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European Technical Assessment

ETA-18/0789
of 28/09/2018

General part

Technical Assessment Body issuing the European Technical Assessment

Instytut Techniki Budowlanej

Trade name of the construction product

AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0

Product family to which the construction product belongs

Fastening screws for metal members and sheeting

Manufacturer

Manufacturing plant

This European Technical Assessment contains

71 pages including 65 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"

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Specific Part

1. Technical description of the product

The fastening screws AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W and ARW 0 are the self-drilling and self-tapping screws listed in Table 1. All screws can be painted. The fastening screws are partly completed with a metallic washer and an EPDM sealing ring. For details see the Annexes 1 to 64.

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

Table 1

No.	Self-drilling screw	Material	Annex
1	AR 0 CS 4,8xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	1, 2
2	AR 0 CSG 4,8xL	carbon steel with Eco-GrePert coating	1, 2
3	AR 0 CSE 4,8xL	carbon steel with EsC coating	1, 2, 3
4	AR0 W CS 4,8xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	4, 5
5	AR0 W CSG 4,8xL	carbon steel with Eco-GrePert coating	4, 5
6	AR0 W CSE 4,8xL	carbon steel with EsC coating	4, 5
7	AR0 W CS 4,8xL UFO	galvanized carbon steel ($\geq 12 \mu\text{m}$)	6
8	AR0 W CSG 4,8xL UFO	carbon steel with Eco-GrePert coating	6
9	AR0 W CSE 4,8xL UFO	carbon steel with EsC coating	6
10	AR0 PZ W CS 6,3xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	7
11	AR0 PZ W CSG 6,3xL	carbon steel with Eco-GrePert coating	7
12	AR0 PZ W CSE 6,3xL	carbon steel with EsC coating	7
13	AR2 W CS 4,8xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	8, 9
14	AR2 W CSG 4,8xL	carbon steel with Eco-GrePert coating	8, 9
15	AR2 W CSE 4,8xL	carbon steel with EsC coating	8, 9, 10
16	AR2 W CS 4,8xL UFO	galvanized carbon steel ($\geq 12 \mu\text{m}$)	11
17	AR2 W CSG 4,8xL UFO	carbon steel with Eco-GrePert coating	11
18	AR2 W CSE 4,8xL UFO	carbon steel with EsC coating	11, 12
19	AR2 W SS 4,8xL	stainless steel (bi-metal)	13
20	AR2 W SS-3 4,8xL	stainless steel	14
21	AR2 W SS-4 4,8xL	stainless steel	15
22	AR3 W CS 4,8xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	16 - 18
23	AR3 W CSG 4,8xL	carbon steel with Eco-GrePert coating	16 - 18
24	AR3 W CSE 4,8xL	carbon steel with EsC coating	16 -18
25	AR3 W SS 4,8xL	stainless steel (bi-metal)	19 - 21
26	AR5 W CS 5,5xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	22, 23
27	AR5 W CSG 5,5xL	carbon steel with Eco-GrePert coating	22, 23
28	AR5 W CSE 5,5xL	carbon steel with EsC coating	22, 23
29	AR5 W SS 5,5xL	stainless steel (bi-metal)	24 – 28
30	AR5 PZ W CS 5,5xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	29
31	AR5 PZ W CSG 5,5xL	carbon steel with Eco-GrePert coating	29
32	AR5 PZ W CSE 5,5xL	carbon steel with EsC coating	29

Table 1

No.	Self-drilling screw	Material	Annex
33	AR6 W CS 6,3xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	30 – 32
34	AR6 W CSG 6,3xL	carbon steel with Eco-GrePert coating	30 – 32
35	AR6 W CSE 6,3xL	carbon steel with EsC coating	30 – 32
36	AR8 W CS 5,5xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	33 – 37
37	AR8 W CSG 5,5xL	carbon steel with Eco-GrePert coating	33 – 37
38	AR8 W CSE 5,5xL	carbon steel with EsC coating	33 – 37
39	AR12 W CS 5,5xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	38, 39
40	AR12 W CSG 5,5xL	carbon steel with Eco-GrePert coating	38, 39
41	AR12 W CSE 5,5xL	carbon steel with EsC coating	38, 39
42	AR12 W SS 5,5xL	stainless steel (bi-metal)	40 – 44
43	AR12 PZ W CS 5,5xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	45
44	AR12 PZ W CSG 5,5xL	carbon steel with Eco-GrePert coating	45
45	AR12 PZ W CSE 5,5xL	carbon steel with EsC coating	45
46	AR16 W CS 6,3xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	46 – 48
47	AR16 W CSG 6,3xL	carbon steel with Eco-GrePert coating	46 – 48
48	AR16 W CSE 6,3xL	carbon steel with EsC coating	46 – 48
49	MA W CS 4,2xL	galvanized carbon steel ($\geq 5 \mu\text{m}$)	49
50	MA W CSG 4,2xL	carbon steel with Eco-GrePert coating	49
51	MA W CSE 4,2xL	carbon steel with EsC coating	49
52	MB W CS 4,2xL	galvanized carbon steel ($\geq 5 \mu\text{m}$)	50
53	MB W CSG 4,2xL	carbon steel with Eco-GrePert coating	50
54	MB W CSE 4,2xL	carbon steel with EsC coating	50
55	MC 0 CS 4,2xL	galvanized carbon steel ($\geq 5 \mu\text{m}$)	51
56	MC 0 CSG 4,2xL	carbon steel with Eco-GrePert coating	51
57	MC 0 CSE 4,2xL	carbon steel with EsC coating	51
58	MC 0 SS-3 4,2xL	stainless steel	52
59	MC 0 SS-4 4,2xL	stainless steel	53
60	AR3+ W CS 5,5xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	54, 55
61	AR3+ W CSG 5,5xL	carbon steel with Eco-GrePert coating	54, 55
62	AR3+ W CSE 5,5xL	carbon steel with EsC coating	54 – 58
63	BH W CS 4,8xL	galvanized carbon steel ($\geq 5 \mu\text{m}$)	59, 60
64	BH W CSG 4,8xL	carbon steel with Eco-GrePert coating	59, 60
65	BH W CSE 4,8xL	carbon steel with EsC coating	59, 60, 61
66	ARW 0 CS 6,4xL	galvanized carbon steel ($\geq 12 \mu\text{m}$)	62, 63, 64
67	ARW 0 CSG 6,4xL	carbon steel with Eco-GrePert coating	62, 63, 64
68	ARW 0 CSE 6,4xL	carbon steel with EsC coating	62, 63, 64

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 metal sheeting to metal or timber supporting substructures. For details see the Annexes 1 to 64. 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 \geq C2 corrosion according to the standard EN ISO 12944-2 are made of stainless steel.

Furthermore the intended use comprises connections with predominantly static loads (e.g. wind loads, dead loads).

The provisions made in this European Technical Assessment are based on an assumed working life of the fasteners of 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer or Technical Assessment Body, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3. Performances of the product and references to the methods used for their assessment

3.1. Performance of the product

3.1.1 Mechanical resistance and stability (BWR 1)

The characteristic values of the shear resistance of connections and tension resistance of connections are given in Annex 1 to 64. The values were determined by tests according to EAD 330046-01-0602.

The design values shall be determined according to Annex 65 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 \geq C2 corrosion according to the standard EN ISO 12944-2.

3.1.2. Safety in case of fire (BWR 2)

The metal 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.

3.1.3. Hygiene, health and the environment (BWR 3)

Regarding the dangerous substances clauses contained in this European Technical Assessment, there may be requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

3.2. Methods used for the assessment

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

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

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

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

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

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

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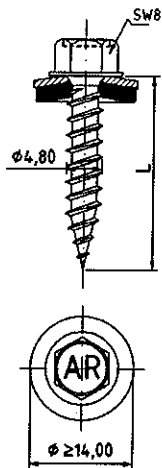
Anna Panek, MSc
Deputy Director of ITB

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber – EN 14081</p> <p>Drilling capacity: $\Sigma t_i \leq 2 \times 0,50$ mm</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 4,39$ Nm</p> <p>$f_{ax,k} = 17,813$ N/mm² for $l_{ef} \geq 20$ mm</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,81	0,81	0,81	0,81	—	—	—	1,43
	0,55	0,81	0,81	0,81	0,81	—	—	—	1,43
	0,63	0,81	0,81	1,41	1,41	—	—	—	1,43
	0,75	0,81	0,81	1,41	1,41	—	—	—	1,43
	0,88	—	—	—	—	—	—	—	1,43
	1,00	—	—	—	—	—	—	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
2,00	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,58	0,58	0,58	0,58	—	—	—	1,71
	0,55	0,58	0,58	0,58	0,58	—	—	—	1,71
	0,63	0,58	0,58	0,73	0,73	—	—	—	1,71
	0,75	0,58	0,58	0,73	0,97	—	—	—	1,71
	0,88	—	—	—	—	—	—	—	1,71
	1,00	—	—	—	—	—	—	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
2,00	—	—	—	—	—	—	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 1 of European Technical Assessment ETA-18/0789</p>
<p>AR 0 CS 4,8xL, AR 0 CSG 4,8xL and AR 0 CSE 4,8xL and sealing washer $\geq \varnothing 14$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber – EN 14081</p> <p>Drilling capacity: $\sum t_i \leq 2 \times 0,50 \text{ mm}$</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 4,39 \text{ Nm}$</p> <p>$f_{ax,k} = 17,813 \text{ N/mm}^2$ for $l_{ef} \geq 20 \text{ mm}$</p>	 <p>The drawing shows a screw with a washer (SW8) and a cross-section of the AR fastener. The screw diameter is $\phi 4,80$ and the fastener diameter is $\phi \geq 14,00$.</p>
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,81	0,81	0,81	0,81	—	—	—	0,81
	0,55	0,81	0,81	0,81	0,81	—	—	—	0,81
	0,63	0,81	0,81	1,41	1,41	—	—	—	1,06
	0,75	0,81	0,81	1,41	1,41	—	—	—	1,06
	0,88	—	—	—	—	—	—	—	—
	1,00	—	—	—	—	—	—	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
2,00	—	—	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,58	0,58	0,58	0,58	—	—	—	0,96
	0,55	0,58	0,58	0,58	0,58	—	—	—	0,96
	0,63	0,58	0,58	0,73	0,73	—	—	—	0,96
	0,75	0,58	0,58	0,73	0,97	—	—	—	0,96
	0,88	—	—	—	—	—	—	—	—
	1,00	—	—	—	—	—	—	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
2,00	—	—	—	—	—	—	—	—	

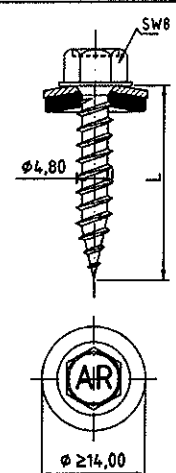
If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR 0 CS 4,8xL, AR 0 CSG 4,8xL and AR 0 CSE 4,8xL
 and sealing washer $\geq \phi 14 \text{ mm}$

Annex 2
 of European
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<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: 1050A – EN 573-3</p> <p>Component II: structural timber – EN 14081</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 2,00$ mm</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 4,39$ Nm</p> <p>$f_{ax,k} = 17,813$ N/mm² for $l_{ef} \geq 20$ mm</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	0,62
	0,55	—	—	—	—	—	—	—	0,62
	0,63	—	—	—	—	—	—	—	0,62
	0,75	—	—	—	—	—	—	—	0,62
	0,88	—	—	—	—	—	—	—	0,62
	1,00	—	—	—	—	—	—	—	0,62
	1,13	—	—	—	—	—	—	—	0,62
	1,25	—	—	—	—	—	—	—	0,62
	1,50	—	—	—	—	—	—	—	0,62
	1,75	—	—	—	—	—	—	—	0,62
2,00	—	—	—	—	—	—	—	0,62	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	0,80
	0,55	—	—	—	—	—	—	—	0,80
	0,63	—	—	—	—	—	—	—	0,80
	0,75	—	—	—	—	—	—	—	0,80
	0,88	—	—	—	—	—	—	—	0,80
	1,00	—	—	—	—	—	—	—	0,80
	1,13	—	—	—	—	—	—	—	0,80
	1,25	—	—	—	—	—	—	—	0,80
	1,50	—	—	—	—	—	—	—	0,80
	1,75	—	—	—	—	—	—	—	0,80
2,00	—	—	—	—	—	—	—	0,80	

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR 0 CSE 4,8xL
 and sealing washer $\geq \varnothing 14$ mm

Annex 3
 of European
 Technical Assessment
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<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 2 \times 1,00 \text{ mm}$</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,03	1,03	1,03	1,03	1,03	1,03	—	/
	0,55	1,03	1,03	1,03	1,03	1,03	1,03	—	
	0,63	1,03	1,03	1,27	1,27	1,27	1,27	—	
	0,75	1,03	1,03	1,27	1,97	1,97	1,97	—	
	0,88	1,03	1,03	1,27	1,97	2,14	2,14	—	
	1,00	1,03	1,03	1,27	1,97	2,14	2,47	—	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,51	0,51	0,51	0,51	0,51	0,51	—	/
	0,55	0,51	0,51	0,51	0,51	0,51	0,51	—	
	0,63	0,51	0,51	0,73	0,73	0,73	0,73	—	
	0,75	0,51	0,51	0,73	0,80	0,80	0,80	—	
	0,88	0,51	0,51	0,73	0,80	0,80	0,80	—	
	1,00	0,51	0,51	0,73	0,80	0,80	0,94	—	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 4 of European Technical Assessment ETA-18/0789</p>
<p>AR0 W CS 4,8xL, AR0 W CSG 4,8xL and AR0 W CSE 4,8xL</p>	

<p><u>Materials</u></p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel or aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 2 \times 1,00 \text{ mm}$</p>		
<p><u>Timber substructures</u></p> <p>no performance assessed</p>		

$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,j}$ [mm]	0,50	1,03	1,03	1,03	1,03	1,03	1,03	—	/
	0,55	1,03	1,03	1,03	1,03	1,03	1,03	—	
	0,63	1,03	1,03	1,27	1,27	1,27	1,27	—	
	0,75	1,03	1,03	1,27	1,97	1,97	1,97	—	
	0,88	1,03	1,03	1,27	1,97	2,14	2,14	—	
	1,00	1,03	1,03	1,27	1,97	2,14	2,47	—	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,j}$ [mm]	0,50	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	—	
	0,63	0,62	0,62	0,73	0,73	0,73	0,73	—	
	0,75	0,62	0,62	0,73	0,80	0,80	0,80	—	
	0,88	0,62	0,62	0,73	0,80	0,93	0,93	—	
	1,00	0,62	0,62	0,73	0,80	0,93	1,46	—	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 5 of European Technical Assessment ETA-18/0789</p>
<p>AR0 W CS 4,8xL, AR0 W CSG 4,8xL and AR0 W CSE 4,8xL and sealing washer $\geq \text{Ø}14 \text{ mm}$</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 2 \times 1,00 \text{ mm}$</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t, \text{nom}}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,03	1,03	1,03	1,03	1,03	—	—	/
	0,55	1,03	1,03	1,03	1,03	1,03	—	—	
	0,63	1,03	1,03	1,27	1,27	1,27	—	—	
	0,75	1,03	1,03	1,27	1,97	1,97	—	—	
	0,88	1,03	1,03	1,27	1,97	2,14	—	—	
	1,00	1,03	1,03	1,27	1,97	2,14	—	—	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	0,62	0,62	0,62	0,62	0,62	—	—	/
	0,55	0,62	0,62	0,62	0,62	0,62	—	—	
	0,63	0,62	0,62	0,73	0,73	0,73	—	—	
	0,75	0,62	0,62	0,73	0,80	0,80	—	—	
	0,88	0,62	0,62	0,73	0,80	0,93	—	—	
	1,00	0,62	0,62	0,73	0,80	0,93	1,46	—	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—	—	

