



DBZ Light duty metal anchors

Economical wedge anchor

Anchor version

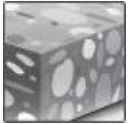


DBZ
(M6)

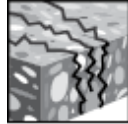
Benefits

- Well proven
- Simple installation
- Small drill bit diameter
- Suitable for cracked and non-cracked concrete C20/25 to C50/60
- Redundant fastening only, e.g. suspended ceilings

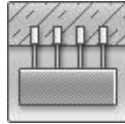
Base material



Concrete
(non-cracked)

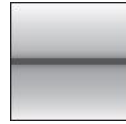


Concrete
(cracked)



Redundant
fastening

Load conditions



Static /
quasi-static



Fire
resistance

Other information



European
Technical
Assessment



CE conformity

Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European Technical Assessment ^{a)}	DIBt, Berlin	ETA-06/0179 / 2016-09-15
Fire test report	DIBt, Berlin	ETA-06/0179 / 2016-09-15
Assessment fire report	warringtonfire	WF364181 / 2016-05-03

a) All data given in this section according ETA-06/0179, issue 2016-09-15. The anchor is to be used only for redundant fastening for non-structural applications.

Basic loading data

All data in this section applies to:

- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Concrete C20/25 to C50/60
- Anchors in redundant fastening

Characteristic resistance

Anchor size	DBZ 6 / 4,5	DBZ 6 / 35
Resistance, all load directions F_{Rk} [kN]	5,0	

Design resistance

Anchor size			DBZ 6 / 4,5	DBZ 6 / 35
Resistance, all load directions	F_{Rd}	[kN]	3,3	

Recommended loads ^{a)}

Anchor size			DBZ 6 / 4,5	DBZ 6 / 35
Resistance, all load directions	F_{Rec}	[kN]	2,4	

a) With overall partial safety factor for action $\gamma = 1,4$. The partial safety factors for action depend on the type of loading and shall be taken from national regulations.

The definition of redundant fastening according to Member States is given in the ETAG 001 Part six, Annex 1. In Absence of a definition by a Member States the following default values may be taken.

Minimum number of fixing points	Minimum number of anchors per fixing point	Maximum design load of action N_{Sd} per fixing point ^{a)}
3	1	2
4	1	3

a) The value for maximum design load of actions per fastening point N_{Sd} is valid in general that means all fastening points are considered in the design of the redundant structural system. The value N_{Sd} may be increased if the failure of one (=most unfavourable) fixing point is taken into account in the design (serviceability and ultimate limit state) of the structural system e.g. suspended ceiling.

Materials

Mechanical properties

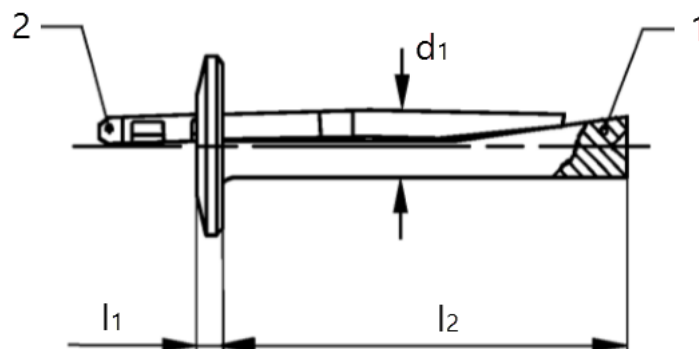
Anchor size			DBZ 6 / 4,5	DBZ 6 / 35
Nominal tensile strength	f_{uk}	[N/mm ²]	390	390
Yield strength	f_{yk}	[N/mm ²]	310	310
Stressed cross-section	A_s	[mm ²]	26	26
Char. bending resistance	$M^0_{Rk,s}$	[Nm]	5,0	5,0

Material quality

Part	Material
Anchor shank (1)	Cold-formed steel, galvanized $\geq 5\mu\text{m}$
Expansion pin (2)	Cold-formed steel, galvanized $\geq 5\mu\text{m}$

