



European Technical Assessment

ETA-24/0607 of 12/12/2024

English translation prepared by CSTB - Original version in French language

General Part

Technical Assessment Body issuing the European Technical Assessment:

Centre Scientifique et Technique du Bâtiment (CSTB)

Trade name of the construction
product:

Hilti channel connectors of MT System

Product family to which the
construction product belongs:

Products for installation systems for supporting technical building
equipment

Manufacturer:

Hilti AG
Feldkircherstraße 100
9494 Schaan
FÜRSTENTUM LIECHTENSTEIN

Manufacturing plants:

L 1128868, L 1006522, L 1066663, L 1027881, L1000446

This European Technical
Assessment contains:

21 pages including 18 pages of 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 version June 2020

This version replaces:

ETA-24/0607 of 12/08/2024

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Specific Part

1 Technical description of the product

This European Technical Assessment covers HILTI channel connectors of MT System: MT-TL M10, MT-TL M10 OC, MT-FL, MT-FL OC, MT-TFB OC, MT-THB OC, MT-THB M12x33 OC, MT-HL M10 OC, MT-HL M12 OC and MT-HL M16 OC.

MT-TL M10, MT-TL M10 OC, MT-FL and MT-FL OC channel connectors consist of a steel bolt, nut made of steel and plate (winged section) made of polyamid. The nut has a centered round opening for metric threaded bolts. Bolts of MT-TL M10, MT-TL M10 OC, MT-FL and MT-FL OC channel connectors are given in Table 3.

MT-TFB OC is a thread forming screw made of steel with hexagonal head and additional torx screw drive. MT-THB OC and MT-THB M12x33 OC consist of a slot nut part with a metric M12 threaded bolt.

MT-HL M10 OC, MT-HL M12 OC and MT-HL M16 OC channels connectors consist of a nut made of steel and a plastic wing. The nut has a centered round opening for metric threaded bolts and screws.

The drawings, dimensions and materials of the Hilti channels connectors of MT System are given in Annex A.

2 Specification of the intended use

The performances given in clause 3 are only valid if HILTI installation channels 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 installation channels of MT System of 50 years when installed in the works (provided that the installation systems products are subject to appropriate installation). 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 product is intended to be used in:

- a) installations for the support of sprinkler kits,
- b) installations for the support of technical building equipment in general,
- c) installations for the support of pipes for the transport of gas/fuel intended for the supply of building heating / cooling systems.
- d) installations for the support of pipes for the transportation of water not intended for human consumption

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

3.1 Safety in case of fire (BWR 2)

No.	Essential characteristic	Performance
1	Reaction to fire	Class A1
2	Resistance under fire exposure	No performance assessed

3.2 Safety and accessibility in use (BWR 4)

No.	Essential characteristic	Performance
4	Shape	See Annex A
5	Dimensions	See Annex A
6	Material	See Annex A
7	Characteristic resistance at ambient temperatures	See Annex C and D

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

In accordance with the European Assessment Document EAD 280016-00-0602, the following legal bases apply:

- In case of intended use a) specified in Section 2:

Commission Decision N° 96/577/EC as amended by Commission Decision 2002/592/EC:

The system is 1

- In case of intended use b) specified in Section 2:

Commission Decision N° 97/161/EC de la Commission:

The system is 2+

- In case of intended use d) specified in Section 2:

Commission Decision N° 1999/472/EC as amended by Commission Decision 2001/596/EC:

The system is 3

- In case of intended use c) specified in Section 2:

Commission Decision N° 1999/472/EC as amended by Commission Decision 2001/596/EC:

The system is 4

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



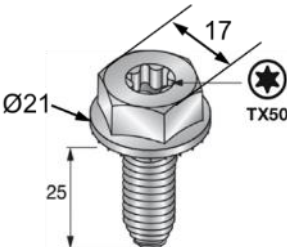
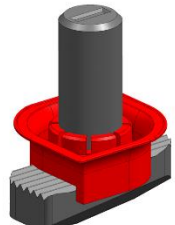

The technical details necessary for the implementation of the system for the assessment and verification of constancy of performance are laid down in the control plan (confidential part of this European Technical Assessment) deposited at Centre Scientifique et Technique du Bâtiment.

