



## TECHNICAL DATA

### MICROFAST® AND MicrofastHP® EC/QREC HSW SPRINKLERS VK605 AND VK612

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® Standard/Quick Response Extended Coverage Horizontal Sidewall Sprinklers VK605 and VK612 are thermosensitive spray sprinklers available in several different finishes and temperature ratings to meet varying design requirements. The orifice design allows efficient use of available water supplies for hydraulically designed fire-protection systems. The glass bulb operating element and special deflector combine speed of operation and area of coverage to meet quick response, extended coverage standards.

The special Polyester and Teflon® coatings can be used in decorative applications where colors are desired.

#### 2. LISTINGS AND APPROVALS

**cULus Listed:** Category VNIV

**NYC Approval:** MEA 89-92-E, Volume 16

Refer to the Approval Chart on page 91c and Design Criteria on page 91d for cULus Listing requirements that must be followed.

#### 3. TECHNICAL DATA

##### Specifications:

Available since 2003.

Minimum Operating Pressure: Refer to the Approval Chart.

**Maximum Working Pressure: Sprinkler VK612 is rated to a maximum 250 psi (17 bar) wwp for high-pressure systems. High-pressure (HP) sprinklers can be identified by locating "250" stamped on the deflector. Sprinkler VK605 is 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

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

Nominal K-Factor: 5.6 U.S. (80.6 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.

Glass-bulb fluid temperature rated to -65 °F (-55 °C)

Overall Length: 2-11/16" (68 mm)

##### Material Standards:

Sprinkler Frame: Brass UNS-C84400

Deflector: Copper UNS-C19500

Bulb: Glass, nominal 3 mm diameter

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

Compression Screw: Brass UNS-C36000

Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400

Pip Cap Attachment (for Sprinkler VK612): 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 Sprinklers VK605 or VK612 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): 135°/57° = A, 155°/68° = B, 175°/79° = D

For example, sprinkler VK605 with a Brass finish and a 155 °F/68 °C temperature rating = Part No. 12120AB.



For Light Hazard Occupancies Only

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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**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 coated and/or recessed sprinklers: Part No. 13655W/B\*\* (available since 2006)

\*\*A ½” 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)

**4. INSTALLATION**

Refer to appropriate NFPA Installation Standards.

**5. OPERATION**

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the bulb to shatter, releasing the pip cap and sealing spring assembly. 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**

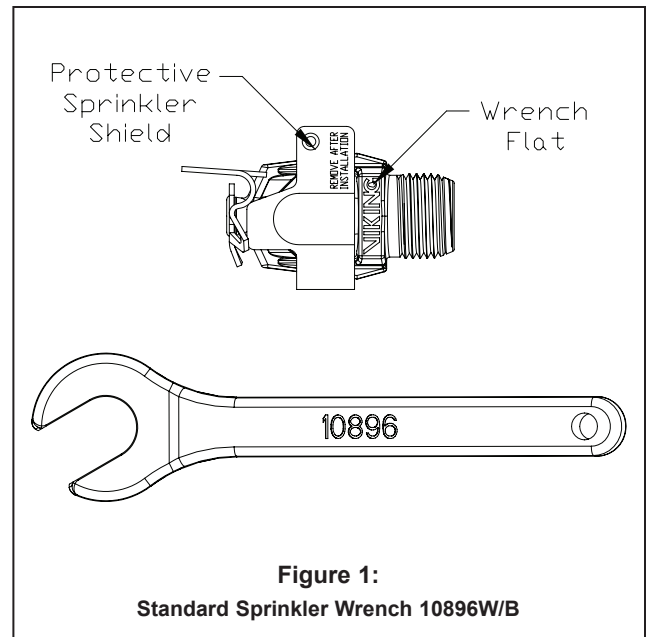
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

**7. AVAILABILITY**

Viking Model VK605 and VK612 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.



**Figure 1:  
Standard Sprinkler Wrench 10896W/B**

**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>	Bulb Color
Ordinary	135 °F (57 °C)	100 °F (38 °C)	Orange
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow

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

**Footnotes**

<sup>1</sup> The sprinkler 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> The coatings indicated are applied to the exposed exterior surfaces only. For Teflon® coated open sprinklers only, the waterway is coated. Note that the spring is exposed on sprinklers with Teflon® and Polyester coatings.

