



# I-RES

## FIELD INSTALLATION HANDBOOK

### Victaulic® Products for CPVC Residential Fire Protection Piping Systems



#### **WARNING**



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, foot protection, and hearing protection.

Failure to follow these instructions could result in death or serious personal injury and property damage.

Contact Victaulic with any questions regarding the safe and proper installation of products featured in this handbook.

Visit [victaulic.com](http://victaulic.com) for the most up-to-date information on Victaulic products.

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# HAZARD IDENTIFICATION


Definitions for identifying the various hazard levels are provided below.




This safety alert symbol indicates important safety messages. When you see this symbol, be alert to the possibility of personal injury. Carefully read and fully understand the message that follows.

 **DANGER**

- The use of the word "DANGER" identifies an immediate hazard with a likelihood of death or serious personal injury if instructions, including recommended precautions, are not followed.

 **WARNING**

- The use of the word "WARNING" identifies the presence of hazards or unsafe practices that could result in death or serious personal injury if instructions, including recommended precautions, are not followed.

 **CAUTION**

- The use of the word "CAUTION" identifies possible hazards or unsafe practices that could result in personal injury and product or property damage if instructions, including recommended precautions, are not followed.

**NOTICE**


- The use of the word "NOTICE" identifies special instructions that are important but not related to hazards.

## INTRODUCTION

This manual is intended for specifiers and installers during installation and inspection of Victaulic products used in CPVC residential fire protection piping systems. Due to the critical safety and loss prevention uses of such systems, all information contained herein is vital to proper system performance and shall be read carefully and understood before specifying any products or starting the installation. Contact Victaulic with any questions concerning the safe and proper use of these products (scan QR code on back cover for contact information for your region).

The Victaulic No. 116 CPVC to IGS Grooved Adapter is manufactured in accordance with ASTM F-438 and is UL Listed and FM Approved for a rated working pressure of 175 psi/12 Bar at 150°F/66°C for residential fire protection piping systems.

Use only primers and solvent cements designed specifically for use with CPVC fire protection piping systems. Always reference the solvent cement manufacturer's published literature for primer and solvent cement selection, installation instructions, set times, and cure times.

 **WARNING**

- Victaulic products for CPVC fire protection piping systems shall be used only in wet systems.
- Victaulic products for CPVC fire protection piping systems SHALL NOT be used in systems containing compressed air or other gases.
- Victaulic products for CPVC fire protection piping systems SHALL NOT be used for outdoor applications.

Failure to follow these instructions could cause system failure, resulting in death or serious personal injury and property damage.



# INSTALLER SAFETY INSTRUCTIONS

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1. Read and understand this handbook before proceeding with installation and testing of Victaulic products for CPVC fire protection piping systems.
2. Use only recommended accessories. Use of improper accessories or unapproved system components in conjunction with Victaulic products for CPVC fire protection piping systems will void the warranty and may result in improper system operation.
3. When using electrically-powered tools for installation, verify that the area is free of moisture that could create an unsafe condition. Keep work areas well illuminated. Allow sufficient space for measuring and system dry fit to accommodate proper installation.
4. Prevent back injury. Always practice safe lifting and installation techniques.
5. Use only tools designed specifically for plastic pipe and fittings.
6. Verify that all system components and necessary tools are available on the jobsite for proper installation.
7. Wear safety glasses, hardhat, and safety footwear.
8. Wear hearing protection when exposed to noisy jobsite operations.
9. Keep work areas clean and keep all visitors a safe distance away from the work areas.
10. When solvent cementing, always work in a well-ventilated area.
11. When solvent cementing, wear protective gloves. If hands come into contact with solvent cement, use a waterless, abrasive soap.
12. When solvent cementing, avoid sources of heat or open flames.

# HANDLING AND STORAGE OF CPVC MATERIALS

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Always reference the CPVC pipe manufacturer's recommendations for handling and storage temperatures.

