Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment

ETA-10/0199 of 25 March 2019

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Fastening screws of PMJ-tec AG
Product family to which the construction product belongs	Fastening screws for metal members and sheeting
Manufacturer	PMJ-tec AG Industriestrasse 34 1791 COURTAMAN SCHWEIZ
Manufacturing plant	Plant 1 Plant 2 Plant 3
This European Technical Assessment contains	68 pages including 62 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 330046-01-0602
This version replaces	ETA-10/0199 issued on 26 June 2013

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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
4	Fastening of perforated sheets	
5	Fastening of perforated sheets	
6	Fastening of perforated sheets	
7	Fastening of perforated sheets	
8	PMJ-tec TOPEX 7510	bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm
9	PMJ-tec TOPEX 7510	bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm
10	PMJ-tec TOPEX 7520	bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm
11	PMJ-tec TOPEX 7530	bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm
12	PMJ-tec TOPEX 7550 4,8	bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm
13	PMJ-tec TOPEX 7550 5,5	bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm
14	PMJ-tec TOPEX 7550 6,3	bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm
15	PMJ-tec TOPEX 7565	bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm
16	PMJ-tec TOPEX 7310	with hexagon head and sealing washer ≥ Ø 16,0 mm
17	PMJ-tec TOPEX 7320	with hexagon head and sealing washer ≥ Ø 16,0 mm
18	PMJ-tec TOPEX 7325	with hexagon head and sealing washer ≥ Ø 16,0 mm
19	PMJ-tec TOPEX 7330	with hexagon head and sealing washer ≥ Ø 16,0 mm
20	PMJ-tec TOPEX 7340	with hexagon head and sealing washer ≥ Ø 16,0 mm
21	PMJ-tec TOPEX 7340 – 4,8xL	with hexagon head
22	PMJ-tec TOPEX 7342	with hexagon head and flange Ø15 mm
23	PMJ-tec TOPEX 7344	with hexagon head and flange Ø15 mm
24	PMJ-tec TOPEX 7346	with hexagon head and flange Ø15 mm
25	PMJ-tec TOPEX NYCO 7810	with polyamide bihexagon head and sealing washer ≥ Ø16 mm
26	PMJ-tec TOPEX NYCO 7820	with polyamide bihexagon head and sealing washer ≥ Ø16 mm

Table 1 - continued

Annex	Fastening screw	Description
27	PMJ-tec TOPEX NYCO 7825	with polyamide bihexagon head and sealing washer ≥ Ø16 mm
28	PMJ-tec TOPEX NYCO 7870	bimetal with polyamide bihexagon head and sealing washer ≥ Ø16 mm
29	PMJ-tec TOPEX NYCO 7880	bimetal with polyamide bihexagon head and sealing washer ≥ Ø16 mm
30	PMJ-tec TOPEX UFO 7110	bimetal with rounded flat head and sealing ring ≥ Ø10 mm
31	PMJ-tec TOPEX UFO 7120	bimetal with rounded flat head and sealing ring ≥ Ø10 mm
32	PMJ-tec TOPEX UFO 7140	bimetal with rounded flat head and sealing ring ≥ Ø10 mm
33	PMJ-tec TOPEX UFO 7160	bimetal with rounded flat head and sealing ring ≥ Ø10 mm
34	PMJ-tec TOPEX UFO 7515 – 5,5 x L	bimetal with rounded flat head and sealing washer ≥ Ø16 mm
35	PMJ-tec TOPEX UFO 7010	with rounded flat head and sealing ring ≥ Ø10 mm
36	PMJ-tec TOPEX UFO 7040	with rounded flat head and sealing ring ≥ Ø10 mm
37	PMJ-tec TOPEX 7653	with hexagon head and sealing washer ≥ Ø16 mm
38	PMJ-tec TOPEX 7673	with hexagon head and sealing washer ≥ Ø16 mm
39	PMJ-tec TOPEX 7335	with hexagon head and sealing washer ≥ Ø16 mm
40	PMJ-tec TOPEX 7339	with hexagon head
41	PMJ-tec TOPEX 7641	with hexagon head and sealing washer ≥ Ø16,0 mm
42	PMJ-tec TOPEX 7641	with hexagon head and sealing washer ≥ Ø19,0 mm
43	PMJ-tec TOPEX 7642	with hexagon head and sealing washer ≥ Ø16,0 mm
44	PMJ-tec TOPEX 7642	with hexagon head and sealing washer ≥ Ø19,0 mm
45	PMJ-tec TOPEX 7653	with hexagon head and sealing washer ≥ Ø19,0 mm
46	PMJ-tec TOPEX PIASTA 7550 – 4,8	with hexagon head and sealing washer ≥ Ø14,0 mm
47	PMJ-tec TOPEX PIASTA 7550 – 5,5	with hexagon head and sealing washer ≥ Ø14,0 mm
48	PMJ-tec TOPEX PIASTA 7550 – 6,3	with hexagon head and sealing washer ≥ Ø14,0 mm
49	PMJ-tec TOPEX PIASTA 7553 – 4,8	with hexagon head and sealing washer ≥ Ø14,0 mm
50	PMJ-tec TOPEX PIASTA 7553 – 6,3	with hexagon head and sealing washer ≥ Ø14,0 mm
51	PMJ-tec TOPEX PIASTA 7553 – 6,3	with hexagon head and sealing washer ≥ Ø16,0 mm
52	PMJ-tec TOPEX 7510 - 5,5	with hexagon head with Ø 13,5 mm
53	PMJ-tec 7563 – 5,5	with hexagon head and sealing washer ≥ Ø 16,0 mm
54	PMJ-tec 7561 – 4,8	with sealing washer ≥ Ø 14,0 mm
55	PMJ-tec 7525 – 6,3	with sealing washer ≥ Ø 16,0 mm
56	PMJ-tec 7553 – 5,5	with sealing washer ≥ Ø 16,0 mm

Table 1 - continued

Annex	Fastening screw	Description
57	PMJ-tec TOPEX 7110-5,5	bimetal with rounded flat head and sealing washer ≥ Ø16 mm
58	PMJ-tec TOPEX 7120-5,5	bimetal with rounded flat head and sealing washer ≥ Ø16 mm
59	PMJ-tec TOPEX 7130-5,5	bimetal with rounded flat head and sealing washer ≥ Ø16 mm
60	PMJ-tec TOPEX 7140-5,5	bimetal with rounded flat head and sealing washer ≥ Ø16 mm
61	PMJ-tec TOPEX 7140-6,3	bimetal with rounded flat head and sealing washer ≥ Ø16 mm
62	PMJ-tec TOPEX 7160-4,8	bimetal with rounded flat head and sealing washer ≥ Ø16 mm

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 (1-62).

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

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

3.1 Mechanical resistance and stability (BWR 1)

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

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1

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 at Deutsches Institut für Bautechnik.

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

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Hahn

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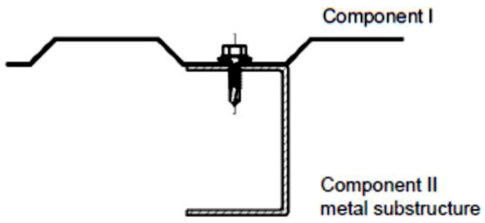
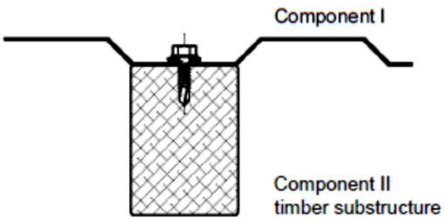
Examples of execution of a connection





Terms for materials

Fastener	Fastening screw
Washer	Sealing washer
Component I	Metal member or sheeting
Component II	Substructure

Terms for dimensions

t_I	Thickness of metal member or sheeting
t_{II}	Thickness of metal substructure
l_{ef}	Effective screw-in length in timber substructure (without drill point)
d_{dp}	Pre-drill diameter of metal member or sheeting and substructure
$d_{dp,I}$	Pre-drill diameter of metal member or sheeting

Terms for performances

$V_{R,k}$	Characteristic value of shear resistance of the connection
$N_{R,k}$	Characteristic value of tension resistance of the connection
$V_{R,I,k}$	Characteristic value of shear resistance of metal member or sheeting
$N_{R,I,k}$	Characteristic value of tension resistance (pull-through) of metal member or sheeting
$N_{R,II,k}$	Characteristic value of tension resistance (pull-out) of the substructure

Additionally for timber substructure the following terms are used:

$M_{y,Rk}$	Characteristic value of yield moment
$f_{ax,k}$	Characteristic value of withdrawal strength
$f_{h,k}$	Characteristic value of embedding strength

Used terms in the Annexes	Annex 1
Fastening screws for metal members and sheeting	

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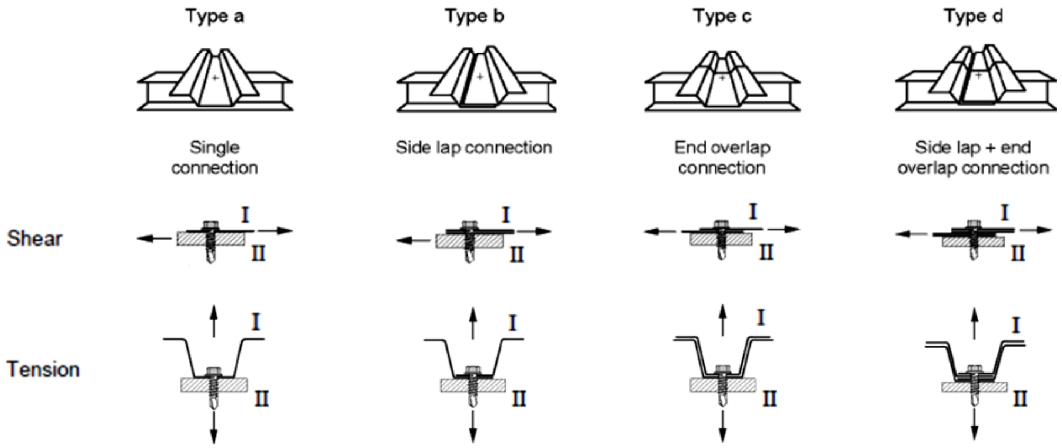
Types of connection and occurred loadings



Determination of Design Values

The design value of tension and shear resistance has to be determined as follows:

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

The characteristic values $N_{R,k}$ and $V_{R,k}$ are given in the Annexes. For intermediate dimension of metal member or sheeting or substructure the characteristic value of the thinner dimension is used.

The recommended partial safety factor γ_M = 1,33 is used, provided no partial safety factor is given in national regulations or national Annexes to Eurocode 3.

For the types of connection (a, b, c, d) listed in the Annexes it is not necessary to take into account the effect of constrains due to temperature. Otherwise this has to be considered unless constrains due to temperature do not occur or are not significant (e.g. sufficient flexibility of the substructure).

For asymmetric metal substructures with thickness t_{II} < 5 mm (for instance Z- or C-shaped profiles), the characteristic value $N_{R,k}$ given in the Annexes has to be reduced to 70%.

In case of combined tension and shear forces the following interaction equation is taken into account:

$$\frac{N_{S,d}}{N_{R,d}} + \frac{V_{S,d}}{V_{R,d}} \le 1,0$$

$N_{S,d}$ and $V_{S,d}$ indicates the design values of applied tension and shear forces.

Installation conditions

The installation is carried out according to the manufacturer's instructions.

The fastening screws are screwed-in with electric screw driver. The use of impact wrenches is not allowed.

The fastening screws are fixed rectangular to the surface of the metal member or sheeting.

The metal member or sheeting and substructure are in contact to each other. The use of compression resistant thermal insulation strips up to a thickness of 3 mm is allowed.

The thickness (or minimum thickness) of metal substructure needs to be covered by the clamping length of the fastening screw. Otherwise only the screwed-in clamping length of the fastening screw may be considered.

Basics for the design	**Annex 2**
Fastening screws for metal members and sheeting	

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Timber substructures

Characteristic values of tension and shear resistance of the connection for other k_{mod} or ρ_k as indicated in the Annexes can be determined as follows:

$$N_{R,k} = \min \begin{cases} N_{R,I,k} \\ F_{ax,Rk} * k_{mod} \end{cases} \qquad V_{R,k} = \min \begin{cases} V_{R,I,k} \\ F_{v,Rk} * k_{mod} \end{cases}$$

The characteristic values $N_{R,I,k}$ and $V_{R,I,k}$ are given in the corresponding Annex of the fastening screw.

$F_{ax,Rk}$ indicates the characteristic value of tension resistance of timber substructure. The value has to be determined according to EN 1995-1-1:2004 + A1:2008, equation (8.40a) with $f_{ax,k}$ given in the corresponding Annex of the fastening screw.

$F_{v,Rk}$ indicates the characteristic shear resistance of timber substructure. The value has to be determined according to EN 1995-1-1:2004 + A1:2008, equation (8.9) with $M_{y,Rk}$ and $f_{h,k}$ given in the corresponding Annex of the fastening screw.

Aluminium members and sheeting

Characteristic values of tension resistance of the connection can be determined as follows:

$$N_{R,k} = \min \begin{cases} N_{R,I,k} \\ N_{R,II,k} \end{cases}$$

The characteristic value $N_{R,I,k}$ has to be determined according to EN 1999-1-4:2007 + AC:2009, equation (8.13).

The characteristic value $N_{R,II,k}$ is given in the corresponding Annex of the fastening screw.

Perforated steel members and sheeting

Characteristic values of tension and shear resistance of the connection can be determined as follows:

$$N_{R,k} = \min \begin{cases} N_{R,I,k} \\ N_{R,II,k} \end{cases} \qquad V_{R,k} = \min \begin{cases} V_{R,I,k} \\ V_{R,k} \end{cases}$$

The characteristic values $N_{R,I,k}$ and $V_{R,I,k}$ are given in Annex 4 and 5.

The characteristic values $N_{R,II,k}$ and $V_{R,k}$ are given in the corresponding Annex of the fastening screw.

Specific notes to the Annexes	Annex 3
Fastening screws for metal members and sheeting	

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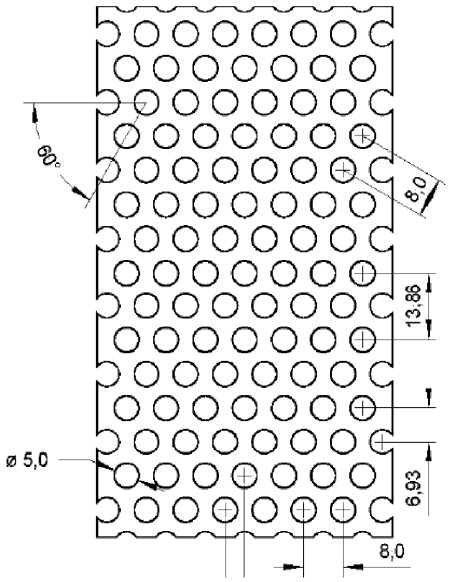

Fastener

Self tapping screw from Ø 6,3 mm to Ø 6,5 mm

Self drilling screw from Ø 5,5 mm to Ø 6,3 mm

Materials

Component I: S280GD to S350GD - EN 10346

Component II: According to the Annex of the corresponding fastener

sheet		perforated sheet made of S280 GD - 10346				perforated sheet made of S320 GD - 10346				perforated sheet made of S350 GD - 10346			
washer Ø [mm]		16	19	22	25	16	19	22	25	16	19	22	25
Component I t I [mm]	$V_{R,I,k}$ [kN]												
	0,75	2,16	2,22	2,24	2,38	2,34	2,40	2,44	2,58	2,54	2,60	2,62	2,78
	0,88	2,56	2,64	2,64	2,78	2,78	2,86	2,86	3,02	3,00	3,10	3,10	3,26
	1,00	2,92	3,04	3,02	3,16	3,16	3,30	3,26	3,42	3,42	3,56	3,52	3,68
	1,13	3,32	3,48	3,42	3,56	3,60	3,76	3,70	3,86	3,88	4,10	4,00	4,16
	1,25	3,70	3,88	3,80	3,94	4,00	4,20	4,10	4,26	4,32	4,54	4,42	4,60
	1,50	4,46	4,74	4,56	4,72	4,84	5,12	4,96	5,10	5,22	5,54	5,34	5,50
	$N_{R,I,k}$ [kN]												
	0,75	1,40	1,94	2,14	2,22	1,52	2,08	3,32	2,42	1,64	2,26	2,50	2,60
	0,88	1,82	2,34	2,62	2,70	1,96	2,54	2,82	2,92	2,12	2,74	3,04	3,14
	1,00	2,24	2,74	3,06	3,14	2,44	2,96	3,32	3,42	2,62	3,20	3,58	3,68
	1,13	2,74	3,18	3,58	3,64	2,98	3,44	3,88	3,96	3,20	3,70	4,18	4,26
	1,25	3,24	3,58	4,08	4,12	3,52	3,88	4,40	4,46	3,78	4,18	4,76	4,80
	1,50	4,36	4,46	5,12	5,12	4,74	4,84	5,56	5,56	5,10	5,22	5,98	5,98

The load bearing capacity of component II is according to the Annex of the corresponding fastener.

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

Fastening of perforated sheets

Load bearing capacity of component I

Annex 4

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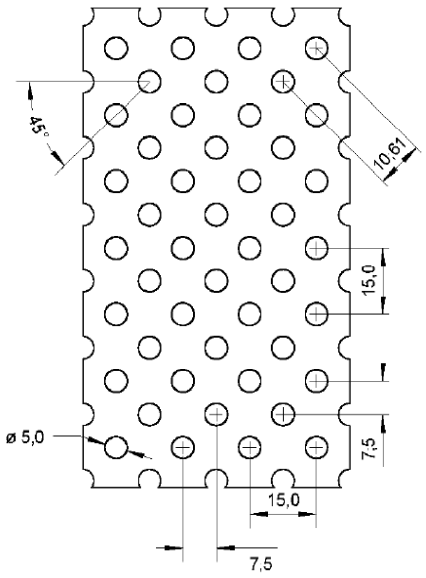

Fastener

Self tapping screw from Ø 6,3 mm to Ø 6,5 mm

Self drilling screw from Ø 5,5 mm to Ø 6,3 mm

Materials

Component I: S280GD - EN 10346

Component II: According to the Annex of the corresponding fastener

sheet		perforated sheet made of S280 GD - 10346							
Fastener		self drilling screws Ø 5,5 mm to Ø 6,0 mm				self tapping screws Ø 6,3 mm to Ø 6,5 mm			
washer Ø [mm]		16	19	22	25	16	19	22	25
Component I t I [mm]	$V_{R,I,k}$ [kN]								
	0,75	2,48	2,52	2,84	2,76	2,38	2,64	3,16	3,24
	0,88	3,04	3,12	3,42	3,32	3,02	3,28	3,78	3,88
	1,00	3,56	3,70	3,84	3,84	3,64	3,96	4,36	4,50
	1,13	4,14	4,26	4,40	4,40	4,36	4,70	5,00	5,18
	1,25	4,68	5,84	4,92	4,94	5,06	5,40	5,60	5,84
	1,50	5,76	6,04	5,90	6,10	6,62	6,94	6,88	7,16
	$N_{R,I,k}$ [kN]								
	0,75	2,88	3,16	3,24	3,14	2,86	3,46	3,72	3,92
	0,88	3,42	3,72	3,76	3,70	3,40	4,02	4,30	4,46
	1,00	3,92	4,28	4,28	4,20	3,90	4,56	4,82	4,96
	1,13	4,46	4,86	4,88	4,72	4,44	5,12	5,38	5,48
	1,25	4,96	5,42	5,42	5,26	4,94	5,66	5,88	5,94
	1,50	6,04	6,60	6,60	6,38	6,00	6,74	6,92	6,90

The load bearing capacity of component II is according to the Annex of the corresponding fastener.

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

Fastening of perforated sheets

Load bearing capacity of component I

Annex 5

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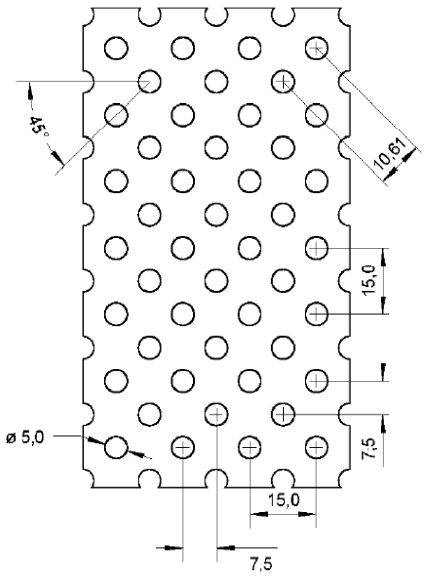

Fastener

Self tapping screw from Ø 6,3 mm to Ø 6,5 mm

Self drilling screw from Ø 5,5 mm to Ø 6,3 mm

Materials

Component I: S320GD - EN 10346

Component II: According to the Annex of the corresponding fastener

sheet		perforated sheet made of S320 GD - 10346							
Fastener		self drilling screws Ø 5,5 mm to Ø 6,0 mm				self tapping screws Ø 6,3 mm to Ø 6,5 mm			
washer Ø [mm]		16	19	22	25	16	19	22	25
Component I t I [mm]	$V_{R,I,k}$ [kN]								
	0,75	2,68	2,74	3,08	3,00	2,68	2,88	3,42	3,50
	0,88	3,30	3,38	3,70	3,60	3,36	3,60	4,10	4,22
	1,00	3,86	4,00	4,16	4,16	4,02	4,30	4,72	4,88
	1,13	4,48	4,62	4,76	4,76	4,76	5,08	5,42	5,60
	1,25	5,06	5,24	5,32	5,36	5,50	5,84	6,08	6,30
	1,50	6,24	6,54	6,40	6,60	7,10	7,52	7,46	7,76
	$N_{R,I,k}$ [kN]								
	0,75	3,12	3,42	3,50	3,40	3,12	3,68	4,06	4,26
	0,88	3,70	4,04	4,08	4,00	3,70	4,32	4,68	4,86
	1,00	4,24	4,64	4,64	4,54	4,24	4,92	5,24	5,40
	1,13	4,84	5,26	5,28	5,12	4,84	5,54	5,86	5,96
	1,25	5,38	5,88	5,88	5,70	5,38	6,14	6,40	6,48
	1,50	6,54	7,16	7,16	6,92	6,54	7,38	7,54	7,52

The load bearing capacity of component II is according to the Annex of the corresponding fastener.