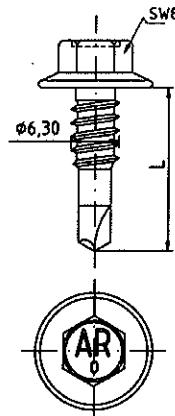
If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR0 W CS 4,8xL UFO, AR0 W CSG 4,8xL UFO
 and AR0 W CSE 4,8xL UFO
 and sealing washer $\geq \text{Ø}14 \text{ mm}$

Annex 6
 of European
 Technical Assessment
 ETA-18/0789

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 2 \times 1,25 \text{ mm}$</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24	
$M_{t,nom}$	6 Nm									
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	/	
	0,55	1,50	1,50	1,50	1,50	1,50	1,50	1,50		
	0,63	1,50	1,50	1,84	1,84	1,84	1,84	1,84		
	0,75	1,50	1,50	1,84	2,86	2,86	2,86	2,86		
	0,88	1,50	1,50	1,84	2,86	3,11	3,11	3,11		
	1,00	1,50	1,50	1,84	2,86	3,11	3,58	3,58		
	1,13	1,50	1,50	1,84	2,86	3,11	3,58	3,58		
	1,25	1,50	1,50	1,84	2,86	3,11	3,58	3,58		
	1,50	—	—	—	—	—	—	—		
	1,75	—	—	—	—	—	—	—		
	2,00	—	—	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,51	0,51	0,67	0,81	0,99	1,75	1,75		1,96
	0,55	0,51	0,51	0,67	0,81	0,99	1,75	1,75		1,96
	0,63	0,51	0,51	0,67	0,81	0,99	1,75	1,75		1,96
	0,75	0,51	0,51	0,67	0,81	0,99	1,75	1,75	1,96	
	0,88	0,51	0,51	0,67	0,81	0,99	1,75	1,75	1,96	
	1,00	0,51	0,51	0,67	0,81	0,99	1,75	1,75	1,96	
	1,13	0,51	0,51	0,67	0,81	0,99	1,75	1,75	1,96	
	1,25	0,51	0,51	0,67	0,81	0,99	1,75	1,75	1,96	
	1,50	—	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 7 of European Technical Assessment ETA-18/0789</p>
<p>AR0 PZ W CS 6,3xL, AR0 PZ W CSG 6,3xL and AR0 PZ W CSE 6,3xL</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber – EN 14081</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 2 \times 1,00 \text{ mm}$</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 4,39 \text{ Nm}$</p> <p>$f_{ax,k} = 17,396 \text{ N/mm}^2$ for $l_{ef} \geq 20 \text{ mm}$</p>	
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$t_{n,II} \text{ [mm]}$	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k} \text{ [kN]}$ for $t_{n,I} \text{ [mm]}$	0,50	1,12	1,12	1,12	1,12	1,12	1,12	—	1,43
	0,55	1,12	1,12	1,12	1,12	1,12	1,12	—	1,43
	0,63	1,12	1,12	1,47	1,47	1,47	1,47	—	1,43
	0,75	1,12	1,12	1,47	1,72	1,72	1,72	—	1,43
	0,88	1,12	1,12	1,47	1,72	1,72	1,72	—	1,43
	1,00	1,12	1,12	1,47	1,72	1,72	1,72	—	1,43
	1,13	—	—	—	—	—	—	—	1,43
	1,25	—	—	—	—	—	—	—	1,43
	1,50	—	—	—	—	—	—	—	1,43
	1,75	—	—	—	—	—	—	—	1,43
2,00	—	—	—	—	—	—	—	1,43	
$N_{R,k} \text{ [kN]}$ for $t_{n,I} \text{ [mm]}$	0,50	0,55	0,55	0,55	0,55	0,55	0,55	—	1,67
	0,55	0,55	0,55	0,55	0,55	0,55	0,55	—	1,67
	0,63	0,55	0,55	0,71	0,71	0,71	0,71	—	1,67
	0,75	0,55	0,55	0,71	0,81	0,81	0,81	—	1,67
	0,88	0,55	0,55	0,71	0,81	1,19	1,19	—	1,67
	1,00	0,55	0,55	0,71	0,81	1,19	1,56	—	1,67
	1,13	—	—	—	—	—	—	—	1,67
	1,25	—	—	—	—	—	—	—	1,67
	1,50	—	—	—	—	—	—	—	1,67
	1,75	—	—	—	—	—	—	—	1,67
2,00	—	—	—	—	—	—	—	1,67	

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 8 of European Technical Assessment ETA-18/0789</p>
<p>AR2 W CS 4,8xL, AR2 W CSG 4,8xL and AR2 W CSE 4,8xL and sealing washer $\geq \text{Ø}14 \text{ mm}$</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber – EN 14081</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 2 \times 1,00$ mm</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 4,39$ Nm</p> <p>$f_{ax,k} = 17,396$ N/mm² for $l_{ef} \geq 20$ mm</p>	
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$t_{n,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{n,I}$ [mm]	0,50	1,12	1,12	1,12	1,12	1,12	—	—	0,75
	0,55	1,12	1,12	1,12	1,12	1,12	—	—	0,75
	0,63	1,12	1,12	1,47	1,47	1,47	—	—	0,75
	0,75	1,12	1,12	1,47	1,72	1,72	—	—	0,75
	0,88	1,12	1,12	1,47	1,72	1,72	—	—	0,75
	1,00	1,12	1,12	1,47	1,72	1,72	—	—	0,75
	1,13	—	—	—	—	—	—	—	0,75
	1,25	—	—	—	—	—	—	—	0,75
	1,50	—	—	—	—	—	—	—	0,75
	1,75	—	—	—	—	—	—	—	0,75
2,00	—	—	—	—	—	—	—	0,75	
$N_{R,k}$ [kN] for $t_{n,I}$ [mm]	0,50	0,55	0,55	0,55	0,55	0,55	—	—	1,10
	0,55	0,55	0,55	0,55	0,55	0,55	—	—	1,10
	0,63	0,55	0,55	0,71	0,71	0,71	—	—	1,10
	0,75	0,55	0,55	0,71	0,81	0,81	—	—	1,10
	0,88	0,55	0,55	0,71	0,81	1,19	—	—	1,10
	1,00	0,55	0,55	0,71	0,81	1,19	—	—	1,10
	1,13	—	—	—	—	—	—	—	1,10
	1,25	—	—	—	—	—	—	—	1,10
	1,50	—	—	—	—	—	—	—	1,10
	1,75	—	—	—	—	—	—	—	1,10
2,00	—	—	—	—	—	—	—	1,10	

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 9 of European Technical Assessment ETA-18/0789</p>
<p>AR2 W CS 4,8xL, AR2 W CSG 4,8xL and AR2 W CSE 4,8xL and sealing washer $\geq \varnothing 14$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: 1050A – EN 573-3</p> <p>Component II: structural timber – EN 14081</p> <p>Drilling capacity: $\Sigma t_i \leq 2 \text{ mm}$</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 4,39 \text{ Nm}$</p> <p>$f_{ax,k} = 17,396 \text{ N/mm}^2$ for $l_{ef} \geq 20 \text{ mm}$</p>	
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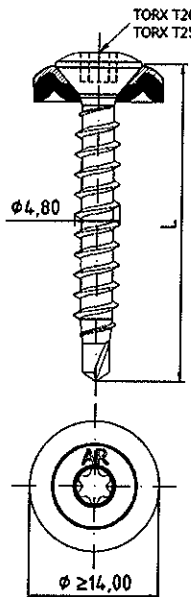
$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								
V_{Rk} [kN] for $t_{N,II}$ [mm]	0,50	—	—	—	—	—	—	—	0,62
	0,55	—	—	—	—	—	—	—	0,62
	0,63	—	—	—	—	—	—	—	0,62
	0,75	—	—	—	—	—	—	—	0,62
	0,88	—	—	—	—	—	—	—	0,62
	1,00	—	—	—	—	—	—	—	0,62
	1,13	—	—	—	—	—	—	—	0,62
	1,25	—	—	—	—	—	—	—	0,62
	1,50	—	—	—	—	—	—	—	0,62
	1,75	—	—	—	—	—	—	—	0,62
2,00	—	—	—	—	—	—	—	0,62	
N_{Rk} [kN] for $t_{N,II}$ [mm]	0,50	—	—	—	—	—	—	—	0,80
	0,55	—	—	—	—	—	—	—	0,80
	0,63	—	—	—	—	—	—	—	0,80
	0,75	—	—	—	—	—	—	—	0,80
	0,88	—	—	—	—	—	—	—	0,80
	1,00	—	—	—	—	—	—	—	0,80
	1,13	—	—	—	—	—	—	—	0,80
	1,25	—	—	—	—	—	—	—	0,80
	1,50	—	—	—	—	—	—	—	0,80
	1,75	—	—	—	—	—	—	—	0,80
2,00	—	—	—	—	—	—	—	0,80	

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 10 of European Technical Assessment ETA-18/0789</p>
<p>AR2 W CSE 4,8xL and sealing washer $\geq \text{Ø}14 \text{ mm}$</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: structural timber – EN 14081</p> <p>Drilling capacity: $\Sigma t_i \leq 2,00$ mm</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{t,Rk} = 4,39$ Nm</p> <p>$f_{ax,k} = 17,396$ N/mm² for $l_{ef} \geq 20$ mm</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,norm}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	1,43
	0,55	—	—	—	—	—	—	—	1,43
	0,63	—	—	—	—	—	—	—	1,43
	0,75	—	—	—	—	—	—	—	1,43
	0,88	—	—	—	—	—	—	—	1,43
	1,00	—	—	—	—	—	—	—	1,43
	1,13	—	—	—	—	—	—	—	1,43
	1,25	—	—	—	—	—	—	—	1,43
	1,50	—	—	—	—	—	—	—	1,43
	1,75	—	—	—	—	—	—	—	1,43
2,00	—	—	—	—	—	—	—	1,43	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	1,67
	0,55	—	—	—	—	—	—	—	1,67
	0,63	—	—	—	—	—	—	—	1,67
	0,75	—	—	—	—	—	—	—	1,67
	0,88	—	—	—	—	—	—	—	1,67
	1,00	—	—	—	—	—	—	—	1,67
	1,13	—	—	—	—	—	—	—	1,67
	1,25	—	—	—	—	—	—	—	1,67
	1,50	—	—	—	—	—	—	—	1,67
	1,75	—	—	—	—	—	—	—	1,67
2,00	—	—	—	—	—	—	—	1,67	

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 11 of European Technical Assessment ETA-18/0789</p>
<p>AR2 W CS 4,8xL UFO, AR2 W CSG 4,8xL UFO and AR2 W CSE 4,8xL UFO and sealing washer $\geq \varnothing 14$ mm</p>	

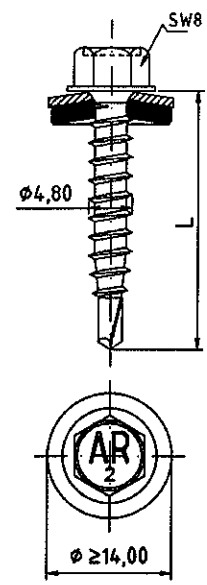
<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: 1050A – EN 573-3</p> <p>Component II: structural timber – EN 14081</p> <p>Drilling capacity: $\Sigma t_i \leq 2,00$ mm</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{ly,Rk} = 4,39$ Nm</p> <p>$f_{ax,k} = 17,396$ N/mm² for $l_{ef} \geq 20$ mm</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
V_{Rk} [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	0,62
	0,55	—	—	—	—	—	—	—	0,62
	0,63	—	—	—	—	—	—	—	0,62
	0,75	—	—	—	—	—	—	—	0,62
	0,88	—	—	—	—	—	—	—	0,62
	1,00	—	—	—	—	—	—	—	0,62
	1,13	—	—	—	—	—	—	—	0,62
	1,25	—	—	—	—	—	—	—	0,62
	1,50	—	—	—	—	—	—	—	0,62
	1,75	—	—	—	—	—	—	—	0,62
2,00	—	—	—	—	—	—	—	0,62	
N_{Rk} [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	0,80
	0,55	—	—	—	—	—	—	—	0,80
	0,63	—	—	—	—	—	—	—	0,80
	0,75	—	—	—	—	—	—	—	0,80
	0,88	—	—	—	—	—	—	—	0,80
	1,00	—	—	—	—	—	—	—	0,80
	1,13	—	—	—	—	—	—	—	0,80
	1,25	—	—	—	—	—	—	—	0,80
	1,50	—	—	—	—	—	—	—	0,80
	1,75	—	—	—	—	—	—	—	0,80
2,00	—	—	—	—	—	—	—	0,80	

Fastening screws for metal members and sheetings
 AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
 AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
 MA W, MB W, MC 0, BH W, ARW 0

AR2 W CSE 4,8xL UFO
 and sealing washer $\geq \varnothing 14$ mm

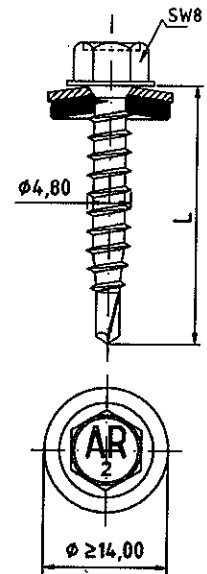
Annex 12
 of European
 Technical Assessment
 ETA-18/0789