Victaulic recommends indoor storage of CPVC materials, where the product will not be exposed to heat-producing sources or sunlight. For extended indoor storage, the area shall be well ventilated so that the ambient temperature does not exceed the pipe manufacturer's maximum handling or storage temperature.

When stored outdoors, CPVC materials shall be covered with a UV barrier to reduce the risk of extended exposure to sunlight and heat absorption, which could cause discoloration and weakening of CPVC materials.

CPVC materials shall be stored in their original shipping containers.

Excessive loading (stacking, point loading, etc.) or excessive strapping or banding shall be avoided to prevent CPVC materials from warping. DO NOT drop, distort, or impact CPVC materials or allow objects to be dropped on them.

Immediately prior to installation, CPVC materials shall be inspected for any scratches, cracks, splits, gouges, or warping that may have occurred from improper handling or storage. In addition, pipe and fittings shall be inspected for horizontal cracking along the length. Damaged sections of CPVC pipe shall be cut out and discarded, and any damaged fittings shall be discarded.

## WARNING

- **Ambient handling and storage temperature SHALL NOT exceed the pipe manufacturer's recommendations.**
- **CPVC materials SHALL NOT be subjected to prolonged sunlight exposure.**
- **When stored outdoors, CPVC materials shall be covered with a UV barrier.**
- **DO NOT install CPVC materials that have been damaged during handling or storage.**
- **DO NOT use Victaulic products for CPVC fire protection piping systems to support non-system components (per NFPA 13).**

**Failure to follow these instructions could cause system failure, resulting in death or serious personal injury and property damage.**

## COMBINING METAL AND CPVC PIPING SYSTEMS

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Systems utilizing a combination of steel pipe or copper tubing and CPVC pipe have been proven successful when precautions were taken to remove packing or cutting oils and when proper thread sealants were used to minimize the risk of Environmental Stress Cracking (ESC).

Certain coatings used in piping products, which are designed to prevent Microbiological Influenced Corrosion (MIC), contain known ESC agents that are incompatible with CPVC products. Coatings and piping, such as the Allied Tube and Conduit ABF II Anti-Microbial Corrosion Coated Pipe and other similar products, are not UL Listed or FM Approved. Until an appropriate listing/testing protocol is developed, and the compatibility of pipe with MIC coatings and CPVC products is confirmed, Victaulic recommends only non-coated steel pipe in combined systems.

# CHEMICAL COMPATIBILITY WITH CPVC MATERIALS

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- CPVC materials may be damaged by chemicals that are not corrosive to metallic piping. These damaging chemicals can be found in common substances used in construction and residential settings. Specific chemicals or chemical vapors that contact CPVC can weaken or severely damage the material. **Always consult with the CPVC pipe manufacturer for a list of chemicals and products that may damage CPVC materials.**
- DO NOT stack, support, hang equipment or flexible wire/cable (especially communications cable) on CPVC material.
- Only system-compatible solvent cements, caulks, sealants, cutting oils, and thread pastes shall be used with CPVC material.
- DO NOT expose CPVC material to petroleum-based substances, cutting oils, cooking oils, esters, ketones, solvents, glycol-based antifreeze fluids, non-water-based paints, packing oils, traditional pipe thread paste and dope, fungicides, termiticides, insecticides, detergents, surfactants, plasticizers, building caulks, adhesive tape, open flame, solder, soldering flux, flexible wire/cable (especially communications cable), and certain spray foam insulation.
- DO NOT install CPVC material in combination with steel pipe, unless a nationally-recognized test laboratory has listed the steel pipe coating as being compatible with CPVC material.
- DO NOT store CPVC material in containers with metal products where contamination with packing oils (hydrocarbons) may occur.
- DO NOT handle CPVC material with gloves contaminated with oils (hydrocarbons) or other incompatible substances.



## WARNING

- **Always verify chemical compatibility with the CPVC pipe manufacturer.**
- **The presence of any visible cracks due to exposure of CPVC material with an incompatible substance warrants a full system inspection and may require partial or full system replacement.**

**Failure to follow these instructions could cause system failure, resulting in death or serious personal injury and property damage.**

## HYDRAULIC DESIGN

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Hydraulic calculations for the sizing of a CPVC sprinkler system shall be calculated using a Hazen-Williams C value of 150. Pipe friction loss calculations shall be made in accordance with NFPA 13, "Standard for the Installation of Sprinkler Systems."