The manufacturer shall, on the basis of a contract, involve a notified body approved in the field of supporting systems for issuing the certificate of conformity CE based on the control plan.

The original French version is signed by

Loïc PAYET, Responsable de Division Structure, Maçonnerie et Partition

Table A1: Dimensions and materials of Hilti channel connectors

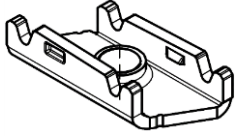
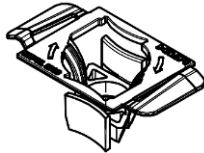
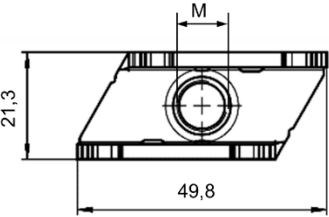
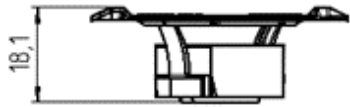

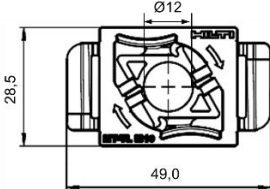
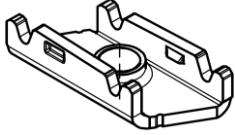
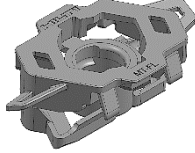
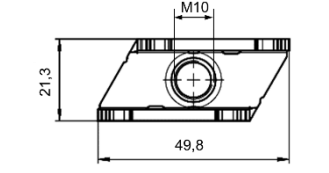
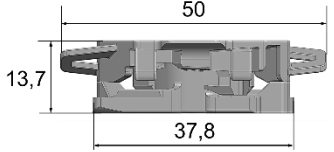

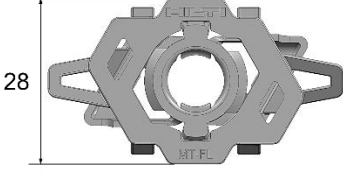
Item number	Designation	Materials and coatings	Illustration (Dimensions in mm)
2272080	MT-TL M10	Steel part: S460MC acc. to EN10149-2 or equivalent as defined in HN709 zinc coated Plastic part: Polyamid	
2272082	MT-TL M10 OC	Steel part: S460MC acc. to EN10149-2 or equivalent as defined in HN709 zinc coated with organic topcoat Plastic part: Polyamid	
2272084	MT-TFB OC	C10B21 acc. to SAE J403, Surface hardness min. 530 HV, Core hardness min. 32-39 HRC zinc coated with organic topcoat	
2431080	MT-THB OC	Steel part: Bolt property class 8.8 Serrated nut property class 8 HDG acc. to EN ISO10684	
2431092	MT-THB M12x33 OC	Plastic part: Polyamide 6	
2430774	MT-HL M10 OC	Steel part: C4C mod acc. to EN10263-2 and HN721 HDG acc. to EN ISO10684 Plastic part: PA66	
2431090	MT-HL M10 OC		
2431072	MT-HL M10 OC		

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A1

Table A2: Dimensions of components of Hilti MT-TL M10, MT-TL M10 OC, MT-FL and MT-FL OC channel connectors

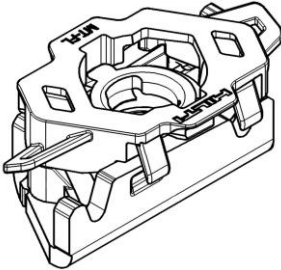
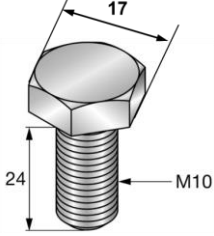
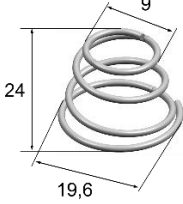
Item number	Designation	Illustration of nut (Dimensions in mm)	Illustration of plastic part (Dimensions in mm)
2272080 2272082	MT-TL M10 MT-TL M10 OC		
			
