



## TECHNICAL DATA

### QR RECESSED FLUSH DRY SPRINKLER VK482 (K5.6)

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

The Viking Quick Response Recessed Flush Dry Sprinkler VK482 is a small high-sensitivity fusible element sprinkler designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired. The sprinkler orifice design, with a K-Factor of 5.6 (80.6 metric\*), allows the sprinkler's efficient use of available water supplies for the hydraulically designed fire-protection system.

The two-piece design of the sprinkler and escutcheon allows installation and testing of the sprinkler prior to ceiling installation. The escutcheon allows for up to 3/4" (19.5 mm) of vertical adjustment and can be removed and re-installed, allowing access above removable ceiling panels without shutting down the sprinkler system and removing the sprinkler.

#### 2. LISTINGS AND APPROVALS



**UL Listed:** Category VNIV

Refer to the Approval Chart and Design Criteria on pages 3 and 4 for UL Listing requirements that must be followed.

#### 3. TECHNICAL DATA

##### Specifications:

Minimum Operating Pressure: 7 psi (0.5 bar)

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

Thread size: 1" NPT (25mm)

Nominal K-Factor: 5.6 U.S. (80.6 metric\*)

\* Metric K-factor measurement shown is in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

Covered by the following U.S. Patents: 8,636,075

##### Material Standards:

Sprinkler Body: QM Brass

Deflector Assembly: Bronze UNS-C22000 and Brass UNS-C36000

Pin Assembly: Stainless Steel UNS-S30200 and Brass UNS-C23000

Seat Assembly: Brass UNS-C31400 or UNS-C31600

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

Fusible Element Assembly: Beryllium Nickel and Eutectic Solder

Element Cover: Copper UNS-C11000

Lever Bar Assembly: Copper Alloy UNS-C72500 and Brass UNS-C36000

Lever Arm: Stainless Steel UNS-S31600

Element Assembly: Copper UNS-C11000 and Nickel Alloy

Barrel: Steel Pipe UNS-G10260, Electrodeposited Epoxy Base Finish

Inlet and Barrel End: QM Brass

##### Escutcheon Materials:

Flush Dry Escutcheons: Cold Rolled Steel UNS-G10080

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

Order Recessed Flush Dry Sprinkler VK482 by first adding the appropriate suffix for the sprinkler and escutcheon finish, the appropriate suffix for the temperature rating, and then the suffix for the length ("A" dimension) to sprinkler base part number. Order in a specific length noted as the "A" dimension (see Figure 2). The "A" dimension is the distance from the face of the fitting (tee) to the desired finished surface of the ceiling.

These sprinklers are listed and approved in lengths from 4-1/2" to 48" (114 mm to 1,219 mm).

Finish Suffix: White Polyester = M/W

Temperature Suffix: 165 °F (74 °C) = C, 205 °F (96 °C) = E

For example, sprinkler VK482 a White Polyester finish and a 165 °F (74 °C) temperature rating, and "A" length of 10" = Part No. 18385MC/W10.



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 Wrench:**

A. Dry Flush Sprinkler Wrench Part No. 18315 (available since 2012)\*\*

\*\*Requires a 1/2” ratchet (not available from Viking).

**Sprinkler Cabinet:**

Part No. 01731A, Capacity: five (5) sprinklers (available since 1971)

**Replacement Escutcheon:**

(3-5/8” diameter): Base Part No. 18386

Specify finish of the escutcheon by adding the appropriate suffix for the finish to the base part number:

Finish Suffix: White Polyester = W

For example, escutcheon 18386 with a White Polyester finish = 18386W.

**4. INSTALLATION**

Refer to appropriate NFPA Installation Standards.

