INSTYTUT TECHNIKI BUDOWLANEJ

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

Member of EOTA
www.eota.eu

European Technical Assessment

ETA-16/0739 of 30/12/2024

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. (EUROFAST / EUROFAST GROUP) Indumastraat 18 5753 RJ Deurne Netherlands
Manufacturing plants	Van Roij Fasteners Europe B.V. plants
This European Technical Assessment contains	205 pages including 199 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 30/03/2021

This European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

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 198.

The fastening screws 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-P 5.5xL	galvanized carbon steel with PREMIUM coating	13
9	ESDS-PH-0-B 5.5xL	stainless steel (bi-metal)	14
10	ESDS-0-B 6.3xL	stainless steel (bi-metal)	15
11	ESDS-X-SP 4.8xL	galvanized carbon steel with SUPER PREMIUM coating	16, 17, 18
12	ESDS-X-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	19, 20, 21
13	ESDS-FH-0-Z 6.3xL	galvanized carbon steel with ≥ 12 µm of zinc coating	22
14	ESDS-FH-0-P 6.3xL	galvanized carbon steel with PREMIUM coating	23
15	ESDS-FH-0-SP 6.3xL	galvanized carbon steel with SUPER PREMIUM coating	24
16	EFS-2-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	25
17	EFS-2-P 4.8xL	galvanized carbon steel with PREMIUM coating	26
18	EFS-2-SP 4.8xL	galvanized carbon steel with SUPER PREMIUM coating	27
19	EFS-2-B 4.8xL	stainless steel (bi-metal)	28
20	EFS-PH-2-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	29
21	EFS-PH-2-P 4.8xL	galvanized carbon steel with PREMIUM coating	30
22	EFS-PH-2-B 4.8xL	stainless steel (bi-metal)	31
23	ESWS-0H-0-S 4.5xL	stainless steel	32
24	ESWS-0H-0-S 6.0xL	stainless steel	33
25	ESDS-3-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	34, 37, 40, 43
26	ESDS-3-P 4.8xL	galvanized carbon steel with PREMIUM coating	35, 38, 41, 44
27	ESDS-3-SP 4.8xL	galvanized carbon steel with SUPER PREMIUM coating	36, 39, 42, 45
28	ESDS-3-B 4.8xL	stainless steel (bi-metal)	46, 47, 48, 49
29	ESDS-3-B 5.5xL	stainless steel (bi-metal)	50, 51, 52, 53, 54
30	EVFS-3-B 5.5xL	stainless steel (bi-metal)	55, 56
31	ESDS-PH-3-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	57
32	ESDS-PH-3-P 4.8xL	galvanized carbon steel with PREMIUM coating	58
33	ESDS-FH-3-Z 4.8xL	galvanized carbon steel with ≥ 12 µm of zinc coating	59
34	ESDS-FH-3-P 4.8xL	galvanized carbon steel with PREMIUM coating	60
35	ESDS-FH-3-SP 4.8xL	galvanized carbon steel with SUPER PREMIUM coating	61
36	ESDS-5-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	62, 65, 68, 71

Table 1

37	ESDS-5-P 5.5xL	galvanized carbon steel with PREMIUM coating	63, 66, 69, 72
38	ESDS-5-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	64, 67, 70, 73
39	ESDS-5-B 5.5xL	stainless steel (bi-metal)	74, 75, 76, 77
40	ESDS-PH-5-B 5.5xL	stainless steel (bi-metal)	78
41	ESDS-PH-5-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	79
42	ESDS-PH-5-P 5.5xL	galvanized carbon steel with PREMIUM coating	80
43	ESDS-FH-5-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	81
44	ESDS-FH-5-P 5.5xL	galvanized carbon steel with PREMIUM coating	82
45	ESDS-FH-5-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	83
46	ESDS-6-Z 6.3xL	galvanized carbon steel with ≥ 12 µm of zinc coating	84, 87, 90
47	ESDS-6-P 6.3xL	galvanized carbon steel with PREMIUM coating	85, 88, 91
48	ESDS-6-SP 6.3xL	galvanized carbon steel with SUPER PREMIUM coating	86, 89, 92
49	ESDS-PH-6-B 6.3xL	stainless steel (bi-metal)	93
50	ESDS-8-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	94, 97, 100, 103
51	ESDS-8-P 5.5xL	galvanized carbon steel with PREMIUM coating	95, 98, 101, 104
52	ESDS-8-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	96, 99, 102, 105
53	ESDS-12-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	106, 109, 112, 115
54	ESDS-12-P 5.5xL	galvanized carbon steel with PREMIUM coating	107, 110, 113, 116
55	ESDS-12-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	108, 111, 114, 117
56	ESDS-12-B 5.5xL	stainless steel (bi-metal)	118, 119, 120, 121
57	ESDS-12-FH-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	122
58	ESDS-12-FH-P 5.5xL	galvanized carbon steel with PREMIUM coating	123
59	ESDS-12-FH-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	124
60	ESDS-16-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	125, 128, 131, 134
61	ESDS-16-P 5.5xL	galvanized carbon steel with PREMIUM coating	126, 129, 132, 135
62	ESDS-16-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	127, 130, 133, 136
63	ESDS-20-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	137, 140, 143, 146
64	ESDS-20-P 5.5xL	galvanized carbon steel with PREMIUM coating	138, 141, 144, 147
65	ESDS-20-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	139, 142, 145, 148
66	ESDS-20S-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	149, 152, 155, 158
67	ESDS-20S-P 5.5xL	galvanized carbon steel with PREMIUM coating	150, 153, 156, 159
68	ESDS-20S-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	151, 154, 157, 160
69	ESDS-25-Z 5.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	161, 164, 167, 170
70	ESDS-25-P 5.5xL	galvanized carbon steel with PREMIUM coating	162, 165, 168, 171
71	ESDS-25-SP 5.5xL	galvanized carbon steel with SUPER PREMIUM coating	163, 166, 169, 172
72	ESTS-0A-Z 6.5xL / ESTS-HWH10-0A-Z 6.5xL	galvanized carbon steel with ≥ 12 µm of zinc coating	173, 174, 175, 176, 177
73	ESTS-0A-S 6.5Xl / ESTS-HWH10-0A-S 6.5xL	galvanized stainless steel	178, 179, 180, 181, 182
74	ESTS-0B-Z 6.3xL / ESTS-HWH10-0B-Z 6.3xL	galvanized carbon steel with ≥ 12 µm of zinc coating	183, 185
75	ESTS-0B-P 6.3xL / ESTS-HWH10-0B-P 6.3xL	galvanized carbon steel with PREMIUM coating	184, 186
76	ESTS-0B-S 6.3xL / ESTS-HWH10-0B-S 6.3xL	galvanized stainless steel	187, 188, 189
77	ESTS-WH-0-Z 4.2xL	galvanized carbon steel with ≥ 8 µm of zinc coating	190
78	ESTS-WH-0-P 4.2xL	galvanized carbon steel with PREMIUM coating	191
79	ESTS-WH-1-Z 4.2xL	galvanized carbon steel with ≥ 8 µm of zinc coating	192
80	ESTS-WH-1-P 4.2xL	galvanized carbon steel with PREMIUM coating	193

Table 1

81	ESDS-WH-2-Z 4.2xL	galvanized carbon steel with ≥ 8 µm of zinc coating	194
82	ESDS-WH-2-P 4.2xL	galvanized carbon steel with PREMIUM coating	195
83	ESDS-2-Z-42 / ESDS-HWH7-2-Z 4.2xL	galvanized carbon steel with ≥ 8 µm of zinc coating	196
84	ESDS-2-C-42 / ESDS-HWH7-2-C 4.2xL	chromium steel	197
85	ESDS-2-B-42 / ESDS-HWH7-2-B 4.2xL	stainless steel (bi-metal)	198

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 198. 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 Performance of the product and references to the methods used for its 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 Annexes 1 to 198. The values were determined by tests according to EAD 330046-01-0602.

The design values shall be determined according to Annex 199 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 has been made in accordance with EAD 330046-01-0602.

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

According to EC 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 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 in 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 30/12/2024 by Instytut Techniki Budowlanej

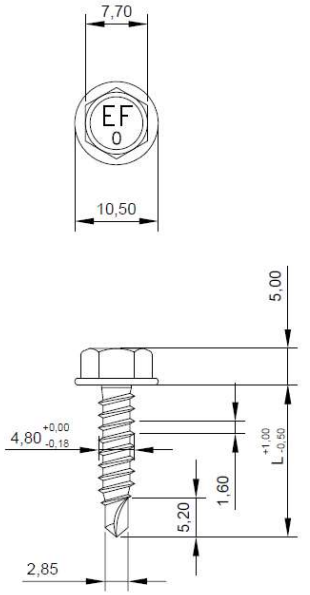
Anna Panek, MSc
Deputy Director of ITB

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:	Σti ≤ 2 x 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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

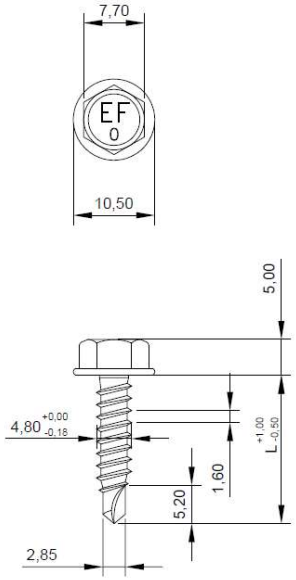
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 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	
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

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

Annex 2

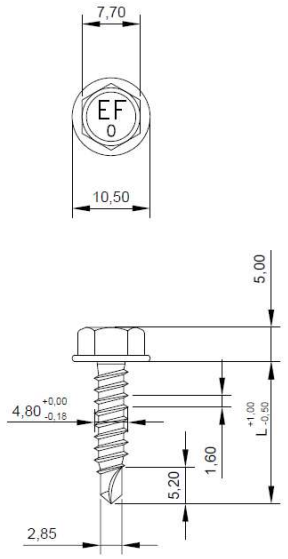
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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

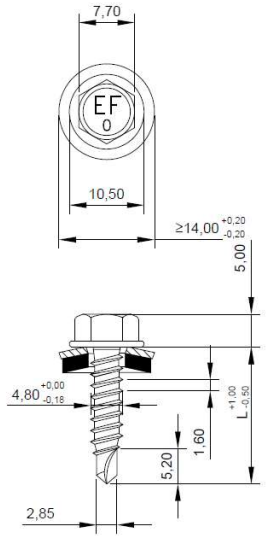
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 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	
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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

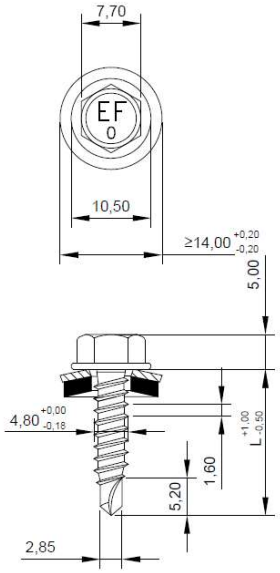
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-0-P 4.8xL
with hexagon head and washer A14

Annex 5

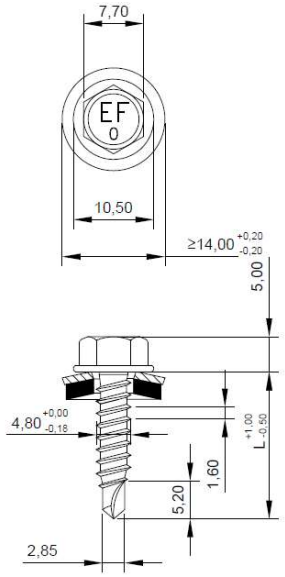
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring or A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	Σti ≤ 2 x 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	
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 or A14

Annex 6

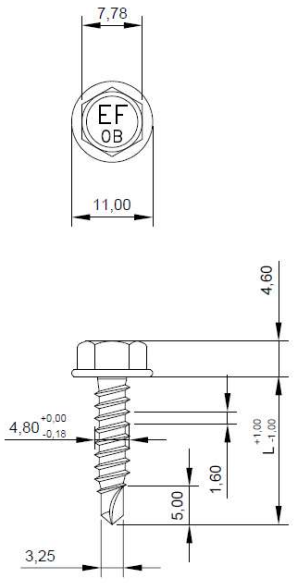
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 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	
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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

Annex 7

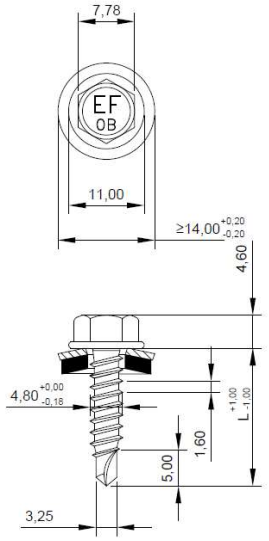
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 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	
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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

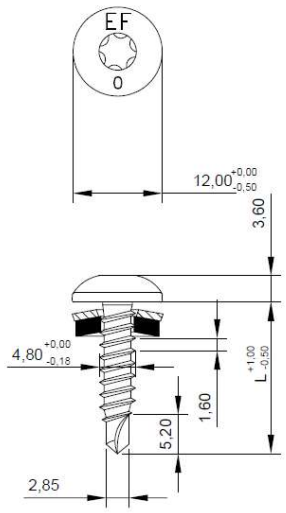
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z11 – galvanized carbon steel washer with EPDM ring or Z12 – galvanized carbon steel washer with EPDM ring or A11 – aluminum washer with EPDM ring or A12 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	Σti ≤ 2 x 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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

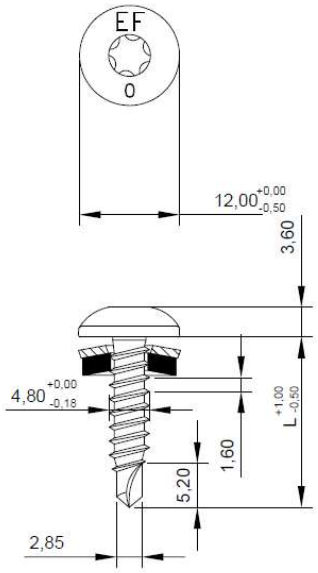
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A11 – aluminum washer with EPDM ring or A12 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	Σti ≤ 2 x 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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

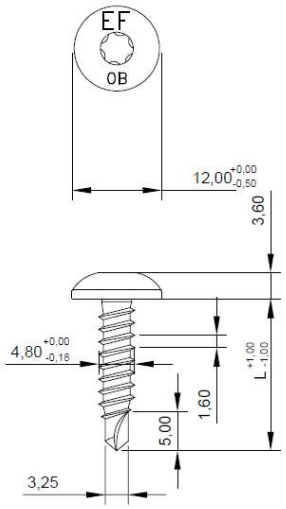
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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

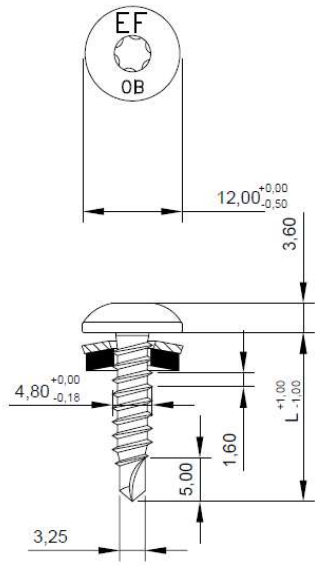
of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE302HQ (bi-metal)
Washer:	S11 – stainless steel washer with EPDM ring or 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:	Σti ≤ 2 x 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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

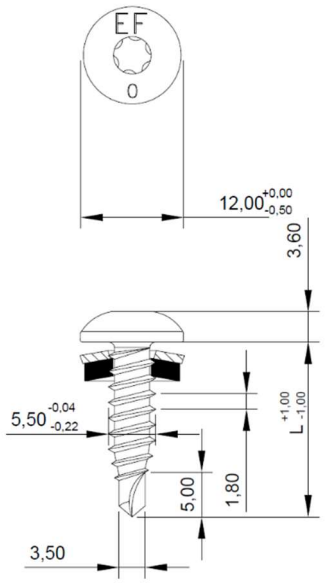
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A11 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	Σti ≤ 2 x 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	
$N_{R\ II,k}$ [kN]		0.61	0.61	0.61	0.75	0.75	1.11	1.11	1.11	1.50	

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-PH-0-P 5.5xL
with pan head and washer A11 or A12

Annex 13

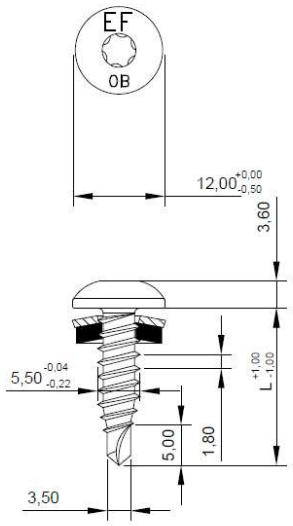
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 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	
$N_{R\ II,k}$ [kN]		0.61	0.61	0.61	0.75	0.75	1.11	1.11	1.11	1.50	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 14

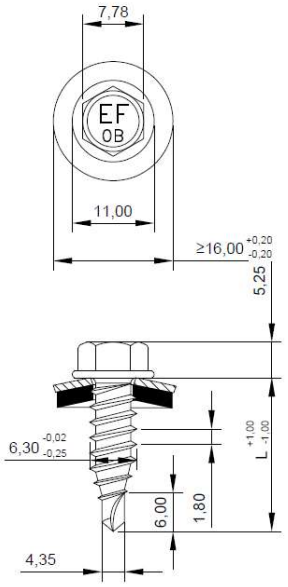
of European
Technical Assessment
ETA-16/0739

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 ≤ 2 x 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	
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-0-B 6.3xL
with hexagon head and washer S16

Annex 15

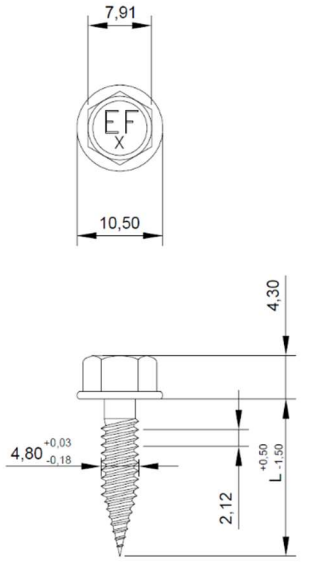
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 1,25 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	1.25	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	1.47	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	1.47	
	0.75	1.28	1.28	1.28	1.47	1.47	2.41	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	2.41	
	0.88	1.28	1.28	1.28	1.47	1.47	2.41	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	2.58	
	1.25	1.28	1.28	1.28	1.47	1.47	2.41	2.41	2.41	2.58	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	0.61	
	0.55	0.61	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	0.61	
	0.63	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
	0.70	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
	0.75	0.82	0.82	0.82	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
	0.80	0.82	0.82	0.82	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
	0.88	0.82	0.82	0.82	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
	1.00	0.82	0.82	0.82	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
	1.25	0.82	0.82	0.82	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
$N_{R\,II,k}$ [kN]		0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	

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

Fastening screws for metal members and sheeting

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

Annex 16

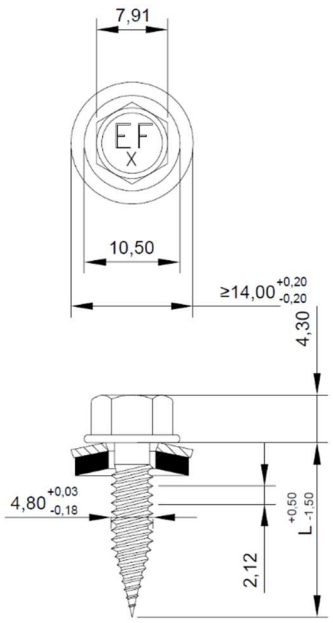
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
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:	Σti ≤ 2 x 1,25 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	1.25	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	1.47	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	1.47	
	0.75	1.28	1.28	1.28	1.47	1.47	2.41	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	2.41	
	0.88	1.28	1.28	1.28	1.47	1.47	2.41	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	2.58	
	1.25	1.28	1.28	1.28	1.47	1.47	2.41	2.41	2.41	2.58	2.58	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.54	
	0.55	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.54	
	0.60	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.54	
	0.63	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	0.70	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	0.75	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	0.80	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	0.88	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	1.00	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	1.25	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
$N_{R\ II,k}$ [kN]		0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	

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

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

Fastening screws for metal members and sheeting

Annex 17

of European Technical Assessment ETA-16/0739

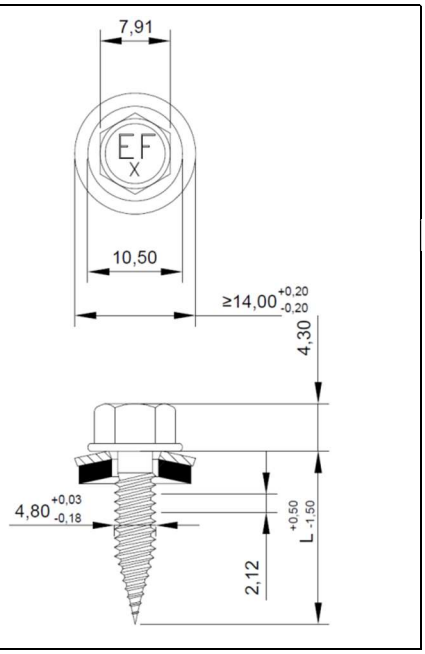
Self- drilling screws ESDS-X-SP 4.8xL with hexagon head and washer Z14

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER 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:	Σti ≤ 2 x 1,25 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	1.25	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	1.47	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	1.47	
	0.75	1.28	1.28	1.28	1.47	1.47	2.41	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	2.41	
	0.88	1.28	1.28	1.28	1.47	1.47	2.41	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	2.58	
	1.25	1.28	1.28	1.28	1.47	1.47	2.41	2.41	2.41	2.58	2.58	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.54	
	0.55	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.54	
	0.60	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.54	
	0.63	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	0.70	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	0.75	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	0.80	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	0.88	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	1.00	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
	1.25	0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	
$N_{R\ II,k}$ [kN]		0.82	0.82	0.82	1.13	1.13	1.58	1.58	1.58	2.13	2.64	

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

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

Fastening screws for metal members and sheeting

Annex 18

of European Technical Assessment ETA-16/0739

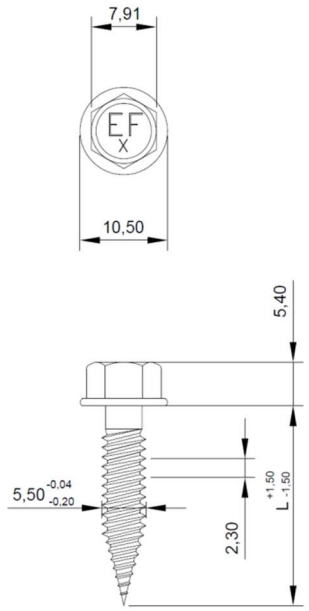
Self-drilling screws ESDS-X-SP 4.8xL with hexagon head and washer A14

