screw with sealing washer ≥ Ø 16 mm	Stainless steel	Aluminum alloy - EN 573 / Steel			
65 / 66	SL3/2-5-S-SV16-6.0 x L	Self-drilling screw mit SV-washer 13x16 mm	Stainless steel	Aluminum alloy - EN 573 / Steel			



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Table 1 - continued

Annex	Fastening screw	Description	Fastener material	Application		
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	Aluminum alloy - EN 573 / Timber		
68	SXW-S16-6.5 x L SXW-L12-S16-6.5 x L	Staiplace staal		Aluminum alloy - EN 573 / Timber		
69	TDA-S-S16-6,5 x L	16-6,5 x L Self-tapping screw with sealing washer ≥ Ø 16 mm Stair		Aluminum alloy - EN 573 / /Timber		
70	SDA5-H13-5,5 x L	Self-drilling screw	Stainless steel	Aluminum alloy - EN 573 / Aluminum alloy - EN 573		
71	SDA5-H13-5,5 x L	-H13-5,5 x L Self-drilling screw		Stainless steel / Aluminum alloy - EN 573		

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 ≥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 (1-71).

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	see Annexes to this ETA



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3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1

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 in the applicable EAD

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

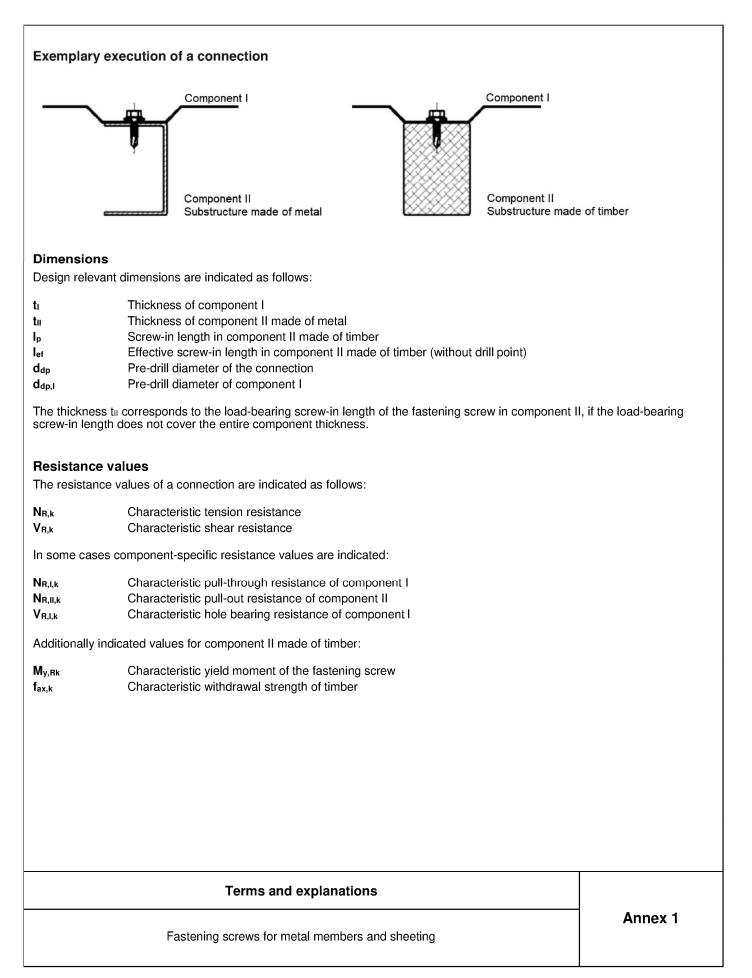
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Dr.-Ing. Ronald Schwuchow Head of Section *beglaubigt:* Hahn

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Design values

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

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

NR,dDesign value of tension resistanceVR,dDesign value of shear resistanceYMPartial 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 $N_{R,k}$ and $V_{R,k}$ 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 $N_{B,k}$ 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:

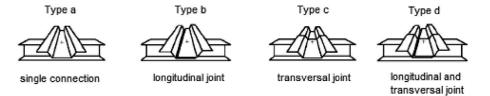
$$\frac{N_{S,d}}{N_{R,d}} + \frac{V_{S,d}}{V_{R,d}} \le 1.0$$

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.

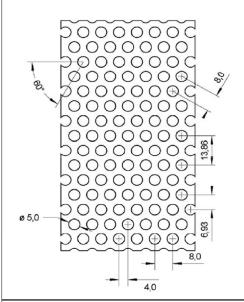
Design and installation

Fastening screws for metal members and sheeting

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<u>Fastening screws</u> 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

Materials

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	2.16	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						
tı [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 _i [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: $N_{R,k} = min \{N_{R,l,k} | N_{R,l,k}\}$ and $V_{R,k} = min \{V_{R,l,k} | V_{R,k}\}$. $N_{R,l,k}$ and $V_{R,k}$ are indicated in the Annex of the fastening screw.

For component I made of S320GD the indicated resistance values $N_{\text{R},l,k}$ and $V_{\text{R},l,k}$ 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.

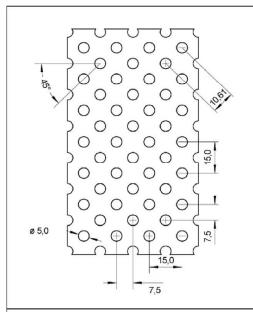
Hole pattern I

Fastening screws for perforated sheeting

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<u>Fastening screws</u> 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

Materials

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
ti [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
tı [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 $N_{\text{R},l,k}$ and $V_{\text{R},l,k}$ 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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	Materials	
<u>≪ Ø12</u>	Fastener:	Stainless steel A2 or A4 - EN ISO 3506
Ø10,5 SW8	Washer.	Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal
5,3	^{3,3} Component I:	S280GD to S450GD - EN 10346
2	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
9	2,3 Drilling-capacity	$\Sigma(t_1 + t_{11}) \leq 3.00 \text{ mm}$
ø3,9		

			tıı [mm]														
		0.63		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	-	1.20ª	-	1.45 ^a	-	1.61ª	-	1.76ª	-	1.90ª	-	1.90ª	-	1.90ª	-
	0.55	1.03ª	-	1.25ª	-	1.53ª	-	1.68ª	-	1.91ª	-	2.13ª	-	2.13ª	-	2.13ª	-
	0.63	1.11 ^a	-	1.34ª	-	1.66ª	-	1.79 ^a	-	2.15 ^a	-	2.50ª	-	2.50ª	-	2.50ª	-
V _{R,k} [kN]	0.75	1.11ª	-	1.47ª	-	1.85ª	-	1.96ª	-	2.51ª	-	3.06ª	-	3.06ª	-	3.06ª	-
t _i [mm]	0.88	1.11 ^a	-	1.47 ^a	-	1.85 ^a	-	2.05	-	2.79	-	3.53	-	3.66	-	3.79	-
	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	-	1.47ª	-	1.85ª	-	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	-	1.22ª	-	1.22ª	-	1.22ª	-	1.22ª	-	1.22ª	-	1.22ª	-
	0.55	0.89	-	1.14	-	1.54	-	1.54ª	-	1.54ª	-	1.54ª	-	1.54ª	-	1.54ª	-
	0.63	0.89	-	1.14	-	1.66	-	1.81	-	2.04ª	-	2.04ª	-	2.04 ^a	-	2.04ª	-
N _{R,k} [kN]	0.75	0.89	-	1.14	-	1.66	-	1.81	-	2.38	-	2.80ª	-	2.80 ^a	-	2.80 ^a	-
tı [mm]	0.88	0.89	-	1.14	-	1.66	-	1.81	-	2.38	-	3.14	-	3.63	-	3.63	-
	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		1.1	4	1.6	6	1.8	1	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 Ø 12 mm

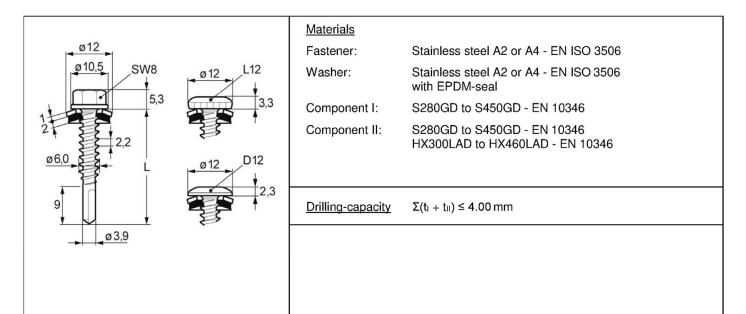
Annex 5

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

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English translation prepared by DIBt





			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	0.88ª	-	1.87ª	-	1.89 ^a	-	1.91 ^a	-	1.91 ^a	-	1.91ª	-	
	0.55	0.98 ^a	-	2.01ª	-	2.05 ^a	-	2.08ª	-	2.12ª	-	2.12ª	-	
	0.63	1.15 ^a	-	2.24ª	-	2.30ª	-	2.36ª	-	2.45ª	-	2.45ª	-	
V _{R,k} [kN]	0.75	1.39ª	-	2.58ª	-	2.68ª	-	2.77ª	-	2.96ª	-	2.96ª	-	
t _i [mm]	0.88	1.66	-	2.67	-	3.30	-	3.36	-	3.66	-	3.79	-	
գլոող	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	1.22ª	-	1.22ª	-	1.22ª	-	1.22ª	-	1.22ª	-	1.22ª	-	
	0.55	1.40	-	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-	1.54ª	-	1.54 ^a	-	
	0.63	1.40	-	1.98	-	2.04 ^a	-	2.04 ^a	-	2.04ª	-	2.04 ^a	-	
N _{R,k} [kN]	0.75	1.40	-	1.98	-	2.61	-	2.80ª	-	2.80ª	-	2.80 ^a	-	
tı [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]	N] 1.40 1.98			8	2.6	1	3.19 4.37				5.82			

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



	Materials	
ø14	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	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
9	Drilling-capacity	$\Sigma(t_i + t_{il}) \leq 3.00 \text{ mm}$
<u>ø3,9</u>		

				tıı [mm]													
		0.6	3	0.7	5	0.8	88	1.0	0	1.2	1.25		0	1.7	5	2.0	0
	0.50	0.98 ^a	-	1.20ª	-	1.45 ^a	ac	1.61ª	ac	1.76ª	ac	1.90ª	ac	1.90ª	ac	1.90 ^a	ac
	0.55	1.03ª	-	1.25ª	-	1.53ª	-	1.68ª	ac	1.91ª	ac	2.13ª	ac	2.13ª	ac	2.13ª	а
	0.63	1.11ª	-	1.34ª	-	1.66ª	-	1.79 ^a	ac	2.15ª	ac	2.50ª	ac	2.50ª	а	2.50ª	а
V _{R,k} [kN]	0.75	1.11ª	-	1.47ª	-	1.85ª	-	1.96ª	ac	2.51ª	ac	3.06ª	ac	3.06ª	а	3.06ª	а
t _I [mm]	0.88	1.11 ^a	-	1.47ª	-	1.85ª	-	2.05	-	2.79	-	3.53	-	3.66	-	3.79	а
a [mm]	1.00	1.11 ^a	-	1.47ª	-	1.85ª	-	2.14	-	3.05	-	3.96	-	4.21	-	4.46	а
	1.25	1.11ª	-	1.47ª	-	1.85ª	-	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	-	1.34ª	ac	1.34ª	ac	1.34ª	ac	1.34ª	ac	1.34ª	ac	1.34ª	ac
	0.55	0.89	-	1.14	-	1.66	-	1.69ª	ac	1.69ª	ac	1.69ª	ac	1.69ª	ac	1.69 ^a	а
	0.63	0.89	-	1.14	-	1.66	-	1.81	ac	2.25	ac	2.25ª	ac	2.25ª	а	2.25ª	а
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	а	3.09 ^a	a
tı [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	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]		0.8	9	1.1	4	1.6	6	1.8	81	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 Ø 14 mm

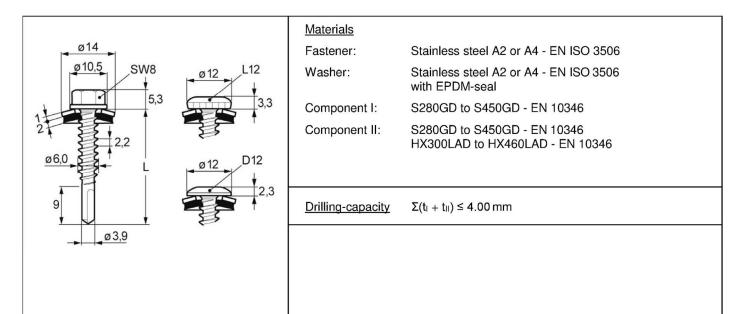
Annex 7

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





			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	0.88ª	ac	1.87ª	ac	1.89 ^a	ac	1.91ª	ac	1.91ª	ac	1.91ª	ac	
	0.55	0.98ª	ac	2.01ª	ac	2.05 ^a	ac	2.08ª	ac	2.12ª	ac	2.12ª	а	
	0.63	1.15ª	ac	2.24ª	ac	2.30ª	ac	2.36 ^a	ac	2.45ª	ac	2.45ª	а	
V _{R,k} [kN]	0.75	1.39ª	ac	2.58ª	ac	2.68ª	ac	2.77ª	ac	2.96ª	ac	2.96ª	а	
t _i [mm]	0.88	1.66	-	2.67	-	3.30	-	3.36	ac	3.66	а	3.79	а	
a finnig -	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	1.34ª	ac	1.34ª	ac	1.34ª	ac	1.34ª	ac	1.34ª	ac	
	0.55	1.40	ac	1.69 ^a	ac	1.69 ^a	ac	1.69 ^a	ac	1.69 ^a	ac	1.69 ^a	а	
	0.63	1.40	ac	1.98	ac	2.25ª	ac	2.25ª	ac	2.25ª	ac	2.25ª	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	
tı [mm]	0.88	1.40	-	1.98	-	2.61	-	3.19	ac	4.00	а	4.00	а	
	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]	k [kN] 1.40 1.98			8	2.6	51	3.1	9	4.3	37	5.82			

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



ø16	<u>Materials</u>	Steinlass steel A2 or A4 EN ISO 2500
	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 2 2,2	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
9	Drilling-capacity	$\Sigma(t_l + t_{ll}) \leq 3.00 \text{ mm}$
ø 3,9		

			tıı [mm]														
		0.63	3	0.7	5	0.8	8	1.0	0	1.2	5	1.50		1.7	5	2.0	0
	0.50	0.98ª	-	1.20ª	-	1.45 ^a	ac	1.61ª	ac	1.76ª	ac	1.90ª	ac	1.90 ^a	ac	1.90ª	ac
	0.55	1.03ª	-	1.25ª	-	1.53ª	-	1.68ª	ac	1.91ª	ac	2.13ª	ac	2.13ª	ac	2.13ª	а
	0.63	1.11ª	-	1.34ª	-	1.66ª	-	1.79 ^a	ac	2.15ª	ac	2.50ª	ac	2.50ª	а	2.50ª	а
V _{R,k} [kN]	0.75	1.11ª	-	1.47ª	-	1.85ª	-	1.96ª	ac	2.51ª	ac	3.06ª	ac	3.06ª	а	3.06ª	а
t _i [mm]	0.88	1.11ª	-	1.47ª	-	1.85ª	-	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	1.11ª	-	1.47ª	-	1.85ª	-	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	-	1.52ª	ac	1.52ª	ac	1.52ª	ac	1.52ª	ac	1.52ª	ac	1.52ª	ac
	0.55	0.89	-	1.14	-	1.66	-	1.81	ac	1.91ª	ac	1.91ª	ac	1.91ª	ac	1.91ª	а
	0.63	0.89	-	1.14	-	1.66	-	1.81	ac	2.38	ac	2.70 ^a	ac	2.70 ^a	а	2.70 ^a	а
N _{R,k} [kN]	0.75	0.89	-	1.14	-	1.66	-	1.81	ac	2.38	ac	3.14	ac	3.50 ^a	а	3.50 ^a	а
tı [mm]	0.88	0.89	-	1.14	-	1.66	-	1.81	-	2.38	-	3.14	-	3.86	-	4.52	а
a trund	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	1	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 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



	Materials	
ø16	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 22	Component	II: S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
	D12	
	2,3 Drilling-capa	$\underline{city} \qquad \Sigma(t_{I} + t_{II}) \leq 4.00 \text{ mm}$
ø3,9		

			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	1.87ª	ac	1.89 ^a	ac	1.91ª	ac	1.91ª	ac	1.91ª	ac		
	0.55	0.98 ^a	ac	2.01ª	ac	2.05ª	ac	2.08ª	ac	2.12ª	ac	2.12ª	а		
	0.63	1.15 ^a	ac	2.24ª	ac	2.30ª	ac	2.36ª	ac	2.45ª	ac	2.45ª	а		
V _{R,k} [kN]	0.75	1.39ª	ac	2.58ª	ac	2.68ª	ac	2.77ª	ac	2.96ª	ac	2.96ª	а		
t _i [mm]	0.88	1.66	-	2.67	-	3.30	-	3.36	ac	3.66	а	3.79	а		
a [initi]	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	1.52ª	ac	1.52ª	ac	1.52ª	ac	1.52ª	ac	1.52ª	ac		
	0.55	1.40	ac	1.91	ac	1.91ª	ac	1.91ª	ac	1.91ª	ac	1.91ª	а		
	0.63	1.40	ac	1.98	ac	2.61	ac	2.70ª	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	3.50ª	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	51	3.1	9	4.3	37	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

