



## TECHNICAL DATA

## STANDARD RESPONSE DRY PENDENT SPRINKLERS VK1510, VK1550, AND VK1590 (CE APPROVED)

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 Standard Response Dry Pendent Sprinklers are thermosensitive spray sprinklers suitable for use in areas subject to freezing. The sprinklers are designed for dry systems and preaction systems where it is necessary to prevent water or condensation from entering the drop nipple before sprinkler operation. They may also be installed in spaces subject to freezing and supplied from a wet system in an adjacent heated area. Viking Standard Response Dry Pendent Sprinklers are available in various finishes and temperature ratings to meet design requirements.

The special Polyester coating has been investigated for installation in corrosive atmospheres. **NOTE: When installed in some corrosive environments, the Polyester finish may change color. This natural discoloration over time is not in itself an indication of corrosion and should not be treated as such. All sprinklers installed in corrosive environments should be replaced or tested as described in NFPA 25 on a more frequent basis.**

### 2. LISTINGS AND APPROVALS

**CE Certified:** Standard EN 12259-1, EC-certificate of conformity 1725-CPD-H0009.

### 3. TECHNICAL DATA

#### Specifications:

Available since 2011.

Minimum Operating Pressure: 0.35 bar\* (5 psi)

Maximum Working Pressure: 12 bar (175 psi)

Factory tested pneumatically to 6.89 bar (100 psi)

Thread size: 25 mm BSP or 1" NPT

Nominal K-Factor: 80.6 metric\*\* (5.6 U.S.) for all approved lengths.

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

\*The minimum operating pressure for CE Approvals ONLY is 0.35 bar (5 psi).

\*\*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.

#### Material Standards:

Frame Casting: Brass UNS-C84400

Deflector: Brass UNS-C26000

Bulb: Glass, nominal 5 mm diameter

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

Compression Screw: Brass UNS-C36000

Pip Cap: Brass UNS-C31400 or UNS-C31600

Pip Cap Adapter: Brass UNS-C36000

Orifice: Copper UNS-C21000

Tube: ERW Hydraulic Steel Tube

Barrel End and Threads: QM Brass

Support (Internal): Stainless Steel UNS-S30400

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

Sleeve (for Adjustable Standard style only): Brass UNS-C26000 or UNS-C26800

#### Escutcheon Materials:

Adjustable Standard Dry Escutcheons: Brass UNS-C26000 or UNS-C26800

Recessed Dry Escutcheons: Cold Rolled Steel UNS-G10080

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

Order Standard Response Dry Pendent Sprinklers by first adding the appropriate suffix for the sprinkler 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 Figures 3 through 5). The "A" dimension is the distance from the face of the fitting (tee) to the desired finished surface of the ceiling.



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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These sprinklers are listed and approved in lengths from 38.1 to 1,156 mm (1-1/2" to 45-1/2") for the adjustable standard style, 76.2 to 1,194 mm (3" to 47") for the plain barrel style, and 82.5 to 1,207 mm (3-1/4" to 47-1/2") for the adjustable recessed style. Lengths exceeding the standard lengths are available, with no approvals, on a "made-to-order" basis: Recessed Dry Pendent up to 1,664 mm (65-1/2"). Adjustable Standard Dry Pendent up to 1,613 mm (63-1/2"). Plain Barrel Dry Pendent up to 1,651 mm (65"). Contact the manufacturer for more information.

Finish Suffix: Brass = A, Chrome-Enloy® = F, and White Polyester = M/W

Temperature Suffix: 68 °C (155 °F) = B, 79 °C (175 °F) = D, 93 °C (200 °F) = E, 141 °C (286 °F) = G

For example, sprinkler VK1550 with 25 mm BSP Threads, a Chrome finish and a 68 °C (155 °F) temperature rating, and "A" length of 254 mm (10") = Part No. 17391FB10.

### 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. 07297W/B (available since 1991)

B. Wrench for recessed sprinklers: Part No. 07565W/B† (available since 1991)  
†A 1/2" ratchet is required (not available from Viking).

**Sprinkler Guard:** Chrome, with no listings or approvals, for installation on dry pendent sprinklers manufactured after May 1994 only (Part No. 08954).

