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

HECO SCHRAUBEN

MULTI-MONTI®

European Technical Approval – Option 1 for cracked concrete

ETA-05/0010

European Technical Approval ETA-05/0010

Concrete screw made of galvanised steel
for use in concrete

Deutsches Institut für Bautechnik

Anstalt des öffentlichen Rechts

Kolonnenstr. 30 L
10829 Berlin
Germany

Tel.: +49(0)30 787 30 0
Fax: +49(0)30 787 30 320
E-mail: dibt@dibt.de
Internet: www.dibt.de

Authorised and notified according to Article 10 of the Council Directive of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products (89/106/EEC)

DIBt

Mitglied der EOTA
Member of EOTA

European Technical Approval ETA-05/0010

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung *Trade name*	HECO MULTI-MONTI MMS
Zulassungsinhaber *Holder of approval*	HECO-Schrauben GmbH & Co. KG Dr.-Kurt-Steim-Straße 28 78713 Schramberg
Zulassungsgegenstand und Verwendungszweck *Generic type and use of construction product*	Betonschraube aus verzinktem Stahl in den Größen 7,5, 10, 12, 14 und 16 zur Verankerung im Beton *Concrete screw made of zinc plated steel of sizes 7.5, 10, 12, 14 and 16 for use in concrete*
Geltungsdauer: vom *Validity: from*	26 March 2007
bis *to*	20 January 2010
Herstellwerk *Manufacturing plant*	HECO-Schrauben GmbH & Co. KG Dr.-Kurt-Steim-Straße 28 78713 Schramberg

Diese Zulassung umfasst *This Approval contains*	14 Seiten einschließlich 7 Anhänge *14 pages including 7 annexes*
Diese Zulassung ersetzt *This Approval replaces*	ETA-05/0010 mit Geltungsdauer vom 20.01.2005 bis 20.01.2010 *ETA-05/0010 with validity from 20.01.2005 to 20.01.2010*

I LEGAL BASES AND GENERAL CONDITIONS

1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:

- Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products[1], modified by Council Directive 93/68/EEC[2] and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council[3];
- Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998[4], zuletzt geändert durch Gesetz vom 06.01.2004[5];
- Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC[6].

2 Deutsches Institut für Bautechnik is authorized to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.

3 This European technical approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.

4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.

5 Reproduction of this European technical approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of Deutsches Institut für Bautechnik. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European technical approval.

6 The European technical approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

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1 Official Journal of the European Communities L 40, 11.2.1989, p. 12
2 Official Journal of the European Communities L 220, 30.8.1993, p. 1
3 Official Journal of the European Union L 284, 31.10.2003, p. 25
4 Bundesgesetzblatt I, p. 812
5 Bundesgesetzblatt I, p.2, 15
6 Official Journal of the European Communities L 17, 20.1.1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of the construction product and intended use

1.1 Definition of the product

The HECO MULTI-MONTI MMS is an anchor made of zinc plated steel of sizes 7.5, 10, 12, 14 and 16. 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.

An illustration of the product and intended use is given in Annex 1.

1.2 Intended use

The anchor is intended to be used for anchorages for which requirements for mechanical resistance and stability and safety in use in the sense of the Essential Requirements 1 and 4 of Council Directive 89/106 EEC shall be fulfilled and failure of anchorages made with these products would cause risk to human life and/or lead to considerable economic consequences.

The anchor may be used for anchorages with requirements related to resistance to fire.

The anchor is to be used only for anchorages subject to static or quasi-static loading in reinforced or unreinforced normal weight concrete of strength classes C20/25 at minimum and C50/60 at most according to EN 206:2000-12. It may be anchored in cracked and non-cracked concrete.

The anchor may only be used in structures subject to dry internal conditions.

The provisions made in this European technical approval are based on an assumed working life of the anchor of 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.

2 Characteristics of the product and methods of verification

2.1 Characteristics of the product

The anchor corresponds to the drawings and information given in Annex 2. The characteristic material values, dimensions and tolerances of the anchor not indicated in Annex 2 shall correspond to the respective values laid down in the technical documentation[7] of this European Technical Approval.