			
2399683 2399682	MT-FL MT-FL OC		
			
			

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A2

Table A3: Dimensions and material of Hilti MT-FL and MT-FL OC channel connectors

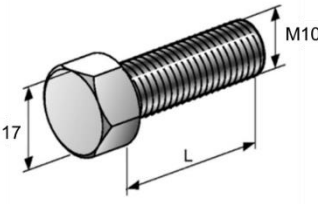
Item number	Designation	Materials and coatings	Illustration (Dimensions in mm)
2399683	MT-FL	Steel part: S460MC acc. to EN10149-2 or equivalent as defined in HN709 zinc coated Plastic part: Polypropylene	
2399682	MT-FL OC	Steel part: S460MC acc. to EN10149-2 or equivalent as defined in HN709 zinc coated with organic topcoat Plastic part: Polypropylene	
Additional components of MT-FL and MT-FL OC			
-	MT-FL	strength class 8.8 acc. to EN ISO 898-1, zinc coated	
-	MT-FL OC	strength class 8.8 acc. to EN ISO 898-1, zinc coated with organic topcoat	
-	MT-FL	1.4310 acc. to EN 10151	
-	MT-FL OC		

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A3

Table A4: Dimensions of Hilti MT-TLB, MT-TLB 30, MT-TLB OC and MT-TLB 30 OC channel connectors

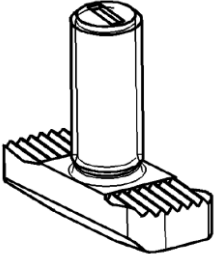
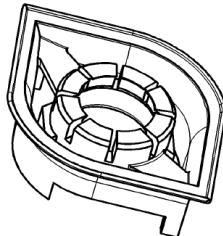
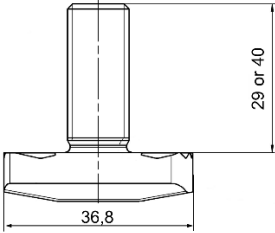
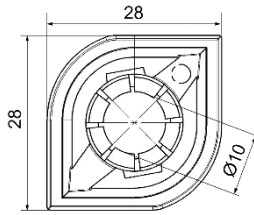
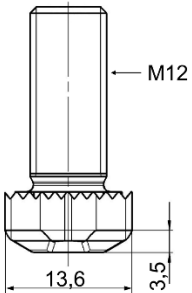

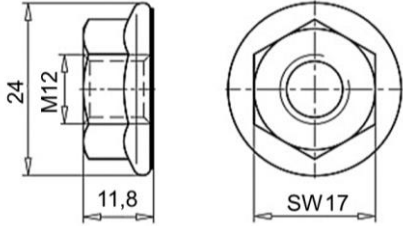
Illustration (Dimensions in mm)	Item number	Designation	L [mm]	Materials and coatings	Channel connector
	2273254	MT-TLB	24	strength class 8.8 in accordance with EN ISO 898-1, zinc coated	MT-TL M10
	2282190	MT-TLB 30	30		
	2273256	MT-TLB OC	24	strength class 8.8 in accordance with EN ISO 898-1, zinc coated with seal	MT-TL M10 OC
	2282191	MT-TLB 30 OC	30		

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A4

Table A5: Dimensions of components of Hilti MT-THB OC and MT-THB M12x33 OC channel connectors

