



TECHNICAL DATA

FREEDOM® RESIDENTIAL FLUSH PENDENT SPRINKLER VK476 (K4.9)

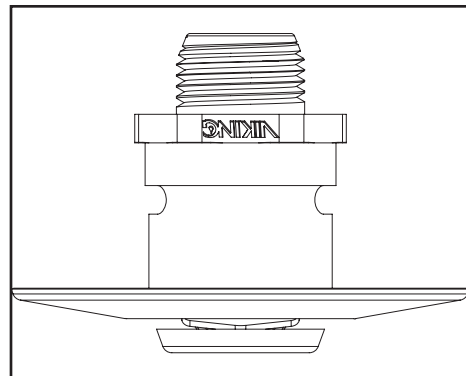
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

1. DESCRIPTION

Viking Freedom® Residential Flush Pendent Sprinkler VK476 is a small high-sensitivity fusible element sprinkler designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired. The sprinkler orifice design, with a K-Factor of 4.9 (70.6 metric*), allows the sprinkler's efficient use of available water supplies for the hydraulically designed fire-protection system. The operating element and special deflector characteristics meet the challenges of residential sprinkler standards.

The two-piece design of the sprinkler and ceiling ring allows installation and testing of the sprinkler prior to ceiling installation. The ceiling ring allows for up to 5/8" (16 mm) of vertical adjustment and can be removed and re-installed, allowing access above removable ceiling panels without shutting down the sprinkler system and removing the sprinkler.



2. LISTINGS AND APPROVALS



UL Listed (C-UL-US-EU): Category VKKW

Refer to the Approval Chart and Design Criteria for C-UL-US-EU Listing requirements that must be followed.

3. TECHNICAL DATA

Specifications:

Available since 2009.

Minimum Operating Pressure: Refer to the Approval Chart.

Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).

Thread size: 1/2" (15 mm) NPT

Nominal K-Factor: 4.9 U.S. (70.6 metric*)

* Metric K-factor measurement shown is in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

Overall Length: 2-1/8" (54 mm)

Covered by the following US Patent No.s: 6,152,236, 9,114,267

Material Standards:

Sprinkler Body and Inlet: QM Brass

Deflector Assembly: Copper UNS-C51000 and Brass UNS-C36000

Pin Assembly: Stainless Steel UNS-S30200 and C23000

Seat Assembly: Brass UNS-C31400 or UNS-C31600

Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape

Fusible Element Assembly: Beryllium Nickel and Eutectic Solder

Element Cover: Copper UNS-C11000

Lever Bar Assembly: Copper Alloy UNS-C72500 and Brass UNS-C36000

Lever Arm: Stainless Steel UNS-S31600

Element Assembly: Copper UNS-C11000 and Nickel Alloy

Ceiling Ring: Cold Rolled Steel UNS-G10080

Ordering Information: (Also refer to the current Viking price list.)

Viking Freedom® Residential Flush Pendent Sprinkler VK476 and Ceiling Ring:

Part No. 15630MC/- (includes a 165 °F (74 °C) rated sprinkler with a protective plastic cap covering the unit, and a ceiling ring).

Specify finish of the sprinkler and ceiling ring by adding the appropriate suffix for the finish to the base part number:

Finish Suffix: Wood Beam Finish = G, Painted White = W, Painted Black = B

For example, sprinkler VK476 with a Wood Beam Finish = 15630MC/G.

Available Finishes And Temperature Ratings: Refer to Table 1.

Accessories: (Also refer to the "Sprinkler Accessories" section of the Viking data book.)

Sprinkler Wrench:** Heavy Duty Wrench Part No. 15209W/R (available since 2009)

**Requires a 1/2" ratchet (not available from Viking).

Sprinkler Cabinet: Part No. 01731A, Capacity: five (5) sprinklers (available since 1971)

Replacement Ceiling Ring (3" diameter): Base Part No. 16580M/-

Viking Technical Data may be found on
The Viking Corporation's Web site at
<http://www.vikinggroupinc.com>.
The Web site may include a more recent
edition of this Technical Data Page.



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Specify finish of the ceiling ring by adding the appropriate suffix for the finish to the base part number:

Finish Suffix: Wood Beam Finish = G, Painted White = W, Painted Black = B

For example, ceiling ring 16580 with a Wood Beam Finish = 16580M/G.

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

During fire conditions, when the fusible element reaches its operating temperature, the element cover, fusible element and lever assembly fall away. The deflector is suspended below the ceiling. Water flowing through the sprinkler orifice strikes the deflector, forming a uniform spray pattern over a specific area of coverage determined by the water supply pressure at the sprinkler to extinguish or control the fire.

6. INSPECTIONS, TESTS AND MAINTENANCE

Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

7. AVAILABILITY

Viking Sprinkler VK476 is available through a network of domestic and international distributors. See The Viking Corporation web site for the closest distributor or contact The Viking Corporation.

8. GUARANTEE

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.