	<h2 style="margin: 0;">TECHNICAL DATA</h2>	<h3 style="margin: 0;">MICROFAST® AND MicrofastHP® EC/QREC HSW SPRINKLERS VK605 AND VK612</h3>
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Sprinkler Base Part Number <sup>1</sup>	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length	
		Inches	mm	U.S.	metric <sup>2</sup>		Inches	mm
12120	VK605	1/2	15	5.6	80.6	175 psi (12 Bar)	2-11/16	68
12295	VK612	1/2	15	5.6	80.6	250 psi (17 Bar)	2-11/16	68

<h3 style="margin: 0;">Approval Chart</h3> <p style="margin: 0;">Microfast® and MicrofastHP® EC/QREC Horizontal Sidewall Sprinklers For Light Hazard Occupancies Only</p>	<table border="1" style="border-collapse: collapse;"> <tr> <td style="font-size: small;">Temperature</td> <td rowspan="3" style="text-align: center; vertical-align: middle;"><b>KEY</b></td> </tr> <tr> <td style="font-size: small;">Finish</td> </tr> <tr> <td style="font-size: small;">A1X ← Escutcheon (if applicable)</td> </tr> </table>	Temperature	<b>KEY</b>	Finish	A1X ← Escutcheon (if applicable)
Temperature	<b>KEY</b>				
Finish					
A1X ← Escutcheon (if applicable)					

Sprinkler Base Part Number	SIN	Maximum Areas of Coverage <sup>7</sup>	Minimum Water Supply Requirements <sup>7</sup>	Listings and Approvals <sup>3</sup>		
				cULus <sup>4</sup>	FM	NYC <sup>6</sup>

**Standard Response<sup>5</sup> - Maximum 175 PSI WWP**  
**For Installation with the deflector located 6" to 12" (152 mm to 305 mm) below smooth, flat, horizontal ceilings only.**

12120	VK605	16' Wide x 16' Throw (4.9 m x 4.9 m)	26 gpm @ 21.6 psi (98.4 L/min @ 1.49 Bar)	B1W	--	See Footnote 7.
12120	VK605	16' Wide x 18' Throw (4.9 m x 5.5 m)	29 gpm @ 26.8 psi (109.8 L/min @ 1.85 Bar)	B1W	--	See Footnote 7.
12120	VK605	16' Wide x 20' Throw (4.9 m x 6.1 m)	32 gpm @ 32.7 psi (121.1 L/min @ 2.25 Bar)	B1X	--	See Footnote 7.

**Standard Response<sup>5</sup> - Maximum 250 PSI WWP**  
**For Installation with the deflector located 6" to 12" (152 mm to 305 mm) below smooth, flat, horizontal ceilings only.**

12295	VK612	16' Wide x 16' Throw (4.9 m x 4.9 m)	26 gpm @ 21.6 psi (98.4 L/min @ 1.49 Bar)	B1W	--	See Footnote 7.
12295	VK612	16' Wide x 18' Throw (4.9 m x 5.5 m)	29 gpm @ 26.8 psi (109.8 L/min @ 1.85 Bar)	B1W	--	See Footnote 7.
12295	VK612	16' Wide x 20' Throw (4.9 m x 6.1 m)	32 gpm @ 32.7 psi (121.1 L/min @ 2.25 Bar)	B1W	--	See Footnote 7.

**Quick Response - Maximum 175 PSI WWP**  
**For Installation with the deflector located 6" to 12" (152 mm to 305 mm) below smooth, flat, horizontal ceilings only.**

12120	VK605	16' Wide x 16' Throw (4.9 m x 4.9 m)	26 gpm @ 21.6 psi (98.4 L/min @ 1.49 Bar)	B1W	--	B2W
12120	VK605	16' Wide x 18' Throw (4.9 m x 5.5 m)	29 gpm @ 26.8 psi (109.8 L/min @ 1.85 Bar)	B1W	--	B2W
12120	VK605	16' Wide x 20' Throw (4.9 m x 6.1 m)	32 gpm @ 32.7 psi (121.1 L/min @ 2.25 Bar)	A1W	--	A2W

**Quick Response - Maximum 250 PSI WWP**  
**For Installation with the deflectors located 6" to 12" (152 mm to 305 mm) below smooth, flat, horizontal ceilings only.**

12295	VK612	16' Wide x 16' Throw (4.9 m x 4.9 m)	26 gpm @ 21.6 psi (98.4 L/min @ 1.49 Bar)	B1W	--	B2W
12295	VK612	16' Wide x 18' Throw (4.9 m x 5.5 m)	29 gpm @ 26.8 psi (109.8 L/min @ 1.85 Bar)	B1W	--	B2W
12295	VK612	16' Wide x 20' Throw (4.9 m x 6.1 m)	32 gpm @ 32.7 psi (121.1 L/min @ 2.25 Bar)	A1W	--	A2W