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal) Washer: EPDM sealing washer with metal top made of stainless steel or aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber – EN 14081</p> <p>Drilling capacity: $\Sigma t_i \leq 2,00$ mm</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{t,Rk} = 3,37$ Nm $f_{ax,k} = 14,375$ N/mm² for $l_{ef} \geq 20$ mm</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,12	1,12	1,12	1,12	1,12	1,12	—	1,18
	0,55	1,12	1,12	1,12	1,12	1,12	1,12	—	1,18
	0,63	1,12	1,12	1,47	1,47	1,47	1,47	—	1,18
	0,75	1,12	1,12	1,47	1,72	1,72	1,72	—	1,18
	0,88	1,12	1,12	1,47	1,72	1,72	1,72	—	1,18
	1,00	1,12	1,12	1,47	1,72	1,72	1,72	—	1,18
	1,13	—	—	—	—	—	—	—	1,18
	1,25	—	—	—	—	—	—	—	1,18
	1,50	—	—	—	—	—	—	—	1,18
	1,75	—	—	—	—	—	—	—	1,18
2,00	—	—	—	—	—	—	—	1,18	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,55	0,55	0,55	0,55	0,55	0,55	—	1,38
	0,55	0,55	0,55	0,55	0,55	0,55	0,55	—	1,38
	0,63	0,55	0,55	0,71	0,71	0,71	0,71	—	1,38
	0,75	0,55	0,55	0,71	0,81	0,81	0,81	—	1,38
	0,88	0,55	0,55	0,71	0,81	1,19	1,19	—	1,38
	1,00	0,55	0,55	0,71	0,81	1,19	1,56	—	1,38
	1,13	—	—	—	—	—	—	—	1,38
	1,25	—	—	—	—	—	—	—	1,38
	1,50	—	—	—	—	—	—	—	1,38
	1,75	—	—	—	—	—	—	—	1,38
2,00	—	—	—	—	—	—	—	1,38	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 13 of European Technical Assessment ETA-18/0789</p>
<p>AR2 W SS 4,8xL and sealing washer $\geq \varnothing 14$ mm</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 Washer: EPDM sealing washer with metal top made of stainless steel or aluminum Component I: S280GD, S320GD or S350GD – EN 10346 Component II: structural timber – EN 14081</p> <p>Drilling capacity: $\Sigma t_i \leq 0,50$ mm</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 3,37$ Nm $f_{ax,k} = 14,375$ N/mm² for $l_{ef} \geq 20$ mm</p>	
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$t_{n,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
V_{Rk} [kN] for $t_{n,I}$ [mm]	0,50	—	—	—	—	—	—	—	1,18
	0,55	—	—	—	—	—	—	—	1,18
	0,63	—	—	—	—	—	—	—	1,18
	0,75	—	—	—	—	—	—	—	1,18
	0,88	—	—	—	—	—	—	—	1,18
	1,00	—	—	—	—	—	—	—	1,18
	1,13	—	—	—	—	—	—	—	1,18
	1,25	—	—	—	—	—	—	—	1,18
	1,50	—	—	—	—	—	—	—	1,18
	1,75	—	—	—	—	—	—	—	1,18
2,00	—	—	—	—	—	—	—	1,18	
N_{Rk} [kN] for $t_{n,I}$ [mm]	0,50	—	—	—	—	—	—	—	1,38
	0,55	—	—	—	—	—	—	—	1,38
	0,63	—	—	—	—	—	—	—	1,38
	0,75	—	—	—	—	—	—	—	1,38
	0,88	—	—	—	—	—	—	—	1,38
	1,00	—	—	—	—	—	—	—	1,38
	1,13	—	—	—	—	—	—	—	1,38
	1,25	—	—	—	—	—	—	—	1,38
	1,50	—	—	—	—	—	—	—	1,38
	1,75	—	—	—	—	—	—	—	1,38
2,00	—	—	—	—	—	—	—	1,38	

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR2 W SS-3 4,8xL
and sealing washer $\geq \varnothing 14$ mm

Annex 14
of European
Technical Assessment
ETA-18/0789

<p>Materials</p> <p>Fastener: stainless steel – SAE 410 Washer: EPDM sealing washer with metal top made of stainless steel or aluminum Component I: S280GD, S320GD or S350GD – EN 10346 Component II: structural timber – EN 14081</p> <p>Drilling capacity: $\sum t_i \leq 1,50$ mm</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 3,37$ Nm $f_{ax,k} = 17,396$ N/mm² for $l_{ef} \geq 20$ mm</p>	
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$t_{d,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{d,I}$ [mm]	0,50	—	—	—	—	—	—	—	1,18
	0,55	—	—	—	—	—	—	—	1,18
	0,63	—	—	—	—	—	—	—	1,18
	0,75	—	—	—	—	—	—	—	1,18
	0,88	—	—	—	—	—	—	—	1,18
	1,00	—	—	—	—	—	—	—	1,18
	1,13	—	—	—	—	—	—	—	1,18
	1,25	—	—	—	—	—	—	—	1,18
	1,50	—	—	—	—	—	—	—	1,18
	1,75	—	—	—	—	—	—	—	1,18
2,00	—	—	—	—	—	—	—	—	1,18
$N_{R,k}$ [kN] for $t_{d,I}$ [mm]	0,50	—	—	—	—	—	—	—	1,67
	0,55	—	—	—	—	—	—	—	1,67
	0,63	—	—	—	—	—	—	—	1,67
	0,75	—	—	—	—	—	—	—	1,67
	0,88	—	—	—	—	—	—	—	1,67
	1,00	—	—	—	—	—	—	—	1,67
	1,13	—	—	—	—	—	—	—	1,67
	1,25	—	—	—	—	—	—	—	1,67
	1,50	—	—	—	—	—	—	—	1,67
	1,75	—	—	—	—	—	—	—	1,67
2,00	—	—	—	—	—	—	—	—	1,67

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR2 W SS-4 4,8xL
and sealing washer $\geq \varnothing 14$ mm

Annex 15
of European
Technical Assessment
ETA-18/0789

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 3,00$ mm</p>		
<p>Timber substructures</p> <p>no performance assessed</p>		

$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24	
$M_{t,nom}$	3 Nm								—	—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,05	1,05	1,05	1,05	—	—	—	/	
	0,55	1,05	1,05	1,05	1,05	—	—	—		
	0,63	1,35	1,35	1,35	1,35	—	—	—		
	0,75	2,06	2,06	2,06	2,06	—	—	—		
	0,88	2,22	2,22	2,22	2,22	—	—	—		
	1,00	2,53	2,53	2,53	2,53	—	—	—		
	1,13	2,53	2,53	2,53	—	—	—	—		
	1,25	2,53	2,66	2,66	—	—	—	—		
	1,50	2,53	2,66	3,32	—	—	—	—		
	1,75	2,53	2,66	—	—	—	—	—		
2,00	2,53	—	—	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,51	0,51	0,51	0,51	—	—	—	/	
	0,55	0,51	0,51	0,51	0,51	—	—	—		
	0,63	0,75	0,75	0,75	0,75	—	—	—		
	0,75	0,83	0,83	0,83	0,83	—	—	—		
	0,88	0,78	0,78	0,78	0,78	—	—	—		
	1,00	0,94	0,94	0,94	0,94	—	—	—		
	1,13	0,94	0,94	0,94	—	—	—	—		
	1,25	0,94	0,94	0,94	—	—	—	—		
	1,50	0,94	0,94	0,94	—	—	—	—		
	1,75	0,94	0,94	—	—	—	—	—		
2,00	0,94	—	—	—	—	—	—	—		

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 16 of European Technical Assessment ETA-18/0789</p>
<p>AR3 W CS 4,8xL, AR3 W CSG 4,8xL and AR3 W CSE 4,8xL</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 3,00$ mm</p> <hr/> <p>Timber substructures</p> <p>no performance assessed</p>	
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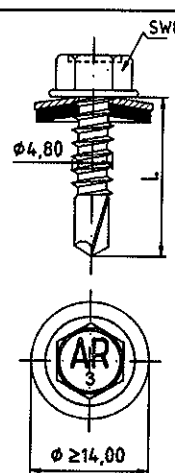
$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,05	1,05	1,05	1,05	—	—	—	/
	0,55	1,05	1,05	1,05	—	—	—	—	
	0,63	1,35	1,35	1,35	—	—	—	—	
	0,75	2,06	2,06	2,06	—	—	—	—	
	0,88	2,22	2,22	2,22	—	—	—	—	
	1,00	2,53	2,53	2,53	—	—	—	—	
	1,13	2,53	2,53	—	—	—	—	—	
	1,25	2,53	2,66	2,66	—	—	—	—	
	1,50	2,53	2,66	3,32	—	—	—	—	
	1,75	2,53	2,66	—	—	—	—	—	
	2,00	2,53	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,96	1,40	1,76	2,14	—	—	—	/
	0,55	0,96	1,40	1,76	2,14	—	—	—	
	0,63	0,96	1,40	1,76	2,70	—	—	—	
	0,75	0,96	1,40	1,76	2,70	—	—	—	
	0,88	0,96	1,40	1,76	2,70	—	—	—	
	1,00	0,96	1,40	1,76	2,70	—	—	—	
	1,13	0,96	1,40	1,76	—	—	—	—	
	1,25	0,96	1,40	1,76	—	—	—	—	
	1,50	0,96	1,40	1,76	—	—	—	—	
	1,75	0,96	1,40	—	—	—	—	—	
	2,00	0,96	—	—	—	—	—	—	

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR3 W CS 4,8xL, AR3 W CSG 4,8xL and AR3 W CSE 4,8xL
 and sealing washer $\geq \varnothing 14$ mm

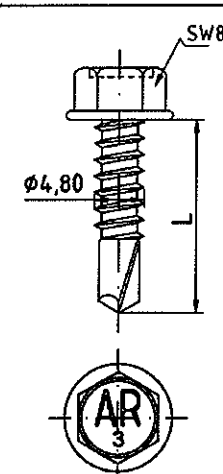
Annex 17
 of European
 Technical Assessment
 ETA-18/0789

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 3,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,05	1,05	1,05	1,05	—	—	—	/
	0,55	1,05	1,05	1,05	1,05	—	—	—	
	0,63	1,35	1,35	1,35	1,35	—	—	—	
	0,75	2,06	2,06	2,06	2,06	—	—	—	
	0,88	2,22	2,22	2,22	2,22	—	—	—	
	1,00	2,53	2,53	2,53	2,53	—	—	—	
	1,13	2,53	2,53	2,53	—	—	—	—	
	1,25	2,53	2,66	2,66	—	—	—	—	
	1,50	2,53	2,66	3,32	—	—	—	—	
	1,75	2,53	2,66	—	—	—	—	—	
2,00	2,53	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,96	1,40	1,76	2,56	—	—	—	/
	0,55	0,96	1,40	1,76	2,56	—	—	—	
	0,63	0,96	1,40	1,76	2,70	—	—	—	
	0,75	0,96	1,40	1,76	2,70	—	—	—	
	0,88	0,96	1,40	1,76	2,70	—	—	—	
	1,00	0,96	1,40	1,76	2,70	—	—	—	
	1,13	0,96	1,40	1,76	—	—	—	—	
	1,25	0,96	1,40	1,76	—	—	—	—	
	1,50	0,96	1,40	1,76	—	—	—	—	
	1,75	0,96	1,40	—	—	—	—	—	
2,00	0,96	—	—	—	—	—	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 18 of European Technical Assessment ETA-18/0789</p>
<p>AR3 W CS 4,8xL, AR3 W CSG 4,8xL and AR3 W CSE 4,8xL and sealing washer $\geq \varnothing 14$ mm</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 3,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24	
$M_{t,nom}$	3 Nm								—	—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,05	1,05	1,05	1,05	—	—	—	/	
	0,55	1,05	1,05	1,05	1,05	—	—	—		
	0,63	1,34	1,34	1,34	1,34	—	—	—		
	0,75	2,04	2,04	2,04	2,04	—	—	—		
	0,88	2,20	2,20	2,20	2,20	—	—	—		
	1,00	2,51	2,51	2,51	2,51	—	—	—		
	1,13	2,51	2,51	2,51	—	—	—	—		
	1,25	2,51	2,65	2,65	—	—	—	—		
	1,50	2,51	2,65	3,29	—	—	—	—		
	1,75	2,51	2,65	—	—	—	—	—		
2,00	2,51	—	—	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,51	0,51	0,51	0,51	—	—	—	/	
	0,55	0,51	0,51	0,51	0,51	—	—	—		
	0,63	0,75	0,75	0,75	0,75	—	—	—		
	0,75	0,83	0,83	0,83	0,83	—	—	—		
	0,88	0,78	0,78	0,78	0,78	—	—	—		
	1,00	0,94	0,94	0,94	0,94	—	—	—		
	1,13	0,94	0,94	0,94	—	—	—	—		
	1,25	0,94	0,94	0,94	—	—	—	—		
	1,50	0,94	0,94	0,94	—	—	—	—		
	1,75	0,94	0,94	—	—	—	—	—		
2,00	0,94	—	—	—	—	—	—	—		

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 19 of European Technical Assessment ETA-18/0789</p>
<p>AR3 W SS 4,8xL</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 3,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24	
$M_{i,nom}$	3 Nm									—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,05	1,05	1,05	1,05	—	—	—	/	
	0,55	1,05	1,05	1,05	1,05	—	—	—		
	0,63	1,34	1,34	1,34	1,34	—	—	—		
	0,75	2,04	2,04	2,04	2,04	—	—	—		
	0,88	2,20	2,20	2,20	2,20	—	—	—		
	1,00	2,51	2,51	2,51	2,51	—	—	—		
	1,13	2,51	2,51	2,51	—	—	—	—		
	1,25	2,51	2,65	2,65	—	—	—	—		
	1,50	2,51	2,65	3,29	—	—	—	—		
	1,75	2,51	2,65	—	—	—	—	—		
2,00	2,51	—	—	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,00	1,23	1,65	2,14	—	—	—	/	
	0,55	1,00	1,23	1,65	2,44	—	—	—		
	0,63	1,00	1,23	1,65	2,44	—	—	—		
	0,75	1,00	1,23	1,65	2,44	—	—	—		
	0,88	1,00	1,23	1,65	2,44	—	—	—		
	1,00	1,00	1,23	1,65	2,44	—	—	—		
	1,13	1,00	1,23	1,65	—	—	—	—		
	1,25	1,00	1,23	1,65	—	—	—	—		
	1,50	1,00	1,23	1,65	—	—	—	—		
	1,75	1,00	1,23	—	—	—	—	—		
2,00	1,00	—	—	—	—	—	—	—		

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 20 of European Technical Assessment ETA-18/0789</p>
<p>AR3 W SS 4,8xL and sealing washer $\geq \varnothing 14$ mm</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: EPDM sealing washer with metal top made of stainless steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 3,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,00	1,25	1,50	2,00	3,00	4,00	5,00	6,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,05	1,05	1,05	1,05	—	—	—	/
	0,55	1,05	1,05	1,05	1,05	—	—	—	
	0,63	1,34	1,34	1,34	1,34	—	—	—	
	0,75	2,04	2,04	2,04	2,04	—	—	—	
	0,88	2,20	2,20	2,20	2,20	—	—	—	
	1,00	2,51	2,51	2,51	2,51	—	—	—	
	1,13	2,51	2,51	2,51	—	—	—	—	
	1,25	2,51	2,65	2,65	—	—	—	—	
	1,50	2,51	2,65	3,29	—	—	—	—	
	1,75	2,51	2,65	—	—	—	—	—	
	2,00	2,51	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,00	1,23	1,65	2,44	—	—	—	
	0,55	1,00	1,23	1,65	2,44	—	—	—	
	0,63	1,00	1,23	1,65	2,44	—	—	—	
	0,75	1,00	1,23	1,65	2,44	—	—	—	
	0,88	1,00	1,23	1,65	2,44	—	—	—	
	1,00	1,00	1,23	1,65	2,44	—	—	—	
	1,13	1,00	1,23	1,65	—	—	—	—	
	1,25	1,00	1,23	1,65	—	—	—	—	
	1,50	1,00	1,23	1,65	—	—	—	—	
	1,75	1,00	1,23	—	—	—	—	—	
	2,00	1,00	—	—	—	—	—	—	

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR3 W SS 4,8xL
 and sealing washer $\geq \varnothing 14$ mm

