HECO SCHRAUBEN

MULTI-MONTI® MMS

European Technical Assessment ETA-05/0010

Mechanical fasteners for use in concrete

European Technical Assessment – Option 1 for cracked concrete

ETA-05/0010

Deutsches Institut für Bautechnik

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European Technical Assessment Body for construction products

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment

ETA-05/0010 of 28 August 2025

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	MULTI-MONTI screw anchor MMS
Product family to which the construction product belongs	Mechanical fasteners for use in concrete
Manufacturer	HECO-Schrauben GmbH & Co. KG Dr.-Kurt-Steim-Straße 28 78713 Schramberg GERMANY
Manufacturing plant	HECO-Plant 1 HECO-Plant 2
This European Technical Assessment contains	14 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 330232-01-0601, Edition 05/2021
This version replaces	ETA-05/0010 issued on 21 January 2015

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Specific Part

1 Technical description of the product

The MULTI-MONTI screw anchor MMS is an anchor in size 7,5, 10, 12, 14 and 16 mm made of galvanized steel. The anchor is screwed into a predrilled cylindrical drill hole. The special thread of the anchor cuts an internal thread into the member while setting. The anchorage is characterised by mechanical interlock in the special thread.

Product and product description are given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the anchor of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic resistance to tension load (static and quasi-static loading)	See Annex B2 and C1
Characteristic resistance to shear load (static and quasi-static loading)	See Annex C1
Displacements (static and quasi-static loading)	See Annex C4
Characteristic resistances and displacements for seismic performance categories C1 and C2	No performance assessed

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire	See Annex C2 and C3

3.3 Aspects of durability linked with the Basic Works Requirements

Essential characteristic	Performance
Durability	See Annex B1

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with European Assessment Document EAD No. 330232-01-0601 the applicable European legal act is: [96/582/EC].

The system to be applied is: 1

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

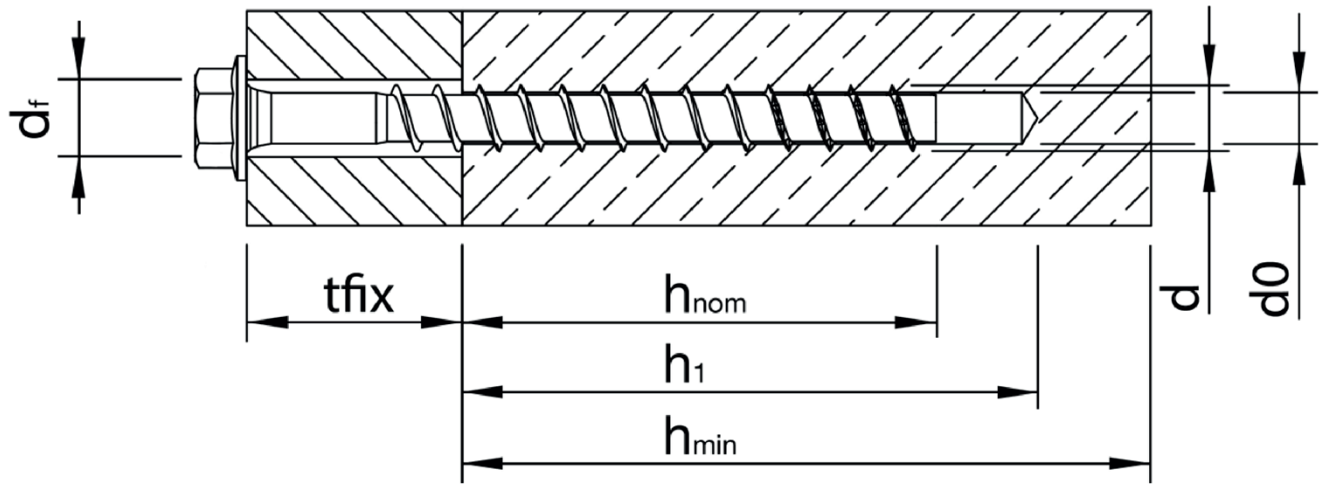
Issued in Berlin on 28 August 2025 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

beglaubigt:
Tempel

Deutsches Institut für Bautechnik DIBt

Installed condition



MMS-SS (Head version hexagon size 7,5, 10, 12, 14 and 16)

d_0	=	nominal borehole diameter
h_{nom}	=	nominal anchorage depth
h_1	=	borehole depth
h_{min}	=	minimum thickness of concrete member
t_{fix}	=	thickness of fixture
d_f	=	diameter of clearance hole in the fixture

