



TECHNICAL DATA

STANDARD RESPONSE FUSIBLE LINK UPRIGHT SPRINKLER VK108 (K5.6)

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

Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

1. DESCRIPTION

Viking Standard Response Fusible Link Upright Sprinkler VK108 is a small thermosensitive solder link spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive environments and are listed/approved as indicated in the Approval Chart(s).

2. LISTINGS AND APPROVALS



cULus Listed: Category VNIV

FM Approved: Classes 2016 and 2017

Refer to the Approval Charts and Design Criterion for Listing/Approval requirements that must be followed.



WARNING: Cancer and Reproductive Harm-
www.P65Warnings.ca.gov

3. TECHNICAL DATA

Specifications:

Minimum Operating Pressure: 7 psi (0.5 bar)[†]
 Maximum Working Pressure: 175 psi (12 bar) wwp
 Factory tested hydrostatically to 500 psi (34.5 bar)
 Thread size: 1/2" (15 mm) NPT
 Nominal K-factor: 5.6 U.S. (80.6 metric^{**})
 Overall Length: 2-1/4" (58 mm)

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

Material Standards:

Frame Casting: Brass UNS-C84400
 Deflector: Brass UNS-C23000 or Copper UNS-C19500
 Fusible Link Assembly: Brass UNS-C40500 and UNS-C51000
NOTE: For chrome sprinklers, the fusible link assembly is painted silver for decorative purposes only.
 Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
 Screw: Brass UNS-C36000
 Seat: Copper UNS-C11000
 Pip Cap Attachment: UNS-C36000
For Polyester Coated Sprinklers: Belleville Spring-Exposed
For ENT Coated Sprinklers: Belleville Spring-Exposed, Screw and Pip Cap-ENT Coated

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

Viking Standard Response Fusible Link Upright Sprinkler VK108 by first adding the appropriate suffix for the sprinkler finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.

Finish Suffix: Brass = A, Chrome = F, White Polyester = M-W, Black Polyester = M-B, Wax Coated = C, and ENT = JN

Temperature Suffix: 165 °F (74 °C) = C, 220 °F (104 °C) = F, 286 °F (141 °C) = G

For example, sprinkler VK108 with a 1/2" thread, Brass finish and a 165 °F (74 °C) temperature rating = Part No. 12973AC

Available Finishes And Temperature Ratings: Refer to Table 1.

Accessories: (Also refer to the Viking website.)

Sprinkler Wrenches:

- A. Standard Wrench: Part No. 21475M/B (available since 2017).
- B. Standard Wrench for Wax Coated Sprinklers: Part No. 10896W/B (available since 2000)
- C. Socket Wrench for Wax Coated Sprinklers: Part No. 13577W/B* (available since 2006)

*A 1/2" ratchet is required (not available from Viking).

Sprinkler Cabinets:

- A. Six-head capacity: Part No. 01724A (available since 1971)
- B. Twelve-head capacity: Part No. 01725A (available since 1971)



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4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

During fire conditions, the heat-sensitive fusible link disengages, the pip cap and spring are released, and the waterway is opened. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

6. INSPECTIONS, TESTS AND MAINTENANCE

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

7. AVAILABILITY

The Viking Standard Response Fusible Link Upright Sprinkler VK108 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.



