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European Technical Assessment

ETA-22/0195 of 31/03/2022

General Part

Technical Assessment Body issuing the European Technical Assessment

Instytut Techniki Budowlanej

Trade name of the construction product

HILTI cantilevers 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 1087643, L 1027881

This European Technical Assessment contains

17 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"

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Specific Part

1 Technical description of the product

This European Technical Assessment covers HILTI cantilevers of MT System: MT-BR-30 300, MT-BR-30 300 OC, MT-BR-30 450, MT-BR-30 450 OC, MT-BR-40 300, MT-BR-40 300 OC, MT-BR-40 450, MT-BR-40 450 OC, MT-BR-40 600, MT-BR-40 600 OC, MT-BR-40 1000, MT-BR-40 1000 OC, MT-BR-40D 600, MT-BR-40D 600 OC, MT-BR-40D 1000, MT-BR-40D 1000 OC, MT-BR-40 O4 600 OC, MT-BR-40 O4 1000 OC, MT-BR-40D O4 600 OC, MT-BR-40D O4 1000 OC and MT-BR-40D O4 1500 OC.

The HILTI cantilevers MT-BR-30 300, MT-BR-30 300 OC, MT-BR-30 450 and MT-BR-30 450 OC are made of steel installation channels with open profile according to ETA-21/0414, with two arms of different length perpendicular to each other.

The HILTI cantilevers MT-BR-40 300, MT-BR-40 300 OC, MT-BR-40 450, MT-BR-40 450 OC, MT-BR-40 600, MT-BR-40 600 OC, MT-BR-40 1000, MT-BR-40 1000 OC, MT-BR-40D 600, MT-BR-40D 600 OC, MT-BR-40D 1000, MT-BR-40D 1000 OC, MT-BR-40 O4 600 OC, MT-BR-40 O4 1000 OC, MT-BR-40D O4 600 OC, MT-BR-40D O4 1000 OC and MT-BR-40D O4 1500 OC consist of steel installation channels with open profile, according to ETA-21/0414 and welded-on steel base plates with elongated holes.

The drawings, dimensions and materials of the HILTI cantilevers 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 cantilevers 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 cantilevers of MT System of 50 years. 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 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.

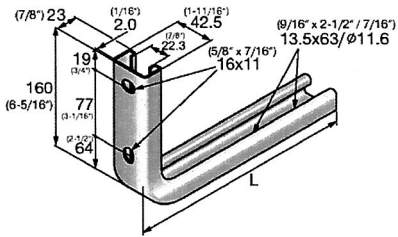
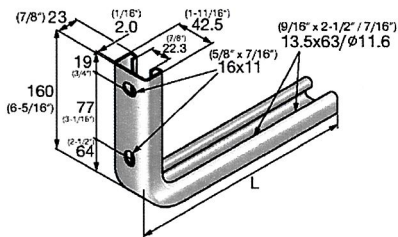
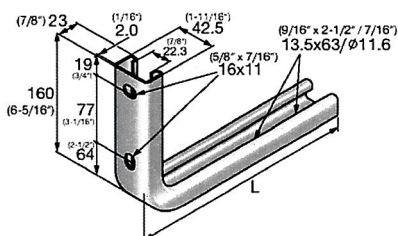
For the type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between Instytut Techniki Budowlanej and the notified 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 the cantilevers MT-BR-30 300, MT-BR-30 300 OC and MT-BR-30 450

Shape and dimensions [mm]	Item number	Designation	Material
 <p style="text-align: center;">L = 300 mm</p>	2271288	MT-BR-30 300	Steel Q235B acc. to GB/T 700, galvanized
 <p style="text-align: center;">L = 300 mm</p>	2271289	MT-BR-30 300 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized
 <p style="text-align: center;">L = 450 mm</p>	2271440	MT-BR-30 450	Steel Q235B acc. to GB/T 700, galvanized

