



SOLVENT CEMENTS

IPS

Weld-On Solvent Cements

The Weld-On CPVC Solvent cements are for use with CPVC plastic pipe and fittings in extensively hot/cold water plumbing and industrial piping systems.

The Weld-On Specialty Solvent Cements are ideal for wet and cold weather conditions.

The Multi-Purpose and Transition Solvent Cements comprise a series of light and medium-bodied formulations designed for use in joining a wide range of PVC, ABS, CPVC and Styrene pipe and fittings.

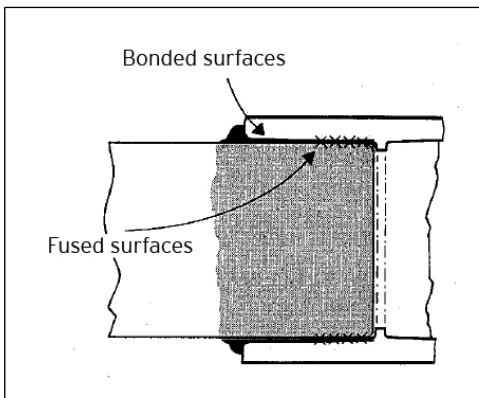
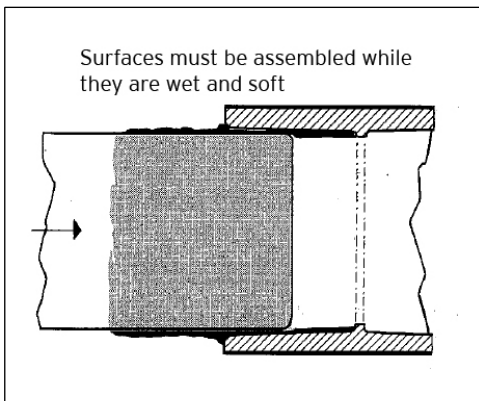
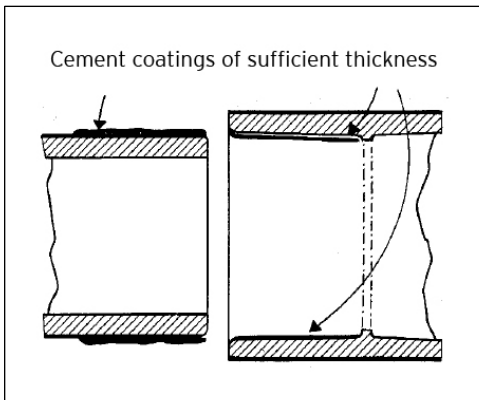
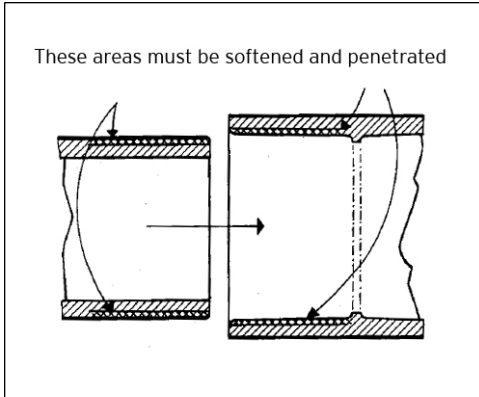
Please contact your local Corix Water Products branch for your specific needs.

SPECIFICATIONS

MODEL	COLOUR	MAX. RECOMMENDED PIPE SIZE	RELATIVE SET TIME	ASTM DESIGNATION	INDUSTRY LISTINGS	CLASSES, SCHEDULES AND TYPES	MIN. SHELF LIFE
713	Orange	2"	Fast	D-2846, F-493	NSF, UPC	Copper Tube Size and Schedule 40	2 Years
714	Orange/Gray	12"	Medium	D-2846, F-493	UPC, NSF (Orange Only)	All Rigid	2 Years
724	Gray	12"	Medium	F-493	NSF	All Rigid	2 Years
729	Gray	24"	Slow	F-493	Pending	All Rigid	2 Years
FlowGuard Gold	Yellow	2"	Fast	D-2846, F-493	UPC, NSF	Copper Tube Size Only	2 Years
All Weather FlowGuard Gold	Yellow	2"	Fast	D-2846, F-493	UPC, NSF	Copper Tube Size Only	2 Years
725 Wet 'R Dry	Aqua Blue	4" (Sch. 80) 6" (All Others)	Extremely Fast	D-2564	NSF, UPC	Rigid/Flex	3 Years
727 Hot 'R Cold	Clear	4" (Sch. 80) 6" (All Others)	Very Fast	D-2564	NSF, UPC	Rigid/Flex	3 Years
735 Wet 'N Fast	Blue	4" (Sch. 80) 6" (All Others)	Extremely Fast	D-2564	NSF, UPC	Rigid/Flex	3 Years
737 Turf 'N Ag	Blue (Fades to Clear)	4" (Sch. 80) 6" (All Others)	Very Fast	D-2564	NSF, UPC	Rigid/Flex	3 Years
747 Pool 'R Spa	Blue (Fades to Clear)	4" (Sch. 80) 6" (All Others)	Extremely Fast	D-2564	NSF, UPC, CSA	Rigid/Flex	3 Years
790	Clear	4" (Sch. 80) 6" (All Others)	Fast	ASTM D-2564, D-2235 and F-493	N/A	All Rigid	3 Years
793	Clear	2-1/2"	Very Fast	-	N/A	All Rigid (Except Sch. 80)	3 Years
794	Green	6"	Fast	D-3138	UPC, NSF	All Rigid (Except Sch. 80)	3 Years
795	Clear	4" (Sch. 80) 6" (All Others)	Fast	-	UPC	Flex/Flex; Flex/Rigid	3 Years
796	White	6"	Fast	D-3138	CSA	All (Except Sch. 80)	3 Years

