

PRESTATIEVERKLARING

HECO-DoP_ETA_05/0011_MMSInox_1809_NL

1. Unieke identificatiecode van het producttype:

MULTI-MONTI (MMS A4)

2. Type-, partij- of serienummer, dan wel een ander identificatiemiddel voor het bouwproduct, zoals voorgeschreven in artikel 11, lid 4

Identificatie conform ETA-05/0011 bijlage A2

Chargennummer: zie de productverpakking

3. Beoogde gebruiken van het bouwproduct, overeenkomstig de toepasselijke geharmoniseerde technische specificatie, zoals door de fabrikant bepaald.

ETA-05/0011 bijlage B1

Plugtype	Betonschroef
Voor gebruik in	<u>Beton C20/25 - C50/60 (EN 206)</u> - ongescheurd: Ø7.5, Ø10 en Ø12 - gescheurd: Ø7.5, Ø10 en Ø12
Optie/Categorie	<u>Option 1</u>
Belasting	Statisch en quasi-statisch (elke Ø)
Materiaal/uitvoering	<u>Roestvrij staal:</u> - toepassingen binnen en buiten als er sprake is van zeer agressieve omstandigheden (alle typen schroeven) <u>Zeer corrosiebestendig staal</u> - toepassingen binnen en buiten als er sprake is van zeer agressieve omstandigheden (alleen schroeven met de stempeling KK)

4. Naam, geregistreerde handelsnaam of geregistreerd handelsmerk en contactadres van de fabrikant, zoals voorgeschreven in artikel 11, lid 5:

HECO-Schrauben GmbH & Co. KG

Dr.-Kurt-Steim-Str. 28

78713 Schramberg (Duitsland)

5. Indien van toepassing, naam en contactadres van de gemachtigde wiens mandaat de in artikel 12, lid 2, vermelde taken bestrijkt:

-

6. Het systeem of de systemen voor de beoordeling en verificatie van de prestatiebestendigheid van het bouwproduct, vermeld in bijlage V

System 1



7. Indien de prestatieverklaring betrekking heeft op een bouwproduct dat onder een geharmoniseerde norm valt:

-

8. Indien de prestatieverklaring betrekking heeft op een bouwproduct waarvoor een Europese technische beoordeling is afgegeven:

Technische beoordelingsinstantie: Het Deutsche Institut für Bautechnik (DIBt)

Keuringsinstituut: Materialprüfungsanstalt Universität Stuttgart, Kennummer 0672

Europees beoordelingsdocument: EAD 330232-00-0601

Conformiteitscertificaat: 0672-CPR-0084

9. Aangegeven prestatie

Belangrijke kenmerken	Prestatie
Montage voorschriften	Zie bijlage, in het bijzonder bijlage B2
Karakteristieke waarden voor statische en quasi-statische belasting en verschuiving van limiettoestand van bruikbaarheid	Zie bijlage, in het bijzonder bijlage C1 en C2
Résistance au feu	cf. annexe : spécialement l'annexe C3

10. Les performances du produit identifié aux points 1 et 2 sont conformes aux performances déclarées indiquées au point 9. La présente déclaration des performances est établie sous la seule responsabilité du fabricant identifié au point 4.

Ondertekend voor en namens de fabrikant door:

Schramberg, 25.10.2018

A handwritten signature in blue ink, appearing to read 'A. Heck'.

i.o.

Andreas Heck

Hoofd PM/Bevestigingstechniek

A handwritten signature in black ink, appearing to read 'A. Hettich'.

i.o.

Andreas Hettich

Hoofd PM/Marketing



Specifications of intended use

Anchorage subject to:

- Static and quasi-static loads: all sizes.
- Fire exposure: all sizes.

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: all sizes.

Use conditions (Environmental conditions):

- Structures subject to dry internal conditions: all screw-types
- Structures subject to external atmospheric exposure (including industrial and marine environment) and to permanently damp internal conditions where no particular aggressive conditions exist: all screw-types
- Structures subject to external atmospheric exposure or exposure in permanently damp internal conditions or particularly aggressive conditions such as permanent or alternate immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor swimming pools or atmosphere with extreme chemical pollution (e.g. in desulfurization plants or road tunnels where de-icing materials are used): screw-types with head-marking KK

Design:

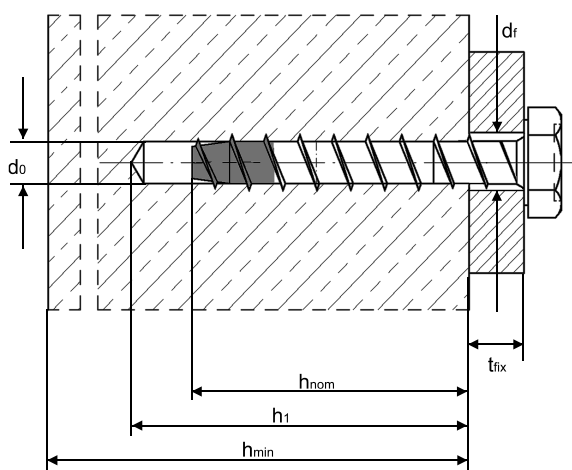
- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings (e. g. position of the anchor relative to reinforcement or to supports, etc.).
- The design of the anchoring under static or quasi-static actions and fire exposure have to be carried out in accordance with FprEN 1992-4:2017 and EOTA Technical Report TR055
- The design under shear load according to FprEN 1992-4:2017, section 6.2.2 applies to all in appendix B2, table B1 specified diameter d_f the diameter of clearance hole in the fixture

Installation:

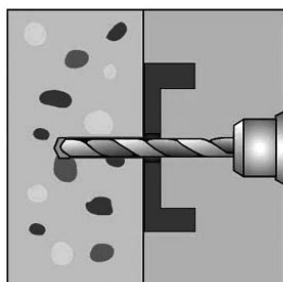
- Hole drilling by hammer-drilling only.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- The head of the anchor is attached to the fixture and is not damaged; respectively the required embedment depth h_{nom} is reached.
- MMS-St:
The required setting depth has to be achieved and the anchor has to be secured against further turning.

Table B1: Installation Parameters

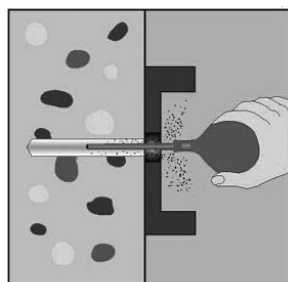
Anchor sizes		MMS-7,5 A4	MMS-10 A4	MMS-12 A4
Nominal drill diameter	d_0 [mm]	6,0	8,0	10,0
Cutting diameter of the drill bit	$d_{cut} \leq$ [mm]	6,4	8,45	10,45
Depth of drill hole	$h_1 \geq$ [mm]	75	90	100
Embedment depth	$h_{nom} \geq$ [mm]	65	75	90
Diameter of clearance hole in the fixture	$d_f \leq$ [mm]	9,0	12,0	14,0
Recommended installation tool		Impact screw driver, max. power output Tmax according to manufacturer information		
		100 Nm	250 Nm	250 Nm



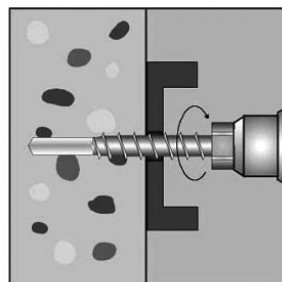
Installation Instruction



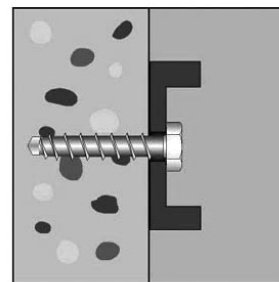
Drilling
 Drill diameter d_0 and drilling depth h_1 have to be met



Removal of drill dust
 e.g. blowing



Installation
 e.g. by hand or with impact screw driver



Complete
 verification: head supported to fixture and embedment depth h_{nom}

Table B2: Minimum thickness of concrete member, minimum spacing and minimum edge distances of anchor

Anchor sizes		MMS-7,5 A4	MMS-10 A4	MMS-12 A4
min. thickness of concrete member	h_{min} [mm]	105	130	140
cracked and uncracked concrete				
min. spacing	s_{min} [mm]	40	50	60
min. edge distance	c_{min} [mm]	40	50	60