The allowance for friction loss in the Victaulic No. 116 CPVC to IGS Grooved Adapter is 2 equivalent feet of pipe/0.6 equivalent meters of pipe. For additional information regarding friction loss, contact Victaulic (scan QR code on back cover for contact information for your region).

# SYSTEM APPROVALS, LISTINGS, USAGE, AND STANDARDS

Victaulic products for CPVC fire protection piping systems are Underwriters Laboratories Inc. (UL) Listed and Factory Mutual (FM) Approved for use in wet-pipe sprinkler systems.

National Fire Protection Association (NFPA) Standards 13, 13R, and 13D shall be referenced for design and installation requirements in addition to this manual.

The following section summarizes agency approvals, listings, usage, and standards. For more specific listing information concerning FM or NSF International, contact Victaulic (scan QR code on back cover for contact information for your region).

## Light Hazard Occupancies

Victaulic products for CPVC fire protection piping systems are UL Listed for use in Light Hazard Occupancies, as defined in NFPA 13, “Standard for the Installation of Sprinkler Systems.”

## Residential Occupancies

Victaulic products for CPVC fire protection piping systems are UL Listed for use in:

1. Residential occupancies, as defined in NFPA 13R, “Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height.”
2. Residential occupancies, as defined in NFPA 13D, “Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.”
3. Residential occupancies, as defined in NFPA 13, “Standard for the Installation of Sprinkler Systems.”

## Concealed Installations

Victaulic products for CPVC fire protection piping systems are UL Listed for use in concealed installations with the following provisions.

- Minimum protection shall consist of one layer of 3⁄8-inch gypsum wallboard, 1⁄2-inch plywood soffits, or a suspended membrane ceiling with lay-in panels or tiles having a weight of not less than .35 lbs/ft² when installed with metallic support grids.
- Minimum protection for residential occupancies, defined in NFPA 13D and 13R, may consist of one layer of 1⁄2-inch plywood.
- Victaulic products for CPVC fire protection piping systems shall be used in systems containing sprinklers that are rated to 225°F/107°C or lower.

## NOTICE

- **Victaulic products for CPVC fire protection piping systems SHALL NOT be installed in spaces defined by NFPA 13 as combustible, concealed spaces that require sprinklers, unless the space is protected by sprinklers that are specifically approved for the application.**
- **NFPA 13D and NFPA 13R permit the omission of sprinklers in combustible, concealed spaces. Victaulic products for CPVC fire protection piping systems can be installed in these areas when sprinkling residential occupancies in accordance with these standards.**

## Ordinary Hazard Installations

In accordance with NFPA 13, “Pipe or tube listed only for light hazard occupancies shall be permitted to be installed in ordinary hazard rooms of otherwise light hazard occupancies where the room does not exceed 400 ft² (37 m²).”

## Exposed Installations

Victaulic products for CPVC fire protection piping systems are not UL Listed for use in installations without protection (exposed).



## Multi-Purpose Systems

Multi-purpose systems are defined in NFPA 13R and NFPA 13D as piping systems designed to serve both domestic and fire protection needs in a residential occupancy. Victaulic products for CPVC fire protection piping systems are not UL Listed for use in multi-purpose systems.

## Factory Mutual

Victaulic products for CPVC fire protection piping systems are FM Approved for use only in wet pipe systems, as defined in:

- Light Hazard occupancies, as defined in NFPA 13, “Standard for the Installation of Sprinkler Systems”
- Residential occupancies, as defined in NFPA 13R, “Standard for the Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height”
- Residential occupancies, as defined in NFPA 13D, “Standard for the Installation of Sprinkler Systems in One and Two-Family Dwellings and Manufactured Homes”
- Underground fire service systems, as defined in NFPA 24, “Standard for the Installation of Private Fire Service Mains and Their Appurtenances”

## Exposed Installations

Victaulic products for CPVC fire protection piping systems are not FM Approved for exposed environments in Light Hazard Occupancies.

