



## PRODUCT DATA QUALIFICATION

### Design criteria used for assessing product characteristics

#### MQ System Installation Channels

##### Methodology:

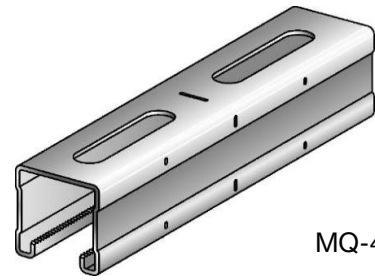
- Finite element analysis
- Hardware tests

##### Standards and codes:

- EN 1990 Basics of structural design 03.2003
- EN 1991-1-1 Eurocode 1: Actions on structures – Part 1-1: General actions – densities, self-weight, imposed loads for buildings 03.2012
- EN 1993-1-1 Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings 03.2012
- EN 1993-1-3 Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting 09.2010
- EN 1993-1-4 Eurocode 3: Design of steel structures – Part 1-4: General rules for stainless steels 04.2007
- EN 1993-1-5 Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements 06.2012
- EN 1993-1-8 Eurocode 3: Design of steel structures – Part 1-8: Design of joints 03.2012
- EN 10025-2 Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels 02.2005
- EAD 280016-00-0602: Products for installation systems for supporting technical building equipment

##### Load conditions:
































- Static loads



MQ-41-R



Item Number	Description	Eurocode	ETA CE	Fire
303988	Installation Channel MQ-21-R 3M			
303989	Installation Channel MQ-21-R 6M			
303991	Installation Channel MQ-21-RA2 6M			
303992	Installation Channel MQ-41-R 3M			
303993	Installation Channel MQ-41-R 6M			
303994	Installation Channel MQ-41-RA2 3M			
303995	Installation Channel MQ-41-RA2 6M			
303997	Installation Channel MQ-52-R 6M			
303998	Installation Channel MQ-21 D-R 3M			
303999	Installation Channel MQ-21 D-R 6M			
304002	Installation Channel MQ-41 D-R 3M			
304003	Installation Channel MQ-41 D-R 6M			
304559	Installation Channel MQ-41 2M			
369591	Installation Channel MQ-41 3M			
369592	Installation Channel MQ-41 6M			

369595	Installation Channel MQ-41 U 6M			
369596	Installation Channel MQ-41/3 3M			
369597	Installation Channel MQ-41/3 6M			
369603	Installation Channel MQ-41 D 3M			
369604	Installation Channel MQ-41 D 6M			
2141964	Installation Channel MQ-41-L 6M			
2141965	Installation Channel MQ-41-L 3M			
2141966	Installation Channel MQ-41-L 2M			
2184771	Installation Channel MQ-21.5 2M			
2184772	Installation Channel MQ-21.5 3M			
2184773	Installation Channel MQ-21.5 6M			



## PRODUCT DATA QUALIFICATION

### Design criteria used for assessing product characteristics

#### MQ System Angle Braces

##### Methodology:

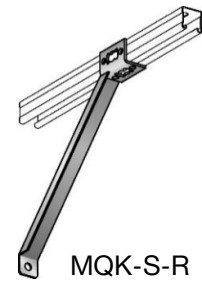
- Finite element analysis
- Hardware tests

##### Standards and codes:

- EN 1990 Basics of structural design 03.2003
- EN 1991-1-1 Eurocode 1: Actions on structures – Part 1-1: General actions – densities, self-weight, imposed loads for buildings 03.2012
- EN 1993-1-1 Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings 03.2012
- EN 1993-1-3 Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting 09.2010
- EN 1993-1-4 Eurocode 3: Design of steel structures – Part 1-4: General rules for stainless steels 04.2007
- EN 1993-1-5 Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements 06.2012
- EN 1993-1-8 Eurocode 3: Design of steel structures – Part 1-8: Design of joints 03.2012
- EN 10025-2 Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels 02.2005
- EAD 280016-00-0602: Products for installation systems for supporting technical building equipment

##### Load conditions:

- Static loads



Item Number	Description	Eurocode	ETA CE	Fire
304010	Angle brace MQK-SL-R			
304011	Angle brace MQK-SK-R			



## PRODUCT DATA QUALIFICATION

### Design criteria used for assessing product characteristics

#### MQ System Angles

##### Methodology:

- Finite element analysis
- Hardware tests

##### Standards and codes:

- EN 1990 Basics of structural design 03.2003
- EN 1991-1-1 Eurocode 1: Actions on structures – Part 1-1: General actions – densities, self-weight, imposed loads for buildings 03.2012
- EN 1993-1-1 Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings 03.2012
- EN 1993-1-3 Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting 09.2010
- EN 1993-1-4 Eurocode 3: Design of steel structures – Part 1-4: General rules for stainless steels 04.2007
- EN 1993-1-5 Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements 06.2012
- EN 1993-1-8 Eurocode 3: Design of steel structures – Part 1-8: Design of joints 03.2012
- EN 10025-2 Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels 02.2005
- EAD 280016-00-0602: Products for installation systems for supporting technical building equipment

