

4.2 MQ System Components — Load Data and Material Specifications

MQK Brackets

Product Features

- C-profile with serrated edges for increased hold
- Installation assisted by dimension marking
- Slotted for greater flexibility
- Back-to-back brackets welded all around

Material Specifications

Materials	Carbon steel, S 235 JR (DIN EN 10025), ASTM A283 (D) Stainless steel, 1.4571 (316 Ti)
Finishes	Electro-galvanized Hot-dipped galvanized, min. 2.2 mil (56 µm)



Ordering Information

MQK-21

Description		Strut Length (in)	Strut Length (mm)	Strut Section (ga/mm)	Weight per piece (lb)	Qty	Item No. Single piece
MQK-21/300	①	11-13/16 in	300	14/2	1.48	1	369607
MQK-21/450	①	17-11/16 in	450	14/2	1.96	1	369608

MQK-41/3

Description		Strut Length (in)	Strut Length (mm)	Strut Section (ga/mm)	Weight per piece (lb)	Qty	Item No. Single piece
MQK-41/3/300	①	11-13/16 in	300	12/3	2.62	1	370595
MQK-41/3/600	①	23-5/8 in	600	12/3	4.54	1	370597
MQK-41/600-F HDG	②	23-5/8 in	600	14/2	3.46	1	304117
MQK-41/600-R SS316 Ti	②	23-5/8 in	600	14/2	3.46	1	304007

MQK-72

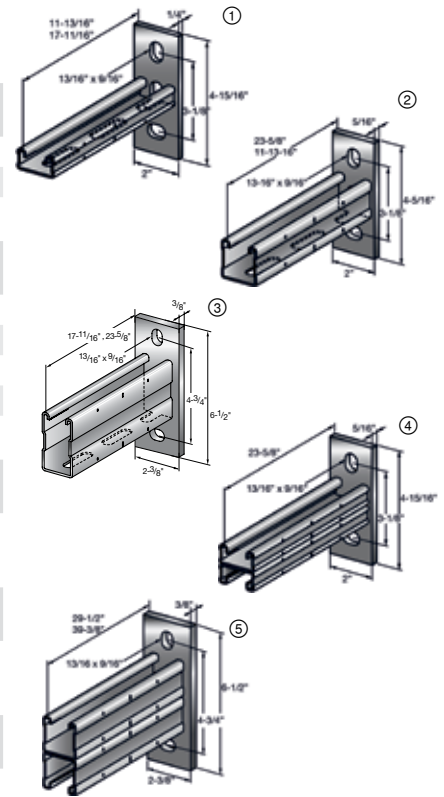
Description		Strut Length (in)	Strut Length (mm)	Strut Section (ga/mm)	Weight per piece (lb)	Qty	Item No. Single piece
MQK-72/600	③	23-5/8 in	600	12/2.75	6.90	1	369616

MQK-21D (Double)

Description		Strut Length (in)	Strut Length (mm)	Strut Section (ga/mm)	Weight per piece (lb)	Qty	Item No. Single piece
MQK-21D/600	④	23-5/8 in	600	14/2	4.83	1	369619

MQK-41D (Double)

Description		Strut Length (in)	Strut Length (mm)	Strut Section (ga/mm)	Weight per piece (lb)	Qty	Item No. Single piece
MQK-41D/1000-F HDG	⑤	39-3/8 in	1000	14/2	11.20	1	304127
MQK-41D/750-R SS316 Ti	⑤	29-1/2 in	750	14/2	6.02	1	304009



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Technical Data — Section Properties

