



## TECHNICAL DATA

**LPCB APPROVED  
HORIZON® MIRAGE®  
CONCEALED PENDENT  
SPRINKLER VK407 (K5.5)**

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

Telephone: 269-945-9501 Technical Services 877-384-5464 Fax: 269-945-4495 Email: techsvcs@vikingcorp.com

### 1. DESCRIPTION

Viking Horizon® Mirage® Concealed Pendent Sprinkler VK407 is a small solder link and lever spray sprinkler designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired.

Horizon® Mirage® Concealed Sprinklers are hidden from view by low-profile cover plates installed flush to the ceiling. The cover plates are available with various decorative finishes to meet design requirements.

The two-piece design of the unit allows installation and testing of the sprinklers prior to installation of the cover plates. After the system has been tested and the ceiling finish applied, the "push-on", "thread-off" design of the cover plate assemblies allows easy installation of the cover plates with up to 1/2" (12.7 mm) adjustment available. The "thread-off" feature is designed to prevent unwanted disengagement of the cover assemblies. This feature also permits temporary removal of ceiling panels without taking the sprinkler system out of service or removing the sprinkler.



### 2. LISTINGS AND APPROVALS

Approved by the China National Center for Quality Supervision and Testing of Fixed Fire Extinguishing Systems and Fire Resisting Building Components.

LPCB Approved: Ref. No. 096e/05

CE Certified: Standard EN 12259-1, EC-certificate of conformity 0832-CPD-2001

MED Certified: Standard EN 12259-1, EC-certificate of conformity 0832-MED-1003

NOTE: Sprinkler VK407 is LPCB Approved as a standard response sprinkler, while utilizing a fast response type fusible link assembly. Refer to the Approval Chart and Design Criteria on page 20h for Listing and Approval requirements that must be followed.

### 3. TECHNICAL DATA

#### Specifications:

Available since 1996.

Minimum Operating Pressure: 7 psi (0.5 bar)

Rated to 175 psi (12 bar) water working pressure.

Factory tested pneumatically to 95 psi (6.55 bar)

Spring: U.S.A. Patent No. 4,570,720

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

Nominal K-Factor: 5.5 U.S. (79.3 metric†)

†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.

Available Cover Plate Vertical Adjustment: 1/2" (12.7 mm) +/- 1/4" (6.4 mm)

Overall Length (Sprinkler Body): 2-1/4" (58 mm)

#### Material Standards:

Sprinkler Body: Brass UNS-C84400

Body Cap: Brass UNS-C26000

Deflector: Copper UNS-C19500

Deflector Pins: Stainless Steel UNS-S30300

Button: UNS-C23000 H55-H80

Screw: Brass UNS-C36000

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

Fusible Link Assembly: Nickel Alloy and Eutectic Solder

Fusible Link Levers: Stainless Steel UNS-S31600

Lever Bar: Copper Alloy UNS-C72500

#### Cover Assembly Materials:

Cover Plate Assembly: Brass UNS-C26000

Spring: Nickel Alloy

Solder: Eutectic

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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**Ordering Information:** (Also refer to the current [Viking price list](#).)

Viking Horizon® Mirage® Concealed Pendent Sprinkler and Cover Plate Assembly must be ordered separately:

**Sprinkler:** Base Part No. 08617AC

Temperature Rating: 162 °F (72 °C)

**Cover Plate Assembly:** Base Part No. 09804-C

Temperature Rating: 162 °F (72 °C)

Specify finish of the cover plate assembly by adding the appropriate suffix for the finish to the base part number:

Finish Suffix: Polished Chrome = F, Brushed Chrome = F-/B, Bright Brass = B, Antique Brass = B-/A, Brushed Brass = B-/B,

Brushed Copper = E-/B, Painted White = M-/SW1004, Painted Ivory = M-/SW1634, Painted Black = M-/SW1007

For example, cover 09804 with a Polished Chrome finish = 09804FC.

**Available Finishes And Temperature Ratings:**

Refer to Table 1

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

**Sprinkler Wrenches\*:**

A. Heavy Duty Part Number 08336W/B (available since 1983), or

B. Light Duty Part Number 10366W/B\*\* (available since 1998)

\*Requires a ½" ratchet (not available from Viking).

\*\*Ideal for sprinkler cabinets.

