

Victaulic® FireLock™ Series FL-QR/DRY/ESFR

Dry, Storage, Fast Response

Pendent Sprinklers, K16.8 (24.2)



1.0 PRODUCT DESCRIPTION

ESFR PENDENT DRY SPRINKLERS	
SIN	V4102
ORIENTATION	Pendent
K-FACTOR ¹	16.8 Imp/24.2 S.I. ¹
CONNECTION	1" IGS
MAX. WORKING PRESSURE	175 psi (1200 kPa)
ESCUTCHEON	Clamshell

AVAILABLE WRENCHES	
SPRINKLER	3/16 Hex-Bit (V9)
Pendent	■

Factory Hydrostatic Test: 100% @ 500 psi/3447 kPa/34 bar

Min. Operating Pressure: UL/FM: 7 psi/48 kPa/.5 bar

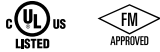
Temperature Rating: See tables in section 2.0

¹ For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.



2.0 CERTIFICATION/LISTINGS



APPROVALS/LISTINGS	
SIN	V4102
Nominal K Factor Imperial	16.8
Nominal K Factor S.I. ²	24.2
Orientation	Pendent
Approved Temperature Ratings F°/C°	
cULus	165°F/74°C 212°F/100°C
FM	165°F/74°C 212°F/100°C

ESFR DRY PENDENT APPROVALS/LISTINGS		
	cULus (NFPA)	FM
SIN	V4102	
Nominal K Factor Imperial	16.8	
Nominal K Factor S.I.	24.2	
Sprinkler Type	ESFR	Quick Response Storage
System Type	Wet	
Temperature Rating	165°F/74°C 212°F/100°C	165°F/74°C 212°F/100°C
Maximum Area of Coverage	100ft ² /9.1m ²	100ft ² /9.1m ²
Minimum Area of Coverage	64ft ² /6m ²	64ft ² /6m ²
Maximum Slope Ceiling	2 in 12/10.5°	
Maximum Spacing	12ft/3.6m for up to 30ft/9.1m ceiling 10ft/3m for over 30ft/9.1m ceiling	12ft/3.6m for up to 30ft/9.1m ceiling 10ft/3m for over 30ft/9.1m ceiling
Minimum Spacing	8ft/2.4m	
Deflector to Ceiling Distance ²	6" – 14"/150mm – 355mm	2" – 13"/50mm – 330mm
Minimum Deflector to Top of Storage	3ft/0.9m	
Minimum Deflector Distance from Walls	4"/100mm	
Sprinkler System Design	12 A.S @ Approved Pressures	12 A.S @ Approved Pressures
Storage Type		
Open Frame (that is, no solid shelves) Single, Double, Multiple-Row, or Portable Rack Storage of Class I-IV and Group A or B Plastics	NFPA 13	Datasheet 8-9
Solid Pile or Palletized Storage of Class I-IV and Group A or B Plastics	NFPA 13	Datasheet 8-9
Idle Pallet Storage	NFPA 13	Datasheet 8-24
Rubber Tire Storage	NFPA 13	Datasheet 8-3
Rolled Paper Storage (Refer to the standard.)	NFPA 13	Datasheet 8-21
Flammable Liquid Storage (Refer to the standard.)	NFPA 30	Datasheet 7-29
Aerosol Storage (Refer to the standard.)	NFPA 30B	Datasheet 7-31
Automotive Components in Portable Racks (Control mode only, refer to the standard.)	Refer to NFPA 13	N/A

² For K-Factor when pressure is measured in Bar, multiply S.I. units by 10.

NOTE

- Listings and approval as of printing.

