

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-10/0181
of 4 July 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 Drillnox, Goldovis and FASTO-INOX

Product family
to which the construction product belongs

Fastening screws for metal members and sheeting

Manufacturer

ETANCO SAS
Parc des Érables - Bât.1
66 Route de Sartrouville - BP 49
78231 Le PECQ Cedex
FRANKREICH

Manufacturing plant

Plant F1
Plant F2
Plant F8
Plant F9

This European Technical Assessment
contains

13 pages including 9 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

European Technical Assessment

ETA-10/0181

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Specific part

1 Technical description of the product

The fastening screws (table 1) are self-drilling or self-tapping screws made from austenitic stainless steel or carbon steel with a coating for corrosion protection. The fastening screws are usually equipped with sealing washers consisting of a metal washer with EPDM-seal.

Table 1 – Fastening screws for metal members and sheeting

Annex	Fastening screw	Description
Annex 4	GOLDOVIS 6 - 6,3 x L	with hexagon head and integrated washer Ø15 mm
Annex 5	DRILLNOX 3,5 - 5,5 x L	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 6	DRILLNOX 6 - 5,5 x L	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 7	DRILLNOX 12 - 5,5 x L	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 8 ^{*)}	DRILLNOX WOOD - 6,3 x L	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 9 ^{*)}	FASTO-INOX Type A 6,5 x L	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$

^{*)} applicable for timber substructures

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 of corrosivity categories $\geq \text{C2}$ according to EN ISO 12944-2 are made from stainless steel. Furthermore the screws are intended to be used in connections under predominantly static actions (e. g. self-weight or wind). The fastening screws are not suitable 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 annexes 1 to 9.

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 case of combined tension and Shear forces (interaction)	see annexes to this ETA
Deformation capacity in case of restraints 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	Performance class A1

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

In accordance with EAD No. 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

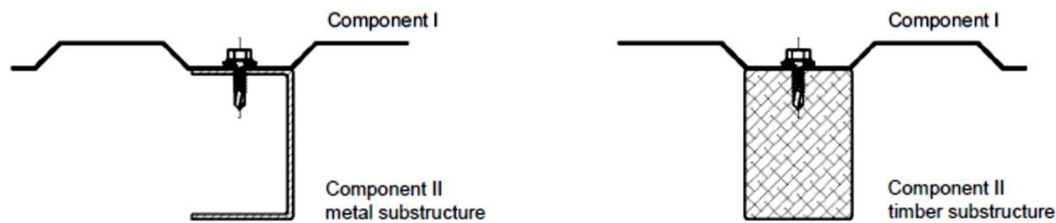
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 4 July 2019 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Jensky

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 Component I and Component II

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:

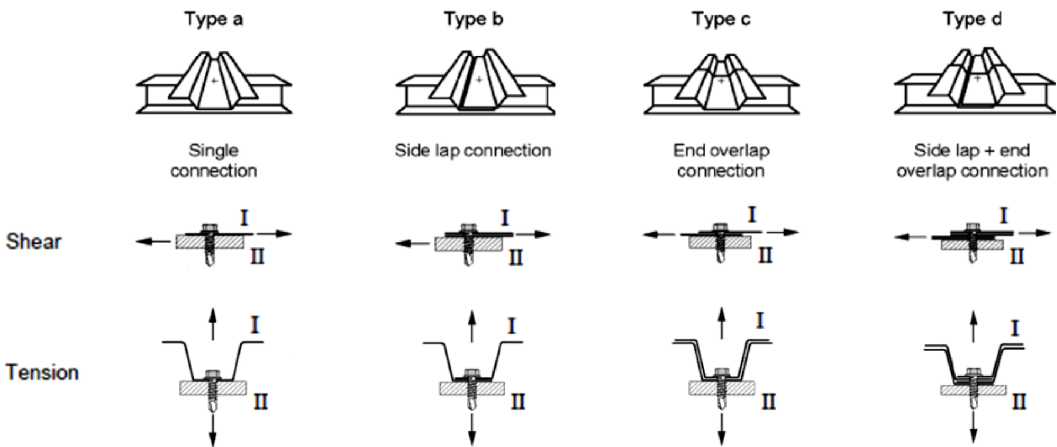
$M_{y,Rk}$	Characteristic value of yield moment
$f_{ax,k}$	Characteristic value of pull out strength

