



TECHNICAL DATA

**HORIZON® MIRAGE™
STANDARD AND QUICK
RESPONSE CONCEALED
PENDENT SPRINKLERS**

1. PRODUCT NAME

Viking Horizon® Mirage™ Model B-2 Standard and Quick Response Concealed Pendent Sprinklers

- A. Sprinkler VK404 (Sprinkler Base Part No. 09783A) with Cover Plate Part Nos. 09804, 11225, or 11697
- B. HP Sprinkler VK405 (Sprinkler Base Part No. 09782A) with Cover Plate Part Nos. 09804 or 11225
- C. HP Sprinkler VK454 (Sprinkler Base Part No. 12292) with Cover Plate Part Nos. 09804, 11225, or 11697

Available since 1996.

2. MANUFACTURER

The Viking Corporation
210 N. Industrial Park Road
Hastings, Michigan 49058 U.S.A.
Telephone: (269) 945-9501
(877) 384-5464
Fax: (269) 945-9599
e-mail: techsvcs@vikingcorp.com

3. PRODUCT DESCRIPTION

Viking Horizon® Mirage™ Standard and Quick Response Concealed Pendent Sprinklers are small solder link and lever spray sprinklers designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired. Horizon® Mirage™ Standard and Quick Response Concealed Sprinklers are hidden from view by low-profile cover plates installed flush to the ceiling. The cover plates are available in several decorative finishes to meet design requirements. The two-piece design 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.

Inside the body of the Horizon® Mirage™ Standard and Quick Response Concealed Sprinkler, the deflector and sealing assembly are held in position by the heat-sensitive fusible link. 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.

4. TECHNICAL DATA LISTINGS AND APPROVALS

Refer to the Approval Chart on page 57 b.

Note: Units of measure in parentheses may be approximations.
Form No. F_012993



Viking Horizon® Mirage™ Concealed Sprinkler Installed in Acoustical Ceiling

NOTE: Quick response concealed sprinklers must be installed in neutral or negative pressure plenums only.

Spring: U.S.A. Patent No. 4,570,720
Thread Size: 1/2" (15 mm) NPT
Nominal K-Factor: 5.6 U.S. (8,1 metric*) for use when pressure is measured in kPa).
* Metric K-Factor shown is for use when pressure is measured in kPa. When pressure is measured in BAR, multiply the metric K-Factor shown by 10.0.
Min. Operating Pressure: 7 psi (48,3 kPa)

RATED WATER WORKING PRESSURE Sprinklers VK405 and VK454 are rated for use with water working pressures ranging from the minimum 7 psi (48,3 kPa) up to 250 psi (1 724 kPa) for high-pressure systems. High-pressure (HP) sprinklers can be identified by locating the number "250" on the sprinkler body.

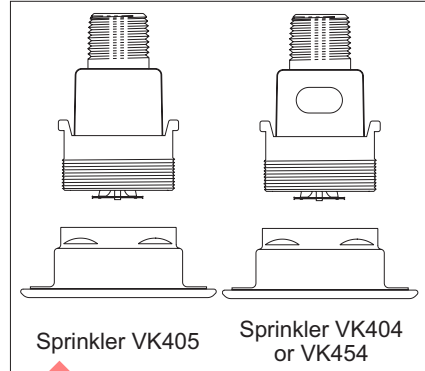
Sprinkler VK404 is rated to a maximum 175 psi (1 207 kPa) wwp.
Available Cover Plate Adjustment: 1/2" (12,7 mm) +/- 1/4" (6,4 mm)
Cover Plate Assembly Temp. Ratings:
Base Part Number 11225: 135 °F (57 °C)
Base Part Number 09804: 165 °F (74 °C)
Base Part Number 11697: 135 °F or 165 °F (57 °C or 74 °C)

SPRINKLER MATERIALS

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
Fusible Link Assembly**: Nickel Alloy and Eutectic Solder
**The fusible link of the Quick Response Concealed Sprinkler is marked with a purple stripe or dot for identification purposes only.
Fusible Link Levers: Stainless Steel UNS-S31600
Lever Bar: Copper Alloy UNS-C72500
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with Teflon Tape

COVER ASSEMBLY MATERIALS

Cover Plate Assembly: Brass UNS-C26000 or UNS-C26800



Spring: Nickel Alloy
Solder: Eutectic

AVAILABLE COVER FINISHES

Bright Brass, Brushed Brass, Antique Brass, Polished Chrome, Brushed Chrome, Brushed Copper, Painted¹ White (No. 1004)², Painted¹ Ivory (No. 1634)², and Painted¹ Black (No. 1007)²
¹ Painted finish consists of Polyester Baked Enamel.
² Sherwin-Williams® Color Answers™ Interior Color Number. Other colors are available on request. See Sherwin-Williams® Color Answers™ Interior Color Selection color numbers.

