BlazeMaster®
FIRE SPRINKLER SYSTEMS

# Joining BlazeMaster CPVC Fire Sprinkler Pipe And Fittings With Red One Step Solvent Cement

## Cutting

BlazeMaster pipe can be easily cut with a ratchet cutter, wheel-type plastic tubing cutter, a power saw, or a fine toothed saw. To ensure the pipe is cut square, a miter box must be used when using a saw. Cutting the pipe as squarely as possible provides the surface of the pipe with a maximum bonding area. If any indication of damage or cracking is evident at the pipe end, cut off at least two (2) inches beyond any visible crack.

## Deburring

Burrs and filings can prevent proper contact between pipe and fitting during assembly, and must be removed from the outside and the inside of the pipe. A chamfering tool or file are suitable for this purpose. A slight bevel shall be placed at the end of the pipe to ease entry of the pipe into the socket and minimize the chances of wiping solvent cement from the fitting.

## Fitting Preparation

Using a clean dry rag, wipe loose dirt and moisture from the fitting socket and pipe end. Moisture can slow the cure time and at this stage of assembly, excessive water can reduce joint strength. Check the dry fit of the pipe and fitting. The pipe should enter the fitting socket easily 1/4 to 3/4 of the way. At this stage, the pipe should not bottom out in the socket.

## Solvent Cement Application

Joining surfaces shall be penetrated and softened. Cement must be provided with the pipe and fittings. Cement shall be applied (worked into pipe) with an applicator 1/2 the size of the pipe diameter. Apply a heavy, even coat of cement to the outside pipe end. Apply a medium coat to the fitting socket. Pipe sizes 1-1/4 inches and above shall always receive a second cement application on the pipe end (apply cement on the pipe end, in the fitting socket, and on the pipe again).

Special care shall be exercised when assembling BlazeMaster systems in extremely low temperatures (below 40°F) or extremely high temperatures (above 100°F). Extra set time shall be allowed in colder temperatures. When cementing pipe and fittings in extremely cold temperatures, make certain that the cement has not"gelled". Gelled cement must be discarded. In extremely hot temperatures, make sure both surfaces to be joined are still wet with cement when putting them together.

## Assembly

Immediately insert the pipe into the fitting socket, while rotating the pipe 1/4 turn. Properly align the fitting for the installation at this time. Pipe must bottom to the stop. Hold assembly for 10 to 15 seconds to ensure initial bonding. A bead of cement should be evident around the pipe and fitting juncture. If this bead is not continuous around the socket shoulder, it may indicate that insufficient cement was applied. If insufficient cement is applied, discard the fitting and begin again. Cement in excess of the bead can be wiped off with a rag. Care should be exercised when installing sprinkler heads. Sprinkler head fittings shall be allowed to cure for a minimum of 30 minutes prior to installing the sprinkler head. When installing sprinkler heads be sure to anchor or hold the sprinkler adapter fitting securely to avoid rotating the pipe in previously cemented connection. Previously cemented fittings shall also be permitted to cure for a minimum of 30 minutes.


**Phone:**
888.234.2436
216.447.5000

**Fax:**
216.447.5750

9911 Brecksville Rd.
Cleveland, OH 44141-3247
web site: www.blazemaster.com e-mail: blazemaster@blazemaster.com

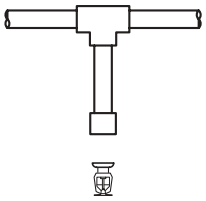
**Safety And Health Precautions**
Prior to using CPVC solvent cements, review and follow all precautions found on the container labels, material safety data sheet, and Standard Practice for Safe Handling ASTM F402.

**Set and Cure Times**
Solvent cement set and cure times are a function of pipe size, temperature, relative humidity, and tightness of fit. Drying time is faster for drier environments, smaller pipe sizes, high temperatures, and tighter fits. The assembly must be allowed to set, without any stress on the joint, for 1 to 5 minutes, depending on the pipe size and temperature. Following the initial set period, the assembly can be handled carefully avoiding significant stresses to the joint. Refer to the cure time tables for minimum cure times prior to pressure testing.

