

## SELF-DRILLING SCREW FIXINGS

Denomination: **SELF-DRILLING SCREW FIXINGS**

Codes: ABE, ABEI, ARE, ABR, ABRBLE, NBR, ABRC, ABRC2, ABRA2, ABA, FS, ABP, NBP, ABPC, ABPC2, TAEZ, TAEN, BCPZ, BZPZBL, BCPN, BCPB, BCPA2, BIE, AUTO, BAUTO, RS.

Reference: **FT BRO-en**

Date: **17/01/20**

Revision: **0**

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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



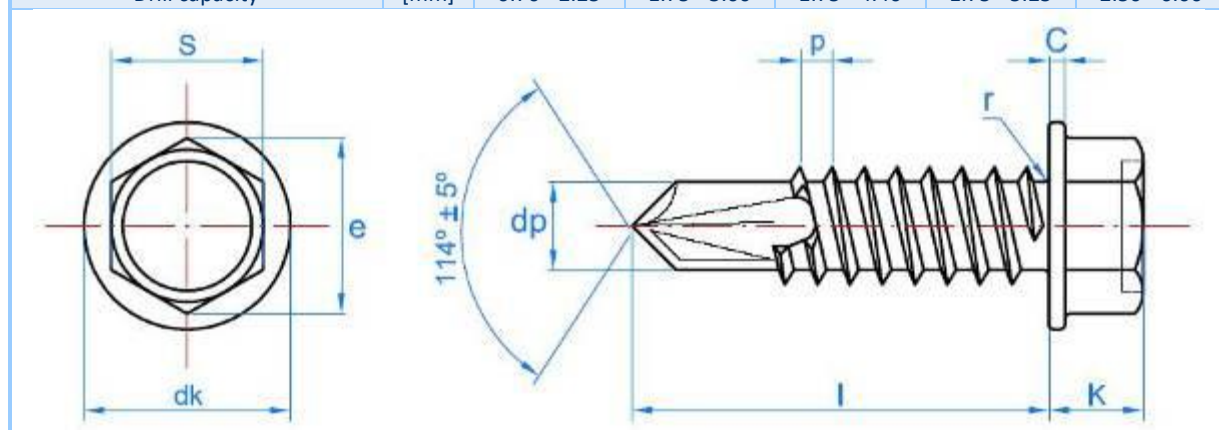
Hexagonal with embossed washer



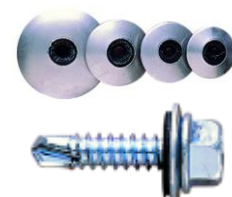
Screw point

#### 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 - 240    |
| 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).



