



## TECHNICAL DATA

**QUICK RESPONSE FUSIBLE  
ELEMENT HSW SPRINKLERS  
VK307, VK334, AND HP VK346  
(PART NOS. 13948, 13962, AND 13965)**

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 Microfast® and MicrofastHP® Quick Response Fusible Element Horizontal Sidewall Sprinklers VK307, VK334, and HP Sprinkler VK346 are small thermostatically solder link spray sprinklers available with various finishes and temperature ratings to meet design requirements. The special Polyester and Teflon® coatings can be used in decorative applications where colors are desired.

### 2. LISTINGS AND APPROVALS

**cULus Listed:** Category VNIV

**FM Approved:** Class 2020

Refer to Approval Chart 1 and Design Criteria on page 52x for cULus Listing requirements, and refer to Approval Chart 2 and Design Criteria on page 52z for FM Approval requirements that must be followed.

### 3. TECHNICAL DATA

#### Specifications:

Minimum Operating Pressure: 7 psi (0.5 bar)

**Maximum Working Pressure: Sprinkler VK346 is rated for use with water working pressures ranging from the minimum 7 psi (0.5 bar) up to 250 psi (17 bar) for high-pressure systems. High-pressure (HP) sprinklers can be identified by locating "250" stamped on the deflector. Sprinklers VK307 and VK334 are rated to a maximum 175 psi (12 bar) wwp.**

Factory tested hydrostatically to 500 psi (34.5 bar)

Testing: U.S.A. Patent No. 4,831,870

Nominal K-Factor: Refer to the Approval Charts

Overall Length: Refer to the Approval Charts

#### Material Standards:

Frame Casting: Brass UNS-C84400

Deflector: Copper UNS-C19500

Bushing (for sprinklers VK334 and VK346): Brass UNS-C36000

Fusible Element Assembly: Nickel Alloy

Trigger and Support: Stainless Steel UNS-S31600

Seat and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400

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

Screw: Brass UNS-C36000

For Teflon® Coated Sprinklers: Belleville Spring-Exposed, Screw-Nickel Plated, Pip Cap-Teflon® Coated

For Polyester Coated Sprinklers: Belleville Spring-Exposed

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

Order Quick Response Fusible Link Horizontal Sidewall Sprinklers 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-Enloy® = F, White Polyester = M-/W, Black Polyester = M-/B, and Black Teflon® = N

Temperature Suffix (°F/°C): 165°/74° = C, 205°/96° = E, and 280°/138° = G

For example, sprinkler VK307 with a Brass finish and a 165 °F/74 °C temperature rating = Part No. 13948AC

#### Available Finishes And Temperature Ratings:

Refer to Table 1

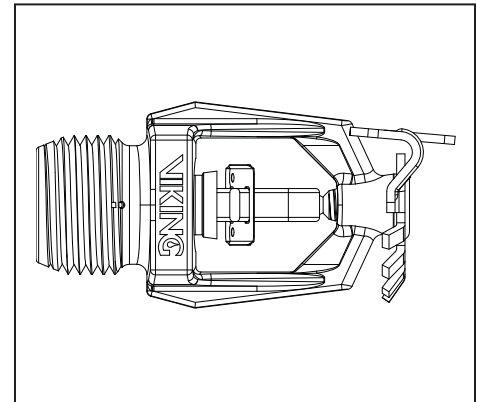
**Accessories:** (Also refer to the "Sprinkler Accessories" section of the Viking data book.)

#### Sprinkler Wrenches:

A. Standard Wrench: Part No. 10896W/B (available since 2000).

B. Wrench for recessed sprinklers with protective shields: Part No. 13655W/B\*\* (available since 2003)

\*\*A ½" ratchet is required (not available from Viking).



Sprinkler VK307

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.

	<b>TECHNICAL DATA</b>	<b>QUICK RESPONSE FUSIBLE ELEMENT HSW SPRINKLERS VK307, VK334, AND HP VK346 (PART NOS. 13948, 13962, AND 13965)</b>
---	-----------------------	---

**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**

**Sprinkler Cabinets:**

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

**4. INSTALLATION**

Refer to appropriate NFPA Installation Standards.