Annex 10

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



	Materials	
≥ø19	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
	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
9	Drilling-capacity	$\Sigma(t_l + t_{ll}) \leq 3.00 \text{ mm}$
<u>→</u> <u>Ø3,9</u>		

			t _{ll} [mm]														
		0.6	3	0.7	5	0.8	8	1.0	1.00 1.25		5	1.50		1.75		2.0	0
	0.50	0.98 ^a	-	1.20ª	-	1.45 ^a	ac	1.61ª	ac	1.76ª	ac	1.90ª	ac	1.90ª	ac	1.90ª	ac
	0.55	1.03ª	-	1.25ª	-	1.53ª	-	1.68ª	ac	1.91ª	ac	2.13ª	ac	2.13ª	ac	2.13ª	а
	0.63	1.11ª	-	1.34ª	-	1.66ª	-	1.79 ^a	ac	2.15ª	ac	2.50ª	ac	2.50ª	а	2.50ª	а
V _{R,k} [kN]	0.75	1.11ª	-	1.47ª	-	1.85ª	-	1.96ª	ac	2.51ª	ac	3.06ª	ac	3.06ª	а	3.06ª	а
t _i [mm]	0.88	1.11 ^a	-	1.47ª	-	1.85 ^a	-	2.05	-	2.79	-	3.53	-	3.66	-	3.79	а
a [mm]	1.00	1.11 ^a	-	1.47ª	-	1.85 ^a	-	2.14	-	3.05	-	3.96	-	4.21	-	4.46	а
	1.25	1.11ª	-	1.47ª	-	1.85ª	-	2.32	-	3.59	-	4.86	-	5.36	-	-	-
	1.50	1.11 ^a	-	1.47ª	-	1.85 ^a	-	2.32	-	3.59	-	4.86	-	-	-	-	-
	0.50	0.89	-	1.14	-	1.66	ac	1.81	ac	1.87ª	ac	1.87ª	ac	1.87ª	ac	1.87ª	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	3.14ª	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
tı [mm]	0.88	0.89	-	1.14	-	1.66	-	1.81	-	2.38	-	3.14	-	3.86	-	4.57	а
a [mm]	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]		0.8	9	1.1	4	1.6	1.66 1.81			2.3	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 $\ge \emptyset$ 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



	Materials	
≥ø19	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	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
9	Drilling-capacity	$\Sigma(t_{I} + t_{II}) \leq 4.00 \text{ mm}$
ø3,9		

			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	0.88ª	ac	1.87ª	ac	1.89ª	ac	1.91ª	ac	1.91ª	ac	1.91ª	ac	
	0.55	0.98ª	ac	2.01ª	ac	2.05ª	ac	2.08ª	ac	2.12ª	ac	2.12ª	а	
	0.63	1.15ª	ac	2.24ª	ac	2.30 ^a	ac	2.36ª	ac	2.45ª	ac	2.45ª	а	
V _{R,k} [kN]	0.75	1.39ª	ac	2.58ª	ac	2.68ª	ac	2.77ª	ac	2.96ª	ac	2.96ª	а	
t _i [mm]	0.88	1.66	-	2.67	-	3.30	-	3.36	ac	3.66	а	3.79	а	
a [mm]	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	1.87ª	ac	1.87ª	ac	1.87ª	ac	1.87ª	ac	1.87ª	ac	
	0.55	1.40	ac	1.98	ac	2.36ª	ac	2.36ª	ac	2.36ª	ac	2.36ª	а	
	0.63	1.40	ac	1.98	ac	2.61	ac	3.14	ac	3.14ª	ac	3.14ª	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	
tı [mm]	0.88	1.40	-	1.98	-	2.61	-	3.19	ac	4.37	а	5.57	а	
a (rining	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]	N _{R,II,k} [kN] 1.40			1.98 2.61				3.1	9	4.3	7	5.82		

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

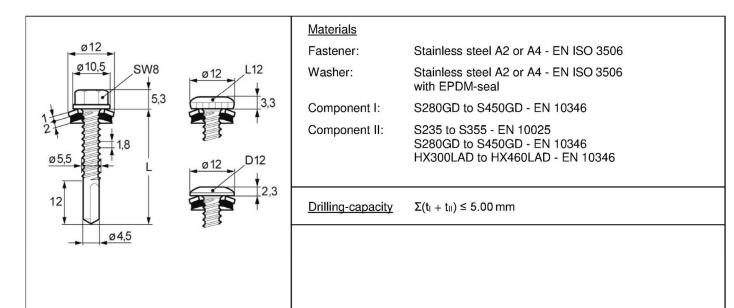
Annex 12

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





							tıı [1	nm]					
		1.5	0	1.7	5	2.0	0	2.5	0	3.0	0	4.0	0
	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	-	1.86ª	-
	0.63	1.94 ^a	-	1.99 ^a	-	2.03ª	-	2.03ª	-	2.03ª	-	2.03ª	-
V _{R,k} [kN]	0.75	2.28ª	-	2.28ª	-	2.28ª	-	2.28ª	-	2.28ª	-	2.28ª	-
t _i [mm]	0.88	2.86 ^a	-	2.86 ^a	-	2.86 ^a	-	3.04ª	-	3.27ª	-	3.27ª	-
	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	1.22ª	-	1.22ª	-	1.22ª	-	1.22ª	-	1.22ª	-	1.22ª	-
	0.55	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-	1.54 ^a	-	1.54ª	-
	0.63	2.04	-	2.04ª	-	2.04 ^a	-	2.04ª	-	2.04 ^a	-	2.04ª	-
N _{R,k} [kN]	0.75	2.09	-	2.69	-	2.80 ^a	-	2.80ª	-	2.80ª	-	2.80ª	-
tı [mm]	0.88	2.09	-	2.69	-	3.28	-	3.63	-	3.63	-	3.63	-
	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]		2.09 2.69			9	3.2	8	4.1	5	5.0	2	8.32	

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

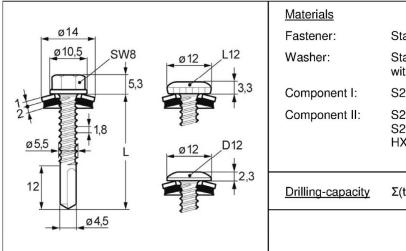
Annex 13

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





	Stainless steel A2 or A4 - EN ISO 3506
	Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal
t I:	S280GD to S450GD - EN 10346
t II:	S235 to S355 - EN 10025 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
bacity	$\Sigma(t_{I} + t_{II}) \leq 5.00 \text{ mm}$

							tıı [r	nm]					
		1.5	50	1.7	'5	2.0	0	2.5	0	3.0	0	4.0	0
	0.50	1.57ª	ac	1.67ª	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	1.86ª	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	а
	0.63	1.94 ^a	ac	1.99 ^a	ac	2.03ª	ac	2.03 ^a	ac	2.03ª	ac	2.03 ^a	а
V _{R,k} [kN]	0.75	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	а
t _i [mm]	0.88	2.86 ^a	ac	2.86 ^a	ac	2.86 ^a	ac	3.04 ^a	ac	3.27ª	ac	3.27ª	а
	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	1.34ª	ac	1.34ª	ac	1.34ª	ac	1.34ª	ac	1.34ª	ac	1.34ª	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
	0.63	2.09	ac	2.25 ^a	ac	2.25ª	ac	2.25 ^a	ac	2.25ª	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
tı [mm]	0.88	2.09	ac	2.69	ac	3.28	ac	4.00	ac	4.00	ac	4.00	а
u (mini)	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	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 14 mm

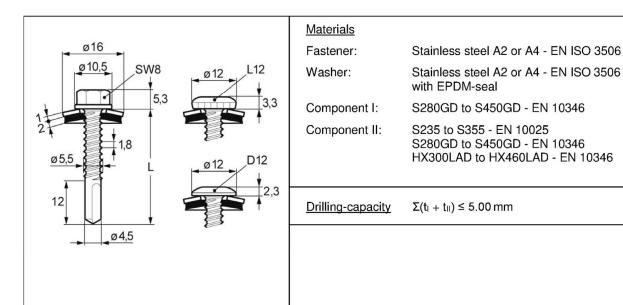
Annex 14

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





							tu fr	nm]					
		1.5	50	1.7	' 5	2.0	-	2.5	50	3.0	0	4.0	ю
	0.50	1.57ª	ac	1.67ª	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac
	0.55	1.71ª	ac	1.79 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	ac	1.86 ^a	а
	0.63	1.94ª	ac	1.99ª	ac	2.03ª	ac	2.03ª	ac	2.03ª	ac	2.03ª	а
V _{R,k} [kN]	0.75	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	а
t _i [mm]	0.88	2.86 ^a	ac	2.86 ^a	ac	2.86 ^a	ac	3.04 ^a	ac	3.27ª	ac	3.27 ^a	а
	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	1.52ª	ac	1.52ª	ac	1.52ª	ac	1.52ª	ac	1.52ª	ac	1.52ª	ac
	0.55	1.91 ^a	ac	1.91ª	ac	1.91ª	ac	1.91ª	ac	1.91ª	ac	1.91ª	а
	0.63	2.09	ac	2.69	ac	2.70ª	ac	2.70 ^a	ac	2.70ª	ac	2.70 ^a	а
N _{R,k} [kN]	0.75	2.09	ac	2.69	ac	3.09	ac	3.50 ^a	ac	3.50ª	ac	3.50 ^a	а
tı [mm]	0.88	2.09	ac	2.69	ac	3.28	ac	4.15	ac	4.52	ac	4.52	а
u (mini)	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	69	3.2	8	4.1	5	5.0	2	8.3	12

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

Annex 15

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



	Materials	
≥ø19	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
	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		

							tıı [r	nm]					
		1.5	50	1.7	'5	2.0	0	2.5	0	3.0	0	4.0	0
	0.50	1.57ª	ac	1.67ª	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac
	0.55	1.71ª	ac	1.79 ^a	ac	1.86ª	ac	1.86 ^a	ac	1.86ª	ac	1.86ª	а
	0.63	1.94ª	ac	1.99ª	ac	2.03ª	ac	2.03ª	ac	2.03ª	ac	2.03ª	а
V _{R,k} [kN]	0.75	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	а
t _i [mm]	0.88	2.86 ^a	ac	2.86 ^a	ac	2.86 ^a	ac	3.04ª	ac	3.27ª	ac	3.27ª	а
a [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	1.87ª	ac	1.87ª	ac	1.87ª	ac	1.87ª	ac	1.87ª	ac	1.87ª	ac
	0.55	2.09	ac	2.36 ^a	ac	2.36ª	ac	2.36 ^a	ac	2.36 ^a	ac	2.36 ^a	а
	0.63	2.09	ac	2.69	ac	3.14	ac	3.14ª	ac	3.14ª	ac	3.14ª	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
tı [mm]	0.88	2.09	ac	2.69	ac	3.28	ac	4.15	ac	5.02	ac	5.57	а
a trining -	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	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 $\ge \emptyset$ 19 mm

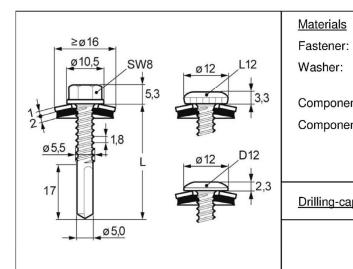
Annex 16

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

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English translation prepared by DIBt





8 9	Stainless steel A2 or A4 - EN ISO 3506
	Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal
ent I:	S280GD to S450GD - EN 10346
ent II:	S235 to S355 - EN 10025 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
apacity	$\Sigma(t_{I} + t_{II}) \leq 14.00 \text{ mm}$

							tıı [r	nm]					
		4.0	00	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
	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
	1.00	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
	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
	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
tı [mm]	0.88	3.60	ac	3.60	ac	3.60	ac	3.60	ac	3.60	ac	3.60	ac
	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.	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

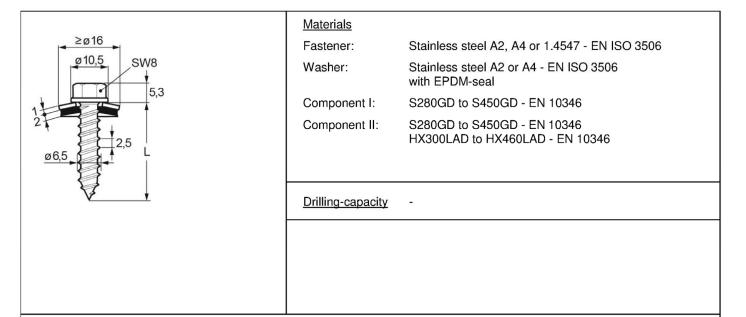
Annex 17

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

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English translation prepared by DIBt





									tıı [r	nm]							
		0.6	3	0.7	5	0.8	8	1.0	0	1.2	25	1.5	50	2.0	0	3.0	00
d _{pd} [mm]		3.5	5	4.0)			4.	5					5.	0		
	0.50	0.82	-	1.07 ^a	-	1.35 ^a	-	1.60ª	ac	1.60 ^a	ac	1.60 ^a	ac	1.60 ^a	ac	1.60ª	ac
	0.55	1.00	-	1.24	-	1.52	-	1.75	ac	1.95	ac	2.10	ac	2.10	ac	2.10	ac
	0.63	1.30	-	1.50	-	1.80	-	2.00	ac	2.50	ac	2.90	ac	2.90	ac	2.90	ac
V _{R,k} [kN]	0.75	1.40	-	1.60	-	1.90	-	2.20	ac	2.70	ac	3.10	ac	3.40	ac	3.50	ac
tı [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
	1.25	1.60	-	1.82	-	2.30	-	2.70	-	3.30	-	4.00	-	4.70	-	5.40	-
	1.50	1.60	-	1.83	-	2.40	-	2.80	-	3.50	-	4.00	-	4.90	-	5.70	-
	0.50	1.00	-	1.20	-	1.40	-	1.50	ac	1.68ª	ac	1.68ª	ac	1.68ª	ac	1.68ª	ac
	0.55	1.00	-	1.20	-	1.40	-	1.50	ac	1.88ª	ac	1.88ª	ac	1.88ª	ac	1.88ª	ac
	0.63	1.00	-	1.20	-	1.40	-	1.50	ac	1.90	ac	2.30	ac	2.70	ac	2.70	ac
N _{R,k} [kN]	0.75	1.00	-	1.20	-	1.40	-	1.50	ac	1.90	ac	2.30	ac	3.40	ac	3.40	ac
t _I [mm]	0.88	1.00	-	1.20	-	1.40	-	1.50	-	1.90	ac	2.30	ac	3.80	ac	4.10	ac
	1.00	1.00	-	1.20	-	1.40	-	1.50	-	1.90	-	2.30	-	3.80	-	4.80	ac
	1.25	1.00	-	1.20	-	1.40	-	1.50	-	1.90	-	2.30	-	3.80	-	5.60	-
	1.50	1.00	-	1.20	-	1.40	-	1.50	-	1.90	-	2.30	-	3.80	-	5.60	-
N _{R,II,k} [kN]		1.00	0	1.2	0	1.4	0	1.5	50	1.9	90	2.3	80	3.8	30	5.6	60

Additional definitions

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

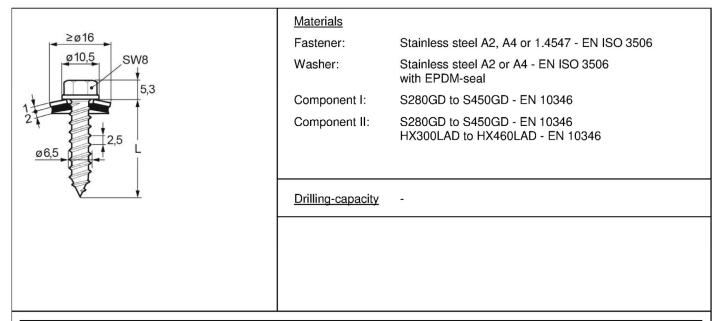
Annex 18

TDA-S-S16-6,5 x L

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English translation prepared by DIBt





						tii [m	ım]				
		2 x 0	.75	2 x C).88	2 x 1	.00	2 x 1	.25	2 x 1	.50
d _{pd} [mm]				4.	0				4	.5	
	0.50	1.36ª	ac	1.48 ^a	ac	1.60 ^a	ac	1.60 ^a	ac	1.60ª	ac
	0.55	1.54ª	ac	1.72ª	ac	1.90ª	ac	1.90ª	ac	1.90ª	ac
	0.63	1.83ª	ac	2.10ª	ac	2.37ª	ac	2.37ª	ac	2.37ª	ac
V _{R,k} [kN]	0.75	2.30 ^a	ac	2.72ª	ac	3.14ª	ac	3.14 ^a	ac	3.14 ^a	ac
tı [mm]	0.88	2.49 ^a - 2.67 ^a -		2.94ª	-	3.40ª	ac	3.40 ^a	ac	3.40ª	ac
a finni	1.00		-	3.16ª	-	3.65	ac	3.65	ac	3.65	ac
	1.25		-	3.17ª	-	3.67	-	3.67	-	3.67	-
	1.50	2.67ª	-	3.18ª	-	3.68	-	3.68	-	3.68	-
	0.50	1.68ª	ac	1.68ª	ac	1.68ª	ac	1.68ª	ac	1.68ª	ac
	0.55	1.88ª	ac	1.88ª	ac	1.88ª	ac	1.88ª	ac	1.88ª	ac
	0.63	2.18	ac	2.70	ac	2.70	ac	2.70	ac	2.70	ac
N _{R,k} [kN]	0.75	2.18	ac	2.77	ac	3.36	ac	3.36	ac	3.36	ac
tı [mm]	0.88	2.18	-	2.77	-	3.36	ac	3.36	ac	3.36	ac
. []	1.00	2.18	-	2.77	-	3.36	ac	3.36	ac	3.36	ac
	1.25	2.18	-	2.77	-	3.36	-	3.36	-	3.36	-
	1.50	2.18	-	2.77	-	3.36	-	3.36	-	3.36	-
N _{R,II,k} [kN]		2.1	8	2.7	77	3.3	36	n/	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-tapping screw with sealing washer $\ge \emptyset$ 16 mm