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:	Σti ≤ 2 x 1,25 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	1.25	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	1.53	1.53	1.53	1.53	1.53	1.53	
	0.55	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	
	0.60	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	
	0.63	1.53	1.53	1.53	1.84	1.84	1.84	1.84	1.84	1.84	1.84	
	0.70	1.53	1.53	1.53	1.84	1.84	1.84	1.84	1.84	1.84	1.84	
	0.75	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.34	2.34	2.34	
	0.80	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.34	2.34	2.34	
	0.88	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.38	2.38	2.38	
	1.00	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.38	2.87	2.87	
	1.25	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.38	2.87	2.87	
$N_{R,k}$ [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	0.61	
	0.55	0.61	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	0.61	
	0.63	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
	0.70	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
	0.75	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
	0.80	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
	0.88	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
	1.00	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
	1.25	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
$N_{R\,II,k}$ [kN]		1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	

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

Fastening screws for metal members and sheeting

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

Annex 19

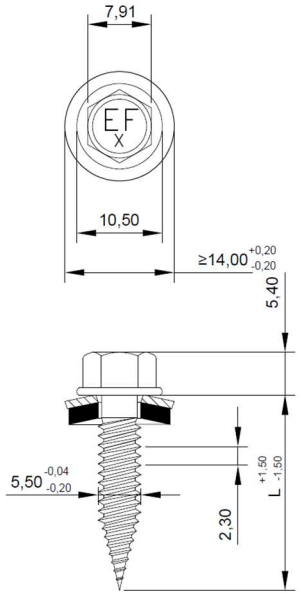
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
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:	Σti ≤ 2 x 1,25 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	1.25	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	1.53	1.53	1.53	1.53	1.53	1.53	
	0.55	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	
	0.60	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	
	0.63	1.53	1.53	1.53	1.84	1.84	1.84	1.84	1.84	1.84	1.84	
	0.70	1.53	1.53	1.53	1.84	1.84	1.84	1.84	1.84	1.84	1.84	
	0.75	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.34	2.34	2.34	
	0.80	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.34	2.34	2.34	
	0.88	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.38	2.38	2.38	
	1.00	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.38	2.87	2.87	
	1.25	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.38	2.87	2.87	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	2.54	
	0.55	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	2.54	
	0.60	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	2.54	
	0.63	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	0.70	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	0.75	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	0.80	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	0.88	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	1.00	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	1.25	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
$N_{R\,II,k}$ [kN]		1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	

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

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

Fastening screws for metal members and sheeting

Self- drilling screws ESDS-X-SP 5.5xL
with hexagon head and washer Z14

Annex 20

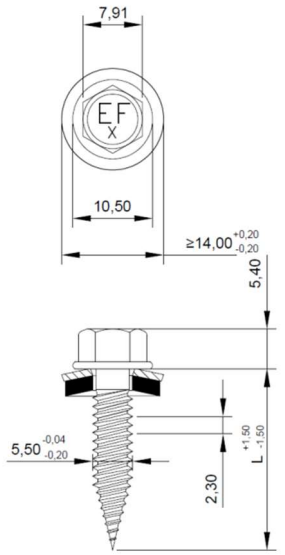
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER 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:	Σti ≤ 2 x 1,25 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	1.25	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	1.53	1.53	1.53	1.53	1.53	1.53	
	0.55	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	
	0.60	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	
	0.63	1.53	1.53	1.53	1.84	1.84	1.84	1.84	1.84	1.84	1.84	
	0.70	1.53	1.53	1.53	1.84	1.84	1.84	1.84	1.84	1.84	1.84	
	0.75	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.34	2.34	2.34	
	0.80	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.34	2.34	2.34	
	0.88	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.38	2.38	2.38	
	1.00	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.38	2.87	2.87	
	1.25	1.53	1.53	1.53	1.84	1.84	2.34	2.34	2.38	2.87	2.87	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	2.54	
	0.55	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	2.54	
	0.60	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	2.54	
	0.63	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	0.70	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	0.75	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	0.80	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	0.88	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	1.00	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
	1.25	1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	
$N_{R\,II,k}$ [kN]		1.02	1.02	1.02	1.23	1.23	1.78	1.78	1.78	2.37	3.01	

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

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

Fastening screws for metal members and sheeting

Self- drilling screws ESDS-X-SP 5.5xL
with hexagon head and washer A14

Annex 21

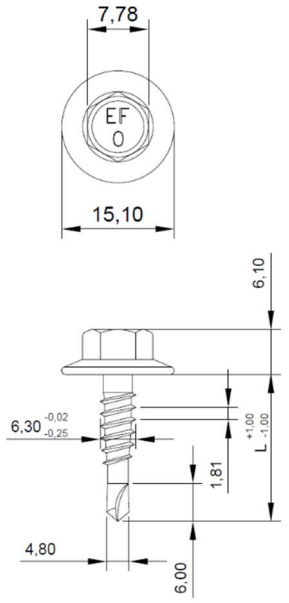
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 2 x 1,25 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	1.25	Wood class ≥ C24
$M_{t,nom}$		7 Nm										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	
	0.55	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	
	0.60	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	
	0.63	1.63	1.63	1.63	2.04	2.04	2.04	2.04	2.04	2.04	2.04	
	0.70	1.63	1.63	1.63	2.04	2.04	2.04	2.04	2.04	2.04	2.04	
	0.75	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.60	2.60	
	0.80	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.60	2.60	
	0.88	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.60	2.60	
	1.00	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.88	2.88	
	1.25	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.88	3.43	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.55	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.60	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.63	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.70	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.75	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.80	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.88	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	1.00	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	1.25	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
$N_{R\,II,k}$ [kN]		0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-FH-0-Z 6.3xL
with hexagon flange head

Annex 22

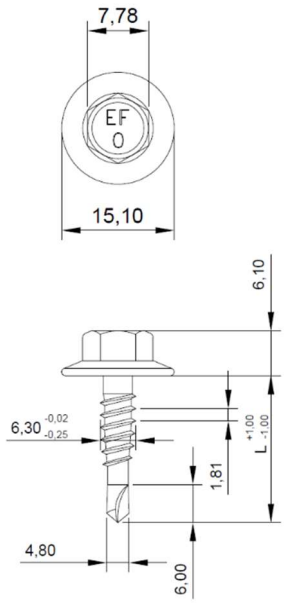
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 2 x 1,25 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	1.25	Wood class ≥ C24
$M_{t,nom}$		7 Nm										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	
	0.55	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	
	0.60	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	
	0.63	1.63	1.63	1.63	2.04	2.04	2.04	2.04	2.04	2.04	2.04	
	0.70	1.63	1.63	1.63	2.04	2.04	2.04	2.04	2.04	2.04	2.04	
	0.75	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.60	2.60	
	0.80	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.60	2.60	
	0.88	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.60	2.60	
	1.00	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.88	2.88	
	1.25	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.88	3.43	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.55	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.60	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.63	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.70	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.75	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.80	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.88	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	1.00	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	1.25	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
$N_{R\,II,k}$ [kN]		0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-FH-0-P 6.3xL
with hexagon flange head

Annex 23

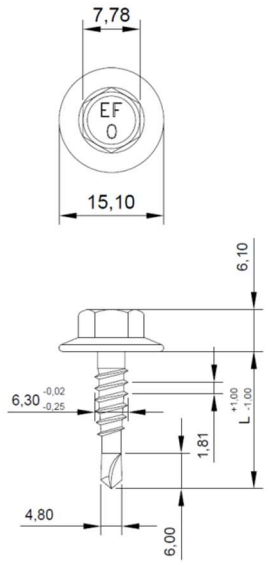
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 1,25 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	1.25	Wood class ≥ C24
$M_{t,nom}$		7 Nm										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	
	0.55	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	
	0.60	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	
	0.63	1.63	1.63	1.63	2.04	2.04	2.04	2.04	2.04	2.04	2.04	
	0.70	1.63	1.63	1.63	2.04	2.04	2.04	2.04	2.04	2.04	2.04	
	0.75	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.60	2.60	
	0.80	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.60	2.60	
	0.88	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.60	2.60	
	1.00	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.88	2.88	
	1.25	1.63	1.63	1.63	2.04	2.04	2.60	2.60	2.60	2.88	3.43	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.55	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.60	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.63	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.70	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.75	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.80	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	0.88	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	1.00	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
	1.25	0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	
$N_{R\,II,k}$ [kN]		0.63	0.63	0.63	0.78	0.78	1.11	1.11	1.11	1.69	1.74	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-FH-0-SP 6.3xL
with hexagon flange head

Annex 24

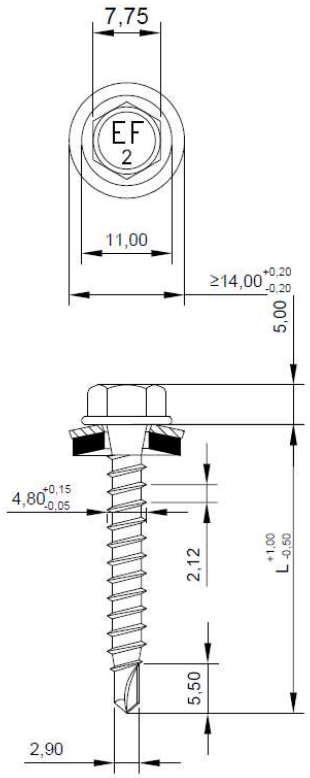
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 2 x 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} ≥ 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
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 25

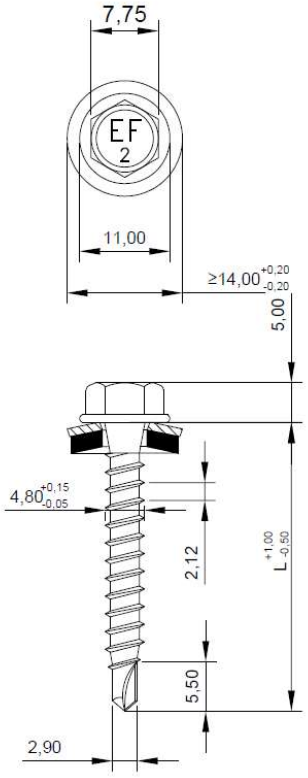
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 2 x 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} ≥ 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
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Self-drilling screws EFS-2-P 4.8xL
with hexagon head and washer A14

Annex 26

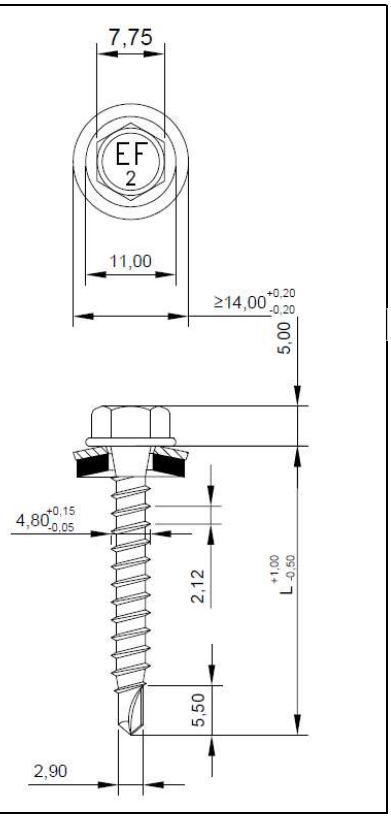
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring or 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:	Σti ≤ 2 x 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} ≥ 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
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Annex 27

of European Technical Assessment ETA-16/0739

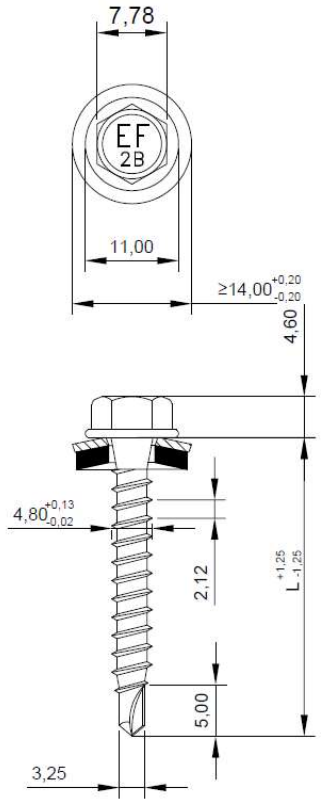
Self-drilling screws EFS-2-SP 4.8xL
with hexagon head and washer S14 or A14

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:	Σti ≤ 2 x 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} ≥ 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
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Annex 28

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

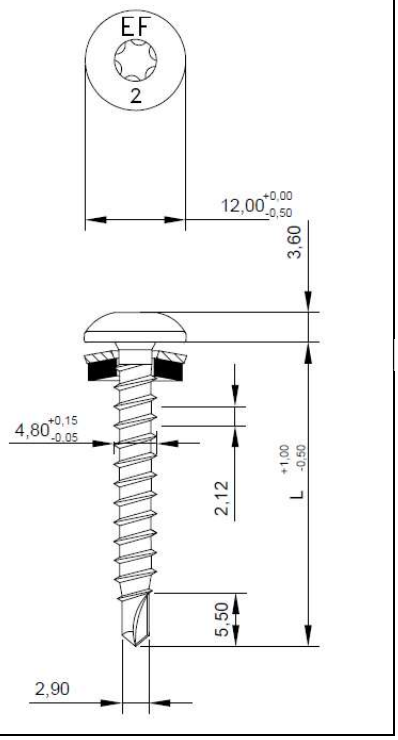
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	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:	Σti ≤ 2 x 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} ≥ 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
$N_{R\ II,k}$ [kN]		0.75	0.75	0.75	0.92	0.92	1.27	1.27	1.27	2.18	1.23

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

Fastening screws for metal members and sheeting

Annex 29

of European Technical Assessment ETA-16/0739

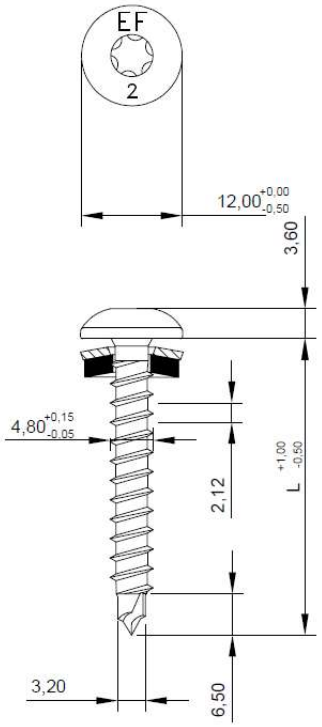
Self-drilling screws EFS-PH-2-Z 4.8xL
with pan head and washer A11, A12, Z11 or Z12

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:	Σti ≤ 2 x 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} ≥ 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
$N_{R\ II,k}$ [kN]		0.75	0.75	0.75	0.92	0.92	1.27	1.27	1.27	2.18	1.23

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

Fastening screws for metal members and sheeting

Annex 30

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

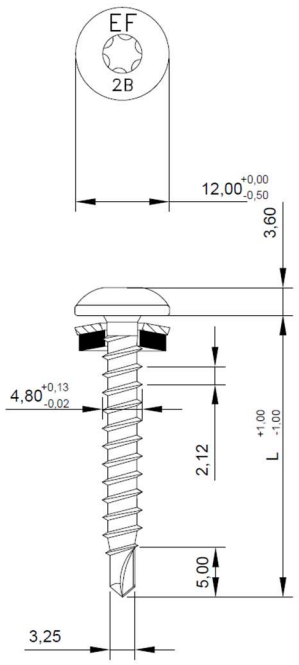
of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (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 or structural wood C24 – EN 14081
Drilling capacity:	Σti ≤ 2 x 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} ≥ 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
$N_{R\ II,k}$ [kN]		0.75	0.75	0.75	0.92	0.92	1.27	1.27	1.27	2.18	1.23

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

Fastening screws for metal members and sheeting

Self-drilling screws EFS-PH-2-B 4.8xL
with pan head and washer S11 or S12

Annex 31

of European
Technical Assessment
ETA-16/0739

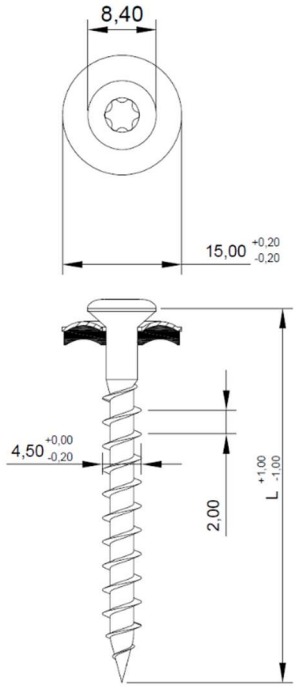
Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	SW15 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	structural wood C24 – EN 14081

Drilling capacity: -

Timber substructures

For timber structures performance assessed with:
$M_{y,Rk}$ = 2,85 Nm
$f_{ax,k}$ = 17,000 N/mm² for l_{ef} ≥ 20 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
$M_{t,nom}$		5 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
	0.55	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
	0.60	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
	0.63	1.01	1.01	1.01	1.44	1.44	1.44	1.44	1.44	1.44	1.44
	0.70	1.01	1.01	1.01	1.44	1.44	1.44	1.44	1.44	1.44	1.44
	0.75	1.01	1.01	1.01	1.44	1.44	1.80	1.80	1.80	1.80	1.80
	0.80	1.01	1.01	1.01	1.44	1.44	1.80	1.80	1.80	1.80	1.80
	0.88	1.01	1.01	1.01	1.44	1.44	1.80	1.80	1.80	1.80	1.80
	1.00	1.01	1.01	1.01	1.44	1.44	1.80	1.80	1.80	1.80	1.80
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	-	-	-	-	-	-	-	-	-	1.53
	0.55	-	-	-	-	-	-	-	-	-	1.53
	0.60	-	-	-	-	-	-	-	-	-	1.53
	0.63	-	-	-	-	-	-	-	-	-	1.53
	0.70	-	-	-	-	-	-	-	-	-	1.53
	0.75	-	-	-	-	-	-	-	-	-	1.53
	0.80	-	-	-	-	-	-	-	-	-	1.53
	0.88	-	-	-	-	-	-	-	-	-	1.53
	1.00	-	-	-	-	-	-	-	-	-	1.53
$N_{R\ II,k}$ [kN]		-	-	-	-	-	-	-	-	-	1.53

Fastening screws for metal members and sheeting

Self-drilling screws ESWS-0H-0-S 4.5xL
with oval head and washer SW15

Annex 32

of European
Technical Assessment
ETA-16/0739

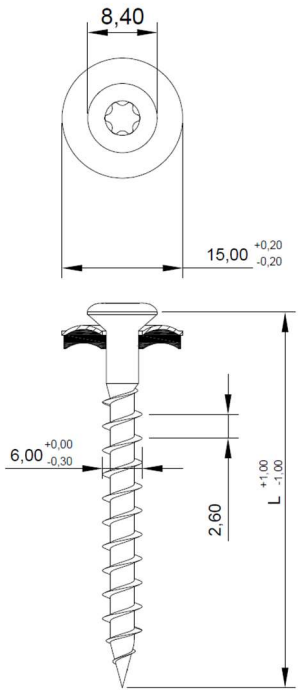
Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	SW15 – stainless steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	structural wood C24 – EN 14081

Drilling capacity: -

Timber substructures

For timber structures performance assessed with:
$M_{y,Rk}$ = 6,01 Nm
$f_{ax,k}$ = 14,600 N/mm² for l_{ef} ≥ 25 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
$M_{t,nom}$		5 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
	0.55	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
	0.60	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
	0.63	1.59	1.59	1.59	1.91	1.91	1.91	1.91	1.91	1.91	1.91
	0.70	1.59	1.59	1.59	1.91	1.91	1.91	1.91	1.91	1.91	1.91
	0.75	1.59	1.59	1.59	1.91	1.91	2.48	2.48	2.48	2.48	2.48
	0.80	1.59	1.59	1.59	1.91	1.91	2.48	2.48	2.48	2.48	2.48
	0.88	1.59	1.59	1.59	1.91	1.91	2.48	2.48	2.48	2.48	2.48
	1.00	1.59	1.59	1.59	1.91	1.91	2.48	2.48	2.48	2.48	2.48
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	-	-	-	-	-	-	-	-	-	2.19
	0.55	-	-	-	-	-	-	-	-	-	2.19
	0.60	-	-	-	-	-	-	-	-	-	2.19
	0.63	-	-	-	-	-	-	-	-	-	2.19
	0.70	-	-	-	-	-	-	-	-	-	2.19
	0.75	-	-	-	-	-	-	-	-	-	2.19
	0.80	-	-	-	-	-	-	-	-	-	2.19
	0.88	-	-	-	-	-	-	-	-	-	2.19
	1.00	-	-	-	-	-	-	-	-	-	2.19
$N_{R\,II,k}$ [kN]		-	-	-	-	-	-	-	-	-	2.19

Fastening screws for metal members and sheeting

Self-drilling screws ESWS-0H-0-S 6.0xL
with oval head and washer SW15

Annex 33

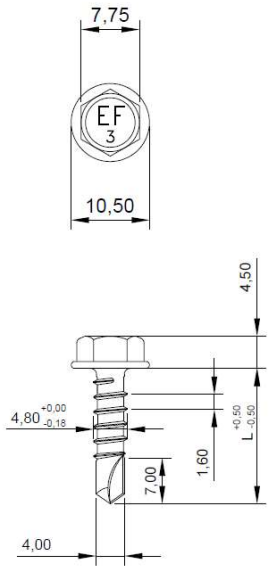
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [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	0.80	0.80	0.80	0.80	0.80	
	0.70	0.80	0.80	0.80	0.80	0.80	
	0.75	0.96	0.96	0.96	0.96	0.96	
	0.80	0.96	0.96	0.96	0.96	0.96	
	0.88	0.96	0.96	0.96	0.96	0.96	
	1.00	0.97	0.97	0.97	0.97	0.97	
	1.13	0.97	0.97	0.97	0.97	—	
	1.15	0.97	0.97	0.97	0.97	—	
	1.25	0.97	0.97	0.97	0.97	—	
	1.50	0.97	0.97	0.97	0.97	—	
	1.75	0.97	0.97	0.97	—	—	
	2.00	0.97	0.97	—	—	—	
$N_{R\,II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 34

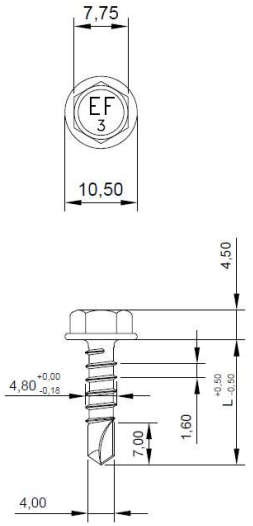
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [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	0.80	0.80	0.80	0.80	0.80	
	0.70	0.80	0.80	0.80	0.80	0.80	
	0.75	0.96	0.96	0.96	0.96	0.96	
	0.80	0.96	0.96	0.96	0.96	0.96	
	0.88	0.96	0.96	0.96	0.96	0.96	
	1.00	0.97	0.97	0.97	0.97	0.97	
	1.13	0.97	0.97	0.97	0.97	—	
	1.15	0.97	0.97	0.97	0.97	—	
	1.25	0.97	0.97	0.97	0.97	—	
	1.50	0.97	0.97	0.97	0.97	—	
	1.75	0.97	0.97	0.97	—	—	
	2.00	0.97	0.97	—	—	—	
$N_{R\,II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

