

# SELF-DRILLING SCREW FIXINGS

## 5. ABR, NBR, ABR\_BLE, ABRA2

Self-drilling screw - Dome head - Ph socket

**Coatings**

Zinc-plated coating

Black zinc-plated

White zinc-plated

Available in different colours

**Properties**

Steel

Available in stainless

Plate assembly

Plate profile

**Properties**

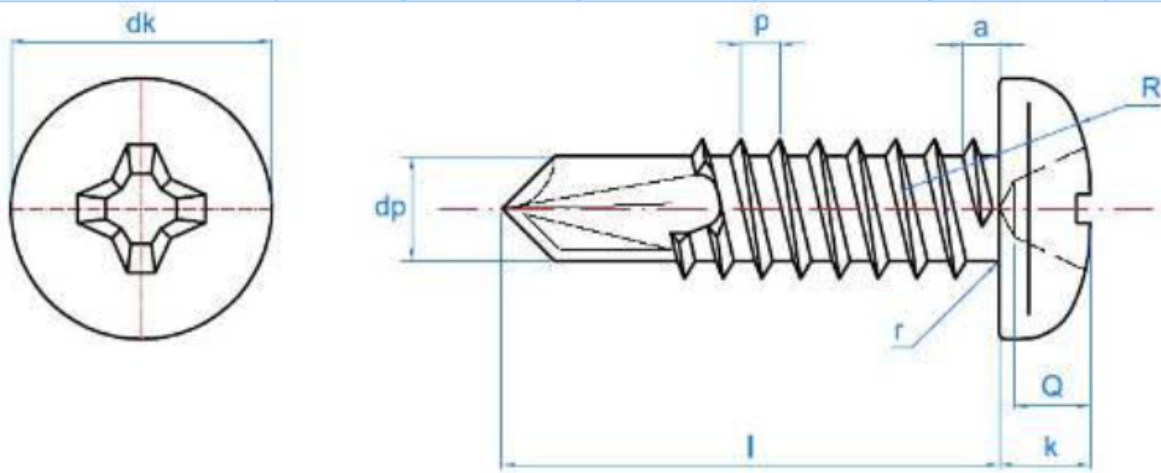
Ph

Dome head

Screw point

### 4.1. Details

Code		ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5
d <sub>k</sub> : head diameter	[mm]	6.9	7.5	8.2	9.5	10.8
k: head thickness	[mm]	2.60	2.80	3.05	3.55	3.95
Ph bit		nº 2	nº 2	nº 2	nº 2	nº 3
R: head radius	[mm]	5.4	5.8	6.2	7.2	8.2
D: exterior thread diameter	[mm]	3.53	3.91	4.22	4.80	5.46
d: interior thread diameter	[mm]	2.64	2.92	3.10	3.58	4.17
p: thread	[mm]	1.3	1.3	1.4	1.6	1.8
l: lengths	[mm]	9.5 - 32	13 - 32	13 - 50	13 - 120	19- 73
Installation bit code (Ph bit)		PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC03 PUPHL03
Drill capacity	[mm]	0.70 - 2.25	0.70 - 2.40	1.75 - 3.00	1.75 - 4.40	1.75 - 5.25



- Zinc-plated (code ABR), white zinc-plated (code ABR\_BLE) and black zinc-plated (code NBR) finishes.
- A2 stainless steel version (code ABRA2) for use exclusively with aluminium (does not produce corrosion by galvanic coupling). Do not use screw in stainless steel to drill steel, as point will burn out due to lack of hardness.

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Properties

Base material



Steel

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Plate assembly

Plate profile

#### 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.

#### 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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Properties		Base material	
Steel	Available in stainless	Plate assembly	Plate profile

### 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.

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

**SELF-DRILLING SCREW FIXINGS**

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Properties		Base material	
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**ABR**