Used terms in the Annexes

Fastening screws for metal members and sheeting

Annex 1

Types of connection and occurred loadings



Determination of Design Values

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

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

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

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 $\gamma_M = 1,33$ 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:

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

$N_{S,d}$ 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 load bearing length of the screw, provided by the manufacturer, has to be taken into account.

Basics for the design

Fastening screws for metal members and sheeting

Annex 2

Timber substructures

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

$$N_{R,k} = \min \left\{ \begin{array}{l} N_{R,I,k} \\ F_{ax,Rk} \cdot k_{mod} \end{array} \right.$$

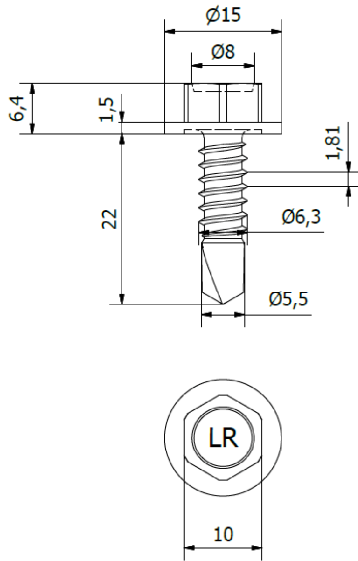
$$V_{R,k} = \min \left\{ \begin{array}{l} V_{R,I,k} \\ F_{v,Rk} \cdot k_{mod} \end{array} \right.$$

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 $M_{y,Rk}$ given in the corresponding Annex of the fastening screw.

Specific notes to the Annexes

Fastening screws for metal members and sheeting

Annex 3



Materials

Fastener: carbon steel, case hardened and galvanized
Washer: none

Component I: S280GD to S320GD - EN 10346

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

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

Timber substructures

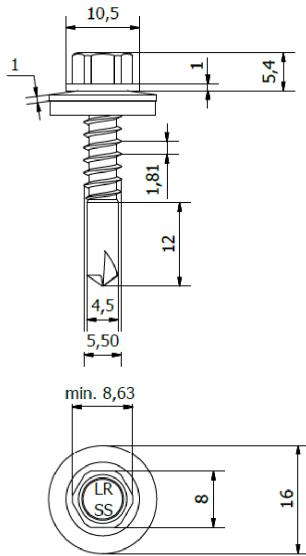
-

		Component II						
		t II [mm]						
		3,00		4,00		5,00		
M _{t,nom}		5 Nm						
Component I t I [mm]	V _{R,k} [kN]	0,63	3,30	abcd	3,30	abcd	3,30	ac
		0,75	4,00	abcd	4,00	ac	4,00	ac
		0,88	4,70	ac	4,70	ac	4,70	ac
		1,00	5,30	ac	5,30	ac	5,30	ac
		1,13	6,10	-	6,10	-	6,10	-
		1,25	6,50	-	6,50	-	6,50	-
		1,50	7,50	-	7,50	-		-
		1,75	7,50	-	7,50	-		-
		2,00	7,50	-	7,50	-		-
	N _{R,k} [kN]	0,63	2,10	abcd	2,10	abcd	2,10	ac
		0,75	2,90	abcd	2,90	ac	2,90	ac
		0,88	3,70	ac	3,70	ac	3,70	ac
		1,00	4,50	ac	4,50	ac	4,50	ac
		1,13	4,60	-	4,60	-	4,60	-
		1,25	4,60	-	4,60	-	-	-
		1,50	4,60	-	4,60	-	-	-
		1,75	4,60	-	4,60	-	-	-
		2,00	4,60	-	4,60	-	-	-
		N _{R,k,II}	4,60	-	4,60	-	4,60	-

self-drilling screw

GOLDOVIS 6 – 6,3 x L
with hexagon head and sealing washer $\geq \varnothing 15$ mm

