INTERSTITIAL COMBUSTIBLE (IC) UPRIGHT SPRINKLER INSTALLATION GUIDE
GENERAL DESCRIPTION
The Globe Model “IC” GL5608 Interstitial Combustible Sprinkler is a quick response, upright, specific-application sprinkler designed to provide protection of specific light hazard concealed spaces. This upright sprinkler is listed to meet the requirements of Underwriters Laboratories UL 199H to comply with criteria for the protection of combustible concealed spaces as described in NFPA 13. It is designed for installation in CPVC wet pipe sprinkler systems and steel wet pipe or dry pipe sprinkler systems. The Interstitial Combustible Upright Sprinkler is designed and tested to be used in applications different than ordinary sprinklers. It is important that they be used in accordance with their UL listings, the appropriate NFPA Standards, and the criteria set forth herein by Globe Fire Sprinkler Corporation.

WARNINGS
Sprinklers contained in this carton have been manufactured and tested in accordance with the applicable standards and requirements. Any alteration to the sprinkler after it leaves the factory including, but not limited to painting, plating, coating or other alteration, may render the sprinkler inoperative and will nullify the Listing of Underwriters Laboratories Inc. Glass bulbs are fragile. Handle with extreme care. Sprinklers should be kept in the carton provided with dividers at all times prior to installation. Sprinklers should never come in direct contact with one another or any other foreign object prior to installation. Do not place sprinklers in a bucket. Globe Fire Sprinkler Corporation is not responsible for glass bulb damage due to improper handling.

IMPORTANT PRECAUTIONS TO FOLLOW
1. Globe Interstitial Combustible Upright Sprinklers are to be installed in accordance with the latest published standards of the National Fire Protection Association, The applicable Underwriters Laboratory Listing, Globe Sprinkler data sheets, Government agencies and/or other similar organizations, and to meet local codes and ordinances.
2. Use only the Globe certified sprinkler wrench to install sprinklers. Any other wrench is liable to injure the sprinkler.
3. Never install a sprinkler after it has dropped to the floor or been mishandled in any way. Mishandled sprinklers should be discarded or returned to the factory for examination.
4. Never install sprinklers into fittings until the piping is in place. Sprinklers are liable to be injured from impact if screwed into the fittings and then transported to the installation location.
5. Never paint or whitewash sprinklers as this will impair or prevent proper performance in a fire.
6. Never attach wiring, ropes or fixtures to sprinkler or sprinkler piping.
7. Store sprinklers in a cool, dry place and preferably in their shipping carton.
8. Quick response sprinklers should be replaced after 20 years of service or as conditions warrant.
9. When replacing sprinklers in any system, make sure replacements are of the same style, size, and temperature rating as those removed.
10. Changes in building structure, occupancy or temperature conditions may result in a change in sprinkler requirements. Notify the insurance carrier or other qualified inspection agency immediately in the event of these types of changes. Do not make any changes without the authorization of one of these agencies.
11. Maintain an extra stock of replacement sprinklers and wrenches in a cabinet as required by NFPA 13.
12. Globe Fire Sprinkler Corporation sprinklers have been tested, listed or approved by the agencies noted on the individual sprinkler data sheet. Acceptance by other agencies or authorities is not the responsibility of Globe Fire Sprinkler Corporation. Globe Fire Sprinkler Corporation is not liable for any costs arising as a result of any changes to listings or approvals after shipment. The seller makes no warranties express or implied including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose except as expressly stated in seller’s sales contract or sales acknowledgment form.
NFPA 13 REQUIREMENTS:
Sprinklers shall be listed for use in combustible concealed spaces (with a slope not exceeding 2 in 12) with combustible wood truss, wood joist construction, or bar joist construction having a combustible upper surface and where the depth of the space is less than 36” (914.4mm) from deck to deck or with double wood joist and composite wood joist construction with a maximum of 36” (914.4mm) between the top of the bottom joist and the bottom of the upper joist.

GLOBE MODEL “IC” UPRIGHT SPRINKLER:
The Globe Model “IC” GL5608 Interstitial Combustible Upright Sprinkler has been listed to be used beyond the 36” (914.4mm) height to a height of 60” (1.5m) to provide more functionality in installation specifically in areas where the height of the concealed space is both above and below the height of 36” (914.4mm).

