

SELF-DRILLING SCREW FIXINGS

Denomination: **SELF-DRILLING SCREW FIXINGS** Codes: ABE, ARE, ABR, ABRBLE, NBR, ABRC, ABRC2, ABRA2, ABA, FS, ABP, NBP, ABPC, ABPCA2, TAEZ, TAEN, BCPZ, BZPZBL, BCPN, BCPB, BCPA2, BIE, AUTO, BAUTO, RS.

Reference: **FT BRO-es**

Date: **19/10/15**

Revision: 9

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1. ABE

Self-drilling screw - hexagonal head with embossed washer



Properties



Steel



Zinc-plated coating



Available in different colours

Base material



Plate assembly



Plate profile

Properties



Hexagonal with embossed washer



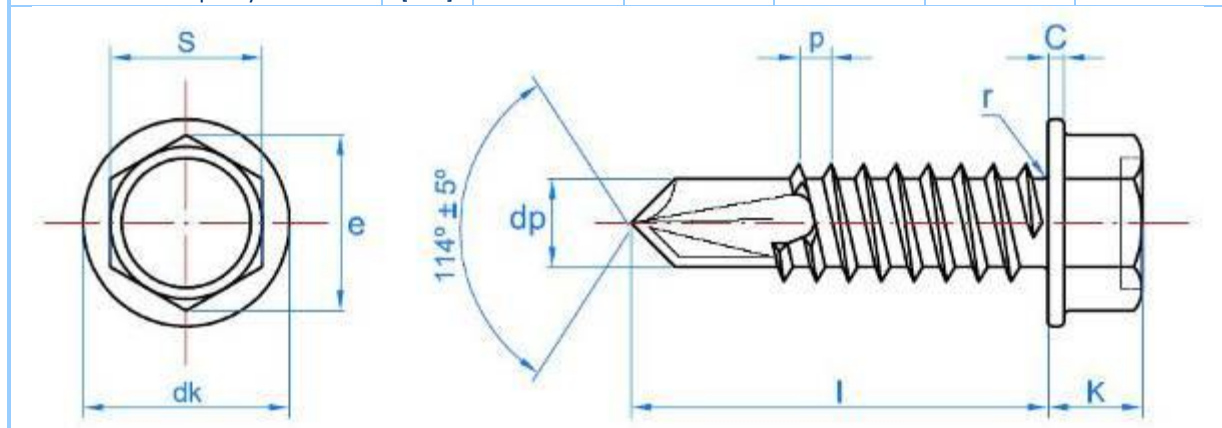
Hexagonal with embossed washer



Screw point

1.1. Details

Code		ST 3.5	ST 4.2	ST 4.8	ST 5.5	ST 6.3
d_k : washer head diameter	[mm]	8	8.5	10	10.5	12.6
k: head thickness	[mm]	3.3	4.1	4.3	4.3	6.3
c: washer thickness	[mm]	1.2	1.5	1.6	1.9	2
s: spanner	[mm]	6	7	8	8	10
D: exterior thread diameter	[mm]	3.53	4.22	4.80	5.46	6.25
d: interior thread diameter	[mm]	2.64	3.10	3.58	4.17	4.88
p: thread	[mm]	1.3	1.4	1.6	1.8	1.8
l: lengths	[mm]	9.5 - 32	13 - 38	13 - 38	19- 75	19 - 140
l_G : maximum thread length	[mm]	90	90	90	90	90
Installation bit code (hexagonal magnetic bit)		BOCA006	BOCA007	BOCA008	BOCA008	BOCA010
Drill capacity	[mm]	0.70 - 2.25	1.75 - 3.00	1.75 - 4.40	1.75 - 5.25	2.50 - 6.00



- Zinc-plated finish.
- For general plate-plate joints.
- Versions with assembled EPMD washer for sealed joints in façades and roofing (consult ARVUL Technical Data Sheet).



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MAXIMUM THICKNESS TO BE FIXED						
Length	ST 3,5	ST 3,9	ST 4,2	ST 4,8	ST 5,5	ST 6,3
9,5	2,85					
11	4,2					
13	6,2	5,8	4,3	3,7		
16	9,2	8,8	7,3	5,5		
19	12,1	11,7	10,3	8,7	8,7	7
22	15,1	14,7	13,3	11,7	11,7	10
25	18,1	17,7	16,3	14,7	14,7	13
32	25,1	24,5	23	21,5	21,5	20
38		30,5	29	27,5	27,5	26
45			36	34,5	34,5	33
50			41	39,5	39,5	38
60				49,5	49,5	48
63				52,5	52,5	51
73				62,5	62,5	61
75				64,5	64,5	63
80				69,5		68
90				79,5		78
100				89,5		88
110						98
120						108
130						118
140						128

