Larson Jeep

300 River Road.

Puyallup, WA

Fire Sprinkler Product Submittal Data

Emerald Fire
Fire Sprinkler Specialists

11021 Cramer Rd NW – Gig Harbor, WA 98329

EMERAFL980MR – EmeraldFireLLC.com

Fire Sprinkler Product Submittal Data

1. Viking VK3001 QR ½" 286* 5.6K Brass Upright Sprinkler
2. Viking VK3001 QR ½" 200* 5.6K Brass Upright Sprinkler
3. Viking VK3001 QR 1/2" 155* 5.6K Brass Upright Sprinkler
4. Viking VK305 QR 1/2" 155* 5.6K Chrome Dry Horizontal SW Sprinkler
5. Viking 4621 QR ½" 155* 5.6K, Brass Pendent Sprinkler
6. Globe GL5620 GL-SS/RE ½" 200* K=5.6 Brass Attic Sprinkler
7. Globe GL5621 GL-SS/DS ½" 200* K=5.6 Brass Attic Sprinkler
8. Wheatland Pipe Company Schedule 10 Black Pipe (1 ¼" & 1 ½" & 2 ½" & 3" & 4")
9. Wheatland Pipe Company Schedule 40 Black Pipe (1")
10. Anvil International Black Cast Iron Threaded Fittings (1")
11. Victaulic Model 10.03 Firelock Grooved Fittings (1 ¼" & 1 ½" & 2 ½" & 3" & 4")
12. Victaulic Style 009N Grooved Rigid Couplings (1 ¼" & 1 ½" & 2 ½" & 3" & 4")
13. Victaulic Style 75 Grooved Flex Coupling (3" & 4")
14. Tolco #4L Longitudinal Sway Brace Attachment
15. Tolco #12A Channel Unistrut (PS200)
16. Tolco #75 Swivel Attachment
17. Tolco #100 All Thread Rod
18. Tolco #200 "Trimline" Adjustable Band Ring Hanger
19. Tolco #906 Sway Brace Multi-Fastener Adapter
20. Tolco #980 No-Thread Swivel Sway Brace Attachment
21. Tolco #1001 Sway Brace Attachment
22. Sammy Wood Screws Model GST 20 & 30
23. Sammy Screws Wood Sidewinders Model SWG 20 & 30
24. Reliable Model G Swing Check Valve (4")
25. Reliable REL-BFG-300 Grooved Butterfly Valve (3"& 4")
26. Tyco DPV-1 Dry Pipe Valve (3")

27. Reliable Model CR Commercial Riser Manifold (4”)

28. Gast Oilless Air Compressor (Riser Mount) 1/6HP

29. Potter 6” Electric Bell PBA-AC 120-VAC

30. Potter Model PS10A Pressure Switch

31. Potter Model PS40A High/Low Pressure Switch

32. Argco Spare Head Cabinet

33. Ames Co Deringer 20 Double Check Backflow Prevention Assembly (6”)

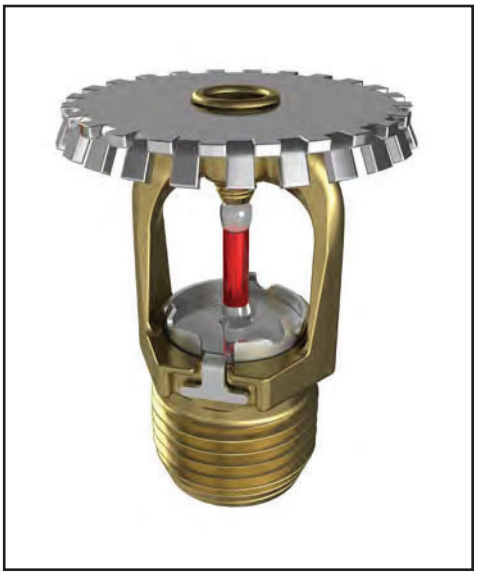
TECHNICAL DATA

VK3001 QUICK RESPONSE UPRIGHT SPRINKLER (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
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

1. DESCRIPTION

The Viking VK3001 Quick Response Upright Sprinkler is a small thermosensitive glass bulb spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive environments and are Listed and Approved as indicated in the Approval Chart.



WARNING: Cancer and Reproductive Harm- www.P65Warnings.ca.gov

2. LISTINGS AND APPROVALS

c UL us — UL Listed: Category VNIV

FM APPROVED — FM Approved: Classes 2016, 2043
Approved for use in FM Approved vacuum dry sprinkler systems with a maximum supervisory vacuum pressure of -3 psi (-207 mbar).

Refer to the Approval Chart and Design Criteria for requirements that must be followed.

3. TECHNICAL DATA

Specifications:
Minimum Operating Pressure: 7 psi (0.5 bar)
Rated to: UL - 250 PSI (24 bar) WWP
FM - 175 PSI (12 bar) WWP
Factory tested hydrostatically to 500 psi (34.5 bar).
Thread size: 1/2" NPT (15 mm BSPT)
Nominal K-factor: 5.6 U.S. (80.6 metric*)
Glass-bulb fluid temperature rated to -65 °F (-55 °C)

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

Material Standards:
Sprinkler Body: Brass CW602N, UNS-C84400 or QM Brass
Deflector: Stainless Steel UNS S30400
Pip Cap Shell - Stainless Steel UNS-S44400
Pip Cap Disc - Stainless Steel UNS-S30100
Belleville Spring - Nickel Alloy
Pip Cap Seal - Polytetrafluoroethylene (PTFE)
Compression Screw: Brass CW612N, CW508L, UNS-C36000 or UNS-C26000
Shipping Cap: Polyethylene
Bulb: Glass, nominal 3 mm diameter

Finishes and Temperatures:

Finish	Brass	Chrome	White Polyester	Black Polyester	ENT	--
Suffix	A	F	M-/W	M-/B	JN	--
Temperature	135 °F (57 °C)	155 °F (68 °C)	175 °F (79 °C)	200 °F (93 °C)	286 °F (141 °C)	Open
Suffix	A	B	D	E	G	Z

Ordering Information: (Refer to Table 1 and the current Viking List Price Book.)

4. INSTALLATION

Refer to appropriate NFPA, FM Global, and/or any other applicable installation standards.

5. OPERATION

During fire conditions, when the temperature around the sprinkler reaches its operating temperature, the heat-sensitive liquid in the glass bulb expands, causing the bulb to shatter, releasing the pip cap 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 Sprinkler Model VK3001 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.

TECHNICAL DATA

VK3001 QUICK RESPONSE UPRIGHT SPRINKLER (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
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

TABLE 1: ORDERING INFORMATION

**Instructions: Using the sprinkler base part number,
(1) add the suffix for the desired Finish
(2) add the suffix for the desired Temperature Rating.**

Sprinkler Base Part No.	Size		1: Finishes		2: Temperature Ratings			
	NPT Inch	BSPT mm	Description	Suffix[1]	Nominal Rating	Bulb Color	Max. Ambient Ceiling Temperature[2]	Suffix
19916	1/2	--	Brass	A	135 °F (57 °C)	Orange	100 °F (38 °C)	A
19928[6]	--	15	Chrome	F	155 °F (68 °C)	Red	100 °F (38 °C)	B
23100[6]	1/2		White Polyester [3,5]	M-/W	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
			Black Polyester [3,5]	M-/B	200 °F (93 °C)	Green	150 °F (65 °C)	E
			ENT [3,4,5]	JN	286 °F (141 °C)	Blue	225 °F (107 °C)	G
					OPEN	--	--	Z

Example: 19916MB/W = VK3001 with White Polyester Finish and 155 °F (68 °C) Nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C) meaning if the area will experience temperatures above the maximum ambient rating, you shall use a higher temperature-rated sprinkler.

Accessories

Sprinkler Wrenches (see Figure 1):

A. Installer Wrench: Part No. 22055.
B. Cabinet Wrench: Part No. 20901M/B.
C. Straight Wrench: Part No. 22940MB

Sprinkler Cabinet:

A. Up to 6 sprinklers: Part number 01724A.
B. 6-12 Sprinklers: Part number 01725A.

Footnotes

1. Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.
2. Based on NFPA 13, NFPA 13R, and NFPA 13D. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
3. UL Listed as corrosion resistant.
4. FM Approved as a corrosion proofing coating for installation in corrosive environments.
5. The corrosion resistant and corrosion proofing coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Chart. These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.
6. UL Listed for 250 PSI (17 bar) WWP.

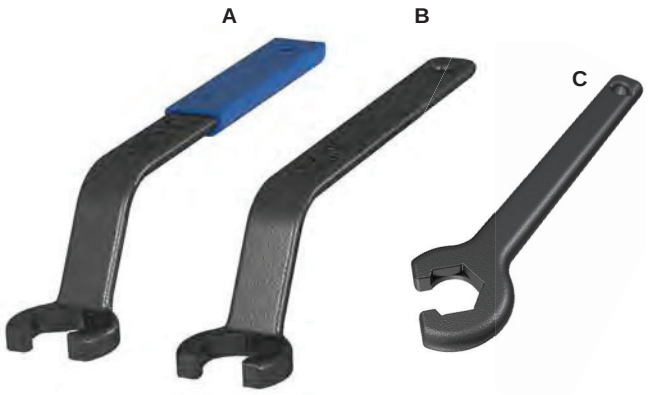


Figure 1: Sprinkler Wrenches

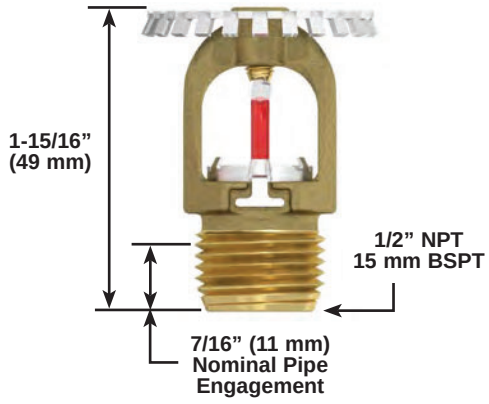


Figure 2: Sprinkler Dimensions

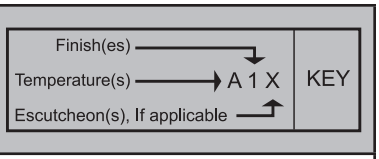
TECHNICAL DATA

VK3001 QUICK RESPONSE UPRIGHT SPRINKLER (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
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

APPROVAL CHART

Viking Quick Response Upright Sprinkler
VK3001 K5.6 (80.6 metric



Sprinkler Base Part Number[1]	Thread Size		Listings and Approvals[2]			
	NPT	BSPT	cULus		FM	
	Inch	mm	Approval Code(s)	Maximum WWP	Approval Code(s)	Maximum WWP
19916	1/2	--	A1	175 PSI (12 bar)	A1	175 PSI (12 bar)
19928	--	15	A1	250 PSI (17 bar)	A1	175 PSI (12 bar)
23100	1/2	--	A1	250 PSI (17 bar)	A1	175 PSI (12 bar)

Approved Temperature Rating Codes:

A = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C) and 286 °F (141 °C)

Approved Finish Codes:e

1 = Brass, Chrome, White Polyester [3,4], Black Polyester [3,4], and ENT [4,5]

Footnotes

1 Base Part number is shown. For complete part number, refer to Viking's current price schedule.
2 This table shows the listings and approvals available at the time of printing. Check with the manufacturer for any additional approvals.
3 Other colors are available upon request with the same Listings and Approvals as the standard colors.
4 cULus Listed as corrosion resistant.
5 FM Approved as corrosion-proofing for installation in corrosive environments.

DESIGN CRITERIA - UL

cULus Listing Requirements:

The Viking VK3001 Quick Response Upright Sprinkler is cULus Listed as indicated in Approval Chart for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

- Designed for use in Light and Ordinary Hazard occupancies.
- The sprinkler installation rules contained in NFPA 13 for standard spray upright sprinklers shall be followed.

IMPORTANT: Always refer to Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 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.

DESIGN CRITERIA - FM

FM Approval Requirements:

The Viking VK3001 Quick Response Upright Sprinkler is FM Approved as quick response Non-Storage upright 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.

NOTE: The FM Installation guidelines may differ from UL and/or NFPA criteria.

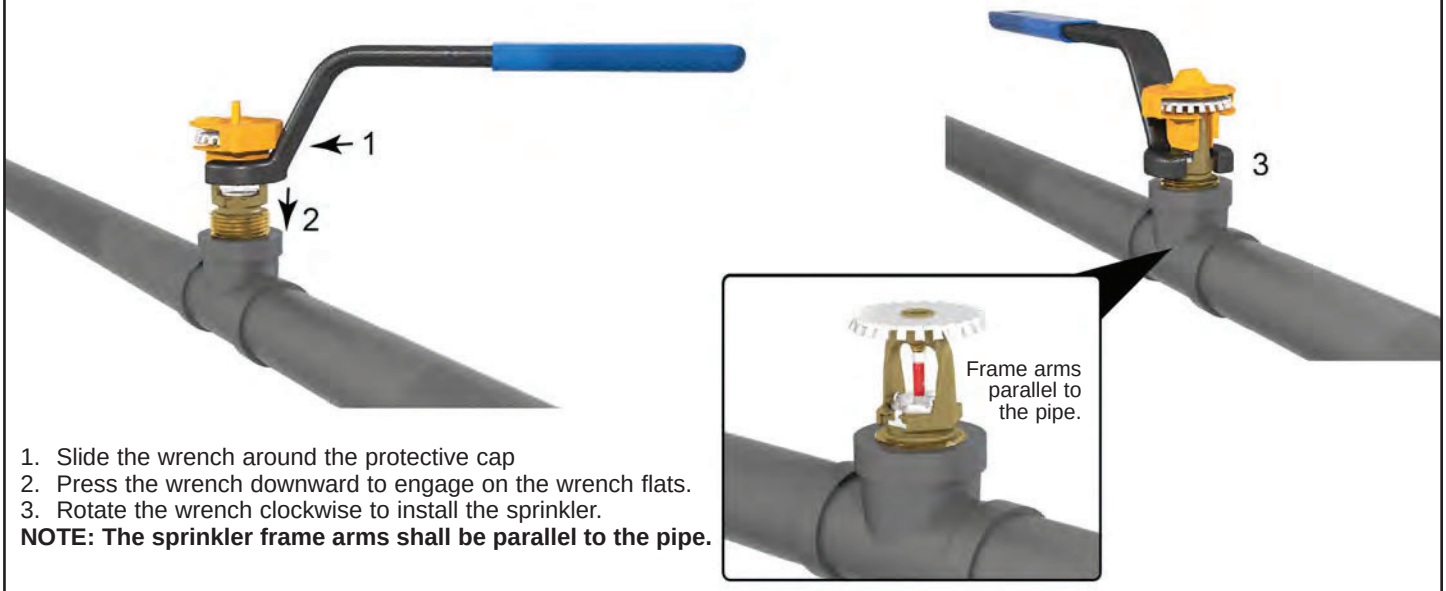
IMPORTANT: Always refer to Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking Technical Data, the appropriate standards of NFPA, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

VIKING®

TECHNICAL DATA

VK3001 QUICK RESPONSE UPRIGHT SPRINKLER (K5.6)

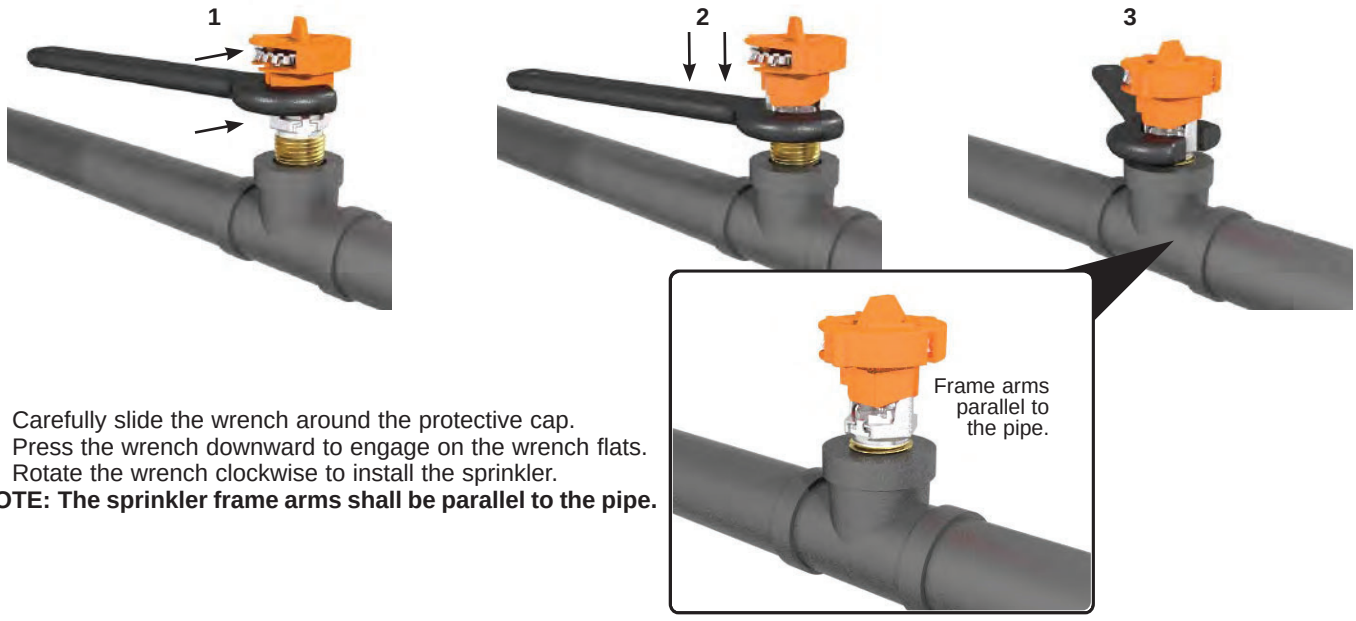
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com



1. Slide the wrench around the protective cap
2. Press the wrench downward to engage on the wrench flats.
3. Rotate the wrench clockwise to install the sprinkler.

NOTE: The sprinkler frame arms shall be parallel to the pipe.

Figure 3: Installation



1. Carefully slide the wrench around the protective cap.
2. Press the wrench downward to engage on the wrench flats.
3. Rotate the wrench clockwise to install the sprinkler.

NOTE: The sprinkler frame arms shall be parallel to the pipe.

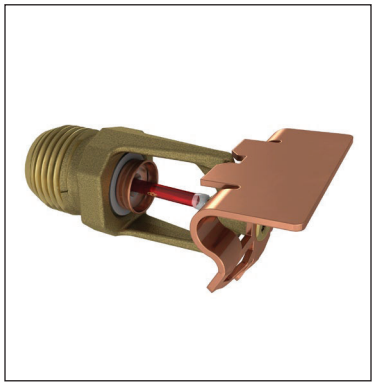
Figure 4: Installation (Straight Wrench)

VIKING	TECHNICAL DATA	MICROFAST® QUICK RESPONSE HORIZONTAL SIDEWALL SPRINKLER VK305 (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
Visit the Viking website for the latest edition of this technical data page: www.vikinggroupinc.com

1. DESCRIPTION

The Viking Microfast® Quick Response Horizontal Sidewall Sprinkler VK305 is a small thermosensitive glass bulb spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive atmospheres and are listed/approved as corrosion resistant as indicated in Approval Charts.



WARNING: Cancer and Reproductive Harm- www.P65Warnings.ca.gov

2. LISTINGS AND APPROVALS

cULus Listed: Category VNIV

FM Approved: Class 2020

China Approval: Approved according to China GB Standard

Refer to Approval Charts and Design Criteria for listing and approval requirements that must be followed.

3. TECHNICAL DATA

Specifications:

Minimum Operating Pressure: 7 psi (0.5 bar)
Rated to 175 psi (12 bar) water working pressure
Factory tested hydrostatically to 500 psi (34.5 bar)
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.

Overall Length: 2-3/4" (68 mm)

Material Standards:

Frame Casting: Brass UNS-C84400 or QM Brass
Deflector: Copper UNS-C19500
Bulb: Glass, nominal 3 mm diameter
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
Screw: Brass UNS-C36000
Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400
For Polyester Coated Sprinklers: Belleville Spring-Exposed
For ENT Coated Sprinklers: Belleville Spring - Exposed, Screw and Pip cap - ENT plated.

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

Order Viking Microfast® Quick Response Horizontal Sidewall Sprinkler VK305 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 = F, White Polyester = M-/W, Black Polyester = M-/B, and ENT = JN
Temperature Suffix: 135 °F / 57 °C = A, 155 °F / 68 °C = B, 175 °F / 79 °C = D, 200 °F / 93 °C = E, and 286 °F / 141 °C = G
For example, sprinkler 12997 with a Brass finish and a 155 °F / 68 °C temperature rating = Part No. 12997AB

Available Finishes And Temperature Ratings: Refer to Table 1.

Accessories: (Also refer to the Viking website.)

Sprinkler Wrenches:

A. Standard Wrench: Part No. 21475M/B (available since 2017).
B. Wrench for recessed and/or wax coated sprinklers: Part No. 13655W/B** (available since 2006)
**A ½" ratchet is required (not available from Viking).

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
Visit the Viking website for the latest edition of this technical data page: www.vikinggroupinc.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 link disengages, the pip cap and spring are released, and the waterway is opened. 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 Microfast® Quick Response Horizontal Sidewall Sprinkler VK305 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.

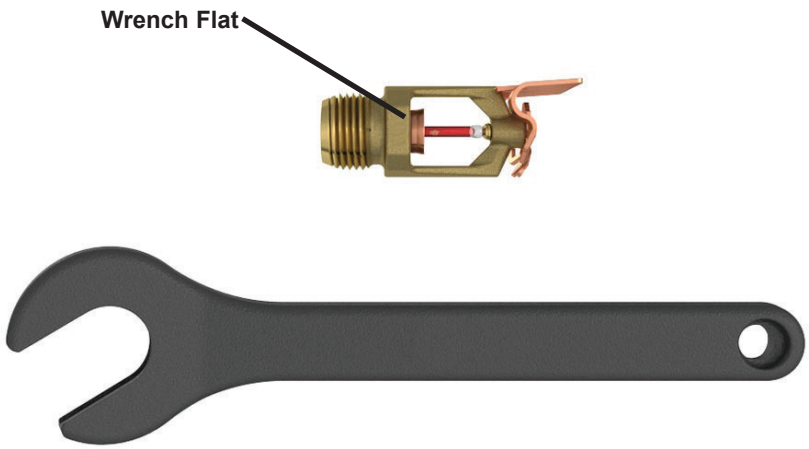


Figure 1:
Standard Sprinkler Wrench 21475M/B

VIKING	TECHNICAL DATA	MICROFAST® QUICK RESPONSE HORIZONTAL SIDEWALL SPRINKLER VK305 (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
Visit the Viking website for the latest edition of this technical data page: www.vikinggroupinc.com

TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating[1]	Maximum Ambient Ceiling Temperature[2]	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
Intermediate	200 °F (93 °C)	150 °F (65 °C)	Green
High	286 °F (141 °C)	225 °F (107 °C)	Blue

Sprinkler Finishes: Brass, Chrome, White Polyester, Black Polyester, and ENT

Corrosion-Resistant Coatings[3]: White Polyester, Black Polyester, and ENT

Footnotes

[1] The sprinkler temperature rating is stamped on the deflector.

[2] 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.

[3] The corrosion-resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Charts. These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For automatic sprinklers, the coatings indicated are applied to the exposed exterior surfaces only. For ENT coated sprinklers, the waterway is coated. Note that the spring is exposed on sprinklers with Polyester, and ENT coatings.

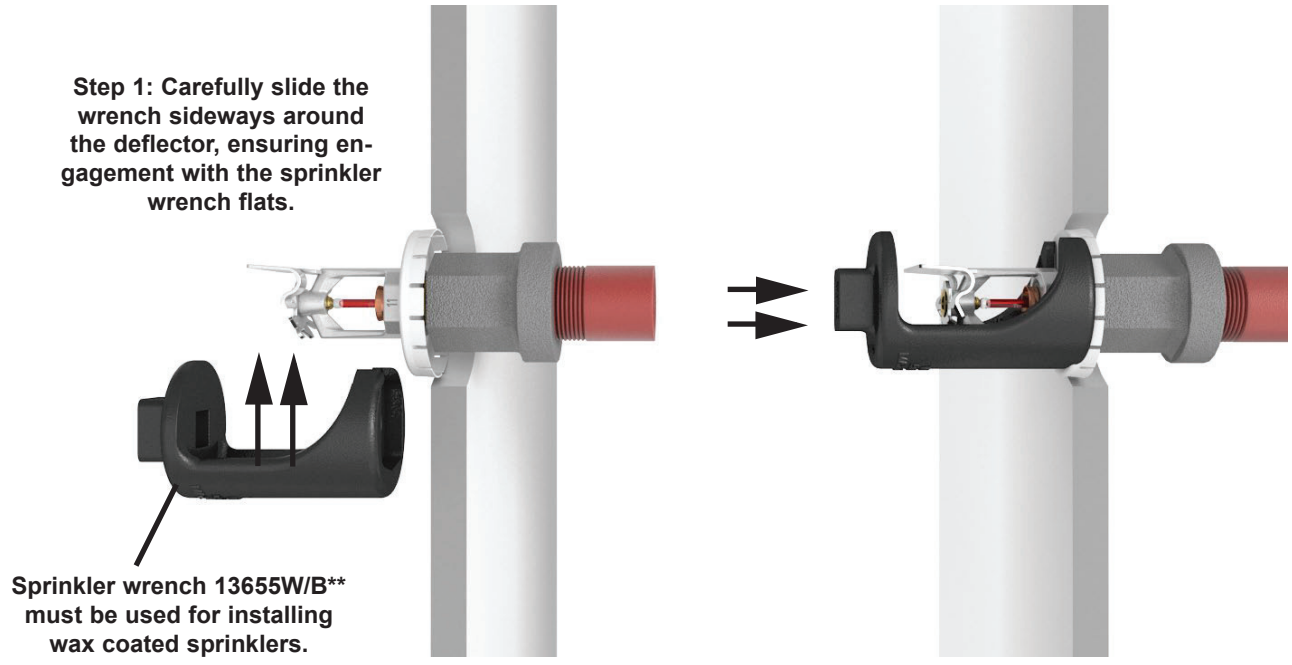


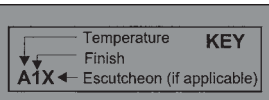
Figure 2: Wrench 13655W/B for Recessed Sprinklers

TECHNICAL DATA

MICROFAST® QUICK RESPONSE HORIZONTAL SIDEWALL SPRINKLER VK305 (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
Visit the Viking website for the latest edition of this technical data page: www.vikinggroupinc.com

Approval Chart 1 (UL)



Microfast® Quick Response Horizontal Sidewall Sprinkler VK305
For Light or Ordinary Hazard Occupancies
Maximum 175 PSI (12 Bar) WWP
Deflector must be located 4" to 12" (102 mm to 305 mm) below the ceiling.

Sprinkler Base Part Number[1]	SIN	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals[3] (Refer also to UL Design Criteria.)	
		NPT	BSPT	U.S.	metric[2]	Inches	mm	cULus[4]	China Approval
12997	VK305	1/2"	15 mm	5.6	80.6	2-11/16	68	A1W, B1X, C2W, D2Z	--
19782[7]	VK305	1/2"	--	5.6	80.6	2-11/16	68	E3	E3
NOTICE - Product Below - Limited Availability (Contact Local Viking Office)									
12121	VK305	1/2"	15 mm	5.6	80.6	2-11/16	68	A1W, B1X, C2W, D2Z	--

Approved Temperature Ratings

A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)
B - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)
C - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)
D - 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)
E - 155 °F (68 °C)

Approved Finishes

1 - Brass, Chrome, White Poly-ester[5,6], and Black Polyester[5,6]
2 - ENT[5]
3 - Chrome

Approved Escutcheons

W - Installed with standard surface-mounted escutcheons
X - Installed with standard surface-mounted escutcheons **or** recessed with the Viking Micromatic® Model E-1, E-2, or G-1 Recessed Escutcheon
Z - Installed with standard surface-mounted escutcheons or recessed with the Viking Micromatic Model E-1

Footnotes

[1] Base part number shown. For complete part number, refer to Viking's current price schedule.
[2] 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.
[3] This table shows the listings and approvals available at the time of printing. Other approvals may be in process.
[4] Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada.
[5] cULus Listed as corrosion-resistant.
[6] Other colors are available on request with the same Listings and Approvals as the standard colors.
[7] Approved according to China GB Standard.