Annex 35

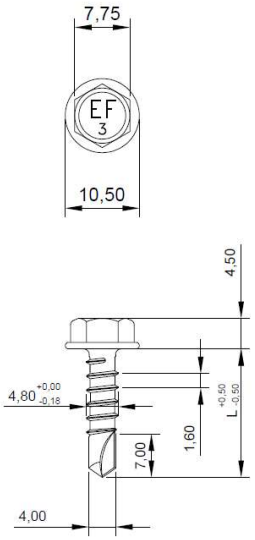
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [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	0.80	0.80	0.80	0.80	0.80	
	0.70	0.80	0.80	0.80	0.80	0.80	
	0.75	0.96	0.96	0.96	0.96	0.96	
	0.80	0.96	0.96	0.96	0.96	0.96	
	0.88	0.96	0.96	0.96	0.96	0.96	
	1.00	0.97	0.97	0.97	0.97	0.97	
	1.13	0.97	0.97	0.97	0.97	—	
	1.15	0.97	0.97	0.97	0.97	—	
	1.25	0.97	0.97	0.97	0.97	—	
	1.50	0.97	0.97	0.97	0.97	—	
	1.75	0.97	0.97	0.97	—	—	
	2.00	0.97	0.97	—	—	—	
$N_{R\ II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 36

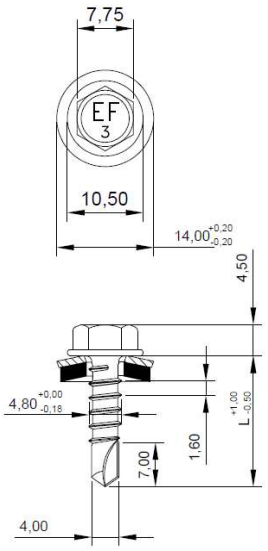
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	2.54	
	0.55	1.01	1.16	1.16	2.03	2.54	
	0.60	1.01	1.16	1.16	2.03	2.54	
	0.63	1.01	1.16	1.16	2.03	3.10	
	0.70	1.01	1.16	1.16	2.03	3.10	
	0.75	1.01	1.16	1.16	2.03	3.10	
	0.80	1.01	1.16	1.16	2.03	3.10	
	0.88	1.01	1.16	1.16	2.03	3.10	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\ II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 37

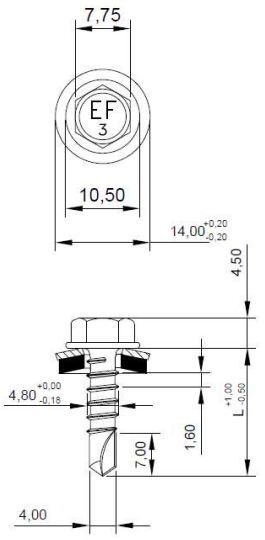
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	2.54	
	0.55	1.01	1.16	1.16	2.03	2.54	
	0.60	1.01	1.16	1.16	2.03	2.54	
	0.63	1.01	1.16	1.16	2.03	3.10	
	0.70	1.01	1.16	1.16	2.03	3.10	
	0.75	1.01	1.16	1.16	2.03	3.10	
	0.80	1.01	1.16	1.16	2.03	3.10	
	0.88	1.01	1.16	1.16	2.03	3.10	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\,II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 38

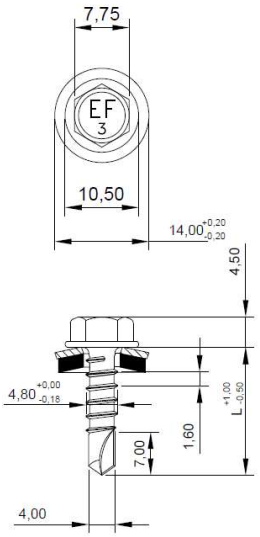
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring or A14 – aluminum 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]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	2.54	
	0.55	1.01	1.16	1.16	2.03	2.54	
	0.60	1.01	1.16	1.16	2.03	2.54	
	0.63	1.01	1.16	1.16	2.03	3.10	
	0.70	1.01	1.16	1.16	2.03	3.10	
	0.75	1.01	1.16	1.16	2.03	3.10	
	0.80	1.01	1.16	1.16	2.03	3.10	
	0.88	1.01	1.16	1.16	2.03	3.10	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\ II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 and washer S14 or A14

Annex 39

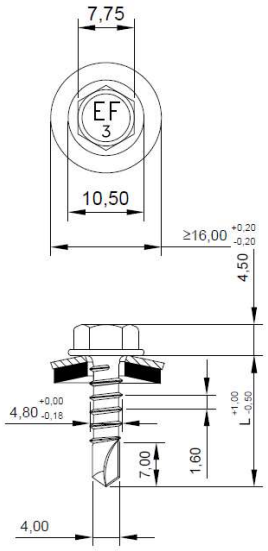
of European Technical Assessment ETA-16/0739

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]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	2.53	
	0.55	1.01	1.16	1.16	2.03	2.53	
	0.60	1.01	1.16	1.16	2.03	2.77	
	0.63	1.01	1.16	1.16	2.03	2.77	
	0.70	1.01	1.16	1.16	2.03	2.89	
	0.75	1.01	1.16	1.16	2.03	2.89	
	0.80	1.01	1.16	1.16	2.03	2.89	
	0.88	1.01	1.16	1.16	2.03	2.89	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\,II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 40

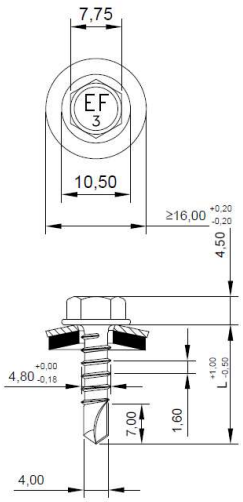
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	2.53	
	0.55	1.01	1.16	1.16	2.03	2.53	
	0.60	1.01	1.16	1.16	2.03	2.77	
	0.63	1.01	1.16	1.16	2.03	2.77	
	0.70	1.01	1.16	1.16	2.03	2.89	
	0.75	1.01	1.16	1.16	2.03	2.89	
	0.80	1.01	1.16	1.16	2.03	2.89	
	0.88	1.01	1.16	1.16	2.03	2.89	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\,II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

If both components I and II are made of S350GD 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 41

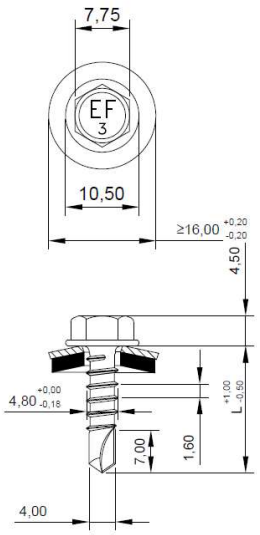
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum 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]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	2.53	
	0.55	1.01	1.16	1.16	2.03	2.53	
	0.60	1.01	1.16	1.16	2.03	2.77	
	0.63	1.01	1.16	1.16	2.03	2.77	
	0.70	1.01	1.16	1.16	2.03	2.89	
	0.75	1.01	1.16	1.16	2.03	2.89	
	0.80	1.01	1.16	1.16	2.03	2.89	
	0.88	1.01	1.16	1.16	2.03	2.89	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\ II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

If both components I and II are made of S350GD 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 and washer S16 or A16

Annex 42

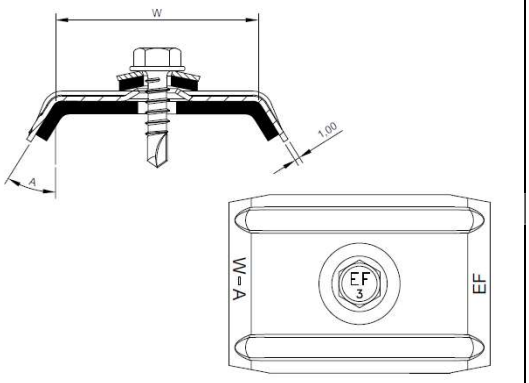
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	3.10	
	0.55	1.01	1.16	1.16	2.03	3.10	
	0.60	1.01	1.16	1.16	2.03	3.10	
	0.63	1.01	1.16	1.16	2.03	3.10	
	0.70	1.01	1.16	1.16	2.03	3.10	
	0.75	1.01	1.16	1.16	2.03	3.10	
	0.80	1.01	1.16	1.16	2.03	3.10	
	0.88	1.01	1.16	1.16	2.03	3.10	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\ II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

If both components I and II are made of S350GD 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 and saddle washer ESW

Annex 43

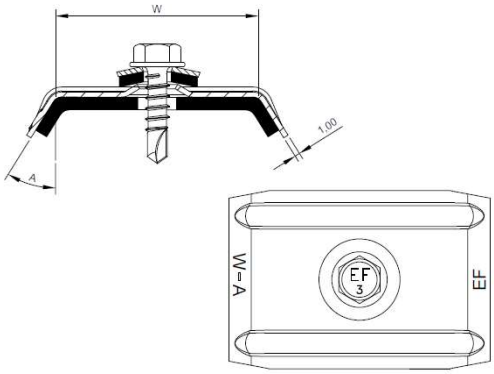
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	3.10	
	0.55	1.01	1.16	1.16	2.03	3.10	
	0.60	1.01	1.16	1.16	2.03	3.10	
	0.63	1.01	1.16	1.16	2.03	3.10	
	0.70	1.01	1.16	1.16	2.03	3.10	
	0.75	1.01	1.16	1.16	2.03	3.10	
	0.80	1.01	1.16	1.16	2.03	3.10	
	0.88	1.01	1.16	1.16	2.03	3.10	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\ II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

If both components I and II are made of S350GD 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 44

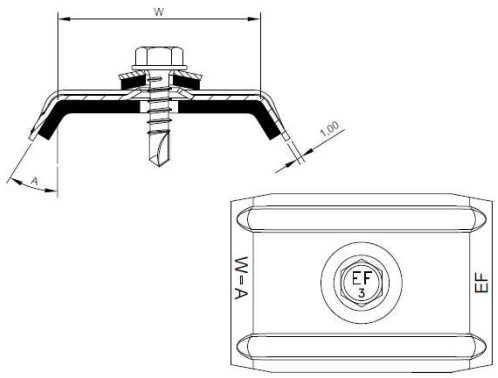
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A14 – 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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	3.10	
	0.55	1.01	1.16	1.16	2.03	3.10	
	0.60	1.01	1.16	1.16	2.03	3.10	
	0.63	1.01	1.16	1.16	2.03	3.10	
	0.70	1.01	1.16	1.16	2.03	3.10	
	0.75	1.01	1.16	1.16	2.03	3.10	
	0.80	1.01	1.16	1.16	2.03	3.10	
	0.88	1.01	1.16	1.16	2.03	3.10	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\ II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

If both components I and II are made of S350GD 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 and washer S16 or A16 and saddle washer ESW

Annex 45

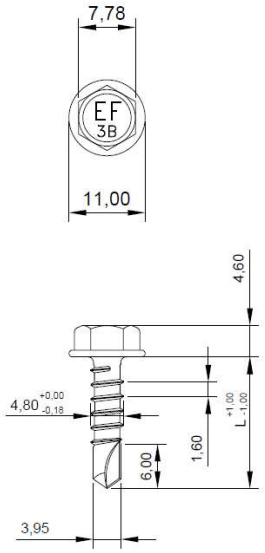
of European Technical Assessment ETA-16/0739

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:	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	1.20	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	—	—	—	
$N_{R\,II,k}$ [kN]		0.96	0.96	1.80	2.76	

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

If both components I and II are made of S350GD 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

Annex 46

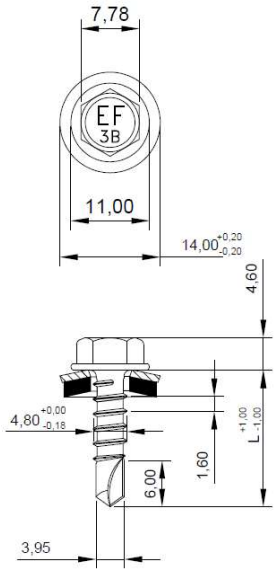
of European
Technical Assessment
ETA-16/0739

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:	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	1.20	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	—	—	—	
$N_{R\,II,k}$ [kN]		0.96	0.96	1.80	2.76	

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

If both components I and II are made of S350GD 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 S14

Annex 47

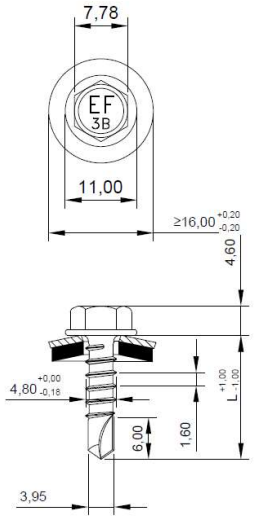
of European Technical Assessment ETA-16/0739

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
$M_{t,nom}$		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	—	—	—	
$N_{R\,II,k}$ [kN]		0.96	0.96	1.80	2.76	

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

If both components I and II are made of S350GD 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 48

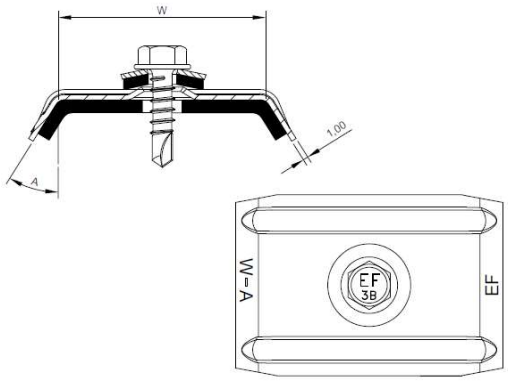
of European
Technical Assessment
ETA-16/0739

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:	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	1.20	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	—	—	—	
$N_{R\,II,k}$ [kN]		0.96	0.96	1.80	2.76	

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

Annex 49

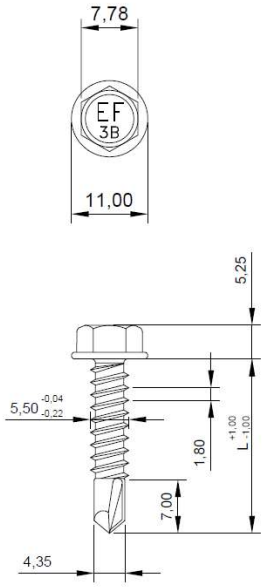
of European Technical Assessment ETA-16/0739

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:	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	0.61	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	—	—	—	
$N_{R\,II,k}$ [kN]		0.99	0.99	1.82	2.77	

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

If both components I and II are made of S350GD 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

Annex 50

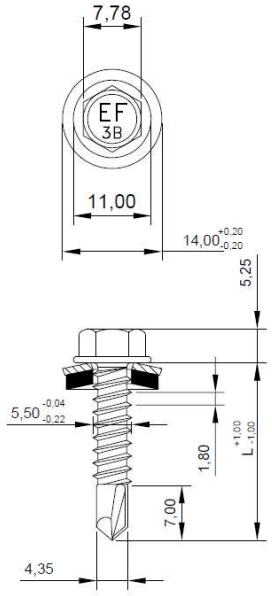
of European
Technical Assessment
ETA-16/0739

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:	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	2.62	
	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	—	—	—	
$N_{R\,II,k}$ [kN]		0.99	0.99	1.82	2.77	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 51

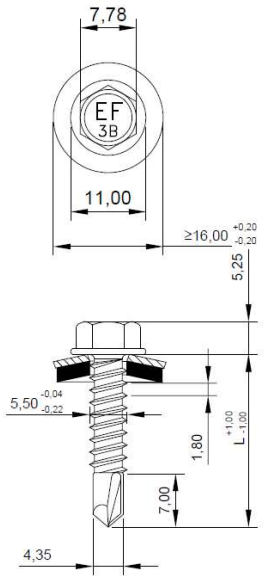
of European
Technical Assessment
ETA-16/0739

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	—	—	—	
$N_{R\,II,k}$ [kN]		0.99	0.99	1.82	2.77	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 52

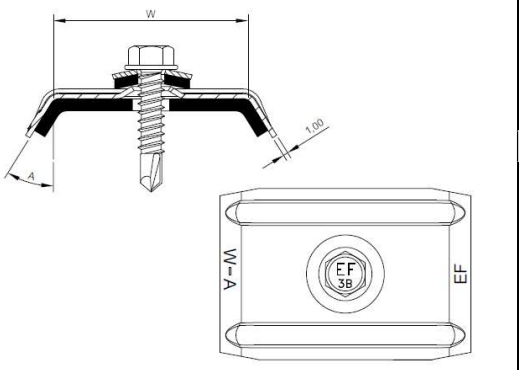
of European Technical Assessment ETA-16/0739

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:	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	—	—	—	
$N_{R\,II,k}$ [kN]		0.99	0.99	1.82	2.77	

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

If both components I and II are made of S350GD 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 53

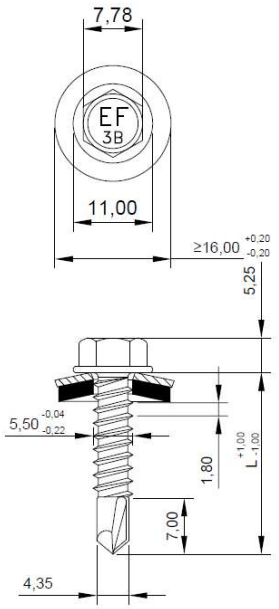
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 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	3.64	
	3.00	1.18	1.87	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	3.64	
	3.00	1.18	1.87	1.87	-	
$N_{R\ II,k}$ [kN]		1.18	1.87	1.87	3.64	
Both components I and II are made of aluminum Rm ≥ 165 N/mm²						

Fastening screws for metal members and sheeting

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

Annex 54

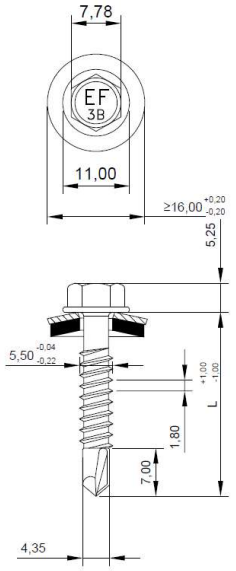
of European
Technical Assessment
ETA-16/0739

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	—	—	—	
$N_{R\ II,k}$ [kN]		0.99	0.99	1.82	2.77	

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

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

Fastening screws for metal members and sheeting

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

Annex 55

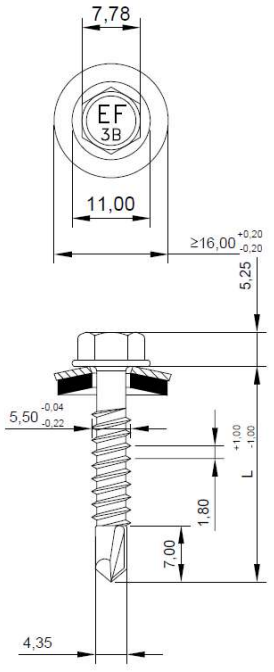
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 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	3.64	
	3.00	1.18	1.87	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	3.64	
	3.00	1.18	1.87	1.87	-	
$N_{R\,II,k}$ [kN]		1.18	1.87	1.87	3.64	
Both components I and II are made of aluminum R_m ≥ 165 N/mm²						

Fastening screws for metal members and sheeting

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

Annex 56

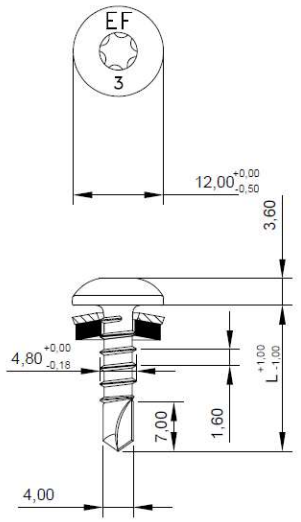
of European
Technical Assessment
ETA-16/0739

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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	0.70	0.70	0.70	0.70	0.70	
	0.55	0.70	0.70	0.70	0.70	0.70	
	0.60	0.70	0.70	0.70	0.70	0.70	
	0.63	0.79	0.79	0.79	0.79	0.79	
	0.70	0.79	0.79	0.79	0.79	0.79	
	0.75	1.01	1.05	1.05	1.05	1.05	
	0.80	1.01	1.05	1.05	1.05	1.05	
	0.88	1.01	1.05	1.05	1.05	1.05	
	1.00	1.01	1.16	1.16	1.40	1.40	
	1.13	1.01	1.16	1.16	1.40	—	
	1.15	1.01	1.16	1.16	1.40	—	
	1.25	1.01	1.16	1.16	1.40	—	
	1.50	1.01	1.16	1.16	1.40	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\,II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

If both components I and II are made of S350GD 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 57

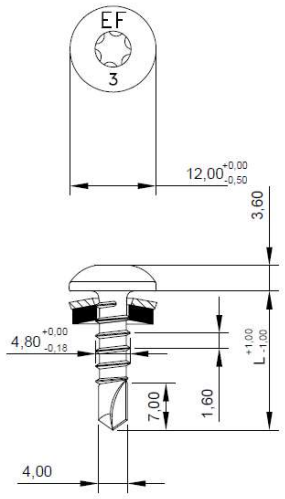
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	0.70	0.70	0.70	0.70	0.70	
	0.55	0.70	0.70	0.70	0.70	0.70	
	0.60	0.70	0.70	0.70	0.70	0.70	
	0.63	0.79	0.79	0.79	0.79	0.79	
	0.70	0.79	0.79	0.79	0.79	0.79	
	0.75	1.01	1.05	1.05	1.05	1.05	
	0.80	1.01	1.05	1.05	1.05	1.05	
	0.88	1.01	1.05	1.05	1.05	1.05	
	1.00	1.01	1.16	1.16	1.40	1.40	
	1.13	1.01	1.16	1.16	1.40	—	
	1.15	1.01	1.16	1.16	1.40	—	
	1.25	1.01	1.16	1.16	1.40	—	
	1.50	1.01	1.16	1.16	1.40	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\,II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

If both components I and II are made of S350GD 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 58

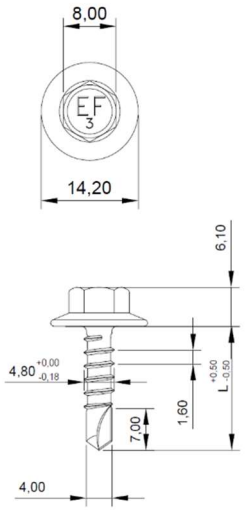
of European Technical Assessment ETA-16/0739

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 10346
Drilling capacity:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	2.54	
	0.55	1.01	1.16	1.16	2.03	2.54	
	0.60	1.01	1.16	1.16	2.03	2.54	
	0.63	1.01	1.16	1.16	2.03	3.10	
	0.70	1.01	1.16	1.16	2.03	3.10	
	0.75	1.01	1.16	1.16	2.03	3.10	
	0.80	1.01	1.16	1.16	2.03	3.10	
	0.88	1.01	1.16	1.16	2.03	3.10	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\,II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

Fastening screws for metal members and sheeting

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

Annex 59

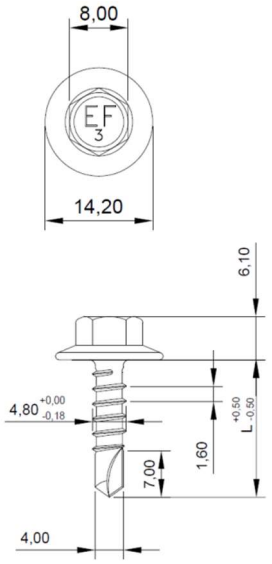
of European
Technical Assessment
ETA-16/0739