CODE	SIZE	€/100		MAX. FIXTURE THICKNESS	DRILL CAPACITY		
ABR3509	3,5 x 9,5	1,137	PH2	2,8	0,70-2,25	1.000	24.000
ABR3511	3,5 x 11	1,323	PH2	4,2	0,70-2,25	1.000	24.000
ABR3513	3,5 x 13	1,380	PH2	6,2	0,70-2,25	1.000	24.000
ABR3516	3,5 x 16	1,473	PH2	9,2	0,70-2,25	1.000	16.000
ABR3519	3,5 x 19	1,577	PH2	12,1	0,70-2,25	1.000	12.000
ABR3522	3,5 x 22	1,764	PH2	15,1	0,70-2,25	1.000	12.000
ABR3525	3,5 x 25	1,980	PH2	18,1	0,70-2,25	500	12.000
ABR3532	3,5 x 32	2,480	PH2	25,1	0,70-2,25	500	6.000
ABR3913	3,9 x 13	1,653	PH2	5,8	0,70-2,40	1.000	16.000
ABR3916	3,9 x 16	1,777	PH2	8,8	0,70-2,40	1.000	12.000
ABR3919	3,9 x 19	1,977	PH2	11,7	0,70-2,40	1.000	12.000
ABR3925	3,9 x 25	2,430	PH2	17,7	0,70-2,40	500	8.000
ABR3932	3,9 x 32	2,927	PH2	24,5	0,70-2,40	500	6.000
ABR4213	4,2 x 13	1,756	PH2	4,3	1,75-3,00	1.000	12.000
ABR4216	4,2 x 16	1,923	PH2	7,3	1,75-3,00	1.000	12.000
ABR4219	4,2 x 19	2,180	PH2	10,3	1,75-3,00	1.000	12.000
ABR4222	4,2 x 22	2,480	PH2	13,3	1,75-3,00	500	8.000
ABR4225	4,2 x 25	2,573	PH2	17,7	1,75-3,00	500	6.000
ABR4232	4,2 x 32	3,017	PH2	24,5	1,75-3,00	500	6.000
ABR4238	4,2 x 38	3,543	PH2	30,5	1,75-3,00	500	6.000
ABR4250	4,2 x 50	4,520	PH2	41	1,75-3,00	500	3.000
ABR4813	4,8 x 13	2,538	PH2	3,7	1,75-4,40	1.000	8.000

CODE	SIZE	€/100		MAX. FIXTURE THICKNESS	DRILL CAPACITY		
ABR4816	4,8 x 16	2,713	PH2	5,5	1,75-4,40	1.000	8.000
ABR4819	4,8 x 19	2,993	PH2	10,3	1,75-4,40	1.000	8.000
ABR4822	4,8 x 22	3,477	PH2	11,7	1,75-4,40	500	6.000
ABR4825	4,8 x 25	3,543	PH2	14,7	1,75-4,40	500	6.000
ABR4832	4,8 x 32	4,127	PH2	21,5	1,75-4,40	500	6.000
ABR4838	4,8 x 38	4,680	PH2	27,5	1,75-4,40	500	3.000
ABR4845	4,8 x 45	5,443	PH2	34,5	1,75-4,40	500	3.000
ABR4850	4,8 x 50	6,230	PH2	39,5	1,75-4,40	500	3.000
ABR4860	4,8 x 60	8,323	PH2	49,5	1,75-4,40	500	2.000
ABR4880	4,8 x 80	10,870	PH2	69,5	1,75-4,40	250	1.500
ABR4890	4,8 x 90	17,123	PH2	79,5	1,75-4,40	100	1.200
ABR4810	4,8 x 100	19,320	PH2	89,5	1,75-4,40	100	1.200
ABR4811	4,8 x 110	19,983	PH2	-	1,75-4,40	100	1.200
ABR4812	4,8 x 120	20,587	PH2	-	1,75-4,40	100	1.200
ABR5519	5,5 x 19	4,207	PH3	8,7	1,75-5,25	500	6.000
ABR5522	5,5 x 22	4,537	PH3	11,7	1,75-5,25	500	6.000
ABR5525	5,5 x 25	4,630	PH3	14,7	1,75-5,25	500	4.000
ABR5532	5,5 x 32	5,617	PH3	21,5	1,75-5,25	500	3.000
ABR5538	5,5 x 38	6,313	PH3	27,5	1,75-5,25	500	3.000
ABR5545	5,5 x 45	7,087	PH3	34,5	1,75-5,25	500	3.000
ABR5560	5,5 x 60	9,907	PH3	49,5	1,75-5,25	250	1.500
ABR5573	5,5 x 73	11,947	PH3	62,5	1,75-5,25	250	1.500