Regarding the requirements concerning safety in case of fire it is assumed that the anchor meets the requirements of class A1 in relation to reaction to fire in accordance with the stipulations of the Commission decision 96/603/EC, amended by 2000/605/EC.

The characteristic values for the design of the anchorages are given in Annex 4 and 5.

The characteristic values for the design of anchorages regarding resistance to fire are given in Annexes 6 and 7. They are valid for use in a system that is required to provide a specific fire resistance class.

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7 The technical documentation of this European technical approval is deposited at the Deutsches Institut für Bautechnik and, as far as relevant for the tasks of the approved bodies involved in the attestation of conformity procedure, is handed over to the approved bodies.

Each anchor shall be marked with the identifying mark of the producer, the anchor type, the diameter, the length of the anchor and the maximum thickness of fixture according to Annex 2.

2.2 Methods of verification

The assessment of the fitness of the anchor for the intended use with regard to the requirements of mechanical resistance and stability as well as safety in use in the sense of the Essential Requirements 1 and 4 was performed based on ETAG 001 "Guideline for European technical approval of Metal Anchors for Use in Concrete", Option 1, and the following additional tests according to EOTA Common Understanding of Assessment Procedure (CUAP) 06.01/20 "Concrete screw for anchorage in normal weight concrete".

1. Setting tests in high strength concrete;
2. Setting tests in low strength concrete;
3. Setting tests with impact screw driver;
4. Modified test under repeated loads;
5. Tests in respect to brittle fracture.

The assessment of the anchor for the intended use in relation to the requirements for resistance to fire has been made in accordance with the technical Report TR 020 "Evaluation of anchorages in concrete concerning resistance to fire".

In addition to the specific clauses relating to dangerous substances contained in this European technical approval, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Directive, these requirements need also to be complied with, when and where they apply.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the communication of the European Commission[8] the system 2+ of attestation of conformity applies.

This system of attestation of conformity is defined as follows:

System 2+: Declaration of conformity of the product by the manufacturer on the basis of:

(a) Tasks for the manufacturer:
  (1) initial type–testing of the product;
  (2) factory production control;
  (3) testing of samples taken at the factory in accordance with a prescribed test plan.

(b) Tasks for the approved body:
  (4) certification of factory production control on the basis of:
    – initial inspection of factory and of factory production control;
    – continuous surveillance, assessment and approval of factory production control.

Note: Approved bodies are also referred to as "notified bodies".

8 Letter of the European Commission of 13/02/2004 to EOTA

3.2 Responsibilities

3.2.1 Tasks of the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The manufacturer may only use initial / raw / constituent materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the control plan of March 2007 which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited at Deutsches Institut für Bautechnik.[9]

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

3.2.1.2 Other tasks of manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 in the field of anchors in order to undertake the actions laid down in section 3.2.2. For this purpose, the control plan referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved body involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

3.2.2 Tasks of approved bodies

The approved body shall perform the

- initial inspection of factory and of factory production control,
- continuous surveillance, assessment and approval of factory production control,

in accordance with the provisions laid down in the control plan.

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the factory production control stating the conformity with the factory production control of this European technical approval.

In cases where the provisions of the European technical approval and its control plan are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform Deutsches Institut für Bautechnik without delay.

3.3 CE marking

The CE marking shall be affixed on each packaging of the anchors. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and be accompanied by the following additional information:

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9 The control plan is a confidential part of the documentation of the European technical approval, but not published together with the ETA and only handed over to the approved body involved in the procedure of attestation of conformity.
See section 3.2.2.

- the name and address of the producer (legal entity responsible for the manufacturer),
- the last two digits of the year in which the CE marking was affixed,
- the number of the EC certificate for the factory production control,
- the number of the European technical approval,
- use category (ETAG 001-1, Option 1),
- size.

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The European technical approval is issued for the product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alterations to the ETA shall be necessary.

4.2 Installation

4.2.1 Design of anchorages

The fitness of the anchor for the intended use is given under the following conditions:

The anchorages are designed in accordance with the "Guideline for European technical approval of Metal Anchors for Use in Concrete", Annex C, Method A 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, in cracked or non-cracked concrete, etc.).