Annex 4



Materials

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

Drilling-capacity $\Sigma(t_i) \leq 4.50$ mm

Timber substructures

-

		Component II t II [mm]				
		1,50	2,00	2,50	3,00	
M _{t,nom}		2 Nm				
Component I t I [mm]	V _{R,k} [kN]	0,63	2,00 ^a ac	2,00 ^a ac	2,00 ^a ac	2,00 ^a ac
		0,75	2,48 ^a ac	2,48 ^a ac	2,86 ^a ac	3,23 ^a ac
		0,88	3,72 ^b -	3,14 ^b -	3,32 ^b -	3,51 ^b -
		1,00	2,95 -	3,79 -	3,79 -	3,79 -
		1,13	3,29 -	3,91 -	4,11 -	4,31 -
		1,25	3,60 -	4,02 -	4,42 -	4,82 -
		1,50	4,24 -	4,24 -	5,05 -	5,85 -
	N _{R,k} [kN]	0,63	1,79 ac	2,33 ^a ac	2,33 ^a ac	2,33 ^a ac
		0,75	1,79 ac	2,33 ^a ac	2,33 ^a ac	2,33 ^a ac
		0,88	1,79 -	2,82 -	3,56 ^b -	3,56 ^b -
		1,00	1,79 -	2,82 -	3,77 -	4,71 -
		1,13	1,79 -	2,82 -	3,77 -	4,71 -
		1,25	1,79 -	2,82 -	3,77 -	4,71 -
		1,50	1,79 -	2,82 -	3,77 -	4,71 -
		N _{R,k,II}	1,79 -	2,82 -	3,77 -	4,71 -

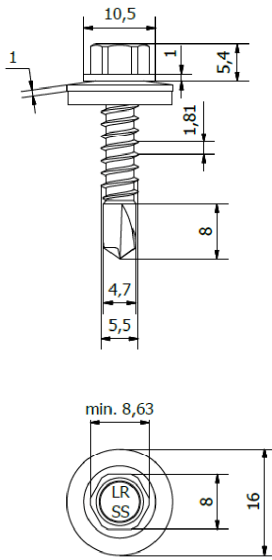
Index a: If component I and component II are made of S320GD to S350GD the values may be increased by 8.0%.

Index b: If component I and component II are made of S320GD to S350GD the values may be increased by 4.0%.

self-drilling screw

DRILLNOX 3,5 – 5,5 x L
with hexagon head and sealing washer $\geq \varnothing 16$ mm