MULTI-MONTI screw anchor MMS

Product description
Installed condition

Annex A 1

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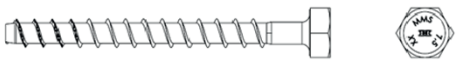
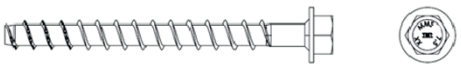
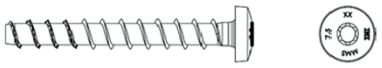
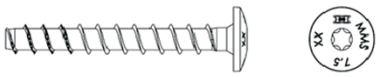
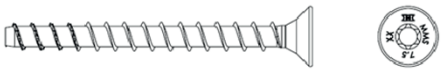
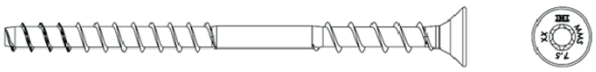
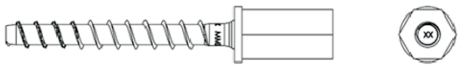
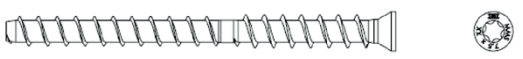
Table A1: Material and screw types

Type	Marking / Material
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	Screw anchor / steel [1]

Size MMS			7,5	10	12	14	16
nominal value of the characteristic yield strength	f_{yk}	[N/mm²]	720	720	720	720	720
nominal value of the characteristic tensile strength	f_{uk}	[N/mm²]	800	800	800	800	800
Rupture elongation	A_5	[%]	≤ 8				

[1] galvanized steel according EN 10263-4:2017 (multi-layered coating systems are possible)

	1) MULTI-MONTI S, with and without washer (alternative design with cone under the head)
	2) MULTI-MONTI SS, with Hexagon Head and washer (alternative design with cone under the head)
	3) MULTI-MONTI P, PanHead, with small PanHead
	4) MULTI-MONTI MS, mounting bar-anchor, with large PanHead
	5) MULTI-MONTI F, with Countersunk
	6) MULTI-MONTI FT, with Countersunk, under head thread and single- or multi-start thread
	7) MULTI-MONTI ZT, with Cylinder Head, under head thread and single- or multi-start thread (alternative forms HT, SST & PT possible)
	8) MULTI-MONTI ST, anchor with metric stud
	9) MULTI-MONTI I, anchor with metric stud for mounting of nuts (pre-assembled with sleeve)
	10) MULTI-MONTI V, anchor with metric stud
	11) MULTI-MONTI TC, with under head thread in different versions

MULTI-MONTI screw anchor MMS

Product description
Material and screw types

Annex A 2

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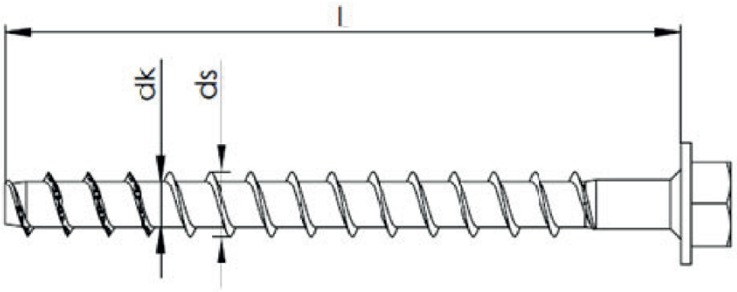
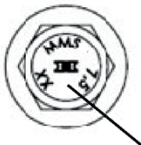
Table A2: Dimensions and head markings

Size MMS			7,5	10	12	14	16
			h_{nom}	h_{nom}	h_{nom}	h_{nom}	h_{nom}
Embedment depth in concrete		[mm]	55	65	75	95	115
Thread diameter	d_s	[mm]	7,5	10,1	12,0	14,3	16,7
Bolt diameter	d_k	[mm]	5,7	7,6	9,4	11,3	13,3
Length	L ≥	[mm]	35	50	75	100	140
	L ≤	[mm]	500	500	600	800	800