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

Fastening of perforated sheets

Load bearing capacity of component I

Annex 6

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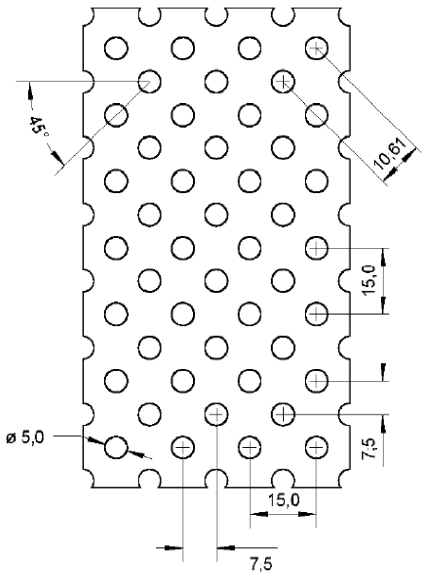


Fastener

Self tapping screw from Ø 6,3 mm to Ø 6,5 mm

Self drilling screw from Ø 5,5 mm to Ø 6,5 mm

Materials

Component I: S350GD - EN 10346

Component II: According to the Annex of the corresponding fastener

sheet		perforated sheet made of S350 GD - 10346							
Fastener		self drilling screws Ø 5,5 mm to Ø 6,0 mm				self tapping screws Ø 6,3 mm to Ø 6,5 mm			
washer Ø [mm]		16	19	22	25	16	19	22	25
Component I t I [mm]	$V_{R,I,k}$ [kN]								
	0,75	2,88	2,92	3,30	3,20	2,98	3,20	3,72	3,92
	0,88	3,54	3,62	3,96	3,86	3,62	3,88	4,42	4,54
	1,00	4,14	4,28	4,46	4,46	4,24	4,52	5,08	5,12
	1,13	4,80	4,94	5,10	5,10	4,92	5,24	5,78	5,74
	1,25	5,44	5,62	5,70	5,72	5,56	5,92	6,46	6,32
	1,50	6,24	6,54	6,40	7,02	6,94	7,36	7,86	7,48
	$N_{R,I,k}$ [kN]								
	0,75	3,34	3,66	3,76	3,64	3,52	4,16	4,52	4,64
	0,88	3,96	4,36	4,38	4,28	3,98	4,76	5,04	5,24
	1,00	4,54	4,98	4,96	4,86	4,40	5,24	5,50	5,76
	1,13	5,16	5,64	5,64	5,48	4,86	5,76	5,96	6,32
	1,25	5,80	6,28	6,28	6,14	5,38	6,24	6,40	6,80
	1,50	6,54	7,16	7,16	7,46	6,54	7,38	7,54	7,80

The load bearing capacity of component II is according to the Annex of the corresponding fastener.

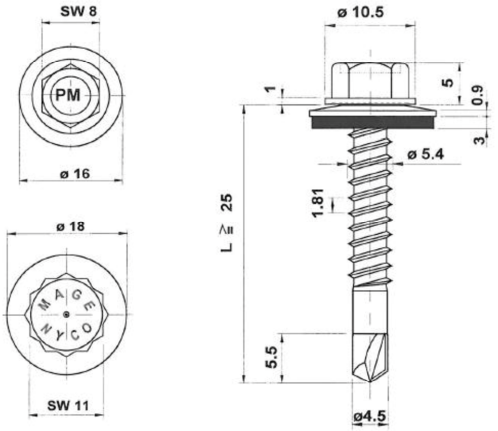
The thickness of the perforated sheets which are exposed to wind loads shall be at least 1,00 mm.

Fastening of perforated sheets

Load bearing capacity of component I

Annex 7

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

no performance determined

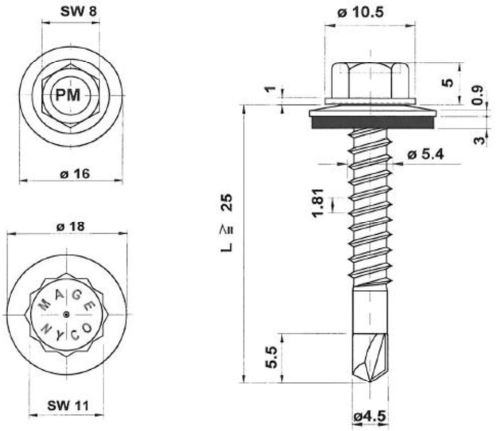
		Component II t II [mm]					
		2 x 0,75		2 x 0,88		2 x 1,00	
	$M_{t,nom}$	5 Nm					
Component I t I [mm]	$V_{R,k}$ [kN]						
	0,63	2,30	-	2,40	ac	2,50	ac
	0,75	2,40	-	2,90	-	2,90	-
	0,88	2,40	-	2,90	-	2,90	-
	1,00	2,40	-	2,90	-	2,90	-
	1,13	2,40	-	2,90	-	2,90	-
	1,25	2,40	-	2,90	-	2,90	-
	1,50	2,40	-	2,90	-	2,90	-
	1,75	2,40	-	2,90	-	-	-
	2,00	2,40	-	-	-	-	-
	$N_{R,k}$ [kN]						
	0,50	0,92		1,03	ac	1,08	ac
	0,55	1,16		1,30	ac	1,36	ac
	0,63	1,70	-	1,90	ac	2,00	ac
	0,75	1,70	-	1,90	-	2,00	-
	0,88	1,70	-	1,90	-	2,00	-
	1,00	1,70	-	1,90	-	2,00	-
	1,13	1,70	-	1,90	-	2,00	-
	1,25	1,70	-	1,90	-	2,00	-
	1,50	1,70	-	1,90	-	2,00	-
	1,75	1,70	-	1,90	-	-	-
	2,00	1,70	-	-	-	-	-
	$N_{R,k,II}$	1,70	-	1,90	-	2,00	-

Self-drilling screw

PMJ-tec TOPEX 7510
bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 8

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

no performance determined

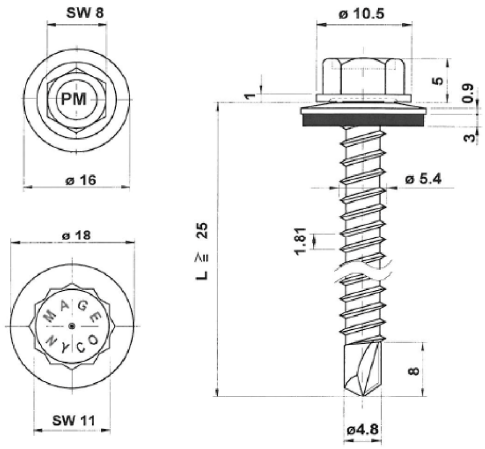
		Component II t II [mm]				
		1,00	1,25	1,50	2,00	3,00
$M_{t,nom}$		-				
Component I t I [mm]	$V_{R,k}$ [kN]					
	0,63	1,90 ac	2,10 ac	2,40 ac	2,60 ac	2,60 ac
	0,75	2,10 -	2,40 ac	2,60 ac	3,00 ac	- -
	0,88	2,30 -	2,60	2,90 ac	3,40 ac	- -
	1,00	2,50 -	2,80	3,20 -	3,70 -	- -
	1,13	2,70 -	3,00	3,40 -	4,10 -	- -
	1,25	2,80 -	3,20	3,60 -	4,30 -	- -
	$N_{R,k}$ [kN]					
	0,50	0,49 -	0,70 ac	0,92 ac	1,35 ac	1,57 ac
	0,55	0,61 -	0,89 ac	1,16 ac	1,71 ac	1,98 ac
	0,63	0,90 -	1,30 ac	1,70 ac	2,50 ac	2,90 ac
	0,75	0,90 -	1,30 ac	1,70 ac	2,50 ac	- -
	0,88	0,90 -	1,30 -	1,70 ac	2,50 ac	- -
	1,00	0,90 -	1,30 -	1,70 -	2,50 -	- -
	1,13	0,90 -	1,30 -	1,70 -	2,50 -	- -
	1,25	0,90 -	1,30 -	1,70 -	2,50 -	- -
	$N_{R,k,II}$	0,90 -	1,30 -	1,70 -	2,50 -	- -

Self-drilling screw

PMJ-tec TOPEX 7510
bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 9

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 6.00$ mm

Timber substructures

no performance determined

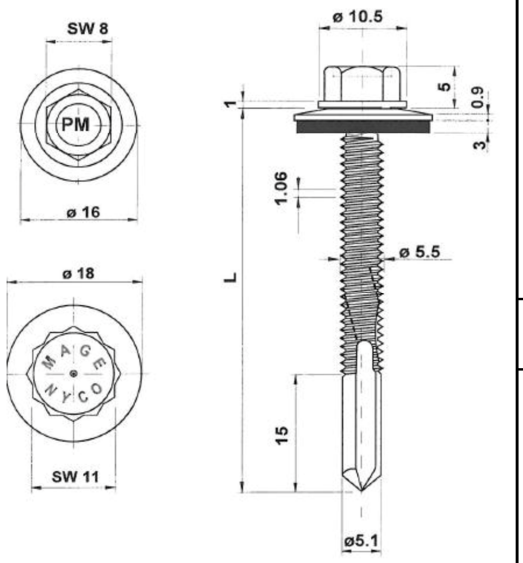
		Component II t II [mm]					
		3,00		4,00		5,00	
	$M_{t,nom}$	7 Nm					
Component I t I [mm] – $V_{R,k}$ [kN]	0,63	2,60	abcd	3,00	abcd	3,00	abcd
	0,75	3,00	ac	3,40	ac	3,40	ac
	0,88	3,40	ac	3,80	ac	3,80	ac
	1,00	3,70	ac	4,30	ac	4,30	ac
	1,13	4,00	ac	4,70	ac	-	-
	1,25	4,40	a	5,10	a	-	-
	1,50	5,00	-	5,30	-	-	-
	1,75	5,00	-	5,30	-	-	-
	2,00	5,00	-	5,30	-	-	-
Component I t I [mm] – $N_{R,k}$ [kN]	0,50	1,57	abcd	1,57	abcd	1,57	abcd
	0,55	1,98	abcd	1,98	abcd	1,98	abcd
	0,63	2,90	abcd	2,90	abcd	2,90	abcd
	0,75	3,40	ac	3,40	ac	3,40	ac
	0,88	4,00	ac	4,00	ac	4,00	ac
	1,00	4,30	ac	4,50	ac	4,50	ac
	1,13	4,30	ac	5,00	ac	-	-
	1,25	4,30	a	5,10	a	-	-
	1,50	4,30	-	5,10	-	-	-
	1,75	4,30	-	5,10	-	-	-
	2,00	4,30	-	5,10	-	-	-
	$N_{R,k,II}$	4,30	-	5,10	-	5,10	-

Self-drilling screw

PMJ-tec TOPEX 7520
bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 10

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506 organic coated
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 12.50$ mm

Timber substructures

no performance determined

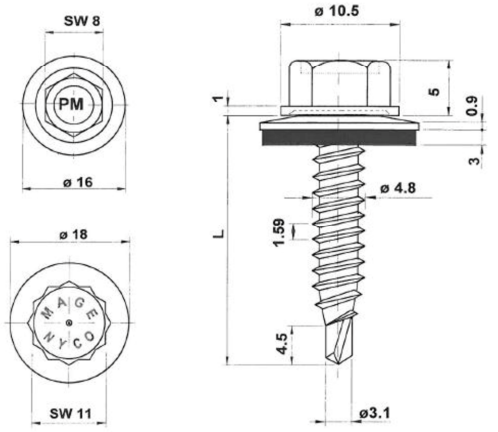
			Component II t II [mm]					
			6,00		8,00		10,0	
		$M_{t,nom}$	5 Nm					
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	2,60	abcd	2,60	abcd	2,60	abcd
		0,75	3,10	abcd	3,10	abcd	3,10	abcd
		0,88	3,60	ac	3,60	ac	3,60	ac
		1,00	4,10	ac	4,10	ac	4,10	ac
		1,13	4,60	ac	4,60	ac	4,60	ac
		1,25	5,10	ac	5,10	ac	5,10	ac
		1,50	6,00	-	6,00	-	6,00	-
		1,75	6,00	-	6,00	-	6,00	-
		2,00	6,00	-	6,00	-	6,00	-
	$N_{R,k}$ [kN]	0,50	1,35	abcd	1,35	abcd	1,35	abcd
		0,55	1,71	abcd	1,71	abcd	1,71	abcd
		0,63	2,50	abcd	2,50	abcd	2,50	abcd
		0,75	2,90	abcd	2,90	abcd	2,90	abcd
		0,88	3,70	ac	3,70	ac	3,70	ac
		1,00	4,50	ac	4,50	ac	4,50	ac
		1,13	5,00	ac	5,00	ac	5,00	ac
		1,25	5,50	ac	5,50	ac	5,50	ac
		1,50	5,70	-	5,70	-	5,70	-
		1,75	5,70	-	5,70	-	5,70	-
		2,00	5,70	-	5,70	-	5,70	-
		$N_{R,k,II}$	5,70	-	5,70	-	5,70	-

Self-drilling screw

PMJ-tec TOPEX 7530
bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 11

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506 organic coated
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

no performance determined

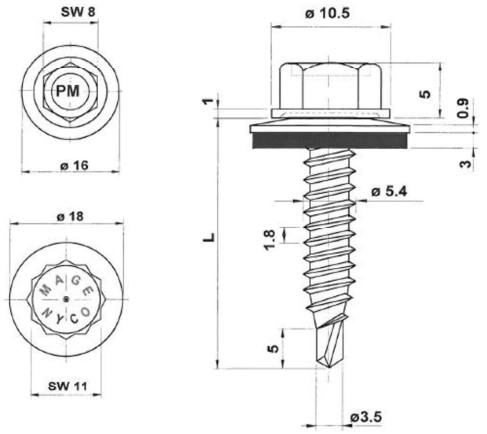
			Component II t II [mm]					
			0,63	0,75	0,88	1,00	1,13	1,25
		$M_{t,nom}$	5 Nm					
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	0,90 -	0,90 -	1,50 -	2,10 ac	2,10 ac	2,10 ac
		0,75	0,90 -	0,90 -	1,50 -	2,10 ac	2,10 ac	2,10 ac
		0,88	0,90 -	0,90 -	1,70 -	2,40 -	2,40 -	2,40 -
		1,00	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
		1,13	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
		1,25	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
	$N_{R,k}$ [kN]	0,50	0,38 -	0,38 -	0,54	0,70 ac	0,86 ac	1,03 ac
		0,55	0,48 -	0,48 -	0,68	0,89 ac	1,09 ac	1,30 ac
		0,63	0,70 -	0,70 -	1,00	1,30 ac	1,60 ac	1,90 ac
		0,75	0,70 -	0,70 -	1,00	1,30 ac	1,60 a	1,90 a
		0,88	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		1,00	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		1,13	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		1,25	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		$N_{R,k,II}$	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -

Self-drilling screw

PMJ-tec TOPEX 7550 4,8
bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 12

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506 organic coated
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

no performance determined

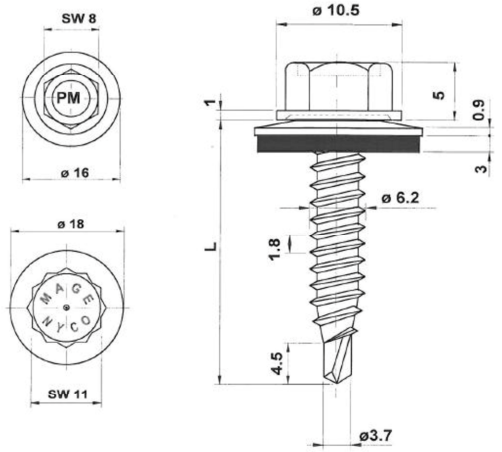
			Component II t II [mm]						
			0,63	0,75	0,88	1,00	1,13	1,25	2x0,75
		$M_{t,nom}$	4 Nm			5 Nm			5 Nm
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	1,30 -	1,50 -	1,50 -	1,50 ac	1,50 ac	1,50 ac	1,80 ac
		0,75	1,30 -	1,50 -	1,50 -	1,50 -	1,50 -	1,50 -	1,80 -
		0,88	1,30 -	1,50 -	1,90 -	2,30 -	2,30 -	2,40 -	2,40 -
		1,00	1,30 -	1,50 -	2,30 -	3,00 -	3,10 -	3,20 -	3,00 -
	$N_{R,k}$ [kN]	0,50	0,38 -	0,54 -	0,70 -	0,86 ac	1,03 ac	1,13 ac	1,13 ac
		0,55	0,48 -	0,68 -	0,89 -	1,09 ac	1,30 ac	1,43 ac	1,43 ac
		0,63	0,70 -	1,00 -	1,30 -	1,60 ac	1,90 ac	2,10 ac	2,10 ac
		0,75	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,30 -
		0,88	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,30 -
		1,00	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,30 -
		$N_{R,k,II}$	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,30 -

Self-drilling screw

PMJ-tec TOPEX 7550 5,5
bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 13

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

no performance determined

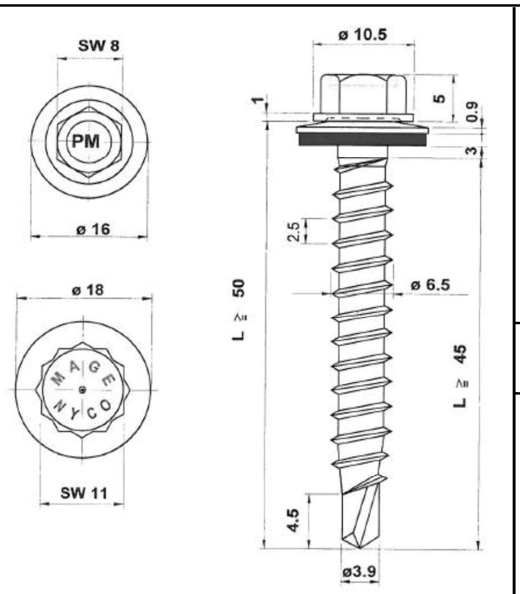
			Component II t II [mm]						
			0,63	0,75	0,88	1,00	1,13	1,25	2x0,75
		$M_{t,nom}$	4 Nm			5 Nm			5 Nm
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	1,60 -	1,60 -	1,60 -	1,60 ac	1,60 ac	1,60 ac	1,80 ac
		0,75	1,60 -	1,60 -	1,60 -	1,60 -	1,60 -	1,60 -	1,80 -
		0,88	1,60 -	1,60 -	1,90	2,30 -	2,30 -	2,40 -	2,40 -
		1,00	1,60 -	1,60 -	2,30	3,00 -	3,10 -	3,20 -	3,00 -
	$N_{R,k}$ [kN]	0,50	0,43 -	0,54 -	0,70 -	0,86 -	1,03 ac	1,19 ac	1,30 ac
		0,55	0,55 -	0,68 -	0,89 -	1,09 -	1,30 ac	1,50 ac	1,64 ac
		0,63	0,80 -	1,00 -	1,30 -	1,60 -	1,90 ac	2,20 ac	2,40 ac
		0,75	0,80 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,60 -
		0,88	0,80 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,60 -
		1,00	0,80 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,60 -
		$N_{R,k,II}$	0,80 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,60 -

Self-drilling screw

PMJ-tec TOPEX 7550 6,3
bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 14

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

$M_{y,Rk}$ = 9,742 Nm
$f_{ax,k}$ = 8,575 N/mm² for $l_{ef} \geq 45{,}0$ mm

			Component II			
			steel t II [mm]		Timber ≥ C24 $L_g \geq 29$ mm	
			1,50	-		
		$M_{t,nom}$	5 Nm		-	
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	1,40 ac	- -	1,40	Failure of component I
		0,75	1,60 ac	- -	1,60	
		0,88	2,00 ac	- -	2,00	
		1,00	2,50 ac	- -	2,50	
	$N_{R,k}$ [kN]	0,50	1,24 ac	- -	1,24	Failure of component I
		0,55	1,57 ac	- -	1,57	
		0,63	2,30 ac	- -	2,30	
		0,75	2,80 ac	- -	2,80	
		0,88	3,20 ac	- -	3,20	
		1,00	3,20 ac	- -	3,20	
		$N_{R,k,II}$	3,20 ac	- -	-	-

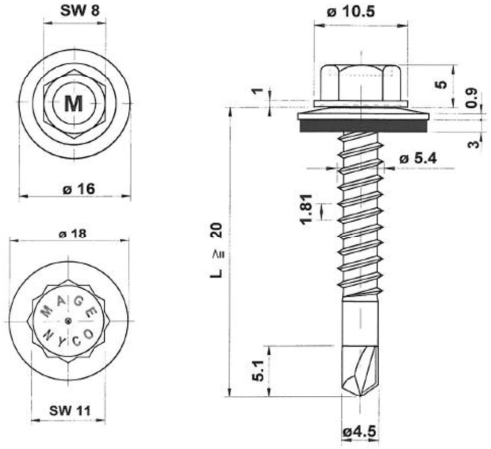
The values listed above in dependence on the screw in length l_{ef} are valid for k_{mod} = 0,90 and ρ_k = 350 kg/m³. For other combinations of k_{mod} and timber densities see Annex 3.

