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# European Technical Assessment

# ETA-22/0194 of 31/03/2022

## General Part

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|---|---|
| **Technical Assessment Body issuing the European Technical Assessment** | Instytut Techniki Budowlanej |
| **Trade name of the construction product** | HILTI saddle nuts of MT System |
| **Product family to which the construction product belongs** | Products for installation systems for supporting technical building equipment |
| **Manufacturer** | HILTI AG<br>Feldkircherstraβe 100<br>9494 Schaan<br>FÜRSTENTUM LIECHTENSTEIN |
| **Manufacturing plant** | L 1124303 |
| **This European Technical Assessment contains** | 9 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** | European Assessment Document EAD 280016-00-0602 "Products for installation systems for supporting technical building equipment" |

*This European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.*

## Specific Part

### 1 Technical description of the product

This European Technical Assessment covers HILTI saddle nuts of MT System: MT-FP M6, MT-FP M6 OC, MT-FP M8, MT-FP M8 OC, MT-FP M10, MT-FP M10 OC, MT-FP M12, MT-FP M12 OC, MT-FP M16 and MT-FP M16 OC.

The products are steel plates in parallelogram shape with one centric arranged threaded opening. The opening in the nut is used to fasten threaded elements, e.g. threaded rods.

The drawings, dimensions and materials of the HILTI saddle nuts of MT System are given in Annex A.

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

The performances given in clause 3 are only valid if HILTI saddle nuts of MT System are in compliance with the specifications and conditions given in Annex B.

The provisions made in this European Technical Assessment are based on an assumed working life of the HILTI saddle nuts of MT System of 50 years when installed in the works. The indications given on the working life cannot be interpreted as a guarantee given by the producer or Technical 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.

In accordance with the European Assessment Document EAD 280016-00-0602, the products are intended to be used under dry indoor conditions for supporting:

- pipes for the transport of water not intended for human consumption,
- pipes for the transport of gas/fuel intended for the supply of building heating/cooling systems,
- technical building equipment in general.

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

### 3.1 Performance of the product

#### 3.1.1 Safety in case of fire (BWR 2)

| Essential characteristic | Performance |
|---|---|
| Reaction to fire | Class A1 |
| Resistance under fire exposure | No performance assessed |

#### 3.1.2 Safety and accessibility in use (BWR 4)

| Essential characteristic | Performance |
|---|---|
| Shape | Annex A |
| Dimension | Annex A |
| Material | Annex A |
| Characteristic pull-out resistance | Annex C |

### 3.2 Methods used for the assessment

The assessment has been made in accordance with EAD 280016-00-0602.

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

For products for installation systems to be used for supporting pipes for the transport of water not intended for human consumption, according to the Decision 1999/472/EC of the European

Commission, amended by the Decision 2001/596/EC, the system 4 of assessment and verification of constancy of performance (see Annex V to the regulation (EU) No 305/2011) applies.

For products for installation systems intended to be used for supporting pipes for the transport of gas/fuel intended for the supply of building heating/cooling systems, according to the Decision 1999/472/EC of the European Commission, amended by the Decision 2001/596/EC, the system 3 of assessment and verification of constancy of performance (see Annex V to the regulation (EU) No 305/2011) applies.

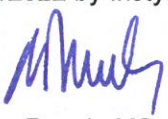
For products for installation systems intended to be used for supporting technical building equipment in general according to the Decision 97/161/EC of the European Commission, the system 2+ of assessment and verification of constancy of performance (see Annex V to the regulation (EU) No 305/2011) applies.

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited in Instytut Techniki Budowlanej.

For the type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between Instytut Techniki Budowlanej and the notified body.