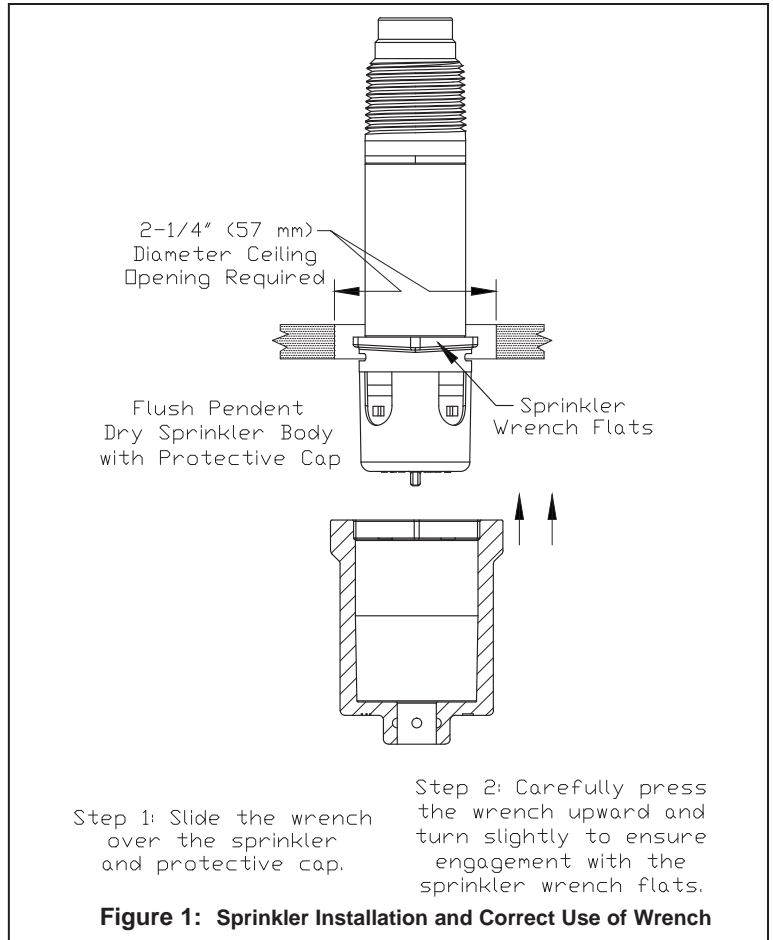


TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES		
Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>
Ordinary	165 °F (74 °C)	100 °F (38 °C)
Intermediate	205 °F (96 °C)	150 °F (65 °C)
<b>Finishes:</b> White Polyester		
<b>Footnotes</b>		
<sup>1</sup> The sprinkler temperature rating is stamped on the sprinkler inlet. <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> Part number shown is the base part number for the replacement escutcheon. For complete part number, refer to current Viking price list schedule.		

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Approval Chart										
Quick Response Recessed Flush Dry Sprinkler VK482 Maximum 175 PSI (12 bar) WWP										
Base Part Number <sup>1</sup>	SIN	Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Order Length Increment		Listings and Approvals <sup>3</sup> (Refer also to Design Criteria on page 111d.)	
		NPT	BSP	U.S	Metric <sup>2</sup>		Inches	mm	UL <sup>4</sup>	FM
Quick Response Applications										
18385	VK482	1"	25mm	5.6	80.6	175 psi (12bar)	1/4"	6.35	A1	--
Approved Temperature Ratings					Approved Finishes and "A" Dimensions <sup>5</sup>					
A - 165 °F (74 °C) and 205 °F (96 °C)					1 - White Polyester with "A" dimensions 4-1/2" to 48" (114 mm to 1,219 mm)					
Footnotes										
<sup>1</sup> Base part number is 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. Check with the manufacturer for any additional approvals. <sup>4</sup> Listed by Underwriters Laboratories Inc. for use in the U.S. <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. Custom colors are indicated on a label on the sprinkler body.										

**5. OPERATION**

During fire conditions, when the fusible element reaches its operating temperature, the element cover, fusible element and lever assembly fall away. The deflector is suspended below the ceiling. Water flowing through the sprinkler orifice strikes the deflector, forming a uniform spray pattern over a specific area of coverage determined by the water supply pressure at the sprinkler to extinguish or control the fire.

**6. INSPECTIONS, TESTS AND MAINTENANCE**

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

**7. AVAILABILITY**

Viking Sprinkler VK482 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.



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**DESIGN CRITERIA**

(Also refer to the Approval Chart on page 111c.)