Self-drilling screw

PMJ-tec TOPEX 7565
bimetal with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 15

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	Carbon steel, galvanized
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

No performance determined

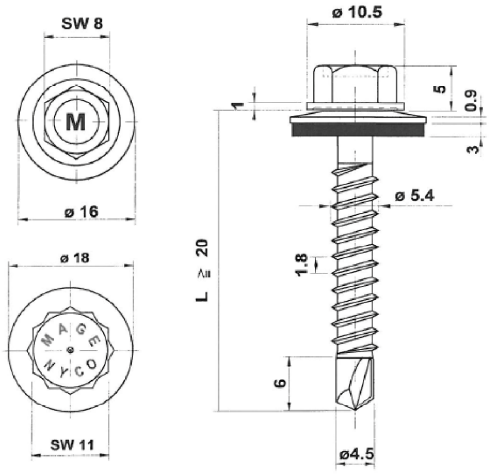
			Component II t II [mm]				
			1,00	1,25	1,50	2,00	3,00
		$M_{t,nom}$	-				
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	1,90 ac	2,10 ac	2,40 ac	2,60 ac	2,60 ac
		0,75	2,10 -	2,40 ac	2,60 ac	3,00 ac	- -
		0,88	2,30 -	2,60	2,90 ac	3,40 ac	- -
		1,00	2,50 -	2,80	3,20 -	3,70 -	- -
		1,13	2,70 -	3,00	3,40 -	4,10 -	- -
		1,25	2,80 -	3,20	3,60 -	4,30 -	- -
	$N_{R,k}$ [kN]	0,50	0,54 ac	0,76 ac	1,03 ac	1,57 ac	1,57 ac
		0,55	0,68 ac	0,95 ac	1,30 ac	1,98 ac	1,98 ac
		0,63	1,00 ac	1,40 ac	1,90 ac	2,90 ac	2,90 ac
		0,75	1,00 -	1,40 ac	1,90 ac	2,90 ac	- -
		0,88	1,00 -	1,40 -	1,90 ac	2,90 ac	- -
		1,00	1,00 -	1,40 -	1,90 -	2,90 -	- -
		1,13	1,00 -	1,40 -	1,90 -	2,90 -	- -
		1,25	1,00 -	1,40 -	1,90 -	2,90 -	- -
		$N_{R,k,II}$	1,00 -	1,40 -	1,90 -	2,90 -	- -

Self-drilling screw

PMJ-tec TOPEX 7310
with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 16

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	Carbon steel, galvanized
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

No performance determined

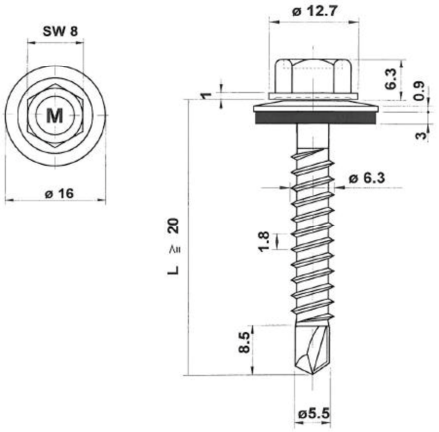
			Component II t II [mm]				
			1,00	1,25	1,50	2,00	3,00
		$M_{t,nom}$	-				
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	1,90 ac	2,10 ac	2,40 ac	2,60 ac	2,60 ac
		0,75	2,10 -	2,40 ac	2,60 ac	3,00 ac	- -
		0,88	2,30 -	2,60	2,90 ac	3,40 ac	- -
		1,00	2,50 -	2,80	3,20 -	3,70 -	- -
		1,13	2,70 -	3,00	3,40 -	4,10 -	- -
		1,25	2,80 -	3,20	3,60 -	4,30 -	- -
	$N_{R,k}$ [kN]	0,50	0,54 ac	0,76 ac	1,03 ac	1,57 ac	1,57 ac
		0,55	0,68 ac	0,95 ac	1,30 ac	1,98 ac	1,98 ac
		0,63	1,00 ac	1,40 ac	1,90 ac	2,90 ac	2,90 ac
		0,75	1,00 -	1,40 ac	1,90 ac	2,90 ac	- -
		0,88	1,00 -	1,40 -	1,90 ac	2,90 ac	- -
		1,00	1,00 -	1,40 -	1,90 -	2,90 -	- -
		1,13	1,00 -	1,40 -	1,90 -	2,90 -	- -
		1,25	1,00 -	1,40 -	1,90 -	2,90 -	- -
		$N_{R,k,II}$	1,00 -	1,40 -	1,90 -	2,90 -	- -

Self-drilling screw

PMJ-tec TOPEX 7320
with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 17

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	Carbon steel, galvanized
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 6.30$ mm

Timber substructures

No performance determined

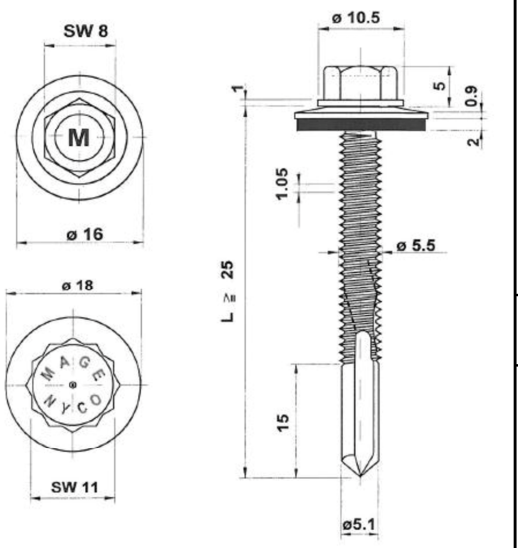
			Component II t II [mm]							
			2,50		3,00		4,00		5,00	
		$M_{t,nom}$	-							
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	2,30	ac	2,60	abc	2,60	abc	2,60	abc
		0,75	2,80	ac	3,10	ac	3,10	ac	3,10	abc
		0,88	3,40	ac	3,60	ac	3,60	ac	3,60	ac
		1,00	4,00	ac	4,10	ac	4,10	ac	4,10	ac
		1,13	4,00	ac	4,50	ac	4,80	ac	5,10	ac
		1,25	4,00	ac	5,70	ac	6,00	ac	6,20	ac
		1,50	4,00	ac	5,70	ac	6,00	-	-	-
		1,75	4,00	ac	5,70	ac	6,00	-	-	-
		2,00	4,00	ac	5,70	ac	6,00	-	-	-
	$N_{R,k}$ [kN]	0,50	1,51	ac	1,51	abc	1,51	abc	1,51	abc
		0,55	1,91	ac	1,91	abc	1,91	abc	1,91	abc
		0,63	2,80	ac	2,80	abc	2,80	abc	2,80	abc
		0,75	3,50	ac	3,50	abc	3,50	abc	3,50	abc
		0,88	4,40	ac	4,40	ac	4,40	ac	4,40	ac
		1,00	5,20	ac	5,20	ac	5,20	ac	5,20	ac
		1,13	5,70	ac	6,10	ac	6,10	ac	6,10	ac
		1,25	5,70	ac	6,40	ac	7,00	ac	7,00	ac
		1,50	5,70	ac	6,40	ac	7,00	-	-	-
		1,75	5,70	ac	6,40	ac	7,00	-	-	-
		2,00	5,70	ac	6,40	ac	7,00	-	-	-
		$N_{R,k,II}$	5,70	-	6,40	-	7,00	-	7,00	-

Self-drilling screw

PMJ-tec TOPEX 7325
with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 18

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	Carbon steel, galvanized
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1

Drilling-capacity $\Sigma(t_i) \leq 12.50$ mm

Timber substructures

No performance determined

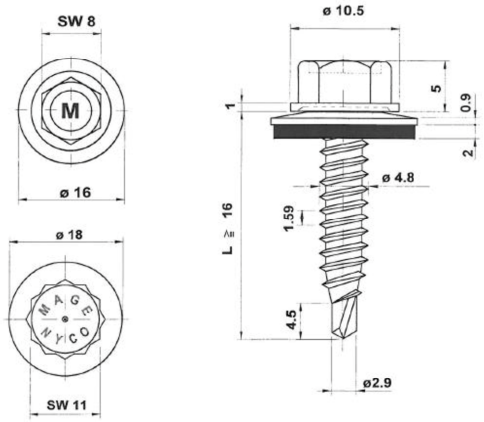
			Component II t II [mm]					
			6,00		8,00		10,0	
		$M_{t,nom}$	8 Nm					
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	2,60	abcd	2,60	abcd	2,60	abcd
		0,75	3,10	abcd	3,10	abcd	3,10	abcd
		0,88	3,60	ac	3,60	ac	3,60	ac
		1,00	4,10	ac	4,10	ac	4,10	ac
		1,13	4,60	ac	4,60	ac	4,60	ac
		1,25	5,10	ac	5,10	ac	5,10	ac
		1,50	6,00	-	6,00	-	6,00	-
		1,75	6,00	-	6,00	-	6,00	-
		2,00	6,00	-	6,00	-	6,00	-
	$N_{R,k}$ [kN]	0,50	1,57	abcd	1,57	abcd	1,57	abcd
		0,55	1,98	abcd	1,98	abcd	1,98	abcd
		0,63	2,90	abcd	2,90	abcd	2,90	abcd
		0,75	3,40	abcd	3,40	abcd	3,40	abcd
		0,88	4,00	ac	4,00	ac	4,00	ac
		1,00	4,50	ac	4,50	ac	4,50	ac
		1,13	5,00	ac	5,00	ac	5,00	ac
		1,25	5,50	ac	5,50	ac	5,50	ac
		1,50	6,60	-	6,60	-	6,60	-
		1,75	6,60	-	6,60	-	6,60	-
		2,00	6,60	-	6,60	-	6,60	-
		$N_{R,k,II}$	6,60	-	6,60	-	6,60	-

Self-drilling screw

PMJ-tec TOPEX 7330
with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 19

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	Carbon steel, galvanized
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

No performance determined

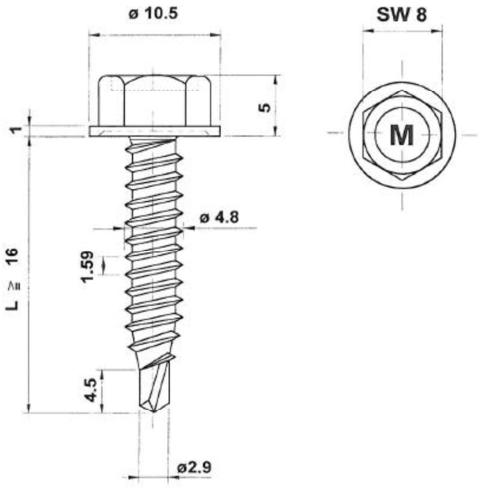
			Component II t II [mm]					
			0,63	0,75	0,88	1,00	1,13	1,25
		$M_{t,nom}$	∑t = 1,50 mm: 4 Nm			∑t = 1,50 mm: 6 Nm		
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	1,40 -	1,40 -	1,80 -	2,10 ac	2,10 ac	2,10 ac
		0,75	1,40 -	1,40 -	1,80 -	2,10 ac	2,10 ac	2,10 ac
		0,88	1,40 -	1,40 -	2,00 -	2,40 ac	2,40 ac	2,40 ac
		1,00	1,40 -	1,40 -	2,20 -	2,80 -	2,80 -	2,80 -
		1,13	1,40 -	1,40 -	2,20 -	2,80 -	2,80 -	2,80 -
		1,25	1,40 -	1,40 -	2,20 -	2,80 -	2,80 -	2,80 -
	$N_{R,k}$ [kN]	0,50	0,38 -	0,38 -	0,54	0,70 ac	0,86 ac	1,03 ac
		0,55	0,48 -	0,48 -	0,68	0,89 ac	1,09 ac	1,30 ac
		0,63	0,70 -	0,70 -	1,00	1,30 ac	1,60 ac	1,90 ac
		0,75	0,70 -	0,70 -	1,00	1,30 ac	1,60 a	1,90 a
		0,88	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		1,00	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		1,13	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		1,25	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		$N_{R,k,II}$	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -

Self-drilling screw

PMJ-tec TOPEX 7340
with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 20

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Carbon steel (1.1147) – EN 10263
case hardened, galvanized and coated with "Dural 250"

Washer: none

Component I: S280GD to S320GD - EN 10346

Component II: S235 - EN 10025-1
S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

No performance determined

			Component II							
			t II [mm]							
			0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25
		$M_{t,nom}$	∑t = 1,50 mm: 4 Nm				∑t = 1,50 mm: 6 Nm			
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	1,51 -	1,51 -	1,51 -	1,51 -	1,51 -	1,51 -	1,51 -	1,51 -
		0,55	1,51 -	1,71 -	1,71 -	1,71 -	1,71 -	1,71 -	1,71 -	1,71 -
		0,63	1,51 -	1,71 -	1,91 -	1,91 -	1,91 -	1,91 -	1,91 -	1,91 -
		0,75	1,51 -	1,71 -	1,91 -	2,18 -	2,18 -	2,18 -	2,18 -	2,18 -
		0,88	1,51 -	1,71 -	1,91 -	2,18 -	2,18 -	2,18 -	2,18 -	2,18 -
		1,00	1,51 -	1,71 -	1,91 -	2,18 -	2,18 -	2,18 -	2,18 -	2,18 -
		1,13	1,51 -	1,71 -	1,91 -	2,18 -	2,18 -	2,18 -	2,18 -	2,18 -
		1,25	1,51 -	1,71 -	1,91 -	2,18 -	2,18 -	2,18 -	2,18 -	2,18 -
		1,50	1,51 -	1,71 -	1,91 -	2,18 -	2,18 -	2,18 -	- -	- -
		1,75	1,51 -	1,71 -	1,91 -	2,18 -	- -	- -	- -	- -
		2,00	1,51 -	- -	- -	- -	- -	- -	- -	- -
	$N_{R,k}$ [kN]	0,50	- -	- -	0,38 -	0,38 -	0,54 -	0,70 -	0,86 -	1,03 -
		0,55	- -	- -	0,48 -	0,48 -	0,68 -	0,89 -	1,09 -	1,30 -
		0,63	- -	- -	0,70 -	0,70 -	1,00 -	1,30 -	1,35[a] -	1,35[a] -
		0,75	- -	- -	0,70 -	0,70 -	1,00 -	1,30 -	1,35[a] -	1,35[a] -
		0,88	- -	- -	0,70 -	0,70 -	1,00 -	1,30 -	1,35[a] -	1,35[a] -
		1,00	- -	- -	0,70 -	0,70 -	1,00 -	1,30 -	1,35[a] -	1,35[a] -
		1,13	- -	- -	0,70 -	0,70 -	1,00 -	1,30 -	1,35[a] -	1,35[a] -
		1,25	- -	- -	0,70 -	0,70 -	1,00 -	1,30 -	1,35[a] -	1,35[a] -
		1,50	- -	- -	0,70 -	0,70 -	1,00 -	1,30 -	- -	- -
		1,75	- -	- -	0,70 -	- -	- -	- -	- -	- -
		2,00	- -	- -	- -	- -	- -	- -	- -	- -
		$N_{R,k,II}$	- -	- -	0,70 -	0,70 -	1,00 -	1,30 -	1,35 -	1,35 -

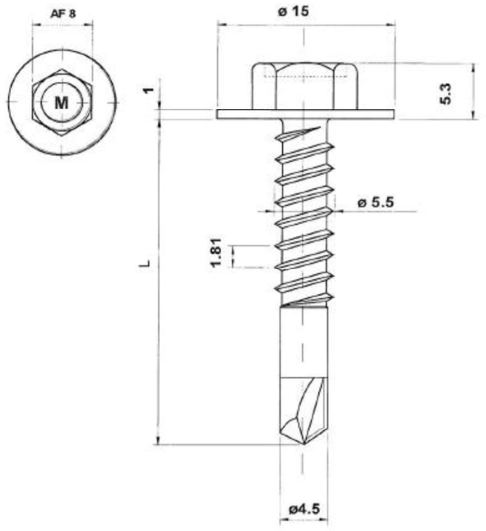
If both components I and II are made of 320GD or S350GD the values $V_{R,k}$ [kN] may be increased by 8,3%.
Only Index a: If component I is made of S320GDor S350GD the values $N_{R,k}$ [kN] may be increased by 8,3%.

Self-drilling screw

PMJ-tec TOPEX 7340 – 4,8xL
with hexagon head

Annex 21

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	none
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

No performance determined

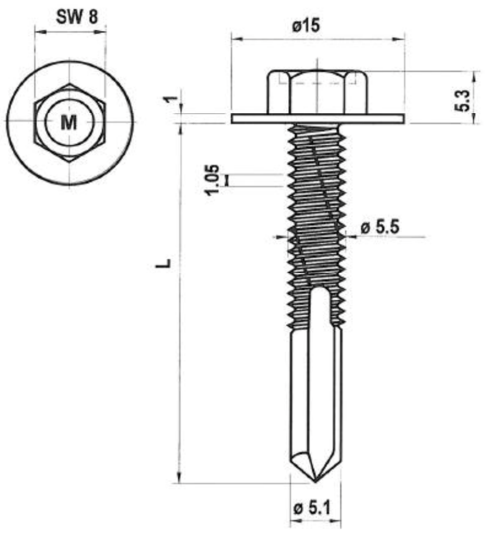
		Component II t II [mm]						
		1,00	1,13	1,25	1,50	2,00	2,50	3,00
	$M_{t,nom}$	5 Nm						
Component I t I [mm] $V_{R,k}$ [kN]	0,63	1,90 ac	1,90 ac	2,10 ac	2,40 ac	2,60 ac	2,60 ac	2,60 ac
	0,75	2,10 -	2,10 -	2,40 ac	2,60 ac	3,00 ac	3,00 ac	- -
	0,88	2,30 -	2,30 -	2,60	2,90 ac	3,40 -	3,40 -	- -
	1,00	2,50 -	2,50 -	2,80	3,20 -	3,70 -	3,70 -	- -
	1,13	2,70 -	2,70 -	3,00	3,40 -	4,10 -	- -	- -
	1,25	2,80 -	2,80 -	3,20	3,60 -	4,30 -	- -	- -
	1,50	2,80 -	2,80 -	3,20	3,60 -	- -	- -	- -
	1,75	2,80 -	2,80 -	3,20	3,60 -	- -	- -	- -
	2,00	2,80 -	2,80 -	3,20	3,60 -	- -	- -	- -
Component I t I [mm] $N_{R,k}$ [kN]	0,63	1,00 ac	1,00 ac	1,40 ac	1,90 ac	2,90 ac	2,90 ac	2,90 ac
	0,75	1,00 -	1,00 -	1,40 ac	1,90 ac	2,90 ac	2,90 ac	- -
	0,88	1,00 -	1,00 -	1,40 -	1,90 ac	2,90 -	2,90 -	- -
	1,00	1,00 -	1,00 -	1,40 -	1,90 -	2,90 -	2,90 -	- -
	1,13	1,00 -	1,00 -	1,40 -	1,90 -	2,90 -	- -	- -
	1,25	1,00 -	1,00 -	1,40 -	1,90 -	2,90 -	- -	- -
	1,50	1,00 -	1,00 -	1,40 -	1,90 -	- -	- -	- -
	1,75	1,00 -	1,00 -	1,40 -	1,90 -	- -	- -	- -
	2,00	1,00 -	1,00 -	1,40 -	1,90 -	- -	- -	- -
	$N_{R,k,II}$	1,00 -	1,00 -	1,40 -	1,90 -	2,90 -	2,90 -	2,90 -

Self-drilling screw

PMJ-tec TOPEX 7342
with hexagon head and flange Ø15 mm

Annex 22

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Carbon steel (1.1147) – EN 10263
case hardened, galvanized and coated with "Dural 250"

Washer: none

Component I: S280GD to S320GD - EN 10346

Component II: S235 - EN 10025-1

Drilling-capacity $\Sigma(t_i) \leq 12.50$ mm

Timber substructures

No performance determined

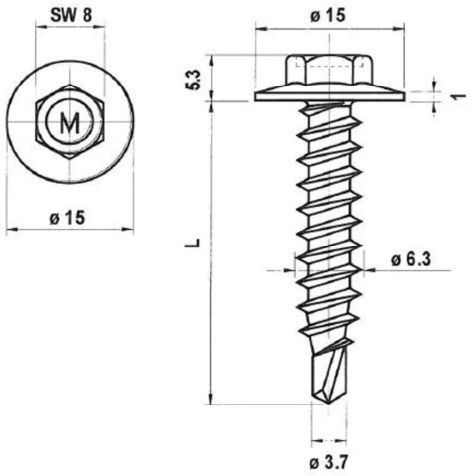
			Component II t II [mm]					
			6,00		8,00		10,0	
		$M_{t,nom}$	5 Nm					
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	2,60	abcd	2,60	abcd	2,60	abcd
		0,75	3,10	abcd	3,10	abcd	3,10	abcd
		0,88	3,60	ac	3,60	ac	3,60	ac
		1,00	4,10	ac	4,10	ac	4,10	ac
		1,13	4,60	ac	4,60	ac	4,60	ac
		1,25	5,10	ac	5,10	ac	5,10	ac
		1,50	6,00	-	6,00	-	6,00	-
		1,75	6,00	-	6,00	-	6,00	-
		2,00	6,00	-	6,00	-	6,00	-
	$N_{R,k}$ [kN]	0,63	2,50	abcd	2,50	abcd	2,50	abcd
		0,75	2,90	abcd	2,90	abcd	2,90	abcd
		0,88	3,70	ac	3,70	ac	3,70	ac
		1,00	4,50	ac	4,50	ac	4,50	ac
		1,13	5,00	ac	5,00	ac	5,00	ac
		1,25	5,50	ac	5,50	ac	5,50	ac
		1,50	6,60	-	6,60	-	6,60	-
		1,75	6,60	-	6,60	-	6,60	-
		2,00	6,60	-	6,60	-	6,60	-
		$N_{R,k,II}$	6,60	-	6,60	-	6,60	-