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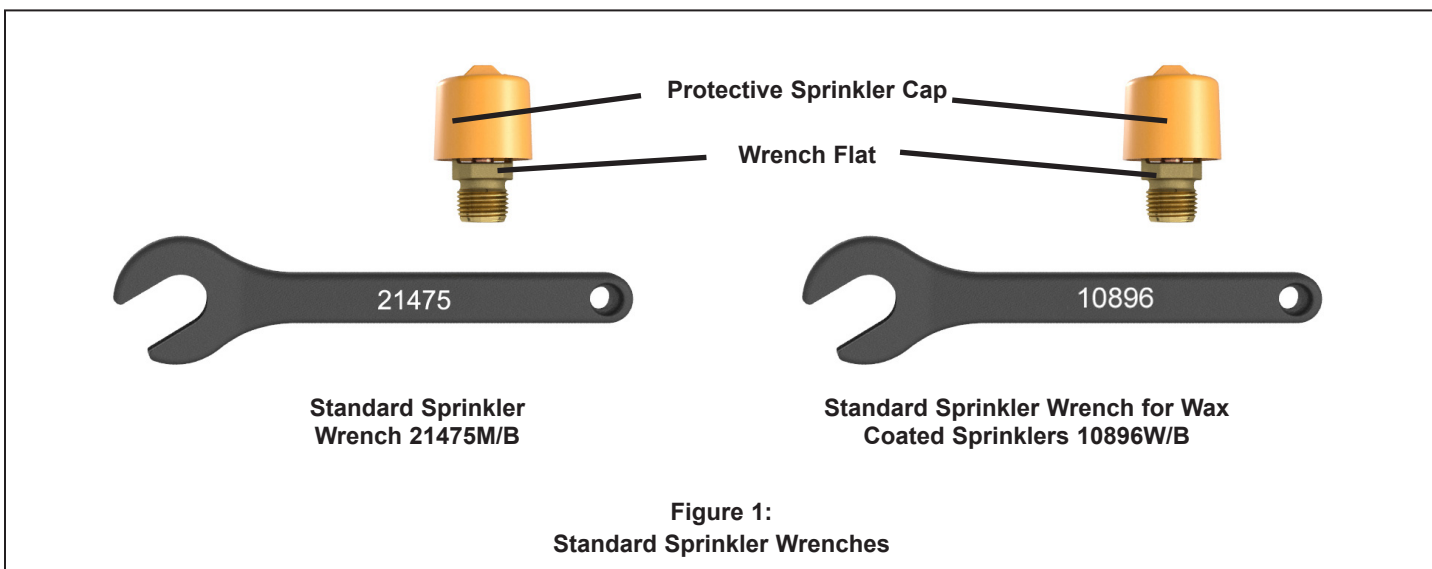
TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating ¹	Maximum Ambient Ceiling Temperature ²
Ordinary	165 °F (74 °C)	100 °F (38 °C)
Intermediate	220 °F (104 °C)	150 °F (65 °C)
High	286 °F (141 °C)	225 °F (107 °C)

Sprinkler Finishes: Brass, Chrome, White Polyester, Black Polyester, and ENT
Corrosion-Resistant Coatings⁴: White Polyester, Black Polyester and ENT^{4,6} in all temperature ratings. Wax-Coated Brass for sprinklers with the following temperature ratings:
 165 °F (74 °C) Lt. Brown Wax 220 °F (104 °C) Dark Brown Wax⁵

Footnotes

- ¹ The sprinkler temperature rating is stamped on the deflector.
- ² Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
- ³ Sprinklers of Ultra-High temperature rating are intended for use inside ovens, dryers, or similar enclosures with normal operating temperatures above 300 °F (149 °C). Where the ambient temperature around the Ultra-High temperature rated sprinkler is significantly reduced below 300 °F (149 °C), response time may be severely retarded.
- ⁴ The corrosion resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Chart(s). These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For automatic sprinklers, the coatings indicated are applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester and ENT coatings. For ENT coated automatic sprinklers, the waterway is coated.
- ⁵ Wax melting point is 170 °F (76 °C) for 220 °F (104 °C) temperature-rated sprinklers.
- ⁶ cULus Listed as corrosion resistant.



**Figure 1:
Standard Sprinkler Wrenches**



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Approval Chart 1 (UL)

Standard Response Upright Sprinkler VK108
Maximum 175 PSI (12 bar) WWP

KEY	
Temperature	Temperature
Finish	Finish
A1X	Escutcheon (if applicable)

Sprinkler Base Part Number ¹	SIN	Thread Size		Nominal K-factor		Overall Length		Listings and Approvals ³ (Refer also to UL Design Criteria.)			
		NPT	BSPT	U.S.	metric ²	Inches	mm	cULus ⁴	VdS	LPCB	CE
Standard Orifice											
12973	VK108	1/2"	15 mm	5.6	80.6	2-1/4"	58	A2, B1, A3	--	--	--
NOTICE - Product Below - Limited Availability (Contact Local Viking Office)											
05557	VK108	1/2"	15 mm	5.6	80.6	2-3/16"	56	A2, B1	--	--	--
Approved Temperature Ratings A - 165 °F (74 °C), 220 °F (104 °C), and 286 °F (141 °C) B - 165 °F (74 °C) and 220 °F (104 °C)						Approved Finishes 1 - Wax-Coated Brass (corrosion resistant) 2 - Brass, Chrome, White Polyester ^{5,6} , and Black Polyester ^{5,6} 3 - ENT ⁵					
Footnotes											
¹ Base part number is shown. For complete part number, refer to Viking's current price schedule. ² Metric K-factor shown is for use when pressure is measured in bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0. ³ This table shows the listings and approvals available at the time of printing. Check with the manufacturer for any additional approvals. ⁴ Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada. ⁵ cULus Listed as corrosion resistant. ⁶ Other colors are available on request with the same Listings and Approvals as the standard colors.											

