

SPECIFIC APPLICATION ATTIC SPRINKLERS

GENERAL DESCRIPTION

The Globe 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 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 these specific Attic structure hazards. 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 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 Attic Protection Scheme requires identifying any of four separate "spaces" within an attic; "Ridgeline"; "Downslope"; "Lower Hip" and "Upper Hip". See Figure 1.

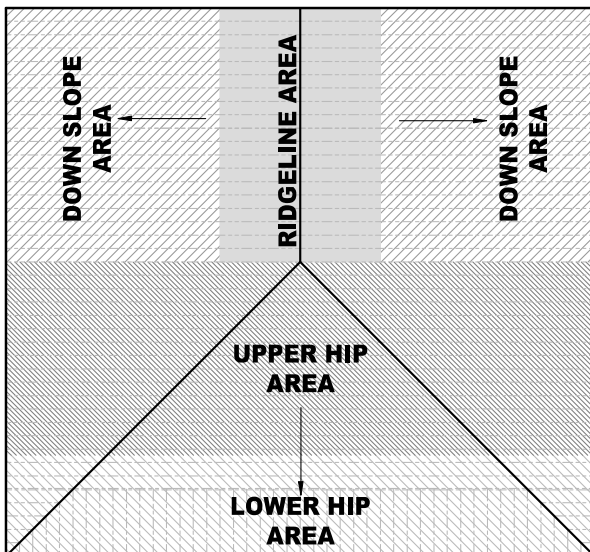
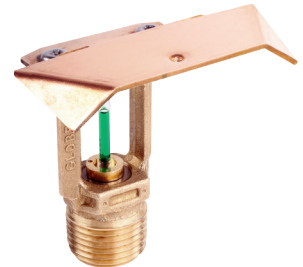


FIGURE 1: ATTIC AREA OF PROTECTION IDENTIFICATION



**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

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

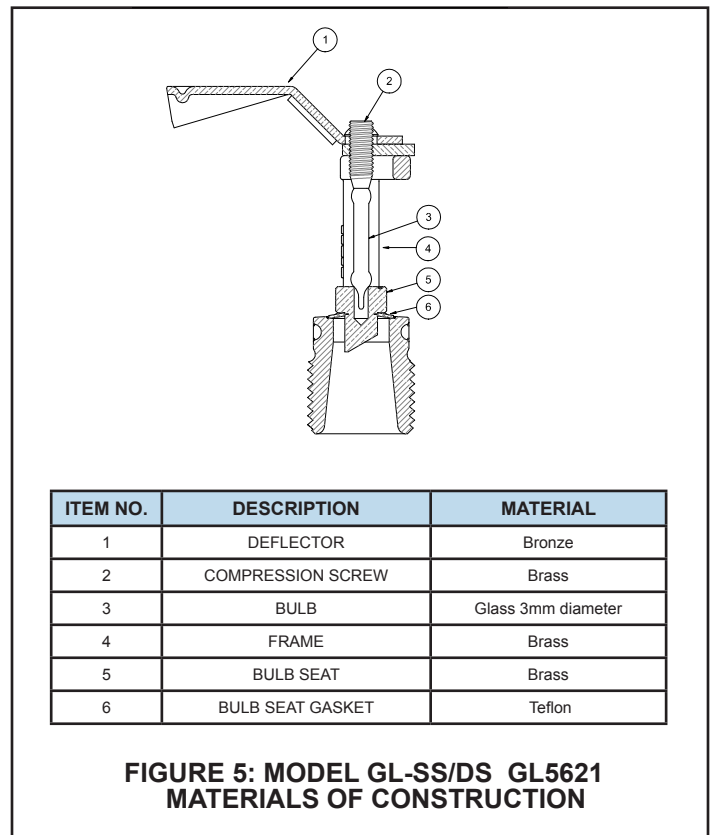
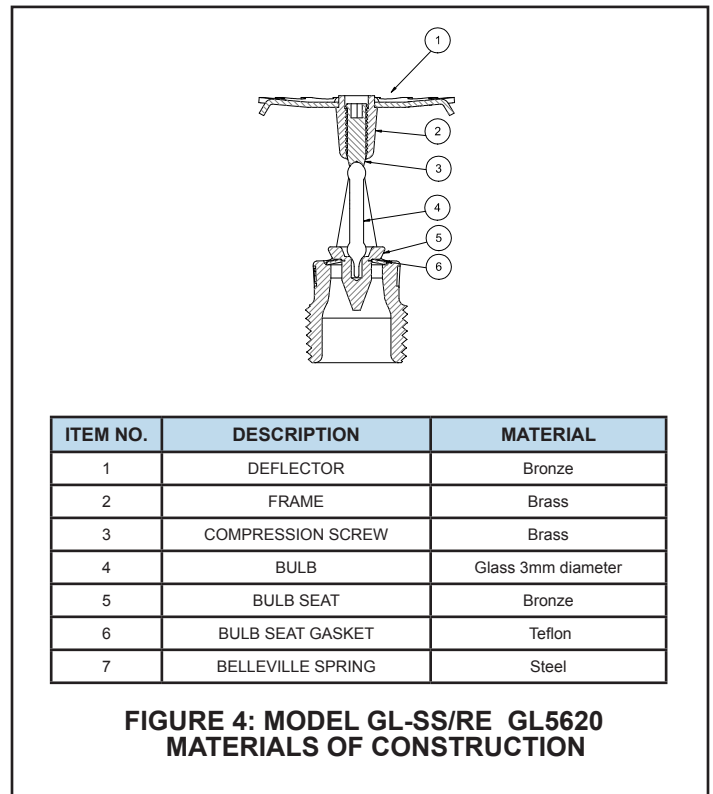
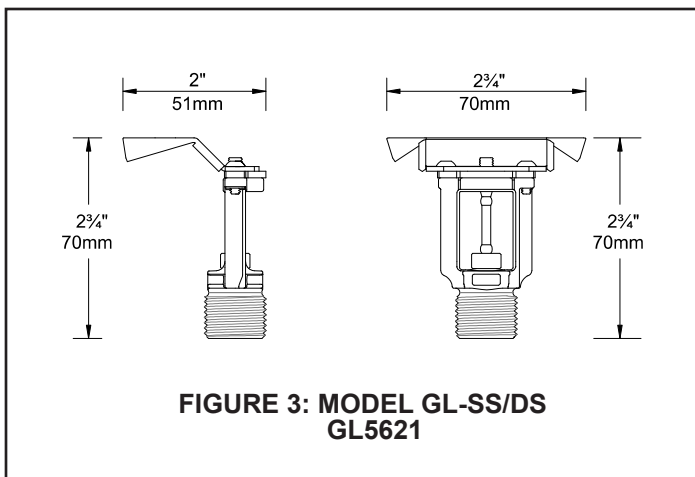
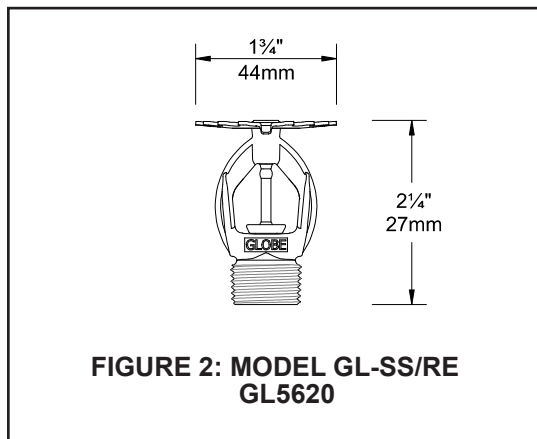
- 12.8 psi (0.88 bar)

Temperature Rating

- 200°F (93.3°C)

Response Type

- Quick Response



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 ridge-line/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.

