

IZJAVA O SVOJSTVIMA

HECO-DoP_ETA_15/0784_MMS-plus_1606_HR

1. Jednoznačan identifikacijski kod vrste proizvoda:

MULTI-MONTI-plus (MMS-plus)

2. Vrsta, šarža ili serijski broj ili neka druga oznaka za identifikaciju građevnog proizvoda prema članku 11 odl. 4:

Označavanje prema ETA-15/0784 prilog A2, A3

Broj šarže: vidi ambalažu proizvoda

3. Svrha uporabe koju je predvidio proizvođač ili predviđene svrhe uporabe građevnog proizvoda prema primjenjivim usklađenim tehničkim specifikacijama:

ETA-15/0784 prilog B1

Tip pričvrsnice	Sidreni vijak
Svrha uporabe	<u>U betonu C20/25 do C50/60 (EN 206)</u> - neispucani: Ø6, Ø7,5, Ø10 i Ø12 - ispucani: Ø6, Ø7,5, Ø10 i Ø12
Opcija/klasa	<u>Opcija 1</u> Seizmološki: Klasa svojstava C1
Opterećenje	mirno, skoro mirno, seizmičko (Ø10 + Ø12), otpornost na požar
Materijal/izvedba	<u>Pocinčani čelik:</u> - za primjenu u uvjetima suhih unutarnjih prostorija - različiti oblici glave

4. Naziv, registrirani trgovački naziv ili registrirana marka i kontaktna adresa proizvođača prema članku 11, odl. 5:

HECO-Schrauben GmbH & Co. KG

Dr.-Kurt-Steim-Str. 28

78713 Schramberg, Njemačka

5. Ako postoji, naziv i adresa ovlaštenog predstavnika koji je zadužen za zadatke prema članku 12, odl. 2:

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6. Sustav ocjenjivanja i provjere stalnosti svojstva građevnog proizvoda prema Prilogu V:

Sustav 1

7. U slučaju izjave o svojstvima koja se odnosi na građevni proizvod obuhvaćen usklađenom normom:

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8. U slučaju izjave o svojstvima koja se odnosi na građevni proizvod za koji je izdana Europska tehnička ocjena:

- Tijelo za tehničko ocjenjivanje: Njemački institut za građevinsku tehniku (DIBT)
- Prijavljeno tijelo: Institut Otto-Graf u Stuttgartu, identifikacijski broj 0672
- Dokument za ocjenjivanje: ETAG 001 dio1, 3 (04.2013)
- Potvrda o sukladnosti: 0672-CPR-0635

9. Objavljeno svojstvo

Bitne karakteristike	Metoda procjene	Svojstvo	Usklađena tehnička specifikacija
Karakterističan otpor kod vlačnog opterećenja	ETAG 001, prilog C, Metoda A CEN/TS 1992-4:2009, Metoda A	ETA-15/0784: prilog C1	ETAG 001 Part 1, 3 ETAG 001, prilog E EOTA TR 020 (Otpornost na požar)
	EOTA TR 045	ETA-15/0784: prilog C2	
	EOTA TR 020 (Otpornost na požar) CEN/TS 1992-4: prilog D	ETA-15/0784: prilog C3	
Karakterističan otpor kod poprečnog opterećenja	ETAG 001, prilog C, Metoda A CEN/TS 1992-4:2009, Metoda A	ETA-15/0784: prilog C1	
	EOTA TR 045	ETA-15/0784: prilog C2	
	EOTA TR 020 (Otpornost na požar) CEN/TS 1992-4: prilog D	ETA-15/0784: prilog C3	
Karakteristične vrijednosti montaže		ETA-15/0784: prilog B2	
Pomaci krajnje granične vrijednosti upotrebljivosti	ETAG 001, prilog: C, Metoda A CEN/TS 1992-4:2009, Metoda A	ETA-15/0784: prilog C4	

10. Svojstvo proizvoda identificirano u točkama 1 i 2 odgovara objavljenom svojstvu u točki 9. Za izradu ove izjave o svojstvima odgovoran je isključivo proizvođač u skladu s točkom 4.