The design of anchorages under fire exposure has to consider the conditions given in the technical Report TR 020 "Evaluation of anchorages in concrete concerning resistance to fire". The relevant characteristic anchor values are given in Annexes 6 and 7. The design method covers anchors with a fire attack from one side only. If the fire attack is from more than one side, the design method may be taken only, if the edge distance of the anchor is $c \geq 300$ mm.

4.2.2 Installation of anchors

The fitness for use of the anchor can only be assumed if the following conditions of installation are met:

- Anchor installation carried out by appropriately qualified personnel under the supervision of the person responsible for technical matters on site,
- Use of the anchor only as supplied by the manufacturer,
- Anchor installation in accordance with the manufacturer's specifications and drawings,
- Checks before placing the anchor, to ensure that the characteristic values of the base material in which the anchor is to be placed, is identical with the values, which the characteristic loads apply,

- Check of the concrete being well compacted, e.g. without significant voids,
- Edge distances and spacings not less than the specified values without minus tolerances,
- Placing drill holes without damaging the reinforcement,
- 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,
- Cleaning of the hole of drilling dust,
- The anchor may be used only once,
- Anchor installation such that the embedment depth of the anchor in the concrete is not smaller then the value h_{nom} given in Annex 3 Table 2,
- The fixture is fully pressed on the concrete surface without intermediate layers,
- Further turning of the anchor is not easy,
- The head of the anchor is fully supported on the fixture and is not damaged.

4.2.3 Responsibility of the manufacturer

The manufacturer is responsible to ensure that the information on the specific conditions according to 1 and 2 including Annexes referred to 4.2.1, 4.2.2 is given to those who are concerned. This information may be made by reproduction of the respective parts of the European technical approval. In addition, all installation data shall be shown clearly on the packaging and/or on an enclosed instruction sheet, preferably using illustrations.

The minimum data required are:

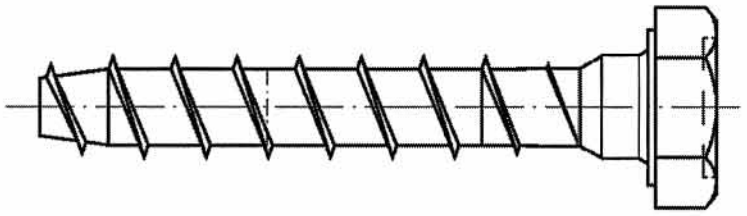
- Drill bit diameter,
- Size of the anchor,
- Maximum thickness of the fixture,
- Minimum embedment depth,
- Minimum hole depth,
- Information on the installation procedure, including cleaning of the hole, preferably by means of an illustration,
- Reference to any special installation equipment needed,
- Identification of the manufacturing batch.

All data shall be presented in a clear and explicit form.

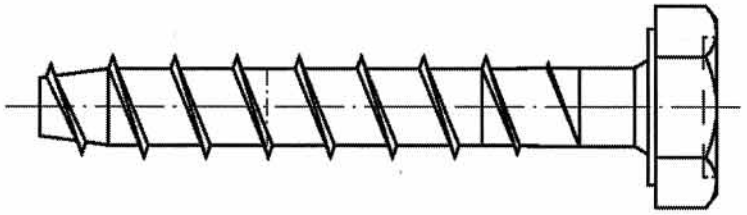
Dipl.-Ing. E. Jasch
President of Deutsches Institut für Bautechnik
Berlin, 26 March 2007