DESIGN CRITERIA - UL

(Also refer to Approval Chart 1.)

cULus Listing Requirements:

Quick Response Horizontal Sprinkler VK305 is cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for sidewall standard spray sprinklers.

- Designed for use in Light and Ordinary Hazard occupancies.
- Locate with the deflector 4" to 12" (102 mm to 305 mm) below the ceiling.
- 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).
- Align the top of the deflector parallel with the ceiling.
- Locate no less than 4" (102 mm) from end walls.
- 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.
- The sprinkler installation and obstruction rules contained in NFPA 13 for sidewall standard spray sprinklers must be followed.

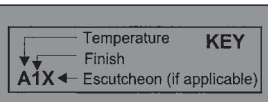
IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Bulletin Form No. F_080614 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

VIKING	TECHNICAL DATA	MICROFAST® QUICK RESPONSE HORIZONTAL SIDEWALL SPRINKLER VK305 (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
Visit the Viking website for the latest edition of this technical data page: www.vikinggroupinc.com

Approval Chart 1 (FM)

Microfast® Quick Response Sidewall Sprinklers
Maximum 175 PSI WWP



Sprinkler Base Part Number[1]	SIN	Thread Size		Nominal K-Factor		Overall Length		FM Approvals[3,4] (Refer also to Design Criteria below.)	
		NPT	BSPT	U.S.	metric[2]	Inches	mm		
12997	VK305	1/2”	15 mm	5.6	80.6	2-11/16	68	A1Y, B1X	
NOTICE - Product Below - Limited Availability (Contact Local Viking Office)									
12121	VK305	1/2”	15 mm	5.6	80.6	2-11/16	68	A1W, B1X, C2W, D2Z	--

Approved Temperature Ratings	Approved Finishes	Approved Escutcheons
A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C) B - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)	1 - Brass	X - Installed with standard surface-mounted escutcheons **or** recessed with the Viking Micromatic® Model E-1, E-2, E-3, or G-1 Recessed Escutcheon Y - Installed with standard surface-mounted escutcheons

Footnotes

[1] Base part number shown. For complete part number, refer to Viking’s current price schedule.
[2] 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.
[3] This table shows the FM Approvals available at the time of printing. Other approvals may be in process.
[4] Viking vertical sidewall sprinklers may be installed pendent or upright.
[5] Approved according to China GB Standard.

DESIGN CRITERIA - FM

(Also refer to Approval Chart 2 above.)

FM Approval Requirements:

Horizontal Sidewall Sprinkler VK305 is FM Approved as a quick response **Non-Storage** 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.

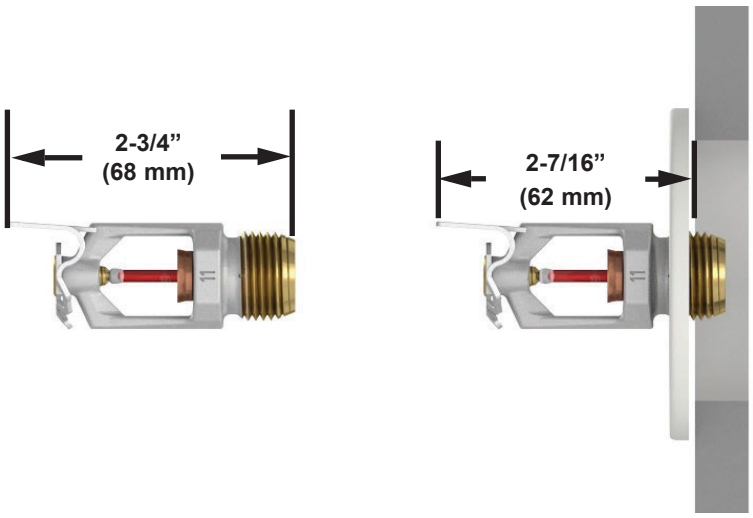
NOTE: The FM installation guidelines may differ from cULus and/or NFPA criteria.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Bulletin Form No. F_080614 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.

MICROFAST® QUICK RESPONSE HORIZONTAL SIDEWALL SPRINKLER VK305 (K5.6)

TECHNICAL DATA

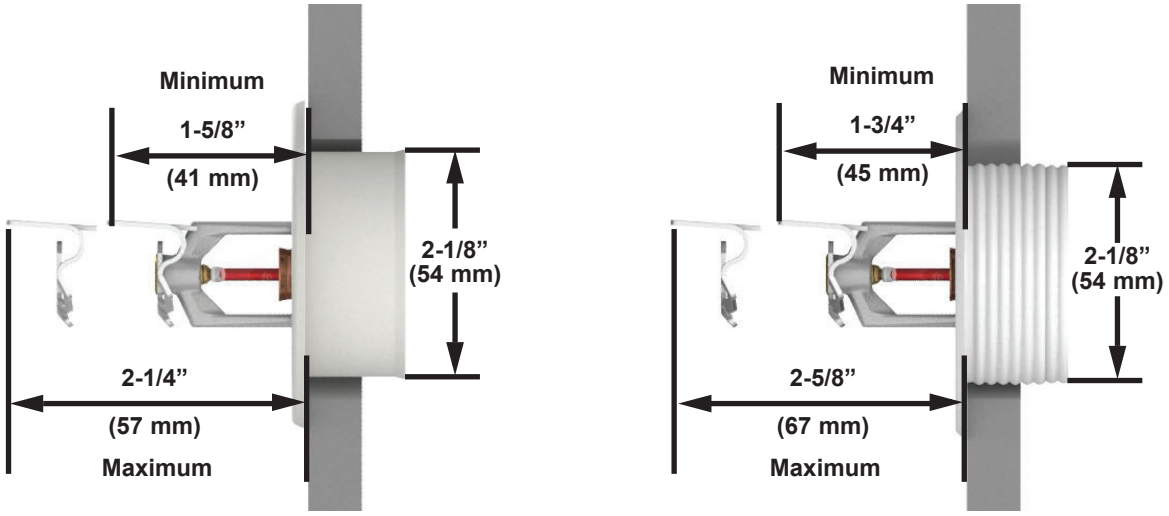
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page: www.vikinggroupinc.com



Wall Opening Size:
2-5/16” (58.7 mm) minimum
2-1/2” (63.5 mm) maximum

Installed with a Standard 1/8” Surface-Mounted Escutcheon

Figure 3: Sidewall Sprinkler Dimensions with a Standard Escutcheon



Wall Opening Size:
2-5/16” (58.7 mm) minimum
2-1/2” (63.5 mm) maximum

Installed with the Micromatic Model E-1 Recessed Escutcheon

Installed with the Threaded Model E-2 Recessed Escutcheon

Figure 4: Sidewall Sprinkler VK305 Dimensions with the Model E-1 and E-2 Recessed Escutcheons

VIKING®	TECHNICAL DATA	STANDARD AND QUICK RESPONSE CONCEALED PENDENT SPRINKLER VK4621 (K5.6)

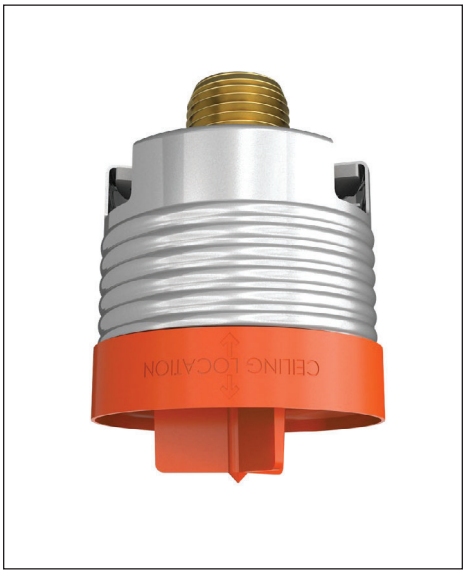
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

1. DESCRIPTION

Viking Standard and Quick Response Concealed Pendent Sprinkler VK4621 is a thermosensitive glass-bulb spray sprinkler designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired.

The sprinkler consists of a permanently mounted and threaded adapter cup designed to be installed with a low-profile cover assembly that provides up to ½" (13 mm) of vertical adjustment. The two-piece design allows installation and testing of the sprinkler prior to installation of the cover plate. The threaded design of the concealed cover plate assembly allows easy installation of the cover plate after the system has been tested and the ceiling finish has been applied. The cover assembly can be removed and reinstalled, allowing temporary removal of ceiling panels without taking the sprinkler system out of service or removing the sprinkler. During installation of the sprinkler and system testing, the newly designed protective cap guards the sprinkler frame from damage.

The Electroless Nickel PTFE (ENT) coating has been investigated for installation in corrosive environments and is listed and approved as indicated in the Approval Charts. The ENT finish is only available for the sprinkler assembly, the cover plate is not plated.



WARNING: Cancer and Reproductive Harm- www.P65Warnings.ca.gov

2. LISTINGS AND APPROVALS

cULus Listed: Category VNIV

FM Approved: Class 2015
Also approved for use in FM Approved vacuum dry sprinkler systems with a maximum supervisory vacuum pressure of -3 psi (-207mbar)

Refer to the Approval Charts and Design Criteria on for cULus Listing requirements that must be followed.

3. TECHNICAL DATA

Specifications:
Minimum Operating Pressure: 7 psi (0.5 bar)
Maximum Working Pressure: FM - 175 psi (12 bar). UL - 250 psi (17.2 bar)
Factory tested hydrostatically to 500 psi (34.5 bar).
Thread size: 1/2" (15 mm) NPT or 15 mm BSPT
Nominal K-Factor: 5.6 U.S. (80.6 metric*)
Glass-bulb fluid temperature rated to -65 °F (-55 °C)

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

Material Standards:
Sprinkler Frame: QM Brass
Deflector: Phosphor Bronze UNS-C51000
Deflector Pins: Stainless Steel UNS-S43000
Pip Cap and Insert Assembly: Copper UNS-C11000, SS UNS-S30400 and SS UNS-S31600
Compression Screw: UNS-C36000
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
Cover Adapter: Cold Rolled Steel UNS-G10080, Finish: Clear Chromate over Zinc Plating
Shipping Cap: HPDE

Cover Plate Materials:
Cover Plate Assembly: Copper UNS-C11000 and Brass UNS-C26800 or Stainless Steel UNS-S30400
Spring: Beryllium Nickel
Solder: Eutectic

Ordering Information: Refer to Tables 1 and 2.

4. INSTALLATION

Refer to appropriate NFPA Installation Standards and installation instructions in this document.

VIKING®

TECHNICAL DATA

STANDARD AND QUICK RESPONSE CONCEALED PENDENT SPRINKLER VK4621 (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
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

5. OPERATION

During fire conditions, when the temperature around the sprinkler approaches its operating temperature, the cover plate detaches, releasing the deflector. Continued heating of the exposed sprinkler causes the heat-sensitive liquid in the glass bulb to expand, causing the glass to shatter, releasing the pip cap and sealing spring assembly. 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 Model VK4621 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.

TABLE 1: ORDERING INFORMATION

Instructions:
(1) Select a Sprinkler Base Part Number
(2) Add the suffix for the desired Finish
(3) Add the suffix for the desired Sprinkler Temperature Rating
(4) Order a cover plate (refer to Table 2)

Example:
22961AE = 200 °F (93 °C) Temperature Rated Sprinkler with a standard Brass finish.

Sprinkler Base Part No.	Size		1: Finishes		2: Temperature Ratings				
	NPT Inch	BSPT mm	Description	Suffix[1]	Sprinkler Temperature Classification	Nominal Rating	Bulb Color	Max. Ambient Ceiling Temperature[2]	Suffix
22961	1/2	--	Brass	A	Ordinary	155 °F (68 °C)	Red	100 °F (38 °C)	B
22962	--	15	ENT [3,4]	JN	Intermediate	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
					Intermediate	200 °F (93 °C)	Green	150 °F (65 °C)	E

Accessories

Sprinkler Wrenches[5] and Tools (see Figure 1):

A. Heavy Duty Wrench - part number: 22978MB
B. Installation Wrench - part number 23143
C. Protective cap removal tool - part number: 23142

Sprinkler Cabinet:

Part number 01731A.

Footnotes

1. Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.
2. Based on NFPA 13, NFPA 13R, and NFPA 13D. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
3. UL Listed as corrosion resistant.
4. The corrosion resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Chart. These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.
5. Requires a 1/2" ratchet which is not available from us.

VIKING®

TECHNICAL DATA

STANDARD AND QUICK RESPONSE CONCEALED PENDENT SPRINKLER VK4621 (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
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

TABLE 2: COVER PLATE ORDERING INFORMATION

Instructions:
(1) Select a Cover Plate Base Part Number
(2) Add the suffix for the desired Finish
(3) Add the suffix for the required Cover Plate Nominal Rating.

Example:
23190MC/W = 165 °F (74 °C) Temperature Rated 2-3/4" (70 mm) diameter Round Cover Plate with a Painted White finish.

1: Select a Cover Plate Base Part Number[3]						2: Select a Finish	
Thread-On Style			Push-On Style				
Base Part Number	Size Inch (mm)	Type	Base Part Number	Size Inch (mm)	Type	Description	Suffix[5]
23190	2-3/4 (70)	Round	23447	2-3/4 (70)	Round	Polished Chrome	F
23174	3-5/16 (84)	Round	23463	3-5/16 (84)	Round	Brushed Chrome	F-/B
23179	3-5/16 (84)	Square	23482	3-5/16 (84)	Square	Bright Brass	B
23193[4]	2-3/4 (70)	Stainless Steel Round	23455	2-3/4 (70)	Stainless Steel Round	Antique Brass	B-/A
						Brushed Brass	B-/B
23183[4]	3-5/16 (84)	Stainless Steel Round	23473	3-5/16 (84)	Stainless Steel Round	Brushed Copper	E-/B
						Painted White	M-/W
23174-/CR	3-5/16 (84)	Clean Room	23463-/CR	3-5/16 (84)	Clean Room	Painted Ivory	M-/I
23183-/CR	3-5/16 (84)	Stainless Steel Round Clean Room	23473-/CR	3-5/16 (84)	Stainless Steel Round Clean Room	Painted Black	M-/B

3: Temperature Rating Matrix[1,2]				
Cover Plate Nominal Rating (Required)	Temperature Classification	Sprinkler Nominal Rating	Sprinkler Maximum Ambient Ceiling Temperature[2]	Suffix
UL: 135 °F (57 °C) FM: 139° F (59 °C)	Ordinary	155 °F (68 °C)	100 °F (38 °C)	**A**
165 °F (74 °C)	Intermediate	175 °F (79 °C)	150 °F (65 °C)	**C**
165 °F (74 °C)	Intermediate	200 °F (93 °C)	150 °F (65 °C)	**C**

Footnotes

1. The sprinkler temperature rating is stamped on the deflector.
2. 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.
3. Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.
4. Stainless Steel versions are not available with any finishes or paint.
5. Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.

A

Heavy Duty Wrench

B

Installation Wrench

C

Cap Removal Tool

Figure 1: Sprinkler Wrenches and Cap Removal Tool

VIKING®	TECHNICAL DATA	STANDARD AND QUICK RESPONSE CONCEALED PENDENT SPRINKLER VK4621 (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
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

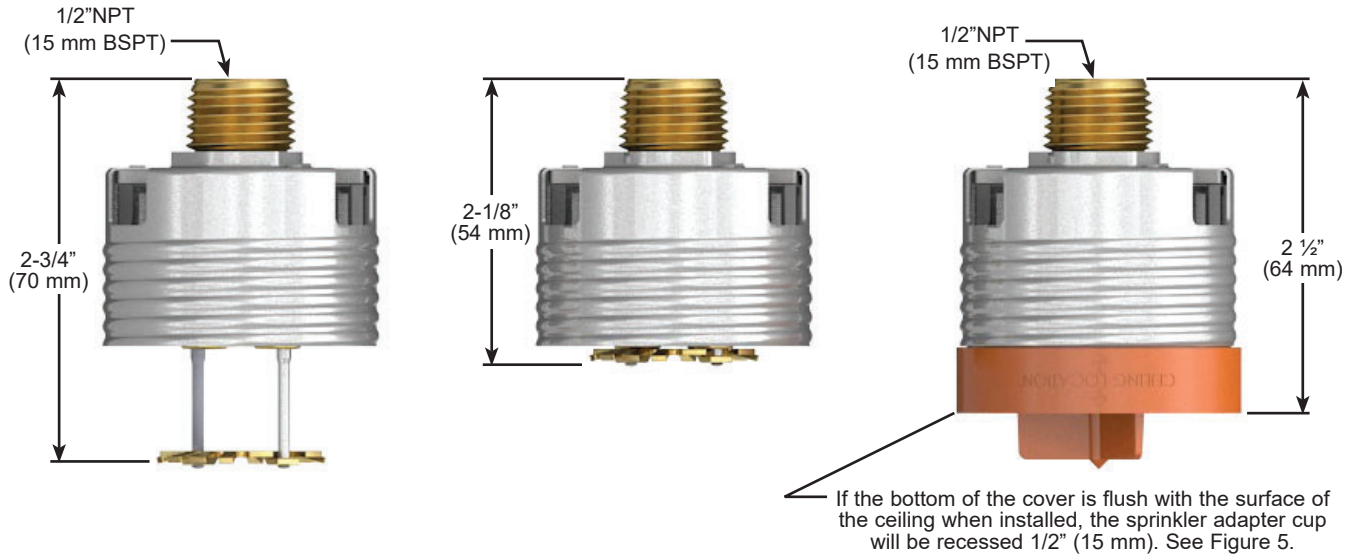


Figure 2: Sprinkler Dimensions

All custom color painted cover plates will have an identifying label affixed to the inside of the cover that indicates the custom color and will have a representative sample (a paint dot) of the paint on the label.

Figure 3: Identification of Custom Paint

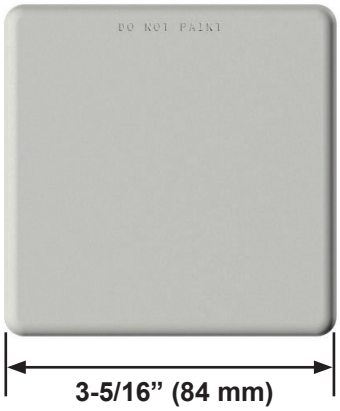


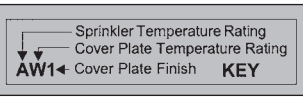
Figure 4: Square Cover Assembly

VIKING®	TECHNICAL DATA	STANDARD AND QUICK RESPONSE CONCEALED PENDENT SPRINKLER VK4621 (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
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

Approval Chart

Concealed Pendent Sprinkler VK4621



Sprinkler Base Part No.[1]	SIN	Thread Size		Nominal K-factor		Maximum Water Working Pressure		Listings and Approvals[3] (Refer also to Design Criteria)	
		NPT Inch	BSPT mm	U.S.	metric[2]	FM	cULus	cULus[4]	FM
Standard Response Applications									
22961A	VK4621	1/2”	--	5.6	80.6	175 psi (12 bar)	--	--	AV1, BX1, AS2, BT2
22961JN[7]	VK4621	1/2”	--	5.6	80.6	175 psi (12 bar)	--	--	--
22962A	VK4621	--	15	5.6	80.6	175 psi (12 bar)	--	--	AV1, BX1, AS2, BT2
22962JN[7]	VK4621	--	15	5.6	80.6	175 psi (12 bar)	--	--	--
Quick Response Applications									
22961A	VK4621	1/2”	--	5.6	80.6	--	250 psi (17.2 bar)	AV1, BX1, AS2, BT2, AY3, BZ3	--
22961JN[7]	VK4621	1/2”	--	5.6	80.6	--	250 psi (17.2 bar)	AV1, BX1, AS2, BT2, AY3, BZ3	--
22962A	VK4621	--	15	5.6	80.6	--	250 psi (17.2 bar)	AV1, BX1, AS2, BT2, AY3, BZ3	--
22962JN[7]	VK4621	--	15	5.6	80.6	--	250 psi (17.2 bar)	AV1, BX1, AS2, BT2, AY3, BZ3	--

Sprinkler Temperature Ratings	Cover Plate Assembly Temperature Ratings[5]	Cover Plate Assembly Finishes
A = 155 °F (68 °C) B = 175 °F (79 °C) and 200 °F (93 °C)	S - 135 °F (57 °C) cULus Listed or 139 °F (59 °C) FM Approved Stainless Steel cover 23193 and 23455, or 23183 and 23473 (large diameter) T - 165 °F (74 °C) Stainless Steel cover 23193 and 23455 or 23183 and 23473 (large diameter) V - 135 °F (57 °C) cULus Listed or 139 °F (59 °C) FM Approved cover 23190 and 23447, 23174 and 23463 (large diameter), or 23179 and 23482 (square cover plate) X - 165 °F (74 °C) cover 23190 and 23447, or 23174 and 23463 (large diameter) Y - 135 °F (57 °C) Clean Room Cover 23174A-/CR and 23463A-/CR or 135 °F (57 °C) Stainless Steel Clean Room Cover 23183A/CR and 23473A/CR Z - 165 °F (74 °C) Clean Room Cover 23174C-/CR and 23463C-/CR	1 - Polished Chrome, Brushed Chrome, Bright Brass, Antique Brass, Brushed Brass, Brushed Copper, Painted[6] White, Painted[6] Ivory, or Painted[6] Black 2 - Stainless Steel 3 - Polished Chrome, Painted White, Painted Ivory, or Painted Black

Footnotes

1. Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.
2. 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.
3. 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.
4. Listed by Underwriter’s Laboratories for use in the U.S. and Canada.
5. The 135 °F (57 °C) [139 °F (59 °C)] covers have an orange label. The 165 °F (74 °C) covers have a white label.
6. 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.
7. cULus Listed as corrosion resistant.

NOTE: Custom colors are indicated on a label inside the cover assembly. Refer to Figure 3.

VIKING®	TECHNICAL DATA	STANDARD AND QUICK RESPONSE CONCEALED PENDENT SPRINKLER VK4621 (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
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

DESIGN CRITERIA - UL

(Also refer to Approval Chart)

cULus Listing Requirements:

Concealed Pendent Sprinkler VK4621 is cULus Listed as quick response for installation in accordance with the latest edition of NFPA 13 for standard coverage pendent spray sprinklers as indicated below.

- For hazard occupancies up to and including Ordinary Hazard, Group II.
- Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13. Maximum spacing allowed is 15 ft. (4.6 m).
- Minimum spacing allowed is 6 ft. (1.8 m) unless baffles are installed in accordance with NFPA 13.
- Minimum distance from walls is 4 in. (102 mm).
- 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 obstruction rules contained in NFPA 13 for standard coverage pendent spray sprinklers must be followed.

NOTE: Concealed sprinklers must be installed in neutral or negative pressure plenums only.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 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.

DESIGN CRITERIA - FM

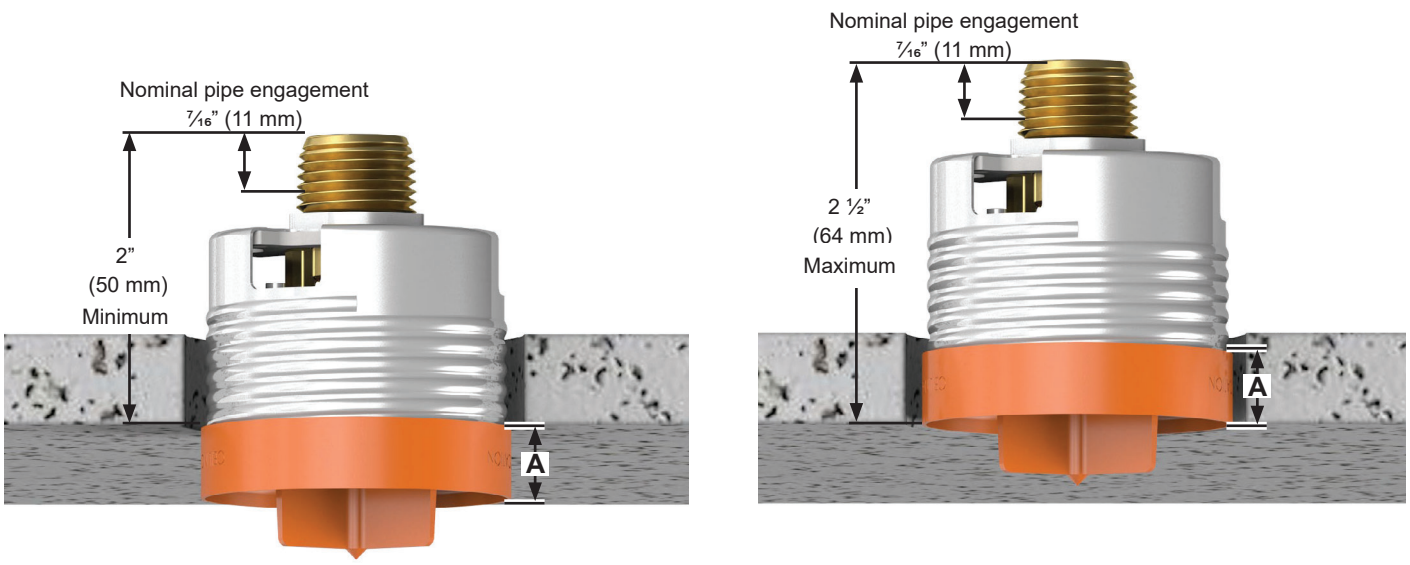
(Also refer to Approval Chart)

FM Approval Requirements:

Viking Concealed Pendent Sprinkler VK4621 is FM Approved as a standard response **Non-Storage** concealed pendent 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.

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 Form No. F_080614 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.



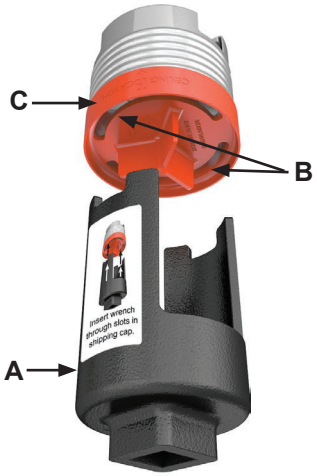
Install the sprinkler so the finished surface of the ceiling lines up within the marked ½" (13 mm) range on the protective cap (A).

Figure 5: Sprinkler Installation Dimensions

VIKING®	TECHNICAL DATA	STANDARD AND QUICK RESPONSE CONCEALED PENDENT SPRINKLER VK4621 (K5.6)

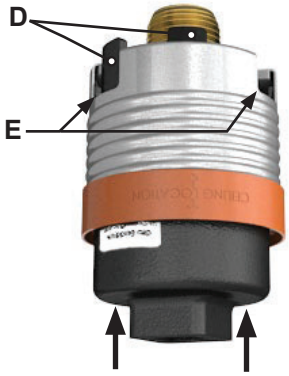
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

USE ONLY the designated sprinkler wrenches shown in this document. Permanent damage to the sprinkler assembly can occur if the proper wrench is not used. Other sprinkler wrenches available from Viking may fit into the sprinkler adapter cup; however, only the wrenches shown here are designed to properly install this sprinkler.