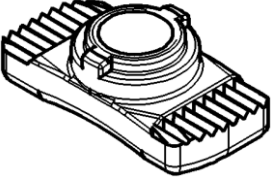
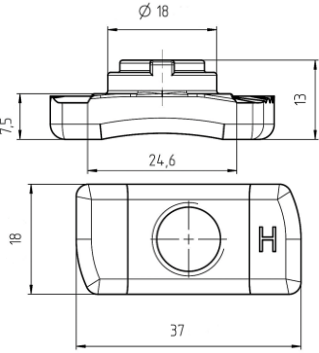
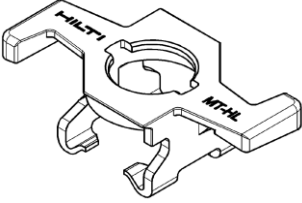
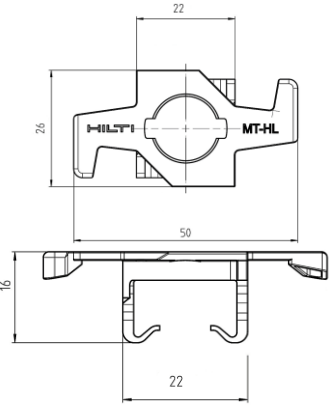
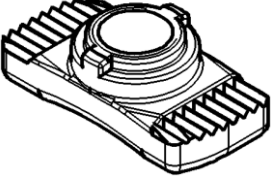
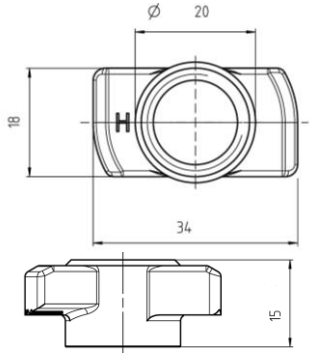
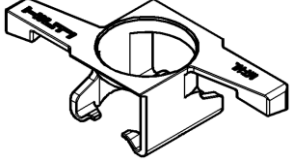
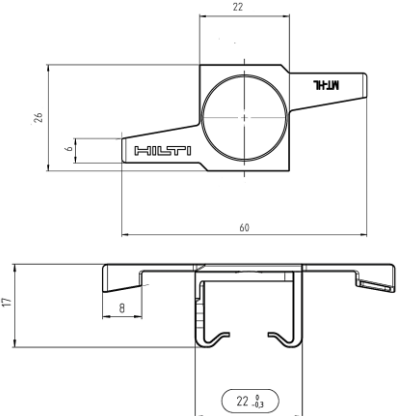
Item number	Designation	Illustration of nut (Dimensions in mm)	Illustration of plastic part (Dimensions in mm)
2431080 2431092	MT-THB OC MT-THB M12x33 OC		
			
			
Additional component of MT-THB OC and MT-THB M12x33 OC			
-	M12x1,75	strength class 10 acc. to ISO 898-2 zinc flake coating	

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A5

Table A6: Dimensions of components of Hilti MT-HL M10 OC, MT-HL M12 OC and MT-HL M16 OC channel connectors

Item number	Designation	Illustration of nut (Dimensions in mm)	Illustration of plastic part (Dimensions in mm)
2430774 2431090	MT-HL M10 OC MT-HL M12 OC	 	 
2431072	MT-HL M16 OC	 	 

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A6

Table A7: Dimensions and materials of Hilti MT-10, MT10 S, MT-15, MT-15 S, MT-15 OC, MT-15 S OC, MT-20, MT-20 S, MT-20 OC, MT-20 S OC, MT-30, MT-30 S OC and MT-30 OC installation channels

Illustration (Dimensions in mm and inch)	Item number	Designation	Length [m]	Materials and coatings
	2268492	MT-10	2	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2360728	MT-10 S	3	
	2268493	MT-15	2	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2360729	MT-15 S	3	
	2268494	MT-15 OC	2	S280GD or equivalent as defined in HN704 + ZM310-A-C acc. to EN 10346
	2360920	MT-15 S OC	3	
	2268495	MT-20	2	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2360921	MT-20 S	3	
	2268496	MT-20 OC	2	S280GD or equivalent as defined in HN704 + ZM310-A-C acc. to EN 10346
	2360922	MT-20 S OC	3	
	2268497	MT-30 S	3	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2268498	MT-30	6	
	2268499	MT-30 S OC	3	S280GD or equivalent as defined in HN704 + ZM310-A-C acc. to EN 10346
	2268500	MT-30 OC	6	

