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European Technical Assessment

ETA-16/0739 of 30/03/2021

General part

Technical Assessment Body issuing the European Technical Assessment	Instytut Techniki Budowlanej
Trade name of the construction product	ESDS, EFS, EVFS, ESTS
Product family to which the construction product belongs	Fastening screws for metal members and sheeting
Manufacturer	Van Roij Fasteners Europe B.V. Jan Tooropstraat 16 5753 DK Deurne, Netherlands
Manufacturing plant(s)	Van Roij Fasteners Europe B.V. plants
This European Technical Assessment contains	136 pages including 131 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	European Assessment Document (EAD) 330046-01-0602 “Fastening screws for metal members and sheeting”
This version replaces	ETA-16/0739 issued on 30/06/2020

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Specific Part

1. Technical description of the product

The fastening screws ESDS, EFS, EVFS and ESTS are the self-drilling and self-tapping screws listed in Table 1. The fastening screws are partly supplied with a metallic washer and an EPDM sealing ring. Some screws can be completed with saddle washers ESW. For details see the Annexes 1 to 130.

The fastening screw and the corresponding connections are subject to tension and shear forces.

Table 1

No.	Screw	Material	Annex
1	ESDS-0-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	1, 4
2	ESDS-0-P 4.8xL	galvanized carbon steel with PREMIUM coating	2, 5
3	ESDS-0-SP 4.8xL	galvanized carbon steel with SUPER PREMIUM coating	3, 6
4	ESDS-0-B 4.8xL	stainless steel (bi-metal)	7, 8
5	ESDS-PH-0-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	9
6	ESDS-PH-0-P 4.8xL	galvanized carbon steel with PREMIUM coating	10
7	ESDS-PH-0-B 4.8xL	stainless steel (bi-metal)	11, 12
8	ESDS-PH-0-B 5.5xL	stainless steel (bi-metal)	13
9	ESDS-0-B 6.3xL	stainless steel (bi-metal)	14
10	EFS-2-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	15
11	EFS-2-P 4.8xL	galvanized carbon steel with PREMIUM coating	16
12	EFS-2-SP 4.8xL	galvanized carbon steel with SUPER PREMIUM coating	17
13	EFS-2-B 4.8xL	stainless steel (bi-metal)	18
14	EFS-PH-2-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	19
15	EFS-PH-2-P 4.8xL	galvanized carbon steel with PREMIUM coating	20
16	ESDS-3-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	21, 24, 27, 30
17	ESDS-3-P 4.8xL	galvanized carbon steel with PREMIUM coating	22, 25, 28, 31
18	ESDS-3-SP 4.8xL	galvanized carbon steel with SUPER PREMIUM coating	23, 26, 29, 32
19	ESDS-3-B 4.8xL	stainless steel (bi-metal)	33, 34, 35, 36
20	ESDS-3-B 5.5xL	stainless steel (bi-metal)	37, 38, 39, 40, 41
21	EVFS-3-B 5.5xL	stainless steel (bi-metal)	42, 43
22	ESDS-PH-3-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	44
23	ESDS-PH-3-P 4.8xL	galvanized carbon steel with PREMIUM coating	45
24	ESDS-5-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	46, 49, 52, 55
25	ESDS-5-P 5.5xL	galvanized carbon steel with PREMIUM coating	47, 50, 53, 56
26	ESDS-5-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	48, 51, 54, 57
27	ESDS-5-B 5.5xL	stainless steel (bi-metal)	58, 59, 60, 61
28	ESDS-PH-5-B 5.5xL	stainless steel (bi-metal)	62
29	ESDS-PH-5-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	63
30	ESDS-PH-5-P 5.5xL	galvanized carbon steel with PREMIUM coating	64
31	ESDS-6-Z 6.3xL	galvanized carbon steel with ≥ 12 µm of zinc coating	65, 68, 71
32	ESDS-6-P 6.3xL	galvanized carbon steel with PREMIUM coating	66, 69, 72
33	ESDS-6-SP 6.3xL	galvanized carbon steel with SUPER PREMIUM coating	67, 70, 73
34	ESDS-PH-6-B 6.3xL	stainless steel (bi-metal)	74
35	ESDS-8-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	75, 78, 81, 84
36	ESDS-8-P 5.5xL	galvanized carbon steel with PREMIUM coating	76, 79, 82, 85
37	ESDS-8-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	77, 80, 83, 86
38	ESDS-12-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	87, 90, 93, 96

Table 1, cont.

39	ESDS-12-P 5.5xL	galvanized carbon steel with PREMIUM coating	88, 91, 94, 97
40	ESDS-12-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	89, 92, 95, 98
41	ESDS-12-B 5.5xL	stainless steel (bi-metal)	99, 100, 101, 102
42	ESDS-20-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	103, 106, 109, 112
43	ESDS-20-P 5.5xL	galvanized carbon steel with PREMIUM coating	104, 107, 110, 113
44	ESDS-20-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	105, 108, 111, 114
45	ESTS-0A-Z 6.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	115, 116, 117, 118
46	ESTS-0A-S 6.5xL	galvanized stainless steel	119, 120, 121, 122
47	ESTS-0B-Z 6.3xL	galvanized carbon steel with ≥ 12 µm of zinc coating	123, 125
48	ESTS-0B-P 6.3xL	galvanized carbon steel with PREMIUM coating	124, 126
49	ESTS-WH-0-Z 4.2xL	galvanized carbon steel with ≥ 8 µm of zinc coating	127
50	ESTS-WH-0-P 4.2xL	galvanized carbon steel with PREMIUM coating	128
51	ESDS-WH-2-Z 4.2xL	galvanized carbon steel with ≥ 8 µm of zinc coating	129
52	ESDS-WH-2-P 4.2xL	galvanized carbon steel with PREMIUM coating	130

2. Specification of the intended use in accordance with the applicable European Assessment Document (EAD)

The fastening screws are intended to be used for fastening steel sheeting to steel, aluminum or timber supporting substructures. For details see the Annexes 1 to 130. The component to be fastened is component I and the supporting structure is component II. 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 provisions made in this European Technical Assessment are based on an assumed working life of the fasteners of 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer or Technical Assessment Body, 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. Performances of the product and references to the methods used for their assessment

3.1. Performance of the product

3.1.1 Mechanical resistance and stability (BWR 1)

The characteristic values of the shear resistance of connections and tension resistance of connections with the fasteners are given in Annex 1 to 130. The values were determined by tests according to EAD 330046-01-0602.

The design values shall be determined according to Annex 131 and EAD 330046-01-0602.

For the corrosion protection the rules given in EN 1993-1-3, EN 1993-1-4 and EN 1999-1-4 shall be taken into account. Fastening screw which are made of stainless steel are intended to be used in external environments ≥ C2 corrosion according to the standard EN ISO 12944-2.

3.1.2. Safety in case of fire (BWR 2)

The fastening screws are considered to satisfy the requirements of performance class A1 of reaction to fire, in accordance with the provisions of the EC Decision 96/603/EC (as amended) without the need for testing on the basis of its listing in that decision.

3.2. Methods used for the assessment

The assessment of products has been made in accordance with the EAD 330046-01-0602.

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

According to Decision 1998/214/EC, amended by 2001/596/EC, of the European Commission the system 2+ of assessment and verification of constancy of performance applies (see Annex V to regulation (EU) No 305/2011).

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document (EAD)

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at the Instytut Techniki Budowlanej.

For type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between Instytut Techniki Budowlanej and the notified body.

Issued in Warsaw on 30/03/2021 by Instytut Techniki Budowlanej

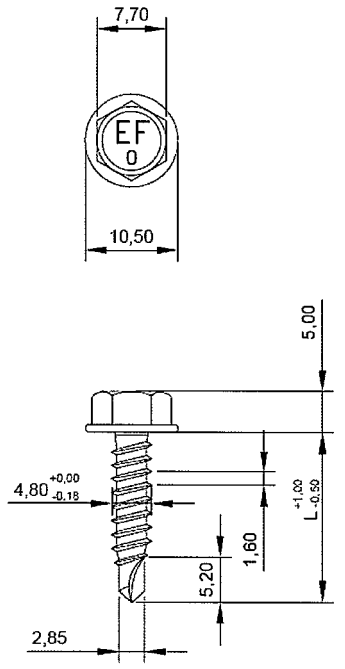
Anna Panek, MSc
Deputy Director of ITB

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,55	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,60	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,63	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,70	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,75	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,80	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,88	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	1,00	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,58	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,63	0,66	0,66	0,66	0,80	0,80	0,80	0,80	0,80	0,80	
	0,70	0,66	0,66	0,66	0,80	0,80	0,80	0,80	0,80	0,80	
	0,75	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,96	
	0,80	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,96	
	0,88	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,96	
	1,00	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,97	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-0-Z 4.8xL
with hexagon head

Annex 1

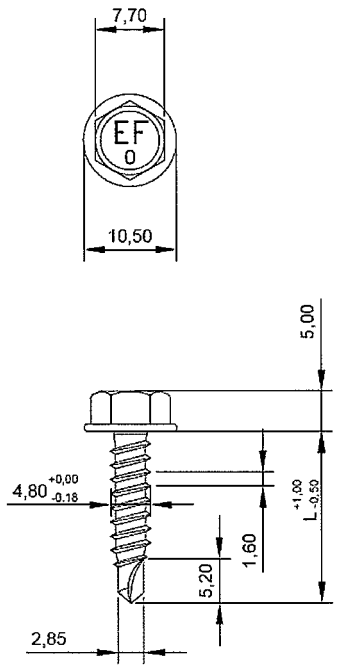
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,55	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,60	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,63	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,70	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,75	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,80	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,88	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	1,00	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,58	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,63	0,66	0,66	0,66	0,80	0,80	0,80	0,80	0,80	0,80	
	0,70	0,66	0,66	0,66	0,80	0,80	0,80	0,80	0,80	0,80	
	0,75	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,96	
	0,80	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,96	
	0,88	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,96	
	1,00	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,97	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

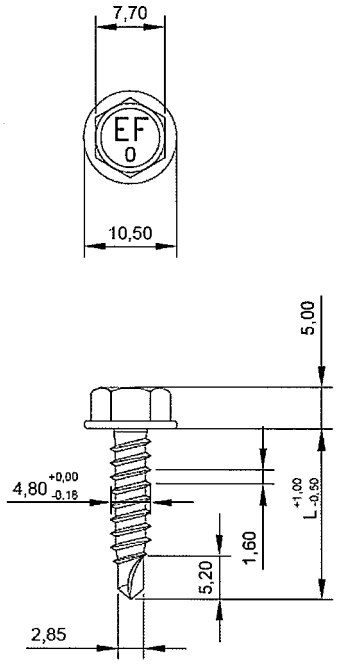
Fastening screws for metal members and sheeting	**Annex 2** of European Technical Assessment ETA-16/0739
Self-drilling screws ESDS-0-P 4.8xL with hexagon head	

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,55	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,60	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,63	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,70	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,75	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,80	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,88	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	1,00	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,58	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,63	0,66	0,66	0,66	0,80	0,80	0,80	0,80	0,80	0,80	
	0,70	0,66	0,66	0,66	0,80	0,80	0,80	0,80	0,80	0,80	
	0,75	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,96	
	0,80	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,96	
	0,88	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,96	
	1,00	0,66	0,66	0,66	0,94	0,94	0,96	0,96	0,96	0,97	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-0-SP 4.8xL
with hexagon head

Annex 3

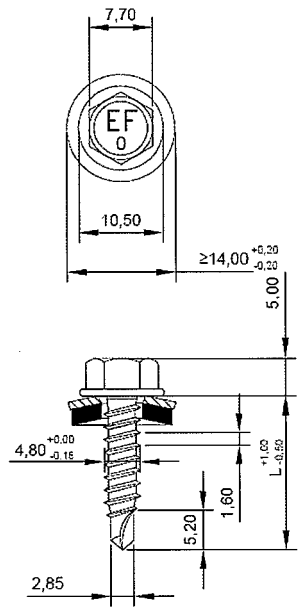
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z14 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,55	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,60	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,63	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,70	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,75	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,80	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,88	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	1,00	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,58	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,55	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,60	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,63	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,70	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,75	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,80	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,88	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	1,00	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-0-Z 4.8xL
with hexagon head and washer Z14

Annex 4

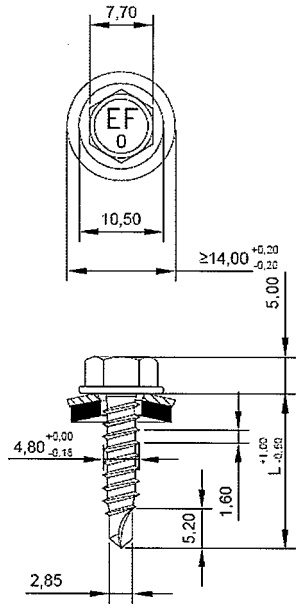
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,55	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,60	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,63	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,70	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,75	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,80	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,88	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	1,00	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,58	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,55	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,60	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,63	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,70	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,75	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,80	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,88	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	1,00	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

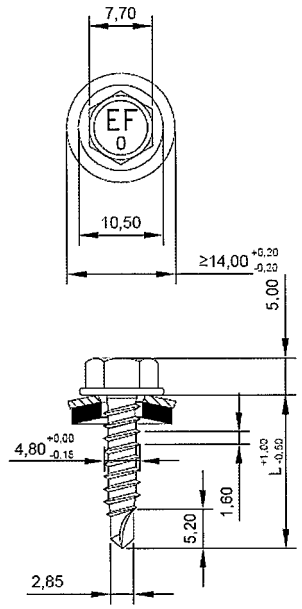
Fastening screws for metal members and sheeting	**Annex 5**
Self-drilling screws ESDS-0-P 4.8xL with hexagon head and washer A14	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,55	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,60	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,63	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,70	1,28	1,28	1,28	1,47	1,47	1,47	1,47	1,47	1,47	
	0,75	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,80	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	0,88	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,41	
	1,00	1,28	1,28	1,28	1,47	1,47	2,41	2,41	2,41	2,58	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,55	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,60	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,63	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,70	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,75	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,80	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	0,88	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	
	1,00	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,61	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-0-SP 4.8xL
with hexagon head and washer S14

Annex 6

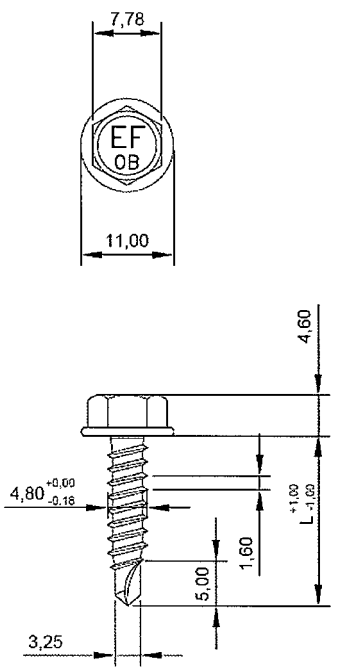
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,60	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,63	1,20	1,20	1,20	1,57	1,57	1,57	1,57	1,57	1,57	
	0,70	1,20	1,20	1,20	1,57	1,57	1,57	1,57	1,57	1,57	
	0,75	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	0,80	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	0,88	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	1,00	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	0,61	
	0,63	0,62	0,62	0,62	0,81	0,81	0,87	0,87	0,87	0,87	
	0,70	0,62	0,62	0,62	0,81	0,81	0,87	0,87	0,87	0,87	
	0,75	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	0,97	
	0,80	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	0,97	
	0,88	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	0,97	
	1,00	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	0,97	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

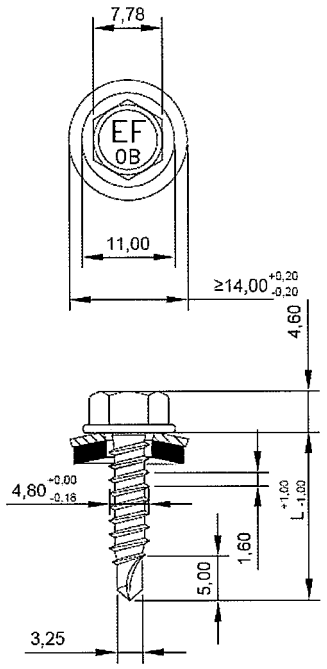
Fastening screws for metal members and sheeting	**Annex 7**
Self-drilling screws ESDS-0-B 4.8xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,60	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,63	1,20	1,20	1,20	1,57	1,57	1,57	1,57	1,57	1,57	
	0,70	1,20	1,20	1,20	1,57	1,57	1,57	1,57	1,57	1,57	
	0,75	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	0,80	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	0,88	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	1,00	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	
	0,55	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	
	0,60	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	
	0,63	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	
	0,70	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	
	0,75	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	
	0,80	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	
	0,88	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	
	1,00	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-0-B 4.8xL
with hexagon head and washer S14

Annex 8

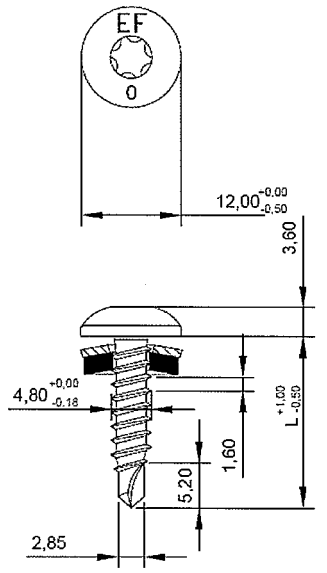
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z11 – galvanized carbon steel washer with EPDM ring
	Z12 – galvanized carbon steel washer with EPDM ring
	A11 – aluminum washer with EPDM ring
	A12 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,55	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,60	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,63	1,28	1,28	1,28	1,56	1,56	1,56	1,56	1,56	1,56	
	0,70	1,28	1,28	1,28	1,56	1,56	1,56	1,56	1,56	1,56	
	0,75	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	
	0,80	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	
	0,88	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	
	1,00	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,95	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,66	0,66	0,66	0,70	0,70	0,70	0,70	0,70	0,70	
	0,55	0,66	0,66	0,66	0,70	0,70	0,70	0,70	0,70	0,70	
	0,60	0,66	0,66	0,66	0,70	0,70	0,70	0,70	0,70	0,70	
	0,63	0,66	0,66	0,66	0,79	0,79	0,79	0,79	0,79	0,79	
	0,70	0,66	0,66	0,66	0,79	0,79	0,79	0,79	0,79	0,79	
	0,75	0,66	0,66	0,66	0,94	0,94	1,05	1,05	1,05	1,05	
	0,80	0,66	0,66	0,66	0,94	0,94	1,05	1,05	1,05	1,05	
	0,88	0,66	0,66	0,66	0,94	0,94	1,05	1,05	1,05	1,05	
	1,00	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,40	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-0-Z 4.8xL
with pan head and washer A11, A12, Z11 or Z12

Annex 9

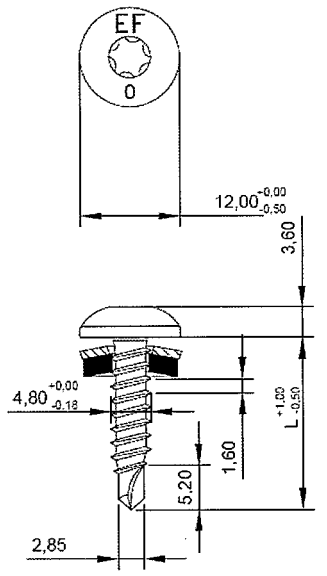
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A11 – aluminum washer with EPDM ring
	A12 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,55	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,60	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	
	0,63	1,28	1,28	1,28	1,56	1,56	1,56	1,56	1,56	1,56	
	0,70	1,28	1,28	1,28	1,56	1,56	1,56	1,56	1,56	1,56	
	0,75	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	
	0,80	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	
	0,88	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	
	1,00	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,95	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,66	0,66	0,66	0,70	0,70	0,70	0,70	0,70	0,70	
	0,55	0,66	0,66	0,66	0,70	0,70	0,70	0,70	0,70	0,70	
	0,60	0,66	0,66	0,66	0,70	0,70	0,70	0,70	0,70	0,70	
	0,63	0,66	0,66	0,66	0,79	0,79	0,79	0,79	0,79	0,79	
	0,70	0,66	0,66	0,66	0,79	0,79	0,79	0,79	0,79	0,79	
	0,75	0,66	0,66	0,66	0,94	0,94	1,05	1,05	1,05	1,05	
	0,80	0,66	0,66	0,66	0,94	0,94	1,05	1,05	1,05	1,05	
	0,88	0,66	0,66	0,66	0,94	0,94	1,05	1,05	1,05	1,05	
	1,00	0,66	0,66	0,66	0,94	0,94	1,09	1,09	1,09	1,40	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-0-P 4.8xL
with pan head and washer A11 or A12

Annex 10

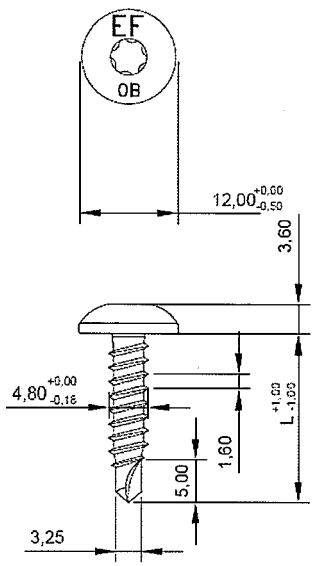
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	stainless steel – SAE302HQ (bi-metal)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,60	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,63	1,20	1,20	1,20	1,57	1,57	1,57	1,57	1,57	1,57	
	0,70	1,20	1,20	1,20	1,57	1,57	1,57	1,57	1,57	1,57	
	0,75	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	0,80	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	0,88	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	1,00	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	0,97	
	0,55	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	0,97	
	0,60	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	0,97	
	0,63	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,17	
	0,70	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,17	
	0,75	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,35	
	0,80	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,35	
	0,88	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,35	
	1,00	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,38	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-0-B 4.8xL
with pan head

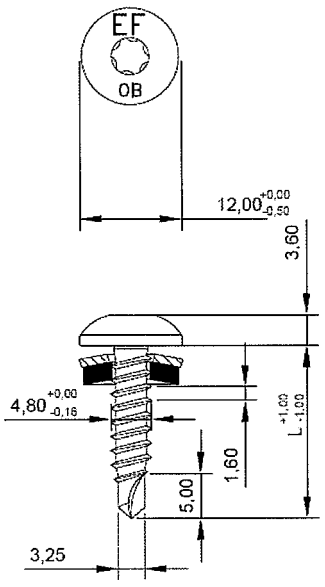
Annex 11

of European
Technical Assessment
ETA-16/0739

Materials	
Fastener:	stainless steel – SAE302HQ (bi-metal)
Washer:	S11 – stainless steel washer with EPDM ring
	S12 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,60	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,63	1,20	1,20	1,20	1,57	1,57	1,57	1,57	1,57	1,57	
	0,70	1,20	1,20	1,20	1,57	1,57	1,57	1,57	1,57	1,57	
	0,75	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	0,80	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	0,88	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,31	
	1,00	1,20	1,20	1,20	1,57	1,57	2,31	2,31	2,31	2,75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	0,97	
	0,55	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	0,97	
	0,60	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	0,97	
	0,63	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,17	
	0,70	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,17	
	0,75	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,35	
	0,80	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,35	
	0,88	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,35	
	1,00	0,50	0,50	0,50	0,62	0,62	0,76	0,76	0,76	1,38	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-0-B 4.8xL
with pan head and washer S11 or S12

Annex 12

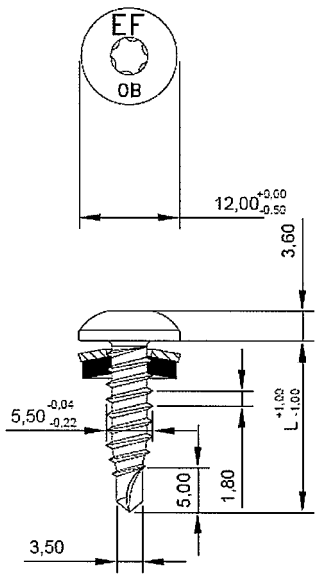
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	stainless steel – SAE302HQ (bi-metal)
Washer:	S11 – stainless steel washer with EPDM ring
	S12 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	
	0,63	1,49	1,49	1,49	1,84	1,84	1,84	1,84	1,84	1,84	
	0,70	1,49	1,49	1,49	1,84	1,84	1,84	1,84	1,84	1,84	
	0,75	1,49	1,49	1,49	1,84	1,84	2,42	2,42	2,42	2,42	
	0,80	1,49	1,49	1,49	1,84	1,84	2,42	2,42	2,42	2,42	
	0,88	1,49	1,49	1,49	1,84	1,84	2,42	2,42	2,42	2,42	
	1,00	1,49	1,49	1,49	1,84	1,84	2,42	2,42	2,42	2,82	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,75	0,75	0,97	0,97	0,97	0,97	
	0,55	0,61	0,61	0,61	0,75	0,75	0,97	0,97	0,97	0,97	
	0,60	0,61	0,61	0,61	0,75	0,75	0,97	0,97	0,97	0,97	
	0,63	0,61	0,61	0,61	0,75	0,75	1,11	1,11	1,11	1,17	
	0,70	0,61	0,61	0,61	0,75	0,75	1,11	1,11	1,11	1,17	
	0,75	0,61	0,61	0,61	0,75	0,75	1,11	1,11	1,11	1,35	
	0,80	0,61	0,61	0,61	0,75	0,75	1,11	1,11	1,11	1,35	
	0,88	0,61	0,61	0,61	0,75	0,75	1,11	1,11	1,11	1,35	
	1,00	0,61	0,61	0,61	0,75	0,75	1,11	1,11	1,11	1,43	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-0-B 5.5xL
with pan head and washer S11 or S12