**5. OPERATION**

During fire conditions, the heat-sensitive fusible element assembly disengages, releasing the seat and spring assemblies to open the waterway. 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**

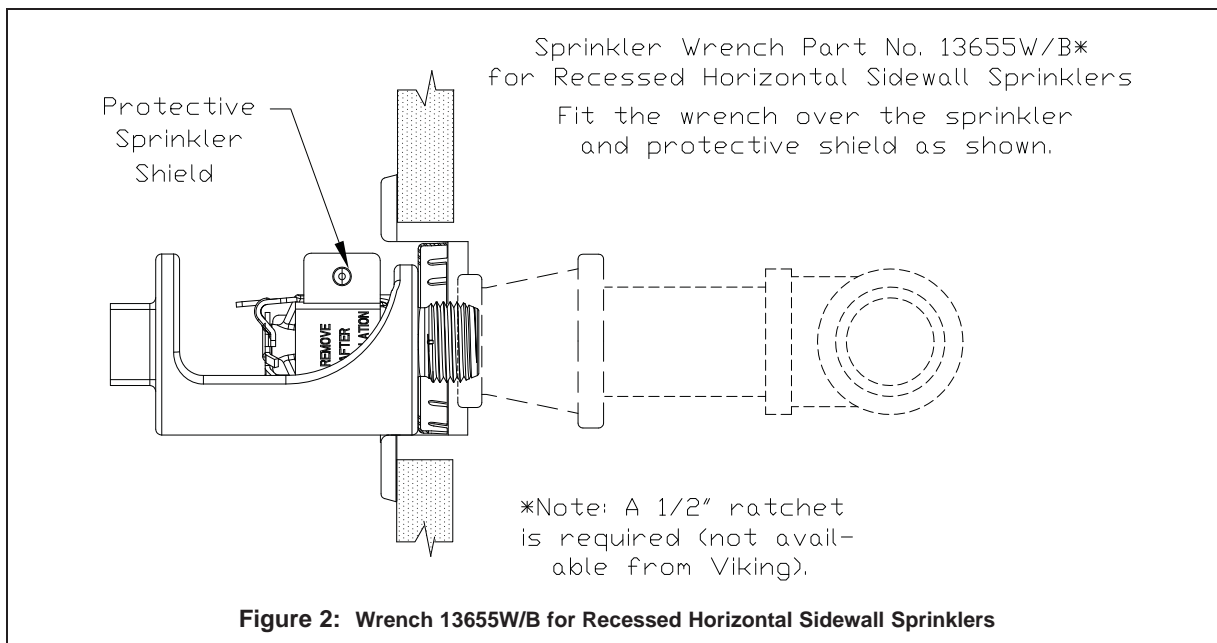
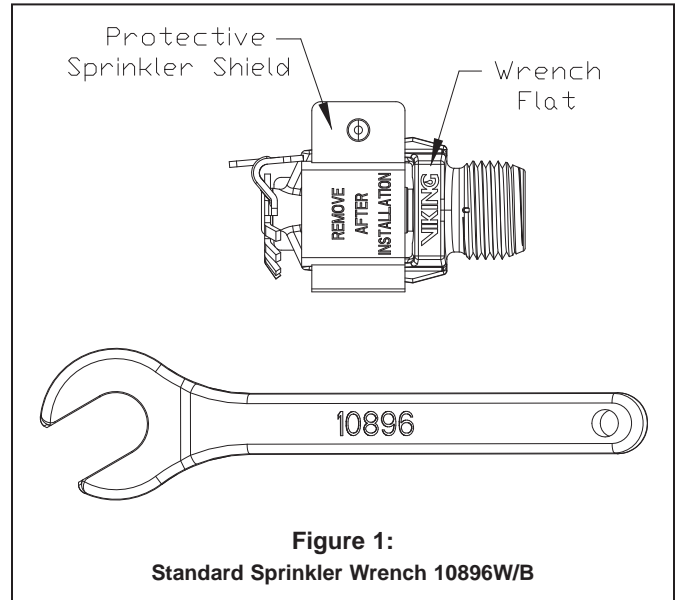
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

**7. AVAILABILITY**

Viking Quick Response Horizontal Sidewall Sprinklers are available through a network of domestic and international distributors. See The Viking Corporation's 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.