beglaubigt:
Lange

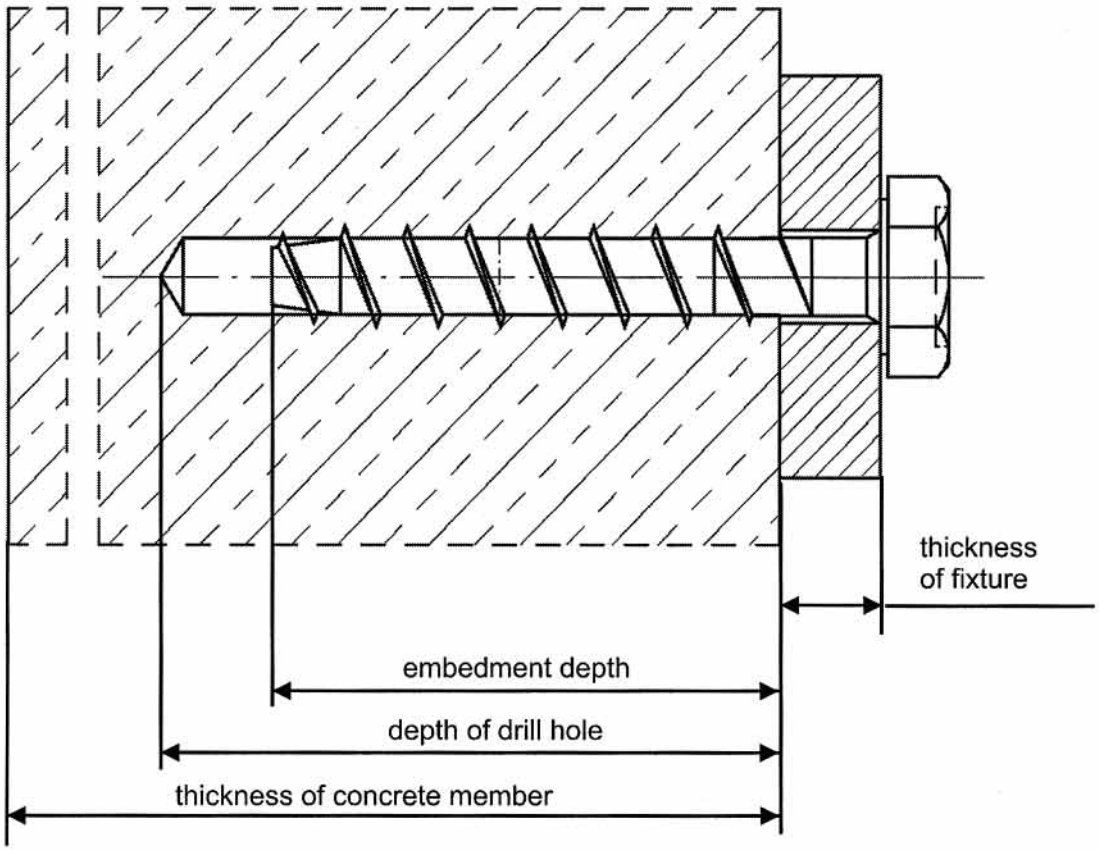
MULTI-MONTI MMS



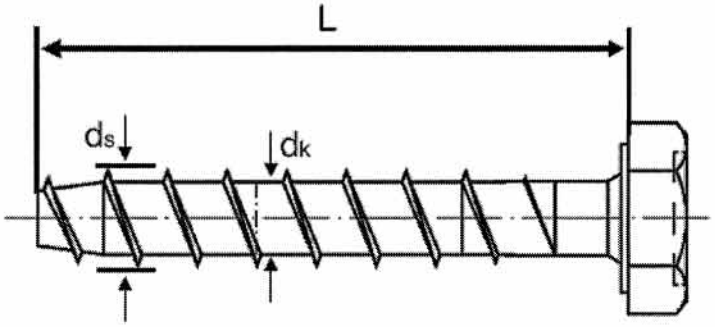
MMS-16



MMS-7,5
MMS-10
MMS-12
MMS-14



HECO MULTI-MONTI MMS	Annex 1
Product and intended use	of European technical approval ETA-05/0010