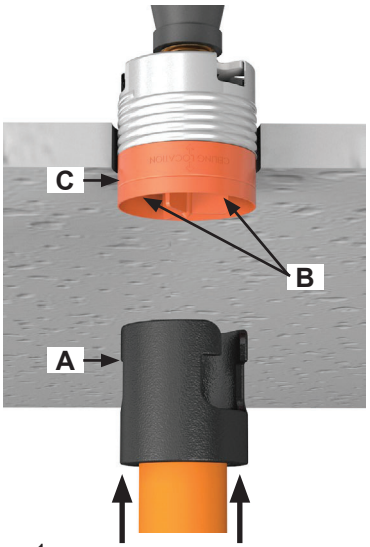
Step 1:
Insert the wrench (A) into the slots (B) on the protective cap (C).

Scan for Installation Video

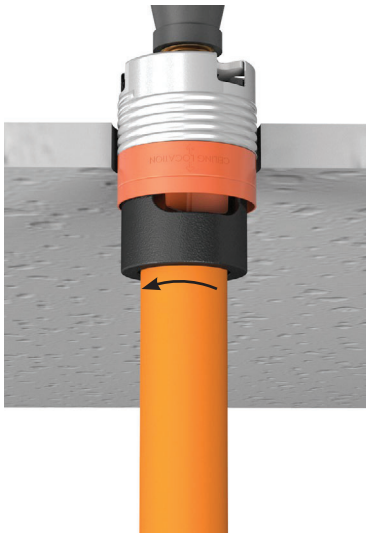


Step 2:
Rotate the wrench slightly in either direction until the tines on the wrench (D) line up with the vent openings (E) on the adapter cup and lock into place. NOTE: A leak tight seal must be achieved. Turn the sprinkler clockwise 1 to 1-½ turns past finger-tight.

Figure 6: Using the Sprinkler Wrenches



Step 1:
Attach a peice of plastic pipe as shown and tighten the thumb screw; then, insert the tool (A) into the slots (B) in the protective cap (C).

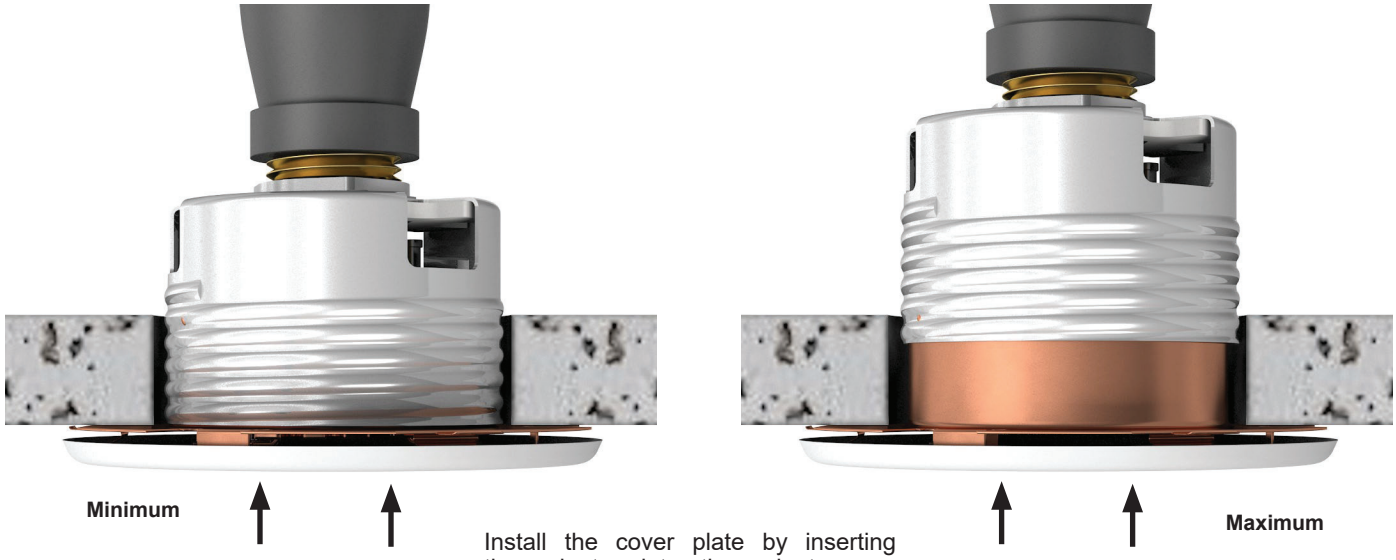


Step 2:
Rotate the tool slightly to lock into place.

Step 2:
Gently, pull downward to remove the protective cap. The deflector will slide downwards on the pins.

Figure 7: Using the Cap Removal Tool

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
Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com



Install the cover plate by inserting the adpater into the adapter cup and (depending on style) pushing or threading into place. Snug the cover plate in place by rotating clockwise. Ensure the cover plate is flush with the ceiling as shown to allow airflow through the sprinkler assembly.

Figure 8: Installing The Cover Plate

4077 Airpark Dr. Standish, MI 48658 • 989-846-4583 • www.globesprinkler.com
Technical Support • 989-414-2600 • techservice@globesprinkler.com

LOW FLOW SPECIFIC APPLICATION ATTIC PROTECTION SCHEME

GENERAL DESCRIPTION

The Globe Low Flow Specific Application Attic Protection Scheme has undergone full scale fire testing with Underwriters Laboratories and is Listed to be utilized per NFPA 13 in conformance with the New Technology and Equivalency Sections as well as the Special Sprinkler Section.

The Globe Low Flow Specific Application Attic Protection Scheme has been engineered to consider all construction conditions typically found in the attic built environment. The scheme utilizes a unique strategy with two distinct types of special sprinklers. The positioning and use of these sprinklers in conjunction with each other, and their complimentary effects on fire control has been carefully considered for sloped attic spaces, with exposed upper structural members creating “channels” as well as with upper roof surfaces without channels (i.e. non-combustibe insulation filled channels creating a flat sloped surface). Consequently, the required number of sprinklers to calculate and system demand is drastically reduced from that seen with standard protection schemes or even the more recent Special Application schemes.

The Globe Low Flow Specific Application Attic Protection Scheme utilizes two specially listed sprinklers, each with a fixed flow and pressure requirement. The "Area/Density" allowances of NFPA 13 do not apply and reductions in flow cannot be taken for reduced spacing. Moreover, as a fixed flow and pressure sprinkler which has been full scale fire tested in its intended installed environment, the slope ceiling penalty of "Area/Density" sprinklers per the prescriptive requirements of NFPA 13 does not apply. The Globe Specific Application scheme is based on full scale fire testing resulting in anticipated Heat Affected Zones of Protection

The Globe Low Flow Attic Protection Scheme requires identifying any of four separate “spaces” within an attic; “Ridgeline”; “Downslope”; “Lower Hip” and “Upper Hip”. See FIGURE 1.

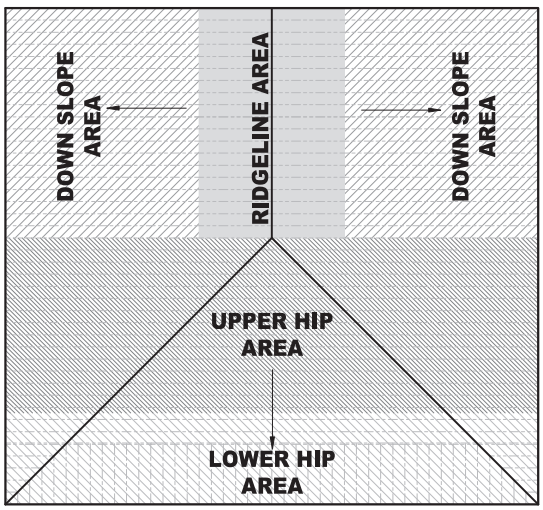


FIGURE 1: ATTIC AREA OF PROTECTION

MODEL GL-SS/RE
GL5620

MODEL GL-SS/DS
GL5621

Multiple Patents Pending

SYSTEM CRITERIA

SLOPE

- 3:12 up to and including 6:12

SPAN

- 1 Branchline up to 24 ft
- 3 Branchlines up to 72 ft

TOTAL SYSTEM DEMAND

- See Hydraulic Calculation section for details

ATTIC CEILING CONFIGURATION

- Exposed Upper Structural Members
- Non-Combustible Insulation Filled Channels Flat Sloped Upper Surfaces

AREA OF USE

LIGHT HAZARD CONCEALED ATTIC SPACES:

RIDGELINE

Sprinkler Model: GL-SS/RE • K-Factor: 5.6
• Temperature: 200° F

DOWNSLOPE

Sprinkler Model: GL-SS/DS • K-Factor: 5.6
• Temperature: 200° F
Sprinkler Model: GL-SS/RE • K-Factor: 5.6
• Temperature: 200° F

EAVE

Sprinkler Model: GL-SS/RE • K-Factor: 5.6
• Temperature: 200° F

HIP

Sprinkler Model: GL-SS/RE • K-Factor: 5.6
• Temperature: 200° F

NOTE:
Users should refer to Globe’s web site (www.globesprinkler.com) to assure that the most recent technical literature is being utilized.

TECHNICAL DATA

Approvals
- cULus

Maximum Working Pressure
- 175 psi (12 bar)
- Factory tested to 500 psi (34 bar)

Minimum Low Temperature
- -40°F (-40°C)

Minimum Operating Pressure
- 12.8 psi (0.88 bar)

Temperature Rating
- 200°F (93.3°C)

Response Type
- Quick Response

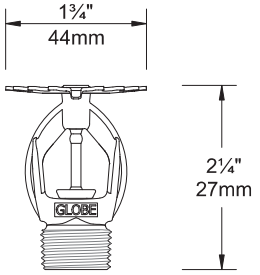


FIGURE 2: MODEL GL-SS/RE GL5620

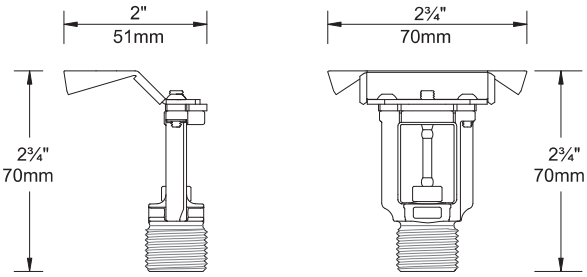
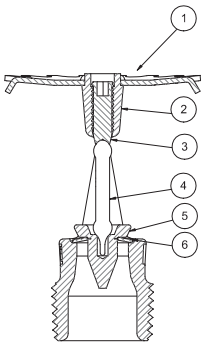
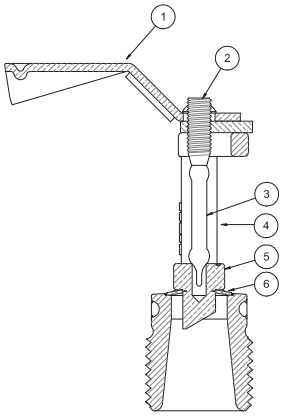


FIGURE 3: MODEL GL-SS/DS GL5621



ITEM NO.	DESCRIPTION	MATERIAL
1	DEFLECTOR	Bronze
2	FRAME	Brass
3	COMPRESSION SCREW	Brass
4	BULB	Glass 3mm diameter
5	BULB SEAT	Bronze
6	BULB SEAT GASKET	Teflon
7	BELLEVILLE SPRING	Steel

FIGURE 4: MODEL GL-SS/RE GL5620 MATERIALS OF CONSTRUCTION



ITEM NO.	DESCRIPTION	MATERIAL
1	DEFLECTOR	Bronze
2	COMPRESSION SCREW	Brass
3	BULB	Glass 3mm diameter
4	FRAME	Brass
5	BULB SEAT	Brass
6	BULB SEAT GASKET	Teflon

FIGURE 5: MODEL GL-SS/DS GL5621 MATERIALS OF CONSTRUCTION

OPERATION

Upon the application of sufficient heat, the fluid within the bulb expands, compressing the air bubble within the bulb. When the air bubble can no longer compress, the fluid expansion results in breakage of the glass bulb, allowing the evacuation of the water seat assembly, and discharge of water from the sprinkler.

INSTALLATION

The Globe Specific Application Attic Sprinklers for Protecting Attics must be installed in accordance with this section.

The Globe GL-SS/RE and GL-SS/DS Specific Application Attic Sprinklers comprise an overall protection scheme which takes into account strategic positioning for activation sensitivity while providing unique distribution characteristics specifically designed for attic construction.

The protection methodology utilizing these sprinklers has been full scale fire tested in the built attic environment. As such, they must be installed in accordance with the guidelines set forth within this data sheet. The NFPA 13 Density/Area prescriptive spacing requirements do not apply as these sprinklers are not bound by the NFPA 13 "S x L Rules". The positioning and spacing requirements of this data sheet take precedence over any other prescriptive requirements that may exist in NFPA 13.

NOTICE

Do not install any bulb-type sprinkler if the bulb is cracked or there is loss of liquid from the bulb. A leak-tight 1/2 inch NPT sprinkler joint should be obtained by applying a torque of approximately 7 to 14 ft.-lb. (9,5 to 19,0 Nm). Higher levels of torque can distort the sprinkler inlet resulting in possible leakage.

To install the Globe Specific Application Attic Sprinklers, the following steps shall be taken:

Step 1. Sprinklers must be oriented correctly as follows:

- Series GL-SS/RE Sprinklers

– At horizontal ridge (peak) - installed in the upright vertical position with deflector parallel to the ceiling below (i.e. sprinkler centerline perpendicular to the ridgeline).

– Near eave or under hip type roofs - installed in the upright position with deflector parallel to roof deck (i.e. sprinkler centerline perpendicular to the roof slope).

- Series GL-SS/DS Sprinklers

– These sprinklers are installed downslope from a ridgeline/peak (See FIGURE 11). Installed in the upright position with deflector parallel to roof deck (i.e. sprinkler centerline perpendicular to the roof slope).

Step 2. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Note: Do not grasp the sprinkler by the deflector.

Step 3. Wrench-tighten the sprinkler using only the appropriate wrench. Wrenches are only to be applied to the sprinkler wrench flats or wrench hex, as applicable.

Note: Do not apply wrench to frame arms.

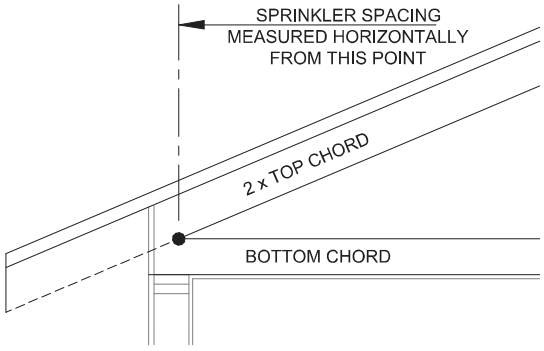


FIGURE 6A

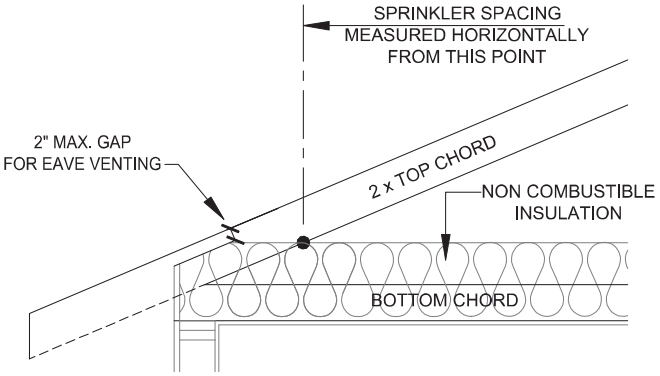


FIGURE 6B

FIGURE 6: DIMENSION FROM EAVE

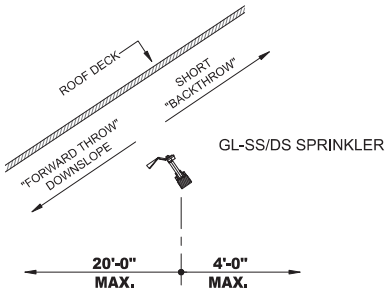


FIGURE 7: SPRINKLER FRAME ORIENTATION TO ROOF SLOPE

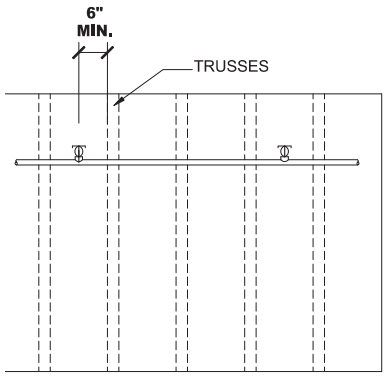


FIGURE 8: DIMENSION FROM TRUSS

GABLE STYLE ROOF

OPTION 1: RIDGE SPRINKLERS ONLY

- When utilizing this option Model GL-SS/RE sprinklers are used to protect the entirety of the attic space. The span of the attic is measured along the floor (or ceiling of floor below) of the attic space from the peak to the intersection of the bottom of the top chord of the roof joist and the non-combustible insulation or floor joist on the floor (or ceiling of floor below). The span is twice the longer of the two measured spans. (See FIGURE 6)
- The maximum span which can be protected by a single line of GL-SS/RE sprinklers at the peak is a total span of 24 ft or a maximum half span of 12 ft.

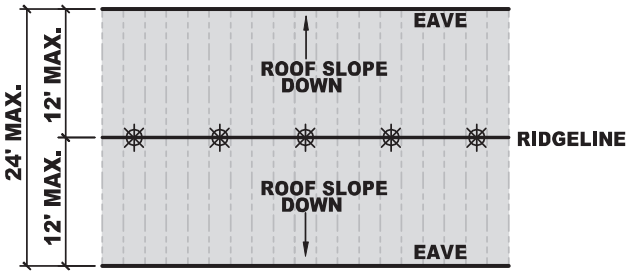


FIGURE 9A

OPTION 2: RIDGELINE SPRINKLERS/EAVE SPRINKLERS (GL-SS/RE)

- This approach utilizes the GL-SS/RE sprinklers at the Ridgeline and downslope covering to the eave. (See FIGURE 10 for dimensional limitations)

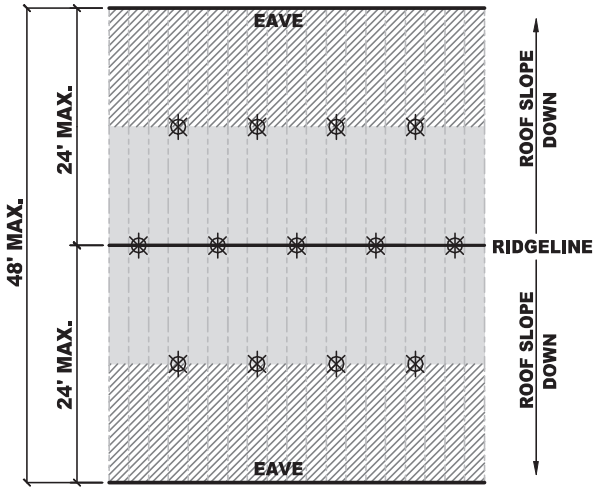


FIGURE 9B

OPTION 3: RIDGELINE SPRINKLERS WITH DOWNSLOPE SPRINKLERS

- The maximum span of this approach is 72 ft or a half span of 36 ft. as measured horizontally. (See FIGURE 10 and FIGURE 11 for dimensional limitations)

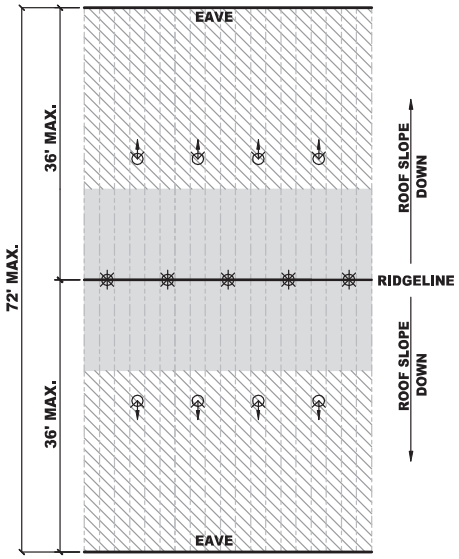


FIGURE 9C

= MODEL GL-SS/RE
= MODEL GL-SS/DS

FIGURE 9: PROTECTION OPTIONS

RIDGELINE DESIGN CRITERIA

SPRINKLER MODEL

- GL-SS/RE

FLOW RATE

- 20 gpm

DISTANCE BETWEEN SPRINKLERS ALONG RIDGE

- Minimum 6 ft
- Maximum 8 ft

MINIMUM DISTANCE TO DOWNSLOPE SPRINKLER

- 6 ft (measured horizontally)

MA IMUM DISTANCE TO DOWNSLOPE SPRINKLER

- 16 ft (measured horizontally)

DEFLECTOR DISTANCE BELOW CEILING (AT RIDGELINE)

- Minimum 16 in
- Maximum 24 in

DEFLECTOR DISTANCE BELOW CEILING (WHEN DOWNSLOPE OF RIDGELINE)

- Install with deflector below bottom of top chord 1"minimum to 3" maximum.

LATERAL MA IMUM DISTANCE FROM RIDGELINE

- 12 in

DISTANCE FROM HIP PEAK

- Minimum 1 ft
- Maximum 4 ft

INSTALLATION

- When installed for Ridgeline protection, the GL-SS/RE Sprinkler has a zone of protection of 24 ft. wide as measured horizontally across the ridgeline). The maximum zone of protection on either side of the ridgeline is 12 ft. (as measured horizontally). The zone of protection along the ridgeline is 8 ft. (4 ft. maximum to either side of the GL-SS/RE Sprinkler).
- When a GL-SS/RE sprinkler is installed under a horizontal Ridge, the deflector is to be positioned parallel with the floor/ceiling below. (Regardless of allowed offset from directly below ridge)
- Maximum span for GL-SS/RE sprinkler to cover is 24 ft wide attic.
- Sprinklers must be installed with the frame arms parallel to the ridge.
- Centerline of sprinkler must be a minimum of 6" laterally from face of any truss. (see FIGURE 8)
- For obstruction criteria, see Obstruction section within this data sheet.
- When installed under a flat sloped ceiling (non-combustible insulation filled joist channels) maximum deflector to ceiling distance is the same as maximum distance below bottom of top chord or deflector distance below ridge.

HYDRAULIC CALCULATIONS

- See Hydraulic Design Section

Note: If a flat sloped ceiling is present utilizing non combustible insulation, the insulation must completely fill the pockets between the joists, and the insulation must be secured in place with metal wire netting or equivalent. The metal wire netting is intended to hold the insulation in place should the insulation become wetted by the operation of the sprinkler. Attic sprinklers have not been evaluated for use with spray foam insulation.

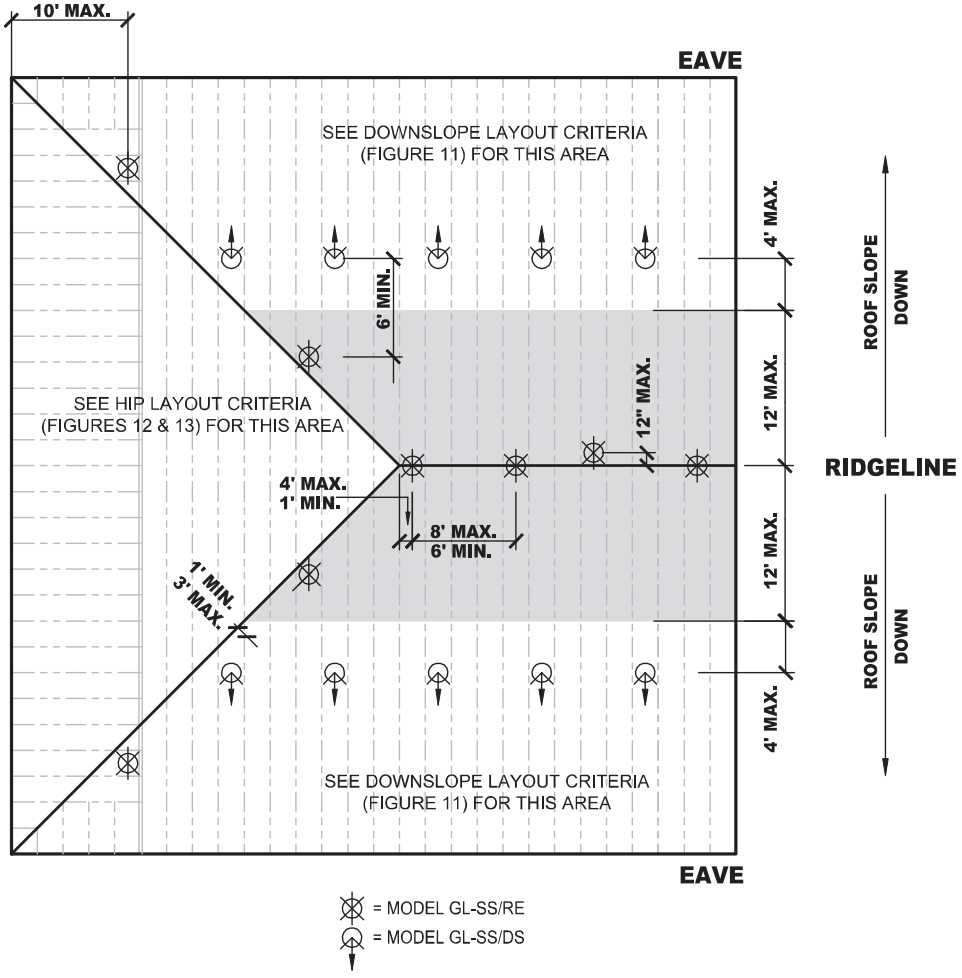


FIGURE 10: RIDGELINE LAYOUT CRITERIA

DOWNSLOPE DESIGN CRITERIA

SPRINKLER MODEL

- GL-SS/DS

FLOW RATE

- 20 gpm

DISTANCE BETWEEN SPRINKLERS PERPENDICULAR TO SLOPE

- Minimum 4 ft
- Maximum 8 ft

MA IMUM SPRINKLER THROW (measured horizontally)

- Upslope - 4 ft
- Downslope - 20 ft

MINIMUM DISTANCE BETWEEN SPRINKLERS DOWNSLOPE OF THE GL-SS/DS (throw direction)

- 15 ft

DEFLECTOR DISTANCE BELOW CEILING

- Install with deflector below bottom of top chord 1" minimum to 4" maximum.