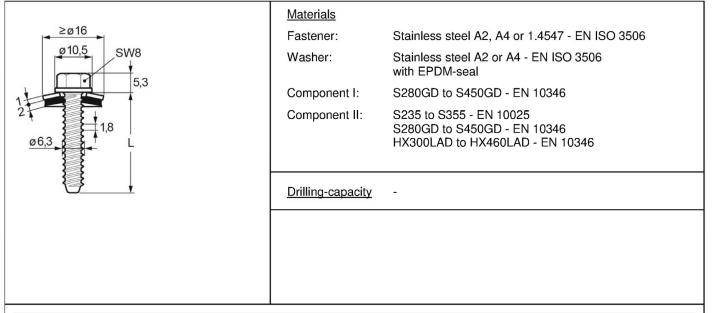
Annex 19

TDA-S-S16-6,5 x L

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English translation prepared by DIBt





							tıı [mm]				
		1.2	25	1.50	2.00	3.00	4.00	6.00	8.00	10.00	> 10.00 ^b
d _{pd} [mm] ^c			5	.0		5.3		5.5	5	.7	5.8
	0.50	1.84ª a	ac	1.84 ^a ac							
	0.55	2.06ª a	ac	2.06ª ac	2.06ª ac	2.06ª ac	2.06ª ac	2.06ª ac	2.06ª ac	2.06ª ac	2.06ª ac
	0.63	2.50	ac	2.70 ac	2.90 ac	3.00 ac	3.10 ac				
V _{R,k} [kN]	0.75	2.60	ac	3.10 ac	3.30 ac	3.60 ac	3.70 ac				
tı [mm]	0.88	2.80	ac	3.20 ac	3.80 ac	4.10 ac	4.30 ac	4.40 ac	4.40 ac	4.40 ac	4.40 ac
a finni	1.00	3.20	-	3.60 -	4.10 -	4.80 ac	4.90 ac	5.10 ac	5.10 ac	5.10 ac	5.10 ac
	1.25	3.60	-	4.20 -	5.00 -	6.10 -	6.30 -	6.50 -	6.50 -	6.50 -	6.50 -
	1.50	3.70	-	4.40 -	5.70 -	6.80 -	7.10 -	7.30 -	7.30 -	7.30 -	7.30 -
	0.50	1.84ª a	ac	1.84ª ac	1.84 ^a ac	1.84 ^a ac	1.84ª ac	1.84ª ac	1.84 ^a ac	1.84 ^a ac	1.84 ^a ac
	0.55	2.00	ac	2.05ª ac	2.05ª ac	2.05ª ac	2.05ª ac	2.05ª ac	2.05ª ac	2.05ª ac	2.05ª ac
	0.63	2.00	ac	2.70 ac	2.80 ac						
N _{R,k} [kN]	0.75	2.00	ac	2.70 ac	3.60 ac						
tı [mm]	0.88	2.00	ac	2.70 ac	3.60 ac	4.29 ac					
. []	1.00	2.00	-	2.70 -	3.60 -	4.85 ac					
	1.25	2.00	-	2.70 -	3.60 -	4.90 -	4.90 -	4.90 -	4.90 -	4.90 -	4.90 -
	1.50	2.00	-	2.70 -	3.60 -	5.90 -	5.90 -	5.90 -	5.90 -	5.90 -	5.90 -
N _{R,II,k} [kN]		2.0	0	2.70	3.60	6.48	9.19	12.22	15.24	15.24	15.24

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 $^{\text{c}}$: The pre-drill diameter d_{pd} for not indicated thicknesses t_{H} 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 $t_{II} = 6.1 - 10.0 \text{ mm}$

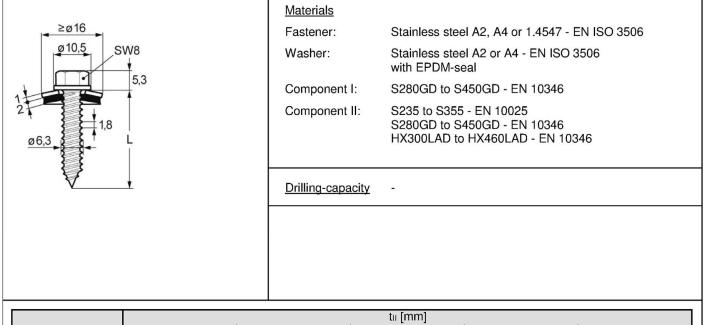
Self-tapping screw with sealing washer $\ge \emptyset$ 16 mm

TDB-S-S16-6,3 x L

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English translation prepared by DIBt





						tii [m	ım]					
		1.2	25	1.5	50	2.0)0	3.0	0	4.0	0	
d _{pd} [mm]			5	.0				5.3	3			
	0.50	1.84 ^a	ac	1.84ª	ac	1.84ª	ac	1.84 ^a	ac	1.84ª	ac	
	0.55	2.06ª	ac	2.06 ^a	ac	2.06 ^a	ac	2.06 ^a	ac	2.06 ^a	ac	
	0.63	2.50	ac	2.70	ac	2.90	ac	3.00	ac	3.10	ac	
V _{R,k} [kN]	0.75	2.60	ac	3.10	ac	3.30	ac	3.60	ac	3.70	ac	
t _i [mm]	0.88	2.80	ac	3.20	ac	3.80	ac	4.10	ac	4.30	ac	
s, []	1.00	3.20	-	3.60	-	4.10	-	4.80	ac	4.90	ac	
	1.25	3.60	-	4.20	-	5.00	-	6.10	-	6.30	-	
	1.50	3.70	-	4.40	-	5.70	-	6.80	-	7.10	-	
	0.50	1.84 ^a	ac	1.84 ^a	ac	1.84 ^a	ac	1.84 ^a	ac	1.84 ^a	ac	
	0.55	2.00	ac	2.05ª	ac	2.05ª	ac	2.05ª	ac	2.05ª	ac	
	0.63	2.00	ac	2.70	ac	2.80	ac	2.80	ac	2.80	ac	
N _{R,k} [kN]	0.75	2.00	ac	2.70	ac	3.60	ac	3.60	ac	3.60	ac	
tı [mm]	0.88	2.00	ac	2.70	ac	3.60	ac	4.29	ac	4.29	ac	
	1.00	2.00	-	2.70	-	3.60	-	4.85	ac	4.85	ac	
	1.25	2.00	-	2.70	-	3.60	-	4.90	-	4.90	-	
	1.50	2.00	-	2.70	-	3.60	-	5.90	-	5.90	-	
N _{R,II,k} [kN]		2.00		2.70		3.6	60	6.4	8	9.19		

Additional definitions

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

Annex 21

TDC-S-S16-6,3 x L

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English translation prepared by DIBt



≥ø12 ø10,€	-	V8 4,7		<u>Materials</u> Fastener: Washer: Component I: Component II:	Stainless s with EPDM S280GD to S280GD to HX300LAD	9 S450GD - EN 9 S450GD - EN 9 to HX460LAD	EN ISO 3506 10346 10346	
					tıı [mm]			
		0.40	0.50	0.55	0.63	0.75	0.88	1.00
	0.40	0.40 0.66	0.50	0.55		0.75 0.66	0.88 0.66	1.00 0.66
	0.40				0.63			
V _{B.k} [kN]		0.66	0.66	0.66	0.63	0.66	0.66	0.66
V _{R,k} [kN]	0.50	0.66 0.66	0.66	0.66	0.63 0.66 0.80	0.66 0.80	0.66	0.66 0.80
V_{R,k} [KN] tı [mm]	0.50 0.55	0.66 0.66 0.66	0.66 0.80 0.80	0.66 0.80 0.98	0.63 0.66 0.80 0.98	0.66 0.80 0.98	0.66 0.80 0.98	0.66 0.80 0.98
	0.50 0.55 0.63	0.66 0.66 0.66 0.66	0.66 0.80 0.80 0.80	0.66 0.80 0.98 0.98	0.63 0.66 0.80 0.98 1.28	0.66 0.80 0.98 1.28	0.66 0.80 0.98 1.28	0.66 0.80 0.98 1.28

0.82

0.82

0.82

0.82

0.82

0.82

0.82

0.82

0.95

0.97

0.97

0.97

0.97

0.97

0.97

0.97

0.95

1.20

1.20

1.20

1.20

1.20

1.20

1.20

0.95

1.20

1.20

1.20

1.20

1.20

1.20

n/a

0.95

1.20

1.20

1.20

1.20

1.20

1.20

n/a

Additional definitions

0.40

0.50

0.55

0.63

0.75

0.88

1.00

N_{R,k} [kN]

t_I [mm]

N_{R,II,k} [kN]

0.52

0.52

0.52

0.52

0.52

0.52

0.52

0.52

0.73

0.73

0.73

0.73

0.73

0.73

0.73

0.73

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



				Mate	<u>rials</u>							
<u>≥</u> ø14	4			Faste	ener:	Stainless	Stainless steel A2 or A4 - EN ISO 3506					
ø10,	5 sv	V8 ↓		Wash	ner:	Stainless with EPD	steel A2 or	A4 - EN ISC	0 3506			
	7	4,7										
1	2	▲		Com	ponent I:	S280GD	to S450GD	- EN 10346				
<u>ø4,8</u>	1,6	 		Com	Component II: S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346							
5	ø 3,2	V		Drillir	ng-capacity	$\chi \qquad \Sigma(t_l + t_{ll}) \leq 2.50 \text{ mm}$						
						tıı [mm]						
		0.40	0.50	0.55	0.63	0.75	0.88	1.00	1.25	1.50		
	0.40	0.40	0.58	0.55	0.63	0.75	0.88	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		
VR,K [KIN]	0.75	0.58	0.69	0.80	0.98	1.26	1.26	1.26	1.26	1.26		
tı [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	0.58	0.69	0.80	0.98	1.26	1.82	2.35	2.35	-		
	1.50	0.58	0.69	0.80	0.98	1.26	1.82	2.35	-	-		
	0.40	0.30	0.42	0.49	0.59	0.76	0.96	1.07	1.07	1.07		
	0.50	0.30	0.42	0.49	0.59	0.76	0.96	1.16	1.16	1.16		
	0.55	0.30	0.42	0.49	0.59	0.76	0.96	1.16	1.16	1.16		
N _{R,k} [kN]	0.63	0.30	0.42	0.49	0.59	0.76	0.96	1.16	1.16	1.16		
	0.75	0.30	0.42	0.49	0.59	0.76	0.96	1.16	1.16	1.16		
tı [mm]	0.88	0.30	0.42	0.49	0.59	0.76	0.96	1.16	1.16	1.16		
	1.00	0.30	0.42	0.49	0.59	0.76	0.96	1.16	1.16	1.16		
	1 0 5		0.40		0 50	0 70						

Additional definitions

N_{R,II,k} [kN]

1.25

1.50

0.30

0.30

0.30

0.42

0.42

0.42

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

0.49

0.49

0.49

0.59

0.59

0.59

0.76

0.76

0.76

0.96

0.96

0.96

1.16

1.16

1.16

1.16

-

n/a

-

-

n/a

Annex 23

SL2-S-S14-4,8 x L

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English translation prepared by DIBt



1.32

1.32

1.32

1.32

1.32

1.32

1.61

1.61

1.61

1.61

1.61

1.61

1.61

1.61

1.61

1.61

-

n/a

1.61

1.61

1.61

-

-

n/a

				Mate	rials						
<u>≥ø1</u> 4	1			Faste	ener:	Stainless steel A2 or A4 - EN ISO 3506					
ø10,5 SW8					ner:	Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal					
	1	4,7		Com	Component I: S280GD to S450GD - EN 10346						
1		Î.									
of B	2,2			Com	conent II:		AD to HX460		0346		
ø5,5	<u> </u>	L				TIXOUUL/			0040		
	-										
7											
	1	•		<u>Drillir</u>	ng-capacity	$\Sigma(t_I + t_{II})$	≤ 2.50 mm				
→	ø2,8										
						tıı [mm]					
		0.40	0.50	0.55	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	0.48	0.48	
	0.50	0.48	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
	0.55	0.48	0.75	0.90	0.90	0.90	0.90	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	
,	0.75	0.48	0.75	0.90	1.13	1.48	1.48	1.48	1.48	1.48	
tı [mm]	0.88	0.48	0.75	0.90	1.13	1.48	1.73	1.73	1.73	1.73	
	1.00	0.48	0.75	0.90	1.13	1.48	1.73	1.97	1.97	1.97	
	1.25	0.48	0.75	0.90	1.13	1.48	1.73	1.97	1.97	-	
	1.50	0.48	0.75	0.90	1.13	1.48	1.73	1.97	-	-	
	0.40	0.43	0.57	0.65	0.79	1.00	1.00	1.00	1.00	1.00	
	0.50	0.43	0.57	0.65	0.79	1.03	1.32	1.61	1.61	1.61	
	0.55	0.43	0.57	0.65	0.79	1.03	1.32	1.61	1.61	1.61	
N _{R,k} [kN]	0.63	0.43	0.57	0.65	0.79	1.03	1.32	1.61	1.61	1.61	
INN,K [KIN]	0.75	0.43	0.57	0.65	0.79	1.03	1.20	1.61	1.61	1.61	

Additional definitions

tı [mm]

N_{R,II,k} [kN]

0.75

0.88

1.00

1.25

1.50

0.43

0.43

0.43

0.43

0.43

0.43

0.57

0.57

0.57

0.57

0.57

0.57

0.65

0.65

0.65

0.65

0.65

0.65

0.79

0.79

0.79

0.79

0.79

0.79

1.03

1.03

1.03

1.03

1.03

1.03

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

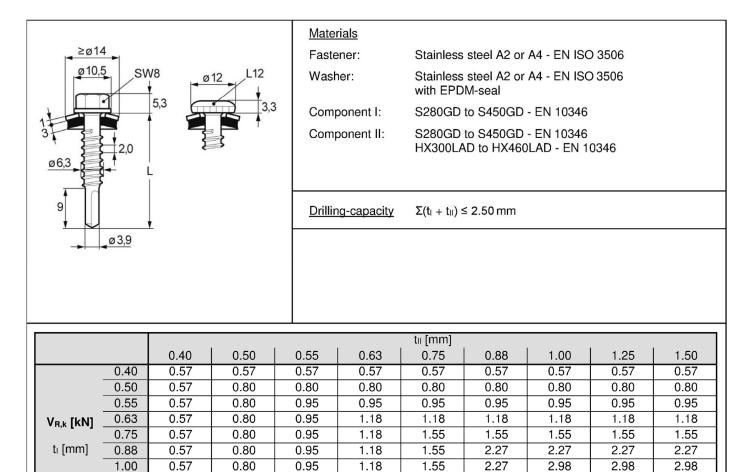
Annex 24

SL2-S-S14-5,5 x L

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English translation prepared by DIBt





1.18

1.18

0.99

0.99

0.99

0.99

0.99

0.99

0.99

0.99

0.99

0.99

1.55

1.55

1.23

1.23

1.23

1.23

1.23

1.23

1.23

1.23

1.23

1.23

2.27

2.27

1.28

1.36

1.50

1.61

1.61

1.61

1.61

1.61

1.61

1.61

2.98

2.98

1.28

1.36

1.50

1.73

1.98

1.98

1.98

1.98

1.98

1.98

2.98

-

1.28

1.36

1.50

1.73

1.98

1.98

1.98

1.98

-

n/a

-

-

1.28

1.36

1.50

1.73

1.98

1.98

1.98

-

-

n/a

Additional definitions

1.25

1.50

0.40

0.50

0.55

0.63

0.75

0.88

1.00

1.25

1.50

N_{R,k} [kN]

tı [mm]

N_{R,II,k} [kN]

0.57

0.57

0.57

0.57

0.57

0.57

0.57

0.57

0.57

0.57

0.57

0.57

0.80

0.80

0.74

0.74

0.74

0.74

0.74

0.74

0.74

0.74

0.74

0.74

0.95

0.95

0.84

0.84

0.84

0.84

0.84

0.84

0.84

0.84

0.84

0.84

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

3.00

3.50

4.00

2.00

2.50

3.00

3.50

4.00

tı [mm]

N_{R,k} [kN]

tı [mm]

N_{R,II,k} [kN]

1.49

1.49

1.49

1.07

1.07

1.07

1.07

1.07

1.07



3.38

3.38

3.38

2.19

2.19

2.19

2.19

2.19

2.19

			<u>Materials</u>						
			Fastener:	Stainless stee	A2 or A4 - EN ISO 3	506			
ø12,	5 SW8		Washer:	-					
	<u>-</u> 5,	3	Component I		S235 to S355 - EN 10025 S280GD to S450GD - EN 10346				
<u>ø6,5</u>	1,8 L		Component I		50GD - EN 10346 HX460LAD - EN 103	46			
A	V		Drilling-capac	<u>city</u> Σ(t _{ll}) ≤ 1.25 mi	m				
			·	tıı [mm]					
		0.63	0.75	0.88	1.00	1.25			
d _{pd,I} [mm]				6.50 - 7.20					
	2.00	1.49	2.29	3.16	3.38	3.62			
V _{R,k} [kN]	2.50	1.49	2.29	3.16	3.38	3.62			
	2 00	1 40	2.20	2.16	2.20	2.60			

3.16

3.16

3.16

1.93

1.93

1.93

1.93

1.93

1.93

2.29

2.29

2.29

1.48

1.48

1.48

1.48

1.48

1.48

Additional definitions

Self-drilling screw

SLG-S-6,5 x L

Annex 26

3.62

3.62

-2.47

2.47

2.47

2.47

-

2.47

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English translation prepared by DIBt



	Materials	
SV 16x13	Fastener:	Stainless steel A2 or A4 - EN ISO 3506
Ø10,5 SW8	Washer:	Stainless steel A2 or A4 - EN ISO 3506
5,3	Component I:	S280GD to S450GD - EN 10346
	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
7 • Ø 3,7	Drilling-capacity	$\Sigma(t_l + t_{ll}) \leq 3.00 \text{ mm}$

				tıı [r	nm]		
		0.63	0.75	0.88	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
	1.50	0.82	1.15	1.49	1.82	2.51	3.21
t _i [mm]	1.75	0.82	1.15	1.49	1.82	2.51	-
	2.00	0.82	1.15	1.49	1.82	-	-
N _{R,II,k} [kN]		0.82	1.15	1.49	1.82	2.51	3.21

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



	Materials	
SV 16x13	Fastener:	Stainless steel A2 or A4 - EN ISO 3506
Ø10,5 SW8	Washer:	Stainless steel A2 or A4 - EN ISO 3506
5,3	Component I:	S280GD to S450GD - EN 10346
	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
7 • Ø 3,7	Drilling-capacity	$\Sigma(t_l + t_{ll}) \leq 4.00 \text{ mm}$

			tıı (n	nm]	
		2 x 0.75	2 x 0.88	2 x 1.00	2 x 1.25
	1.00	2.10	2.23	2.35	3.23
V _{R,k} [kN]	1.25	2.60	2.92	3.24	4.01
	1.50	3.09	3.61	4.12	4.12
t _l [mm]	1.75	3.09	3.61	4.12	-
	2.00	3.09	3.61	4.12	-
	1.00	2.43	2.94	3.45	3.69
N _{R,k} [kN]	1.25	2.43	2.94	3.45	4.38
	1.50	2.43	2.94	3.45	4.38
t _I [mm]	1.75	2.43	2.94	3.45	-
	2.00	2.43	2.94	3.45	-
N _{R,II,k} [kN]		2.43	2.94	3.45	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