**Sprinkler Cabinet:** Part No. 01731A, Capacity: six (6) sprinklers (available since 1971)

#### 4. INSTALLATION

Refer to appropriate Installation Standards.

#### 5. OPERATION

During fire conditions, when the temperature around the sprinkler approaches its operating temperature, the cover plate detaches. Continued heating of the sprinkler causes the heat-sensitive fusible link to disengage, releasing the deflector and sealing assembly. Water flowing through the sprinkler orifice strikes the 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

Viking concealed sprinklers are 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 <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Temperature Rating of Cover Assembly (Required)	Cover Plate Base Part Number <sup>3</sup>
Ordinary	162 °F (72 °C)	100 °F (38 °C)	162 °F (72 °C)	09804

**Cover Plate Finishes:** Polished Chrome, Brushed Chrome, Bright Brass, Antique Brass, Brushed Brass, Brushed Copper, Painted White, Painted Ivory, and Painted Black.

#### Footnotes

<sup>1</sup> The sprinkler temperature rating is stamped on the sprinkler body.

<sup>2</sup> Based on LPC rules for automatic sprinkler installation. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

<sup>3</sup> Base part number is shown. For complete part number, refer to Viking's current price list schedule.

**NOTE:** These sprinklers are suitable for risks, or part risks, as described in LPCB Technical Bulletin TB 20: *The Selection of Sprinkler Heads*.

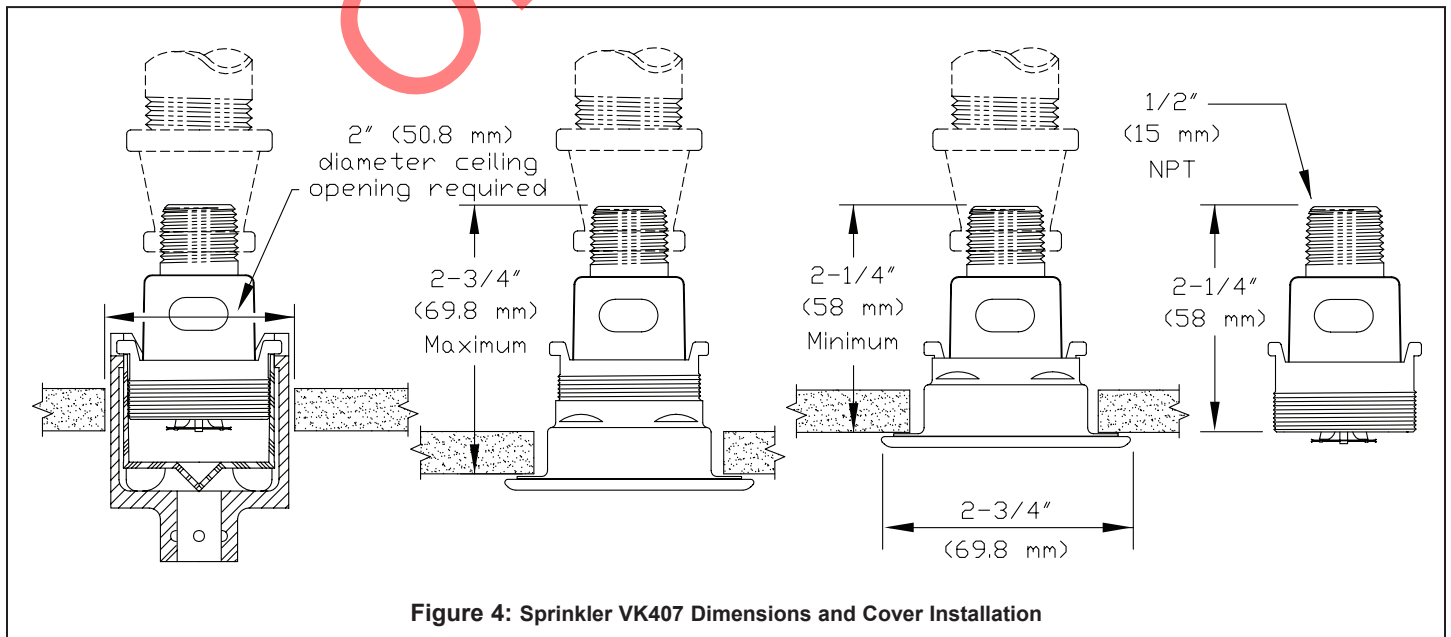
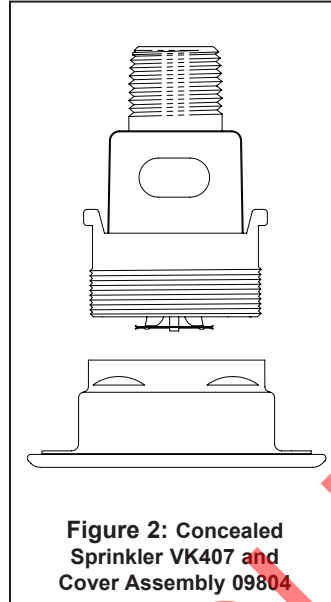
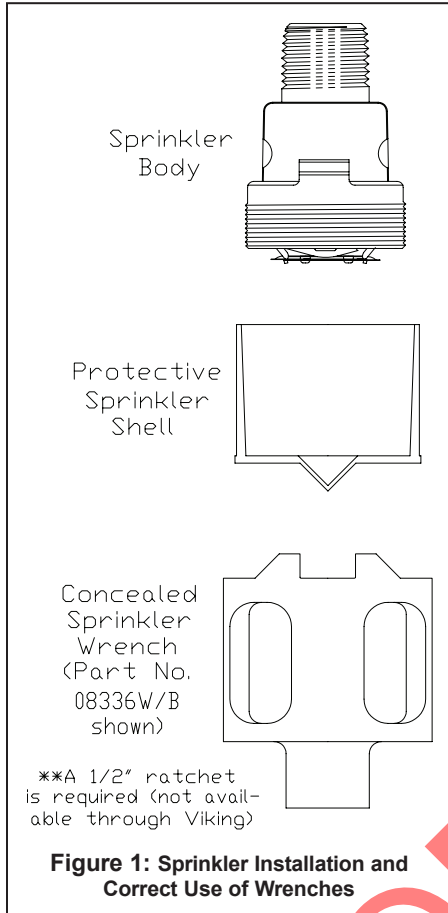