head versions

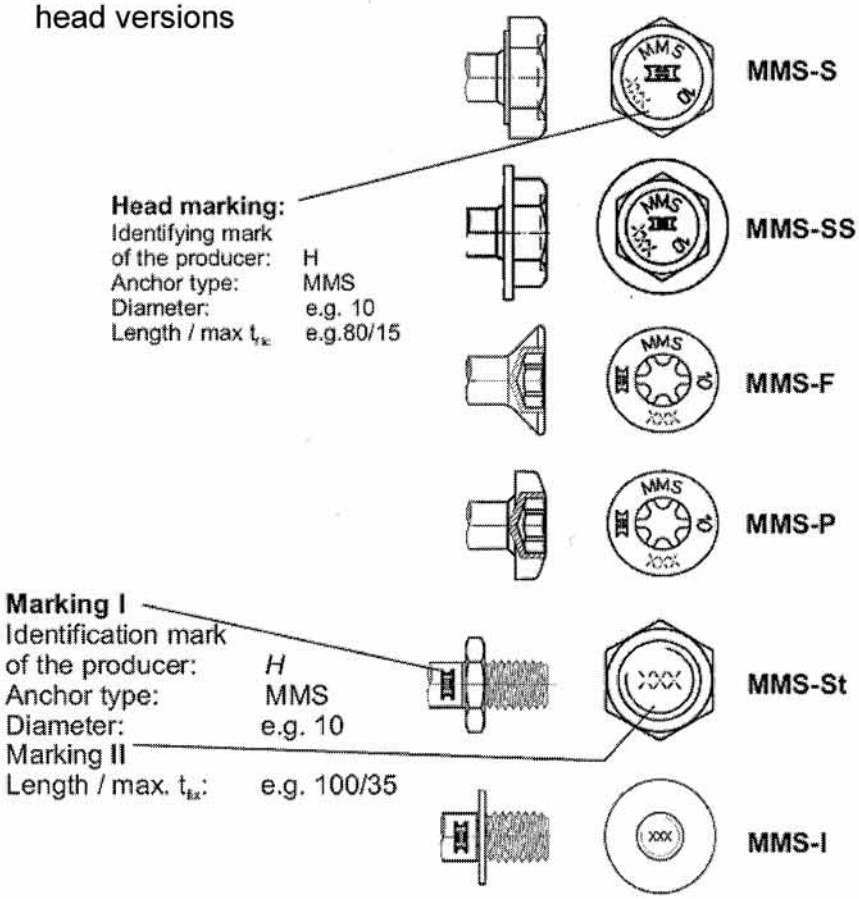


Table 1: Dimensions and materials

Anchor size				MMS-7,5	MMS-10	MMS-12	MMS-14	MMS-16
Length	L	≥	[mm]	60	70	80	100	120
Length	L	≤	[mm]	200	200	400	400	400
Bolt diameter	d_k		[mm]	5.7	7.6	9.7	11.3	13.3
Thread diameter	d_s		[mm]	7.5	10.1	12.0	14.3	16.7
Material				zinc plated steel acc. to EN 10263-4				