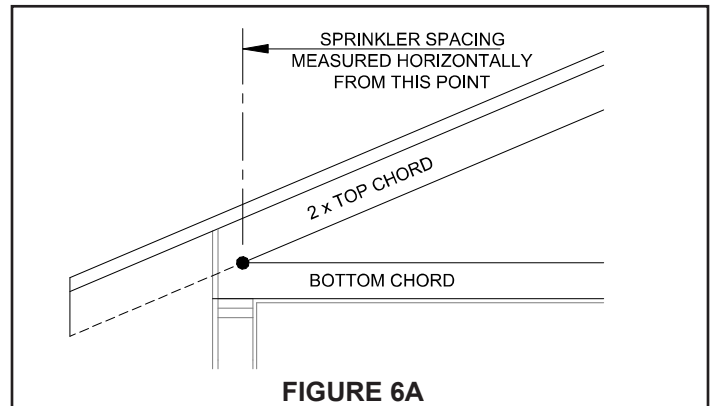


FIGURE 6A

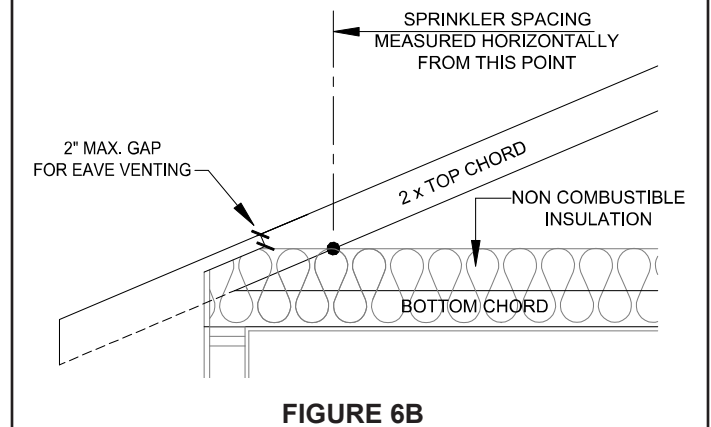


FIGURE 6B

FIGURE 6: DIMENSION FROM EAVE

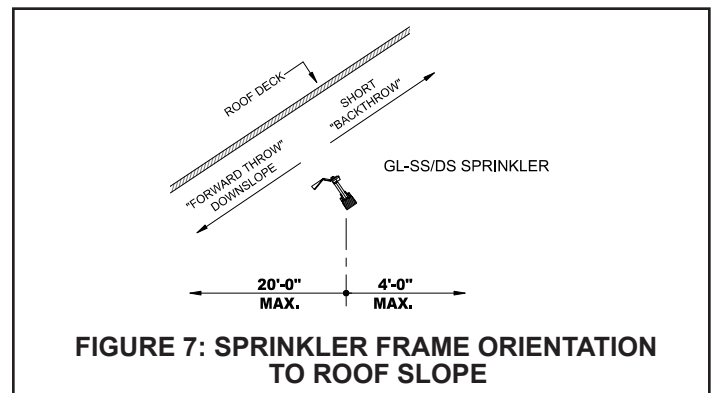


FIGURE 7: SPRINKLER FRAME ORIENTATION TO ROOF SLOPE

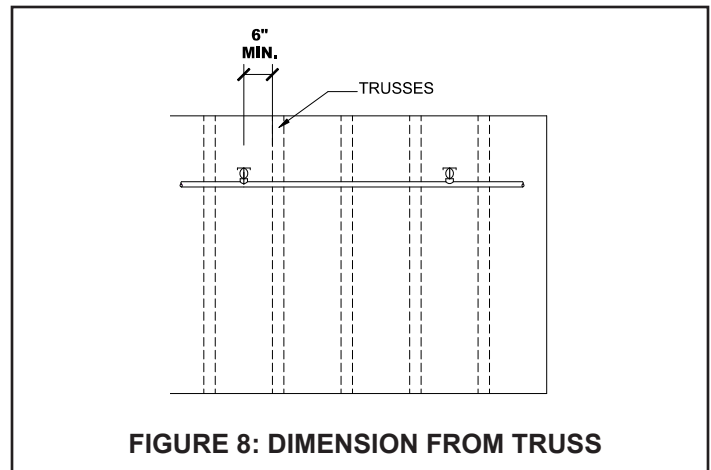


FIGURE 8: DIMENSION FROM TRUSS

SYSTEM DESIGN PROCEDURE

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 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.

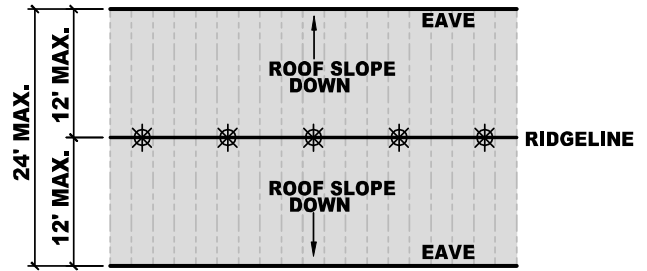


FIGURE 9A

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)

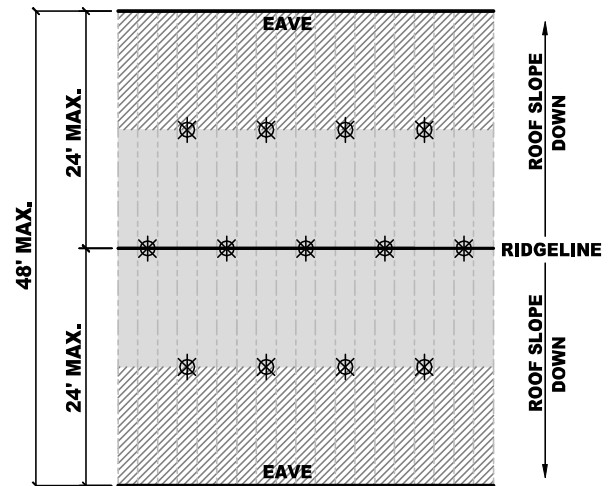


FIGURE 9B

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 Figures 10 and 11 for dimensional limitations)

NOTE:

Single sloped roofs have not been investigated at the time of printing. Design single slope roofs with shear walls in accordance with NFPA 13.

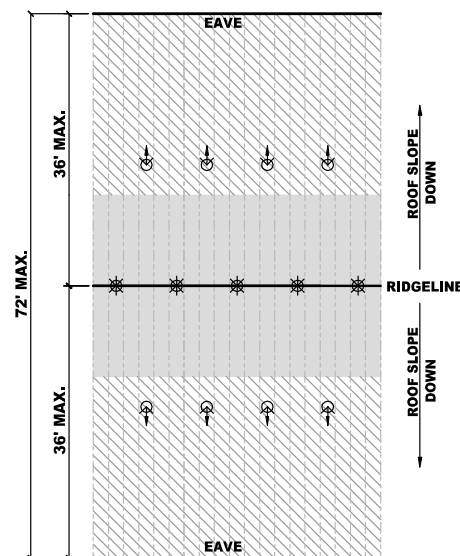
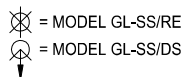


FIGURE 9C

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)

MAXIMUM 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 to be a maximum of 2" (maximum top chord to be 6").

LATERAL MAXIMUM 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.