DISTANCE AWAY FROM HIP LINE

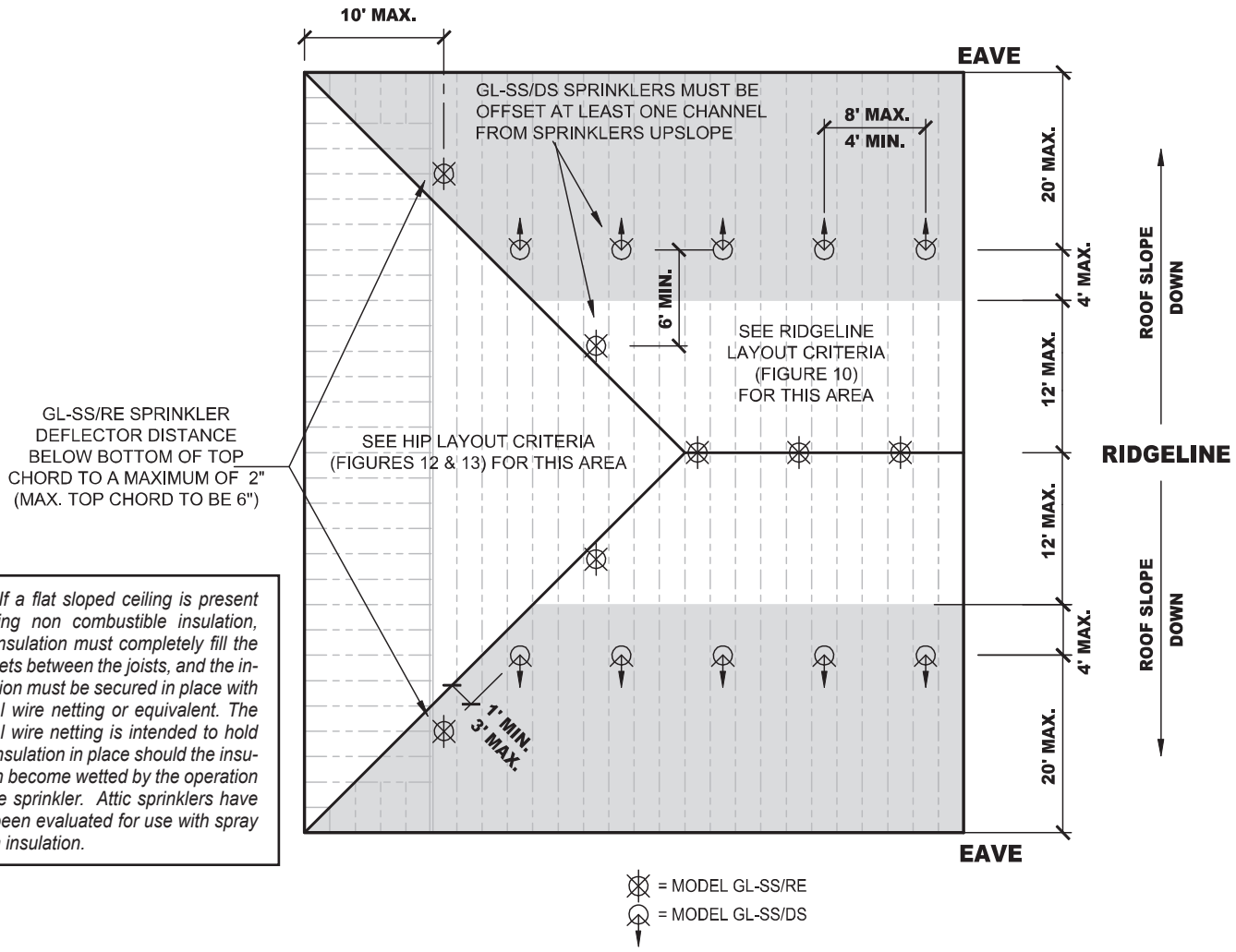
- Minimum 1 ft
- Maximum 3 ft

INSTALLATION

- The GL-SS/DS Sprinkler has a zone of protection of 20 ft. forward (measured on the horizontal); 4 ft. backwards (measured on the horizontal; and 8 ft. wide (4 ft. laterally to either side of the sprinkler).
- Ensure that the sprinkler deflector is installed with the deflector parallel to the sloped roof above.
- Centerline of sprinkler must be a minimum of 6" laterally from face of truss (See FIGURE 8).
- Must be offset at least one channel laterally from any Ridgeline sprinkler.
- Sprinklers must be installed with the frame arms perpendicular to the roof slope.
- For obstruction criteria, see Obstruction section within this data sheet.
- When installed under a flat sloped ceiling (non-combustible insulation filled joist channels) maximum deflector to ceiling distance is the same as maximum distance below bottom of top chord.

HYDRAULIC CALCULATIONS

- See Hydraulic Design Section



Note: If a flat sloped ceiling is present utilizing non combustible insulation, the insulation must completely fill the pockets between the joists, and the insulation must be secured in place with metal wire netting or equivalent. The metal wire netting is intended to hold the insulation in place should the insulation become wetted by the operation of the sprinkler. Attic sprinklers have not been evaluated for use with spray foam insulation.

FIGURE 11: DOWNSLOPE LAYOUT CRITERIA

HIP AREA SPRINKLER DESIGN CRITERIA
HIP TRUSS/JACK TRUSS CONSTRUCTION

MODEL

- GL-SS/RE

FLOW RATE

- 20 gpm

DISTANCE BETWEEN SPRINKLERS

FIRST ROW FROM EAVE

(measured horizontally)

- Minimum 6 ft
- Maximum 8 ft

DISTANCE BETWEEN SPRINKLERS

ALL OTHER ROWS UPSLOPE

(measured horizontally)

- Minimum 6 ft
- Maximum 12 ft

DISTANCE FROM EAVE TO FIRST ROW

(measured horizontally)

- Minimum 5 ft
- Maximum 12 ft

DISTANCE BETWEEN ROWS (measured horizontally)

- Minimum 6 ft
- Maximum 10 ft

MINIMUM DISTANCE BETWEEN SPRINKLERS

- 6 ft

DEFLECTOR DISTANCE BELOW CEILING

- Install with deflector below bottom of top chord 1" minimum to 3" maximum.

SPRINKLER AT APE

- A GL-SS/RE Sprinkler must be installed between 1 ft. to 5 ft. down from the intersection of the ridgeline and hip lines (Apex)

SPRINKLERS ADJACENT TO HIP LINE

- All GL-SS/RE Sprinklers directly adjacent to hip line shall be 1 ft. to 3 ft. from hip line (as measured perpendicular to hip line)

INSTALLATION

- Ensure that the sprinkler is installed with the deflector parallel to the sloped roof above.
- Sprinklers must be installed with the frame arms perpendicular to the roof slope (see FIGURE 7).
- For obstruction criteria, see Obstruction section within this data sheet.
- When installed under a flat sloped ceiling (non-combustible insulation filled joist channels) maximum deflector to ceiling distance is the same as maximum distance below bottom of top chord.

HYDRAULIC CALCULATIONS

- See Hydraulic Design Section

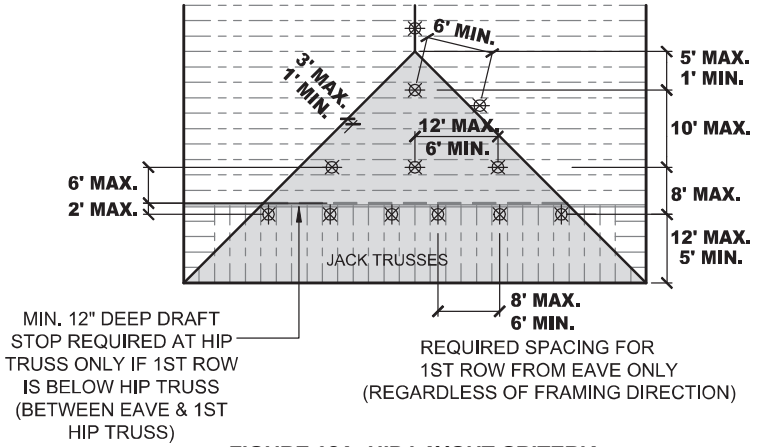


FIGURE 12A: HIP LAYOUT CRITERIA
WHEN FIRST ROW OF SPRINKLERS PLACED WITHIN JACK TRUSSES

= MODEL GL-SS/RE

Note: If a flat sloped ceiling is present utilizing non combustible insulation, the insulation must completely fill the pockets between the joists, and the insulation must be secured in place with metal wire netting or equivalent. The metal wire netting is intended to hold the insulation in place should the insulation become wetted by the operation of the sprinkler. Attic sprinklers have not been evaluated for use with spray foam insulation.

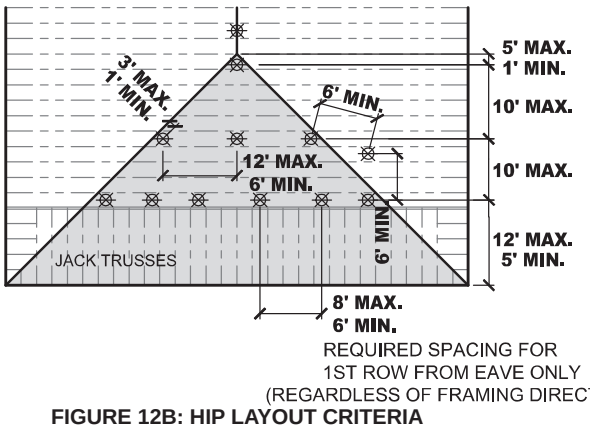


FIGURE 12B: HIP LAYOUT CRITERIA
WHEN FIRST ROW OF SPRINKLERS PLACED BEYOND JACK TRUSSES

FIGURE 12: HIP LAYOUT CRITERIA - HIP TRUSS/ JACK TRUSS CONSTRUCTION

HIP AREA SPRINKLER DESIGN CRITERIA
FRAMING MEMBERS PARALLEL TO ROOF SLOPE

MODEL

- GL-SS/RE

FLOW RATE

- 20 gpm

DISTANCE FROM EAVE TO FIRST ROW
(measured horizontally)

- Minimum 5 ft
- Maximum 12 ft

MA IMUM DISTANCE BETWEEN SPRINKLERS

- See FIGURE 13

DEFLECTOR DISTANCE BELOW CEILING

- Install with deflector below bottom of top chord 1" minimum to 3" maximum.

SPRINKLER AT APE

- A GL-SS/RE Sprinkler must be installed between 1 ft. to 5 ft. down from the intersection of the ridgeline and hip lines (Apex)

SPRINKLERS ADJACENT TO HIP LINE

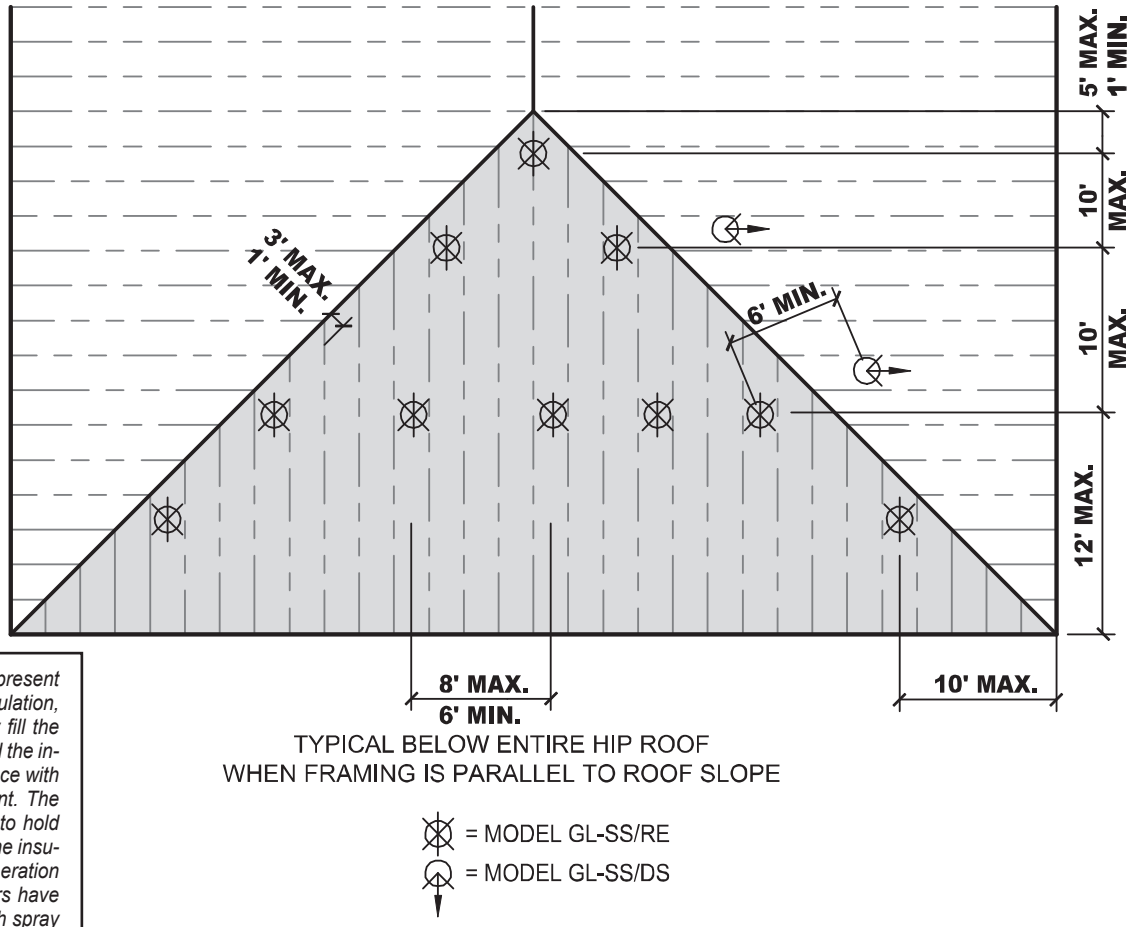
- All GL-SS/RE Sprinklers directly adjacent to hip line shall be 1 ft. to 3 ft. from hip line (as measured perpendicular to hip line)

INSTALLATION

- Ensure that the sprinkler is installed with the deflector parallel to the sloped roof above
- Sprinklers must be installed with the frame arms perpendicular to the roof slope.
- For obstruction criteria, see Obstruction section within this data sheet.
- When installed under a flat sloped ceiling (non-combustible insulation filled joist channels) maximum deflector to ceiling distance is the same as maximum distance below bottom of top chord.

HYDRAULIC CALCULATIONS

- See Hydraulic Design Section



TYPICAL BELOW ENTIRE HIP ROOF
WHEN FRAMING IS PARALLEL TO ROOF SLOPE

Note: If a flat sloped ceiling is present utilizing non combustible insulation, the insulation must completely fill the pockets between the joists, and the insulation must be secured in place with metal wire netting or equivalent. The metal wire netting is intended to hold the insulation in place should the insulation become wetted by the operation of the sprinkler. Attic sprinklers have not been evaluated for use with spray foam insulation.

FIGURE 13: HIP LAYOUT CRITERIA
FRAMING MEMBERS PARALLEL TO ROOF SLOPE

HIP AREA SPRINKLER DESIGN CRITERIA
FRAMING MEMBERS PARALLEL TO ROOF SLOPE

MODEL

- GL-SS/DS (GL-SS/RE @ apex)

FLOW RATE

- 20 gpm

DISTANCE BETWEEN SPRINKLERS (Laterally)

- Minimum 4 ft.
- Maximum 8 ft.

DISTANCE FROM EAVE TO FIRST ROW (measured horizontally)

- Minimum 5 ft.
- Maximum 20 ft.

DEFLECTOR DISTANCE BELOW CEILING

- Install with deflector below bottom of top chord 1" minimum to 4" maximum.

SPRINKLER AT APE

- A GL-SS/RE Sprinkler must be installed between 1 ft. to 5 ft. down from the intersection of the ridgeline and hip lines (Apex)

SPRINKLERS ADJACENT TO HIP LINE

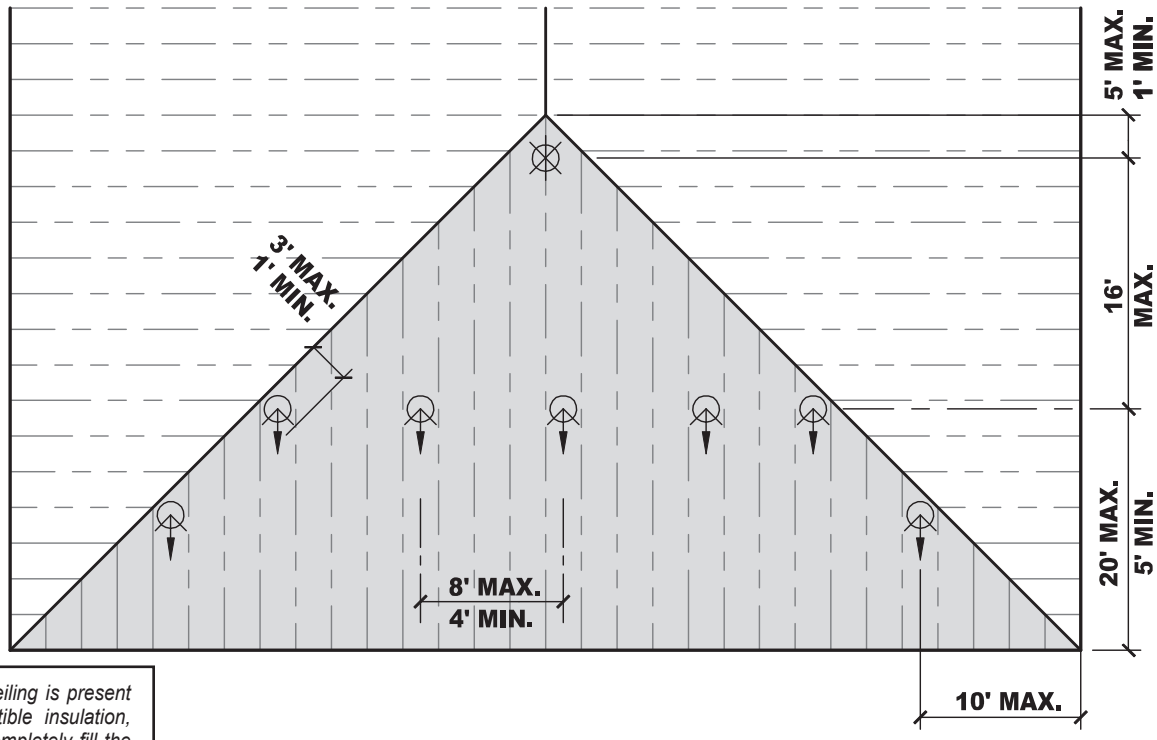
- All GL-SS/RE Sprinklers directly adjacent to hip line shall be 1 ft. to 3 ft. from hip line (as measured perpendicular to hip line)

INSTALLATION

- Ensure that the sprinkler is installed with the deflector parallel to the sloped roof above
- Sprinklers must be installed with the frame arms perpendicular to the roof slope.
- For obstruction criteria, see Obstruction section within this data sheet
- When installed under a flat sloped ceiling (non-combustible insulation filled joist channels) maximum deflector to ceiling distance is the same as maximum distance below bottom of top chord.

HYDRAULIC CALCULATIONS

- See Hydraulic Design Section



Note: If a flat sloped ceiling is present utilizing non combustible insulation, the insulation must completely fill the pockets between the joists, and the insulation must be secured in place with metal wire netting or equivalent. The metal wire netting is intended to hold the insulation in place should the insulation become wetted by the operation of the sprinkler. Attic sprinklers have not been evaluated for use with spray foam insulation.

TYPICAL BELOW ENTIRE HIP ROOF
WHEN FRAMING IS PARALLEL TO ROOF SLOPE

= MODEL GL-SS/RE

= MODEL GL-SS/DS

FIGURE 13A: HIP LAYOUT CRITERIA
FRAMING MEMBERS PARALLEL TO ROOF SLOPE

SINGLE SLOPE DESIGN CRITERIA

SPRINKLER MODEL

- GL-SS/DS

FLOW RATE

- 20 gpm

DEFLECTOR DISTANCE BELOW PEAK (See FIGURE 14A)

- Minimum 16 in.
- Maximum 24 in.

DEFLECTOR DISTANCE BELOW SLOPING ROOF DECK (See FIGURE 14A)

- Install with deflector below bottom of top chord to a maximum of 2 in.

DISTANCE BETWEEN SPRINKLERS PERPENDICULAR TO THE SLOPE

- Minimum 4 ft.
- Maximum 8 ft.

MA IMUM ALLOWED SPRINKLER THROW (measured horizontally)

- Downslope - 16 ft.

MINIMUM DISTANCE BETWEEN SPRINKLERS DOWNSLOPE OF THE GL-SS/DS (throw direction)

- 15 ft. (as measured on the slope)

INSTALLATION

- Ensure that the sprinkler deflector is installed with the deflector parallel to the sloped roof above.
- Centerline of sprinkler must be a minimum of 6" laterally from face of truss. See FIGURE 8.
- When two rows of GL-SS/DS sprinklers are utilized, the adjacent rows of sprinklers must be offset at least one channel laterally from each other. See FIGURE 14C.
- Sprinklers must be installed with the frame arms perpendicular to the roof slope. See FIGURE 7.
- For obstruction criteria, see Obstruction section within this data sheet.
- When installed under a flat sloped ceiling (non-combustible insulation filled joist channels) maximum deflector to ceiling distance is the same as maximum distance below bottom of top chord.

HYDRAULIC CALCULATIONS

- See Hydraulic Design Section

Note: If a flat sloped ceiling is present utilizing non combustible insulation, the insulation must completely fill the pockets between the joists, and the insulation must be secured in place with metal wire netting or equivalent. The metal wire netting is intended to hold the insulation in place should the insulation become wetted by the operation of the sprinkler. Attic sprinklers have not been evaluated for use with spray foam insulation.

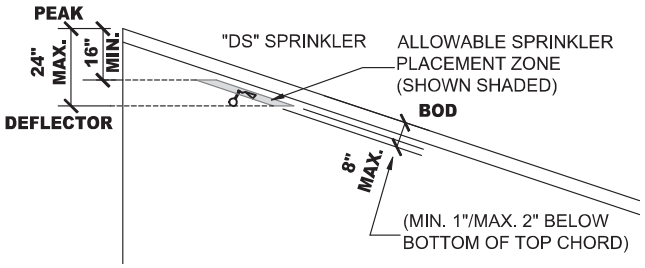


FIGURE 14A - SECTION VIEW DS SPRINKLER DEFLECTOR PLACEMENT AT PEAK

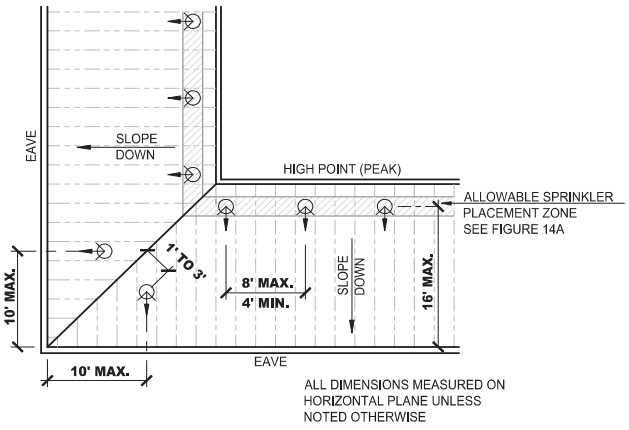


FIGURE 14B
1 ROW DS SPRINKLER
(HIP SHOWN AT CORNER)

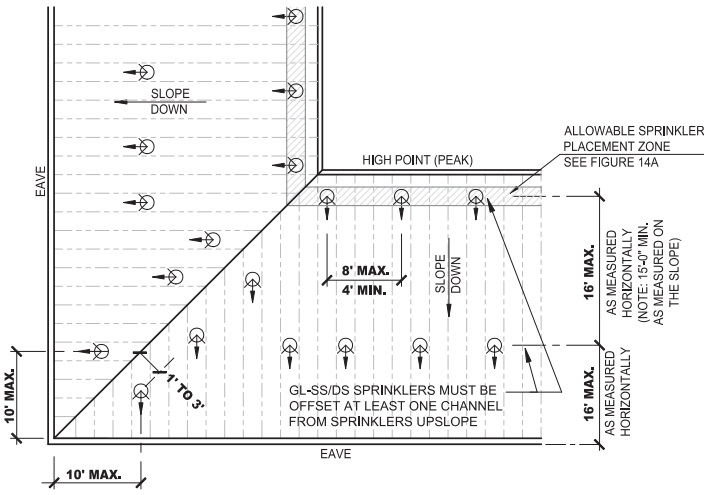


FIGURE 14C
2 ROW DS SPRINKLER
(HIP SHOWN AT CORNER)

FIGURE 14: SINGLE SLOPE LAYOUT CRITERIA

DORMER PROTECTION CRITERIA

The protection scheme for dormer roofs shall be in accordance with the following guidelines:

Dormers Built Entirely Over (on top) of Main Roof Sheathing - 4 Sprinklers or Less - Any Slope

- RE/DS Sprinklers allowed (CPVC allowance applies for wet systems only)
- Standard Spray Sprinklers allowed

Dormers Built Entirely Over (on top) of Main Roof Sheathing - More than 4 Sprinklers

- RE/DS Sprinklers allowed where the pitch is between 3:12 and 6:12. Protection scheme utilized shall be in accordance with this document
- Standard Spray Sprinklers allowed for any slope

Dormers Open to Attic Space Below - 4 Sprinklers or Less - Any Slope

- RE/DS Sprinklers allowed (CPVC allowance applies for wet systems only)
- Standard Spray Sprinklers allowed.

Dormers Open to Attic Space Below - More than 4 Sprinklers

- RE/DS Sprinklers allowed where the pitch is between 3:12 and 6:12. Protection scheme utilized shall be in accordance with this document
- Standard Spray Sprinklers allowed for any slope. (Required to calculate Attic in accordance with NFPA 13 (i.e. 2535 sq. ft. for Dry Systems)

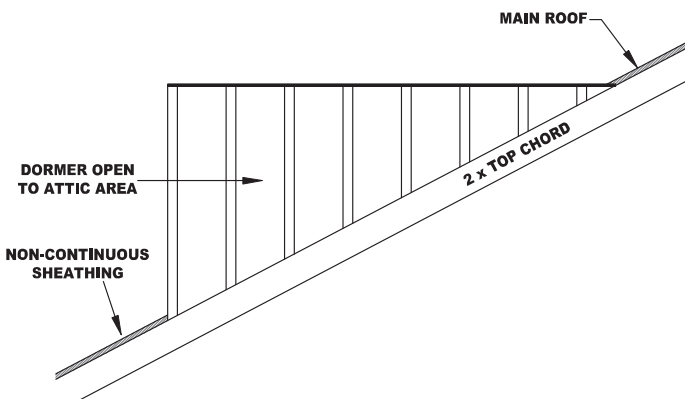


FIGURE 15A
DORMER OPEN TO ATTIC SPACE

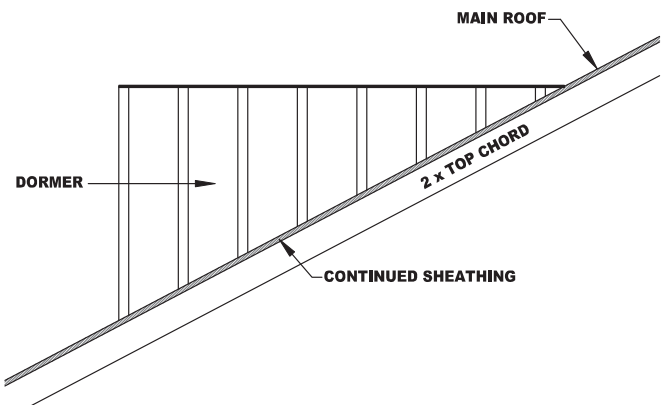


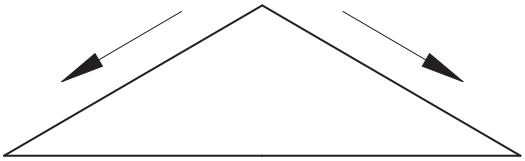
FIGURE 15B
DORMER ENTIRELY OVER MAIN ROOF SHEATHING

FIGURE 15: DORMERS SECTION VIEW

HYDRAULIC DESIGN

The Globe Specific Application Attic protection scheme shall be hydraulically calculated in accordance with the following guidelines. These calculation guidelines are applicable only to the special Globe Attic Protection scheme utilizing Globe GL-SS/RE and GL-SS/DS sprinklers. These requirements are based on special full scale fire testing and in no way should be utilized when designing other than these specially listed and tested sprinklers for use in sloped combustible attic structures. As with Hydraulic Calculations performed in accordance with NFPA 13, multiple areas of piping may need to be investigated and multiple calculations performed should it not be readily obvious of the hydraulically most demanding area due to non-typical pipe layout. Hose allowances must be included in the hydraulic calculations in accordance with NFPA 13.