HILTI cantilevers of MT System

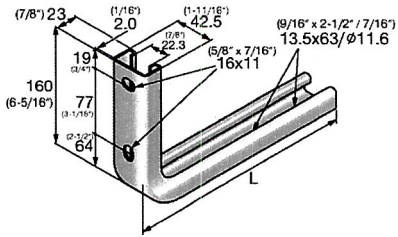
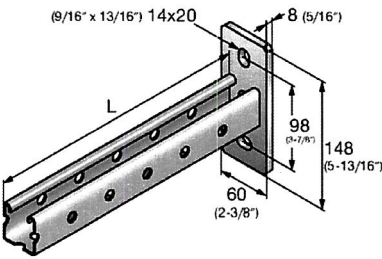
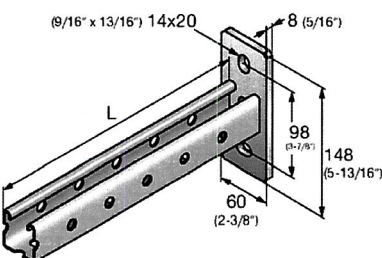
Product description

Shape, dimensions and materials of HILTI cantilevers MT-BR-30 300, MT-BR-30 300 OC and MT-BR-30 450

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Table A2: Shape, dimensions and materials of the cantilevers MT-BR-30 450 OC, MT-BR-40 300 and MT-BR-40 300 OC

Shape and dimensions [mm]	Item number	Designation	Material
 <p style="text-align: center;">L = 450 mm</p>	2271441	MT-BR-30 450 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized
 <p style="text-align: center;">L = 300 mm</p>	2271442	MT-BR-40 300	Steel Q235B acc. to GB/T 700, galvanized
 <p style="text-align: center;">L = 300 mm</p>	2271443	MT-BR-40 300 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized

HILTI cantilevers of MT System

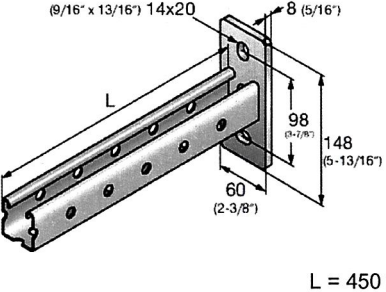
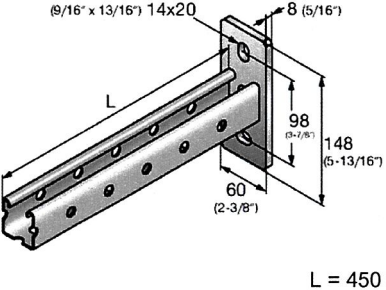
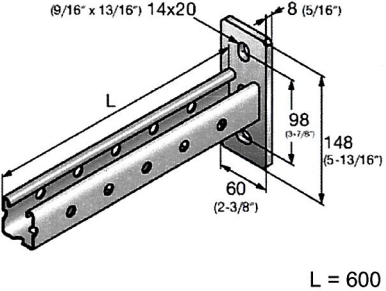
Product description

Shape, dimensions and materials of HILTI cantilevers MT-BR-30 450 OC, MT-BR-40 300 and MT-BR-40 300 OC

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Table A3: Shape, dimensions and materials of the cantilevers MT-BR-40 450, MT-BR-40 450 OC and MT-BR-40 600

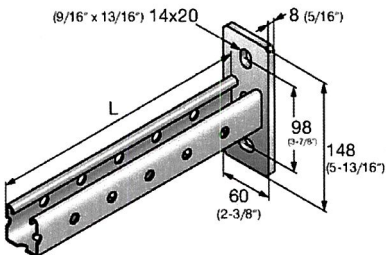
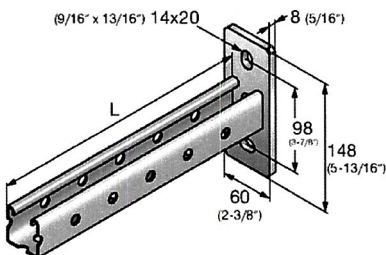
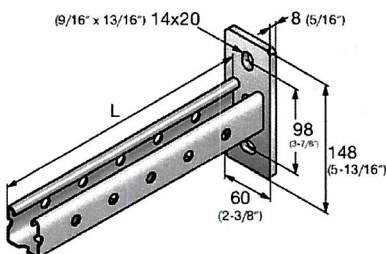
Shape and dimensions [mm]	Item number	Designation	Material
 <p style="text-align: center;">L = 450 mm</p>	2271444	MT-BR-40 450	Steel Q235B acc. to GB/T 700, galvanized
 <p style="text-align: center;">L = 450 mm</p>	2271445	MT-BR-40 450 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized
 <p style="text-align: center;">L = 600 mm</p>	2271451	MT-BR-40 600	Steel Q235B acc. to GB/T 700, galvanized

