

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-17/1067
of 25 January 2018

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail

Product family
to which the construction product belongs

Products related to installation systems supporting
technical equipment for building services such as pipes,
conduits, ducts and cables

Manufacturer

Hilti AG
Feldkircherstraße 100
9494 Schaan
FÜRSTENTUM LIECHTENSTEIN

Manufacturing plant

L 1000511
L 1005049
L 1000446

This European Technical Assessment
contains

10 pages including 6 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

EAD 280016-00-0602

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Specific Part

1 Technical description of the product

Object of this European Technical Assessment are the Hilti MQ-41/3 headrail and the Hilti MQ-41/3 LL headrail. Hilti MQ-41/3 and Hilti MQ-41/3 LL headrails consist of thin metal profiles (channel MQ-41/3 or MQ-41/3 LL), two steel drilled plates MQZ-L11 and one steel saddle nut MQA-M12-B.

The channels are delivered in lengths of 3m (MQ-41/3 3M and MQ-41/3 3M LL) and 6m (MQ-41/3 6M and MQ-41/3 6M LL). The channels are cut to length as required. The center distance of the drilled plates is 200 mm. The distance of the drilled plate center to the nearest channel end is at least 50 mm with the fastener going through a closed long hole of the channel. The distance from the long hole with the fastener to the nearest channel end is at least 18 mm for the channel MQ-41/3 and 11 mm for the channel MQ-41/3 LL.

The saddle nut is positioned centrally between the drilled plates.

Annex A describes the dimensions and the materials of the headrail systems. The requirements for performance assessment are described in Annex B.

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

The performance in chapter 3 can only be assumed if the Hilti MQ-41/3 and Hilti MQ-41/3 LL headrails are used in compliance with the specifications and under the boundary conditions set out in Annexes A to C. The test and assessment methods on which this European Technical Assessment is based lead to an assumption of working life of the Hilti MQ-41/3 und MQ-41/3 LL headrails of at least 50 years in final use under ambient temperatures in indoor areas. 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.

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

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	A1

3.2 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Dimensions and materials of Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail	see Annex A
Resistance of Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail at elevated temperatures	see Annex C

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:

- Decision of the commission N° 1996/577/EC:
System 1 applies for the assessment and verification of constancy of performance (AVCP)
- Decision of the commission N° 1999/472/EC:
System 3 applies for the assessment and verification of constancy of performance (AVCP)

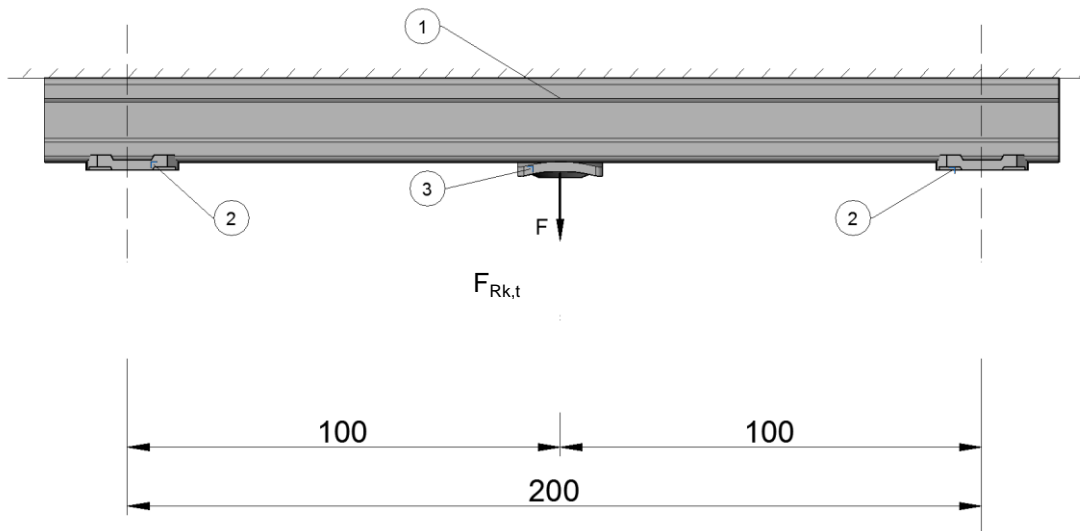
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

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 Deutsches Institut für Bautechnik.