## ANSI/NSF 61

Victaulic products for CPVC fire protection piping systems are not evaluated to ANSI/NSF 61 for use in drinking water systems.

## Penetrating Fire-Rated Walls and Partitions

Before beginning, consult the building codes and authorities having jurisdiction in your area. Several UL Classified, through-penetration firestop systems are approved for use with CPVC pipe. Consult the UL Building Materials Directory, the UL Fire Resistance Directory, and the system manufacturer for proper selection and application. Two manufacturers of Listed systems for use with CPVC pipe are Nelson Fire Stop Products (800-331-7325) and Tremco (800-321-7906). Contact Victaulic for further information (scan QR code on back cover for contact information for your region).

## Heat Sources and Open Ceiling Areas

CPVC sprinkler systems shall be laid out so that the piping is not closely exposed to heat producing sources, such as light fixtures, ballasts, and steam lines. Per UL 1821, piping is to be installed at least 24 inches/610 mm from air return grilles or other openings in the ceiling. During remodeling or ceiling repair, appropriate precautions shall be implemented to properly protect the piping.

## Use with Other Manufacturers' Pipe, Fittings, and Solvent Cements

Victaulic products for CPVC fire protection piping systems are UL Listed for use in combination with UL Listed CPVC sprinkler products and solvent cements. Contact Victaulic for additional information (scan QR code on back cover for contact information for your region).



# PREPARATION AND INSTALLATION

## Cutting the Pipe for Mating to a Victaulic No. 116 CPVC to IGS Grooved Adapter

CPVC pipe can be cut with a ratchet cutter, wheel-type plastic tubing cutter, power saw, or any other fine-tooth saw that is designed for use with plastic material. Tools shall be maintained in good condition, in accordance with the tool manufacturer's recommendations.

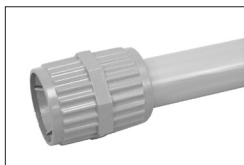
If any damage or cracking is evident at the pipe end, cut off at least 2 inches/ 51 mm beyond any visible crack.



**NOTE:** An improperly maintained ratchet cutter with a dull blade will split CPVC pipe. Verify that the blade remains sharp (blades dull quickly), that the ratchet cutter is used only at temperatures of 50°F/10°C or above, and that the ratchet cutter is capable of producing consistent square cuts.

Pipe ends shall be square cut to provide the maximum bonding surface area. When cutting CPVC pipe with a saw, use a miter box to ensure that the pipe is cut square.

## Deburring and Beveling Pipe



- Burrs and filings can prevent proper contact between the pipe and adapter during assembly and shall be removed from the pipe inside and outside diameters. A chamfering tool or file is suitable for deburring pipe.



- An approximate 10° to 15° bevel shall be placed at the end of the pipe. This bevel will ease entry of the pipe end into the adapter's socket and minimize the amount of solvent cement that is wiped from the adapter's socket during insertion.

## Dry Fit Check for CPVC Pipe and Victaulic No. 116 CPVC to IGS Grooved Adapters

### **WARNING**

- Immediately prior to installation, CPVC materials shall be inspected for any scratches, cracks, splits, gouges, or warping that may have occurred from improper handling or storage. Damaged sections of CPVC materials shall be cut out and discarded. Any damaged Victaulic products for CPVC fire protection piping systems shall be discarded.

**Failure to check all CPVC materials immediately prior to installation may cause joint failure, resulting in death or serious personal injury and property damage.**

- CPVC pipe shall enter the socket of the Victaulic No. 116 CPVC to IGS Grooved Adapter easily,  $\frac{1}{3}$  to  $\frac{2}{3}$  of the way. Contact between the pipe and adapter allows the solvent cement to effectively join the pipe and adapter. If the pipe bottoms out in the adapter, try another adapter. If the pipe bottoms out in the new adapter, discard that section of pipe.
- Using a clean, dry rag, wipe all loose dirt and moisture from the pipe end and the socket of the Victaulic No. 116 CPVC to IGS Grooved Adapter. Moisture can slow the cure time and, at this stage of assembly, excessive water can reduce joint strength.