### Replacement Escutcheons:

A. Adjustable Standard Dry Escutcheon: Base Part No. 17442

B. Recessed Dry Escutcheon Cup: Base Part No. 05459A

## 4. INSTALLATION

Refer to appropriate Installation Standards.

## 5. OPERATION

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the glass to shatter, releasing the internal parts 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

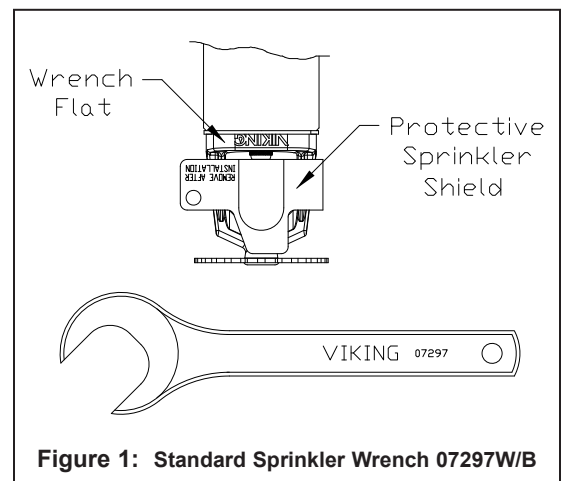
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

## 7. AVAILABILITY

The Viking Standard Response Dry Pendent 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.





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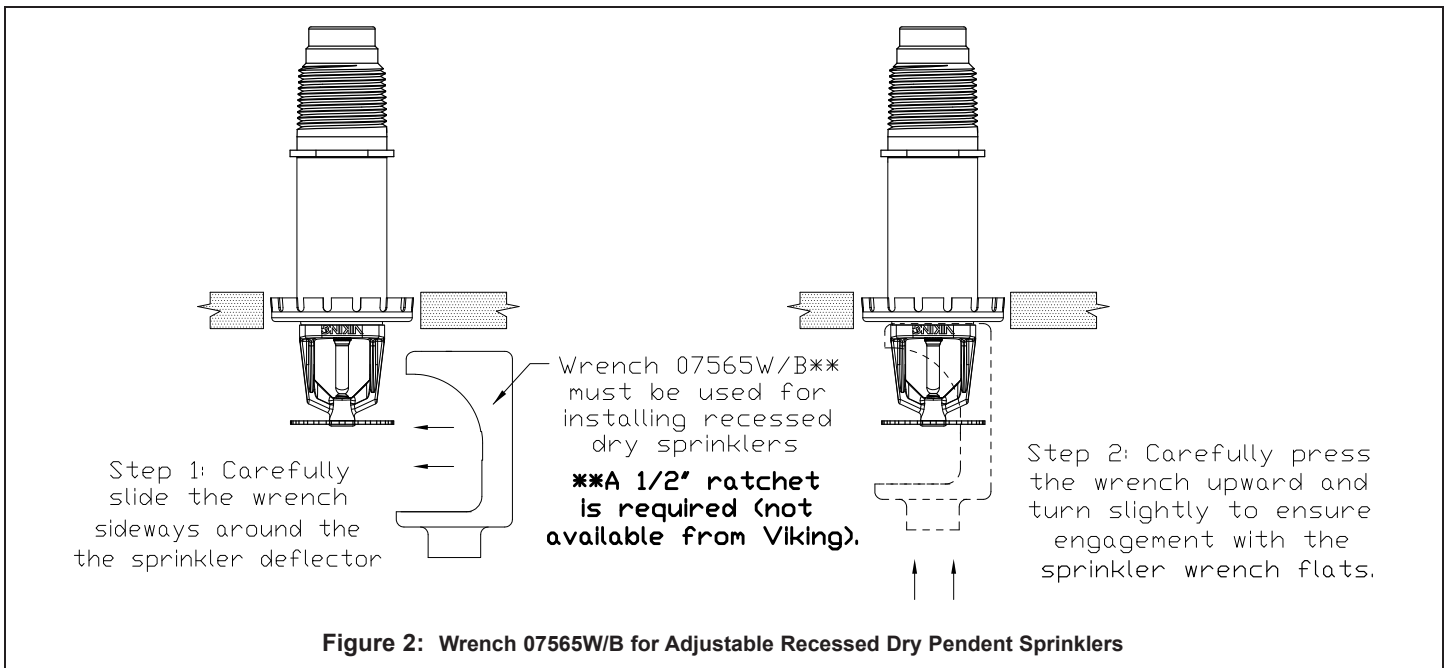
TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Bulb Color
Ordinary	68 °C (155 °F)	38 °C (100 °F)	Red
Intermediate	79 °C (175 °F)	65 °C (150 °F)	Yellow
Intermediate	93 °C (200 °F)	65 °C (150 °F)	Green
High	141 °C (286 °F)	107 °C (225 °F)	Blue