TECHNICAL DATA

**QUICK RESPONSE FUSIBLE  
ELEMENT HSW SPRINKLERS**  
VK307, VK334, AND HP VK346  
(PART NOS. 13948, 13962, AND 13965)

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

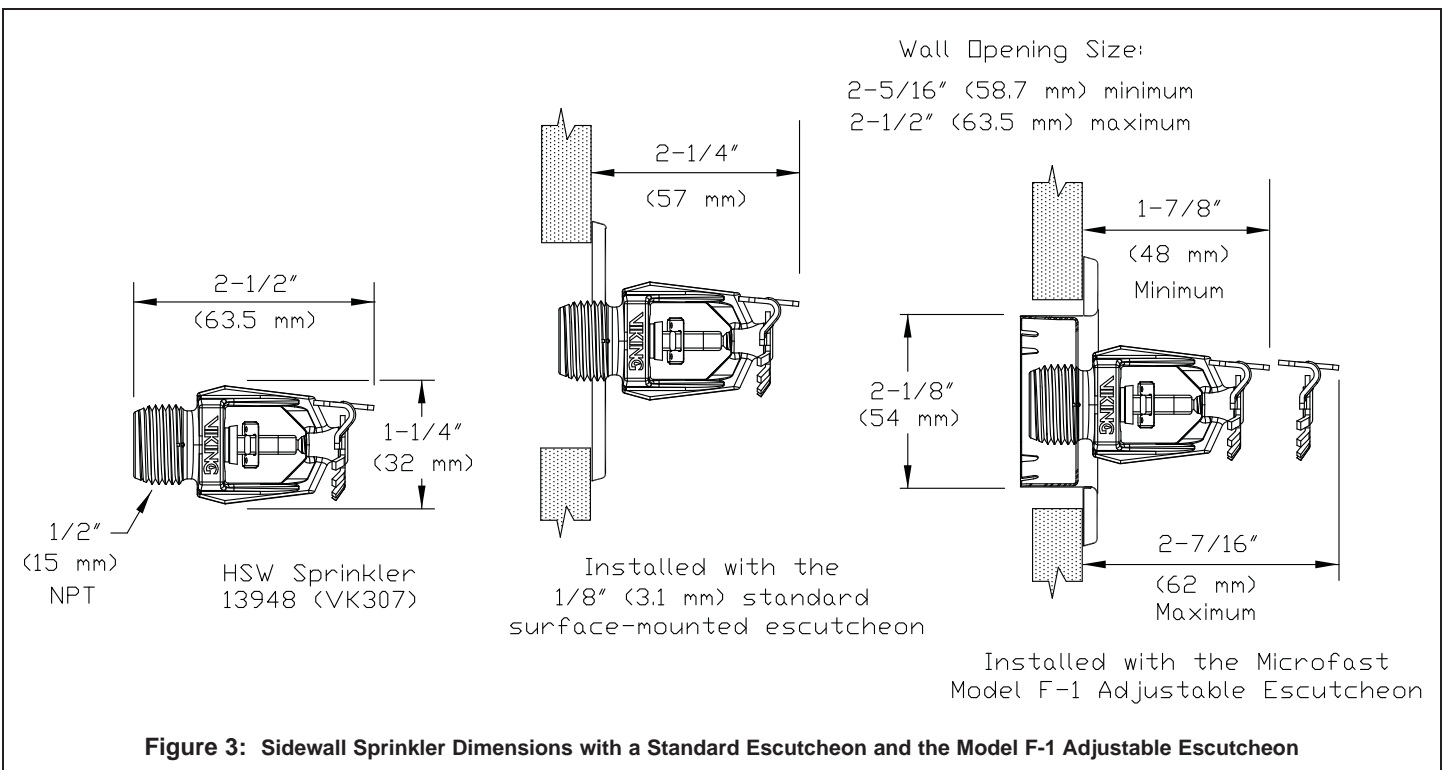
**TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES**

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Frame Paint Color
Ordinary	165 °F (74 °C)	100 °F (38 °C)	None
Intermediate	205 °F (96 °C)	150 °F (65 °C)	White
High	280 °F (138 °C)	225 °F (107 °C)	Blue

**Sprinkler Finishes:** Brass, Chrome-Enloy®, White Polyester<sup>3</sup>, Black Polyester<sup>3</sup>, and Black Teflon®<sup>3</sup>

**Footnotes**

- <sup>1</sup> Decorative sprinklers may not be color coded. The temperature rating is stamped on the deflector.
- <sup>2</sup> 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.
- <sup>3</sup> 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 Teflon® coatings. For Teflon® coated open sprinklers only, the waterway is coated.