**ABRA2**



CODE	SIZE	€/100		MAX. FIXTURE THICKNESS	DRILL CAPACITY		
ABRA23509	3,5 x 9,5	7,907	PH2	2,85	0,70-2,25	1.000	24.000
ABRA23513	3,5 x 13	9,540	PH2	6,2	0,70-2,25	500	12.000
ABRA23519	3,5 x 19	11,690	PH2	12,1	0,70-2,25	500	12.000
ABRA24213	4,2 x 13	11,173	PH2	4,3	1,75-3,00	500	12.000
ABRA24216	4,2 x 16	12,520	PH2	7,3	1,75-3,00	500	12.000
ABRA24219	4,2 x 19	13,323	PH2	10,3	1,75-3,00	500	12.000
ABRA24225	4,2 x 25	13,993	PH2	16,3	1,75-3,00	250	6.000
ABRA24816	4,8 x 16	17,530	PH2	5,5	1,75-4,40	250	6.000
ABRA24819	4,8 x 19	17,173	PH2	8,7	1,75-4,40	250	6.000
ABRA24825	4,8 x 25	19,080	PH2	14,7	1,75-4,40	250	6.000
ABRA24832	4,8 x 32	22,333	PH2	21,5	1,75-4,40	250	4.000
ABRA24838	4,8 x 38	24,450	PH2	27,5	1,75-4,40	250	3.000
ABRA24850	4,8 x 50	28,303	PH2	39,5	1,75-4,40	250	3.000

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Steel	Available in stainless	Plate assembly	Plate profile

### NBR



CODE	SIZE	€/100		MAX. FIXTURE THICKNESS	DRILL CAPACITY		
NBR3509	3,5 x 9,5	1,877	PH2	2,85	0,70-2,25	1.000	24.000
NBR3513	3,5 x 13	2,333	PH2	6,2	0,70-2,25	1.000	24.000
NBR3516	3,5 x 16	2,393	PH2	9,2	0,70-2,25	1.000	16.000
NBR3519	3,5 x 19	2,643	PH2	12,1	0,70-2,25	1.000	12.000
NBR4213	4,2 x 13	2,760	PH2	4,3	1,75-3,00	1.000	12.000
NBR4216	4,2 x 16	3,057	PH2	7,3	1,75-3,00	1.000	12.000
NBR4219	4,2 x 19	3,433	PH2	10,3	1,75-3,00	1.000	12.000
NBR4225	4,2 x 25	4,237	PH2	16,3	1,75-3,00	500	6.000
NBR4232	4,2 x 32	5,033	PH2	23	1,75-3,00	500	6.000
NBR4238	4,2 x 38	5,907	PH2	29	1,75-3,00	500	6.000
NBR4816	4,8 x 16	4,217	PH2	5,5	1,75-4,40	1.000	8.000
NBR4819	4,8 x 19	4,907	PH2	8,7	1,75-4,40	1.000	8.000
NBR4825	4,8 x 25	5,773	PH2	14,7	1,75-4,40	500	6.000
NBR4832	4,8 x 32	7,010	PH2	21,5	1,75-4,40	500	6.000
NBR4838	4,8 x 38	7,470	PH2	27,5	1,75-4,40	500	3.000
NBR4845	4,8 x 45	8,660	PH2	34,5	1,75-4,40	500	3.000
NBR4850	4,8 x 50	9,393	PH2	39,5	1,75-4,40	500	3.000

### ABR\_BLE



CODE	SIZE	€/100		MAX. FIXTURE THICKNESS	DRILL CAPACITY		
ABR3509BLE	3,5 x 9,5	1,607	PH2	2,85	0,70-2,25	1.000	24.000
ABR3513BLE	3,5 x 13	4,427	PH2	6,2	0,70-2,25	1.000	24.000
ABR3516BLE	3,5 x 16	4,980	PH2	9,2	0,70-2,25	1.000	16.000
ABR4213BLE	4,2x 13	5,793	PH2	4,3	1,75-3,00	1.000	12.000
ABR4216BLE	4,2 x 16	6,430	PH2	7,3	1,75-3,00	1.000	12.000
ABR4219BLE	4,2 x 19	6,460	PH2	10,3	1,75-3,00	1.000	12.000
ABR4825BLE	4,8 x 25	9,263	PH2	14,7	1,75-4,40	500	6.000