GABLE ROOF CALCULATION PROCEDURE



3 BRANCHLINE DESIGN - WET SYSTEM

Perform the following 2 calculations:

Calculation #1: Calculate the 5 most hydraulically demanding sprinklers consisting of 5 GL-SS/RE (Ridgeline) sprinklers. Minimum sprinkler flow is 20 gpm per sprinkler. See FIGURE 16A.

Calculation #2: Calculate the 5 most hydraulically demanding sprinklers consisting of 2 GL-SS/DS (Downslope) sprinklers and 3 GL-SS/RE (Ridgeline) sprinklers. Minimum sprinkler flow is 20 gpm per sprinkler. See FIGURE 16B.

Note: If additional sprinklers are required beyond an obstruction, calculate up to 2 additional sprinklers beyond the obstruction. See FIGURE 16B.

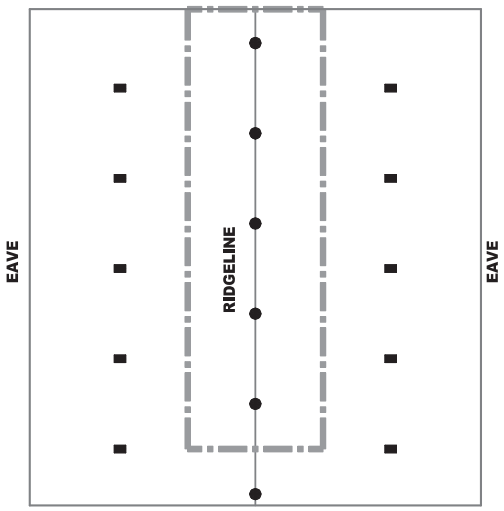


FIGURE 16A

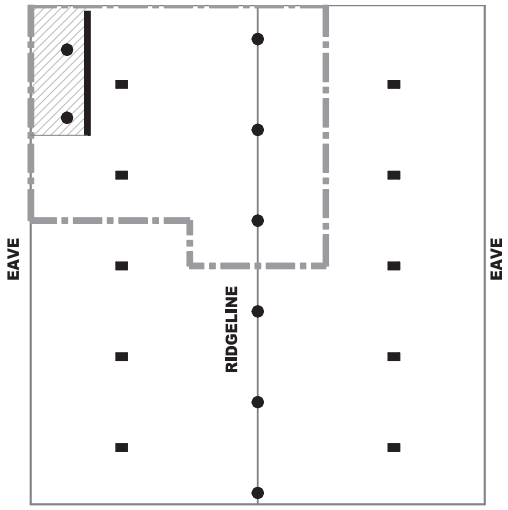


FIGURE 16B

FIGURE 16: HYDRAULIC CALCULATION REQUIRED FOR WET 3 BRANCHLINE SYSTEM

3 BRANCHLINE DESIGN - DRY SYSTEM

Perform the following 2 calculations:

Calculation #1: Calculate the 6 most hydraulically demanding sprinklers consisting of 6 GL-SS/RE (Ridgeline) sprinklers. Minimum sprinkler flow is 20 gpm per sprinkler. See FIGURE 17A.

Calculation #2: Calculate the 6 most hydraulically demanding sprinklers consisting of 2 GL-SS/DS (Downslope) sprinklers and 4 GL-SS/RE (Ridgeline) sprinklers. Minimum sprinkler flow is 20 gpm per sprinkler. See FIGURE 17B.

Note: If additional sprinklers are required beyond an obstruction, calculate up to 2 additional sprinklers beyond the obstruction. See FIGURE 17B.

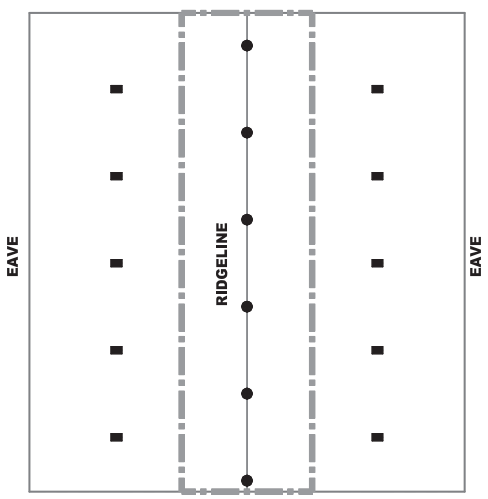


FIGURE 17A

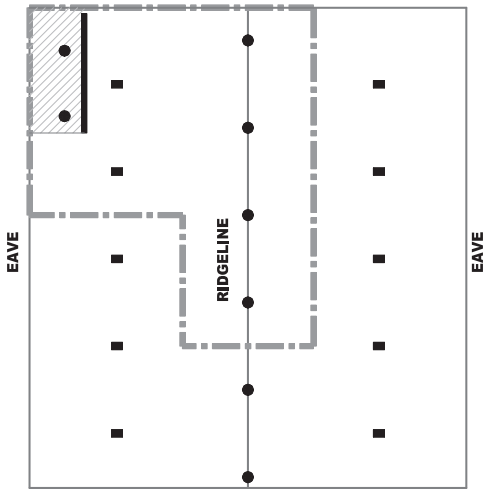
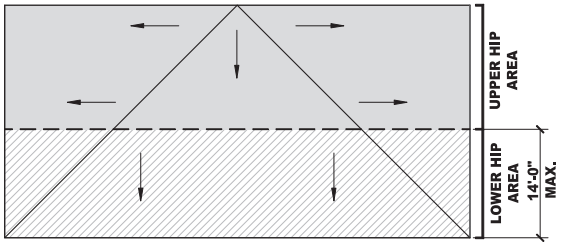


FIGURE 17B

FIGURE 17: HYDRAULIC CALCULATIONS REQUIRED FOR DRY 3 BRANCHLINE SYSTEM

HIP ROOF CALCULATION PROCEDURE



When a Hip is included in the design of the attic, there are three calculations required. One calculation for the “Ridge/Hip Transition” area. The second and third calculations determine the pipe sizing for the Hip area itself. For the purposes of these hydraulic calculations the Hip is broken into two areas; the “Lower Hip” area; and the “Upper Hip” area. See above figure.

HIP CALCULATION (HIP TRUSS/JACK TRUSS CONSTRUCTION) - WET SYSTEM

Calculation #1 – Ridge/Hip Transitions

- Calculate the most demanding 7 contiguous sprinklers with a maximum of 5 sprinklers along the ridge plus the 2 most demanding sprinklers within the hip area. See FIGURE 18A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Calculation #2 – Lower Hip Area

- Calculate up to the 7 most demanding contiguous sprinklers along the eave. This may include sprinklers on both sides of the hip line as shown. See FIGURE 18B.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Calculation #3 – Upper Hip Area

If there are 4 sprinklers or less in the shaded area (FIGURE 18B):

- Calculate up to the 7 most demanding contiguous sprinklers in the "Upper Hip" area. This may include sprinklers on both sides of the hip line as shown.
- Minimum sprinkler flow is 20 gpm per sprinkler.

If there are more than 4 sprinklers in the shaded area (FIGURE 18C):

- Calculate the hydraulically most demanding 75% of the total number of sprinklers located within the "Upper Hip" area, rounding up to the nearest sprinkler. (Minimum number of sprinklers to be calculated is 7)
- Minimum sprinkler flow is 20 gpm per sprinkler.
  – Example shown in FIGURE 18C results in 9 sprinklers to be calculated. (12 x 0.75 = 9)

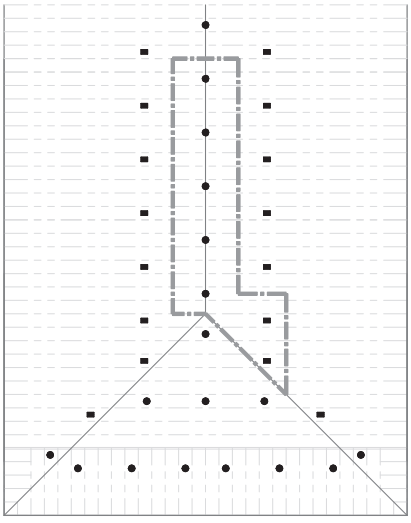


FIGURE 18A

● = RE
■ = DS

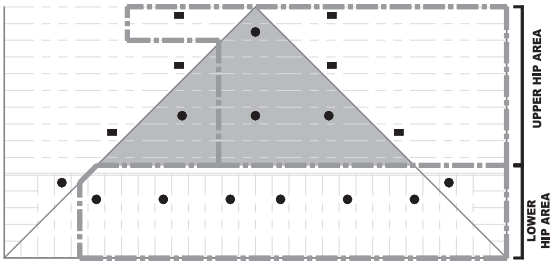


FIGURE 18B

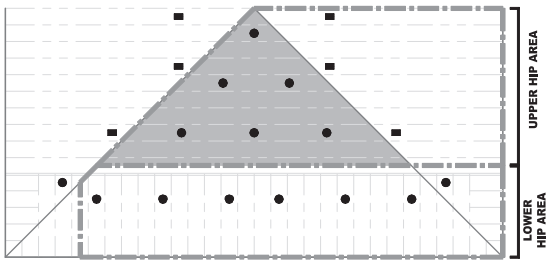


FIGURE 18C

FIGURE 18: HYDRAULIC CALCULATIONS REQUIRED FOR HIP - WET SYSTEM (HIP TRUSS/JACK TRUSS CONSTRUCTION)

HIP CALCULATION (HIP TRUSS/JACK TRUSS CONSTRUCTION - DRY SYSTEM

Calculation #1 – Ridge/Hip Transitions

- Calculate the most demanding 8 contiguous sprinklers with a maximum of 6 sprinklers along the ridge plus the 2 most demanding sprinklers within the hip area. See FIGURE 19A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Calculation #2 – Lower Hip Area

- Calculate the 8 most demanding contiguous sprinklers along the eave. This may include sprinklers on both sides of the hip line as shown. See FIGURE 19B.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Calculation #3 – Upper Hip Area

If there are 4 sprinklers or less in the shaded area (FIGURE 19B):

- Calculate up to the 8 most demanding contiguous sprinklers in the "Upper Hip" area. This may include sprinklers on both sides of the hip line as shown. See FIGURE 19B.
- Minimum sprinkler flow is 20 gpm per sprinkler.

If there are more than 4 sprinklers in the shaded area (FIGURE 19C):

- Calculate all sprinklers in the "Upper Hip" area.
- Minimum sprinkler flow is 20 gpm per sprinkler.

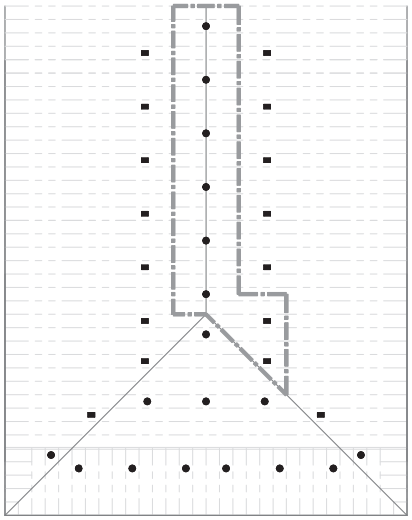


FIGURE 19A

● = RE

■ = DS

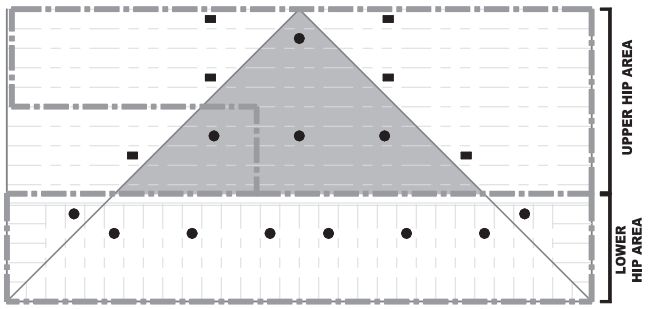


FIGURE 19B

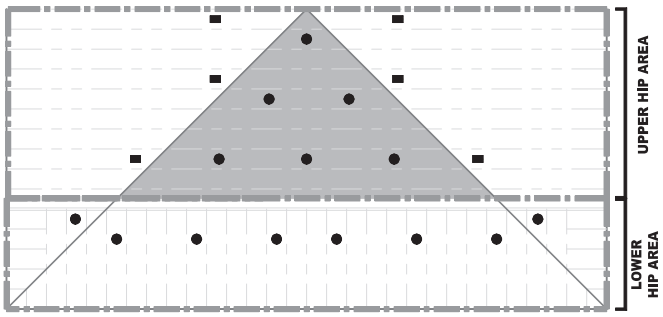


FIGURE 19C

FIGURE 19: HYDRAULIC CALCULATIONS REQUIRED FOR HIP - DRY SYSTEM (HIP TRUSS/JACK TRUSS CONSTRUCTION)

(Examples shown in these figures are for reference only. Actual sprinklers selected based on piping configuration which results in the most demanding hydraulic demand.)

HIP CALCULATION RE SPRINKLERS (FRAMING MEMBERS PARALLEL TO ROOF SLOPE) - WET SYSTEM

Calculation #1 – Ridge/Hip Transitions

- Calculate the most demanding 7 contiguous sprinklers with a maximum of 5 sprinklers along the ridge plus the 2 most demanding sprinklers within the hip area. See FIGURE 18A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Calculation #2 – Hip Area

- Calculate all sprinklers within the hip area shown shaded. See FIGURE 20.
- Minimum sprinkler flow is 20 gpm per sprinkler.

HIP CALCULATION RE SPRINKLERS (FRAMING MEMBERS PARALLEL TO ROOF SLOPE) - DRY SYSTEM

Calculation #1 – Ridge/Hip Transitions

- Calculate the most demanding 8 contiguous sprinklers with a maximum of 6 sprinklers along the ridge plus the 2 most demanding sprinklers within the hip area. See FIGURE 19A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Calculation #2 – Hip Area

- Calculate all sprinklers within the hip area shown shaded. See FIGURE 20.
- Minimum sprinkler flow is 20 gpm per sprinkler.

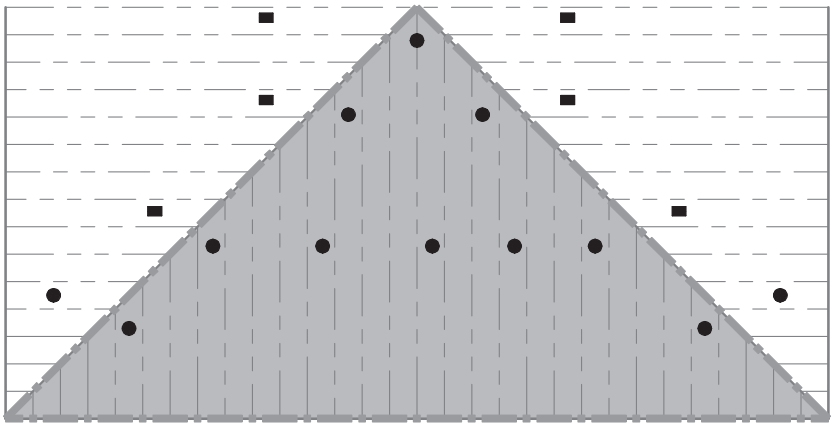


FIGURE 20: HYDRAULIC CALCULATIONS REQUIRED FOR RE HIP (FRAMING MEMBERS PARALLEL TO SLOPE)

● = RE

■ = DS

HIP CALCULATION DS SPRINKLERS (FRAMING MEMBERS PARALLEL TO ROOF SLOPE) - WET SYSTEM

Calculation #1 – Ridge/Hip Transitions

- Calculate the most demanding 7 contiguous sprinklers with a maximum of 5 sprinklers along the ridge plus the 2 most demanding sprinklers within the hip area. See FIGURE 18A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Calculation #2 – Hip Area

- Calculate all sprinklers within the hip area shown shaded. See FIGURE 20A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

HIP CALCULATION DS SPRINKLERS (FRAMING MEMBERS PARALLEL TO ROOF SLOPE) - DRY SYSTEM

Calculation #1 – Ridge/Hip Transitions

- Calculate the most demanding 8 contiguous sprinklers with a maximum of 6 sprinklers along the ridge plus the 2 most demanding sprinklers within the hip area. See FIGURE 19A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Calculation #2 – Hip Area

- Calculate all sprinklers within the hip area shown shaded. See FIGURE 20A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

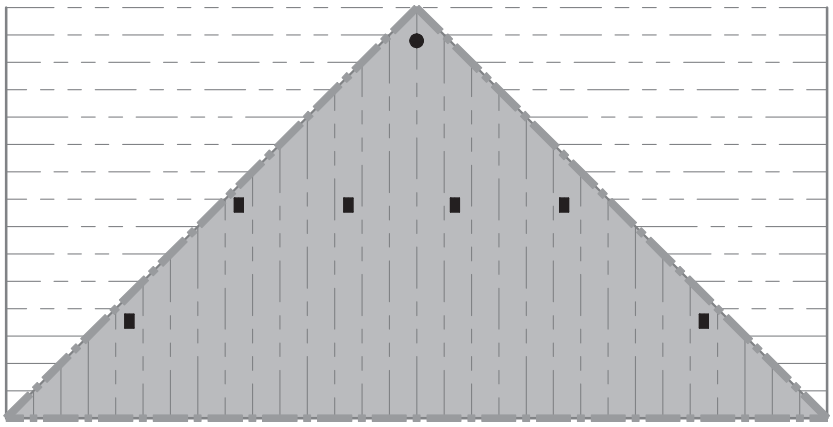
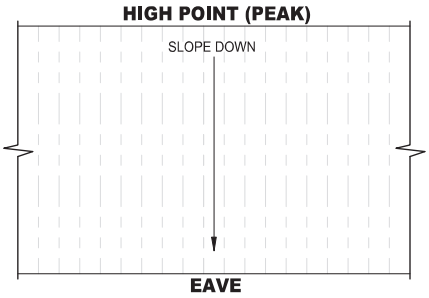


FIGURE 20A: HYDRAULIC CALCULATIONS REQUIRED FOR DS HIP (FRAMING MEMBERS PARALLEL TO SLOPE)

● = RE

■ = DS

SINGLE SLOPE ROOF CALCULATION PROCEDURE



When a single slope roof area exists, the following calculation procedures shall be followed to size piping to the sprinklers protecting this area. NOTE: Single Slopes (with vertical shear walls) result in different fire dynamics than might be seen with gable and/or hip roof construction.

SINGLE SLOPE ROOF CALCULATION - WET SYSTEM

1 Row Protection

- Calculate the most hydraulically demanding 5 contiguous DS sprinklers. See FIGURE 21A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

2 Row Protection

The following 2 sets of calculations shall be performed:

- Calculation #1: Calculate the most hydraulically demanding 5 contiguous sprinklers consisting of 3 at the high point and 2 on the adjacent slope. See FIGURE 21B.
- Calculation #2: Calculate the most hydraulically demanding 5 contiguous sprinklers along the high point. See FIGURE 21C.
- Minimum sprinkler flow is 20 gpm per sprinkler.

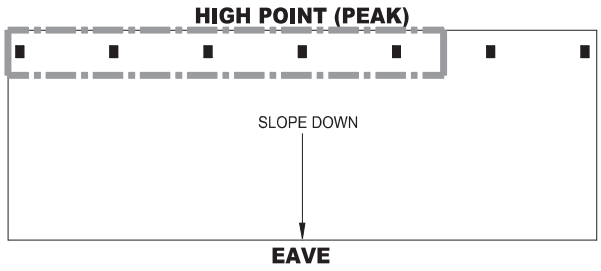


FIGURE 21A
1 ROW PROTECTION CALCULATION

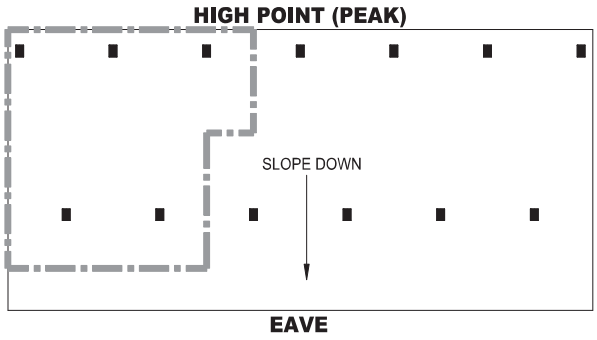


FIGURE 21B
2 ROW PROTECTION CALCULATION 1

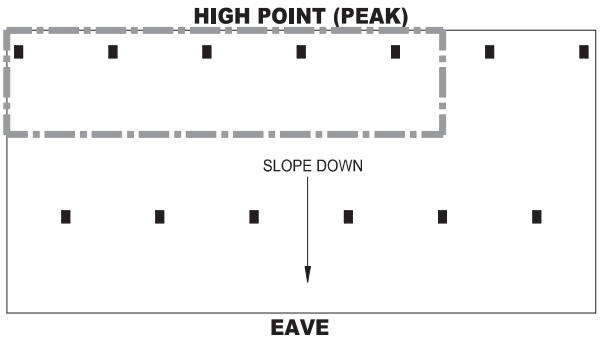


FIGURE 21C
2 ROW PROTECTION CALCULATION 2

FIGURE 21: HYDRAULIC CALCULATIONS REQUIRED FOR WET SYSTEM
SINGLE SLOPE DESIGN

SINGLE SLOPE ROOF CALCULATION PROCEDURE

SINGLE SLOPE ROOF CALCULATION - DRY SYSTEM

1 Row Protection

- Calculate the most hydraulically demanding 7 contiguous DS sprinklers. See FIGURE 22A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

2 Row Protection

The following 2 sets of calculations shall be performed:

- Calculation #1: Calculate the 7 most hydraulically demanding contiguous DS sprinklers located along the high point (peak). See FIGURE 22B.
- Calculation #2: Calculate the 7 most hydraulically contiguous DS sprinklers consisting of 5 DS at the hight point (peak) and 2 DS sprinklers on the adjacent downslope branchline. See FIGURE 22C.
- Minimum sprinkler flow is 20 gpm per sprinkler.

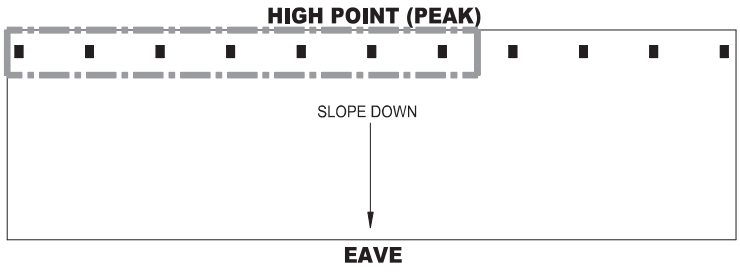


FIGURE 22A
1 ROW PROTECTION CALCULATION

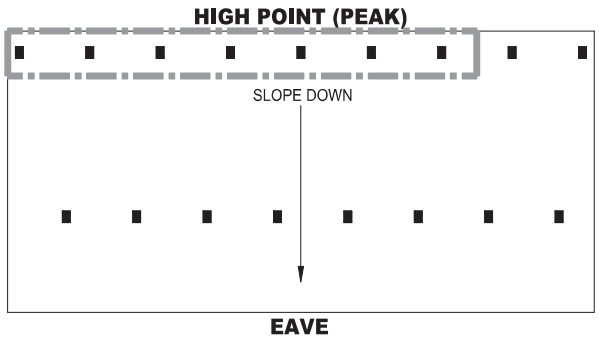


FIGURE 22B
2 ROW PROTECTION CALCULATION 1

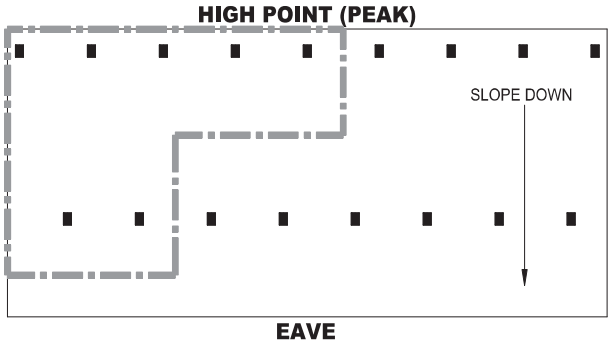


FIGURE 22C
2 ROW PROTECTION CALCULATION 2

FIGURE 22: HYDRAULIC CALCULATIONS REQUIRED FOR DRY SYSTEM
SINGLE SLOPE DESIGN

SINGLE SLOPE ROOF WITH HIP CALCULATION PROCEDURE

SINGLE SLOPE ROOF CALCULATION - WET SYSTEM

1 Row Protection

- Calculate the 5 most hydraulically demanding contiguous DS sprinklers located along the high point plus the 2 most demanding sprinklers along the hip line. See FIGURE 23A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

2 Row Protection

The following 3 sets of calculations shall be performed:

- Calculation #1: Calculate the 3 most hydraulically demanding contiguous DS sprinklers located along the high point (peak) plus the 2 most demanding sprinklers along the hip line. See FIGURE 23B.
- Calculation #2: Calculate the most hydraulically demanding 5 contiguous sprinklers along the high point. See FIGURE 23C.
- Calculation #3: Calculate all sprinklers within the shaded corner Hip area as shown. See FIGURE 23D.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Note: The "plus 2" most demanding sprinklers along the hip line may vary from that shown in the figures depending on actual piping. Designer may need to investigate multiple options to determine the 2 most demanding sprinklers to incorporate into the calculations.

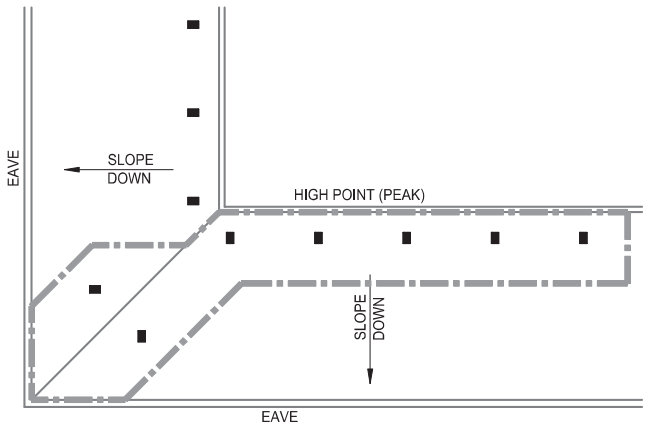


FIGURE 23A: 1 ROW PROTECTION CALCULATION

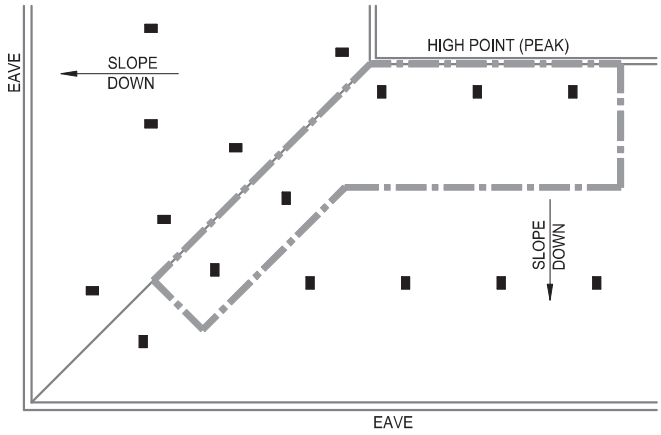


FIGURE 23B: 2 ROW PROTECTION CALCULATION 1

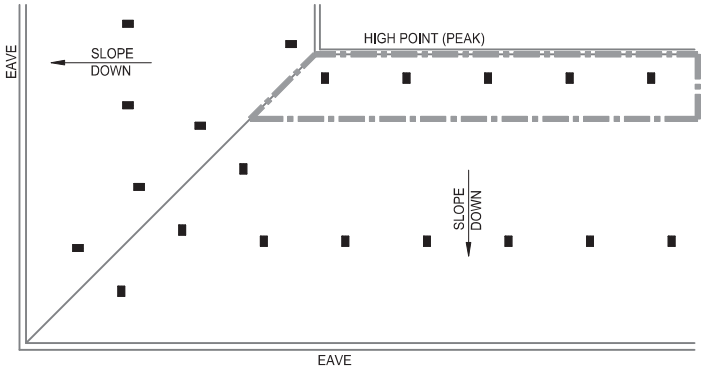


FIGURE 23C: 2 ROW PROTECTION CALCULATION 2

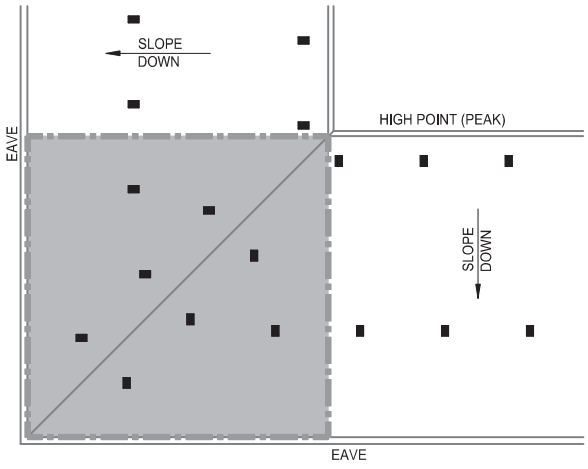


FIGURE 23D: 2 ROW PROTECTION CALCULATION 3

FIGURE 23: SINGLE SLOPE DESIGN

SINGLE SLOPE ROOF WITH HIP CALCULATION PROCEDURE

SINGLE SLOPE ROOF CALCULATION - DRY SYSTEM

1 Row Protection

- Calculate the 7 most hydraulically demanding contiguous DS sprinklers located along the high point plus the 2 most demanding sprinklers along the hip line. See FIGURE 24A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

2 Row Protection

The following 2 sets of calculations shall be performed:

- Calculation #1: Calculate the 7 most hydraulically demanding contiguous DS sprinklers located along the high point (peak) plus the 2 most demanding sprinklers along the hip line. See FIGURE 24B.
- Calculation #2: Calculate all sprinklers within the shaded corner Hip area as shown. See FIGURE 24C.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Note: The "plus 2" most demanding sprinklers along the hip line may vary from that shown in the figures depending on actual piping. Designer may need to investigate multiple options to determine the 2 most demanding sprinklers to incorporate into the calculations.