HILTI cantilevers of MT System

Product description
Shape, dimensions and materials of HILTI cantilevers
MT-BR-40 450, MT-BR-40 450 OC and MT-BR-40 600

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Table A4: Shape, dimensions and materials of the cantilevers MT-BR-40 600 OC, MT-BR-40 1000 and MT-BR-40 1000 OC

Shape and dimensions [mm]	Item number	Designation	Material
 <p style="text-align: center;">L = 600 mm</p>	2271452	MT-BR-40 600 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized
 <p style="text-align: center;">L = 1000 mm</p>	2271446	MT-BR-40 1000	Steel Q235B acc. to GB/T 700, galvanized
 <p style="text-align: center;">L = 1000 mm</p>	2271447	MT-BR-40 1000 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized

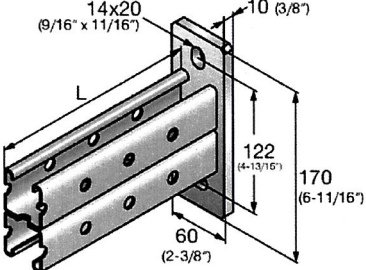
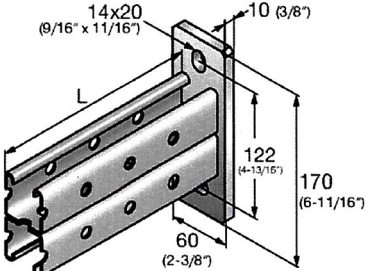
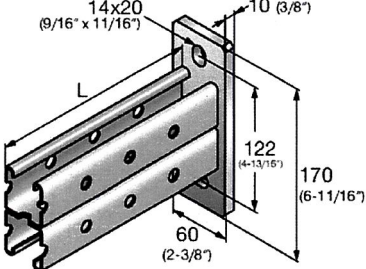
HILTI cantilevers of MT System

Product description

Shape, dimensions and materials of HILTI cantilevers
MT-BR-40 600 OC, MT-BR-40 1000 and MT-BR-40 1000 OC

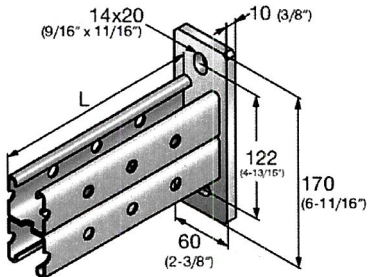
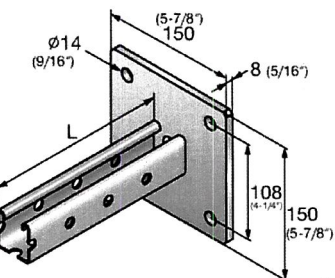
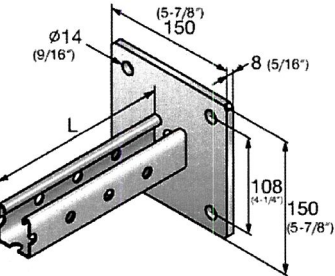
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Table A5: Shape, dimensions and materials of the cantilevers MT-BR-40D 600, MT-BR-40D 600 OC and MT-BR-40D 1000

Shape and dimensions [mm]	Item number	Designation	Material
 <p style="text-align: center;">L = 600 mm</p>	2271448	MT-BR-40D 600	Steel Q235B acc. to GB/T 700, galvanized
 <p style="text-align: center;">L = 600 mm</p>	2271449	MT-BR-40D 600 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized
 <p style="text-align: center;">L = 1000 mm</p>	2271450	MT-BR-40D 1000	Steel Q235B acc. to GB/T 700, galvanized

HILTI cantilevers of MT System	Annex A5 of European Technical Assessment ETA-22/0195
Product description Shape, dimensions and materials of HILTI cantilevers MT-BR-40D 600, MT-BR-40D 600 OC and MT-BR-40D 1000	

Table A6: Shape, dimensions and materials of the cantilevers MT-BR-40D 1000 OC, MT-BR-40 O4 600 OC and MT-BR-40 O4 1000 OC