Anchor dimension

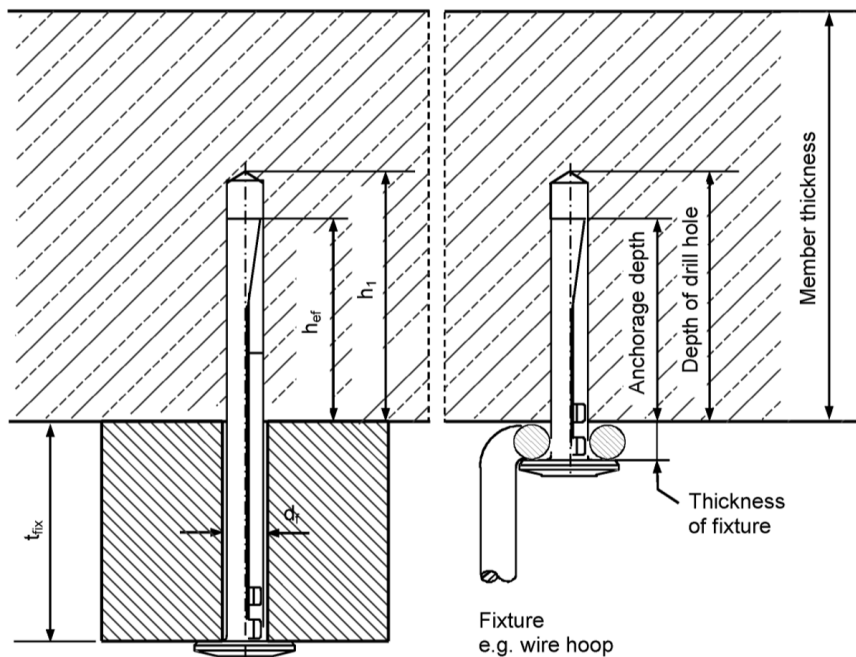
Anchor size			DBZ 6 / 4,5	DBZ 6 / 35
Height anchor head	l_1	[mm]	2,5	2,5
Max. distance	d_1	[mm]	6,4	6,4
Length of anchor shaft	l_2	[mm]	37,5	68



Setting information

Setting details

Anchor size		DBZ 6 / 4,5	DBZ 6 / 35	
Thickness of fixture	t_{fix} [mm]	$\leq 4,5$	$20 \leq t_{fix} \leq 35$	$5 \leq t_{fix} \leq 20$
Depth of drill hole	$h_1 \geq$ [mm]	40	55	70
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	6,4		
Nominal diameter of drill bit	d_o [mm]	6		
Clearance hole diameter	$d_i \leq$ [mm]	7		



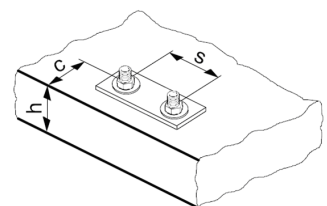
Installation equipment

Anchor size	DBZ 6 / 4,5	DBZ 6 / 35
Rotary hammer	TE 2 -TE 7	
Other tools	Hammer, blow out pump	

Setting parameters

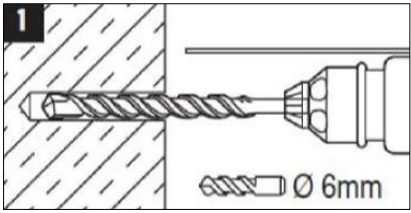
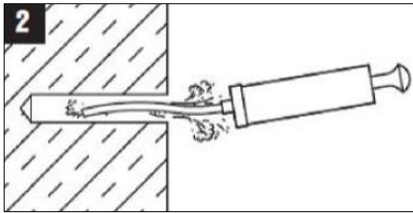
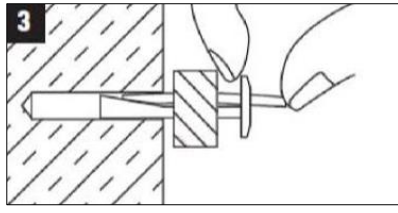
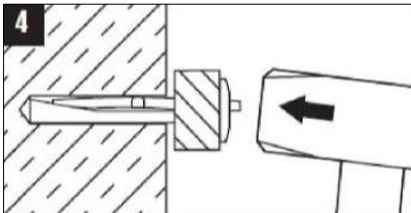
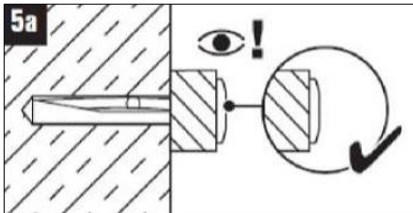
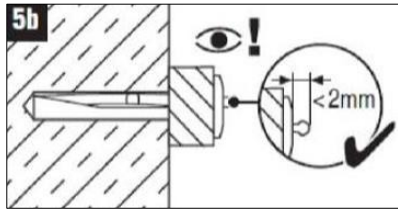
Anchor size		DBZ 6 / 4,5	DBZ 6 / 35	
Thickness of fixture	t_{fix} [mm]	$\leq 4,5$	$20 \leq t_{fix} \leq 35$	$5 \leq t_{fix} \leq 20$
Minimum member thickness	$h_{min} \geq$ [mm]	80	100	
Effective anchorage length	$h_{ef} \geq$ [mm]	32		
Spacing	$s_{min} = s_{cr}$ [mm]	200		
Edge distance	$c_{min} = c_{cr}$ [mm]	150		

- a) The critical spacing (critical edge distance) shall be kept. Smaller spacing (edge distance) than critical spacing (critical edge distance) are not covered by the design method.



Setting instruction

*For detailed information on installation see instruction for use given with the package of the product.

Setting instructions		
1 Drill hole with drill bit 	2 Blow out dust completely 	3 Insert anchor with fixture 
4 Hammer down the expansion pin 	5a Check if the pin is completely flattened 	5b Max. exceedance of 2mm can be accepted 
6 In case the pin exceedance is larger than 2mm replace the used drill bit with a new drill bit 