HECO MULTI-MONTI MMS

Head versions, dimensions and materials

Annex 2

of European technical approval ETA-05/0010

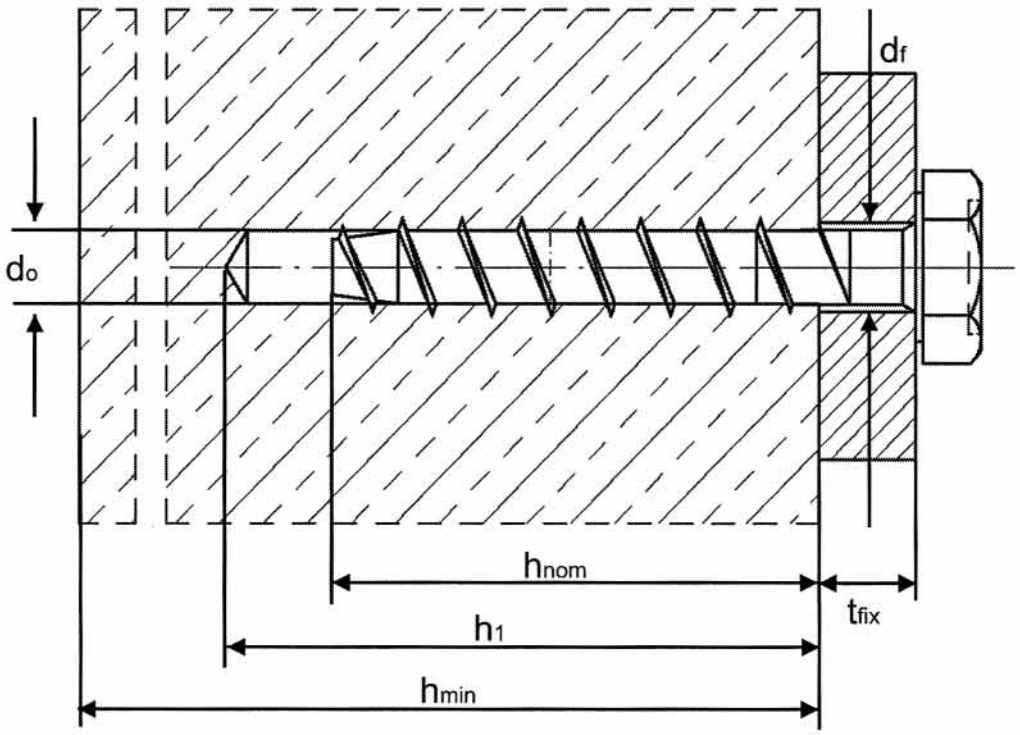


Table 2: Installation parameters

Anchor size				MMS-7,5	MMS-10	MMS-12	MMS-14	MMS-16
Nominal drill diameter	d_0		[mm]	6	8.0	10.0	12.0	14.0
Cutting diameter of the drill bit	d_{cut}	≤	[mm]	6.4	8.45	10.45	12.5	14.5
Depth of drill hole	h_1	≥	[mm]	65	75	85	105	130
Embedment depth	h_{nom}	≥	[mm]	55	65	75	95	115
Diameter of clearence hole in the fixture	d_f	≤	[mm]	9	12.0	14.0	16.0	18.0

Table 3: Minimum thickness of concrete member, minimum spacing and minimum edge distances of anchors

Anchor size				MMS-7,5	MMS-10	MMS-12	MMS-14	MMS-16
Min. thickness of the concrete member	h_{min}		[mm]	100	115	125	150	180
Cracked concrete and non-cracked concrete								
Minimum spacing	s_{min}	=	[mm]	40	50	60	90	100
Minimum edge distance	c_{min}	=	[mm]	40	50	60	90	100

HECO MULTI-MONTI MMS

Installation parameters,
minimum thickness of concrete member,
minimum spacing and edge distances

Annex 3

of European
technical approval
ETA-05/0010

Table 4: Design method A, characteristic values to tension loads

Anchor size			MMS-7,5	MMS-10	MMS-12	MMS-14	MMS-16
Steel failure							
Characteristic resistance	$N_{Rk,s}$	[kN]	19.4	16	25	30	43
Partial safety factor	γ_{Ms} [1)]	[-]	1.4				
Pullout							
Characteristic resistance in cracked concrete C20/25	$N_{Rk,p}$	[kN]	5	9	12	20	30
Characteristic resistance in non-cracked concrete C20/25	$N_{Rk,p}$	[kN]	7.5	12	16	30	40
Increasing factor for $N_{Rk,p}$ in cracked and non-cracked concrete	ψ_c	C30/37	1.22				
		C40/50	1.41				
		C50/60	1.55				
Partial safety factor	γ_{Mp} [1)]	[-]	1.8 [2)]				
Concrete cone failure, splitting failure							
Effective anchorage depth	h_{ef}	[mm]	40	47.5	54.5	71.5	87.5
Spacing	$s_{cr,N} = s_{cr,sp}$	[mm]	3 h_{ef}				
Edge distance	$c_{cr,N} = c_{cr,sp}$	[mm]	1.5 h_{ef}				
Partial safety factor	γ_{Mc} [1)]	[-]	1.8 [2)]				

[1)] in absence of other national regulations

[2)] the installation safety factor $\gamma_2 = 1.2$ is included

Table 5: Displacements under tension loads

Anchor size			MMS-7,5	MMS-10	MMS-12	MMS-14	MMS-16
Tension load in cracked concrete	**N**	[kN]	2.0	3.0	4.0	7.2	9.7
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 in non-cracked concrete	**N**	[kN]	3.0	4.0	5.3	10.1	13.7
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

Table 6: Design method A, characteristic values to shear loads

Anchor size			MMS-7,5	MMS-10	MMS-12	MMS-14	MMS-16
Steel failure without lever arm							
Characteristic resistance	$V_{Rk,s}$	[kN]	6.9	16	26	36	49
Partial safety factor	γ_{Ms} [1)]	[-]	1.5				
Steel failure with lever arm							
Characteristic anchor resistance	$M^0_{Rk,s}$	[Nm]	19	38	82	132	217
Partial safety factor	γ_{Ms} [1)]	[-]	1.5				
Concrete pryout failure							
Factor in equation 5.6 of ETAG, Annex C, section 5.2.3.3	k		1.0	2.0			
Partial safety factor	γ_{Mc} [1)]	[-]	1.5 [2)]				
Concrete edge failure							
Effective length of the anchor in shear loading	ℓ_f	[mm]	40	47.5	54.5	71.5	87.5
Effective diameter of the anchor	d_{nom}	[mm]	6	8	10	12	14
Partial safety factor	γ_{Mc} [1)]	[-]	1.5 [2)]				