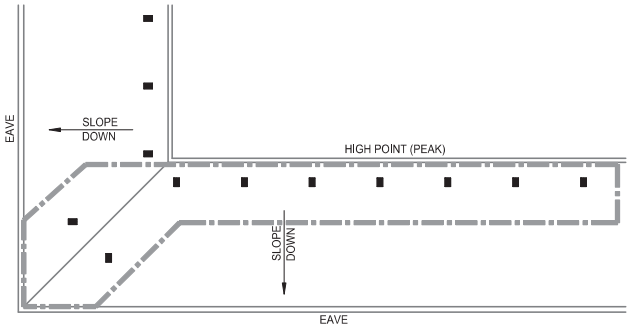


FIGURE 24A: 1 ROW PROTECTION CALCULATION

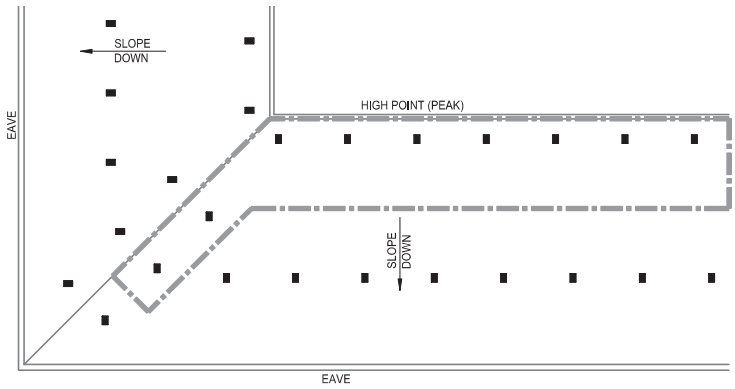


FIGURE 24B: 2 ROW PROTECTION CALCULATION 1

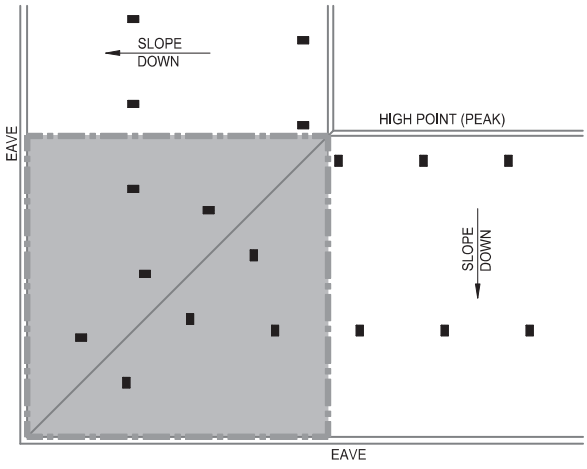


FIGURE 24C: 2 ROW PROTECTION CALCULATION 2

FIGURE 24: SINGLE SLOPE DESIGN

OBSTRUCTIONS

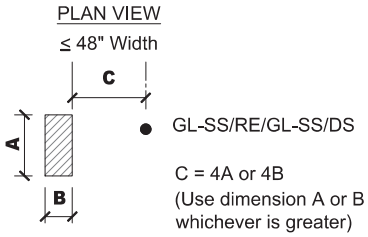
The following guidelines outline criteria to minimize critical obstructions to spray pattern development and to maximize effectiveness in achieving control.

General

- Structural trusses and web members are not considered "obstructions" provided a minimum 6" lateral distance from sprinklers to side of truss/web member is maintained.
- GL-SS/RE and GL-SS/DS sprinklers may be installed directly on maximum nominal 2½" (DN65) pipe without the need for a "Sprig-up". For pipe larger than 2½" nominal, see NPFA 13 for Sprig requirements.
- Sprinklers shall be positioned away from obstructions a minimum distance of Four (4) times the maximum dimension of the obstruction (e.g. Ducts, pipe). This 4X requirement does not apply to truss web members provided the web members do not exceed 6" and the minimum lateral distance of 6" from sprinkler to side of member is maintained.

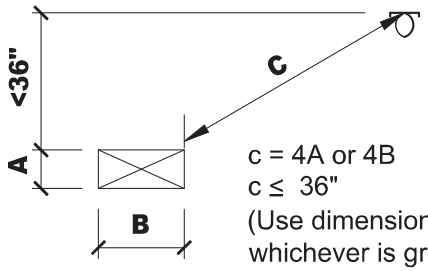
Obstruction criteria is otherwise grouped into three categories (See FIGURE 25, FIGURE 26 and FIGURE 27)

- **Vertical Obstructions**
  Those obstructions which run vertically through the attic. These may consist of fireplace flues, walls, vents, stacks, etc. These obstructions will typically run up to or penetrate the roof deck.
- **Suspended Horizontal Obstructions**
  Those obstructions which are typically "suspended" within the attic space itself and run horizontally. These obstructions will have clearance over and under the obstruction to allow discharge of water around the obstruction. These obstructions may consist of ductwork; walkways; etc. Horizontal obstructions located within 1'-0" vertically of the bottom chords or ceiling joists are not considered "Suspended" Horizontal Obstructions.
- **Obstructions at Upper Deck**
  Those obstructions which are either attached directly to the roof deck or to the top chords/joists of the roof framing in a manner that little to no discharge of water can pass/clear the top of the obstruction. These obstructions can have an impact on the upper portion of the spray pattern from sprinklers.



Should the sprinkler not be able to be located a distance of 4X away from obstruction, an additional sprinkler must be installed on the opposite side of the obstruction within 1'-0" from the opposite side of the obstruction.

FIGURE 25: VERTICAL OBSTRUCTIONS GL-SS/RE/GL-SS/DS SPRINKLERS



No additional sprinkler required below, if equal to or less than 48" suspended obstruction.

FIGURE 26A

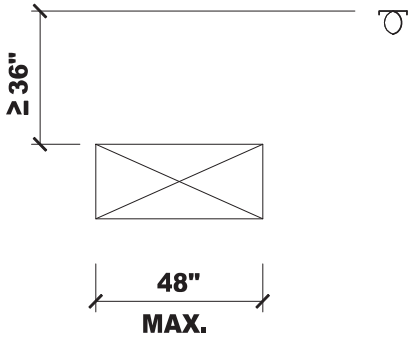
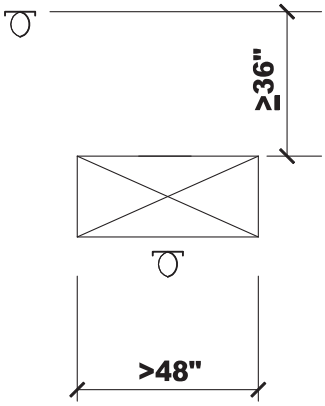


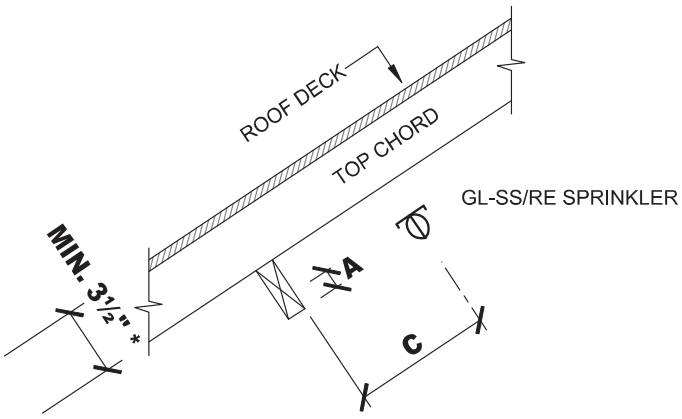
FIGURE 26B



Additional sprinkler required below, if greater than 48" suspended obstruction.

FIGURE 26C

FIGURE 26:
SUSPENDED HORIZONTAL OBSTRUCTIONS GL-SS/RE/GL-SS/DS SPRINKLERS

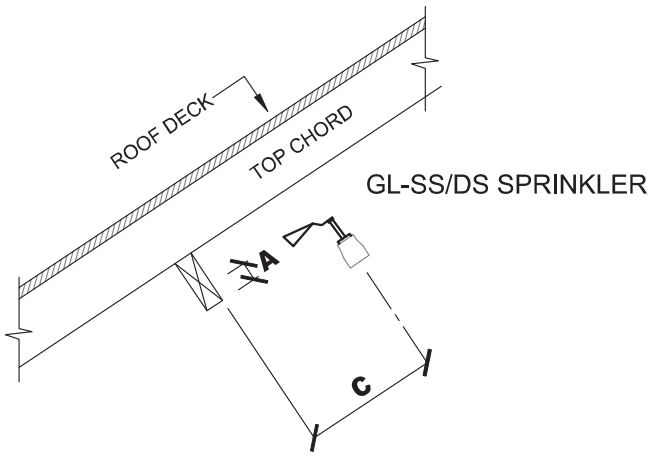


DISTANCE FROM SPRKR. TO SIDE OF OBSTRUCTION (C) inches (metric)	MA IMUM ALLOWABLE DISTANCE OF DEFLECTOR ABOVE BOTTOM OF OBSTRUCTION (A) inches (mm)
Less than 1 ft. 6 in. (457mm)	NOT ALLOWED
1 ft. 6 in. (457mm) to less than 3 ft. 0 in. (914mm)	1 in. (25)
3 ft. 0 in. (914mm) to less than 4 ft. 0 in. (1.2m)	3 in. (76)
4 ft. 0 in. (1.2m) to less than 4 ft. 6 in. (1.4m)	5 in. (127)
4 ft. 6 in. (1.4m) to less than 6 ft. 0 in. (1.8m)	7 in. (178)
6 ft. 0 in. (1.8m) to less than 6 ft. 6 in. (2m)	9 in. (229)
6 ft. 6 in. (2m) to less than 7 ft. 0 in. (2.1m)	11 in. (279)
7 ft. 0 in. (2.1m) to less than 8 ft. 0 in. (2.4m)	14 in. (356)
8 ft. 0 in. (2.4m) to less than 8 ft. 6 in. (2.6m)	15 in. (381)
8 ft. 6 in. (2.6m) to less than 9 ft. 0 in. (2.7m)	17 in. (432)

*Minimum 3½" clear space needed for unimpeded hot gas flow

FIGURE 27: OBSTRUCTIONS AT UPPER DECK GL-SS/RE SPRINKLER

OBSTRUCTIONS



DISTANCE FROM SPRKR. TO SIDE OF OBSTRUCTION (C) feet (m)	MA IMUM ALLOWABLE DISTANCE OF DEFLECTOR ABOVE BOTTOM OF OBSTRUCTION (A) inches (mm)
Less than 8 ft. (2.4)	NOT ALLOWED
8 ft. (2.4) to less than 10 ft. (3)	1 in. (25)
10 ft. (3.0) to less than 11 ft. (3.3)	2 in. (51)
11 ft. (3.3) to less than 12 ft. (3.7)	3 in. (76)
12 ft. (3.7) to less than 13 ft. (4)	4 in. (102)
13 ft. (4) to less than 14 ft. (4.3)	6 in. (152)
14 ft. (4.3) to less than 15 ft. (4.6)	7 in. (178)
15 ft. (4.6) to less than 16 ft. (4.9)	9 in. (229)
16 ft. (4.9) to less than 17 ft. (5.2)	11 in. (279)
17 ft. (5.2) or greater	14 in. (356)

FIGURE 28: OBSTRUCTIONS AT UPPER DECK GL-SS/DS SPRINKLER

OBSTRUCTIONS

PIGGYBACK TRUSSES

When trusses are stacked (“Piggyback”) at the peak, consideration to obstructions to the spray pattern of the Globe RE sprinklers must be made. These “Piggyback” configurations will typically include 2X “Stiffeners” running perpendicular to the trusses. Additionally, these “stiffeners” will be sandwiched between the uppermost and lowermost horizontal chords of the two stacked trusses.

In the event that all members are above the level of the GL-SS/RE deflector, no obstruction exists to the GL-SS/RE spray pattern. See FIGURE 29 and FIGURE 30.

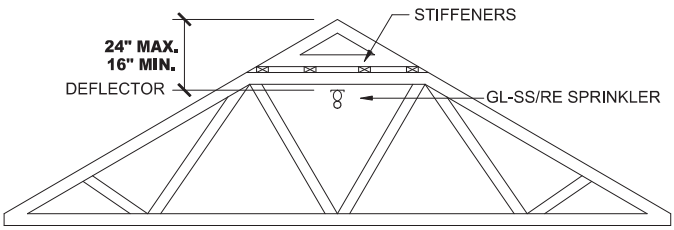


FIGURE 29: DEFLECTOR COMPLETELY BELOW STIFFENERS AND HORIZONTAL WEB MEMBERS (NO OBSTRUCTION)

In the event that the GL-SS/RE Deflector is located completely above the stiffeners and horizontal web members, the parameters of Figure 28 must be met for the spray pattern to be considered unobstructed.

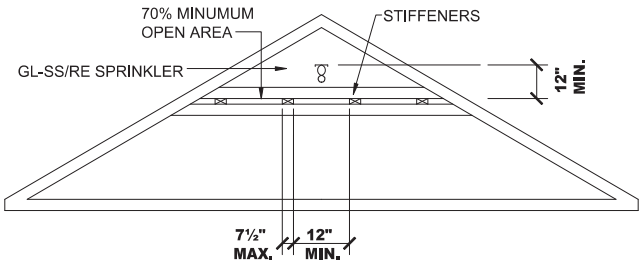


FIGURE 30: DEFLECTOR ABOVE STIFFENERS AND HORIZONTAL WEB MEMBERS (NO OBSTRUCTION)

USE OF UL LISTED CPVC PIPING WITH GLOBE SPECIFIC APPLICATION ATTIC SPRINKLERS

(Wet Systems Only)

UL Listed CPVC piping may be used in a combustible concealed attic space requiring sprinklers when installed in accordance with the following guidelines. For clarity, the following guidlines reference both "Ridgeline/Downslope" areas as well as "Hip" areas. Refer to FIGURE 1 on page 1 for explanation of these areas.

Notice: For installations in accordance with FIGURE 31, where the use of non-combustible insulation is specified, verify with the insulation manufacturer as to the non-combustibility of the insulation. The non-combustible insulation (fiberglass) may be faced or unfaced. Where faced, the facing need not be non-combustible. The insulation is to have a flame spread index of not more than 25. Verify chemical compatibility of the insulation with the UL Listed CPVC by consulting the CPVC Manufacturer's literature.

CPVC AT BOTTOM CHORDS TO FEED CEILING SPRINKLERS BELOW

UL Listed CPVC may be used to feed the wet system ceiling sprinklers on the floor below when adhering to the following guidelines: (See FIGURE 31)

- There must be 6 in. (152.4 mm) of non-combustible insulation covering the horizontal or vertical pipe extending 12 in. (304.8 mm) on each side away from the centerline of the pipe. Refer to FIGURE 29A.
- The area above the pipe must be protected with Globe GL-SS/RE and GL-SS/DS Special Application Attic Sprinklers. If the pipe is located inside the ceiling joist, the joist channel must be covered or filled with 6 in. (152.4 mm) of non-combustible insulation on top of the pipe and the area above must be protected by Globe GL-SS/RE and/or GL-SS/DS Sprinklers. Refer to FIGURE 29B. Insulation is for fire protection purposes. It is not freeze protection. CPVC must be installed in accordance with the CPVC Manufacturer's installation guide instructions.

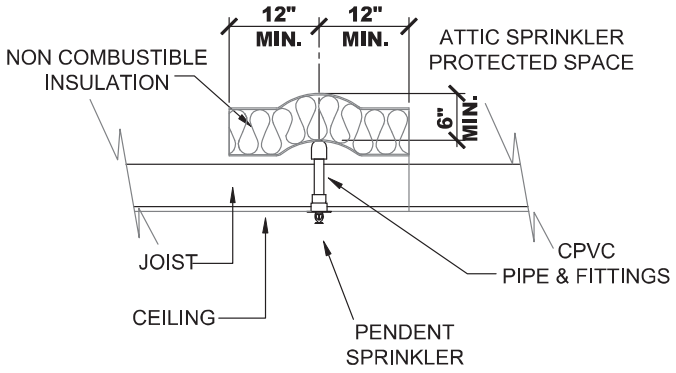


FIGURE 31A

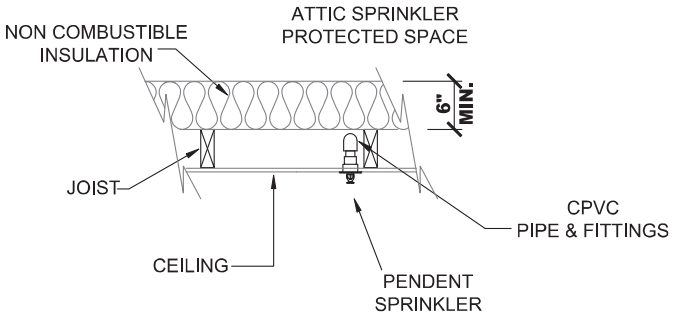


FIGURE 31B

FIGURE 31: NON-COMBUSTIBLE INSULATION FOR THE PROTECTION OF CPVC PIPE

USE OF UL LISTED CPVC PIPING WITH GLOBE SPECIFIC APPLICATION ATTIC SPRINKLERS (CONTINUED)

(Wet systems only)

CPVC AT RIDGELINE/DOWNSLOPE AREAS ONLY

UL Listed CPVC Pipe and Fittings may be used to feed the GL-SS/RE and GL-SS/DS sprinklers protecting the attic space when adhering to the following guidelines: (See FIGURE 32)

- Wet Systems only
- Risers are vertical and protected by GL-SS/RE or GL-SS/DS Sprinklers located at a maximum lateral distance of 12 in. (304.8 mm) from the riser centerline.
- GL-SS/RE or GL-SS/DS Sprinklers are directly mounted on the branchline.
- GL-SS/RE or GL-SS/DS Sprinklers are on arm-overs and located at a maximum lateral distance of 6 in. (152.4 mm) from the branchline centerline.
- GL-SS/RE or GL-SS/DS Sprinklers are on vertical sprigs attached to the branchline.

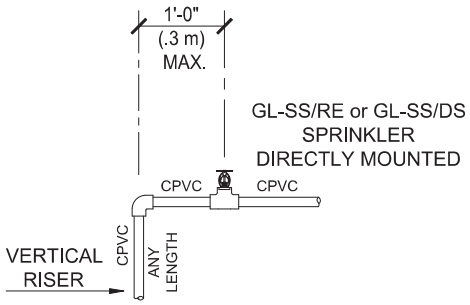


FIGURE 32A
VERTICAL RISER DIRECT MOUNT

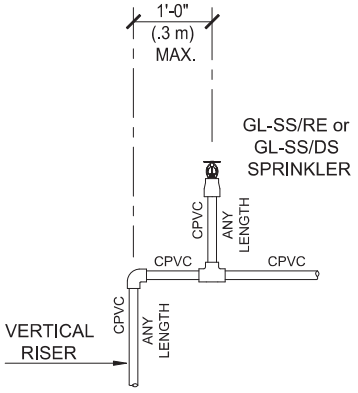


FIGURE 32B
VERTICAL RISER SPRIG UP

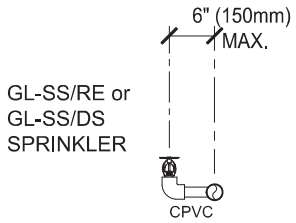


FIGURE 32C
DIRECT MOUNT
ARM-OVER

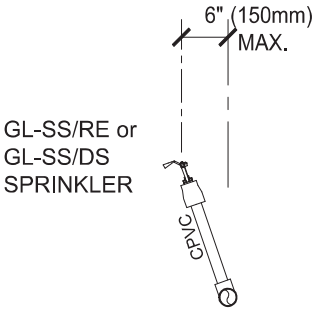


FIGURE 32D
ANGLED SPRIG

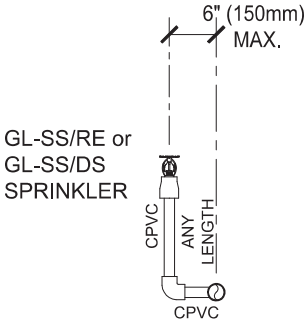


FIGURE 32E
ARM OVER SPRIG

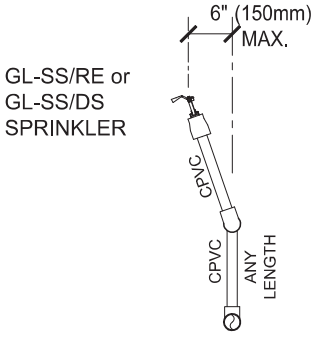


FIGURE 32F
VERTICAL SPRIG WITH
SWING JOINT

FIGURE 32: CPVC ALLOWANCE GUIDELINES
WET SYSTEMS ONLY
(DIRECTLY FEEDING GL-SS/RE / GL-SS/DS SPRINKLERS)

CPVC GUIDELINES

CPVC AT HIP AREAS

Listed CPVC may be used to feed the GL-SS/RE and GL-SS/DS sprinklers protecting the Hip areas when adhering to the following guidelines:

- Wet systems only
- When the horizontal branchline piping feeding sprinklers within the hip roof areas is run over the bottom chords of the trusses, it shall be covered with a minimum of 6 in. (152.4 mm) in depth of non-combustible insulation (See FIGURE 34). This insulation must extend nominally 12 in. (304.8 mm) on each side away from the centerline of the CPVC branchline. Insulation is for fire protection purposes. It is not freeze protection.
- When the horizontal CPVC branchline piping feeding the sprinklers within the hip roof areas is located within the ceiling joist, the joist channel must be covered or filled with a minimum of 6 in (152.4 mm) depth of noncombustible insulation on top of the branchline feeding the sprigs (See FIGURE 33). Insulation is for fire protection purposes. It is not freeze protection.
- A minimum lateral distance of 18 in (450 mm) is maintained between the CPVC pipe and a heat producing device such as heat pumps, fan motors, and heat lamps.
- The sprinklers (RE or DS) may be fed by exposed vertical sprigs directly to a sprinkler or exposed angled sprigs directly to a sprinkler provided:
  –Vertical sprigs have no maximum exposed length, the RE or DS Sprinkler is located at a maximum lateral distance of 12 in (3304.8 mm) from the sprig centerline.
  –Angled sprigs with a maximum exposed length of 3 ft. (0.9 m).

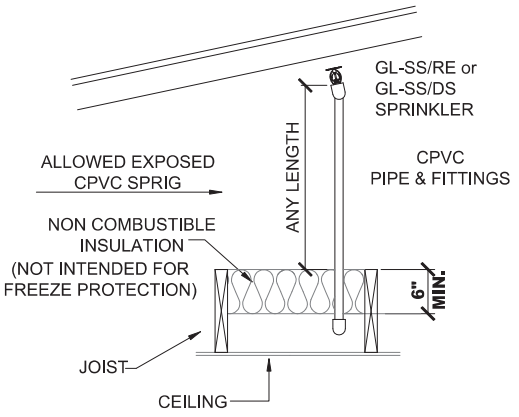


FIGURE 33A
VERTICAL SPRIG

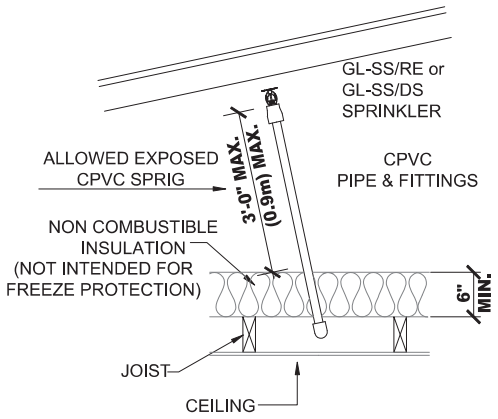


FIGURE 33B
ANGLED SPRIG

FIGURE 33: E POSED CPVC AT HIP ROOF AREAS (HORIZONTAL BRANCHLINE WITHIN JOISTS) WET SYSTEMS ONLY

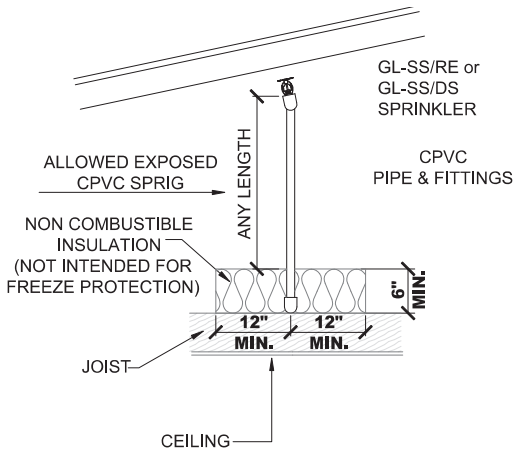


FIGURE 34A
VERTICAL SPRIG

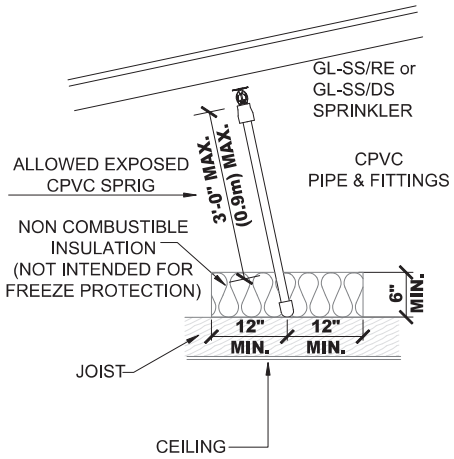


FIGURE 34B
ANGLED SPRIG

FIGURE 34: CPVC AT HIP ROOF AREAS (HORIZONTAL BRANCHLINE OVER JOISTS) WET SYSTEMS ONLY

ORDERING INFORMATION

SPECIFY

Quantity • Model • SIN • Part Number

- GL-SS/RE. . . . GL5620 562020001
- GL-SS/DS. . . . GL5621 562120001

Quantity - Wrenches - P/N 325390

GLOBE® PRODUCT WARRANTY

Globe agrees to repair or replace any of its manufactured products found to be defective in material or workmanship for a period of one year from date of shipment.