GENERAL INSTALLATION ALLOWANCES:

<table>
<thead>
<tr>
<th>CONSTRUCTION</th>
<th>STEEL PIPING</th>
<th>CPVC PIPING</th>
<th>COVERAGE AREA</th>
<th>DISTANCE BETWEEN SPRINKLERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MINIMUM</td>
<td>MAXIMUM</td>
<td></td>
<td>Feet (Meters)</td>
</tr>
<tr>
<td></td>
<td>Open Space</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Height (In)</td>
<td>Height (In)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unobstructed Wood Truss</td>
<td>6 (152)</td>
<td>60 (1524)</td>
<td>256 (78.0)</td>
<td>6 (1.8)</td>
</tr>
<tr>
<td>Non-Combustible Bar Joist</td>
<td>N/A</td>
<td>N/A</td>
<td>MINIMUM</td>
<td>16 (4.9) MAXIMUM</td>
</tr>
<tr>
<td>Obstructed Wood Truss</td>
<td>6 (152)</td>
<td>60 (1524)</td>
<td>MAXIMUM</td>
<td></td>
</tr>
<tr>
<td>Solid Wood Joist</td>
<td>6 (152)</td>
<td>60 (1524)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulation Filled Joist</td>
<td>6 (152)</td>
<td>60 (1524)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: METRIC CONVERSIONS ARE APPROXIMATE.
*WHEN TRUSS OR JOIST SPACE IS NONINSULATION FILLED, THE MAXIMUM ALLOWED HEIGHT IS 12” (305 mm).
**UP TO 12” (305mm) LOWER JOIST SPACE.

SPECIFICATIONS AND APPROVALS:

<table>
<thead>
<tr>
<th>STYLE</th>
<th>SIN MODEL</th>
<th>NOMINAL “K” FACTOR</th>
<th>HAZARD¹</th>
<th>THREAD SIZE</th>
<th>LENGTH</th>
<th>FINISH</th>
<th>TEMPERATURES</th>
<th>PRESSURE RATING</th>
<th>MAX. LOW TEMP. BULB RATING</th>
<th>cULus</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPRIGHT</td>
<td>GL5608</td>
<td>5.6 (80 metric)</td>
<td>LH</td>
<td>1/2”NPT (15mm)</td>
<td>2 1/4” (5.7cm)</td>
<td>Factory Bronze</td>
<td>X</td>
<td>X</td>
<td>175 psi (12 Bars)</td>
<td>-67°F (-55°C)</td>
</tr>
</tbody>
</table>

NOTE: METRIC CONVERSIONS ARE APPROXIMATE.
*SPRINKLERS SHALL BE LIMITED AS PER THE REQUIREMENTS OF NFPA13 AND ANY OTHER RELATED DOCUMENTS.

OBSTRUCTIONS:
For systems where the Globe “IC” Upright Sprinklers are positioned with 15’ (4.6m) or less between sprinklers the Globe “IC” Upright Sprinkler must use the obstruction requirements for standard spray upright sprinklers. For systems where the Globe “IC” Upright Sprinklers are positioned with greater than 15’ (4.6m) between sprinklers the Globe “IC” Upright Sprinkler must use the obstruction requirements for extended coverage upright sprinklers.
CPVC PIPING SYSTEM DESIGN REQUIREMENTS

SYSTEM TYPE:
Wet pipe systems

CONSTRUCTION TYPE:
Unobstructed wood truss construction
Unobstructed bar joist construction
Non-combustible insulation filled solid wood joist construction
Non-combustible insulation filled composite wood joist construction

1 Upper joist/truss cannot be more than 4” (101.6mm) in height.
2 The joist space in non-combustible insulation filled joist construction must be completely filled with noncombustible insulation and secured in place by metal wire netting to hold the insulation in place in the event of a fire.

PARTITION REQUIREMENTS:
The concealed space being protected must be broken up into areas no greater than 1000 square feet either by full height walls or by draft curtains.

DRAFT CURTAINS:
When draft curtains are used they must be 8” (203.2mm) in height or one third of the depth of the concealed space, whichever is greater. Draft curtains must be constructed of a material that will not allow for heat to escape through or above them.

DEFLECTOR POSITION:
1 ½ to 4 inches below the upper deck for wood truss and bar joist constructions.
1 ½ to 4 inches below the joists for solid and composite wood joist constructions.
4 ½ inches away from trusses.

CONCEALED SPACE SIZE:
All spaces must have a minimum open space (from top of lower joist, cord, or truss to bottom of upper joist, cord, or truss) of 6” (152.4mm). (see figures on page 4)
Unobstructed wood truss and bar joist construction must not have a total bottom of floor to top of ceiling space height of more than 60” (1.5m). (see figures on page 4)
Joist construction with noncombustible insulation in the upper deck must not have an open space (from top of lower joist to bottom of upper joist) of greater than 60 inches in size. They must not have a total concealed space height of greater than 72” (1.8m). This allows for a maximum lower joist space of 12” (304.8mm).