	Materials	
≥ø16	Fastener:	Carbon steel with anticorrosion coating
Ø 10,5 SW8 5,3	Washer:	Carbon steel with anticorrosion coating with EPDM-seal
3,3	Component I:	S280GD to S450GD - EN 10346
	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
Ø 3,9	Drilling-capacity	$\Sigma(t_l + t_{ll}) \leq 2.50 \text{ mm}$

			t _{ii} [mm]									
		0.7	5	0.88		1.0	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 _i [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 _i [mm]	0.88	1.17	-	1.60	-	1.92	-	1.92	-	1.92	-	
	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	-	-	-	-	-	
NR,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

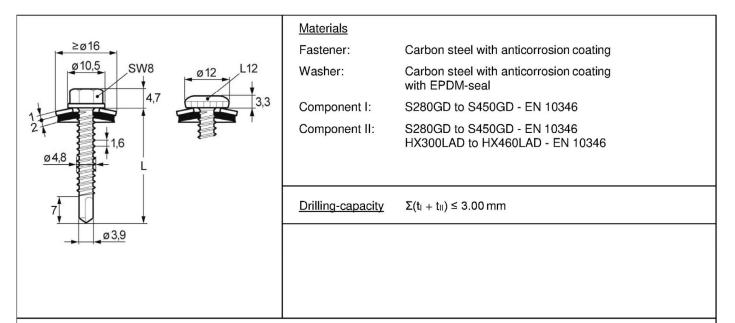
Annex 29

SD2-T16-6.3 x L

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English translation prepared by DIBt





						tii [m	ım]				
		1.2	25	1.5	50	1.7	75	2.0	0	2.5	0
	0.50	1.57ª	ac	1.57ª	ac	1.57ª	ac	1.57ª	а	1.57ª	а
	0.55	1.63ª	ac	1.63ª	ac	1.63ª	ac	1.63ª	а	-	-
	0.63	1.72ª	ac	1.72ª	ac	1.72 ^a	а	1.72 ^a	а	-	-
V _{R,k} [kN]	0.75	2.43ª	ac	2.43ª	ac	2.43ª	а	2.43ª	а	-	-
tı [mm]	0.88	2.92	-	3.11	-	3.30	-	3.49	а	-	-
	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	-	-
a firmini	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]		1.6	5	2.1	6	2.6	60	3.0	3	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 with sealing washer $\ge \emptyset$ 16 mm

Annex 30

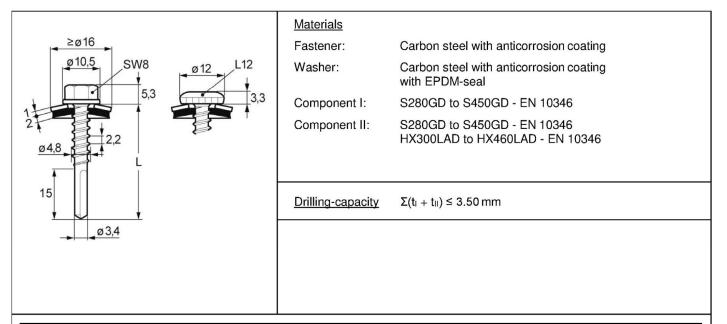
SD3-T16-4,8 x L, SD3-L12-T16-4,8 x L

Z93880.20

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English translation prepared by DIBt





						tıı (m	ım]				
		2 x 0	.63	2 x 0	.75	2 x 0	.88	2 x 1	.00	2 x 1	.25
	0.50	-	-	-	-	-	-	-	-	-	-
	0.55	-	-	-	-	-	-	-	-	-	-
	0.63	1.64	-	1.64	-	1.64	-	1.64	-	1.64	-
V _{R,k} [kN]	0.75	2.22	-	2.22	-	2.22	-	2.22	-	2.22	-
tı [mm]	0.88	2.84	-	2.84	-	2.84	-	2.84	-	2.84	-
	1.00	2.87	-	2.97	-	3.06	-	3.06	-	3.06	-
	1.25	2.90	-	3.10	-	3.29	-	3.29	-	-	-
	1.50	2.90	-	3.10	-	3.29	-	3.29	-	-	-
	0.50	-	-	-	-	-	-	-	-	-	-
	0.55	-	-	-	-	-	-	-	-	-	-
	0.63	1.41	-	1.98	-	1.98	-	1.98	-	1.98	-
N _{R,k} [kN]	0.75	1.41	-	2.00	-	2.41	-	2.41	-	2.41	-
t _i [mm]	0.88	1.41	-	2.00	-	2.58	-	2.71	-	2.71	-
u (ining	1.00	1.41	-	2.00	-	2.58	-	2.71	-	2.71	-
	1.25	1.41	-	2.00	-	2.58	-	2.71	-	-	-
	1.50	1.41	-	2.00	-	2.58	-	2.71	-	-	-
N _{R,II,k} [kN]		1.4	1	2.0	0	2.5	58	2.7	'1	n/a	a

Additional definitions

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

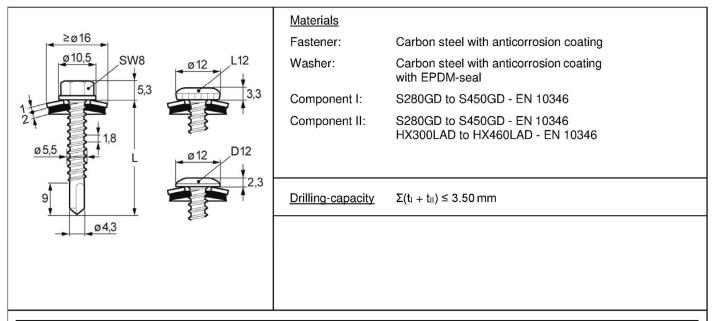
Annex 31

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

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English translation prepared by DIBt





				_		tii [m	ım]				
		1.2	25	1.5	50	1.7	75	2.0)0	2.5	0
	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
	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
tı [mm]	0.88	2.49	-	2.62	-	2.75	-	2.87	а	2.87	а
	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 _i [mm]	0.88	1.71	-	2.36	-	2.76	-	2.86	а	2.86	а
a finning -	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	-	-	-
NR,II,k [KN]		1.7	'1	2.3	36	2.7	76	3.1	6	n/a	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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English translation prepared by DIBt



	Materials	
Ø 17,5 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>	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
12	Drilling-capacity	$\Sigma(t_l + t_{ll}) \leq 3.50 \text{ mm}$
→ 4,3		

						tii [m	าm]				
		1.2	25	1.5	50	1.7	75	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	-
	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 _i [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	-
	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 _i [mm]	0.88	1.34	-	1.64	-	1.94	-	1.94	-	1.94	-
a [initi]	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	-	-	-
NR,II,k [kN]		1.7	'1	2.3	36	2.7	76	3.1	6	n/a	a

Additional definitions

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

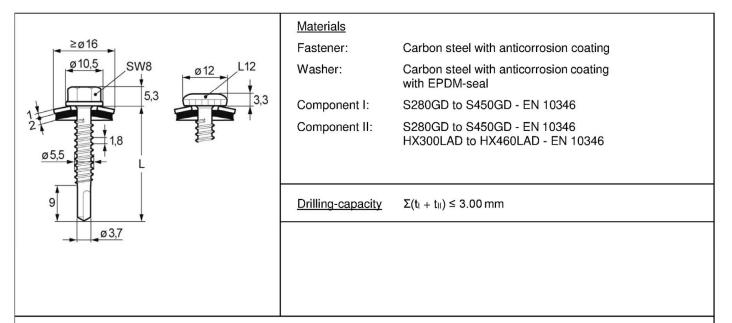
Self-drilling screw

SDP3-Z-5,5 x L

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English translation prepared by DIBt





						tii [m	ım]				
		1.2	5	1.5	50	1.7	75	2.0	00	2.5	0
	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	а	-	-
	0.63	2.13	ac	2.13	ac	2.13	а	2.13	а	-	-
V _{R,k} [kN]	0.75	2.44	ac	2.44	ac	2.44	а	2.44	а	-	-
tı [mm]	0.88	2.57	-	2.57	-	2.57	-	2.57	-	-	-
([''''']	1.00	3.11	-	3.11	-	3.11	-	3.11	-	-	-
	1.25	3.72	-	3.72	-	3.72	-	-	-	-	-
	1.50	4.33	-	4.33	-	-	-	-	-	-	-
	0.50	1.90	ac	1.90	ac	1.90	ac	1.90	ac	1.90	а
	0.55	2.12	ac	2.12	ac	2.12	ac	2.12	а	-	-
NI FLAIT	0.63	2.18	ac	2.47	ac	2.47	а	2.47	а	-	-
N _{R,k} [kN]	0.75	2.18	ac	2.93	ac	3.00	а	3.00	а	-	-
t _i [mm]	0.88	2.18	-	2.93	-	3.42	-	3.47	-	-	-
a [mm]	1.00	2.18	-	2.93	-	3.42	-	3.90	-	-	-
	1.25	2.18	-	2.93	-	3.42	-	-	-	-	-
	1.50	2.18	-	2.93	-	-	-	-	-	-	-
NR,II,k [kN]		2.1	8	2.9	93	3.4	12	3.9	90	n/a	a

Additional definitions

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

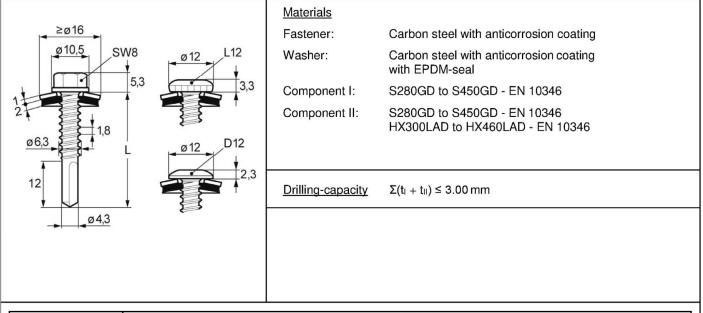
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SDL3-T16-5,5 x L, SDL3-L12-T16-5,5 x L

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English translation prepared by DIBt





						tii (m	ım]				
		1.2	25	1.5	50	1.7	75	2.0	00	2.5	0
	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	-	-	-
tı [mm]	0.88	3.42	-	3.65	-	3.88	-	4.10	-	-	-
a [mm]	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	-	-	-
tı [mm]	0.88	2.42	-	3.36	-	3.64	-	3.77	-	-	-
a (rining	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]		2.4	2	3.3	36	3.6	64	3.9)1	n/a	a

Additional definitions

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

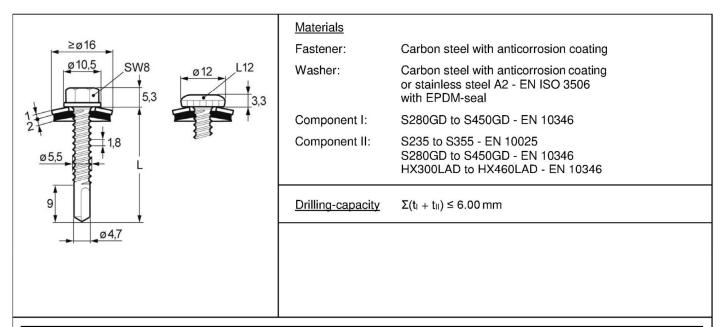
Annex 35

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

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English translation prepared by DIBt





			tii [mm] 1.50 1.75 2.00 2.50 3.00 4.00 5.00												
		1.5	0	1.7	5	2.0	0	2.5	0	3.0	0	4.0	0	5.0	0
	0.50	1.57ª	ac	1.67ª	ac	1.76 ^a	ac								
	0.55	1.71ª	ac	1.79ª	ac	1.86ª	а								
	0.63	1.94 ^a	ac	1.99 ^a	ac	2.03 ^a	а								
V _{R,k} [kN]	0.75	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	а
tı [mm]	0.88	2.86ª	ac	2.86ª	ac	2.86ª	ac	3.04ª	ac	3.27ª	ac	3.27ª	ac	3.27ª	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
	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	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]		2.20		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 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 la	Drilling-capacity	$\Sigma(t_i + t_{ii}) \leq 6.00 \text{ mm}$
<u></u> ø4,7		

						t⊫[mm] 1.50 1.75 2.00 2.50 3.00 4.00 5.00												
		1.5	0	1.7	5	2.0	00	2.5	0	3.0	0	4.0	0	5.0	00			
	0.50	1.57ª	ac	1.67ª	ac	1.76 ^a	ac	1.76ª	ac	1.76ª	ac	1.76ª	ac	1.76ª	ac			
	0.55	1.71 ^a	ac	1.79 ^a	ac	1.86 ^a	ac	1.86ª	ac	1.86ª	ac	1.86ª	ac	1.86ª	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	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	ac	2.28ª	а			
t _i [mm]	0.88	2.86ª	ac	2.86ª	ac	2.86ª	ac	3.04ª	ac	3.27ª	ac	3.27ª	ac	3.27ª	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	1.15	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			
	0.63	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	ac	1.80	а			
NR,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			
a fining -	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]	N _{R,II,k} [kN] 2.20			2.7	0	3.2	20	4.3	0	5.4	0	n/a	a	n/a				

Additional definitions

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

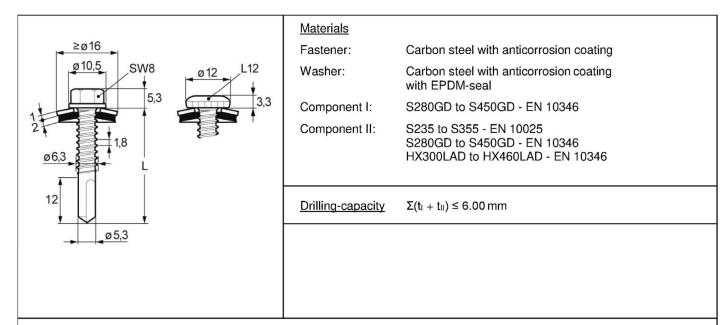
Self-drilling screw

SD6-H15-5,5 x L

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English translation prepared by DIBt





								tıı [n	וm]						
		1.5	50	1.7	'5	2.0	0	2.5	50	3.0)0	4.0	0	5.0	00
	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
tı [mm]	0.88	3.18	-	3.27	-	3.36	-	3.54	-	3.72	ac	3.72	ac	3.72	а
	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 _i [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	-	-	-
NR,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

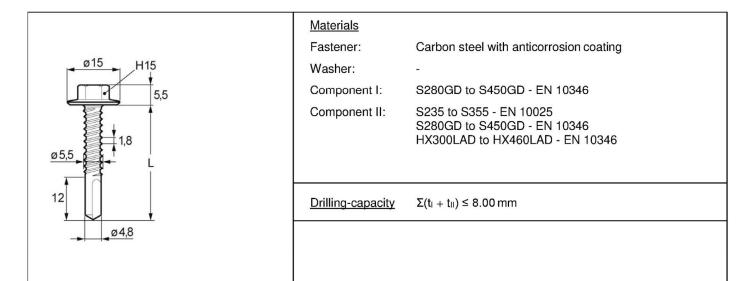
Annex 38

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

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English translation prepared by DIBt





			t⊫[mm] 2.00 2.50 3.00 4.00 5.00 6.00 7.00												
		2.0	0	2.5	50	3.0	00	4.0	00	5.0	0	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	1.76ª	ac	1.76 ^{a)}	ac
	0.55	1.86ª	ac	1.86ª	ac	1.86ª	ac	1.86ª	ac	1.86ª	ac	1.86ª	ac	1.86 ^{a)}	а
	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 _i [mm]	0.88	3.20	-	3.20	-	4.00	ac	4.00	ac	4.20	ac	4.20	ac	4.20	а
	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
	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 _i [mm]	0.88	3.20	-	4.00	-	4.00	ac	4.00	ac	4.00	ac	4.00	ac	4.00	а
	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	10	n/a	а	n/a	a	n/a	a	n/a	а

Additional definitions

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

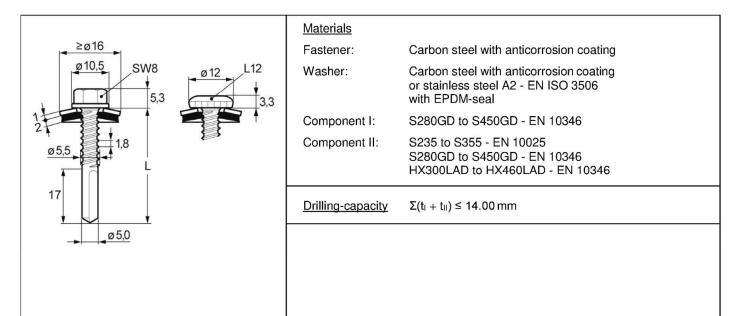
Self-drilling screw

SD8-H15-5,5 x L

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English translation prepared by DIBt





							tii [1	mm]					
		4.0	0	5.0	0	6.0	00	8.0	00	10.	00	12.0	00
	0.50	1.76 ^a	ac	1.76 ^a	ac	1.76ª	ac	1.76ª	ac	1.76ª	ac	1.76 ^{a)}	ac
	0.55	1.86ª	ac	1.86ª	ac	1.86ª	ac	1.86ª	ac	1.86ª	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
tı [mm]	0.88	6.22	ac	6.35	ac	6.49	ac	6.49	ac	6.49	ac	6.49	ac
a [min]	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
	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 _l [mm]	0.88	2.86	ac	2.86	ac	2.86	ac	2.86	ac	2.86	ac	2.86	ac
a finning -	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/s	a	n/s	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 with sealing washer $\ge \emptyset$ 16 mm

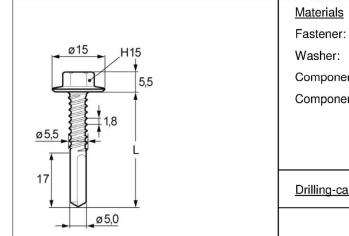
Annex 40

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

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English translation prepared by DIBt