Shape and dimensions [mm]	Item number	Designation	Material
 <p style="text-align: center;">L = 1000 mm</p>	2271453	MT-BR-40D 1000 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized
 <p style="text-align: center;">L = 600 mm</p>	2271455	MT-BR-40 O4 600 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized
 <p style="text-align: center;">L = 1000 mm</p>	2271456	MT-BR-40 O4 1000 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized

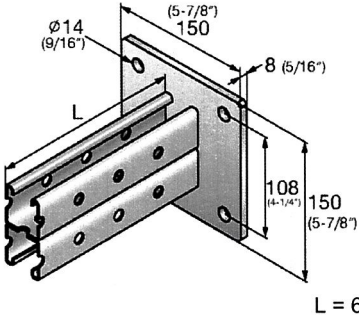
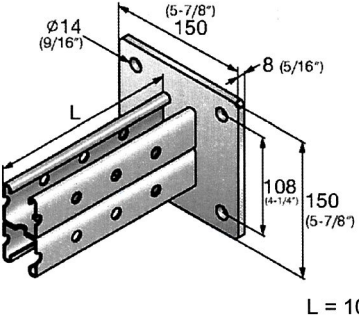
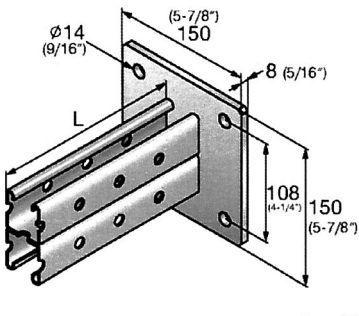
HILTI cantilevers of MT System

Product description

Shape, dimensions and materials of HILTI cantilevers MT-BR-40D 1000 OC, MT-BR-40 O4 600 OC and MT-BR-40 O4 1000 OC

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Table A7: Shape, dimensions and materials of the cantilevers MT-BR-40D O4 600 OC, MT-BR-40D O4 1000 OC and MT-BR-40D O4 1500 OC

Shape and dimensions [mm]	Item number	Designation	Material
 <p style="text-align: center;">L = 600 mm</p>	2271459	MT-BR-40D O4 600 OC	Steel Q235B acc. to GB/T 700, galvanized
 <p style="text-align: center;">L = 1000 mm</p>	2271461	MT-BR-40D O4 1000 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized
 <p style="text-align: center;">L = 1500 mm</p>	2271287	MT-BR-40D O4 1500 OC	Steel Q235B acc. to GB/T 700, hot dip galvanized

HILTI cantilevers of MT System

Product description

Shape, dimensions and materials of HILTI cantilevers MT-BR-40D O4 600 OC, MT-BR-40D O4 1000 OC and MT-BR-40D O4 1500 OC

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Table A8: HILTI cantilevers and associated HILTI installation channels according to ETA-21/0414

HILTI Cantilever	HILTI installation channel according to ETA-21/0414
MT-BR-30 300 MT-BR-30 450	MT-30
MT-BR-30 300 OC MT-BR-30 450 OC	MT-30 OC
MT-BR-40 300 MT-BR-40 450 MT-BR-40 600 MT-BR-40 1000	MT-40
MT-BR-40 300 OC MT-BR-40 450 OC MT-BR-40 600 OC MT-BR-40 1000 OC MT-BR-40 O4 600 OC MT-BR-40 O4 1000 OC	MT-40 OC
MT-BR-40D 600 MT-BR-40D 1000	MT-40-D
MT-BR-40D 600 OC MT-BR-40D 1000 OC MT-BR-40D O4 600 OC MT-BR-40D O4 1000 OC MT-BR-40D O4 1500 OC	MT-40-D OC

HILTI cantilevers of MT System

Product description
Installation channels of HILTI cantilevers

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Specification of intended use