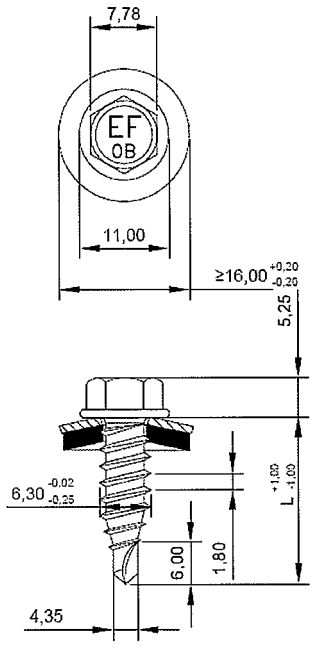
Annex 13

of European
Technical Assessment
ETA-16/0739

Materials	
Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 2 \times 1{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,72	1,72	1,72	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,72	1,72	1,72	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	1,72	1,72	1,72	1,90	1,90	2,69	2,69	2,69	2,69	
	0,80	1,72	1,72	1,72	1,90	1,90	2,69	2,69	2,69	2,69	
	0,88	1,72	1,72	1,72	1,90	1,90	2,69	2,69	2,69	2,69	
	1,00	1,72	1,72	1,72	1,90	1,90	2,69	2,69	2,69	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,77	0,77	1,11	1,11	1,11	1,50	
	0,55	0,61	0,61	0,61	0,77	0,77	1,11	1,11	1,11	1,50	
	0,60	0,61	0,61	0,61	0,77	0,77	1,11	1,11	1,11	1,50	
	0,63	0,61	0,61	0,61	0,77	0,77	1,11	1,11	1,11	1,50	
	0,70	0,61	0,61	0,61	0,77	0,77	1,11	1,11	1,11	1,50	
	0,75	0,61	0,61	0,61	0,77	0,77	1,11	1,11	1,11	1,50	
	0,80	0,61	0,61	0,61	0,77	0,77	1,11	1,11	1,11	1,50	
	0,88	0,61	0,61	0,61	0,77	0,77	1,11	1,11	1,11	1,50	
	1,00	0,61	0,61	0,61	0,77	0,77	1,11	1,11	1,11	1,50	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 14**
Self-drilling screws ESDS-0-B 6.3xL with hexagon head and washer S16	of European Technical Assessment ETA-16/0739

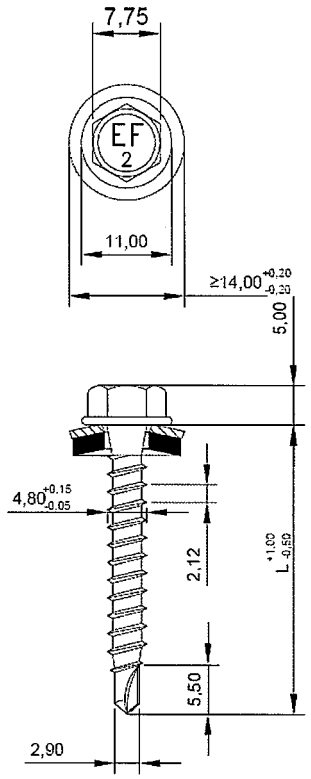
Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z14 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

For timber structures performance assessed with::

$M_{y,Rk} = 4{,}39$ Nm
$f_{ax,k} = 13{,}346$ N/mm^2 for $l_{ef} \geq 19{,}2$ mm



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,55	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,60	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,63	1,92	1,92	1,92	2,15	2,15	2,15	2,15	2,15	2,15	2,15
	0,70	1,92	1,92	1,92	2,15	2,15	2,15	2,15	2,15	2,15	2,15
	0,75	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	0,80	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	0,88	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	1,00	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,55	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,60	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,63	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,70	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,75	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,80	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,88	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	1,00	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws EFS-2-Z 4.8xL
with hexagon head and washer Z14

Annex 15

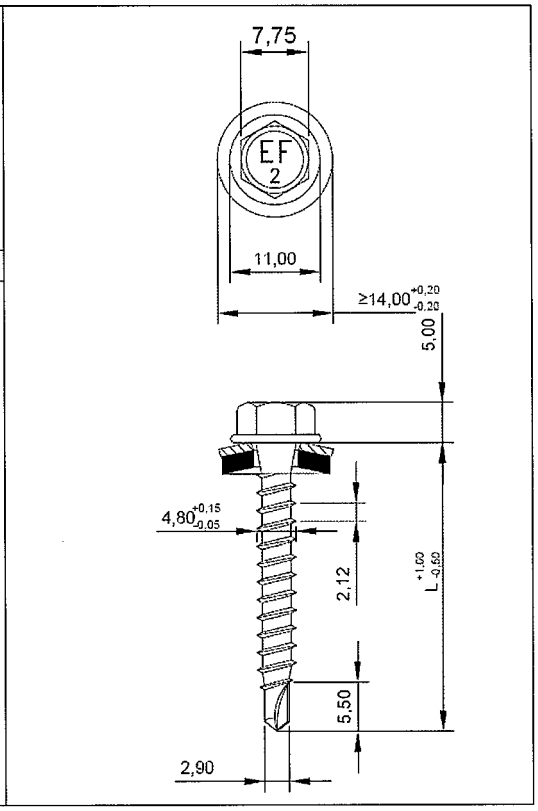
of European
Technical Assessment
ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk} = 4{,}39$ Nm
$f_{ax,k} = 13{,}346$ N/mm^2 for $l_{ef} \geq 19{,}2$ mm



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,55	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,60	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,63	1,92	1,92	1,92	2,15	2,15	2,15	2,15	2,15	2,15	2,15
	0,70	1,92	1,92	1,92	2,15	2,15	2,15	2,15	2,15	2,15	2,15
	0,75	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	0,80	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	0,88	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	1,00	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,55	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,60	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,63	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,70	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,75	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,80	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,88	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	1,00	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 16**
Self-drilling screws EFS-2-P 4.8xL with hexagon head and washer A14	of European Technical Assessment ETA-16/0739

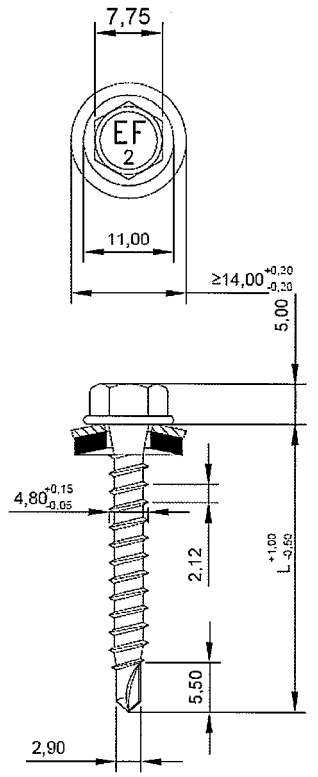
Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk} = 4{,}39$ Nm
$f_{ax,k} = 13{,}346$ N/mm^2 for $l_{ef} \geq 19{,}2$ mm



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,55	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,60	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,63	1,92	1,92	1,92	2,15	2,15	2,15	2,15	2,15	2,15	2,15
	0,70	1,92	1,92	1,92	2,15	2,15	2,15	2,15	2,15	2,15	2,15
	0,75	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	0,80	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	0,88	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	1,00	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,55	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,60	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,63	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,70	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,75	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,80	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	0,88	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13
	1,00	0,61	0,61	0,61	0,80	0,80	0,98	0,98	0,98	1,59	1,13

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws EFS-2-SP 4.8xL
with hexagon head and washer S14

Annex 17

of European
Technical Assessment
ETA-16/0739

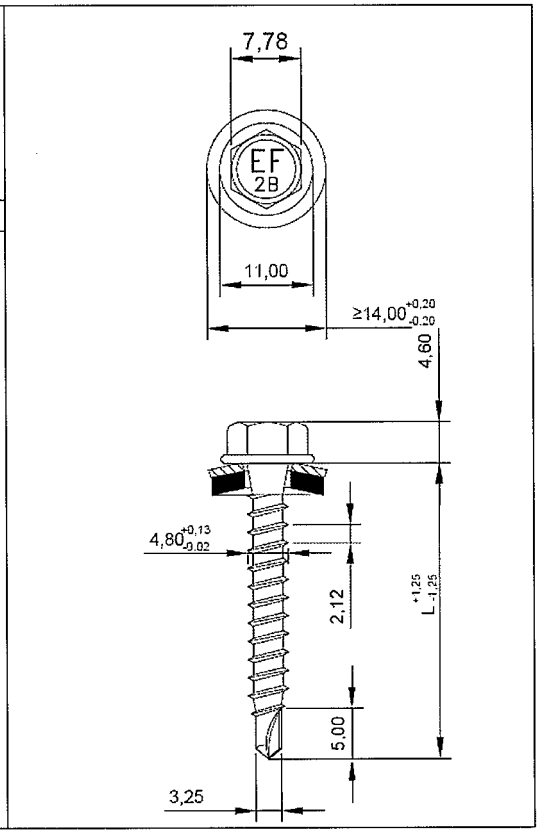
Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk} = 4{,}39$ Nm
$f_{ax,k} = 13{,}346$ N/mm^2 for $l_{ef} \geq 19{,}2$ mm



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,55	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,60	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92	1,92
	0,63	1,92	1,92	1,92	2,15	2,15	2,15	2,15	2,15	2,15	2,15
	0,70	1,92	1,92	1,92	2,15	2,15	2,15	2,15	2,15	2,15	2,15
	0,75	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	0,80	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	0,88	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
	1,00	1,92	1,92	1,92	2,15	2,15	3,52	3,52	3,52	3,52	3,52
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	1,35
	0,55	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	1,35
	0,60	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	1,35
	0,63	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	1,35
	0,70	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	1,35
	0,75	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	1,35
	0,80	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	1,35
	0,88	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	1,35
	1,00	0,62	0,62	0,62	0,81	0,81	0,92	0,92	0,92	1,67	1,35

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws EFS-2-B 4.8xL
with hexagon head and washer S14

Annex 18

of European
Technical Assessment
ETA-16/0739

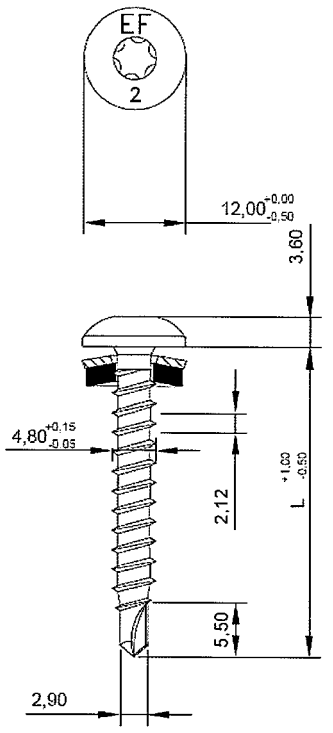
Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z11 – galvanized carbon steel washer with EPDM ring
	Z12 – galvanized carbon steel washer with EPDM ring
	A11 – aluminum washer with EPDM ring
	A12 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk} = 4{,}39$ Nm
$f_{ax,k} = 13{,}346$ N/mm² for $l_{ef} \geq 19{,}2$ mm



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28
	0,55	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28
	0,60	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28
	0,63	1,28	1,28	1,28	1,56	1,56	1,56	1,56	1,56	1,56	1,56
	0,70	1,28	1,28	1,28	1,56	1,56	1,56	1,56	1,56	1,56	1,56
	0,75	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	2,30
	0,80	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	2,30
	0,88	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	2,30
	1,00	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,95	2,95
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	1,23
	0,55	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	1,23
	0,60	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	1,23
	0,63	0,75	0,75	0,75	0,79	0,79	0,79	0,79	0,79	0,79	1,23
	0,70	0,75	0,75	0,75	0,79	0,79	0,79	0,79	0,79	0,79	1,23
	0,75	0,75	0,75	0,75	0,92	0,92	1,05	1,05	1,05	1,05	1,23
	0,80	0,75	0,75	0,75	0,92	0,92	1,05	1,05	1,05	1,05	1,23
	0,88	0,75	0,75	0,75	0,92	0,92	1,05	1,05	1,05	1,05	1,23
	1,00	0,75	0,75	0,75	0,92	0,92	1,27	1,27	1,27	1,40	1,23

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws EFS-PH-2-Z 4.8xL
with pan head and washer A11, A12, Z11 or Z12

Annex 19

of European
Technical Assessment
ETA-16/0739

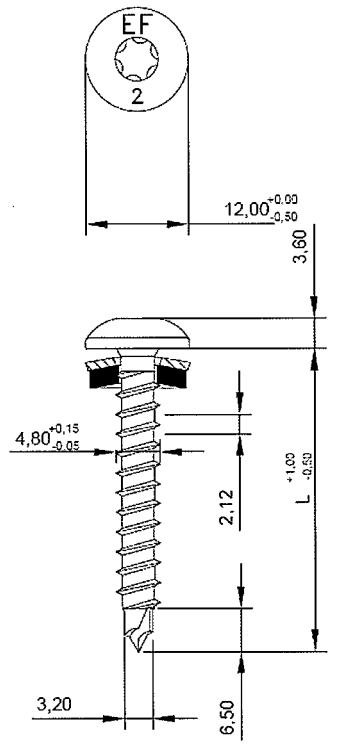
Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A11 – aluminum washer with EPDM ring A12 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}00$ mm

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk} = 4{,}39$ Nm
$f_{ax,k} = 13{,}346$ N/mm² for $l_{ef} \geq 19{,}2$ mm



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	1,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28
	0,55	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28
	0,60	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28	1,28
	0,63	1,28	1,28	1,28	1,56	1,56	1,56	1,56	1,56	1,56	1,56
	0,70	1,28	1,28	1,28	1,56	1,56	1,56	1,56	1,56	1,56	1,56
	0,75	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	2,30
	0,80	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	2,30
	0,88	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,30	2,30
	1,00	1,28	1,28	1,28	1,56	1,56	2,30	2,30	2,30	2,95	2,95
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	1,23
	0,55	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	1,23
	0,60	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	1,23
	0,63	0,75	0,75	0,75	0,79	0,79	0,79	0,79	0,79	0,79	1,23
	0,70	0,75	0,75	0,75	0,79	0,79	0,79	0,79	0,79	0,79	1,23
	0,75	0,75	0,75	0,75	0,92	0,92	1,05	1,05	1,05	1,05	1,23
	0,80	0,75	0,75	0,75	0,92	0,92	1,05	1,05	1,05	1,05	1,23
	0,88	0,75	0,75	0,75	0,92	0,92	1,05	1,05	1,05	1,05	1,23
	1,00	0,75	0,75	0,75	0,92	0,92	1,27	1,27	1,27	1,40	1,23

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws EFS-PH-2-P 4.8xL
with pan head and washer A11 or A12

Annex 20

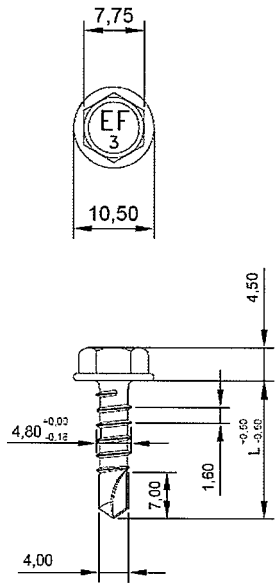
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	
	0,63	0,80	0,80	0,80	0,80	
	0,70	0,80	0,80	0,80	0,80	
	0,75	0,96	0,96	0,96	0,96	
	0,80	0,96	0,96	0,96	0,96	
	0,88	0,96	0,96	0,96	0,96	
	1,00	0,97	0,97	0,97	0,97	
	1,13	0,97	0,97	0,97	—	
	1,15	0,97	0,97	0,97	—	
	1,25	0,97	0,97	0,97	—	
	1,50	0,97	0,97	0,97	—	
	1,75	0,97	0,97	—	—	
	2,00	0,97	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-Z 4.8xL
with hexagon head

Annex 21

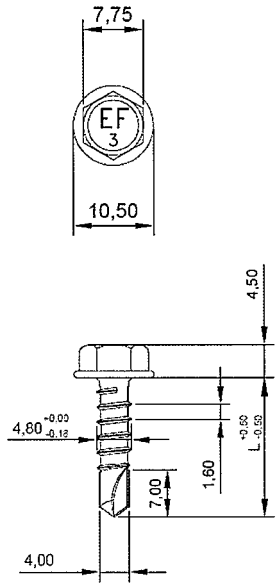
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	
	0,63	0,80	0,80	0,80	0,80	
	0,70	0,80	0,80	0,80	0,80	
	0,75	0,96	0,96	0,96	0,96	
	0,80	0,96	0,96	0,96	0,96	
	0,88	0,96	0,96	0,96	0,96	
	1,00	0,97	0,97	0,97	0,97	
	1,13	0,97	0,97	0,97	—	
	1,15	0,97	0,97	0,97	—	
	1,25	0,97	0,97	0,97	—	
	1,50	0,97	0,97	0,97	—	
	1,75	0,97	0,97	—	—	
	2,00	0,97	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

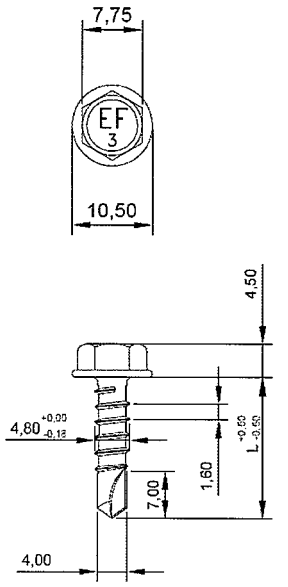
Fastening screws for metal members and sheeting	**Annex 22**
Self-drilling screws ESDS-3-P 4.8xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	
	0,63	0,80	0,80	0,80	0,80	
	0,70	0,80	0,80	0,80	0,80	
	0,75	0,96	0,96	0,96	0,96	
	0,80	0,96	0,96	0,96	0,96	
	0,88	0,96	0,96	0,96	0,96	
	1,00	0,97	0,97	0,97	0,97	
	1,13	0,97	0,97	0,97	—	
	1,15	0,97	0,97	0,97	—	
	1,25	0,97	0,97	0,97	—	
	1,50	0,97	0,97	0,97	—	
	1,75	0,97	0,97	—	—	
	2,00	0,97	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-SP 4.8xL with hexagon head

Annex 23

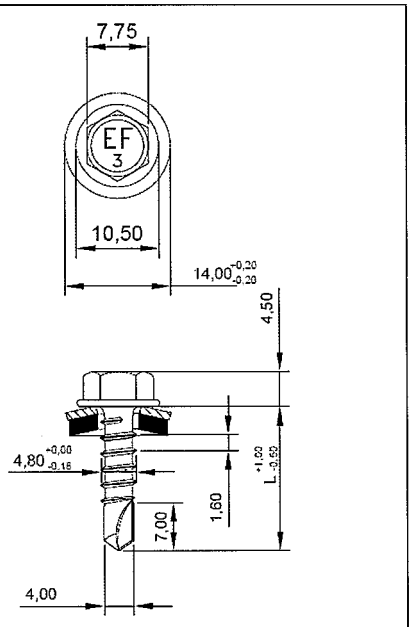
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z14 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,16	1,16	2,03	2,54	
	0,55	1,16	1,16	2,03	2,54	
	0,60	1,16	1,16	2,03	2,54	
	0,63	1,16	1,16	2,03	3,10	
	0,70	1,16	1,16	2,03	3,10	
	0,75	1,16	1,16	2,03	3,10	
	0,80	1,16	1,16	2,03	3,10	
	0,88	1,16	1,16	2,03	3,10	
	1,00	1,16	1,16	2,03	3,10	
	1,13	1,16	1,16	2,03	—	
	1,15	1,16	1,16	2,03	—	
	1,25	1,16	1,16	2,03	—	
	1,50	1,16	1,16	2,03	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-Z 4.8xL
with hexagon head and washer Z14

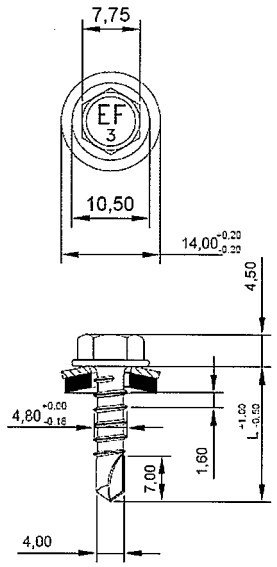
Annex 24

of European
Technical Assessment
ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,16	1,16	2,03	2,54	
	0,55	1,16	1,16	2,03	2,54	
	0,60	1,16	1,16	2,03	2,54	
	0,63	1,16	1,16	2,03	3,10	
	0,70	1,16	1,16	2,03	3,10	
	0,75	1,16	1,16	2,03	3,10	
	0,80	1,16	1,16	2,03	3,10	
	0,88	1,16	1,16	2,03	3,10	
	1,00	1,16	1,16	2,03	3,10	
	1,13	1,16	1,16	2,03	—	
	1,15	1,16	1,16	2,03	—	
	1,25	1,16	1,16	2,03	—	
	1,50	1,16	1,16	2,03	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

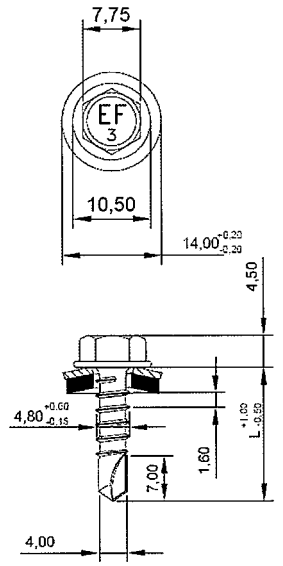
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-P 4.8xL
with hexagon head and washer A14

Annex 25

of European
Technical Assessment
ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 3{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,16	1,16	2,03	2,54	
	0,55	1,16	1,16	2,03	2,54	
	0,60	1,16	1,16	2,03	2,54	
	0,63	1,16	1,16	2,03	3,10	
	0,70	1,16	1,16	2,03	3,10	
	0,75	1,16	1,16	2,03	3,10	
	0,80	1,16	1,16	2,03	3,10	
	0,88	1,16	1,16	2,03	3,10	
	1,00	1,16	1,16	2,03	3,10	
	1,13	1,16	1,16	2,03	—	
	1,15	1,16	1,16	2,03	—	
	1,25	1,16	1,16	2,03	—	
	1,50	1,16	1,16	2,03	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

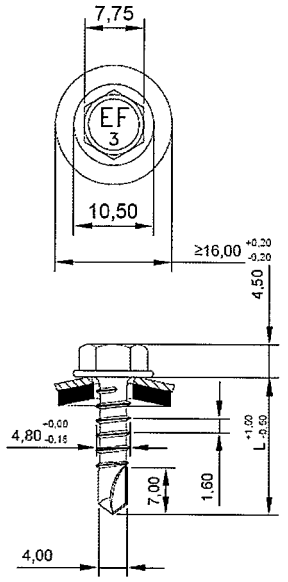
Fastening screws for metal members and sheeting	**Annex 26**
Self-drilling screws ESDS-3-SP 4.8xL with hexagon head and washer S14	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,16	1,16	2,03	2,53	
	0,55	1,16	1,16	2,03	2,53	
	0,60	1,16	1,16	2,03	2,77	
	0,63	1,16	1,16	2,03	2,77	
	0,70	1,16	1,16	2,03	2,89	
	0,75	1,16	1,16	2,03	2,89	
	0,80	1,16	1,16	2,03	2,89	
	0,88	1,16	1,16	2,03	2,89	
	1,00	1,16	1,16	2,03	3,10	
	1,13	1,16	1,16	2,03	—	
	1,15	1,16	1,16	2,03	—	
	1,25	1,16	1,16	2,03	—	
	1,50	1,16	1,16	2,03	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-Z 4.8xL
with hexagon head and washer Z16

Annex 27

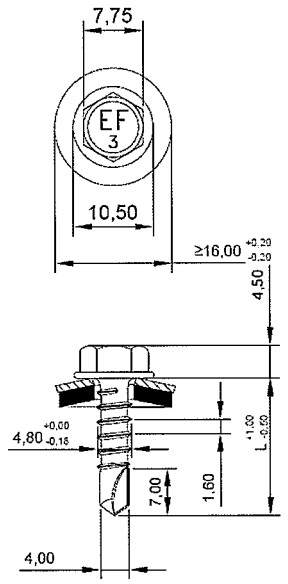
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,16	1,16	2,03	2,53	
	0,55	1,16	1,16	2,03	2,53	
	0,60	1,16	1,16	2,03	2,77	
	0,63	1,16	1,16	2,03	2,77	
	0,70	1,16	1,16	2,03	2,89	
	0,75	1,16	1,16	2,03	2,89	
	0,80	1,16	1,16	2,03	2,89	
	0,88	1,16	1,16	2,03	2,89	
	1,00	1,16	1,16	2,03	3,10	
	1,13	1,16	1,16	2,03	—	
	1,15	1,16	1,16	2,03	—	
	1,25	1,16	1,16	2,03	—	
	1,50	1,16	1,16	2,03	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-P 4.8xL
with hexagon head and washer A16

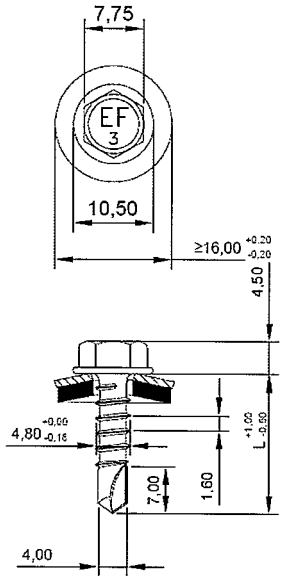
Annex 28

of European
Technical Assessment
ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,16	1,16	2,03	2,53	
	0,55	1,16	1,16	2,03	2,53	
	0,60	1,16	1,16	2,03	2,77	
	0,63	1,16	1,16	2,03	2,77	
	0,70	1,16	1,16	2,03	2,89	
	0,75	1,16	1,16	2,03	2,89	
	0,80	1,16	1,16	2,03	2,89	
	0,88	1,16	1,16	2,03	2,89	
	1,00	1,16	1,16	2,03	3,10	
	1,13	1,16	1,16	2,03	—	
	1,15	1,16	1,16	2,03	—	
	1,25	1,16	1,16	2,03	—	
	1,50	1,16	1,16	2,03	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

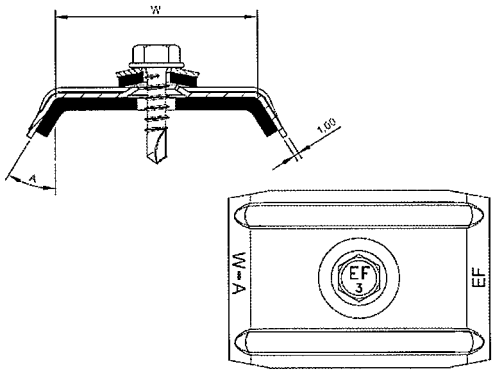
Fastening screws for metal members and sheeting	**Annex 29**
Self-drilling screws ESDS-3-SP 4.8xL with hexagon head and washer S16	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,16	1,16	2,03	3,10	
	0,55	1,16	1,16	2,03	3,10	
	0,60	1,16	1,16	2,03	3,10	
	0,63	1,16	1,16	2,03	3,10	
	0,70	1,16	1,16	2,03	3,10	
	0,75	1,16	1,16	2,03	3,10	
	0,80	1,16	1,16	2,03	3,10	
	0,88	1,16	1,16	2,03	3,10	
	1,00	1,16	1,16	2,03	3,10	
	1,13	1,16	1,16	2,03	—	
	1,15	1,16	1,16	2,03	—	
	1,25	1,16	1,16	2,03	—	
	1,50	1,16	1,16	2,03	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