Potpisuje za i u ime proizvođača:



Schramberg, 01.07.2016

po nalogu

Andreas Hettich, Voditelj PM/marketinga

Specifications of intended use

Use of the anchoring:

- Static and quasi static loads: all sizes.
- Seismic category C1:
MMS-plus all Versions, size 10 with maximum embedment depth (h_{nom2}) and size 12 with the embedment depth h_{nom1} and h_{nom2} .
- Fire exposure: all sizes.

Base Materials:

- Reinforced or non-reinforced 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: all sizes.

Conditions of use (Environmental conditions):

- Structures subject to dry internal conditions.

Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchor is 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 for design method A in accordance with:
 - ETAG 001, Annex C, edition august 2010 or
 - CEN/TS 1992-4:2009
- The design of the anchoring under seismic action have to be carried out in accordance with:
 - EOTA Technical Report TR 045, edition February 2013
 - Anchoring's have to be placed outside of critical places like plastic hinges.
 - A distance mounting or mounting with mortar layer is not allowed.
- The design of the anchoring under fire exposure have to be carried in accordance with:
 - EOTA Technical Report 020, edition Mai 2014 or
 - CEN/TS 1992-4:2009, Annex D
 - In case of requirements for resistance of fire exposure it must be ensured that local spalling of the concrete cover does not occur.

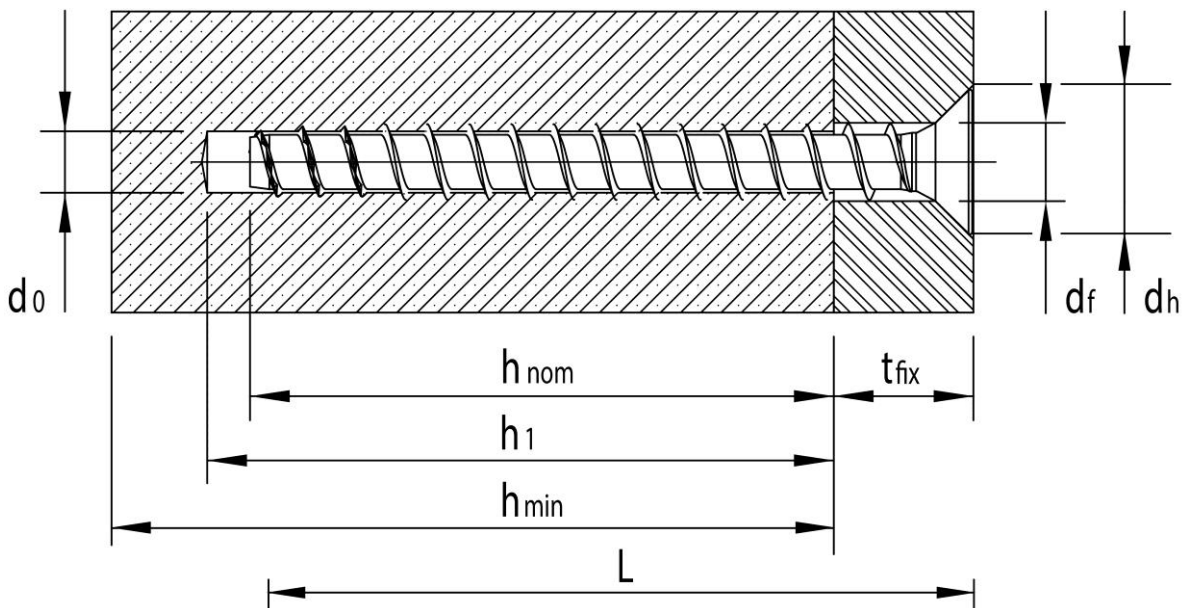
Installation:

- Hole drilling by hammer-drilling only.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- In case of aborted hole: new drilling at a minimum distance away of twice the depth of the aborted hole or smaller distance if the aborted hole is filled with high strength mortar and if under shear or oblique tension load it is not the direction of the load application.
- The anchor may be used only once.
- After installation further turning of the anchor must not be possible.
- The head of the anchor must be supported on the fixture and is not damaged.