**Sprinkler Finishes:** Brass, Chrome-Enloy® (patents pending), and White Polyester  
**Corrosion-Resistant Coating<sup>3,4</sup>:** White Polyester in all temperature ratings

### 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 Polyester coating is NOT corrosion proof. Prior to installation, verify through the end-user that the coating is compatible with or suitable for the proposed environment. Polyester coating is applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester coatings.
- <sup>4</sup> When installed in some corrosive environments, the Polyester finish may change color. This natural discoloration over time is not in itself an indication of corrosion and should not be treated as such. All sprinklers installed in corrosive environments should be replaced or tested as described in NFPA 25 on a more frequent basis.





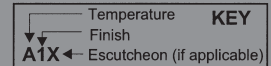
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### Approval Chart

Standard Response Standard Orifice Dry Pendent Sprinklers  
 Maximum 12 bar (175 PSI) WWP



Sprinkler Base Part No. <sup>1</sup>	SIN	Style	Thread Size		Nominal K-Factor <sup>2</sup>		Order Length Increment		Listings and Approvals <sup>4</sup>						
			NPT	BSP	U.S.	metric <sup>3</sup>	Inches	mm	cULus	NYC	VdS	LPCB	CE <sup>5</sup>	⚙	
17391	VK1550	Adjustable Standard	--	25 mm	--	80.6	1/2"	12.7	--	--	--	--	--	A1	--
17390	VK1550		1"	--	5.6	--	1/2"	12.7	--	--	--	--	--	A1	--
17387	VK1590	Adjustable Recessed	--	25 mm	--	80.6	1/4"	6.35	--	--	--	--	--	B2	--
17386	VK1590		1"	--	5.6	--	1/4"	6.35	--	--	--	--	--	B2	--
17389	VK1510	Plain Barrel	--	25 mm	--	80.6	1/2"	12.7	--	--	--	--	--	A3	--
17388	VK1510		1"	--	5.6	--	1/2"	12.7	--	--	--	--	--	A3	--

#### Approved Temperature Ratings

A - 68 °C (155 °F), 79 °C (175 °F), 93 °C (200 °F), and 141 °C (286 °F)  
 B - 68 °C (155 °F), 79 °C (175 °F), and 93 °C (200 °F)

#### Approved Finishes and "A" Dimensions

- 1 - Chrome-Enloy® with "A" dimensions 38.1 mm to 1,156 mm (1-1/2" to 45-1/2")
- 2 - Chrome-Enloy® or White Polyester with "A" dimensions 82.5 to 1,207 mm (3-1/4" to 47-1/2")
- 3 - Chrome-Enloy® or Brass with "A" dimensions 76.2 mm to 1,194 mm (3" to 47")

#### 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> K-Factor applies for standard lengths ("A" Dimensions indicated above).
- <sup>3</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>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> CE Certified, Standard EN 12259-1, EC-certificate of conformity 1725-CPD-H0009.

