Declaration of Performance

1109-CPR-0504

1. Unique identification code of the product-type: Mungo ceiling Anchor MAN for multiple use for non-structural applications in concrete

2. Manufacturer: Mungo Befestigungstechnik AG, Bornfeldstrasse 2, CH-4603 Olten/Switzerland

3. System/s of AVCP: System 2+

4. Intended use or use/es:

Product	Intended use
Anchor for multiple use for non-structural application in non-cracked and cracked concrete	The anchor is to be used for static or quasi-static loading in reinforced or unreinforced normal weight concrete of strength classes C20/25 to C50/60 according to EN 206-1:2000

5. European Assessment Document: ETAG 001 Part 6, August 2010, used as EAD
European Technical Assessment: ETA-06/0168 of 11 August 2016
Technical Assessment Body: DIBt – Deutsches Institut für Bautechnik
Notified body/ies: No 305/2011 (Construction Product Regulation)

6. Declared performance:
Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic resistance for all load directions	See appendix, especially Annex C1

Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Anchorages satisfy requirements for Class A1
Resistance to fire	See appendix Annex C1

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Singed for and on behalf of the manufacturer by:

Dipl.-Ing. Massimo Pirozzi
Head of Engineering

p.p.a. Massimo Pirozzi

Olten, 2018-26-07

This DoP Has been prepared in different languages. In case there is a dispute on the interpretation the English version shall always prevail.
The Appendix includes voluntary and complementary information in English language exceeding the (language as neutrally specified) legal requirements.

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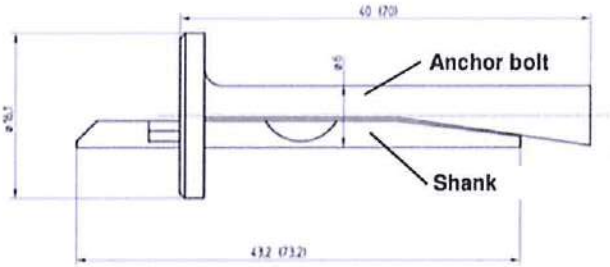
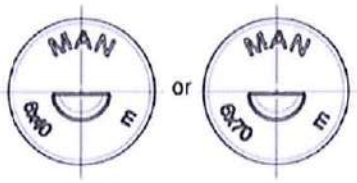
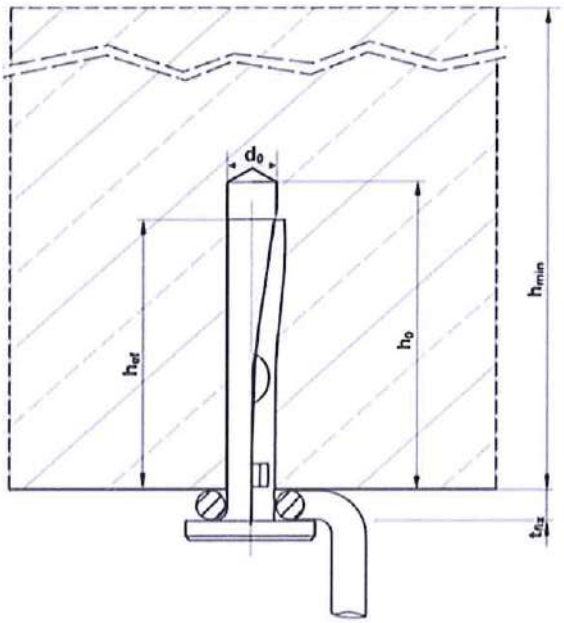
Only for multiple use for non-structural applications according to ETAG 001, Part 6, Annex 1

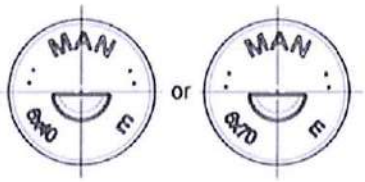
Head marking: Identifying mark of the producer and anchor type





Installed condition for mungo MAN ceiling anchor





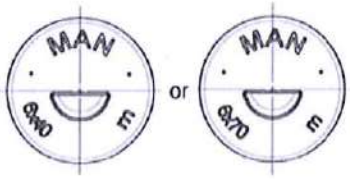


Table A1: Anchor dimension, marking and material

mungo MAN ceiling anchor		**6 x 40**	**6 x 70**
Marking / embossing		MAN 6 x 40	MAN 6 x 70
Anchor length	[mm]	40	70
Material	Anchor bolt	Strength class 4.8 according to EN ISO 898-1:2013 galvanized steel, Zinc plating ≥ 5 µm according to EN ISO 4042:1999	
	Shank	Strength class 8.8 according to EN ISO 898-1:2013; galvanized steel, Zinc plating ≥ 5 µm according to EN ISO 4042:1999	

mungo ceiling anchor MAN	**Annex A1**
Product description Installed condition, anchor types, dimensions and materials	