Prilog B1

Table B1: Installation parameters MMS-plus

Size MMS-plus			6		7,5		10		12		
			h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	
Embedment depth in concrete [mm]			35	45	35	55	50	65	75	90	
Nominal drill diameter	d_0	[mm]	5		6		8		10		
Drill bit cutting diameter	d_{cut} \leq	[mm]	5,40		6,40		8,45		10,45		
Depth of borehole	h_1 \geq	[mm]	40	50	40	65	60	75	85	100	
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	7		9		12		14		
Diameter Countersunk	d_h	[mm]	11,5		15,5		19,5		24		
Min. thickness of the concrete member	h_{min}	[mm]	100	100	100	100	100	115	125	150	
cracked and uncracked concrete	min. spacing s_{min}	[mm]	30	30	40	40	40	50	60	60	
	min. edge distance c_{min}	[mm]	30	30	40	40	40	50	60	60	
Recommended installation tool		[Nm]	Impact screw driver, max. power output T_{max} according manufacturer information								
			75	100	100	200	250				
Torque moment for threaded version (type MMS-plus V)	T_{inst}	[Nm]	-		15		20		30		



Prilog B2

Table C1: Characteristic values for static and quasi-static tension MMS-plus

Size MMS-plus			6		7,5		10		12		
			h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	
Embedment depth in concrete h_{nom} [mm]			35 ¹⁾	45	35 ¹⁾	55	50	65	75	90	
Steel failure for tension- and shear resistance											
Characteristic resistance	$N_{Rk,s}$	[kN]	10,8		17,6		32,1		49,9		
	$V_{Rk,s}$	[kN]	4,1		6,1		13,7		24,1		
	k_2 ²⁾	-	0,8								
	$M^0_{Rk,s}$	[Nm]	6,7		14,1		34,5		66,8		
Partial safety factor		γ_2	1,25								
Pullout											
Characteristic resistance in uncracked concrete C20/25		$N_{Rk,p}$	[kN]	4,0	6,0	4,0	9,0	12,0	16,0	20,0	25,0
Characteristic resistance in cracked concrete C20/25		$N_{Rk,p}$	[kN]	1,0	1,5	2,0	4,0	6,0	9,0	12,0	16,0
Increasing factor for concrete	C30/37	Ψ_c	-	1,22							
	C40/50			1,41							
	C50/60			1,55							
Concrete cone failure and splitting failure											
Effective anchorage depth		h_{ef}	[mm]	26	35	26	43	36	50	57	70
Factor for	cracked	k_{cr} ²⁾	-	7,2							
	uncracked	k_{unc} ²⁾	-	10,1							
Concrete cone	edge distance	$C_{cr,N}$	[mm]	1.5 h_{ef}							
	spacing	$S_{cr,N}$	[mm]	3 h_{ef}							
Splitting	edge distance	$C_{cr,sp}$	[mm]	1.8 h_{ef}							
	spacing	$S_{cr,sp}$	[mm]	3.6 h_{ef}							
Installation safety factor		γ_2 ³⁾ = γ_{inst} ²⁾	-	1,0							
Concrete pryout failure											
k-factor		$k^{(3)} = k_3^{(2)}$	-	1,0							2,0
Concrete edge failure											
Effective length of the anchor under shear loading		$l_{ef} = h_{ef}$	[mm]	26	35	26	43	36	50	57	70
Effective diameter of the anchor		d_{nom}	[mm]	5		6		8		10	