**Quick Response - QREC Specific Application - Maximum 175 PSI WWP**  
**For Installation with the deflector located 4" to 6" (102 mm to 152 mm) below sloped<sup>8</sup> ceilings with slopes from 2/12 through 4/12 (9.5° to 18.4°) pitch. Sprinkler must be located at the high-point intersection of the wall and the ceiling with spray directed down the slope. Refer to Figure 6 on page 91f.**

12120	VK605	16' Wide x 16' Throw (4.9 m x 4.9 m)	26 gpm @ 21.6 psi (98.4 L/min @ 1.49 Bar)	B1W	--	See Footnote 7.
12120	VK605	16' Wide x 18' Throw (4.9 m x 5.5 m)	29 gpm @ 26.8 psi (109.8 L/min @ 1.85 Bar)	B1W	--	See Footnote 7.
12120	VK605	16' Wide x 20' Throw (4.9 m x 6.1 m)	32 gpm @ 32.7 psi (121.1 L/min @ 2.25 Bar)	A1W	--	See Footnote 7.

Approved Temperature Ratings	Approved Finishes	Approved Escutcheons
A - 135 °F (57 °C) and 175 °F (79 °C) B - 155 °F (68 °C)	1 - Brass, Chrome-Enloy®, White Polyester, Black Polyester, and Black Teflon® 2 - Brass, Chrome-Enloy®, White Polyester, and Black Polyester	W - Standard surface-mounted escutcheons, including the Micro-fast® Model F-1 Adjustable Escutcheon, or recessed with the Micromatic® Model E-1, E-2, or G-1 Recessed Escutcheon X - Recessed with the Micromatic® Model E-1 Recessed Escutcheon only

**Footnotes**

- <sup>1</sup> Part number shown is the base part number. For complete part number, refer to current Viking price list 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 chart shows listings and approvals available at time of printing. Check with the manufacturer for any additional approvals.
- <sup>4</sup> cULus Listed for use in the U.S. and Canada for Light-Hazard occupancies only.
- <sup>5</sup> Listings are limited to Light Hazard Occupancies where allowed by the installation standards being applied.
- <sup>6</sup> Accepted for use, City of New York Department of Buildings, MEA 89-92-E Vol. 16.
- <sup>7</sup> Meets New York City requirements, effective July 1, 2008.
- <sup>7</sup> For areas of coverage smaller than shown, use the "Minimum Water Supply Requirement" for the next larger area listed. Flows and pressures listed are per sprinkler.
- <sup>8</sup> Listed area of coverage measured along ceiling slope. Consult Figure 6 for installation notes.



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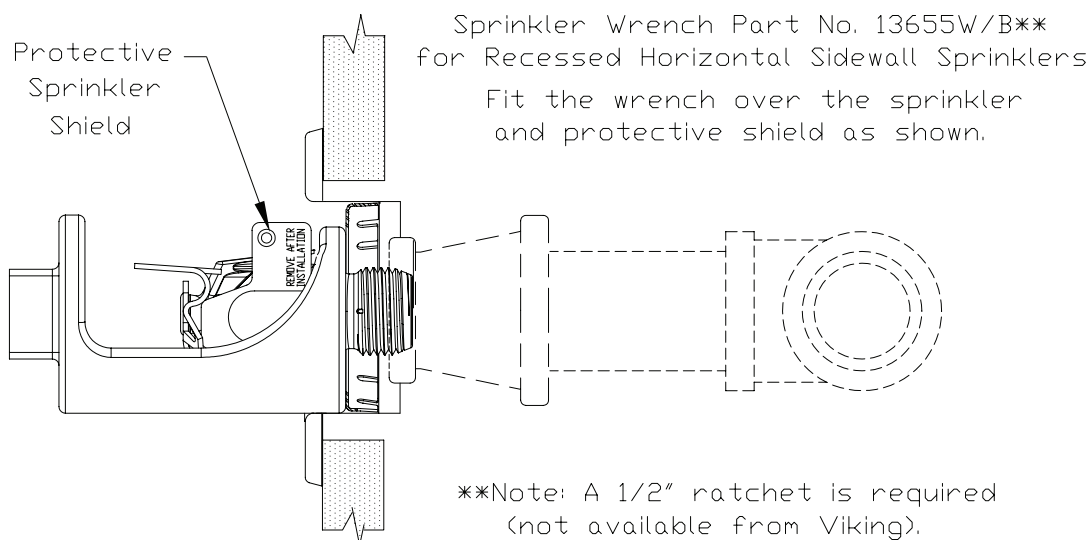
#### DESIGN CRITERIA

(Also refer to the Approval Chart on page 91c.)