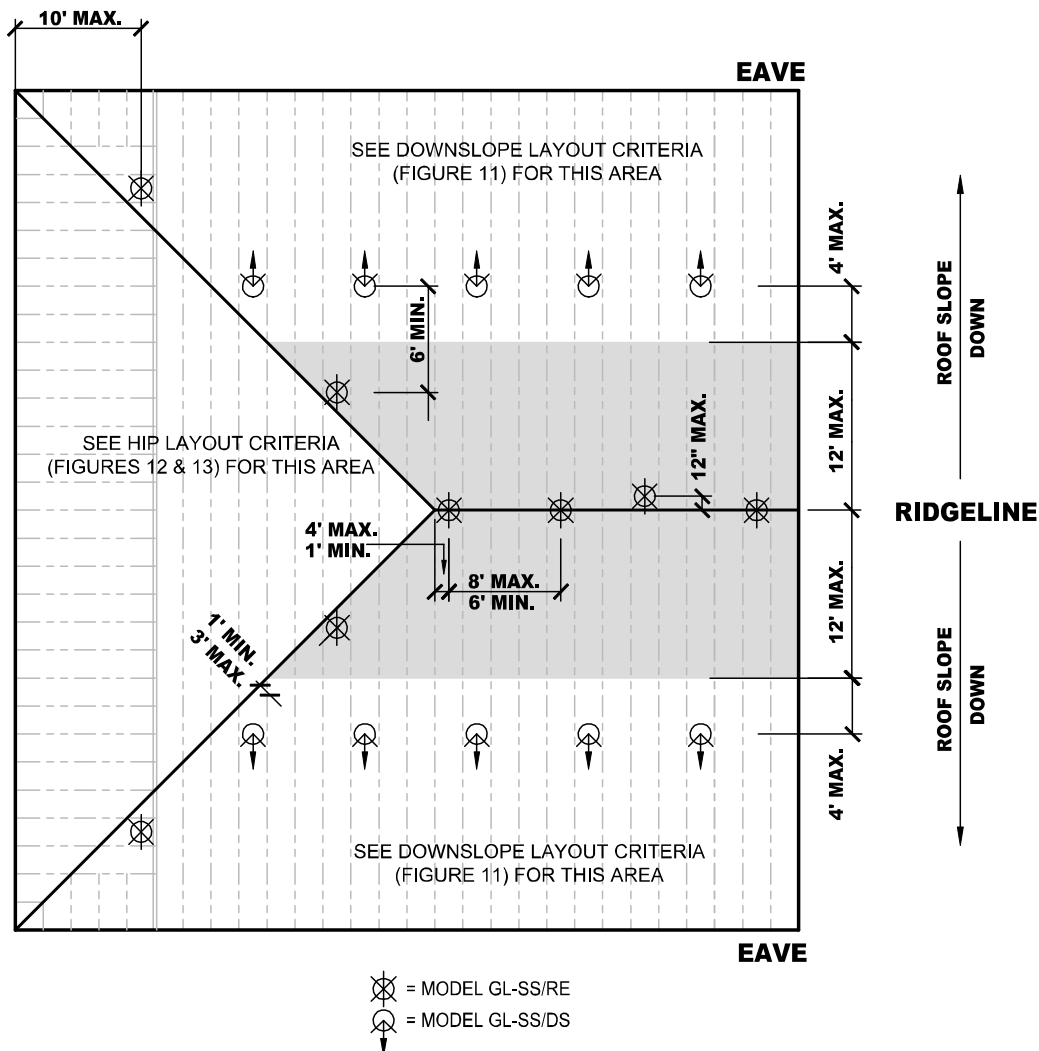


FIGURE 10: RIDGELINE LAYOUT CRITERIA

DOWNSLOPE DESIGN CRITERIA

SPRINKLER MODEL

- GL-SS/DS

FLOW RATE

- 20 gpm

DISTANCE BETWEEN SPRINKLERS PERPENDICULAR TO SLOPE

- Minimum 4 ft
- Maximum 8 ft

MAXIMUM 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 to a maximum of 2" (maximum top chord to be 6").

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.

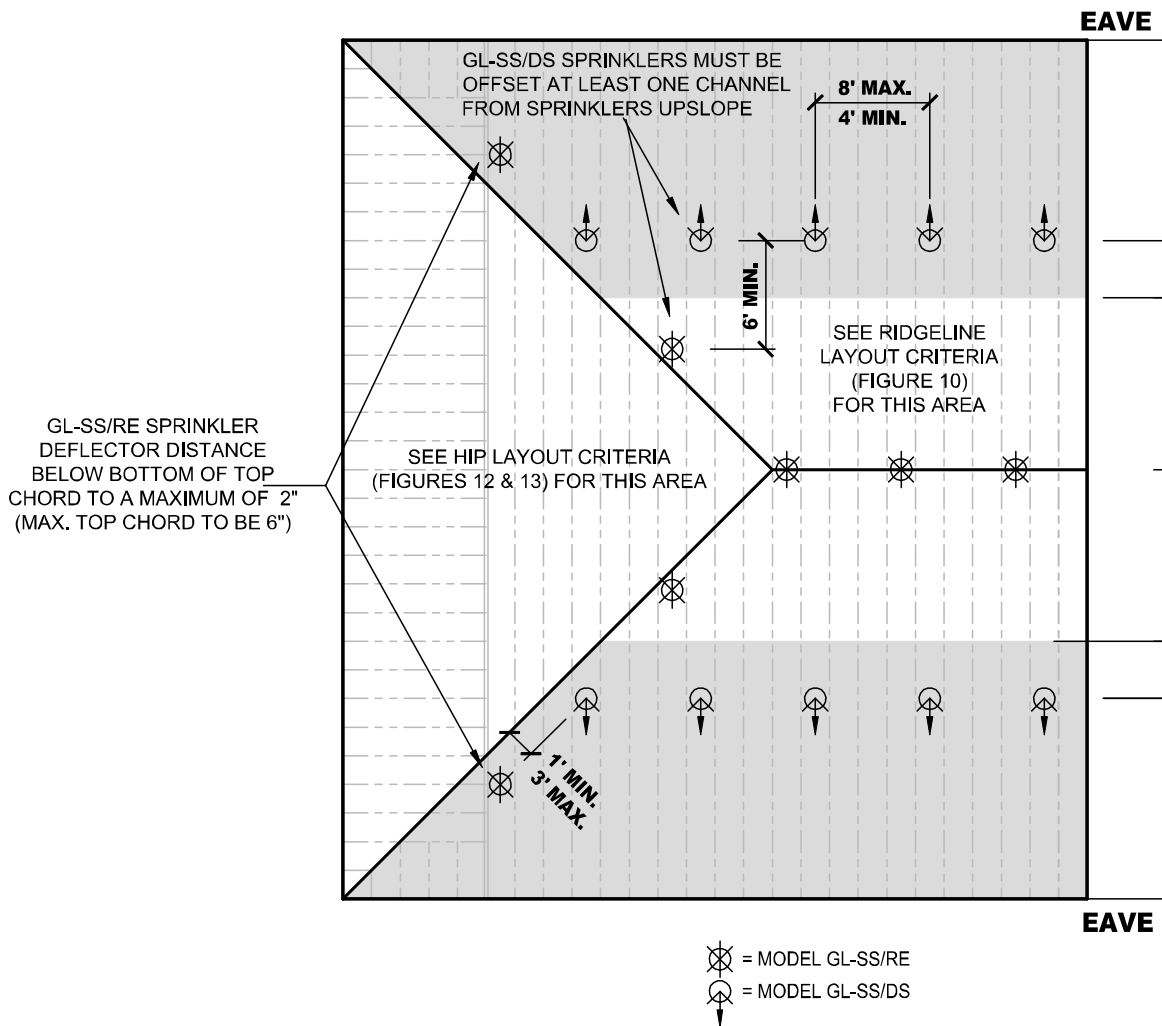


FIGURE 11: DOWNSLOPE LAYOUT CRITERIA

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)

- Maximum 12 ft

MINIMUM DISTANCE BETWEEN SPRINKLERS

- 6 ft

DEFLECTOR DISTANCE BELOW CEILING

- Install with deflector below bottom of top chord to a maximum of 2" (maximum top chord to be 6").

SPRINKLER AT APEX

- 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.