¹⁾ Only for non-structural applications

²⁾ Parameter only relevant for the design according to CEN/TS 1992-4:2009

³⁾ Parameter only relevant for the design according to ETAG 001, Annex C

Table C2: Characteristic values for seismic actions C1

Size MMS-plus			10	12	
Embedment depth in concrete [mm]	h_{nom}		h_{nom2}	h_{nom1}	h_{nom2}
			65	75	90
Steel failure for tension- and shear resistance					
Characteristic resistance	$N_{Rk,s,seis}$	[kN]	24,1	37,4	
	$V_{Rk,s,seis}$	[kN]	9,6	16,9	
Pullout					
Characteristic in cracked concrete	$N_{Rk,p,seis}$	[kN]	6,8	9,0	12,0
Concrete cone failure					
Effective anchorage depth	h_{ef}	[mm]	50	57	70
concrete edge distance	$c_{cr,N}$	[mm]	1,5 h_{ef}		
cone spacing	$s_{cr,N}$	[mm]	3 h_{ef}		
Installation safety factor	γ_2	-	1,0		
Concrete pryout failure					
k-factor	k	-	2,0	1,0	
Concrete edge failure					
Effective length of the anchor under shear loading	$l_{ef} = h_{ef}$	[mm]	50	57	70
Effective diameter of the anchor	d_{nom}	[mm]	8	10	

Table C3: Characteristic values under fire exposure

Size MMS-plus				6		7,5		10		12	
				h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}
Embedment depth in concrete h_{nom} [mm]				35	45	35	55	50	65	75	90
Steel failure for tension- and shear resistance ($F_{Rk,fi} = N_{Rk,fi} = V_{Rk,fi}$)											
Characteristic resistance	R30	$F_{Rk,fi}$	[kN]	0,25	0,4	0,5	1,0	1,5	2,3	3,0	3,0
	R60	$F_{Rk,fi}$	[kN]	0,25	0,4	0,5	0,8	1,4	1,4	2,1	2,1
	R90	$F_{Rk,fi}$	[kN]	0,25	0,4	0,5	0,5	1,0	1,0	1,5	1,5
	R120	$F_{Rk,fi}$	[kN]	0,2	0,3	0,4	0,4	0,8	0,8	1,2	1,2
	R30	$M^0_{Rk,s,fi}$	[Nm]	0,5		1,1		2,7		5,3	
	R60	$M^0_{Rk,s,fi}$	[Nm]	0,3		0,6		1,5		2,8	
	R90	$M^0_{Rk,s,fi}$	[Nm]	0,2		0,4		1,1		2,0	
	R120	$M^0_{Rk,s,fi}$	[Nm]	0,2		0,3		0,9		1,6	
Edge distance											
R30 to R120		$C_{cr,fi}$	[mm]	2 h_{ef}							
Spacing											
R30 to R120		$S_{cr,fi}$	[mm]	2 $C_{cr,fi}$							

Table C4: Displacements under tension loads

Size MMS-plus				6		7,5		10		12	
Embedment depth in concrete				h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}
				35	45	35	55	50	65	75	90
Cracked concrete C20/25 to C50/60	tension	N	[kN]	1,9	3,0	1,9	5,3	5,7	7,9	10,7	12,8
	displacement	$\bar{\delta}_{N0}$	[mm]	0,11	0,11	0,06	0,12	0,06	0,07	0,05	0,19
		$\bar{\delta}_{N\infty}$	[mm]	0,30	0,28	0,38	1,03	0,75	0,72	0,74	0,60
Uncracked concrete C20/25 to C50/60	tension	N	[kN]	0,5	0,7	0,9	2,0	2,9	4,3	5,7	6,4
	displacement	$\bar{\delta}_{N0}$	[mm]	0,01	0,02	0,03	0,04	0,03	0,09	0,05	0,02
		$\bar{\delta}_{N\infty}$	[mm]	0,14	0,09	0,12	0,11	0,08	0,09	0,07	0,22

Table C5: Displacements under shear loads

Size MMS-plus				6		7,5		10		12	
Embedment depth in concrete				h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}	h_{nom1}	h_{nom2}
				35	45	35	55	50	65	75	90
Cracked and uncracked concrete C20/25 to C50/60	shear load	V	[kN]	2	2	4	4	8	8	12	12
	displacement	$\bar{\delta}_{N0}$	[mm]	0,14	0,13	0,09	0,11	0,18	0,13	0,18	0,18
		$\bar{\delta}_{N\infty}$	[mm]	0,20	0,19	0,13	0,16	0,27	0,20	0,27	0,27