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 10346
Drilling capacity:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	2.54	
	0.55	1.01	1.16	1.16	2.03	2.54	
	0.60	1.01	1.16	1.16	2.03	2.54	
	0.63	1.01	1.16	1.16	2.03	3.10	
	0.70	1.01	1.16	1.16	2.03	3.10	
	0.75	1.01	1.16	1.16	2.03	3.10	
	0.80	1.01	1.16	1.16	2.03	3.10	
	0.88	1.01	1.16	1.16	2.03	3.10	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\ II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

Fastening screws for metal members and sheeting

Annex 60

Self-drilling screws ESDS-FH-3-P 4.8xL
with hexagon flange head

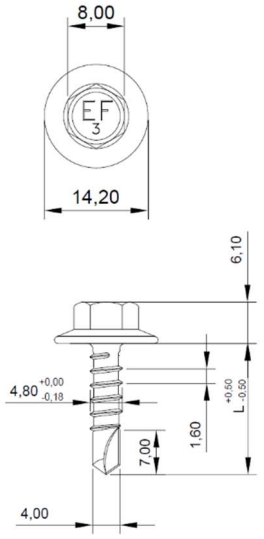
of European Technical Assessment ETA-16/0739

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 10346
Drilling capacity:	Σti ≤ 3,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	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	1.17	
	0.55	1.17	1.17	1.17	1.17	1.17	
	0.60	1.17	1.17	1.17	1.17	1.17	
	0.63	1.44	1.44	1.44	1.44	1.44	
	0.70	1.44	1.44	1.44	1.44	1.44	
	0.75	2.27	2.27	2.27	2.27	2.27	
	0.80	2.27	2.27	2.27	2.27	2.27	
	0.88	2.27	2.27	2.27	2.27	2.27	
	1.00	2.64	2.64	2.64	2.64	2.64	
	1.13	2.64	2.64	2.64	2.64	—	
	1.15	2.64	2.64	2.64	2.64	—	
	1.25	2.64	2.64	2.64	2.64	—	
	1.50	2.64	2.64	2.64	2.64	—	
	1.75	2.64	2.64	2.64	—	—	
	2.00	2.64	2.64	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	1.01	1.16	1.16	2.03	2.54	
	0.55	1.01	1.16	1.16	2.03	2.54	
	0.60	1.01	1.16	1.16	2.03	2.54	
	0.63	1.01	1.16	1.16	2.03	3.10	
	0.70	1.01	1.16	1.16	2.03	3.10	
	0.75	1.01	1.16	1.16	2.03	3.10	
	0.80	1.01	1.16	1.16	2.03	3.10	
	0.88	1.01	1.16	1.16	2.03	3.10	
	1.00	1.01	1.16	1.16	2.03	3.10	
	1.13	1.01	1.16	1.16	2.03	—	
	1.15	1.01	1.16	1.16	2.03	—	
	1.25	1.01	1.16	1.16	2.03	—	
	1.50	1.01	1.16	1.16	2.03	—	
	1.75	1.01	1.16	1.16	—	—	
	2.00	1.01	1.16	—	—	—	
$N_{R\ II,k}$ [kN]		1.01	1.16	1.16	2.03	3.10	

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

Fastening screws for metal members and sheeting

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

Annex 61

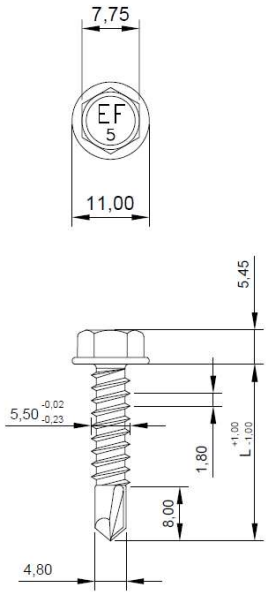
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – 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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

If both components I and II are made of S350GD 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 62

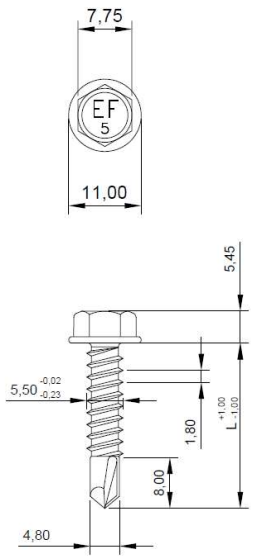
of European Technical Assessment ETA-16/0739

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 to S355 – 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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

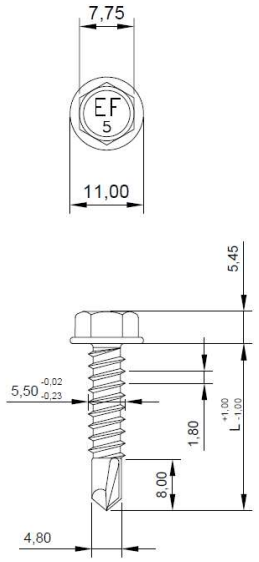
Annex 63

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 to S355 – 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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

If both components I and II are made of S350GD 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

Annex 64

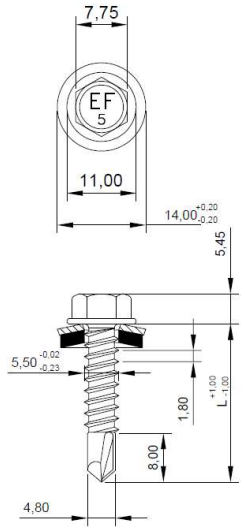
of European Technical Assessment ETA-16/0739

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 to S355 – 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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 65

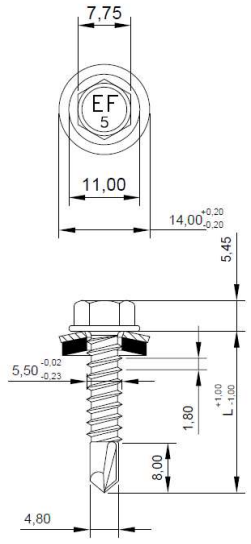
of European
Technical Assessment
ETA-16/0739

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 to S355 – 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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

If both components I and II are made of S350GD 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 66

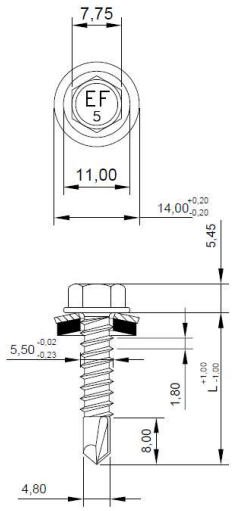
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring or A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – 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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

If both components I and II are made of S350GD 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 S14 or A14

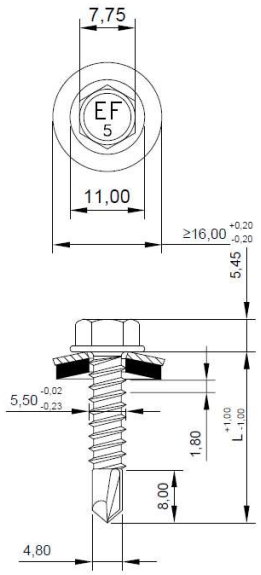
Annex 67

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 to S355 – 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	2.53	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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

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

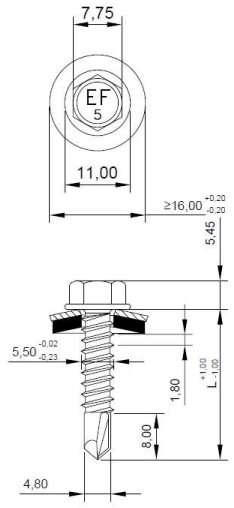
Fastening screws for metal members and sheeting

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

Annex 68

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 to S355 – 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	2.53	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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

If both components I and II are made of S350GD 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 69

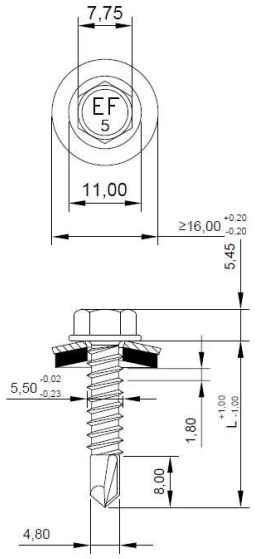
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – 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	2.53	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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 or A16

Annex 70

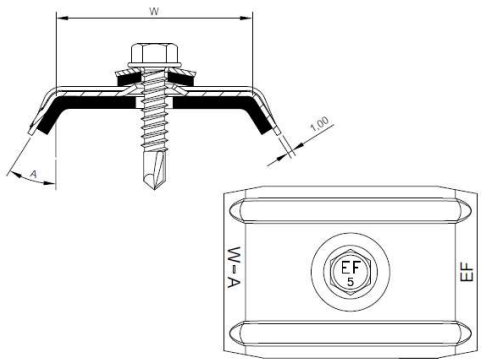
of European Technical Assessment ETA-16/0739

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 to S355 – 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	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	—	
$N_{R\ II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

If both components I and II are made of S350GD 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, washer Z16 and saddle washer ESW

Annex 71

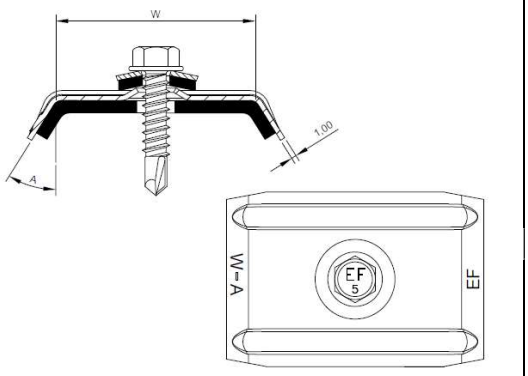
of European Technical Assessment ETA-16/0739

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 to S355 – 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	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	—	
$N_{R\ II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

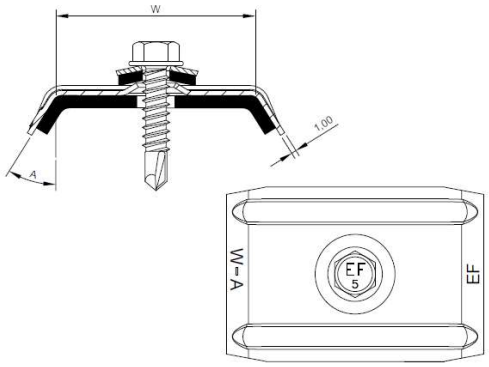
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – 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	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	—	
$N_{R\ II,k}$ [kN]		1.90	2.43	4.17	4.17	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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, washer S16 or A16 and saddle washer ESW

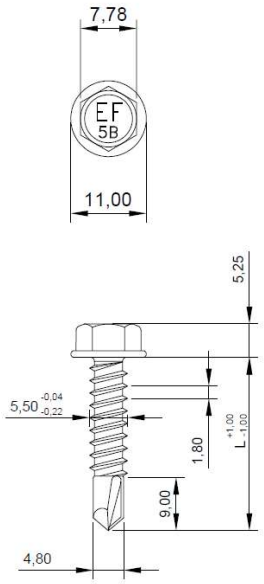
Annex 73

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 to S355 – 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	1.49	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	—	
$N_{R\,II,k}$ [kN]		1.52	2.41	3.45	3.45	

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

If both components I and II are made of S350GD 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

Annex 74

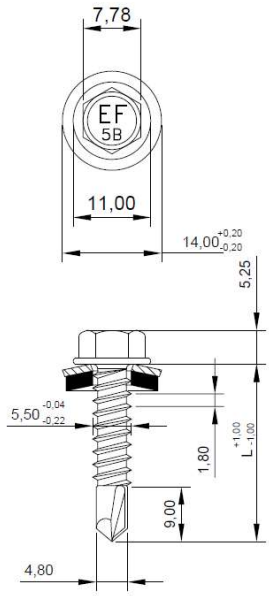
of European Technical Assessment ETA-16/0739

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 to S355 – 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	1.49	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	—	
$N_{R\,II,k}$ [kN]		1.52	2.41	3.45	3.45	

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

If both components I and II are made of S350GD 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 S14

Annex 75

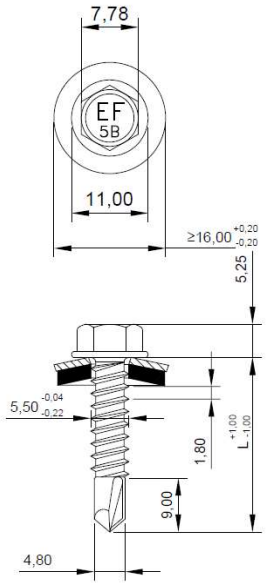
of European Technical Assessment ETA-16/0739

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 to S355 – 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	1.49	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	—	
$N_{R\,II,k}$ [kN]		1.52	2.41	3.45	3.45	

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

If both components I and II are made of S350GD 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 76

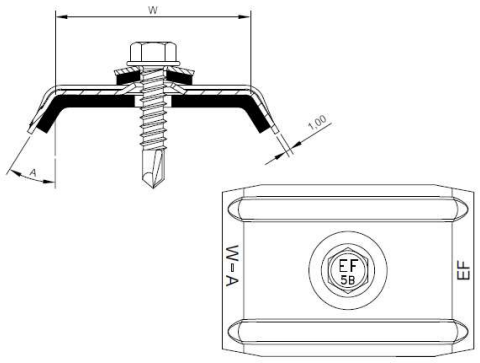
of European Technical Assessment ETA-16/0739

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 to S355 – 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	1.49	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	—	
$N_{R\,II,k}$ [kN]		1.52	2.41	3.45	3.45	

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

If both components I and II are made of S350GD 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, washer S16 and saddle washer ESW

Annex 77

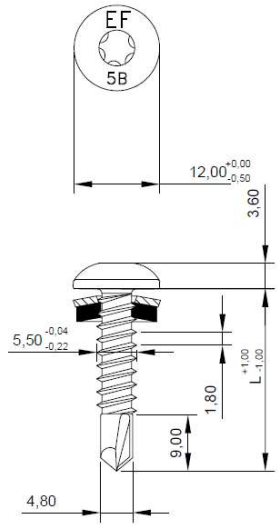
of European Technical Assessment ETA-16/0739

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 to S355 – 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	1.49	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	—	
$N_{R\,II,k}$ [kN]		1.52	2.41	3.45	3.45	

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

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

Fastening screws for metal members and sheeting

Annex 78

Self-drilling screws ESDS-PH-5-B 5.5xL
with pan head and washer S11 or S12

of European Technical Assessment ETA-16/0739

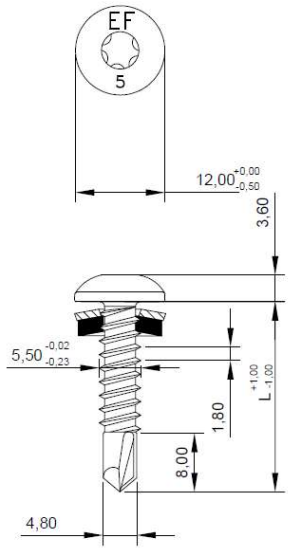
Materials

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 to S355 – 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	0.70	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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

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

Fastening screws for metal members and sheeting

Annex 79

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

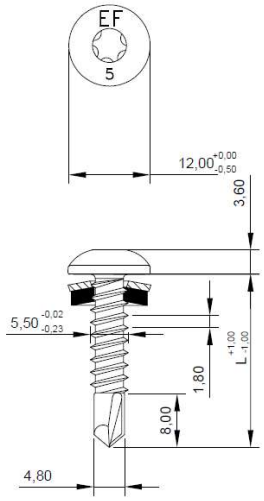
of European Technical Assessment ETA-16/0739

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 to S355 – 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	0.70	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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

If both components I and II are made of S350GD 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

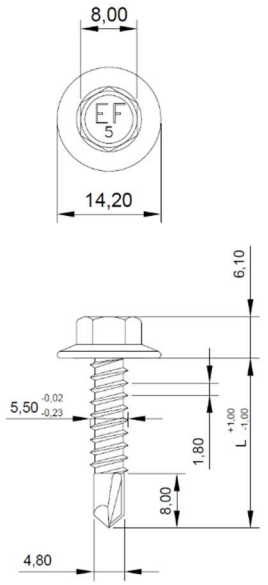
Annex 80

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 to S355 – 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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

Fastening screws for metal members and sheeting

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

Annex 81

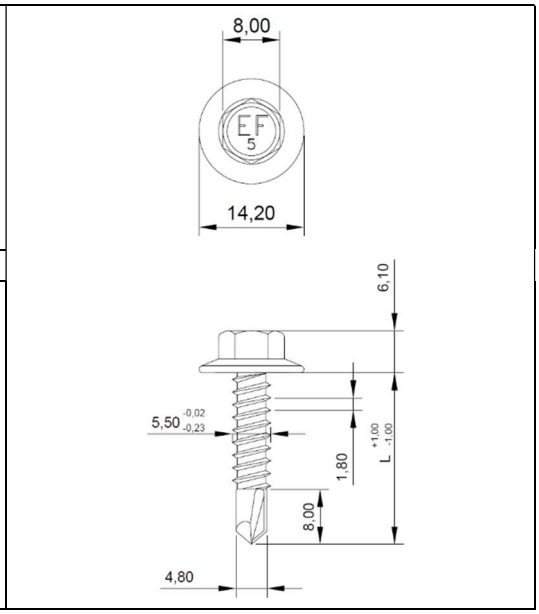
of European Technical Assessment ETA-16/0739

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 to S355 – 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	—	
$N_{R\,II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

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

Fastening screws for metal members and sheeting

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

Annex 82

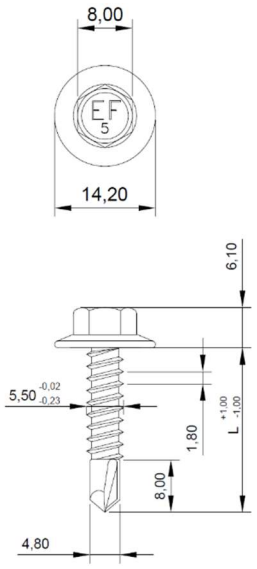
of European
Technical Assessment
ETA-16/0739

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 to S355 – 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	—	
$N_{R\ II,k}$ [kN]		1.90	2.43	4.17	4.17	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-FH-5-SP 5.5xL
with hexagon flange head

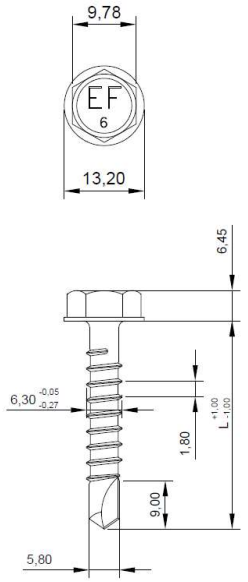
Annex 83

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 to S355 – 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	—	
$N_{R\ II,k}$ [kN]		3.98	3.98	8.50	

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

If both components I and II are made of S350GD 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 84

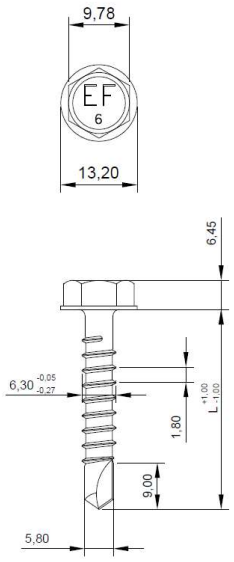
of European Technical Assessment ETA-16/0739

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 to S355 – 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	—	
$N_{R\ II,k}$ [kN]		3.98	3.98	8.50	

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

If both components I and II are made of S350GD 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

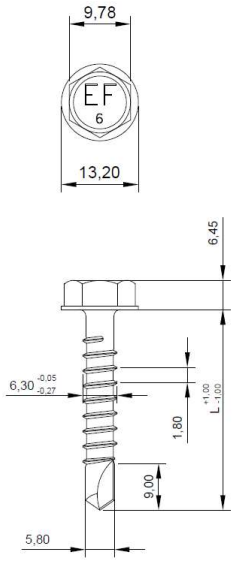
Annex 85

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 to S355 – 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	—	
$N_{R\ II,k}$ [kN]		3.98	3.98	8.50	

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

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

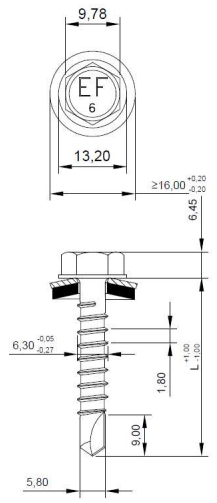
Fastening screws for metal members and sheeting	**Annex 86**
Self-drilling screws ESDS-6-SP 6.3xL with hexagon head	of European Technical Assessment ETA-16/0739

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 to S355 – 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	—	
$N_{R\ II,k}$ [kN]		3.98	3.98	8.50	

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

If both components I and II are made of S350GD 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 and washer Z16

Annex 87

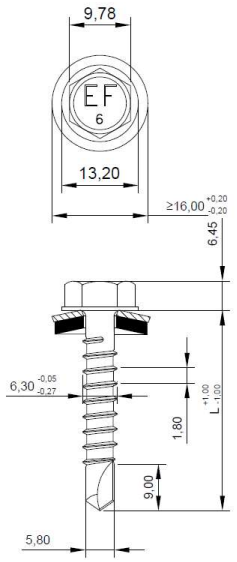
of European
Technical Assessment
ETA-16/0739

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 to S355 – 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	—	
$N_{R\ II,k}$ [kN]		3.98	3.98	8.50	

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

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

Fastening screws for metal members and sheeting

Annex 88

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

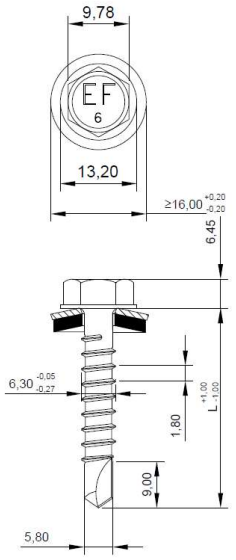
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – 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	—	
$N_{R\ II,k}$ [kN]		3.98	3.98	8.50	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 or A16

Annex 89

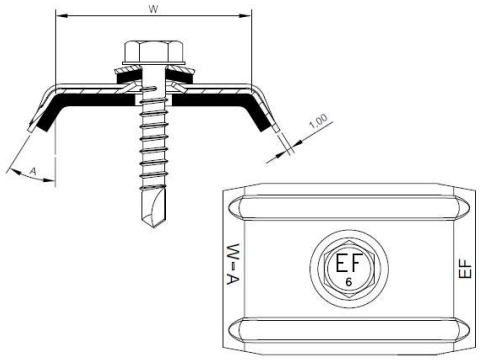
of European Technical Assessment ETA-16/0739

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 to S355 – 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	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	—	
$N_{R\,II,k}$ [kN]		3.98	3.98	8.50	