Self-drilling screw

PMJ-tec TOPEX 7344
with hexagon head and flange Ø15 mm

Annex 23

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	none
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

No performance determined

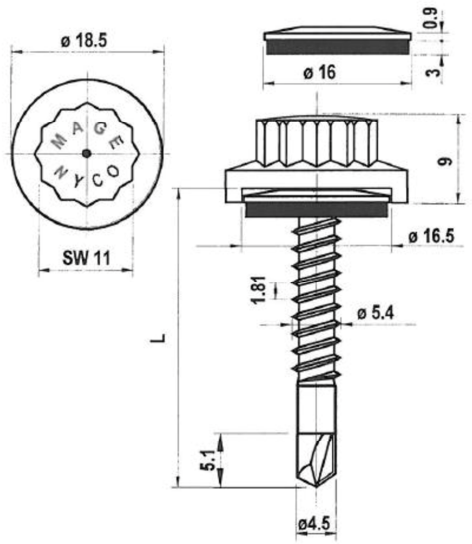
			Component II t II [mm]					
			0,63	0,75	0,88	1,00	1,13	1,25
		$M_{t,nom}$	5 Nm					
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	1,40 -	1,40 -	1,80 -	2,10 -	2,10 -	2,10 -
		0,75	1,40 -	1,40 -	1,80 -	2,10 -	2,10 -	2,10 -
		0,88	1,40 -	1,40 -	2,00 -	2,40 -	2,40 -	2,40 -
		1,00	1,40 -	1,40 -	2,20 -	2,80 -	2,80 -	2,80 -
		1,13	1,40 -	1,40 -	2,20 -	2,80 -	2,80 -	2,80 -
		1,25	1,40 -	1,40 -	2,20 -	2,80 -	2,80 -	2,80 -
	$N_{R,k}$ [kN]	0,63	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 ac	1,90 ac
		0,75	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 -	1,90 -
		0,88	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
		1,00	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
		1,13	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
		1,25	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
		$N_{R,k,II}$	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -

Self-drilling screw

PMJ-tec TOPEX 7346
with hexagon head and flange Ø15 mm

Annex 24

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	stainless steel (1.4301) – EN 10088
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

No performance determined

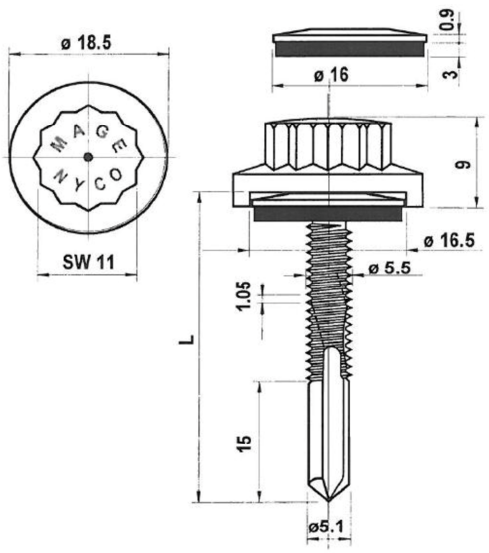
		Component II t II [mm]						
		1,00	1,13	1,25	1,50	2,00	2,50	3,00
	$M_{t,nom}$	5 Nm						
Component I t I [mm] $V_{R,k}$ [kN]	0,63	1,90 ac	1,90 ac	2,10 ac	2,40 ac	2,60 ac	2,60 ac	2,60 ac
	0,75	2,10 -	2,10 -	2,40 ac	2,60 ac	3,00 ac	3,00 ac	- -
	0,88	2,30 -	2,30 -	2,60	2,90 ac	3,40 -	3,40 -	- -
	1,00	2,50 -	2,50 -	2,80	3,20 -	3,70 -	3,70 -	- -
	1,13	2,70 -	2,70 -	3,00	3,40 -	4,10 -	- -	- -
	1,25	2,80 -	2,80 -	3,20	3,60 -	4,30 -	- -	- -
	1,50	2,80 -	2,80 -	3,20	3,60 -	- -	- -	- -
	1,75	2,80 -	2,80 -	3,20	3,60 -	- -	- -	- -
	2,00	2,80 -	2,80 -	3,20	3,60 -	- -	- -	- -
Component I t I [mm] $N_{R,k}$ [kN]	0,50	0,54 ac	0,54 ac	0,76 ac	1,03 ac	1,57 ac	1,57 ac	1,57 ac
	0,55	0,68 ac	0,68 ac	0,95 ac	1,30 ac	1,98 ac	1,98 ac	1,98 ac
	0,63	1,00 ac	1,00 ac	1,40 ac	1,90 ac	2,90 ac	2,90 ac	2,90 ac
	0,75	1,00 -	1,00 -	1,40 ac	1,90 ac	2,90 ac	2,90 ac	- -
	0,88	1,00 -	1,00 -	1,40 -	1,90 ac	2,90 -	2,90 -	- -
	1,00	1,00 -	1,00 -	1,40 -	1,90 -	2,90 -	2,90 -	- -
	1,13	1,00 -	1,00 -	1,40 -	1,90 -	2,90 -	- -	- -
	1,25	1,00 -	1,00 -	1,40 -	1,90 -	2,90 -	- -	- -
	1,50	1,00 -	1,00 -	1,40 -	1,90 -	- -	- -	- -
	1,75	1,00 -	1,00 -	1,40 -	1,90 -	- -	- -	- -
	2,00	1,00 -	1,00 -	1,40 -	1,90 -	- -	- -	- -
	$N_{R,k,II}$	1,00 -	1,00 -	1,40 -	1,90 -	2,90 -	2,90 -	2,90 -

Self-drilling screw

PMJ-tec TOPEX NYCO 7810
with polyamide bihexagon head and sealing washer ≥ Ø16 mm

Annex 25

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	stainless steel (1.4301) – EN 10088
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1

Drilling-capacity $\Sigma(t_i) \leq 12.50$ mm

Timber substructures

No performance determined

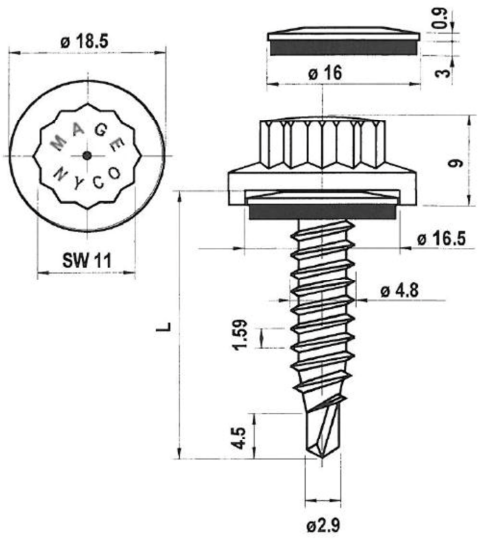
		Component II t II [mm]					
		6,00		8,00		10,0	
	$M_{t,nom}$	5 Nm					
Component I t I [mm] $V_{R,k}$ [kN]	0,63	2,60	abcd	2,60	abcd	2,60	abcd
	0,75	3,10	abcd	3,10	abcd	3,10	abcd
	0,88	3,60	ac	3,60	ac	3,60	ac
	1,00	4,10	ac	4,10	ac	4,10	ac
	1,13	4,60	ac	4,60	ac	4,60	ac
	1,25	5,10	ac	5,10	ac	5,10	ac
	1,50	6,00	-	6,00	-	6,00	-
	1,75	6,00	-	6,00	-	6,00	-
	2,00	6,00	-	6,00	-	6,00	-
Component I t I [mm] $N_{R,k}$ [kN]	0,50	1,35	abcd	1,35	abcd	1,35	abcd
	0,55	1,71	abcd	1,71	abcd	1,71	abcd
	0,63	2,50	abcd	2,50	abcd	2,50	abcd
	0,75	2,90	abcd	2,90	abcd	2,90	abcd
	0,88	3,70	ac	3,70	ac	3,70	ac
	1,00	4,50	ac	4,50	ac	4,50	ac
	1,13	5,00	ac	5,00	ac	5,00	ac
	1,25	5,50	ac	5,50	ac	5,50	ac
	1,50	6,60	-	6,60	-	6,60	-
	1,75	6,60	-	6,60	-	6,60	-
	2,00	6,60	-	6,60	-	6,60	-
	$N_{R,k,II}$	6,60	-	6,60	-	6,60	-

Self-drilling screw

PMJ-tec TOPEX NYCO 7820
with polyamide bihexagon head and sealing washer ≥ Ø16 mm

Annex 26

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	stainless steel (1.4301) – EN 10088
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

No performance determined

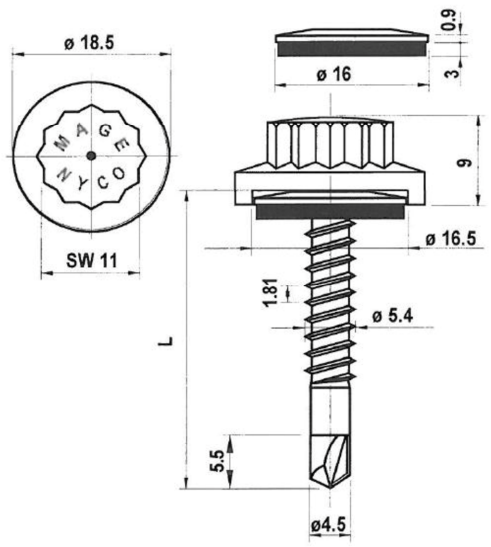
		Component II t II [mm]					
		0,63	0,75	0,88	1,00	1,13	1,25
	$M_{t,nom}$	5 Nm					
Component I t I [mm] $V_{R,k}$ [kN]	0,63	1,40 -	1,40 -	1,80 -	2,10 ac	2,10 ac	2,10 ac
	0,75	1,40 -	1,40 -	1,80 -	2,10 ac	2,10 ac	2,10 ac
	0,88	1,40 -	1,40 -	2,00 -	2,40 -	2,40 -	2,40 -
	1,00	1,40 -	1,40 -	2,20 -	2,80 -	2,80 -	2,80 -
	1,13	1,40 -	1,40 -	2,20 -	2,80 -	2,80 -	2,80 -
	1,25	1,40 -	1,40 -	2,20 -	2,80 -	2,80 -	2,80 -
Component I t I [mm] $N_{R,k}$ [kN]	0,50	0,38 -	0,38	0,54	0,70	0,86 ac	1,03 ac
	0,55	0,48 -	0,48	0,68	0,89	1,09 ac	1,30 ac
	0,63	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 ac	1,90 ac
	0,75	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 ac	1,90 ac
	0,88	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	1,00	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	1,13	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	1,25	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	$N_{R,k,II}$	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -

Self-drilling screw

PMJ-tec TOPEX NYCO 7825
with polyamide bihexagon head and sealing washer ≥ Ø16 mm

Annex 27

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	stainless steel (1.4301) – EN 10088 organic coated
Washer:	stainless steel (1.4301) – EN 10088
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

No performance determined

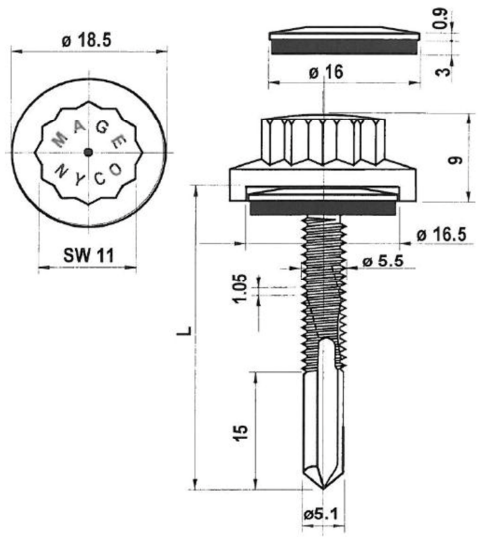
		Component II t II [mm]						
		1,00	1,13	1,25	1,50	2,00	2,50	3,00
	$M_{t,nom}$	5 Nm						
Component I t I [mm] / $V_{R,k}$ [kN]	0,63	1,90 ac	1,90 ac	2,10 ac	2,40 ac	2,60 ac	2,60 ac	2,60 ac
	0,75	2,10 -	2,10 -	2,40 ac	2,60 ac	3,00 ac	3,00 ac	- -
	0,88	2,30 -	2,30 -	2,60	2,90 ac	3,40 -	3,40 -	- -
	1,00	2,50 -	2,50 -	2,80	3,20 -	3,70 -	3,70 -	- -
	1,13	2,70 -	2,70 -	3,00	3,40 -	4,10 -	- -	- -
	1,25	2,80 -	2,80 -	3,20	3,60 -	4,30 -	- -	- -
	1,50	2,80 -	2,80 -	3,20	3,60 -	- -	- -	- -
	1,75	2,80 -	2,80 -	3,20	3,60 -	- -	- -	- -
	2,00	2,80 -	2,80 -	3,20	3,60 -	- -	- -	- -
Component I t I [mm] / $N_{R,k}$ [kN]	0,50	0,49 ac	0,49 ac	0,70 ac	0,92 ac	1,35 ac	1,35 ac	1,57 ac
	0,55	0,61 ac	0,61 ac	0,89 ac	1,16 ac	1,71 ac	1,71 ac	1,98 ac
	0,63	0,90 ac	0,90 ac	1,30 ac	1,70 ac	2,50 ac	2,50 ac	2,90 ac
	0,75	0,90 -	0,90 -	1,30 ac	1,70 ac	2,50 ac	2,50 ac	- -
	0,88	0,90 -	0,90 -	1,30 -	1,70 ac	2,50 -	2,50 -	- -
	1,00	0,90 -	0,90 -	1,30 -	1,70 -	2,50 -	2,50 -	- -
	1,13	0,90 -	0,90 -	1,30 -	1,70 -	2,50 -	- -	- -
	1,25	0,90 -	0,90 -	1,30 -	1,70 -	2,50 -	- -	- -
	1,50	- -	- -	- -	- -	- -	- -	- -
	1,75	- -	- -	- -	- -	- -	- -	- -
	2,00	- -	- -	- -	- -	- -	- -	- -
	$N_{R,k,II}$	0,90 -	0,90 -	1,30 -	1,70 -	2,50 -	2,50 -	2,90 -

Self-drilling screw

PMJ-tec TOPEX NYCO 7870
bimetal with polyamide bihexagon head and sealing washer ≥ Ø16 mm

Annex 28

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	stainless steel (1.4301) – EN 10088 organic coated
Washer:	stainless steel (1.4301) – EN 10088
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1

Drilling-capacity $\Sigma(t_i) \leq 12.50$ mm

Timber substructures

No performance determined

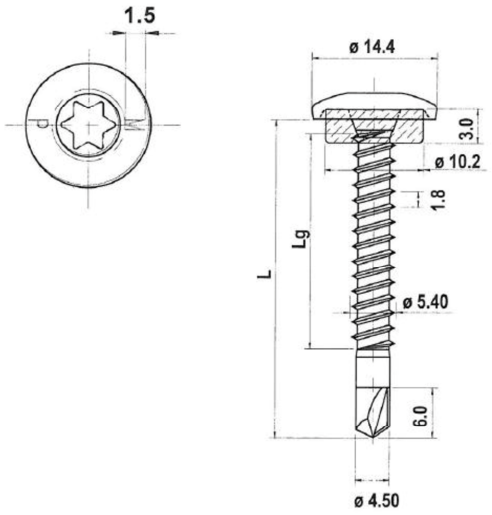
		Component II t II [mm]					
		6,00		8,00		10,0	
	$M_{t,nom}$	-					
Component I t I [mm] $V_{R,k}$ [kN]	0,63	2,60	abcd	2,60	abcd	2,60	abcd
	0,75	3,10	abcd	3,10	abcd	3,10	abcd
	0,88	3,60	ac	3,60	ac	3,60	ac
	1,00	4,10	ac	4,10	ac	4,10	ac
	1,13	4,60	ac	4,60	ac	4,60	ac
	1,25	5,10	ac	5,10	ac	5,10	ac
	1,50	6,00	-	6,00	-	6,00	-
	1,75	6,00	-	6,00	-	6,00	-
	2,00	6,00	-	6,00	-	6,00	-
Component I t I [mm] $N_{R,k}$ [kN]	0,50	1,57	abcd	1,57	abcd	1,57	abcd
	0,55	1,98	abcd	1,98	abcd	1,98	abcd
	0,63	2,90	abcd	2,90	abcd	2,90	abcd
	0,75	3,40	abcd	3,40	abcd	3,40	abcd
	0,88	4,00	ac	4,00	ac	4,00	ac
	1,00	4,50	ac	4,50	ac	4,50	ac
	1,13	5,00	ac	5,00	ac	5,00	ac
	1,25	5,50	ac	5,50	ac	5,50	ac
	1,50	6,60	-	6,60	-	6,60	-
	1,75	6,60	-	6,60	-	6,60	-
	2,00	6,60	-	6,60	-	6,60	-
	$N_{R,k,II}$	6,60	-	6,60	-	6,60	-

Self-drilling screw

PMJ-tec TOPEX NYCO 7880
bimetal with polyamide bihexagon head and sealing washer ≥ Ø16 mm

Annex 29

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: stainless steel (1.4301) – EN 10088

Washer: none

Component I: S280GD to S320GD - EN 10346

Component II: S235 - EN 10025-1
S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

No performance determined

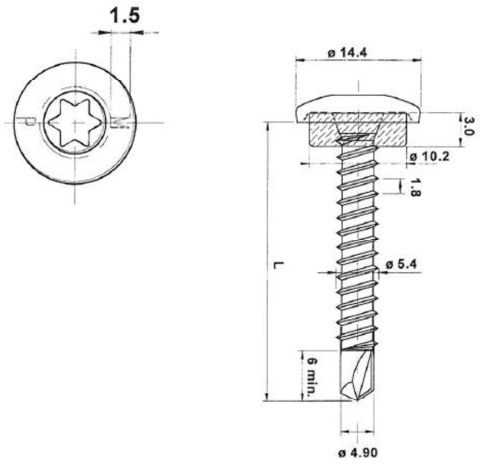
			Component II t II [mm]				
			1,00	1,13	1,25	1,50	2,00
		$M_{t,nom}$	5 Nm				
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	1,00 ac	1,10 ac	1,20 ac	1,40 ac	1,70 ac
		0,55	1,10 ac	1,30 ac	1,40 ac	1,70 ac	2,10 ac
		0,63	1,30 -	1,40 -	1,60 ac	1,90 ac	2,40 ac
		0,75	1,50 -	1,70 -	2,00 -	2,40 -	3,10 ac
	$N_{R,k}$ [kN]	0,50	0,90 ac	1,10 ac	1,30 ac	1,70 ac	1,90 ac
		0,55	0,90 ac	1,10 ac	1,30 ac	1,70 ac	2,30 ac
		0,63	0,90 -	1,10 -	1,30 ac	1,70 ac	2,50 ac
		0,75	0,90 -	1,10 -	1,30 -	1,70 -	2,50 ac
	$N_{R,k,II}$		0,90 -	1,10 -	1,30 -	1,70 -	2,50 -

Self-drilling screw

PMJ-tec TOPEX UFO 7110
bimetal with rounded flat head and sealing ring ≥ Ø10 mm

Annex 30

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: stainless steel (1.4301) – EN 10088

Washer: none

Component I: S280GD to S320GD - EN 10346

Component II: S235 - EN 10025-1
S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 6.75$ mm

Timber substructures

No performance determined

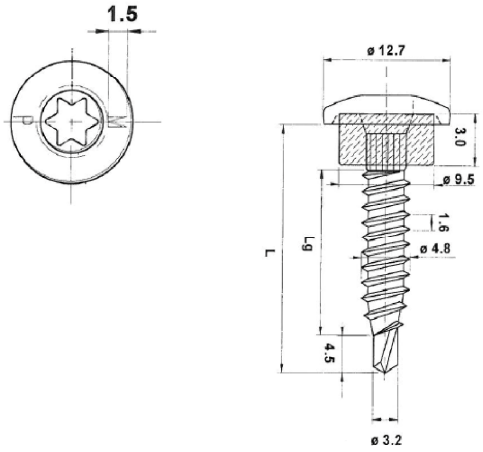
			Component II t II [mm]				
			2,50	3,00	4,00	5,00	6,00
		$M_{t,nom}$	5 Nm				
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	1,40 ac	1,80 ac	1,80 ac	1,80 ac	1,80 a
		0,55	1,80 ac	2,10 ac	2,10 ac	2,10 ac	2,10 a
		0,63	2,20 -	2,40 ac	2,40 ac	2,40 ac	2,40 a
		0,75	2,90 -	2,90 -	2,90 ac	2,90 ac	2,90 a
	$N_{R,k}$ [kN]	0,50	1,90 ac	1,90 ac	1,90 ac	1,90 ac	1,90 a
		0,55	2,30 ac	2,30 ac	2,30 ac	2,30 ac	2,30 a
		0,63	2,80 -	2,80 ac	2,80 ac	2,80 ac	2,80 a
		0,75	3,00 -	3,80 -	3,80 ac	2,80 ac	3,80 a
		$N_{R,k,II}$	3,00 -	3,80 -	3,80 -	2,80 -	3,80 -

