



PRODUCT TECHNICAL DATASHEET

Cast-in Anchor KCM-WF M10/M12

Update: Oct-25



Cast-in Anchor KCM-WF M10/M12

Multi-Threaded Cast-in Anchor Solution for Wood Forms

Anchor versions



KCM-WF M10/M12

Benefits

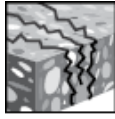
- Application-relevant multi-thread configurations
- Colour coded perforated foam inserts to prevent concrete intrusion
- Notched nails that snap off easily at the concrete surface after the wood forms are stripped
- Nails lock the metal head to the plastic body preventing anchor popping off due to rebar hits
- Nail and anchor design profile reduce the risk of anchor knock over due to accidental rebar hit



Base material

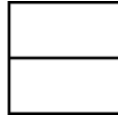


Concrete
(non-cracked)

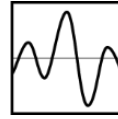


Concrete
(cracked)

Load conditions



Static/
quasi-static



Seismic C1

Installation conditions



Cast-in
concrete

Other information



ICC-ESR



PROFIS
Engineering
software

Linked Approvals/Certificates and Instructions for use

Approvals/certificates

Approval no	Application / loading condition	Authority / Laboratory	Date of issue	Date of expiry
<u>ESR-4145</u>	Static and quasi-static / Seismic	ICC-ES, USA	Feb-2025	Feb-2027

Instructions for use (IFU)

Anchor size	
KCM-WF	<u>IFU KCM-WF M10/M12</u>

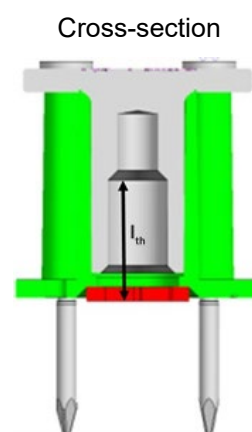
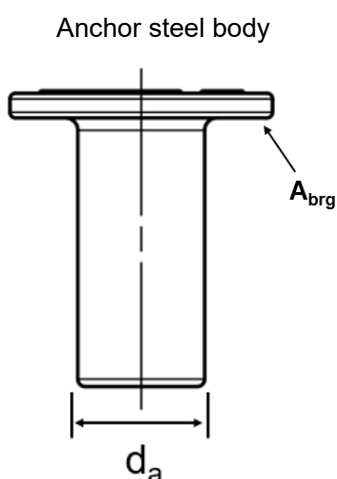
Link to Hilti Webpage

<u>KCM-WF</u>	
	

Material and Fastener special dimensions

Anchor dimensions

Anchor size			KCM-WF 10/12 M12	
			M10	M12
Outside diameter of anchor steel body	d_a	[mm]	17	
Bearing area	A_{brg}	[mm ²]	643	
Thread engagement length	l_{th}	[mm]	12	13



Materials

Mechanical properties of anchor insert

Anchor insert			KCM-WF 10/12 M12
Nominal tensile strength	N_{uk}	[kN]	54,7

Mechanical properties of threaded rods

Threaded rod size			M10			M12		
Grade			4.6	5.8	8.8	4.6	5.8	8.8
Nominal tensile strength	f_{uk}	[N/mm ²]	400	500	800	400	500	800
Yield strength	f_{yk}	[N/mm ²]	240	400	640	240	400	640
Stressed cross-section	A_s	[mm ²]	58,0			84,3		
Moment of resistance	W_{el}	[mm ³]	62,3			109		
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	29,9	37,4	59,8	52,4	65,5	104,8

Material quality

Part	Material
Anchor insert body	Carbon steel, zinc plated per ASTM B633 Fe/Zn 5 Type III
Housing	Plastic material
Threaded rod	ISO 898-1, Grade 4.6, 5.8 or 8.8

Static and quasi-static loading based on ESR-4145. Design according to ACI 318 Chapter 17

All data in this section applies to:

- Correct setting (see Instructions for use (IFU) section)
- Single anchor
- No edge distance and spacing influence
- Minimum base material thickness (see setting detail table)
- Concrete C20/25, $f_c = 20 \text{ N/mm}^2$
- Shown values representing only steel-related failure modes
- Recommended loads: With overall partial safety factor for action $\gamma = 1,4$

For specific design cases refer to [PROFIS Engineering](#)

Effective anchorage depth

Anchor size	KCM-WF 10/12
Effective anchorage depth h_{ef} [mm]	41

Design resistance

Anchor size	KCM-WF 10/12
Threaded rod size	M10 M12
Grade	4.6 5.8 8.8 4.6 5.8 8.8
Uncracked concrete	
Tension N_{Rd} [kN]	9,9 9,9
Shear V_{Rd} [kN]	7,0 9,9 9,9 9,9 9,9 9,9
Cracked concrete	
Tension N_{Rd} [kN]	7,0 7,0
Shear V_{Rd} [kN]	7,0 7,0 7,0 7,0 7,0 7,0

Recommended loads

Anchor size	KCM-WF 10/12
Threaded rod size	M10 M12
Grade	4.6 5.8 8.8 4.6 5.8 8.8
Uncracked concrete	
Tension N_{Rec} [kN]	7,1 7,1
Shear V_{Rec} [kN]	5,0 7,1 7,1 7,1 7,1 7,1
Cracked concrete	
Tension N_{Rec} [kN]	5,0 5,0
Shear V_{Rec} [kN]	5,0 5,0 5,0 5,0 5,0 5,0

Seismic loading data based on ESR-4145. Design according to ACI 318 Chapter 17

All data in this section applies to:

- Correct setting (see Instructions for use (IFU) section)
- Single anchor
- No edge distance and spacing influence
- Minimum base material thickness(see table with setting details)
- Concrete C20/25, $f_c = 20 \text{ N/mm}^2$
- Shown values representing only steel-related failure modes
- $\alpha_{\text{gap}} = 0,5$ (without using Hilti seismic filling set)

For specific design cases refer to [PROFIS Engineering](#)

Effective anchorage depth

Anchor size	KCM-WF M10/M12	
Effective anchorage depth h_{ef} [mm]	41	

Design resistance in case of seismic performance category C1

Anchor size	KCM-WF M10/M12					
Threaded rod size	M10			M12		
Grade	4.6	5.8	8.8	4.6	5.8	8.8
Tension $N_{\text{Rd,C1}}$ [kN]	7,0			7,0		
Shear $V_{\text{Rd,C1}}$ [kN]	3,0	3,5	3,5	3,5	3,5	3,5

Setting information

Setting details

Anchor size	KCM-WF M10/M12	
Nominal embedment depth h_{nom} [mm]	45,3	
Effective embedment depth h_{ef} [mm]	41	
Minimum thickness of concrete member h_{min} [mm]	100	
Minimum edge distance and spacing	s_{min} [mm]	67
	c_{min} [mm]	67