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

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

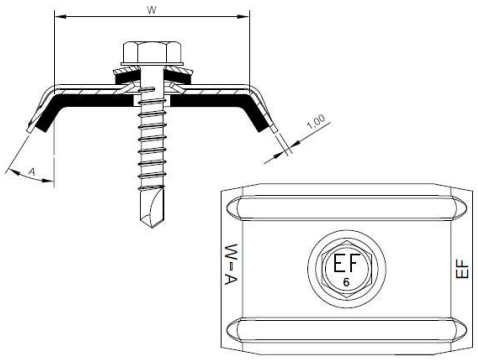
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-6-Z 6.3xL
with hexagon head and washer Z16 and saddle washer ESW

Annex 90

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 to S355 – 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	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	—	
$N_{R\,II,k}$ [kN]		3.98	3.98	8.50	

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

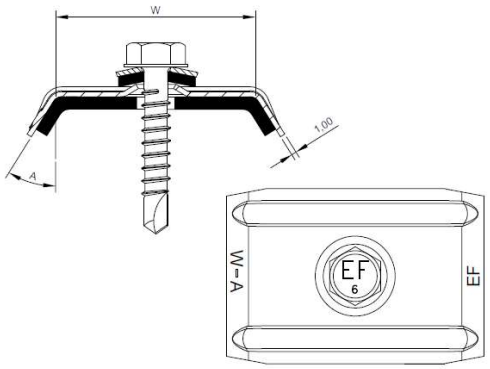
Fastening screws for metal members and sheeting	**Annex 91**
Self-drilling screws ESDS-6-P 6.3xL with hexagon head, washer A16 and saddle washer ESW	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – 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	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	—	
$N_{R\,II,k}$ [kN]		3.98	3.98	8.50	

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

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

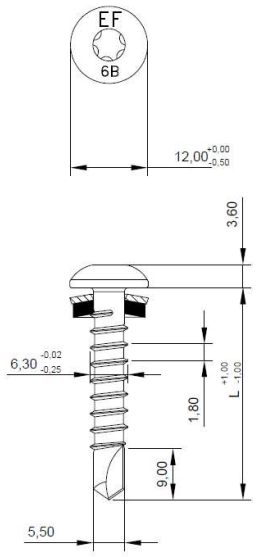
Fastening screws for metal members and sheeting	**Annex 92**
Self-drilling screws ESDS-6-SP 6.3xL with hexagon head, washer S16 or A16 and saddle washer ESW	of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1
	S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	—	
$N_{R\ II,k}$ [kN]		2.67	3.79	6.14	6.14	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 93

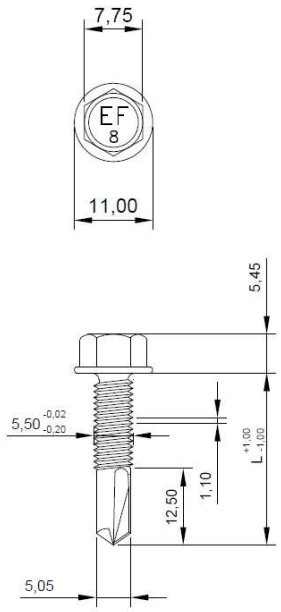
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\,II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

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

If both components I and II are made of S350GD 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

Annex 94

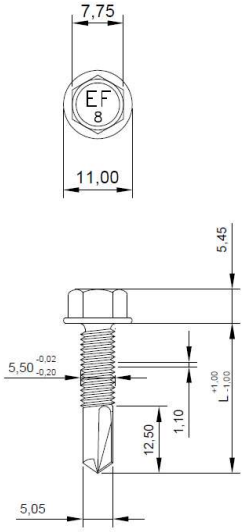
of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\,II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

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

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

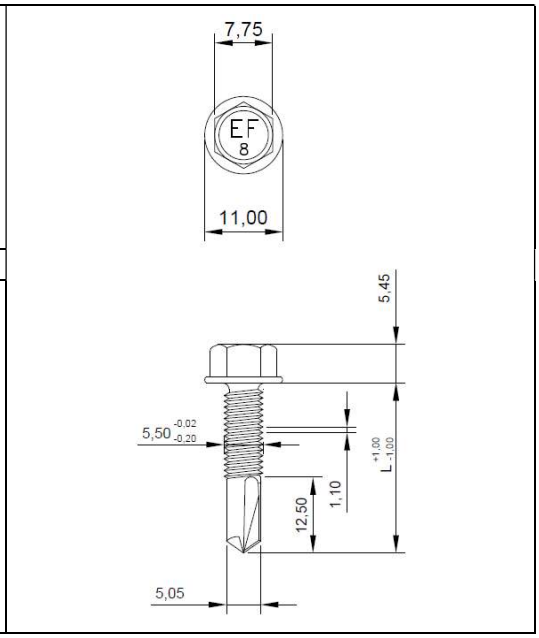
Fastening screws for metal members and sheeting	**Annex 95**
Self-drilling screws ESDS-8-P 5.5xL with hexagon head	of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\,II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 96

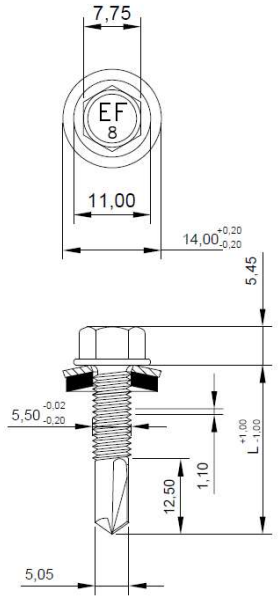
of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\,II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 97

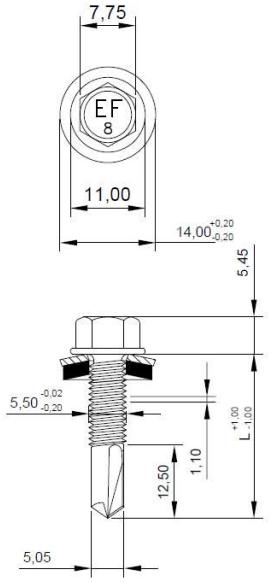
of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\,II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 A14

Annex 98

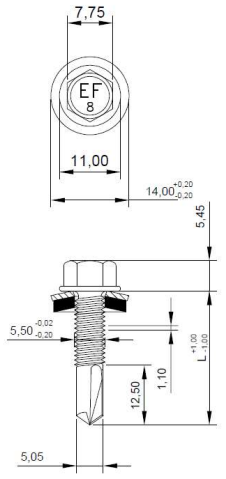
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring or A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\,II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

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

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

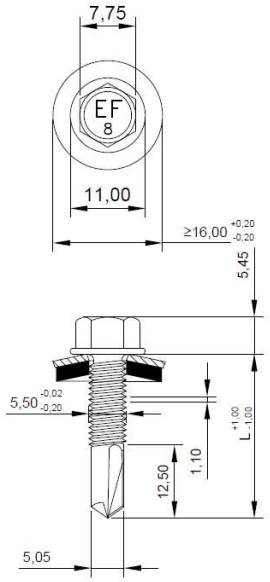
Fastening screws for metal members and sheeting	Annex 99
Self-drilling screws ESDS-8-SP 5.5xL with hexagon head and washer S14 or A14	of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\,II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

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

If both components I and II are made of S350GD 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 100

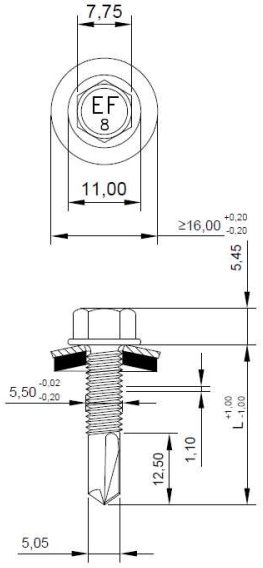
of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\ II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

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

If both components I and II are made of S350GD 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 101

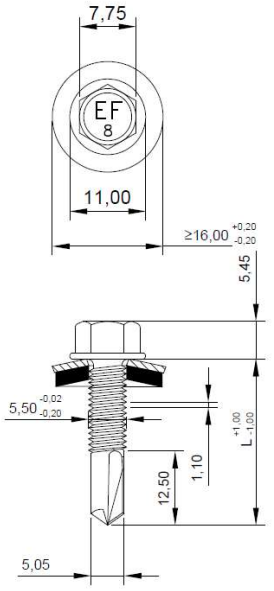
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\,II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

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

If both components I and II are made of S350GD 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 or A16

Annex 102

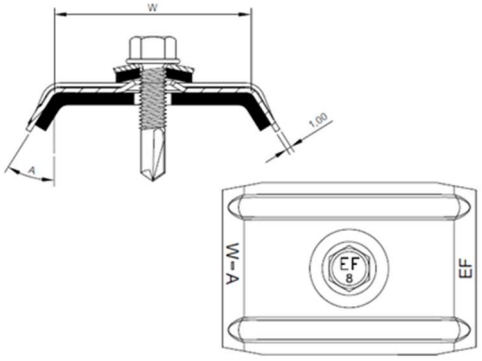
of European
Technical Assessment
ETA-16/0739

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 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\ II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

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

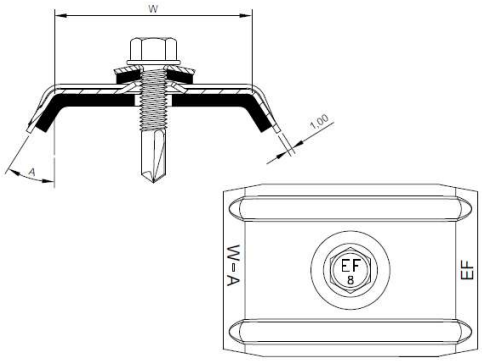
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

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 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\ II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

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

If both components I and II are made of S350GD 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, washer A16 and saddle washer ESW

Annex 104

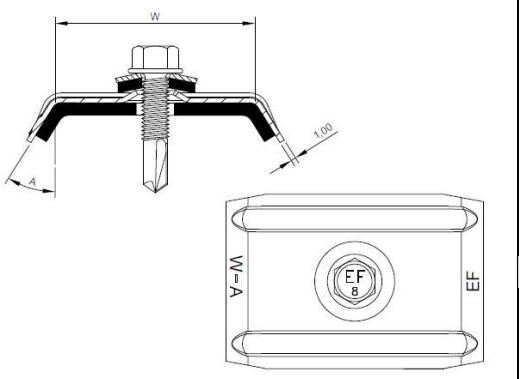
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1 S280GD, S320GD or S350GD – EN 10346
Drilling capacity:	Σti ≤ 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	
$N_{R\ II,k}$ [kN]		1.90	3.92	3.92	7.85	7.85	

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

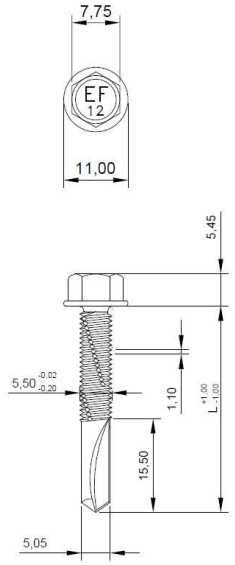
Fastening screws for metal members and sheeting	**Annex 105**
Self-drilling screws ESDS-8-SP 5.5xL with hexagon head, washer S16 or A16 and saddle washer ESW	of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	
$N_{R\,II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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 106

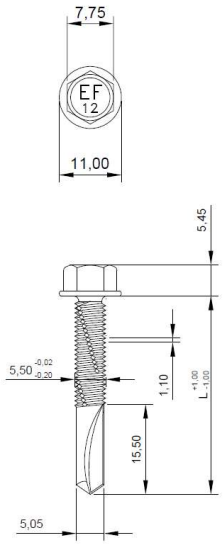
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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 107

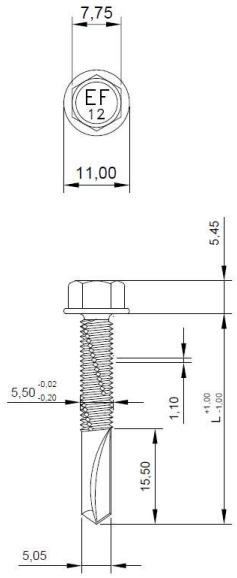
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\,II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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

Annex 108

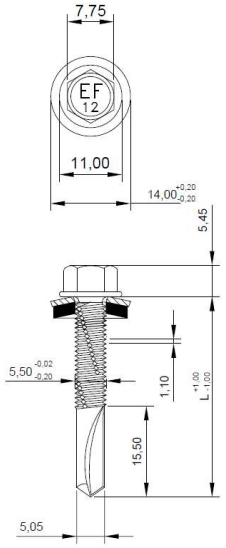
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\,II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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 Z14

Annex 109

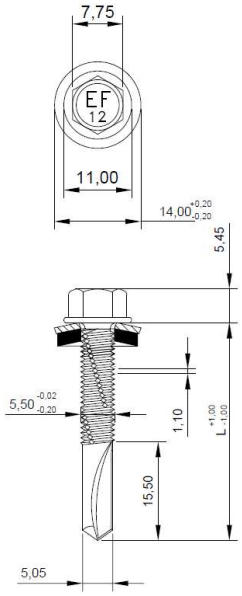
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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 110

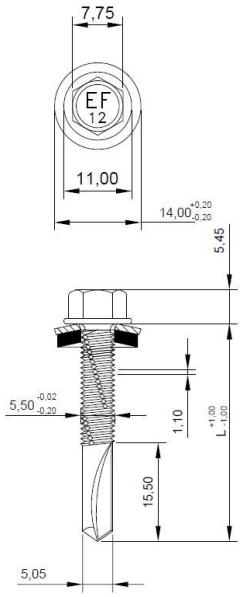
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring or A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	
$N_{R\ II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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 S14 or A14

Annex 111

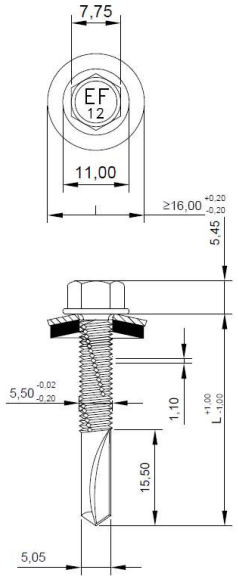
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z16 – galvanized carbon steel washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	
$N_{R\,II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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

Annex 112

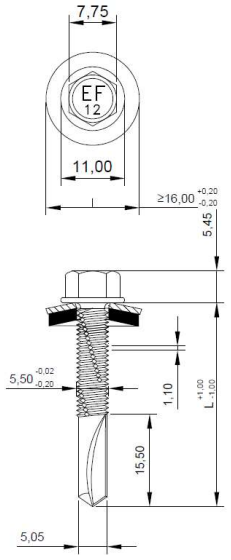
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with PREMIUM coating
Washer:	A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	
$N_{R\,II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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

Annex 113

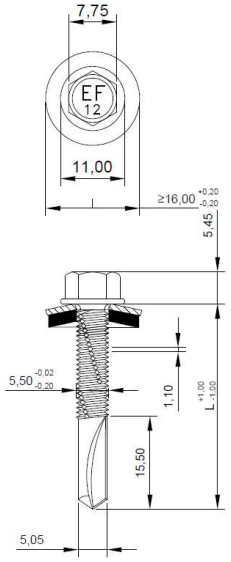
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or
	A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	
$N_{R\,II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

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

Fastening screws for metal members and sheeting

Annex 114

Self-drilling screws ESDS-12-SP 5.5xL
with hexagon head and washer S16 or A16

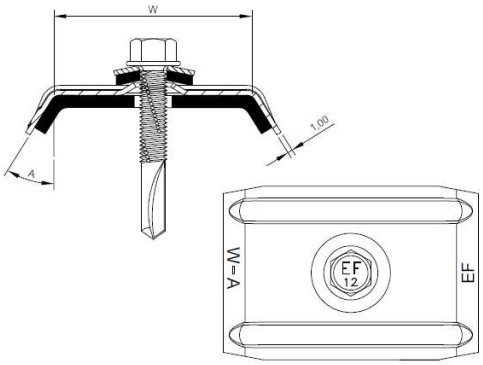
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\,II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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, washer Z16 and saddle washer ESW

Annex 115

of European Technical Assessment ETA-16/0739

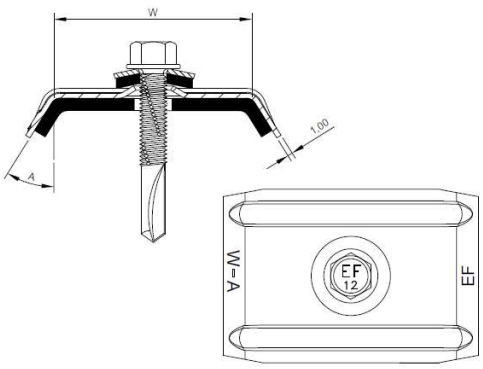
Materials

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 to 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	
$N_{R\,II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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, washer A16 and saddle washer ESW

Annex 116

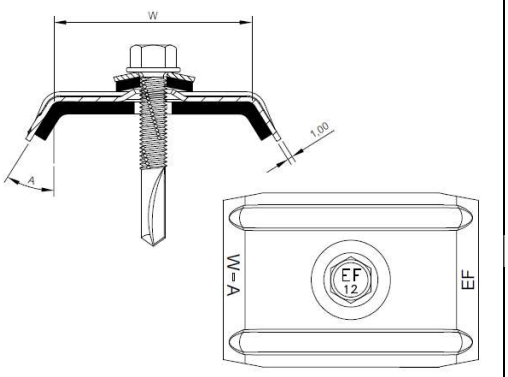
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	
$N_{R\,II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

If both components I and II are made of S350GD 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, washer S16 or A16 and saddle washer ESW

Annex 117

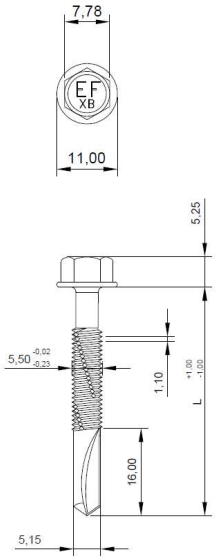
of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	0.61	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	
$N_{R\,II,k}$ [kN]		5.17	5.17	7.45	7.45	7.45	

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

Annex 118

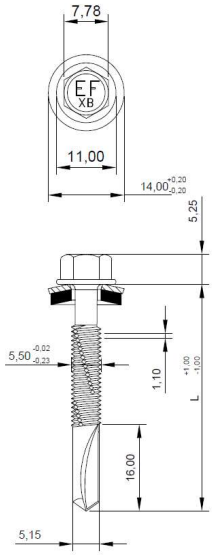
of European
Technical Assessment
ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		5.17	5.17	7.45	7.45	7.45	

If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 S14

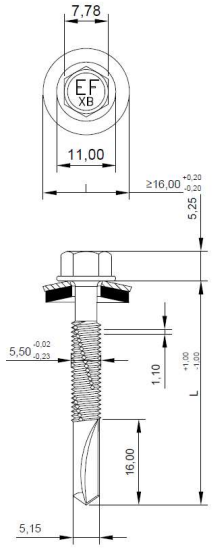
Annex 119

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 to 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	
$N_{R\ II,k}$ [kN]		5.17	5.17	7.45	7.45	7.45	

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

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

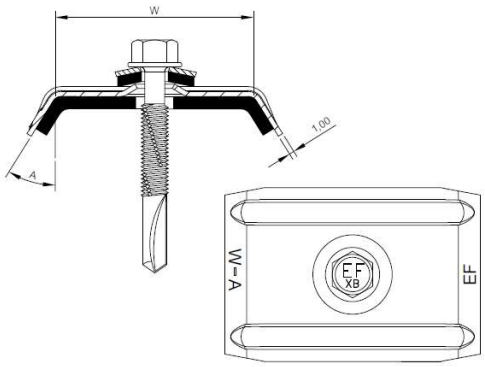
Fastening screws for metal members and sheeting	**Annex 120**
Self-drilling screws ESDS-12-B 5.5xL with hexagon head and washer S16	of European Technical Assessment ETA-16/0739

Materials

Fastener:	stainless steel – SAE304 (bi-metal)
Washer:	S16 – stainless steel washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	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	
$N_{R\ II,k}$ [kN]		5.17	5.17	7.45	7.45	7.45	

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

If both components I and II are made of S350GD 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, washer S16 and saddle washer ESW

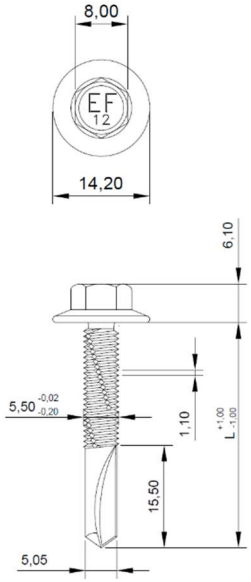
Annex 121

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 to 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	
$N_{R\ II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

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

Fastening screws for metal members and sheeting

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

Annex 122

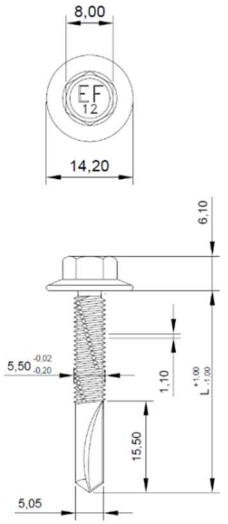
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

Fastening screws for metal members and sheeting

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

Annex 123

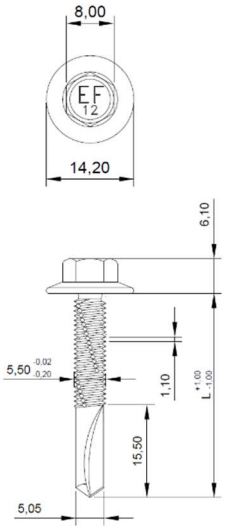
of European
Technical Assessment
ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		6.24	7.96	7.96	7.96	7.96	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-FH-12-SP 5.5xL
with hexagon flange head

Annex 124

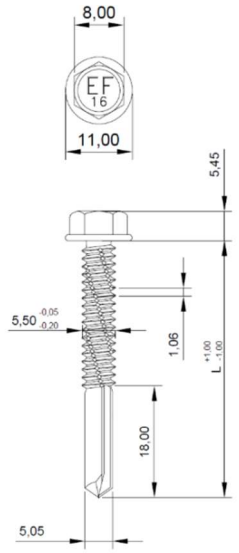
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	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	
	0.55	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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Annex 125

of European Technical Assessment ETA-16/0739

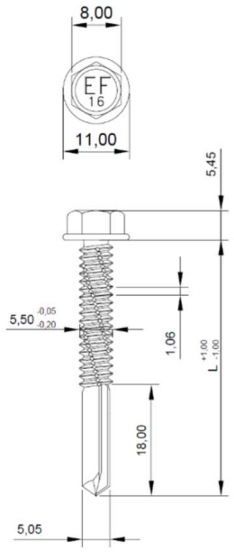
Self-drilling screws ESDS-16-Z 5.5xL with hexagon head

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	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	
	0.55	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	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Annex 126

of European Technical Assessment ETA-16/0739

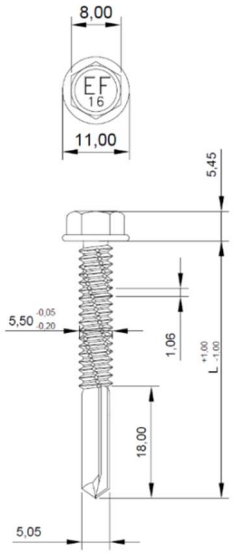
Self-drilling screws ESDS-16-P 5.5xL with hexagon head