Annex 5



Materials

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

Drilling-capacity $\Sigma(t_i) \leq 7.50$ mm

Timber substructures

-

		Component II t II [mm]					
		2,00	2,50	3,00	4,00	5,00	6,00
M _{t,nom}		2 Nm					
Component I t I [mm]	V _{R,k} [kN]	0,63	2,12 ^a ac	2,12 ^a ac	2,12 ^a ac	2,12 ^a ac	2,12 ^a ac
		0,75	2,12 ^a ac	2,12 ^a ac	2,12 ^a ac	2,49 ^a ac	2,49 ^a ac
		0,88	2,12 ^a -	2,12 ^a -	2,12 ^a -	2,98 ^b -	2,98 ^b a
		1,00	3,47 -	3,47 -	3,47 -	3,47 -	3,47 a
		1,13	3,78 -	3,92 -	4,15 -	4,15 -	4,15 a
		1,25	4,08 -	4,36 -	4,83 -	4,83 -	4,83 a
		1,50	4,68 -	5,25 -	5,82 -	6,00 -	6,18 a
	N _{R,k} [kN]	0,63	1,79 ^a ac	1,79 ^a ac	1,79 ^a ac	1,79 ^a ac	1,79 ^a ac
		0,75	2,27 ac	3,03 ^a ac	3,03 ^a ac	3,03 ^a ac	3,03 ^a ac
		0,88	2,27 -	3,31 -	3,71 ^a -	3,71 ^a -	3,71 ^a a
		1,00	2,27 -	3,31 -	4,34 -	4,38 ^a -	4,38 ^a a
		1,13	2,27 -	3,31 -	4,34 -	5,08 -	5,08 a
		1,25	2,27 -	3,31 -	4,34 -	5,70 -	5,79 a
		1,50	2,27 -	3,31 -	4,34 -	5,70 -	6,16 a
	N _{R,k,II}	2,27 -	3,31 -	4,34 -	5,70 -	6,16 -	6,16 -

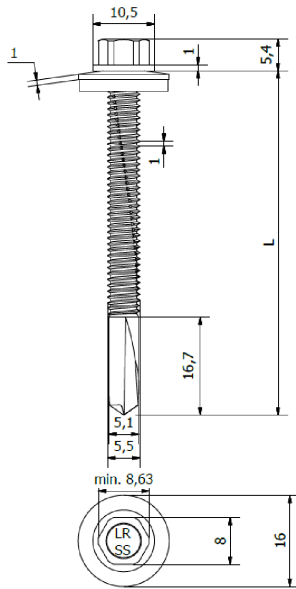
Index a: If component I and component II are made of S320GD to S350GD the values may be increased by 8.0%.

Index b: If component I and component II are made of S320GD to S350GD the values may be increased by 4.0%.

self-drilling screw

DRILLNOX 6 – 5,5 x L
with hexagon head and sealing washer $\geq \varnothing$ 16 mm

Annex 6



Materials

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

Drilling-capacity $\Sigma(t_i) \leq 13.50$ mm

Timber substructures

-

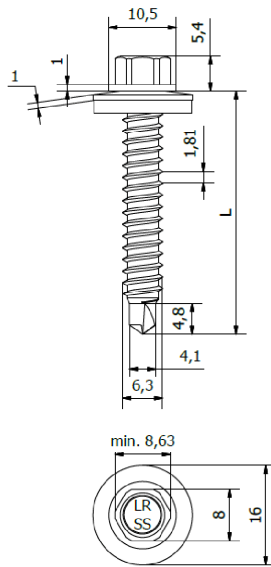
		Component II t II [mm]					
		4,00	5,00	6,00	8,00	10,00	12,00
M _{t,nom}		2 Nm					
Component I t I [mm]	V _{R,k} [kN]	0,63	2,44 ^a ac	2,44 ^a ac	2,44 ^a ac	2,44 ^a ac	2,44 ^a ac
		0,75	2,92 ^a ac	2,92 ^a ac	2,92 ^a ac	2,92 ^a ac	2,92 ^a ac
		0,88	3,42 ^a ac	3,42 ^a ac	3,42 ^a ac	3,42 ^a ac	3,42 ^a a
		1,00	3,92 ^a ac	3,92 ^a ac	3,92 ^a ac	3,92 ^a ac	3,92 ^a a
		1,13	4,47 ac	4,47 ac	4,50 ac	4,55 ac	4,57 ac
		1,25	5,02 ac	5,02 ac	5,07 ac	5,18 ac	5,21 ac
		1,50	6,11 ac	6,11 ac	6,22 ac	6,44 ac	6,50 ac
		1,75	6,11 ac	6,11 ac	6,22 ac	6,44 ac	6,50 ac
		2,00	6,11 ac	6,11 ac	6,22 ac	6,44 ac	6,50 a
	N _{R,k} [kN]	0,63	2,12 ^a ac	2,12 ^a ac	2,12 ^a ac	2,12 ^a ac	2,12 ^a ac
		0,75	3,04 ^a ac	3,04 ^a ac	3,04 ^a ac	3,04 ^a ac	3,04 ^a ac
		0,88	3,48 ^a ac	3,48 ^a ac	3,48 ^a ac	3,48 ^a ac	3,48 ^a a
		1,00	4,44 ac	4,44 ^a ac	4,44 ^a ac	4,44 ^a ac	4,44 ^a a
		1,13	4,45 ac	5,07 ac	5,27 ac	5,27 ac	5,27 ac
		1,25	4,45 ac	5,07 ac	5,68 ac	6,10 ac	6,10 ac
		1,50	4,45 ac	5,07 ac	5,68 ac	6,50 ac	7,54 ac
		1,75	4,45 ac	5,07 ac	5,68 ac	6,50 ac	7,54 ac
		2,00	4,45 ac	5,07 ac	5,68 ac	6,50 ac	7,54 a
	N _{R,k,II}	4,45	-	5,07	-	5,68	-