3.0 SPECIFICATIONS – MATERIAL

- Deflector:** Bronze
- Frame:** Brass
- Load Screw:** Stainless Steel
- Link:** Nickel
- Lever:** Stainless Steel
- Strut:** Stainless Steel
- Strut Cap:** Stainless Steel
- Split Spacer:** Stainless Steel
- Orifice Insert:** Stainless Steel
- Inner Tube:** Stainless Steel
- Torsion Spring:** Stainless Steel
- Spring Seal Assembly:** PTFE coated Beryllium nickel alloy and stainless steel
- Outer Tube:** Galvanized steel pipe
- Inlet Fitting:** Brass
- Escutcheon/Cover Plate:** Stainless steel
- Escutcheon Screws:** Zinc Plated Steel
- Sprinkler Frame Finishes:** Plain brass
- Coupling:** Refer to Victaulic [publication 10.65](#)

Accessories⁴

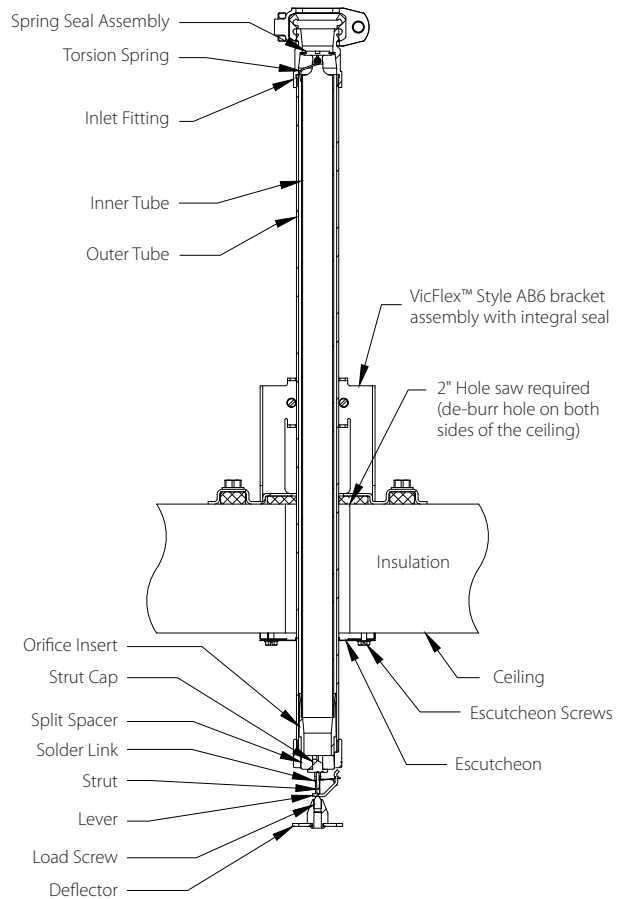
Style AB6 Bracket Assembly

- Bracket:** Carbon Steel, Zinc-Plated
- U-bolt:** Carbon Steel, Zinc-Plated
- Hex Nut:** Carbon Steel, Zinc-Plated
- Seal:** EPDM/Neoprene
- Seal EPDM/Neoprene**
- Washer:** Carbon Steel, Zinc-Plated
- Screw:** Carbon Steel, Zinc-Plated

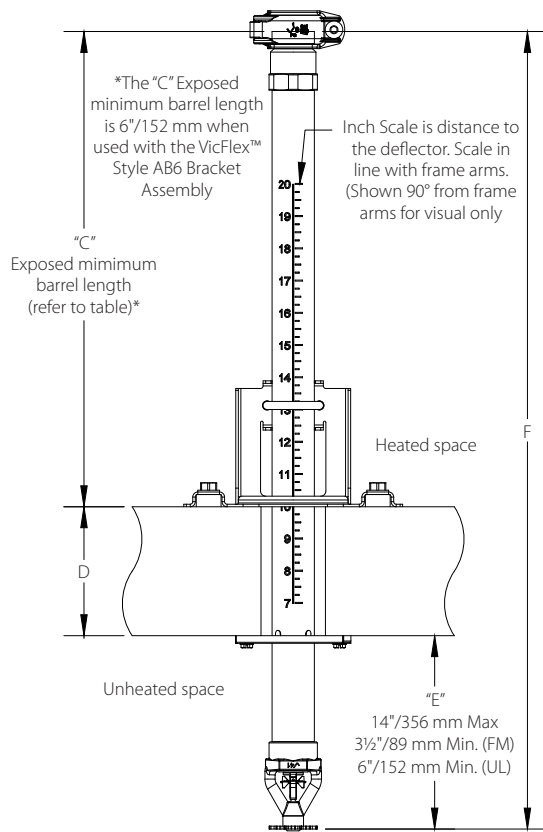
Series GH1 Braided Flexible Fitting 1 ½" OGS⁵ x 1" IGS⁶