Self-drilling screw

PMJ-tec TOPEX UFO 7120
bimetal with rounded flat head and sealing ring ≥ Ø10 mm

Annex 31

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	stainless steel (1.4301) – EN 10088
Washer:	none
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

No performance determined

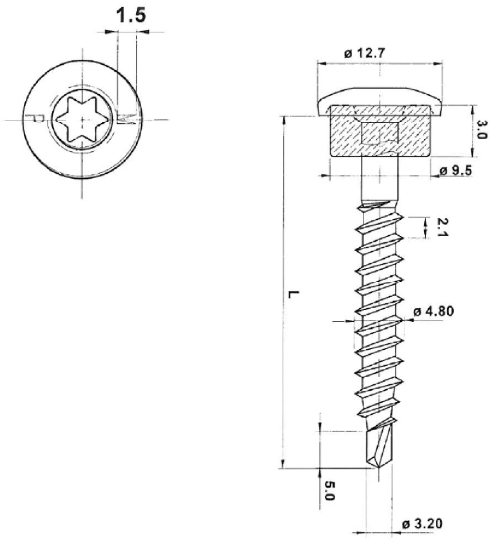
			Component II t II [mm]			
			0,50	0,55	0,63	0,75
		$M_{t,nom}$	5 Nm			
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	0,80 -	0,90 -	1,00 -	1,10 -
		0,55	0,80 -	0,90 -	1,00 -	1,30 -
		0,63	0,80 -	0,90 -	1,00 -	1,60 -
		0,75	0,80 -	0,90 -	1,00 -	2,00 -
	$N_{R,k}$ [kN]	0,50	0,50 -	0,60 -	0,70 -	0,70 -
		0,55	0,50 -	0,60 -	0,70 -	0,70 -
		0,63	0,50 -	0,60 -	0,70 -	0,70 -
		0,75	0,50 -	0,60 -	0,70 -	0,70 -
		$N_{R,k,II}$	0,50 -	0,60 -	0,70 -	0,70 -

Self-drilling screw

PMJ-tec TOPEX UFO 7140
bimetal with rounded flat head and sealing ring ≥ Ø10 mm

Annex 32

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: stainless steel (1.4301) – EN 10088

Washer: none

Component I: S280GD to S320GD - EN 10346

Component II: structural timber – EN 14081

Drilling-capacity $\Sigma(t_i) \leq 1.50$ mm

Timber substructures

$M_{y,Rk}$ = 4,429 Nm

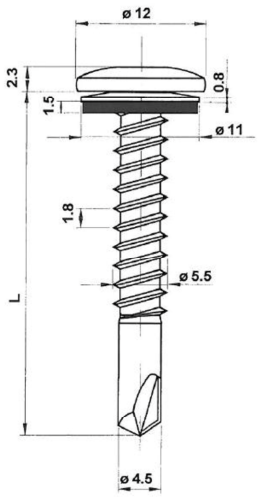
$f_{ax,k}$ = 8,575 N/mm^2 for $l_{ef} \geq 30,0$ mm

			Component II t II [mm]	
			-	
		$M_{t,nom}$	5 Nm	
Component I t I [mm]	$V_{R,I,k}$ [kN]	0,50	1,10	ac
		0,55	1,30	ac
		0,63	1,60	ac
		0,75	2,00	ac
	$N_{R,I,k}$ [kN]	0,50	1,80	ac
		0,55	2,10	ac
		0,63	2,50	ac
		0,75	3,20	ac

The values listed above in dependence on the screw in length l_{ef} are valid for k_{mod} = 0,90 and ρ_k = 350 kg/m^3. For other combinations of k_{mod} and timber densities see Annex 3.

Self-drilling screw	**Annex 33**
PMJ-tec TOPEX UFO 7160 bimetal with rounded flat head and sealing ring ≥ Ø10 mm	

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: stainless steel (1.4301) – EN 10088
Washer: stainless steel (1.4301) – EN 10088

Component I: S280GD to S320GD - EN 10346

Component II: S235 – EN 10025-1
S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

-

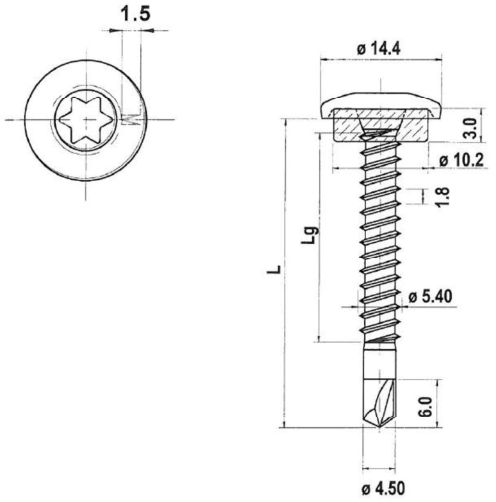
		Component II t II [mm]						
		1,00	1,13	1,25	1,50	2,00	2,50	3,00
	$M_{t,nom}$	5 Nm						
Component I t I [mm] $V_{R,k}$ [kN]	0,50	1,04 ac	1,13 ac	1,22 ac	1,40 ac	1,75 ac	1,75 ac	1,75 ac
	0,55	1,15 ac	1,27 ac	1,39 ac	1,70 ac	2,05 ac	2,05 ac	- -
	0,63	1,46 -	1,41 ac	1,56 ac	1,99 ac	2,34 ac	2,34 ac	- -
	0,75	1,46 -	1,68 -	1,90 -	2,57 -	2,93 ac	2,93 ac	- -
	0,88	1,46 -	1,68 -	1,90 -	2,57 -	2,93 -	2,93 -	- -
	1,00	1,46 -	1,68 -	1,90 -	2,57 -	2,93 -	2,93 -	- -
	1,13	1,46 -	1,68 -	1,90 -	2,57 -	2,93 -	- -	- -
	1,25	1,46 -	1,68 -	1,90 -	2,57 -	2,93 -	- -	- -
	1,50	1,46 -	1,68 -	1,90 -	2,57 -	2,93 -	- -	- -
	1,75	1,46 -	1,68 -	1,90 -	2,57 -	- -	- -	- -
	2,00	1,46 -	1,68 -	1,90 -	2,57 -	- -	- -	- -
	0,50	0,90 ac	1,10 ac	1,30 ac	1,70 ac	1,90 ac	1,90 ac	1,90 ac
	0,55	0,90 ac	1,10 ac	1,30 ac	1,70 ac	2,30 ac	2,30 ac	- -
	0,63	0,90 -	1,10 ac	1,30 ac	1,70 ac	2,50 ac	2,50 ac	- -
	0,75	0,90 -	1,10 -	1,30 -	1,70 -	2,50 ac	2,50 ac	- -
	0,88	0,90 -	1,10 -	1,30 -	1,70 -	2,50 -	2,50 -	- -
	1,00	0,90 -	1,10 -	1,30 -	1,70 -	2,50 -	2,50 -	- -
	1,13	0,90 -	1,10 -	1,30 -	1,70 -	2,50 -	- -	- -
	1,25	0,90 -	1,10 -	1,30 -	1,70 -	2,50 -	- -	- -
	1,50	0,90 -	1,10 -	1,30 -	1,70 -	2,50 -	- -	- -
	1,75	0,90 -	1,10 -	1,30 -	1,70 -	- -	- -	- -
	2,00	0,90 -	1,10 -	1,30 -	1,70 -	- -	- -	- -
	$N_{R,k,II}$	0,90 -	1,10 -	1,30 -	1,70 -	2,50 -	2,50 -	2,50 -

Self-drilling screw

PMJ-tec TOPEX UFO 7515 – 5,5 x L
bimetal with rounded flat head and sealing washer ≥ Ø11 mm

Annex 34

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with "Dural 250"
Washer:	none
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

-

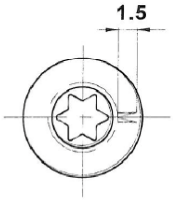
			Component II t II [mm]				
			1,00	1,13	1,25	1,50	2,00
		$M_{t,nom}$	5 Nm				
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	1,00 ac	1,10 ac	1,20 ac	1,40 ac	1,70 ac
		0,55	1,10 ac	1,30 ac	1,40 ac	1,70 ac	2,10 ac
		0,63	1,30 -	1,40 -	1,60 ac	1,90 ac	2,40 ac
		0,75	1,50 -	1,70 -	2,00 -	2,40 -	3,10 ac
	$N_{R,k}$ [kN]	0,50	0,90 ac	1,10 ac	1,30 ac	1,70 ac	1,90 ac
		0,55	0,90 ac	1,10 ac	1,30 ac	1,70 ac	2,30 ac
		0,63	0,90 -	1,10 -	1,30 ac	1,70 ac	2,80 ac
		0,75	0,90 -	1,10 -	1,30 -	1,70 -	2,90 ac
		$N_{R,k,II}$	0,90 -	1,10 -	1,30 -	1,70 -	2,90 -

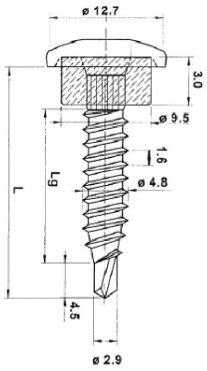
Self-drilling screw

PMJ-tec TOPEX UFO 7010
with rounded flat head and sealing ring ≥ Ø10 mm

Annex 35

Deutsches Institut für Bautechnik DIBt





Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with “Dural 250”
Washer:	none
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

-

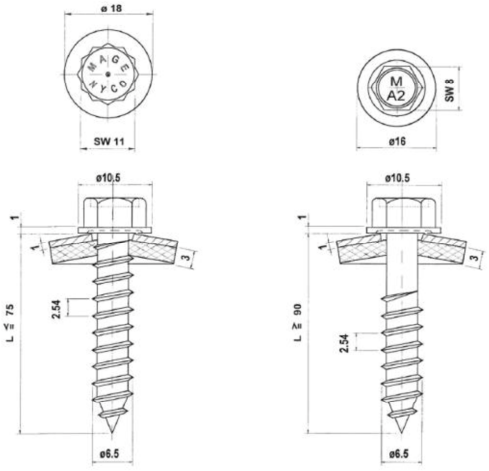
			Component II t II [mm]			
			0,50	0,55	0,63	0,75
		$M_{t,nom}$	5 Nm			
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	0,80 -	0,90 -	1,00 -	1,10 -
		0,55	0,80 -	0,90 -	1,00 -	1,30 -
		0,63	0,80 -	0,90 -	1,00 -	1,60 -
		0,75	0,80 -	0,90 -	1,00 -	2,00 -
	$N_{R,k}$ [kN]	0,50	0,50 -	0,60 -	0,70 -	0,70 -
		0,55	0,50 -	0,60 -	0,70 -	0,70 -
		0,63	0,50 -	0,60 -	0,70 -	0,70 -
		0,75	0,50 -	0,60 -	0,70 -	0,70 -
		$N_{R,k,II}$	0,50 -	0,60 -	0,70 -	0,70 -

Self-drilling screw

PMJ-tec TOPEX UFO 7040
with rounded flat head and sealing ring ≥ Ø10 mm

Annex 36

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Stainless steel A2, A4, A5 – EN ISO 3506
Washer: Stainless steel A2, A4, A5 – EN ISO 3506

Component I: S280GD to S320GD - EN 10346

Component II: S235 – EN 10025-1
S280GD to S320GD - EN 10346

Drilling-capacity see table below

Timber substructures

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

		Component II										
		t II [mm]									Timber ≥ C24 $L_g \geq 24$ mm	
		0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00	3,00		
		Ø 4,0		Ø 4,5				Ø 5,0		Ø 5,7		
		3 Nm					5 Nm					
Component I t I [mm]	$V_{R,k}$ [kN] 0,63	1,30 -	1,50 -	1,80 -	2,00 ac	2,30 ac	2,50 ac	2,90 ac	2,90 ac	2,90 ac	2,90	Failure of component I
	$V_{R,k}$ [kN] 0,75	1,40 -	1,60 -	1,90 -	2,20 ac	2,50 ac	2,60 ac	3,10 ac	3,10 ac	3,10 ac	3,20	
	$V_{R,k}$ [kN] 0,88	1,50 -	1,70 -	2,00 -	2,30 -	2,60 -	2,80 ac	3,20 ac	3,20 ac	3,20 ac	3,40	
	$V_{R,k}$ [kN] 1,00	1,50 -	1,80 -	2,10 -	2,50 -	2,80 -	3,10 -	3,60 -	3,60 -	3,60 ac	3,50	
	$V_{R,k}$ [kN] 1,13	1,60 -	1,80 -	2,20 -	2,60 -	2,90 -	3,20 -	3,80 -	3,80 -	3,80 ac	3,80	
	$V_{R,k}$ [kN] 1,25	1,60 -	1,90 -	2,30 -	2,70 -	3,00 -	3,30 -	4,00 -	4,00 -	4,00 ac	4,00	
	$V_{R,k}$ [kN] 1,50	1,60 -	1,90 -	2,40 -	2,80 -	3,20 -	3,50 -	4,00 -	4,30 -	4,30 ac	4,30	
	$V_{R,k}$ [kN] 1,75	1,60 -	1,90 -	2,40 -	2,80 -	3,20 -	3,50 -	4,00 -	4,30 -	4,30 -	4,30	
	$V_{R,k}$ [kN] 2,00	1,60 -	1,90 -	2,40 -	2,80 -	3,20 -	3,50 -	4,00 -	4,30 -	4,30 -	4,30	
	$N_{R,k}$ [kN] 0,50	0,49 -	0,59 -	0,70 -	0,76 ac	0,86 ac	0,97 ac	1,13 ac	1,19 ac	1,19 ac	1,19	Failure of component I
	$N_{R,k}$ [kN] 0,55	0,61 -	0,75 -	0,89 -	0,95 ac	1,09 ac	1,23 ac	1,43 ac	1,50 ac	1,50 ac	1,50	
	$N_{R,k}$ [kN] 0,63	0,90 -	1,10 -	1,30 -	1,40 ac	1,60 ac	1,80 ac	2,10 ac	2,20 ac	2,20 ac	2,20	
	$N_{R,k}$ [kN] 0,75	0,90 -	1,10 -	1,30 -	1,40 ac	1,60 ac	1,80 ac	2,10 ac	2,80 ac	2,80 ac	2,80	
	$N_{R,k}$ [kN] 0,88	0,90 -	1,10 -	1,30 -	1,40 -	1,60 -	1,80 ac	2,10 ac	3,50 ac	3,50 ac	3,50	
	$N_{R,k}$ [kN] 1,00	0,90 -	1,10 -	1,30 -	1,40 -	1,60 -	1,80 -	2,20 -	3,60 -	3,60 ac	3,60	
	$N_{R,k}$ [kN] 1,13	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 ac	3,60	
	$N_{R,k}$ [kN] 1,25	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 ac	3,60	
	$N_{R,k}$ [kN] 1,50	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 ac	3,60	
	$N_{R,k}$ [kN] 1,75	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 -	3,60	
	$N_{R,k}$ [kN] 2,00	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 -	3,60	
	$N_{R,k,II}$	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 -	3,60	
											Failure of component II see Annex 3	

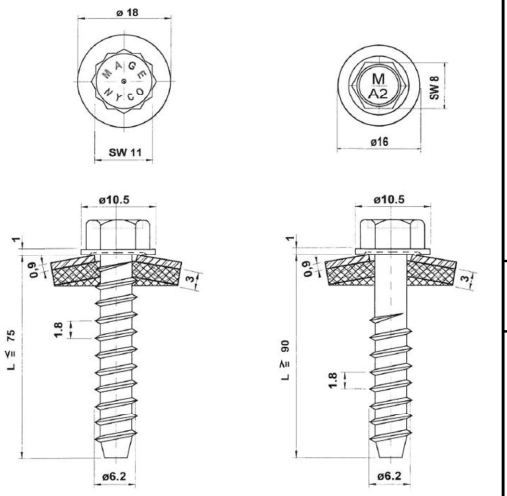
The values listed above in dependence on the screw in length l_{ef} are valid for k_{mod} = 0,90 and ρ_k = 350 kg/m^3. For other combinations of k_{mod} and timber densities see Annex 3.

Self-tapping screw

PMJ-tec TOPEX 7653
with hexagon head and sealing washer ≥ Ø16 mm

Annex 37

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity see table below

Timber substructures

-

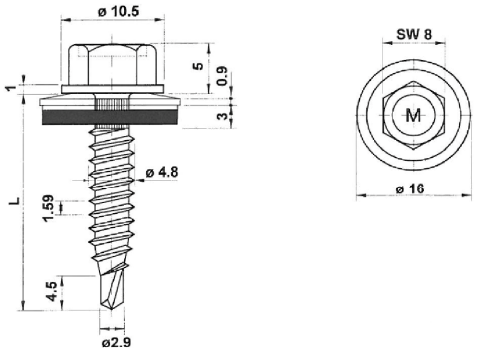
		Component II t II [mm]						
		1,25	1,50	2,00	3,00	4,00	6,00	≥ 7,00
	d_{pd}	Ø 5,0		Ø 5,3			Ø 5,5	Ø 5,7
	$M_{t,nom}$	5 Nm						
$N_{R,k}$ [kN]	0,63	2,50 ac	2,70 ac	2,90 abcd	3,00 abcd	3,10 abcd	3,10 abcd	3,10 abcd
	0,75	2,60 ac	3,10 ac	3,30 ac	3,60 ac	3,70 abcd	3,70 abcd	3,70 abcd
	0,88	2,80 ac	3,20 ac	3,80 ac	4,10 ac	4,30 ac	4,40 ac	4,40 ac
	1,00	3,20 -	3,60 ac	4,10 ac	4,80 ac	4,90 ac	5,10 ac	5,10 ac
	1,13	3,40 -	4,00 -	4,60 ac	5,40 ac	5,60 ac	5,80 ac	5,80 ac
	1,25	3,60 -	4,20 -	5,00 ac	6,10 ac	6,30 ac	6,50 ac	6,50 ac
	1,50	3,70 -	4,40 -	5,70 -	6,80 -	7,10 -	7,30 -	7,30 -
	1,75	3,70 -	4,70 -	6,20 -	7,60 -	7,70 -	8,10 -	8,10 -
	2,00	3,80 -	4,90 -	6,90 -	7,80 -	7,90 -	8,10 -	8,10 -
	0,50	0,97 ac	1,35 ac	1,51 abcd	1,51 abcd	1,51 abcd	1,51 abcd	1,51 abcd
	0,55	1,23 ac	1,71 ac	1,91 abcd	1,91 abcd	1,91 abcd	1,91 abcd	1,91 abcd
	0,63	1,80 ac	2,50 ac	2,80 abcd	2,80 abcd	2,80 abcd	2,80 abcd	2,80 abcd
	0,75	2,00 ac	2,60 ac	3,10 ac	3,60 ac	3,60 abcd	3,60 abcd	3,60 abcd
	0,88	2,00 ac	2,70 ac	3,30 ac	3,80 ac	3,80 ac	3,80 ac	3,80 ac
	1,00	2,00 -	2,70 ac	3,40 ac	4,00 ac	4,00 ac	4,00 ac	4,00 ac
	1,13	2,00 -	2,70 -	3,60 ac	4,40 ac	4,40 ac	4,40 ac	4,40 ac
	1,25	2,00 -	2,70 -	3,60 ac	4,80 ac	4,80 ac	4,80 ac	4,80 ac
	1,50	2,00 -	2,70 -	3,60 -	5,60 -	5,60 -	5,60 -	5,60 -
	1,75	2,00 -	2,70 -	3,60 -	5,80 -	6,90 -	7,10 -	7,10 -
	2,00	2,00 -	2,70 -	3,60 -	6,00 -	7,30 -	7,60 -	7,60 -
	$N_{R,k,II}$	2,00 -	2,70 -	3,60	6,00 -	7,30 -	7,60 -	7,60 -

Self-tapping screw

PMJ-tec TOPEX 7673
with hexagon head and sealing washer ≥ Ø16 mm

Annex 38

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Carbon steel (1.1147) – EN 10263
case hardened, galvanized and coated with "Dural 250"

Washer: Carbon steel, galvanized

Component I: S235 to S275 - EN 10025-1

Component II: S235 – EN 10025-1
S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