Annex 21
 of European
 Technical Assessment
 ETA-18/0789

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 5,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,23	1,23	1,23	1,23	—	—	—	/
	0,55	1,23	1,23	1,23	1,23	—	—	—	
	0,63	1,56	1,56	1,56	1,56	—	—	—	
	0,75	1,66	1,66	1,66	1,66	—	—	—	
	0,88	2,01	2,01	2,01	2,01	—	—	—	
	1,00	2,30	2,30	2,30	2,30	—	—	—	
	1,13	2,30	2,30	2,30	—	—	—	—	
	1,25	3,30	3,30	3,30	—	—	—	—	
	1,50	3,30	3,30	3,30	—	—	—	—	
	1,75	3,30	3,30	3,30	—	—	—	—	
2,00	3,30	3,30	3,30	—	—	—	—	—	
$N_{R,k}$ [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	—	—	—	
	0,63	0,89	0,89	0,89	0,89	—	—	—	
	0,75	0,99	0,99	0,99	0,99	—	—	—	
	0,88	0,99	0,99	0,99	0,99	—	—	—	
	1,00	1,12	1,12	1,12	1,12	—	—	—	
	1,13	1,12	1,12	1,12	—	—	—	—	
	1,25	1,12	1,12	1,12	—	—	—	—	
	1,50	1,12	1,12	1,12	—	—	—	—	
	1,75	1,12	1,12	—	—	—	—	—	
2,00	1,12	—	—	—	—	—	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 22 of European Technical Assessment ETA-18/0789</p>
<p>AR5 W CS 5,5xL, AR5 W CSG 5,5xL and AR5 W CSE 5,5xL</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel or aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 5,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,00	1,13	1,25	1,50	2,00	2,50	3,00	4,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,i}$ [mm]	0,50	0,92	0,92	0,92	0,92	0,92	0,92	0,92	0,92
	0,55	0,92	0,92	0,92	0,92	0,92	0,92	0,92	0,92
	0,63	1,08	1,08	1,08	1,08	1,08	1,08	1,08	1,08
	0,75	1,15	1,15	1,15	1,15	1,15	1,15	1,15	1,15
	0,88	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
	1,00	1,68	1,68	1,68	1,68	1,68	1,68	1,68	1,68
	1,13	—	1,68	1,68	1,68	1,68	1,68	1,68	—
	1,25	—	—	2,26	2,26	2,26	2,26	2,26	—
	1,50	—	—	—	2,88	2,88	2,88	2,88	—
	2,00	—	—	—	—	3,65	3,65	3,65	—
2,50	—	—	—	—	—	3,65	—	—	
$N_{R,k}$ [kN] for $t_{N,i}$ [mm]	0,50	0,96	0,96	1,37	1,49	2,33	2,33	2,53	2,53
	0,55	0,96	0,96	1,37	1,49	2,33	2,33	2,53	2,53
	0,63	0,96	0,96	1,37	1,49	2,33	2,33	3,56	3,56
	0,75	0,96	0,96	1,37	1,49	2,33	2,33	4,09	4,09
	0,88	0,96	0,96	1,37	1,49	2,33	2,33	4,10	4,10
	1,00	0,96	0,96	1,37	1,49	2,33	2,33	4,66	4,66
	1,13	—	0,96	1,37	1,49	2,33	2,33	4,66	—
	1,25	—	—	1,37	1,49	2,33	2,33	4,66	—
	1,50	—	—	—	1,49	2,33	2,33	4,66	—
	2,00	—	—	—	—	2,33	2,33	5,49	—
2,50	—	—	—	—	—	2,33	—	—	

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

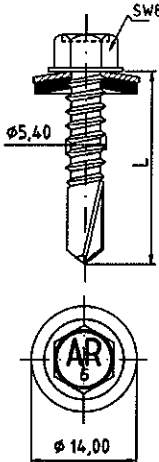
<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 23 of European Technical Assessment ETA-18/0789</p>
<p>AR5 W CS 5,5xL, AR5 W CSG 5,5xL and AR5 W CSE 5,5xL and sealing washer $\geq \varnothing 14$ mm</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 5,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,23	1,23	1,23	1,23	—	—	—	/
	0,55	1,23	1,23	1,23	1,23	—	—	—	
	0,63	1,56	1,56	1,56	1,56	—	—	—	
	0,75	1,66	1,66	1,66	1,66	—	—	—	
	0,88	2,01	2,01	2,01	2,01	—	—	—	
	1,00	2,30	2,30	2,30	2,30	—	—	—	
	1,13	2,30	2,30	2,30	—	—	—	—	
	1,25	3,30	3,30	3,30	—	—	—	—	
	1,50	3,30	3,30	3,30	—	—	—	—	
	1,75	3,30	3,30	3,30	—	—	—	—	
2,00	3,30	3,30	3,30	—	—	—	—	—	
$N_{R,k}$ [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	—	—	—	
	0,63	0,89	0,89	0,89	0,89	—	—	—	
	0,75	0,99	0,99	0,99	0,99	—	—	—	
	0,88	0,99	0,99	0,99	0,99	—	—	—	
	1,00	1,12	1,12	1,12	1,12	—	—	—	
	1,13	1,12	1,12	1,12	—	—	—	—	
	1,25	1,12	1,12	1,12	—	—	—	—	
	1,50	1,12	1,12	1,12	—	—	—	—	
	1,75	1,12	1,12	1,12	—	—	—	—	
2,00	1,12	1,12	1,12	—	—	—	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 24 of European Technical Assessment ETA-18/0789</p>
<p>AR5 W SS 5,5xL</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 5,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,23	1,23	1,23	1,23	—	—	—	/
	0,55	1,23	1,23	1,23	1,23	—	—	—	
	0,63	1,56	1,56	1,56	1,56	—	—	—	
	0,75	1,66	1,66	1,66	1,66	—	—	—	
	0,88	2,01	2,01	2,01	2,01	—	—	—	
	1,00	2,30	2,30	2,30	2,30	—	—	—	
	1,13	2,30	2,30	2,30	—	—	—	—	
	1,25	3,30	3,30	3,30	—	—	—	—	
	1,50	3,30	3,30	3,30	—	—	—	—	
	1,75	3,30	3,30	3,30	—	—	—	—	
2,00	3,30	3,30	3,30	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,68	2,14	2,14	2,14	—	—	—	/
	0,55	1,68	2,48	2,14	2,14	—	—	—	
	0,63	1,68	2,48	2,86	2,86	—	—	—	
	0,75	1,68	2,48	3,35	3,35	—	—	—	
	0,88	1,68	2,48	3,46	3,46	—	—	—	
	1,00	1,68	2,48	3,97	3,97	—	—	—	
	1,13	1,68	2,48	3,97	—	—	—	—	
	1,25	1,68	2,48	3,97	—	—	—	—	
	1,50	1,68	2,48	3,97	—	—	—	—	
	1,75	1,68	2,48	3,97	—	—	—	—	
2,00	1,68	2,48	3,97	—	—	—	—		

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 25 of European Technical Assessment ETA-18/0789</p>
<p>AR5 W SS 5,5xL and sealing washer \varnothing14 mm</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 5,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,23	1,23	1,23	1,23	—	—	—	/
	0,55	1,23	1,23	1,23	1,23	—	—	—	
	0,63	1,56	1,56	1,56	1,56	—	—	—	
	0,75	1,66	1,66	1,66	1,66	—	—	—	
	0,88	2,01	2,01	2,01	2,01	—	—	—	
	1,00	2,30	2,30	2,30	2,30	—	—	—	
	1,13	2,30	2,30	2,30	—	—	—	—	
	1,25	3,30	3,30	3,30	—	—	—	—	
	1,50	3,30	3,30	3,30	—	—	—	—	
	1,75	3,30	3,30	3,30	—	—	—	—	
2,00	3,30	3,30	3,30	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,68	2,48	3,08	3,08	—	—	—	/
	0,55	1,68	2,48	3,08	3,08	—	—	—	
	0,63	1,68	2,48	3,52	3,52	—	—	—	
	0,75	1,68	2,48	4,06	4,06	—	—	—	
	0,88	1,68	2,48	4,07	4,07	—	—	—	
	1,00	1,68	2,48	4,63	4,63	—	—	—	
	1,13	1,68	2,48	4,63	—	—	—	—	
	1,25	1,68	2,48	4,63	—	—	—	—	
	1,50	1,68	2,48	4,63	—	—	—	—	
	1,75	1,68	2,48	4,63	—	—	—	—	
2,00	1,68	2,48	4,63	—	—	—	—		

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 26 of European Technical Assessment ETA-18/0789</p>
<p>AR5 W SS 5,5xL and sealing washer $\geq \text{Ø}16$ mm</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: EPDM sealing washer with metal top made of stainless steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\sum t_i \leq 5,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,23	1,23	1,23	1,23	—	—	—	/
	0,55	1,23	1,23	1,23	1,23	—	—	—	
	0,63	1,56	1,56	1,56	1,56	—	—	—	
	0,75	1,66	1,66	1,66	1,66	—	—	—	
	0,88	2,01	2,01	2,01	2,01	—	—	—	
	1,00	2,30	2,30	2,30	2,30	—	—	—	
	1,13	2,30	2,30	2,30	—	—	—	—	
	1,25	3,30	3,30	3,30	—	—	—	—	
	1,50	3,30	3,30	3,30	—	—	—	—	
	1,75	3,30	3,30	3,30	—	—	—	—	
2,00	3,30	3,30	3,30	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,68	2,48	2,56	2,56	—	—	—	/
	0,55	1,68	2,48	2,56	2,56	—	—	—	
	0,63	1,68	2,48	3,49	3,49	—	—	—	
	0,75	1,68	2,48	4,02	4,02	—	—	—	
	0,88	1,68	2,48	4,03	4,03	—	—	—	
	1,00	1,68	2,48	4,58	4,58	—	—	—	
	1,13	1,68	2,48	4,58	—	—	—	—	
	1,25	1,68	2,48	4,58	—	—	—	—	
	1,50	1,68	2,48	4,58	—	—	—	—	
	1,75	1,68	2,48	4,58	—	—	—	—	
2,00	1,68	2,48	4,58	—	—	—	—		

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 27 of European Technical Assessment ETA-18/0789</p>
<p>AR5 W SS 5,5xL and sealing washer \varnothing14 mm</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: EPDM sealing washer with metal top made of stainless steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 5,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,23	1,23	1,23	1,23	—	—	—	/
	0,55	1,23	1,23	1,23	1,23	—	—	—	
	0,63	1,56	1,56	1,56	1,56	—	—	—	
	0,75	1,66	1,66	1,66	1,66	—	—	—	
	0,88	2,01	2,01	2,01	2,01	—	—	—	
	1,00	2,30	2,30	2,30	2,30	—	—	—	
	1,13	2,30	2,30	2,30	—	—	—	—	
	1,25	3,30	3,30	3,30	—	—	—	—	
	1,50	3,30	3,30	3,30	—	—	—	—	
	1,75	3,30	3,30	3,30	—	—	—	—	
2,00	3,30	3,30	3,30	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,68	2,48	3,23	3,23	—	—	—	/
	0,55	1,68	2,48	3,23	3,23	—	—	—	
	0,63	1,68	2,48	3,64	3,64	—	—	—	
	0,75	1,68	2,48	4,70	4,70	—	—	—	
	0,88	1,68	2,48	5,07	5,07	—	—	—	
	1,00	1,68	2,48	5,07	5,07	—	—	—	
	1,13	1,68	2,48	5,07	—	—	—	—	
	1,25	1,68	2,48	5,07	—	—	—	—	
	1,50	1,68	2,48	5,07	—	—	—	—	
	1,75	1,68	2,48	5,07	—	—	—	—	
2,00	1,68	2,48	5,07	—	—	—	—	—	

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 28 of European Technical Assessment ETA-18/0789</p>
<p>AR5 W SS 5,5xL and sealing washer $\geq \varnothing 16$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 5,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	8,00	10,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,23	1,23	1,23	1,23	—	—	—	
	0,55	1,23	1,23	1,23	1,23	—	—	—	
	0,63	1,56	1,56	1,56	1,56	—	—	—	
	0,75	1,66	1,66	1,66	1,66	—	—	—	
	0,88	2,01	2,01	2,01	2,01	—	—	—	
	1,00	2,30	2,30	2,30	2,30	—	—	—	
	1,13	2,30	2,30	2,30	—	—	—	—	
	1,25	3,30	3,30	3,30	—	—	—	—	
	1,50	3,30	3,30	3,30	—	—	—	—	
	1,75	3,30	3,30	3,30	—	—	—	—	
2,00	3,30	3,30	3,30	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,25	1,80	2,69	2,69	—	—	—	
	0,55	1,25	1,80	2,69	2,69	—	—	—	
	0,63	1,25	1,80	3,33	3,66	—	—	—	
	0,75	1,25	1,80	3,33	4,23	—	—	—	
	0,88	1,25	1,80	3,33	4,23	—	—	—	
	1,00	1,25	1,80	3,33	4,81	—	—	—	
	1,13	1,25	1,80	3,33	—	—	—	—	
	1,25	1,25	1,80	3,33	—	—	—	—	
	1,50	1,25	1,80	3,33	—	—	—	—	
	1,75	1,25	1,80	—	—	—	—	—	
2,00	1,25	—	—	—	—	—	—		

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 29 of European Technical Assessment ETA-18/0789</p>
<p>AR5 PZ W CS 5,5xL, AR5 PZ W CSG 5,5xL and AR5 PZ W CSE 5,5xL</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 6,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	3,00	4,00	5,00	6,00	8,00	10,00	12,00	14,00	Wood; class \geq C24
$M_{t,nom}$	6 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,30	1,30	1,30	—	—	—	—	/
	0,55	1,30	1,30	1,30	—	—	—	—	
	0,63	1,44	1,44	1,44	—	—	—	—	
	0,75	2,01	2,01	2,01	—	—	—	—	
	0,88	2,40	2,40	2,40	—	—	—	—	
	1,00	2,91	2,91	2,91	—	—	—	—	
	1,13	2,91	2,91	—	—	—	—	—	
	1,25	2,91	2,91	—	—	—	—	—	
	1,50	2,91	2,91	—	—	—	—	—	
	1,75	2,91	2,91	—	—	—	—	—	
2,00	2,91	2,91	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,72	0,72	0,72	—	—	—	—	/
	0,55	0,72	0,72	0,72	—	—	—	—	
	0,63	1,05	1,05	1,05	—	—	—	—	
	0,75	1,15	1,15	1,15	—	—	—	—	
	0,88	1,16	1,16	1,16	—	—	—	—	
	1,00	1,32	1,32	1,32	—	—	—	—	
	1,13	1,32	1,32	—	—	—	—	—	
	1,25	1,32	1,32	—	—	—	—	—	
	1,50	1,32	1,32	—	—	—	—	—	
	1,75	1,32	1,32	—	—	—	—	—	
2,00	1,32	1,32	—	—	—	—	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 30 of European Technical Assessment ETA-18/0789</p>
<p>AR6 W CS 6,3xL, AR6 W CSG 6,3xL and AR6 W CSE 6,3xL</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 6,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{n,II}$ [mm]	3,00	4,00	5,00	6,00	8,00	10,00	12,00	14,00	Wood; class \geq C24
$M_{t,nom}$	6 Nm								
$V_{R,k}$ [kN] for $t_{n,I}$ [mm]	0,50	1,30	1,30	1,30	—	—	—	—	/
	0,55	1,30	1,30	1,30	—	—	—	—	
	0,63	1,44	1,44	1,44	—	—	—	—	
	0,75	2,01	2,01	2,01	—	—	—	—	
	0,88	2,40	2,40	2,40	—	—	—	—	
	1,00	2,91	2,91	2,91	—	—	—	—	
	1,13	2,91	2,91	—	—	—	—	—	
	1,25	2,91	2,91	—	—	—	—	—	
	1,50	2,91	2,91	—	—	—	—	—	
	1,75	2,91	2,91	—	—	—	—	—	
2,00	2,91	2,91	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{n,I}$ [mm]	0,50	3,08	3,08	3,08	—	—	—	—	/
	0,55	3,08	3,08	3,08	—	—	—	—	
	0,63	3,52	3,52	3,52	—	—	—	—	
	0,75	4,06	4,06	4,06	—	—	—	—	
	0,88	4,07	4,07	4,07	—	—	—	—	
	1,00	4,63	4,63	4,63	—	—	—	—	
	1,13	4,63	4,63	—	—	—	—	—	
	1,25	4,63	4,63	—	—	—	—	—	
	1,50	4,63	4,63	—	—	—	—	—	
	1,75	4,63	4,63	—	—	—	—	—	
2,00	4,63	4,63	—	—	—	—	—	—	

