

WCA1 Ceiling Anchors

Economical ceiling hammer-set anchor for non-structural applications

Anchor types



WCA1 6x40
WCA1 6x65

- The **WCA1** ceiling anchors are easy to install deformation-controlled anchors for medium loads. They are approved for multiple use for non-structural applications in cracked and non-cracked concrete.

Features and benefits

- ETA ETAG001 Part 6 approval for multiple use for non-structural applications
- Simple and quick installation procedure
- Correct anchor installation can be verified by simple visual check
- Fire resistance class R30-R120 for design of anchorages under exposure to fire
- Medium load capacity
- Through fixing

Approvals and certificates

- European Technical Assessment
- Fire Test Report

ETA-16/0971, 15 December 2016
ETA-16/0971, 15 December 2016



Suitable base materials

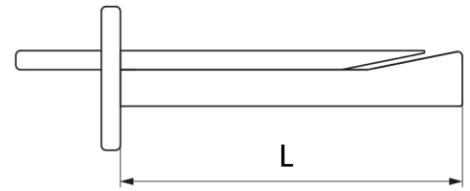
- Non-cracked concrete, C20/25 to C50/60
- Cracked concrete, C20/25 to C50/60
- Fire-exposed concrete, C20/25 to C50/60

Typical applications

- Lightweight and suspended ceilings
- Coffered ceilings
- Fastening perforated suspension band
- Machinery

Product details

Article	Description	Size	Length
		[-]	L [mm]
60963604	WCA1 6x40	6	36
60963665	WCA1 6x65	6	65



Packaging details

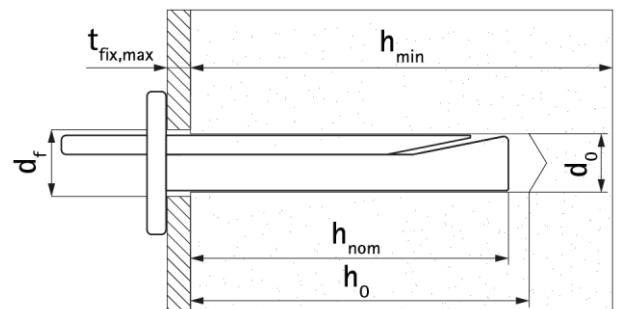
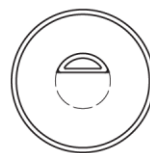
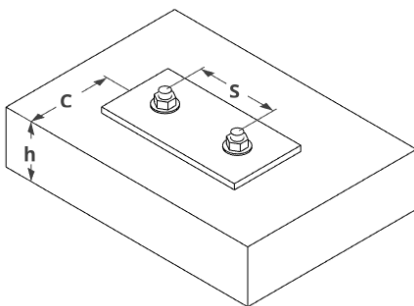
Article	Description	Pack 1		Pack 2	
		[pcs]	EAN13	[pcs]	EAN13
60963604	WCA1 6x40	100	8712993157822	1600	8712993157877
60963665	WCA1 6x65	100	8712993157839	800	8712993157884

Mechanical properties

Anchor Type	WCA1
Material	Steel acc. to EN 10263-2; galvanized steel ($\geq 8 \mu\text{m}$)

Installation parameters

Anchor Type			WCA1	
Anchor size			6x40	6x65
Anchor length	L	[mm]	36	65
Drill hole diameter	d_0	[mm]	6	6
Depth of drill hole	$h_0 \geq$	[mm]	≥ 40	≥ 40
Nominal embedment depth	h_{nom}	[mm]	≥ 32	≥ 32
Effective embedment depth	h_{ef}	[mm]	32	32
Min. concrete member thickness	h_{min}	[mm]	100	100
Maximum fixture thickness	$t_{\text{fix,max}}$	[mm]	4.5	35
Characteristic edge spacing distance	C_{cr}	[mm]	150	150
Characteristic anchor spacing distance	S_{cr}	[mm]	200	200
Clearance hole diameter	d_f	[mm]	7	7



Instructions for installation in concrete



Recommended loads for multiple use for non-structural applications in C20/25 to C50/C60 concrete for single anchors¹⁾

Anchor Type		WCA1	
Anchor size		6x40	6x65
Recommended load for all directions	F_{rec} [kN]	1.43	1.43

1) Single anchors are anchors not affected by concrete edge and anchor spacing influence.

2) Recommended load includes partial safety factor and an overall partial safety factor for action of 1.4. The partial safety factor for action depends on the type of loading and shall be taken from national regulations. All anchor failure modes and the entire relevant product European Technical Assessment must be considered for anchor design.

Characteristic values of resistance for multiple use for non-structural applications under fire exposure in C20/25-C50/C60 concrete¹⁾

Anchor Type		WCA1	
Anchor size		6x40	6x65
All load directions			
R30	Characteristic resistance $F_{Rk,fi}$ [kN]	0.60	0.60
R60		0.50	0.50
R90		0.30	0.30
R120		0.30	0.30
Spacing distance	$S_{cr,fi}$ [mm]	$4 \times h_{ef}$	
Edge distance	$C_{cr,fi}$ [mm]	$2 \times h_{ef}$ ²⁾	

1) In absence of other national regulations the partial safety factor for resistance under fire exposure $\gamma_{M,fi} = 1,0$ is recommended

2) If the fire attack is from more than one side, the edge distance of the anchor has to be ≥ 300 mm and $\geq 2 \times h_{ef}$

The definition and requirements of multiple use for non-structural applications

The definition of multiple use according to the Member States is given in ETAG 001 Part 6, Annex 1. In the absence of a definition by a Member State the following default values may be taken:

Minimum number of fixing points	Minimum number of anchors per fixing point	Maximum design value of actions per fixing point
$[n_1]$	$[n_2]$	$[n_3]$
3	1	2.0 kN
4	1	3.0 kN

The maximum design value of actions per fixing point might be increased if in the design it is shown that the requirements on the strength and stiffness of the fixture in the serviceability and ultimate states after the failure of one anchor are fulfilled.

Design method for anchorages for multiple use for non-structural applications

The design of the fixture is such that, in the case of excessive slip or failure of one anchor, the load can be transmitted to neighbouring anchors without significantly violating the requirements on the fixture in the serviceability and ultimate limit state.

For example the design of the fixture may specify the number n_1 of fixing points to fasten the fixture and the number n_2 of anchors per fixing point. Furthermore by specifying the design value of actions N_{Sd} on a fixing point to a value $\leq n_3$ (kN) up to which the strength and stiffness of the fixture are fulfilled and the load transfer in the case of excessive slip or failure of one anchor need not to be taken into account in the design of the fixture.