-

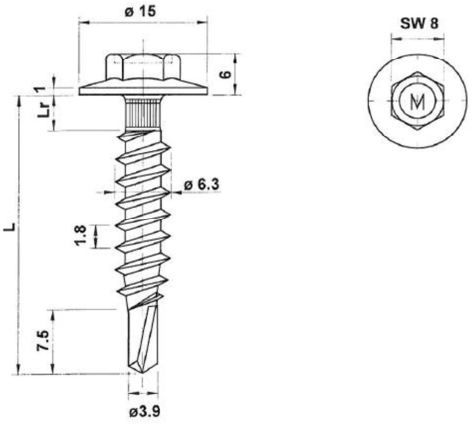
		Component II							
		t II [mm]							
		0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25
	$M_{t,nom}$	-							
Component I t I [mm] $V_{R,k}$ [kN]	0,50	0,89 -	0,89 -	0,89 -	0,89 -	0,89 -	0,89 -	0,89 -	0,89 -
	0,55	0,89 -	0,96 -	0,96 -	0,96 -	0,96 -	0,96 -	0,96 -	0,96 -
	0,63	0,89 -	0,96 -	1,02 -	1,02 -	1,02 -	1,02 -	1,02 -	1,02 -
	0,75	0,89 -	0,96 -	1,02 -	1,55 ac	1,55 ac	1,55 ac	1,55 ac	1,55 ac
	0,88	0,89 -	0,96 -	1,02 -	1,55 ac	1,55 ac	1,55 ac	1,55 ac	1,55 ac
	1,00	0,89 -	0,96 -	1,02 -	1,55 ac	1,55 ac	1,55 ac	1,55 ac	1,55 ac
	1,13	0,89 -	0,96 -	1,02 -	1,55 ac	1,55 ac	1,55 ac	1,55 ac	1,55 ac
	1,25	0,89 -	0,96 -	1,02 -	1,55 ac	1,55 ac	1,55 ac	1,55 ac	1,55 ac
	0,50	0,65 -	0,67 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	0,55	0,65 -	0,67 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	0,63	0,65 -	0,67 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	0,75	0,65 -	0,67 -	0,70 -	0,70 ac	1,00 ac	1,30 ac	1,60 ac	1,90 ac
	0,88	0,65 -	0,67 -	0,70 -	0,70 ac	1,00 ac	1,30 ac	1,60 ac	1,90 ac
	1,00	0,65 -	0,67 -	0,70 -	0,70 ac	1,00 ac	1,30 ac	1,60 ac	1,90 ac
	1,13	0,65 -	0,67 -	0,70 -	0,70 ac	1,00 ac	1,30 ac	1,60 ac	1,90 ac
	1,25	0,65 -	0,67 -	0,70 -	0,70 ac	1,00 ac	1,30 ac	1,60 ac	1,90 ac
	$N_{R,k,II}$	0,65 -	0,67 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -

Self-drilling screw

PMJ-tec TOPEX 7335
with hexagon head and sealing washer ≥ Ø16 mm

Annex 39

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Carbon steel (1.1147) – EN 10263 case hardened, galvanized and coated with “Dural 250”
Washer:	none
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

-

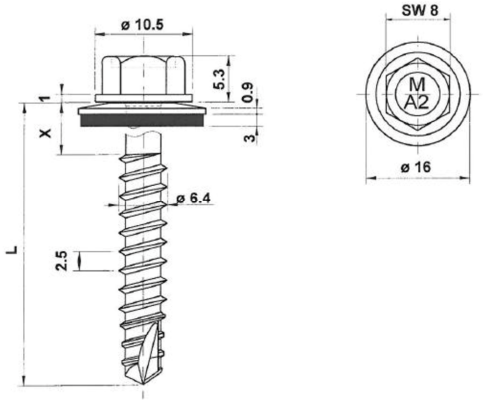
		Component II t II [mm]					
		0,63	0,75	0,88	1,00	1,13	1,25
	$M_{t,nom}$	-					
Component I t I [mm]	$V_{R,k}$ [kN] 0,63	1,80 -	1,80 -	1,80 -	1,80 -	1,80 -	1,80 -
	$V_{R,k}$ [kN] 0,75	1,80 -	2,48 -	2,48 -	2,48 -	2,48 -	2,48 -
	$V_{R,k}$ [kN] 0,88	1,80 -	2,48 -	3,36 -	3,36 -	3,36 -	3,36 -
	$V_{R,k}$ [kN] 1,00	1,80 -	2,48 -	3,36 -	4,23 ac	4,23 ac	4,23 ac
	$V_{R,k}$ [kN] 1,13	1,80 -	2,48 -	3,36 -	4,23 ac	4,23 ac	4,23 ac
	$V_{R,k}$ [kN] 1,25	1,80 -	2,48 -	3,36 -	4,23 ac	4,23 ac	4,23 ac
	$N_{R,k}$ [kN] 0,63	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	$N_{R,k}$ [kN] 0,75	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	$N_{R,k}$ [kN] 0,88	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	$N_{R,k}$ [kN] 1,00	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 ac	1,90 ac
	$N_{R,k}$ [kN] 1,13	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 ac	1,90 ac
	$N_{R,k}$ [kN] 1,25	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 ac	1,90 ac
	$N_{R,k,II}$	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -

Self-drilling screw

PMJ-tec TOPEX 7339
with hexagon head

Annex 40

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Stainless steel A2, A4, A5 – EN ISO 3506
Washer: Stainless steel A2, A4, A5 – EN ISO 3506

Component I: S280GD to S320GD - EN 10346
Component II: Structural timber – EN 14081

Drilling-capacity $\Sigma(t_i) \leq 1.00$ mm

Timber substructures

$M_{y,Rk}$ = 14,830 Nm
$f_{ax,k}$ = 8,575 N/mm² for $l_{ef} \geq 35,0$ mm

			Component II t II [mm]											
		l_{ef}	35	38	41	44	47	50	53	56	59	62	65	
		$M_{t,nom}$	-											
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	1,24	1,38	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	Failure of component I
		0,55	1,24	1,38	1,52	1,63	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	
		0,63	1,24	1,38	1,52	1,66	1,81	1,95	2,00	2,00[a]	2,00[a]	2,00[a]	2,00[a]	
		0,75	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,62	
		0,88	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,66	
		1,00	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,66	
	$N_{R,k}$ [kN]	0,50	1,30	1,45	1,57	1,57[a]	1,57[a]	1,57[a]	1,57[a]	1,57[a]	1,57[a]	1,57[a]	1,57[a]	Failure of component I
		0,55	1,30	1,45	1,61	1,76	1,78[a]	1,78[a]	1,78[a]	1,78[a]	1,78[a]	1,78[a]	1,78[a]	
		0,63	1,30	1,45	1,61	1,76	1,91	2,06	2,10	2,10[a]	2,10[a]	2,10[a]	2,10[a]	
		0,75	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,62	2,62	
		0,88	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	
		1,00	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	
		$N_{R,k,II}$	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	

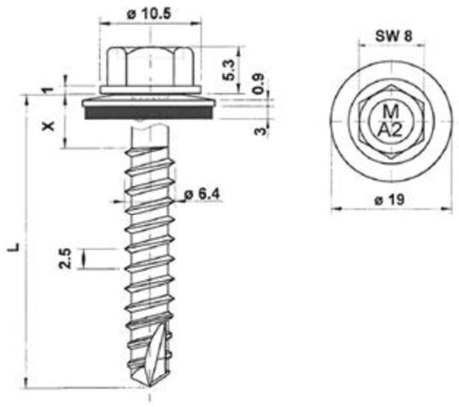
Index a: If component I is made of S320GD or S350GD the values may be increased by 8,0%.
The values listed above in dependence on the screw in length l_{ef} are valid for k_{mod} = 0,90 and ρ_k = 350 kg/m³. For other combinations of k_{mod} and timber densities see Annex 3.

Self-drilling screw

PMJ-tec TOPEX 7641
with hexagon head and sealing washer ≥ Ø16,0 mm

Annex 41

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Stainless steel A2, A4, A5 – EN ISO 3506
Washer: Stainless steel A2, A4, A5 – EN ISO 3506

Component I: S280GD to S320GD - EN 10346
Component II: Structural timber – EN 14081

Drilling-capacity $\Sigma(t_i) \leq 1.00$ mm

Timber substructures

$M_{y,Rk}$ = 14,830 Nm
$f_{ax,k}$ = 8,575 N/mm² for $l_{ef} \geq 35,0$ mm

			Component II t II [mm]											
		l_{ef}	35	38	41	44	47	50	53	56	59	62	65	
		$M_{t,nom}$	-											
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	1,24	1,38	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	Failure of component I
		0,55	1,24	1,38	1,52	1,63	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	
		0,63	1,24	1,38	1,52	1,66	1,81	1,95	2,00	2,00[a]	2,00[a]	2,00[a]	2,00[a]	
		0,75	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,62	
		0,88	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,66	
		1,00	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,66	
	$N_{R,k}$ [kN]	0,50	1,30	1,45	1,61	1,64[a]	1,64[a]	1,64[a]	1,64[a]	1,64[a]	1,64[a]	1,64[a]	1,64[a]	Failure of component I
		0,55	1,30	1,45	1,61	1,76	1,81[a]	1,87[a]	1,87[a]	1,87[a]	1,87[a]	1,87[a]	1,87[a]	
		0,63	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,23	2,23[a]	2,23[a]	2,23[a]	
		0,75	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,62	2,62	
		0,88	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	
		1,00	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	
		$N_{R,k,II}$	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	

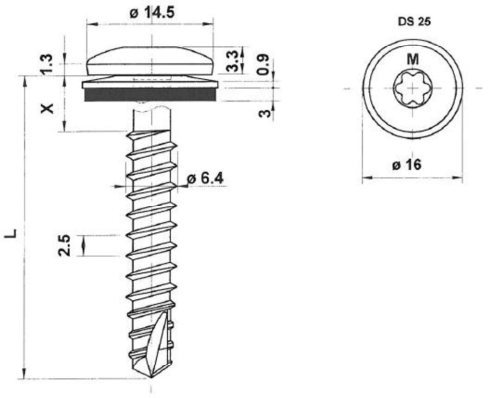
Index a: If component I is made of S320GD or S350GD the values may be increased by 8,0%.
The values listed above in dependence on the screw in length l_{ef} are valid for k_{mod} = 0,90 and ρ_k = 350 kg/m³. For other combinations of k_{mod} and timber densities see Annex 3.

Self-drilling screw

PMJ-tec TOPEX 7641
with hexagon head and sealing washer ≥ Ø19,0 mm

Annex 42

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Stainless steel A2, A4, A5 – EN ISO 3506
Washer: Stainless steel A2, A4, A5 – EN ISO 3506

Component I: S280GD to S320GD - EN 10346
Component II: Structural timber – EN 14081

Drilling-capacity $\Sigma(t_i) \leq 1.00$ mm

Timber substructures

$M_{y,Rk}$ = 14,830 Nm
$f_{ax,k}$ = 8,575 N/mm^2 for $l_{ef} \geq 35,0$ mm

			Component II t II [mm]											
		l_{ef}	35	38	41	44	47	50	53	56	59	62	65	
		$M_{t,nom}$	-											
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	1,24	1,38	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	Failure of component I
		0,55	1,24	1,38	1,52	1,63	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	
		0,63	1,24	1,38	1,52	1,66	1,81	1,95	2,00	2,00[a]	2,00[a]	2,00[a]	2,00[a]	
		0,75	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,62	
		0,88	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,66	
		1,00	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,66	
	$N_{R,k}$ [kN]	0,50	1,30	1,45	1,57	1,57[a]	1,57[a]	1,57[a]	1,57[a]	1,57[a]	1,57[a]	1,57[a]	1,57[a]	Failure of component I
		0,55	1,30	1,45	1,61	1,76	1,78[a]	1,78[a]	1,78[a]	1,78[a]	1,78[a]	1,78[a]	1,78[a]	
		0,63	1,30	1,45	1,61	1,76	1,91	2,06	2,10	2,10[a]	2,10[a]	2,10[a]	2,10[a]	
		0,75	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,62	2,62	
		0,88	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	
		1,00	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	
		$N_{R,k,II}$	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	

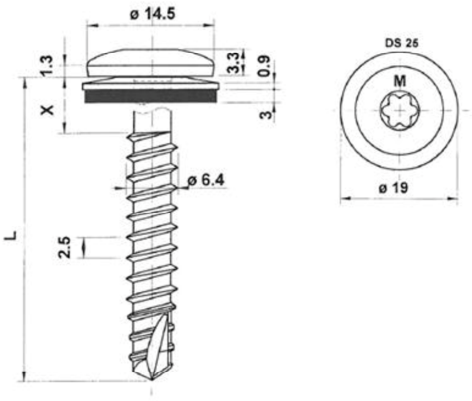
Index a: If component I is made of S320GD or S350GD the values may be increased by 8,0%.
The values listed above in dependence on the screw in length l_{ef} are valid for k_{mod} = 0,90 and ρ_k = 350 kg/m^3. For other combinations of k_{mod} and timber densities see Annex 3.

Self-drilling screw

PMJ-tec TOPEX 7642
with hexagon head and sealing washer ≥ Ø16,0 mm

Annex 43

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Stainless steel A2, A4, A5 – EN ISO 3506
Washer: Stainless steel A2, A4, A5 – EN ISO 3506

Component I: S280GD to S320GD - EN 10346
Component II: Structural timber – EN 14081

Drilling-capacity $\Sigma(t_i) \leq 1.00$ mm

Timber substructures

$M_{y,Rk}$ = 14,830 Nm
$f_{ax,k}$ = 8,575 N/mm² for $l_{ef} \geq 35{,}0$ mm

			Component II t II [mm]											
		l_{ef}	35	38	41	44	47	50	53	56	59	62	65	
		$M_{t,nom}$	-											
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	1,24	1,38	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	1,38[a]	Failure of component I
		0,55	1,24	1,38	1,52	1,63	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	1,63[a]	
		0,63	1,24	1,38	1,52	1,66	1,81	1,95	2,00	2,00[a]	2,00[a]	2,00[a]	2,00[a]	
		0,75	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,62	
		0,88	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,66	
		1,00	1,24	1,38	1,52	1,66	1,81	1,95	2,09	2,23	2,38	2,52	2,66	
	$N_{R,k}$ [kN]	0,50	1,30	1,45	1,61	1,64[a]	1,64[a]	1,64[a]	1,64[a]	1,64[a]	1,64[a]	1,64[a]	1,64[a]	Failure of component I
		0,55	1,30	1,45	1,61	1,76	1,81[a]	1,87[a]	1,87[a]	1,87[a]	1,87[a]	1,87[a]	1,87[a]	
		0,63	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,23	2,23[a]	2,23[a]	2,23[a]	
		0,75	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,62	2,62	
		0,88	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	
		1,00	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	
		$N_{R,k,II}$	1,30	1,45	1,61	1,76	1,91	2,06	2,21	2,36	2,51	2,66	2,81	

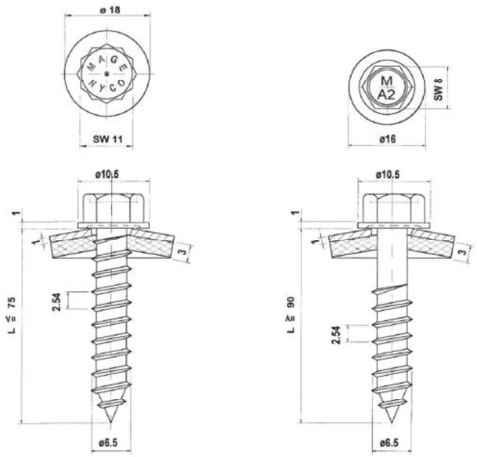
Index a: If component I is made of S320GD or S350GD the values may be increased by 8,0%.
The values listed above in dependence on the screw in length l_{ef} are valid for k_{mod} = 0,90 and ρ_k = 350 kg/m³. For other combinations of k_{mod} and timber densities see Annex 3.

Self-drilling screw

PMJ-tec TOPEX 7642
with hexagon head and sealing washer ≥ Ø19,0 mm

Annex 44

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Stainless steel A2, A4, A5 – EN ISO 3506
Washer: Stainless steel A2, A4, A5 – EN ISO 3506

Component I: S280GD to S320GD - EN 10346

Component II: S235 – EN 10025-1
S280GD or S320GD – EN 10346

Pre drill diameter: see table below

Timber substructures

$M_{y,Rk}$ = 14,830 Nm
$f_{ax,k}$ = 8,575 N/mm^2 for $l_{ef} \geq 26{,}0$ mm

		Component II										
		t II [mm]									Timber ≥ C24 $L_g \geq 24$ mm	
		0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00	3,00		
d_{pd}		Ø 4,0		Ø 4,5				Ø 5,0		Ø 5,7		
$M_{t,nom}$		3 Nm					5 Nm					
Component I t I [mm]	$V_{R,k}$ [kN]											
	0,63	1,30 -	1,50 -	1,80 -	2,00 ac	2,30 ac	2,50 ac	2,90 ac	2,90 ac	2,90 ac	2,90	Failure of component I
	0,75	1,40 -	1,60 -	1,90 -	2,20 ac	2,50 ac	2,60 ac	3,10 ac	3,10 ac	3,10 ac	3,20	
	0,88	1,50 -	1,70 -	2,00 -	2,30 -	2,60 -	2,80 ac	3,20 ac	3,20 ac	3,20 ac	3,40	
	1,00	1,50 -	1,80 -	2,10 -	2,50 -	2,80 -	3,10 -	3,60 -	3,60 -	3,60 ac	3,50	
	1,25	1,60 -	1,90 -	2,30 -	2,70 -	3,00 -	3,30 -	4,00 -	4,00 -	4,00 ac	4,00	
	1,50	1,60 -	1,90 -	2,40 -	2,80 -	3,20 -	3,50 -	4,00 -	4,30 -	4,30 ac	4,30	
	1,75	1,60 -	1,90 -	2,40 -	2,80 -	3,20 -	3,50 -	4,00 -	4,30 -	4,30 -	4,30	
	2,00	1,60 -	1,90 -	2,40 -	2,80 -	3,20 -	3,50 -	4,00 -	4,30 -	4,30 -	4,30	
	$N_{R,k}$ [kN]											
	0,50	0,90 -	1,20 -	1,40 -	1,50 -	1,64[a] -	1,64[a] -	1,64[a] -	1,64[a] -	1,64[a] -	1,64[a]	Failure of component I
	0,55	0,90 -	1,20 -	1,40 -	1,50 -	1,70 -	1,87[a] -	1,87[a] -	1,87[a] -	1,87[a] -	1,87[a]	
	0,63	0,90 -	1,20 -	1,40 -	1,50 ac	1,70 ac	1,90 ac	2,20 ac	2,20 ac	2,20 ac	2,20	
	0,75	0,90 -	1,20 -	1,40 -	1,50 ac	1,70 ac	1,90 ac	2,30 ac	2,80 ac	2,80 ac	2,80	
	0,88	0,90 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 ac	2,30 ac	3,50 ac	3,50 ac	3,50	
	1,00	0,90 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 ac	3,60	
	1,25	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 ac	3,60	
	1,50	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 ac	3,60	
	1,75	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 -	3,60	
	2,00	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 -	3,60	
	$N_{R,k,II}$	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	3,60 -	3,60 -		
											Failure of component II see Annex 3	

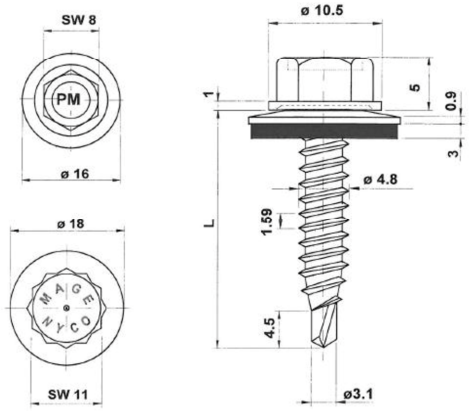
Index a: If component I is made of S320GD or S350GD the values may be increased by 8,0%.
The values listed above in dependence on the screw in length l_{ef} are valid for k_{mod} = 0,90 and ρ_k = 350 kg/m^3. For other combinations of k_{mod} and timber densities see Annex 3.

Self-tapping screw

PMJ-tec TOPEX 7653
with hexagon head and sealing washer ≥ Ø19,0 mm

Annex 45

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506 organic coated
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD or S320GD – EN 10346

Drilling capacity: $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

-

		Component II t II [mm]								
		0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25
	$M_{t,nom}$	-								
Component I t I [mm] $V_{R,k}$ [kN]	0,40	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -
	0,50	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -
	0,55	0,59 -	0,59 -	0,71 -	0,71 -	0,71 -	0,71 -	0,71 -	0,71 -	0,71 -
	0,63	0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,50 -	2,10 ac	2,10 ac	2,10 ac
	0,75	0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,50 -	2,10 ac	2,10 a	2,10 a
	0,88	0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,70 -	2,40 -	2,40 -	2,40 -
	1,00	0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
	1,13	0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
	1,25	0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
	0,40	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,46 -	1,46
	0,50	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 ac	1,52 ac	1,65 ac
	0,55	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 ac	1,55 ac	1,75 ac
	0,63	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 ac	1,90 ac
	0,75	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 a	1,90 a
	0,88	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	1,00	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	1,13	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	1,25	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	$N_{R,k,II}$	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -

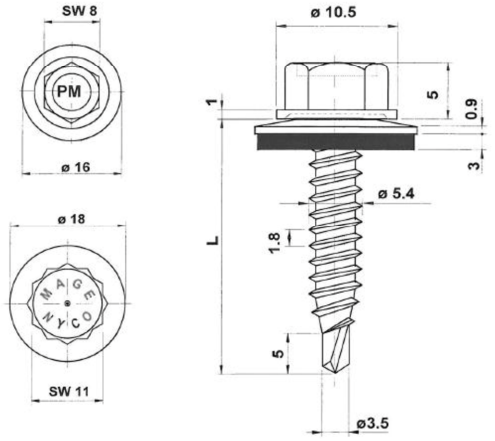
Index a: If component I is made of S320GD or S350GD the values may be increased by 8,0%.