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 31 of European Technical Assessment ETA-18/0789</p>
<p>AR6 W CS 6,3xL, AR6 W CSG 6,3xL and AR6 W CSE 6,3xL and sealing washer $\geq \varnothing 16$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel</p> <p>Component I: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 6,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	3,00	4,00	5,00	6,00	8,00	10,00	12,00	14,00	Wood; class \geq C24
$M_{t,nom}$	6 Nm								
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,30	1,30	1,30	—	—	—	—	/
	0,55	1,30	1,30	1,30	—	—	—	—	
	0,63	1,44	1,44	1,44	—	—	—	—	
	0,75	2,01	2,01	2,01	—	—	—	—	
	0,88	2,40	2,40	2,40	—	—	—	—	
	1,00	2,91	2,91	2,91	—	—	—	—	
	1,13	2,91	2,91	—	—	—	—	—	
	1,25	2,91	2,91	—	—	—	—	—	
	1,50	2,91	2,91	—	—	—	—	—	
	1,75	2,91	2,91	—	—	—	—	—	
2,00	2,91	2,91	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	3,23	3,23	3,23	—	—	—	—	/
	0,55	3,23	3,23	3,23	—	—	—	—	
	0,63	3,64	3,64	3,64	—	—	—	—	
	0,75	4,70	4,70	4,70	—	—	—	—	
	0,88	4,74	5,35	5,35	—	—	—	—	
	1,00	4,74	6,48	6,48	—	—	—	—	
	1,13	4,74	6,48	—	—	—	—	—	
	1,25	4,74	6,48	—	—	—	—	—	
	1,50	4,74	6,48	—	—	—	—	—	
	1,75	4,74	6,48	—	—	—	—	—	
2,00	4,74	6,48	—	—	—	—	—	—	

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 32 of European Technical Assessment ETA-18/0789</p>
<p>AR6 W CS 6,3xL, AR6 W CSG 6,3xL and AR6 W CSE 6,3xL and sealing washer $\geq \varnothing 16$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\sum t_i \leq 8,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,27	1,27	1,27	1,27	—	—	—	/
	0,55	1,27	1,27	1,27	1,27	—	—	—	
	0,63	1,61	1,61	1,61	1,61	—	—	—	
	0,75	1,71	1,71	1,71	1,71	—	—	—	
	0,88	2,07	2,07	2,07	2,07	—	—	—	
	1,00	2,37	2,37	2,37	2,37	—	—	—	
	1,13	2,37	2,37	2,37	2,37	—	—	—	
	1,25	2,37	2,37	2,37	2,37	—	—	—	
	1,50	2,37	2,37	2,37	2,37	—	—	—	
	1,75	2,37	2,37	2,37	2,37	—	—	—	
2,00	2,37	2,37	2,37	2,37	—	—	—		
$N_{R,k}$ [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	—	—	—	
	0,63	0,89	0,89	0,89	0,89	—	—	—	
	0,75	0,99	0,99	0,99	0,99	—	—	—	
	0,88	0,99	0,99	0,99	0,99	—	—	—	
	1,00	1,12	1,12	1,12	1,12	—	—	—	
	1,13	1,12	1,12	1,12	1,12	—	—	—	
	1,25	1,12	1,12	1,12	1,12	—	—	—	
	1,50	1,12	1,12	1,12	1,12	—	—	—	
	1,75	1,12	1,12	1,12	1,12	—	—	—	
2,00	1,12	1,12	1,12	1,12	—	—	—		

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 33 of European Technical Assessment ETA-18/0789</p>
<p>AR8 W CS 5,5xL, AR8 W CSG 5,5xL and AR8 W CSE 5,5xL</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 8,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class \geq C24
$M_{t, nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,27	1,27	1,27	1,27	1,27	—	—	/
	0,55	1,27	1,27	1,27	1,27	1,27	—	—	
	0,63	1,61	1,61	1,61	1,61	1,61	—	—	
	0,75	1,71	1,71	1,71	1,71	1,71	—	—	
	0,88	2,07	2,07	2,07	2,07	2,07	—	—	
	1,00	2,37	2,37	2,37	2,37	2,37	—	—	
	1,13	2,37	2,37	2,37	2,37	2,37	—	—	
	1,25	2,37	2,37	2,37	2,37	2,37	—	—	
	1,50	2,37	2,37	2,37	2,37	2,37	—	—	
	1,75	2,37	2,37	2,37	2,37	2,37	—	—	
2,00	2,37	2,37	2,37	2,37	2,37	—	—		
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,64	2,14	2,14	2,14	2,14	—	—	/
	0,55	1,64	2,14	2,14	2,14	2,14	—	—	
	0,63	1,64	2,86	2,86	2,86	2,86	—	—	
	0,75	1,64	2,87	3,35	3,35	3,35	—	—	
	0,88	1,64	2,87	3,46	3,46	3,46	—	—	
	1,00	1,64	2,87	3,97	3,97	3,97	—	—	
	1,13	1,64	2,87	3,97	3,97	3,97	—	—	
	1,25	1,64	2,87	3,97	3,97	3,97	—	—	
	1,50	1,64	2,87	3,97	3,97	3,97	—	—	
	1,75	1,64	2,87	3,97	3,97	3,97	—	—	
2,00	1,64	2,87	3,97	3,97	3,97	—	—		

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 34 of European Technical Assessment ETA-18/0789</p>
<p>AR8 W CS 5,5xL, AR8 W CSG 5,5xL and AR8 W CSE 5,5xL and sealing washer \varnothing14 mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 8,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,27	1,27	1,27	1,27	1,27	—	—	/
	0,55	1,27	1,27	1,27	1,27	1,27	—	—	
	0,63	1,61	1,61	1,61	1,61	1,61	—	—	
	0,75	1,71	1,71	1,71	1,71	1,71	—	—	
	0,88	2,07	2,07	2,07	2,07	2,07	—	—	
	1,00	2,37	2,37	2,37	2,37	2,37	—	—	
	1,13	2,37	2,37	2,37	2,37	2,37	—	—	
	1,25	2,37	2,37	2,37	2,37	2,37	—	—	
	1,50	2,37	2,37	2,37	2,37	2,37	—	—	
	1,75	2,37	2,37	2,37	2,37	2,37	—	—	
	2,00	2,37	2,37	2,37	2,37	2,37	—	—	
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,64	2,87	3,08	3,08	3,08	—	—	/
	0,55	1,64	2,87	3,08	3,08	3,08	—	—	
	0,63	1,64	2,87	3,52	3,52	3,52	—	—	
	0,75	1,64	2,87	4,06	4,06	4,06	—	—	
	0,88	1,64	2,87	4,07	4,07	4,07	—	—	
	1,00	1,64	2,87	4,63	4,63	4,63	—	—	
	1,13	1,64	2,87	4,63	4,63	4,63	—	—	
	1,25	1,64	2,87	4,63	4,63	4,63	—	—	
	1,50	1,64	2,87	4,63	4,63	4,63	—	—	
	1,75	1,64	2,87	4,63	4,63	4,63	—	—	
	2,00	1,64	2,87	4,63	4,63	4,63	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 35 of European Technical Assessment ETA-18/0789</p>
<p>AR8 W CS 5,5xL, AR8 W CSG 5,5xL and AR8 W CSE 5,5xL and sealing washer $\geq \varnothing 16$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 8,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,27	1,27	1,27	1,27	1,27	—	—	/
	0,55	1,27	1,27	1,27	1,27	1,27	—	—	
	0,63	1,61	1,61	1,61	1,61	1,61	—	—	
	0,75	1,71	1,71	1,71	1,71	1,71	—	—	
	0,88	2,07	2,07	2,07	2,07	2,07	—	—	
	1,00	2,37	2,37	2,37	2,37	2,37	—	—	
	1,13	2,37	2,37	2,37	2,37	2,37	—	—	
	1,25	2,37	2,37	2,37	2,37	2,37	—	—	
	1,50	2,37	2,37	2,37	2,37	2,37	—	—	
	1,75	2,37	2,37	2,37	2,37	2,37	—	—	
2,00	2,37	2,37	2,37	2,37	2,37	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,64	2,56	2,56	2,56	2,56	—	—	/
	0,55	1,64	2,56	2,56	2,56	2,56	—	—	
	0,63	1,64	2,87	3,49	3,49	3,49	—	—	
	0,75	1,64	2,87	4,02	4,02	4,02	—	—	
	0,88	1,64	2,87	4,03	4,03	4,03	—	—	
	1,00	1,64	2,87	4,58	4,58	4,58	—	—	
	1,13	1,64	2,87	4,58	4,58	4,58	—	—	
	1,25	1,64	2,87	4,58	4,58	4,58	—	—	
	1,50	1,64	2,87	4,58	4,58	4,58	—	—	
	1,75	1,64	2,87	4,58	4,58	4,58	—	—	
2,00	1,64	2,87	4,58	4,58	4,58	—	—		

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 36 of European Technical Assessment ETA-18/0789</p>
<p>AR8 W CS 5,5xL, AR8 W CSG 5,5xL and AR8 W CSE 5,5xL and sealing washer $\varnothing 14$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 for $t_{N,II} \geq 3$ mm or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 8,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	2,00	3,00	4,00	5,00	6,00	8,00	10,00	12,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,27	1,27	1,27	1,27	1,27	—	—	/
	0,55	1,27	1,27	1,27	1,27	1,27	—	—	
	0,63	1,61	1,61	1,61	1,61	1,61	—	—	
	0,75	1,71	1,71	1,71	1,71	1,71	—	—	
	0,88	2,07	2,07	2,07	2,07	2,07	—	—	
	1,00	2,37	2,37	2,37	2,37	2,37	—	—	
	1,13	2,37	2,37	2,37	2,37	2,37	—	—	
	1,25	2,37	2,37	2,37	2,37	2,37	—	—	
	1,50	2,37	2,37	2,37	2,37	2,37	—	—	
	1,75	2,37	2,37	2,37	2,37	2,37	—	—	
	2,00	2,37	2,37	2,37	2,37	2,37	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,64	2,87	3,23	3,23	3,23	—	—	/
	0,55	1,64	2,87	3,23	3,23	3,23	—	—	
	0,63	1,64	2,87	3,64	3,64	3,64	—	—	
	0,75	1,64	2,87	4,70	4,70	4,70	—	—	
	0,88	1,64	2,87	5,35	5,35	5,35	—	—	
	1,00	1,64	2,87	5,51	5,39	5,39	—	—	
	1,13	1,64	2,87	5,51	5,39	5,39	—	—	
	1,25	1,64	2,87	5,51	5,39	5,39	—	—	
	1,50	1,64	2,87	5,51	5,39	5,39	—	—	
	1,75	1,64	2,87	5,51	5,39	5,39	—	—	
	2,00	1,64	2,87	5,51	5,39	5,39	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 37 of European Technical Assessment ETA-18/0789</p>
<p>AR8 W CS 5,5xL, AR8 W CSG 5,5xL and AR8 W CSE 5,5xL and sealing washer $\geq \varnothing 16$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{w,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{i,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{w,i}$ [mm]	0,50	1,32	1,32	1,32	1,32	1,32	—	—	/
	0,55	1,32	1,32	1,32	1,32	1,32	—	—	
	0,63	1,45	1,45	1,45	1,45	1,45	—	—	
	0,75	1,88	1,88	1,88	1,88	1,88	—	—	
	0,88	2,28	2,28	2,28	2,28	2,28	—	—	
	1,00	2,74	2,74	2,74	2,74	2,74	—	—	
	1,13	2,74	2,74	2,74	2,74	2,74	—	—	
	1,25	2,74	2,74	2,74	2,74	2,74	—	—	
	1,50	2,74	2,74	2,74	2,74	2,74	—	—	
	1,75	2,74	2,74	2,74	2,74	2,74	—	—	
2,00	2,74	2,74	2,74	2,74	2,74	—	—	—	
$N_{R,k}$ [kN] for $t_{w,i}$ [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	—	—	
	0,63	0,89	0,89	0,89	0,89	0,89	—	—	
	0,75	0,99	0,99	0,99	0,99	0,99	—	—	
	0,88	0,99	0,99	0,99	0,99	0,99	—	—	
	1,00	1,12	1,12	1,12	1,12	1,12	—	—	
	1,13	1,12	1,12	1,12	1,12	1,12	—	—	
	1,25	1,12	1,12	1,12	1,12	1,12	—	—	
	1,50	1,12	1,12	1,12	1,12	1,12	—	—	
	1,75	1,12	1,12	1,12	1,12	1,12	—	—	
2,00	1,12	1,12	1,12	1,12	1,12	—	—	—	

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 38 of European Technical Assessment ETA-18/0789</p>
<p>AR12 W CS 5,5xL, AR12 W CSG 5,5xL and AR12 W CSE 5,5xL</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel or aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\sum t_i \leq 12,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,18	1,18	1,18	1,18	1,18	—	—	/
	0,55	1,18	1,18	1,18	1,18	1,18	—	—	
	0,63	1,26	1,26	1,26	1,26	1,26	—	—	
	0,75	1,26	1,26	1,26	1,26	1,26	—	—	
	0,88	1,48	1,48	1,48	1,48	1,48	—	—	
	1,00	1,80	1,80	1,80	1,80	1,80	—	—	
	1,13	1,80	1,80	1,80	1,80	1,80	—	—	
	1,25	2,66	2,66	2,66	2,66	2,66	—	—	
	1,50	3,46	3,46	3,46	3,46	3,46	—	—	
	2,00	4,02	4,02	4,02	4,02	4,02	—	—	
$N_{R,k}$ [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	—	—	
	0,63	3,56	3,56	3,56	3,56	3,56	—	—	
	0,75	4,09	4,09	4,09	4,09	4,09	—	—	
	0,88	4,10	4,10	4,10	4,10	4,10	—	—	
	1,00	4,66	4,66	4,66	4,66	4,66	—	—	
	1,13	4,66	4,66	4,66	4,66	4,66	—	—	
	1,25	4,66	4,66	4,66	4,66	4,66	—	—	
	1,50	4,69	4,69	4,69	4,69	4,69	—	—	
	2,00	4,69	4,69	4,69	4,69	4,69	—	—	

