



## TECHNICAL DATA

### MICROFAST® STANDARD/ QUICK RESPONSE EXTENDED COVERAGE HSW SPRINKLER VK606

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® Standard/Quick Response Extended Coverage Horizontal Sidewall Sprinkler VK606 is a thermosensitive spray sprinkler available in several different finishes and temperature ratings to meet varying design requirements. The small 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

**FM Approved:** Class 2022

**NYC Approval:** City of New York Board of Standards and Appeals, Calendar No. 219-76-SA

Refer to Approval Chart 1 and Design Criteria on page 82c for cULus Listing requirements, and refer to Approval Chart 2 and Design Criteria on page 82d for FM Approval requirements that must be followed.



**For Light Hazard Occupancies Only**

#### 3. TECHNICAL DATA

##### Specifications:

Available since 1996.

Minimum Operating Pressure: Refer to the Approval Chart.

Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).

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

Thread size: 3/4" (20 mm) NPT

Nominal K-Factor: 8.0 U.S. (115.2 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: 3-1/8" (80 mm)

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.

##### Material Standards:

Sprinkler Frame: Brass UNS-C84400

Deflector: Phosphor Bronze UNS-C51000

Bulb: Glass, nominal 3 mm diameter

Pip Cap: Brass UNS-C31400 or UNS-C31600

Compression Screw: Brass UNS-C36000

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

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 Sprinkler VK606 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 VK606 with a Brass finish and a 155 °F/68 °C temperature rating = Part No. 13005AB.

**Available Finishes And Temperature Ratings:** Refer to Table 1.

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



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#### 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.

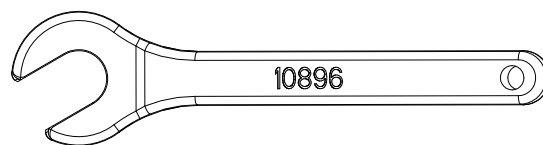
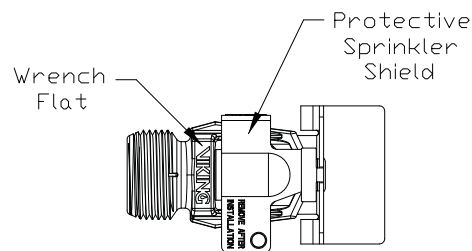
## 7. AVAILABILITY

The Viking Model VK606 Sprinkler 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.

Note: Sprinkler is turned sideways for clarity. (Refer to Figures 3 and 4 for correct deflector orientation.)



**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.



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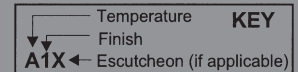
Sprinkler Base Part Number <sup>1</sup>	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length	
	Inches	mm	U.S.	metric <sup>2</sup>		Inches	mm
13005	3/4	20	8.0	115.2	175 psi (12 Bar)	3-1/8	80

### Approval Chart 1 (UL)

Microfast® QREC Horizontal Sidewall Sprinkler VK606

For Light Hazard Occupancies Only.

For installation below smooth, flat, horizontal ceilings only.



Maximum Areas of Coverage <sup>3</sup> (Width x Throw)	Minimum Water Supply Requirements <sup>3</sup>	Deflector-to-Ceiling Distance	Listings and Approvals <sup>4</sup> (Refer also to Design Criteria below.)	
			cULus <sup>5</sup>	NYC <sup>6</sup>
16' x 16' (4.9 m x 4.9 m)	26 gpm @ 10.6 psi (98.4 L/min @ 0.73 Bar)	4 to 12" (102 to 305 mm)	A1W	A1X
16' x 18' (4.9 m x 5.5 m)	29 gpm @ 13.1 psi (109.8 L/min @ 0.90 Bar)	4 to 12" (102 to 305 mm)	A1W	A1X
16' x 20' (4.9 m x 6.2 m)	32 gpm @ 16.0 psi (121.1 L/min @ 1.10 Bar)	4 to 12" (102 to 305 mm)	A1W	A1Y
16' x 22' (4.9 m x 6.7 m)	36 gpm @ 20.3 psi (136.3 L/min @ 1.4 Bar)	4 to 6" (102 to 152 mm)	A1W	See Footnote 7.
16' x 22' (4.9 m x 6.7 m)	38 gpm @ 22.6 psi (143.8 L/min @ 1.56 Bar)	6 to 12" (152 to 305 mm)	A1W	See Footnote 7.
<p><b>Approved Temperature Ratings</b> A - 135 °F (57 °C), 155 °F (68 °C), and 175 °F (79 °C)</p> <p><b>Approved Finishes</b> 1 - Brass, Chrome-Enloy®, White Polyester, Black Polyester, and Black Teflon®</p> <p><b>Approved Escutcheons</b> W - Standard surface-mounted escutcheons or the Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Micromatic® Model E-1 or E-2 Recessed Escutcheon, or the Model G-1 Adjustable Escutcheon. X - Standard surface-mounted escutcheons or the Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Micromatic® Model E-1 or E-2 Recessed Escutcheon Y - Standard surface-mounted escutcheons or the Microfast® Model F-1 Adjustable Escutcheon</p>				

#### 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> 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>4</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>5</sup> Listed by Underwriter's Laboratories, Inc. for use in the U.S. and Canada for Light-Hazard occupancies with smooth, flat, horizontal ceilings only.