Self-drilling screw

PMJ-tec TOPEX PIASTA 7550 – 4,8
with hexagon head and sealing washer ≥ Ø14,0 mm

Annex 46

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506 organic coated
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD or S320GD – EN 10346

Drilling capacity: $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

-

		Component II								
		t II [mm]								
		0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	2 x 0,75
	$M_{t,nom}$	-								
Component I t I [mm]	$V_{R,k}$ [kN]									
	0,50	0,96[a] -	0,96[a] -	0,96[a] -	0,96[a] -	0,96[a] -	0,96[a] ac	0,96[a] ac	0,96[a] ac	0,96[a] a
	0,55	0,96[a] -	1,09 -	1,09 -	1,09 -	1,09 -	1,09 ac	1,09 ac	1,09 ac	1,09 a
	0,63	0,96[a] -	1,09 -	1,30 -	1,50 -	1,50 -	1,50 ac	1,50 ac	1,50 ac	1,80 a
	0,75	0,96[a] -	1,09 -	1,30 -	1,50 -	1,50 -	1,50 -	1,50 -	1,50 -	1,80 -
	0,88	0,96[a] -	1,09 -	1,30 -	1,50 -	1,90 -	2,30 -	2,30 -	2,40 -	2,40 -
	1,00	0,96[a] -	1,09 -	1,30 -	1,50 -	2,30 -	3,00 -	3,10 -	3,20 -	3,00 -
	1,13	0,96 -	1,09 -	1,30 -	1,50 -	2,30 -	3,00 -	3,10 -	3,20 -	- -
	1,25	0,96 -	1,09 -	1,30 -	1,50 -	2,30 -	3,00 -	3,10 -	3,20 -	- -
	$N_{R,k}$ [kN]									
	0,50	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,46 ac	1,46 ac	1,46 ac	1,46[a] a
	0,55	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 ac	1,71 ac	1,71 ac	1,71 a
	0,63	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 ac	1,90 ac	2,10 ac	2,10 a
	0,75	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,30 -
	0,88	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,30 -
	1,00	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,30 -
	1,13	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	- -
	1,25	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	- -
	$N_{R,k,II}$	0,54 -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,30 -

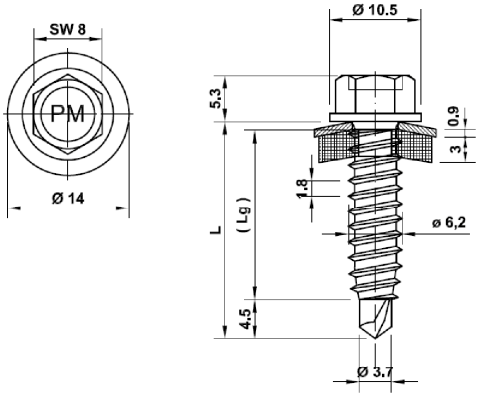
Index a: If component I is made of S320GD or S350GD the values may be increased by 8,0%.

Self-drilling screw

PMJ-tec TOPEX PIASTA 7550 – 5,5
with hexagon head and sealing washer ≥ Ø14,0 mm

Annex 47

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Stainless steel A2, A4, A5 – EN ISO 3506
organic coated

Washer: Stainless steel A2, A4, A5 – EN ISO 3506

Component I: S280GD to S320GD - EN 10346

Component II: S235 – EN 10025-1
S280GD or S320GD – EN 10346

Drilling capacity: $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

-

		Component II								
		t II [mm]								
		0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	2 x 0,75
	$M_{t,nom}$	-								
Component I t I [mm]	$V_{R,k}$ [kN]									
0,50		1,13[a] -	1,13[a] -	1,13[a] -	1,13[a] -	1,13[a] -	1,13[a] ac	1,13[a] ac	1,13[a] ac	1,13[a] a
0,55		1,13[a] -	1,31 -	1,31 -	1,31 -	1,31 -	1,31 ac	1,31 ac	1,31 ac	1,31 a
0,63		0,96[a] -	1,60 -	1,60 -	1,60 -	1,60 -	1,60 ac	1,60 ac	1,60 ac	1,80 a
0,75		0,96[a] -	1,60 -	1,60 -	1,60 -	1,60 -	1,60 -	1,60 -	1,60 -	1,80 -
0,88		0,96[a] -	1,60 -	1,60 -	1,60 -	1,90 -	2,30 -	2,30 -	2,40 -	2,40 -
1,00		0,96[a] -	1,60 -	1,60 -	1,60 -	2,30 -	3,00 -	3,10 -	3,20 -	3,00 -
1,13		0,96 -	1,60 -	1,60 -	1,60 -	2,30 -	3,00 -	3,10 -	3,20 -	- -
1,25		0,96 -	1,60 -	1,60 -	1,60 -	2,30 -	3,00 -	3,10 -	3,20 -	- -
	$N_{R,k}$ [kN]									
0,50		0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,46 ac	1,46 ac	1,46 ac	1,46[a] a
0,55		0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60 ac	1,71 ac	1,71 ac	1,71 a
0,63		0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60 ac	1,90 ac	2,10 ac	2,10 a
0,75		0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60	1,90 -	2,20 -	2,60 -
0,88		0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60	1,90 -	2,20 -	2,60 -
1,00		0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60	1,90 -	2,20 -	2,60 -
1,13		0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60	1,90 -	2,20 -	- -
1,25		0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60	1,90 -	2,20 -	- -
	$N_{R,k,II}$	0,70 -	0,74 -	0,88 -	1,00 -	1,30 -	1,60	1,90 -	2,20 -	- -

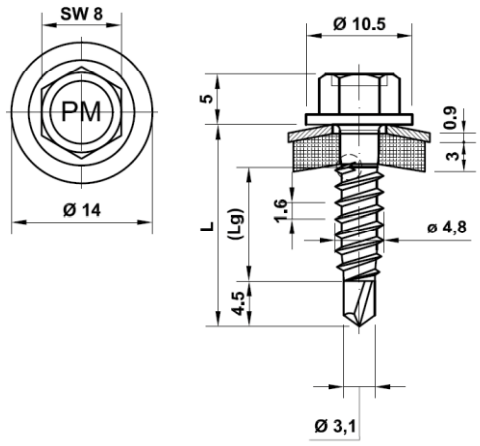
Index a: If component I is made of S320GD or S350GD the values may be increased by 8,0%.

Self-drilling screw

PMJ-tec TOPEX PIASTA 7550 – 6,3
with hexagon head and sealing washer ≥ Ø14,0 mm

Annex 48

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506 organic coated
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD or S320GD – EN 10346

Drilling capacity: $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

-

		Component II t II [mm]								
		0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25
	$M_{t,nom}$	-								
Component I t I [mm]	$V_{R,k}$ [kN]									
0,40		0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -
0,50		0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -	0,59 -
0,55		0,59 -	0,59 -	0,71 -	0,71 -	0,71 -	0,71 -	0,71 -	0,71 -	0,71 -
0,63		0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,50 -	2,10 ac	2,10 ac	2,10 ac
0,75		0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,50 -	2,10 ac	2,10 a	2,10 a
1,88		0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,70 -	2,40 -	2,40 -	2,40 -
1,00		0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
1,13		0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
1,25		0,59 -	0,59 -	0,71 -	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
	$N_{R,k}$ [kN]									
0,40		0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,46 -	1,46
0,50		0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 ac	1,52 ac	1,65 ac
0,55		0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 ac	1,55 ac	1,75 ac
0,63		0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 ac	1,90 ac
0,75		0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 ac	1,60 a	1,90 a
1,88		0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
1,00		0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
1,13		0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
1,25		0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -
	$N_{R,k,II}$	0,41 -	0,53 -	0,60 -	0,70 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -

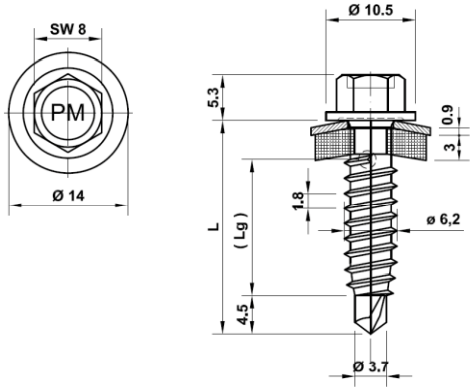
Indicated characteristic values of longitudinal tension capacity are valid, if component II lies completely in the thread of the screw.

Self-drilling screw

PMJ-tec TOPEX PIASTA 7553 – 4,8
with hexagon head and sealing washer ≥ Ø14,0 mm

Annex 49

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506 organic coated
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD or S320GD – EN 10346

Drilling capacity: $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

-

			Component II							
			t II [mm]							
			0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25
		$M_{t,nom}$	-							
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	1,03[a] -	1,03[a] -	1,03[a] -	1,03[a] -	1,03[a] -	1,03[a] -	1,03[a] -	1,03[a] -
		0,55	1,03[a] -	1,19[a] -	1,19[a] -	1,19[a] -	1,19[a] -	1,19[a] -	1,19[a] -	1,19[a] -
		0,63	1,03[a] -	1,19[a] -	1,44[a] -	1,44[a] -	1,44[a] -	1,44[a] -	1,44[a] -	1,44[a] -
		0,75	1,03[a] -	1,19[a] -	1,44[a] -	1,84 ac	1,84 ac	1,84 ac	1,84 a	1,84 a
		0,88	1,03[a] -	1,19[a] -	1,44[a] -	1,84 a	2,25 a	2,25 a	2,25 a	2,25 a
		1,00	1,03[a] -	1,19[a] -	1,44[a] -	1,84 a	2,25 a	2,66 a	2,66 a	2,66 a
		1,13	1,03[a] -	1,19[a] -	1,44[a] -	1,84 a	2,25 a	2,66 a	2,66 a	2,66 a
		1,25	1,03[a] -	1,19[a] -	1,44[a] -	1,84 a	2,25 a	2,66 a	2,66 a	2,66 a
	$N_{R,k}$ [kN]	0,50	0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,46 -	1,46 -	1,46 -
		0,55	0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60 -	1,71 -	1,71 -
		0,63	0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60 -	1,90 -	2,10 -
		0,75	0,70[a] -	0,74 -	0,88 -	1,00 ac	1,30 ac	1,60 ac	1,90 a	2,20 a
		0,88	0,70[a] -	0,74 -	0,88 -	1,00 a	1,30 a	1,60 a	1,90 a	2,20 a
		1,00	0,70[a] -	0,74 -	0,88 -	1,00 a	1,30 a	1,60 a	1,90 a	2,20 a
		1,13	0,70[a] -	0,74 -	0,88 -	1,00 a	1,30 a	1,60 a	1,90 a	2,20 a
		1,25	0,70[a] -	0,74 -	0,88 -	1,00 a	1,30 a	1,60 a	1,90 a	2,20 a
		$N_{R,k,II}$	0,70 -	0,74 -	0,88 -	1,00 -	1,30 -	1,60	1,90 -	2,20 -

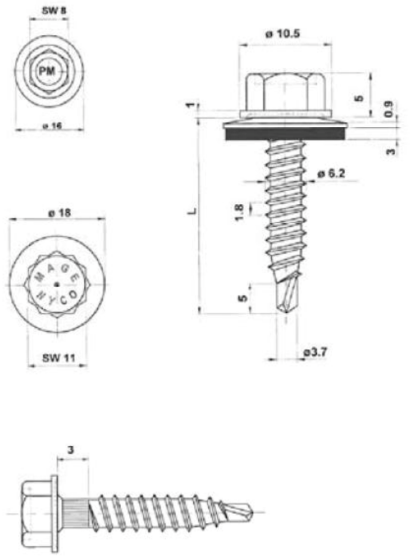
Index a: For t_I and t_{II} made of 320GD or S350GD values can be increased by 8,0%.
Indicated characteristic values of longitudinal tension capacity are valid, if component II lies completely in the thread of the screw.

Self-drilling screw

PMJ-tec TOPEX PIASTA 7553 – 6,3
with hexagon head and sealing washer ≥ Ø14,0 mm

Annex 50

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506 organic coated
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD or S320GD – EN 10346

Drilling capacity: $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

-

		Component II							
		t II [mm]							
		0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25
	$M_{t,nom}$	-							
Component I t I [mm]	$V_{R,k}$ [kN]								
	0,50	1,03[a] -	1,03[a] -	1,03[a] -	1,03[a] -	1,03[a] -	1,03[a] -	1,03[a] -	1,03[a] -
	0,55	1,03[a] -	1,19[a] -	1,19[a] -	1,19[a] -	1,19[a] -	1,19[a] -	1,19[a] -	1,19[a] -
	0,63	1,03[a] -	1,19[a] -	1,44[a] -	1,44[a] -	1,44[a] -	1,44[a] -	1,44[a] -	1,44[a] -
	0,75	1,03[a] -	1,19[a] -	1,44[a] -	1,84 ac	1,84 ac	1,84 ac	1,84 a	1,84 a
	0,88	1,03[a] -	1,19[a] -	1,44[a] -	1,84 a	2,25 a	2,25 a	2,25 a	2,25 a
	1,00	1,03[a] -	1,19[a] -	1,44[a] -	1,84 a	2,25 a	2,66 a	2,66 a	2,66 a
	1,13	1,03[a] -	1,19[a] -	1,44[a] -	1,84 a	2,25 a	2,66 a	2,66 a	2,66 a
	1,25	1,03[a] -	1,19[a] -	1,44[a] -	1,84 a	2,25 a	2,66 a	2,66 a	2,66 a
	$N_{R,k}$ [kN]								
	0,50	0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60 -	1,82 -	1,82 -
	0,55	0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60 -	1,88 -	1,88 -
	0,63	0,70[a] -	0,74 -	0,88 -	1,00 -	1,30 -	1,60 -	1,90 -	2,10 -
	0,75	0,70[a] -	0,74 -	0,88 -	1,00 ac	1,30 ac	1,60 ac	1,90 a	2,20 a
	0,88	0,70[a] -	0,74 -	0,88 -	1,00 a	1,30 a	1,60 a	1,90 a	2,20 a
	1,00	0,70[a] -	0,74 -	0,88 -	1,00 a	1,30 a	1,60 a	1,90 a	2,20 a
	1,13	0,70[a] -	0,74 -	0,88 -	1,00 a	1,30 a	1,60 a	1,90 a	2,20 a
	1,25	0,70[a] -	0,74 -	0,88 -	1,00 a	1,30 a	1,60 a	1,90 a	2,20 a
	$N_{R,k,II}$	0,70 -	0,74 -	0,88 -	1,00 -	1,30 -	1,60	1,90 -	2,20 -

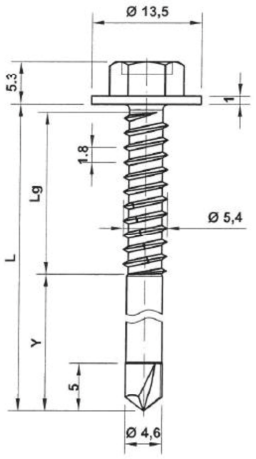
Index a: For t_I and t_{II} made of 320GD or S350GD values can be increased by 8,0%.
Indicated characteristic values of longitudinal tension capacity are valid, if component II lies completely in the thread of the screw.

Self-drilling screw

PMJ-tec TOPEX PIASTA 7553 – 6,3
with hexagon head and sealing washer ≥ Ø16,0 mm

Annex 51

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: Stainless steel A2, A4, A5 – EN ISO 3506

Washer: none

Component I: S280GD to S320GD - EN 10346

Component II: S235 – EN 10025-1
S280GD or S320GD – EN 10346

Drilling capacity: $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

-

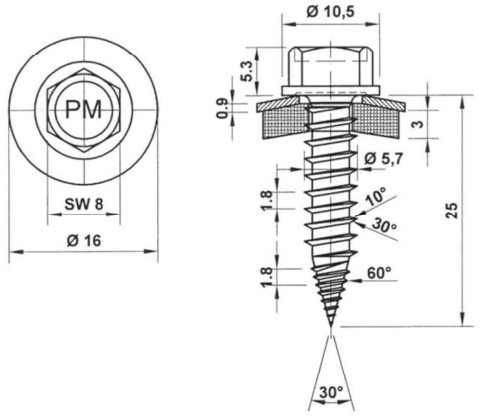
		Component II							
		t II [mm]							
		1,00	1,25	1,50	2,00	3,00	2 x 0,75	2 x 0,88	2 x 1,00
	$M_{t,nom}$								
Component I t I [mm]	$V_{R,k}$ [kN]								
	0,50	1,20 -	1,20 -	1,20 -	1,20 -	1,20 -	- -	- -	- -
	0,55	1,32 -	1,32 -	1,32 -	1,32 -	- -	- -	- -	- -
	0,63	1,51 -	1,51 -	1,51 -	1,51 -	- -	2,27 -	2,27 -	2,27 -
	0,75	1,80 -	1,80 -	1,80 -	1,80 -	- -	2,46 -	2,86 -	3,23 -
	0,88	2,13 -	2,13 -	2,13 -	2,13 -	- -	2,46 -	2,86 -	3,23 -
	1,00	2,43 -	2,43 -	2,43 -	2,43 -	- -	2,46 -	2,86 -	3,23 -
	1,13	2,43 -	2,97 -	2,97 -	3,75 -	- -	2,46 -	2,86 -	3,23 -
	1,25	2,43 -	3,47 -	3,47 -	4,96 -	- -	2,46 -	2,86 -	3,23 -
	1,50	- -	- -	- -	- -	- -	2,46 -	2,86 -	3,23 -
	1,75	- -	- -	- -	- -	- -	2,46 -	2,86 -	3,23 -
	2,00	- -	- -	- -	- -	- -	2,46 -	- -	- -
	$N_{R,k}$ [kN]								
	0,50	0,90 -	1,16 -	1,16 -	1,16 -	1,16 -	1,16 -	1,16 -	1,16 -
	0,55	0,90 -	1,30 -	1,35 -	1,35 -	- -	1,35 -	1,35 -	1,35 -
	0,63	0,90 -	1,30 -	1,65 -	1,65 -	- -	1,65 -	1,65 -	1,65 -
	0,75	0,90 -	1,30 -	1,70 -	2,50 -	- -	1,70 -	1,90 -	2,00 -
	0,88	0,90 -	1,30 -	1,70 -	2,50 -	- -	1,70 -	1,90 -	2,00 -
	1,00	0,90 -	1,30 -	1,70 -	2,50 -	- -	1,70 -	1,90 -	2,00 -
	1,13	0,90 -	1,30 -	1,70 -	2,50 -	- -	1,70 -	1,90 -	2,00 -
	1,25	0,90 -	1,30 -	1,70 -	2,50 -	- -	1,70 -	1,90 -	2,00 -
	1,50	- -	- -	- -	- -	- -	1,70 -	1,90 -	2,00 -
	1,75	- -	- -	- -	- -	- -	1,70 -	1,90 -	2,00 -
	2,00	- -	- -	- -	- -	- -	1,70 -		
	$N_{R,k,II}$	0,90 -	1,30 -	1,70 -	2,50 -	2,90 -	1,70 -	1,90 -	2,00 -

Self-drilling screw

PMJ-tec TOPEX PIASTA 7510 – 5,5
with hexagon head with Ø 13,5 mm

Annex 52

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD or S320GD – EN 10346

Drilling capacity: $\Sigma(t_i) \leq 2.00$ mm

Timber substructures

-

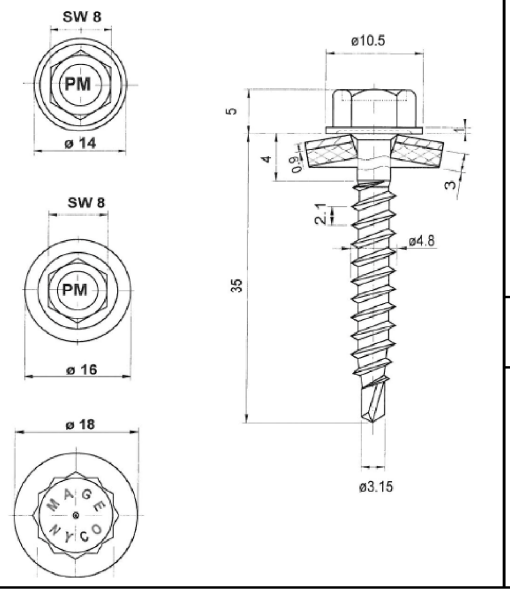
Component I t I [mm]		Component II t II [mm]						
		0,40	0,50	0,55	0,63	0,75	0,88	1,00
$V_{R,k}$ [kN]	0,40	0,77 -	0,77 -	0,77 -	0,77 -	0,77 -	0,77 -	0,77 -
	0,50	0,77 -	0,97 -	0,97 -	0,97 -	0,97 -	0,97 -	0,97 -
	0,55	0,77 -	0,97 -	1,06 -	1,06 -	1,06 -	1,06 -	1,06 -
	0,63	0,77 -	0,97 -	1,06 -	1,21 -	1,21 -	1,21 -	1,21 -
	0,75	0,77 -	0,97 -	1,06 -	1,21 -	2,15 -	2,15 -	2,15 -
	0,88	0,77 -	0,97 -	1,06 -	1,21 -	2,15 -	3,17 -	3,17 -
	1,00	0,77 -	0,97 -	1,06 -	1,21 -	2,15 -	3,17 -	3,32 -
$N_{R,k}$ [kN]	0,40	0,62 -	0,84 -	0,96 -	1,16 -	1,50 -	1,50 -	1,50 -
	0,50	0,62 -	0,84 -	0,96 -	1,16 -	1,52 -	1,89 -	1,89 -
	0,55	0,62 -	0,84 -	0,96 -	1,16 -	1,52 -	1,92 -	1,92 -
	0,63	0,62 -	0,84 -	0,96 -	1,16 -	1,52 -	1,92 -	1,92 -
	0,75	0,62 -	0,84 -	0,96 -	1,16 -	1,52 -	1,92 -	1,92 -
	0,88	0,62 -	0,84 -	0,96 -	1,16 -	1,52 -	1,92 -	1,92 -
	1,00	0,62 -	0,84 -	0,96 -	1,16 -	1,52 -	1,92 -	1,92 -
	$N_{R,k,II}$	0,62 -	0,84 -	0,96 -	1,16 -	1,52 -	1,92 -	1,92 -

Self-drilling screw

PMJ-tec 7563 – 5,5
with hexagon head and sealing washer ≥ Ø 16,0 mm

Annex 53

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S320GD - EN 10346
Component II:	structural timber