SCREW RESISTANCE CHARACTERISTICS*

SIZE	TENSION [kN]	SHEAR [kN]
ST 2.9	2.62	1.31
ST 3.5	3.81	1.91
ST 3.9	4.64	2.32
ST 4.2	5.26	2.63
ST 4.8	7.11	3.56
ST 5.5	9.63	4.82
ST 6.3	13.36	6.68

1 kN ≈ 100 Kg

For tension loads, the inherent resistance of plates to be fixed must be taken into account, which is usually less than the resistance of the screw itself, as the screw will probably tear the plates.

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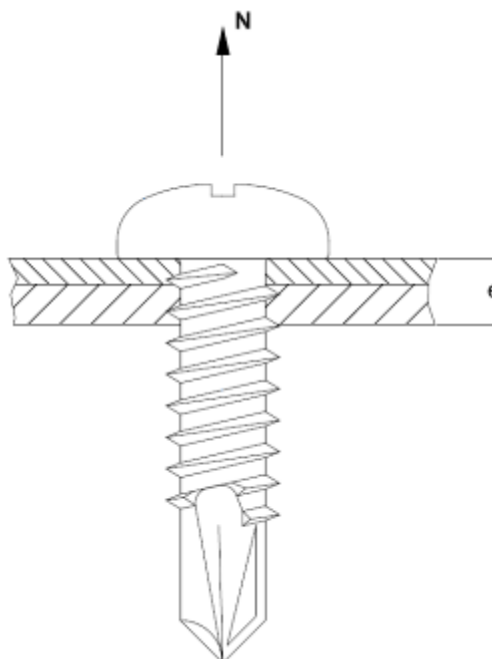
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RECOMMENDED TENSION LOAD IN STEEL PLATE

SIZE	RECOMMENDED LOAD					
	e[mm]	N[kN]	e[mm]	N[kN]	e[mm]	N[kN]
ST 3.5	0.8	0.55	1.5	0.89	2.0	1.13
ST 3.9	0.8	0.54	1.5	0.97	2.0	1.50
ST 4.2	2.0	1.63	2.5	1.51	3.0	2.62
ST 4.8	2.0	1.87	3.0	2.77	4.0	3.71
ST 5.5	2.0	1.77	3.5	2.86	5.0	3.43
ST 6.3	2.5	1.44	4.0	3.19	5.0	4.83

RECOMMENDED TENSION LOAD IN ALUMINIUM PLATE

SIZE	RECOMMENDED LOAD					
	e[mm]	N[kN]	e[mm]	N[kN]	e[mm]	N[kN]
ST 4.8	2.0	0.95	3.0	1.52	4.0	2.10



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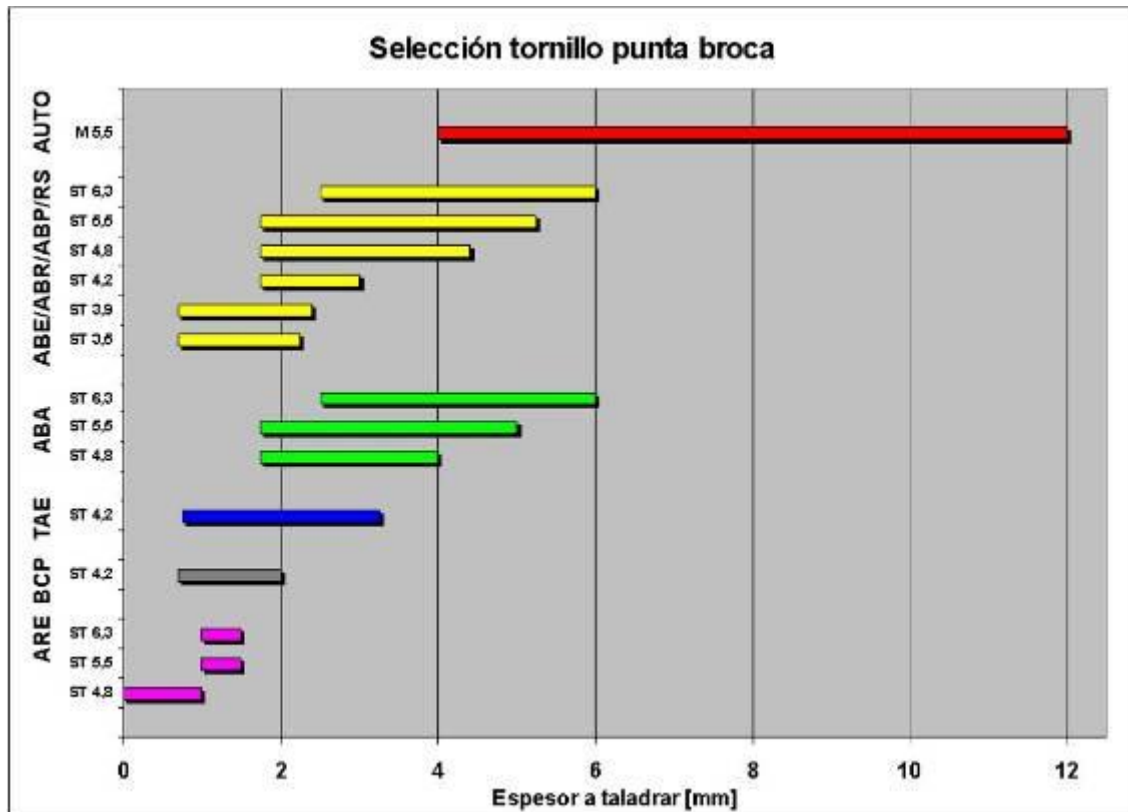
INSTALLATION PARAMETERS