##### Load conditions:

- Static loads



MQW-3-R



Item Number	Description	Eurocode	ETA CE	Fire
304051	2-hole Angle MQW-2-R			
304052	3-hole Angle MQW-3-R			
304053	3-hole Angle MQW-3/45-R			
304054	4-hole Angle MQW-4-R			
304055	8-hole Angle MQW-8/90-R			
304058	Angle MQW-S/1-R			
304059	Angle MQW-S/2-R			
369664	Angle MQW-S/1			
369665	Angle MQW-S/2			



## PRODUCT DATA QUALIFICATION

### Design criteria used for assessing product characteristics

#### MQ System Brackets

##### Methodology:

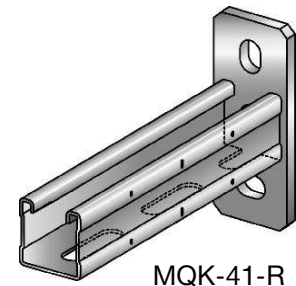
- Finite element analysis
- Hardware tests

##### Standards and codes:

- EN 1990 Basics of structural design 03.2003
- EN 1991-1-1 Eurocode 1: Actions on structures – Part 1-1: General actions – densities, self-weight, imposed loads for buildings 03.2012
- EN 1993-1-1 Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings 03.2012
- EN 1993-1-3 Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting 09.2010
- EN 1993-1-4 Eurocode 3: Design of steel structures – Part 1-4: General rules for stainless steels 04.2007
- EN 1993-1-5 Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements 06.2012
- EN 1993-1-8 Eurocode 3: Design of steel structures – Part 1-8: Design of joints 03.2012
- EN 10025-2 Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels 02.2005
- EAD 280016-00-0602: Products for installation systems for supporting technical building equipment

##### Load conditions:

- Static loads



MQK-41-R



Item Number	Description	Eurocode	ETA CE	Fire
304004	Bracket MQK-21/450-R			
304005	Bracket MQK-41/300-R			
304006	Bracket MQK-41/450-R			
304007	Bracket MQK-41/600-R			
304008	Bracket MQK-21 D/450-R			
304009	Bracket MQK-41 D/750-R			
369609	Bracket MQK-41/300			
369610	Bracket MQK-41/450			
369611	Bracket MQK-41/600			
369612	Bracket MQK-41/1000			
370595	Bracket MQK-41/3/300			
370596	Bracket MQK-41/3/450			
370597	Bracket MQK-41/3/600			



## PRODUCT DATA QUALIFICATION

### Design criteria used for assessing product characteristics

#### MQ System Channel Connectors



#### Methodology:

- Finite element analysis
- Hardware tests



#### Standards and codes:

- EN 1990 Basics of structural design 03.2003
- EN 1991-1-1 Eurocode 1: Actions on structures – Part 1-1: General actions – densities, self-weight, imposed loads for buildings 03.2012
- EN 1993-1-1 Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings 03.2012
- EN 1993-1-3 Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting 09.2010
- EN 1993-1-4 Eurocode 3: Design of steel structures – Part 1-4: General rules for stainless steels 04.2007
- EN 1993-1-5 Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements 06.2012
- EN 1993-1-8 Eurocode 3: Design of steel structures – Part 1-8: Design of joints 03.2012
- EN 10025-2 Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels 02.2005
- EAD 280016-00-0602: Products for installation systems for supporting technical building equipment

#### Load conditions:

- Static loads

Item Number	Description	Eurocode	ETA CE	Fire
304012	Channel Connector MQN-R			
2184368	Channel Connector MQN-C			
2184369	Channel Connector MQN-C HDG plus			
2184850	Channel Connector MQN-CP			
2184853	Channel Connector MQN-B			



## PRODUCT DATA QUALIFICATION

### Design criteria used for assessing product characteristics

#### MQ System Clamps



MQB-R



#### Methodology:

- Finite element analysis
- Hardware tests

#### Standards and codes:

- EN 1990 Basics of structural design 03.2003
- EN 1991-1-1 Eurocode 1: Actions on structures – Part 1-1: General actions – densities, self-weight, imposed loads for buildings 03.2012
- EN 1993-1-1 Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings 03.2012
- EN 1993-1-3 Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting 09.2010
- EN 1993-1-4 Eurocode 3: Design of steel structures – Part 1-4: General rules for stainless steels 04.2007
- EN 1993-1-5 Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements 06.2012
- EN 1993-1-8 Eurocode 3: Design of steel structures – Part 1-8: Design of joints 03.2012
- EN 10025-2 Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels 02.2005
- EAD 280016-00-0602: Products for installation systems for supporting technical building equipment

#### Load conditions:

- Static loads

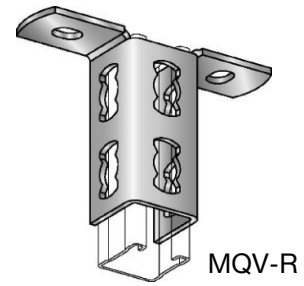
Item Number	Description	Eurocode	ETA CE	Fire
304060	Clamp MQB-21-R			
304062	Clamp MQB-52-R			
304067	Beam clamp MQT-21-41-R			