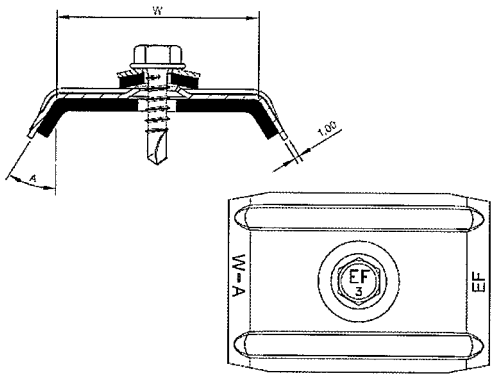
Fastening screws for metal members and sheeting	**Annex 30**
Self-drilling screws ESDS-3-Z 4.8xL with hexagon head and washer Z16 and saddle washer ESW	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,16	1,16	2,03	3,10	
	0,55	1,16	1,16	2,03	3,10	
	0,60	1,16	1,16	2,03	3,10	
	0,63	1,16	1,16	2,03	3,10	
	0,70	1,16	1,16	2,03	3,10	
	0,75	1,16	1,16	2,03	3,10	
	0,80	1,16	1,16	2,03	3,10	
	0,88	1,16	1,16	2,03	3,10	
	1,00	1,16	1,16	2,03	3,10	
	1,13	1,16	1,16	2,03	—	
	1,15	1,16	1,16	2,03	—	
	1,25	1,16	1,16	2,03	—	
	1,50	1,16	1,16	2,03	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-P 4.8xL
with hexagon head and washer A16 and saddle washer ESW

Annex 31

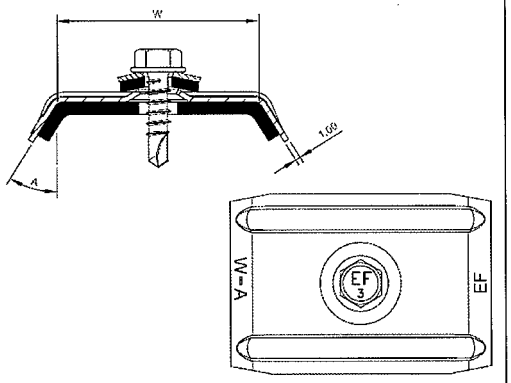
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,16	1,16	2,03	3,10	
	0,55	1,16	1,16	2,03	3,10	
	0,60	1,16	1,16	2,03	3,10	
	0,63	1,16	1,16	2,03	3,10	
	0,70	1,16	1,16	2,03	3,10	
	0,75	1,16	1,16	2,03	3,10	
	0,80	1,16	1,16	2,03	3,10	
	0,88	1,16	1,16	2,03	3,10	
	1,00	1,16	1,16	2,03	3,10	
	1,13	1,16	1,16	2,03	—	
	1,15	1,16	1,16	2,03	—	
	1,25	1,16	1,16	2,03	—	
	1,50	1,16	1,16	2,03	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

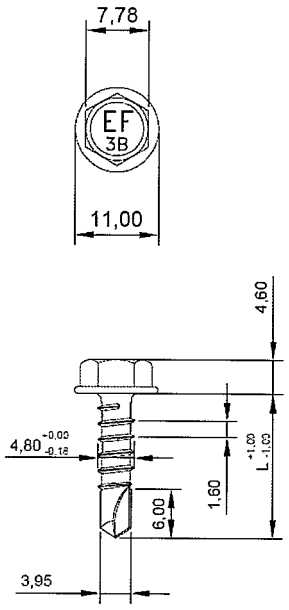
Fastening screws for metal members and sheeting	**Annex 32**
Self-drilling screws ESDS-3-SP 4.8xL with hexagon head and washer S16 and saddle washer ESW	of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,20	1,20	1,20	1,20	
	0,55	1,20	1,20	1,20	1,20	
	0,60	1,20	1,20	1,20	1,20	
	0,63	1,57	1,57	1,57	1,57	
	0,70	1,57	1,57	1,57	1,57	
	0,75	2,31	2,31	2,31	2,31	
	0,80	2,31	2,31	2,31	2,31	
	0,88	2,31	2,31	2,31	2,31	
	1,00	2,75	2,75	2,75	2,75	
	1,13	2,75	2,75	2,75	—	
	1,15	2,75	2,75	2,75	—	
	1,25	2,75	2,75	2,75	—	
	1,50	2,75	2,75	2,75	—	
	1,75	2,75	2,75	—	—	
	2,00	2,75	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	
	0,63	0,87	0,87	0,87	0,87	
	0,70	0,87	0,87	0,87	0,87	
	0,75	0,96	0,96	0,97	0,97	
	0,80	0,96	0,96	0,97	0,97	
	0,88	0,97	0,97	0,97	0,97	
	1,00	0,97	0,97	0,97	0,97	
	1,13	0,97	0,97	0,97	—	
	1,15	0,97	0,97	0,97	—	
	1,25	0,97	0,97	0,97	—	
	1,50	0,97	0,97	0,97	—	
	1,75	0,97	0,97	—	—	
	2,00	0,97	—	—	—	

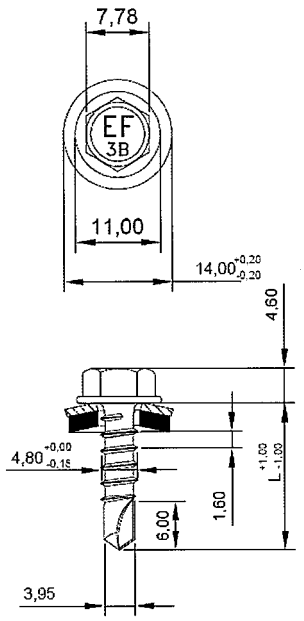
If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 33**
Self-drilling screws ESDS-3-B 4.8xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,20	1,20	1,20	1,20	
	0,55	1,20	1,20	1,20	1,20	
	0,60	1,20	1,20	1,20	1,20	
	0,63	1,57	1,57	1,57	1,57	
	0,70	1,57	1,57	1,57	1,57	
	0,75	2,31	2,31	2,31	2,31	
	0,80	2,31	2,31	2,31	2,31	
	0,88	2,31	2,31	2,31	2,31	
	1,00	2,75	2,75	2,75	2,75	
	1,13	2,75	2,75	2,75	—	
	1,15	2,75	2,75	2,75	—	
	1,25	2,75	2,75	2,75	—	
	1,50	2,75	2,75	2,75	—	
	1,75	2,75	2,75	—	—	
	2,00	2,75	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,96	0,96	1,80	2,62	
	0,55	0,96	0,96	1,80	2,62	
	0,60	0,96	0,96	1,80	2,62	
	0,63	0,96	0,96	1,80	2,76	
	0,70	0,96	0,96	1,80	2,76	
	0,75	0,96	0,96	1,80	2,76	
	0,80	0,96	0,96	1,80	2,76	
	0,88	0,96	0,96	1,80	2,76	
	1,00	0,96	0,96	1,80	2,76	
	1,13	0,96	0,96	1,80	—	
	1,15	0,96	0,96	1,80	—	
	1,25	0,96	0,96	1,80	—	
	1,50	0,96	0,96	1,80	—	
	1,75	0,96	0,96	—	—	
	2,00	0,96	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

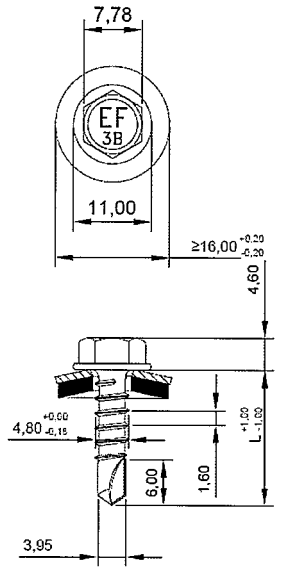
Fastening screws for metal members and sheeting	**Annex 34** of European Technical Assessment ETA-16/0739
Self-drilling screws ESDS-3-B 4.8xL with hexagon head and washer S14	

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,20	1,20	1,20	1,20	
	0,55	1,20	1,20	1,20	1,20	
	0,60	1,20	1,20	1,20	1,20	
	0,63	1,57	1,57	1,57	1,57	
	0,70	1,57	1,57	1,57	1,57	
	0,75	2,31	2,31	2,31	2,31	
	0,80	2,31	2,31	2,31	2,31	
	0,88	2,31	2,31	2,31	2,31	
	1,00	2,75	2,75	2,75	2,75	
	1,13	2,75	2,75	2,75	—	
	1,15	2,75	2,75	2,75	—	
	1,25	2,75	2,75	2,75	—	
	1,50	2,75	2,75	2,75	—	
	1,75	2,75	2,75	—	—	
	2,00	2,75	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,96	0,96	1,80	2,76	
	0,55	0,96	0,96	1,80	2,76	
	0,60	0,96	0,96	1,80	2,76	
	0,63	0,96	0,96	1,80	2,76	
	0,70	0,96	0,96	1,80	2,76	
	0,75	0,96	0,96	1,80	2,76	
	0,80	0,96	0,96	1,80	2,76	
	0,88	0,96	0,96	1,80	2,76	
	1,00	0,96	0,96	1,80	2,76	
	1,13	0,96	0,96	1,80	—	
	1,15	0,96	0,96	1,80	—	
	1,25	0,96	0,96	1,80	—	
	1,50	0,96	0,96	1,80	—	
	1,75	0,96	0,96	—	—	
	2,00	0,96	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-B 4.8xL
with hexagon head and washer S16

Annex 35

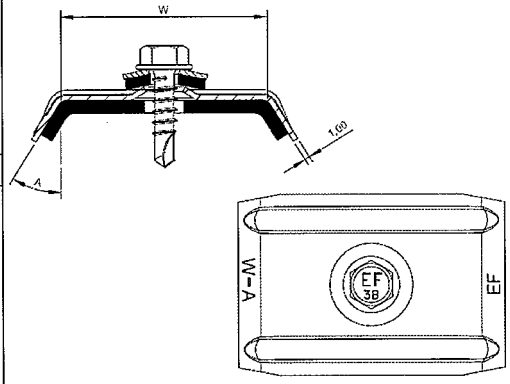
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,20	1,20	1,20	1,20	
	0,55	1,20	1,20	1,20	1,20	
	0,60	1,20	1,20	1,20	1,20	
	0,63	1,57	1,57	1,57	1,57	
	0,70	1,57	1,57	1,57	1,57	
	0,75	2,31	2,31	2,31	2,31	
	0,80	2,31	2,31	2,31	2,31	
	0,88	2,31	2,31	2,31	2,31	
	1,00	2,75	2,75	2,75	2,75	
	1,13	2,75	2,75	2,75	—	
	1,15	2,75	2,75	2,75	—	
	1,25	2,75	2,75	2,75	—	
	1,50	2,75	2,75	2,75	—	
	1,75	2,75	2,75	—	—	
	2,00	2,75	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,96	0,96	1,80	2,76	
	0,55	0,96	0,96	1,80	2,76	
	0,60	0,96	0,96	1,80	2,76	
	0,63	0,96	0,96	1,80	2,76	
	0,70	0,96	0,96	1,80	2,76	
	0,75	0,96	0,96	1,80	2,76	
	0,80	0,96	0,96	1,80	2,76	
	0,88	0,96	0,96	1,80	2,76	
	1,00	0,96	0,96	1,80	2,76	
	1,13	0,96	0,96	1,80	—	
	1,15	0,96	0,96	1,80	—	
	1,25	0,96	0,96	1,80	—	
	1,50	0,96	0,96	1,80	—	
	1,75	0,96	0,96	—	—	
	2,00	0,96	—	—	—	

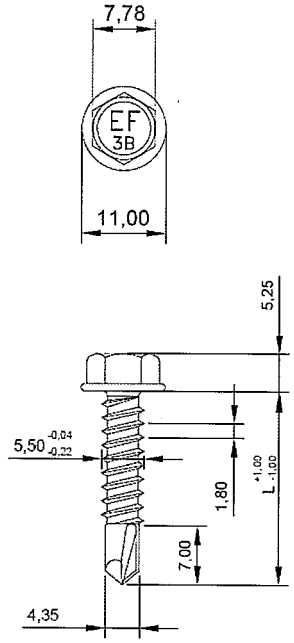
If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 36**
Self-drilling screws ESDS-3-B 4.8xL with hexagon head and washer S16 and saddle washer ESW	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,42	2,42	2,42	2,42	
	0,80	2,42	2,42	2,42	2,42	
	0,88	2,42	2,42	2,42	2,42	
	1,00	2,82	2,82	2,82	2,82	
	1,13	2,82	2,82	2,82	—	
	1,15	2,82	2,82	2,82	—	
	1,25	2,82	2,82	2,82	—	
	1,50	2,82	2,82	2,82	—	
	1,75	2,82	2,82	2,82	—	
	2,00	2,82	2,82	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	
	0,63	0,87	0,87	0,87	0,87	
	0,70	0,87	0,87	0,87	0,87	
	0,75	0,97	0,97	0,97	0,97	
	0,80	0,97	0,97	0,97	0,97	
	0,88	0,97	0,97	0,97	0,97	
	1,00	0,97	0,97	0,97	0,97	
	1,13	0,97	0,97	0,97	—	
	1,15	0,97	0,97	0,97	—	
	1,25	0,97	0,97	0,97	—	
	1,50	0,97	0,97	0,97	—	
	1,75	0,97	0,97	—	—	
	2,00	0,97	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

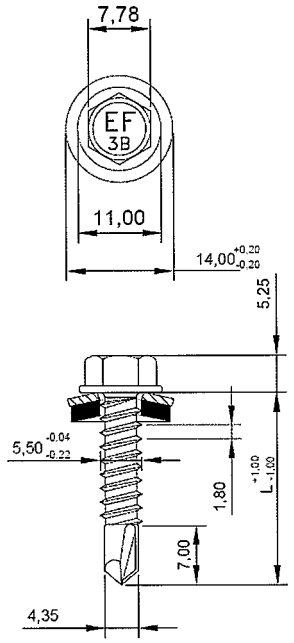
Fastening screws for metal members and sheeting	**Annex 37**
Self-drilling screws ESDS-3-B 5.5xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,42	2,42	2,42	2,42	
	0,80	2,42	2,42	2,42	2,42	
	0,88	2,42	2,42	2,42	2,42	
	1,00	2,82	2,82	2,82	2,82	
	1,13	2,82	2,82	2,82	—	
	1,15	2,82	2,82	2,82	—	
	1,25	2,82	2,82	2,82	—	
	1,50	2,82	2,82	2,82	—	
	1,75	2,82	2,82	—	—	
	2,00	2,82	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,99	0,99	1,82	2,62	
	0,55	0,99	0,99	1,82	2,62	
	0,60	0,99	0,99	1,82	2,62	
	0,63	0,99	0,99	1,82	2,77	
	0,70	0,99	0,99	1,82	2,77	
	0,75	0,99	0,99	1,82	2,77	
	0,80	0,99	0,99	1,82	2,77	
	0,88	0,99	0,99	1,82	2,77	
	1,00	0,99	0,99	1,82	2,77	
	1,13	0,99	0,99	1,82	—	
	1,15	0,99	0,99	1,82	—	
	1,25	0,99	0,99	1,82	—	
	1,50	0,99	0,99	1,82	—	
	1,75	0,99	0,99	—	—	
	2,00	0,99	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-B 5.5xL
with hexagon head and washer S14

Annex 38

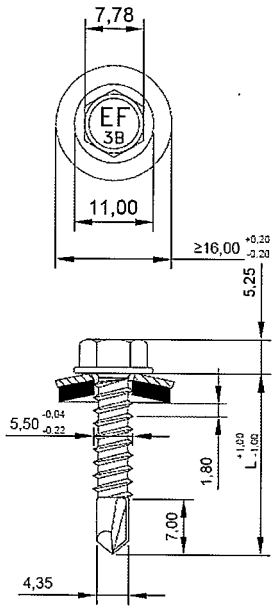
of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,42	2,42	2,42	2,42	
	0,80	2,42	2,42	2,42	2,42	
	0,88	2,42	2,42	2,42	2,42	
	1,00	2,82	2,82	2,82	2,82	
	1,13	2,82	2,82	2,82	—	
	1,15	2,82	2,82	2,82	—	
	1,25	2,82	2,82	2,82	—	
	1,50	2,82	2,82	2,82	—	
	1,75	2,82	2,82	—	—	
	2,00	2,82	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,99	0,99	1,82	2,77	
	0,55	0,99	0,99	1,82	2,77	
	0,60	0,99	0,99	1,82	2,77	
	0,63	0,99	0,99	1,82	2,77	
	0,70	0,99	0,99	1,82	2,77	
	0,75	0,99	0,99	1,82	2,77	
	0,80	0,99	0,99	1,82	2,77	
	0,88	0,99	0,99	1,82	2,77	
	1,00	0,99	0,99	1,82	2,77	
	1,13	0,99	0,99	1,82	—	
	1,15	0,99	0,99	1,82	—	
	1,25	0,99	0,99	1,82	—	
	1,50	0,99	0,99	1,82	—	
	1,75	0,99	0,99	—	—	
	2,00	0,99	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-B 5.5xL
with hexagon head and washer S16

Annex 39

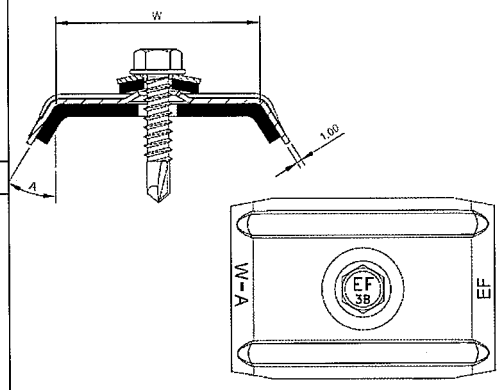
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,42	2,42	2,42	2,42	
	0,80	2,42	2,42	2,42	2,42	
	0,88	2,42	2,42	2,42	2,42	
	1,00	2,82	2,82	2,82	2,82	
	1,13	2,82	2,82	2,82	—	
	1,15	2,82	2,82	2,82	—	
	1,25	2,82	2,82	2,82	—	
	1,50	2,82	2,82	2,82	—	
	1,75	2,82	2,82	—	—	
	2,00	2,82	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,99	0,99	1,82	2,77	
	0,55	0,99	0,99	1,82	2,77	
	0,60	0,99	0,99	1,82	2,77	
	0,63	0,99	0,99	1,82	2,77	
	0,70	0,99	0,99	1,82	2,77	
	0,75	0,99	0,99	1,82	2,77	
	0,80	0,99	0,99	1,82	2,77	
	0,88	0,99	0,99	1,82	2,77	
	1,00	0,99	0,99	1,82	2,77	
	1,13	0,99	0,99	1,82	—	
	1,15	0,99	0,99	1,82	—	
	1,25	0,99	0,99	1,82	—	
	1,50	0,99	0,99	1,82	—	
	1,75	0,99	0,99	—	—	
	2,00	0,99	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-3-B 5.5xL
with hexagon head and washer S16 and saddle washer ESW

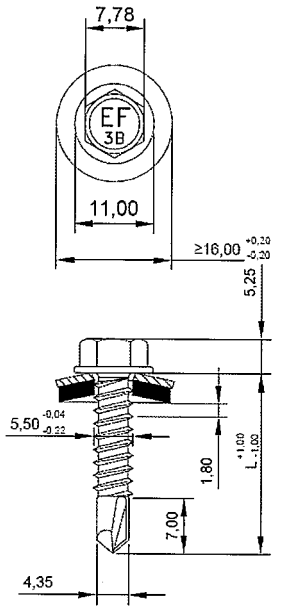
Annex 40
of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	EN AW-1050A – EN 573-3, H14 – EN 485-2
Component II:	EN AW-1050A – EN 573-3, H14 – EN 485-2
Drilling capacity:	$\Sigma ti \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	2,50	3,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	1,50	1,18	1,87	1,87	3,64	
	2,00	1,18	1,87	1,87	3,64	
	2,50	1,18	1,87	1,87	-	
	3,00	1,18	1,87	-	-	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	1,50	1,18	1,87	1,87	3,64	
	2,00	1,18	1,87	1,87	3,64	
	2,50	1,18	1,87	1,87	-	
	3,00	1,18	1,87	-	-	

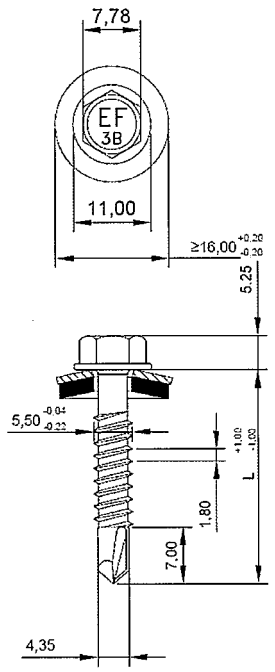
Both components I and II are made of aluminum $R_m \geq 165$ N/mm^2

Fastening screws for metal members and sheeting	**Annex 41**
Self-drilling screws ESDS-3-B 5.5xL with hexagon head and washer S16	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,42	2,42	2,42	2,42	
	0,80	2,42	2,42	2,42	2,42	
	0,88	2,42	2,42	2,42	2,42	
	1,00	2,82	2,82	2,82	2,82	
	1,13	2,82	2,82	2,82	—	
	1,15	2,82	2,82	2,82	—	
	1,25	2,82	2,82	2,82	—	
	1,50	2,82	2,82	2,82	—	
	1,75	2,82	2,82	—	—	
	2,00	2,82	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,99	0,99	1,82	2,77	
	0,55	0,99	0,99	1,82	2,77	
	0,60	0,99	0,99	1,82	2,77	
	0,63	0,99	0,99	1,82	2,77	
	0,70	0,99	0,99	1,82	2,77	
	0,75	0,99	0,99	1,82	2,77	
	0,80	0,99	0,99	1,82	2,77	
	0,88	0,99	0,99	1,82	2,77	
	1,00	0,99	0,99	1,82	2,77	
	1,13	0,99	0,99	1,82	—	
	1,15	0,99	0,99	1,82	—	
	1,25	0,99	0,99	1,82	—	
	1,50	0,99	0,99	1,82	—	
	1,75	0,99	0,99	—	—	
	2,00	0,99	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

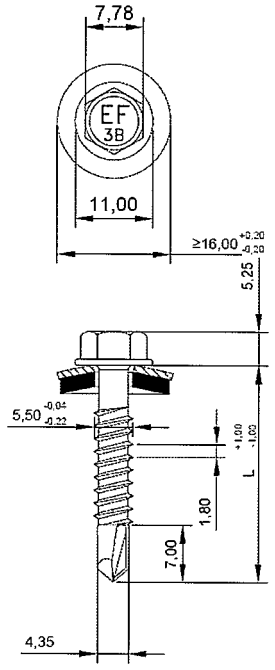
Fastening screws for metal members and sheeting	**Annex 42**
Self-drilling screws EVFS-3-B 5.5xL with hexagon head and washer S16	of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	EN AW-1050A – EN 573-3, H14 – EN 485-2
Component II:	EN AW-1050A – EN 573-3, H14 – EN 485-2
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	2,50	3,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	1,50	1,18	1,87	1,87	3,64	
	2,00	1,18	1,87	1,87	3,64	
	2,50	1,18	1,87	1,87	-	
	3,00	1,18	1,87	-	-	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	1,50	1,18	1,87	1,87	3,64	
	2,00	1,18	1,87	1,87	3,64	
	2,50	1,18	1,87	1,87	-	
	3,00	1,18	1,87	-	-	

Both components I and II are made of aluminum Rm ≥ 165 N/mm^2

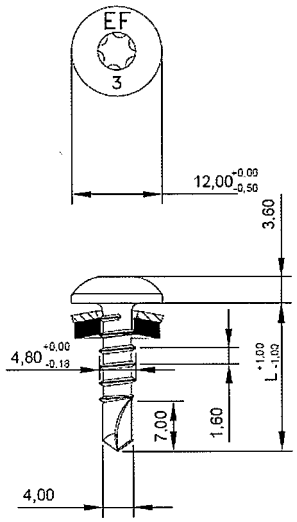
Fastening screws for metal members and sheeting	**Annex 43**
Self-drilling screws EVFS-3-B 5.5xL with hexagon head and washer S16	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z11 – galvanized carbon steel washer with EPDM ring
	Z12 – galvanized carbon steel washer with EPDM ring
	A11 – aluminum washer with EPDM ring
	A12 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,70	0,70	0,70	0,70	
	0,55	0,70	0,70	0,70	0,70	
	0,60	0,70	0,70	0,70	0,70	
	0,63	0,79	0,79	0,79	0,79	
	0,70	0,79	0,79	0,79	0,79	
	0,75	1,05	1,05	1,05	1,05	
	0,80	1,05	1,05	1,05	1,05	
	0,88	1,05	1,05	1,05	1,05	
	1,00	1,16	1,16	1,40	1,40	
	1,13	1,16	1,16	1,40	—	
	1,15	1,16	1,16	1,40	—	
	1,25	1,16	1,16	1,40	—	
	1,50	1,16	1,16	1,40	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-3-Z 4.8xL
with pan head and washer Z11, Z12, A11 or A12