# TECHNICAL DATA SHEET

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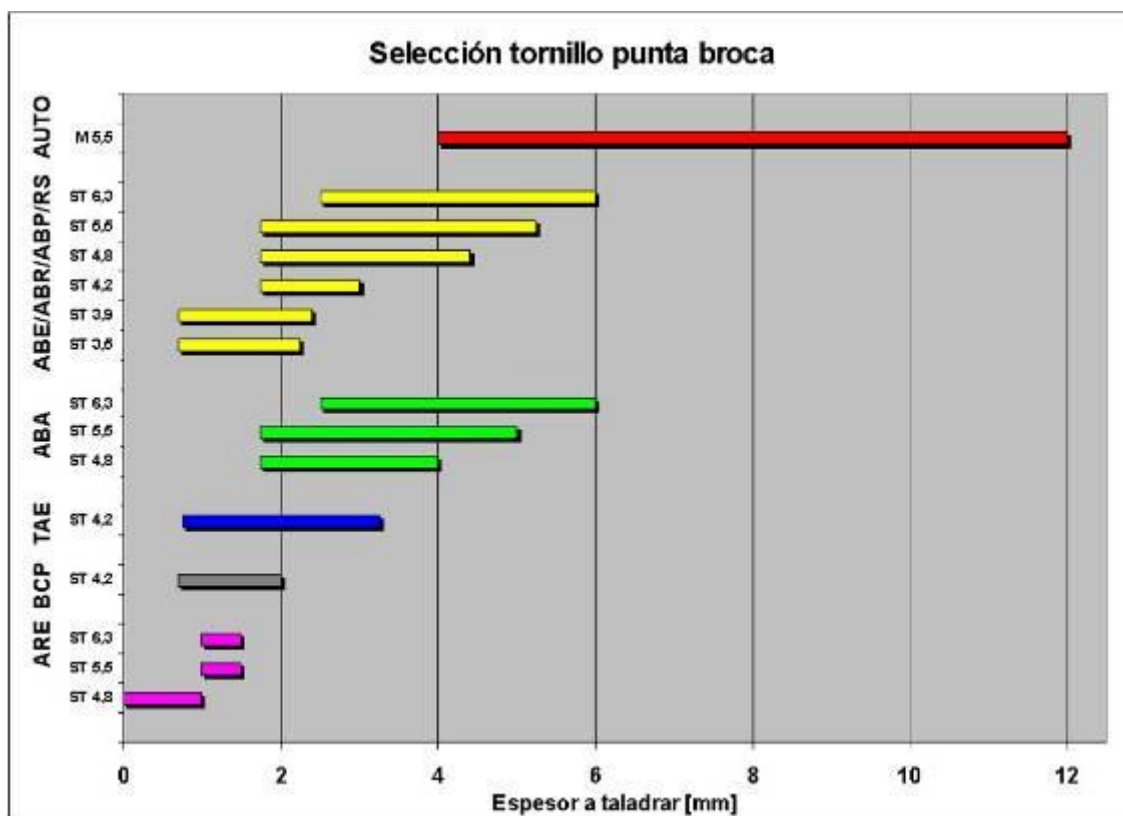
### INSTALLATION PARAMETERS

| Parameter                     |                 |       | ST 3.5      | ST 3.9 | ST 4.2 | ST 4.8 | ST 5.5<br>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  $\approx$  1 Kg

10 Nm  $\approx$  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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| 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<br>[kN] | SHEAR<br>[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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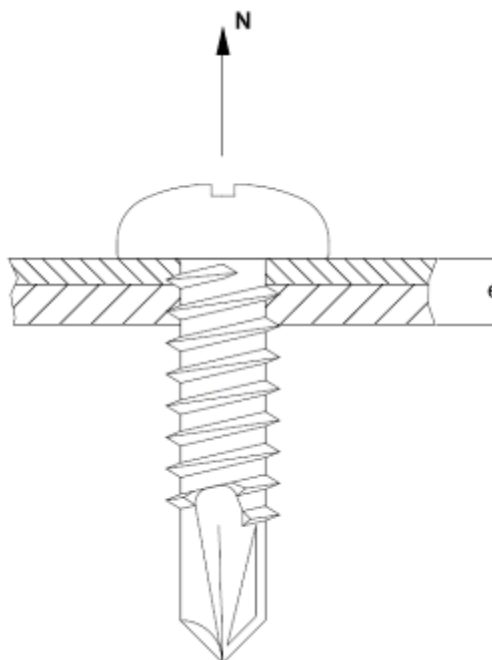
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### RECOMMENDED TENSION LOAD IN STEEL PLATE

| 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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### ABE