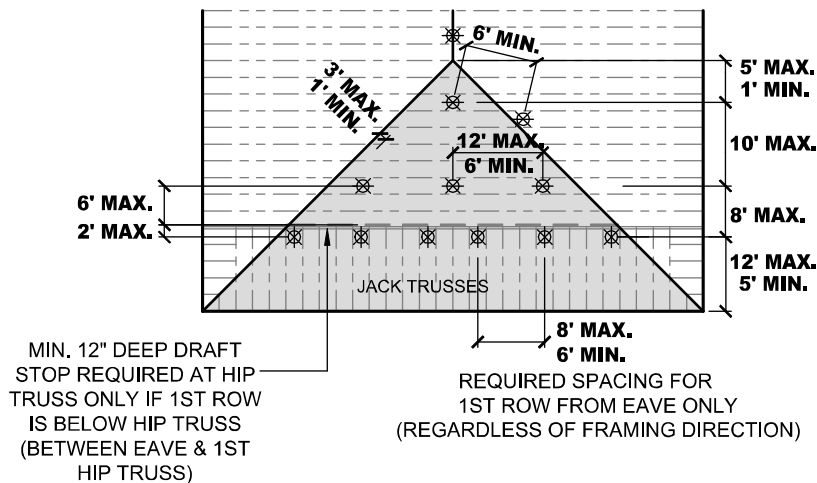


FIGURE 12A: HIP LAYOUT CRITERIA
WHEN FIRST ROW OF SPRINKLERS PLACED "WITHIN" JACK TRUSSES

⊗ = MODEL GL-SS/RE

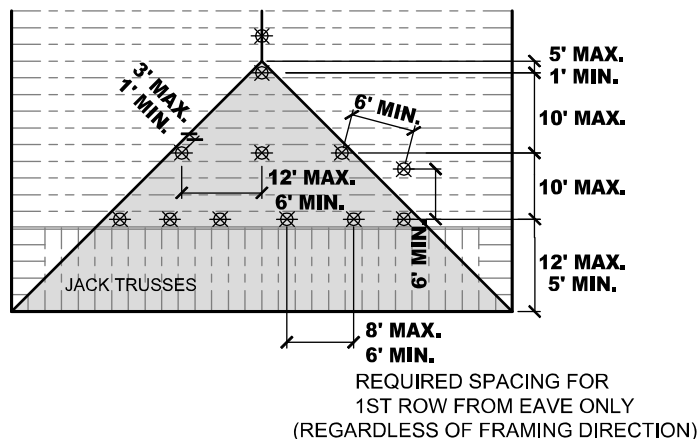


FIGURE 12B: HIP LAYOUT CRITERIA
WHEN FIRST ROW OF SPRINKLERS PLACED "BEYOND" JACK TRUSSES

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

MAXIMUM DISTANCE BETWEEN SPRINKLERS

- See Figure 13

DEFLECTOR DISTANCE BELOW CEILING

- Install with deflector below bottom of top chord to a maximum of 2" (maximum top chord to be 6").

SPRINKLER AT APEX

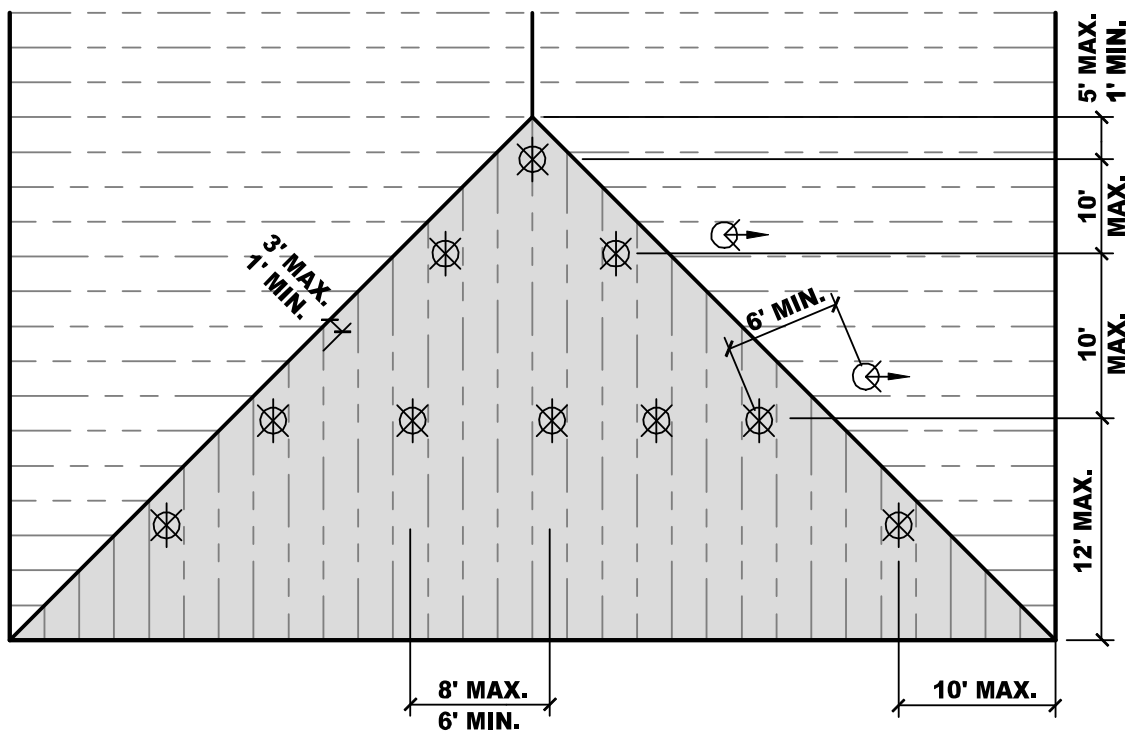
- A GL-SS/RE Sprinkler must be installed between 1 ft. to 5 ft. down from the intersection of the ridgeline and hip lines (Apex)

SPRINKLERS ADJACENT TO HIP LINE

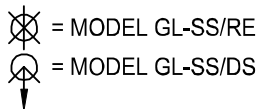
- All GL-SS/RE Sprinklers directly adjacent to hip line shall be 1 ft. to 3 ft. from hip line (as measured perpendicular to hip line)

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.



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

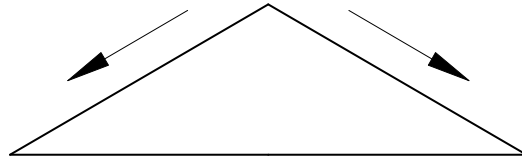


**FIGURE 13: HIP LAYOUT CRITERIA
FRAMING MEMBERS PARALLEL TO ROOF SLOPE**

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 14A.

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 14B.

Note: If additional sprinklers are required beyond an obstruction, calculate up to 2 additional sprinklers beyond the obstruction. (See Figure 14B)

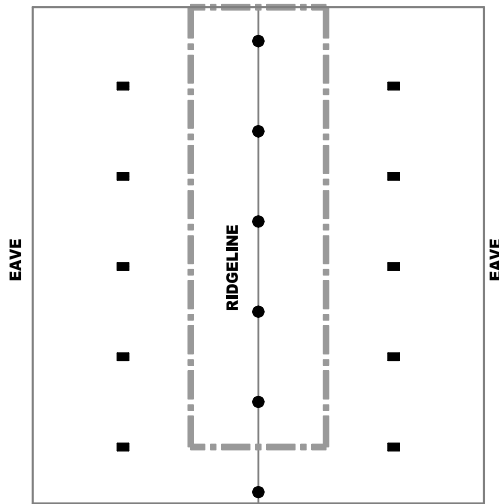


FIGURE 14A

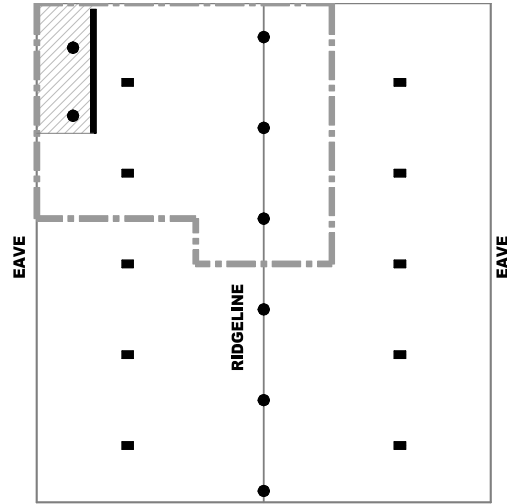


FIGURE 14B

FIGURE 14: HYDRAULIC CALCULATION
REQUIRED FOR WET 3 BRANCHLINE
SYSTEM

HYDRAULIC DESIGN

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 15A.