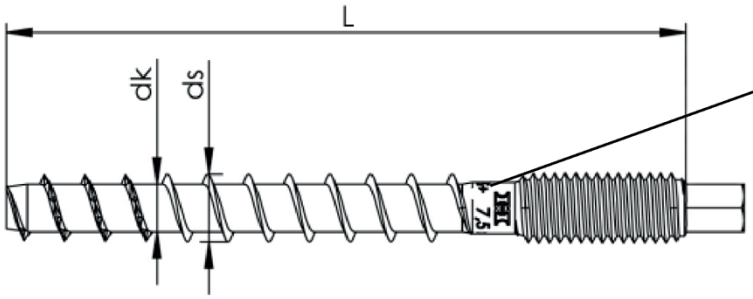
Head marking





Head marking
Factory signs: H
Anchor type: MMS
Anchor size: e.g. 7,5
Anchor length: e.g. 80

Bolt marking



Marking
Factory signs: H
Anchor type: MMS
Anchor size: e.g. 7,5
Anchor length: e.g. 80

MULTI-MONTI screw anchor MMS

Product description
Dimensions and head marking

Annex A 3

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Specifications of intended use

Use of the anchoring:

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

Base Materials:

- Reinforced or unreinforced normal weight concrete without fibres according to EN 206:2013.
- Strength classes C20/25 to C50/60 according to EN 206:2013.
- Cracked and uncracked concrete: all sizes.

Use conditions (Environmental conditions):

- Structure 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. positions of the anchor relative to reinforcement or to supports, etc.)
- The designs of the anchoring under static or quasi-static actions and fire exposure have to be carried out in accordance with EN 1992-4:2018 and EOTA Technical Report TR 055, edition 2018.
- The design under shear load according to EN 1992-4:2018, section 6.2.2 applies to all in appendix B2, Table B1 specified diameter df of clearance hole in the fixture.

Installation:

- Hole drilling by hammer drilling or hollow/vacuum drilling.
- 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, and the required embedment depth is reached.

MULTI-MONTI screw anchor MMS	Annex B 1
Intended use Specification	

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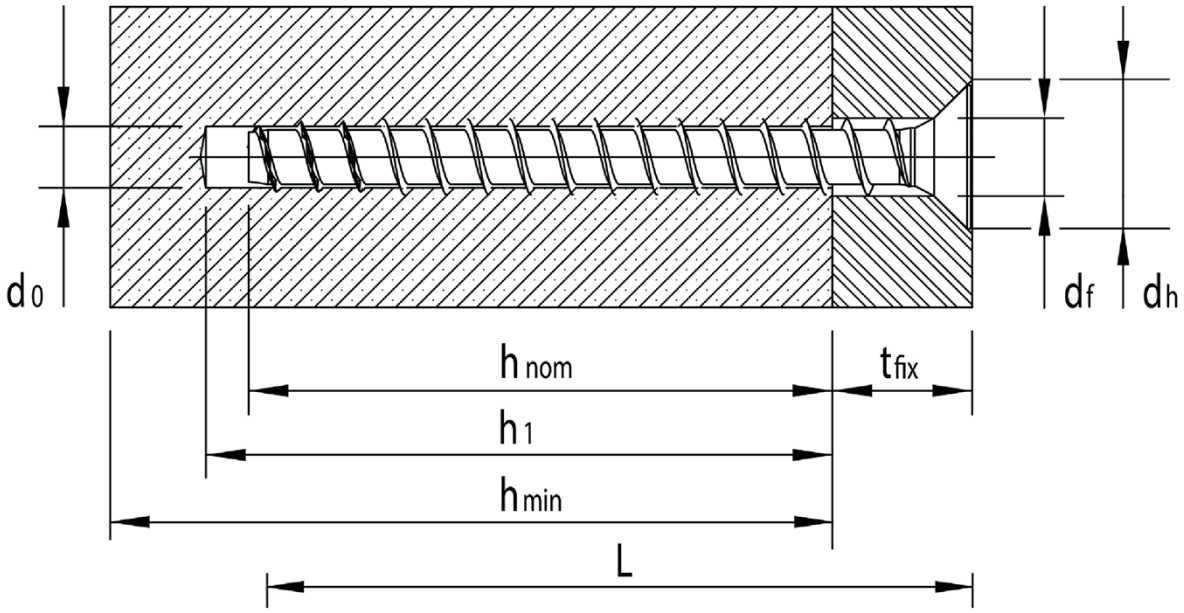
Table B1: Installation parameters MMS