For specific details of our warranty please refer to Price List Terms and Conditions of Sale (Our Price List).

Fire Sprinkler Pipe

Schedule 10 and Schedule 40

Submittal Data Sheet

FM Approved and Fully Listed Sprinkler Pipe
Wheatland Tube's Schedule 10 and Schedule 40 steel fire sprinkler pipe is FM Approved and UL® and C-UL Listed.

Approvals and Specifications
Schedule 10 and Schedule 40 meet or exceed the following standards:

- ASTM A135, Type E, Grade A (Schedule 10, 1–8 NPS)
- ASTM A795, Type E, Grade A (Schedule 40, 1–2 NPS)
- ASTM A53, Type E, Grade B (Schedule 40, 2–8 NPS)
- ASTM A53, Type F, Grade A (Schedule 40, 1–4 NPS)
- NFPA® 13 and NFPA 14

Manufacturing Protocols
Schedule 10 and Schedule 40 are subjected to the toughest possible testing protocols to ensure the highest quality and long-lasting performance.

Finishes and Coatings
All Wheatland black steel fire sprinkler pipe receives a proprietary mill coating to ensure a clean, corrosion-resistant surface that outperforms and outlasts standard lacquer coatings. This coating allows the pipe to be easily painted, without special preparation. Schedule 10 and Schedule 40 can be ordered in black or hot-dip galvanized, to meet FM/UL requirements for dry systems that meet the zinc coating specifications of ASTM A795 or A53.

Product Marking
Each length of Wheatland fire sprinkler pipe is continuously stenciled to show the manufacturer, type of pipe, grade, size and length. Bar coding is acceptable as a supplementary identification method.

SUBMITTAL INFORMATION

PROJECT: _____ CONTRACTOR: _____ DATE: _____

ENGINEER: _____ SPECIFICATION REFERENCE: _____ SYSTEM TYPE: _____

LOCATIONS: _____ COMMENTS: _____

☐ BLACK ☐ HOT-DIP GALVANIZED

1 Council Avenue, P.O. Box 608
Wheatland, PA 16161
P 800.257.8182
F 724.346.7260

info@wheatland.com
wheatland.com
Follow us on Twitter:
@WheatlandTube

Wheatland Tube
A DIVISION OF ZEKELMAN INDUSTRIES

Fire Sprinkler Pipe

Schedule 10 and Schedule 40

Submittal Data Sheet

SCHEDULE 10 WEIGHTS AND DIMENSIONS

NPS	NOMINAL OD		NOMINAL ID		NOMINAL WALL		WT./FT.	WT./FT. H_2O FILLED	PCS./LIFT	WT./LIFT 21'	WT./LIFT 24'	WT./LIFT 25'	UL
	in.	mm	in.	mm	in.	mm	lbs.	lbs.		lbs.	lbs.	lbs.	CRR*
1	1.315	33.4	1.097	27.9	0.109	2.77	1.405	1.814	70	2065	2360	2459	11.4
1¼	1.660	42.2	1.442	36.6	0.109	2.77	1.807	2.514	61	2315	2645	2756	7.3
1½	1.900	48.3	1.682	42.7	0.109	2.77	2.087	3.049	61	2673	3055	3183	5.8
2	2.375	60.3	2.157	54.8	0.109	2.77	2.640	4.222	37	2051	2344	2442	4.7
2½	2.875	73.0	2.635	66.9	0.120	3.05	3.354	5.895	30	2226	2544	2651	3.5
3	3.500	88.9	3.260	82.8	0.120	3.05	4.336	7.949	19	1730	1977	2060	2.6
4	4.500	114.3	4.260	108.2	0.120	3.05	5.619	11.789	19	2242	2562	2669	1.6
5	5.563	141.3	5.295	134.5	0.134	3.40	7.780	17.309	13	2124	2427	2529	1.5
6	6.625	168.3	6.357	161.5	0.134	3.40	9.298	23.038	10	1953	2232	2325	1.0
8	8.625	219.1	8.249	209.5	0.188	4.78	16.960	40.086	7	2493	2849	2968	2.1

SCHEDULE 40 WEIGHTS AND DIMENSIONS

NPS	NOMINAL OD		NOMINAL ID		NOMINAL WALL		WT./FT.	WT./FT. H_2O FILLED	PCS./LIFT	WT./LIFT 21'	WT./LIFT 24'	WT./LIFT 25'	UL
	in.	mm	in.	mm	in.	mm	lbs.	lbs.		lbs.	lbs.	lbs.	CRR*
1	1.315	33.4	1.049	26.6	0.133	3.38	1.68	2.055	70	2470	2822	2940	1.000
1¼	1.660	42.2	1.380	35.1	0.140	3.56	2.27	2.922	51	2431	2778	2894	1.000
1½	1.900	48.3	1.610	40.9	0.145	3.68	2.72	3.602	44	2513	2872	2992	1.000
2	2.375	60.3	2.067	52.5	0.154	3.91	3.66	5.109	24	1845	2108	2196	1.000
2½	2.875	73.0	2.469	62.7	0.203	5.16	5.80	7.871	20	2436	2784	2900	1.000
3	3.500	88.9	3.068	77.9	0.216	5.49	7.58	10.783	13	2069	2365	2464	1.000
3½	4.000	101.6	3.548	90.1	0.226	5.74	9.12	13.400	10	1915	2189	2280	1.000
4	4.500	114.3	4.026	102.3	0.237	6.02	10.80	16.311	10	2268	2592	2700	1.000
5	5.563	141.3	5.047	158.2	0.258	6.55	14.63	23.262	7	2151	2458	2560	1.000
6	6.625	168.3	6.065	154.1	0.280	7.11	18.99	31.498	5	1994	2279	2374	1.000
8**	8.625	219.1	7.981	202.7	0.322	8.18	28.58	50.240	5	3001	3430	3573	1.000

** Calculated using Standard UL CRR formula, UL Fire Protection Directory, Category VIZY. The CRR is a ratio value used to measure the ability of a pipe to withstand corrosion. Threaded Schedule 40 steel pipe is used as the benchmark (value of 1.0).*

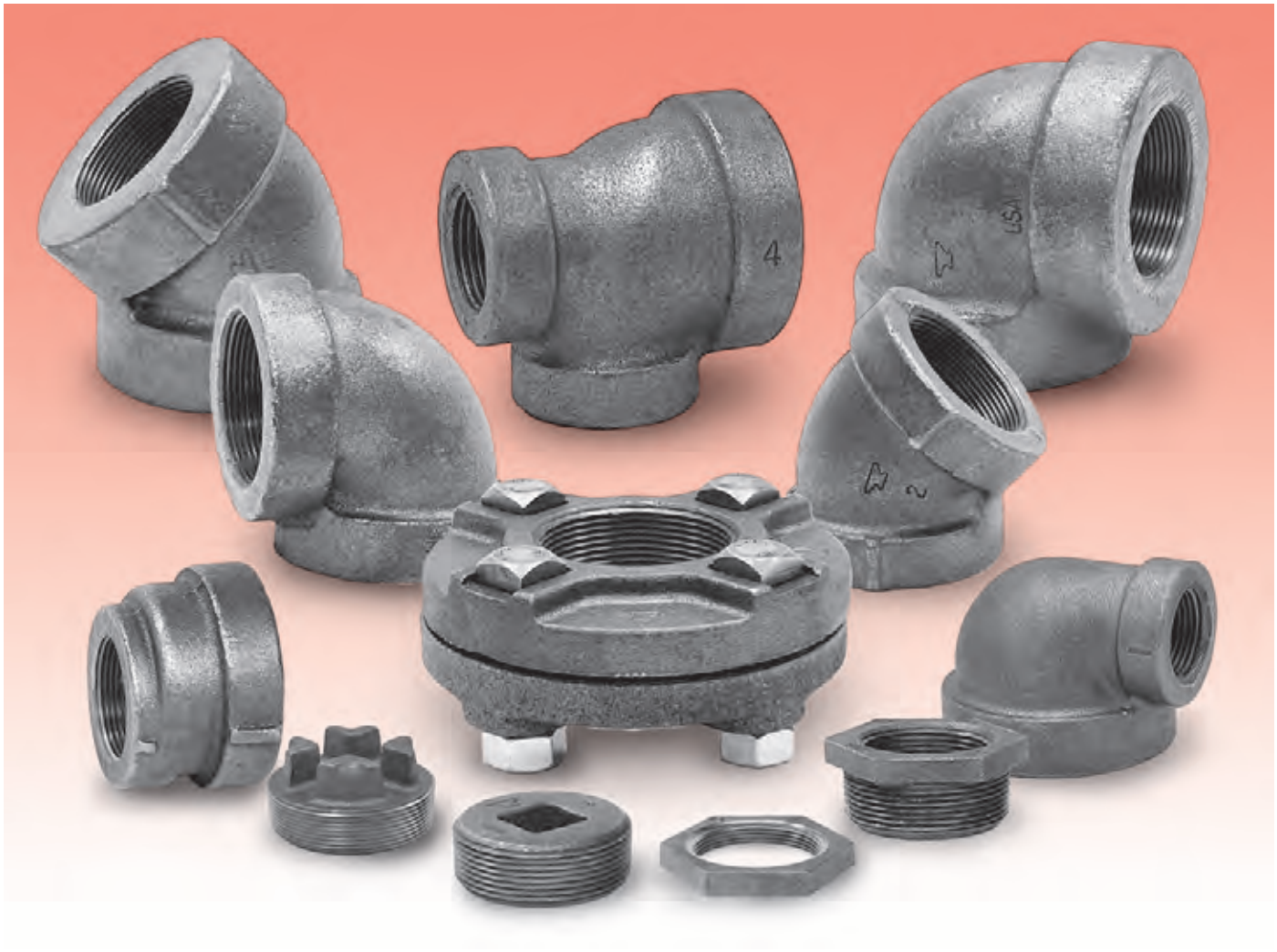
*** 8 NPS Schedule 40 is FM Approved but not UL Listed.*

WFS-060520

1 Council Avenue, P.O. Box 608
Wheatland, PA 16161
P 800.257.8182
F 724.346.7260

info@wheatland.com
wheatland.com
Follow us on Twitter:
@WheatlandTube

Wheatland Tube
A DIVISION OF ZEKELMAN INDUSTRIES



Anvil standard and extra heavy cast iron threaded fittings are manufactured in accordance with ASME-B16.4 (except plugs and bushings, ASME B16.14). Dimensions also conform to Federal Specifications, WW-P-501 (except plugs and bushings WW-P-471).

c UL us

FM APPROVED

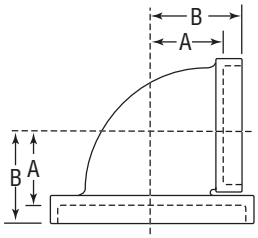
For Listings/Approval Details and Limitations, visit our website @ www.anvilintl.com or contact an Anvil/AnvilStar Sales Representative.

Cast Iron Threaded Fittings Pressure - Temperature Ratings					
Temperature		Pressure			
		Class 125		Class 250	
(°F)	*(°C)*	psi	*bar*	psi	*bar*
-20° to 150°	*-28.9 to 65.6*	175	*12.1*	400	*27.6*
200°	*93.3*	165	*11.4*	370	*25.5*
250°	*121.1*	150	*10.3*	340	*23.4*
300°	*148.9*	140	*9.7*	310	*21.4*
350°	*176.7*	125	*8.6*	300	*20.7*
400°	*204.4*	–	–	250	*17.2*

Cast Iron Threaded Fittings

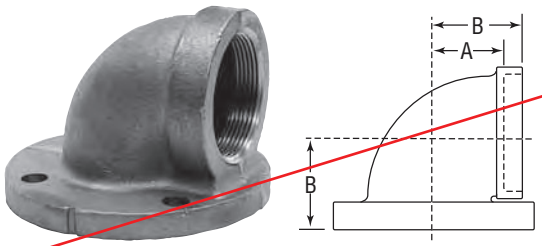
Class 125 (Standard)

FIGURE 351
90° Elbow



Size		A		B		Unit Weight Black	
NPS	*DN*	in	*mm*	in	*mm*	lbs	*kg*
1/4	*8*	1/2	*13*	13/16	*22*	0.16	*0.07*
3/8	*10*	9/16	*14*	15/16	*24*	0.25	*0.11*
1/2	*15*	11/16	*17*	1 1/8	*29*	0.40	*0.18*
3/4	*20*	13/16	*22*	1 15/16	*33*	0.60	*0.27*
1	*25*	15/16	*24*	1 1/2	*38*	0.92	*0.42*
1 1/4	*32*	1 1/8	*29*	1 3/4	*44*	1.44	*0.65*
1 1/2	*40*	1 5/16	*33*	1 15/16	*49*	1.95	*0.88*
2	*50*	1 9/16	*40*	2 1/4	*57*	3.13	*1.42*
2 1/2	*65*	1 13/16	*47*	2 11/16	*68*	4.94	*2.24*
3	*80*	2 3/16	*56*	3 1/8	*79*	7.21	*3.27*
3 1/2	*90*	2 7/16	*62*	3 7/16	*87*	9.67	*4.39*
4	*100*	2 11/16	*68*	3 13/16	*98*	12.17	*5.52*
5	*125*	3 5/16	*84*	4 1/2	*114*	21.46	*9.73*
6	*150*	3 7/8	*98*	5 1/8	*130*	31.33	*14.21*
8	*200*	5 3/16	*132*	6 9/16	*167*	64.56	*29.28*

FIGURE 371
90° Elbow,
Flange & Screw



Size		A		B		Unit Weight Black	
NPS	*DN*	in	*mm*	in	*mm*	lbs	*kg*
2 1/2	*65*	1 13/16	*47*	2 11/16	*68*	10.22	*4.63*
3	*80*	2 3/16	*56*	3 1/8	*79*	13.25	*6.01*
4	*100*	2 11/16	*68*	3 13/16	*98*	21.56	*9.78*
6	*150*	3 7/8	*98*	5 1/8	*130*	40.50	*18.37*

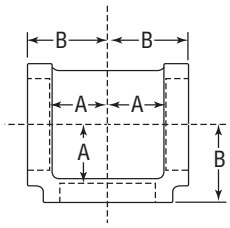
†Nominal Pipe Sizes of 4" *(100 DN)* and larger have two holes tapped for stud or tap bolts.

Note: See page 37 for pressure-temperature ratings.

Cast Iron Threaded Fittings

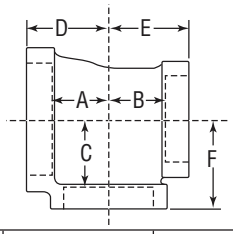
Class 125 (Standard)

FIGURE 358
Tee



Size		A		B		Unit Weight Black	
NPS	*DN*	in	*mm*	in	*mm*	lbs	*kg*
1/4	*8*	1/2	*13*	13/16	*22*	0.22	*0.10*
3/8	*10*	5/8	*16*	1	*25*	0.35	*0.16*
1/2	*15*	11/16	*17*	1 1/8	*29*	0.56	*0.25*
3/4	*20*	13/16	*22*	1 5/16	*33*	0.84	*0.38*
1	*25*	15/16	*24*	1 1/2	*38*	1.25	*0.57*
1 1/4	*32*	1 1/8	*29*	1 3/4	*44*	2.03	*0.92*
1 1/2	*40*	1 5/16	*33*	1 15/16	*49*	2.70	*1.22*
2	*50*	1 9/16	*40*	2 1/4	*57*	4.23	*1.92*
2 1/2	*65*	1 13/16	*47*	2 11/16	*68*	6.67	*3.02*
3	*80*	2 3/16	*56*	3 1/8	*79*	10.00	*4.54*
3 1/2	*90*	2 7/16	*62*	3 7/16	*87*	13.29	*6.03*
4	*100*	2 11/16	*68*	3 3/4	*95*	16.33	*7.41*
5	*125*	3 5/16	*84*	4 1/2	*114*	27.33	*12.39*
6	*150*	3 7/8	*98*	5 1/8	*130*	40.85	*18.53*
8	*200*	5 3/16	*132*	6 9/16	*167*	79.00	*35.83*

FIGURE 359
Tee Reducing



Size						A		B		C		D		E		F		Unit Weight Black	
NPS	*DN*	NPS	*DN*	NPS	*DN*	in	*mm*	in	*mm*	in	*mm*	in	*mm*	in	*mm*	in	*mm*	lbs	*kg*
1/2	*15*	1/2	*15*	1/4	*8*	1 1/16	*17*	11/16	*17*	13/16	*22*	1 1/8	*29*	1 1/8	*29*	1 1/8	*29*	0.57	*0.26*
				3/8	*10*	1 1/16	*17*	11/16	*17*	3/4	*19*	1 1/8	*29*	1 1/8	*29*	1 1/8	*29*	0.57	*0.26*
				3/4	*20*	1 3/16	*22*	13/16	*22*	11/16	*17*	1 1/4	*32*	1 1/4	*32*	13/16	*22*	0.68	*0.31*
				1	*25*	1	*25*	1	*25*	13/16	*22*	1 7/16	*37*	1 7/16	*37*	1 3/8	*35*	1.00	*0.45*
3/4	*20*	1/4	*8*	3/4	*20*	1 3/16	*22*	15/16	*24*	13/16	*22*	15/16	*24*	1 1/4	*32*	15/16	*24*	0.79	*0.36*
		1/2	*15*	1/2	*15*	1 1/16	*17*	11/16	*17*	13/16	*22*	13/16	*22*	1 1/8	*29*	1 1/4	*32*	0.64	*0.29*
				3/4	*20*	1 3/16	*22*	13/16	*22*	13/16	*22*	15/16	*24*	1 1/4	*32*	15/16	*24*	0.75	*0.34*
		3/4	*20*	1/4	*8*	9/16	*14*	9/16	*14*	7/8	*22*	11/16	*17*	11/16	*17*	13/16	*22*	0.62	*0.28*
				3/8	*10*	1 1/16	*17*	11/16	*17*	15/16	*24*	13/16	*22*	13/16	*22*	1 1/4	*32*	0.75	*0.34*
				1/2	*15*	1 1/16	*17*	11/16	*17*	13/16	*22*	13/16	*22*	13/16	*22*	1 1/4	*32*	0.76	*0.34*
				1	*25*	1 5/16	*24*	15/16	*24*	13/16	*22*	1 7/16	*37*	1 7/16	*37*	1 3/8	*35*	0.99	*0.45*
1	*25*	1/4	*8*	1	*25*	1 5/16	*24*	15/16	*24*	15/16	*24*	1 1/2	*38*	1 1/4	*32*	1 1/2	*38*	1.08	*0.49*
		1/2	*15*	1/2	*15*	1 1/16	*17*	3/4	*19*	15/16	*24*	1 1/4	*32*	13/16	*22*	1 3/8	*35*	0.90	*0.41*
				3/4	*20*	1 3/16	*22*	13/16	*22*	15/16	*24*	1 3/8	*35*	1 1/4	*32*	1 7/16	*37*	0.91	*0.41*
				1	*25*	1 5/16	*24*	15/16	*24*	15/16	*24*	1 1/2	*38*	1 3/8	*35*	1 1/2	*38*	1.08	*0.49*
		3/4	*20*	1/2	*15*	1 1/16	*17*	11/16	*17*	15/16	*24*	1 1/4	*32*	13/16	*22*	1 3/8	*35*	0.89	*0.40*
				3/4	*20*	1 3/16	*22*	13/16	*22*	15/16	*24*	1 3/8	*35*	15/16	*24*	1 7/16	*37*	1.00	*0.45*
				1	*25*	1 5/16	*24*	15/16	*24*	15/16	*24*	1 1/2	*38*	1 7/16	*37*	1 1/2	*38*	1.13	*0.51*
		1	*25*	1/4	*8*	1 1/16	*17*	11/16	*17*	1 1/8	*29*	1 1/8	*29*	1 1/4	*32*	1 3/8	*35*	1.01	*0.46*
				1/2	*15*	1 1/16	*17*	11/16	*17*	15/16	*24*	1 1/4	*32*	1 1/4	*32*	1 3/8	*35*	1.01	*0.46*
				3/4	*20*	1 3/16	*22*	13/16	*22*	15/16	*24*	1 3/8	*35*	1 3/8	*35*	1 7/16	*37*	1.11	*0.50*
				1 1/4	*32*	1 1/8	*29*	1 1/8	*29*	15/16	*24*	1 11/16	*43*	1 11/16	*43*	1 9/16	*40*	1.49	*0.68*
				1 1/2	*40*	1 1/4	*32*	1 1/4	*32*	1	*25*	1 13/16	*47*	1 13/16	*47*	1 5/8	*41*	1.84	*0.83*
				2	*50*	1 7/16	*37*	1 7/16	*37*	1	*25*	2	*50*	2	*50*	1 3/4	*44*	2.70	*1.22*

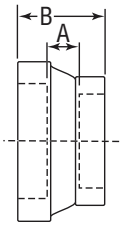
Note: See page 37 for pressure-temperature ratings.

Continued on next page.

Cast Iron Threaded Fittings

Class 125 (Standard)

FIGURE 367
Concentric Reducer



Size				A		B		Unit Weight Black	
NPS	*DN*	NPS	*DN*	in	*mm*	in	*mm*	lbs	*kg*
3/4	*20*	1/2	*15*	5/8	*16*	1 9/16	*40*	0.40	*0.18*
1	*25*	1/2 (Hex)	*15*	11/16	*17*	1 11/16	*43*	0.54	*0.24*
		3/4 (Hex)	*20*	7/16	*11*	1 1/2	*38*	0.63	*0.29*
1 1/4	*32*	1/2	*15*	9/16	*14*	1 5/8	*41*	0.84	*0.38*
		3/4	*20*	1	*25*	2 1/8	*54*	0.90	*0.41*
		1	*25*	15/16	*24*	2 1/8	*54*	1.07	*0.49*
1 1/2	*40*	1/2	*15*	1/2	*13*	1 5/8	*41*	1.00	*0.45*
		3/4	*20*	1/2	*13*	1 5/8	*41*	1.20	*0.54*
		1	*25*	1/2	*13*	1 3/4	*44*	1.50	*0.68*
		1 1/4	*32*	1	*25*	2 1/4	*57*	1.45	*0.66*
2	*50*	1/2	*15*	5/8	*16*	2	*51*	2.00	*0.91*
		3/4	*20*	3/4	*19*	2	*51*	1.90	*0.86*
		1	*25*	3/4	*19*	2	*51*	1.83	*0.83*
		1 1/4	*32*	13/16	*22*	2 1/8	*54*	1.78	*0.81*
		1 1/2	*40*	7/8	*22*	2 3/16	*56*	1.98	*0.90*
2 1/2	*65*	1 1/2	*40*	3/4	*19*	2	*51*	3.10	*1.41*
		2	*50*	1	*25*	2 9/16	*65*	2.98	*1.35*
3	*80*	3/4	*20*	15/16	*24*	2 1/2	*64*	4.31	*1.95*
		2	*50*	1 1/16	*27*	2 3/4	*70*	3.96	*1.80*
		2 1/2	*65*	15/16	*24*	2 13/16	*73*	4.40	*2.00*
4	*100*	2	*50*	1 3/16	*30*	2 15/16	*75*	6.50	*2.95*
		2 1/2	*65*	1 3/16	*30*	3 1/8	*79*	7.78	*3.53*
		3	*80*	1 1/16	*27*	3 1/8	*79*	7.01	*3.18*
5	*125*	4	*100*	1 1/16	*27*	3 5/16	*84*	10.48	*4.75*
6	*150*	4	*100*	1 1/8	*29*	3 7/16	*87*	13.83	*6.27*
		5	*125*	1 1/8	*29*	3 9/16	*90*	15.53	*7.04*
8	*200*	6	*150*	1 1/4	*32*	3 7/8	*98*	29.10	*13.20*

Note: See page 37 for pressure-temperature ratings.

Victaulic® FireLock™ Fittings

10.03

1.0 PRODUCT DESCRIPTION

Available Sizes

- 1 ¼ – 8"/DN32 – DN200

Maximum Working Pressure

- Pressure ratings for Victaulic FireLock™ Fittings conform to the ratings of Victaulic FireLock EZ™ Style 009N couplings (refer to publication 10.64 for more information).

Application

- FireLock™ fittings are designed for use exclusively with Victaulic couplings that have been Listed or Approved for Fire Protection Services. Use of other couplings or flange adapters may result in bolt pad interference.
- Connects pipe, provides change in direction and adapts sizes or components

Pipe Materials

- Carbon steel

2.0 CERTIFICATION/LISTINGS

c UL us LISTED · FM · LPCB · VdS · CE · CCC

EN 10311
Regulation (EU)
No. 305/2011

3.0 SPECIFICATIONS – MATERIAL

Fitting: Ductile iron conforming to ASTM A536, Grade 65-45-12.

