

ETA-23/0434

T-Head MTS



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Authorised and notified according
to Article 29 of the Regulation (EU)
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MEMBER OF EOTA



European Technical Assessment ETA-23/0434 of 2023/09/12

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:

MPS-080 series T-headed bars

Product family to which the above construction product belongs:

Headed reinforcement steel bars

Manufacturer:

MEPRO
Robijnstraat 1
NL-2872 ZW Schoonhoven
Tel: +31 (0) 348 45 25 55
Internet www.mepro.com

Manufacturing plant:

MEPRO
Str. Bruxelles no 41
Prejmer 507165
Romania

This European Technical Assessment contains:

8 pages including 3 annexes which form an integral part of the document

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:

EAD 160012-01-0301 Headed reinforcement steel bars

This version replaces:

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product

General

MPS-080 series T-headed bars are steel bars for reinforcement of concrete structures. The bars have devices for mechanical anchorage attached to one or both ends. The anchorage devices (T-heads) are steel plates rigidly connected to the rebar. The head is made of rebar steel and is produced by hot forging (MPS-080 series).

The material of the reinforced bar material complies with EN 10080: 2005 and EN 1992-1-1: 2004 with a characteristic yield strength of 500 MPa and class B ductility.

The bar diameters for the hot forged T-Heads are 16 mm to 32 mm. with a head thickness of 9.6 mm to 19 mm. The description of these products is given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

In section 3 are performances mentioned these are only valid if the T-headed bar is used in accordance with the specifications and conditions described in Annex A and B.

MPS-080 series T-headed bars are intended for use in building constructions with an assumed intended working life of 100 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body, 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

Characteristics	Performance
Geometry of anchoring head	See annex A
Robustness of head-to-bar connection	See Annex C
Resistance under static and quasi-static loading	See Annex C
Characteristic resistance under seismic loading	No performance assessed
Resistance under fatigue loading	See Annex C

3.2 Safety in case of fire

Characteristics	Performance
Reaction to fire	The T-headed bars are made from steel classified as Euroclass A1 in accordance with EN 13501-1 and Commission Delegated Regulation 2016/364

4 Attestation and verification of constancy of performance (AVCP)

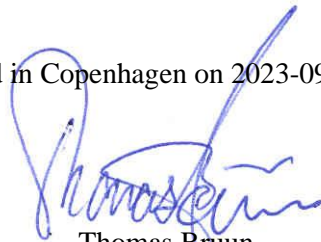
4.1 AVCP system

According to the decision 97/597/EC of the European Commission, as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is System 1+.

5 Technical details necessary for the implementation of the AVCP system, as foreseen in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking.

Issued in Copenhagen on 2023-09-12 by



Thomas Bruun
Manager, ETA-Danmark

Annex A – Description of the products

A.1 Hot formed T-Head (MPS-080 series)

A.1.1 Dimensions of the hot formed T-Head

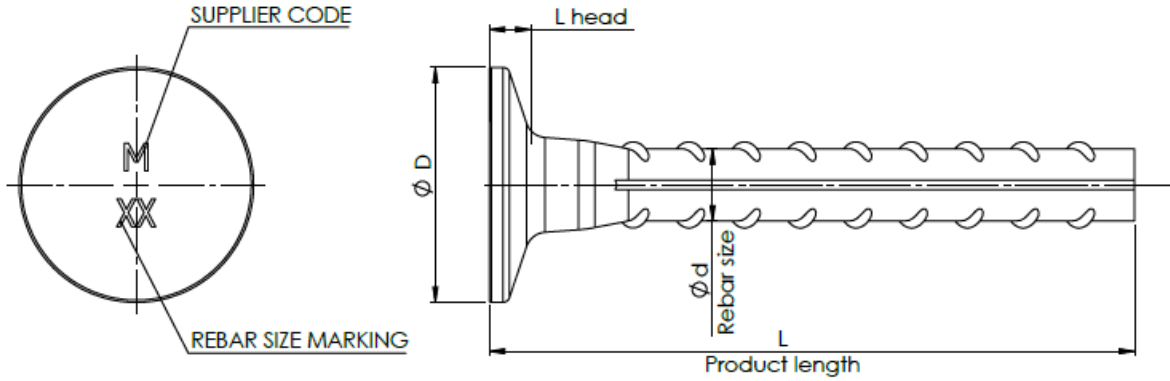


Table A.1.1: Dimensions Hot formed T-Heads

Nominal diameter	Dimensions of the hot formed T-Heads	
Ød (mm)	L head (mm)	ØD (mm)
16	9,6	Min 48
20	11,5	Min 60
25	15,5	Min 75
32	19	Min 96

Table A.1.2: Materials

Component	Material
Rebar	Reinforcing bars of class B according to EN 1992-1-1: 2004+ AC: 2010 with $f_{yk} = 500$ MPa

Annex B: Intended use

B.1 Specifications of intended use

The anchoring reinforced bars for concrete structures reliant to static and quasi-static and high-cycle fatigue loads.

B.2 Concrete

Concrete of minimum strength class C30/37, according to EN 206: 2013

B.3 Design

The function of the MPS-080 series is to be a part for reinforcing a concrete structure, depending on the design of the works according to the applied design laws. For this, the necessary crack and split reinforcement due to partially loaded areas, local crushing and transverse forces must be taken into account.

In order to ensure the resistance to fire, the structure should be designed and built in accordance with the provisions of an appropriate standard for the design of structures in case of fire.

B.4 Installation MPS-080 series

To install the MPS-080 series must comply with the documentation of detailed construction like models, drawings, specifications etc. determined for the individual works.

If the MPS-080 series is bend, it must be implemented that the beginning of the bend is at a minimum distance of twice the bar diameter from the head-to-bar connection.

Annex C – Performance**C.1 Anchorage capacity**

Robustness of head-to-bar connection

Product	Level of performance	Description
MPS-080	Category B3 according to ISO 15698-1	The wedge tensile tests have been performed according to clause of 7.3 of ISO 15698-1 and clause 6 of ISO 15698-2. The assessment of the test results is described in clause 7.3 of ISO 15698-1 and clause 6 of ISO 15698-2. The wedge angle that has been used during the test is 10°.

Static and quasi- static loading

Product	Level of performance	Description
MPS-080	Category B3 according to ISO 15698-1	Static tensile tests were conducted on headed bars to order to assess the suitability of the head for transfer of static loads from the reinforcing bar into the concrete. The tests have been performed according to clause 7.2.2 of ISO 15698-1 and clause 5 of ISO 15698-2. The tests have been performed in air. The assessment of the test results is described in clause 7.2.2 of ISO 15698-1 and clause 5.7.3 of ISO 15698-2.

Fatigue loading

Product	Level of performance	Description
MPS-080	Category F1 according to ISO 15698-1	The tests have been performed according to clause 7.2.3 of ISO 15698-1 and clause 5.8 of ISO 15698-2. The test conditions and assessment of the test results are described in clause 7.2.3 of ISO 15698-1 and clause 5.8.4 of ISO 15698-2 with modifications given in Annex B. Number of cycles of reinforcing bar at stress ranges and maximum number of cycles and stress ranges of headed bar tested in one series are given in the below table:

Size	Upper stress level	Lower stress level	Stress range	Number of cycles
	σ_{max}	σ_{min}	$2\sigma_a$	N
16	300	50	250	68.149
16	300	138	162	386.611
25	300	50	250	98.808
25	300	138	162	1.255.194
32	300	50	250	88.911
32	300	138	162	1.015.648