Issued in Berlin on 25 January 2018 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Ortmann



Legend

- 1 MQ-41/3 or MQ-41/3 LL channel
- 2 Drilled plate MQZ-L11
- 3 Saddle nut MQA-M12-B

Annex

- A2
- A2
- A2

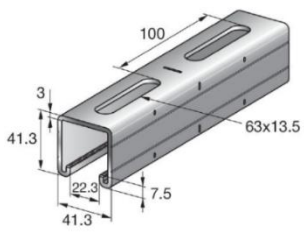
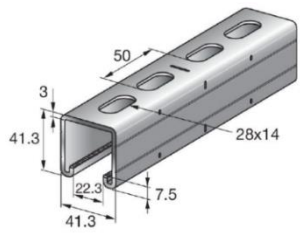
Dimensions in mm

Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail

Description of the product (kit)
Dimensions and materials

Annex A1

Tabelle A2.1: Dimensions and materials of the channels

Illustration ¹⁾	Item number	Designation	Length [m]	Material
	369596	MQ-41/3 3M	3	S250GD+Z275-M-A-C according to EN 10346
	369597	MQ-41/3 6M	6	
	2048102	MQ-41/3 3M LL	3	
	2048103	MQ-41/3 6M LL	6	

¹⁾ Dimensions in mm

Table A2.2: Dimensions and materials of the drilled plate

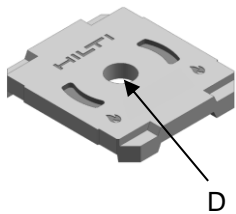
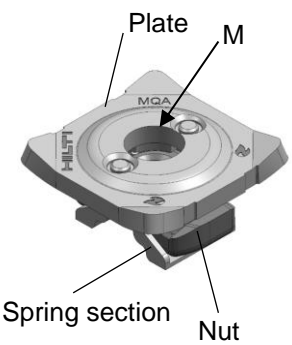
Illustration	Item number	Designation	D [mm]	Material
	2199455	MQZ-L11	11.5	S235JR according to EN 10025-2, zinc coated

Table A2.3: Dimensions and materials of the saddle nut

Illustration	Item number	Designation	M [mm]	Material
	2199453	MQA-M12-B	12	Plate: DD11 according to EN 10111 ²⁾ , zinc coated Nut: C4C according to EN 10263-2, zinc coated Spring section: PET

²⁾ with $235 \text{ N/mm}^2 \leq R_{eL} \leq 340 \text{ N/mm}^2$, Method of deoxidation: fully killed

