

Declaration of Performance

2323-CPR-0024

1. Unique identification code of the product-type: Mungo metal Anchor MANr made of stainless steel 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-17/1011 of 22 Februar 2018

Technical Assessment Body: DIBt – Deutsches Institut für Bautechnik

Notified body/ies: No 305/2011/EU (Construction Product Regulation)

6. Declared performance:

Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic resistance in concrete	See appendix, especially Annex C 1
Edge distances and spacing	See appendix, especially Annex C 1

Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Anchorage satisfy requirements for Class A1
Resistance to fire	See appendix, especially Annex C 1

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.

Signed for and on behalf of the manufacturer by:

Dipl.-Ing. Massimo Pirozzi

Head of Engineering



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.

Installed condition for MANr

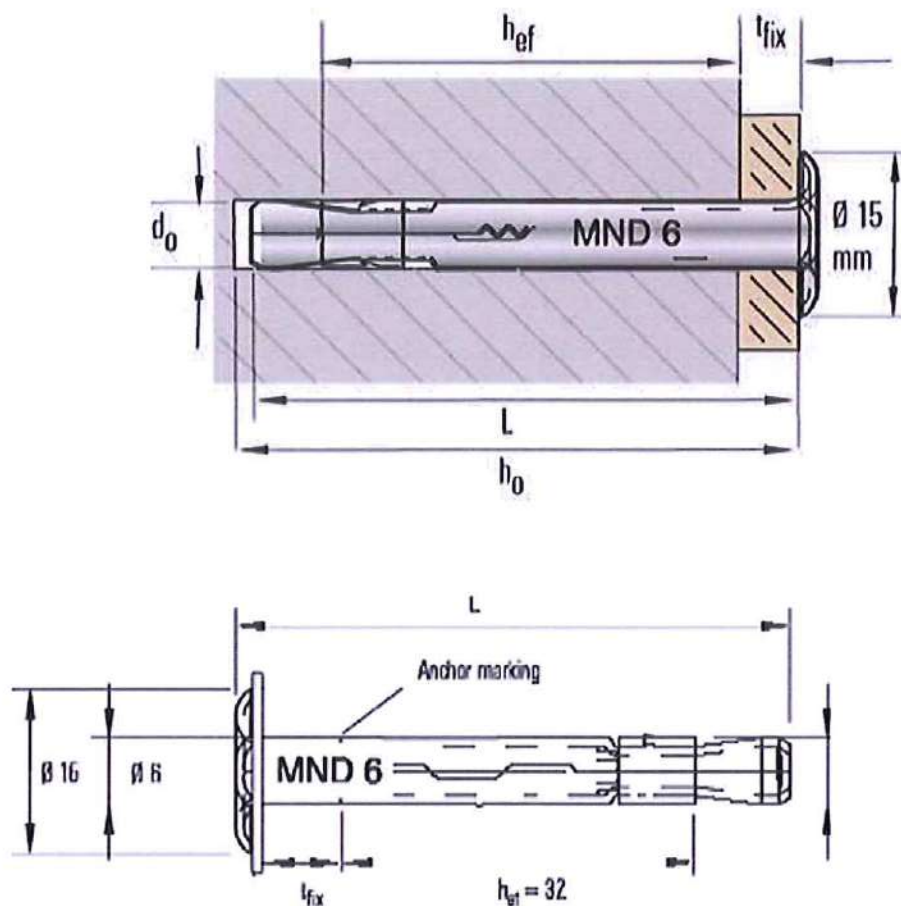


Table A1: Anchor dimension, marking and material

MANr			MANr 6 x 45	MANr 6 x 50	MANr 6 x 70
Marking / embossing			MND 6/5	MND 6/10	MND 6/35
Anchor length	L	[mm]	45	50	70
Material steel galvanized			H340LAD Z100 / H420LAD Z100		
Material stainless steel			1.4301 1.4404 / 1.4571 1.4529		

Mungo Ceiling anchor MANr

Product description
Installed condition, anchor types, dimensions and materials

Annex A 1

Specifications of intended use

Anchorage subject to:

- Static and quasi-static loads,
- Used only for multiple use for non-structural applications according to ETAG 001, Part 6,
- Used for anchorages with requirements related to resistance of fire (all anchor types except steel 1.4301).