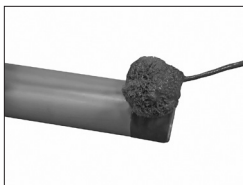


### **WARNING**

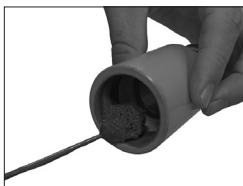
- **Before using solvent cement, refer to ASTM– F402, “Standard Practice for Safe Handling of Solvent Cements, Primers, and Cleaners Used for Thermoplastic Pipe and Fittings;” the Material Safety Data Sheet (MSDS) for the solvent cement; and the instructions contained on the solvent cement can label. In addition, follow all instructions contained within this handbook.**
- **Solvent cement is highly flammable. Verify that all ignition sources are eliminated before use.**
- **Avoid breathing solvent cement vapors, and use solvent cement only in well-ventilated areas. Explosion-proof, general mechanical ventilation or local exhaust is recommended to maintain vapor concentrations below recommended exposure limits. In confined or partially enclosed areas, a NIOSH-approved, organic-vapor cartridge respirator with a full-face piece is recommended.**
- **Avoid frequent contact with skin. PVA coated gloves and an impervious apron are recommended.**
- **Avoid contact with eyes. Splash-proof chemical goggles are recommended.**

**Failure to follow these instructions could result in death or serious personal injury.**

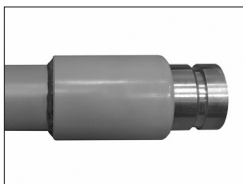
- Use only solvent cements that have been formulated and listed/approved specifically for use with CPVC fire protection piping systems and that have been approved by the pipe /fitting manufacturers. Before installing any Victaulic products for CPVC fire protection piping systems, verify the expiration date located on the solvent cement container. Expired solvent cement shall be discarded in accordance with local and national codes and regulations and in accordance with the manufacturer's instructions.
- Special care shall be exercised when installing Victaulic products for CPVC fire protection piping systems in temperatures below 40° F/4°C. In colder temperatures, extra time shall be allowed for the solvent cement to set, and care shall be taken to prevent damage to the pipe during handling. When applying solvent cement in colder temperatures, verify that the solvent cement does not become “lumpy” or “gelled”. Lumpy or gelled solvent cement shall be discarded in accordance with local and national codes and regulations and in accordance with the manufacturer's instructions.
- If an unopened solvent cement container is subjected to freezing temperatures, the solvent cement may become extremely thick. Place the closed container in a room temperature area where, after a short time period, the solvent cement will return to a usable condition. DO NOT attempt to heat solvent cement.
- At temperatures above 80° F/27°C, verify that both surfaces to be joined are still wet with solvent cement during assembly. Higher temperatures and/or wind accelerate the evaporation of volatile solvents. Pipe exposed to direct sunlight may have surface temperatures higher than the air temperature. Store the pipe and adapters out of direct sunlight prior to applying cement (solvents will penetrate hot surfaces more deeply). In higher temperatures, it is important to avoid puddling of solvent cement.
- To prolong the life of solvent cement, keep containers tightly closed when not in use. Cover the container as much as possible during use.
- Use a dauber that is sized properly for the pipe. For 1-inch/DN25 pipe sizes, use a dauber that is ½-inch in size. Refer to the photos and steps on the following page for the proper application sequence.
- Excessive application (puddling) of solvent cement can cause clogged waterways. To prevent puddling, the socket of the adapter or fitting shall receive a lighter coating of solvent cement than the outside of the pipe. Excess solvent cement on the outside of the pipe shall be wiped off.



1. Vigorously apply a heavy, even coat of solvent cement to the outside of the pipe end. Work the solvent cement into the joining surface using a continuous circular motion.