## PRODUCT DATA QUALIFICATION

### Design criteria used for assessing product characteristics

#### MQ System Connectors & Rail Supports



#### Methodology:

- Finite element analysis
- Hardware tests



#### Standards and codes:

- EN 1990 Basics of structural design 03.2003
- EN 1991-1-1 Eurocode 1: Actions on structures – Part 1-1: General actions – densities, self-weight, imposed loads for buildings 03.2012
- EN 1993-1-1 Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings 03.2012
- EN 1993-1-3 Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting 09.2010
- EN 1993-1-4 Eurocode 3: Design of steel structures – Part 1-4: General rules for stainless steels 04.2007
- EN 1993-1-5 Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements 06.2012
- EN 1993-1-8 Eurocode 3: Design of steel structures – Part 1-8: Design of joints 03.2012
- EN 10025-2 Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels 02.2005
- EAD 280016-00-0602: Products for installation systems for supporting technical building equipment

#### Load conditions:

- Static loads

Item Number	Description	Eurocode	ETA CE	Fire
304032	Connector MQV-2/2 D-R			
304033	Rail support MQV-2/2 D-14-R			
304034	Connector MQV-3/2 D-R			
304035	Connector MQV-3/3 D-R			
304037	Connector MQV-12-R			
304047	Rail support MQP-21-72-R			
369651	Rail support MQP-21-72			

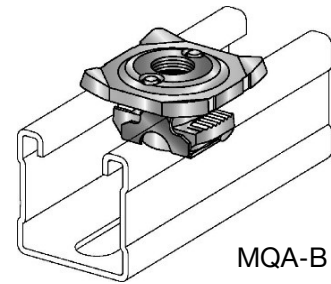




## PRODUCT DATA QUALIFICATION

### Design criteria used for assessing product characteristics

#### MQ System Pipe Ring Saddles



MQA-B

#### Methodology:

- Finite element analysis
- Hardware tests



#### Standards and codes:

- EN 1990 Basics of structural design 03.2003
- EN 1991-1-1 Eurocode 1: Actions on structures – Part 1-1: General actions – densities, self-weight, imposed loads for buildings 03.2012
- EN 1993-1-1 Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings 03.2012
- EN 1993-1-3 Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting 09.2010
- EN 1993-1-4 Eurocode 3: Design of steel structures – Part 1-4: General rules for stainless steels 04.2007
- EN 1993-1-5 Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements 06.2012
- EN 1993-1-8 Eurocode 3: Design of steel structures – Part 1-8: Design of joints 03.2012
- EN 10025-2 Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels 02.2005
- EAD 280016-00-0602: Products for installation systems for supporting technical building equipment

#### Load conditions:

- Static loads

Item Number	Description	Eurocode	ETA CE	Fire
2141906	MQA-S-M8			
2141907	MQA-S-M10			
2184832	MQA-S-M6			
2184833	MQA-ST M8 x 40			
2184834	MQA-ST M8 x 60			
2184835	MQA-ST M8 x 80			
2184836	MQA-ST M8 x 100			
2184837	MQA-ST M10 x 40			
2184838	MQA-ST M10 x 60			
2184839	MQA-ST M10 x 80			
2184840	MQA-ST M10 x 100			
2199452	MQA-M10-B			
2199453	MQA-M12-B			
2199454	MQA-M16-B			



## PRODUCT DATA QUALIFICATION

### Design criteria used for assessing product characteristics

#### MQ System Plates

##### Methodology:

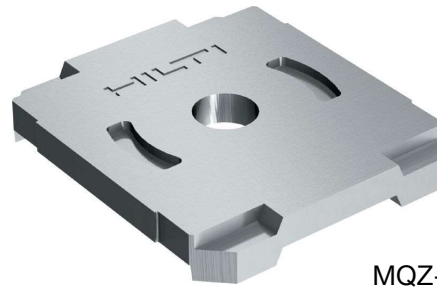
- Finite element analysis
- Hardware tests

##### Standards and codes:

- EN 1990 Basics of structural design 03.2003
- EN 1991-1-1 Eurocode 1: Actions on structures – Part 1-1: General actions – densities, self-weight, imposed loads for buildings 03.2012
- EN 1993-1-1 Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings 03.2012
- EN 1993-1-3 Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting 09.2010
- EN 1993-1-4 Eurocode 3: Design of steel structures – Part 1-4: General rules for stainless steels 04.2007
- EN 1993-1-5 Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements 06.2012
- EN 1993-1-8 Eurocode 3: Design of steel structures – Part 1-8: Design of joints 03.2012
- EN 10025-2 Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels 02.2005
- EAD 280016-00-0602: Products for installation systems for supporting technical building equipment

##### Load conditions:

- Static loads



MQZ-L-R



Item Number	Description	Eurocode	ETA CE	Fire
304070	Bored plate MQZ-L7-R			
304071	Bored plate MQZ-L9-R			
304072	Bored plate MQZ-L11-R			
304073	Bored plate MQZ-L13-R			
369681	Drilled plate MQZ-L17			
2199455	Drilled plate MQZ-L11			
2199456	Drilled plate MQZ-L13			