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A7

Table A8: Dimensions and materials of Hilti MT-40 S, MT-40, MT-40 S OC, MT-40 OC, MT-40 T, MT-40 T S, MT-40 T OC, MT-40 T S OC, MT-50 S, MT-50, MT-50 S OC, MT-50 OC, MT-60 S, MT-60, MT-60 S OC, and MT-60 OC, installation channels

Illustration (Dimensions in mm and inch)	Item number	Designation	Length [m]	Materials and coatings
	2268505	MT-40 S	3	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2268506	MT-40	6	
	2268507	MT-40 S OC	3	S280GD or equivalent as defined in HN704 + ZM310-A-C acc. to EN 10346
	2268508	MT-40 OC	6	
	2360923	MT-40 T S	3	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2268502	MT-40 T	6	
	2360924	MT-40 T S OC	3	S280GD or equivalent as defined in HN704 + ZM310-A-C acc. to EN 10346
	2268504	MT-40 T OC	6	
	2268509	MT-50 S	3	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2268510	MT-50	6	
	2268511	MT-50 S OC	3	S280GD or equivalent as defined in HN704 + ZM310-A-C acc. to EN 10346
	2268512	MT-50 OC	6	
	2268513	MT-60 S	3	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2268514	MT-60	6	
	2268515	MT-60 S OC	3	S280GD or equivalent as defined in HN704 + ZM310-A-C acc. to EN 10346
	2268516	MT-60 OC	6	

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A8

Table A9: Dimensions and materials of Hilti MT-30D, MT-30D S, MT-30D OC, MT-30D S OC, MT-40D S, MT-40D, MT-40D S OC, MT-40 D OC installation channels

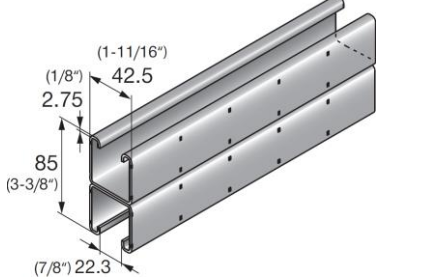
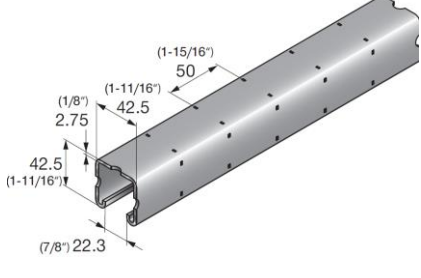
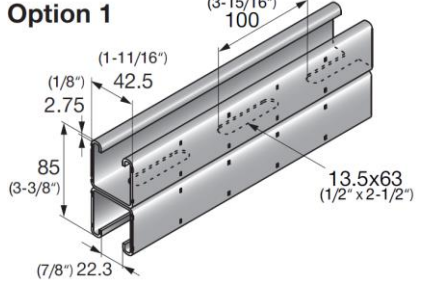
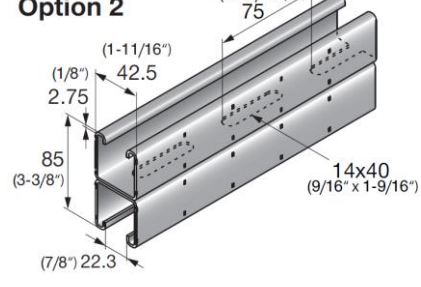
Illustration (Dimensions in mm and inch)	Item number	Designation	Length [m]	Materials and coatings
<p>Option 1</p> <p>Option 2</p>	2362706	MT-30D	6	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2362708	MT-30D S	3	
	2362707	MT-30D OC	6	S280GD or equivalent as defined in HN704 + ZM310-A-C acc. to EN 10346
	2362709	MT-30D S OC	3	
	2268517	MT-40D S	3	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2268518	MT-40D	6	
	2268519	MT-40D S OC	3	S280GD or equivalent as defined in HN704 + ZM310-A-C acc. to EN 10346
	2268520	MT-40D OC	6	