**Self-drilling screw - hexagonal head with embossed washer**

| CODE    | DIMENSIONS |  |  | EAN           |
|---------|------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------|
| ABE3516 | 3,5 x 16   | 1000 pcs.                                                                         | 12000 pcs.                                                                        | 8423533100207 |
| ABE3519 | 3,5 x 19   | 1000 pcs.                                                                         | 12000 pcs.                                                                        | 8423533100306 |
| ABE4213 | 4,2 x 13   | 1000 pcs.                                                                         | 12000 pcs.                                                                        | 8423533100603 |
| ABE4216 | 4,2 x 16   | 1000 pcs.                                                                         | 8000 pcs.                                                                         | 8423533100702 |
| ABE4219 | 4,2 x 19   | 1000 pcs.                                                                         | 8000 pcs.                                                                         | 8423533100801 |
| ABE4225 | 4,2 x 25   | 500 pcs.                                                                          | 6000 pcs.                                                                         | 8423533100467 |
| ABE4232 | 4,2 x 32   | 500 pcs.                                                                          | 6000 pcs.                                                                         | 8423533100474 |
| ABE4238 | 4,2 x 38   | 500 pcs.                                                                          | 6000 pcs.                                                                         | 8423533100542 |
| ABE4813 | 4,8 x 13   | 1000 pcs.                                                                         | 8000 pcs.                                                                         | 8423533101204 |
| ABE4816 | 4,8 x 16   | 1000 pcs.                                                                         | 6000 pcs.                                                                         | 8423533101303 |
| ABE4819 | 4,8 x 19   | 500 pcs.                                                                          | 6000 pcs.                                                                         | 8423533100566 |
| ABE4825 | 4,8 x 25   | 500 pcs.                                                                          | 6000 pcs.                                                                         | 8423533190253 |
| ABE4832 | 4,8 x 32   | 500 pcs.                                                                          | 3000 pcs.                                                                         | 8423533190352 |
| ABE4838 | 4,8 x 38   | 500 pcs.                                                                          | 3000 pcs.                                                                         | 8423533190451 |
| ABE5519 | 5,5 x 19   | 500 pcs.                                                                          | 6000 pcs.                                                                         | 8423533100573 |
| ABE5522 | 5,5 x 22   | 500 pcs.                                                                          | 4000 pcs.                                                                         | 8423533100627 |
| ABE5525 | 5,5 x 25   | 500 pcs.                                                                          | 6000 pcs.                                                                         | 8423533100641 |
| ABE5532 | 5,5 x 32   | 500 pcs.                                                                          | 3000 pcs.                                                                         | 8423533100665 |
| ABE5538 | 5,5 x 38   | 500 pcs.                                                                          | 3000 pcs.                                                                         | 8423533100726 |
| ABE5550 | 5,5 x 50   | 500 pcs.                                                                          | 2000 pcs.                                                                         | 8423533190550 |
| ABE5563 | 5,5 x 63   | 250 pcs.                                                                          | 1000 pcs.                                                                         | 8423533100740 |
| ABE5575 | 5,5 x 75   | 250 pcs.                                                                          | 1500 pcs.                                                                         | 8423533100764 |
| ABE6319 | 6,3 x 19   | 500 pcs.                                                                          | 3000 pcs.                                                                         | 8423533100849 |
| ABE6325 | 6,3 x 25   | 500 pcs.                                                                          | 3000 pcs.                                                                         | 8423533100863 |
| ABE6332 | 6,3 x 32   | 500 pcs.                                                                          | 2000 pcs.                                                                         | 8423533100948 |
| ABE6338 | 6,3 x 38   | 500 pcs.                                                                          | 2000 pcs.                                                                         | 8423533100962 |
| ABE6350 | 6,3 x 50   | 250 pcs.                                                                          | 1500 pcs.                                                                         | 8423533103024 |
| ABE6363 | 6,3 x 63   | 250 pcs.                                                                          | 1500 pcs.                                                                         | 8423533101068 |
| ABE6375 | 6,3 x 75   | 250 pcs.                                                                          | 1000 pcs.                                                                         | 8423533101143 |
| ABE6380 | 6,3 x 80   | 250 pcs.                                                                          | 1000 pcs.                                                                         | 8423533103307 |
| ABE6390 | 6,3 x 90   | 250 pcs.                                                                          | 750 pcs.                                                                          | 8423533103406 |
| ABE6310 | 6,3 x 100  | 100 pcs.                                                                          | 600 pcs.                                                                          | 8423533103512 |
| ABE6311 | 6,3 x 110  | 100 pcs.                                                                          | 600 pcs.                                                                          | 8423533103611 |
| ABE6312 | 6,3 x 120  | 100 pcs.                                                                          | 600 pcs.                                                                          | 8423533103710 |
| ABE6313 | 6,3 x 130  | 100 pcs.                                                                          | 600 pcs.                                                                          | 8423533103819 |
| ABE6314 | 6,3 x 140  | 100 pcs.                                                                          | 600 pcs.                                                                          | 8423533103918 |
| ABE6315 | 6,3 x 150  | 100 pcs.                                                                          | 600 pcs.                                                                          | 8423533822161 |
| ABE6316 | 6,3 x 160  | 100 pcs.                                                                          | 400 pcs.                                                                          | 8423533775214 |