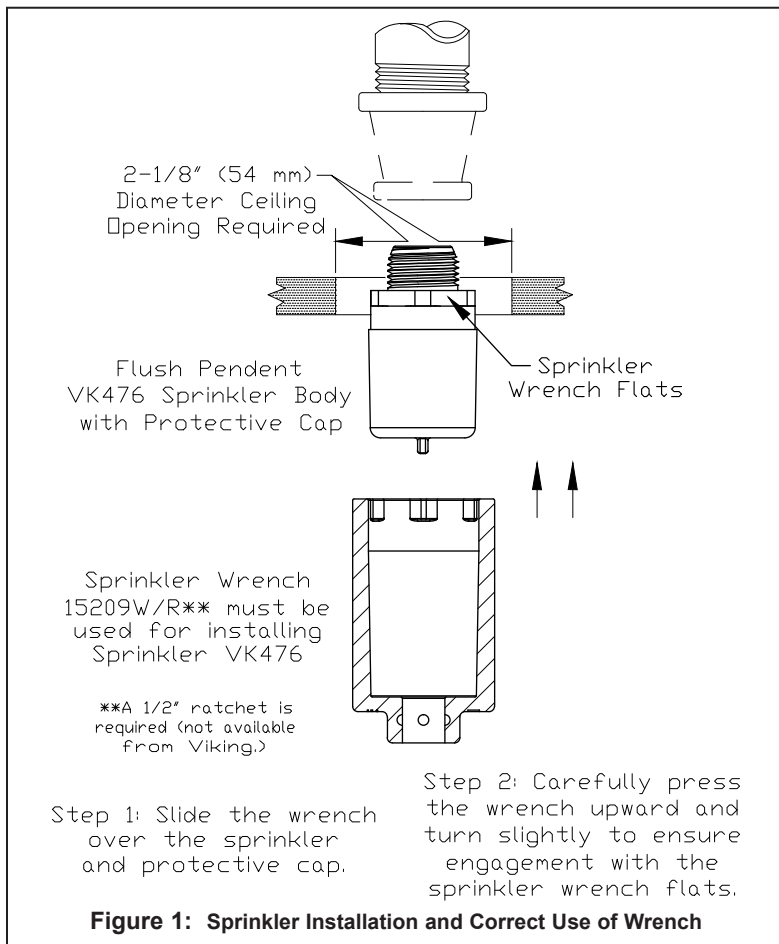


TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating ¹	Maximum Ambient Ceiling Temperature ²	Ceiling Ring Base Part Number ³
Ordinary	165 °F (74 °C)	100 °F (38 °C)	16580

Finishes: Wood Beam Finish, Painted White, or Painted Black

Footnotes

¹ The sprinkler temperature rating is stamped on the sprinkler inlet.

² Based on NFPA-13, NFPA 13R, and NFPA 13D. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

³ Part number shown is the base part number for replacement ceiling rings. For complete part number, refer to current Viking price list schedule.



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Approval Chart Viking VK476, 4.9 K-Factor Residential Flush Pendent Sprinkler

For systems designed to NFPA 13D or NFPA 13R. For systems designed to NFPA 13, refer to the design criteria. For Ceiling types refer to NFPA 13, 13R or 13D 2013 Editions

Sprinkler Base Part Number ¹	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length	
		Inches	mm	U.S.	metric ²		Inches	mm
15630	VK476	1/2	15	4.9	70.6	175 psi (12 bar)	2-1/8	54
Max. Coverage Area ⁷ Width X Length Ft. X Ft. (m X m)	Ordinary Temp Rating (165 °F/74 °C)		Deflector to Ceiling	Installation Type	Listings and Approvals ³			Minimum Spacing Ft. (m)
	Flow ⁷ GPM (L/min)	Pressure ⁷ PSI (bar)			 ⁴	NYC	NSF	
16 X 16 (4.9 X 4.9)	13 (49.2)	7.0 (0.48)	Refer to Figure 2	Flush with Ceiling Ring	See Footnote 6	See Footnote 5	--	8 (2.4)
18 X 18 (5.5 X 5.5)	17 (64.4)	12.0 (0.83)						
20 X 20 (6.1 X 6.1)	21 (79.5)	18.4 (1.27)						

Footnotes

¹ Part number shown is the base part number. For complete part number, refer to current Viking price schedule.

² Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

³ This chart shows the listings and approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals. Refer also to Design Criteria.

⁴ Listed by Underwriter's Laboratories, Inc. for use in the U.S., Canada, and European Union.

⁵ Meets New York City requirements, effective July 1, 2008.

⁶ Accepted Finishes are: Wood Beam Finish, Painted White, and Painted Black ⁸.

⁷ For areas of coverage smaller than shown, use the "Flow" and "Pressure" for the next larger area listed. Flows and pressures listed are per sprinkler. The distance from sprinklers to walls shall not exceed one-half the sprinkler spacing indicated for the minimum "Flow" and "Pressure" used.

⁸ Painted finish consists of Polyester Baked Enamel. Other paint colors are available on request with the same listings as the standard finish colors. Listings and approvals apply for any paint manufacturer. Contact Viking for additional information.

NOTE: Custom colors are indicated on a label on the sprinkler body.



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DESIGN CRITERIA

(Also refer to the Approval Chart.)

UL Listing Requirements (C-UL-US-EU):

When using Viking Residential Flush Pendent Sprinkler VK476 for systems designed to NFPA 13D or NFPA 13R, apply the listed areas of coverage and minimum water supply requirements shown in the Approval Chart.

For systems designed to NFPA 13: The number of design sprinklers is to be the four contiguous most hydraulically demanding sprinklers. The minimum required discharge from each of the four sprinklers is to be the greater of the following:

- The flow rates given in the Approval Chart for NFPA 13D and NFPA 13R applications for each listed area of coverage, or
- Calculated based on a minimum discharge of 0.1 gpm/sq. ft. over the "design area" in accordance with sections 8.5.2.1 or 8.6.2.1.2 of NFPA 13.
- Minimum distance between residential sprinklers: 8 ft. (2.4 m).

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to pages RES1-17 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA and any other similar Authorities Having Jurisdiction, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable. Final approval and acceptance of all residential sprinkler installations must be obtained from the Authorities Having Jurisdiction.