Drilling capacity: $\Sigma(t_i) \leq 2.00$ mm

Timber substructures

$M_{y,Rk}$ = 6,947 Nm
$f_{ax,k}$ = 8,93 N/mm^2 for $l_{ef} \geq 30,0$ mm

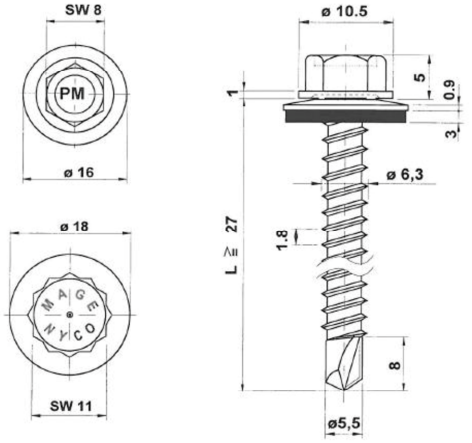
			Component II	
			Timber ≥ C24 $L_g \geq 35$ mm ($l_{eff} \geq 30$ mm)	
Component I S280 GD to S350 GD - 10346 t I [mm]	$V_{R,I,k}$ [kN]	0,50	1,28	Failure of component I
		0,55	1,44	
		0,63	1,71	
		0,75	2,10	
		0,88	2,10	
		1,00	2,10	
	$N_{R,I,k}$ [kN]	0,50	1,68	Failure of component I
		0,55	1,90	
		0,63	2,24	
		0,75	2,80	
		0,88	2,80	
		1,00	2,80	
$V_{R,k,II}$; $N_{R,k,II}$			see Annex 3	

Self-drilling screw

PMJ-tec 7561 – 4,8
with sealing washer ≥ Ø 14,0 mm

Annex 54

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S350GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD or S320GD – EN 10346

Drilling capacity: $\Sigma(t_i) \leq 6.00$ mm

Timber substructures

-

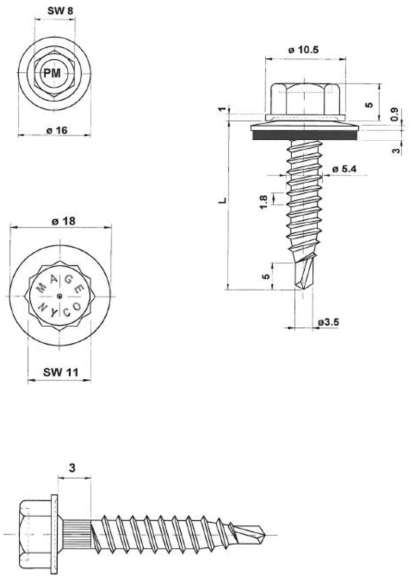
		Component II t II [mm]				
		2,00	2,50	3,00	4,00	5,00
	$M_{t,nom}$	-				
Component I t I [mm] – $V_{R,k}$ [kN]	0,50	1,51 ac	1,51 ac	1,51 ac	1,51 ac	1,51 ac
	0,55	1,51 ac	1,81 ac	1,93 ac	1,93 ac	1,93 a
	0,63	1,51 ac	2,30 ac	2,60 ac	2,60 ac	2,60 a
	0,75	1,51 ac	2,80 ac	3,10 ac	3,10 ac	3,10 a
	0,88	1,51 ac	3,40 ac	3,60 ac	3,60 ac	3,60 a
	1,00	1,51 ac	4,00 ac	4,10 ac	4,10 ac	4,10 a
	1,13	1,51 ac	4,00 ac	4,50 a	4,80 -	- -
	1,25	1,51 ac	4,00 ac	5,70 a	6,00 -	- -
	1,50	1,51 ac	4,00 -	5,70 -	6,00 -	- -
	1,75	1,51 ac	4,00 -	5,70 -	6,00 -	- -
	2,00	1,51 ac	4,00 -	5,70 -	6,00 -	- -
Component I t I [mm] – $N_{R,k}$ [kN]	0,50	1,52 ac	1,52 ac	1,52 ac	1,52 ac	1,52 ac
	0,55	1,81 ac	1,81 ac	1,81 ac	1,81 ac	1,81 a
	0,63	2,22 ac	2,22 ac	2,22 ac	2,22 ac	2,22 a
	0,75	2,76 ac	2,92 ac	2,92 ac	2,92 ac	2,92 a
	0,88	2,76 ac	3,61 ac	3,61 ac	3,61 ac	3,61 a
	1,00	2,76 ac	3,76 ac	4,31 ac	4,31 ac	4,31 a
	1,13	2,76 ac	3,76 ac	4,76 a	4,95 -	- -
	1,25	2,76 ac	3,76 ac	4,76 a	5,58 -	- -
	1,50	2,76 ac	3,76 -	4,76 -	5,58 -	- -
	1,75	2,76 ac	3,76 -	4,76 -	5,58 -	- -
	2,00	2,76 ac	3,76 -	4,76 -	5,58 -	- -
	$N_{R,k,II}$	2,76 -	3,76 -	4,76 -	5,58 -	5,58 -

Self-drilling screw

PMJ-tec 7525 – 6,3
with sealing washer ≥ Ø 16,0 mm

Annex 55

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	Stainless steel A2, A4, A5 – EN ISO 3506
Washer:	Stainless steel A2, A4, A5 – EN ISO 3506
Component I:	S280GD to S350GD - EN 10346
Component II:	S235 – EN 10025-1 S280GD or S350GD – EN 10346

Drilling capacity: $\Sigma(t_i) \leq 6.00$ mm

Timber substructures

-

		Component II t II [mm]							
		0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25
	$M_{t,nom}$	-							
Component I t I [mm]	$V_{R,k}$ [kN] 0,50	1,03 -	1,03 -	1,03 -	1,03 -	1,03 -	1,03 -	1,03 -	1,03 -
	$V_{R,k}$ [kN] 0,55	1,03 -	1,19 -	1,19 -	1,19 -	1,19 -	1,19 -	1,19 -	1,19 -
	$V_{R,k}$ [kN] 0,63	1,03 -	1,19 -	1,45 -	1,45 -	1,45 -	1,45 -	1,45 -	1,45 -
	$V_{R,k}$ [kN] 0,75	1,03 -	1,19 -	1,45 -	1,84 -	1,84 -	1,84 -	1,84 -	1,84 -
	$V_{R,k}$ [kN] 1,88	1,03 -	1,19 -	1,45 -	1,84 -	2,27 -	2,27 -	2,27 -	2,27 -
	$V_{R,k}$ [kN] 1,00	1,03 -	1,19 -	1,45 -	1,84 -	2,27 -	2,66 -	2,66 -	2,66 -
	$V_{R,k}$ [kN] 1,13	1,03 -	1,19 -	1,45 -	1,84 -	2,27 -	2,66 -	2,66 -	2,66 -
	$V_{R,k}$ [kN] 1,25	1,03 -	1,19 -	1,45 -	1,84 -	2,27 -	2,66 -	2,66 -	2,66 -
	$N_{R,k}$ [kN] 0,50	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,82 -	1,82 -
	$N_{R,k}$ [kN] 0,55	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,88 -	1,88 -
	$N_{R,k}$ [kN] 0,63	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,10 -
	$N_{R,k}$ [kN] 0,75	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -
	$N_{R,k}$ [kN] 1,88	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -
	$N_{R,k}$ [kN] 1,00	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -
	$N_{R,k}$ [kN] 1,13	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -
	$N_{R,k}$ [kN] 1,25	0,54[a] -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -
	$N_{R,k,II}$	0,54 -	0,57 -	0,70 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -

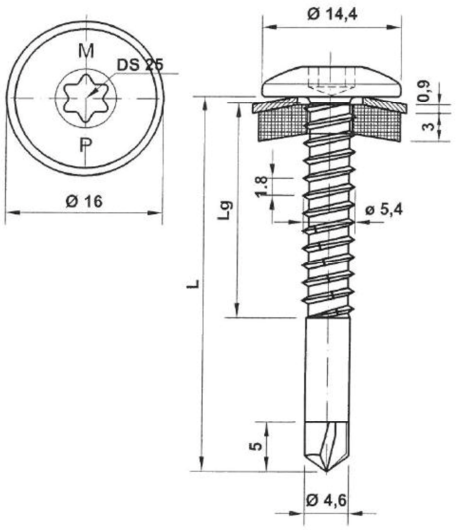
Index a: If component I is made of S320GD or S350GD the values may be increased by 8,0%.

Self-drilling screw

PMJ-tec 7553 – 5,5
with sealing washer ≥ Ø 16,0 mm

Annex 56

Deutsches Institut für Bautechnik DIBt



Materials

Fastener: stainless steel (1.4301) – EN 10088

Washer: stainless steel (1.4301) – EN 10088

Component I: S280GD to S320GD - EN 10346

Component II: S235 - EN 10025-1
S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 3.50$ mm

Timber substructures

No performance determined

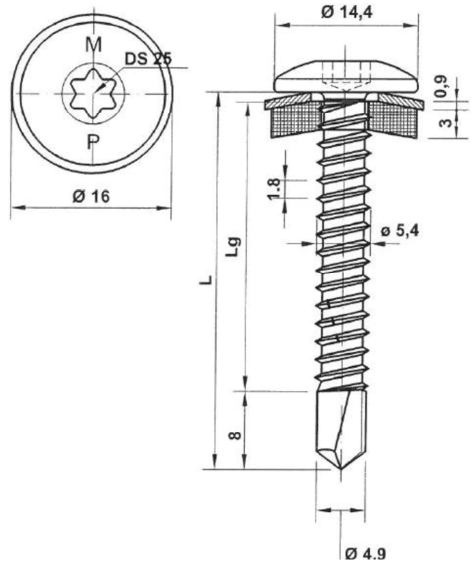
			Component II t II [mm]				
			1,00	1,25	1,50	2,00	3,00
		$M_{t,nom}$	-				
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	1,90 ac	2,10 ac	2,40 ac	2,60 ac	2,60 ac
		0,75	2,10 -	2,40 ac	2,60 ac	3,00 ac	- -
		0,88	2,30 -	2,60	2,90 ac	3,40 ac	- -
		1,00	2,50 -	2,80	3,20 -	3,70 -	- -
		1,13	2,70 -	3,00	3,40 -	4,10 -	- -
		1,25	2,80 -	3,20	3,60 -	4,30 -	- -
	$N_{R,k}$ [kN]	0,50	0,49 -	0,70 ac	0,92 ac	1,35 ac	1,57 ac
		0,55	0,61 -	0,89 ac	1,16 ac	1,71 ac	1,98 ac
		0,63	0,90 -	1,30 ac	1,70 ac	2,50 ac	2,90 ac
		0,75	0,90 -	1,30 ac	1,70 ac	2,50 ac	- -
		0,88	0,90 -	1,30 -	1,70 ac	2,50 ac	- -
		1,00	0,90 -	1,30 -	1,70 -	2,50 -	- -
		1,13	0,90 -	1,30 -	1,70 -	2,50 -	- -
		1,25	0,90 -	1,30 -	1,70 -	2,50 -	- -
		$N_{R,k,II}$	0,90 -	1,30 -	1,70 -	2,50 -	- -

Self-drilling screw

PMJ-tec TOPEX 7110-5,5
bimetal with rounded flat head and sealing washer ≥ Ø16 mm

Annex 57

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	stainless steel (1.4301) – EN 10088
Washer:	stainless steel (1.4301) – EN 10088
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 6.75$ mm

Timber substructures

No performance determined

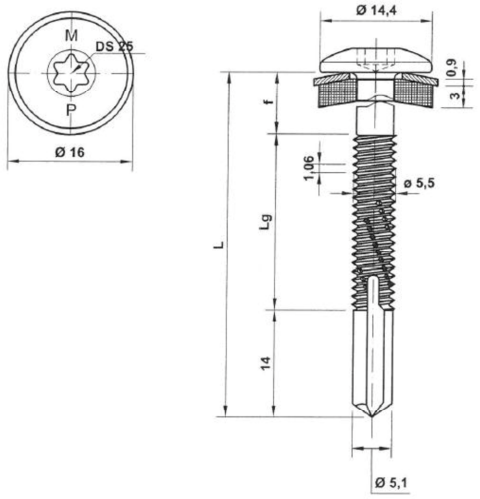
			Component II t II [mm]				
			2,50	3,00	4,00	5,00	6,00
		$M_{t,nom}$	5 Nm				
Component I t I [mm]	$V_{R,k}$ [kN]	0,50	1,40 ac	1,80 ac	1,80 ac	1,80 ac	1,80 a
		0,55	1,80 ac	2,10 ac	2,10 ac	2,10 ac	2,10 a
		0,63	2,20 -	2,40 ac	2,40 ac	2,40 ac	2,40 a
		0,75	2,90 -	2,90 -	2,90 ac	2,90 ac	2,90 a
	$N_{R,k}$ [kN]	0,50	1,90 ac	1,90 ac	1,90 ac	1,90 ac	1,90 a
		0,55	2,30 ac	2,30 ac	2,30 ac	2,30 ac	2,30 a
		0,63	2,80 -	2,80 ac	2,80 ac	2,80 ac	2,80 a
		0,75	3,00 -	3,80 -	3,80 ac	2,80 ac	3,80 a
		$N_{R,k,II}$	3,00 -	3,80 -	3,80 -	2,80 -	3,80 -

Self-drilling screw

PMJ-tec TOPEX 7120-5,5
bimetal with rounded flat head and sealing washer ≥ Ø16 mm

Annex 58

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	stainless steel (1.4301) – EN 10088
Washer:	stainless steel (1.4301) – EN 10088
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 12.50$ mm

Timber substructures

No performance determined

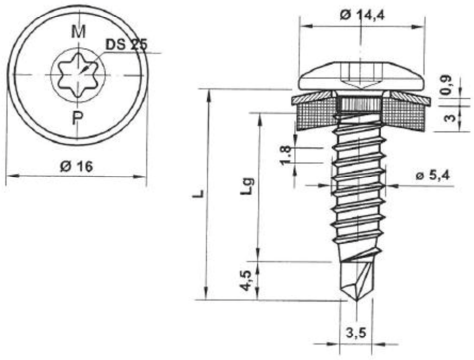
			Component II t II [mm]					
			6,00		8,00		10,0	
		$M_{t,nom}$	5 Nm					
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	2,60	abcd	2,60	abcd	2,60	abcd
		0,75	3,10	abcd	3,10	abcd	3,10	abcd
		0,88	3,60	ac	3,60	ac	3,60	ac
		1,00	4,10	ac	4,10	ac	4,10	ac
		1,13	4,60	ac	4,60	ac	4,60	ac
		1,25	5,10	ac	5,10	ac	5,10	ac
		1,50	6,00	-	6,00	-	6,00	-
		1,75	6,00	-	6,00	-	6,00	-
		2,00	6,00	-	6,00	-	6,00	-
	$N_{R,k}$ [kN]	0,50	1,35	abcd	1,35	abcd	1,35	abcd
		0,55	1,71	abcd	1,71	abcd	1,71	abcd
		0,63	2,50	abcd	2,50	abcd	2,50	abcd
		0,75	2,90	abcd	2,90	abcd	2,90	abcd
		0,88	3,70	ac	3,70	ac	3,70	ac
		1,00	4,50	ac	4,50	ac	4,50	ac
		1,13	5,00	ac	5,00	ac	5,00	ac
		1,25	5,50	ac	5,50	ac	5,50	ac
		1,50	5,70	-	5,70	-	5,70	-
		1,75	5,70	-	5,70	-	5,70	-
		2,00	5,70	-	5,70	-	5,70	-
		$N_{R,k,II}$	5,70	-	5,70	-	5,70	-

Self-drilling screw

PMJ-tec TOPEX 7130-5,5
bimetal with rounded flat head and sealing washer ≥ Ø16 mm

Annex 59

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	stainless steel (1.4301) – EN 10088
Washer:	stainless steel (1.4301) – EN 10088
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

No performance determined

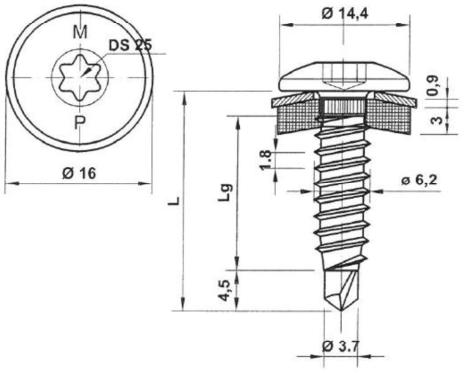
			Component II t II [mm]					
			0,63	0,75	0,88	1,00	1,13	1,25
		$M_{t,nom}$	5 Nm					
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	0,90 -	0,90 -	1,50 -	2,10 ac	2,10 ac	2,10 ac
		0,75	0,90 -	0,90 -	1,50 -	2,10 ac	2,10 ac	2,10 ac
		0,88	0,90 -	0,90 -	1,70 -	2,40 -	2,40 -	2,40 -
		1,00	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
		1,13	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
		1,25	0,90 -	0,90 -	1,90 -	2,80 -	2,80 -	2,80 -
	$N_{R,k}$ [kN]	0,50	0,38 -	0,38 -	0,54	0,70 ac	0,86 ac	1,03 ac
		0,55	0,48 -	0,48 -	0,68	0,89 ac	1,09 ac	1,30 ac
		0,63	0,70 -	0,70 -	1,00	1,30 ac	1,60 ac	1,90 ac
		0,75	0,70 -	0,70 -	1,00	1,30 ac	1,60 a	1,90 a
		0,88	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		1,00	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		1,13	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		1,25	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -
		$N_{R,k,II}$	0,70 -	0,70 -	1,00	1,30	1,60 -	1,90 -

Self-drilling screw

PMJ-tec TOPEX 7140-4,8
bimetal with rounded flat head and sealing washer ≥ Ø16 mm

Annex 60

Deutsches Institut für Bautechnik DIBt



Materials

Fastener:	stainless steel (1.4301) – EN 10088
Washer:	stainless steel (1.4301) – EN 10088
Component I:	S280GD to S320GD - EN 10346
Component II:	S235 - EN 10025-1 S280GD to S320GD - EN 10346

Drilling-capacity $\Sigma(t_i) \leq 2.50$ mm

Timber substructures

No performance determined

			Component II t II [mm]						
			0,63	0,75	0,88	1,00	1,13	1,25	2x0,75
		$M_{t,nom}$	4 Nm			5 Nm			5 Nm
Component I t I [mm]	$V_{R,k}$ [kN]	0,63	1,60 -	1,60 -	1,60 -	1,60 ac	1,60 ac	1,60 ac	1,80 ac
		0,75	1,60 -	1,60 -	1,60 -	1,60 -	1,60 -	1,60 -	1,80 -
		0,88	1,60 -	1,60 -	1,90	2,30 -	2,30 -	2,40 -	2,40 -
		1,00	1,60 -	1,60 -	2,30	3,00 -	3,10 -	3,20 -	3,00 -
	$N_{R,k}$ [kN]	0,50	0,43 -	0,54 -	0,70 -	0,86 -	1,03 ac	1,19 ac	1,30 ac
		0,55	0,55 -	0,68 -	0,89 -	1,09 -	1,30 ac	1,50 ac	1,64 ac
		0,63	0,80 -	1,00 -	1,30 -	1,60 -	1,90 ac	2,20 ac	2,40 ac
		0,75	0,80 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,60 -
		0,88	0,80 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,60 -
		1,00	0,80 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,60 -
		$N_{R,k,II}$	0,80 -	1,00 -	1,30 -	1,60 -	1,90 -	2,20 -	2,60 -

Self-drilling screw

PMJ-tec TOPEX 7140-6,3
bimetal with rounded flat head and sealing washer ≥ Ø16 mm

Annex 61

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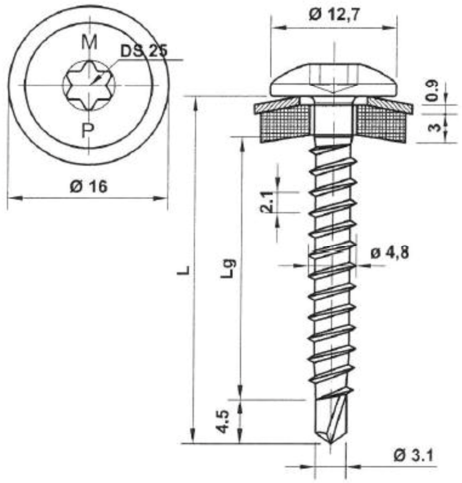

Materials

Fastener:	stainless steel (1.4301) – EN 10088
Washer:	stainless steel (1.4301) – EN 10088
Component I:	S280GD to S320GD - EN 10346
Component II:	structural timber – EN 14081

Drilling-capacity $\Sigma(t_i) \leq 1.50$ mm

Timber substructures

$M_{y,Rk}$ = 4,429 Nm
$f_{ax,k}$ = 8,575 N/mm^2 for $l_{ef} \geq 30,0$ mm

			Component II t II [mm]	
			-	
		$M_{t,nom}$	5 Nm	
Component I t I [mm]	$V_{R,I,k}$ [kN]	0,50	1,10	ac
		0,55	1,30	ac
		0,63	1,60	ac
		0,75	2,00	ac
	$N_{R,I,k}$ [kN]	0,50	1,80	ac
		0,55	2,10	ac
		0,63	2,50	ac
		0,75	3,20	ac

The values listed above in dependence on the screw in length l_{ef} are valid for k_{mod} = 0,90 and ρ_k = 350 kg/m^3. For other combinations of k_{mod} and timber densities see Annex 3.

Self-drilling screw

PMJ-tec TOPEX 7160-4,8
bimetal with rounded flat head and sealing washer ≥ Ø16 mm

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