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:	S235 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	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	
	0.55	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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-16-SP 5.5xL with hexagon head

Annex 127

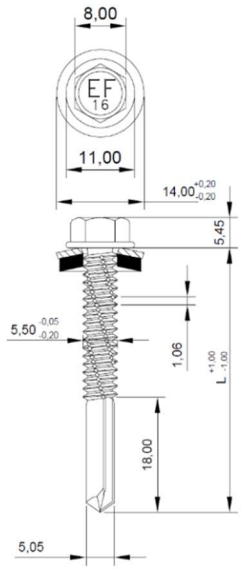
of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	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	
	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	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

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

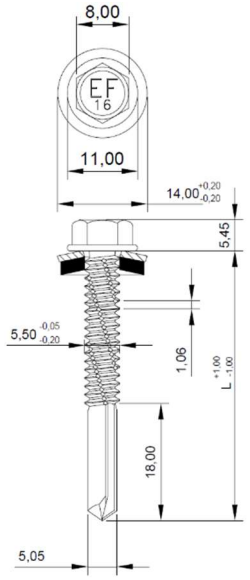
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-16-Z 5.5xL
with hexagon head and washer Z14

Annex 128

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	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	
	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	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-16-P 5.5xL
with hexagon head and washer A14

Annex 129

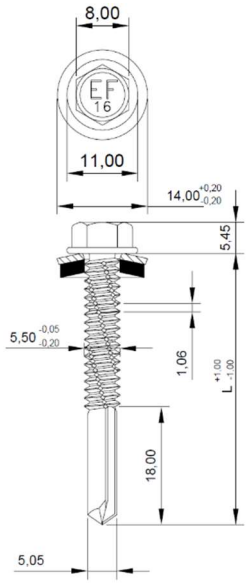
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring or
	A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	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	
	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	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-16-SP 5.5xL
with hexagon head and washer S14 or A14

Annex 130

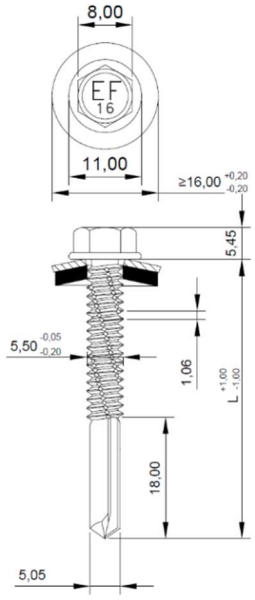
of European
Technical Assessment
ETA-16/0739

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	3.10	3.10	3.10	3.10	3.10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-16-Z 5.5xL
with hexagon head and washer Z16

Annex 131

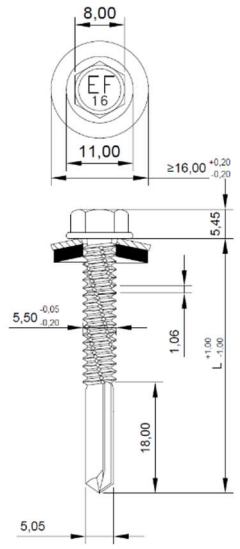
of European
Technical Assessment
ETA-16/0739

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	3.10	3.10	3.10	3.10	3.10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-16-P 5.5xL
with hexagon head and washer A16

Annex 132

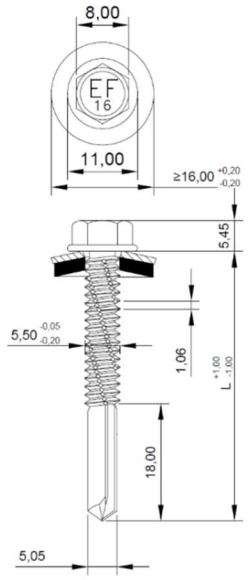
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	3.10	3.10	3.10	3.10	3.10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

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

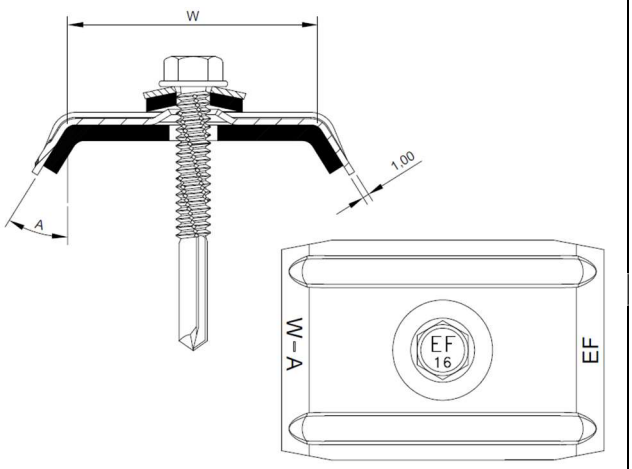
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-16-SP 5.5xL
with hexagon head and washer S16 or A16

Annex 133

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	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	
	0.55	10.92	10.92	10.92	10.92	10.92	
	0.60	10.92	10.92	10.92	10.92	10.92	
	0.63	10.92	10.92	10.92	10.92	10.92	
	0.70	10.92	10.92	10.92	10.92	10.92	
	0.75	10.92	10.92	10.92	10.92	10.92	
	0.80	10.92	10.92	10.92	10.92	10.92	
	0.88	10.92	10.92	10.92	10.92	10.92	
	1.00	10.92	10.92	10.92	10.92	10.92	
	1.13	10.92	10.92	10.92	10.92	10.92	
	1.15	10.92	10.92	10.92	10.92	10.92	
	1.25	10.92	10.92	10.92	10.92	10.92	
	1.50	10.92	10.92	10.92	10.92	10.92	
	1.75	10.92	10.92	10.92	10.92	10.92	
	2.00	10.92	10.92	10.92	10.92	10.92	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

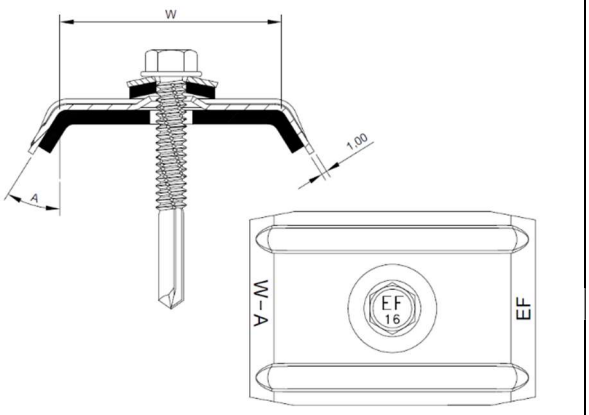
If both components I and II are made of S320GD values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

Annex 134
of European Technical Assessment ETA-16/0739

Self-drilling screws ESDS-16-Z 5.5xL
with hexagon head, washer Z16 and saddle washer ESW

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	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	
	0.55	10.92	10.92	10.92	10.92	10.92	
	0.60	10.92	10.92	10.92	10.92	10.92	
	0.63	10.92	10.92	10.92	10.92	10.92	
	0.70	10.92	10.92	10.92	10.92	10.92	
	0.75	10.92	10.92	10.92	10.92	10.92	
	0.80	10.92	10.92	10.92	10.92	10.92	
	0.88	10.92	10.92	10.92	10.92	10.92	
	1.00	10.92	10.92	10.92	10.92	10.92	
	1.13	10.92	10.92	10.92	10.92	10.92	
	1.15	10.92	10.92	10.92	10.92	10.92	
	1.25	10.92	10.92	10.92	10.92	10.92	
	1.50	10.92	10.92	10.92	10.92	10.92	
	1.75	10.92	10.92	10.92	10.92	10.92	
	2.00	10.92	10.92	10.92	10.92	10.92	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

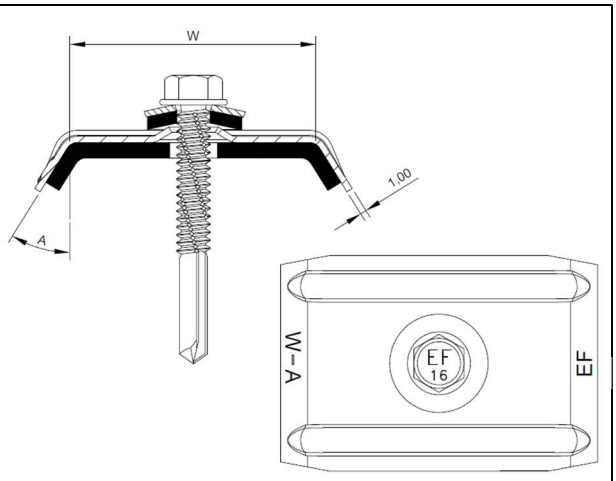
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-16-P 5.5xL
with hexagon head, washer A16 and saddle washer ESW

Annex 135

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 or A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 16,00 mm
Timber substructures No performance assessed	



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	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	
	0.55	1.72	1.72	1.72	1.72	1.72	
	0.60	1.72	1.72	1.72	1.72	1.72	
	0.63	1.90	1.90	1.90	1.90	1.90	
	0.70	1.90	1.90	1.90	1.90	1.90	
	0.75	2.69	2.69	2.69	2.69	2.69	
	0.80	2.69	2.69	2.69	2.69	2.69	
	0.88	2.69	2.69	2.69	2.69	2.69	
	1.00	3.10	3.10	3.10	3.10	3.10	
	1.13	3.10	3.10	3.10	3.10	3.10	
	1.15	3.10	3.10	3.10	3.10	3.10	
	1.25	3.10	3.10	3.10	3.10	3.10	
	1.50	3.10	3.10	3.10	3.10	3.10	
	1.75	3.10	3.10	3.10	3.10	3.10	
	2.00	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	
	0.55	10.92	10.92	10.92	10.92	10.92	
	0.60	10.92	10.92	10.92	10.92	10.92	
	0.63	10.92	10.92	10.92	10.92	10.92	
	0.70	10.92	10.92	10.92	10.92	10.92	
	0.75	10.92	10.92	10.92	10.92	10.92	
	0.80	10.92	10.92	10.92	10.92	10.92	
	0.88	10.92	10.92	10.92	10.92	10.92	
	1.00	10.92	10.92	10.92	10.92	10.92	
	1.13	10.92	10.92	10.92	10.92	10.92	
	1.15	10.92	10.92	10.92	10.92	10.92	
	1.25	10.92	10.92	10.92	10.92	10.92	
	1.50	10.92	10.92	10.92	10.92	10.92	
	1.75	10.92	10.92	10.92	10.92	10.92	
	2.00	10.92	10.92	10.92	10.92	10.92	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-16-SP 5.5xL
with hexagon head, washer S16 or A16 and saddle washer ESW

Annex 136

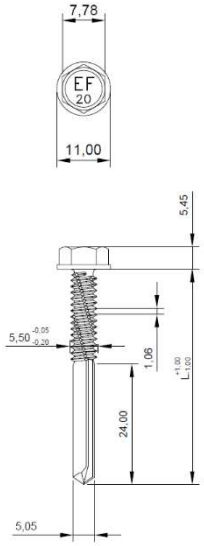
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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

Annex 137

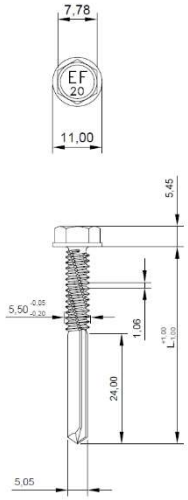
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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 138

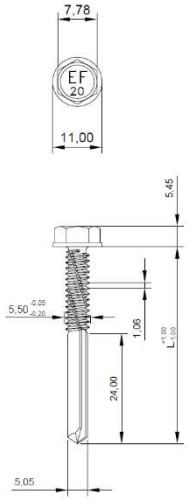
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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 139

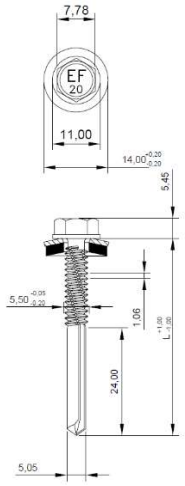
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

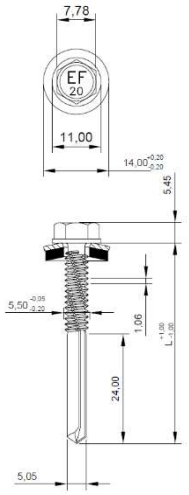
Fastening screws for metal members and sheeting	Annex 140
Self-drilling screws ESDS-20-Z 5.5xL with hexagon head and washer Z14	of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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 141

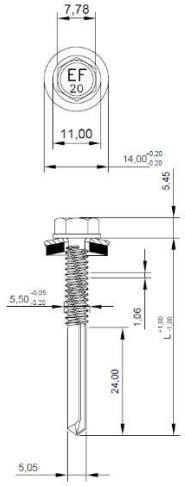
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring or A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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 or A14

Annex 142

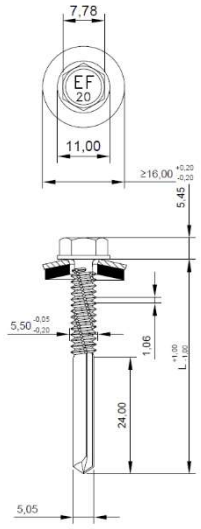
of European Technical Assessment ETA-16/0739

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 to 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	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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 143

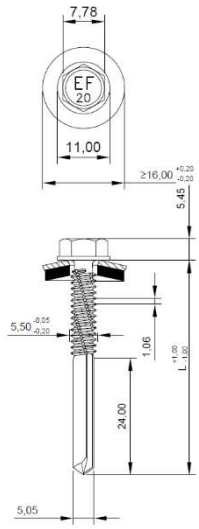
of European
Technical Assessment
ETA-16/0739

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 to 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	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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 144

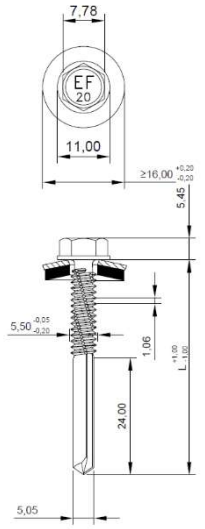
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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 or A16

Annex 145

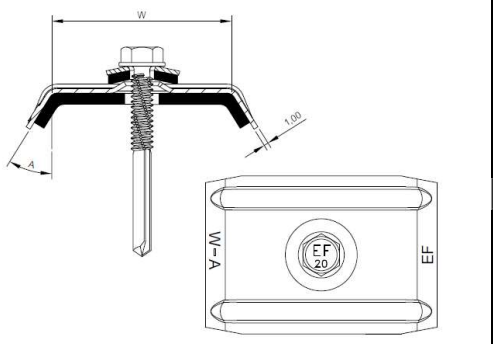
of European Technical Assessment ETA-16/0739

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 to 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	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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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, washer Z16 and saddle washer ESW

Annex 146

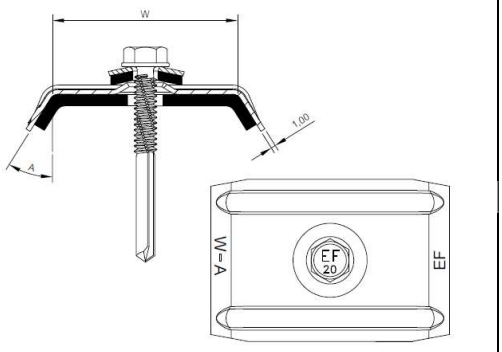
of European Technical Assessment ETA-16/0739

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 to 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	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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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, washer A16 and saddle washer ESW

Annex 147

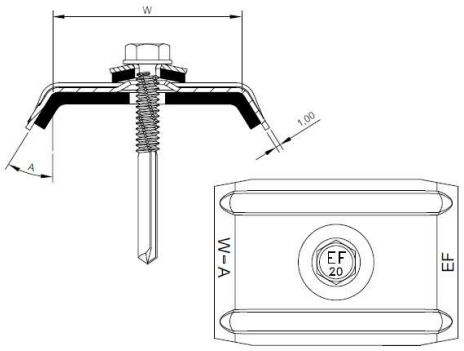
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16– aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

If both components I and II are made of S350GD 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, washer S16 or A16 and saddle washer ESW

Annex 148

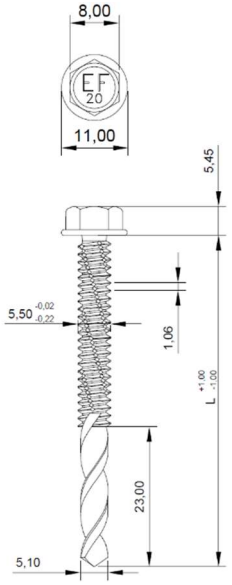
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20S-Z 5.5xL
with hexagon head

Annex 149

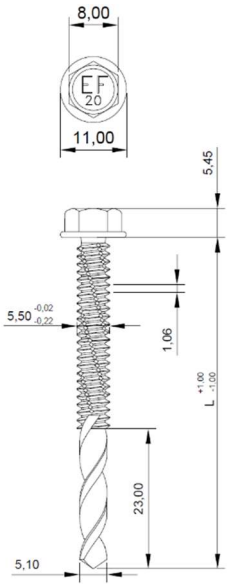
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

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

Annex 150

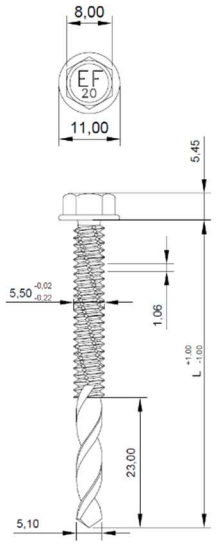
of European
Technical Assessment
ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

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

Annex 151

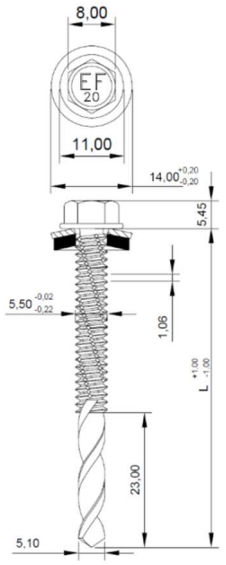
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20S-Z 5.5xL
with hexagon head and washer Z14

Annex 152

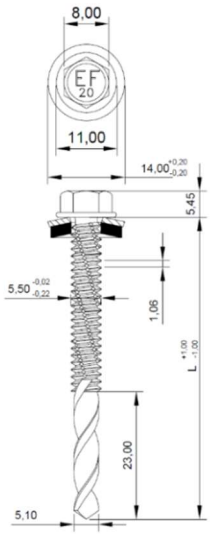
of European Technical Assessment ETA-16/0739

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 to 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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

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

Annex 153

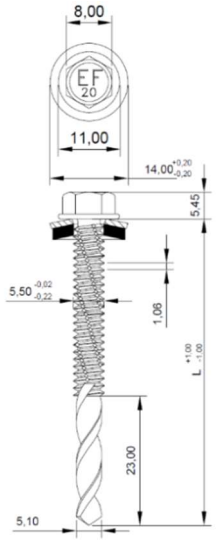
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring or A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20S-SP 5.5xL
with hexagon head and washer S14 or A14

Annex 154

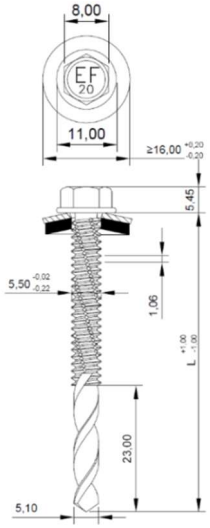
of European
Technical Assessment
ETA-16/0739

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 to 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	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

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

Annex 155

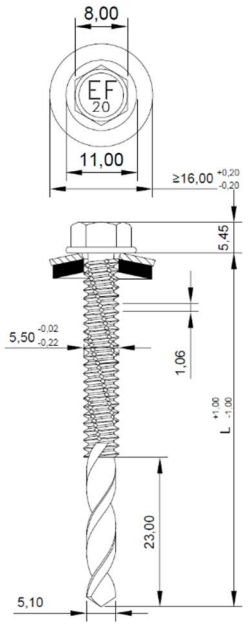
of European
Technical Assessment
ETA-16/0739

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 to 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	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

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

Annex 156

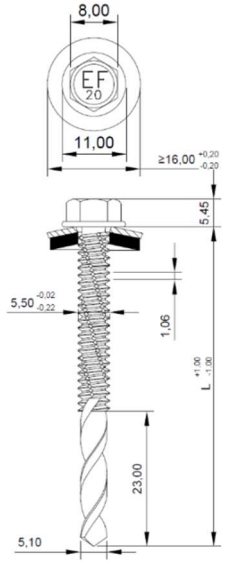
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20S-SP 5.5xL
with hexagon head and washer S16 or A16

Annex 157

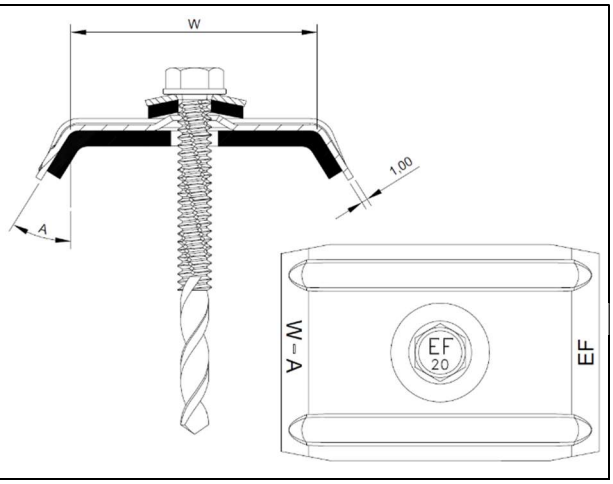
of European Technical Assessment ETA-16/0739

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 to 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	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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

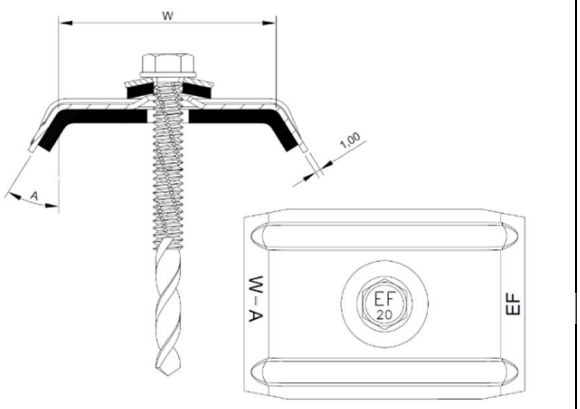
Fastening screws for metal members and sheeting

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

Annex 158

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 to 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	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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

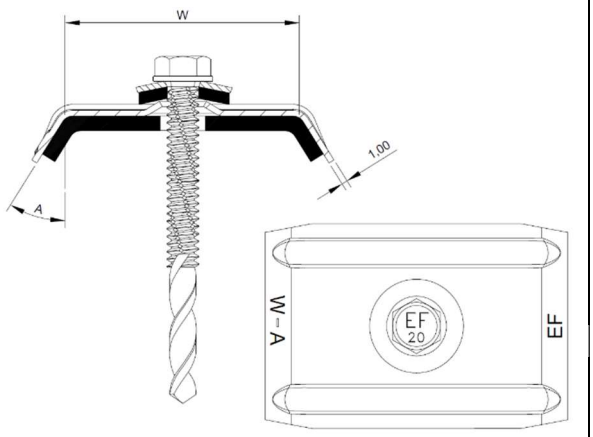
Fastening screws for metal members and sheeting