Annex 44

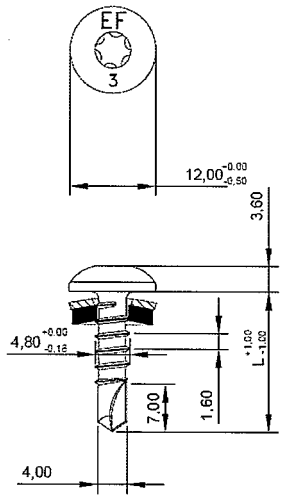
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A11 – aluminum washer with EPDM ring
	A12 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 3{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,00	1,25	1,50	2,00	Wood class ≥ C24
$M_{t,nom}$		4 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,17	1,17	1,17	1,17	
	0,55	1,17	1,17	1,17	1,17	
	0,60	1,17	1,17	1,17	1,17	
	0,63	1,44	1,44	1,44	1,44	
	0,70	1,44	1,44	1,44	1,44	
	0,75	2,27	2,27	2,27	2,27	
	0,80	2,27	2,27	2,27	2,27	
	0,88	2,27	2,27	2,27	2,27	
	1,00	2,64	2,64	2,64	2,64	
	1,13	2,64	2,64	2,64	—	
	1,15	2,64	2,64	2,64	—	
	1,25	2,64	2,64	2,64	—	
	1,50	2,64	2,64	2,64	—	
	1,75	2,64	2,64	—	—	
	2,00	2,64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,70	0,70	0,70	0,70	
	0,55	0,70	0,70	0,70	0,70	
	0,60	0,70	0,70	0,70	0,70	
	0,63	0,79	0,79	0,79	0,79	
	0,70	0,79	0,79	0,79	0,79	
	0,75	1,05	1,05	1,05	1,05	
	0,80	1,05	1,05	1,05	1,05	
	0,88	1,05	1,05	1,05	1,05	
	1,00	1,16	1,16	1,40	1,40	
	1,13	1,16	1,16	1,40	—	
	1,15	1,16	1,16	1,40	—	
	1,25	1,16	1,16	1,40	—	
	1,50	1,16	1,16	1,40	—	
	1,75	1,16	1,16	—	—	
	2,00	1,16	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-3-P 4.8xL
with pan head and washer A11 or A12

Annex 45

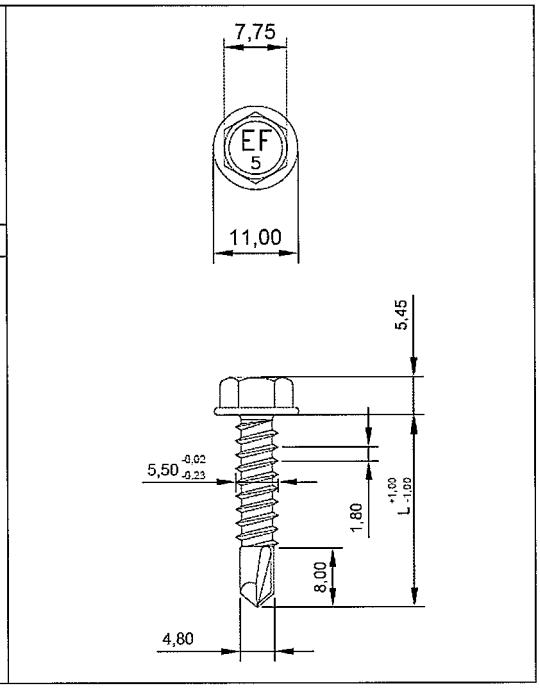
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 5,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	—	
	1,15	1,31	1,31	1,31	—	
	1,25	1,31	1,31	1,31	—	
	1,50	1,31	1,31	1,31	—	
	1,75	1,31	1,31	1,31	—	
	2,00	1,31	1,31	1,31	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-Z 5.5xL with hexagon head

Annex 46

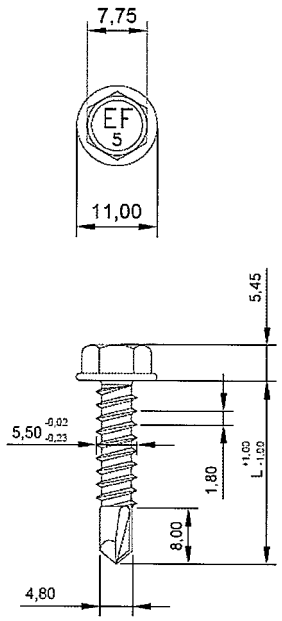
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	—	
	1,15	1,31	1,31	1,31	—	
	1,25	1,31	1,31	1,31	—	
	1,50	1,31	1,31	1,31	—	
	1,75	1,31	1,31	1,31	—	
	2,00	1,31	1,31	1,31	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-P 5.5xL with hexagon head

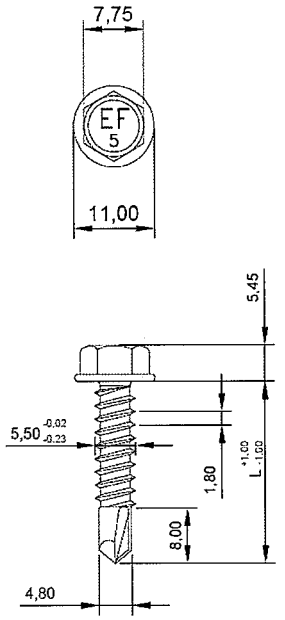
Annex 47

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	—	
	1,15	1,31	1,31	1,31	—	
	1,25	1,31	1,31	1,31	—	
	1,50	1,31	1,31	1,31	—	
	1,75	1,31	1,31	1,31	—	
	2,00	1,31	1,31	1,31	—	

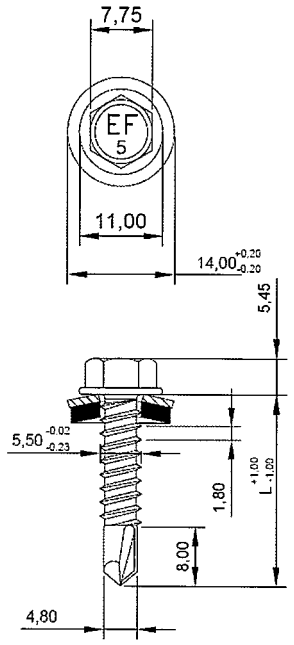
If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 48**
Self-drilling screws ESDS-5-SP 5.5xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z14 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 5,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,43	2,54	2,54	
	0,55	1,90	2,43	2,54	2,54	
	0,60	1,90	2,43	2,54	2,54	
	0,63	1,90	2,43	3,41	3,41	
	0,70	1,90	2,43	3,41	3,41	
	0,75	1,90	2,43	4,10	4,10	
	0,80	1,90	2,43	4,10	4,10	
	0,88	1,90	2,43	4,10	4,10	
	1,00	1,90	2,43	4,10	4,10	
	1,13	1,90	2,43	4,10	—	
	1,15	1,90	2,43	4,10	—	
	1,25	1,90	2,43	4,10	—	
	1,50	1,90	2,43	4,10	—	
	1,75	1,90	2,43	4,10	—	
	2,00	1,90	2,43	4,10	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-Z 5.5xL
with hexagon head and washer Z14

Annex 49

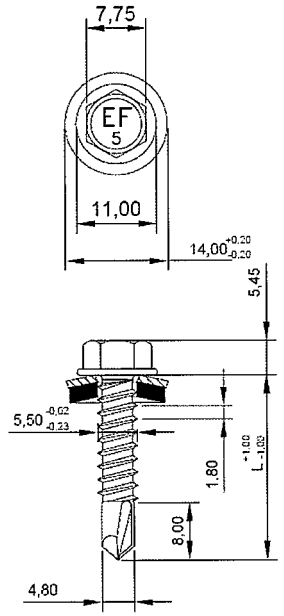
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,43	2,54	2,54	
	0,55	1,90	2,43	2,54	2,54	
	0,60	1,90	2,43	2,54	2,54	
	0,63	1,90	2,43	3,41	3,41	
	0,70	1,90	2,43	3,41	3,41	
	0,75	1,90	2,43	4,10	4,10	
	0,80	1,90	2,43	4,10	4,10	
	0,88	1,90	2,43	4,10	4,10	
	1,00	1,90	2,43	4,10	4,10	
	1,13	1,90	2,43	4,10	—	
	1,15	1,90	2,43	4,10	—	
	1,25	1,90	2,43	4,10	—	
	1,50	1,90	2,43	4,10	—	
	1,75	1,90	2,43	4,10	—	
	2,00	1,90	2,43	4,10	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-P 5.5xL
with hexagon head and washer A14

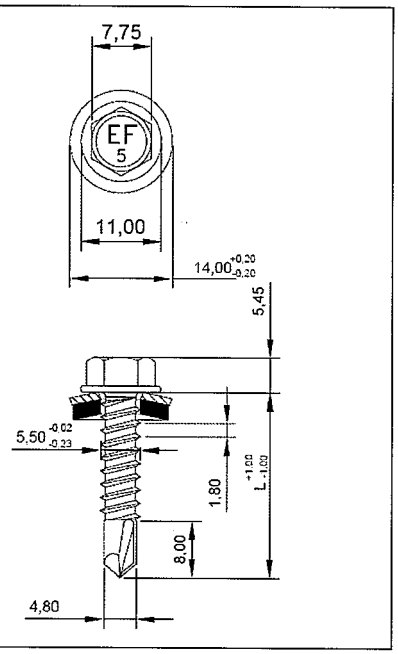
Annex 50

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,43	2,54	2,54	
	0,55	1,90	2,43	2,54	2,54	
	0,60	1,90	2,43	2,54	2,54	
	0,63	1,90	2,43	3,41	3,41	
	0,70	1,90	2,43	3,41	3,41	
	0,75	1,90	2,43	4,10	4,10	
	0,80	1,90	2,43	4,10	4,10	
	0,88	1,90	2,43	4,10	4,10	
	1,00	1,90	2,43	4,10	4,10	
	1,13	1,90	2,43	4,10	—	
	1,15	1,90	2,43	4,10	—	
	1,25	1,90	2,43	4,10	—	
	1,50	1,90	2,43	4,10	—	
	1,75	1,90	2,43	4,10	—	
	2,00	1,90	2,43	4,10	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

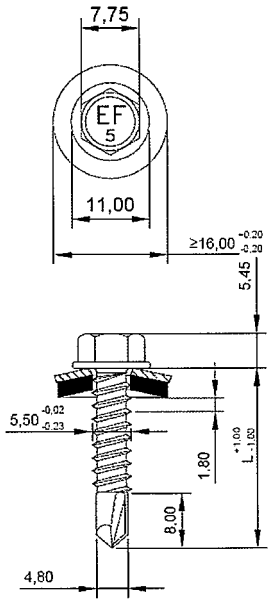
Fastening screws for metal members and sheeting	**Annex 51**
Self-drilling screws ESDS-5-SP 5.5xL with hexagon head and washer S14	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,43	2,53	2,53	
	0,55	1,90	2,43	2,53	2,53	
	0,60	1,90	2,43	2,77	2,77	
	0,63	1,90	2,43	2,77	2,77	
	0,70	1,90	2,43	2,89	2,89	
	0,75	1,90	2,43	2,89	2,89	
	0,80	1,90	2,43	2,89	2,89	
	0,88	1,90	2,43	2,89	2,89	
	1,00	1,90	2,43	4,17	4,17	
	1,13	1,90	2,43	4,17	—	
	1,15	1,90	2,43	4,17	—	
	1,25	1,90	2,43	4,17	—	
	1,50	1,90	2,43	4,17	—	
	1,75	1,90	2,43	4,17	—	
	2,00	1,90	2,43	4,17	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

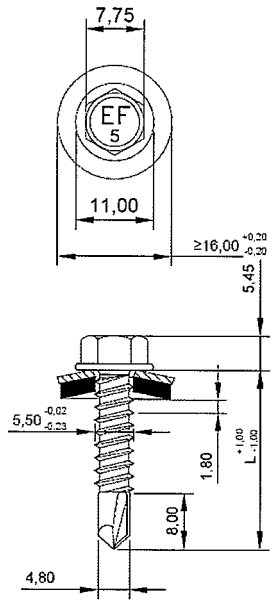
Fastening screws for metal members and sheeting	**Annex 52**
Self-drilling screws ESDS-5-Z 5.5xL with hexagon head and washer Z16	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,43	2,53	2,53	
	0,55	1,90	2,43	2,53	2,53	
	0,60	1,90	2,43	2,77	2,77	
	0,63	1,90	2,43	2,77	2,77	
	0,70	1,90	2,43	2,89	2,89	
	0,75	1,90	2,43	2,89	2,89	
	0,80	1,90	2,43	2,89	2,89	
	0,88	1,90	2,43	2,89	2,89	
	1,00	1,90	2,43	4,17	4,17	
	1,13	1,90	2,43	4,17	—	
	1,15	1,90	2,43	4,17	—	
	1,25	1,90	2,43	4,17	—	
	1,50	1,90	2,43	4,17	—	
	1,75	1,90	2,43	4,17	—	
	2,00	1,90	2,43	4,17	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-P 5.5xL
with hexagon head and washer A16

Annex 53

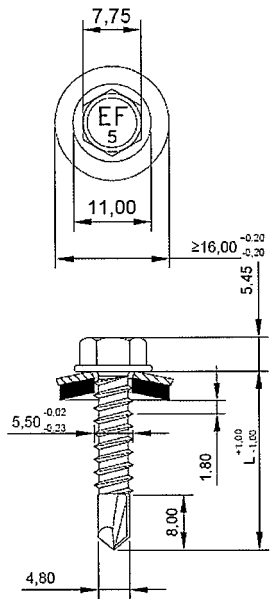
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,43	2,53	2,53	
	0,55	1,90	2,43	2,53	2,53	
	0,60	1,90	2,43	2,77	2,77	
	0,63	1,90	2,43	2,77	2,77	
	0,70	1,90	2,43	2,89	2,89	
	0,75	1,90	2,43	2,89	2,89	
	0,80	1,90	2,43	2,89	2,89	
	0,88	1,90	2,43	2,89	2,89	
	1,00	1,90	2,43	4,17	4,17	
	1,13	1,90	2,43	4,17	—	
	1,15	1,90	2,43	4,17	—	
	1,25	1,90	2,43	4,17	—	
	1,50	1,90	2,43	4,17	—	
	1,75	1,90	2,43	4,17	—	
	2,00	1,90	2,43	4,17	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-SP 5.5xL with hexagon head and washer S16

Annex 54

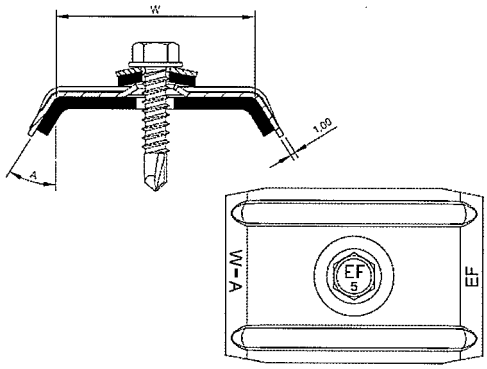
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,43	4,17	4,17	
	0,55	1,90	2,43	4,17	4,17	
	0,60	1,90	2,43	4,17	4,17	
	0,63	1,90	2,43	4,17	4,17	
	0,70	1,90	2,43	4,17	4,17	
	0,75	1,90	2,43	4,17	4,17	
	0,80	1,90	2,43	4,17	4,17	
	0,88	1,90	2,43	4,17	4,17	
	1,00	1,90	2,43	4,17	4,17	
	1,13	1,90	2,43	4,17	—	
	1,15	1,90	2,43	4,17	—	
	1,25	1,90	2,43	4,17	—	
	1,50	1,90	2,43	4,17	—	
	1,75	1,90	2,43	4,17	—	
	2,00	1,90	2,43	4,17	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-Z 5.5xL
with hexagon head and washer Z16 and saddle washer ESW

Annex 55

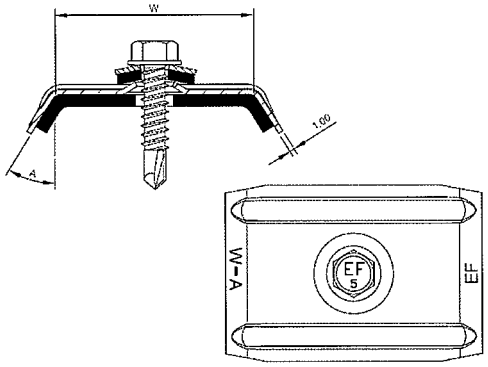
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring ESW made of aluminum
Saddle washer:	
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,43	4,17	4,17	
	0,55	1,90	2,43	4,17	4,17	
	0,60	1,90	2,43	4,17	4,17	
	0,63	1,90	2,43	4,17	4,17	
	0,70	1,90	2,43	4,17	4,17	
	0,75	1,90	2,43	4,17	4,17	
	0,80	1,90	2,43	4,17	4,17	
	0,88	1,90	2,43	4,17	4,17	
	1,00	1,90	2,43	4,17	4,17	
	1,13	1,90	2,43	4,17	—	
	1,15	1,90	2,43	4,17	—	
	1,25	1,90	2,43	4,17	—	
	1,50	1,90	2,43	4,17	—	
	1,75	1,90	2,43	4,17	—	
	2,00	1,90	2,43	4,17	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-P 5.5xL
with hexagon head and washer A16 and saddle washer ESW

Annex 56

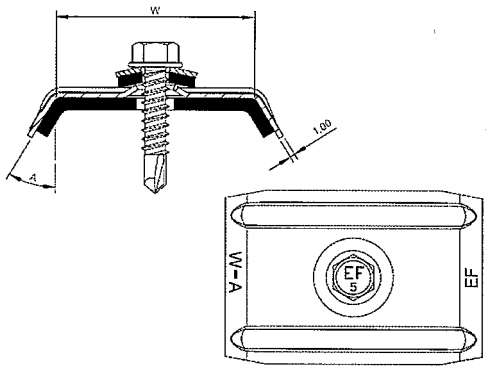
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,43	4,17	4,17	
	0,55	1,90	2,43	4,17	4,17	
	0,60	1,90	2,43	4,17	4,17	
	0,63	1,90	2,43	4,17	4,17	
	0,70	1,90	2,43	4,17	4,17	
	0,75	1,90	2,43	4,17	4,17	
	0,80	1,90	2,43	4,17	4,17	
	0,88	1,90	2,43	4,17	4,17	
	1,00	1,90	2,43	4,17	4,17	
	1,13	1,90	2,43	4,17	—	
	1,15	1,90	2,43	4,17	—	
	1,25	1,90	2,43	4,17	—	
	1,50	1,90	2,43	4,17	—	
	1,75	1,90	2,43	4,17	—	
	2,00	1,90	2,43	4,17	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

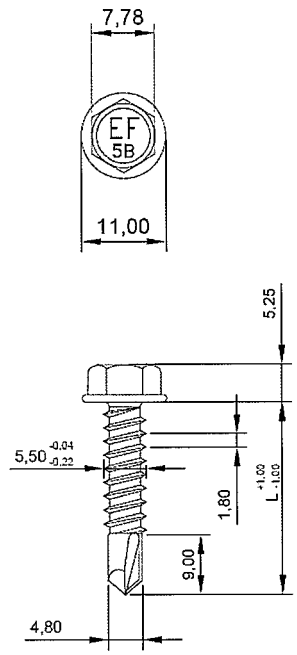
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-SP 5.5xL with hexagon head and washer S16 and saddle washer ESW

Annex 57

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm
Timber substructures	
No performance assessed	

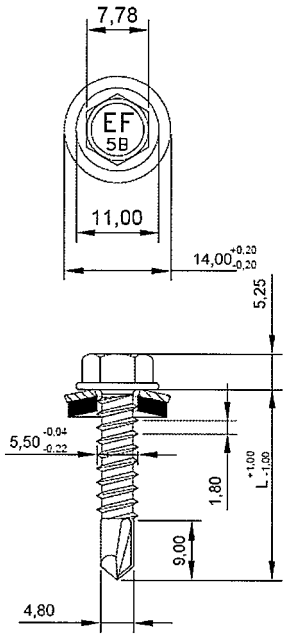


$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,42	2,42	2,42	2,42	
	0,80	2,42	2,42	2,42	2,42	
	0,88	2,42	2,42	2,42	2,42	
	1,00	2,82	2,82	2,82	2,82	
	1,13	2,82	2,82	2,82	—	
	1,15	2,82	2,82	2,82	—	
	1,25	2,82	2,82	2,82	—	
	1,50	2,82	2,82	2,82	—	
	1,75	2,82	2,82	2,82	—	
	2,00	2,82	2,82	2,82	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	
	0,63	0,87	0,87	0,87	0,87	
	0,70	0,87	0,87	0,87	0,87	
	0,75	0,97	0,97	0,97	0,97	
	0,80	0,97	0,97	0,97	0,97	
	0,88	0,97	0,97	0,97	0,97	
	1,00	0,97	0,97	0,97	0,97	
	1,13	0,97	0,97	0,97	—	
	1,15	0,97	0,97	0,97	—	
	1,25	0,97	0,97	0,97	—	
	1,50	0,97	0,97	0,97	—	
	1,75	0,97	0,97	0,97	—	
	2,00	0,97	0,97	0,97	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 58**
Self-drilling screws ESDS-5-B 5.5xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,42	2,42	2,42	2,42	
	0,80	2,42	2,42	2,42	2,42	
	0,88	2,42	2,42	2,42	2,42	
	1,00	2,82	2,82	2,82	2,82	
	1,13	2,82	2,82	2,82	—	
	1,15	2,82	2,82	2,82	—	
	1,25	2,82	2,82	2,82	—	
	1,50	2,82	2,82	2,82	—	
	1,75	2,82	2,82	2,82	—	
	2,00	2,82	2,82	2,82	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,52	2,41	2,62	2,62	
	0,55	1,52	2,41	2,62	2,62	
	0,60	1,52	2,41	2,62	2,62	
	0,63	1,52	2,41	3,45	3,45	
	0,70	1,52	2,41	3,45	3,45	
	0,75	1,52	2,41	3,45	3,45	
	0,80	1,52	2,41	3,45	3,45	
	0,88	1,52	2,41	3,45	3,45	
	1,00	1,52	2,41	3,45	3,45	
	1,13	1,52	2,41	3,45	—	
	1,15	1,52	2,41	3,45	—	
	1,25	1,52	2,41	3,45	—	
	1,50	1,52	2,41	3,45	—	
	1,75	1,52	2,41	3,45	—	
	2,00	1,52	2,41	3,45	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

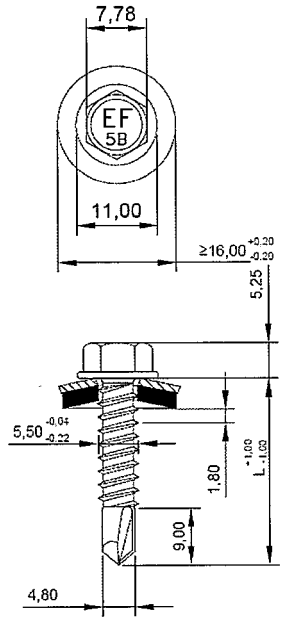
Fastening screws for metal members and sheeting	**Annex 59**
Self-drilling screws ESDS-5-B 5.5xL with hexagon head and washer S14	of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,42	2,42	2,42	2,42	
	0,80	2,42	2,42	2,42	2,42	
	0,88	2,42	2,42	2,42	2,42	
	1,00	2,82	2,82	2,82	2,82	
	1,13	2,82	2,82	2,82	—	
	1,15	2,82	2,82	2,82	—	
	1,25	2,82	2,82	2,82	—	
	1,50	2,82	2,82	2,82	—	
	1,75	2,82	2,82	2,82	—	
	2,00	2,82	2,82	2,82	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,52	2,41	2,53	2,53	
	0,55	1,52	2,41	2,53	2,53	
	0,60	1,52	2,41	2,77	2,77	
	0,63	1,52	2,41	2,77	2,77	
	0,70	1,52	2,41	2,89	2,89	
	0,75	1,52	2,41	2,89	2,89	
	0,80	1,52	2,41	2,89	2,89	
	0,88	1,52	2,41	2,89	2,89	
	1,00	1,52	2,41	3,45	3,45	
	1,13	1,52	2,41	3,45	—	
	1,15	1,52	2,41	3,45	—	
	1,25	1,52	2,41	3,45	—	
	1,50	1,52	2,41	3,45	—	
	1,75	1,52	2,41	3,45	—	
	2,00	1,52	2,41	3,45	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-B 5.5xL
with hexagon head and washer S16

Annex 60

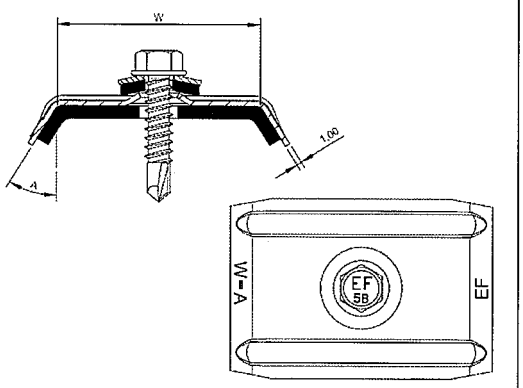
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,42	2,42	2,42	2,42	
	0,80	2,42	2,42	2,42	2,42	
	0,88	2,42	2,42	2,42	2,42	
	1,00	2,82	2,82	2,82	2,82	
	1,13	2,82	2,82	2,82	—	
	1,15	2,82	2,82	2,82	—	
	1,25	2,82	2,82	2,82	—	
	1,50	2,82	2,82	2,82	—	
	1,75	2,82	2,82	2,82	—	
	2,00	2,82	2,82	2,82	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,52	2,41	3,45	3,45	
	0,55	1,52	2,41	3,45	3,45	
	0,60	1,52	2,41	3,45	3,45	
	0,63	1,52	2,41	3,45	3,45	
	0,70	1,52	2,41	3,45	3,45	
	0,75	1,52	2,41	3,45	3,45	
	0,80	1,52	2,41	3,45	3,45	
	0,88	1,52	2,41	3,45	3,45	
	1,00	1,52	2,41	3,45	3,45	
	1,13	1,52	2,41	3,45	—	
	1,15	1,52	2,41	3,45	—	
	1,25	1,52	2,41	3,45	—	
	1,50	1,52	2,41	3,45	—	
	1,75	1,52	2,41	3,45	—	
	2,00	1,52	2,41	3,45	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-5-B 5.5xL
with hexagon head and washer S16 and saddle washer ESW