- The HILTI cantilevers of MT System: MT-BR-30 300, MT-BR-30 300 OC, MT-BR-30 450, MT-BR-30 450 OC, MT-BR-40 300, MT-BR-40 300 OC, MT-BR-40 450, MT-BR-40 450 OC, MT-BR-40 600, MT-BR-40 600 OC, MT-BR-40 1000, MT-BR-40 1000 OC, MT-BR-40D 600, MT-BR-40D 600 OC, MT-BR-40D 1000, MT-BR-40D 1000 OC, MT-BR-40 O4 600 OC, MT-BR-40 O4 1000 OC, MT-BR-40D O4 600 OC, MT-BR-40D O4 1000 OC and MT-BR-40D O4 1500 OC are used to transfer the loads of building services components such as ducts and equipment for water, heating, cooling, ventilation, electrical and other installations at ambient temperature.
- The resistance of HILTI cantilevers set down in Annex C1 applies for static actions in the direction of the main axes X, Y, Z.
- For cantilevers MT-BR-30 300, MT-BR-30 300 OC, MT-BR-30 450 and MT-BR-30 450 OC the point of intersection of the axes X, Y, Z is located in the centroid position of the cross section of each arms of installation channel according to Figure B1.1.

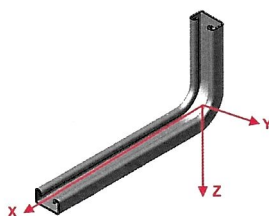


Figure B1.1. Coordinate system of force directions acting in the cantilevers MT-BR-30 300, MT-BR-30 300 OC, MT-BR-30 450 and MT-BR-30 450 OC

- For cantilevers MT-BR-40 300, MT-BR-40 300 OC, MT-BR-40 450, MT-BR-40 450 OC, MT-BR-40 600, MT-BR-40 600 OC, MT-BR-40 1000, MT-BR-40 1000 OC, MT-BR-40D 600, MT-BR-40D 600 OC, MT-BR-40D 1000, MT-BR-40D 1000 OC, MT-BR-40 O4 600 OC, MT-BR-40 O4 1000 OC, MT-BR-40D O4 600 OC, MT-BR-40D O4 1000 OC and MT-BR-40D O4 1500 OC the point of intersection of the axes X, Y, Z is located in the centroid position of the cross section of the installation channel and on the base plate surface facing the channel according to Figure B1.2.

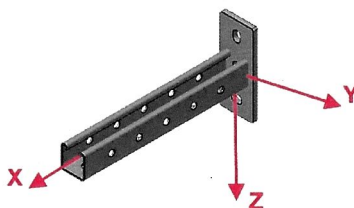


Figure B1.2. Coordinate system of force directions acting in the cantilevers MT-BR-40 300, MT-BR-40 300 OC, MT-BR-40 450, MT-BR-40 450 OC, MT-BR-40 600, MT-BR-40 600 OC, MT-BR-40 1000, MT-BR-40 1000 OC, MT-BR-40D 600, MT-BR-40D 600 OC, MT-BR-40D 1000, MT-BR-40D 1000 OC, MT-BR-40 O4 600 OC, MT-BR-40 O4 1000 OC, MT-BR-40D O4 600 OC, MT-BR-40D O4 1000 OC and MT-BR-40D O4 1500 OC

HILTI cantilevers of MT System	Annex B1 of European Technical Assessment ETA-22/0195
Intended use Specifications	

- The welded connections of the installation channel profiles to the base plates are presented in the Figures B.1.3 to B.1.6.
- Prior to installation, it has to be ensured that the component to be supported by the cantilevers, the anchoring of the cantilever to the base material and the base material itself are suitable to withstand the resistance values given in Annex C1 in this European Technical Assessment.
- The cantelivers must be installed by appropriately qualified personnel and under the supervision of the site manager. The general installation instructions of the manufacturer apply.

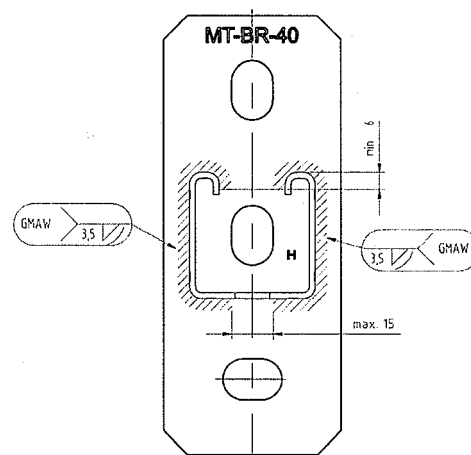


Figure B1.3. Welded connection of HILTI cantilevers MT-BR-40 300, MT-BR-40 300 OC, MT-BR-40 450, MT-BR-40 450 OC, MT-BR-40 600, MT-BR-40 600 OC, MT-BR-40 1000 and MT-BR-40 1000 OC