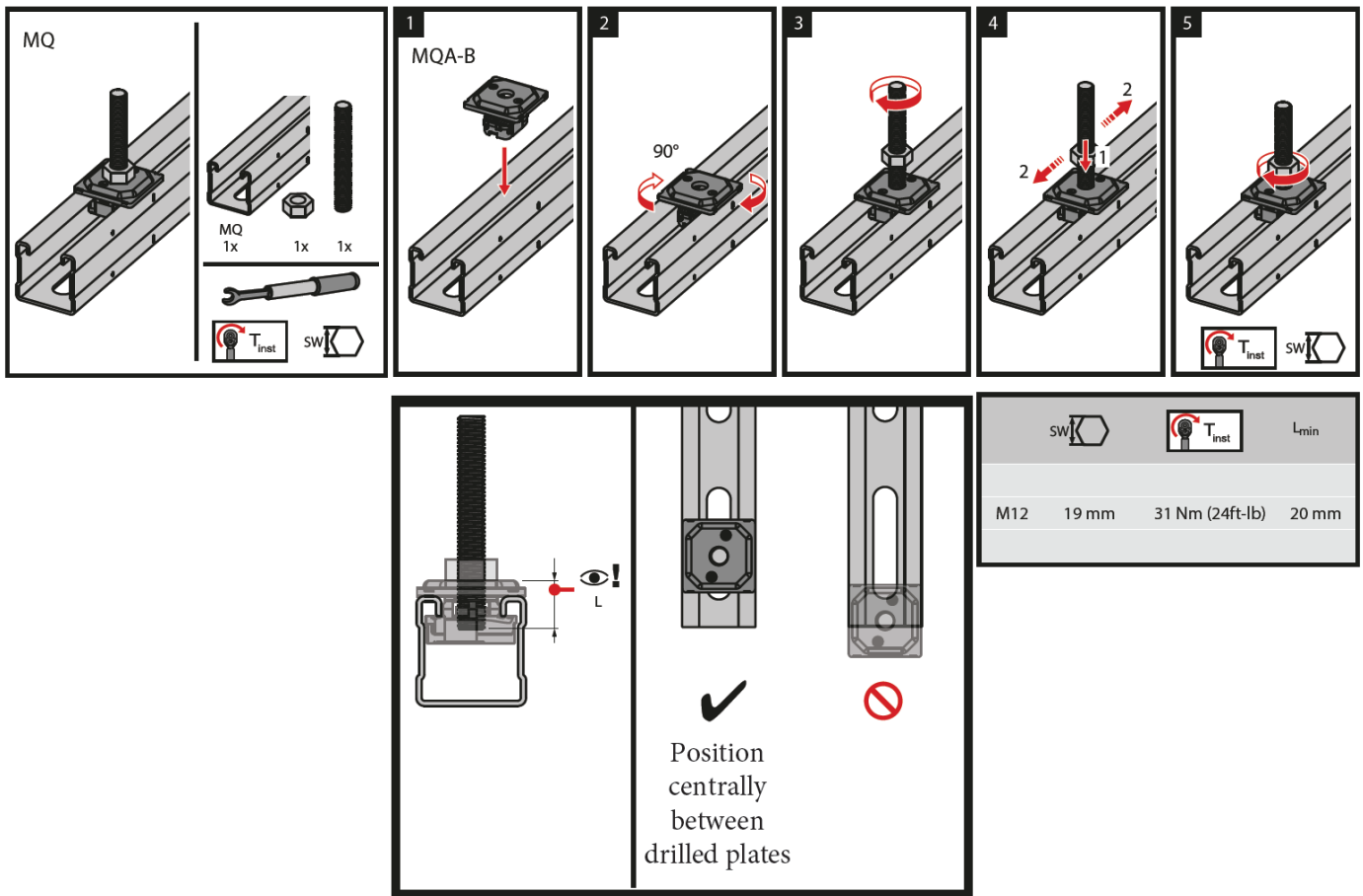
Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail

Description of the product (kit)
Dimensions and materials of the components of the kit

Annex A2

English translation prepared by DIBt

- Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail are used to support components of the technical building equipment such as pipes and equipment for sprinkler-, sewage-, drinking-, water-, heating-, cooling-, ventilation-, electrical- and other systems. Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail are performing this load-bearing function at elevated temperatures under the conditions described in this European Technical Assessment in chapter 2.
- The resistance at elevated temperatures applies for static and centric actions on the headrails according to Annex A1. The channel profiles with a length of 300 mm are fastened directly to the reinforced concrete ceiling. On the underside of the ceiling, the channel profile is mounted so that the side with slotted holes rests directly against the ceiling. For this, appropriate anchors at a distance of 200 mm are installed from below through the ceiling and fastened to the open side of the channel profile with drilled plates MQZ-L11. In this type of fixation, the anchor shaft in a length of about 40 mm is exposed to elevated temperatures.
- The resistance at elevated temperatures is referring to the boundary conditions of the standard temperature curve according to EN 1363-1.
- Before installing the channel to the ceiling, it is necessary to ensure by a fire resistance design that the substructure and the fasteners to the substructure are suitable to support the declared resistance of the headrail system.
- The installation of the saddle nut and the threaded rod is carried out according to the following principles:



- Installation must be carried out by trained personnel and under the supervision of the site manager.
- The general assembly instructions of the manufacturer in the informative Appendix D must be observed.

Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail	Annex B
Requirements for performance assessment	

English translation prepared by DIBt

Table C1: Resistance of Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail with centric load according to Annex A1 at elevated temperatures. Parameters of the regression curve $F_{Rk,t} = c_3 (c_1 + c_2 / t)$

Span ³⁾ [mm]	c ₁	c ₂	c ₃	t _{min} [minutes]	t _{max} [minutes]
200	706.553	35755.143	0.84663231	21	150

Table C2: Resistance $F_{Rk,t}$ of Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail with centric load according to Annex A1 at elevated temperatures after 30, 60, 90 and 120 minutes

Span ³⁾ [mm]	F _{Rk,30} [N]	F _{Rk,60} [N]	F _{Rk,90} [N]	F _{Rk,120} [N]
200	1607	1103	935	850

³⁾ Distance of the drilled plates (see Annex A1)

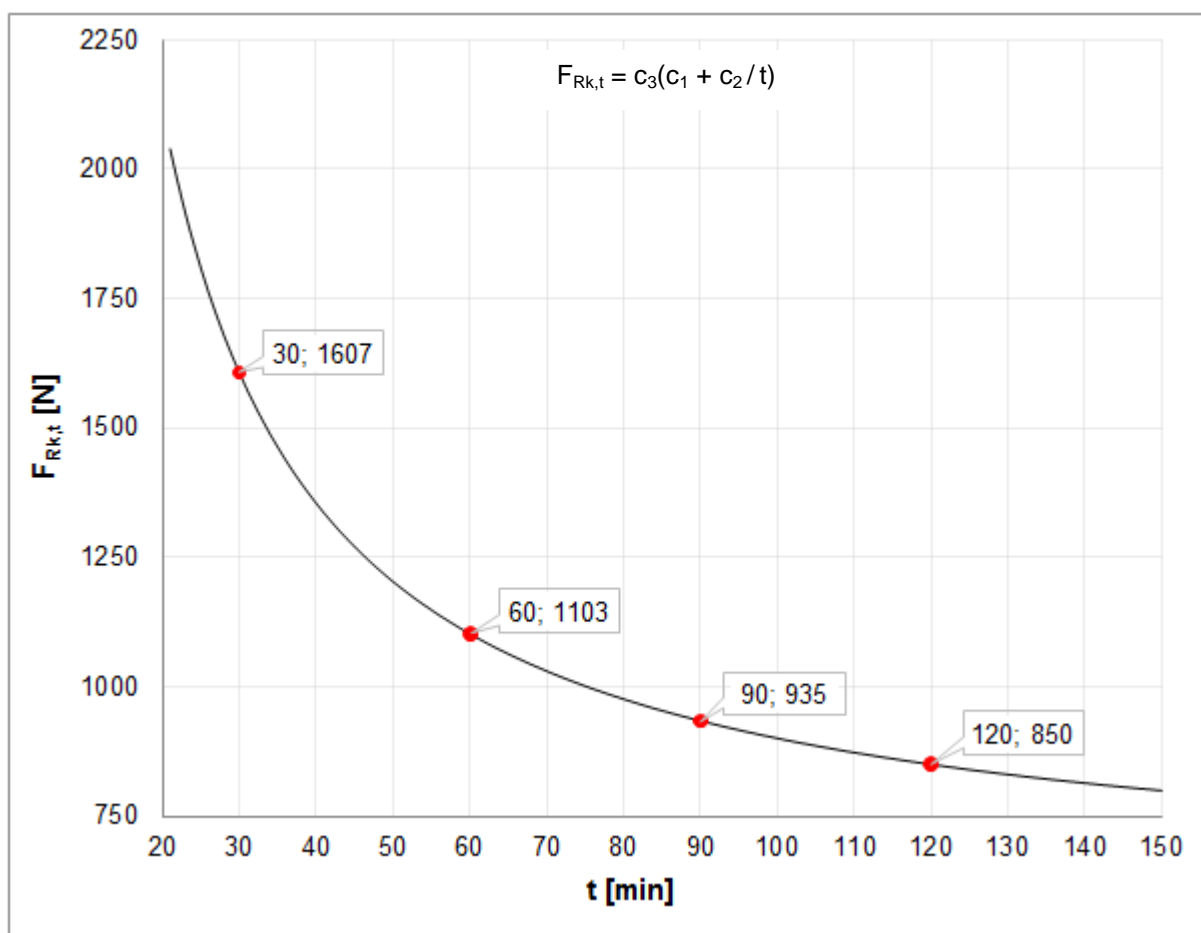
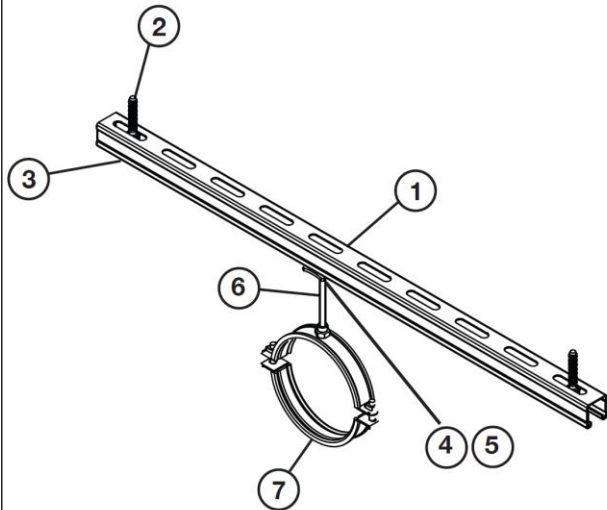