Index a: If component I is made of S320GD to S350GD the values may be increased by 8.0%.

self-drilling screw

DRILLNOX 12 – 5,5 x L
with hexagon head and sealing washer $\geq \varnothing 16$ mm

Annex 7



Materials

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

Washer: Stainless steel A2, A4 or A5 – EN ISO 3506
with vulcanized EPDM-seal

Component I: S280GD to S320GD - EN 10346

Component II: S280GD to S320GD - EN 10346
S235 – EN 10025-1
Structural timber – EN 14081

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

Timber substructures

$M_{y,Rk} = 8.981$ Nm

$f_{ax,k} = 8.575$ N/mm² for $l_{ef} \geq 31,0$ mm

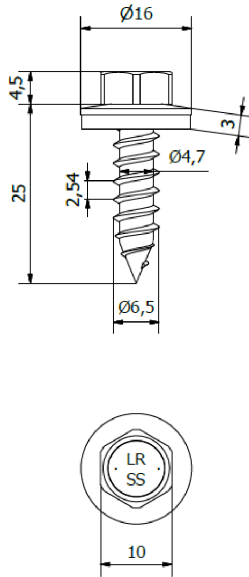
		Component II						Timber ≥ C24 L _{eff} ≥ 31 mm		
		t II [mm]								
		0,63	0,75	0,88	1,00	1,13	1,25			
		2 Nm								
Component I t I [mm]	V _{R,k} [kN]	0,63	1,66 ^a -	1,66 ^a -	2,02 ^a -	2,37 ^a ac	2,44 ^a ac	2,51 ^a ac	2,17	Failure of component I
		0,75	1,66 ^a -	2,39 ^a -	2,39 ^a -	2,39 ^a -	2,69 ^a -	2,97 ^a -	2,17	
		0,88	1,66 ^a -	2,47 ^a -	2,47 ^a -	2,47 ^a -	2,97 ^b -	3,46 -	2,17	
		1,00	1,66 ^a -	2,56 ^a -	2,56 ^a -	2,56 ^a -	3,25 ^b -	3,93 -	2,17	
		1,13	1,66 ^a -	2,64 ^a -	2,64 ^a -	2,64 ^a -	3,36 ^b -	4,07 -	2,28	
		1,25	1,66 ^a -	2,72 ^a -	2,72 ^a -	2,72 ^a -	3,46 ^b -	4,20 -	2,38	
	N _{R,k} [kN]	0,63	0,82 -	1,14 -	1,51 -	1,87 ac	2,12 ac	2,12 ac	2,12 ^a	Failure of component I
		0,75	0,82 -	1,14 -	1,51 -	1,87 -	2,26 -	2,65 -	3,04 ^a	
		0,88	0,82 -	1,14 -	1,51 -	1,87 -	2,26 -	2,65 -	3,63 ^a	
		1,00	0,82 -	1,14 -	1,51 -	1,87 -	2,26 -	2,65 -	4,22 ^a	
		1,13	0,82 -	1,14 -	1,51 -	1,87 -	2,26 -	2,65 -	5,19	
		1,25	0,82 -	1,14 -	1,51 -	1,87 -	2,26 -	2,65 -	6,15	
		N _{R,k,II}	0,82 -	1,14 -	1,51 -	1,87 -	2,26 -	2,65 -		
								Failure of component II see Annex 3		