<u>rials</u>	
ener:	Carbon steel with anticorrosion coating
ner:	-
ponent I:	S280GD to S450GD - EN 10346
ponent II:	S235 to S355 - EN 10025 S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
ng-capacity	$\Sigma(t_1 + t_{11}) \leq 14.00 \text{ mm}$

			tıı [mm]										
		4.0	00	5.0	00	6.0	0	8.00		10.0	00	12.	00
	0.50	1.76 ^a	ac	1.76 ^a	ac	1.76ª	ac	1.76 ^a	ac	1.76 ^a	ac	1.76 ^a	ac
	0.55	1.86 ^a	ac	1.86 ^a	ac	1.86ª	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
tı [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	1.15	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
	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
a trining -	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	99	8.7	75	9.6	2	n/s	a	n/a	а	n/s	а

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		Materials Fastener: Washer: 3 Component I Component I	- S280GD to S I: S280GD to S	with anticorrosion coa 450GD - EN 10346 450GD - EN 10346 9 HX460LAD - EN 103	
<u>Ø4,8</u>			<u>Drilling-capac</u>	<u>city</u> Σ(tı + tıı) ≤ 2.5	0 mm	
				tu [mm]		
		0.63	0.75	tıı [mm] 0.88	1.00	1.25
	0.63	0.63	0.75	tii [mm] 0.88 1.48	1.00	1.25 1.48
V _{Rk} [kN]	0.63			0.88		
V _{R,k} [kN]		1.48	1.48	0.88	1.48	1.48
V_{R,k} [kN] t _i [mm]	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	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
	0.75 0.88 1.00	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
tı [mm]	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 4.49	1.48 2.90 3.78 4.59 4.59
	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 2.90 2.90 2.90 2.90 2.90 1.34	0.88 1.48 2.90 3.78 3.78 3.78 3.78 1.65	1.48 2.90 3.78 4.59 4.49 1.88	1.48 2.90 3.78 4.59 4.59 1.88
tı [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 1.48 1.48	1.48 2.90 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 4.49 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 1.48 1.16 1.16 1.16	1.48 2.90 2.90 2.90 2.90 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 4.49 1.88 1.94 1.94	1.48 2.90 3.78 4.59 4.59 1.88 2.35 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



1.34

1.34

1.34

1.34

1.34

1.34

1.16

1.16

1.16

1.16

1.16

1.16

1.65

1.65

1.65

1.65

1.65

1.65

1.94

1.94

1.94

1.94

1.94

1.94

				<u>Materials</u>					
<u>≥ø14</u>	-			Fastener:	Carbon ste	el with anticorro	osion coating		
ø10,5	sv sv	¥.		Washer:	Washer: Aluminum alloy - EN 573 with EPDM-seal				
		4,7		Component I:	Component I: S280GD to S450GD - EN 10346				
ø4,8	1,3			Component II:) S450GD - EN) to HX460LAD			
	,		-	Drilling-capacity	Σ(t _I + t _{II}) ≤	2.00 mm			
					tii [mm]				
		0.40	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	
	0.50	0.74	0.94	0.94	0.94	0.94	0.94	0.94	
V _{R,k} [kN]	0.55	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	
t _I [mm]	0.75	0.74	0.94	1.06	1.25	2.29	2.29	2.29	
	0.88	0.74	0.94	1.06	1.25	2.29	2.98	2.98	
	1.00	0.74	0.94	1.06	1.25	2.29	2.98	3.61	
	0.40	0.69	0.89	1.00	1.16	1.34	1.58	1.58	
	0.50	0.69	0.89	1.00	1.16	1.34	1.65	1.77	

1.00

1.00

1.00

1.00

1.00

1.00

Additional definitions

0.55

0.63

0.75

0.88

1.00

N_{R,k} [kN]

t_I [mm]

N_{R,II,k} [kN]

0.69

0.69

0.69

0.69

0.69

0.69

0.89

0.89

0.89

0.89

0.89

0.89

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



				Mate	rials							
≥ø14	1					Carbon -	+ مما يون ^ي نه م		opting			
ø10,5	-			Faste			Carbon steel with anticorrosion coating					
	sv sv			Wash	ier:		Aluminum alloy - EN 573 with EPDM-seal					
		4,7		Com	oonent I:	S280GD to S450GD - EN 10346						
3				Com	Component II: S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346				0346			
ø4,8 5↓					<u>Drilling-capacity</u> $\Sigma(t_i + t_{ii}) \le 2.50 \text{ mm}$							
	ø2,8				ig-capacity	∠(u + u)).	= 2.50 mm					
						tıı [mm]						
		0.40	0.50	0.55	0.63	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		
tı [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	0.58	0.69	0.80	0.98	1.26	1.82	2.35	2.35	-		
	1.50	0.58	0.69	0.80	0.98	1.26	1.82	2.35	-	-		
	0.40	0.30	0.42	0.49	0.80	1.00	1.09	1.09	1.09	1.09		
	0.50	0.30	0.42	0.49	0.80	1.00	1.40	1.70	1.92	1.92		
	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		
tı [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	-	-		
N _{R,II,k} [kN]		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	erials			
dentes (m)		Fas	tener:	Carbon steel with ant	icorrosion coating	
ø10,5SV	V8	Wa	sher:	-		
	4,7	Cor	nponent I:	S280GD to S450GD	- EN 10346	
Ø4,8	L	Cor	nponent II:	S280GD to S450GD HX300LAD to HX460		
5 ø2,8	<u> </u>	Dril	ing-capacity	$\Sigma(t_l+t_{ll}) \leq 2.50\text{mm}$		
				tıı [mm]		
	0.63	0.75	0.88	1.00	1.25	1.50

		0.63	0.75	0.88	1.00	1.25	1.50
	0.63	1.40	1.40	1.90	2.40	2.40	2.40
	0.75	1.40	1.90	1.90	2.60	2.60	2.60
V _{R,k} [kN]	0.88	1.80	1.90	2.80	2.80	2.80	2.80
tı [mm]	1.00	2.10	2.50	2.80	3.60	3.60	3.60
	1.25	2.10	2.50	2.80	3.60	3.60	-
	1.50	2.10	2.50	2.80	3.60	-	-
	0.63	0.80	1.00	1.40	1.70	2.10	2.10
	0.75	0.80	1.00	1.40	1.70	2.10	2.10
N _{R,k} [kN]	0.88	0.80	1.00	1.40	1.70	2.10	2.10
tı [mm]	1.00	0.80	1.00	1.40	1.70	2.10	2.10
	1.25	0.80	1.00	1.40	1.70	2.10	-
	1.50	0.80	1.00	1.40	1.70	-	-
NR,II,k [kN]		0.80	1.00	1.40	1.70	2.10	n/a

Additional definitions

Self-drilling screw

Annex 45

SL2-4,8 x L

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English translation prepared by DIBt



	Materials	
	Fastener:	Carbon steel with anticorrosion coating
₩15 H15	Washer:	-
6	Component I:	S280GD to S450GD - EN 10346
<u>Ø6,3</u>	Component II:	S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346
7 ø 3,9	Drilling-capacity	$\Sigma(t_l + t_{ll}) \leq 2.50 \text{ mm}$
		tıı [mm]
0.63	0.88	

				սլ			
		0.63	0.75	0.88	1.00	1.25	1.50
	0.63	0.90	1.00	1.10	1.30	1.60	1.60
	0.75	0.90	2.70	2.70	2.70	2.70	2.70
V _{R,k} [kN]	0.88	0.90	2.70	3.60	3.60	3.60	3.60
t _i [mm]	1.00	0.90	2.70	3.60	3.90	4.10	4.10
a frinid	1.25	0.90	2.70	3.60	3.90	4.10	-
	1.50	0.90	2.70	3.60	3.90	-	-
	0.63	0.80	1.10	1.40	1.60	2.10	2.10
	0.75	0.80	1.10	1.40	1.60	2.10	2.10
N _{R,k} [kN]	0.88	0.80	1.10	1.40	1.60	2.10	2.10
t _i [mm]	1.00	0.80	1.10	1.40	1.60	2.10	2.10
a tinni	1.25	0.80	1.10	1.40	1.60	2.10	-
	1.50	0.80	1.10	1.40	1.60	-	-
NR,II,k [kN]		0.80	1.10	1.40	1.60	2.10	n/a

Additional definitions

Self-drilling screw

SL2-H15-6,3 x L

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English translation prepared by DIBt

1.25

1.50

1.75

2.00

1.00

1.25

1.50

1.75

2.00

V_{R,k} [kN]

tı [mm]

N_{R,k} [kN]

tı [mm]

NR,II,k [kN]

3.20

3.20

3.20

3.20

-

1.40

1.40

1.40

1.40

1.40



4.10

5.40

5.40

-2.60

2.60

2.60

2.60

-

n/a

Fastener: Carbon steel with anticorrosion coating	
Washer:	
6 Component I: S280GD to S450GD - EN 10346	
Component II: S280GD to S450GD - EN 10346 HX300LAD to HX460LAD - EN 10346	
$\underline{Drilling-capacity} \Sigma(t_i + t_{ii}) \leq 3.50 \text{ mm}$	
1.00 1.25 1.50 1.75 2.00 1.00 - 3.50 4.10 4.10 4.10	

4.10

5.40

5.40

5.40

2.60

2.60

2.60

2.60

2.60

2.60

3.60

3.60

3.60

3.60

2.20

2.20

2.20

2.20

2.20

2.20

Additional definitions

Self-drilling screw

SL3-H15-6,3 x L

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4.10

4.10

-

-

2.60

2.60

2.60

-

-

n/a

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English translation prepared by DIBt



≥ø16 ø10,5 SW8 5,3 ø6,0 L 2,2 L				<u>Materials</u> Fastener: Washer: Component I: Component II:	Stainless sto with EPDM- S280GD to	eel A2 or A4 - Ef eel A2 or A4 - Ef seal S450GD - EN 10 iferous timber) -	N ISO 3506)346		
	-	_	-	Drilling-capacity	Σ(t _i) ≤ 2.00 r	nm			
7	ø3,5	Y	-	<u>Characteristics</u> M _{y,Rk} = f _{ax,k} =	7.9 Nm 13.2 N/mm² (l _{ef} = 25 mm, ρ _a = 350 kg/m³)				
				l _{ef} [mm]			1		
		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		
	0.63	1.02	1.21	1.21	1.21	1.21	1.21		
V _{R,k} [kN]	0.75	1.02	1.23	1.40	1.40	1.40	1.40		
tı [mm]	0.88	1.02	1.23	1.40	1.40	1.40	1.40	V _{R,I,k} [kN]	
a [mm]	1.00	1.02	1.23	1.40	1.40	1.40	1.40		
	1.25	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		
NI 71-N/2	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		
t _i [mm]	0.88	1.78	2.14	2.49	2.85	3.21	3.28	NR,I,k [kN]	
a [runn]	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		
	1.50	1.78	2.14	2.49	2.85	3.21	3.28		
NR,II,k [kN]		1.78	2.14	2.49	2.85	3.21			

Additional definitions

The indicated resistance values $N_{R,k}$ (and $N_{R,II,k}$) applies to component II with $k_{mod} = 0.9$ and $\rho_k = 350 \text{ kg/m}^3$. $N_{R,k}$ for other k_{mod} or ρ_k can be determined as follows: $N_{R,k}(k_{mod}, \rho_k) = \min \{N_{R,II,k} \mid N_{R,II,k} * \frac{k_{mod}}{0.9} * \frac{\rho_{k,1}}{350}$.

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

Annex 48

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

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English translation prepared by DIBt



				NA					
				<u>Materials</u>					
<u>≥ø1</u>	-			Fastener: Stainless steel A2 or A4 - EN			NISO 3506		
ø10,	5 SV		L12	Washer: Stainless steel A2 or A4 - EN I with EPDM-seal			N ISO 3506		
	1	5,3	3,3	Component I:	S280GD to S	S450GD - EN 10	346		
1				•					
ø6,5	{ 2,5	E		Component II:	Timber (com	iferous timber) -	EN 14001		
				Drilling-capacity	Σ(t _i) ≤ 2.00 r	nm			
_11			Γ	Characteristics					
7				M _{y,Rk} =	12.1 Nm				
	ø 3,9	-		$f_{ax,k} =$	13.2 N/mm² (I _{ef} = 35 mm, ρ _a = 350 kg/m³)				
				L.[mm]			1		
		35	45	l _{ef} [mm]					
		33			CE.	75			
				55	65	75	1 55		
-	0.50	1.55	1.55	1.55	1.55	1.55	1.55	_	
	0.55	1.55 1.71	1.55 1.71	1.55 1.71	1.55 1.71	1.55 1.71	1.71	_	
V _{R,k} [kN]	0.55 0.63	1.55 1.71 1.73	1.55 1.71 2.23	1.55 1.71 2.73	1.55 1.71 2.90	1.55 1.71 2.90	1.71 2.90	-	
	0.55 0.63 0.75	1.55 1.71 1.73 1.73	1.55 1.71 2.23 2.23	1.55 1.71 2.73 2.73	1.55 1.71 2.90 3.14	1.55 1.71 2.90 3.34	1.71 2.90 3.50	– V _{R,I,k} [kN]	
V_{R,k} [kN] tı [mm]	0.55 0.63 0.75 0.88	1.55 1.71 1.73	1.55 1.71 2.23	1.55 1.71 2.73	1.55 1.71 2.90	1.55 1.71 2.90 3.34 3.34	1.71 2.90 3.50 4.00	V _{R,I,k} [kN]	
	0.55 0.63 0.75	1.55 1.71 1.73 1.73 1.73	1.55 1.71 2.23 2.23 2.23 2.23	1.55 1.71 2.73 2.73 2.73	1.55 1.71 2.90 3.14 3.14	1.55 1.71 2.90 3.34	1.71 2.90 3.50	– V _{R,I,k} [kN]	
	0.55 0.63 0.75 0.88 1.00	1.55 1.71 1.73 1.73 1.73 1.73 1.73	1.55 1.71 2.23 2.23 2.23 2.23 2.23	1.55 1.71 2.73 2.73 2.73 2.73 2.73	1.55 1.71 2.90 3.14 3.14 3.14	1.55 1.71 2.90 3.34 3.34 3.34 3.34	1.71 2.90 3.50 4.00 4.50	– V _{R,I,k} [kN]	
	0.55 0.63 0.75 0.88 1.00 1.25	1.55 1.71 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73	1.55 1.71 2.23 2.23 2.23 2.23 2.23 2.23 2.23	1.55 1.71 2.73 2.73 2.73 2.73 2.73 2.73 2.73	1.55 1.71 2.90 3.14 3.14 3.14 3.14 3.14	1.55 1.71 2.90 3.34 3.34 3.34 3.34 3.34	1.71 2.90 3.50 4.00 4.50 5.40	V _{R,I,k} [kN]	
	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 1.73 1.73	1.55 1.71 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.2	1.55 1.71 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73	1.55 1.71 2.90 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14	1.55 1.71 2.90 3.34 3.34 3.34 3.34 3.34 3.34 3.34	1.71 2.90 3.50 4.00 4.50 5.40 5.70	– V _{R,I,k} [kN]	
tı [mm]	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.50 0.55 0.63	1.55 1.71 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73	1.55 1.71 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 1.68	1.55 1.71 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 1.68	1.55 1.71 2.90 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14	1.55 1.71 2.90 3.34 3.34 3.34 3.34 3.34 3.34 3.34 1.68	1.71 2.90 3.50 4.00 4.50 5.40 5.70 1.68	– V _{R,I,k} [kN]	
	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.50 0.55	1.55 1.71 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.88	1.55 1.71 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 1.68 1.88	1.55 1.71 2.73 2.73 2.73 2.73 2.73 2.73 2.73 1.68 1.88	1.55 1.71 2.90 3.14 3.18	1.55 1.71 2.90 3.34 3.34 3.34 3.34 3.34 3.34 1.68 1.88	1.71 2.90 3.50 4.00 4.50 5.40 5.70 1.68 1.88		
tı [mm] N _{R,k} [kN]	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.50 0.55 0.63	1.55 1.71 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 2.70	1.55 1.71 2.23 2.23 2.23 2.23 2.23 2.23 2.23 1.68 1.88 2.70	1.55 1.71 2.73 2.73 2.73 2.73 2.73 2.73 1.68 1.88 2.70	1.55 1.71 2.90 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 2.70	1.55 1.71 2.90 3.34 3.34 3.34 3.34 3.34 3.34 1.68 1.88 2.70	$ \begin{array}{r} 1.71 \\ 2.90 \\ 3.50 \\ 4.00 \\ 4.50 \\ 5.40 \\ 5.70 \\ 1.68 \\ 1.88 \\ 2.70 \\ \end{array} $		
tı [mm]	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.50 0.55 0.63 0.75	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	1.55 1.71 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 3.40	1.55 1.71 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 3.40 4.10 4.25	1.55 1.71 2.90 3.14 3.40	1.55 1.71 2.90 3.34 3.34 3.34 3.34 3.34 3.34 1.68 1.88 2.70 3.40	1.71 2.90 3.50 4.00 4.50 5.40 5.70 1.68 1.88 2.70 3.40		
tı [mm] N _{R,k} [kN]	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	1.55 1.71 1.73 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	1.55 1.71 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.2	1.55 1.71 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 3.40 4.10 4.25 4.25	1.55 1.71 2.90 3.14 1.68 1.88 2.70 3.40 4.10 4.80 5.02	1.55 1.71 2.90 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 1.68 1.88 2.70 3.40 4.10 4.80 5.60	$ \begin{array}{r} 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\\ \end{array} $	V _{R,I,k} [kN]	
tı [mm] N _{R,k} [kN]	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.55 0.63 0.75 0.88 1.00	1.55 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	1.55 1.71 2.23 2.23 2.23 2.23 2.23 2.23 1.68 1.88 2.70 3.40 3.47 3.47	1.55 1.71 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 2.73 3.40 4.10 4.25	1.55 1.71 2.90 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 3.14 1.68 1.88 2.70 3.40 4.10 4.80	1.55 1.71 2.90 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 3.34 1.68 1.88 2.70 3.40 4.10 4.80	$ \begin{array}{r} 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 \\ \end{array} $		

Additional definitions

The indicated resistance values $N_{R,k}$ (and $N_{R,II,k}$) applies to component II with $k_{mod} = 0.9$ and $\rho_k = 350 \text{ kg/m}^3$. $N_{R,k}$ for other k_{mod} or ρ_k can be determined as follows: $N_{R,k}(k_{mod}, \rho_k) = \min \{N_{R,I,k} \mid N_{R,II,k} * \frac{k_{mod}}{0.9} * \frac{\rho_k}{356}$.