Parameter			ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5 M 5.5	ST 6.3
Maximum installation strength		[N]	150	200	250	250	350	350
Drill Speed	Steel	[rpm]	1800 - 2500				1000 - 1800	
	Stainless Steel	[rpm]	1000 - 1500				600 - 1000	
Maximum time		[sg]	4	4.5	5	7	11	13
Maximum torque		[Nm]	2.8	3.8	4.7	6.9	10.4	16.9

10 N ≈ 1 Kg

10 Nm ≈ 1Kg m

With high drilling times or excessive drilling speed there is a risk of burning the drill bit and therefore not drilling the material.



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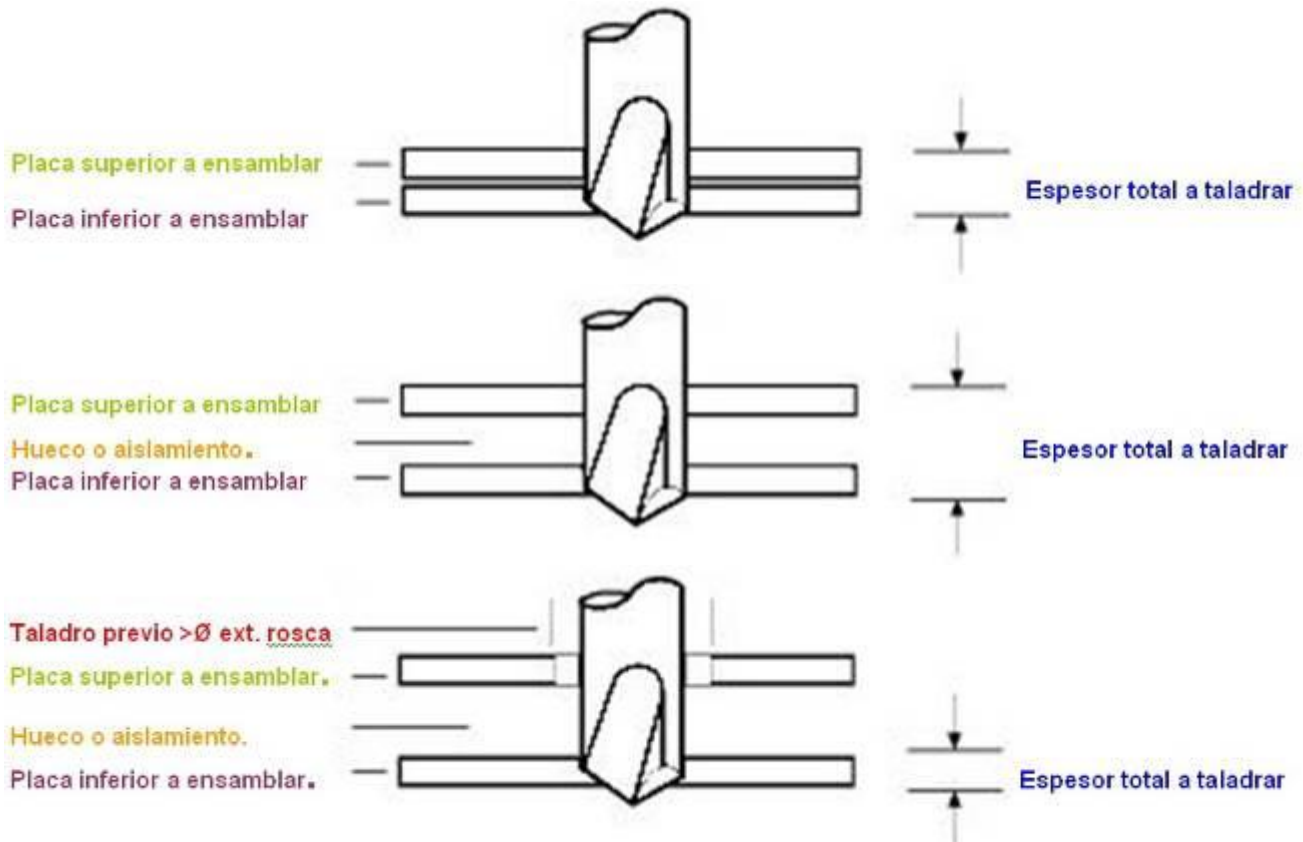
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MATERIALS

