

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" NPT/25 mm BSPT/IGS™ Grooved
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 CERTIFICATIONS/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		
	NFPA (cULus/FM)	FM
SIN	V4102	
Nominal K Factor Imperial	16.8	
Nominal K Factor S.I. ²	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	100 ft ² / 9.1 m ²	100 ft ² / 9.1 m ²
Minimum Area of Coverage	64 ft ² / 6 m ²	64 ft ² / 6 m ²
Maximum Slope Ceiling	NFPA 13	Datasheet 2-0 and 8-9
Maximum Spacing	12 ft / 3.6 m for up to 30 ft / 9.1 m ceiling 10 ft / 3.1 m for over 30 ft / 9.1 m ceiling	12 ft / 3.6 m for up to 30 ft / 9.1 m ceiling 10 ft / 3.1 m for over 30 ft / 9.1 m ceiling
Minimum Spacing	8 ft / 2.4 m	8 ft / 2.4 m
Deflector to Ceiling Distance ³	NFPA 13	Datasheet 2-0
Minimum Deflector to Top of Storage	3 ft / 0.9 m	3 ft / 0.9 m
Minimum Deflector Distance from Walls	4 inches / 100 mm	4 inches / 100 mm
Sprinkler System Design	12 A.S. @ Approved Pressures per NFPA 13 when more are required	12 A.S. @ Approved Pressures per Datasheet 2.0 and 8-9 when more are required
Storage Type	Applicable Standards	
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.

³ For K-Factor when pressure is measured in bar, multiply S.I. units by 10.

NOTE

- Reference the specific agency website listings for the most up-to-date certification information.

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 × 1" IGS⁶

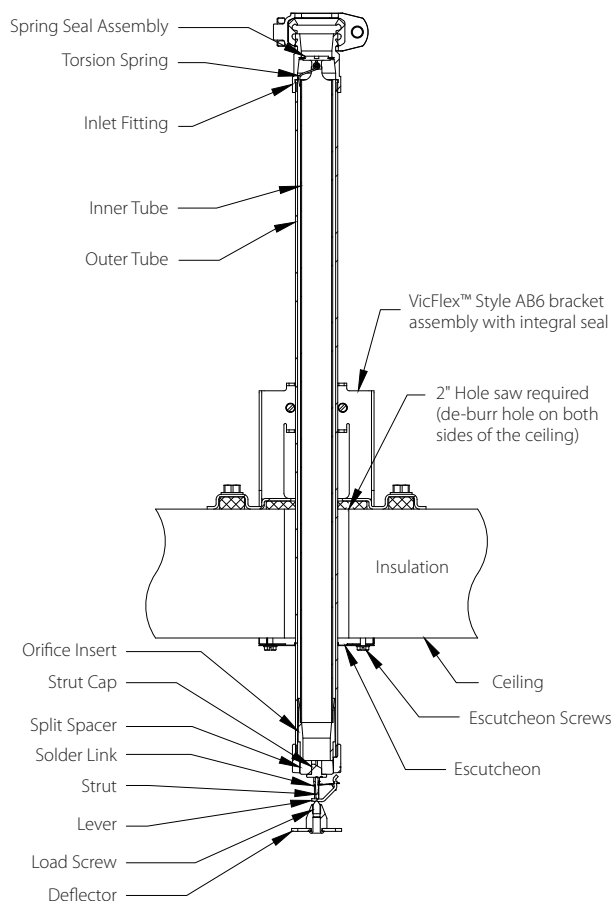
Flexible Hose: Stainless Steel

Weld Fitting: Stainless Steel

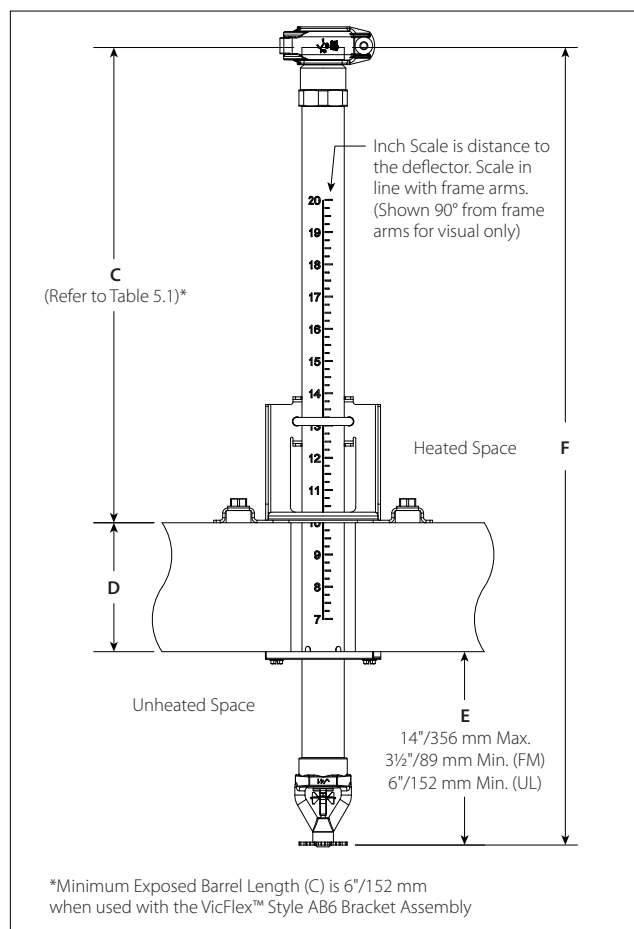
⁴ FM Approved only

⁵ Branchline connection is 1 ½" OGS grooved end

⁶ See [Publication 10.88](#) for approved installation methods and performance specifications



4.0 DIMENSIONS



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.

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

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 systems are to be designed to and installed per NFPA, FM Data sheets, and any local standards.

5.1 PERFORMANCE

Table information applies to 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

When GH1 Braided Flexible Fitting 1 ½" OGS × 1" IGS™ is used see [Publication 10.88](#) for approved installation methods and performance specifications.

GH1 1 ½" × 1" Friction Loss Data		
Hose Length ft m	Equivalent Length (ft of Sch 40 pipe in same nominal diameter)	
	S-Bend ft m	90° Bend ft m
36 914	19.9 7	14.0 5

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) 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

Assembly Weights

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 inches		AB6 Bracket	36" GH1 Flexible Fitting (Water-Filled)	Total Weight 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

[10.65: FireLock IGS Installation-Ready Style V9 Sprinkler Coupling](#)

[10.88: GH1 Flexible Fittings](#)

[I-40: Victaulic FireLock™ Automatic Sprinklers Installation and Maintenance Instructions](#)

[I-V9: Style V9 Victaulic FireLock™ IGS™ Installation-Ready™ Sprinkler Coupling Installation Instructions](#)

[I-VICFLEX™ Field Installation Handbook: Style AB6](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for determining the suitability of Victaulic products for their end-use application, in accordance with industry standards, project specifications, and Victaulic's published performance, maintenance, and safety data, as well as all warnings and installation 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, warranty, installation instructions, or this disclaimer.

Installation

Always refer to and follow the [Victaulic Installation Handbook](#) or installation instructions for 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 [victaulic.com](#).

Warranty

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

Intellectual Property Rights

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Note

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