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A9

Table A10: Dimensions and materials of Hilti MT-50D U, MT-50 U, MT-50D, MT-50D S installation channels

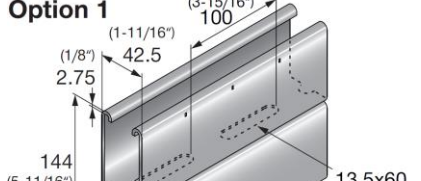
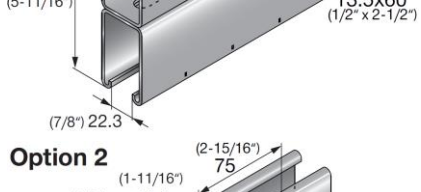
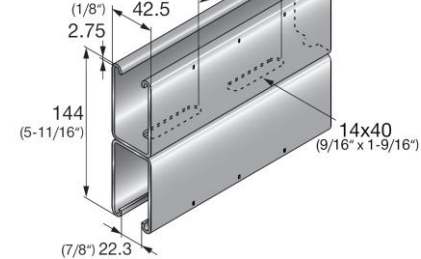
Illustration (Dimensions in mm and inch)	Item number	Designation	Length [m]	Materials and coatings
	2362807	MT-50D U	6	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
	2362808	MT-50 U	6	
<p>Option 1</p> 	2362803	MT-50D	6	
<p>Option 2</p> 	2362804	MT-50D S	3	

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A10

Table A11: Dimensions and materials of Hilti MT-60D U, MT-60D S, MT-60D OC installation channels

Illustration (Dimensions in mm and inch)	Item number	Designation	Length [m]	Materials and coatings
 <p>Option 1</p>	2362800	MT-60D	6	S280GD or equivalent as defined in HN704 + Z275-M-A-C acc. to EN 10346
 <p>Option 2</p>	2362802	MT-60D S	3	
	2362801	MT-60D OC	6	S280GD or equivalent as defined in HN704 + ZM310-A-C acc. to EN 10346

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A11

Table A12: Dimensions and materials of Hilti MT-70 S OC, MT-70 OC, MT-80 S OC, MT-80 OC, MT-90 S OC, MT-90 OC, MT-100 S OC and MT-100 OC installation channels

Illustration (Dimensions in mm and inch)	Item number	Designation	Length [m]	Materials and coatings
	2268364	MT-70 S OC	3	S350GD+ ZM310-A-C acc. to EN 10346
	2268365	MT-70 OC	6	
	2268366	MT-80 S OC	3	
	2268367	MT-80 OC	6	
	2268368	MT-90 S OC	3	
	2268369	MT-90 OC	6	
	2268490	MT-100 S OC	3	
	2268491	MT-100 OC	6	
	2431073	MT-90H S OC	3	
	2430776	MT-90H OC	6	

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Product description

Annex A12

Specifications of intended use

- HILTI channel connectors MT-TL M10, MT-TL M10 OC, MT-FL, MT-FL OC, MT-TFB OC, MT-THB OC, MT-THB M12x33 OC, MT-HL M10 OC, MT-HL M12 OC and MT-HL M16 OC are used to transfer building services components loads such as ducts and equipment for water, heating, cooling, ventilation, electrical and other systems. Hilti MT channels connectors are performing this loadbearing function under conditions described in Section 2 of this European Technical Assessment.
- The resistance of HILTI channel connectors set down in Annex C1 and F1 applies for static actions in the direction of the main axes Y, Z (see Figure C1 and Figure F1) in connection with HILTI installation channels of MT System, HILTI base connectors and HILTI angle connectors and Table B2.
- The hex-nuts of MT-TL M10, MT-TL M10 OC, MT-FL, MT-FL OC and MT-TFB OC are connected to the installation channel and the attached component by tightening an appropriate bolt acc. to Table B2
- MT-TFB OC are used to connect installation channels and attached angle connectors or base connectors by screwing them together through the appropriate openings of these components.
- MT-THB OC and MT-THB M12x33 OC are used to connect installation channels and attached angle connectors by screwing them together through the appropriate openings of these components in combination with MT-90H girders.
- The installation torque of channel connectors are shown in Table B1