Figure C1: Regression curve according to Table C1

Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail

Resistance at elevated temperatures

Annex C



Bill of material / Stückliste					
Part of typical/ Applikationselement	Ref.	Opt.	Item no. / Artikel Nr.	Description / Bezeichnung	
Structure / Aufbau	Channel / Schiene	1	369596 2048102	MQ-41/3 3m channel* MQ-41/3 LL 3m channel*	
	Fixation / Befestigung	2	A	2105715	HST3 M10x130 70/50 stud anchors
		2	B	2079798	HUS3 -H 8x100 50/40/30
Pipe Fixation / Rohr- fixierung	M10	3	A	2199455	MQZ-L11 bored plate
		4		2199452	MQA-M10-B pipering saddle
		5		216466	M10 hexagon nut
	M12	6		339795	AM10x1000 4.8 threaded rod**
		4		2199453	MQA-M12-B pipering saddle
		5		216467	M12 hexagon nut
	M16	6		339797	AM12x1000 4.8 threaded rod**
		4		2199454	MQA-M16-B pipering saddle
		5		216468	M16 hexagon nut
Pipe Ring / Rohrschelle	M10/ M12/ M16	7		20843	MP-MI (from 3/8" to 244.50", with M10, 12, 16)
		7		20898	

* other lengths of the channels also possible / * andere Schienenlängen auch möglich

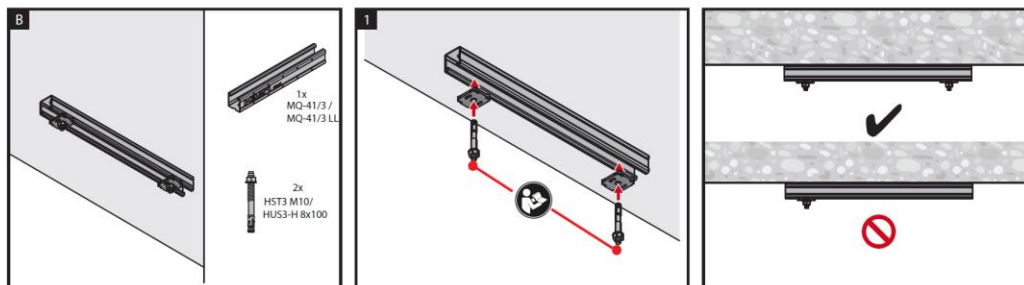
** Threaded rod available in 1,2 & 3 meters / ** Gewindestange erhältlich in 1,2 & 3 Meter

Assembly Instructions / Montagehinweise

①

Please use the Threaded rod & Anchors either in closed long holes or closed round holes in the channel
Verwendung von Gewindestangen & Dübeln nur durch geschlossene Langlöcher bzw. Rundlöcher der Schiene