2. Apply a medium coat of solvent cement to the socket of the Victaulic No. 116 CPVC to IGS Grooved Adapter.



3. Immediately after applying solvent cement, insert the pipe into the socket of the Victaulic No. 116 CPVC to IGS Grooved Adapter and rotate the pipe a quarter turn until the pipe bottoms out at the adapter's internal stop. Hold the assembly for 30 seconds to ensure initial bonding. A bead of solvent cement shall be evident around the pipe and adapter's shoulder. If a bead of solvent cement is not continuous around the adapter's shoulder, the adapter shall be cut out and discarded. Cement in excess of the bead shall be wiped off with a clean, dry rag.

## Set and Cure Times

Solvent cement set and cure times are a function of pipe size, temperature, relative humidity, and tightness of fit. Curing time is faster in dry environments, smaller pipe sizes, higher temperatures, and tighter fits. Curing times shall be increased when moisture is present. The assembly shall be allowed to set without any stress on the joint; set time is dependent upon pipe size, temperature, and humidity. Refer to the solvent cement manufacturer's instructions and minimum cure time tables.

For Victaulic No. 116 CPVC to IGS Grooved Adapters, perform all solvent cement application steps and follow all cure times before making the transition to carbon steel pipe with a Victaulic Style 108 FireLock™ IGS™ Installation-Ready™ Rigid Coupling. Verify that no solvent cement comes into contact with the gasket of the Style 108 Coupling.



### WARNING

- **Follow the solvent cement manufacturer's instructions and minimum cure time tables.**
- **Avoid puddling of solvent cement. Improper installation techniques that result in excess solvent cement will weaken CPVC material.**
- **DO NOT allow solvent cement to run into the inside or on the outside of the pipe or fittings/adapters. Areas containing excess solvent cement shall be cut out and replaced.**
- **DO NOT allow solvent cement to come into contact with gaskets contained in Style 108 Couplings.**

**Failure to follow these instructions may cause system failure, resulting in death or serious personal injury and property damage.**

## Making the Grooved IGS Connection

### **WARNING**

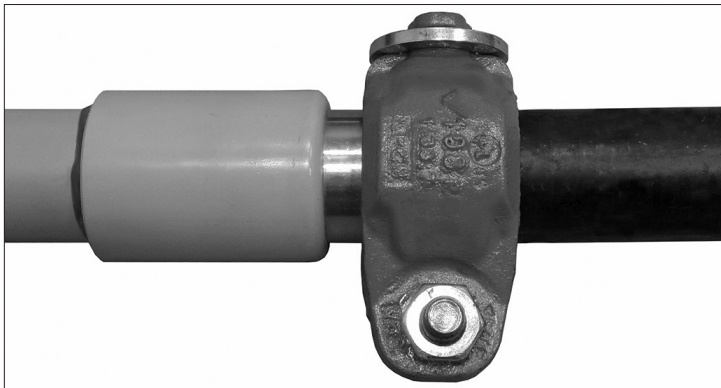
- Read and understand all instructions in the I-108, which can be downloaded at [victaulic.com](http://victaulic.com).

**Failure to follow these instructions could cause improper product installation, resulting in death or serious personal injury and property damage.**



Scan for Victaulic  
Publication 25.14

1. Prepare the 1-inch/DN25 carbon steel pipe in accordance with current Victaulic IGS proprietary groove specifications. Refer to Victaulic publication 25.14 for the IGS groove specification, which can be downloaded at [victaulic.com](http://victaulic.com) (scan QR code to the left).



Scan for Victaulic  
Publication I-108

2. Install the Style 108 Coupling in accordance with current Victaulic instructions. Refer to Victaulic publication I-108 for the Style 108 Coupling installation instructions, which can be downloaded at [victaulic.com](http://victaulic.com) (scan QR code to the left). DO NOT use the Style 108 Coupling for sprinkler-piping-to-sprinkler connections. For sprinkler connections, the Style V9 shall be used.