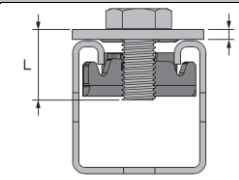
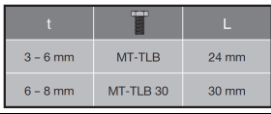
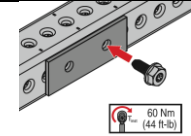
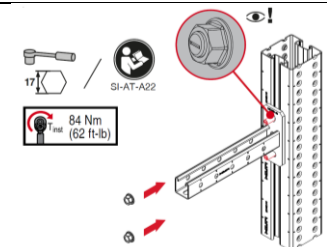
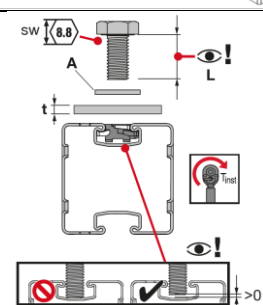
HILTI channel connectors	Bolts	Torque	Illustration
MT-TL M10	MT-TLB MT-TLB 30	30 Nm	
MT-FL	n.a.		
MT-TL M10 OC	MT-TLB OC MT-TLB 30 OC	40 Nm	
MT-FL OC	n.a.		
MT-TFB OC	n.a.	60 Nm	
MT-THB OC MT-THB M12x33 OC	n.a.	84 Nm	
MT-HL M10 OC	M10 8.8	40 Nm	
MT-HL M12 OC MT-HL M16 OC	M12 8.8 M16 8.8	84 Nm	

Table B1: Installation torque of MT channel connectors

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Intended use
 Specifications

Annex B1

- MT-HL OC are used to connect e.g. installation channels, angle connectors, etc. by screwing them together through the appropriate openings of these components using metric screws to MT-90H girders.
- The required torque may be applied with electrical or non-electrical devices.
- The MT installation open profile channels and closed profiles (girders) can be cut along the entire length following the manufacturers' instructions without compromising the declared performances.
- For closed MT channels (girders) the distance between the cut of the girder and start of the dome shaped hole must be at a minimum distance of 10 mm.

- Prior to installation, it must be ensured that the supported component, the anchoring of the threaded rod to the base material and the base material itself are suitable to withstand the resistance values of the installation system and that they have a fireproof certificate. The channel connectors must be installed by appropriately qualified personnel and under the supervision of the site manager. The general installation instructions of the manufacturer apply.

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Intended use
Specifications

Annex B2

Table C1: Characteristic resistance of Hilti MT-TL M10 and MT-FL channel connectors

Channel connector	Hilti installation channel (all lengths and coating)	Characteristic shear resistance $F_{z,Rk}$ in kN	Characteristic pull-out resistance $F_{y,Rk}$ in kN
MT-TL M10 MT-TL M10 OC MT-TL FL MT-TL FL OC	MT-30 MT-40 MT-50 MT-50 U MT-60 MT-40D	10,59	14,21

Designation

$F_{z,Rk}$ Resistance in direction of local z-Axis

All characteristic resistances for ambient temperatures do not consider deflections.

Partial safety factor for design resistance is $\gamma_M = F_{Rk} / F_{Rd}$ or $\gamma_M = M_{Rk} / M_{Rd}$.

For design resistances the manufacturer's specifications and national regulations must be observed.