<sup>6</sup> Accepted for use, City of New York Board of Standards and Appeals, Calendar Number 219-76-SA for Light Hazard occupancies only.

<sup>7</sup> Meets New York City requirements, effective July 1, 2008.

**NOTE:** Horizontal sidewall sprinklers must be installed with deflectors located between 4" and 6" (102 mm and 152 mm) from walls. *Exception:* Horizontal sidewall sprinklers may be located less than 4" (102 mm) from the wall in which they are installed. Always install horizontal sidewall sprinklers with the top of the deflector aligned parallel with the ceiling or roof.

### DESIGN CRITERIA - UL

(Also refer to Approval Chart 1 above.)

#### cULus Listing Requirements:

Microfast® Extended Coverage Horizontal Sidewall Sprinkler VK606 is cULus Listed as a quick response sprinkler as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for extended coverage sidewall spray sprinklers:

- Limited to Light Hazard occupancies with smooth, flat, horizontal ceilings only.
- Refer to Approval Chart 1 for required deflector distance below the ceiling. Install with the leading edge of the deflector and sprinkler frame arms oriented parallel to the ceiling (see Figure 3). **THE TOP SURFACE OF THE DEFLECTOR IS MARKED "TOP"**. The sprinkler must be oriented as shown in Figure 3.
- 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, 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)

Microfast® Quick Response Extended Coverage HSW Sprinkler VK606  
Maximum 175 PSI (12 Bar) WWP

Temperature	KEY
Finish	
A1X ← Escutcheon (if applicable)	

Sprinkler Base Part Number <sup>1</sup>	SIN	NPT Thread Size		Nominal K-Factor		Maximum Areas of Coverage <sup>3</sup> (Width x Throw)	Minimum Water Supply Requirements <sup>3</sup> Flow/Pressure	FM Approvals <sup>4</sup> (Refer also to Design Criteria below.)
		Inches	mm	U.S.	metric <sup>2</sup>			
13005	VK606	3/4	20	8.0	115.2	16' x 16' (4.9 m x 4.9 m)	32 gpm @ 16.0 psi (121.1 L/min @ 1.10 Bar)	A1Y, B1Z
13005	VK606	3/4	20	8.0	115.2	16' x 18' (4.9 m x 5.5 m)	36 gpm @ 20.3 psi (136.3 L/min @ 1.4 Bar)	A1Y, B1Z
13005	VK606	3/4	20	8.0	115.2	16' x 20' (4.9 m x 6.1 m)	40 gpm @ 25.0 psi (151.4 L/min @ 1.72 Bar)	A1Y, B1Z
13005	VK606	3/4	15	8.0	115.2	16' x 22' (4.9 m x 6.7 m)	44 gpm @ 30.3 psi (166.6 L/min @ 2.09 Bar)	A1Y, B1Z
13005	VK606	3/4	15	8.0	115.2	16' x 24' (4.9 m x 7.3 m)	48 gpm @ 36.0 psi (181.7 L/min @ 2.48 Bar)	A1Y, B1Z
<b>Sprinkler Temperature Ratings</b> A - 135 °F (57 °C), 155 °F (68 °C) and 175°F (79 °C) B - 135 °F (57 °C), 155 °F (68 °C)		<b>Approved Finishes</b> 1 - Brass, Chrome-Enloy®, White Polyester, and Black Polyester		<b>Approved Escutcheons</b> Y - Recessed with the Micromatic® Model E-1 or E-2 Recessed Escutcheon, or the Model G-1 Adjustable Escutcheon. Z - Standard surface-mounted escutcheons or the Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Micromatic® Model E-1 or E-2 Recessed Escutcheon, or the Model G-1 Adjustable Escutcheon.				

#### 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 the FM Approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals.

<sup>4</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.

### DESIGN CRITERIA - FM

(Also refer to Approval Chart 2 above.)

#### FM Approval Requirements:

Microfast® Quick Response Extended Coverage Horizontal Sidewall Sprinkler VK606 is FM Approved as a quick response sidewall **Non-Storage** sprinkler as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including 2-0) and Technical Advisory Bulletins. FM Global Loss Prevention Data Sheets and Technical Advisory Bulletins 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 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.