Size MMS			**7,5**	**10**	**12**	**14**	**16**
			h_{nom}	h_{nom}	h_{nom}	h_{nom}	h_{nom}
Embedment depth in concrete		[mm]	55	65	75	95	115
Nominal drill diameter	d_0	[mm]	6	8	10	12	14
Drill bit cutting-Ø	$d_{cut} \leq$	[mm]	6,40	8,45	10,45	12,50	14,50
Borehole depth	$h_1 \geq$	[mm]	65	75	85	105	130
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	9	12	14	16	18
Diameter Countersunk	d_h	[mm]	13,6	17	24	-	-
Min. thickness of the concrete member	h_{min}	[mm]	100	115	125	150	180
Cracked and uncracked concrete — min. spacing	s_{min}	[mm]	40	50	60	90	100
Cracked and uncracked concrete — min. edge distance	c_{min}	[mm]	40	50	60	90	100
Recommended installation tool		[Nm]	Impact screw driver, max. power output T_{max} according manufacture information				
			100	250	250	350	500
Torque moment for threaded version (MMS-V)	T_{inst}	[Nm]	15	20	30	55	70



MULTI-MONTI screw anchor MMS

Intended use
Installation parameters

Annex B 2

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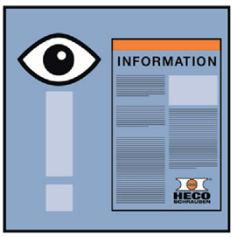
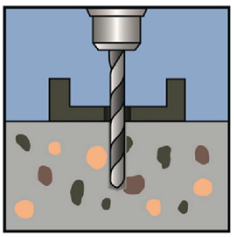
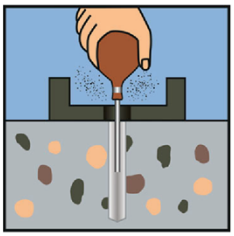
Installation instructions



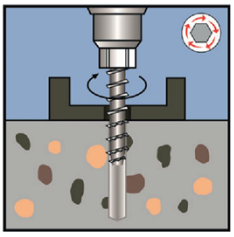
Note the information of the approval!



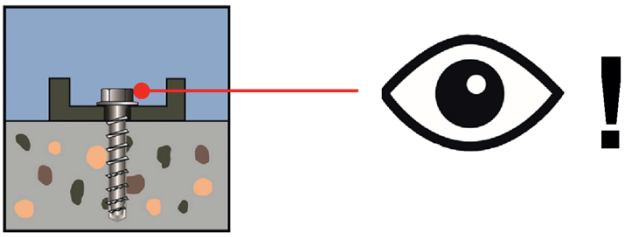
Create borehole using a rotary hammer



Clean borehole, e.g. with blowing out



Install of the screw anchor with an impact wrench or by hand



Check: The anchor head is fully supported on the fixture and not damaged

MULTI-MONTI screw anchor MMS	**Annex B 3**
Intended use Installation instruction	

Deutsches Institut für Bautechnik DIBt

Table C1: Characteristic values for static and quasi-static loading

Size MMS				**7,5**	**10**	**12**	**14**	**16**
				h_{nom}	h_{nom}	h_{nom}	h_{nom}	h_{nom}
Embedment depth in concrete			[mm]	55	65	75	95	115
Steel failure for tension- and shear resistance								
Characteristic resistance		$N_{Rk,s}$	[kN]	19,4	16	25	30	43
Partial safety factor		γ_{Ms}	-	1,4				
Characteristic resistance		$V_{Rk,s}$	[kN]	6,9	16	23	36	49
Partial safety factor		γ_{Ms}	[-]	1,5				
Ductility factor		k_7	[-]	0,8				
Characteristic resistance		$M^0_{Rk,s}$	[Nm]	19	38	71	132	217
Pullout								
Characteristic resistance in uncracked concrete C20/25		$N_{Rk,p}$	[kN]	7,5	13	15	26	32
Characteristic resistance in cracked concrete C20/25		$N_{Rk,p}$	[kN]	4,5	9	11,5	20	26
Increasing factor for $N_{Rk,p} = N_{Rk,p(C20/25)} * \psi_c$ of compressive strength classes C20/25 to C50/60		ψ_c	[-]	$(f_{ck}/20)^{0,50}$				
Concrete cone failure and splitting failure								
Effective anchorage depth		h_{ef}	[mm]	40	47,5	54,5	71,5	87,0
Factor for	cracked	$k_{cr,N}$	[-]	7,7				
	uncracked	$k_{urc,N}$	[-]	11,0				
Concrete cone	edge distance	$c_{cr,N}$	[mm]	1,5 h_{ef}				
	spacing	$s_{cr,N}$	[mm]	3 h_{ef}				
Splitting	resistance	$N^0_{Rk,sp}$	[kN]	$\min(N^0_{Rk,c}; N_{Rk,p})$				
	edge distance	$c_{cr,sp}$	[mm]	1,5 h_{ef}				
	spacing	$s_{cr,sp}$	[mm]	3 h_{ef}				
Installation factor		γ_{inst}	[-]	1,2				
Concrete pryout failure								
k-Factor		k_8	[-]	1,0	2,0			
Concrete edge failure								
Effective length of the anchor		$l_{ef} = h_{ef}$	[mm]	40	47,5	54,5	71,5	87,5
Effective diameter of the anchor		d_{nom}	[mm]	6	8	10	12	14