**cULus Listing Requirements:** Microfast® and MicrofastHP® EC/QREC Horizontal Sidewall Sprinklers VK605 and VK612 are cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for extended coverage sidewall spray sprinklers:

- Sprinkler VK612 is limited to Light Hazard occupancies with smooth, flat, horizontal ceilings only.
- Sprinkler VK605 is cULus Listed for Light Hazard occupancies with smooth, flat, horizontal ceilings. Sprinkler VK605 is also listed for ceilings with slopes to 4/12 (18.4°), as a QREC "Specific Application Sprinkler".
- For sprinkler VK605 in sloped ceiling applications, Sections 11.2.3.2.3 and 11.2.3.2.4 of the 2007 Edition of NFPA-13 do not apply regarding System Area of Operation. Sprinkler VK605 should be installed according to the areas of coverage, and flows and pressures listed in the Approval Chart on page 91c.
- In sloped ceiling installations, sprinkler VK605 is listed for installation at the high-point intersection of the wall and the ceiling. In sloped ceiling installations, the spray must be directed down the slope. Spray may NOT be directed across the slope. Refer to Figure 6.
- Listed area of coverage for sloped ceilings corresponds to ceiling slope. (For sloped ceiling applications, actual floor coverage will be less than the listed area.)
- Refer to the Approval Chart for required deflector distance below the ceiling. Install with the leading edge of the deflector oriented parallel to the ceiling (see Figure 4).
- Minimum distance from end walls is 4 in. (102 mm).
- Maximum distance from the end wall 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 extended coverage sidewall spray sprinklers must be followed.

**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to pages EC1-3 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.**