**NOTICE**

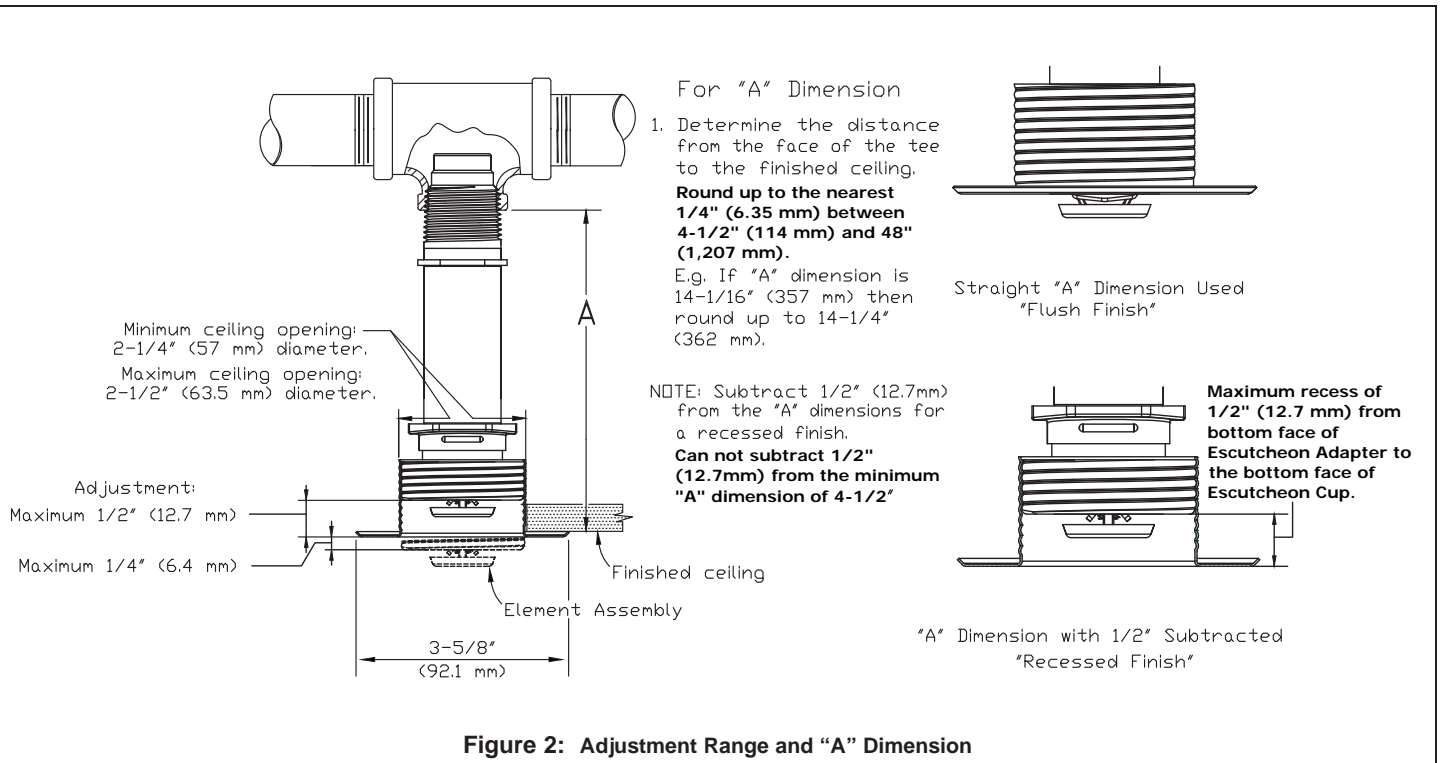
When using CPVC fittings with Viking dry sprinklers, use only new Nibco Model 5012-S-BI tees. When selecting other CPVC fittings, contact Viking Technical Services.

**UL Listing Requirements:**

Viking Recessed Flush Dry Sprinkler VK482 is UL Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for standard spray pendent sprinklers.

- Designed for use in Light and Ordinary Hazard occupancies.
- 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) unless baffles are installed in accordance with NFPA 13.
- Locate no less than 4" (102 mm) from walls.
- Maximum distance from walls 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 standard spray pendent sprinklers must be followed.