**NOTE:** 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.

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

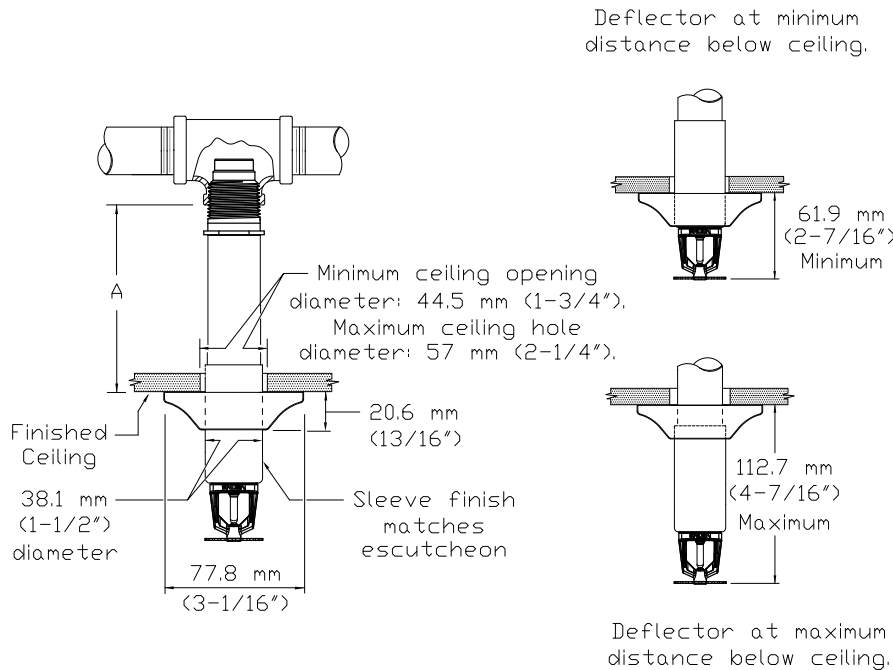


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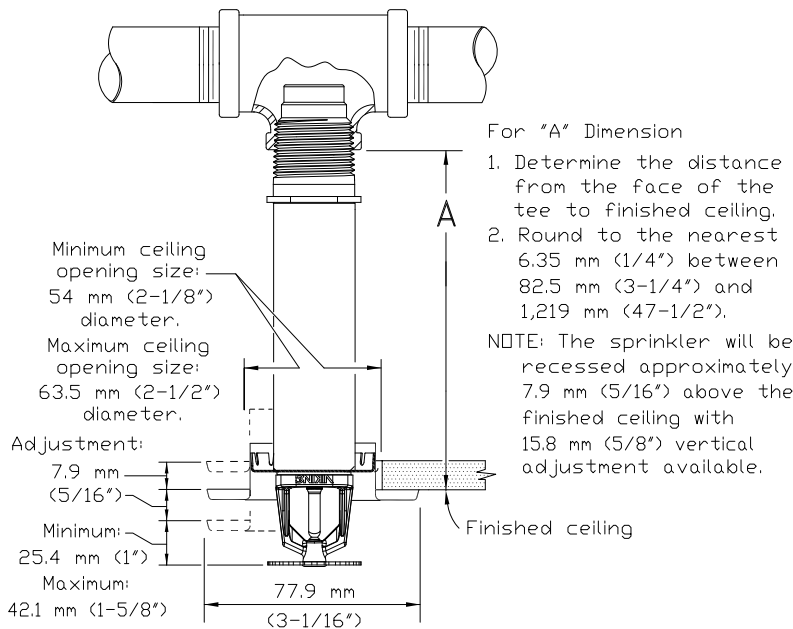
For "A" Dimension: 1. Determine the distance from the face of the tee to the finished ceiling.  
 2. Round to the nearest 12.7 mm (1/2") between 38.1 mm and 1,156 mm (1-1/2" and 45-1/2").  
 NOTE: The deflector will be located approximately 87.3 mm (3-7/16") below the ceiling.  
 with 25.4 mm (1") upward and 25.4 mm (1") downward adjustment.



NOTE: To locate the deflector at the minimum distance below the ceiling, with no upward adjustment available, order the dry pendent sprinkler 25.4 mm (1") shorter than the A dimension.

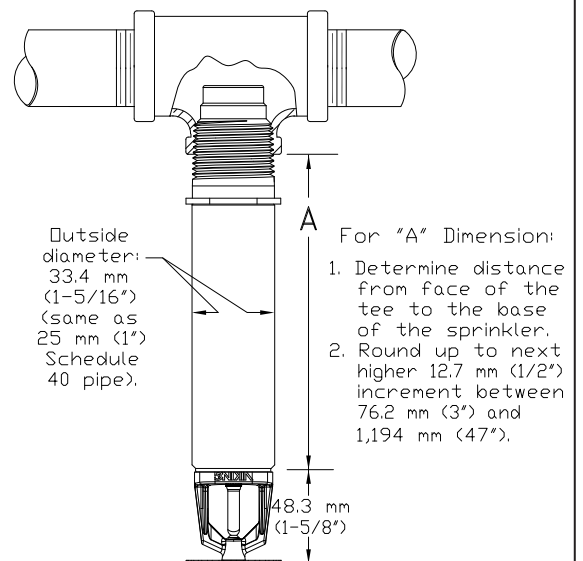
NOTE: To locate the deflector at the maximum distance below the ceiling, with no downward adjustment available, order the dry pendent sprinkler 25.4 mm (1") longer than the A dimension.