Annex 61

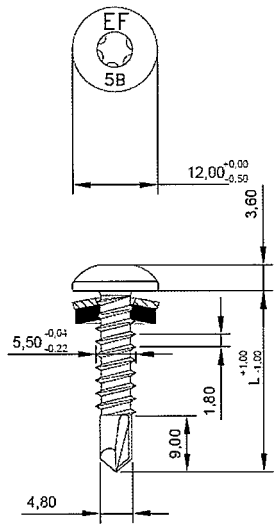
of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE302HQ (bi-metal)
Washer:	S11 – stainless steel washer with EPDM ring S12 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,49	1,49	1,49	1,49	
	0,55	1,49	1,49	1,49	1,49	
	0,60	1,49	1,49	1,49	1,49	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,42	2,42	2,42	2,42	
	0,80	2,42	2,42	2,42	2,42	
	0,88	2,42	2,42	2,42	2,42	
	1,00	2,82	2,82	2,82	2,82	
	1,13	2,82	2,82	2,82	—	
	1,15	2,82	2,82	2,82	—	
	1,25	2,82	2,82	2,82	—	
	1,50	2,82	2,82	2,82	—	
	1,75	2,82	2,82	2,82	—	
	2,00	2,82	2,82	2,82	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,97	0,97	0,97	0,97	
	0,55	0,97	0,97	0,97	0,97	
	0,60	0,97	0,97	0,97	0,97	
	0,63	1,17	1,17	1,17	1,17	
	0,70	1,17	1,17	1,17	1,17	
	0,75	1,35	1,35	1,35	1,35	
	0,80	1,35	1,35	1,35	1,35	
	0,88	1,35	1,35	1,35	1,35	
	1,00	1,43	1,43	1,43	1,43	
	1,13	1,43	1,43	1,43	—	
	1,15	1,43	1,43	1,43	—	
	1,25	1,43	1,43	1,43	—	
	1,50	1,43	1,43	1,43	—	
	1,75	1,43	1,43	1,43	—	
	2,00	1,43	1,43	1,43	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 62**
Self-drilling screws ESDS-PH-5-B 5.5xL with pan head and washer S11 or S12	of European Technical Assessment ETA-16/0739

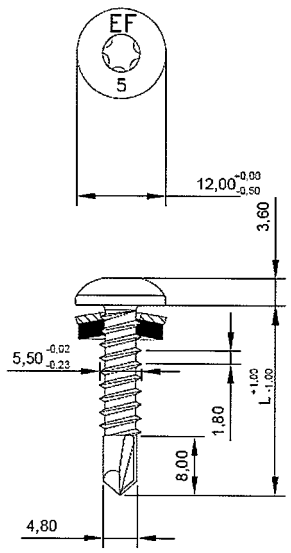
Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z11 – galvanized carbon steel washer with EPDM ring
	Z12 – galvanized carbon steel washer with EPDM ring
	A11 – aluminum washer with EPDM ring
	A12 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1
	S280GD, S320GD or S350GD – EN 10346

Drilling capacity: $\Sigma ti \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,70	0,70	0,70	0,70	
	0,55	0,70	0,70	0,70	0,70	
	0,60	0,70	0,70	0,70	0,70	
	0,63	0,79	0,79	0,79	0,79	
	0,70	0,79	0,79	0,79	0,79	
	0,75	1,05	1,05	1,05	1,05	
	0,80	1,05	1,05	1,05	1,05	
	0,88	1,05	1,05	1,05	1,05	
	1,00	1,40	1,40	1,40	1,40	
	1,13	1,40	1,40	1,40	—	
	1,15	1,40	1,40	1,40	—	
	1,25	1,40	1,40	1,40	—	
	1,50	1,40	1,40	1,40	—	
	1,75	1,40	1,40	1,40	—	
	2,00	1,40	1,40	1,40	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-5-Z 5.5xL
with pan head and washer Z11, Z12, A11 or A12

Annex 63

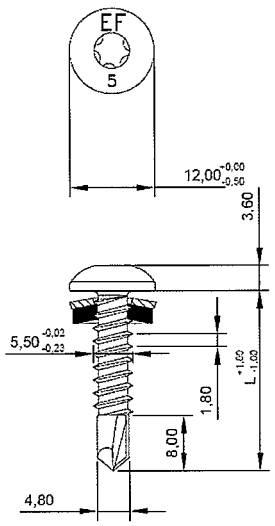
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A11 – aluminum washer with EPDM ring
	A12 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1
	S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 5{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		1,50	2,00	3,00	4,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,53	1,53	1,53	1,53	
	0,55	1,53	1,53	1,53	1,53	
	0,60	1,53	1,53	1,53	1,53	
	0,63	1,84	1,84	1,84	1,84	
	0,70	1,84	1,84	1,84	1,84	
	0,75	2,34	2,34	2,34	2,34	
	0,80	2,34	2,34	2,34	2,34	
	0,88	2,34	2,34	2,34	2,34	
	1,00	2,38	2,38	2,38	2,38	
	1,13	2,38	2,38	2,38	—	
	1,15	2,38	2,38	2,38	—	
	1,25	2,87	2,87	2,87	—	
	1,50	2,87	2,87	2,87	—	
	1,75	2,87	2,87	2,87	—	
	2,00	2,87	2,87	2,87	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,70	0,70	0,70	0,70	
	0,55	0,70	0,70	0,70	0,70	
	0,60	0,70	0,70	0,70	0,70	
	0,63	0,79	0,79	0,79	0,79	
	0,70	0,79	0,79	0,79	0,79	
	0,75	1,05	1,05	1,05	1,05	
	0,80	1,05	1,05	1,05	1,05	
	0,88	1,05	1,05	1,05	1,05	
	1,00	1,40	1,40	1,40	1,40	
	1,13	1,40	1,40	1,40	—	
	1,15	1,40	1,40	1,40	—	
	1,25	1,40	1,40	1,40	—	
	1,50	1,40	1,40	1,40	—	
	1,75	1,40	1,40	1,40	—	
	2,00	1,40	1,40	1,40	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-5-P 5.5xL
with pan head and washer A11 or A12

Annex 64

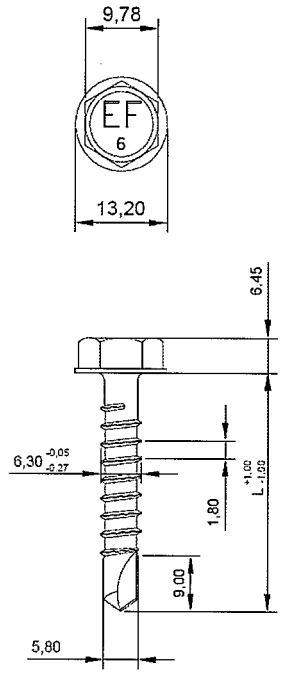
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 6,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		3,00	4,00	5,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	
	1,13	3,10	3,10	—	
	1,15	3,10	3,10	—	
	1,25	3,10	3,10	—	
	1,50	3,10	3,10	—	
	1,75	3,10	3,10	—	
	2,00	3,10	3,10	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	
	1,13	1,31	1,31	—	
	1,15	1,31	1,31	—	
	1,25	1,31	1,31	—	
	1,50	1,31	1,31	—	
	1,75	1,31	1,31	—	
	2,00	1,31	1,31	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-6-Z 6.3xL with hexagon head

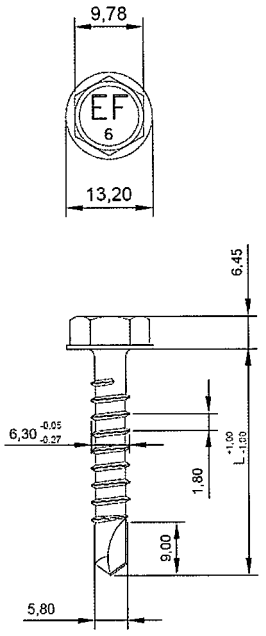
Annex 65

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 6{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		3,00	4,00	5,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	
	1,13	3,10	3,10	—	
	1,15	3,10	3,10	—	
	1,25	3,10	3,10	—	
	1,50	3,10	3,10	—	
	1,75	3,10	3,10	—	
	2,00	3,10	3,10	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	
	1,13	1,31	1,31	—	
	1,15	1,31	1,31	—	
	1,25	1,31	1,31	—	
	1,50	1,31	1,31	—	
	1,75	1,31	1,31	—	
	2,00	1,31	1,31	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

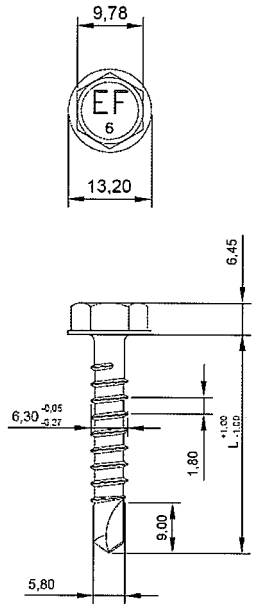
Fastening screws for metal members and sheeting	**Annex 66**
Self-drilling screws ESDS-6-P 6.3xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 6{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		3,00	4,00	5,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	
	1,13	3,10	3,10	—	
	1,15	3,10	3,10	—	
	1,25	3,10	3,10	—	
	1,50	3,10	3,10	—	
	1,75	3,10	3,10	—	
	2,00	3,10	3,10	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	
	1,13	1,31	1,31	—	
	1,15	1,31	1,31	—	
	1,25	1,31	1,31	—	
	1,50	1,31	1,31	—	
	1,75	1,31	1,31	—	
	2,00	1,31	1,31	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

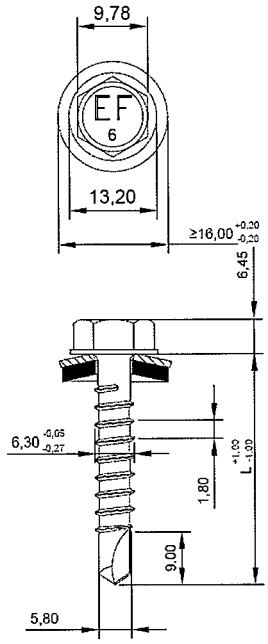
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-6-SP 6.3xL with hexagon head

Annex 67

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 6,00 mm
Timber substructures	
No performance assessed	

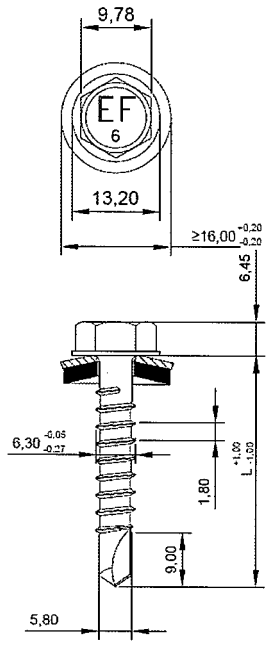


$t_{N,II}$ [mm]		3,00	4,00	5,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	
	1,13	3,10	3,10	—	
	1,15	3,10	3,10	—	
	1,25	3,10	3,10	—	
	1,50	3,10	3,10	—	
	1,75	3,10	3,10	—	
	2,00	3,10	3,10	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,65	2,65	2,65	
	0,55	2,65	2,65	2,65	
	0,60	2,65	2,65	2,65	
	0,63	3,63	3,63	3,63	
	0,70	3,63	3,63	3,63	
	0,75	3,98	3,98	4,27	
	0,80	3,98	3,98	4,27	
	0,88	3,98	3,98	4,27	
	1,00	3,98	3,98	4,75	
	1,13	3,98	3,98	—	
	1,15	3,98	3,98	—	
	1,25	3,98	3,98	—	
	1,50	3,98	3,98	—	
	1,75	3,98	3,98	—	
	2,00	3,98	3,98	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 68** of European Technical Assessment ETA-16/0739
Self-drilling screws ESDS-6-Z 6.3xL with hexagon head and washer Z16	

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 6{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		3,00	4,00	5,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	
	1,13	3,10	3,10	—	
	1,15	3,10	3,10	—	
	1,25	3,10	3,10	—	
	1,50	3,10	3,10	—	
	1,75	3,10	3,10	—	
	2,00	3,10	3,10	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,65	2,65	2,65	
	0,55	2,65	2,65	2,65	
	0,60	2,65	2,65	2,65	
	0,63	3,63	3,63	3,63	
	0,70	3,63	3,63	3,63	
	0,75	3,98	3,98	4,27	
	0,80	3,98	3,98	4,27	
	0,88	3,98	3,98	4,27	
	1,00	3,98	3,98	4,75	
	1,13	3,98	3,98	—	
	1,15	3,98	3,98	—	
	1,25	3,98	3,98	—	
	1,50	3,98	3,98	—	
	1,75	3,98	3,98	—	
	2,00	3,98	3,98	—	

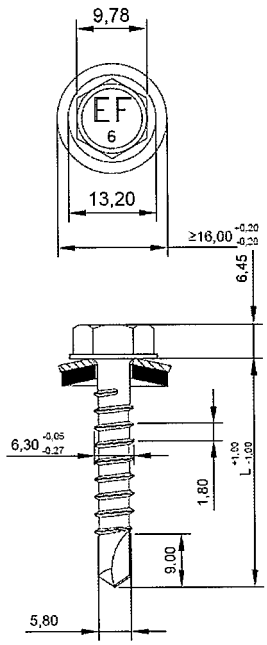
If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 69**
Self-drilling screws ESDS-6-P 6.3xL with hexagon head and washer A16	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 6{,}00$ mm

Timber substructures

No performance assessed

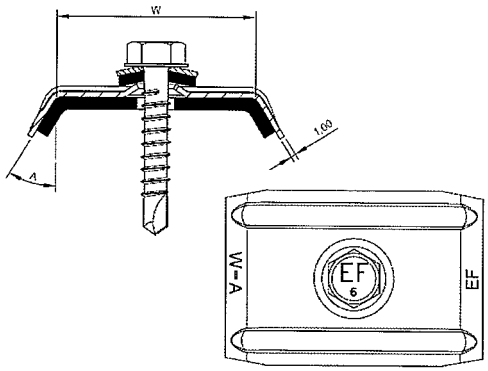


$t_{N,II}$ [mm]		3,00	4,00	5,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	
	1,13	3,10	3,10	—	
	1,15	3,10	3,10	—	
	1,25	3,10	3,10	—	
	1,50	3,10	3,10	—	
	1,75	3,10	3,10	—	
	2,00	3,10	3,10	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,65	2,65	2,65	
	0,55	2,65	2,65	2,65	
	0,60	2,65	2,65	2,65	
	0,63	3,63	3,63	3,63	
	0,70	3,63	3,63	3,63	
	0,75	3,98	3,98	4,27	
	0,80	3,98	3,98	4,27	
	0,88	3,98	3,98	4,27	
	1,00	3,98	3,98	4,75	
	1,13	3,98	3,98	—	
	1,15	3,98	3,98	—	
	1,25	3,98	3,98	—	
	1,50	3,98	3,98	—	
	1,75	3,98	3,98	—	
	2,00	3,98	3,98	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 70** of European Technical Assessment ETA-16/0739
Self-drilling screws ESDS-6-SP 6.3xL with hexagon head and washer S16	

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 6{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		3,00	4,00	5,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	
	1,13	3,10	3,10	—	
	1,15	3,10	3,10	—	
	1,25	3,10	3,10	—	
	1,50	3,10	3,10	—	
	1,75	3,10	3,10	—	
	2,00	3,10	3,10	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	3,98	3,98	8,50	
	0,55	3,98	3,98	8,50	
	0,60	3,98	3,98	8,50	
	0,63	3,98	3,98	8,50	
	0,70	3,98	3,98	8,50	
	0,75	3,98	3,98	8,50	
	0,80	3,98	3,98	8,50	
	0,88	3,98	3,98	8,50	
	1,00	3,98	3,98	8,50	
	1,13	3,98	3,98	—	
	1,15	3,98	3,98	—	
	1,25	3,98	3,98	—	
	1,50	3,98	3,98	—	
	1,75	3,98	3,98	—	
	2,00	3,98	3,98	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

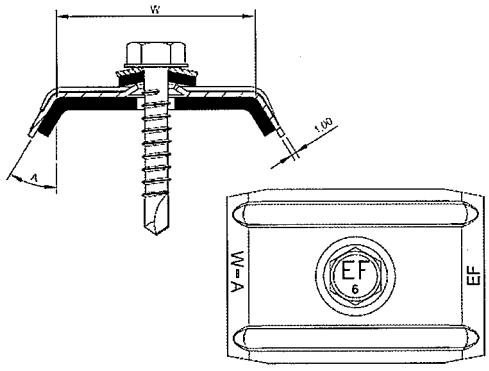
Fastening screws for metal members and sheeting	**Annex 71**
Self-drilling screws ESDS-6-Z 6.3xL with hexagon head and washer Z16 and saddle washer ESW	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 6{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		3,00	4,00	5,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	
	1,13	3,10	3,10	—	
	1,15	3,10	3,10	—	
	1,25	3,10	3,10	—	
	1,50	3,10	3,10	—	
	1,75	3,10	3,10	—	
	2,00	3,10	3,10	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	3,98	3,98	8,50	
	0,55	3,98	3,98	8,50	
	0,60	3,98	3,98	8,50	
	0,63	3,98	3,98	8,50	
	0,70	3,98	3,98	8,50	
	0,75	3,98	3,98	8,50	
	0,80	3,98	3,98	8,50	
	0,88	3,98	3,98	8,50	
	1,00	3,98	3,98	8,50	
	1,13	3,98	3,98	—	
	1,15	3,98	3,98	—	
	1,25	3,98	3,98	—	
	1,50	3,98	3,98	—	
	1,75	3,98	3,98	—	
	2,00	3,98	3,98	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-6-P 6.3xL
with hexagon head and washer A16 and saddle washer ESW

Annex 72

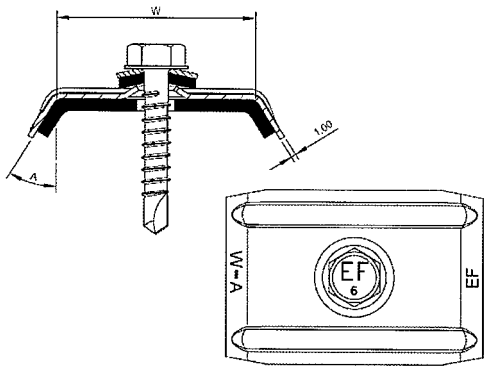
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 6{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		3,00	4,00	5,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	
	1,13	3,10	3,10	—	
	1,15	3,10	3,10	—	
	1,25	3,10	3,10	—	
	1,50	3,10	3,10	—	
	1,75	3,10	3,10	—	
	2,00	3,10	3,10	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	3,98	3,98	8,50	
	0,55	3,98	3,98	8,50	
	0,60	3,98	3,98	8,50	
	0,63	3,98	3,98	8,50	
	0,70	3,98	3,98	8,50	
	0,75	3,98	3,98	8,50	
	0,80	3,98	3,98	8,50	
	0,88	3,98	3,98	8,50	
	1,00	3,98	3,98	8,50	
	1,13	3,98	3,98	—	
	1,15	3,98	3,98	—	
	1,25	3,98	3,98	—	
	1,50	3,98	3,98	—	
	1,75	3,98	3,98	—	
	2,00	3,98	3,98	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-6-SP 6.3xL
with hexagon head and washer S16 and saddle washer ESW

Annex 73

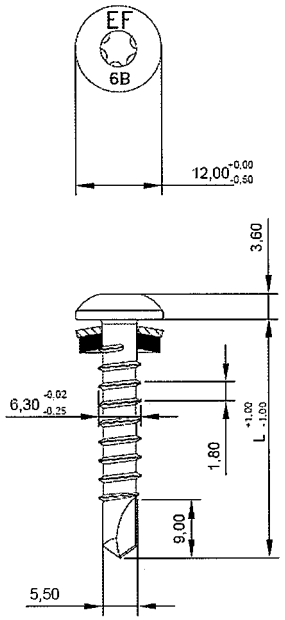
of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE302HQ (bi-metal)
Washer:	S11 – stainless steel washer with EPDM ring
	S12 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1
	S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 6{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,50	3,00	4,00	5,00	Wood class ≥ C24
$M_{t,nom}$		7 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	—	
	1,15	3,10	3,10	3,10	—	
	1,25	3,10	3,10	3,10	—	
	1,50	3,10	3,10	3,10	—	
	1,75	3,10	3,10	3,10	—	
	2,00	3,10	3,10	3,10	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,97	0,97	0,97	0,97	
	0,55	0,97	0,97	0,97	0,97	
	0,60	0,97	0,97	0,97	0,97	
	0,63	1,17	1,17	1,17	1,17	
	0,70	1,17	1,17	1,17	1,17	
	0,75	1,35	1,35	1,35	1,35	
	0,80	1,35	1,35	1,35	1,35	
	0,88	1,35	1,35	1,35	1,35	
	1,00	1,43	1,43	1,43	1,43	
	1,13	1,43	1,43	1,43	—	
	1,15	1,43	1,43	1,43	—	
	1,25	1,43	1,43	1,43	—	
	1,50	1,43	1,43	1,43	—	
	1,75	1,43	1,43	1,43	—	
	2,00	1,43	1,43	1,43	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-6-B 6.3xL
with pan head and washer S11 or S12

Annex 74

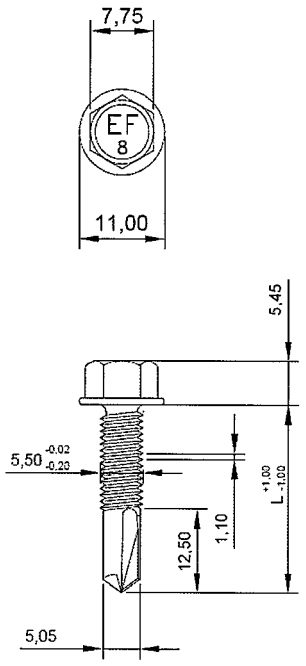
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 8{,}00$ mm

Timber substructures

No performance assessed

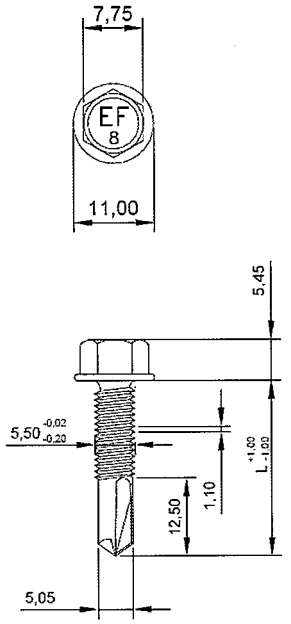


$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	1,31	1,31	
	1,15	1,31	1,31	1,31	1,31	1,31	
	1,25	1,31	1,31	1,31	1,31	1,31	
	1,50	1,31	1,31	1,31	1,31	1,31	
	1,75	1,31	1,31	1,31	1,31	1,31	
	2,00	1,31	1,31	1,31	1,31	1,31	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 75**
Self-drilling screws ESDS-8-Z 5.5xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 8{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	1,31	1,31	
	1,15	1,31	1,31	1,31	1,31	1,31	
	1,25	1,31	1,31	1,31	1,31	1,31	
	1,50	1,31	1,31	1,31	1,31	1,31	
	1,75	1,31	1,31	1,31	1,31	1,31	
	2,00	1,31	1,31	1,31	1,31	1,31	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-8-P 5.5xL with hexagon head

Annex 76

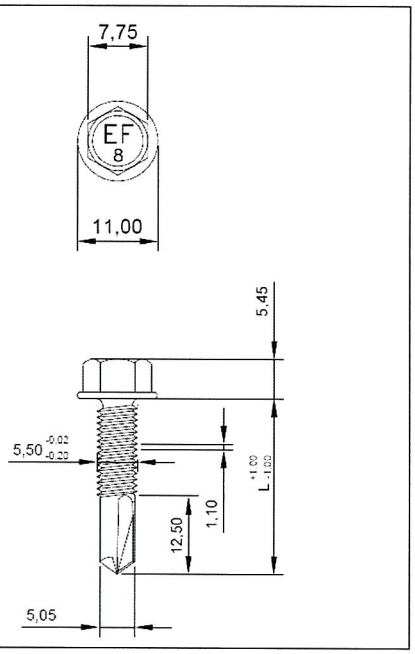
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 8{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	1,31	1,31	
	1,15	1,31	1,31	1,31	1,31	1,31	
	1,25	1,31	1,31	1,31	1,31	1,31	
	1,50	1,31	1,31	1,31	1,31	1,31	
	1,75	1,31	1,31	1,31	1,31	1,31	
	2,00	1,31	1,31	1,31	1,31	1,31	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-8-SP 5.5xL with hexagon head

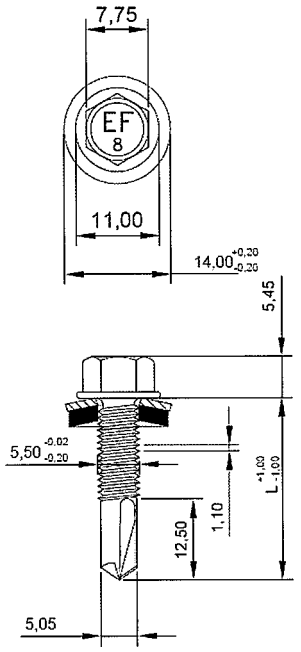
Annex 77

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z14 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 8{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,54	2,54	2,54	2,54	
	0,55	1,90	2,54	2,54	2,54	2,54	
	0,60	1,90	2,54	2,54	2,54	2,54	
	0,63	1,90	3,41	3,41	3,41	3,41	
	0,70	1,90	3,41	3,41	3,41	3,41	
	0,75	1,90	3,92	3,92	4,10	4,10	
	0,80	1,90	3,92	3,92	4,10	4,10	
	0,88	1,90	3,92	3,92	4,10	4,10	
	1,00	1,90	3,92	3,92	4,05	4,05	
	1,13	1,90	3,92	3,92	4,05	4,05	
	1,15	1,90	3,92	3,92	4,05	4,05	
	1,25	1,90	3,92	3,92	4,05	4,05	
	1,50	1,90	3,92	3,92	4,05	4,05	
	1,75	1,90	3,92	3,92	4,05	4,05	
	2,00	1,90	3,92	3,92	4,05	4,05	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

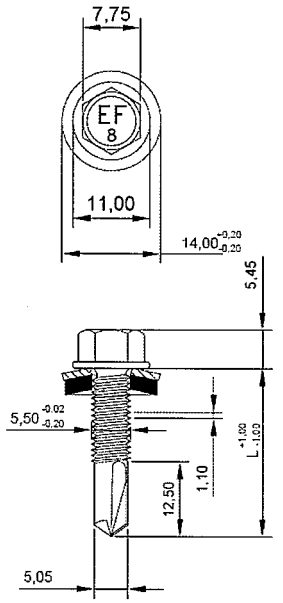
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-8-Z 5.5xL
with hexagon head and washer Z14