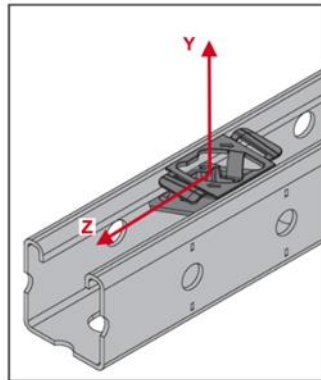


Figure C1: Coordinate system for the pull-out and shear resistance of HILTI channel connectors MT-TL M10, MT-TL M10 OC, MT-FL, MT-FL OC

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Characteristic shear and pull-out resistance

Annex C1

Table D1: Characteristic resistance of Hilti MT-TFB OC channel connector

Channel connector	Hilti installation channel (all lengths)	Characteristic shear resistance $F_{z,Rk}$ in kN	Characteristic pull-out resistance $F_{y,Rk}$ in kN
MT-TFB OC	MT-70 OC	23,47	14,28
	MT-80 OC	23,33	15,20
	MT-90 OC	23,47	14,90
	MT-90H OC	22,65	12,79
	MT-100 OC	23,47	21,62

Designation

$F_{z,Rk}$ Resistance in direction of local z-Axis

All characteristic resistances for ambient temperatures do not consider deflections.

Partial safety factor for design resistance is $\gamma_M = F_{Rk} / F_{Rd}$ or $\gamma_M = M_{Rk} / M_{Rd}$.

For design resistances the manufacturer's specifications and national regulations must be observed.

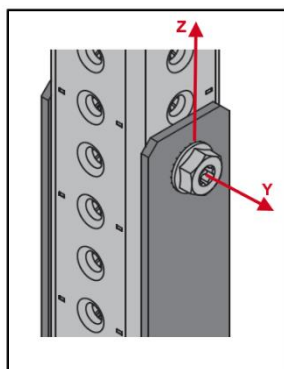


Figure D1: Coordinate system for the pull-out and shear resistance of HILTI channel connector MT-TFB OC

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Characteristic shear and pull-out resistance

Annex D1

Table E1: Characteristic resistance of Hilti MT-THB OC and MT-THB M12x33 OC channel connectors (center of channel)

Channel connector	Hilti installation channel (all lengths)	Characteristic shear resistance $F_{z,Rk}$ in kN	Characteristic pull-out resistance $F_{y,Rk}$ in kN
MT-THB OC MT-THB M12x33 OC	MT-90H OC	14,09	25,0

Designation

$F_{z,Rk}$ Resistance in direction of local z-Axis

All characteristic resistances for ambient temperatures do not consider deflections.

Partial safety factor for design resistance is $\gamma_M = F_{Rk} / F_{Rd}$ or $\gamma_M = M_{Rk} / M_{Rd}$.

For design resistances the manufacturer's specifications and national regulations must be observed.

Hilti MT channel connectors MT-TL M10, MT-FL, MT-TFB, MT-HL and MT-THB

Characteristic shear and pull-out resistance

Annex E1

Table F1: Characteristic resistance of Hilti MT-HL M10 OC, MT-HL M12 OC and MT-HL M16 OC channel connectors (center of channel)

Channel connector	Hilti installation channel (all lengths)	Characteristic shear resistance $F_{z,Rk}$ in kN	Characteristic pull-out resistance $F_{y,Rk}$ in kN
MT-HL M10 OC	MT-90H OC	8,58	24,00
MT-HL M12 OC		10,40	24,07
MT-HL M16 OC		11,14	23,69

Designation

$F_{z,Rk}$ Resistance in direction of local z-Axis

All characteristic resistances for ambient temperatures do not consider deflections.

Partial safety factor for design resistance is $\gamma_M = F_{Rk} / F_{Rd}$ or $\gamma_M = M_{Rk} / M_{Rd}$.

For design resistances the manufacturer's specifications and national regulations must be observed.

Hilti MT channel connectors MT-TL, MT-FL, MT-TFB, MT-HL and MT-THB

Characteristic shear and pull-out resistance

Annex F1