HILTI cantilevers of MT System	Annex B2 of European Technical Assessment ETA-22/0195
Intended use Weldede connection types	

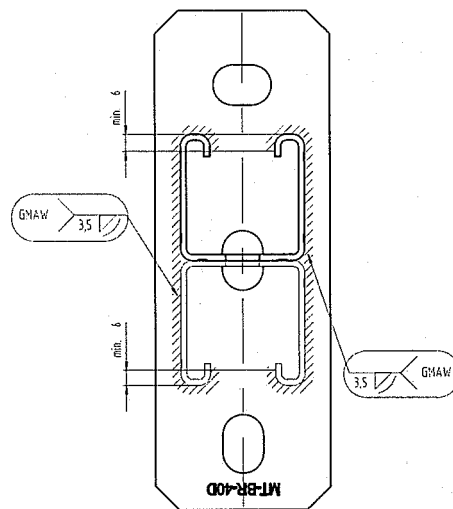


Figure B1.4. Welded connection of HILTI cantilevers MT-BR-40D 600, MT-BR-40D 600 OC, MT-BR-40D 1000 and MT-BR-40D 1000 OC

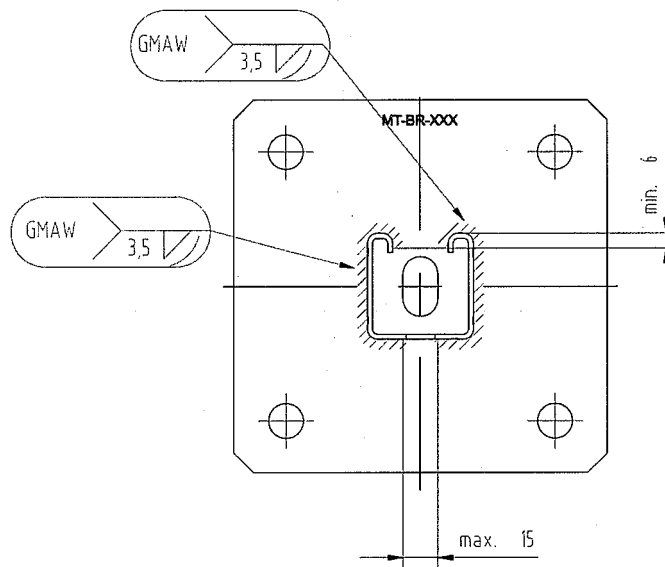


Figure B1.5. Welded connection of HILTI cantilevers MT-BR-40 O4 600 OC and MT-BR-40 O4 1000 OC

HILTI cantilevers of MT System	Annex B3 of European Technical Assessment ETA-22/0195
Intended use Welded connection types	

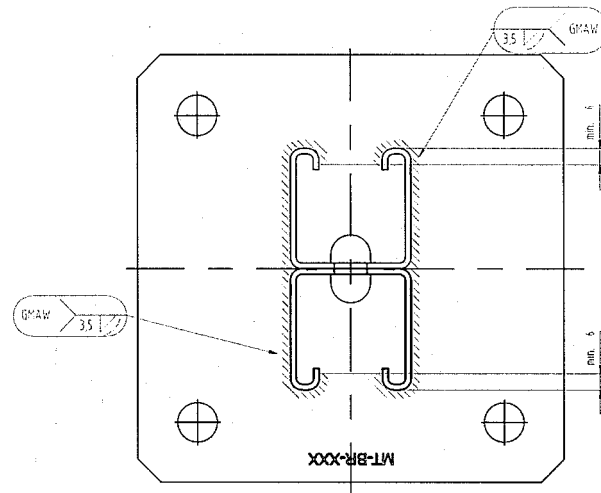


Figure B1.6. Welded connection of HILTI cantilevers MT-BR-40D O4 600 OC, MT-BR-40D O4 1000 OC and MT-BR-40D O4 1500 OC

HILTI cantilevers of MT System	Annex B4 of European Technical Assessment ETA-22/0195
Intended use Welded connection types	