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR12 W CS 5,5xL, AR12 W CSG 5,5xL and AR12 W CSE 5,5xL
 and sealing washer $\geq \phi 14$ mm

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<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{t, nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,i}$ [mm]	0,50	1,32	1,32	1,32	1,32	1,32	—	—	—
	0,55	1,32	1,32	1,32	1,32	1,32	—	—	—
	0,63	1,45	1,45	1,45	1,45	1,45	—	—	—
	0,75	1,88	1,88	1,88	1,88	1,88	—	—	—
	0,88	2,28	2,28	2,28	2,28	2,28	—	—	—
	1,00	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,13	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,25	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,50	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,75	2,74	2,74	2,74	2,74	2,74	—	—	—
2,00	2,74	2,74	2,74	2,74	2,74	—	—	—	
$N_{R,k}$ [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	—	—	—
	0,63	0,89	0,89	0,89	0,89	0,89	—	—	—
	0,75	0,99	0,99	0,99	0,99	0,99	—	—	—
	0,88	0,99	0,99	0,99	0,99	0,99	—	—	—
	1,00	1,12	1,12	1,12	1,12	1,12	—	—	—
	1,13	1,12	1,12	1,12	1,12	1,12	—	—	—
	1,25	1,12	1,12	1,12	1,12	1,12	—	—	—
	1,50	1,12	1,12	1,12	1,12	1,12	—	—	—
	1,75	1,12	1,12	1,12	1,12	1,12	—	—	—
2,00	1,12	1,12	1,12	1,12	1,12	—	—	—	

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

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR12 W SS 5,5xL

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<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,32	1,32	1,32	1,32	1,32	—	—	—
	0,55	1,32	1,32	1,32	1,32	1,32	—	—	—
	0,63	1,45	1,45	1,45	1,45	1,45	—	—	—
	0,75	1,88	1,88	1,88	1,88	1,88	—	—	—
	0,88	2,28	2,28	2,28	2,28	2,28	—	—	—
	1,00	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,13	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,25	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,50	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,75	2,74	2,74	2,74	2,74	2,74	—	—	—
	2,00	2,74	2,74	2,74	2,74	2,74	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,14	2,14	2,14	2,14	2,14	—	—	—
	0,55	2,14	2,14	2,14	2,14	2,14	—	—	—
	0,63	2,86	2,86	2,86	2,86	2,86	—	—	—
	0,75	3,35	3,35	3,35	3,35	3,35	—	—	—
	0,88	3,46	3,46	3,46	3,46	3,46	—	—	—
	1,00	3,97	3,97	3,97	3,97	3,97	—	—	—
	1,13	3,97	3,97	3,97	3,97	3,97	—	—	—
	1,25	3,97	3,97	3,97	3,97	3,97	—	—	—
	1,50	3,97	3,97	3,97	3,97	3,97	—	—	—
	1,75	3,97	3,97	3,97	3,97	3,97	—	—	—
	2,00	3,97	3,97	3,97	3,97	3,97	—	—	—

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 41 of European Technical Assessment ETA-18/0789</p>
<p>AR12 W SS 5,5xL and sealing washer \varnothing14 mm</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{l,nom}$	5 Nm								
V_{Rk} [kN] for $t_{N,I}$ [mm]	0,50	1,32	1,32	1,32	1,32	1,32	—	—	/
	0,55	1,32	1,32	1,32	1,32	1,32	—	—	
	0,63	1,45	1,45	1,45	1,45	1,45	—	—	
	0,75	1,88	1,88	1,88	1,88	1,88	—	—	
	0,88	2,28	2,28	2,28	2,28	2,28	—	—	
	1,00	2,74	2,74	2,74	2,74	2,74	—	—	
	1,13	2,74	2,74	2,74	2,74	2,74	—	—	
	1,25	2,74	2,74	2,74	2,74	2,74	—	—	
	1,50	2,74	2,74	2,74	2,74	2,74	—	—	
	1,75	2,74	2,74	2,74	2,74	2,74	—	—	
2,00	2,74	2,74	2,74	2,74	2,74	—	—	—	
N_{Rk} [kN] for $t_{N,I}$ [mm]	0,50	3,08	3,08	3,08	3,08	3,08	—	—	/
	0,55	3,08	3,08	3,08	3,08	3,08	—	—	
	0,63	3,52	3,52	3,52	3,52	3,52	—	—	
	0,75	4,06	4,06	4,06	4,06	4,06	—	—	
	0,88	4,07	4,07	4,07	4,07	4,07	—	—	
	1,00	4,63	4,63	4,63	4,63	4,63	—	—	
	1,13	4,63	4,63	4,63	4,63	4,63	—	—	
	1,25	4,63	4,63	4,63	4,63	4,63	—	—	
	1,50	4,63	4,63	4,63	4,63	4,63	—	—	
	1,75	4,63	4,63	4,63	4,63	4,63	—	—	
2,00	4,63	4,63	4,63	4,63	4,63	—	—	—	

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

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR12 W SS 5,5xL
 and sealing washer $\geq \varnothing 16$ mm

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 of European
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<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: EPDM sealing washer with metal top made of stainless steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,32	1,32	1,32	1,32	1,32	—	—	—
	0,55	1,32	1,32	1,32	1,32	1,32	—	—	—
	0,63	1,45	1,45	1,45	1,45	1,45	—	—	—
	0,75	1,88	1,88	1,88	1,88	1,88	—	—	—
	0,88	2,28	2,28	2,28	2,28	2,28	—	—	—
	1,00	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,13	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,25	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,50	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,75	2,74	2,74	2,74	2,74	2,74	—	—	—
2,00	2,74	2,74	2,74	2,74	2,74	—	—	—	
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	2,56	2,56	2,56	2,56	2,56	—	—	—
	0,55	2,56	2,56	2,56	2,56	2,56	—	—	—
	0,63	3,49	3,49	3,49	3,49	3,49	—	—	—
	0,75	4,02	4,02	4,02	4,02	4,02	—	—	—
	0,88	4,03	4,03	4,03	4,03	4,03	—	—	—
	1,00	4,58	4,58	4,58	4,58	4,58	—	—	—
	1,13	4,58	4,58	4,58	4,58	4,58	—	—	—
	1,25	4,58	4,58	4,58	4,58	4,58	—	—	—
	1,50	4,58	4,58	4,58	4,58	4,58	—	—	—
	1,75	4,58	4,58	4,58	4,58	4,58	—	—	—
2,00	4,58	4,58	4,58	4,58	4,58	—	—	—	

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 43 of European Technical Assessment ETA-18/0789</p>
<p>AR12 W SS 5,5xL and sealing washer \varnothing14 mm</p>	

<p>Materials</p> <p>Fastener: stainless steel – SAE 304 (bi-metal)</p> <p>Washer: EPDM sealing washer with metal top made of stainless steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,32	1,32	1,32	1,32	1,32	—	—	—
	0,55	1,32	1,32	1,32	1,32	1,32	—	—	—
	0,63	1,45	1,45	1,45	1,45	1,45	—	—	—
	0,75	1,88	1,88	1,88	1,88	1,88	—	—	—
	0,88	2,28	2,28	2,28	2,28	2,28	—	—	—
	1,00	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,13	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,25	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,50	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,75	2,74	2,74	2,74	2,74	2,74	—	—	—
2,00	2,74	2,74	2,74	2,74	2,74	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	3,23	3,23	3,23	3,23	3,23	—	—	—
	0,55	3,23	3,23	3,23	3,23	3,23	—	—	—
	0,63	3,64	3,64	3,64	3,64	3,64	—	—	—
	0,75	4,70	4,70	4,70	4,70	4,70	—	—	—
	0,88	5,35	5,35	5,35	5,35	5,35	—	—	—
	1,00	6,48	6,48	6,48	6,48	6,48	—	—	—
	1,13	6,48	6,48	6,48	6,48	6,48	—	—	—
	1,25	6,48	6,48	6,48	6,48	6,48	—	—	—
	1,50	6,48	6,48	6,48	6,48	6,48	—	—	—
	1,75	6,48	6,48	6,48	6,48	6,48	—	—	—
2,00	6,48	6,48	6,48	6,48	6,48	—	—	—	

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

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

AR12 W SS 5,5xL
 and sealing washer $\geq \varnothing 16$ mm

Annex 44
 of European
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 ETA-18/0789

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 12,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,00	12,00	14,00	16,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,32	1,32	1,32	1,32	1,32	—	—	—
	0,55	1,32	1,32	1,32	1,32	1,32	—	—	—
	0,63	1,45	1,45	1,45	1,45	1,45	—	—	—
	0,75	1,88	1,88	1,88	1,88	1,88	—	—	—
	0,88	2,28	2,28	2,28	2,28	2,28	—	—	—
	1,00	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,13	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,25	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,50	2,74	2,74	2,74	2,74	2,74	—	—	—
	1,75	2,74	2,74	2,74	2,74	2,74	—	—	—
2,00	2,74	2,74	2,74	2,74	2,74	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	2,69	2,69	2,69	2,69	2,69	—	—	—
	0,55	2,69	2,69	2,69	2,69	2,69	—	—	—
	0,63	3,66	3,66	3,66	3,66	3,66	—	—	—
	0,75	4,23	4,23	4,23	4,23	4,23	—	—	—
	0,88	4,23	4,23	4,23	4,23	4,23	—	—	—
	1,00	4,81	4,81	4,81	4,81	4,81	—	—	—
	1,13	4,81	4,81	4,81	4,81	4,81	—	—	—
	1,25	4,81	4,81	4,81	4,81	4,81	—	—	—
	1,50	4,81	4,81	4,81	4,81	4,81	—	—	—
	1,75	4,81	4,81	4,81	4,81	4,81	—	—	—
2,00	4,81	4,81	4,81	4,81	4,81	—	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 45 of European Technical Assessment ETA-18/0789</p>
<p>AR12 PZ W CS 5,5xL, AR12 PZ W CSG 5,5xL and AR12 PZ W CSE 5,5xL</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 16,00$ mm</p> <hr/> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{w,II}$ [mm]	5,00	6,00	8,00	10,00	12,00	14,00	16,00	20,00	Wood; class \geq C24
$M_{t, nom}$	6 Nm								
$V_{R,k}$ [kN] for $t_{w,I}$ [mm]	0,50	1,39	1,39	1,39	1,39	1,39	1,39	—	/
	0,55	1,39	1,39	1,39	1,39	1,39	1,39	—	
	0,63	1,50	1,50	1,50	1,50	1,50	1,50	—	
	0,75	2,07	2,07	2,07	2,07	2,07	2,07	—	
	0,88	2,45	2,45	2,45	2,45	2,45	2,45	—	
	1,00	2,94	2,94	2,94	2,94	2,94	2,94	—	
	1,13	2,94	2,94	2,94	2,94	2,94	2,94	—	
	1,25	2,94	2,94	2,94	2,94	2,94	2,94	—	
	1,50	2,94	2,94	2,94	2,94	2,94	2,94	—	
	1,75	2,94	2,94	2,94	2,94	2,94	2,94	—	
2,00	2,94	2,94	2,94	2,94	2,94	2,94	—	—	
$N_{R,k}$ [kN] for $t_{w,I}$ [mm]	0,50	0,72	0,72	0,72	0,72	0,72	0,72	—	/
	0,55	0,72	0,72	0,72	0,72	0,72	0,72	—	
	0,63	1,05	1,05	1,05	1,05	1,05	1,05	—	
	0,75	1,15	1,15	1,15	1,15	1,15	1,15	—	
	0,88	1,16	1,16	1,16	1,16	1,16	1,16	—	
	1,00	1,32	1,32	1,32	1,32	1,32	1,32	—	
	1,13	1,32	1,32	1,32	1,32	1,32	1,32	—	
	1,25	1,32	1,32	1,32	1,32	1,32	1,32	—	
	1,50	1,32	1,32	1,32	1,32	1,32	1,32	—	
	1,75	1,32	1,32	1,32	1,32	1,32	1,32	—	
2,00	1,32	1,32	1,32	1,32	1,32	1,32	—	—	

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 46 of European Technical Assessment ETA-18/0789</p>
<p>AR16 W CS 6,3xL, AR16 W CSG 6,3xL and AR16 W CSE 6,3xL</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 16,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{n,II}$ [mm]	5,00	6,00	8,00	10,00	12,00	14,00	16,00	20,00	Wood; class \geq C24
$M_{t,nom}$	6 Nm								
$V_{R,k}$ [kN] for $t_{n,I}$ [mm]	0,50	1,39	1,39	1,39	1,39	1,39	1,39	—	—
	0,55	1,39	1,39	1,39	1,39	1,39	1,39	—	—
	0,63	1,50	1,50	1,50	1,50	1,50	1,50	—	—
	0,75	2,07	2,07	2,07	2,07	2,07	2,07	—	—
	0,88	2,45	2,45	2,45	2,45	2,45	2,45	—	—
	1,00	2,94	2,94	2,94	2,94	2,94	2,94	—	—
	1,13	2,94	2,94	2,94	2,94	2,94	2,94	—	—
	1,25	2,94	2,94	2,94	2,94	2,94	2,94	—	—
	1,50	2,94	2,94	2,94	2,94	2,94	2,94	—	—
	1,75	2,94	2,94	2,94	2,94	2,94	2,94	—	—
2,00	2,94	2,94	2,94	2,94	2,94	2,94	—	—	
$N_{R,k}$ [kN] for $t_{n,I}$ [mm]	0,50	3,08	3,08	3,08	3,08	3,08	3,08	—	—
	0,55	3,08	3,08	3,08	3,08	3,08	3,08	—	—
	0,63	3,52	3,52	3,52	3,52	3,52	3,52	—	—
	0,75	4,06	4,06	4,06	4,06	4,06	4,06	—	—
	0,88	4,07	4,07	4,07	4,07	4,07	4,07	—	—
	1,00	4,12	4,12	4,63	4,63	4,63	4,63	—	—
	1,13	4,12	4,12	4,63	4,63	4,63	4,63	—	—
	1,25	4,12	4,12	4,63	4,63	4,63	4,63	—	—
	1,50	4,12	4,12	4,63	4,63	4,63	4,63	—	—
	1,75	4,12	4,12	4,63	4,63	4,63	4,63	—	—
2,00	4,12	4,12	4,63	4,63	4,63	4,63	—	—	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 47 of European Technical Assessment ETA-18/0789</p>
<p>AR16 W CS 6,3xL, AR16 W CSG 6,3xL i AR16 W CSE 6,3xL and sealing washer $\geq \varnothing 16$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S235JR – EN 10025-1 or S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 16,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	5,00	6,00	8,00	10,00	12,00	14,00	16,00	20,00	Wood; class \geq C24
$M_{t, nom}$	6 Nm								
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	1,39	1,39	1,39	1,39	1,39	1,39	—	—
	0,55	1,39	1,39	1,39	1,39	1,39	1,39	—	—
	0,63	1,50	1,50	1,50	1,50	1,50	1,50	—	—
	0,75	2,07	2,07	2,07	2,07	2,07	2,07	—	—
	0,88	2,45	2,45	2,45	2,45	2,45	2,45	—	—
	1,00	2,94	2,94	2,94	2,94	2,94	2,94	—	—
	1,13	2,94	2,94	2,94	2,94	2,94	2,94	—	—
	1,25	2,94	2,94	2,94	2,94	2,94	2,94	—	—
	1,50	2,94	2,94	2,94	2,94	2,94	2,94	—	—
	1,75	2,94	2,94	2,94	2,94	2,94	2,94	—	—
2,00	2,94	2,94	2,94	2,94	2,94	2,94	—	—	
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,50	3,23	3,23	3,23	3,23	3,23	3,23	—	—
	0,55	3,23	3,23	3,23	3,23	3,23	3,23	—	—
	0,63	3,64	3,64	3,64	3,64	3,64	3,64	—	—
	0,75	4,12	4,12	4,70	4,70	4,70	4,70	—	—
	0,88	4,12	4,12	5,35	5,35	5,35	5,35	—	—
	1,00	4,12	4,12	6,18	6,18	6,18	6,18	—	—
	1,13	4,12	4,12	6,18	6,18	6,18	6,18	—	—
	1,25	4,12	4,12	6,18	6,18	6,18	6,18	—	—
	1,50	4,12	4,12	6,18	6,18	6,18	6,18	—	—
	1,75	4,12	4,12	6,18	6,18	6,18	6,18	—	—
2,00	4,12	4,12	6,18	6,18	6,18	6,18	—	—	