Characteristic	ABE, ARE, AUTO, ABR, ABRBL, NBR, ABRC, ABA, FS, ABP, NBP, ABPC, TAEZ, TAEN, BCPZ, BCPN, BCPB, RS	ABRA2, ABRC A2, ABPCA2, BCPA2	BIE, BAUTO (silver ruspert coating)
Material	Special steel for SAE J403 1022 thermal treatment	A2 Stainless Steel	A2 Stainless Steel head and shaft. Special steel point for SAE J403 1022 thermal treatment
Surface hardness	> 500 HV	---	Head and shaft --- Point > 500 HV
Core hardness	240 - 450 HV	---	Head and shaft --- Point 240 - 450 HV
Depth hardness	ST 2.5 – 3.5: 0.05 – 0.18 mm. ST 3.9 – 5.5: 0.10 – 0.23 mm. ST 6.3: 0.15 – 0.28 mm.	---	Head and shaft --- Point: ST 4.8 – 5.5: 0.10 – 0.23 mm. ST 6.3: 0.15 – 0.28 mm.



POINT SELECTION

The choice of screw point must be such that the total thickness of materials to be joined (including any intermediate spaces) is lower than the edge of the drill point; otherwise screw breakage may occur during installation.





AL BOX

CODE	DIMENSIONS	EAN		
ABE3509	3,5 x 9,5	8423533100009	1000	24000
ABE3513	3,5 x 13	8423533100108	1000	12000
ABE3516	3,5 x 16	8423533100207	1000	12000
ABE3519	3,5 x 19	8423533100306	1000	12000
ABE4213	4,2 x 13	8423533100603	1000	12000
ABE4216	4,2 x 16	8423533100702	1000	8000
ABE4219	4,2 x 19	8423533100801	1000	8000
ABE4225	4,2 x 25	8423533100467	500	6000
ABE4232	4,2 x 32	8423533100474	500	6000
ABE4238	4,2 x 38	8423533100542	500	6000
ABE4813	4,8 x 13	8423533101204	1000	8000
ABE4816	4,8 x 16	8423533101303	1000	6000
ABE4819	4,8 x 19	8423533100566	500	6000
ABE4825	4,8 x 25	8423533190253	500	6000
ABE4832	4,8 x 32	8423533190352	500	3000
ABE4838	4,8 x 38	8423533190451	500	3000
ABE5519	5,5 x 19	8423533100573	500	6000
ABE5522	5,5 x 22	8423533100627	500	4000
ABE5525	5,5 x 25	8423533100641	500	6000
ABE5532	5,5 x 32	8423533100665	500	3000
ABE5538	5,5 x 38	8423533100726	500	3000
ABE5550	5,5 x 50	8423533190550	500	2000
ABE5563	5,5 x 63	8423533100740	250	1000
ABE5575	5,5 x 75	8423533100764	250	1500
ABE6319	6,3 x 19	8423533100849	500	3000
ABE6325	6,3 x 25	8423533100863	500	3000
ABE6332	6,3 x 32	8423533100948	500	2000
ABE6338	6,3 x 38	8423533100962	500	2000
ABE6350	6,3 x 50	8423533103024	250	1500
ABE6363	6,3 x 63	8423533101068	250	1500
ABE6375	6,3 x 75	8423533101143	250	1000
ABE6380	6,3 x 80	8423533103307	250	1000
ABE6390	6,3 x 90	8423533103406	250	750
ABE6310	6,3 x 100	8423533103512	100	600
ABE6311	6,3 x 110	8423533103611	100	600
ABE6312	6,3 x 120	8423533103710	100	600