**Figure 3: Sidewall Sprinkler Dimensions with a Standard Escutcheon and the Model F-1 Adjustable Escutcheon**

	<h2 style="margin: 0;">TECHNICAL DATA</h2>	<p style="margin: 0;"><b>QUICK RESPONSE FUSIBLE ELEMENT HSW SPRINKLERS</b>  <b>VK307, VK334, AND HP VK346</b>                  (PART NOS. 13948, 13962, AND 13965)</p>
---	--	--

**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**

<b>Approval Chart 1 (UL)</b> Microfast® and MicrofastHP® Quick Response Fusible Element HSW Sprinklers For Light Hazard Occupancies Only													
<b>Maximum 175 PSI (12 Bar) WWP</b> Standard Orifice, Deflector must be located 4" to 6" (102 mm to 152 mm) below the ceiling.													
Base Part Number <sup>1</sup>	SIN	Maximum Pressure	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals <sup>3</sup> (Refer also to Design Criteria below.)				
			NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	cULus <sup>4</sup>	NYC	LPCB	CE	⚙
13948	VK307	175 psi	1/2"	15 mm	5.6	80.6	2-1/2	64	A1X, B1Y	See Footnote 5.	--	--	--
<b>Standard Orifice, Deflector must be located 6" to 12" (152 mm to 304 mm) below the ceiling.</b>													
13948	VK307	175 psi	1/2"	15 mm	5.6	80.6	2-1/2	64	A1X	See Footnote 5.	--	--	--
<b>Small Orifice<sup>6</sup>, Deflector must be located 4" to 6" (102 mm to 152 mm) below the ceiling.</b>													
Base Part Number <sup>1</sup>	SIN	Maximum Pressure	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals <sup>3</sup> (Refer also to Design Criteria below.)				
			NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	cULus <sup>4</sup>	NYC	LPCB	CE	⚙
13962 <sup>7</sup>	VK334	175 psi	1/2"	15 mm	2.8	40.3	2-1/2	64	A1X, B1Y	See Footnote 5.	--	--	--
<b>Maximum 250 PSI WWP</b> Small Orifice <sup>6</sup> , Deflector must be located 4" to 6" (102 mm to 152 mm) below the ceiling.													
13965 <sup>7</sup>	VK346	250 psi	1/2"	15 mm	2.8	40.3	2-1/2	64	A1X, B1Y	See Footnote 5.	--	--	--
<b>Approved Temperature Ratings</b> A - 165 °F (74 °C), 205 °F (96 °C), 280 °F (138 °C) B - 165 °F (74 °C) and 205 °F (96 °C)				<b>Approved Finishes</b> 1 - Brass, Chrome-Enloy®, White Polyester®, Black Polyester®, and Black Teflon®				<b>Approved Escutcheons</b> X - Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon Y - Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Viking Micromatic® Model E-1, E-2, or G-1 Recessed Escutcheon					
Footnotes													
<sup>1</sup> Base part number shown. For complete part number, refer to Viking's current price schedule. <sup>2</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>3</sup> This table shows the listings and approvals available at the time of printing. Other approvals may be in process. <sup>4</sup> Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada. <sup>5</sup> Meets New York City requirements, effective July 1, 2008. <sup>6</sup> Listings are limited to Light Hazard Occupancies, with hydraulically calculated wet systems. <sup>7</sup> The sprinkler orifice is bushed. <sup>8</sup> 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 above.)

**cULus Listing Requirements:**  
 Microfast® and MicrofastHP® Quick Response Horizontal Sidewall Sprinklers VK307, VK334, and VK346 are cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for sidewall standard spray sprinklers.

- Limited to Light Hazard occupancies only (*small orifice sprinklers are limited to Light Hazard Occupancies with hydraulically calculated wet systems only*).
- 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).
- Refer to the Approval Chart for allowable deflector distance below the ceiling. Align with the leading edge of the deflector parallel to the ceiling.
- Maximum distance from end walls shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall. Minimum distance from end walls is 4 in. (102 mm).
- The sprinkler installation and obstruction rules contained in NFPA 13 for sidewall standard spray sprinklers must be followed.