- Flexible Hose:** Stainless Steel
- Weld Fitting:** Stainless Steel

⁴ FM Approved only.
⁵ Branchline connection is 1 ½" OGS grooved end
⁶ See [publication 10.88](#) for approved installation methods and performance specifications



4.0 DIMENSIONS



Minimum Sprinkler Length (F) = C+D+E

C = Minimum exposed barrel length (above ceiling). Refer to Table 5.1. Ambient Temperature VS Minimum Exposed Barrel Length

D = Ceiling panel thickness

E = Drop distance below ceiling (discharge end of sprinkler). Ceiling to deflector. Refer to NFPA 13 Section 14.2.10 and FM Datasheet 2-0 when considering obstructions.

NOTE

- Minimum order length should be the next available standard length above Minimum Sprinkler Length (F).
- Minimum C Dimension when used with AB6 bracket is 6"

5.0 PERFORMANCE

Sprinkler is to be installed and designed as per NFPA, FM Datasheets, or any local standards.

When GH1 braided flexible fitting 1 ½" OGS x 1" IGS is used:

See [publication 10.88](#) for approved installation methods and performance specifications

5.1 PERFORMANCE

Table is for dry sprinklers only

Ambient Temperature VS Minimum Exposed Barrel Length			
Ambient Temperature Exposed to Discharge End of Sprinkler °F °C	Minimum Exposed Barrel Length when Exposed to 40°F/4°C inches mm	Minimum Exposed Barrel Length when Exposed to 50°F/10°C inches mm	Minimum Exposed Barrel Length when Exposed to 60°F/16°C inches mm
40 4	-	-	-
30 -1	-	-	-
20 -7	4 100	-	-
10 -12	8 200	1 25	-
0 -18	12 300	3 75	-
-10 -23	14 350	4 100	1 25
-20 -29	14 350	6 150	3 75
-30 -34	16 400	8 200	4 100
-40 -40	18 450	8 200	4 100
-50 -46	20 500	10 250	6 150
-60 -51	20 500	10 250	6 150

6.0 NOTIFICATIONS

WARNING



- Read and understand all instructions before attempting to install any Victaulic products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, and foot protection.

Failure to follow these instructions could result in death or serious personal injury and property damage.

- These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.
- The installer shall understand the use of this product and why it was specified for the particular application.
- The installer shall understand common industry safety standards and potential consequences of improper product installation.
- It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.
- The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service.

Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

- [10.65: FireLock IGS Installation-Ready Style V9 Sprinkler Coupling](#)
- [10.88: GH1 Flexible Fittings](#)
- [1-40: Victaulic FireLock™ Automatic Sprinklers Installation and Maintenance Instructions](#)
- [I-V9: Style V9 Victaulic FireLock™ IGS™ Installation-Ready™ Sprinkler Coupling Installation Instructions](#)
- [I-VICFLEX-AB6: Vicflex™ Style AB6 Assembly - Cold storage installation manual](#)

The values in the table below are the total weight in pounds/kilograms for a Model V41 Dry Sprinkler, with Style AB6 Bracket Assembly, and Optional Series GH1 Flexible Fitting (water-filled).

Model	Sprinkler Order Length		AB6 Bracket	36" GH1 Flexible Fitting (Water-Filled)	Total Weight	
	inches				lbs	kg
V4102	24	x	–	–	3.4	1.54
		x	x	–	4.8	2.18
		x	x	x	10.1	4.58
	30	x	–	–	4.0	1.81
		x	x	–	5.4	2.50
		x	x	x	10.7	4.85
	36	x	–	–	4.6	2.09
		x	x	–	6.0	2.72
		x	x	x	11.3	5.13

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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