DESIGN CRITERIA - UL

(Also refer to Approval Chart 1.)

cULus Listing Requirements:

Viking Standard Response Fusible Link Upright Sprinkler VK108 is cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

Designed for use in Light, Ordinary, and Extra Hazard occupancies.

Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13.

Minimum spacing allowed is 6 ft. (1.8 m) unless baffles are installed in accordance with NFPA 13.

Minimum distance from walls is 4 in. (102 mm).

Maximum distance from walls shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall.

The sprinkler installation and obstruction rules contained in NFPA 13 for standard spray upright sprinklers must be followed.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to page F_080614 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, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.



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Approval Chart 2 (FM)

Standard Response Upright Sprinkler VK108
Maximum 175 PSI (12 bar) WWP

KEY	
Temperature	Temperature
Finish	Finish
A1X ← Escutcheon (if applicable)	Escutcheon (if applicable)

Sprinkler Base Part Number ¹	SIN	Thread Size		Nominal K-factor		Overall Length		FM Approvals ³ (Refer also to Design Criteria below.)
		NPT	BSPT	U.S.	metric ²	Inches	mm	
Standard Orifice								
12973	VK108	1/2"	15 mm	5.6	80.6	2-1/4"	58	A1
NOTICE - Product Below - Limited Availability (Contact Local Viking Office)								
05557	VK108	1/2"	15 mm	5.6	80.6	2-1/4"	58	A1
Approved Temperature Ratings A - 165 °F (74 °C), 220 °F (104 °C), and 286 °F (141 °C)				Approved Finishes 1 - Brass, White Polyester ⁴ , Black Polyester ⁴ , and ENT				
Footnotes								
¹ Base part number is shown. For complete part number, refer to Viking's current price schedule. ² Metric K-factor shown is for use when pressure is measured in bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0. ³ This table shows the listings and approvals available at the time of printing. Check with the manufacturer for any additional approvals. ⁴ Other colors are available on request with the same Approvals as the standard colors.								

DESIGN CRITERIA - FM

(Also refer to Approval Chart 2.)

FM Approval Requirements:

Sprinkler VK108 is FM Approved as a standard response Non-Storage upright sprinkler as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling.

NOTE: The FM installation guidelines may differ from cULus and/or NFPA criteria.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 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, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.



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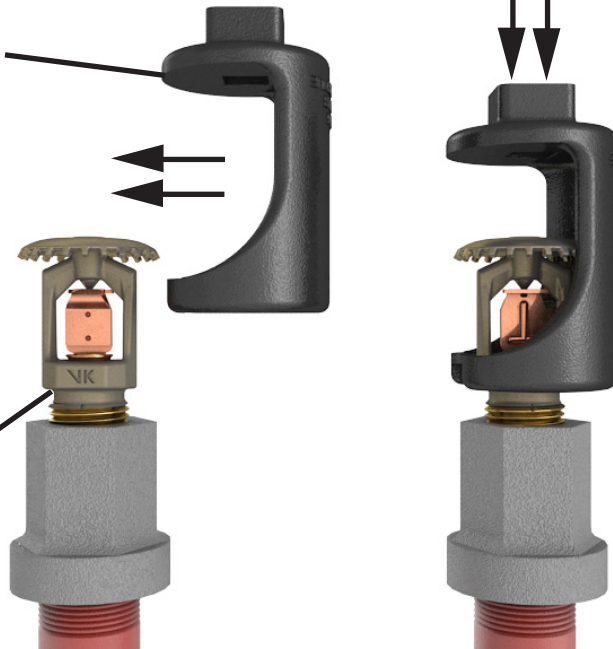
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Sprinkler wrench 13577W/B**
must be used for installing
wax coated sprinklers.

Step 1: Carefully slide the
wrench sideways around the
deflector, ensuring engage-
ment with the sprinkler
wrench flats.

Wax Coated
Upright Sprinkler



** A 1/2" ratchet is required
(not available from Viking)

Step 2: Carefully press the wrench downward
and ensure engagement with the sprinkler
wrench flats.

Figure 2: Socket Wrench 13577W/B for Wax Coated Sprinklers