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

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English translation prepared by DIBt



≥ø16 ø10,5 swa 5 2,5 ¢6,5	3,3		<u>Materials</u> Fastener: Washer: Compone Compone		Stainless ste with EPDM-s S280GD to \$	el A2 or A4 - E	0346	506
			Drilling-ca	pacity	-			
		Γ	Character	istics				
			M _{y,Rk} =		13.9 Nm			
			f _{ax,k} =		13.2 N/mm ²	(l _{ef} = 29 mm, ρ _ε	a = 350 kg/m ³)	
		•	I _P [m	m]			1	
	35	45	55		65	75		
d _{pd} [mm]			4.0					
0.50	1.55	1.55	1.5	5	1.55	1.55	1.55	

d _{pd} [mm]				4.0				
	0.50	1.55	1.55	1.55	1.55	1.55	1.55	
	0.55	1.71	1.71	1.71	1.71	1.71	1.71	
	0.63	1.73	2.23	2.73	2.90	2.90	2.90	
V _{R,k} [kN]	0.75	1.73	2.23	2.73	3.14	3.34	3.50	
tı [mm]	0.88	1.73	2.23	2.73	3.14	3.34	4.00	V _{R,I,k} [kN]
a trining -	1.00	1.73	2.23	2.73	3.14	3.34	4.50	
	1.25	1.73	2.23	2.73	3.14	3.34	5.40	
	1.50	1.73	2.23	2.73	3.14	3.34	5.70	
	0.50	1.68	1.68	1.68	1.68	1.68	1.68	
	0.55	1.88	1.88	1.88	1.88	1.88	1.88	
	0.63	2.70	2.70	2.70	2.70	2.70	2.70	
N _{R,k} [kN]	0.75	2.70	3.40	3.40	3.40	3.40	3.40	
tı [mm]	0.88	2.70	3.47	4.10	4.10	4.10	4.10	NR,I,k [kN]
a (min)	1.00	2.70	3.47	4.25	4.80	4.80	4.80	
	1.25	2.70	3.47	4.25	5.02	5.60	5.60	
	1.50	2.70	3.47	4.25	5.02	5.60	5.60	
NR,II,k [kN]		2.70	3.47	4.25	5.02	5.79		

Additional definitions

The indicated resistance values $N_{R,k}$ (and $N_{R,II,k}$) applies to component II with k_{mod} = 0.9 and ρ_k = 350 kg/m³. $N_{R,k}$ for other k_{mod} or ρ_k can be determined as follows: $N_{R,k}(k_{mod}, \rho_k)$ = min $\{N_{R,II,k} \mid N_{R,II,k} * \frac{k_{mod}}{0.9} * \frac{\rho_k}{350}$.

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

Annex 50

TDA-S-S16-6,5 x L

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English translation prepared by DIBt



≥ø14 ø10,5 SW8
4,7
Ø4,8
5 Ø2,8

Materials	
Fastener:	Carbon steel with anticorrosion coating
Washer:	Aluminum alloy - EN 573 with EPDM-seal
Component I:	S280GD to S450GD - EN 10346
Component II:	Timber (coniferous timber) - EN 14081
Drilling-capacity	Σ(tլ) ≤ 2.00 mm
Characteristics	
M _{y,Rk} =	6.1 Nm
f _{ax,k} =	13.2 N/mm ² (l _{ef} = 25 mm, ρ_a = 350 kg/m ³)

				l _{ef} [mm]				
		25	30	35	40	45		
	0.50	0.90	1.08	1.19	1.19	1.19	1.19	
	0.55	0.90	1.08	1.26	1.28	1.28	1.28	
	0.63	0.90	1.08	1.26	1.42	1.42	1.42	1
V _{R,k} [kN]	0.75	0.90	1.08	1.26	1.44	1.62	1.63	
tı [mm]	0.88	0.90	1.08	1.26	1.44	1.62	1.72	V _{R,I,k} [kN]
	1.00	0.90	1.08	1.26	1.44	1.62	1.81	1
	1.25	0.90	1.08	1.26	1.44	1.62	1.81	1
	1.50	0.90	1.08	1.26	1.44	1.62	1.81	1
	0.50	1.43	1.71	1.92	1.92	1.92	1.92	
	0.55	1.43	1.71	2.00	2.15	2.15	2.15	
	0.63	1.43	1.71	2.00	2.28	2.49	2.49	
N _{R,k} [kN]	0.75	1.43	1.71	2.00	2.28	2.57	3.02	
t _i [mm]	0.88	1.43	1.71	2.00	2.28	2.57	3.62	N _{R,I,k} [kN]
a finni	1.00	1.43	1.71	2.00	2.28	2.57	4.18	
	1.25	1.43	1.71	2.00	2.28	2.57	4.18	
	1.50	1.43	1.71	2.00	2.28	2.57	4.18	
NR,II,k [kN]		1.43	1.71	2.00	2.28	2.57		

Additional definitions

The indicated resistance values $N_{R,k}$ (and $N_{R,II,k}$) applies to component II with k_{mod} = 0.9 and ρ_k = 350 kg/m³. $N_{R,k}$ for other k_{mod} or ρ_k can be determined as follows: $N_{R,k}(k_{mod}, \rho_k)$ = min $\{N_{R,I,k} \mid N_{R,II,k} * \frac{k_{mod}}{0.9} * \frac{\rho_k}{350}$.

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

Annex 51

SW-T-A14-4,8 x L

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English translation prepared by DIBt



				Materials				
≥ø1	6			Fastener: Carbon steel with anticorrosion coating				
ø10,	5 SI	N8 5,3	L12	Washer:	Carbon steel with anticorrosion coating or stainless steel A2 - EN ISO 3506 with EPDM-seal			
				Component I:	S280GD to	S450GD - EN 10	0346	
	{	1						
ø6,5	2,5			Component II:	nimber (con	iferous timber) -	EN 14081	
				Drilling-capacity	Σ(t _i) ≤ 2.00 r	mm		
				Characteristics				
7		¥.		M _{y,Rk} =	14.9 Nm			
	ø4,3			f _{ax.k} =		(l _{ef} = 35 mm, ρ _a	-350 kg/m^{3}	
				Tax,K –	10.2 11/11/1	(lef – 55 mm, pa	= 550 kg/m /	
				Let [mm]			1	
		35	45	l _{ef} [mm]	65	75]	
	0.50	35	45	55	65 1.58	75	1.58	
	0.50	1.58	1.58	55 1.58	1.58	1.58	1.58	-
	0.55	1.58 1.73	1.58 1.73	55 1.58 1.73	1.58 1.73	1.58 1.73	1.73	-
V _{R,k} [kN]		1.58	1.58	55 1.58	1.58	1.58		
	0.55 0.63	1.58 1.73 1.73	1.58 1.73 1.97	55 1.58 1.73 1.97	1.58 1.73 1.97	1.58 1.73 1.97	1.73 1.97	V _{R,I,k} [kN]
V_{в,к} [kN] t _i [mm]	0.55 0.63 0.75	1.58 1.73 1.73 1.73	1.58 1.73 1.97 2.23	55 1.58 1.73 1.97 2.33	1.58 1.73 1.97 2.33	1.58 1.73 1.97 2.33	1.73 1.97 2.33	– V _{R,I,k} [kN]
	0.55 0.63 0.75 0.88	1.58 1.73 1.73 1.73 1.73 1.73	1.58 1.73 1.97 2.23 2.23	55 1.58 1.73 1.97 2.33 2.33	1.58 1.73 1.97 2.33 2.33	1.58 1.73 1.97 2.33 2.33	1.73 1.97 2.33 2.33	V _{R,I,k} [kN]
	0.55 0.63 0.75 0.88 1.00	1.58 1.73 1.73 1.73 1.73 1.73 1.73	1.58 1.73 1.97 2.23 2.23 2.23	55 1.58 1.73 1.97 2.33 2.33 2.33	1.58 1.73 1.97 2.33 2.33 2.33	1.58 1.73 1.97 2.33 2.33 2.33	1.73 1.97 2.33 2.33 2.33	V _{R,I,k} [kN
	0.55 0.63 0.75 0.88 1.00 1.25	1.58 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73	1.58 1.73 1.97 2.23 2.23 2.23 2.23 2.23	55 1.58 1.73 1.97 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	1.58 1.73 1.97 2.33 2.33 2.33 2.33	1.73 1.97 2.33 2.33 2.33 2.33 2.33	V _{R,I,k} [kN]
	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 1.73	1.58 1.73 1.97 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23	55 1.58 1.73 1.97 2.33 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 1.97 2.33 2.33 2.33 2.33 2.33 2.33 2.33	1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33	V _{R,I,k} [kN]
tı [mm]	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.50	1.58 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73	1.58 1.73 1.97 2.23 2.23 2.23 2.23 2.23 2.23 1.63	55 1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 2.33 1.63	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 1.63	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 1.63	1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 1.63	- V _{R,I,k} [kN]
	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.50 0.55	1.58 1.73 1.93	1.58 1.73 1.97 2.23 2.23 2.23 2.23 2.23 1.63 1.93	55 1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 1.63 1.93	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 1.63 1.93	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 1.63 1.93	1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 1.63 1.93	
tı [mm]	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.50 0.55 0.63	1.58 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 2.41	1.58 1.73 1.97 2.23 2.23 2.23 2.23 2.23 1.63 1.93 2.41	55 1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 1.63 1.93 2.41	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 1.63 1.93 2.41	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 1.63 1.93 2.41	1.73 1.97 2.33 2.33 2.33 2.33 2.33 1.63 1.93 2.41	
tı [mm]	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.50 0.55 0.63 0.75	1.58 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 2.41 2.70	1.58 1.73 1.97 2.23 3.13	55 1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 1.63 1.93 2.41 3.13	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 1.63 1.93 2.41 3.13	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 3.13	1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 1.63 1.93 2.41 3.13	
tı [mm]	0.55 0.63 0.75 0.88 1.00 1.25 1.50 0.50 0.55 0.63 0.75 0.88	1.58 1.73 1.73 1.73 1.73 1.73 1.73 1.73 1.73 2.41 2.70	1.58 1.73 1.97 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 2.23 3.13 3.47	55 1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 3.13 3.91	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 3.13 3.91	1.58 1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 3.13 3.91	1.73 1.97 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 2.33 3.1.93 2.41 3.13 3.91	V _{R,I,k} [kN]

Additional definitions

NR,II,k [kN]

2.70

3.47

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

4.25

5.02

5.79

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

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

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English translation prepared by DIBt



Ø15 H15
6
2,5
Ø6,5
7
→ Ø4,3

<u>Materials</u>	
Fastener:	Carbon steel with anticorrosion coating
Washer:	-
Component I:	S280GD to S450GD - EN 10346
Component II:	Timber (coniferous timber) - EN 14081
Drilling-capacity	$\Sigma(t_i) \leq 2.00 \text{ mm}$
Characteristics	
M _{y,Rk} =	14.9 Nm
f _{ax,k} =	13.2 N/mm ² (l _{ef} = 35 mm, ρ_a = 350 kg/m ³)

				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	
	0.63	1.73	1.97	1.97	1.97	1.97	1.97	
V _{R,k} [kN]	0.75	1.73	2.23	2.33	2.33	2.33	2.33	
t _i [mm]	0.88	1.73	2.23	2.33	2.33	2.33	2.33	V _{R,I,k} [kN]
	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	
	0.63	2.29	2.29	2.29	2.29	2.29	2.29	
N _{R,k} [kN]	0.75	2.70	2.71	2.71	2.71	2.71	2.71	
tı [mm]	0.88	2.70	3.47	3.55	3.55	3.55	3.55	N _{R,I,k} [kN]
	1.00	2.70	3.47	4.25	4.33	4.33	4.33	
	1.25	2.70	3.47	4.25	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]		2.70	3.47	4.25	5.02	5.79		

Additional definitions

The indicated resistance values $N_{R,k}$ (and $N_{R,II,k}$) applies to component II with k_{mod} = 0.9 and ρ_k = 350 kg/m³. $N_{R,k}$ for other k_{mod} or ρ_k can be determined as follows: $N_{R,k}(k_{mod}, \rho_k)$ = min $\{N_{R,I,k} \mid N_{R,II,k} * \frac{k_{mod}}{0.9} * \frac{\rho_k}{350}$.

Self-drilling screw

SW3-T-H15-6,5 x L

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English translation prepared by DIBt



		Materials						
≥ø12		Fastener:	Stainless ste	eel A2 or A4 - EN ISO	3506			
Ø10,5 SW8		Washer:	Washer: Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal					
	5,3	^{,3} Componen	it I: Aluminum a	lloy - EN 573				
2 2,2		Componen	it II: Aluminum a	lloy - EN 573				
Ø6,0	ø12 D12	2,3						
9		Drilling-cap	$\underline{\text{pacity}} \qquad \Sigma(t_i + t_{ii}) \leq 3$.00 mm				
ø3,9	•							
Component I and II			tıı [mm]					
R _m ≥ 165 N/mm ²	1.00	1.20	1.50	2.00	2.50			
0.50	0.65 -	0.69 -	0.69 -	0.69 -	0.69 -			
0.60	0.80 -	0.80 -	0.86 -	0.97 -				
0.70	0.00	0.00	1.04	1.05				

F	$R_m \ge 165 \text{ N/mm}^2$ 1.00		1.2	20	1.5	0	2.0	0	2.5	0		
		0.50	0.65	-	0.69	-	0.69	-	0.69	-	0.69	-
		0.60	0.80	-	0.80	-	0.86	-	0.97	-	-	-
		0.70	0.99	-	0.99	-	1.04	-	1.25	-	-	-
1	/ _{R,k} [kN]	0.80	1.19	-	1.19	-	1.21	-	1.53	-	-	-
	tı [mm]	0.90	1.31	-	1.31	-	1.38	-	1.81	-	-	-
	. []	1.00	1.42	-	1.42	-	1.55	-	2.08	-	-	-
		1.20	1.42	-	1.45	-	1.90	-	-	-	-	-
		1.50	1.42	-	1.45	-	1.90	-	-	-	-	-
N	R,II,k [kN]		0.7	2	0.8	2	1.2	26	1.8	5	2.6	5

	Component	I and II					t⊫[m	וm]				
	R _m ≥ 215 I		1.0	0	1.2	20	1.5	50	2.0	0	2.5	0
Γ	0.50		0.85	-	0.90	-	0.90	-	0.90	-	0.90	-
		0.60	1.04	-	1.04	-	1.12	-	1.26	-	-	-
		0.70	1.30	-	1.30	-	1.35	-	1.63	-	-	-
	V _{R,k} [kN]	0.80	1.55	-	1.55	-	1.57	-	1.99	-	-	-
L	tı [mm]	0.90	1.70	-	1.70	-	1.80	-	2.35	-	-	-
L	a fuund	1.00	1.85	-	1.85	-	2.02	-	2.71	-	-	-
L		1.20	1.85	-	1.89	-	2.47	-	-	-	-	-
		1.50	1.85	-	1.89	-	2.47	-	-	-	-	-
	NR,II,k [kN]		0.9	3	1.0)6	1.6	64	2.4	.1	3.4	5

Additional definitions

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

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

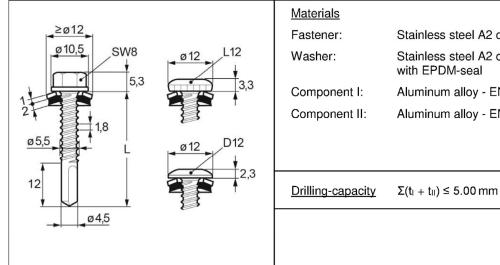
Annex 54

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

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English translation prepared by DIBt





	Stainless steel A2 or A4 - EN ISO 3506
	Stainless steel A2 or A4 - EN ISO 3506 with EPDM-seal
t I:	Aluminum alloy - EN 573
t II:	Aluminum alloy - EN 573
acity	$\Sigma(t_1 + t_2) \le 5.00 \text{mm}$

Component	t I and II					tii [m	ım]						
R _m ≥ 165		1.5	0	2.0	00	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	-		
tı [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	1.00		1.13		1.74		5	3.8	8		

Component	I and II					tii (m	וm]				
R _m ≥ 215 I	N/mm ²	1.5	0	2.0	00	2.5	50	3.0	00	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	-
tı [mm]	0.90	1.32	-	1.93	-	1.98	-	2.02	-	2.09	-
a [mm]	1.00	1.46	-	2.04	-	2.13	-	2.20	-	2.35	-
	1.20	1.46	-	2.26	-	2.42	-	2.57	-	-	-
	1.50	1.46	-	2.26	-	2.42	-	2.57	-	-	-
N _{R,II,k} [kN]		1.3	1	1.4	18	2.2	28	3.0)7	5.0	5

Additional definitions

The resistance value $N_{R,k}$ can be determined as follows: $N_{R,k} = min \{N_{R,l,k} | N_{R,l,k}\}$. $N_{R,l,k}$ 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 55