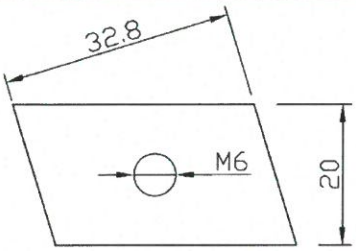
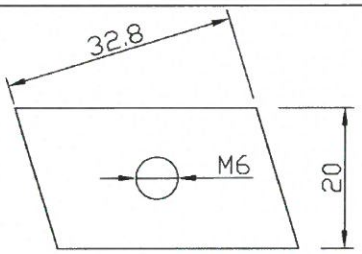
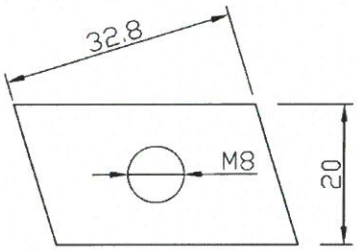
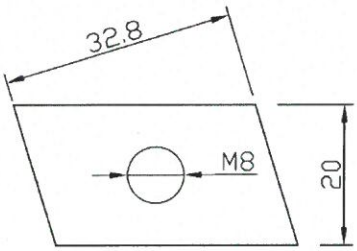
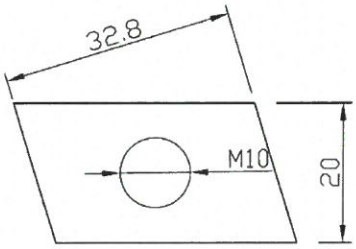
Issued in Warsaw on 31/03/2022 by Instytut Techniki Budowlanej



Anna Panek, MSc

Deputy Director of ITB

**Table A1: Shape, dimensions and materials of MT-FP M6, MT-FP M6 OC, MT-FP M8, MT-FP M8 OC and MT-FP M10 saddle nuts**

| Shape and dimensions mm | Item number | Designation | Material |
|---|---|---|---|
|  Thickness 6 mm | 2273653 | MT-FP M6 | Steel Q235B acc. to GB/T 700; galvanized |
|  Thickness 6 mm | 2273654 | MT-FP M6 OC | Steel Q235B acc. to GB/T 700; hot dip galvanized |
|  Thickness 6 mm | 2273655 | MT-FP M8 | Steel Q235B acc. to GB/T 700; galvanized |
|  Thickness 6 mm | 2273656 | MT-FP M8 OC | Steel Q235B acc. to GB/T 700; hot dip galvanized |
|  Thickness 6 mm | 2273657 | MT-FP M10 | Steel Q235B acc. to GB/T 700; galvanized |

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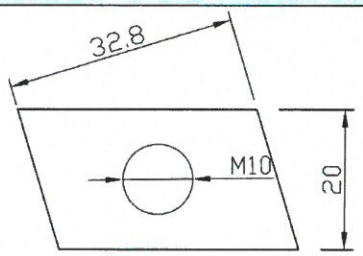
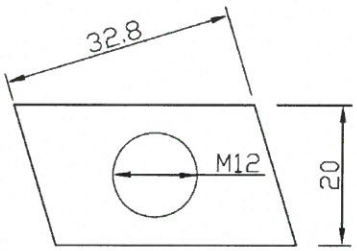
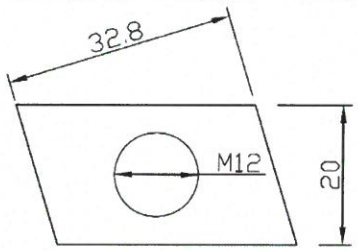
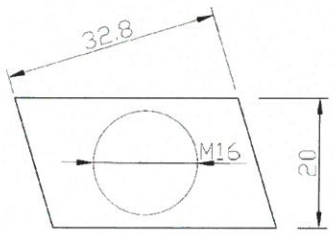
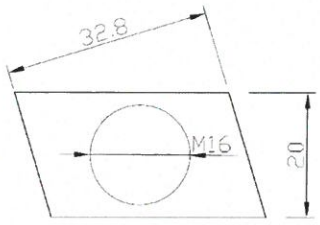
| **HILTI saddle nuts of MT System** | **Annex A1** |
| **Product description**<br>Shape, dimensions and materials of MT-FP M6, MT-FP M6 OC, MT-FP M8, MT-FP M8 OC, MT-FP M10 saddle nuts | of European Technical Assessment ETA-22/0194 |