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

Annex 159

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 or A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to 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	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	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

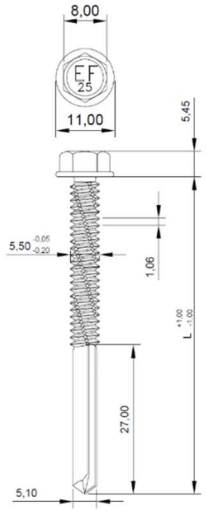
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-20S-SP 5.5xL
with hexagon head, washer S16 or A16 and saddle washer ESW

Annex 160

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	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	0.80	0.80	
	0.55	0.80	0.80	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	0.80	0.80	
	0.63	1.00	1.00	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	1.00	1.00	
	0.75	1.31	1.31	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	1.31	1.31	
	0.88	1.31	1.31	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	1.31	1.31	
	1.13	1.31	1.31	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	1.31	1.31	
	1.25	1.31	1.31	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	1.31	1.31	
	1.75	1.31	1.31	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	1.31	1.31	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

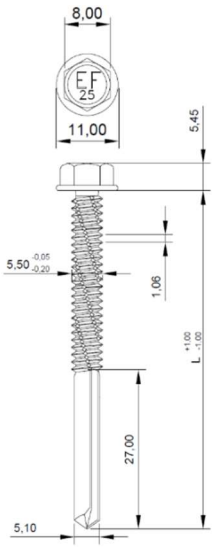
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting	**Annex 161**
Self-drilling screws ESDS-25-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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	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	0.80	0.80	
	0.55	0.80	0.80	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	0.80	0.80	
	0.63	1.00	1.00	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	1.00	1.00	
	0.75	1.31	1.31	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	1.31	1.31	
	0.88	1.31	1.31	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	1.31	1.31	
	1.13	1.31	1.31	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	1.31	1.31	
	1.25	1.31	1.31	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	1.31	1.31	
	1.75	1.31	1.31	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	1.31	1.31	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

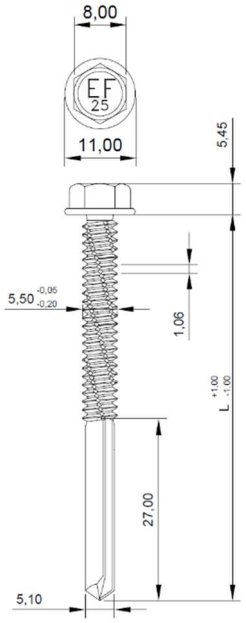
Fastening screws for metal members and sheeting	**Annex 162**
Self-drilling screws ESDS-25-P 5.5xL with hexagon head	of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	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	0.80	0.80	
	0.55	0.80	0.80	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	0.80	0.80	
	0.63	1.00	1.00	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	1.00	1.00	
	0.75	1.31	1.31	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	1.31	1.31	
	0.88	1.31	1.31	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	1.31	1.31	
	1.13	1.31	1.31	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	1.31	1.31	
	1.25	1.31	1.31	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	1.31	1.31	
	1.75	1.31	1.31	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	1.31	1.31	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-25-SP 5.5xL with hexagon head

Annex 163

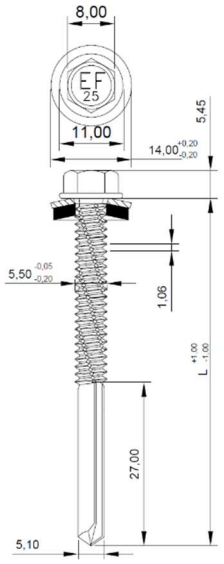
of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	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	2.54	2.54	
	0.55	2.54	2.54	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	2.54	2.54	
	0.63	3.41	3.41	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	3.41	3.41	
	0.75	4.10	4.10	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	4.10	4.10	
	0.88	4.10	4.10	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	4.10	4.10	
	1.13	4.10	4.10	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	4.10	4.10	
	1.25	4.10	4.10	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	4.10	4.10	
	1.75	4.10	4.10	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	4.10	4.10	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-25-Z 5.5xL
with hexagon head and washer Z14

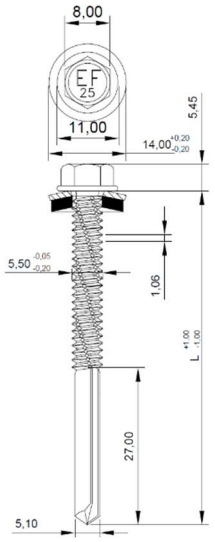
Annex 164

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 ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	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	2.54	2.54	
	0.55	2.54	2.54	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	2.54	2.54	
	0.63	3.41	3.41	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	3.41	3.41	
	0.75	4.10	4.10	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	4.10	4.10	
	0.88	4.10	4.10	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	4.10	4.10	
	1.13	4.10	4.10	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	4.10	4.10	
	1.25	4.10	4.10	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	4.10	4.10	
	1.75	4.10	4.10	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	4.10	4.10	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-25-P 5.5xL
with hexagon head and washer A14

Annex 165

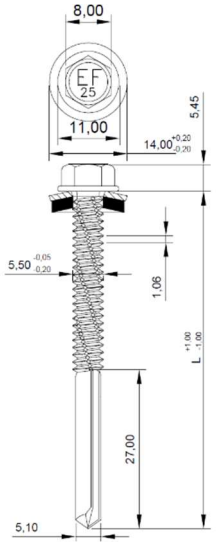
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S14 – stainless steel washer with EPDM ring or A14 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	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	2.54	2.54	
	0.55	2.54	2.54	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	2.54	2.54	
	0.63	3.41	3.41	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	3.41	3.41	
	0.75	4.10	4.10	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	4.10	4.10	
	0.88	4.10	4.10	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	4.10	4.10	
	1.13	4.10	4.10	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	4.10	4.10	
	1.25	4.10	4.10	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	4.10	4.10	
	1.75	4.10	4.10	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	4.10	4.10	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-25-SP 5.5xL
with hexagon head and washer S14 or A14

Annex 166

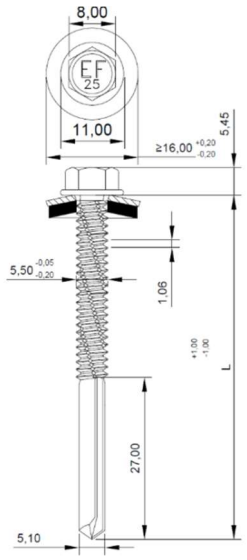
of European
Technical Assessment
ETA-16/0739

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	3.10	3.10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-25-Z 5.5xL
with hexagon head and washer Z16

Annex 167

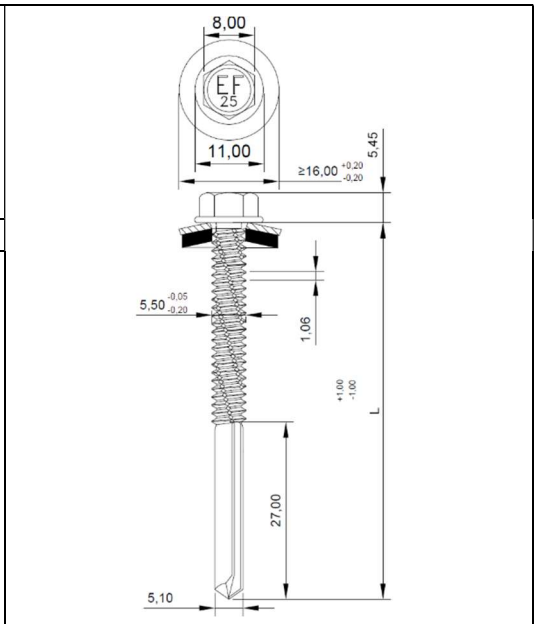
of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	3.10	3.10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-25-P 5.5xL
with hexagon head and washer A16

Annex 168

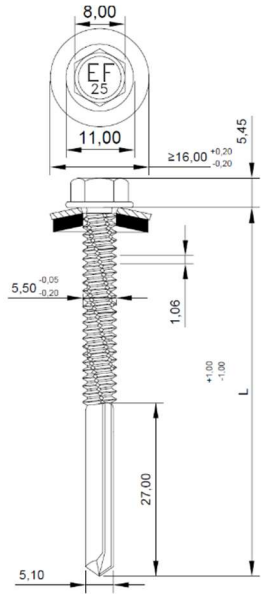
of European
Technical Assessment
ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized with SUPER PREMIUM coating
Washer:	S16 – stainless steel washer with EPDM ring or A16 – aluminum washer with EPDM ring
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	3.10	3.10	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.55	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.60	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	
	0.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.70	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
	0.75	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.80	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	0.88	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	
	1.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.13	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.15	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.25	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.50	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	1.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
	2.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

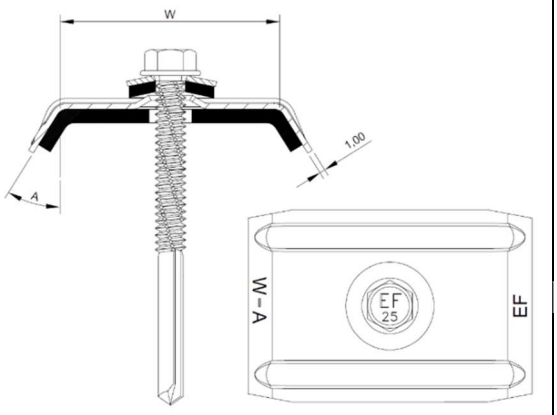
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-25-SP 5.5xL
with hexagon head and washer S16 or A16

Annex 169

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm
Timber substructures	
No performance assessed	



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	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	10.92	10.92	
	0.55	10.92	10.92	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	10.92	10.92	
	0.63	10.92	10.92	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	10.92	10.92	
	0.75	10.92	10.92	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	10.92	10.92	
	0.88	10.92	10.92	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	10.92	10.92	
	1.13	10.92	10.92	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	10.92	10.92	
	1.25	10.92	10.92	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	10.92	10.92	
	1.75	10.92	10.92	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	10.92	10.92	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-25-Z 5.5xL
with hexagon head, washer Z16 and saddle washer ESW

Annex 170

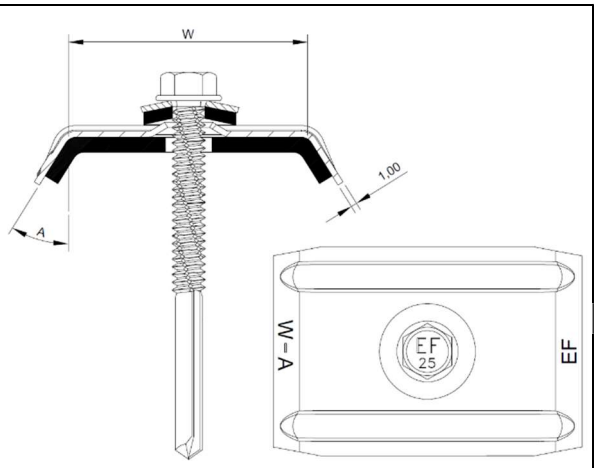
of European Technical Assessment ETA-16/0739

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 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	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	10.92	10.92	
	0.55	10.92	10.92	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	10.92	10.92	
	0.63	10.92	10.92	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	10.92	10.92	
	0.75	10.92	10.92	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	10.92	10.92	
	0.88	10.92	10.92	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	10.92	10.92	
	1.13	10.92	10.92	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	10.92	10.92	
	1.25	10.92	10.92	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	10.92	10.92	
	1.75	10.92	10.92	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	10.92	10.92	
$N_{R\,II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

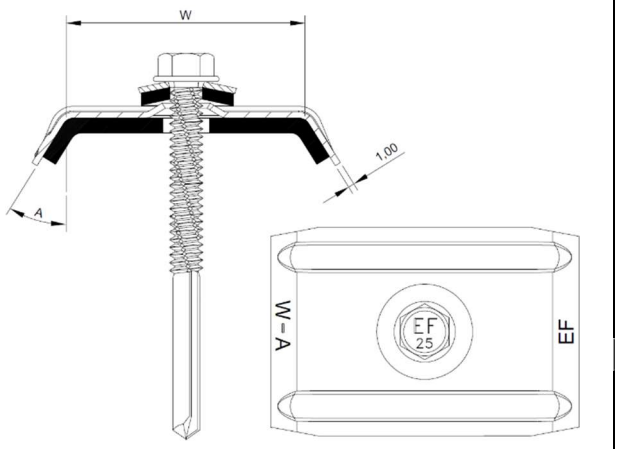
Fastening screws for metal members and sheeting

Self-drilling screws ESDS-25-P 5.5xL
with hexagon head, washer A16 and saddle washer ESW

Annex 171

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 or A16 – aluminum washer with EPDM ring
Saddle washer:	ESW made of aluminum
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S235 to S355 – EN 10025-1
Drilling capacity:	Σti ≤ 25,00 mm
Timber substructures No performance assessed	



$t_{N,II}$ [mm]		6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	23.00	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	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	1.90	1.90	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	1.90	1.90	
	0.75	2.69	2.69	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	2.69	2.69	
	0.88	2.69	2.69	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	3.10	3.10	
	1.13	3.10	3.10	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	3.10	3.10	
	1.25	3.10	3.10	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	3.10	3.10	
	1.75	3.10	3.10	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	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	10.92	10.92	
	0.55	10.92	10.92	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	10.92	10.92	
	0.63	10.92	10.92	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	10.92	10.92	
	0.75	10.92	10.92	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	10.92	10.92	
	0.88	10.92	10.92	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	10.92	10.92	
	1.13	10.92	10.92	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	10.92	10.92	
	1.25	10.92	10.92	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	10.92	10.92	
	1.75	10.92	10.92	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	10.92	10.92	
$N_{R\ II,k}$ [kN]		12.00	12.37	12.37	12.37	12.37	12.37	12.37	12.37	12.37	

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

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-25-SP 5.5xL
with hexagon head, washer S16 or A16 and saddle washer ESW

Annex 172

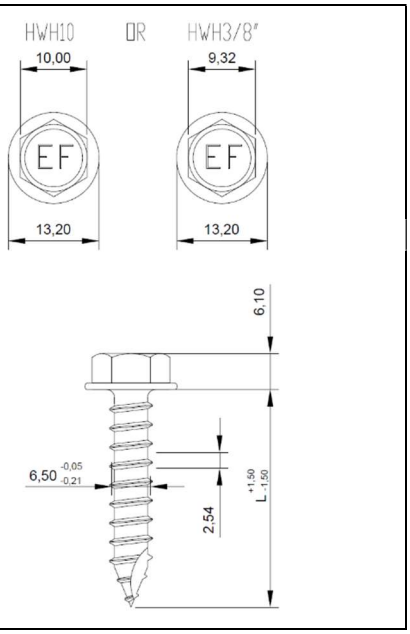
of European Technical Assessment ETA-16/0739

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 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} ≥ 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	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	1.61
	0.55	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	1.61
	0.60	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	1.61
	0.63	0.68	0.68	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	1.61
	0.70	0.68	0.68	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	1.61
	0.75	0.68	0.68	0.95	0.95	0.95	1.09	1.09	1.09	1.09	1.09	1.09	1.61
	0.80	0.68	0.68	0.95	0.95	0.95	1.09	1.09	1.09	1.09	1.09	1.09	1.61
	0.88	0.68	0.68	0.95	0.95	0.95	1.09	1.09	1.09	1.09	1.09	1.09	1.61
	1.00	0.68	0.68	0.95	0.95	0.95	1.39	1.39	1.39	1.55	1.55	1.55	1.61
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 / ESTS-HWH10-0A-Z 6.5xL with hexagon head

Annex 173

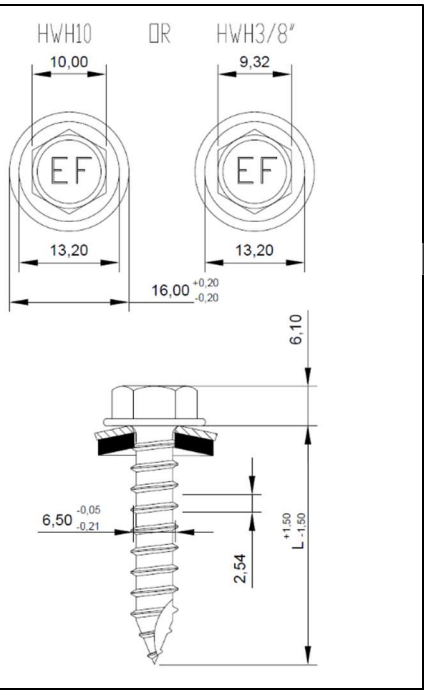
of European Technical Assessment ETA-16/0739

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} ≥ 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
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD 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 / ESTS-HWH10-0A-Z 6.5xL with hexagon head and washer Z16

Annex 174

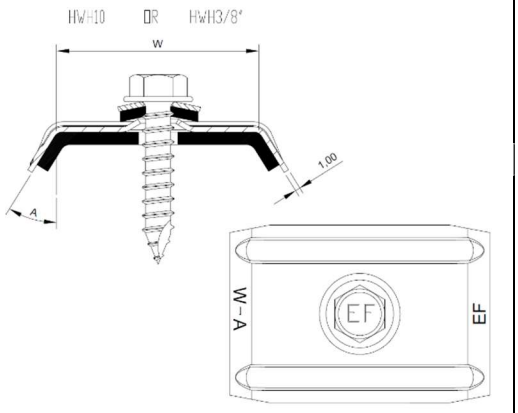
of European Technical Assessment ETA-16/0739

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} ≥ 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
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 / ESTS-HWH10-0A-Z 6.5xL with hexagon head, washer Z16 and saddle washer ESW

Annex 175

of European Technical Assessment ETA-16/0739

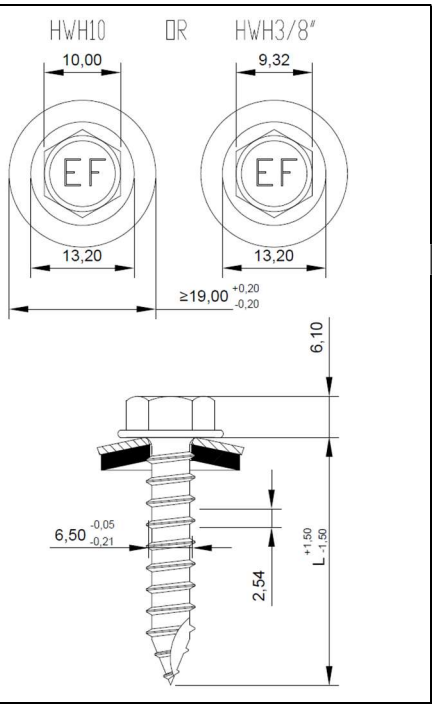
Materials

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} ≥ 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
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD 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 / ESTS-HWH10-0A-Z 6.5xL with hexagon head and washer Z19

Annex 176

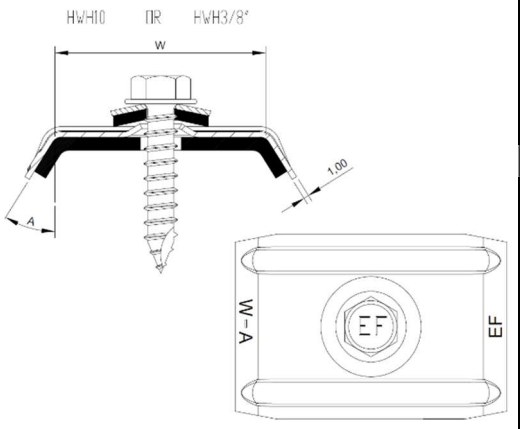
of European Technical Assessment ETA-16/0739

Materials

Fastener:	carbon steel – SAE1022, quenched, tempered and coated: galvanized (12 µm)
Washer:	Z19 – galvanized carbon steel washer with EPDM ring
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/mm² dla l_{ef} ≥ 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
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 / ESTS-HWH10-0A-Z 6.5xL with hexagon head, washer Z19 and saddle washer ESW

Annex 177

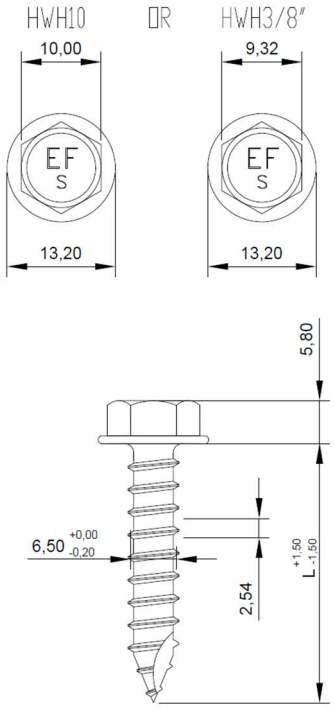
of European Technical Assessment ETA-16/0739

Materials

Fastener:	galvanized stainless steel – SAE304
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:	-

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	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	1.61
	0.55	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	1.61
	0.60	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	1.61
	0.63	0.68	0.68	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	1.61
	0.70	0.68	0.68	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	1.61
	0.75	0.68	0.68	0.95	0.95	0.95	1.09	1.09	1.09	1.09	1.09	1.09	1.61
	0.80	0.68	0.68	0.95	0.95	0.95	1.09	1.09	1.09	1.09	1.09	1.09	1.61
	0.88	0.68	0.68	0.95	0.95	0.95	1.09	1.09	1.09	1.09	1.09	1.09	1.61
	1.00	0.68	0.68	0.95	0.95	0.95	1.39	1.39	1.39	1.55	1.55	1.55	1.61
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 / ESTS-HWH10-0A-S 6.5xL with hexagon head

Annex 178

of European Technical Assessment ETA-16/0739

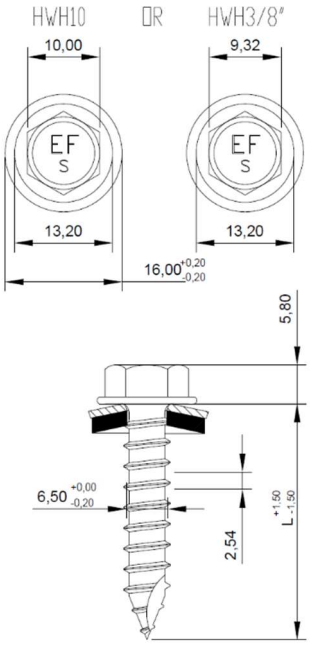
Materials

Fastener:	galvanized stainless steel – SAE304
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} ≥ 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
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD 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 / ESTS-HWH10-0A-S 6.5xL with hexagon head and washer S16

Annex 179

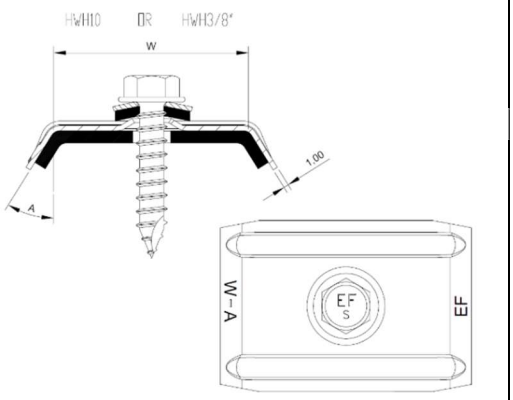
of European Technical Assessment ETA-16/0739