ORDERING INSTRUCTIONS

1. To order Viking Horizon® Mirage™ Standard and Quick Response Concealed Pendent Sprinklers, refer to:
 - A. Base Part Number 09782A or
 - B. Base Part Number 09783A or
 - C. Base Part Number 12292
2. To order Cover Assemblies, refer to:
 - A. Base Part Number 11225 (2-3/4" diameter) or 11697 (3-5/16" diameter), rated 135 °F or
 - B. Base Part Number 09804 (2-3/4" diameter) or 11697 (3-5/16" diameter), rated 165 °F

Specify sprinkler temperature rating and temperature rating and finish of cover plate assembly.

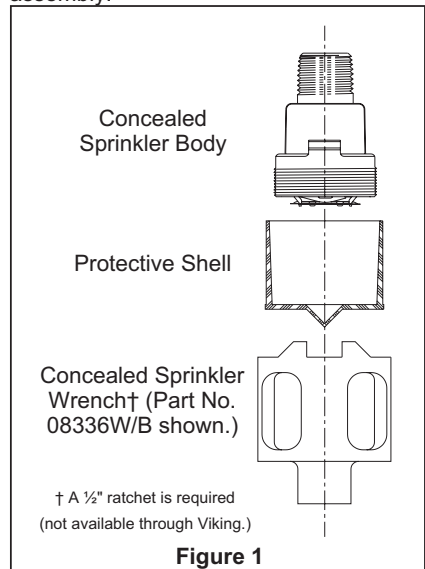


Figure 1

Replaces page 57 a-b, dated February 7, 2003 (new sprinkler base part number and SIN). Refer to technical data page SR1-2 or QR1-2 for general care, installation, and maintenance information.

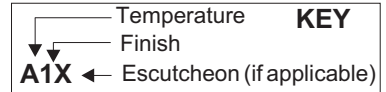


TECHNICAL DATA

HORIZON[®] MIRAGE[™] STANDARD AND QUICK RESPONSE CONCEALED PENDENT SPRINKLERS

Approval Chart

Horizon[®] Mirage[™] Standard and Quick Response Concealed Pendent Sprinklers



Sprinkler Temperature Classification	Sprinkler Nominal Temp. Rating ¹	Maximum Ambient Ceiling Temperature ²	Temp. Rating of the Required Cover Assembly	Cover Plate Assembly Base Part No. ⁵
Ordinary	165 °F (74 °C)	100 °F (38 °C)	135 °F (57 °C)	11225 or 11697
			165 °F (74 °C)	09804 or 11697
Intermediate	220 °F (104 °C)	150 °F (65 °C)	135 °F (57 °C)	11697
			165 °F (74 °C)	09804 or 11697

Standard Response Applications

Sprinkler Base Part No. ⁵	SIN	NPT Thread Size		K-Factor		Maximum Water Working Pressure	Listings and Approvals ⁴		
		Inches	mm	U.S.	metric		cULus ⁶	FM	NYC ⁷
09782A	VK405	1/2	15	5.6	8,1	250 psi ³	AW1, AY1, BY1	—	AY1, BY1
09783A	VK404	1/2	15	5.6	8,1	175 psi	—	AX1, AY1, AZ1	—

Quick Response Applications

09783A	VK404	1/2	15	5.6	8,1	175 psi	AW1, AX1, AY1, BX1, BY1	—	AY1, BY1
12292	VK454	1/2	15	5.6	8,1	250 psi ³	AW1, AX1, AY1, BX1, BY1	—	AY1, BY1