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 15B.

Note: If additional sprinklers are required beyond an obstruction, calculate up to 2 additional sprinklers beyond the obstruction. (See Figure 15B)

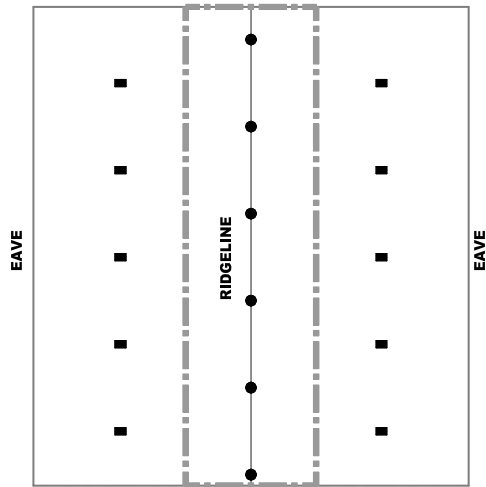


FIGURE 15A

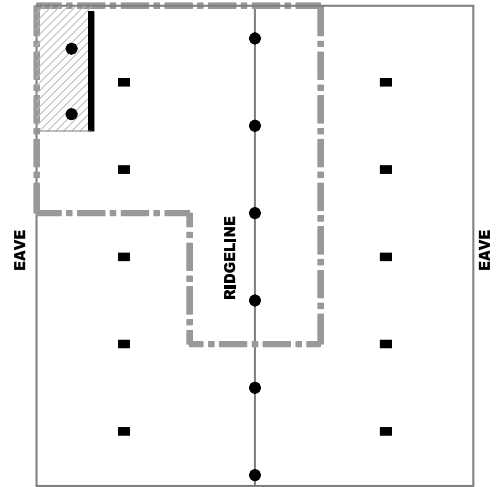
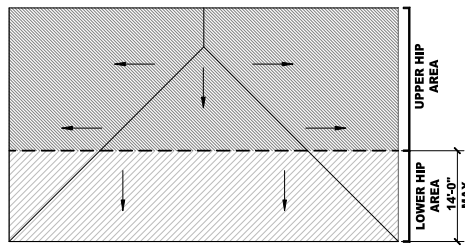


FIGURE 15B

FIGURE 15: HYDRAULIC CALCULATIONS
REQUIRED FOR DRY 3 BRANCHLINE SYSTEM

HYDRAULIC DESIGN

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 16A.
- 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 16B.
- 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 16B):

- 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 16C):

- 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 16C results in 9 sprinklers to be calculated. ($12 \times 0.75 = 9$)

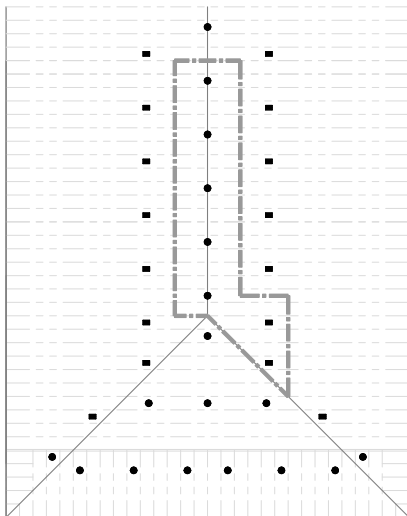


FIGURE 16A

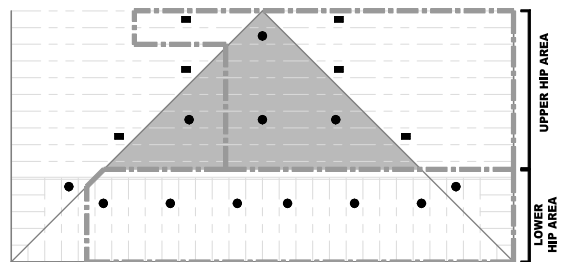


FIGURE 16B

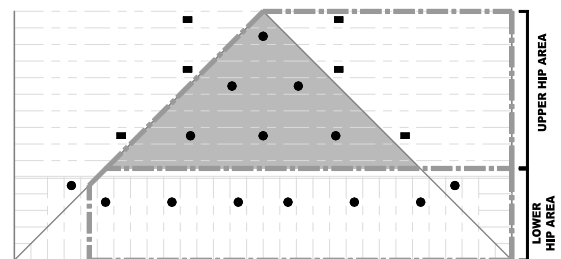


FIGURE 16C

FIGURE 16: EXAMPLES OF WET SYSTEM DESIGN AT HIP AREA

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 17A.
- 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 17B.
- 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 17B):

- 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 17B.
- Minimum sprinkler flow is 20 gpm per sprinkler.

If there are more than 4 sprinklers or less in the shaded area (Figure 17C):

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

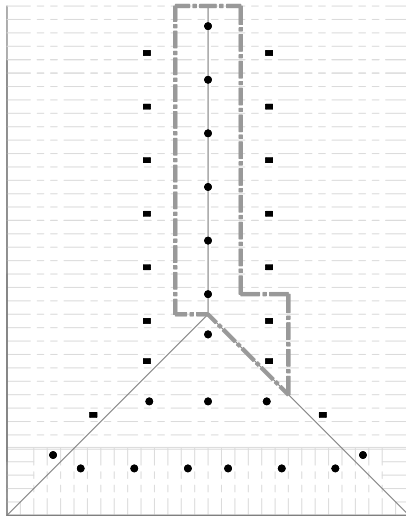


FIGURE 17A

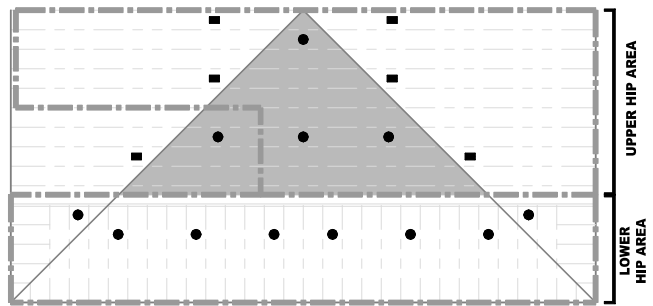


FIGURE 17B

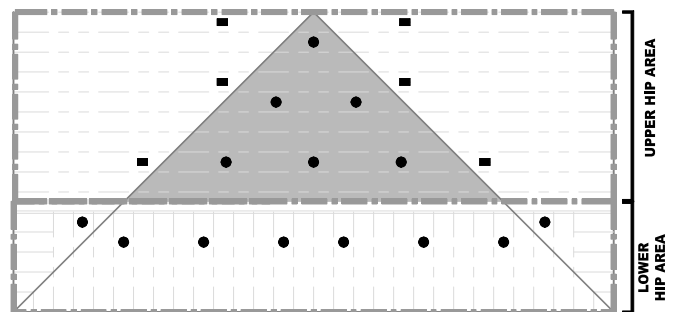


FIGURE 17C

FIGURE 17: EXAMPLES OF DRY SYSTEM DESIGN AT HIP AREA

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

HYDRAULIC DESIGN

HIP CALCULATION (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 16A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Calculation #2 – Hip Area

- Calculate all sprinklers within the hip area shown shaded. See Figure 18.
- Minimum sprinkler flow is 20 gpm per sprinkler.