**Figure 2:**

**Wrench 13655W/B for Recessed Horizontal Sidewall Sprinklers**

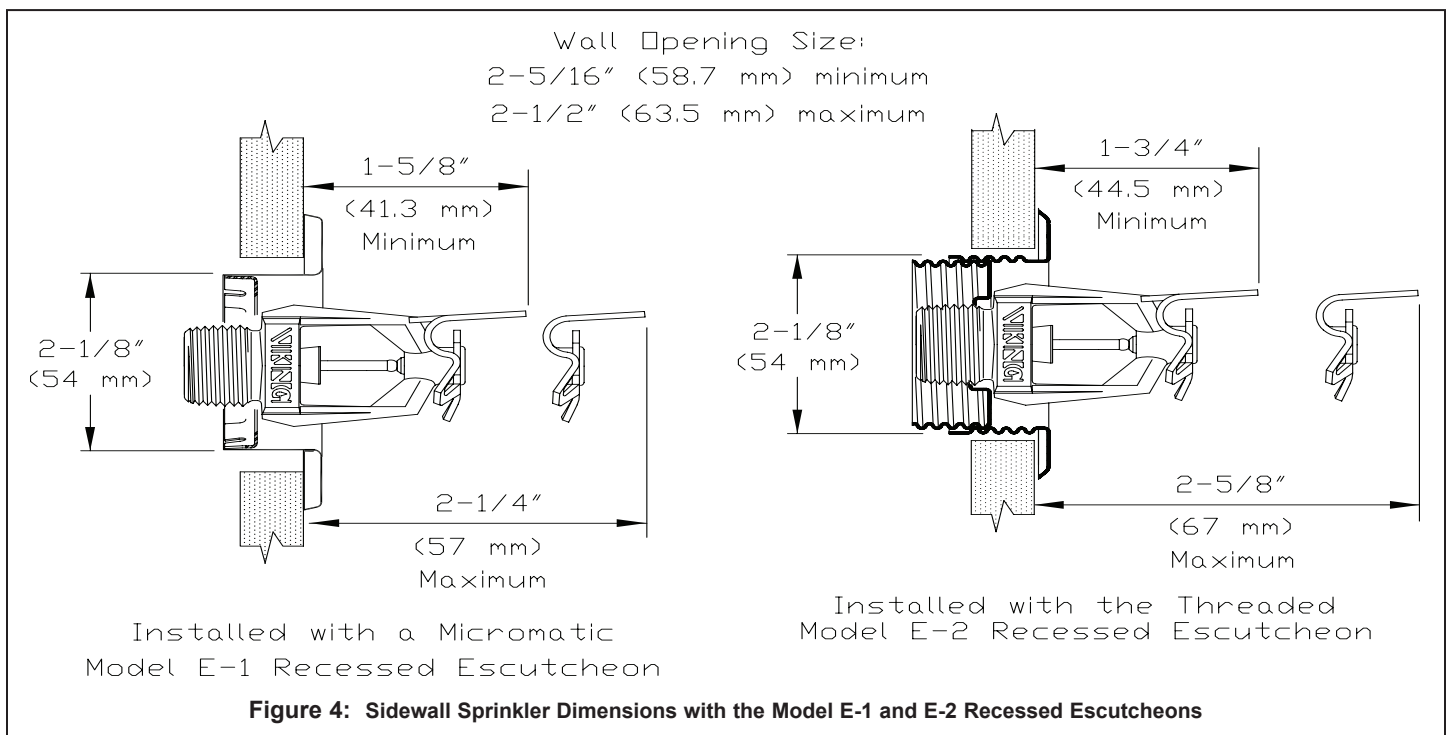
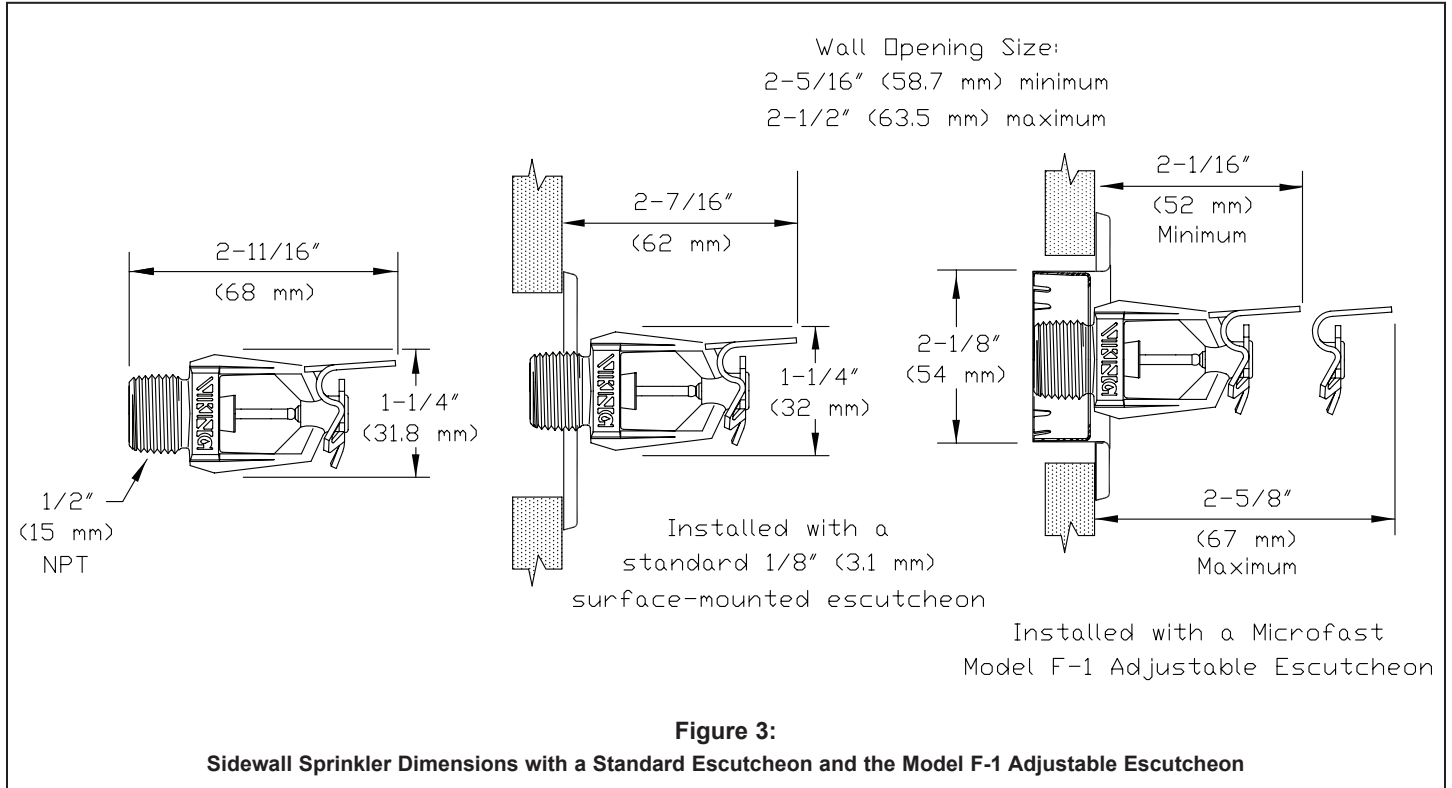


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