Index a: If component I and component II are made of S320GD or S350GD the values may be increased by 8,0%.
Index b: If component I and component II are made of S320GD or S350GD the values may be increased by 4,0%.
The values listed above in dependence on the screw in length l_{ef} are valid for $k_{mod} = 0,90$ and $\rho_k = 350$ kg/m³. For other combinations of k_{mod} and timber densities see Annex 3.

self-drilling screw

DRILLNOX WOOD – 6,3 x L
with hexagon head and sealing washer $\geq \varnothing 16$ mm

Annex 8



Materials

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

Washer: Stainless steel A2, A4 or A5 – EN ISO 3506
with vulcanized EPDM-seal

Component I: S280GD to S320GD - EN 10346

Component II: S280GD to S320GD - EN 10346
S235 – EN 10025-1
Structural timber – EN 14081

Predrill diameter: see table below

Timber substructures

$M_{y,Rk} = 9.742 \text{ Nm}$

$f_{ax,k} = 8.575 \text{ N/mm}^2$ for $l_{ef} \geq 26.0 \text{ mm}$

		Component II										Timber ≥ C24 L _{ef} ≥ 26 mm	
		t II [mm]											
		0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00				
d _{pd}		Ø 3,5	Ø 4,0	Ø 4,5				Ø 5,0					
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	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	3,20		
		0,88	1,50 -	1,70 -	2,00 -	2,30 -	2,60 -	2,80 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 ac	3,50		
		1,25	1,60 -	1,90 -	2,30 -	2,70 -	3,00 -	3,30 -	4,00 -	4,00 ac	4,00		
		1,50	1,60 -	1,90 -	2,40 -	2,80 -	3,20 -	3,50 -	4,00 -	4,00 ac	4,00		
		1,75	1,60 -	1,90 -	2,40 -	2,80 -	3,20 -	3,50 -	4,00 -	4,00 -	4,00		
		2,00	1,60 -	1,90 -	2,40 -	2,80 -	3,20 -	3,50 -	4,00 -	4,00 -	4,00		
	N _{R,k} [kN]	0,63	0,90 -	1,10 -	1,30 -	1,40 ac	1,60 ac	1,80 ac	2,10 ac	2,10 ac	2,10	Failure of component I	
		0,75	0,90 -	1,10 -	1,30 -	1,40 ac	1,60 ac	1,80 ac	2,10 ac	2,10 ac	2,10		
		0,88	0,90 -	1,10 -	1,30 -	1,40 -	1,60 -	1,80 ac	2,10 ac	2,10 ac	2,10		
		1,00	0,90 -	1,10 -	1,30 -	1,40 -	1,60 -	1,80 -	2,20 -	2,20 -	2,20		
		1,25	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	2,30 -	2,30		
		1,50	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	2,30 -	2,30		
		1,75	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	2,30 -	2,30		
		2,00	1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	2,30 -	2,30		
N _{R,k,II}		1,00 -	1,20 -	1,40 -	1,50 -	1,70 -	1,90 -	2,30 -	2,30 -	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 $\rho_k = 350 \text{ kg/m}^3$. For other combinations of k_{mod} and timber densities see Annex 3.

self-tapping screw

FASTO-INOX Type A – 6,5 x L
with hexagon head and sealing washer $\geq \text{Ø } 16 \text{ mm}$

Annex 9