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<b>Approval Chart</b> LPCB Approved Horizon® Mirage® Concealed Pendent Sprinkler VK407												
Sprinkler Part Number	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure		Overall Length (Sprinkler Body)		Listings and Approvals <sup>2</sup> (Refer also to Design Criteria below.)		
		Inch	mm	U.S.	metric <sup>1</sup>	PSI	Bar	Inches	mm	Approved by the China National Center for Quality Supervision and Testing of Fixed Fire Extinguishing Systems and Fire Resisting Building Components	LPCB	CE <sup>3</sup>
08617AC	VK407	1/2"	15	5.5	79.3	175	12	2-1/4"	58	AW1	AW1	AW1
<b>Sprinkler Temperature Rating</b> A - 162 °F (72 °C)		<b>Cover Plate Assembly Temp. Rating</b> W - 162 °F (72 °C)					<b>Finishes of the Cover Plate Assembly<sup>5</sup></b> 1 - Polished Chrome, Brushed Chrome, Bright Brass, Antique Brass, Brushed Brass, Brushed Copper, Painted White, Painted Ivory, or Painted Black					
<b>Footnotes</b>												
<sup>1</sup> 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. <sup>2</sup> 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. <sup>3</sup> CE Certified, Standard EN 12259-1, EC-certificate of conformity 0832-CPD-2001. <sup>4</sup> MED Certified, Standard EN 12259-1, EC-certificate of conformity 0832-MED-1003. <sup>5</sup> Painted finish consists of Polyester Baked Enamel. Other paint colors are available on request with the same listings as the standard paint colors. Listings and approvals apply for any paint manufacturer. Contact Viking for additional information. <b>NOTE:</b> Custom colors are indicated on a label inside the cover assembly. Refer to Figure 3.												

<b>DESIGN CRITERIA</b> (Also refer to the Approval Chart above.)
<p><b>Listing and Approval Requirements:</b></p> <p>LPCB Approved Horizon® Mirage® Standard Response Concealed Pendent Sprinkler VK407 is to be installed in accordance with the latest published standards of the Loss Prevention Council or other similar organizations.</p> <p><b>NOTE: Concealed sprinklers must be installed in neutral or negative pressure plenums only.</b></p>
<p><b>IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to page SR1-3 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.</b></p>