



KMC CAST-IN ANCHOR

Technical Datasheet

Update: Jan-23





Cast-in Anchor KCM-WF M10/M12

Multi-Threaded Cast-in Anchor Solution for Wood Forms

Anchor versions

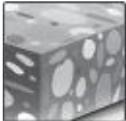


KCM-WF M10/M12

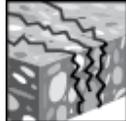
Benefits

- 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 above the head lock the metal head to the plastic body preventing head 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

Approvals/certificates

Description	Authority / Laboratory	No. / Date of issue
ICC Evaluation Service Report	International Code Council	ESR-4145 / Feb. 2021

Static and quasi-static resistance (for a single anchor)

All data in this section applies to:

- Correct setting (See setting instruction)
- No edge distance and spacing influence
- *Steel* failure
- Minimum base material thickness
- Concrete C 20/25, $f_c = 20 \text{ N/mm}^2$

Effective anchorage depth

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

Characteristic 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
Non-cracked concrete								
Tension	N_{Rk}	[kN]	14,9			14,9		
Shear	V_{Rk}	[kN]	11,6	14,5	14,9	14,9	14,9	14,9
Cracked concrete								
Tension	N_{Rk}	[kN]	10,4			10,4		
Shear	V_{Rk}	[kN]	10,4	10,4	10,4	10,4	10,4	10,4

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
Non-cracked 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^{a)}

Anchor size			KCM-WF 10/12					
Threaded rod size			M10			M12		
Grade			4.6	5.8	8.8	4.6	5.8	8.8
Non-cracked 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

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.



Seismic loading data (for single anchor)

All data in this section applies to:

- Correct setting (See setting instruction)
- No edge distance and spacing influence
- *Steel* failure
- Minimum base material thickness
- Concrete C 20/25, $f_c = 20 \text{ N/mm}^2$
- $\alpha_{\text{gap}} = 0,5$ (without using Hilti seismic filling set)

Effective anchorage depth

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

Characteristic resistance in case of seismic performance category C1

Anchor size		KCM-WF 10/12					
Threaded rod size		M10			M12		
Grade		4.6	5.8	8.8	4.6	5.8	8.8
Tension	$N_{\text{Rk,seis}}$ [kN]	10,4			10,4		
Shear	$V_{\text{Rk,seis}}$ [kN]	4,6	5,2	5,2	5,2	5,2	5,2

Design resistance in case of seismic performance category C1

Anchor size		KCM-WF 10/12					
Threaded rod size		M10			M12		
Grade		4.6	5.8	8.8	4.6	5.8	8.8
Tension	$N_{\text{Rd,seis}}$ [kN]	7,0			7,0		
Shear	$V_{\text{Rd,seis}}$ [kN]	3,0	3,5	3,5	3,5	3,5	3,5

Materials

Mechanical properties of anchor insert

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

Mechanical properties of threaded rods

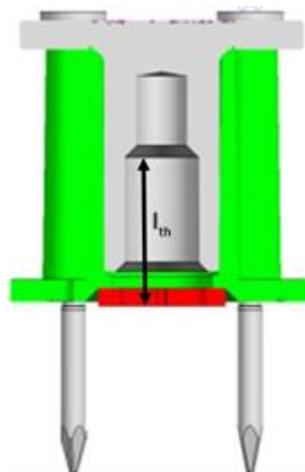
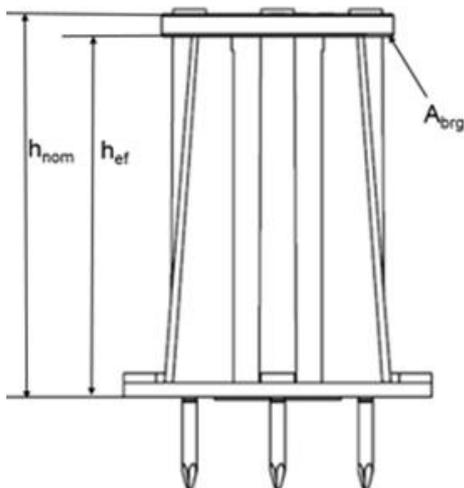
Threaded rod size			M10			M12		
Grade			4.6	5.8	8.8	4.6	5.8	8.8
Nominal tensile strength	f_{uk}	[N/mm ²]	400	500	800	400	500	800
Yield strength	f_{yk}	[N/mm ²]	240	400	640	240	400	640
Stressed cross-section	A_s	[mm ²]	58,0			84,3		
Moment of resistance	W_{el}	[mm ³]	62,3			109		
Characteristic bending 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

Anchor dimensions

Anchor size			KCM-WF 10/12M12
Outside diameter of anchor steel body	d_a	[mm]	16,9
Bearing area	A_{brg}	[mm ²]	643
Thread engagement length, diameter M10	l_{th}	[mm]	12
Thread engagement length, diameter M12	l_{th}	[mm]	13



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

Setting instructions

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

Setting instruction