**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to pages DRY1-3 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 and any other similar Authorities Having Jurisdiction, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.**



**Figure 2: Adjustment Range and "A" Dimension**



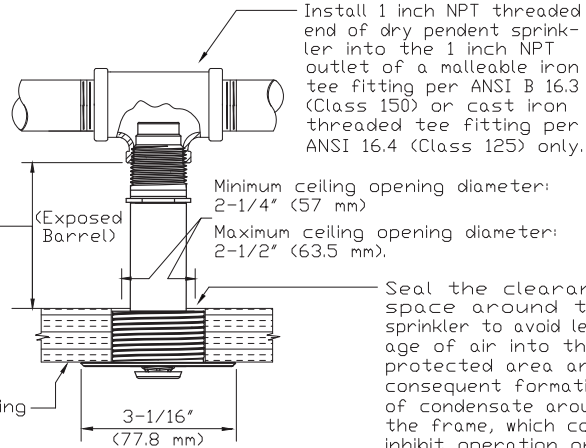
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Ambient Temperature of Protected Area* at the Discharge End of the Sprinkler	Exposed Barrel Ambient Temperature		
	40°F/4°C	50°F/10°C	60°F/16°C
40°F (4°C)	0	0	0
30°F (-1°C)	0	0	0
20°F (-7°C)	4 (100)	0	0
10°F (-12°C)	8 (203)	1 (25.4)	0
0°F (-18°C)	12 (305)	3 (76)	0
-10°F (-23°C)	14 (356)	4 (102)	1 (25.4)
-20°F (-29°C)	14 (356)	6 (152)	3 (76)
-30°F (-34°C)	16 (406)	8 (203)	4 (102)
-40°F (-40°C)	18 (457)	8 (203)	4 (102)
-50°F (-46°C)	20 (508)	10 (254)	6 (152)
-60°F (-51°C)	20 (508)	10 (254)	6 (152)



Seal the clearance space around the sprinkler to avoid leakage of air into the protected area and consequent formation of condensate around the frame, which could inhibit operation or cause premature operation. Refer to Figure 4 below.

If humidity and temperature differential causes condensation on the exposed dry sprinkler, consider wrapping the exposed barrel with insulation, foam insulating tape, or equivalent.

(Protected Area)

\*The protected area refers to the area below the ceiling. The ambient temperature is the temperature at the discharge end of the sprinkler. For protected area temperatures that occur between the values listed, use the next cooler temperature.

\*\*The minimum required barrel length is not the same as the "A" dimension. Refer to Figure 2 for the "A" dimension. NOTE: Exposed minimum barrel lengths are inclusive up to 30 mph wind velocities.

Figure 3: Recessed Flush Dry Pendent Sprinkler Required Minimum Barrel Length Based on Ambient Temperature in the Protected Area