**Table A2: Shape, dimensions and materials of MT-FP M10 OC, MT-FP M12, MT-FP M12 OC, MT-FP M16 and MT-FP M16 OC saddle nuts**

| Shape and dimensions mm | Item number | Designation | Material |
|---|---|---|---|
|  Thickness 6 mm | 2273658 | MT-FP M10 OC | Steel Q235B acc. to GB/T 700; hot dip galvanized |
|  Thickness 6 mm | 2273659 | MT-FP M12 | Steel Q235B acc. to GB/T 700; galvanized |
|  Thickness 6 mm | 2273670 | MT-FP M12 OC | Steel Q235B acc. to GB/T 700; hot dip galvanized |
|  Thickness 6 mm | 2273671 | MT-FP M16 | Steel Q235B acc. to GB/T 700; galvanized |
|  Thickness 6 mm | 2273672 | MT-FP M16 OC | Steel Q235B acc. to GB/T 700; hot dip galvanized |

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| **HILTI saddle nuts of MT System** | **Annex A2** |
| **Product description**<br>Shape, dimensions and materials of MT-FP M10 OC, MT-FP M12, MT-FP M12 OC, MT-FP M16 and MT-FP M16 OC saddle nuts | of European Technical Assessment ETA-22/0194 |

**Specification of intended use**

- HILTI saddle nuts of MT System are used to transfer building services components loads such as ducts and equipment for water, heating, cooling, ventilation, electrical and other systems at ambient temperature.
- The resistance of HILTI saddle nuts of MT System set down in Annex C1 applies for static actions in the direction of the main axe X in connection with HILTI installation channels according to ETA-21/0414 and applied torques as per tables B2.2.
- The threaded rods used are of minimum strength class 4.8 in accordance with EN ISO 898-1. The hexagonal nuts used are of strength class 8 according to EN ISO 4032.
- HILTI saddle nuts of MT System are used in combination with washers according to table B2.1.
- The assembly of HILTI saddle nuts of MT System with the associated members is shown in figure B1.1.

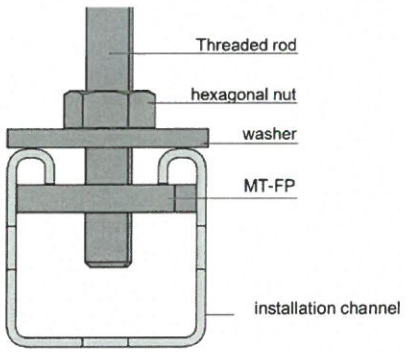


**Figure B1.1.** Assembly of HILTI saddle nuts of MT System

- The positioning of HILTI saddle nuts in the HILTI installation channel has to follow the instruction showed in figure B.1.2.

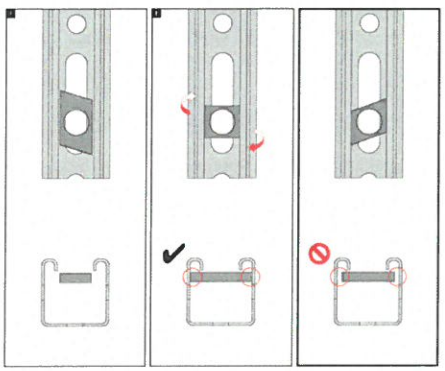

**Figure B1.2.** Positioning of HILTI saddle nuts of MT System in the HILTI installation channel

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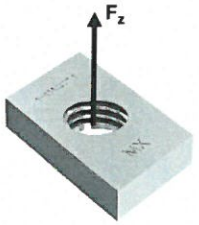
|---|---|
| **HILTI saddle nuts of MT System** | **Annex B1**<br>of European Technical Assessment ETA-22/0194 |
| **Intended use**<br>Specification | |