CPVC PIPE INSTALLATION:
Horizontal runs of CPVC piping must be located not more than 6” (152.4mm) or one third depth of the combustible concealed space above the ceiling or non-combustible ceiling insulation in the bottom of the space, whichever is smaller. When the lower joist is greater than 6” (152.4mm) in height CPVC piping is permitted to be attached directly to the top of the joist. For the purpose of this part of the system installation the depth of the combustible concealed space is to be considered the distance between the top surface of the ceiling below to the bottom of the floor or the bottom of the noncombustible insulation above. The CPVC piping can be used to supply the Globe “IC” Upright Sprinklers as well as the sprinklers protecting the space below.
When using 1” (DN25) or larger pipe, a hanger must be located at the truss nearest a sprig for purposes of restraint. If using ¾” (DN19) piping, all sprigs over 12” (304.8mm) must be laterally braced using methods described in the NFPA standards. Where CPVC piping must be offset to go over an obstruction that will violate the horizontal positioning requirements the CPVC piping must be spaced not greater than 6 inches from that obstruction and an additional Globe IC Upright Sprinkler must be provided to protect the section of CPVC piping (see figures on page 4). CPVC piping must be kept a minimum of 18” (457.2mm) laterally away from heat sources such as heat pumps, fan motors, and heat lamps.

HYDRAULIC DESIGN AREA:
The system hydraulic design area shall be 1000 square feet.
CPVC PIPE
UNOBSERVED WOOD TRUSS or NON-COMBUSTIBLE BAR JOIST CONSTRUCTION

1 1/2" (38mm) MIN.
4" (102mm) MAX.

TOP CHORD
4" (102mm) MAX.
FRAME ARMS MUST BE INSTALLED IN-LINE WITH PIPE RUN
GL5608 (MODEL IC SPRINKLER)

6" (152mm) MAX.
OR TOP CHORD OF BAR JOIST
FOR CPVC PIPE

6" (152mm) MAX.
OR TOP CHORD OF BAR JOIST
TO FACE OF WOOD TRUSS
FOR CPVC PIPE

12" (305mm) MIN.
60" (1524mm) MAX.

GL5608 (MODEL IC SPRINKLER)

4" (100mm) MAX.
ABOVE CEILING TO BOTTOM OF PIPE
OR NON-COMBUSTIBLE CEILING INSULATION, OR 1/3 THE DEPTH OF CONCEALED SPACE (AS MEASURED FROM TOP SURFACE OF CEILING TO BOTTOM SURFACE OF DECK), OR WHICH EVER IS SMALLER.
WHEN OFFSETTING CPVC PIPE OVER AN OBSTRUCTION, A GL5608 MODEL "IC" SPRINKLER MUST BE INSTALLED DIRECTLY ON THE CPVC OVER THE OBSTRUCTION.

6" (152mm) MIN.

BOTTOM OF PIPE/ TOP OF CHORD

WHEN OFFSETTING CPVC PIPE OVER AN OBSTRUCTION, A GL5608 MODEL "IC" SPRINKLER MUST BE INSTALLED DIRECTLY ON THE CPVC OVER THE OBSTRUCTION.

6" (152mm) MAX. ABOVE CEILING OR NON-COMBUSTIBLE CEILING INSULATION, OR 1/3 THE DEPTH OF CONCEALED AREA (AS MEASURED FROM TOP SURFACE OF CEILING TO TOP SURFACE OF JOIST INSULATION ABOVE), OR WHICH EVER IS SMALLER. WHEN THE LOWER JOIST IS GREATER THAN 6" (152mm) IN HEIGHT CPVC PIPING IS PERMITTED TO BE ATTACHED DIRECTLY TO THE TOP OF THE JOIST.

CPVC PIPE
NON-COMBUSTIBLE INSULATION FILLED UPPER DECK
SOLID WOOD or COMPOSITE WOOD JOIST CONSTRUCTION

1 1/2" (38mm) MIN.
4" (102mm) MAX.

FRAME ARMS MUST BE INSTALLED IN-LINE WITH PIPE RUN
GL5608 (MODEL IC SPRINKLER)

6" (152mm) MIN.
60" (1524mm) MAX.