Annex 78

of European
Technical Assessment
ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 8{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,54	2,54	2,54	2,54	
	0,55	1,90	2,54	2,54	2,54	2,54	
	0,60	1,90	2,54	2,54	2,54	2,54	
	0,63	1,90	3,41	3,41	3,41	3,41	
	0,70	1,90	3,41	3,41	3,41	3,41	
	0,75	1,90	3,92	3,92	4,10	4,10	
	0,80	1,90	3,92	3,92	4,10	4,10	
	0,88	1,90	3,92	3,92	4,10	4,10	
	1,00	1,90	3,92	3,92	4,05	4,05	
	1,13	1,90	3,92	3,92	4,05	4,05	
	1,15	1,90	3,92	3,92	4,05	4,05	
	1,25	1,90	3,92	3,92	4,05	4,05	
	1,50	1,90	3,92	3,92	4,05	4,05	
	1,75	1,90	3,92	3,92	4,05	4,05	
	2,00	1,90	3,92	3,92	4,05	4,05	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

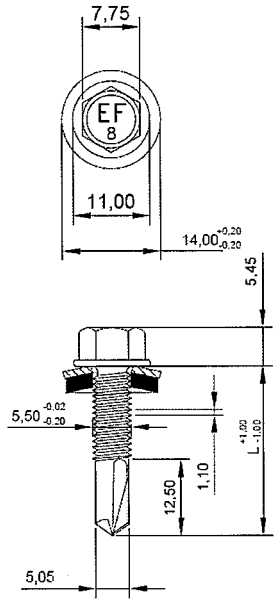
Fastening screws for metal members and sheeting	**Annex 79**
Self-drilling screws ESDS-8-P 5.5xL with hexagon head and washer A14	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 8{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,54	2,54	2,54	2,54	
	0,55	1,90	2,54	2,54	2,54	2,54	
	0,60	1,90	2,54	2,54	2,54	2,54	
	0,63	1,90	3,41	3,41	3,41	3,41	
	0,70	1,90	3,41	3,41	3,41	3,41	
	0,75	1,90	3,92	3,92	4,10	4,10	
	0,80	1,90	3,92	3,92	4,10	4,10	
	0,88	1,90	3,92	3,92	4,10	4,10	
	1,00	1,90	3,92	3,92	4,05	4,05	
	1,13	1,90	3,92	3,92	4,05	4,05	
	1,15	1,90	3,92	3,92	4,05	4,05	
	1,25	1,90	3,92	3,92	4,05	4,05	
	1,50	1,90	3,92	3,92	4,05	4,05	
	1,75	1,90	3,92	3,92	4,05	4,05	
	2,00	1,90	3,92	3,92	4,05	4,05	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

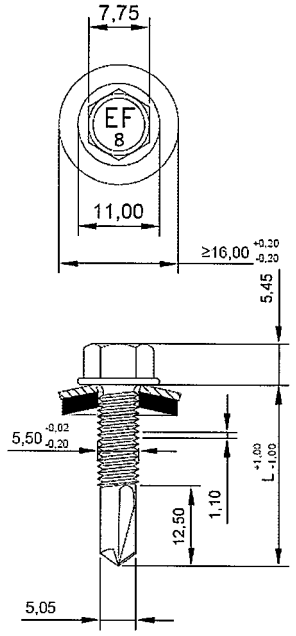
Fastening screws for metal members and sheeting	**Annex 80**
Self-drilling screws ESDS-8-SP 5.5xL with hexagon head and washer S14	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 8{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,53	2,53	2,53	2,53	
	0,55	1,90	2,53	2,53	2,53	2,53	
	0,60	1,90	2,77	2,77	2,77	2,77	
	0,63	1,90	2,77	2,77	2,77	2,77	
	0,70	1,90	2,89	2,89	2,89	2,89	
	0,75	1,90	2,89	2,89	2,89	2,89	
	0,80	1,90	2,89	2,89	2,89	2,89	
	0,88	1,90	2,89	2,89	2,89	2,89	
	1,00	1,90	3,92	3,92	4,27	4,27	
	1,13	1,90	3,92	3,92	4,27	4,27	
	1,15	1,90	3,92	3,92	4,27	4,27	
	1,25	1,90	3,92	3,92	4,27	4,27	
	1,50	1,90	3,92	3,92	4,27	4,27	
	1,75	1,90	3,92	3,92	4,27	4,27	
	2,00	1,90	3,92	3,92	4,27	4,27	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-8-Z 5.5xL
with hexagon head and washer Z16

Annex 81

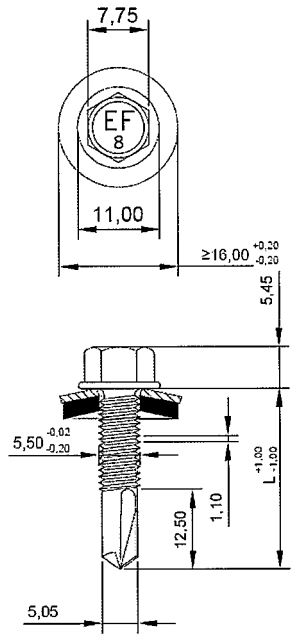
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 8{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,53	2,53	2,53	2,53	
	0,55	1,90	2,53	2,53	2,53	2,53	
	0,60	1,90	2,77	2,77	2,77	2,77	
	0,63	1,90	2,77	2,77	2,77	2,77	
	0,70	1,90	2,89	2,89	2,89	2,89	
	0,75	1,90	2,89	2,89	2,89	2,89	
	0,80	1,90	2,89	2,89	2,89	2,89	
	0,88	1,90	2,89	2,89	2,89	2,89	
	1,00	1,90	3,92	3,92	4,27	4,27	
	1,13	1,90	3,92	3,92	4,27	4,27	
	1,15	1,90	3,92	3,92	4,27	4,27	
	1,25	1,90	3,92	3,92	4,27	4,27	
	1,50	1,90	3,92	3,92	4,27	4,27	
	1,75	1,90	3,92	3,92	4,27	4,27	
	2,00	1,90	3,92	3,92	4,27	4,27	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-8-P 5.5xL
with hexagon head and washer A16

Annex 82

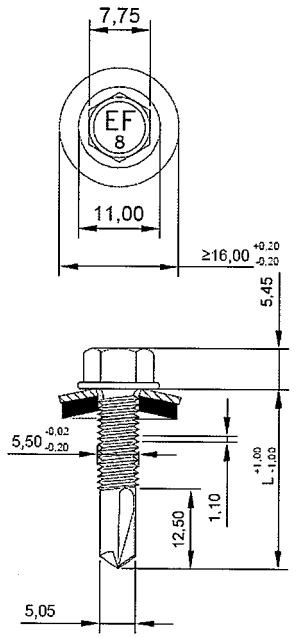
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma ti \leq 8{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	2,53	2,53	2,53	2,53	
	0,55	1,90	2,53	2,53	2,53	2,53	
	0,60	1,90	2,77	2,77	2,77	2,77	
	0,63	1,90	2,77	2,77	2,77	2,77	
	0,70	1,90	2,89	2,89	2,89	2,89	
	0,75	1,90	2,89	2,89	2,89	2,89	
	0,80	1,90	2,89	2,89	2,89	2,89	
	0,88	1,90	2,89	2,89	2,89	2,89	
	1,00	1,90	3,92	3,92	4,27	4,27	
	1,13	1,90	3,92	3,92	4,27	4,27	
	1,15	1,90	3,92	3,92	4,27	4,27	
	1,25	1,90	3,92	3,92	4,27	4,27	
	1,50	1,90	3,92	3,92	4,27	4,27	
	1,75	1,90	3,92	3,92	4,27	4,27	
	2,00	1,90	3,92	3,92	4,27	4,27	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-8-SP 5.5xL
with hexagon head and washer S16

Annex 83

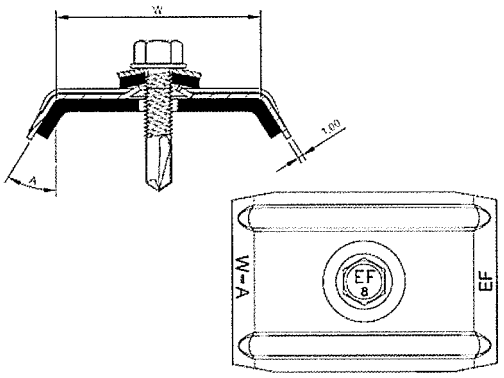
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 8{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	3,92	3,92	7,85	7,85	
	0,55	1,90	3,92	3,92	7,85	7,85	
	0,60	1,90	3,92	3,92	7,85	7,85	
	0,63	1,90	3,92	3,92	7,85	7,85	
	0,70	1,90	3,92	3,92	7,85	7,85	
	0,75	1,90	3,92	3,92	7,85	7,85	
	0,80	1,90	3,92	3,92	7,85	7,85	
	0,88	1,90	3,92	3,92	7,85	7,85	
	1,00	1,90	3,92	3,92	7,85	7,85	
	1,13	1,90	3,92	3,92	7,85	7,85	
	1,15	1,90	3,92	3,92	7,85	7,85	
	1,25	1,90	3,92	3,92	7,85	7,85	
	1,50	1,90	3,92	3,92	7,85	7,85	
	1,75	1,90	3,92	3,92	7,85	7,85	
	2,00	1,90	3,92	3,92	7,85	7,85	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-8-Z 5.5xL
with hexagon head and washer Z16 and saddle washer ESW

Annex 84

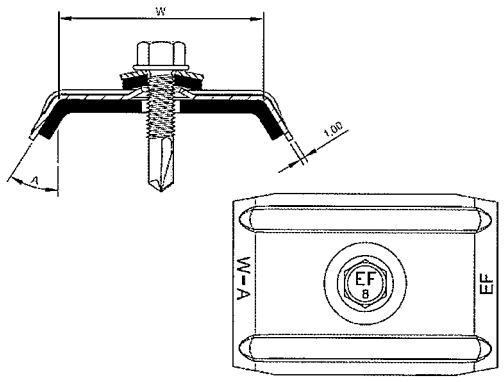
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 8{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	3,92	3,92	7,85	7,85	
	0,55	1,90	3,92	3,92	7,85	7,85	
	0,60	1,90	3,92	3,92	7,85	7,85	
	0,63	1,90	3,92	3,92	7,85	7,85	
	0,70	1,90	3,92	3,92	7,85	7,85	
	0,75	1,90	3,92	3,92	7,85	7,85	
	0,80	1,90	3,92	3,92	7,85	7,85	
	0,88	1,90	3,92	3,92	7,85	7,85	
	1,00	1,90	3,92	3,92	7,85	7,85	
	1,13	1,90	3,92	3,92	7,85	7,85	
	1,15	1,90	3,92	3,92	7,85	7,85	
	1,25	1,90	3,92	3,92	7,85	7,85	
	1,50	1,90	3,92	3,92	7,85	7,85	
	1,75	1,90	3,92	3,92	7,85	7,85	
	2,00	1,90	3,92	3,92	7,85	7,85	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-8-P 5.5xL
with hexagon head and washer A16 and saddle washer ESW

Annex 85

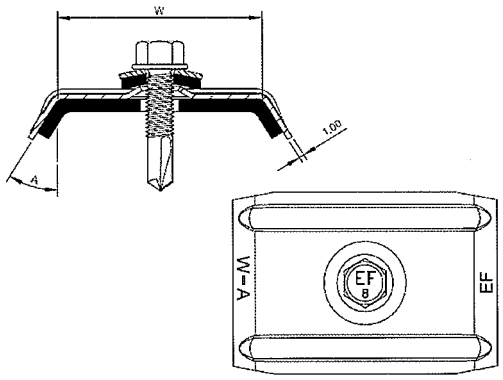
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	$\Sigma t_i \leq 8{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,41	1,41	1,41	1,41	1,41	
	0,55	1,41	1,41	1,41	1,41	1,41	
	0,60	1,41	1,41	1,41	1,41	1,41	
	0,63	1,77	1,77	1,77	1,77	1,77	
	0,70	1,77	1,77	1,77	1,77	1,77	
	0,75	2,35	2,35	2,35	2,35	2,35	
	0,80	2,35	2,35	2,35	2,35	2,35	
	0,88	2,35	2,35	2,35	2,35	2,35	
	1,00	2,50	2,50	2,50	2,50	2,50	
	1,13	2,50	2,50	2,50	2,50	2,50	
	1,15	2,50	2,50	2,50	2,50	2,50	
	1,25	2,50	2,50	2,50	2,50	2,50	
	1,50	2,50	2,50	2,50	2,50	2,50	
	1,75	2,50	2,50	2,50	2,50	2,50	
	2,00	2,50	2,50	2,50	2,50	2,50	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,90	3,92	3,92	7,85	7,85	
	0,55	1,90	3,92	3,92	7,85	7,85	
	0,60	1,90	3,92	3,92	7,85	7,85	
	0,63	1,90	3,92	3,92	7,85	7,85	
	0,70	1,90	3,92	3,92	7,85	7,85	
	0,75	1,90	3,92	3,92	7,85	7,85	
	0,80	1,90	3,92	3,92	7,85	7,85	
	0,88	1,90	3,92	3,92	7,85	7,85	
	1,00	1,90	3,92	3,92	7,85	7,85	
	1,13	1,90	3,92	3,92	7,85	7,85	
	1,15	1,90	3,92	3,92	7,85	7,85	
	1,25	1,90	3,92	3,92	7,85	7,85	
	1,50	1,90	3,92	3,92	7,85	7,85	
	1,75	1,90	3,92	3,92	7,85	7,85	
	2,00	1,90	3,92	3,92	7,85	7,85	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

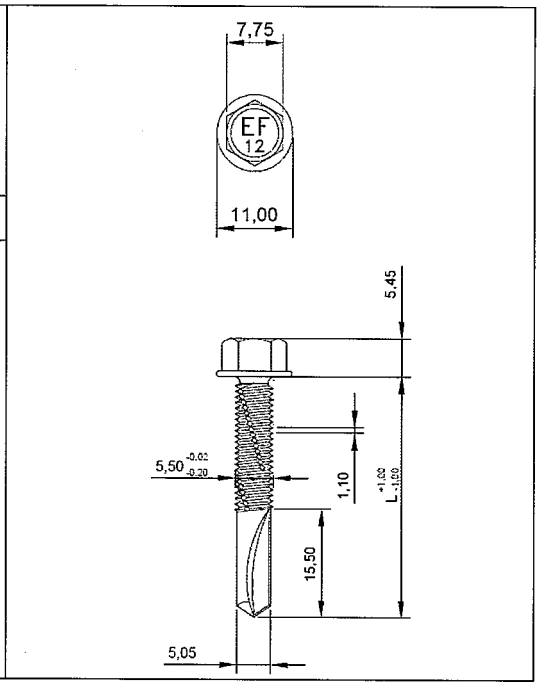
Fastening screws for metal members and sheeting	**Annex 86**
Self-drilling screws ESDS-8-SP 5.5xL with hexagon head and washer S16 and saddle washer ESW	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	Σti ≤ 12,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	1,31	1,31	
	1,15	1,31	1,31	1,31	1,31	1,31	
	1,25	1,31	1,31	1,31	1,31	1,31	
	1,50	1,31	1,31	1,31	1,31	1,31	
	1,75	1,31	1,31	1,31	1,31	1,31	
	2,00	1,31	1,31	1,31	1,31	1,31	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-Z 5.5xL with hexagon head

Annex 87

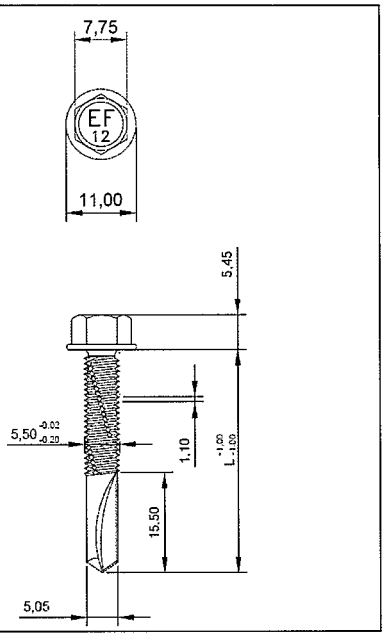
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma t_i \leq 12{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	1,31	1,31	
	1,15	1,31	1,31	1,31	1,31	1,31	
	1,25	1,31	1,31	1,31	1,31	1,31	
	1,50	1,31	1,31	1,31	1,31	1,31	
	1,75	1,31	1,31	1,31	1,31	1,31	
	2,00	1,31	1,31	1,31	1,31	1,31	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

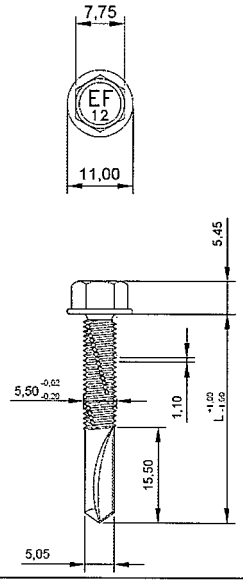
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-P 5.5xL with hexagon head

Annex 88

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	Σti ≤ 12,00 mm
Timber substructures	
No performance assessed	

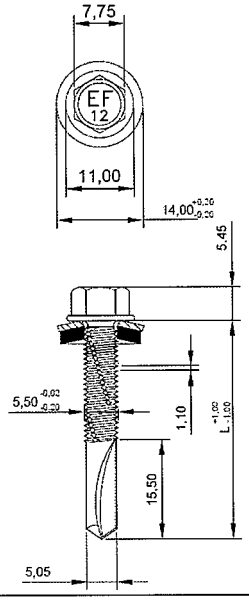


$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	1,31	1,31	
	1,15	1,31	1,31	1,31	1,31	1,31	
	1,25	1,31	1,31	1,31	1,31	1,31	
	1,50	1,31	1,31	1,31	1,31	1,31	
	1,75	1,31	1,31	1,31	1,31	1,31	
	2,00	1,31	1,31	1,31	1,31	1,31	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 89**
Self-drilling screws ESDS-12-SP 5.5xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z14 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	Σti ≤ 12,00 mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,54	2,54	2,54	2,54	2,54	
	0,55	2,54	2,54	2,54	2,54	2,54	
	0,60	2,54	2,54	2,54	2,54	2,54	
	0,63	3,41	3,41	3,41	3,41	3,41	
	0,70	3,41	3,41	3,41	3,41	3,41	
	0,75	4,10	4,10	4,10	4,10	4,10	
	0,80	4,10	4,10	4,10	4,10	4,10	
	0,88	4,10	4,10	4,10	4,10	4,10	
	1,00	4,10	4,10	4,10	4,10	4,10	
	1,13	4,10	4,10	4,10	4,10	4,10	
	1,15	4,10	4,10	4,10	4,10	4,10	
	1,25	4,10	4,10	4,10	4,10	4,10	
	1,50	4,10	4,10	4,10	4,10	4,10	
	1,75	4,10	4,10	4,10	4,10	4,10	
	2,00	4,10	4,10	4,10	4,10	4,10	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

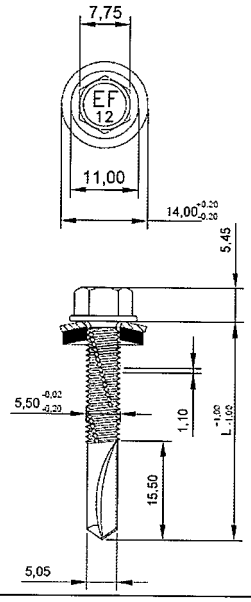
Fastening screws for metal members and sheeting	**Annex 90**
Self-drilling screws ESDS-12-Z 5.5xL with hexagon head and washer Z14	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	Σti ≤ 12,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,54	2,54	2,54	2,54	2,54	
	0,55	2,54	2,54	2,54	2,54	2,54	
	0,60	2,54	2,54	2,54	2,54	2,54	
	0,63	3,41	3,41	3,41	3,41	3,41	
	0,70	3,41	3,41	3,41	3,41	3,41	
	0,75	4,10	4,10	4,10	4,10	4,10	
	0,80	4,10	4,10	4,10	4,10	4,10	
	0,88	4,10	4,10	4,10	4,10	4,10	
	1,00	4,10	4,10	4,10	4,10	4,10	
	1,13	4,10	4,10	4,10	4,10	4,10	
	1,15	4,10	4,10	4,10	4,10	4,10	
	1,25	4,10	4,10	4,10	4,10	4,10	
	1,50	4,10	4,10	4,10	4,10	4,10	
	1,75	4,10	4,10	4,10	4,10	4,10	
	2,00	4,10	4,10	4,10	4,10	4,10	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

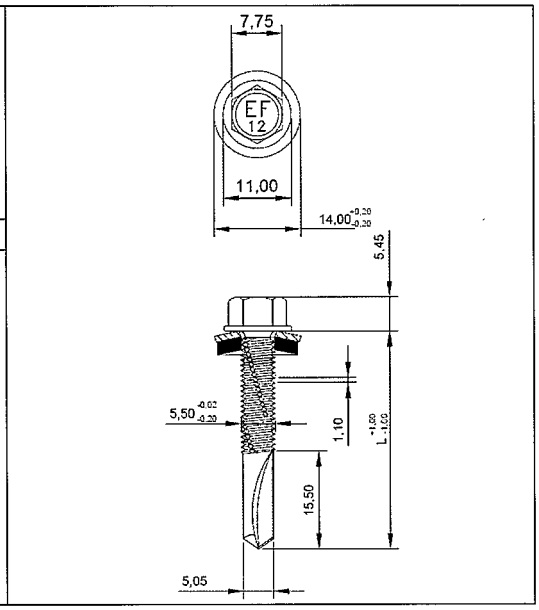
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-P 5.5xL
with hexagon head and washer A14

Annex 91

of European
Technical Assessment
ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma ti \leq 12{,}00$ mm
Timber substructures	
No performance assessed	

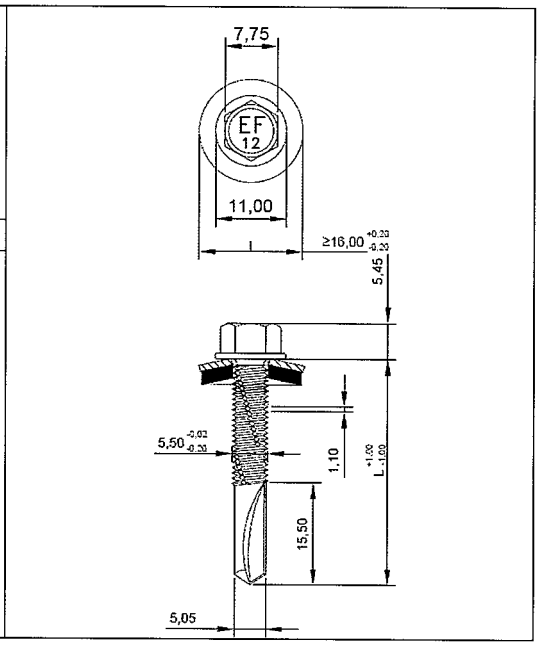


$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,54	2,54	2,54	2,54	2,54	
	0,55	2,54	2,54	2,54	2,54	2,54	
	0,60	2,54	2,54	2,54	2,54	2,54	
	0,63	3,41	3,41	3,41	3,41	3,41	
	0,70	3,41	3,41	3,41	3,41	3,41	
	0,75	4,10	4,10	4,10	4,10	4,10	
	0,80	4,10	4,10	4,10	4,10	4,10	
	0,88	4,10	4,10	4,10	4,10	4,10	
	1,00	4,10	4,10	4,10	4,10	4,10	
	1,13	4,10	4,10	4,10	4,10	4,10	
	1,15	4,10	4,10	4,10	4,10	4,10	
	1,25	4,10	4,10	4,10	4,10	4,10	
	1,50	4,10	4,10	4,10	4,10	4,10	
	1,75	4,10	4,10	4,10	4,10	4,10	
	2,00	4,10	4,10	4,10	4,10	4,10	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 92** of European Technical Assessment ETA-16/0739
Self-drilling screws ESDS-12-SP 5.5xL with hexagon head and washer S14	

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	Σti ≤ 12,00 mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,53	2,53	2,53	2,53	2,53	
	0,55	2,53	2,53	2,53	2,53	2,53	
	0,60	2,77	2,77	2,77	2,77	2,77	
	0,63	2,77	2,77	2,77	2,77	2,77	
	0,70	2,89	2,89	2,89	2,89	2,89	
	0,75	2,89	2,89	2,89	2,89	2,89	
	0,80	2,89	2,89	2,89	2,89	2,89	
	0,88	2,89	2,89	2,89	2,89	2,89	
	1,00	4,27	4,27	4,27	4,27	4,27	
	1,13	4,27	4,27	4,27	4,27	4,27	
	1,15	4,27	4,27	4,27	4,27	4,27	
	1,25	4,27	4,27	4,27	4,27	4,27	
	1,50	4,27	4,27	4,27	4,27	4,27	
	1,75	4,27	4,27	4,27	4,27	4,27	
	2,00	4,27	4,27	4,27	4,27	4,27	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-Z 5.5xL
with hexagon head and washer Z16

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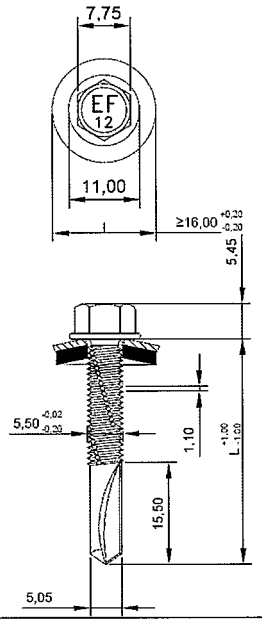
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma ti \leq 12{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,53	2,53	2,53	2,53	2,53	
	0,55	2,53	2,53	2,53	2,53	2,53	
	0,60	2,77	2,77	2,77	2,77	2,77	
	0,63	2,77	2,77	2,77	2,77	2,77	
	0,70	2,89	2,89	2,89	2,89	2,89	
	0,75	2,89	2,89	2,89	2,89	2,89	
	0,80	2,89	2,89	2,89	2,89	2,89	
	0,88	2,89	2,89	2,89	2,89	2,89	
	1,00	4,27	4,27	4,27	4,27	4,27	
	1,13	4,27	4,27	4,27	4,27	4,27	
	1,15	4,27	4,27	4,27	4,27	4,27	
	1,25	4,27	4,27	4,27	4,27	4,27	
	1,50	4,27	4,27	4,27	4,27	4,27	
	1,75	4,27	4,27	4,27	4,27	4,27	
	2,00	4,27	4,27	4,27	4,27	4,27	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-P 5.5xL
with hexagon head and washer A16