[1)] in absence of other national regulations

[2)] the installation safety factor γ_2 = 1.0 is included

Table 7: Displacements under shear loads

Anchor size			MMS-7,5	MMS-10	MMS-12	MMS-14	MMS-16
Shear load in cracked and non-cracked concrete	V	[kN]	3.3	8.9	14.7	20.3	28.1
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

Information for design of anchorage under shear load:

In general, the conditions given in ETAG 001 Annex C, section 4.2.2.1 a) and section 4.2.2.2 b) are not fulfilled because the diameter of clearance hole in the fixture according to Annex 3 Table 2 is greater than the values given in Annex C Table 4.1 for the corresponding diameter of the anchor.
However for each specific anchor length the manufacturer may specify the thickness of fixture for which these conditions are fulfilled.

HECO MULTI-MONTI MMS	**Annex 5**
Design method A, characteristic values to shear loads; displacements	of European technical approval ETA-05/0010

Table 8: Characteristic values to tension loads under fire exposure in cracked and non-cracked concrete C 20/25 to C 50/60

Anchor size			MMS-7,5				MMS-10				MMS-12				MMS-14				MMS-16			
Fire resistance duration	R	[min]	30	60	90	120	30	60	90	120	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	8.3	6.3	4.2	3.1	10.8	8.1	5.4	4.1
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	5.0			4.0	7.5			6.0
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	7.8			6.2	12.9			10.3
Spacing	$s_{cr,N}$	[mm]	$4 \times h_{ef}$																			
	s_{min}	[mm]	s_{min} according to Annex 3																			
Edge distance	$c_{cr,N}$	[mm]	$2 \times h_{ef}$																			
	c_{minN}	[mm]	$c_{min} = 2 \times h_{ef}$; if fire attack is from more than one side, the edge distance of the anchor has to be bigger than 300 mm.																			

in absence of other national regulations the partial safety factor for resistance under fire exposure $\gamma_{M,fi} = 1.0$ is recommended

HECO MULTI-MONTI MMS

Characteristic values of tension load resistance under fire exposure

Annex 6

of European technical approval ETA-05/0010

Table 9: Characteristic values to shear loads under fire exposure in cracked and non-cracked concrete C 20/25 to C 50/60

Anchor size			MMS-7,5				MMS-10				MMS-12				MMS-14				MMS-16			
Fire resistance duration	R	[min]	30	60	90	120	30	60	90	120	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	8.3	6.3	4.2	3.1	10.8	8.1	5.4	4.1
Steel failure with lever arm																						
Characteristic anchor 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	15.0	11.0	7.4	5.6	22.0	17.0	11.0	8.3
Concrete pryout failure																						
In Equation (5.6) of ETAG 001, Annex C, 5.2.3.3 the k-factor 2.0 (1.0 for MMS-7,5) and the relevant values of $N^0_{Rk,c,fi}$ of Table 8 have to be considered																						
Concrete edge failure																						
The initual value $V^0_{Rk,c,fi}$ of the characteristic resistance in concrete C20/25 to C50/60 under fire exposure may be determined by: $V^0_{Rk,c,fi} = 0{,}25 \times V^0_{Rk,c}$ (R30, R60, R90) $V^0_{Rk,c,fi} = 0{,}20 \times V^0_{Rk,c}$ (R120) with $V^0_{Rk,c}$ initiual value of the characteristic resistance in cracked concrete C20/25 under normal temperature																						

in absence of other national regulations the partial safety factor for resistance under fire exposure $\gamma_{M,fi} = 1.0$ is recommended

HECO MULTI-MONTI MMS

Characteristic values of shear load resistance under fire exposure

Annex 7

of European technical approval ETA-05/0010