Materials

Fastener:	galvanized stainless steel – SAE304
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/mm² dla l_{ef} ≥ 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
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD 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 / ESTS-HWH10-0A-S 6.5xL with hexagon head, washer S16 and saddle washer ESW

Annex 180

of European Technical Assessment ETA-16/0739

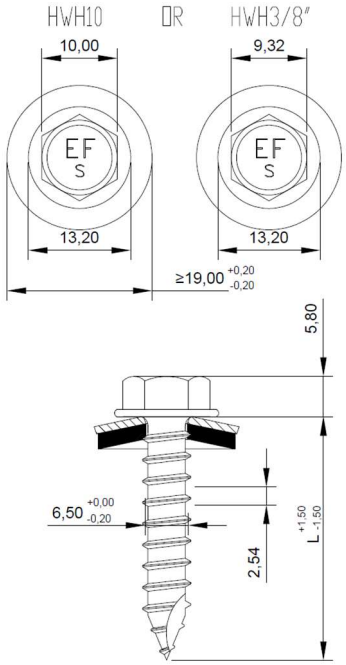
Materials

Fastener:	galvanized stainless steel – SAE304
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/mm² dla l_{ef} ≥ 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
$N_{R\,II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD 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 / ESTS-HWH10-0A-S 6.5xL with hexagon head and washer S19

Annex 181

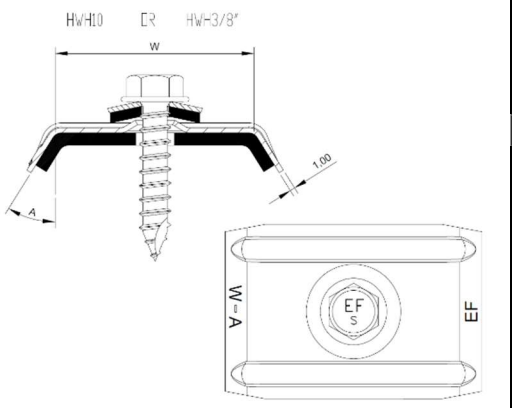
of European Technical Assessment ETA-16/0739

Materials

Fastener:	galvanized stainless steel – SAE304
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/mm² dla l_{ef} ≥ 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
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD 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 / ESTS-HWH10-0A-S 6.5xL with hexagon head, washer S19 and saddle washer ESW

Annex 182

of European Technical Assessment ETA-16/0739

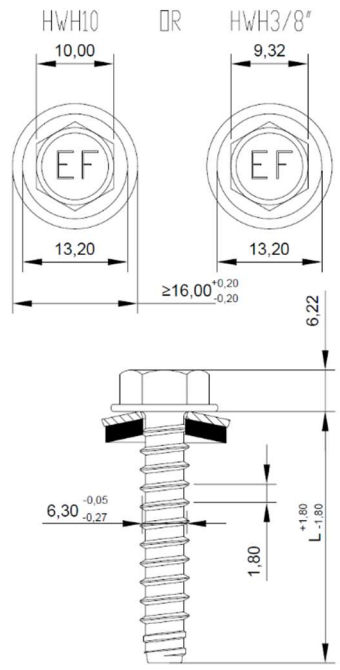
Materials

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 to S355 – 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD 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 / ESTS-HWH10-0B-Z 6.3xL with hexagon head and washer Z16

Annex 183

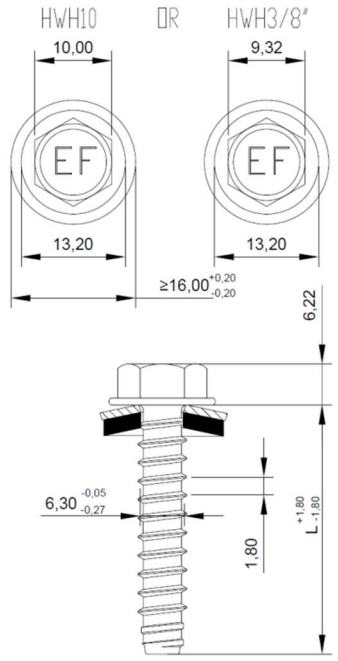
of European Technical Assessment ETA-16/0739

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 to S355 – 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD 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 / ESTS-HWH10-0B-P 6.3xL with hexagon head and washer A16

Annex 184

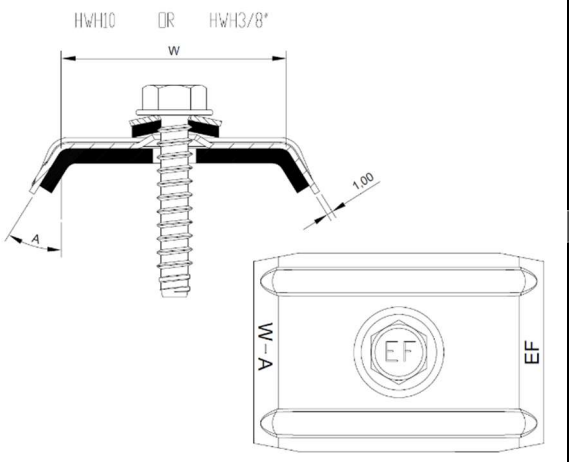
of European Technical Assessment ETA-16/0739

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 to S355 – 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD 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 / ESTS-HWH10-0B-Z 6.3xL with hexagon head, washer Z16 and saddle washer ESW

Annex 185

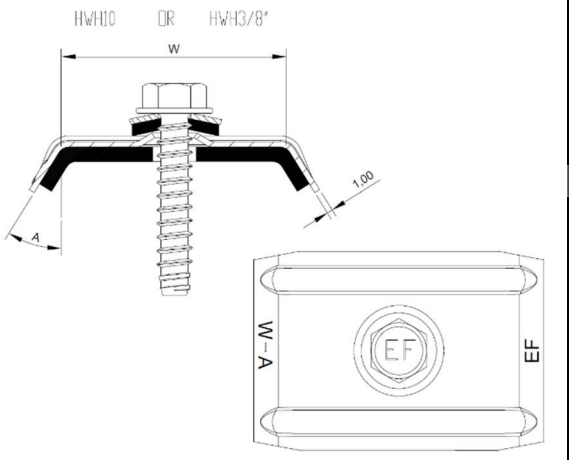
of European Technical Assessment ETA-16/0739

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 to S355 – 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	
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD 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 / ESTS-HWH10-0B-P 6.3xL with hexagon head, washer A16 and saddle washer ESW

Annex 186

of European Technical Assessment ETA-16/0739

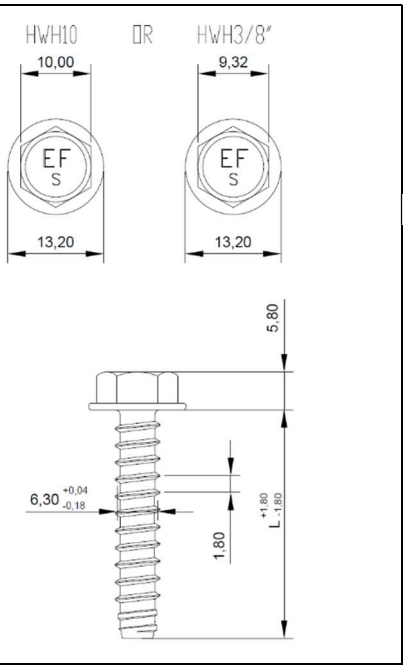
Materials

Fastener:	galvanized stainless steel – SAE304
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326

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	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	
	0.55	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	
	0.60	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	
	0.63	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	
	0.70	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	
	0.75	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	
	0.80	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	
	0.88	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	
	1.00	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	
$N_{R\ II,k}$ [kN]		3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	

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

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

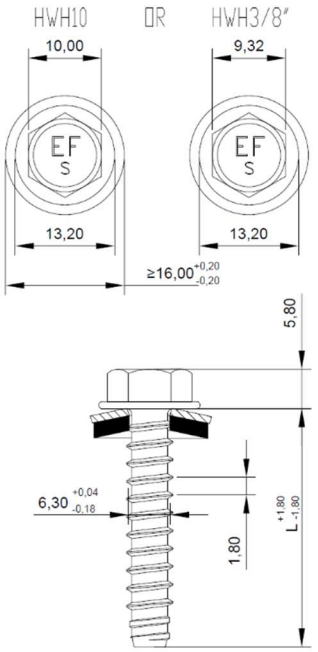
Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0B-S 6.3xL / ESTS-HWH10-0B-S 6.3xL with hexagon head

Annex 187

of European Technical Assessment ETA-16/0739

Materials	
Fastener:	galvanized stainless steel – SAE304
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:	-
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	3.79	4.64	4.64	4.64	4.64	4.64	4.64	4.64	
$N_{R\ II,k}$ [kN]		3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	

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

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

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0B-S 6.3xL / ESTS-HWH10-0B-S 6.3xL with hexagon head and washer S16

Annex 188

of European Technical Assessment ETA-16/0739

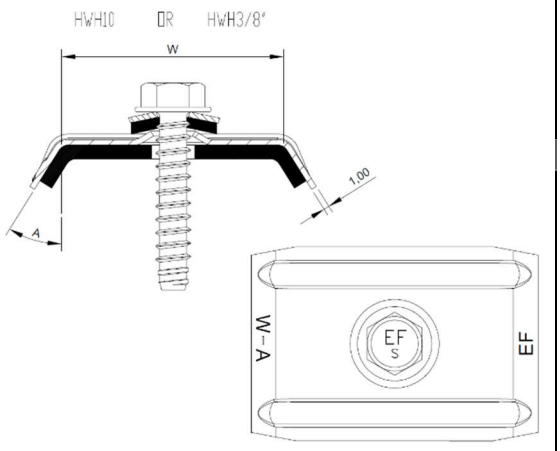
Materials

Fastener:	galvanized stainless steel – SAE304
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: -

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	3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	
	0.55	3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	
	0.60	3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	
	0.63	3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	
	0.70	3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	
	0.75	3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	
	0.80	3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	
	0.88	3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	
	1.00	3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	
$N_{R\ II,k}$ [kN]		3.79	6.86	6.86	6.86	6.86	6.86	6.86	6.86	

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

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

Fastening screws for metal members and sheeting

Self-tapping screws ESTS-0B-S 6.3xL / ESTS-HWH10-0B-S 6.3xL with hexagon head, washer S16 and saddle washer ESW

Annex 189

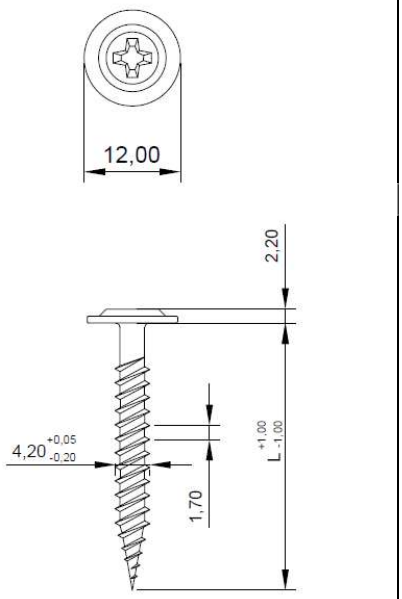
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 2 x 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} ≥ 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
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

Fastening screws for metal members and sheeting

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

Annex 190

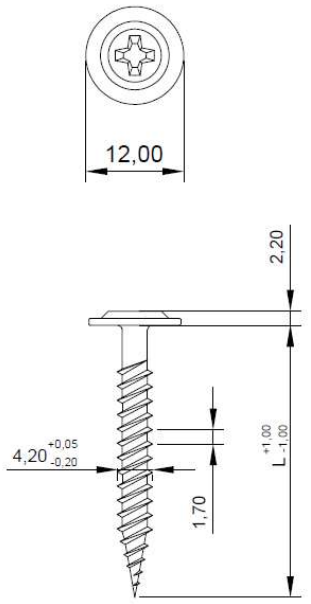
of European Technical Assessment ETA-16/0739

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:	Σti ≤ 2 x 0,88 mm

Timber substructures

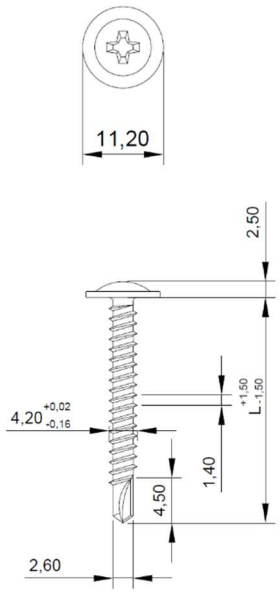
For timber structures performance assessed with:
$M_{y,Rk}$ = 3,10 Nm
$f_{ax,k}$ = 14,314 N/mm² for l_{ef} ≥ 16,8 mm



$t_{N,II}$ [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
$N_{R\ II,k}$ [kN]		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 values $V_{R,k}$ may be increased by 8,3%
If both components I and II are made of S350GD values $V_{R,k}$ may be increased by 16,6%

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:	Σti ≤ 2 x 0,75 mm
Timber substructures No performance assessed	



$t_{N,II}$ [mm]		0.50	0.55	0.60	0.63	0.70	0.75	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	
	0.55	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	
	0.63	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	
	0.75	0.94	0.94	0.94	0.94	0.94	1.75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	0.63	0.63	0.63	0.63	0.63	0.71	
	0.55	0.63	0.63	0.63	0.63	0.63	0.71	
	0.60	0.63	0.63	0.63	0.63	0.63	0.71	
	0.63	0.63	0.63	0.63	0.63	0.63	0.71	
	0.70	0.63	0.63	0.63	0.63	0.63	0.71	
	0.75	0.63	0.63	0.63	0.63	0.63	0.71	
$N_{R\ II,k}$ [kN]		0.63	0.63	0.63	0.63	0.63	1.19	

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

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

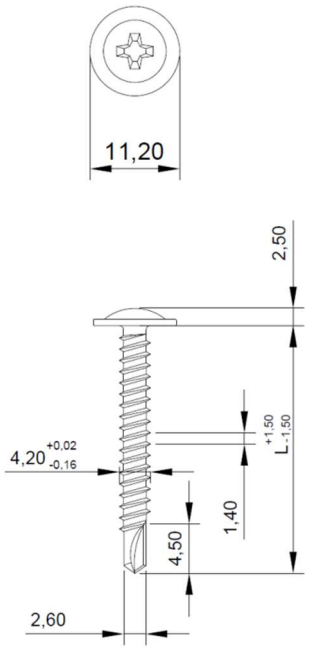
Fastening screws for metal members and sheeting	**Annex 192** of European Technical Assessment ETA-16/0739
Self-drilling screws ESDS-WH-1-Z 4.2xL with flat head	

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:	Σti ≤ 2 x 0,75 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.50	0.55	0.60	0.63	0.70	0.75	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	
	0.55	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	
	0.63	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	
	0.75	0.94	0.94	0.94	0.94	0.94	1.75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.50	0.63	0.63	0.63	0.63	0.63	0.71	
	0.55	0.63	0.63	0.63	0.63	0.63	0.71	
	0.60	0.63	0.63	0.63	0.63	0.63	0.71	
	0.63	0.63	0.63	0.63	0.63	0.63	0.71	
	0.70	0.63	0.63	0.63	0.63	0.63	0.71	
	0.75	0.63	0.63	0.63	0.63	0.63	0.71	
$N_{R\ II,k}$ [kN]		0.63	0.63	0.63	0.63	0.63	1.19	

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

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

Fastening screws for metal members and sheeting

Annex 193

of European Technical Assessment ETA-16/0739

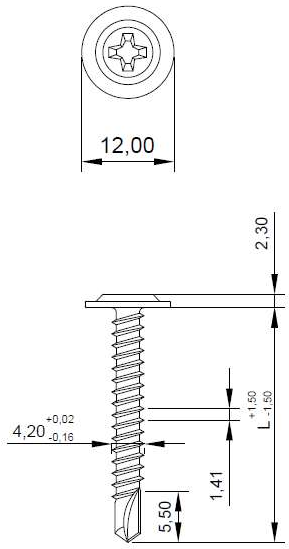
Self-drilling screws ESDS-WH-1-P 4.2xL with flat head

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:	Σti ≤ 2 x 1,25 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	0.80	0.88	1.00	1.13	1.15	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	1.75	
	0.80	1.75	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	1.75	
	1.00	1.75	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	1.75	
	1.15	1.75	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	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	0.82	
	0.80	0.82	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	0.82	
	1.00	0.82	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	0.82	
	1.15	0.82	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	0.82	
$N_{R\,II,k}$ [kN]		0.82	0.82	0.82	0.82	0.82	0.82	0.82	

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

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

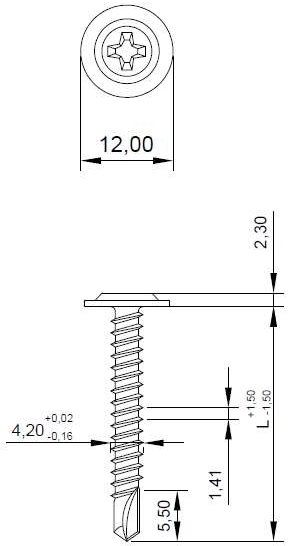
Fastening screws for metal members and sheeting	**Annex 194**
Self-drilling screws ESDS-WH-2-Z 4.2xL with flat head	of European Technical Assessment ETA-16/0739

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:	Σti ≤ 2 x 1,25 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	0.80	0.88	1.00	1.13	1.15	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	1.75	
	0.80	1.75	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	1.75	
	1.00	1.75	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	1.75	
	1.15	1.75	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	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	0.82	
	0.80	0.82	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	0.82	
	1.00	0.82	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	0.82	
	1.15	0.82	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	0.82	
$N_{R\,II,k}$ [kN]		0.82	0.82	0.82	0.82	0.82	0.82	0.82	

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

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

Fastening screws for metal members and sheeting

Annex 195

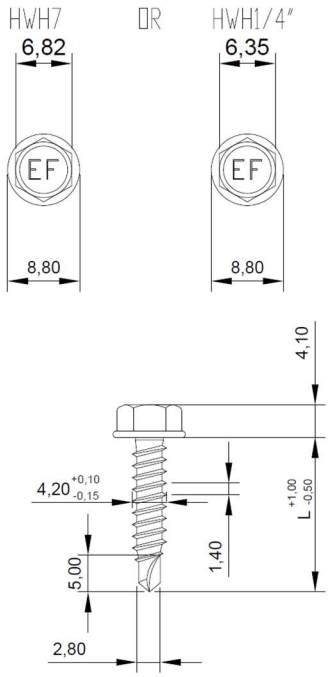
of European Technical Assessment ETA-16/0739

Self-drilling screws ESDS-WH-2-P 4.2xL with flat head

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:	Σti ≤ 2 x 1,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	0.80	0.88	1.00	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	
	0.80	1.75	1.75	1.75	1.75	
	0.88	1.75	1.75	1.75	1.75	
	1.00	1.75	1.75	1.75	1.75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.75	1.19	1.19	1.19	1.19	
	0.80	1.19	1.19	1.19	1.19	
	0.88	1.19	1.19	1.19	1.19	
	1.00	1.19	1.19	1.19	1.19	
$N_{R\,II,k}$ [kN]		1.19	1.19	1.19	1.19	

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-2-Z 4.2xL / ESDS-HWH7-2-Z 4.2xL with hexagon head

Annex 196

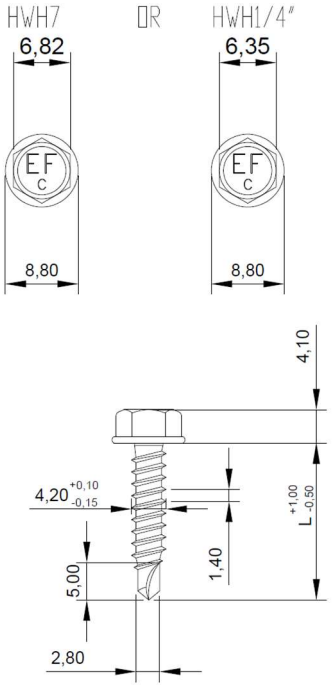
of European Technical Assessment ETA-16/0739

Materials

Fastener:	chromium steel – SAE410, quenched, tempered and passivated
Washer:	-
Component I:	S280GD, S320GD or S350GD – EN 10326
Component II:	S280GD, S320GD or S350GD – EN 10326
Drilling capacity:	Σti ≤ 2 x 1,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	0.80	0.88	1.00	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	
	0.80	1.75	1.75	1.75	1.75	
	0.88	1.75	1.75	1.75	1.75	
	1.00	1.75	1.75	1.75	1.75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.75	1.19	1.19	1.19	1.19	
	0.80	1.19	1.19	1.19	1.19	
	0.88	1.19	1.19	1.19	1.19	
	1.00	1.22	1.22	1.22	1.22	
$N_{R\ II,k}$ [kN]		1.22	1.22	1.22	1.22	

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-2-C 4.2xL / ESDS-HWH7-2-C 4.2xL with hexagon head

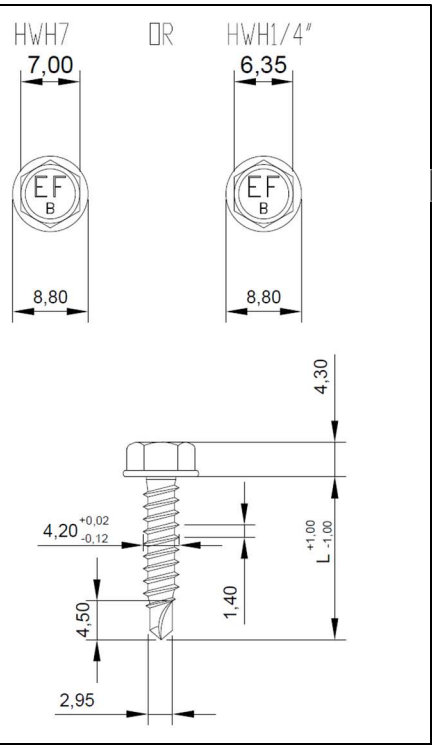
Annex 197

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:	Σti ≤ 2 x 1,00 mm

Timber substructures

No performance assessed



$t_{N,II}$ [mm]		0.75	0.80	0.88	1.00	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	
	0.80	1.75	1.75	1.75	1.75	
	0.88	1.75	1.75	1.75	1.75	
	1.00	1.75	1.75	1.75	1.75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0.75	0.49	0.49	0.49	0.49	
	0.80	0.49	0.49	0.49	0.49	
	0.88	0.49	0.49	0.49	0.49	
	1.00	0.49	0.49	0.49	0.49	
$N_{R\ II,k}$ [kN]		0.49	0.49	0.49	0.49	

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

Fastening screws for metal members and sheeting

Self-drilling screws ESDS-2-B 4.2xL / ESDS-HWH7-2-B 4.2xL with hexagon head

Annex 198

of European Technical Assessment ETA-16/0739

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_I 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.

Fastening screws for metal members and sheeting	**Annex 199**
Determination of design values	of European Technical Assessment ETA-16/0739