**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to page QR1-3 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, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.**

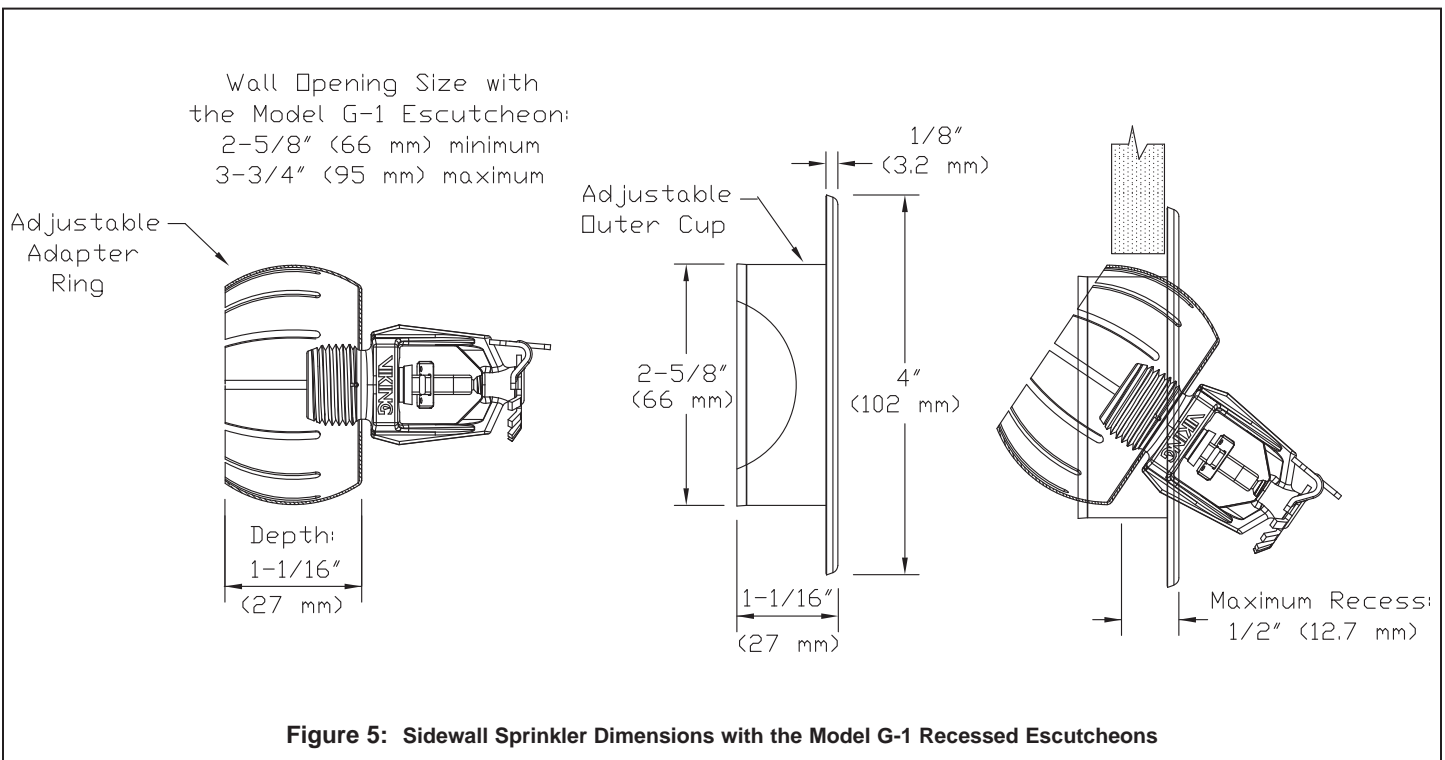
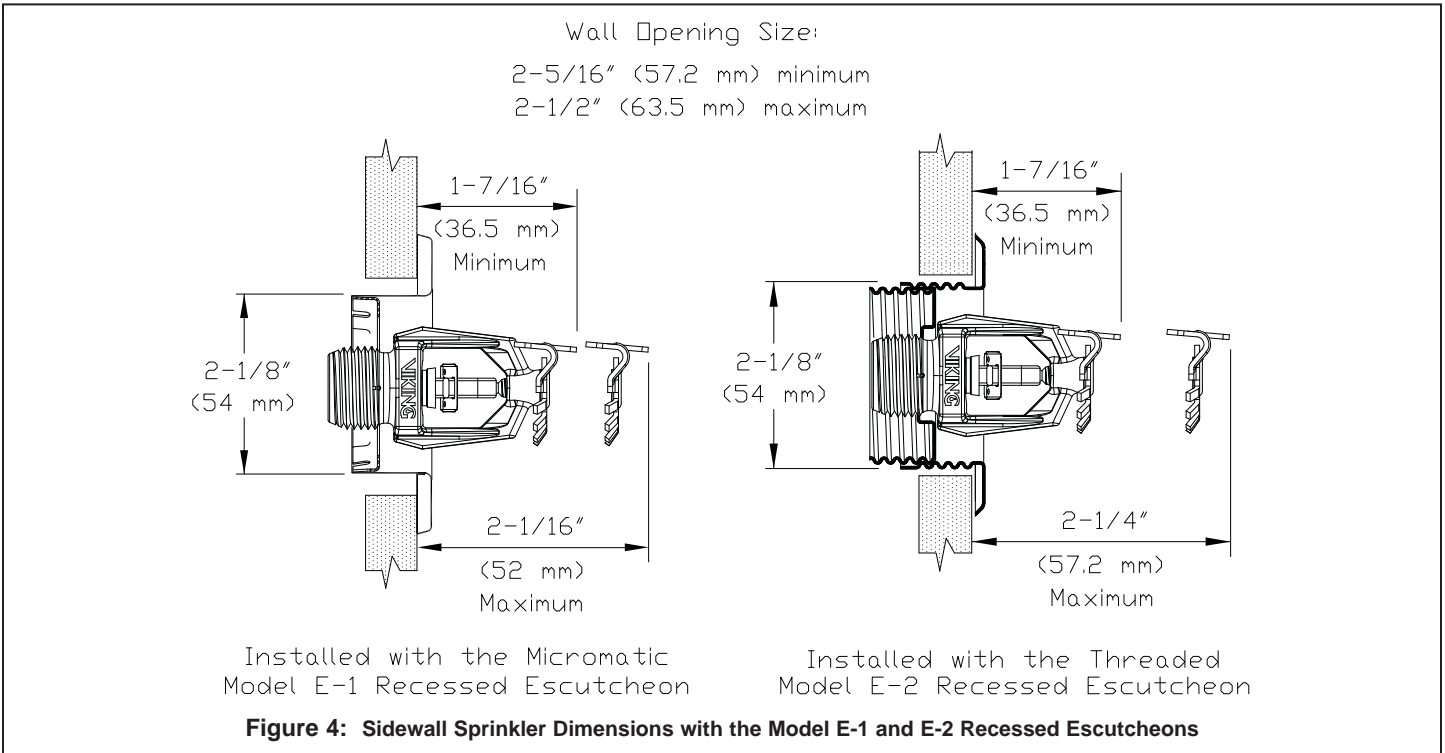