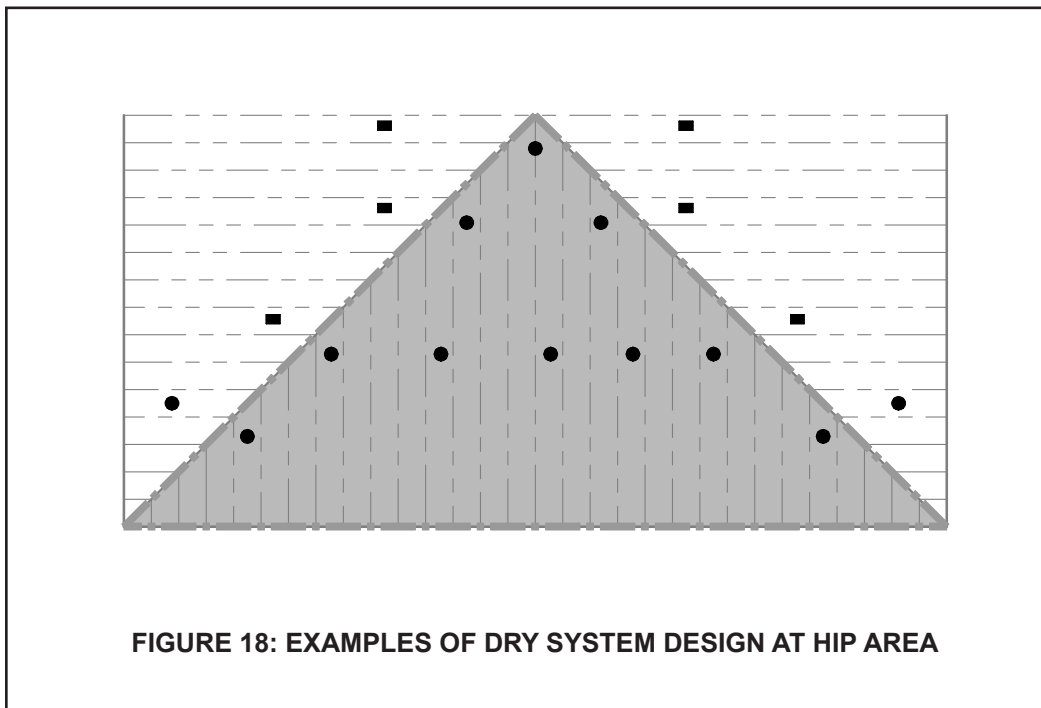
HIP CALCULATION (FRAMING MEMBERS PARALLEL TO ROOF SLOPE) - DRY SYSTEM

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 17A.
- Minimum sprinkler flow is 20 gpm per sprinkler.

Calculation #2 – Hip Area

- Calculate all sprinklers within the hip area shown shaded. See Figure 18.
- Minimum sprinkler flow is 20 gpm per sprinkler.



OBSTRUCTIONS

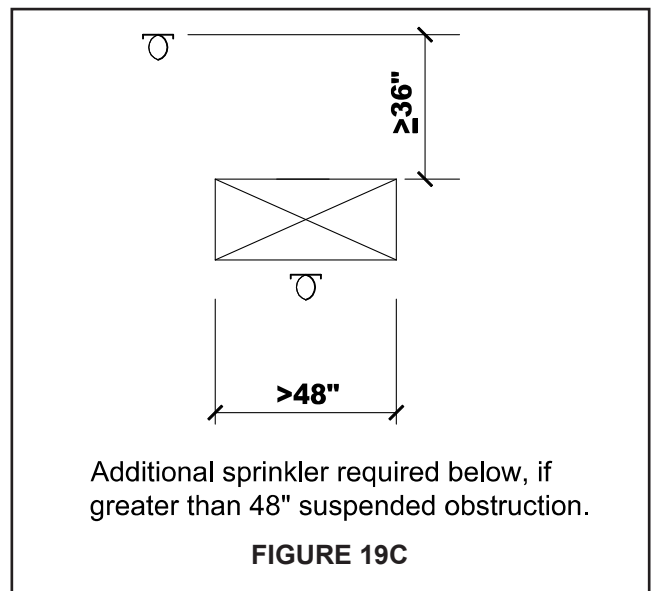
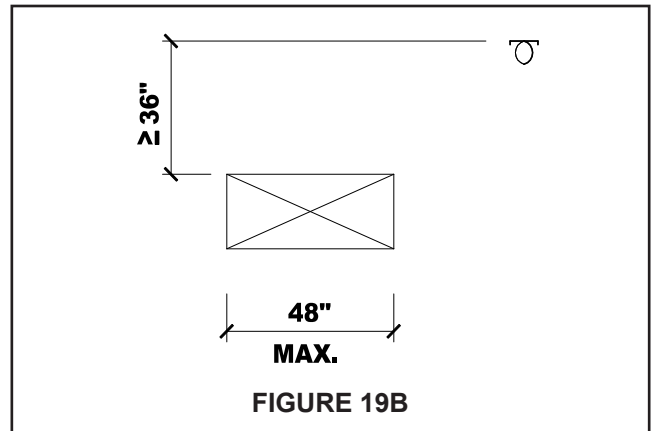
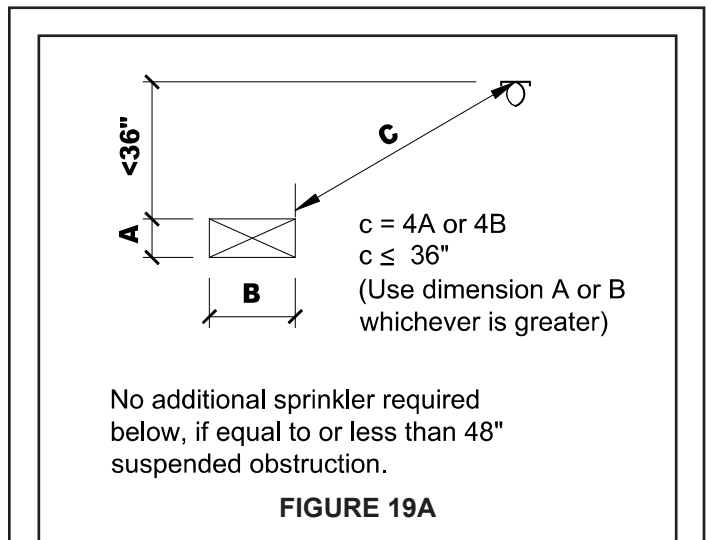
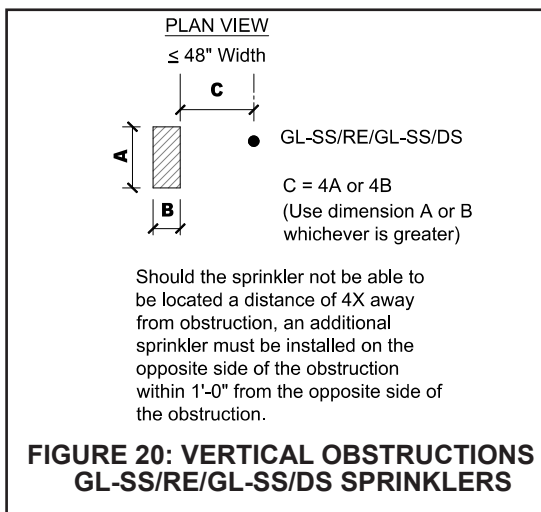
The following guidelines outline criteria to minimize critical obstructions to spray pattern development and to maximize effectiveness in achieving control.

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 Figures 19, 20 and 21)

- **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.