NON-COMBUSTIBLE INSULATION
12" (305mm) MAX. DEPTH
COMPOSITE WOOD JOIST
12" (305mm) MAX. DEPTH
SOLID WOOD JOIST
12" (305mm) MAX. DEPTH

6" (152mm) MAX.
FOR CPVC

6" (152mm) MAX.
FOR CPVC

72" (1829mm) MAX.

CEILING
BOTTOM OF PIPE/ TOP OF CHORD

CPVC PIPING SYSTEM DESIGN REQUIREMENTS (con’t.)
STEEL PIPE SYSTEM DESIGN REQUIREMENTS

SYSTEM TYPE:
- Wet Pipe Systems
- Dry Pipe Systems

CONSTRUCTION TYPE:
- Unobstructed wood truss construction
- Unobstructed bar joist construction
- Solid wood joist construction
- Obstructed wood truss construction
- Non-combustible insulation filled solid wood joist construction
- Non-combustible insulation filled composite wood joist construction

1 Upper joist/truss cannot be more than 4” (101.6mm) in height.
2 Upper joist/truss cannot be more than 12” (304.8mm) in height.
3 The joist space in non-combustible insulation filled joist construction must be completely filled with noncombustible insulation and secured in place by metal wire netting to hold the insulation in place in the event of a fire.

PARTITION REQUIREMENTS:
For unobstructed wood truss construction, unobstructed bar joist construction, solid wood joist construction, and obstructed wood truss construction the concealed space being protected must be broken up into areas no greater than 1000 square feet either by full height walls or by draft curtains.

Noncombustible filled joist construction is not required to be broken up into partitioned areas.

DRAFT CURTAINS:
- Unobstructed wood truss construction and noncombustible bar joist construction must be 8” (203.2mm) in height or one third of the depth of the concealed space, whichever is greater. Draft curtains must be constructed of a material that will not allow for heat to escape through or above them.
- Obstructed wood truss and solid wood joist construction must be 6” (152.4mm) in height or one third of the depth of the concealed space, whichever is greater. Draft curtains must be constructed of a material that will not allow for heat to escape through or above them.

BLOCKING:
For solid wood joist and obstructed wood truss construction blocking must be provided in each of the channels between the upper joists or trusses. The blocking must be located where the draft curtains intersect the channels. The blocking must be installed to the full depth of the joists and be installed as to not allow heat to escape through or above the blocking. The blocking must be installed using either the same material as the joists or a noncombustible material.

DEFLECTOR POSITION:
- 1 ½ to 4 inches below the upper deck for unobstructed wood truss and bar joist constructions
- 1 ½ to 4 inches below the joists for noncombustible insulation filled solid and composite wood joist construction.
- 1 ½ to 2 inches below the joist or truss for solid wood joist or obstructed truss construction.
- 4 ½ inches away from trusses

CONCEALED SPACE SIZE:
All spaces must have a minimum open space (from top of lower joist, cord, or truss to bottom of upper joist, cord, or truss) of 6” (152.4mm). (see figures on page 6)
- Unobstructed wood truss and bar joist construction must not have a total concealed space height of more than 60” (1.5m). (see figures on page 6)
- Joist construction with noncombustible insulation in the upper deck must not have an open space (from top of lower joist to bottom of upper joist) of greater than 60” (1.5m) in size. They must not have a total concealed space height of greater than 72” (1.8m). This allows for a maximum lower joist space of 12” (304.8mm). (see figures on page 6)
- Solid wood joist and obstructed truss construction must not have an open space (from top of lower joist or truss to bottom of upper joist or truss) of greater than 60” (1.5m) in size. They must not have a total concealed space height of greater than 84” (2.1m). The upper joist space must not be greater than 12” (304.8mm) in depth. (see figures on page 6)

HYDRAULIC DESIGN AREA:
For Steel Pipe Systems with insulation filled joists the design area shall be per the requirements of NFPA 13 for Light Hazard Systems. For all other pipe and construction types the design area shall be 1000 ft² (92.9m²).
STEEL PIPE SYSTEM DESIGN REQUIREMENTS (con’t.)

STEEL PIPE
UNOBSERCTED WOOD TRUSS or
NON-COMBUSTIBLE BAR JOIST CONSTRUCTION

STEEL PIPE
OBSCTURED TRUSS or SOLID WOOD JOIST CONSTRUCTION

STEEL PIPE
NON-COMBUSTIBLE INSULATION FILLED UPPER DECK
SOLID WOOD or COMPOSITE WOOD JOIST CONSTRUCTION