MULTI-MONTI screw anchor MMS

Performance
Characteristic value for static and quasi-static loading

Annex C 1

Deutsches Institut für Bautechnik DIBt

Table C2: Characteristic tension resistance under fire exposure

Size MMS				**7,5**	**10**	**12**	**14**	**16**
				h_{nom}	h_{nom}	h_{nom}	h_{nom}	h_{nom}
Embedment depth in concrete			[mm]	55	65	75	95	115
Characteristic resistance for tension								
Characteristic resistance	R30	$N_{Rk,s,fi}$	[kN]	1,7	3,4	5,9	8,3	10,8
	R60			1,2	2,5	4,4	6,3	8,1
	R90			0,8	1,7	3,0	4,2	5,4
	R120			0,6	1,2	2,2	3,1	4,1
Characteristic resistance for MMS-St with metric stud	R30	$N_{Rk,s,fi}$	[kN]	1,3	1,8	1)	1)	1)
	R60			1,2	1,5	1)	1)	1)
	R90			0,8	1,1	1)	1)	1)
	R120			0,6	1,0	1)	1)	1)
Pullout								
Characteristic resistance in concrete C20/25 to C50/60	R30	$M^0_{Rk,s,fi}$	[Nm]	1,1	2,3	2,9	5,0	6,5
	R60							
	R90							
	R120			0,9	1,8	2,3	4,0	5,2
Concrete failure								
Characteristic resistance in concrete C20/25 to C50/60	R30	$N_{Rk,c,fi}$	[kN]	1,7	2,7	3,8	7,4	12,3
	R60							
	R90							
	R120			1,4	2,1	3,0	6,0	9,9
Edge distance								
	R30 to R120	$c_{cr,fi}$	[mm]	2 x h_{ef}				
		If fire exposure occurs on more than one side, the edge distance of the concrete screw must be more than 300 mm.						
Spacing								
	R30 to R120	$s_{cr,fi}$	[mm]	4 x h_{ef}				

1) No performance assessed

MULTI-MONTI screw anchor MMS

Performance
Characteristic value under fire exposure

Annex C 2

Deutsches Institut für Bautechnik DIBt

Table C3: Characteristic shear resistance under fire exposure

Size MMS				**7,5**	**10**	**12**	**14**	**16**
				h_{nom}	h_{nom}	h_{nom}	h_{nom}	h_{nom}
Embedment depth in concrete			[mm]	55	65	75	95	115
Characteristic resistance for shear								
Characteristic resistance	R30	$V_{Rk,s,fi}$	[kN]	1,7	3,4	5,9	8,3	10,8
	R60			1,2	2,5	4,4	6,3	8,1
	R90			0,8	1,7	3,0	4,2	5,4
	R120			0,6	1,2	2,2	3,1	4,1
	R30	$M^0_{Rk,s,fi}$	[Nm]	1,5	4,0	8,8	15,0	22,0
	R60			1,1	3,0	6,6	11,0	17,0
	R90			0,7	2,0	4,4	7,4	11,0
	R120			0,5	1,5	3,3	5,6	8,3
Edge distance								
R30 to R120		$c_{cr,fi}$	[mm]	$2 \times h_{ef}$				
Spacing								
R30 to R120		$s_{cr,fi}$	[mm]	$4 \times h_{ef}$				