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
- Cracked and uncracked concrete

Use conditions (environmental conditions):

- Structures subject to dry internal conditions (all anchor types),
- Structures subject to external atmospheric exposure (including industrial and marine environment) and to permanently damp internal condition, if no particular aggressive conditions exist (anchors of stainless steel 1.4404, 1.4571, 1.4529),
- Structures subject to particular aggressive conditions (anchors of stainless steel 1.4529).
Particular aggressive conditions are e.g. permanent, alternating immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor swimming pools or atmosphere with extreme chemical pollution (e.g. in desulphurization plants or road tunnels where de-icing materials are used).

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, Edition August 2010.
- Anchorages under fire exposure are designed in accordance with:
 - EOTA Technical Report TR 020, Edition May 2004.

Installation:

- Hole drilling by hammer drilling,
- Anchor installation has to be carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site,
- The anchor may only be set once.

Mungo Ceiling anchor MANr

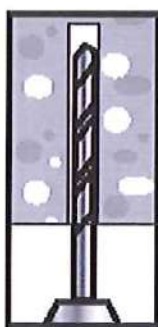
Intended use
Specifications

Annex B 1

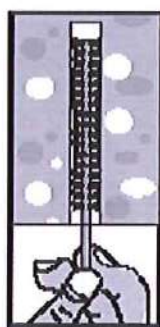
Table B1: Installation parameters

MANr			MANr 6 x 45	MANr 6 x 50	MANr 6 x 70
Nominal drill hole diameter	d_o	[mm]	6	6	6
Drill hole depth	$h_o \geq$	[mm]	$48 - t_{fix}$	$53 - t_{fix}$	$75 - t_{fix}$
Effective anchorage depth	$h_{ef} \geq$	[mm]	32	32	32
Minimum thickness of concrete member	for $t_{fix} > 20\text{mm}$	h_{min}	-	-	80
	for $t_{fix} \leq 20\text{mm}$				100
Maximum thickness of fixture	$\max t_{fix}$	[mm]	5	10	35
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	7,5		

Installation Instructions:



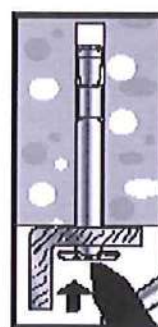
drilling
of hole



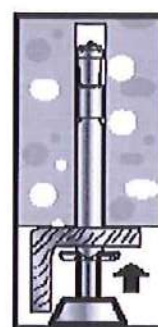
cleaning
of drill hole



setting anchor
through fixture



driving in with
a hammer



or driving in with
a setting tool

Mungo Ceiling anchor MANr

Intended use
Installation parameters, edge distance and spacing
Installation instructions

Annex B 2

Table C1: Characteristic values of resistance in concrete in all load directions without lever arm

MANr			MANr 6 x 45 MANr 6 x 50 MANr 6 x 72	
All load directions			Steel galvanized	Stainless steel 1.4301, 1.4404, 1.4571, 1.4529
Characteristic resistance in concrete C20/25 to C50/60	F_{Rk}	[kN]	3,0	4,0
Partial safety factor	γ_M	[-]	1,5	2,25
Spacing	s_{cr}	[mm]	200	
Edge distance	c_{cr}	[mm]	100	

Table C2: Characteristic values under fire exposure in concrete C20/25 to C50/60 for all load directions without lever arm

Fire resistance class	MANr			Steel galvanized	Stainless steel 1.4404, 1.4571, 1.4529
R30	Characteristic resistance	$F_{Rk,fi}$	[kN]	0,35	1,0
R60				0,25	1,0
R90				0,15	0,6
R120				0,1	0,3
R30 - R120	Spacing	$s_{cr,fi}$	[mm]	200	
	Edge distance ¹⁾	$c_{cr,fi}$	[mm]	100	

¹⁾ The edge distance shall be ≥ 300 mm if there is a fire to more than one side of the concrete member

Mungo Ceiling anchor MANr

Performances
Characteristic resistances in concrete

Annex C 1