Once an installation is completed and cured, per the appropriate table, the system should be tested at 200 psi for 2 hours, or at 50 psi in excess of the maximum pressure when the maximum pressure to be maintained in the system is in excess of 150 psi, in accordance with the requirements established by NFPA 13. Sprinkler systems in one and two family dwellings and mobile homes may be tested at line pressure in accordance with the requirements established by NFPA 13D. When pressure testing, the sprinkler system shall be filled with water and air bled from the highest and farthest sprinkler head before test pressure is applied. Air or compressed gas should never be used for pressure testing. If a leak is found, the fitting must be cut out and discarded. A new section can be installed using couplings or a union. Unions should be used in accessible area only.

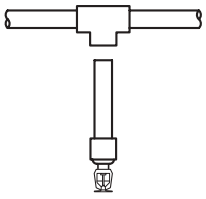
**Warning**
Sprinkler heads shall be installed only after all the CPVC pipe and fittings, including the sprinkler head adapters, are solvent welded to the piping and allowed to cure for a minimum of 30 minutes. Sprinkler head fittings should be visually inspected and probed with a wooden dowel to insure that the water way and threads are clear of any excess cement. Once the installation is complete and cured, per the appropriate table, the system shall be hydrostatically tested. It is an unacceptable practice to thread the sprinkler head into the adapter fitting prior to cementing the adapter to the drop.

**Right**



Thread the sprinkler into the adaptor fitting only after the recommended cure time.

**Wrong**



Do not pre-assemble the drop assembly with the sprinkler head prior to cementing all joints.

| Cure Times With One Step Solvent Cement 225 psi (Maximum) Test Pressure | | | |
|---|---|---|---|
| Pipe Size Inches | Ambient Temperature During Cure Period | | |
| | 60°F to 120°F | 40°F to 59°F | 0°F to 39°F |
| 3/4" | 1 hr. | 4 hr. | 48 hr. |
| 1" | 1.5 hr. | 4 hr. | 48 hr. |
| 1-1/4" | 3 hr. | 32 hr. | 10 days |
| 1-1/2" | 3 hr. | 32 hr. | 10 days |
| 2" | 8 hr. | 48 hr. | See Note 1 |
| 2-1/2" | 24 hr. | 96 hr. | See Note 1 |
| 3" | 24 hr. | 96 hr. | See Note 1 |

Note 1: For these sizes, the solvent cement can be applied at temperatures below 32°F, however, the sprinkler system temperature must be raised to a temperature of 32°F or above and allowed to cure per the above recommendations prior to pressure testing.

| Cure Times With One Step Solvent Cement 200 psi (Maximum) Test Pressure | | | |
|---|---|---|---|
| Pipe Size Inches | Ambient Temperature During Cure Period | | |
| | 60°F to 120°F | 40°F to 59°F | 0°F to 39°F |
| 3/4" | 45 min. | 1.5 hr. | 24 hr. |
| 1" | 45 min. | 1.5 hr. | 24 hr. |
| 1-1/4" | 1.5 hr. | 16 hr. | 120 hr. |
| 1-1/2" | 1.5 hr. | 16 hr. | 120 hr. |
| 2" | 6 hr. | 36 hr. | See Note 1 |
| 2-1/2" | 8 hr. | 72 hr. | See Note 1 |
| 3" | 8 hr. | 72 hr. | See Note 1 |

Note 1: For these sizes, the solvent cement can be applied at temperatures below 32°F, however, the sprinkler system temperature must be raised to a temperature of 32°F or above and allowed to cure per the above recommendations prior to pressure testing.

| Cure Times With One Step Solvent Cement 100 psi (Maximum) Test Pressure | | | |
|---|---|---|---|
| Pipe Size Inches | Ambient Temperature During Cure Period | | |
| | 60°F to 120°F | 40°F to 59°F | 0°F to 39°F |
| 3/4" CTS | 15 min. | 15 min. | 30 min. |
| 3/4" | 15 min. | 15 min. | 30 min. |
| 1" | 15 min. | 30 min. | 30 min. |
| 1-1/4" | 15 min. | 30 min. | 2 hr. |

| BlazeMaster Pipe SDR 13.5 (ASTM F442) Estimating One Step Cement Requirements | |
|---|---|
| Fitting Size inches | Solvent Cement number of joints per quart |
| 3/4" | 270 |
| 1" | 180 |
| 1-1/4" | 130 |
| 1-1/2" | 100 |
| 2" | 70 |
| 2-1/2" | 50 |
| 3" | 40 |