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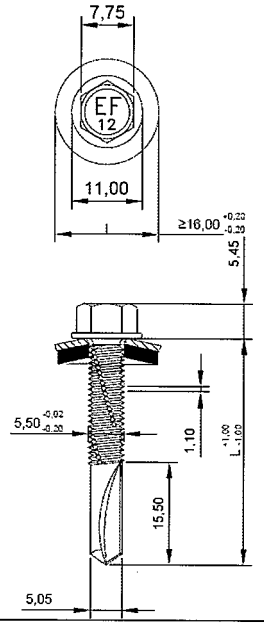
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma t_i \leq 12{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,53	2,53	2,53	2,53	2,53	
	0,55	2,53	2,53	2,53	2,53	2,53	
	0,60	2,77	2,77	2,77	2,77	2,77	
	0,63	2,77	2,77	2,77	2,77	2,77	
	0,70	2,89	2,89	2,89	2,89	2,89	
	0,75	2,89	2,89	2,89	2,89	2,89	
	0,80	2,89	2,89	2,89	2,89	2,89	
	0,88	2,89	2,89	2,89	2,89	2,89	
	1,00	4,27	4,27	4,27	4,27	4,27	
	1,13	4,27	4,27	4,27	4,27	4,27	
	1,15	4,27	4,27	4,27	4,27	4,27	
	1,25	4,27	4,27	4,27	4,27	4,27	
	1,50	4,27	4,27	4,27	4,27	4,27	
	1,75	4,27	4,27	4,27	4,27	4,27	
	2,00	4,27	4,27	4,27	4,27	4,27	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-SP 5.5xL
with hexagon head and washer S16

Annex 95

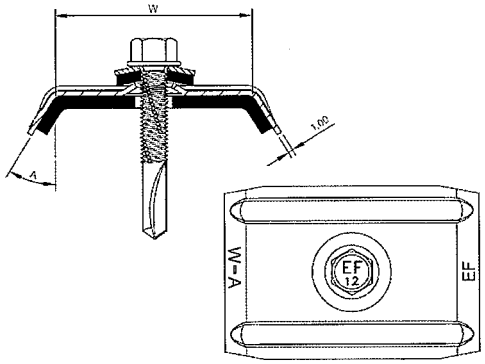
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	Σti ≤ 12,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	6,24	7,96	7,96	7,96	7,96	
	0,55	6,24	7,96	7,96	7,96	7,96	
	0,60	6,24	7,96	7,96	7,96	7,96	
	0,63	6,24	7,96	7,96	7,96	7,96	
	0,70	6,24	7,96	7,96	7,96	7,96	
	0,75	6,24	7,96	7,96	7,96	7,96	
	0,80	6,24	7,96	7,96	7,96	7,96	
	0,88	6,24	7,96	7,96	7,96	7,96	
	1,00	6,24	7,96	7,96	7,96	7,96	
	1,13	6,24	7,96	7,96	7,96	7,96	
	1,15	6,24	7,96	7,96	7,96	7,96	
	1,25	6,24	7,96	7,96	7,96	7,96	
	1,50	6,24	7,96	7,96	7,96	7,96	
	1,75	6,24	7,96	7,96	7,96	7,96	
	2,00	6,24	7,96	7,96	7,96	7,96	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-Z 5.5xL
with hexagon head and washer Z16 and saddle washer ESW

Annex 96

of European Technical Assessment ETA-16/0739

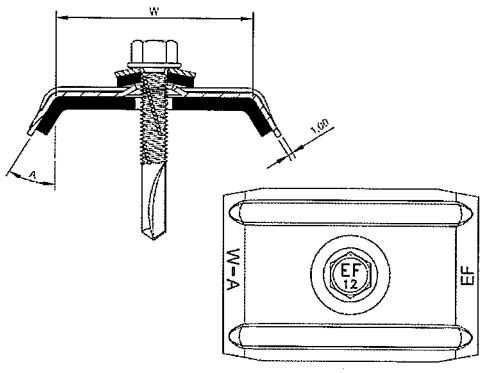
Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1

Drilling capacity: $\Sigma t_i \leq 12{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	6,24	7,96	7,96	7,96	7,96	
	0,55	6,24	7,96	7,96	7,96	7,96	
	0,60	6,24	7,96	7,96	7,96	7,96	
	0,63	6,24	7,96	7,96	7,96	7,96	
	0,70	6,24	7,96	7,96	7,96	7,96	
	0,75	6,24	7,96	7,96	7,96	7,96	
	0,80	6,24	7,96	7,96	7,96	7,96	
	0,88	6,24	7,96	7,96	7,96	7,96	
	1,00	6,24	7,96	7,96	7,96	7,96	
	1,13	6,24	7,96	7,96	7,96	7,96	
	1,15	6,24	7,96	7,96	7,96	7,96	
	1,25	6,24	7,96	7,96	7,96	7,96	
	1,50	6,24	7,96	7,96	7,96	7,96	
	1,75	6,24	7,96	7,96	7,96	7,96	
	2,00	6,24	7,96	7,96	7,96	7,96	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-P 5.5xL
with hexagon head and washer A16 and saddle washer ESW

Annex 97

of European Technical Assessment ETA-16/0739

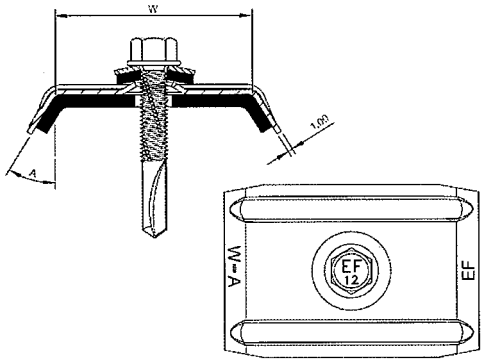
Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1

Drilling capacity: $\Sigma t_i \leq 12{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	6,24	7,96	7,96	7,96	7,96	
	0,55	6,24	7,96	7,96	7,96	7,96	
	0,60	6,24	7,96	7,96	7,96	7,96	
	0,63	6,24	7,96	7,96	7,96	7,96	
	0,70	6,24	7,96	7,96	7,96	7,96	
	0,75	6,24	7,96	7,96	7,96	7,96	
	0,80	6,24	7,96	7,96	7,96	7,96	
	0,88	6,24	7,96	7,96	7,96	7,96	
	1,00	6,24	7,96	7,96	7,96	7,96	
	1,13	6,24	7,96	7,96	7,96	7,96	
	1,15	6,24	7,96	7,96	7,96	7,96	
	1,25	6,24	7,96	7,96	7,96	7,96	
	1,50	6,24	7,96	7,96	7,96	7,96	
	1,75	6,24	7,96	7,96	7,96	7,96	
	2,00	6,24	7,96	7,96	7,96	7,96	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

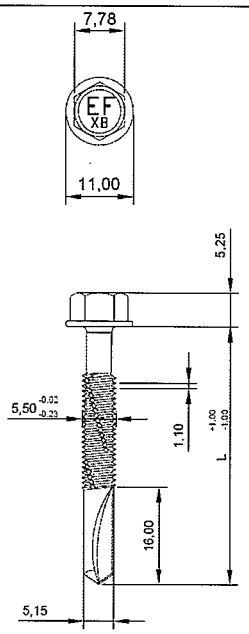
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-SP 5.5xL
with hexagon head and washer S16 and saddle washer ESW

Annex 98

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma t_i \leq 12{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,61	0,61	0,61	0,61	0,61	
	0,55	0,61	0,61	0,61	0,61	0,61	
	0,60	0,61	0,61	0,61	0,61	0,61	
	0,63	0,87	0,87	0,87	0,87	0,87	
	0,70	0,87	0,87	0,87	0,87	0,87	
	0,75	0,97	0,97	0,97	0,97	0,97	
	0,80	0,97	0,97	0,97	0,97	0,97	
	0,88	0,97	0,97	0,97	0,97	0,97	
	1,00	0,97	0,97	0,97	0,97	0,97	
	1,13	0,97	0,97	0,97	0,97	0,97	
	1,15	0,97	0,97	0,97	0,97	0,97	
	1,25	0,97	0,97	0,97	0,97	0,97	
	1,50	0,97	0,97	0,97	0,97	0,97	
	1,75	0,97	0,97	0,97	0,97	0,97	
	2,00	0,97	0,97	0,97	0,97	0,97	

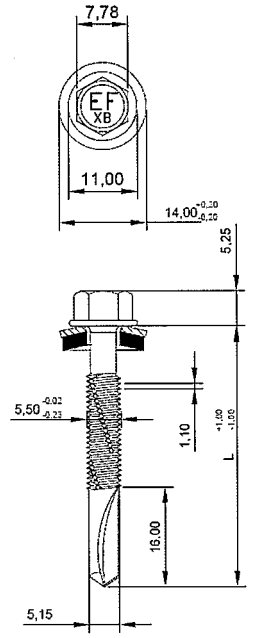
If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 99**
Self-drilling screws ESDS-12-B 5.5xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	Σti ≤ 12,00 mm

Timber substructures

No performance assessed

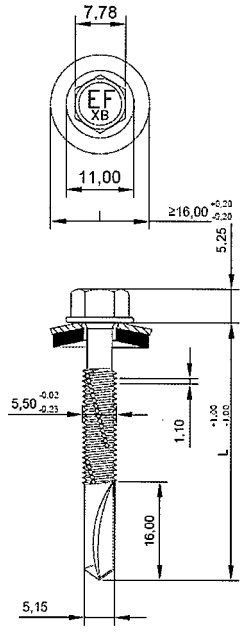


$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,62	2,62	2,62	2,62	2,62	
	0,55	2,62	2,62	2,62	2,62	2,62	
	0,60	2,62	2,62	2,62	2,62	2,62	
	0,63	3,46	3,46	3,46	3,46	3,46	
	0,70	3,46	3,46	3,46	3,46	3,46	
	0,75	4,16	4,16	4,16	4,16	4,16	
	0,80	4,16	4,16	4,16	4,16	4,16	
	0,88	4,16	4,16	4,16	4,16	4,16	
	1,00	4,16	4,16	4,16	4,16	4,16	
	1,13	4,16	4,16	4,16	4,16	4,16	
	1,15	4,16	4,16	4,16	4,16	4,16	
	1,25	4,16	4,16	4,16	4,16	4,16	
	1,50	4,16	4,16	4,16	4,16	4,16	
	1,75	4,16	4,16	4,16	4,16	4,16	
	2,00	4,16	4,16	4,16	4,16	4,16	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 100**
Self-drilling screws ESDS-12-B 5.5xL with hexagon head and washer S14	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma t_i \leq 12{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,53	2,53	2,53	2,53	2,53	
	0,55	2,53	2,53	2,53	2,53	2,53	
	0,60	2,77	2,77	2,77	2,77	2,77	
	0,63	2,77	2,77	2,77	2,77	2,77	
	0,70	2,89	2,89	2,89	2,89	2,89	
	0,75	2,89	2,89	2,89	2,89	2,89	
	0,80	2,89	2,89	2,89	2,89	2,89	
	0,88	2,89	2,89	2,89	2,89	2,89	
	1,00	4,27	4,27	4,27	4,27	4,27	
	1,13	4,27	4,27	4,27	4,27	4,27	
	1,15	4,27	4,27	4,27	4,27	4,27	
	1,25	4,27	4,27	4,27	4,27	4,27	
	1,50	4,27	4,27	4,27	4,27	4,27	
	1,75	4,27	4,27	4,27	4,27	4,27	
	2,00	4,27	4,27	4,27	4,27	4,27	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-B 5.5xL
with hexagon head and washer S16

Annex 101

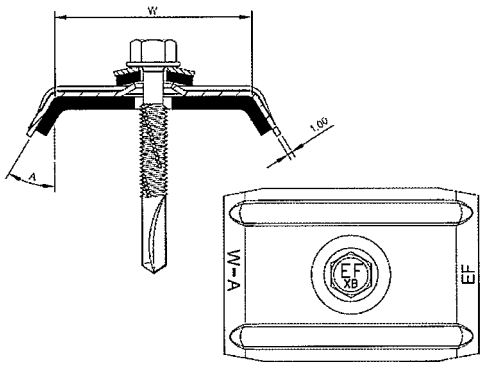
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma ti \leq 12{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		4,00	5,00	6,00	8,00	10,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm					
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,66	1,66	1,66	1,66	1,66	
	0,55	1,66	1,66	1,66	1,66	1,66	
	0,60	1,66	1,66	1,66	1,66	1,66	
	0,63	1,76	1,76	1,76	1,76	1,76	
	0,70	1,76	1,76	1,76	1,76	1,76	
	0,75	2,60	2,60	2,60	2,60	2,60	
	0,80	2,60	2,60	2,60	2,60	2,60	
	0,88	2,60	2,60	2,60	2,60	2,60	
	1,00	3,37	3,37	3,37	3,37	3,37	
	1,13	3,37	3,37	3,37	3,37	3,37	
	1,15	3,37	3,37	3,37	3,37	3,37	
	1,25	3,37	3,37	3,37	3,37	3,37	
	1,50	3,37	3,37	3,37	3,37	3,37	
	1,75	3,37	3,37	3,37	3,37	3,37	
	2,00	3,37	3,37	3,37	3,37	3,37	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	5,17	5,17	7,45	7,45	7,45	
	0,55	5,17	5,17	7,45	7,45	7,45	
	0,60	5,17	5,17	7,45	7,45	7,45	
	0,63	5,17	5,17	7,45	7,45	7,45	
	0,70	5,17	5,17	7,45	7,45	7,45	
	0,75	5,17	5,17	7,45	7,45	7,45	
	0,80	5,17	5,17	7,45	7,45	7,45	
	0,88	5,17	5,17	7,45	7,45	7,45	
	1,00	5,17	5,17	7,45	7,45	7,45	
	1,13	5,17	5,17	7,45	7,45	7,45	
	1,15	5,17	5,17	7,45	7,45	7,45	
	1,25	5,17	5,17	7,45	7,45	7,45	
	1,50	5,17	5,17	7,45	7,45	7,45	
	1,75	5,17	5,17	7,45	7,45	7,45	
	2,00	5,17	5,17	7,45	7,45	7,45	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-12-B 5.5xL
with hexagon head and washer S16 and saddle washer ESW

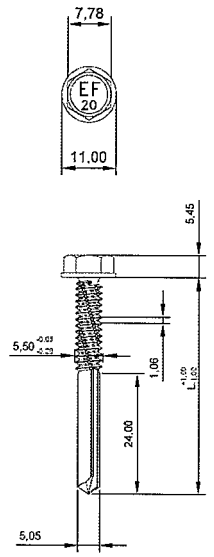
Annex 102

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	Σti ≤ 20,00 mm

Timber substructures

No performance assessed

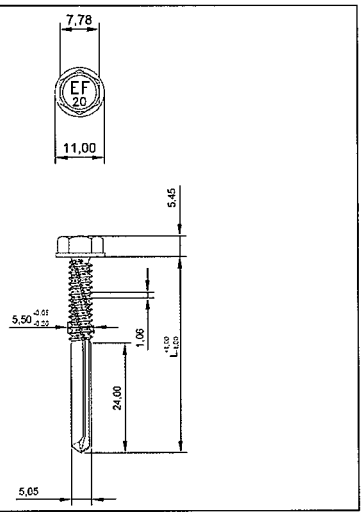


$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,15	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,25	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,50	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,75	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	2,00	1,31	1,31	1,31	1,31	1,31	1,31	1,31	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 103**
Self-drilling screws ESDS-20-Z 5.5xL with hexagon head	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma t_i \leq 20{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,15	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,25	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,50	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,75	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	2,00	1,31	1,31	1,31	1,31	1,31	1,31	1,31	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20-P 5.5xL with hexagon head

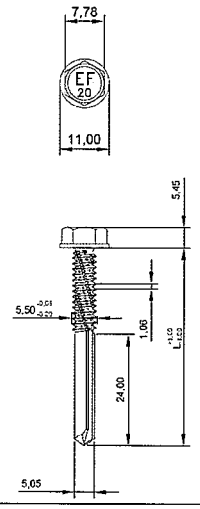
Annex 104

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma ti \leq 20{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
	0,55	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
	0,60	0,80	0,80	0,80	0,80	0,80	0,80	0,80	
	0,63	1,00	1,00	1,00	1,00	1,00	1,00	1,00	
	0,70	1,00	1,00	1,00	1,00	1,00	1,00	1,00	
	0,75	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	0,80	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	0,88	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,00	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,13	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,15	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,25	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,50	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	1,75	1,31	1,31	1,31	1,31	1,31	1,31	1,31	
	2,00	1,31	1,31	1,31	1,31	1,31	1,31	1,31	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20-SP 5.5xL with hexagon head

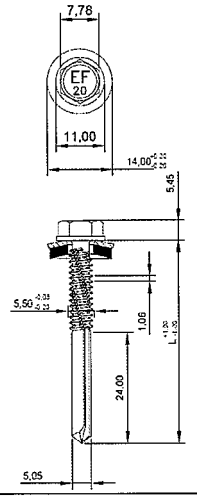
Annex 105

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z14 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma t_i \leq 20{,}00$ mm

Timber substructures

No performance assessed

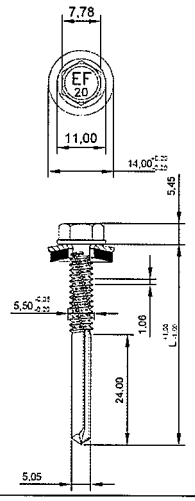


$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,54	2,54	2,54	2,54	2,54	2,54	2,54	
	0,55	2,54	2,54	2,54	2,54	2,54	2,54	2,54	
	0,60	2,54	2,54	2,54	2,54	2,54	2,54	2,54	
	0,63	3,41	3,41	3,41	3,41	3,41	3,41	3,41	
	0,70	3,41	3,41	3,41	3,41	3,41	3,41	3,41	
	0,75	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	0,80	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	0,88	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,00	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,13	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,15	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,25	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,50	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,75	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	2,00	4,10	4,10	4,10	4,10	4,10	4,10	4,10	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 106**
Self-drilling screws ESDS-20-Z 5.5xL with hexagon head and washer Z14	of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	Σti ≤ 20,00 mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,54	2,54	2,54	2,54	2,54	2,54	2,54	
	0,55	2,54	2,54	2,54	2,54	2,54	2,54	2,54	
	0,60	2,54	2,54	2,54	2,54	2,54	2,54	2,54	
	0,63	3,41	3,41	3,41	3,41	3,41	3,41	3,41	
	0,70	3,41	3,41	3,41	3,41	3,41	3,41	3,41	
	0,75	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	0,80	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	0,88	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,00	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,13	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,15	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,25	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,50	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,75	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	2,00	4,10	4,10	4,10	4,10	4,10	4,10	4,10	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

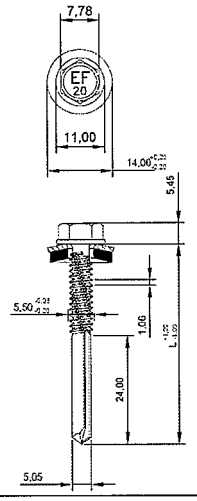
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20-P 5.5xL
with hexagon head and washer A14

Annex 107

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma t_i \leq 20{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,54	2,54	2,54	2,54	2,54	2,54	2,54	
	0,55	2,54	2,54	2,54	2,54	2,54	2,54	2,54	
	0,60	2,54	2,54	2,54	2,54	2,54	2,54	2,54	
	0,63	3,41	3,41	3,41	3,41	3,41	3,41	3,41	
	0,70	3,41	3,41	3,41	3,41	3,41	3,41	3,41	
	0,75	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	0,80	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	0,88	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,00	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,13	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,15	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,25	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,50	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	1,75	4,10	4,10	4,10	4,10	4,10	4,10	4,10	
	2,00	4,10	4,10	4,10	4,10	4,10	4,10	4,10	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20-SP 5.5xL
with hexagon head and washer S14

Annex 108

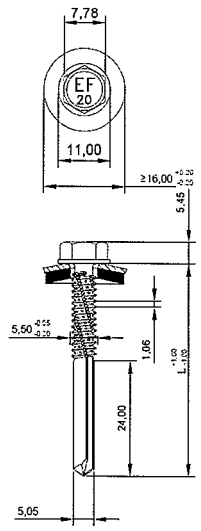
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	Σti ≤ 20,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,53	2,53	2,53	2,53	2,53	2,53	2,53	
	0,55	2,53	2,53	2,53	2,53	2,53	2,53	2,53	
	0,60	2,77	2,77	2,77	2,77	2,77	2,77	2,77	
	0,63	2,77	2,77	2,77	2,77	2,77	2,77	2,77	
	0,70	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	0,75	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	0,80	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	0,88	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	1,00	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,13	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,15	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,25	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,50	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,75	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	2,00	4,27	4,27	4,27	4,27	4,27	4,27	4,27	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

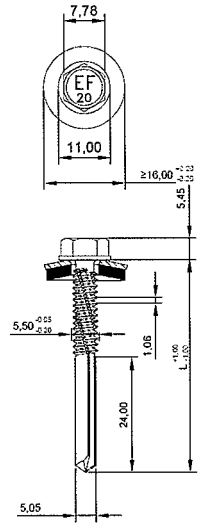
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20-Z 5.5xL
with hexagon head and washer Z16

Annex 109

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma t_i \leq 20{,}00$ mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,53	2,53	2,53	2,53	2,53	2,53	2,53	
	0,55	2,53	2,53	2,53	2,53	2,53	2,53	2,53	
	0,60	2,77	2,77	2,77	2,77	2,77	2,77	2,77	
	0,63	2,77	2,77	2,77	2,77	2,77	2,77	2,77	
	0,70	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	0,75	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	0,80	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	0,88	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	1,00	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,13	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,15	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,25	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,50	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,75	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	2,00	4,27	4,27	4,27	4,27	4,27	4,27	4,27	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20-P 5.5xL
with hexagon head and washer A16

Annex 110

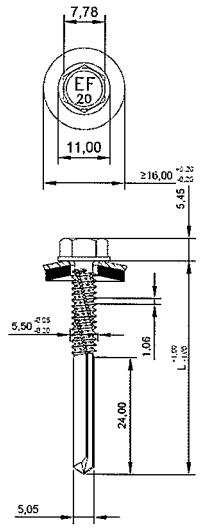
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma t_i \leq 20{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,53	2,53	2,53	2,53	2,53	2,53	2,53	
	0,55	2,53	2,53	2,53	2,53	2,53	2,53	2,53	
	0,60	2,77	2,77	2,77	2,77	2,77	2,77	2,77	
	0,63	2,77	2,77	2,77	2,77	2,77	2,77	2,77	
	0,70	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	0,75	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	0,80	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	0,88	2,89	2,89	2,89	2,89	2,89	2,89	2,89	
	1,00	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,13	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,15	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,25	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,50	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	1,75	4,27	4,27	4,27	4,27	4,27	4,27	4,27	
	2,00	4,27	4,27	4,27	4,27	4,27	4,27	4,27	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20-SP 5.5xL
with hexagon head and washer S16

Annex 111

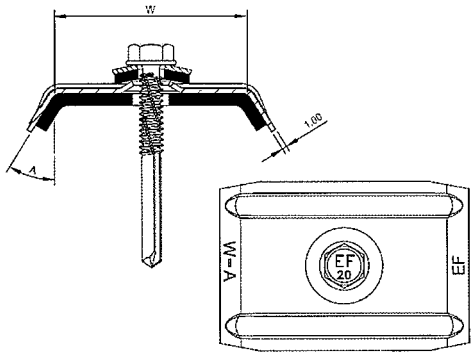
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma ti \leq 20{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,55	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,60	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,63	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,70	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,75	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,80	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,88	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,00	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,13	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,15	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,25	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,50	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,75	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	2,00	10,92	10,92	10,92	10,92	10,92	10,92	10,92	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20-Z 5.5xL
with hexagon head and washer Z16 and saddle washer ESW

Annex 112

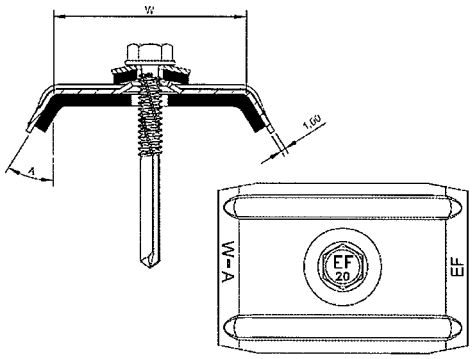
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma t_i \leq 20{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{t,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,55	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,60	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,63	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,70	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,75	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,80	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,88	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,00	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,13	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,15	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,25	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,50	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,75	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	2,00	10,92	10,92	10,92	10,92	10,92	10,92	10,92	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20-P 5.5xL
with hexagon head and washer A16 and saddle washer ESW

Annex 113

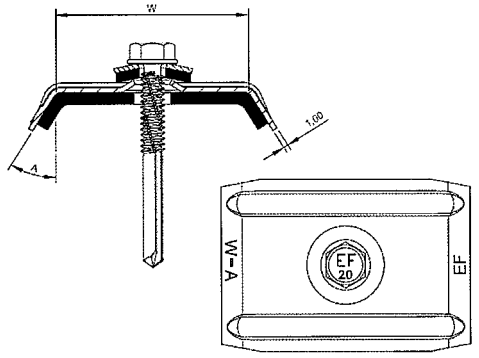
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – S355 EN 10025-1
Drilling capacity:	$\Sigma ti \leq 20{,}00$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6,00	8,00	10,00	12,00	14,00	16,00	18,00	Wood class ≥ C24
$M_{I,nom}$		5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,55	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,60	1,72	1,72	1,72	1,72	1,72	1,72	1,72	
	0,63	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,70	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,75	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,80	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	0,88	2,69	2,69	2,69	2,69	2,69	2,69	2,69	
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,13	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,15	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,25	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,50	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	1,75	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
	2,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,55	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,60	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,63	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,70	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,75	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,80	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	0,88	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,00	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,13	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,15	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,25	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,50	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	1,75	10,92	10,92	10,92	10,92	10,92	10,92	10,92	
	2,00	10,92	10,92	10,92	10,92	10,92	10,92	10,92	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 114**
Self-drilling screws ESDS-20-SP 5.5xL with hexagon head and washer S16 and saddle washer ESW	of European Technical Assessment ETA-16/0739