Table C1: Characteristic resistance of the cantilevers MT-BR-30 300, MT-BR-30 300 OC, MT-BR-30 450, MT-BR-30 450 OC according to the coordinate system in figure B1.1

+Fx,Rk [kN]	-Fx,Rk [kN]	+Fy,Rk [kN]	-Fy,Rk [kN]	+Fz,Rk [kN]	-Fz,Rk [kN]
6.01	13.75	0.53	0.53	1.775	1.65
+Mx,Rk [kNm]	-Mx,Rk [kNm]	+My,Rk [kNm]	-My,Rk [kNm]	+Mz,Rk [kNm]	-Mz,Rk [kNm]
0.210	0.210	0.239	0.239	0.077	0.077

Table C2: Characteristic resistance of the cantilevers MT-BR-40 300, MT-BR-40 300 OC, MT-BR-40 450, MT-BR-40 450 OC, MT-BR-40 600, MT-BR-40 600 OC, MT-BR-40 1000, MT-BR-40 1000 OC according to the coordinate system in figure B1.2 (including resistance of welded connection)

+Fx,Rk [kN]	-Fx,Rk [kN]	+Fy,Rk [kN]	-Fy,Rk [kN]	+Fz,Rk [kN]	-Fz,Rk [kN]
37.47	81.87	9.11	9.11	9.48	10.66
+Mx,Rk [kNm]	-Mx,Rk [kNm]	+My,Rk [kNm]	-My,Rk [kNm]	+Mz,Rk [kNm]	-Mz,Rk [kNm]
0.456	0.456	1.006	1.006	0.901	0.901

Table C3: Characteristic resistance of the cantilevers MT-BR-40D 600, MT-BR-40D 600 OC, MT-BR-40D 1000, MT-BR-40D 1000 OC according to the coordinate system in figure B1.2 (including resistance of welded connection)

+Fx,Rk [kN]	-Fx,Rk [kN]	+Fy,Rk [kN]	-Fy,Rk [kN]	+Fz,Rk [kN]	-Fz,Rk [kN]
41.27	148.89	11.07	11.07	17.17	17.17
+Mx,Rk [kNm]	-Mx,Rk [kNm]	+My,Rk [kNm]	-My,Rk [kNm]	+Mz,Rk [kNm]	-Mz,Rk [kNm]
0.935	0.935	2.25	2.25	1.292	1.292

Table C4: Characteristic resistance of the cantilevers MT-BR-40 O4 600 OC, MT-BR-40 O4 1000 OC, according to the coordinate system in figure B1.2 (including resistance of welded connection)

+Fx,Rk [kN]	-Fx,Rk [kN]	+Fy,Rk [kN]	-Fy,Rk [kN]	+Fz,Rk [kN]	-Fz,Rk [kN]
44.22	79.35	7.73	7.73	9.91	9.97
+Mx,Rk [kNm]	-Mx,Rk [kNm]	+My,Rk [kNm]	-My,Rk [kNm]	+Mz,Rk [kNm]	-Mz,Rk [kNm]
0.489	0.489	0.769	0.769	0.418	0.418

Table C5: Characteristic resistance of the cantilevers MT-BR-40D O4 600 OC, MT-BR-40D O4 1000 OC, MT-BR-40D O4 1500 OC according to the coordinate system in figure B1.2 (including resistance of welded connection)

+Fx,Rk [kN]	-Fx,Rk [kN]	+Fy,Rk [kN]	-Fy,Rk [kN]	+Fz,Rk [kN]	-Fz,Rk [kN]
52.12	148.71	13.38	13.38	20.29	20.29
+Mx,Rk [kNm]	-Mx,Rk [kNm]	+My,Rk [kNm]	-My,Rk [kNm]	+Mz,Rk [kNm]	-Mz,Rk [kNm]
0.94	0.94	2.253	2.253	1.802	1.802

Partial safety coefficients (provided that no other national regulations apply):

Steel: $\gamma_{M0} = 1.0$; $\gamma_{M1} = 1.1$; $\gamma_{M2} = 1.25$

In case of more than one force acting simultaneous on the cantilever, the interaction formula given in appropriate Eurocode can be used for the design of the cantilevers.

HILTI cantilevers of MT System

Performances
Characteristic resistance of cantilevers

Annex C1
of European
Technical Assessment
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