MQK Brackets	21 (13/16")		41 (1-5/8")		41/3 (1-5/8")		72 (1-7/8")		21 D (13/16 B2B)		41 D (1-5/8" B2B)	
Thickness	14 ga	2.00 mm	14 ga	2.00 mm	11 ga	3.00 mm	12 ga	2.75 mm	14 ga	2.00 mm	14 ga	2.00 mm
Profile Weight	0.968 lb/ft	1.44 kg/m	1.398 lb/ft	2.08 kg/m	1.955 lb/ft	2.91 kg/m	2.755 lb/ft	4.10 kg/m	2.002 lb/ft	2.98 kg/m	2.883 lb/ft	4.29 kg/m
Area of section	0.256 in ²	1.65 cm ²	0.380 in ²	2.45 cm ²	0.540 in ²	3.48 cm ²	0.764 in ²	4.93 cm ²	0.512 in ²	3.31 cm ²	0.760 in ²	4.90 cm ²
Moment of inertia I _x	0.022 in ⁴	0.92 cm ⁴	0.129 in ⁴	5.37 cm ⁴	0.169 in ⁴	7.02 cm ⁴	0.690 in ⁴	28.70 cm ⁴	0.120 in ⁴	4.98 cm ⁴	0.737 in ⁴	30.69 cm ⁴
Moment of inertia I _y	0.105 in ⁴	4.39 cm ⁴	0.176 in ⁴	7.33 cm ⁴	0.251 in ⁴	10.44 cm ⁴	0.370 in ⁴	15.40 cm ⁴	0.211 in ⁴	8.78 cm ⁴	0.352 in ⁴	14.67 cm ⁴
Section Modulus S _x	0.052 in ³	0.85 cm ³	0.155 in ³	2.54 cm ³	0.199 in ³	3.26 cm ³	0.476 in ³	7.80 cm ³	0.148 in ³	2.42 cm ³	0.453 in ³	7.43 cm ³
Section Modulus S _y	0.130 in ³	2.13 cm ³	0.217 in ³	3.55 cm ³	0.309 in ³	5.06 cm ³	0.455 in ³	7.46 cm ³	0.259 in ³	4.25 cm ³	0.433 in ³	7.10 cm ³
Radius of Gyration R _x	0.291 in	0.74 cm	0.583 in	1.48 cm	0.559 in	1.42 cm	0.949 in	2.41 cm	0.484 in	1.23 cm	0.984 in	2.50 cm
Radius of Gyration R _y	0.642 in	1.63 cm	0.681 in	1.73 cm	0.681 in	1.73 cm	0.697 in	1.77 cm	0.642 in	1.63 cm	0.681 in	1.73 cm
Gravity Axis e ₁	0.427 in	1.08 cm	0.832 in	2.11 cm	0.847 in	2.15 cm	1.448 in	3.68 cm	0.811 in	2.06 cm	1.626 in	4.13 cm
Gravity Axis e ₂	0.384 in	0.98 cm	0.794 in	2.02 cm	0.779 in	1.98 cm	1.387 in	3.52 cm	0.811 in	2.06 cm	1.626 in	4.13 cm

MQK Brackets

Technical Data — Allowable Loads for Carbon and Stainless Steels



Bracket

Bracket	L (in.)	L (mm)	F1		F1		F1		F2		F3	
			lb	N	lb	N	lb	N	lb	N	lb	N
MQK-21/300	11-13/16	300	128	570	128	570	63	280	63	280	43	190
MQK-21/450	17-11/16	450	85	380	85	380	40	180	43	190	27	120
MQK-41/600	23-5/8	600	189	840	189	840	94	420	94	420	63	280
MQK-41/3/300	11-13/16	300	382	1700	382	1700	191	850	191	850	126	560
MQK-41/3/600	23-5/8	600	187	830	187	830	92	410	92	410	61	270
MQK-72/600	23-5/8	600	454	2020	454	2020	227	1010	227	1010	151	670
MQK-21 D/600	23-5/8	600	175	780	175	780	88	390	88	390	58	260
MQK-41 D/750	29-1/2	750	360	1600	360	1600	180	800	180	800	119	530
MQK-41 D/1000	39-3/8	1000	265	1180	265	1180	133	590	133	590	88	390

- Loading capacity of bracket fastened to concrete with KB-TZ 1/2" x 3-3/4" (with an embedment depth of 3" using ASD allowable load values) or KH-EZ 1/2" x 4".
- The deflection of L/150 was observed at the point of load application.
- The loads apply only when strut opening pointing upwards or downwards.
- The bracket's own weight has been accounted for.
- Concrete strength minimum 3000 psi.
- Fastener loads based on no edge distance or anchor spacing effects. Reference Vol. 2 Hilti Anchoring Technical Guide for details.
- Engineer of record is responsible for verifying suitability of the components, connection, anchor selection and base material for any specific application.
- The application guidelines applicable to the anchor must be observed. Reference Vol. 2 Hilti Anchoring Technical Guide.
- Load values for steel are based on the lesser of allowable stress, 25,000 psi, or a deflection limit of L/150 at the outer most loading point.