**Figure 3: Adjustable Standard Dry Pendent Sprinkler**



For "A" Dimension  
 1. Determine the distance from the face of the tee to finished ceiling.  
 2. Round to the nearest 6.35 mm (1/4") between 82.5 mm (3-1/4") and 1,219 mm (47-1/2").  
 NOTE: The sprinkler will be recessed approximately 7.9 mm (5/16") above the finished ceiling with 15.8 mm (5/8") vertical adjustment available.

**Figure 4: Adjustable Recessed Dry Pendent Sprinkler**



For "A" Dimension:  
 1. Determine distance from face of the tee to the base of the sprinkler.  
 2. Round up to next higher 12.7 mm (1/2") increment between 76.2 mm (3") and 1,194 mm (47").

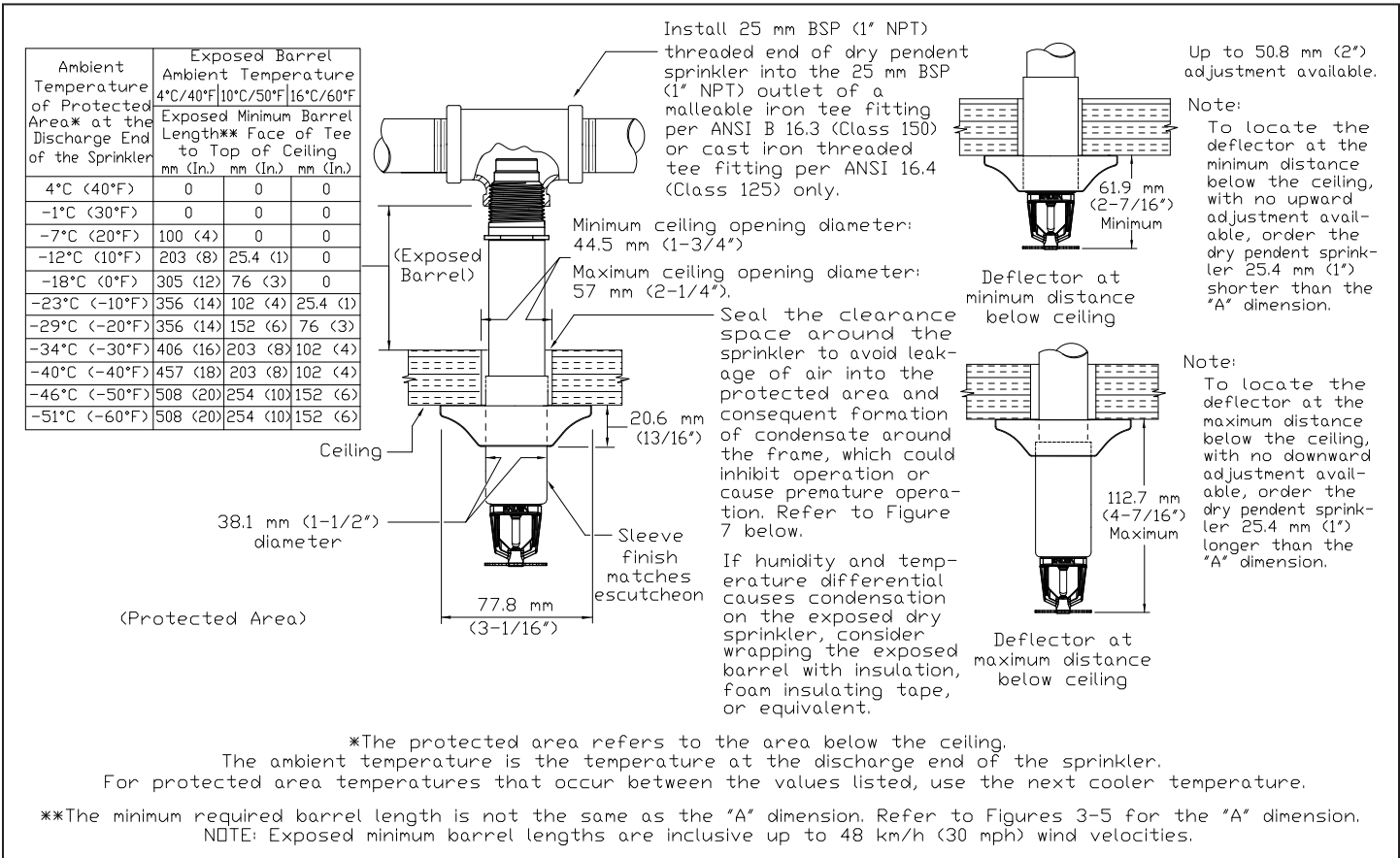
**Figure 5: Plain Barrel Dry Pendent Sprinkler**