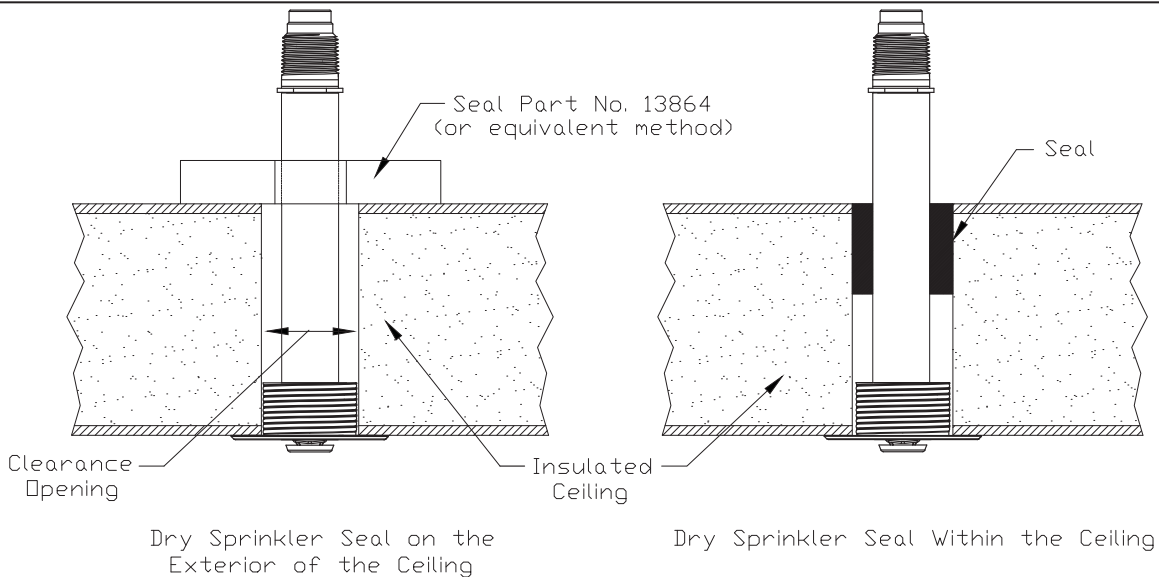


Figure 4: Recessed Flush Dry Sprinkler Seal



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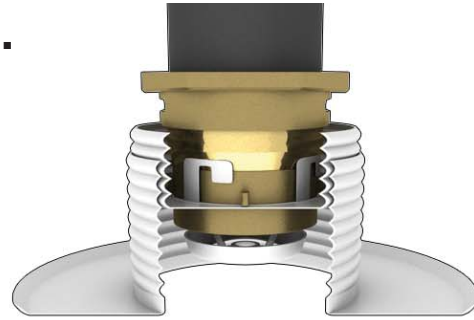
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1.

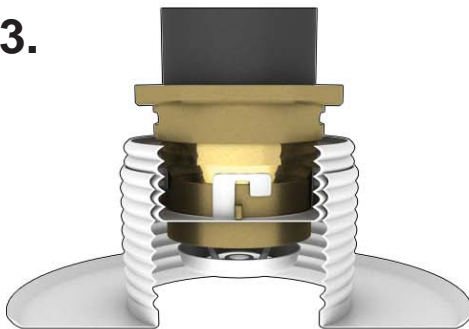


2.



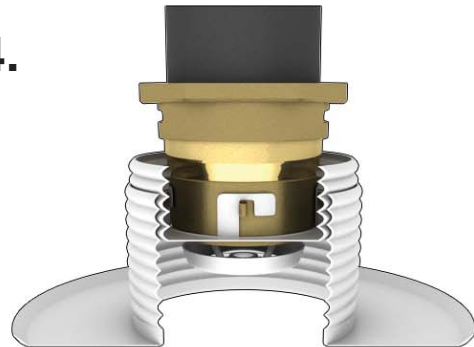
Push adapter up until stopped.

3.



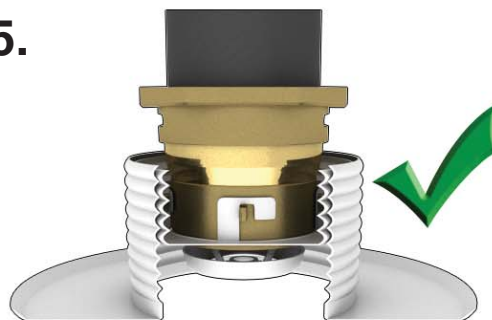
Rotate adapter clock-wise until stopped.

4.



Let adapter drop until stopped.

5.



Rotate outer cup until it comes into contact with the ceiling.

Figure 5: Recessed Flush Dry Sprinkler Escutcheon Instructions





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NOTE: After installed, the inner escutcheon adapter must not extend beyond the outer escutcheon cup. This will result in exceeding the maximum recess distance of 1/2".