**FIGURE 19: SUSPENDED
HORIZONTAL OBSTRUCTIONS
GL-SS/RE/GL-SS/DS SPRINKLERS**

OBSTRUCTIONS

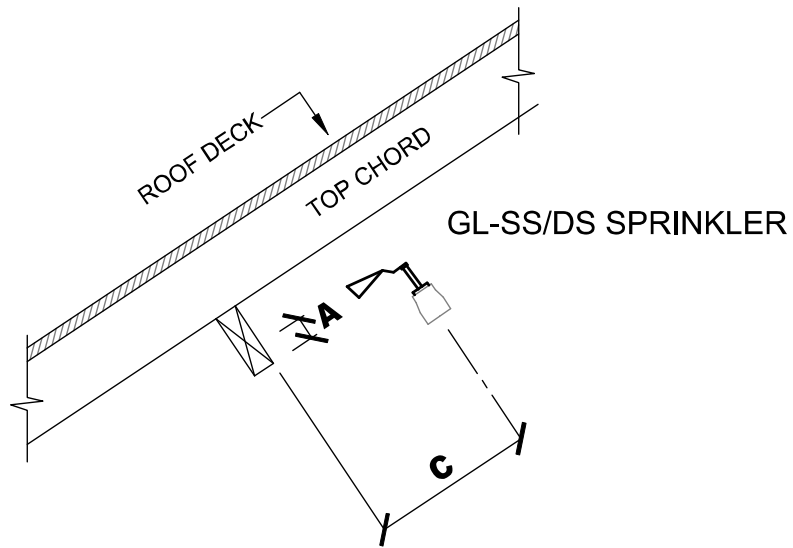


FIGURE 22A

DISTANCE FROM SPRKR. TO SIDE OF OBSTRUCTION (C) inches (metric)	MAXIMUM 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)

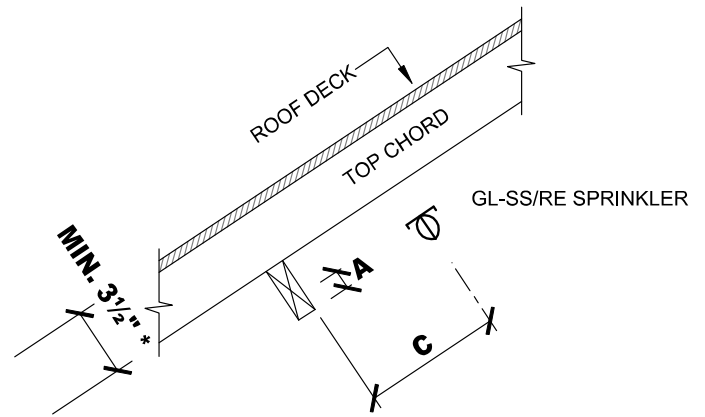
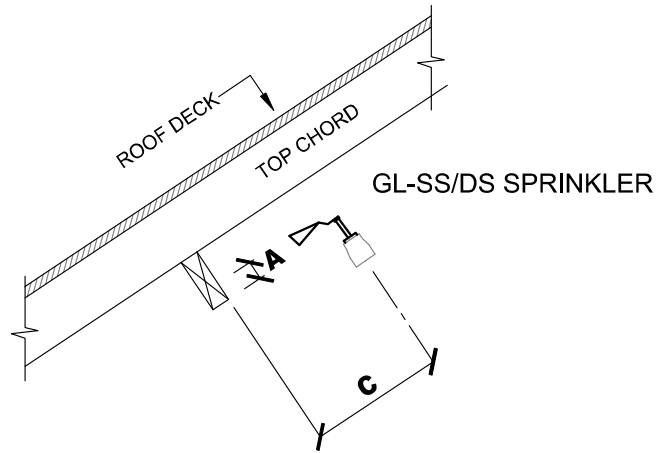


FIGURE 22B

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

**FIGURE 21: OBSTRUCTIONS AT UPPER DECK
GL-SS/RE SPRINKLER**

OBSTRUCTIONS



DISTANCE FROM SPRKR. TO SIDE OF OBSTRUCTION (C) feet (m)	MAXIMUM 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)

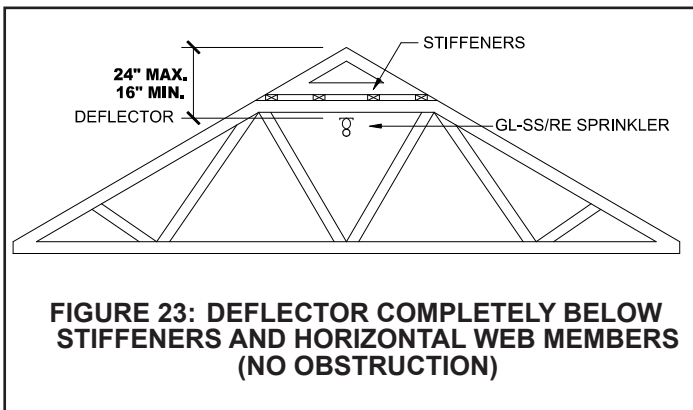
**FIGURE 22: OBSTRUCTIONS AT UPPER DECK
GL-SS/DS SPRINKLER**

OBSTRUCTIONS

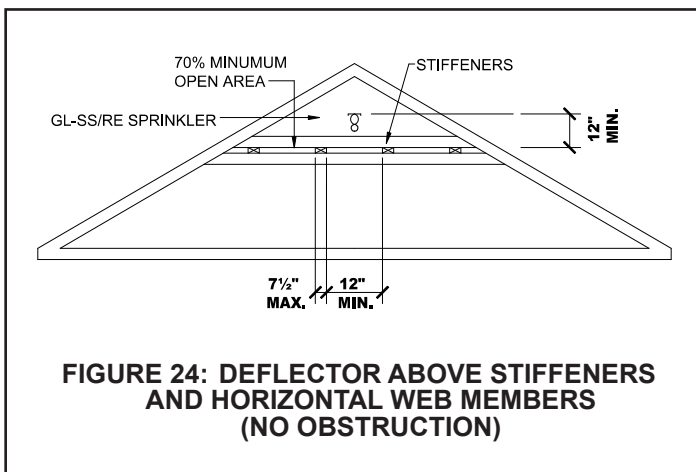
PIGGYBACK TRUSSES

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 Figures 23 and 24.



In the event that the GL-SS/RE Deflector is located completely above the stiffeners and horizontal web members, the parameters of Figure 25 must be met for the spray pattern to be considered unobstructed.



CPVC GUIDELINES

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 guidelines reference both "Ridge/line/Downslope" areas as well as "Hip" areas. Refer to Figure 1 on page 1 for explanation of these areas.

Notice: 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 25)

- 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 26A.
- 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 26B. 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.