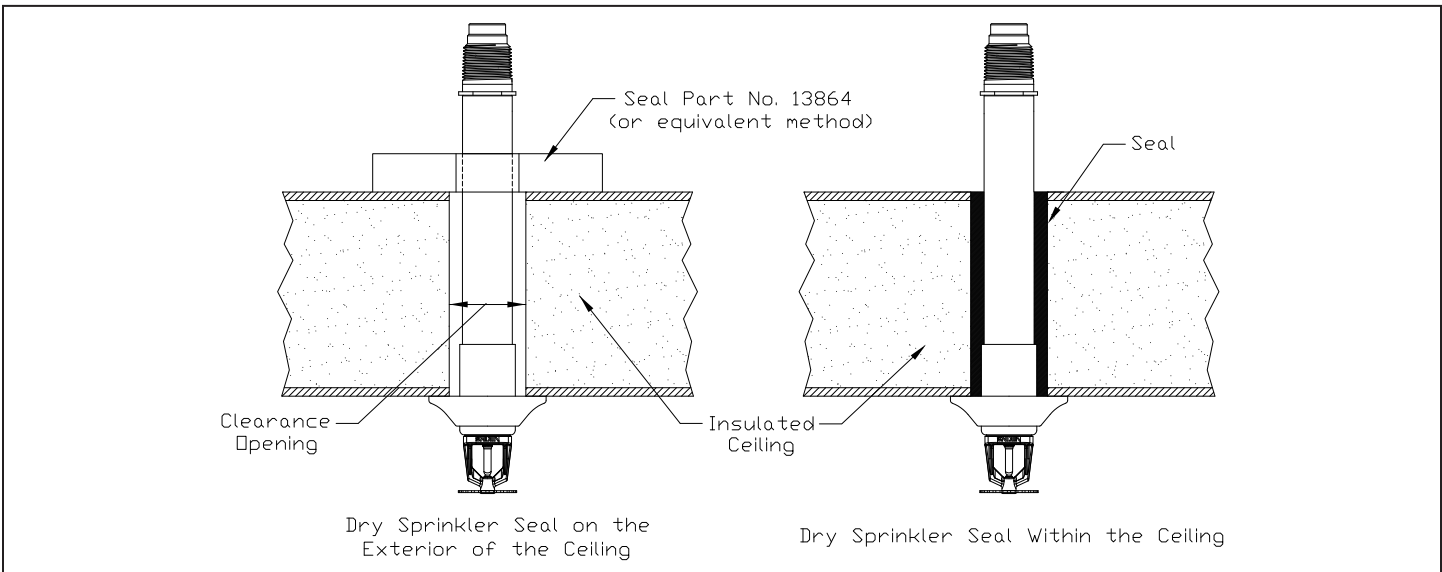
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**Figure 6: Dry Pendent Sprinkler Required Minimum Barrel Length Based on Ambient Temperature in the Protected Area (Adjustable Standard Dry Pendent Sprinkler is shown)**



**Figure 7: Dry Sprinkler Seal (Adjustable Standard Dry Pendent Sprinkler is shown)**