3. Inspect the joints before and after pressure testing. Look for gaps between the bolt pads. Look for housing keys that are not inside the grooves. Verify that pipe alignment does not place undue stress on the grooved adapter. Any of these conditions shall be corrected immediately.
4. The maximum recommended pipe hanger distance from the grooved adapter is 6 feet/1.8 meters. As an added precaution, Victaulic suggests a hanger or support be located at or near the grooved adapter joint.

### **When Connecting a Victaulic "CC" Flexible Hose to a Victaulic No. 116 CPVC to IGS Grooved Adapter:**



Scan for Victaulic  
VicFlex Bracket  
Installation  
Instructions

Install the Victaulic "CC" Flexible Hose to the Victaulic No. 116 CPVC to IGS Grooved Adapter, install the bracket to the ceiling structure, and install the sprinkler reducing nipple into the center gate by following the instructions for the appropriate bracket. Bracket installation instructions can be downloaded at [victaulic.com](http://victaulic.com) (scan QR code to the left).

# SYSTEM ACCEPTANCE TESTING

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## WARNING

- **Air or compressed gas SHALL NOT be used for system acceptance testing.**  
**System failure when using compressed air/gas for system acceptance testing can result in death or serious personal injury and property damage.**

When an installation is complete and joints are cured properly per the requirements listed in the solvent cement manufacturer's instructions and minimum cure time tables, the system may be hydrostatically (water) pressure tested to 200 psi/14 Bar for 2 hours. The system shall be pressure tested with water to 50 psi/3 Bar in excess of the maximum pressure when the maximum system pressure will be maintained above 150 psi/10 Bar. These tests are in accordance with requirements established by NFPA 13.

Sprinkler systems in one- and two-family dwellings and mobile homes may be pressure tested with water at line pressure, after following Table 3 curing conditions, in accordance with the requirements established by NFPA 13D.

When pressure testing, the sprinkler system shall be filled slowly with water. Air shall be bled from the highest and furthest sprinkler heads before pressure testing is applied. Air shall be removed from the piping system (plastic or metal) to prevent it from being locked in the system when pressure is applied. Entrapped air can generate excessive surge pressures that can result in death or serious personal injury and property damage, regardless of the piping material used. **CPVC piping systems SHALL NOT be tested with air or compressed gas.**

If a leak is found, the fitting shall be cut out and discarded. A new section can be installed by using a coupling or a union. Unions shall be used in accessible areas only.

## PAINTING PIPE AND FITTINGS

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## WARNING

- **The UL Listing DOES NOT cover painted CPVC Sprinkler System Products.**  
**Painting CPVC Sprinkler System Products may cause product failure, resulting in death or serious personal injury and property damage.**

The UL Listing DOES NOT cover painted CPVC fire sprinkler piping products. Use of certain paints, such as oil-based, can damage CPVC fire sprinkler piping products. Always consult with the local authority having jurisdiction (AHJ) for restrictions.

# HELPFUL INFORMATION

The following section provides guidance on common methods for hanging and supporting CPVC sprinkler system piping. Always refer to the pipe and fitting manufacturers' instructions for additional requirements, including pipe hanger spacing.

## Pipe Hangers

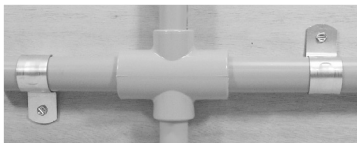
### WARNING

- **Install hangers only with the hardware provided.**
- **Hangers shall not compress, distort, cut, or abrade the piping, and they shall allow free axial movement of the pipe for thermal expansion and contraction.**
- **Verify that the hangers do not contain rough or sharp edges, which can damage the CPVC pipe.**
- **DO NOT use any hardware that requires the use of a hammer or power nailer.**
- **DO NOT use CPVC fire sprinkler piping products to support non-system components (per NFPA 13).**

**Failure to follow these instructions could cause system failure, resulting in death or serious personal injury and property damage.**

Pipe hangers and support devices shall be listed as a UL Category VIXH (Support Devices for Thermoplastic Sprinkler Piping) and/or VFXT (Hangers, Pipe). Refer to the UL website for manufacturers of products that comply with these categories. In addition, these hangers shall comply with NFPA requirements for use with CPVC fire sprinkler piping systems. Hangers shall not compress, distort, cut, or abrade the piping, and they shall allow free axial movement of the pipe for thermal expansion and contraction. Verify that the hangers do not contain rough or sharp edges, which can damage the CPVC pipe. DO NOT use any supporting devices that require the use of a hammer, power nailer, and/or nails for installation.