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



≥ø1 ø10, 1 2 ø6,5	-	V8 5,3 L			Com	ener:	Sta witl Alu	iinless stee iinless stee n EPDM-se minum allo minum allo	l A2 or eal by - EN	A4 - EN I 573			
Component R _m ≥ 165 ľ		1.0	00	1.2	0	1.50	-	mm])	2.5	50	3.00	
d _{pd} [mm]				4.5						.0		5.3	
	0.50	0.65	-	0.82	-	0.86	-	0.86	-	0.86	-	0.86	-
	0.60	0.65	-	0.82	-	1.03	-	1.03	-	1.03	-	1.03	-
	0.70	0.65	-	0.82	-	1.03	-	1.20	-	1.20	-	1.20	-
V _{R,k} [kN]	0.80	0.65	-	0.82	-	1.03	-	1.37	-	1.37	-	1.37	-
t _i [mm]	0.90	0.65	-	0.82	-	1.03	-	1.37	-	1.46	-	1.54	-
a funni	1.00	0.67	-	0.82	-	1.03	-	1.37	-	1.55	-	1.72	-
	1.20	0.67	-	0.88	-	1.08	-	1.41	-	1.74	-	2.06	-
	1.50	0.67	-	0.88	-	1.24	-	1.53	-	1.83	-	2.13	-
N _{R,II,k} [kN]		0.4	2	0.5	5	0.77		1.19)	1.6	69	2.19	
	1							1		•			
Component R _m ≥ 215 I		1.0	0	1.2	0	1.50	-	mm]			:0	1 2.00	
d _{pd} [mm]		1.0	.0	4.5		1.50		2.00		2.5 .0		3.00 5.3	
	0.50	0.85	-	4.0	-	1.12	-	1.12	- 5	.0	-	1.12	-
0.50		0.85	-	0.06	-	1.34	-	1.12	-	1.12	-	1.34	-
0.60		0.85		1.06	-	1.34	-	1.57	-	1.57		1.57	-
V _{R,k} [kN]	0.70	0.85	-	1.06	-	1.34	-	1.79	-	1.79	-	1.79	-
	0.80	0.85	-	1.06	-	1.34	-	1.79	-	1.79	-	2.01	-
tı [mm]		0.88	-	1.06	-	1.34	-	1.78	-	2.01	-	2.24	-
1.00		0.88	-	1.15	-	1.34	-	1.78	-	2.01	-	2.24	-
1.20 1.50					-	1.61	-	2.00	-	2.26		2.00	
	1.50	0.88	-	1.15	-	1.01	-	2.00	-	2.39	-	2.11	-

Additional definitions

N_{R,II,k} [kN]

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

1.01

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

0.71

0.55

TDA-S-S16-6,5 x L

Annex 56

2.85

2.20

1.55

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<u> ≥ø16</u>					Mate	rials							
≥ø1	≥ø16 ø10,5 SW8					ener:	Ste	ainless ste		1 or 1 151	7 - EN I	SO 3506	
ø10,						ner:	Sta	ainless ste h EPDM-s	el A2 or				
	1,8				Com	onent I:	Alu	iminum all	ov - EN	573			
1		Î				onent II:		iminum all	-				
<u>ø6,3</u>	1,8						7 110			010			
E						ig-capacity	-						
Company							tu f	mm]					
Component R _m ≥ 165 I		1.5	50	20	00 2.50			3.0	4.0	00	≥ 6.0	0	
d _{pd} [mm]		4.		2.0		5.0		0.0	0	5.		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	-
	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	76	1.1	7	1.64	1	2.1	5	4.2	21	6.09)
Component	land I						tıı f	mm]					
R _m ≥ 215 I		1.5	50	2.0	0	2.50	-	3.0	0	4.0	00	≥ 6.0	0
d _{pd} [mm]		4.			-	5.0		0.0	-	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	-
			-	1.73	-	1.73	-	1.73	-	1.73	-	1.73	-
0.00 1.00			-	1.73	-	1.95	-	1.95	-	1.95	-	1.95	-
t _i [mm] 0.90 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] 0.99			99	1.5	3	2.13	3	2.8	0	5.4	18	7.93	3

Additional definitions

The resistance value $N_{B,k}$ can be determined as follows: $N_{B,k} = min \{N_{B,l,k} | N_{B,l,k}\}$. $N_{B,l,k}$ 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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English translation prepared by DIBt



				Matariala										
201	4			<u>Materials</u>										
	≥ø14 ø10,5 \$W8 47			Fastener:	S	tainless steel A	2 or A4 - EN	ISO 3506						
ø10,5	4,7			Washer:		tainless steel A ith EPDM-seal	2 or A4 - EN	ISO 3506						
	2,2			Compone	nt I: A	luminum alloy -	EN 573							
1				Compone		luminum alloy -								
· ↓ 目				Compone	IILII. A	iuminum alloy -	EN 575							
ø5,5														
	7													
7														
* •	<pre>/</pre>				<u>ipacity</u> Σ	(t _I + t _{II}) ≤ 2.50 n	ım							
	ø2,8													
	_ → _ ⊲ ∅∠,ŏ													
Component	I band II				tu	[mm]								
		0.50	0.60	0.70										
		0.31	0.31	0.31	0.31	0.31	0.31	0.31	1.50 0.31					
	Component I and II $R_m \ge 165 \text{ N/mm}^2$ 0.50 0.60 0.70		0.45	0.45	0.45	0.45	0.45	0.45	0.45					
	0.70	0.31	0.45	0.59	0.59	0.59	0.59	0.59	0.59					
V _{R,k} [kN]	0.80	0.31	0.45	0.59	0.73	0.73	0.73	0.73	0.73					
tı [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					tu	[mm]								
$R_m \ge 215 I$		0.50	0.60	0.70	0.80	0.90	1.00	1.20	1.50					
		0.40	0.40	0.40	0.40	0.30	0.40	0.40	0.40					
	0.50		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]	$\mathbf{V}_{\mathbf{R},\mathbf{k}} [\mathbf{kN}] \begin{array}{c c} 0.70 & 0.40 & 0.58 \\ \hline 0.80 & 0.40 & 0.58 \end{array}$		0.77	0.95	0.95	0.95	0.95	0.95						
t [mm]	t [mm] 0.90 0.40 0.58			0.77	0.95	1.07	1.07	1.07	1.07					
u [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	0.77	0.95	1.07	1.18	-	-					
NR,II,k [kN]			0.61	0.75	0.88	1.00	n/a	n/a						

Additional definitions

The resistance value $N_{B,k}$ can be determined as follows: $N_{B,k} = min \{N_{B,l,k} | N_{B,l,k}\}$. $N_{B,l,k}$ 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



≥ø12 ø10,5 9 9	-	V8 @12 5,3	2 12 3,3	Materials Fastener: Washer: Compone Compone	ent I: Ali	ainless steel A ainless steel A th EPDM-seal uminum alloy uminum alloy $t_1 + t_{11}) \leq 2.50$ n	2 or A4 - EN - EN 573 - EN 573		
Component	l and II				tıı (mm]			
		0.50	0.60	0.70	0.80	0.90	1.00	1.20	1.50
$\frac{\text{Component I and II}}{\text{R}_{\text{m}} \ge 165 \text{ N/mm}^2}$ $\frac{0.50}{0.60}$		0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
0.50 0.60		0.28	0.45	0.45	0.45	0.45	0.45	0.45	0.45
		0.28	0.45	0.62	0.62	0.62	0.62	0.62	0.62
		0.28	0.45	0.62	0.79	0.79	0.79	0.79	0.79
tı [mm]	0.90	0.28	0.45	0.62	0.79	0.97	0.97	0.97	0.97
a trund	1.00	0.28	0.45	0.62	0.79	0.97	1.15	1.15	1.15
	1.20	0.28	0.45	0.62	0.79	0.97	1.15	1.15	-
	1.50	0.28	0.45	0.62	0.79	0.97	1.15	-	-
N _{R,II,k} [kN]		0.35	0.44	0.54	0.63	0.75	0.87	n/a	n/a
Component	land I				tu I	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 _{R,k} [kN]	0.80	0.36	0.58	0.81	1.03	1.03	1.03	1.03	1.03
tı [mm]	0.90	0.36	0.58	0.81	1.03	1.26	1.26	1.26	1.26
a (min)	1.00	0.36	0.58	0.81	1.03	1.26	1.49	1.49	1.49
	1.20	0.36	0.58	0.81	1.03	1.26	1.49	1.49	-
	1.50	0.36	0.58	0.81	1.03	1.26	1.49	-	-

Additional definitions

0.46

0.58

NR,II,k [kN]

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

0.82

0.98

1.14

n/a

0.70

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

Annex 59

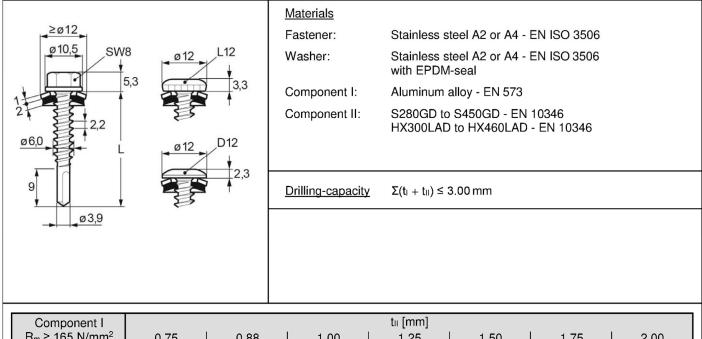
SL2-S-S14-6,3 x L, SL2-S-L12-S14-6,3 x L

n/a

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English translation prepared by DIBt





Compon								ալո	uug –						
R _m ≥ 165 I	N/mm ²	0.7	5	0.8	8	1.0	0	1.2	5	1.5	50	1.7	5	2.0	0
	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	-
tı [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]	N _{R,II,k} [kN]		4	1.6	6	1.8	51	2.3	8	3.1	4	3.8	6	4.5	7
Compon R _m ≥ 215 I		0.7	'5	0.8	8	1.0	0	t⊫[m 1.2		1.5	50	1.7	5	2.0	0
	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	-
tı [mm]	0.90	1.37	-	1.61	-	1.75	-	1.78	-	2.01	-	2.04	-	2.07	-
u [i i i i i i j	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	-	-	-
	1.50	1.37	-	1.77	-	1.93	-	2.34	-	2.75	-	-	-	-	-
N _{R,II,k} [kN]		1.1	4	1.6	6	1.8	51	2.3	8	3.1	4	3.8	6	4.5	7

Additional definitions

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

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

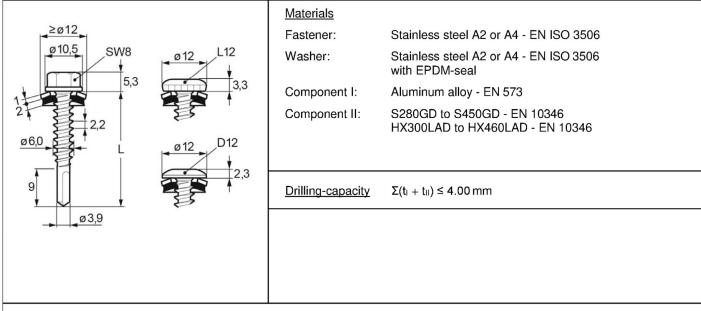
Annex 60

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

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English translation prepared by DIBt





Compon	ent I						tii (1	nm]					
R _m ≥ 165 I		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	0.65	-	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	-
tı [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	10	1.9	98	2.6	51	3.1	9	4.3	37	5.8	2
Compon	ont l						tu fi	nm]					
R _m ≥ 215 I		2 x ().63	2 x 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	-
	0.60	0.85	-	1.33	-	1.40	-	1.44	-	1.44	-	1.44	-
	0.70	0.85 -		1.33	-	1.81	-	1.85	-	1.85	-	1.85	-
V _{R,k} [kN]	0.80	0.85	-	1.33	-	2.22	-	2.27	-	2.27	-	2.27	-
tı [mm]	0.90	0.85	-	1.33	-	2.22	-	2.48	-	2.48	-	2.48	-
a funni	1.00	0.05		1 22		0.00		0.00		0.00		0.00	

NR,II,k [kN]

1.00

1.20

1.50

0.85

0.85

0.85

1.40

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

2.22

2.22

2.22

2.61

_

_

-

2.68

2.68

2.68

3.19

-

-

-

2.68

2.27

2.27

4.37

_

_

-

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

1.33

1.33

1.33

_

-

-

-

-

-

1.98

Annex 61

2.68

-

-

_

-

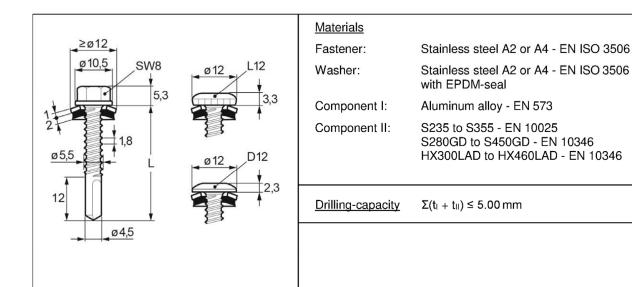
5.82

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





Compon	ent I						tıı [r	nm]					
R _m ≥ 165 I		1.5	50	1.7	'5	2.0	0	2.5	0	3.0	0	4.0	0
	0.50	0.70	-	0.80	-	0.89	-	0.89	-	0.89	-	0.89	-
	0.60	0.95	-	1.01	-	1.07	-	1.07	-	1.07	-	1.07	-
	0.70	1.19	-	1.23	-	1.26	-	1.26	-	1.26	-	1.26	-
V _{R,k} [kN]	0.80	1.44	-	1.44	-	1.44	-	1.44	-	1.44	-	1.44	-
t _i [mm]	0.90	1.55	-	1.55	-	1.55	-	1.55	-	1.58	-	1.63	-
. []	1.00	1.66	-	1.66	-	1.66	-	1.66	-	1.72	-	1.82	-
	1.20	1.66	-	1.72	-	1.77	-	1.88	-	1.99	-	-	-
	1.50	1.66	-	1.72	-	1.77	-	1.88	-	1.99	-	-	-
N _{R,II,k} [kN]		2.0	9	2.6	9	3.2	8	4.1	5	5.0	2	8.3	2

Compon	ent I						tu (r	nm]					
R _m ≥ 215 I	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	-
tı [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	-	-	-
NR,II,k [kN]		2.0	9	2.6	9	3.2	8	4.1	5	5.0	2	8.3	2

Additional definitions

The resistance value $N_{B,k}$ can be determined as follows: $N_{B,k} = min \{N_{B,l,k} | N_{B,l,k}\}$. $N_{B,l,k}$ 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, 010, 0 0 0 0 0 0 0 0 0 0 0 0 0	-	W8 5,3 L		Materials Fastener: Washer: Compone Compone	nt I: /	Stainless steel A Stainless steel A with EPDM-seal Aluminum alloy S280GD to S45 HX300LAD to H	A2 or A4 - EN - EN 573 0GD - EN 103	ISO 3506 346	3506
-		_			pacity -				
Compon						ո [mm]	1		
R _m ≥ 165 N	N/mm ²	0.63	0.75	0.88	1.00	1.25	1.50	2.00	3.00
d _{pd} [mm]		3.5	4.0		4.5			5.0	
	0.50	0.35 -	0.44 -	0.55 -	0.65 -		0.86 -	0.86 -	0.86 -
	0.60	0.35 -	0.44 -	0.55 -	0.65 -		1.03 -	1.03 -	1.03 -
V _{R,k} [kN]	0.70	0.35 -	0.44 -	0.55 -	0.65 -	0.00	1.03 -	1.20 -	1.20 -
	0.80	0.35 -	0.44 -	0.55 -	0.65 -	0.00	1.03 -	1.37 -	1.37 -
t _i [mm]	0.90	0.35 - 0.35 -	0.44 -	0.56 - 0.56 -	0.65 -	0.00	1.03 -	1.37 -	1.54 - 1.72 -
	1.00	0.35 - 0.35 -	0.44 -	0.56 - 0.56 -	0.67 - 0.67 -		1.03 - 1.08 -	1.37 - 1.41 -	2.06 -
	1.50	0.35 -	0.44 -	0.56 -	0.67 -		1.08 -	1.53 -	2.08 -
N _{R,II,k} [kN]	1.00	1.00	1.20	1.40	1.50	1.90	2.30	3.80	5.60
,,. []		1.00	1.20	1.10			2.00	0.00	
Compon						။ [mm]			
R _m ≥ 215 N	V/mm ²	0.63	0.75	0.88	1.00	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 -		1.34 -	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 -
	0.80	0.45 -	0.58 -	0.72 -	0.85 -	=	1.34 -	1.79 -	1.79 -
tı [mm]	0.90	0.45 -	0.58 -	0.72 -	0.85 -		1.34 -	1.78 -	2.01 -
	1.00	0.45 -	0.58 -	0.72 -	0.88 -		1.34 -	1.78 -	2.24 -
	1.20	0.45 -	0.58 -	0.72 -	0.88 -	1.20 -	1.41 -	1.83 -	2.68 -

Additional definitions

N_{R,II,k} [kN]

1.50

0.45

-

1.00

0.58

1.20

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

_

1.40

0.88

1.50

1.23

1.90

1.61

2.30

2.00

3.80

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

0.72

TDA-S-S16-6,5 x L

Annex 63

2.77

5.60

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English translation prepared by DIBt



						Ma	ater	ials									
≥ø16	-					Fa	aste	ner:	Stair	nless	steel A2, A	4 or 1.4	547	- EN IS	O 35	606	
ø10,	s si	N8 ∳				W	ash	er:			steel A2 or M-seal	A4 - EN	N ISC	O 3506			
		5,3				Co	omp	onent I:	Alun	ninun	n alloy - EN	573					
ø6,3		 L				Co	omp	onent II:	S28	0GD	6355 - EN 1 to S450GD AD to HX460	- EN 10					
		Ļ				Dr	rillin	g-capacity									
Compon	ontl								tıı [m	ıml			_		_		
R _m ≥ 165 ľ		1.25	;	1.50	1	2.00		3.00	4.0	-	6.00	8.0	0	10.0	00	> 10.0)0 ^ε
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	-
				4 00	4	16	-	1.16 -	1.16	-	1.16 -	1.16	-	1.16	-	1.16	-
	0.70	0.83	-	1.00 -	- 1.	10											
V _{R,k} [kN]	0.70 0.80	0.83	-	1.00 - 1.00 -			-	1.33 -	1.33	-	1.33 -	1.33	-	1.33	-	1.33	-
· ·		0.83 0.83			- 1.		-			-		1.33 1.50	-		-	1.33 1.50	-
V_{R,k} [kN] t _i [mm]	0.80 0.90 1.00	0.83 0.83 0.83		1.00 - 1.00 - 1.00 -	- 1. - 1. - 1.	33 33 33	- -	1.33 - 1.50 - 1.66 -	1.33 1.50 1.66		1.33 - 1.50 - 1.66 -	1.33 1.50 1.66		1.33 1.50 1.66		1.50 1.66	-
· ·	0.80 0.90 1.00 1.20	0.83 0.83 0.83 0.90		1.00 - 1.00 - 1.00 - 1.06 -	- 1. - 1. - 1. - 1.	33 33 33 33 37	- - -	1.33-1.50-1.66-2.00-	1.33 1.50 1.66 2.00	- - - -	1.33 - 1.50 - 1.66 - 2.00 -	1.33 1.50 1.66 2.00	-	1.33 1.50 1.66 2.00	- - - -	1.50 1.66 2.00	
tı [mm]	0.80 0.90 1.00	0.83 0.83 0.83 0.90 0.93	- - - -	1.00 - 1.00 - 1.00 - 1.06 - 1.22 -	- 1. - 1. - 1. - 1.	33 33 33 37 50	-	1.33-1.50-2.00-2.07-	1.33 1.50 1.66 2.00 2.49	- - - -	1.33 - 1.50 - 1.66 - 2.00 - 2.49 -	1.33 1.50 1.66 2.00 2.49		1.33 1.50 1.66 2.00 2.49	- - - -	1.50 1.66 2.00 2.49	
· • •	0.80 0.90 1.00 1.20	0.83 0.83 0.83 0.90	- - - -	1.00 - 1.00 - 1.00 - 1.06 -	- 1. - 1. - 1. - 1.	33 33 33 33 37	-	1.33-1.50-1.66-2.00-	1.33 1.50 1.66 2.00	- - - - 9	1.33 - 1.50 - 1.66 - 2.00 -	1.33 1.50 1.66 2.00		1.33 1.50 1.66 2.00	- - - -	1.50 1.66 2.00	- - - - 4