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

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 48 of European Technical Assessment ETA-18/0789</p>
<p>AR16 W CS 6,3xL, AR16 W CSG 6,3xL i AR16 W CSE 6,3xL and sealing washer $\geq \text{Ø}16$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer or none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\sum t_i \leq 2 \times 0,65 \text{ mm}$</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	2 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,81	0,81	1,04	1,63	1,92	2,13	—	—
	0,55	—	0,81	1,04	1,63	1,92	2,13	—	—
	0,63	—	—	1,04	1,63	1,92	2,13	—	—
	0,75	—	—	—	1,63	1,92	2,13	—	—
	0,88	—	—	—	—	1,92	2,13	—	—
	1,00	—	—	—	—	—	2,13	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
	2,00	—	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,55	0,55	0,76	0,81	1,07	1,58	—	—
	0,55	—	0,55	0,76	0,81	1,07	1,58	—	—
	0,63	—	—	0,76	0,81	1,07	1,58	—	—
	0,75	—	—	—	0,81	1,07	1,58	—	—
	0,88	—	—	—	—	1,07	1,58	—	—
	1,00	—	—	—	—	—	1,58	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
	2,00	—	—	—	—	—	—	—	—

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

MA W CS 4,2xL, MA W CSG 4,2xL and MA W CSE 4,2xL

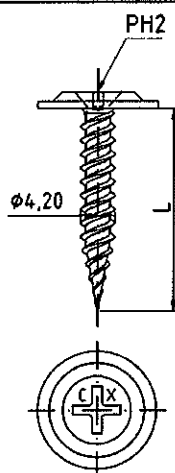
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Materials Fastener: carbon steel – SAE 1022, quenched, tempered and coated Washer: EPDM sealing washer or none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 2,25$ mm		
Timber substructures no performance assessed		

$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{L,nom}$	2 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,70	0,70	0,70	0,70	0,70	0,70	0,70	
	0,55	—	0,70	0,70	0,70	0,70	0,70	0,70	
	0,63	—	—	0,70	0,70	0,70	0,70	0,70	
	0,75	—	—	—	1,63	1,92	1,93	1,93	
	0,88	—	—	—	—	1,92	1,93	1,93	
	1,00	—	—	—	—	—	1,93	1,93	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,40	0,40	0,40	0,40	0,40	0,40	0,40	
	0,55	—	0,40	0,40	0,40	0,40	0,40	0,40	
	0,63	—	—	0,40	0,40	0,40	0,40	0,40	
	0,75	—	—	—	0,81	1,09	1,73	1,73	
	0,88	—	—	—	—	1,09	1,73	1,73	
	1,00	—	—	—	—	—	1,73	1,73	
	1,13	—	—	—	—	—	—	1,73	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—		

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

Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0	Annex 50 of European Technical Assessment ETA-18/0789
MB W CS 4,2xL, MB W CSG 4,2xL and MB W CSE 4,2xL	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer or none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber – EN 14081</p> <hr/> <p>Drilling capacity: $\sum t_i \leq 0,88$ mm</p> <hr/> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{t,Rk} = 3,10$ Nm</p> <p>$f_{ax,k} = 12,885$ N/mm² for $l_{ef} \geq 17$ mm</p>	
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$t_{n,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	2 Nm								
$V_{R,k}$ [kN] for $t_{n,I}$ [mm]	0,50	0,32	0,32	0,32	0,32	0,32	—	—	0,82
	0,55	0,32	0,32	0,32	0,32	0,32	—	—	0,82
	0,63	0,32	0,32	0,32	0,32	0,32	—	—	0,82
	0,75	0,32	0,32	0,32	0,32	0,32	—	—	0,82
	0,88	0,32	0,32	0,32	0,32	0,32	—	—	0,82
	1,00	—	—	—	—	—	—	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
2,00	—	—	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{n,I}$ [mm]	0,50	0,32	0,32	0,32	0,32	0,32	—	—	0,92
	0,55	0,32	0,32	0,32	0,32	0,32	—	—	0,92
	0,63	0,32	0,32	0,32	0,32	0,32	—	—	0,92
	0,75	0,32	0,32	0,32	0,32	0,32	—	—	0,92
	0,88	0,32	0,32	0,32	0,32	0,32	—	—	0,92
	1,00	—	—	—	—	—	—	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
2,00	—	—	—	—	—	—	—	—	—

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

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

MC 0 CS 4,2xL, MC 0 CSG 4,2xL and MC 0 CSE 4,2xL

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<p>Materials</p> <p>Fastener: stainless steel – SAE 304 Washer: EPDM sealing washer or none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber – EN 14081</p> <p>Drilling capacity: -</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 2,38 \text{ Nm}$ $f_{ax,k} = 12,045 \text{ N/mm}^2$ for $l_{ef} \geq 17 \text{ mm}$</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	2 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,32	0,32	0,32	0,32	0,32	—	—	0,71
	0,55	0,32	0,32	0,32	0,32	0,32	—	—	0,71
	0,63	0,32	0,32	0,32	0,32	0,32	—	—	0,71
	0,75	0,32	0,32	0,32	0,32	0,32	—	—	0,71
	0,88	0,32	0,32	0,32	0,32	0,32	—	—	0,71
	1,00	—	—	—	—	—	—	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
2,00	—	—	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,32	0,32	0,32	0,32	0,32	—	—	0,86
	0,55	0,32	0,32	0,32	0,32	0,32	—	—	0,86
	0,63	0,32	0,32	0,32	0,32	0,32	—	—	0,86
	0,75	0,32	0,32	0,32	0,32	0,32	—	—	0,86
	0,88	0,32	0,32	0,32	0,32	0,32	—	—	0,86
	1,00	—	—	—	—	—	—	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
2,00	—	—	—	—	—	—	—	—	

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

MC 0 SS-3 4,2xL

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<p>Materials</p> <p>Fastener: stainless steel – SAE 410 Washer: EPDM sealing washer or none Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber – EN 14081</p> <p>Drilling capacity: $\Sigma ti \leq 0,88$ mm</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 2,38$ Nm $f_{ax,k} = 12,885$ N/mm² for $l_{ef} \geq 17$ mm</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	2 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,32	0,32	0,32	0,32	0,32	—	—	0,71
	0,55	0,32	0,32	0,32	0,32	0,32	—	—	0,71
	0,63	0,32	0,32	0,32	0,32	0,32	—	—	0,71
	0,75	0,32	0,32	0,32	0,32	0,32	—	—	0,71
	0,88	0,32	0,32	0,32	0,32	0,32	—	—	0,71
	1,00	—	—	—	—	—	—	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
2,00	—	—	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,32	0,32	0,32	0,32	0,32	—	—	0,92
	0,55	0,32	0,32	0,32	0,32	0,32	—	—	0,92
	0,63	0,32	0,32	0,32	0,32	0,32	—	—	0,92
	0,75	0,32	0,32	0,32	0,32	0,32	—	—	0,92
	0,88	0,32	0,32	0,32	0,32	0,32	—	—	0,92
	1,00	—	—	—	—	—	—	—	—
	1,13	—	—	—	—	—	—	—	—
	1,25	—	—	—	—	—	—	—	—
	1,50	—	—	—	—	—	—	—	—
	1,75	—	—	—	—	—	—	—	—
2,00	—	—	—	—	—	—	—	—	—

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

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

MC 0 SS-4 4,2xL

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Materials Fastener: carbon steel – SAE 1022, quenched, tempered and coated Washer: - Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346 Drilling capacity: $\Sigma t_i \leq 3,00$ mm		
Timber substructures no performance assessed		

$t_{N,II}$ [mm]	0,75	0,88	1,00	1,13	1,25	1,50	2,00	2,50	Wood; class \geq C24	
$M_{t,nom}$	5 Nm									—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	/	
	0,55	—	—	—	—	—	—	—		
	0,63	—	—	—	—	—	—	—		
	0,75	2,20	2,62	3,23	3,23	3,60	3,68	—		
	0,88	—	2,62	3,23	3,23	3,60	3,68	—		
	1,00	—	—	3,23	3,23	3,60	3,68	—		
	1,13	—	—	—	3,23	3,60	3,68	—		
	1,25	—	—	—	—	3,60	3,68	—		
	1,50	—	—	—	—	—	3,68	—		
	1,75	—	—	—	—	—	—	—		
	2,00	—	—	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—		/
	0,55	—	—	—	—	—	—	—		
	0,63	—	—	—	—	—	—	—		
	0,75	0,72	0,88	1,21	1,21	1,75	2,13	—		
	0,88	—	0,88	1,21	1,21	1,75	2,13	—		
	1,00	—	—	1,21	1,21	1,75	2,13	—		
	1,13	—	—	—	1,21	1,75	2,13	—		
	1,25	—	—	—	—	1,75	2,13	—		
	1,50	—	—	—	—	—	2,13	—		
	1,75	—	—	—	—	—	—	—		
	2,00	—	—	—	—	—	—	—		

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

Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0	Annex 54 of European Technical Assessment ETA-18/0789
AR3+ W CS 5,5xL, AR3+ W CSG 5,5xL and AR3+ W CSE 5,5xL	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p> <p>Drilling capacity: $\Sigma t_i \leq 3,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	0,75	0,88	1,00	1,13	1,25	1,50	2,00	2,50	Wood; class \geq C24		
$M_{t,nom}$	5 Nm										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00	2,50
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75	2,00

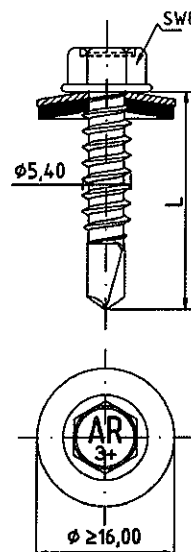
If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 55 of European Technical Assessment ETA-18/0789</p>
<p>AR3+ W CS 5,5xL, AR3+ W CSG 5,5xL and AR3+ W CSE 5,5xL and sealing washer $\geq \varnothing 14$ mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: 1050A – EN 573-3</p> <p>Component II: 1050A – EN 573-3</p> <p>Drilling capacity: $\Sigma t_i \leq 4,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,00	1,13	1,25	1,50	2,00	2,50	3,00	4,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	
	0,55	—	—	—	—	—	—	—	
	0,63	—	—	—	—	—	—	—	
	0,75	—	—	—	—	—	—	—	
	0,88	—	—	—	—	—	—	—	
	1,00	1,71	1,71	1,71	1,71	1,71	—	—	
	1,13	—	—	—	1,71	1,71	—	—	
	1,25	—	—	—	1,71	1,71	—	—	
	1,50	—	—	—	2,19	2,19	—	—	
	1,75	—	—	—	—	2,19	—	—	
2,00	—	—	—	—	2,51	—	—		
$N_{S,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	
	0,55	—	—	—	—	—	—	—	
	0,63	—	—	—	—	—	—	—	
	0,75	—	—	—	—	—	—	—	
	0,88	—	—	—	—	—	—	—	
	1,00	0,83	0,83	0,83	0,83	0,83	—	—	
	1,13	—	—	—	0,83	0,83	—	—	
	1,25	—	—	—	0,83	0,83	—	—	
	1,50	—	—	—	1,04	1,04	—	—	
	1,75	—	—	—	—	1,04	—	—	
2,00	—	—	—	—	1,60	—	—		

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 56 of European Technical Assessment ETA-18/0789</p>
<p>AR3+ W CSE 5,5xL and sealing washer \varnothing14 mm</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: 1050A – EN 573-3</p> <p>Component II: 1050A – EN 573-3</p> <p>Drilling capacity: $\Sigma t_i \leq 4,00$ mm</p>	
<p>Timber substructures</p> <p>no performance assessed</p>	

$t_{N,II}$ [mm]	1,00	1,13	1,25	1,50	2,00	2,50	3,00	4,00	Wood; class \geq C24
$M_{t, nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	—	—	—	—	—	—	—	—	/
0,50	—	—	—	—	—	—	—	—	
0,55	—	—	—	—	—	—	—	—	
0,63	—	—	—	—	—	—	—	—	
0,75	—	—	—	—	—	—	—	—	
0,88	—	—	—	—	—	—	—	—	
1,00	1,71	1,71	1,71	1,71	1,71	—	—	—	
1,13	—	—	—	1,71	1,71	—	—	—	
1,25	—	—	—	1,71	1,71	—	—	—	
1,50	—	—	—	2,19	2,19	—	—	—	
1,75	—	—	—	—	2,19	—	—	—	
2,00	—	—	—	—	2,51	—	—	—	
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	—	—	—	—	—	—	—	—	
0,50	—	—	—	—	—	—	—	—	
0,55	—	—	—	—	—	—	—	—	
0,63	—	—	—	—	—	—	—	—	
0,75	—	—	—	—	—	—	—	—	
0,88	—	—	—	—	—	—	—	—	
1,00	0,90	0,90	0,90	0,90	0,90	—	—	—	
1,13	—	—	—	0,90	0,90	—	—	—	
1,25	—	—	—	0,90	0,90	—	—	—	
1,50	—	—	—	1,66	1,66	—	—	—	
1,75	—	—	—	—	1,66	—	—	—	
2,00	—	—	—	—	1,83	—	—	—	

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

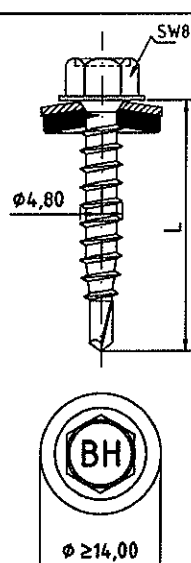
AR3+ W CSE 5,5xL
and sealing washer $\geq \varnothing 16$ mm