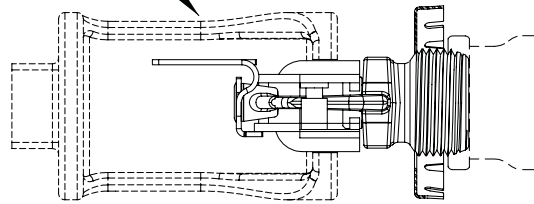
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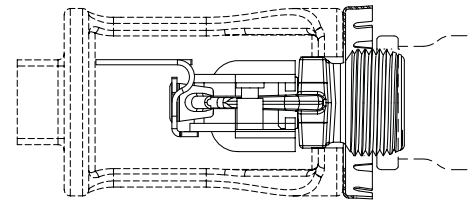
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

Sprinkler Wrench Part  
No. 13655W/B\*\* for  
installing recessed  
sprinkler VK606



Step 1: Carefully slide the  
wrench over the sprinkler  
and protective shield as shown.

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



Step 2: Carefully press the  
wrench onto the sprinkler  
wrench flats and turn  
slightly to ensure engage-  
ment with the wrench flats.

(Note the orientation of the  
of the shield in the wrench.)

Figure 2:

Wrench 13655W/B for Recessed Sprinkler VK606

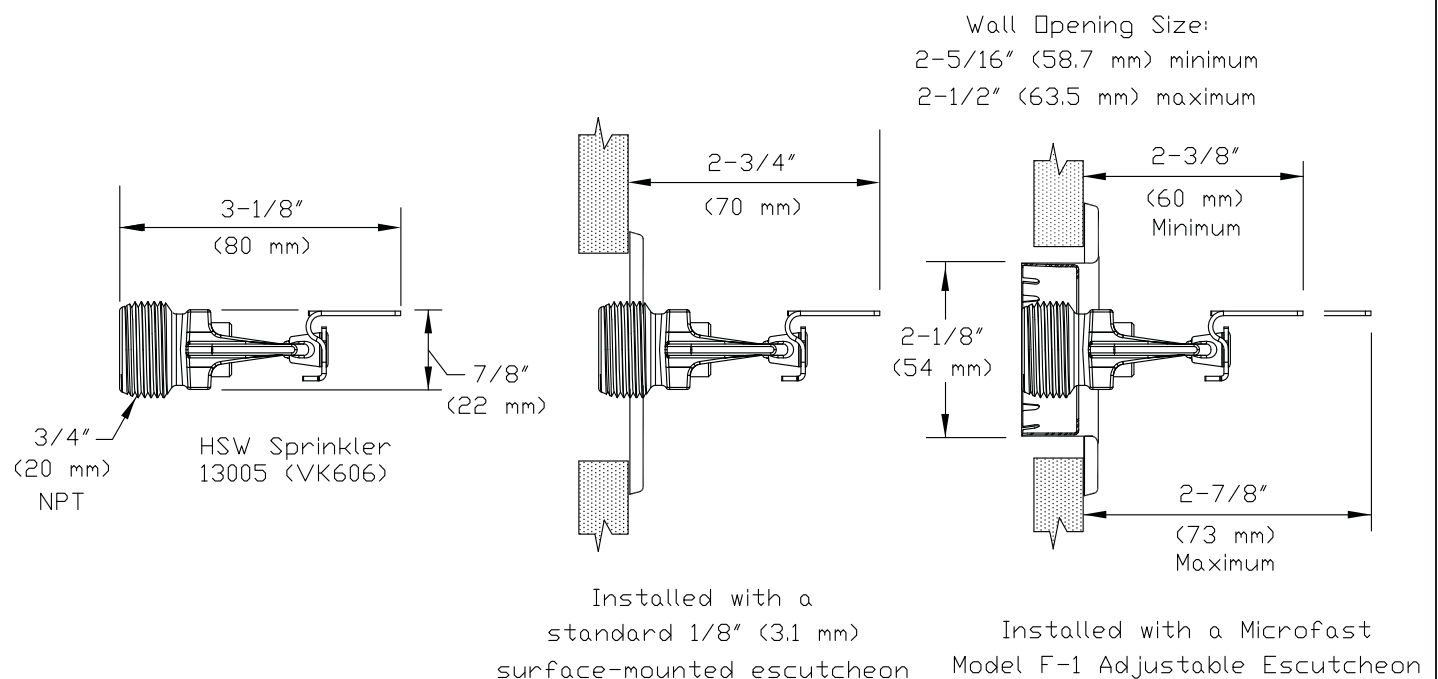


Figure 3:

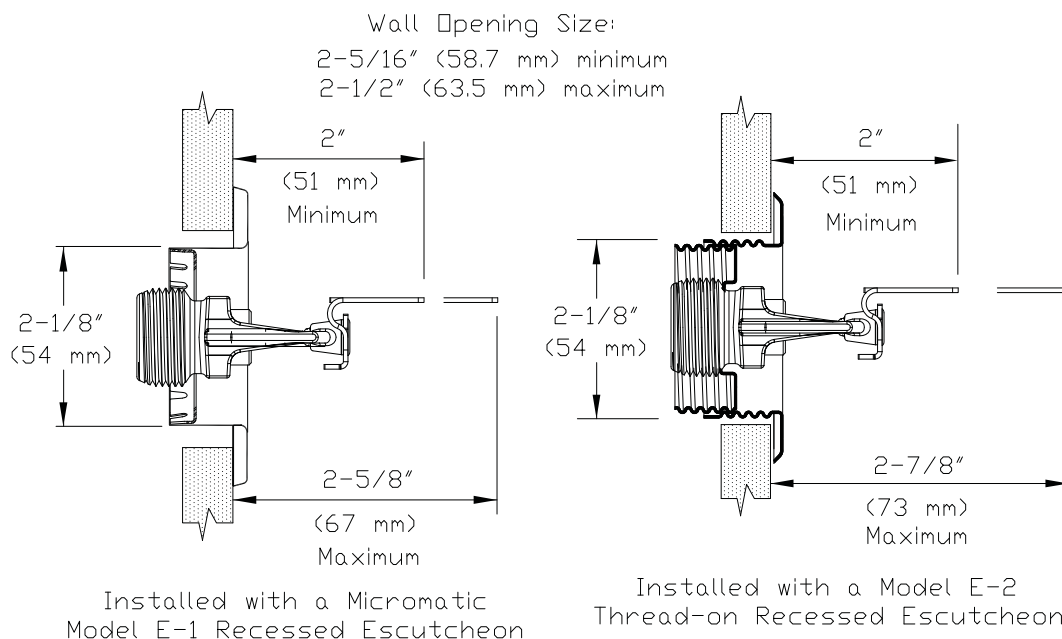
Sidewall Sprinkler Dimensions with a Standard Escutcheon and the Model F-1 Adjustable Escutcheon



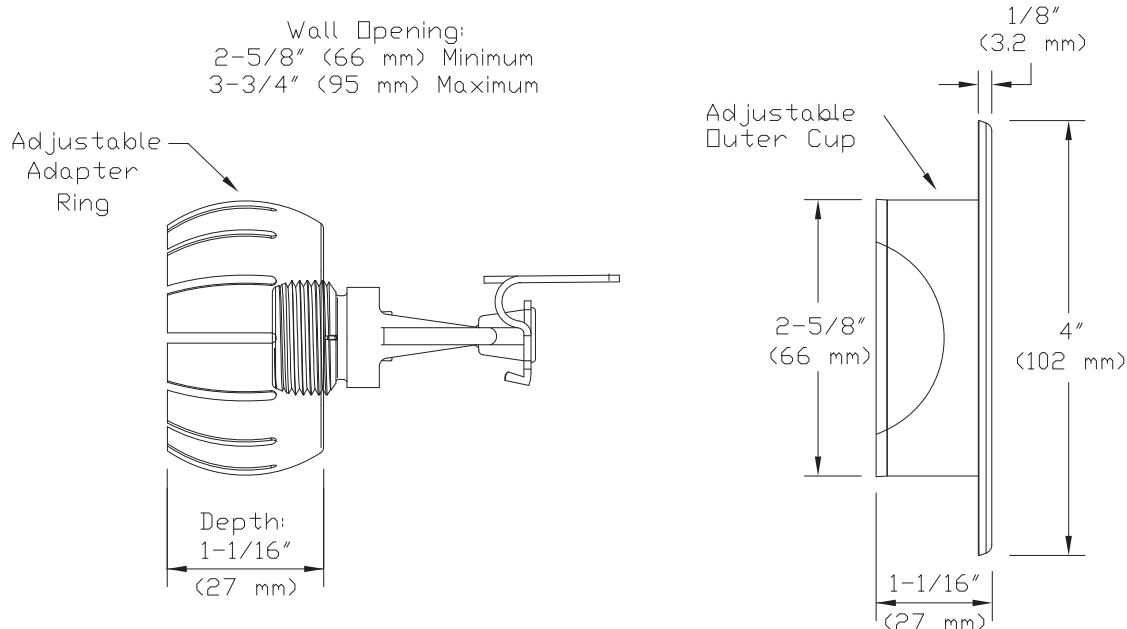
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**Figure 4:**  
**Sidewall Sprinkler Dimensions with the Model E-1 and E-2 Recessed Escutcheons**



**Figure 5:**  
**Sidewall Sprinkler Dimensions with the Model G-1 Adjustable Escutcheon**