Table C1 Characteristic values for static and quasi-static tension

Anchor sizes			MMS-7,5 A4	MMS-10 A4	MMS-12 A4
Steel failure					
Characteristic resistance	$N_{Rk,s}$	[kN]	23	16	25
Partial safety factor	γ_{Ms}	[-]	1,4		
Pullout					
Characteristic resistance in cracked concrete C20/25	$N_{Rk,p}$	[kN]	5	9	12
Characteristic resistance in uncracked concrete C20/25	$N_{Rk,p}$	[kN]	7,5	12	16
Increasing factor for $N_{Rk,p}$ in cracked and uncracked concrete	Ψ_c	C30/37	1,22		
		C40/50	1,41		
		C50/60	1,58		
Installation safety factor	γ_{inst}	[-]	1,4	1,2	
Concrete cone failure, splitting failure					
Effective anchorage depth	h_{ef}	[mm]	40	47,5	54,5
Factor for	cracked concrete	$k_{cr,N}$	7,7		
	uncracked concrete	$k_{urc,N}$	11,0		
Spacing	$s_{cr,N} = s_{cr}$	[mm]	3 x h_{ef}		
Edge distance	$c_{cr,N} = c_{cr}$	[mm]	1,5 x h_{ef}		
Installation safety factor	γ_{inst}	[-]	1,4	1,2	

Table C2: Displacements under tension loads

Anchor sizes			MMS-7,5 A4	MMS-10 A4	MMS-12 A4
Tension load in cracked concrete	N	[kN]	1,7	3,0	4,0
Displacements	δ_{N0}	[mm]	0,1	0,1	0,2
	$\delta_{N\infty}$	[mm]	0,2	0,2	0,6
Tension load in uncracked concrete	N	[kN]	2,6	4,0	5,3
Displacements	δ_{N0}	[mm]	0,1	0,1	0,2
	$\delta_{N\infty}$	[mm]	0,2	0,2	0,6



Table C3 Characteristic values for static and quasi-static shear

Anchor sizes			MMS-7,5 A4	MMS-10 A4	MMS-12 A4
Steel failure without lever arm					
Characteristic resistance	$V_{Rk,s}$	[kN]	12,3	20	33
Factor	k_7		0,8		
Partial safety factor	γ_{Ms}	[-]	1,5		
Steel failure with lever arm					
Characteristic resistance	$M^0_{Rk,s}$	[Nm]	22	45	93
Partial safety factor	γ_{Ms}	[-]	1,5		
Concrete pryout failure					
k-factor	k_8	[-]	1,0	2,0	
Installation safety factor	γ_{inst}	[-]	1,0		
Concrete edge failure					
Effective length of the anchor	l_f	[mm]	40	47,5	54,5
Effective diameter of the anchor	d_{nom}	[mm]	6	8	10
Installation safety factor	γ_{inst}	[-]	1,0		

Table C4 Displacements under shear loads

Anchor sizes			MMS-7,5 A4	MMS-10 A4	MMS-12 A4
Shear load in cracked and uncracked concrete	V	[kN]	5,9	9,7	15,7
Displacements	δ_{v0}	[mm]	1,7	3,0	3,2
	$\delta_{v\infty}$	[mm]	2,6	4,5	4,8



Table C5 Characteristic values for tension under fire exposure

Anchor sizes			MMS-7,5 A4				MMS-10 A4				MMS-12 A4			
Fire resistance duration	R	[min]	30	60	90	120	30	60	90	120	30	60	90	120
Steel failure														
Characteristic resistance	$N_{Rk,s,fi}$	[kN]	1,7	1,2	0,8	0,6	3,4	2,5	1,7	1,2	5,9	4,4	3,0	2,2
Characteristic resistance for MMS-St with metric stud	$N_{Rk,s,fi}$	[kN]	1,7	1,2	0,8	0,6	1,8	1,5	1,1	1,0	-	-	-	-
Pullout														
Characteristic resistance in concrete C20/25 to C50/60	$N_{Rk,p,fi}$	[kN]	1,3		1,0		2,3		1,8		3,0		2,4	
Concrete cone failure														
Characteristic resistance in concrete C20/25 to C50/60	$N_{Rk,c,fi}$	[kN]	1,8		1,5		2,8		2,2		3,9		3,2	
Spacing	$s_{cr,fi}$	[mm]	4 x h_{ef}											
Edge distance	$c_{cr,fi}$	[mm]	2 x h_{ef}											

Table C6 Characteristic values for shear under fire exposure

Anchor sizes			MMS-7,5 A4				MMS-10 A4				MMS-12 A4			
Fire resistance duration	R	[min]	30	60	90	120	30	60	90	120	30	60	90	120
Steel failure without lever arm														
Characteristic resistance	$V_{Rk,s,fi}$	[kN]	1,7	1,2	0,8	0,6	3,4	2,5	1,7	1,2	5,9	4,4	3,0	2,2
Steel failure with lever arm														
Characteristic resistance	$M^0_{Rk,s,fi}$	[Nm]	1,5	1,1	0,7	0,5	4,0	3,0	2,0	1,5	8,8	6,6	4,4	3,3