MULTI-MONTI screw anchor MMS

Performance
Characteristic value under fire exposure

Annex C 3

Deutsches Institut für Bautechnik DIBt

Table C4: Displacements under tension loads

Size MMS			**7,5**	**10**	**12**	**14**	**16**
			h_{nom}	h_{nom}	h_{nom}	h_{nom}	h_{nom}
Embedment depth in concrete		[mm]	55	65	75	95	115
Tension load uncracked concrete	N	[kN]	3,0	5,2	6,0	10,3	12,7
Displacement	δ_{N0}	[mm]	0,1	0,1	0,2	0,3	0,4
	$\delta_{N\infty}$	[mm]	0,2	0,3	0,6	0,8	0,8
Tension load cracked concrete	N	[kN]	1,8	3,6	4,6	7,9	10,3
Displacement	δ_{N0}	[mm]	0,1	0,1	0,2	0,3	0,4
	$\delta_{N\infty}$	[mm]	0,2	0,3	0,6	0,8	0,8

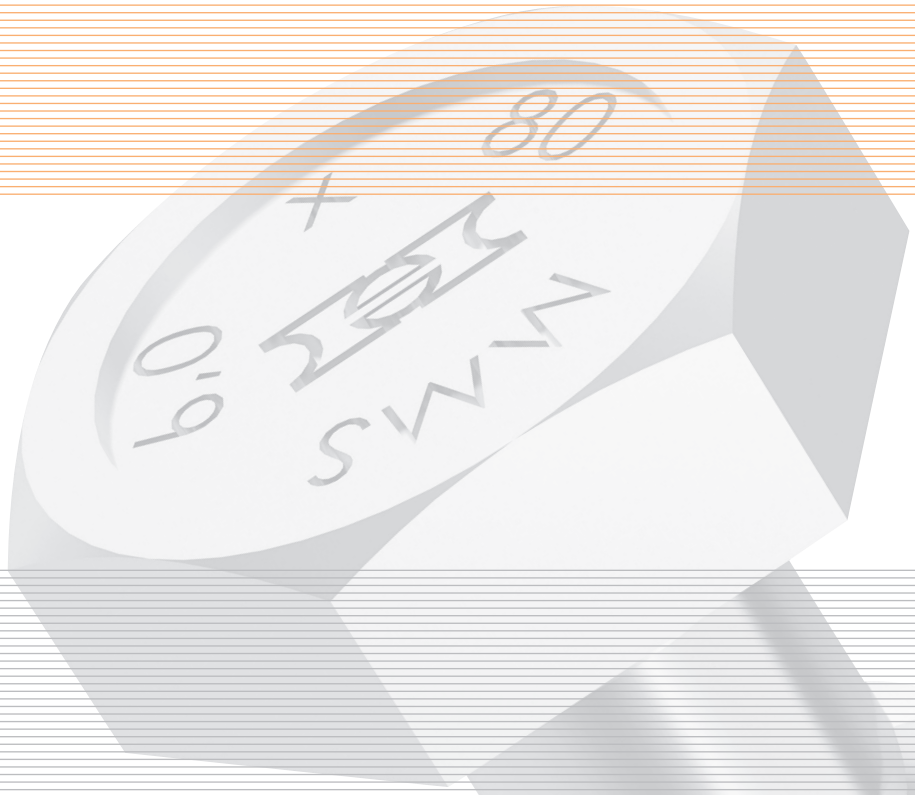
Table C5: Displacements under shear loads

Size MMS			**7,5**	**10**	**12**	**14**	**16**
			h_{nom}	h_{nom}	h_{nom}	h_{nom}	h_{nom}
Embedment depth in concrete		[mm]	55	65	75	95	115
Shear load uncracked and cracked concrete	V	[kN]	3,3	7,6	11,0	17,1	23,3
Displacement	δ_{V0}	[mm]	0,8	3,0	3,0	3,0	4,5
	$\delta_{V\infty}$	[mm]	1,2	4,5	4,5	4,5	6,0

MULTI-MONTI screw anchor MMS

Performance
Displacements

Annex C 4



HECO SCHRAUBEN

HECO-Schrauben GmbH & Co.KG
Dr.-Kurt-Steim-Straße 28 · D-78713 Schramberg
Tel.: +49 (0) 74 22 / 9 89-0 · Fax: +49 (0) 74 22 / 9 89-200
Mail: info@heco-schrauben.de · www.heco-schrauben.de

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