③

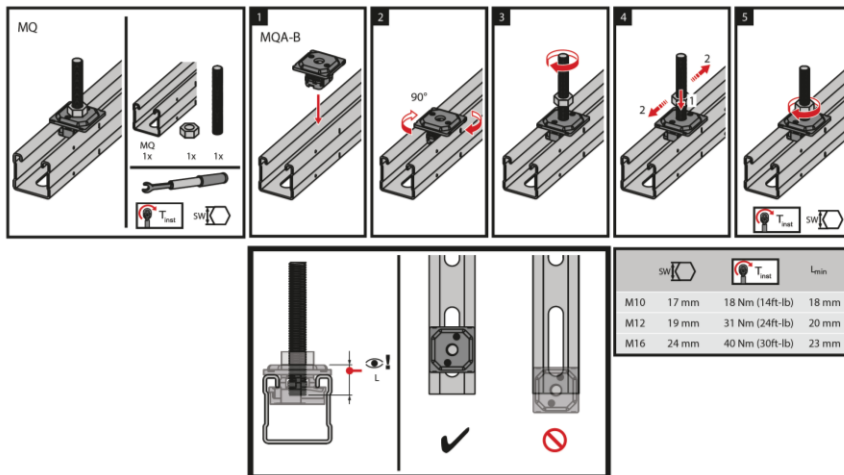


Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail

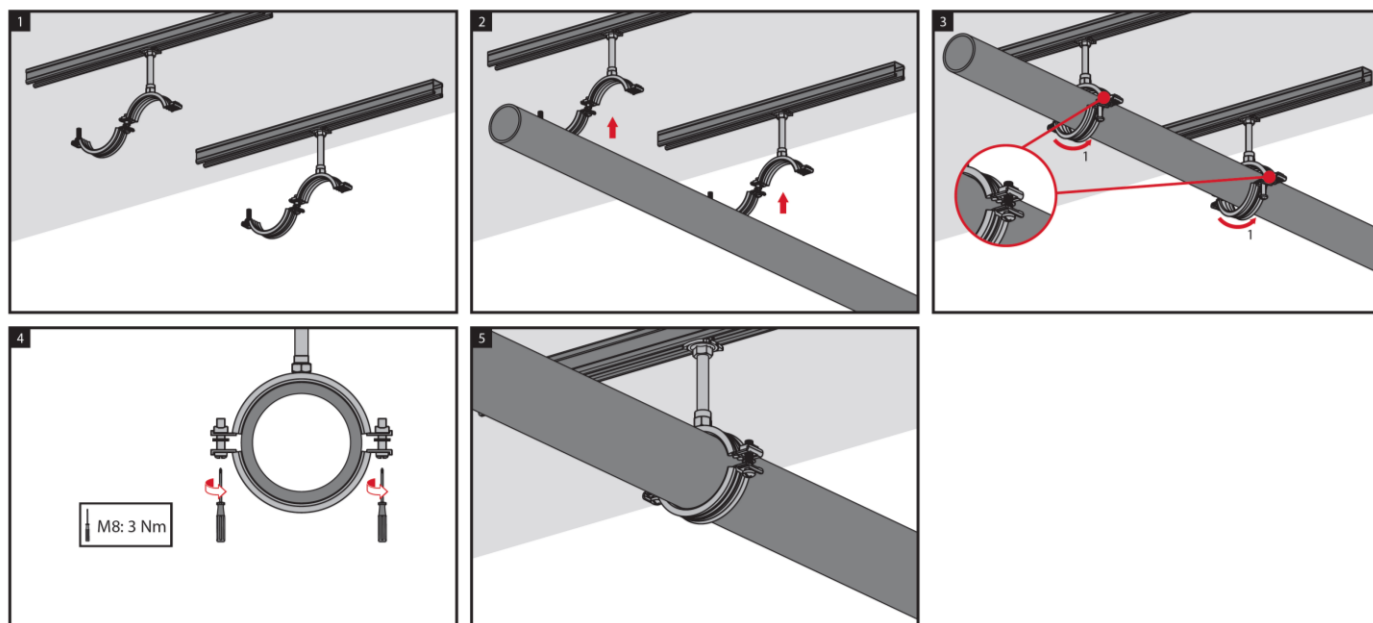
Assembly instructions

Annex D1
(informative)

4 / 5 / 6



7



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Hilti MQ-41/3 headrail and Hilti MQ-41/3 LL headrail

Assembly instructions

Annex D2
(informative)