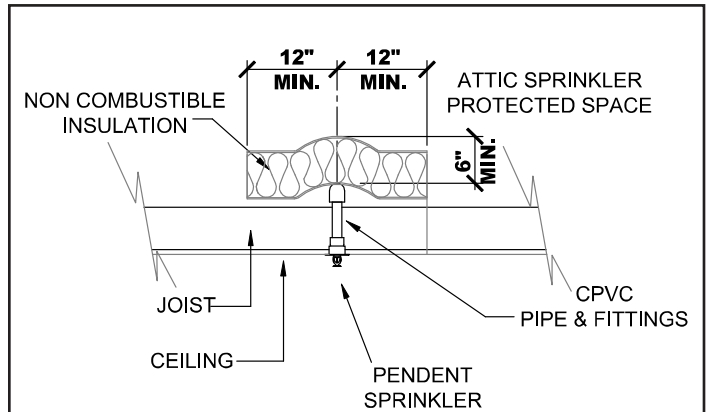


FIGURE 25A

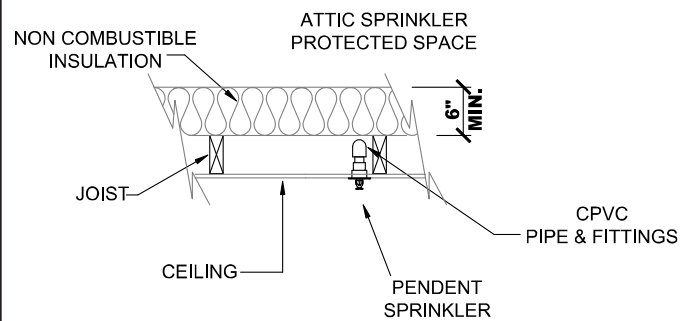


FIGURE 25B

FIGURE 25: NON-COMBUSTIBLE INSULATION FOR THE PROTECTION OF CPVC PIPE

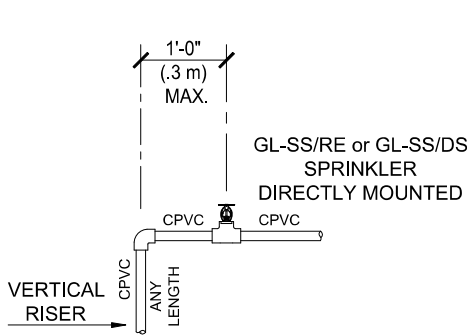
USE OF UL LISTED CPVC PIPING WITH GLOBE SPECIFIC APPLICATION ATTIC SPRINKLERS (CONTINUED)

(Wet systems only)

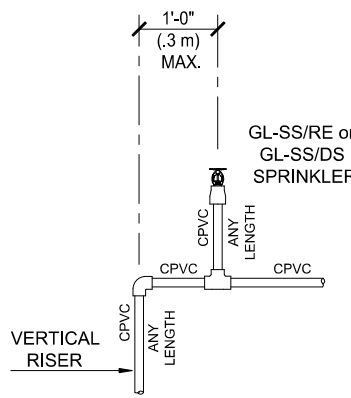
CPVC AT RIDGELINE/DOWNSLOPE AREAS ONLY

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 26)

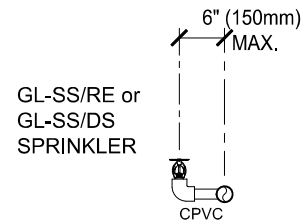
- Wet Systems only
- Risers are vertical and protected by GL-SS/RE or GL-SS/DS Sprinklers located at a maximum lateral distance of 12 in. (304.8 mm) from the riser centerline.
- GL-SS/RE or GL-SS/DS Sprinklers are directly mounted on the branchline.
- GL-SS/RE or GL-SS/DS Sprinklers are on arm-overs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



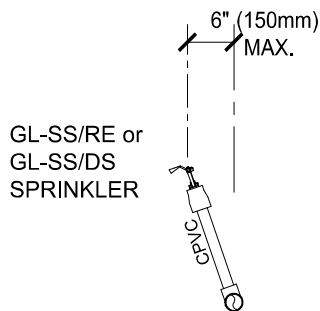
**FIGURE 26A
VERTICAL RISER
DIRECT MOUNT**



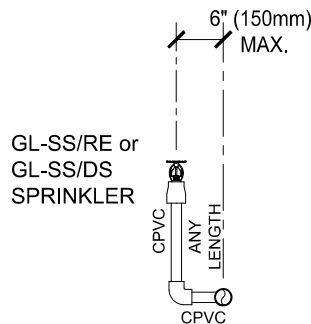
**FIGURE 26B
VERTICAL RISER
SPRIG UP**



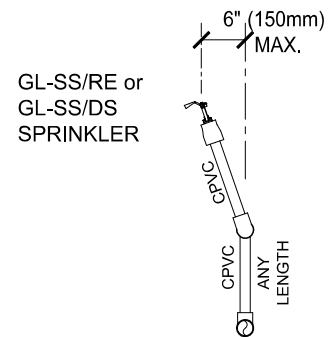
**FIGURE 26C
DIRECT MOUNT
ARM-OVER**



**FIGURE 26D
ANGLED SPRIG**



**FIGURE 26E
ARM OVER SPRIG**



**FIGURE 26F
VERTICAL SPRIG WITH
SWING JOINT**

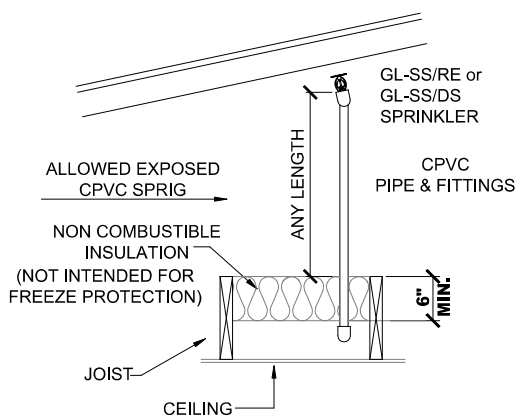
**FIGURE 26: CPVC ALLOWANCE GUIDELINES
WET SYSTEMS ONLY
(DIRECTLY FEEDING GL-SS/RE / GL-SS/DS SPRINKLERS)**

CPVC GUIDELINES

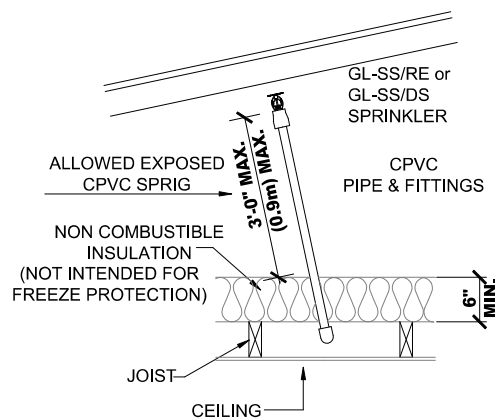
CPVC AT HIP AREAS

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 27). 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 28). 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).

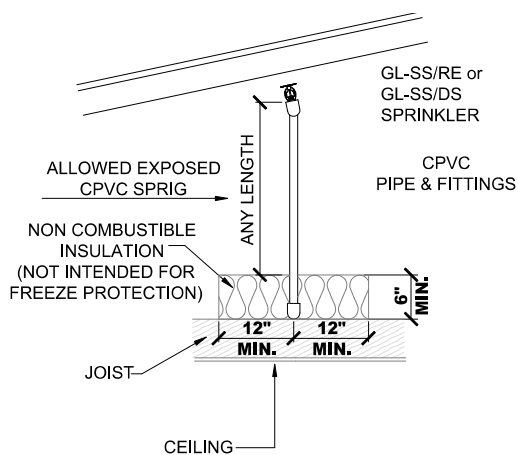


**FIGURE 28A
VERTICAL SPRIG**

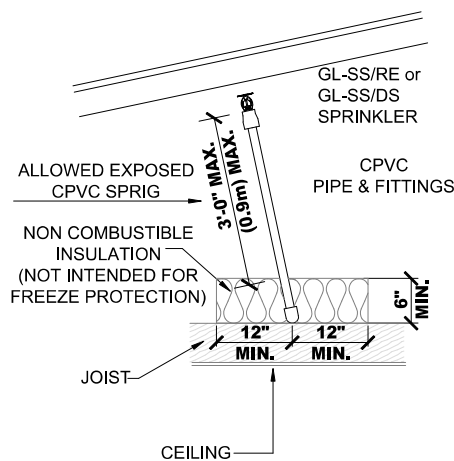


**FIGURE 28B
ANGLED SPRIG**

**FIGURE 28: EXPOSED CPVC AT HIP ROOF AREAS
(HORIZONTAL BRANCHLINE WITHIN JOISTS)
WET SYSTEMS ONLY**



**FIGURE 27A
VERTICAL SPRIG**



**FIGURE 27B
ANGLED SPRIG**

**FIGURE 27: EXPOSED 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).