**Table B2.1: Washers used in combination with HILTI saddle nuts of MT System**

| Saddle nuts | Washer dimensions | Washer material |
|---|---|---|
| MT-FP M6 | Inside diameter: 6.4 mm<br>Outside diameter: 40 mm<br>Thickness: 3 mm | according to EN ISO 7089<br>(Vickers hardness 200HV) |
| MT-FP M6 OC | | |
| MT-FP M8 | Inside diameter: 8.4 mm<br>Outside diameter: 40 mm<br>Thickness: 3 mm | |
| MT-FP M8 OC | | |
| MT-FP M10 | Inside diameter: 10.4 mm<br>Outside diameter: 40 mm<br>Thickness: 3 mm | |
| MT-FP M10 OC | | |
| MT-FP M12 | Inside diameter: 13 mm<br>Outside diameter: 40 mm<br>Thickness: 3 mm | |
| MT-FP M12 OC | | |
| MT-FP M16 | Inside diameter: 17 mm<br>Outside diameter: 40 mm<br>Thickness: 3 mm | |
| MT-FP M16 OC | | |

**Table B2.2: Channels, applied torques and coordinate system for pull-out resistance of saddle nuts**

| Saddle nuts | Installation channels acc. to ETA-21/0414 | Torque (Nm) | Direction of force |
|---|---|---|---|
| MT-FP M6 | MT-30 S, MT-30, MT-30 S OC, MT-30 OC, MT-40 S, MT-40, MT-40 S OC, MT-40 OC, MT-50 S, MT-50, MT-50 S OC, MT-50 OC, MT-60 S, MT-60, MT-60 S OC, MT-60 OC, MT-40D S, MT-40D, MT-40D S OC and MT-40D OC | 5 |  |
| MT-FP M6 OC | | 5 | |
| MT-FP M8 | | 9 | |
| MT-FP M8 OC | | 9 | |
| MT-FP M10 | | 15 | |
| MT-FP M10 OC | | 15 | |
| MT-FP M12 | | 20 | |
| MT-FP M12 OC | | 20 | |
| MT-FP M16 | | 20 | |
| MT-FP M16 OC | | 20 | |

- The required torques may be applied with electrical or non-electrical devices.
- Prior to installation, it has to be ensured that the components to be supported by the saddle nut to the base material are suitable to withstand the resistance values given in Annex C1 in this European Technical Assessment.
- The saddle nuts has to be installed by appropriately qualified personnel and under the supervision of the site manager. The installation instruction of the manufacturer applies.

**Table C1: Characteristic pull-out resistance of the HILTI saddle nuts of MT System: MT-FP M6, MT-FP M6 OC, MT-FP M8, MT-FP M8 OC, MT-FP M10 OC, MT-FP M12, MT-FP M12 OC, MT-FP M16 and MT-FP M16 OC**

| Saddle nuts | Installation channels acc. to ETA-21/0414 | Characteristic resistance $F_{z,Rk}$, kN | Partial safety coefficient [1), 2)] |
|---|---|---|---|
| MT-FP M6 | MT-30 S, MT-30, MT-30 S OC, MT-30 OC, MT-40 S, MT-40, MT-40 S OC, MT-40 OC, MT-50 S, MT-50, MT-50 S OC, MT-50 OC, MT-60 S, MT-60, MT-60 S OC, MT-60 OC, MT-40D S, MT-40D, MT-40D S OC and MT-40D OC | 3.16 | 4.48 |
| MT-FP M6 OC | | | |
| MT-FP M8 | | 4.40 | 1.25 |
| MT-FP M8 OC | | | |
| MT-FP M10 | | 4.02 | 1.81 |
| MT-FP M10 OC | | | |
| MT-FP M12 | | 4.72 | 1.26 |
| MT-FP M12 OC | | | |
| MT-FP M16 | | 3.71 | 1.40 |
| MT-FP M16 OC | | | |

[1)] provided that no other national regulations apply
[2)] the partial safety coefficient was determined as $\gamma_M = F_{Rk} / F_{Rd}$, where $F_{Rk}$ and $F_{Rd}$ were calculated according to EN 1990 Annex D