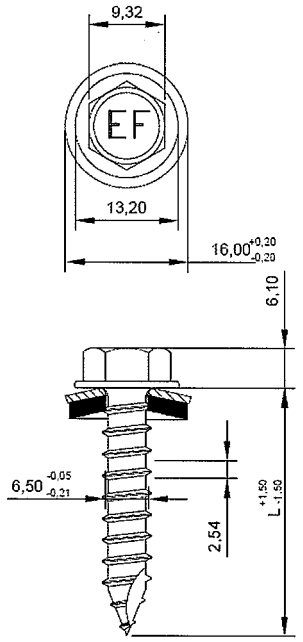
Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	-

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk}$ = 9,66 Nm
$f_{ax,k}$ = 14,538 N/mm² dla $l_{ef} \geq 40$ mm



$t_{N,II}$ [mm]		0,63	0,70	0,75	0,80	0,88	1,00	1,15	1,25	1,50	2,00	3,00	Wood class ≥ C24
Drill Ø		3,00		3,50		4,50				5,00	5,30		
$M_{t,nom}$		3 Nm							5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,55	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,60	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,63	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,70	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,75	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,80	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,88	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	1,00	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,55	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,60	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,63	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,70	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,75	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,80	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,88	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	1,00	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0A-Z 6.5xL
with hexagon head and washer Z16

Annex 115

of European
Technical Assessment
ETA-16/0739

Materials

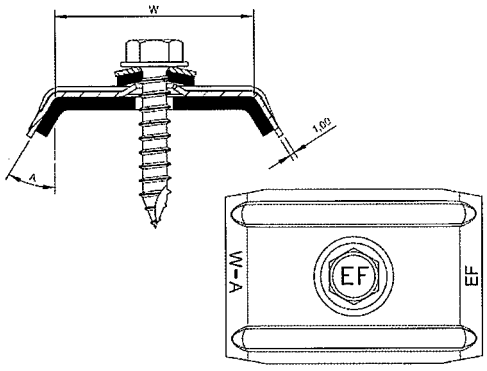
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081

Drilling capacity: -

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk}$ = 9,66 Nm
$f_{ax,k}$ = 14,538 N/mm^2 dla $l_{ef} \geq 40$ mm



$t_{N,II}$ [mm]		0,63	0,70	0,75	0,80	0,88	1,00	1,15	1,25	1,50	2,00	3,00	Wood class ≥ C24
Drill Ø		3,00		3,50		4,50				5,00	5,30		
$M_{t,nom}$		3 Nm							5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,55	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,60	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,63	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,70	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,75	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,80	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,88	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	1,00	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,55	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,60	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,63	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,70	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,75	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,80	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,88	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	1,00	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0A-Z 6.5xL
with hexagon head and washer Z16 and saddle washer ESW

Annex 116

of European Technical Assessment ETA-16/0739

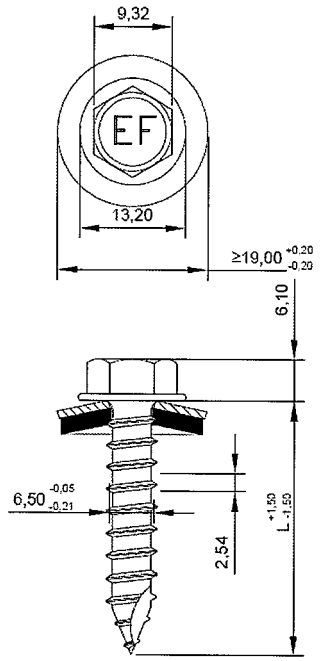
Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z19 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	-

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk}$ = 9,66 Nm
$f_{ax,k}$ = 14,538 N/mm^2 dla $l_{ef} \geq 40$ mm



$t_{N,II}$ [mm]		0,63	0,70	0,75	0,80	0,88	1,00	1,15	1,25	1,50	2,00	3,00	Wood class ≥ C24
Drill Ø		3,00		3,50		4,50				5,00	5,30		
$M_{t,nom}$		3 Nm							5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,55	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,60	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,63	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,70	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,75	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,80	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,88	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	1,00	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,55	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,60	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,63	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,70	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,75	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,80	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,88	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	1,00	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

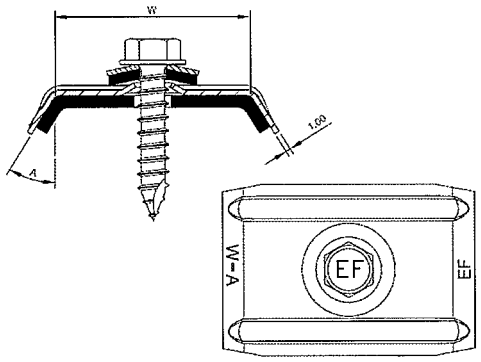
Self-tapping screws ESTS-0A-Z 6.5xL
with hexagon head and washer Z19

Annex 117

of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z19 – galvanized carbon steel washer with
Saddle washer:	EPDM ring ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	-



Timber substructures

For timber structures performance assessed with:

$M_{y,Rk}$ = 9,66 Nm
$f_{ax,k}$ = 14,538 N/mm^2 dla $l_{ef} \geq 40$ mm

$t_{N,II}$ [mm]		0,63	0,70	0,75	0,80	0,88	1,00	1,15	1,25	1,50	2,00	3,00	Wood class ≥ C24
Drill Ø		3,00		3,50		4,50				5,00	5,30		
$M_{t,nom}$		3 Nm							5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,55	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,60	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,63	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,70	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,75	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,80	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,88	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	1,00	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,55	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,60	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,63	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,70	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,75	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,80	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,88	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	1,00	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0A-Z 6.5xL
with hexagon head and washer Z19 and saddle washer ESW

Annex 118

of European Technical Assessment ETA-16/0739

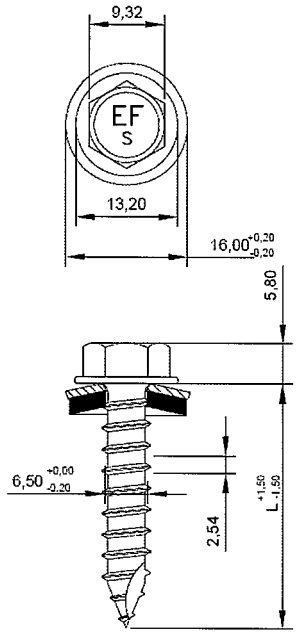
Materials

Fastener:	galvanized stainless steel
Washer:	S16 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	-

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk}$ = 9,66 Nm
$f_{ax,k}$ = 14,538 N/mm² dla $l_{ef} \geq 40$ mm



$t_{N,II}$ [mm]		0,63	0,70	0,75	0,80	0,88	1,00	1,15	1,25	1,50	2,00	3,00	Wood class ≥ C24
Drill Ø		3,00		3,50		4,50				5,00	5,30		
$M_{t,nom}$		3 Nm							5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,55	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,60	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,63	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,70	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,75	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,80	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,88	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	1,00	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,55	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,60	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,63	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,70	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,75	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,80	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,88	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	1,00	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0A-S 6.5xL
with hexagon head and washer S16

Annex 119

of European
Technical Assessment
ETA-16/0739

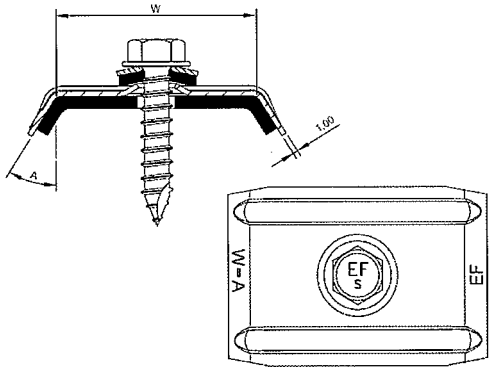
Materials

Fastener:	galvanized stainless steel
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	-

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk}$ = 9,66 Nm
$f_{ax,k}$ = 14,538 N/mm^2 dla $l_{ef} \geq$ 40 mm



$t_{N,II}$ [mm]		0,63	0,70	0,75	0,80	0,88	1,00	1,15	1,25	1,50	2,00	3,00	Wood class ≥ C24
Drill Ø		3,00		3,50		4,50				5,00	5,30		
$M_{t,nom}$		3 Nm							5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,55	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,60	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,63	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,70	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,75	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,80	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,88	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	1,00	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,55	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,60	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,63	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,70	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,75	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,80	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,88	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	1,00	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0A-S 6.5xL
with hexagon head and washer S16 and saddle washer ESW

Annex 120

of European Technical Assessment ETA-16/0739

Materials

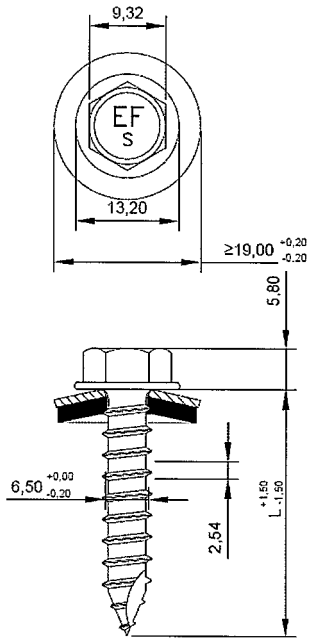
Fastener:	galvanized stainless steel
Washer:	S19 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081

Drilling capacity: -

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk}$ = 9,66 Nm
$f_{ax,k}$ = 14,538 N/mm^2 dla $l_{ef} \geq 40$ mm



$t_{N,II}$ [mm]		0,63	0,70	0,75	0,80	0,88	1,00	1,15	1,25	1,50	2,00	3,00	Wood class ≥ C24
Drill Ø		3,00		3,50		4,50				5,00	5,30		
$M_{t,nom}$		3 Nm							5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,55	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,60	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,63	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,70	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,75	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,80	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,88	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	1,00	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,55	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,60	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,63	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,70	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,75	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,80	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,88	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	1,00	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0A-S 6.5xL
with hexagon head and washer S19

Annex 121

of European
Technical Assessment
ETA-16/0739

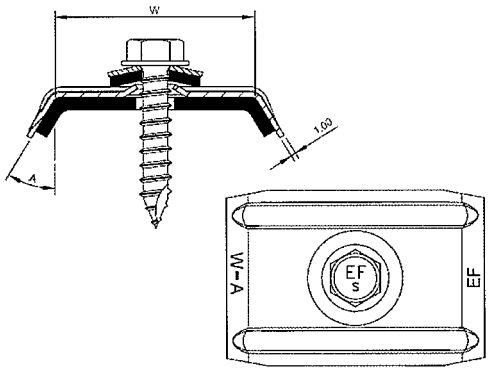
Materials

Fastener:	galvanized stainless steel
Washer:	S19 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	-

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk}$ = 9,66 Nm
$f_{ax,k}$ = 14,538 N/mm^2 dla $l_{ef} \geq 40$ mm



$t_{N,II}$ [mm]		0,63	0,70	0,75	0,80	0,88	1,00	1,15	1,25	1,50	2,00	3,00	Wood class ≥ C24
Drill Ø		3,00		3,50		4,50				5,00	5,30		
$M_{t,nom}$		3 Nm							5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,55	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52	2,52
	0,60	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,63	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,70	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,75	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,80	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	0,88	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
	1,00	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16	3,16
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,55	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,60	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,63	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,70	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,75	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,80	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	0,88	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61
	1,00	0,68	0,68	0,95	0,95	0,95	1,39	1,39	1,39	1,57	2,00	2,00	1,61

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0A-S 6.5xL
with hexagon head and washer S19 and saddle washer ESW

Annex 122

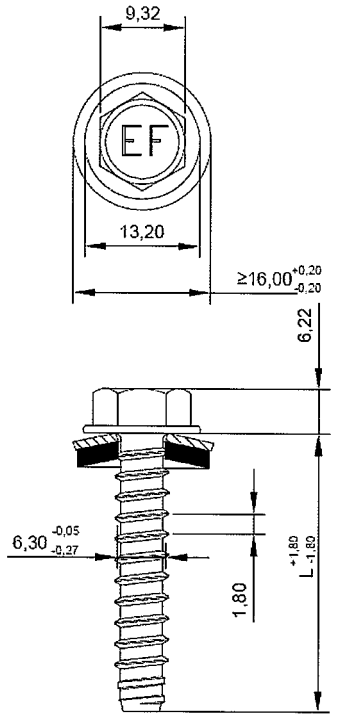
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	-

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood class ≥ C24
Drill Ø		5,30			5,50		5,70			
$M_{t,nom}$		5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,55	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,60	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,63	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,70	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,75	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	0,80	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	0,88	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	1,00	2,76	2,76	2,76	3,04	3,04	3,04	3,04	3,04	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,18	2,18	2,18	2,18	2,18	2,18	2,18	2,18	
	0,55	2,18	2,18	2,18	2,18	2,18	2,18	2,18	2,18	
	0,60	2,18	2,18	2,18	2,18	2,18	2,18	2,18	2,18	
	0,63	3,47	3,47	3,47	3,47	3,47	3,47	3,47	3,47	
	0,70	3,47	3,47	3,47	3,47	3,47	3,47	3,47	3,47	
	0,75	3,72	3,72	3,72	3,72	3,72	3,72	3,72	3,72	
	0,80	3,72	3,72	3,72	3,72	3,72	3,72	3,72	3,72	
	0,88	3,72	3,72	3,72	3,72	3,72	3,72	3,72	3,72	
	1,00	4,25	4,64	4,64	4,64	4,64	4,64	4,64	4,64	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0B-Z 6.3xL
with hexagon head and washer Z16

Annex 123

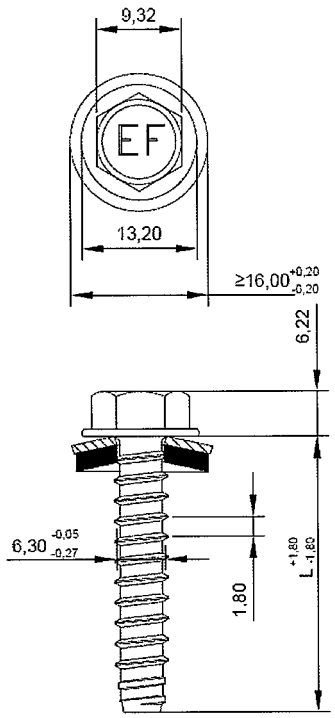
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	-

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood class ≥ C24
Drill Ø		5,30			5,50		5,70			
$M_{t,nom}$		5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,55	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,60	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,63	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,70	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,75	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	0,80	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	0,88	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	1,00	2,76	2,76	2,76	3,04	3,04	3,04	3,04	3,04	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,18	2,18	2,18	2,18	2,18	2,18	2,18	2,18	
	0,55	2,18	2,18	2,18	2,18	2,18	2,18	2,18	2,18	
	0,60	2,18	2,18	2,18	2,18	2,18	2,18	2,18	2,18	
	0,63	3,47	3,47	3,47	3,47	3,47	3,47	3,47	3,47	
	0,70	3,47	3,47	3,47	3,47	3,47	3,47	3,47	3,47	
	0,75	3,72	3,72	3,72	3,72	3,72	3,72	3,72	3,72	
	0,80	3,72	3,72	3,72	3,72	3,72	3,72	3,72	3,72	
	0,88	3,72	3,72	3,72	3,72	3,72	3,72	3,72	3,72	
	1,00	4,25	4,64	4,64	4,64	4,64	4,64	4,64	4,64	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0B-P 6.3xL
with hexagon head and washer A16

Annex 124

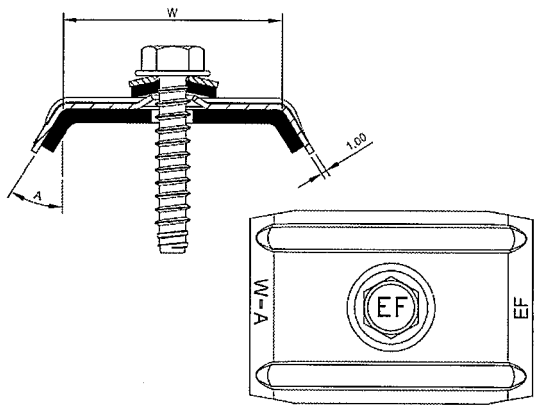
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	-

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood class ≥ C24
Drill Ø		5,30			5,50		5,70			
$M_{t,nom}$		5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,55	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,60	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,63	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,70	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,75	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	0,80	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	0,88	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	1,00	2,76	2,76	2,76	3,04	3,04	3,04	3,04	3,04	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,55	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,60	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,63	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,70	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,75	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,80	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,88	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	1,00	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0B-Z 6.3xL
with hexagon head and washer Z16 and saddle washer ESW

Annex 125

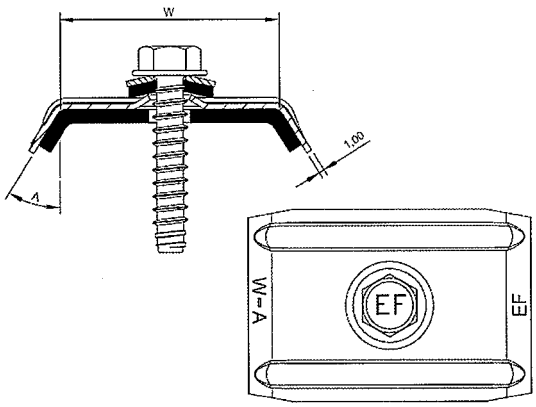
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	-

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood class ≥ C24
Drill Ø		5,30			5,50		5,70			
$M_{t,nom}$		5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,55	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,60	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,63	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,70	1,28	1,28	1,28	1,46	1,46	1,46	1,46	1,46	
	0,75	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	0,80	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	0,88	1,91	1,91	1,91	2,15	2,15	2,15	2,15	2,15	
	1,00	2,76	2,76	2,76	3,04	3,04	3,04	3,04	3,04	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,55	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,60	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,63	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,70	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,75	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,80	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	0,88	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	
	1,00	4,25	6,44	6,44	7,02	7,02	7,02	7,02	7,02	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0B-P 6.3xL
with hexagon head and washer A16 and saddle washer ESW

Annex 126

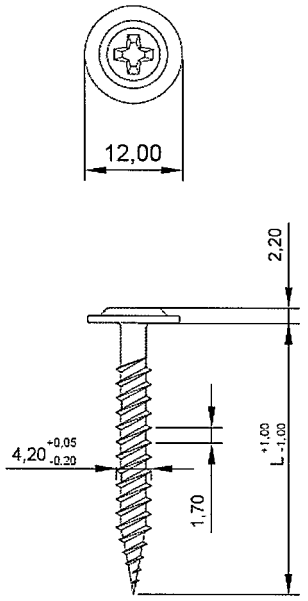
of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (8 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	$\Sigma ti \leq 2 \times 0{,}88$ mm

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk} = 3{,}10$ Nm
$f_{ax,k} = 14{,}314$ N/mm^2 for $l_{ef} \geq 16{,}8$ mm



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	Wood class ≥ C24
$M_{t,nom}$		3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,55	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,60	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,63	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,70	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,75	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,80	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,88	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,55	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,60	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,63	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,70	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,75	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,80	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,88	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 127**
Self-tapping screws ESTS-WH-0-Z 4.2xL with flat head	of European Technical Assessment ETA-16/0739

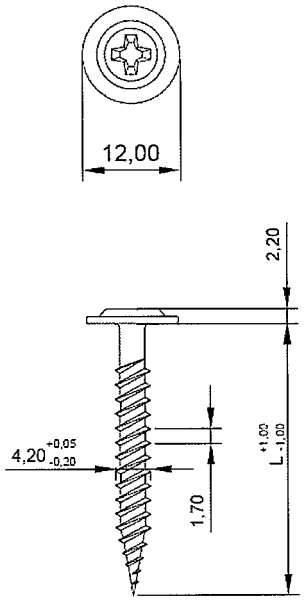
Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326 or structural wood C24 – EN 14081
Drilling capacity:	$\Sigma ti \leq 2 \times 0{,}88$ mm

Timber substructures

For timber structures performance assessed with:

$M_{y,Rk} = 3{,}10$ Nm
$f_{ax,k} = 14{,}314$ N/mm² for $l_{ef} \geq 16{,}8$ mm



$t_{N,II}$ [mm]		0,50	0,55	0,60	0,63	0,70	0,75	0,80	0,88	Wood class ≥ C24
$M_{t,nom}$		3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,55	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,60	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,63	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,70	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,75	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,80	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,88	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,55	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,60	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,63	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,70	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,75	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,80	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95
	0,88	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,95

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-WH-0-P 4.2xL with flat head

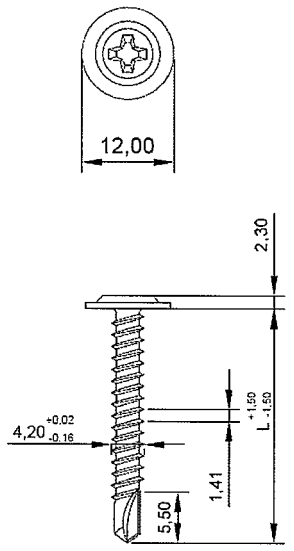
Annex 128

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (8 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma t_i \leq 2 \times 1{,}25$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,75	0,80	0,88	1,00	1,13	1,25	Wood class ≥ C24
$M_{t,nom}$		3 Nm						
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	1,75	1,75	1,75	1,75	1,75	1,75	
	0,80	1,75	1,75	1,75	1,75	1,75	1,75	
	0,88	1,75	1,75	1,75	1,75	1,75	1,75	
	1,00	1,75	1,75	1,75	1,75	1,75	1,75	
	1,13	1,75	1,75	1,75	1,75	1,75	1,75	
	1,15	1,75	1,75	1,75	1,75	1,75	1,75	
	1,25	1,75	1,75	1,75	1,75	1,75	1,75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	0,82	0,82	0,82	0,82	0,82	0,82	
	0,80	0,82	0,82	0,82	0,82	0,82	0,82	
	0,88	0,82	0,82	0,82	0,82	0,82	0,82	
	1,00	0,82	0,82	0,82	0,82	0,82	0,82	
	1,13	0,82	0,82	0,82	0,82	0,82	0,82	
	1,15	0,82	0,82	0,82	0,82	0,82	0,82	
	1,25	0,82	0,82	0,82	0,82	0,82	0,82	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

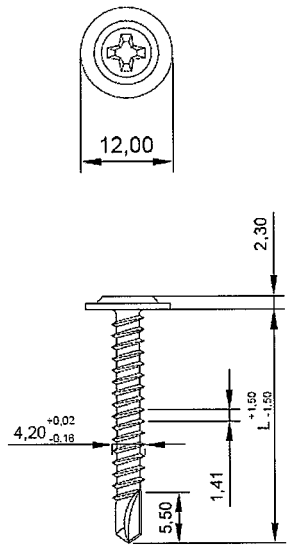
Fastening screws for metal members and sheeting	**Annex 129**
Self-drilling screws ESDS-WH-2-Z 4.2xL with flat head	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	$\Sigma ti \leq 2 \times 1{,}25$ mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0,75	0,80	0,88	1,00	1,13	1,25	Wood class ≥ C24
$M_{t,nom}$		3 Nm						
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	1,75	1,75	1,75	1,75	1,75	1,75	
	0,80	1,75	1,75	1,75	1,75	1,75	1,75	
	0,88	1,75	1,75	1,75	1,75	1,75	1,75	
	1,00	1,75	1,75	1,75	1,75	1,75	1,75	
	1,13	1,75	1,75	1,75	1,75	1,75	1,75	
	1,15	1,75	1,75	1,75	1,75	1,75	1,75	
	1,25	1,75	1,75	1,75	1,75	1,75	1,75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	0,82	0,82	0,82	0,82	0,82	0,82	
	0,80	0,82	0,82	0,82	0,82	0,82	0,82	
	0,88	0,82	0,82	0,82	0,82	0,82	0,82	
	1,00	0,82	0,82	0,82	0,82	0,82	0,82	
	1,13	0,82	0,82	0,82	0,82	0,82	0,82	
	1,15	0,82	0,82	0,82	0,82	0,82	0,82	
	1,25	0,82	0,82	0,82	0,82	0,82	0,82	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 130** of European Technical Assessment ETA-16/0739
Self-drilling screws ESDS-WH-2-P 4.2xL with flat head	

Determination of design values

1. **Determination of Design Shear Resistance**

   The determination of the design values of the shear resistance depends on the type of supporting substructure.

   For Metal Substructures the following applies:

   The design values $V_{R,d}$ of the shear resistance are the characteristic values of the shear resistance divided by the recommended partial safety factor γ_M = 1,33. The recommended partial safety factor γ_M should be used in cases where no value is given in national regulations of the Member State where the fastening screws are used.

   For Timber Substructures the following applies:

   The design values $V_{R,d}$ of the shear resistance are the characteristic values of the shear resistance multiplied by k_{mod} according to EN 1995-1-1, Table 3.1, and divided by the recommended partial safety factor γ_M = 1,33. If failure of the metal component with the thickness t_1 and not failure of the timber substructure is the relevant failure mode then k_{mod} = 1,0.

   The recommended partial safety factor γ_M should be used in cases where no value is given in national regulations of the Member State where the fastening screws are used.

2. **Determination of Design Pull-through, Pull-out and Tension Resistance**

   The design values of the pull-through resistance are the characteristic values of the pull-through resistance divided by the recommended partial safety factor γ_M = 1,33. The recommended partial safety factor γ_M should be used in cases where no value is given in national regulations of the Member State where the fastening screws are used.

   The determination of the design values of the pull-out resistance depends on the type of substructure.

   For Metal Substructures the following applies:

   The design values of the pull-out resistance are the characteristic values of the pull-out resistance divided by the recommended partial safety factor γ_M = 1,33. The recommended partial safety factor γ_M should be used in cases where no value is given in national regulations of the Member State where the fastening screws are used.

   For Timber Substructures the following applies:

   The design values of the pull-out resistance are the characteristic values of the pull-out resistance multiplied by k_{mod} according to EN 1995-1-1, Table 3.1, and divided by the recommended partial safety factor γ_M = 1,33. The recommended partial safety factor γ_M should be used in cases where no value is given in national regulations of the Member State where the fastening screws are used.

   The design tension resistance $N_{R,d}$ is the minimum value of the design values of either pull-through resistance or relevant pull-out resistance for the corresponding connection.

3. **Design Resistance in case of combined Tension and Shear Forces (interaction)**

   In case of combined tension and shear forces the linear interaction formula according to EN 1993-1-3, section 8.3 (8) or EN 1999-1-4, section 8.1 (7) should be taken into account.