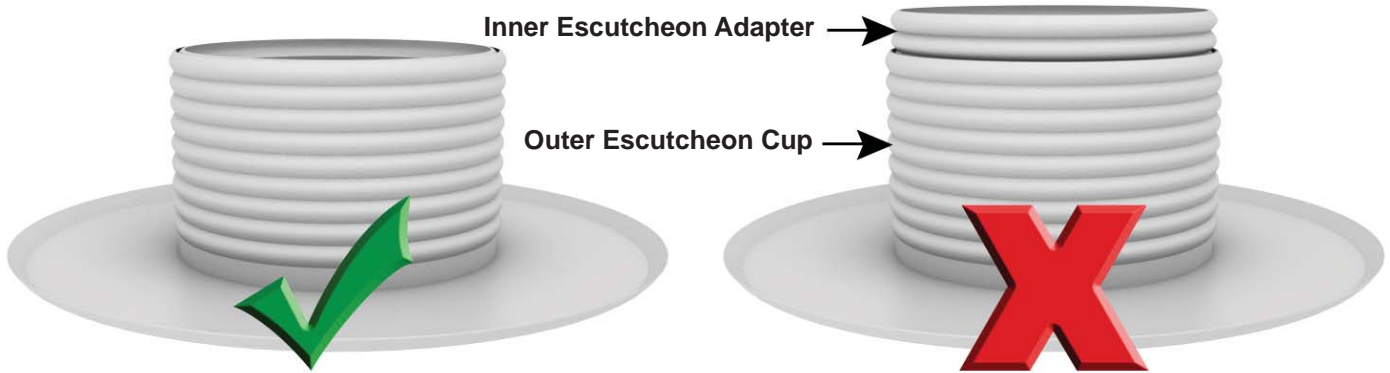


Figure 6: Recessed Flush Dry Sprinkler Escutcheon Recess Instructions

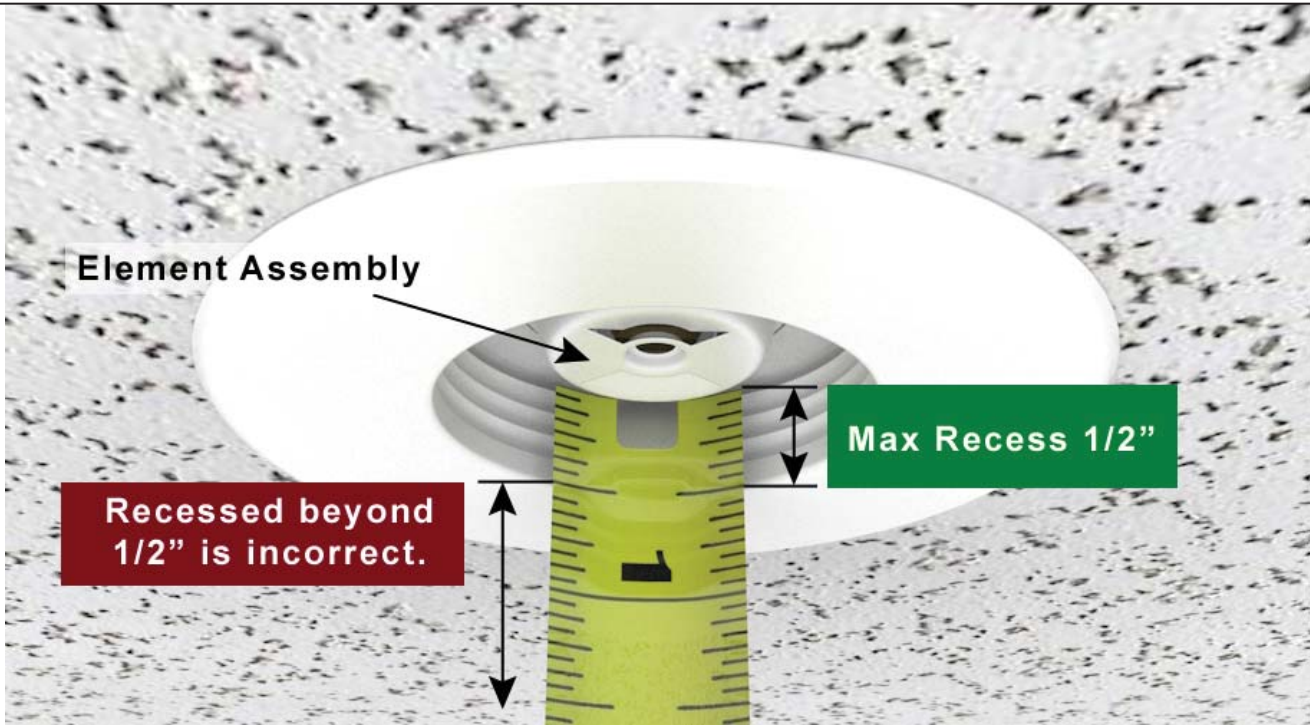


Figure 7: Recessed Flush Dry Sprinkler Escutcheon Recess Instructions

Measure from Escutcheon Adapter/Sprinkler Base to the bottom face of Escutcheon Cup for recess measurement. Also see figure 2.

NOTE: Do not measure from Element Assembly.