### CPVC One-Hole, Wrap-Around Strap

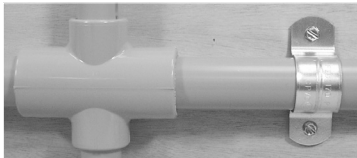


The CPVC one-hole wrap-around strap is designed to support CPVC piping systems only when the hanger tab is in the vertical position and the screw-type fastener is in the horizontal position.

These straps can be used as pipe restraints when the hanger tab is in the downward position; however, they cannot be used to support any weight of the system. In addition, these straps can be used as piping system guides when the system lies on top of a beam, and the beam supports the system's weight.

The one-hole wrap-around strap is not intended to support the CPVC piping system from underneath a ceiling or any other flat, horizontal surface. For this application, a CPVC two-hole strap shall be installed.

### CPVC Two-Hole Strap

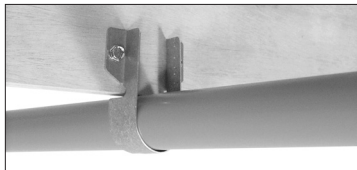


The CPVC two-hole strap is designed to support CPVC piping systems when attached to a flat, horizontal surface with the screw-type fasteners in the vertical position.

In addition, the two-hole strap is designed to support CPVC piping systems when attached to a flat, vertical surface with one mounting tab in the vertical position and the screw-type fasteners in the horizontal position.

The two-hole strap can be used as a piping system guide when the system lies on top of a beam, and the beam supports the system's weight.

## CPVC Two-Hole, 90° Side-Mount Strap



The CPVC side-mount strap is designed to support CPVC piping systems when attached to a horizontal beam with the screw-type fasteners in the horizontal position. In this case, the pipe hangs below the beam. This strap provides a benefit when overhead clearance is limited.

In addition, the side-mount strap can be used as a restrainer when the system lies on top of a beam.

## Band Hanger and Surge Restraint

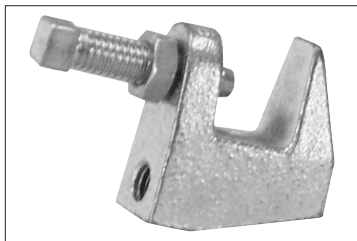


The band hanger is designed to support CPVC piping systems when used with a hanging steel threaded rod suspended from a ceiling or other flat, horizontal surface. The threaded rod shall be leveled properly before installing the band hanger.



A UL Listed band hanger, when installed with a UL Listed surge restraint, provides surge protection for the system (shown to the left).

## Universal Beam Clamp with Locknut



The universal beam clamp supports CPVC piping systems in both top-beam and bottom-beam positions. It is designed for attaching a hanger rod to the top flange of a beam or bar joist when the flange thickness does not exceed  $\frac{3}{4}$  inch. A steel threaded rod shall be level on a ceiling or other flat, horizontal surface before installing the beam clamp.

## Wooden Studs and Joists

Holes in wooden studs, used to support CPVC pipe and fittings, shall be oversized to allow for movement.

## Metal Studs

Extreme caution shall be taken when installing Victaulic CPVC pipe and fittings into metal studs, since the studs may puncture or gouge the pipe. Grommets made of plastic, which are commonly used in the plumbing industry, can be used for protection. Contact your local AHJ for more information regarding protection of CPVC pipe installed in metal studs.



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**I-RES 13213 REV A 02/2020      Z000116RES**

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