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Specifications of intended use

Anchorages subject to:

- Static and quasi-static loads
- Multiple fixing of non-structural applications
- Fire exposure

Base materials:

- Reinforced or unreinforced normal weight concrete according to EN 206-1:2000
- Strength classes C20/25 to C50/60 according to EN 206-1:2000
- Non-cracked and cracked concrete

Use conditions:

- Structures subject to dry internal conditions

Design:

- The anchorages are to be designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings shall be prepared taking account of the loads to be anchored, the nature and strength of the base materials and the dimensions of the anchorage members as well as of the relevant tolerances. The position of the anchor shall be indicated on the design drawings (e. g. position of the anchor relative to reinforcement or to supports, etc.).
- Anchorages under static or quasi-static actions are designed in accordance with ETAG 001, Annex C, design method C, Edition August 2010.
- Anchorages under fire exposure are designed in accordance with ETAG 001, Annex C, design Method C, Edition August 2010 and EOTA Technical Report TR 020, Edition May 2004. It must be ensured that local spalling of the concrete cover does not occur.
- Fasteners are only to be used for multiple use for non-structural application, according to ETAG 001 Part 6, Edition January 2011.

Installation:

- Dry or wet concrete
- Anchor installation has to be carried out by appropriately qualified personnel according to Annex B2 under the supervision of the person responsible for technical matters of the site.
- Hole drilling by hammer drilling
- Anchor expansion by impact on the shank. The anchor is properly set, if no further driving by impact is possible and the excess of the shank is at maximum 2,5 mm.
- The anchor may only be set once.

mungo ceiling anchor MAN	**Annex B1**
Intended use Specifications	

Table B1: Installation parameters

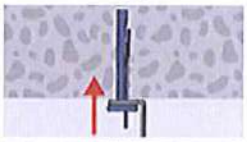
mungo MAN ceiling anchor			MAN 6 x 40	MAN 6 x 70
Effective anchorage depth	$h_{ef} \geq$	[mm]	32	
Thickness of fixture	t_{fix}	[mm]	0 - 5	0 - 35
Nominal drill hole diameter	d_o	[mm]	6	
Max. drill bit diameter	d_{cut}	[mm]	6,4	
Drill hole depth	$h_o \geq$	[mm]	40	
Minimum thickness of concrete member	h_{min}	[mm]	80	
Minimum spacing	s_{min}	[mm]	200	
Minimum edge distance	c_{min}	[mm]	150	

Installation instructions:

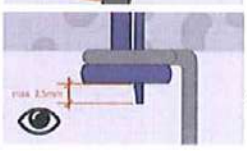

Make the drill hole


Clean the drill hole from drill dust


Place the fixture on the ceiling anchor


Place the ceiling anchor with the fixture concisely into the hole


Drive in the nail with a hammer


Installed ceiling anchor; control of maximum overlap of shank:
≤ 2,5 mm

mungo ceiling anchor MAN	Annex B2
Intended use Installation parameters, edge distance and spacing Installation instructions	

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Table C1: Characteristic values of resistance in concrete in all load directions (Design according to ETAG 001, Annex C, design method C)

mungo MAN ceiling anchor			**MAN 6 x 40**	**MAN 6 x 70**
All load directions				
Characteristic resistance in concrete C20/25 to C50/60	F_{Rk}	[kN]	3,0	
Installation safety factor	γ_2	[-]	1,0	
Minimum spacing	s_{min}	[mm]	200	
Minimum edge distance	c_{min}	[mm]	150	
Shear load with lever arm				
Characteristic bending moment	$M^0_{Rk,s}$ [1)]	[Nm]	5,4	
Installation safety factor	γ_2	[-]	1,0	

[1)] Characteristic bending moment $M^0_{Rk,s}$ for Equation (5.5) in ETAG 001, Annex C

Only for multiple use for non-structural applications, the definition of multiple use according to the member states is given in the informative Annex 1 of ETAG 001, Part 6

Table C2: Characteristic values under fire exposure in cracked and non-cracked concrete C20/25 to C50/60 in all load directions without lever arm (Design according to EOTA TR 020)

Fire resistance class	**mungo MAN ceiling anchor**			**MAN 6 x 40**	**MAN 6 x 70**
R 30	Characteristic resistance	$F^0_{Rk,fi}$ [1)]	[kN]	0,6	
R 60				0,5	
R 90				0,4	
R 120				0,3	
R 30 - R 120	Minimum spacing	$s_{min,fi}$	[mm]	200	
	Minimum edge distance [2)]	$c_{min,fi}$	[mm]	150	

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

[2)] In case of fire attack from more than one side of the concrete member, the edge distance shall be $\geq$ 300 mm.

mungo ceiling anchor MAN	**Annex C1**
Performances Characteristic resistances in concrete Design method C according to ETAG 001, Annex C	