Fitting Coating:

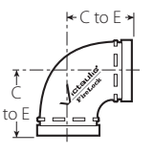
- ☐ Orange enamel.
- ☐ Red enamel in Europe, Middle East, Africa, and India.
- ☐ Optional: Hot dipped galvanized.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

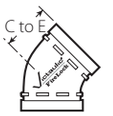
System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

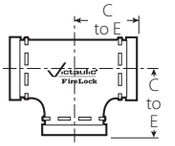
4.0 DIMENSIONS



No. 001



No. 003



No. 002

No. 006

Nominal Size inches DN	Actual Outside Diameter inches mm	No. 001 90° Elbow C to E inches mm	No. 001 90° Elbow Approximate Weight Each lb kg	No. 003 45° Elbow C to E inches mm	No. 003 45° Elbow Approximate Weight Each lb kg	No. 002 Straight Tee C to E inches mm	No. 002 Straight Tee Approximate Weight Each lb kg	No. 006 Cap T inches mm	No. 006 Cap Approximate Weight Each lb kg
1 ¼ DN32	1.660 42.4	— —	— —	— —	— —	— —	— —	0.82 21	0.3 0.1
1 ½ DN40	1.900 48.3	— —	— —	— —	— —	— —	— —	0.82 21	0.4 0.2
2 DN50	2.375 60.3	2.75 70	1.7 0.8	2.00 51	1.8 0.8	2.75 70	2.4 1.1	0.88 22	0.6 0.3
2 ½	2.875 73.0	3.00 76	3.1 1.4	2.25 57	2.2 1.0	3.00 76	3.6 1.6	0.88 22	1.0 0.5
DN65	3.000 76.1	3.00 76	3.30 1.5	2.25 57	2.4 1.1	3.00 76	3.8 1.7	—	—
3 DN80	3.500 88.9	3.38 86	4.0 1.8	2.50 64	3.1 1.4	3.38 86	5.3 2.4	0.88 22	1.2 0.5
	4.250 108.0	4.00 102	5.7 2.6	3.00 76	5.1 2.3	4.00 102	7.5 3.4	—	—
4 DN100	4.500 114.3	4.00 102	6.7 3.0	3.00 76	5.6 2.5	4.00 102	8.7 3.9	1.00 25	2.4 1.1
5	5.563 141.3	4.88 124	12.6 5.7	3.25 83	8.3 3.8	4.88 124	15.7 7.1	1.00 25	4.1 1.9
DN125	5.500 139.7	4.88 124	12.4 5.6	3.25 82.6	8.2 3.7	4.88 124	15.4 6.9	—	—
	6.250 158.8	5.50 140	12.6 5.7	3.50 89	9.2 4.2	5.50 140	17.9 8.0	—	—
6 DN150	6.625 168.3	5.50 140	18.3 8.3	3.50 89	11.7 5.3	5.50 140	22.7 10.3	1.00 25	5.9 2.7
	6.500 165.1	5.43 140	17.6 7.9	3.50 89	11.4 5.2	5.50 140	22.0 9.9	—	—
8 DN200	8.625 219.1	6.81 173	25.5 11.6	4.25 108	20.4 9.3	6.94 176	38.7 17.6	1.13 29	12.7 5.8
	8.515 216.3	6.81 173	23.1 10.5	— —	— —	6.94 176	33.6 15.2	— —	— —

5.0 PERFORMANCE

Flow Data

Size		Frictional Resistance Equivalent of Straight Pipe[1]			
		Elbows		No. 002 Straight Tee	
Nominal Size inches DN	Actual Outside Diameter inches mm	No. 001 90° Elbow feet meters	No. 003 45° Elbow feet meters	Branch feet meters	Run feet meters
1 ¼ DN32	1.660 42.4	— —	— —	— —	— —
1 ½ DN40	1.900 48.3	— —	— —	— —	— —
2 DN50	2.375 60.3	3.5 1.1	1.8 0.5	8.5 2.6	3.5 1.1
2 ½	2.875 73.0	4.3 1.3	2.2 0.7	10.8 3.3	4.3 1.3
DN65	3.000 76.1	4.5 1.4	2.3 0.7	11.0 3.4	4.5 1.4
3 DN80	3.500 88.9	5.0 1.5	2.6 0.8	13.0 4.0	5.0 1.5
	4.250 108.0	6.4 2.0	3.2 0.9	15.3 4.7	6.4 2.0
4 DN100	4.500 114.3	6.8 2.1	3.4 1.0	16.0 4.9	6.8 2.1
5	5.563 141.3	8.5 2.6	4.2 1.3	21.0 6.4	8.5 2.6
DN125	5.500 139.7	8.3 2.5	4.1 1.3	20.6 6.3	8.3 2.5
	6.250 158.8	9.4 2.9	4.9 1.5	25.0 7.6	9.6 2.9
6 DN150	6.625 168.3	10.0 3.0	5.0 1.5	25.0 7.6	10.0 3.0
	6.500 165.1	9.8 3.0	4.9 1.5	24.5 7.5	9.8 3.0
8 DN200	8.625 219.1	13.0 4.0	5.0 1.5	33.0 10.1	13.0 4.0
	8.515 216.3	13.0 4.0	— —	33.0 10.1	13.0 4.0

[1] The flow data listed is based upon the pressure drop of Schedule 40 pipe.

6.0 NOTIFICATIONS

General Notes

NOTE: When assembling FireLock EZ™ couplings onto end caps, take additional care to make certain the end cap is fully seated against the gasket end stop. For FireLock EZ™ Style 009N/009H couplings, use FireLock™ No. 006 end caps containing the “EZ” marking on the inside face or No. 60 end caps containing the “QV EZ” marking on the inside face. Non-Victaulic end cap products shall not be used with Style 009/009V/009H/009N couplings.

7.0 REFERENCE MATERIALS

10.64: Victaulic® FireLock™ Rigid Coupling Style 009N

10.02: Victaulic® FireLock™ Rigid Coupling Style 005H with Vic-Plus™ Gasket System

29.01: Victaulic® Terms and Conditions of Sale

Victaulic® Firelock™ Rigid Coupling
Style 009N

10.64

Patented

1.0 CERTIFICATION/LISTINGS

C104-1a/36

2.0 PRODUCT DESCRIPTION

- The FireLock EZ™ Style 009N Installation-ReadyTM Rigid Coupling is for use in the fire protection market.
- The coupling's unique design eliminates loose parts, promotes consistent installation and provides substantial gains in productivity.
- **IMPORTANT:** FireLock EZ™ Style 009N couplings are recommended for use ONLY on fire protection systems.

3.0 MATERIAL SPECIFICATIONS

Housing: Ductile iron conforming to ASTM A 536, Grade 65-45-12. Ductile iron conforming to ASTM A 395, Grade 65-45-15, is available upon special request.

Housing Coating: (specify choice)

☐ Orange enamel (North America, Asia Pacific)

☐ Red enamel (Europe)

☐ Hot dipped galvanized

Gasket: (specify choice[1])

☐ **Grade "E" EPDM (Type A)**
FireLock EZ products have been Listed by Underwriters Laboratories Inc., Underwriters Laboratories of Canada Limited, and Approved by Factory Mutual Research for wet and dry (oil free air) sprinkler services within the rated working pressure.

1 Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific gasket service guidelines and for a listing of services which are not compatible.

Bolts/Nuts: Zinc electroplated carbon steel, trackhead meeting the physical and chemical requirements of ASTM A 449 and physical requirements of ASTM A 183.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

4.0 LISTINGS/APPROVAL [2]

The information provided below is based on the latest listing and approval data at the time of publication. Listings/Approvals are subject to change and/or additions by the approvals agencies. Contact Victaulic for performance on other pipe and the latest listings and approvals.

Nominal Size	cULus			FM			Vds	LPCB
inches mm	Sch. 5 psi kPa	Sch. 10 psi kPa	Sch. 40 psi kPa	Sch. 5 psi kPa	Sch. 10 psi kPa	Sch. 40 psi kPa	psi kPa	psi kPa
1 ¼ 32	232 1600	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
1 ½ 40	232 1600	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
2 50	363 2502	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
2 ½ 65	N/A	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
76.1 mm	N/A	365 [3] 2517 [3]	N/A	N/A	363 [4] 2502 [4]	N/A	363 2500	363 2500
3 80	N/A	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
4 100	N/A	365 2517	365 2517	175 1205	363 2502	363 2502	363 2500	363 2500
108.0 mm	N/A	N/A	N/A	175 1205	363 2502	363 2502	N/A	N/A
5 125	N/A	290 2000	365 2517	N/A	363 2502	363 2502	232 1600	N/A
133.0 mm	N/A	N/A	N/A	N/A	363 [4] 2502 [4]	N/A	N/A	N/A
139.7 mm	N/A	290 [5] 2000 [5]	N/A	N/A	363 [4] 2502 [4]	N/A	232 1600	N/A
159.0 mm	N/A	N/A	N/A	N/A	363 [4] 2502 [4]	N/A	N/A	N/A
165.1 mm	N/A	290 [6] 2000 [6]	N/A	N/A	363 [4] 2502 [4]	N/A	N/A	N/A
6 150	N/A	290 2000	365 2517	N/A	363 2502	363 2502	232 1600	N/A
216.0 mm	N/A	N/A	N/A	N/A	363 [4] 2502 [4]	N/A	N/A	N/A
8 200	N/A	290 2000	365 2517	N/A	363 2502	363 2502	232 1600	N/A

2 Listed/Approved for wet and dry pipe systems (> –40°F/–40°C) for continuous use in freezing conditions, use of Style 005H Coupling with Silicone Gasket is recommended.
Please see the Victaulic Installation Manual I-009N/009H for details concerning when supplemental lubrication is required.

3 cULus listed for DIN 2458 2.6 mm pipe wall.

4 FM approved for BS 1387 Medium 3.6 mm pipe wall.

5 cULus listed for EN 10220 4.0 mm pipe wall.

6 cULus listed for EN 10255 4.5 mm pipe wall.

4.1 LISTINGS/APPROVAL

Speciality Pipe

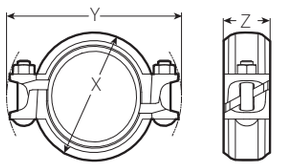
Pipe	Size	Pressure Rating		Pipe	Size	Pressure Rating		Pipe	Size	Pressure Rating	
	inches	**cULus** psi kPa	**FM** psi kPa		inches	**cULus** psi kPa	**FM** psi kPa		inches	**cULus** psi kPa	**FM** psi kPa
BLT	1 ¼ – 2	300 2068	365 2517	EZT	1 ¼ – 2	300 2068	365 2517	MT	1 ¼ – 2	300 2068	365 2517
DF	1 ¼ – 4	300 2068	365 2517	FF	1 ¼ – 4	300 2068	365 2517	MLT	1 ¼ – 2	N/A	365 2517
DT	1 ¼ – 2	300 2068	365 2517	FLF	1 ¼ – 4	N/A	365 2517	ST	1 ¼ – 2	N/A	365 2517
EF	1 ¼ – 4	175 1206	175 1206	FLT	1 ¼ – 2	N/A	365 2517	STF	1 ¼ – 4	N/A	365 2517
EL	1 ¼ – 2	300 2068	365 2517	FLTL	1 ¼ – 2	N/A	365 2517	TF	2 ¼ – 4	N/A	365 2517
ET40	1 ¼ – 2	300 2068	365 2517	GL	1 ¼ – 2	300 2068	365 2517	WLS	1 ¼ – 2	300 2068	365 2517
EZF	3 – 4	300 2068	365 2517	MF	1 ¼ – 4	300 2068	365 2517	WST	1 ¼ – 2	N/A	365 2517
								XL	1 ¼ – 2	300 2068	365 2517

NOTES

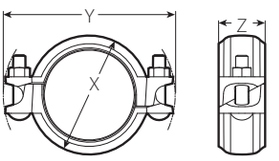
- BLT = BLT steel pipe manufactured by Allied Tube & Conduit Corp.
- DF = DYNA-FLOW steel pipe manufactured by Allied Tube & Conduit Corp.
- DT = DYNA-FLOW steel pipe manufactured by Allied Tube & Conduit Corp.
- EF = EDDY FLOW steel pipe manufactured by Bull Moose Tube Co.
- EL = EDDYLITE steel pipe manufactured by Bull Moose Tube Co.
- ET40 = Eddythread 40 steel pipe manufactured by Bull Moose Tube Co.
- EZF = EZ-Flow steel pipe manufactured by Northwest Pipe Co.
- EZT = EZ-Thread steel pipe manufactured by Youngstown Tube Co.
- FF = Fire-Flo steel pipe manufactured by Youngstown Tube Co.
- FLF = Fire-Line Flow steel pipe manufactured by Western International Forest Products Inc.
- FLT = Fire-Line Threadable steel pipe manufactured by Western International Forest Products Inc.
- FLTL = Fire-Line Threadable Light steel pipe manufactured by Western International Forest Products Inc.
- GL = GL steel pipe manufactured by Wheatland Tube Co.
- MF = Mega-Flow steel pipe manufactured by Wheatland Tube Co.
- MT = Mega-Thread steel pipe manufactured by Wheatland Tube Co.
- MLT = MLT steel pipe manufactured by Wheatland Tube Co
- ST = STD wall pipe in accordance with ASTM A53.
- STF = Steady Flow steel pipe manufactured by AMS Tube Corp.
- TF = Tex-Flow steel pipe manufactured by Tex-Tube Co.
- WLS = WLS steel pipe manufactured by Wheatland Tube Co.
- WST = WST steel pipe manufactured by Wheatland Tube Company.
- XL = XL steel pipe manufactured by Allied Tube & Conduit Corp.

5.0 DIMENSIONS

Style 009N



Style 009N Pre-Assembled
(Push On Condition)



Style 009N Joint Assembled

Nominal Size	Actual Outside Diameter	Maximum Working Pressure [7]	Maximum End Load [7]	Allow. Pipe End Separation [8]	Bolt/Nut [9] Size		Dimensions					Approx. Weight Each
							Pre-assembled (Push On Condition)		Joint Assembled			
							X	Y	X	Y	Z	
inches mm	inches mm	psi kPa	lbs. N	inches mm	No.	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	lbs. kg
1 ¼ 32	1.660 42.4	365 2517	790 3514	0.10 2.54	2	⅜ × 2 M10 x 2	3.13 79	5.00 127	2.75 70	5.00 127	2.00 51	1.4 0.6
1 ½ 40	1.900 48.3	365 2517	1035 4604	0.10 2.54	2	⅜ × 2 M10 x 2	3.38 86	5.13 130	3.00 76	5.13 130	2.00 51	1.5 0.7
2 50	2.375 60.3	365 2517	1616 7193	0.12 3.05	2	⅜ ×2 ½ M10 x 2 ½	4.00 102	5.63 143	3.50 89	5.63 143	2.00 51	1.9 0.9
2 ½ 65	2.875 73.0	365 2517	2370 10542	0.12 3.05	2	⅜ × 2 ½ M10 x 2 ½	4.50 114	6.13 156	4.00 102	6.13 156	2.00 51	2.1 1.0
76.1 mm	3.000 76.1	365 2517	2580 11476	0.12 3.05	2	⅜ × 2 ½ M10 x 2 ½	4.63 118	6.00 152	4.13 105	6.13 156	2.00 51	2.1 1.0
3 80	3.500 88.9	365 2517	3512 15622	0.12 3.05	2	⅜ × 2 ½ M10 x 2 ½	5.13 130	6.75 171	4.63 117	6.75 171	2.00 51	2.3 1.0
4 100	4.500 114.3	365 2517	5805 25822	0.17 4.32	2	⅜ × 2 ½ M10 x 2 ½	6.00 152	7.88 200	5.63 143	7.50 191	2.13 54	2.9 1.3
108.0 mm	4.250 108.0	365 2517	5175 23020	0.17 4.32	2	⅜ × 2 ½ M10 x 2 ½	5.63 152	7.38 1.87	5.38 137	7.38 187	2.13 54	3.1 1.4
5 125	5.563 141.3	365 2000	8870 39456	0.17 4.32	2	½ × 3 M12 x 3	7.25 184	9.25 235	6.75 171	9.13 232	2.25 57	5.0 2.3
133.0 mm	5.250 133.0	365 2517	7897 35106	0.17 4.32	2	½ × 3 M12 x 3	6.63 168	9.00 229	6.38 162	9.00 229	2.25 57	4.8 2.2
139.7 mm	5.500 139.7	365 2517	8667 38529	0.17 4.32	2	½ × 3 M12 x 3	6.88 175	9.25 235	6.75 171	9.13 232	2.25 57	4.9 2.2
159.0 mm	6.250 159.0	365 2517	11192 49753	0.17 4.32	2	½ × 3 ¼ M12 x 3 ¼	7.88 200	10.00 254	7.38 187	9.88 251	2.25 57	5.6 2.5
165.1 mm	6.500 165.1	365 2517	12105 53813	0.17 4.32	2	½ × 3 ¼ M12 x 3 ¼	8.00 203	10.25 260	7.75 197	10.13 257	2.25 57	6.0 2.7
6 150	6.625 168.3	365 2000	12582 44469	0.17 4.32	2	½ × 3 ¼ M12 x 3 ¼	8.38 213	10.38 264	7.88 200	10.13 257	2.25 57	6.0 2.7
216.0 mm	8.500 216.0	365 2517	20712 55968	0.17 4.32	2	⅝ × 4 M16 x 4	10.63 270	13.25 337	10.25 260	10.13 257	2.63 67	11.4 5.2
8 200	8.625 219.1	365 1620	21326 94863	0.17 4.32	2	⅝ × 4 M16 x 4	10.88 276	13.38 340	10.25 260	13.13 333	2.50 64	11.4 5.2

7 Working Pressure and End Load are total, from all internal and external loads, based on standard weight (ANSI) steel pipe, standard roll or cut grooved in accordance with Victaulic specifications. See the Listings/Approvals section of this publication for ratings on other pipe.

8 The allowable pipe separation dimension shown is for system layout purposes only. FireLock EZ™ couplings are considered rigid connections and will not accommodate expansion or contraction of the piping system.

9 Number of bolts required equals number of housing segments.

NOTES

- When assembling FireLock EZ™ couplings onto end caps, take additional care to make certain the end cap is fully seated against the gasket end stop. For FireLock EZ™ Style 009N couplings, use FireLock No. 006 end caps containing the "EZ" marking on the inside face or No. 60 end caps containing the "QV EZ" marking on the inside face. Non-Victaulic end cap products shall not be used with Style 009N couplings. IMPORTANT: Gaskets intended for the Style 009 or Style 009V couplings cannot be used with the Style 009N coupling. There is no interchanging of gaskets or housings between coupling styles.
- **Use Of Flushseal Gaskets For Dry Pipe Systems** FireLock EZ™ couplings are supplied with FireLock EZ™ Grade "E" Type A gaskets. These gaskets include an integral pipe stop, that once installed provides the similar benefits as a FlushSeal gasket for dry pipe systems. It should be noted that standard Victaulic Flush-Seal™ gaskets are not compatible and cannot be used with the FireLock EZ™ couplings.

6.0 REFERENCE MATERIALS

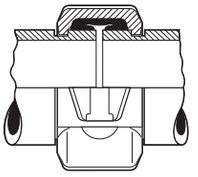
Publication 05.01: Seal Selection Guide

I-009N/009H: Installation Instructions FireLock EZ™ Rigid Coupling

Victaulic® Flexible Coupling
Style 75

06.05

1 – 8"/DN25 – DN200



Exaggerated for clarity

1.0 PRODUCT DESCRIPTION

Available Sizes

- 1 – 8"/DN25 – DN200

Pipe Material

- Carbon steel
- Stainless steel

Maximum Working Pressure

- Accommodates pressures ranging from full vacuum (29.9 in Hg/760 mm Hg) up to 500 psi/3447 kPa/34 bar
- Working pressure dependent on material, wall thickness and size of pipe

Application

- Joins standard roll grooved and cut grooved pipe, as well as grooved fittings, valves and accessories
- Provides a flexible pipe joint which allows for expansion, contraction and deflection
- Up to 50% lighter in weight than standard Victaulic Style 77 or Style 177N flexible couplings

2.0 CERTIFICATION/LISTINGS

NOTES

- Download publication 10.01 for Fire Protection Certifications/Listings Reference Guide.
- See publication 02.06: Victaulic Potable Water Approvals ANSI/NSF for potable water approvals if applicable.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

3.0 SPECIFICATIONS – MATERIAL

Housing: Ductile iron conforming to ASTM A536, Grade 65-45-12. Ductile iron conforming to ASTM A395, Grade 65-45-15, is available upon special request.

Housing Coating: (specify choice)

- ☐ Standard: Orange enamel
- ☐ Optional: Hot dipped galvanized
- ☐ Optional: Contact Victaulic with your requirements for other coatings.

Gasket: (specify choice[1])

- ☐ **Grade "E" EPDM**
  EPDM (Green stripe color code). Temperature range –30ºF to +230ºF/–34ºC to +110ºC. May be specified for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**
- ☐ **Grade "T" Nitrile**
  Nitrile (Orange stripe color code). Temperature range –20ºF to +180ºF/–29ºC to +82ºC. May be specified for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range; not compatible for hot dry air over +140°F/+60°C and water over +150°F/+66°C. **NOT COMPATIBLE FOR USE WITH HOT WATER.**
- ☐ **Others**
  For alternate gasket selection, reference publication 05.01: Victaulic Seal Selection Guide - Elastomeric Seal Construction.

[1] Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest Victaulic Seal Selection Guide for specific gasket service guidelines and for a listing of services which are not compatible.

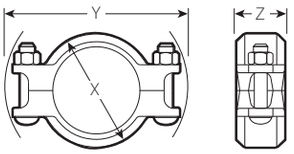
Bolts/Nuts: (specify choice[2])

- ☐ Standard: Carbon steel oval neck track bolts meeting the mechanical property requirements of ASTM A449 (imperial) and ISO 898-1 Class 9.8 (metric). Carbon steel hex nuts meeting the mechanical property requirements of ASTM A563 Grade B (imperial - heavy hex nuts) and ASTM A563M Class 9 (metric - hex nuts). Track bolts and hex nuts are zinc electroplated per ASTM B633 ZN/FE5, finish Type III (imperial) or Type II (metric).
- ☐ Optional (imperial): Stainless steel oval neck track bolts meeting the mechanical property requirements of ASTM F593, Group 2 (316 stainless steel), condition CW. Stainless steel heavy nuts meeting the mechanical property requirements of ASTM F594, Group 2 (316 stainless steel), condition CW, with galling reducing coating.

[2] Optional bolts/nuts are available in imperial sizes only.

4.0 DIMENSIONS

Style 75



Size		Pipe End Separation[3]	Deflection from Centerline[3]		Bolt/Nut		Dimensions			Weight
Nominal inches DN	Actual Outside Diameter inches mm	Allowable inches mm	Per Cplg. Degrees	Pipe inches/ft. mm/m	Qty.	Size imperial metric	X inches mm	Y inches mm	Z inches mm	Approx. (Each) lb kg
1 DN25	1.315 33.7	0–0.06 0–1.6	2°–43′	0.57 48	2	⅜ x 2 M10 x 51	2.38 61	4.27 108	1.77 45	1.3 0.6
1 ¼ DN32	1.660 42.4	0–0.06 0–1.6	2°–10′	0.45 38	2	⅜ x 2 M10 x 51	2.68 68	4.61 117	1.77 45	1.4 0.6
1 ½ DN40	1.900 48.3	0–0.06 0–1.6	1°–56′	0.40 33	2	⅜ x 2 M10 x 51	2.91 74	4.82 122	1.77 45	1.5 0.6
2 DN50	2.375 60.3	0–0.06 0–1.6	1°–31′	0.32 26	2	⅜ x 2 M10 x 51	3.43 87	5.22 133	1.88 48	1.7 0.8
2 ½	2.875 73.0	0–0.06 0–1.6	1°–15′	0.26 22	2	⅜ x 2 M10 x 51	3.88 98	5.68 144	1.88 48	1.9 0.9
DN65	3.000 76.1	0–0.06 0–1.6	1°–12′	0.26 22	2	⅜ x 2 M10 x 51	4.00 102	5.90 150	1.88 48	1.9 0.9
3 DN80	3.500 88.9	0–0.06 0–1.6	1°–2′	0.22 18	2	½ x 2 ¾ M12 x 70	4.50 114	7.00 178	1.88 48	2.9 1.3
3 ½ DN90	4.000 101.6	0–0.06 0–1.6	0°–54′	0.19 16	2	½ x 2 ¾ M12 x 70	5.00 127	7.50 191	1.88 48	2.9 1.3
4 DN100	4.500 114.3	0–0.13 0–3.2	1°–36′	0.34 28	2	½ x 2 ¾ M12 x 70	5.80 147	8.03 204	2.13 54	4.1 1.9
	4.250 108.0	0–0.13 0–3.2	1°–41′	0.35 29	2	½ x 2 ¾ M12 x 70	5.55 141	7.79 198	2.13 54	3.7 1.7
	5.000 127.0	0–0.13 0–3.2	1°–26′	0.25 21	2	⅝ x 3 ¼ M16 x 83	6.13 156	9.43 240	2.13 54	5.5 2.5
5	5.563 141.3	0–0.13 0–3.2	1°–18′	0.27 23	2	⅝ x 3 ¼ M16 x 83	6.88 175	10.07 256	2.13 54	5.8 2.6
	5.250 133.0	0–0.13 0–3.2	1°–21′	0.28 24	2	⅝ x 3 ¼ M16 x 83	6.55 166	9.37 238	2.13 54	6.0 2.7
DN125	5.500 139.7	0–0.13 0–3.2	1°–18′	0.28 24	2	⅝ x 3 ¼ M16 x 83	6.80 173	9.59 244	2.13 54	6.3 2.9
	6.000 152.4	0–0.13 0–3.2	1°–12′	0.21 18	2	⅝ x 3 ¼ M16 x 83	7.38 187	10.48 266	1.88 48	6.2 2.8
6 DN150	6.625 168.3	0–0.13 0–3.2	1°–5′	0.23 18	2	⅝ x 3 ¼ M16 x 83	8.00 203	11.07 281	2.13 54	7.0 3.2
	6.250 159.0	0–0.13 0–3.2	1°–9′	0.24 20	2	⅝ x 3 ¼ M16 x 83	7.63 194	10.49 266	2.13 54	6.8 3.1
	6.500 165.1	0–0.13 0–3.2	1°–7′	0.23 58	2	⅝ x 3 ¼ M16 x 83	7.84 199	10.66 271	2.08 53	6.6 3.0
	8.515 216.3	0–0.13 0–3.2	0°–51′	0.18 46	2	¾ x 4 ¼ M20 x 108	10.19 259	13.75 350	2.32 59	13.2 6.0
8 DN200	8.625 219.1	0–0.13 0–3.2	0°–50′	0.18 14	2	¾ x 4 ¼ M20 x 108	10.34 263	13.97 355	2.13 59	12.4 5.6

[3] Allowable Pipe End Separation and Deflection figures show the maximum nominal range of movement available at each joint for standard **roll** grooved pipe. Figures for standard **cut** grooved pipe may be doubled. These figures are maximums; for design and installation purposes these figures should be reduced by: 50% for ¾ – 3 ½"/DN20 – DN90; 25% for 4"/DN100 and larger.

NOTE

- Metric thread size bolts are available (color coded gold) for all coupling sizes upon request. Contact Victaulic for details.

5.0 PERFORMANCE

Style 75

Size		Maximum Working Pressure[4]	Maximum End Load[4]
Nominal inches DN	Actual Outside Diameter inches mm	psi kPa	lb N
1 DN25	1.315 33.7	500 3447	680 3,025
1 ¼ DN32	1.660 42.4	500 3447	1080 4,805
1 ½ DN40	1.900 48.3	500 3447	1420 6,320
2 DN50	2.375 60.3	500 3447	2215 9,860
2 ½	2.875 73.0	500 3447	3245 14,440
DN65	3.000 76.1	500 3447	3535 15,730
3 DN80	3.500 88.9	500 3447	4800 21,360
3 ½ DN90	4.000 101.6	500 3447	6300 28,035
4 DN100	4.500 114.3	500 3447	7950 35,380
	4.250 108.0	450 3103	6380 28,395
	5.000 127.0	450 3103	8820 39,250
5	5.563 141.3	450 3103	10935 48,660
	5.250 133.0	450 3103	9735 43,325
DN125	5.500 139.7	450 3103	10665 47,460
	6.000 152.4	450 3103	12735 56,670
6 DN150	6.625 168.3	450 3103	15525 69,085
	6.250 159.0	450 3103	13800 61,405
	6.500 165.1	450 3103	14930 66,412
	8.515 216.3	450 3103	25625 113,986
8 DN200	8.625 219.1	450 3103	26280 116,945

[4] Working Pressure and End Load are total, from all internal and external loads, based on ANSI B36.10 sized carbon steel pipe, grooved in accordance with Victaulic specifications. Contact Victaulic for performance on other pipe.

NOTE

- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1½ times the figures shown.

6.0 NOTIFICATIONS

WARNING

- **Victaulic RX roll sets must be used when grooving light-wall/thin-wall stainless steel pipe for use with Victaulic Couplings.**

Failure to use Victaulic RX roll sets when grooving light-wall/thin-wall stainless steel pipe may cause joint failure, resulting in serious personal injury and/or property damage.

NOTICE

- **Victaulic RX grooving rolls must be ordered separately. They are identified by a silver color and the designation RX on the front of the roll sets.**

7.0 REFERENCE MATERIALS

02.06: Victaulic® Potable Water Approvals ANSI/NSF

05.01: Victaulic® Seal Selection Guide - Elastomeric Seal Construction

06.15: Victaulic® Pressure Ratings and End Loads for Victaulic Couplings on Steel Pipe

10.01: Victaulic® Products for Fire Protection Pipings Systems - Regulatory Approval Reference Guide

17.01: Victaulic® Pipe Preparation for Use on Stainless Steel Pipe With Victaulic Products

17.09: Victaulic® Ductile Iron Grooved Couplings Performance Data for Stainless Steel Pipe

25.01: Victaulic® Standard Groove Specifications

26.01: Victaulic® Design Data

29.01: Victaulic® Terms and Conditions of Sale

I-100: Victaulic® Field Installation Handbook

06.05 1470 Rev P Updated 10/2017