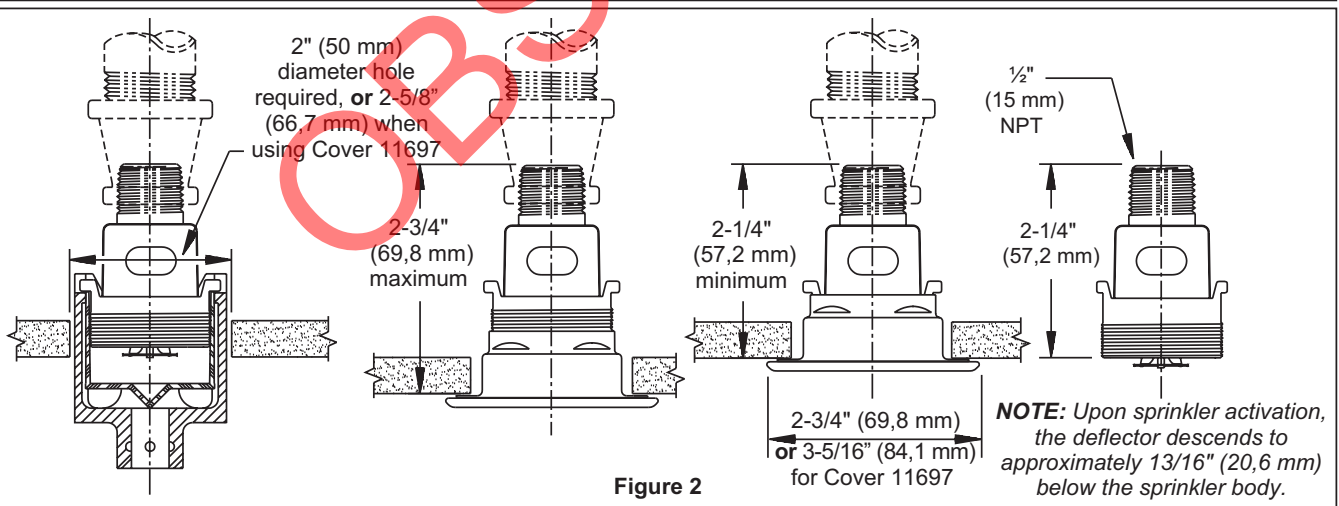
Sprinkler Temperature Ratings
 A - 165 °F (74 °C)
 B - 220 °F (104 °C)

Cover Plate Assembly Temp. Ratings
 W - 135 °F (57 °C) Cover Base P/N 11225
 X - 135 °F (57 °C) Cover Base P/N 11697
 Y - 165 °F (74 °C) Cover Base P/N 09804
 Z - 165 °F (74 °C) Cover Base P/N 11697

Finishes of the Cover Plate Assembly
 1 - Bright Brass, Brushed Brass, Antique Brass, Polished Chrome, Brushed Chrome, Brushed Copper, Painted White, Painted Ivory, and Painted Black⁸

Footnotes

- The temperature rating is stamped on the sprinkler body.
- 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.
- The Water Working Pressure rating is stamped on the sprinkler body.
- This chart shows the listings and approvals available at the time of printing. Other approvals may be in process.
- Base part number is shown. For complete part number, refer to Viking's current price list schedule.
- Listed by Underwriters Laboratories, Inc. for use in the U.S. and Canada.
- Accepted for use, City of New York Department of Buildings, MEA No. 89-92-E, Vol. 16.
- Other paint colors are available on request with the same Listings and Approvals as the standard paint finishes.



ACCESSORIES

- Sprinkler Cabinet: Part Number 01731A
Capacity: six (6) sprinklers
Available since 1971.
- Flush/Concealed 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 1/2" ratchet (not available from Viking).

***Ideal for sprinkler cabinets.

NOTE: Cover Plate Assembly Part Number 09804 or 11697 **must** be used for all Factory Mutual Approved installations. Previous Model B-1 Cover Plate Assembly Part Number 08310 may still be used for cULus installations.
 The correct Horizon[®] Mirage[™] Concealed Sprinkler can be verified by checking the fusible link for the following identification scheme:

Standard Response: No stripe or dot.
 Quick Response: Purple stripe or dot.
 QREC: Yellow stripe or dot (refer to technical data page 87 a-c for additional information).