Annex 57
of European
Technical Assessment
ETA-18/0789

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: 1050A – EN 573-3</p> <p>Component II: 1050A – EN 573-3</p> <p>Drilling capacity: $\Sigma ti \leq 4,00$ mm</p> <p>Timber substructures</p> <p>no performance assessed</p>	
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$t_{N,II}$ [mm]	1,00	1,13	1,25	1,50	2,00	2,50	3,00	4,00	Wood; class \geq C24
$M_{t,nom}$	5 Nm								
$V_{R,x}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	/
	0,55	—	—	—	—	—	—	—	
	0,63	—	—	—	—	—	—	—	
	0,75	—	—	—	—	—	—	—	
	0,88	—	—	—	—	—	—	—	
	1,00	1,71	1,71	1,71	1,71	1,71	—	—	
	1,13	—	—	—	1,71	1,71	—	—	
	1,25	—	—	—	1,71	1,71	—	—	
	1,50	—	—	—	2,19	2,19	—	—	
	1,75	—	—	—	—	2,19	—	—	
2,00	—	—	—	—	2,51	—	—		
$N_{R,x}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	/
	0,55	—	—	—	—	—	—	—	
	0,63	—	—	—	—	—	—	—	
	0,75	—	—	—	—	—	—	—	
	0,88	—	—	—	—	—	—	—	
	1,00	0,13	0,13	0,13	0,13	0,13	—	—	
	1,13	—	—	—	0,13	0,13	—	—	
	1,25	—	—	—	0,13	0,13	—	—	
	1,50	—	—	—	0,34	0,34	—	—	
	1,75	—	—	—	—	0,34	—	—	
2,00	—	—	—	—	0,62	—	—		

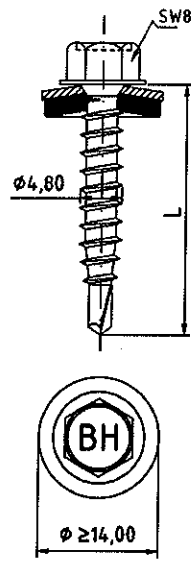
<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 58 of European Technical Assessment ETA-18/0789</p>
<p>AR3+ W CSE 5,5xL</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber – EN 14081</p> <hr/> <p>Drilling capacity: $\Sigma ti \leq 2 \times 1,00 \text{ mm}$</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 4,39 \text{ Nm}$ $f_{ax,k} = 17,396 \text{ N/mm}^2$ for $l_{ef} \geq 20 \text{ mm}$</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,12	1,12	1,12	1,12	1,12	1,12	—	1,43
	0,55	1,12	1,12	1,12	1,12	1,12	1,12	—	1,43
	0,63	1,12	1,12	1,47	1,47	1,47	1,47	—	1,43
	0,75	1,12	1,12	1,47	1,72	1,72	1,72	—	1,43
	0,88	1,12	1,12	1,47	1,72	1,72	1,72	—	1,43
	1,00	1,12	1,12	1,47	1,72	1,72	1,72	—	1,43
	1,13	—	—	—	—	—	—	—	1,43
	1,25	—	—	—	—	—	—	—	1,43
	1,50	—	—	—	—	—	—	—	1,43
	1,75	—	—	—	—	—	—	—	1,43
2,00	—	—	—	—	—	—	—	1,43	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,55	0,55	0,55	0,55	0,55	0,55	—	1,67
	0,55	0,55	0,55	0,55	0,55	0,55	0,55	—	1,67
	0,63	0,55	0,55	0,71	0,71	0,71	0,71	—	1,67
	0,75	0,55	0,55	0,71	0,81	0,81	0,81	—	1,67
	0,88	0,55	0,55	0,71	0,81	1,19	1,19	—	1,67
	1,00	0,55	0,55	0,71	0,81	1,19	1,56	—	1,67
	1,13	—	—	—	—	—	—	—	1,67
	1,25	—	—	—	—	—	—	—	1,67
	1,50	—	—	—	—	—	—	—	1,67
	1,75	—	—	—	—	—	—	—	1,67
2,00	—	—	—	—	—	—	—	1,67	

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

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 59 of European Technical Assessment ETA-18/0789</p>
<p>BH W CS 4,8xL, BH W CSG 4,8xL and BH W CSE 4,8xL and sealing washer $\geq \text{Ø}14 \text{ mm}$</p>	

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346 or structural timber – EN 14081</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 2 \times 1,00 \text{ mm}$</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 4,39 \text{ Nm}$</p> <p>$f_{ax,k} = 17,396 \text{ N/mm}^2$ for $l_{ef} \geq 20 \text{ mm}$</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,12	1,12	1,12	1,12	1,12	—	—	0,75
	0,55	1,12	1,12	1,12	1,12	1,12	—	—	0,75
	0,63	1,12	1,12	1,47	1,47	1,47	—	—	0,75
	0,75	1,12	1,12	1,47	1,72	1,72	—	—	0,75
	0,88	1,12	1,12	1,47	1,72	1,72	—	—	0,75
	1,00	1,12	1,12	1,47	1,72	1,72	—	—	0,75
	1,13	—	—	—	—	—	—	—	0,75
	1,25	—	—	—	—	—	—	—	0,75
	1,50	—	—	—	—	—	—	—	0,75
	1,75	—	—	—	—	—	—	—	0,75
2,00	—	—	—	—	—	—	—	0,75	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,55	0,55	0,55	0,55	0,55	—	—	1,10
	0,55	0,55	0,55	0,55	0,55	0,55	—	—	1,10
	0,63	0,55	0,55	0,71	0,71	0,71	—	—	1,10
	0,75	0,55	0,55	0,71	0,81	0,81	—	—	1,10
	0,88	0,55	0,55	0,71	0,81	1,19	—	—	1,10
	1,00	0,55	0,55	0,71	0,81	1,19	—	—	1,10
	1,13	—	—	—	—	—	—	—	1,10
	1,25	—	—	—	—	—	—	—	1,10
	1,50	—	—	—	—	—	—	—	1,10
	1,75	—	—	—	—	—	—	—	1,10
2,00	—	—	—	—	—	—	—	1,10	

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

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

<p>Fastening screws for metal members and sheetings</p> <p>AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 60</p> <p>of European Technical Assessment ETA-18/0789</p>
<p>BH W CS 4,8xL, BH W CSG 4,8xL and BH W CSE 4,8xL and sealing washer $\geq \varnothing 14 \text{ mm}$</p>	

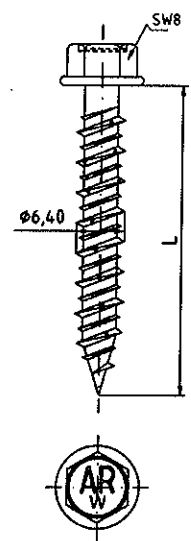
<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: 1050A – EN 573-3</p> <p>Component II: structural timber – EN 14081</p> <p>Drilling capacity: $\Sigma t_i \leq 2 \text{ mm}$</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{fy,Rk} = 4,39 \text{ Nm}$</p> <p>$f_{ax,k} = 17,396 \text{ N/mm}^2$ for $l_{ef} \geq 20 \text{ mm}$</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	Wood; class \geq C24
$M_{t,nom}$	3 Nm								—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	0,62
	0,55	—	—	—	—	—	—	—	0,62
	0,63	—	—	—	—	—	—	—	0,62
	0,75	—	—	—	—	—	—	—	0,62
	0,88	—	—	—	—	—	—	—	0,62
	1,00	—	—	—	—	—	—	—	0,62
	1,13	—	—	—	—	—	—	—	0,62
	1,25	—	—	—	—	—	—	—	0,62
	1,50	—	—	—	—	—	—	—	0,62
	1,75	—	—	—	—	—	—	—	0,62
2,00	—	—	—	—	—	—	—	0,62	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	0,80
	0,55	—	—	—	—	—	—	—	0,80
	0,63	—	—	—	—	—	—	—	0,80
	0,75	—	—	—	—	—	—	—	0,80
	0,88	—	—	—	—	—	—	—	0,80
	1,00	—	—	—	—	—	—	—	0,80
	1,13	—	—	—	—	—	—	—	0,80
	1,25	—	—	—	—	—	—	—	0,80
	1,50	—	—	—	—	—	—	—	0,80
	1,75	—	—	—	—	—	—	—	0,80
2,00	—	—	—	—	—	—	—	0,80	

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

BH W CSE 4,8xL
and sealing washer $\geq \varnothing 14 \text{ mm}$

Annex 61
of European
Technical Assessment
ETA-18/0789

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: -</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: structural timber – EN 14081</p> <p>Drilling capacity: $\sum t_i \leq 1 \text{ mm}$</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{y,Rk} = 9,28 \text{ Nm}$</p> <p>$f_{ax,k} = 14,808 \text{ N/mm}^2$ for $l_{ef} \geq 30 \text{ mm}$</p> <p>$f_{ax,k} = 14,761 \text{ N/mm}^2$ for $l_{ef} \geq 40 \text{ mm}$</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	Wood; class \geq C24		
$M_{t,nom}$	6 Nm						$l_{ef} \geq 30 \text{ mm}$	$l_{ef} \geq 40 \text{ mm}$	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	1,15	1,15	bearing resistance of component I
	0,55	—	—	—	—	—	1,15	1,15	
	0,63	—	—	—	—	—	1,52	1,52	
	0,75	—	—	—	—	—	1,74	1,74	
	0,88	—	—	—	—	—	1,74	1,74	
	1,00	—	—	—	—	—	1,74	1,74	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—		
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	0,72	0,72	pull-through resistance of component I
	0,55	—	—	—	—	—	0,72	0,72	
	0,63	—	—	—	—	—	1,05	1,05	
	0,75	—	—	—	—	—	1,15	1,15	
	0,88	—	—	—	—	—	1,16	1,16	
	1,00	—	—	—	—	—	1,32	1,32	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—		

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

ARW 0 CS 6,4xL, ARW 0 CSG 6,4xL and ARW 0 CSE 6,4xL

Annex 62
of European
Technical Assessment
ETA-18/0789

<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of aluminum</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: structural timber – EN 14081</p> <hr/> <p>Drilling capacity: $\Sigma t_i \leq 1 \text{ mm}$</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{ly,Rk} = 9,28 \text{ Nm}$</p> <p>$f_{ax,k} = 14,808 \text{ N/mm}^2$ for $l_{ef} \geq 30 \text{ mm}$</p> <p>$f_{ax,k} = 14,761 \text{ N/mm}^2$ for $l_{ef} \geq 40 \text{ mm}$</p>	
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$t_{N,II}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	Wood; class \geq C24			
	$M_{t,nom}$						$l_{ef} \geq 30 \text{ mm}$	$l_{ef} \geq 40 \text{ mm}$		
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	6 Nm									bearing resistance of component I
	0,50	—	—	—	—	—	1,15	1,15		
	0,55	—	—	—	—	—	1,15	1,15		
	0,63	—	—	—	—	—	1,52	1,52		
	0,75	—	—	—	—	—	1,74	1,74		
	0,88	—	—	—	—	—	1,74	1,74		
	1,00	—	—	—	—	—	1,74	1,74		
	1,13	—	—	—	—	—	—	—		
	1,25	—	—	—	—	—	—	—		
	1,50	—	—	—	—	—	—	—		
1,75	—	—	—	—	—	—	—			
2,00	—	—	—	—	—	—	—			
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	6 Nm									* pull-through resistance of component I ** pull-out of the fastener from the component II
	0,50	—	—	—	—	—	2,84*	3,08*		
	0,55	—	—	—	—	—	2,84*	3,08*		
	0,63	—	—	—	—	—	2,84*	3,52*		
	0,75	—	—	—	—	—	2,84*	3,87**		
	0,88	—	—	—	—	—	2,84*	3,87**		
	1,00	—	—	—	—	—	2,84*	3,87**		
	1,13	—	—	—	—	—	—	—		
	1,25	—	—	—	—	—	—	—		
	1,50	—	—	—	—	—	—	—		
1,75	—	—	—	—	—	—	—			
2,00	—	—	—	—	—	—	—			

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

ARW 0 CS 6,4xL, ARW 0 CSG 6,4xL and ARW 0 CSE 6,4xL
 and sealing washer $\geq \varnothing 16 \text{ mm}$

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<p>Materials</p> <p>Fastener: carbon steel – SAE 1022, quenched, tempered and coated</p> <p>Washer: EPDM sealing washer with metal top made of coated carbon steel or stainless steel</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: structural timber – EN 14081</p> <p>Drilling capacity: $\Sigma t_i \leq 1$ mm</p> <p>Timber substructures</p> <p>For timber substructures performance assessed with:</p> <p>$M_{ly,Rk} = 9,28$ Nm</p> <p>$f_{ax,k} = 14,808$ N/mm² for $l_{ef} \geq 30$ mm</p> <p>$f_{ax,k} = 14,761$ N/mm² for $l_{ef} \geq 40$ mm</p>	
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$t_{v,i}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	Wood; class \geq C24		
$M_{t,nom}$	6 Nm						$l_{ef} \geq 30$ mm	$l_{ef} \geq 40$ mm	
$V_{R,k}$ [kN] for $t_{v,i}$ [mm]	0,50	—	—	—	—	—	1,15	1,15	bearing resistance of component I
	0,55	—	—	—	—	—	1,15	1,15	
	0,63	—	—	—	—	—	1,52	1,52	
	0,75	—	—	—	—	—	1,74	1,74	
	0,88	—	—	—	—	—	1,74	1,74	
	1,00	—	—	—	—	—	1,74	1,74	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{v,i}$ [mm]	0,50	—	—	—	—	—	2,84*	3,23*	pull-through resistance of component I ** pull-out of the fastener from the component II
	0,55	—	—	—	—	—	2,84*	3,23*	
	0,63	—	—	—	—	—	2,84*	3,64*	
	0,75	—	—	—	—	—	2,84*	3,87**	
	0,88	—	—	—	—	—	2,84*	3,87**	
	1,00	—	—	—	—	—	2,84*	3,87**	
	1,13	—	—	—	—	—	—	—	
	1,25	—	—	—	—	—	—	—	
	1,50	—	—	—	—	—	—	—	
	1,75	—	—	—	—	—	—	—	
2,00	—	—	—	—	—	—	—	—	

Fastening screws for metal members and sheetings
AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W,
AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W,
MA W, MB W, MC 0, BH W, ARW 0

ARW 0 CS 6,4xL, ARW 0 CSG 6,4xL and ARW 0 CSE 6,4xL
 and sealing washer $\geq \varnothing 16$ mm

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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 $\gamma_M = 1,33$. 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 $\gamma_M = 1,33$. If failure of the metal component with the thickness t_f 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 $\gamma_M = 1,33$. 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 $\gamma_M = 1,33$. 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 $\gamma_M = 1,33$. 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.

<p>Fastening screws for metal members and sheetings AR 0, AR0 W, AR0 PZ W, AR2 W, AR3 W, AR3+ W, AR5 W, AR5 PZ W, AR6 W, AR8 W, AR12 W, AR12 PZ W, AR16 W, MA W, MB W, MC 0, BH W, ARW 0</p>	<p>Annex 65 of European Technical Assessment ETA-18/0789</p>
<p>Determination of design values</p>	