TECHNICAL DATA

**QUICK RESPONSE FUSIBLE  
ELEMENT HSW SPRINKLERS  
VK307, VK334, AND HP VK346  
(PART NOS. 13948, 13962, AND 13965)**

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

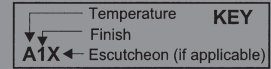
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com



	<h2 style="margin: 0;">TECHNICAL DATA</h2>	<p style="margin: 0;"><b>QUICK RESPONSE FUSIBLE ELEMENT HSW SPRINKLERS</b>  <b>VK307, VK334, AND HP VK346</b>                  (PART NOS. 13948, 13962, AND 13965)</p>
---	--	--

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

<b>Approval Chart 2 (FM)</b> Microfast® Quick Response Fusible Element HSW Sprinklers Maximum 175 PSI (12 Bar) WWP									
Base Part Number <sup>1</sup>	SIN	Maximum Pressure	Thread Size		Nominal K-Factor		Overall Length		FM Approvals <sup>3</sup> (Refer also to Design Criteria below.)
			NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	
13948	VK307	175 psi	1/2"	15 mm	5.6	80.6	2-1/2	64	A1X, B1Y
<b>Approved Temperature Ratings</b> A - 165 °F (74 °C), 205 °F (96 °C), 280 °F (138 °C) B - 165 °F (74 °C) and 205 °F (96 °C)			<b>Approved Finishes</b> 1 - Brass and Chrome-Enloy®			<b>Approved Escutcheons</b> X - Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon Y - Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon, <b>or</b> recessed with the Viking Micromatic® Model E-1, E-2, or G-1 Recessed Escutcheon			
<b>Footnotes</b> <sup>1</sup> Base part number shown. For complete part number, refer to Viking's current price schedule. <sup>2</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>3</sup> This table shows the FM Approvals available at the time of printing. Other approvals may be in process.									



<b>DESIGN CRITERIA - FM</b> (Also refer to Approval Chart 2 above.)
<p><b>FM Approval Requirements:</b>                      Sprinkler VK307 is FM Approved as a quick response <b>Non-Storage</b> sidewall 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.</p> <p><b>NOTE: The FM installation guidelines may differ from cULus and/or NFPA criteria.</b></p> <p><b>IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to page QR1-3 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>