



Certificate of Compliance

This certificate is issued for the following:

Seismic Sway Brace Components for Pipe, Tubing and Conduit
(see attached listing)

Prepared for:

Hilti AG
Feldkircherstrasse 100
BU Installation
Postfach 333
Schaan , 9494
Liechtenstein

FM Approvals Class: 1950 (September 2013)

Approval Identification: PR453100 Approval Granted: April 14, 2020

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

A handwritten signature in black ink, appearing to read 'D. B. Fuller', written over a horizontal line.

David Fuller
VP - Manager of Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



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Certificate of Compliance

| Model | Part Description | Run Pipe Nominal Size | Orientation | Allowable Horizontal Capacity (F) per Installation Angle, lb (N) | | | | Remarks |
|-------------|-----------------------|-----------------------|--------------|--|-----------------|-----------------|---------|---------|
| | | | | 30°-44° | 45°-59° | 60°-74° | 75°-90° | |
| MQS-SP | Pipe Attachment | 2, 2-1/2, 3 | Lateral | 1111 (4940) | 1443 (6417) | 2425 (10788) | NR | a, b |
| MQS-SP | Pipe Attachment | 4, 5 | Lateral | 1007 (4478) | 1648 (7331) | 2407 (10708) | NR | a, b |
| MQS-SP | Pipe Attachment | 6 | Lateral | 1679 (7467) | 2450 (10898) | 2707 (12040) | NR | a, b |
| MQS-SP | Pipe Attachment | 8 | Lateral | 1747 (7770) | 1994 (8870) | 2532 (11263) | NR | a, b |
| MQS-SP | Pipe Attachment | 10 | Lateral | 2080 (9250) | 2530 (11250) | 2740 (12190) | NR | b, m |
| MQS-SP | Pipe Attachment | 12 | Lateral | 1870 (8320) | 2400 (10670) | 3160 (14060) | NR | b, m |
| MQS-SP | Pipe Attachment | 2, 2-1/2, 3 | Longitudinal | 1228 (5462) | 1799 (8001) | 2203 (9801) | NR | a, b |
| MQS-SP | Pipe Attachment | 4, 5 | Longitudinal | 1080 (4804) | 1619 (7203) | 1925 (8561) | NR | a, b |
| MQS-SP | Pipe Attachment | 6 | Longitudinal | 1199 (5332) | 1679 (7467) | 1858 (8265) | NR | a, b |
| MQS-SP | Pipe Attachment | 8 | Longitudinal | 1080 (4804) | 1857 (8262) | 1987 (8837) | NR | a, b |
| MQS-SP | Pipe Attachment | 10 | Longitudinal | 1280 (5690) | 1360 (6050) | 1360 (6050) | NR | b, m |
| MQS-SP | Pipe Attachment | 12 | Longitudinal | 1570 (6980) | 1730 (7700) | 2130 (9470) | NR | b, m |
| MQS-SP-L | Structural Attachment | NA | Note G | 1490 (6620) | 1440 (6400) | 1160 (5150) | NR | a, c |
| MQS-SP-T | Structural Attachment | NA | Note G | 780 (3460) | 1130 (5020) | 1360 (6040) | NR | a, d |
| MQS-SP-L ½" | Structural Attachment | NA | Note G | 1490 (6620) | 1440 (6400) | 1160 (5150) | NR | k, l |
| MQS-SP-T ½" | Structural Attachment | NA | Note G | 780 (3460) | 1130 (5020) | 1360 (6040) | NR | k, l |



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| Model | Part Description | Run Pipe Nominal Size | Orientation | Allowable Horizontal Capacity (F) per Installation Angle, lb (N) | | | | Remarks |
|--------|------------------|-----------------------|-------------|--|----------------|----------------|---------|---------|
| | | | | 30°-44° | 45°-59° | 60°-74° | 75°-90° | |
| MQS-IB | Beam Clamp | NA | Along | 680 (3020) | 970 (4310) | 1190 (5290) | NR | a, e, f |
| MQS-IB | Beam Clamp | NA | Across | 710 (3150) | 1000 (4440) | 1190 (5290) | NR | a, e, f |

Remarks:

- a. FM Approved when used with MQ-41, MQ-21, MQ-21D or HS 1-5/8 12 ga PG10 channel as brace element.
- b. MQS-SP consists of parts marked MQS-SP, MQS-P (2140053) and MQS-C-SP (2080472). The correct designation for the FM Approved sway brace is MQS-SP.
- c. MQS-SP-L consists of parts marked MQS-A-SP-12 (2136842), MQS-P (2140053) and MQS-C-SP (2080472). The correct designation for the FM Approved sway brace is MQS-SP-L.
- d. MQS-SP-T consists of parts marked MQS-A-SP-12 (2136842), QTY=2; MQS-P (2140053) and MQS-C-SP (2080472). The correct designation for the FM Approved sway brace is MQS-SP-T.
- e. MQS-IB is FM Approved when used with either MQS-SP-T or MQS-SP-L to connect brace to the MQS-IB.
- f. MQS-IB consists of parts marked MQS-IB (2148831 and 2148855). The correct designation for the FM Approved sway brace is MQS-IB
- g. MQS-SP-L is designated –L for brace element longitudinal. This refers to the orientation relative to the sprinkler pipe being braced, not orientation to a structural member. MQS-SP-T is designated –T for brace element transverse to sprinkler pipe.
- h. Lateral – brace element perpendicular to sprinkler pipe; Longitudinal – brace element parallel to sprinkler pipe
- i. Along - Brace element loading along the length of the beam, Across - Brace element loading across the width of the beam
- j. NR – Not rated for this installation angle range; NA – Not Applicable
- k. MQS-SP-L ½” consists of parts marked MQS-A-SP-1/2 (2186464), MQS-P (2140053) and MQS-C-SP (2080472). The correct designation for the FM Approved sway brace is MQS-SP-L ½”.
- l. MQS-SP-T ½” consists of parts marked MQS-A-SP-1/2” (2186464), MQS-A-SP-12 (2136842), MQS-P (2140053) and MQS-C-SP (2080472). The correct designation for the FM Approved sway brace is MQS-SP-T ½”.
- m. FM Approved when used with MQ-41 or HS 1-5/8 12 ga PG10 channel as brace element.



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