I Compon	ient I									տլո	uni –								
R _m ≥ 215 I	N/mm ²	1.2	25	1.5	0	2.0	0	3.0	0	4.0	0	6.0	0	8.0)0	10.	00	> 10.	.00ª
d _{pd} [mm] ^b			5	.0				5.3	3			5.5	5		5	.7		5.8	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	-
	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	-
tı [mm]	0.90	1.08	-	1.30	-	1.73	-	1.95	-	1.95	-	1.95	-	1.95	-	1.95	-	1.95	-
. []	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]		2.0	0	2.7	0	3.6	0	6.0	0	9.1	9	12.2	22	15.:	24	15.	24	15.2	24

Additional definitions

The resistance value $N_{B,k}$ can be determined as follows: $N_{B,k} = min \{N_{B,l,k} | N_{B,l,k}\}$. $N_{B,l,k}$ 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_{ll} 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



			<u>_</u>				
0)/40	. 40		Mate				
SV16			Fast	ener: Sta	ainless steel A2 or	A4 - EN ISO 3506	i
ø10),5 SI	N8	Was	her: Sta	ainless steel A2 or	A4 - EN ISO 3506	i
	$\overline{\mathbf{n}}$	5,3	Com	ponent I: Aluminui	m alloy - EN 573		
				, ponent II: S280GE		10346	
1	+			HX	(300LAD to HX46)	DLAD - EN 10346	
~~~ }	<b>1,8</b>						
ø6,0		L					
7							
· • •	/	<u>↓</u>	Drilling	<u>g-capacity</u> Σ(t	ı + tıı) ≤ 4.00 mm		
	ø 3,7			· · · · · · · · · · · · · · · · · · ·	<ul> <li>a sure dataventer surementer</li> </ul>		
Compor	nent I				mm]		
R _m ≥ 165		0.63	0.75	0.88	1.00	1.25	1.50
V FLNII	1.50	1.20	1.40	1.57	1.74	1.77	1.77
V _{R,k} [kN]	2.00	1.20	1.83	2.04	2.25	2.57	2.88
tı [mm]	2.50	1.20	1.83	2.43	2.43	2.57	2.88
NI 11-1-17	3.00	1.20	2.01	2.81	2.81	-	-
N _{R,II,k} [kN]		0.82	1.15	1.49	1.82	2.51	3.21
Compor							0.21
	nent I			tıı [	mm]		0.21
$\Box m \leq 213$	nent I N/mm ²	0.63	0.75	tıı [   0.88	mm]   1.00	1.25	1.50
		0.63 1.20	0.75	-		1.25	
Nm ≥ 215	N/mm ²			0.88	1.00		1.50
	N/mm ² 1.50	1.20	1.60	0.88	1.00 2.26	2.30	1.50 2.30

2.81

1.49

2.87

1.82

-

2.51

Additional definitions

3.00

N_{R,II,k} [kN]

1.20

0.82

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

#### Self-drilling screw with SV-washer 13x16 mm

2.01

1.15

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

Annex 65

-

3.21

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English translation prepared by DIBt



SV16 @10 1 @6,0 7 7		N8 5,3 L	Washer: Component I: Alumi Component II: S280	Stainless steel A2 or A4 - EN I Stainless steel A2 or A4 - EN I num alloy - EN 573 IGD to S450GD - EN 10346 HX300LAD to HX460LAD - EN $\Sigma(t_1 + t_{11}) \leq 4.00 \text{ mm}$	SO 3506
1	+				10346
	3 1,8 1 1,8	 L 			
	ø 3,7	¥.	Drilling-capacity	$\Sigma(t_l + t_{ll}) \leq 4.00 \text{ mm}$	
Compor	ient l			tıı [mm]	
R _m ≥ 165	N/mm²	2 x 0.75	2 x 0.88	2 x 1.00	2 x 1.25
	N/mm² 1.50	2 x 0.75 1.40	2 x 0.88 1.57	2 x 1.00 1.74	2 x 1.25 1.77
R _m ≥ 165 V _{R,k} [kN]					
V _{R,k} [kN]	1.50	1.40	1.57	1.74	1.77
V _{R,k} [kN] tı [mm]	1.50	1.40 1.83	1.57 2.04 - -	1.74 2.25	1.77 - - -
V _{R,k} [kN]	1.50 2.00 2.50	1.40 1.83 1.83	1.57 2.04 -	1.74 2.25 -	1.77 - -
V _{R,k} [kN] ti [mm] N _{R,II,k} [kN]	1.50 2.00 2.50 3.00	1.40 1.83 1.83 -	1.57 2.04 - - 2.94	1.74 2.25 - - 3.45	1.77 - - -
V _{R,k} [kN] tı [mm]	1.50 2.00 2.50 3.00	1.40 1.83 1.83 -	1.57 2.04 - - 2.94	1.74 2.25 - -	1.77 - - -
V _{R,k} [kN] ti [mm] N _{R,II,k} [kN] Compor R _m ≥ 215	1.50 2.00 2.50 3.00	1.40 1.83 1.83 - 2.43	1.57 2.04 - - 2.94	1.74 2.25 - 3.45 t _{ll} [mm]	1.77 - - - 4.38
V _{R,k} [kN] tı [mm] N _{R,II,k} [kN]	1.50 2.00 2.50 3.00 nent I N/mm ² 1.50 2.00	1.40 1.83 1.83 - 2.43 2 x 0.75	1.57 2.04 - - 2.94 2 x 0.88	1.74 2.25 - 3.45 t _{ll} [mm] 2 x 1.00	1.77 - - - 4.38 2 x 1.25
V _{R,k} [kN] ti [mm] N _{R,II,k} [kN] Compor R _m ≥ 215 V _{R,k} [kN]	1.50 2.00 2.50 3.00 ment I N/mm ² 1.50 2.00 2.50	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	1.74 2.25 - 3.45 t _{ll} [mm] 2 x 1.00 2.26	1.77 - - 4.38 2 x 1.25 2.30
V _{R,k} [kN] ti [mm] N _{R,II,k} [kN] Compor R _m ≥ 215	1.50 2.00 2.50 3.00 nent 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 x 0.88 1.93 2.35	1.74 2.25 - - 3.45 t₁ [mm] 2 x 1.00 2.26 2.87	1.77 - - 4.38 2 x 1.25 2.30 -

Additional definitions

The resistance value  $N_{B,k}$  can be determined as follows:  $N_{B,k} = min \{N_{B,l,k} | N_{B,l,k}\}$ .  $N_{B,l,k}$  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



≥ø10, 010, 06,0 7, 7,	5 SV	V8 5,3	L12 3,3	MaterialsFastener:Washer:Component I:Component II:Drilling-capacityCharacteristicsMy,Rkfax,k=	Stainless st with EPDM- Aluminum a Timber (con Σ(t₁) ≤ 2.00 t 7.9 Nm	lloy - EN 573 iferous timber) - E	ISO 3506 EN 14081	
0				L [mm]				
Compon R _m ≥ 165 ľ	ent I	25	30	l _{ef} [mm]   35	40	45		
	0.50	0.59	0.59	0.59	0.59	0.59	0.59	
	0.60	0.39	0.80	0.80	0.39	0.80	0.39	
	0.70	1.01	1.01	1.01	1.01	1.01	1.01	-
V _{R,k} [kN]	0.80	1.02	1.14	1.14	1.14	1.14	1.14	-
t [mm]	0.90	1.02	1.23	1.26	1.26	1.26	1.26	V _{R,I,k} [kN]
tı [mm]	1.00	1.02	1.23	1.26	1.26	1.26	1.26	-
	1.20	1.02	1.23	1.26	1.26	1.26	1.26	-
	1.50	1.02	1.23	1.26	1.26	1.26	1.26	-
N _{R,II,k} [kN]		1.78	2.14	2.49	2.85	3.21		
Compon	onti			l _{ef} [mm]				
R _m ≥ 215 ľ		25	30	35	40	45		
	0.50	0.70	0.70	0.70	0.70	0.70	0.70	
	0.60	0.93	0.93	0.93	0.93	0.93	0.93	-
	0.70	1.02	1.16	1.16	1.16	1.16	1.16	-
V _{R,k} [kN]	0.80	1.02	1.23	1.34	1.34	1.34	1.34	
tı [mm]	0.90	1.02	1.23	1.43	1.52	1.52	1.52	V _{R,I,k} [kN]
	1.00	1.02	1.23	1.43	1.52	1.52	1.52	
	1.20	1.02	1.23	1.43	1.52	1.52	1.52	
N _{R,II,k} [kN]	1.50	1.02	1.23 2.14	1.43	1.52 2.85	1.52 3.21	1.52	
999-1-4:200	ce value l )7, equati d resistan	ion (8.13).	κ applies to c	bllows: N _{R,k} = min {f omponent II with k _n * $\frac{k_{mod}}{0.9}$ * $\frac{P_k}{350}$				-
	S			sealing washer ≥			An	nex 67

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0.00
0.86
1.20
1.37
1.54 VR,I,K [KN]
1.72
2.06
2.57
1.12
1.34
1.57
1.79 V [LAN]
2.01 <b>V</b> _{R,I,k} [ <b>k</b> N]
2.24
2.68
3.35

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

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	2			Materials				
<u>≥</u> ø1	-			Fastener:	Stainless st	eel A2, A4 or 1.4	547 - EN ISO	3506
ø10,	5 SI	N8 ∳		Washer:	Stainless st with EPDM	eel A2 or A4 - EN ∙seal	N ISO 3506	
1		5,3		Component I:	Aluminum a	lloy - EN 573		
2				Component II:	Timber (cor	niferous timber) -	FN 14081	
ø6,5	2,5	 L 						
V	•	¥		Drilling-capacity	-			
			Γ	<b>Characteristics</b>				
				 M _{y,Rk} =	13.9 Nm			
				f _{ax,k} =		² (l _{ef} = 29 mm, ρ _a	$-350 \text{ kg/m}^{3}$	
				Tax,K =	13.2 10/1111	(lef – 29 min, pa	= 550 kg/m ⁻ )	
				l₀ [mm]				
Compon R _m ≥ 165 I		35	45	ι _ρ [ΠΠΤ]	65	75		
d _{pd} [mm]	N/11111		45	4.80	05	75		
apa [mm]	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	1.00	1.20	-
V _{R,k} [kN]	0.80	1.37	1.37	1.37	1.37	1.37	1.37	-
t Engine 1	0.90	1.54	1.54	1.54	1.54	1.54	1.54	V _{R,I,k} [kN]
tı [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	L	
Compon	ent I			l _p [mm]				
R _m ≥ 215 ľ	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	
tı [mm]	0.90	1.73	2.01	2.01	2.01	2.01	2.01	V _{R,I,k} [kN]
a [mm]	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		

#### Additional definitions

The resistance value  $N_{R,k}$  can be determined as follows:  $N_{R,k} = \min \{N_{R,l,k} | N_{R,l,k}\}$ .  $N_{R,l,k}$  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  $\rho_k$  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

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ø5,5 7	W8 5,3 L	<u>Materials</u> Fastener: Washer: Component I: Component II:	- Aluminum allo Aluminum allo	by - EN 573	1506
	Î	Component II:	Aluminum allo	oy - EN 573	
<u>ø5,5</u>	 L 				
7	<u> </u>	Drilling-capaci	<u>ty</u> Σ(t _{il} ) ≤ 4.00 m	m	
Component I and I			tıı [mm]	0.00	1.00
R _m ≥ 165 N/mm ²	1.50	2.00	2.50 5.2	3.00	4.00
d _{pd,I} [mm]	1.51	0.00	2.24	0.44	0.44
V _{R,k} [kN] 2.00 2.50	1.51	2.03 2.10	2.24	2.44	2.44 2.86
2.50 <u>3.00</u>	1.51	2.10	2.41	2.70	3.28
t _i [mm] <u>3.00</u> 4.00	1.51	2.17	2.89	3.48	4.12
4.00 <b>N</b> R,II,k <b>[KN]</b>	0.74	1.19	1.58	1.97	4.12
	0.74	1.19		1.9/	4.55
Component I and I			tıı [mm]		
R _m ≥ 215 N/mm ²	1.50	2.00	2.50	3.00	4.00
d _{pd,I} [mm]			5.2		
2.00	1.97	2.64	2.91	3.18	3.18
V _{R,k} [kN] 2.50	1.97	2.73	3.13	3.52	3.73
t. [mm] 3.00	1.97	2.82	3.34	3.86	4.28
tı [mm] <u>4.00</u> NR,II,k [kN]	1.97	2.99 1.55	3.76 2.06	4.53 2.57	5.37 5.93

Additional definitions

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

Self drilling screw

SDA5-H13-5,5 x L

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English translation prepared by DIBt



			<u>Materials</u>			
			Fastener:	Stainless stee	A2 or A4 - EN ISO 3	3506
ø12,	5 SW	8	Washer:	-		
						0
	<u>1</u>	5,3	Componen	nt I: Stainless stee	el - EN 10088 - R _m ≥ 5	550 N/mm²
E	t t		Componen	nt II: Aluminum allo	by - EN 573	
	1,8					
ø5,5						
	t L					
7			Drilling-car	<u>pacity</u> Σ(t _{II} ) ≤ 4.00 m	m	
	•	e e				
	<b>●</b> Ø4,2					
Compor				tıı [mm]		
R _m ≥ 165		1.50	2.00	2.50	3.00	4.00
R _m ≥ 165 d _{pd,I} [mm]	N/mm ²			2.50		•
R _m ≥ 165	N/mm ²	-	2.32	2.50 5.5 2.56	2.80	2.80
R _m ≥ 165 d _{pd,I} [mm] V _{R,k} [kN]	N/mm ² 1.50 2.00	-	2.32	2.50 5.5 2.56 2.78	2.80 3.12	2.80 3.12
R _m ≥ 165 d _{pd,1} [mm] V _{R,k} [kN] t _i [mm]	N/mm ²	- - 1.90	2.32 2.44 2.56	2.50 5.5 2.56 2.78 3.00	2.80 3.12 3.44	2.80 3.12 3.44
R _m ≥ 165 d _{pd,I} [mm] V _{R,k} [kN]	N/mm ² 1.50 2.00	-	2.32	2.50 5.5 2.56 2.78	2.80 3.12	2.80 3.12
R _m ≥ 165 d _{pd,I} [mm] V _{R,k} [kN] t _I [mm] N _{R,II,k} [kN]	N/mm ² 1.50 2.00 2.50	- - 1.90	2.32 2.44 2.56	2.50 5.5 2.56 2.78 3.00	2.80 3.12 3.44	2.80 3.12 3.44
R _m ≥ 165 d _{pd,1} [mm] V _{R,k} [kN] t _i [mm]	N/mm ² 1.50 2.00 2.50 nent II	- - 1.90	2.32 2.44 2.56	2.50 5.5 2.56 2.78 3.00 1.58 t₁ [mm] 2.50	2.80 3.12 3.44	2.80 3.12 3.44
R _m ≥ 165 d _{pd,1} [mm] V _{R,k} [kN] t ₁ [mm] N _{R,II,k} [kN] Compor	N/mm ² 1.50 2.00 2.50 nent II	- - 1.90 0.74	2.32 2.44 2.56 1.19	2.50 5.5 2.56 2.78 3.00 1.58 t₁ [mm] 2.50 5.5	2.80 3.12 3.44 1.97	2.80 3.12 3.44 4.55
R _m ≥ 165 d _{pd,1} [mm] V _{R,k} [kN] t ₁ [mm] N _{R,II,k} [kN] Compor R _m ≥ 215 d _{pd,1} [mm]	N/mm ² 1.50 2.00 2.50 nent II	- - 1.90 0.74	2.32 2.44 2.56 1.19	2.50 5.5 2.56 2.78 3.00 1.58 t₁ [mm] 2.50 5.5 3.34	2.80 3.12 3.44 1.97	2.80 3.12 3.44 4.55
R _m ≥ 165 d _{pd,1} [mm] V _{R,k} [kN] t ₁ [mm] N _{R,I,k} [kN] Compor R _m ≥ 215 d _{pd,1} [mm] V _{R,k} [kN]	N/mm ² 1.50 2.00 2.50 hent II N/mm ²	- - 1.90 0.74 1.50	2.32 2.44 2.56 1.19 2.00	2.50 5.5 2.56 2.78 3.00 1.58 t₁ [mm] 2.50 5.5	2.80 3.12 3.44 1.97 3.00	2.80 3.12 3.44 4.55 4.00
R _m ≥ 165 d _{pd,1} [mm] V _{R,k} [kN] t ₁ [mm] N _{R,II,k} [kN] Compor R _m ≥ 215 d _{pd,1} [mm]	N/mm ² 1.50 2.00 2.50 1.50 1.50	- - 1.90 0.74 1.50	2.32 2.44 2.56 1.19 2.00 3.03	2.50 5.5 2.56 2.78 3.00 1.58 t₁ [mm] 2.50 5.5 3.34	2.80 3.12 3.44 1.97 3.00 3.65	2.80 3.12 3.44 4.55 4.00 3.65

Additional definitions

Self drilling screw

SDA5-H13-5,5 x L