BASIC PRINCIPLES OF SOLVENT CEMENTING PLASTIC PIPE AND FITTINGS

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The solvent cemented connection in thermoplastic pipe and fittings is the last vital link in a plastic pipe installation. It can mean the success or failure of the system as a whole. Accordingly, it requires the same professional care and attention that are given to other components of the system.

There are many solvent cementing techniques published covering step-by-step procedures on just how to make solvent cemented joints. However, IPS feels that if the basic principles involved are explained, known and understood, a better understanding would be gained, as to what techniques are necessary to suit particular applications, temperature conditions and variations in sizes and fits of pipe and fittings.

To consistently make good joints, the following should be clearly understood:

1. The joining surfaces must be softened and made semi-fluid.
2. Sufficient cement must be applied to fill the gap between pipe and fitting.
3. Assembly of pipe and fittings must be made while the surfaces are still wet and fluid.
4. Joint strength develops as the cement dries. In the tight part of the joint, the surfaces will tend to fuse together, in the loose part, the cement will bond to both surfaces.

Penetration and softening can be achieved by the cement itself, by a suitable primer, or by the use of both primer and cement. For certain materials and in certain situations, it is desirable to use a primer. A suitable primer will usually penetrate and soften the surfaces more quickly than the cement alone. Additionally, the use of a primer can provide a safety factor for the installer, for he can know, under various temperature conditions, when he has achieved sufficient softening. For example, in cold weather, more time and additional applications are required.

More than sufficient cement to fill the loose part of the joint must be applied. Besides filling the gap, adequate cement layers will penetrate the surfaces and also remain wet until the joint is assembled. Prove this for yourself. Apply on the top surface of a piece of pipe two separate layers of cement. First, flow on a heavy layer of cement, then along side it, a thin brushed out layer. Test the layers every 15 seconds or so by a gentle tap with your finger. You will note that the thin layer becomes tacky and then dries quickly (probably within 15 seconds). The heavy layer will remain wet much longer. Now, check for penetration a few minutes after applying these layers. Scrape them with a knife. The thin layer will have achieved little or no penetration. The heavy one much more penetration.

If the cement coatings on the pipe and fittings are wet and fluid when assembly takes place, they will tend to flow together and become one cement layer. Also, if the cement is wet, the surfaces beneath them will still be soft and these softened surfaces in the tight part of the joint will tend to fuse together.

As the solvent dissipates, the cement layer and the softened surfaces will harden with a corresponding increase in joint strength. A good joint will take the required working pressure long before the joint is fully dry and final strength is obtained. In the tight (fused) part of the joint, strength will develop more quickly than in the looser (bonded) part of the joint. Information about the development of bond strength of solvent cemented joints is available.

JOINING PVC PLASTIC PIPE IN HOT WEATHER

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There are many occasions when solvent cementing plastic pipe in 95°F temperatures and over cannot be avoided. If special precautions are taken, problems can be avoided.

Weld-On solvent cements for plastic pipe contain high-strength solvents which evaporate faster at elevated temperatures. This is especially true when there is a hot wind blowing. If the pipe is stored in direct sunlight, surface temperatures may be 20°F to 30°F above air temperatures. Solvents attack these hot surfaces faster and deeper, especially inside a joint. Thus, it is very important to avoid puddling inside socket and to wipe off excess cement outside.

By following IPS' standard instructions and using a little extra care, as outlined below, successful solvent cemented joints can be made in even the most extreme hot weather conditions.

Tips to follow when solvent cementing in high temperatures:

1. Store solvent cements and primers in a cool or shaded area prior to use.
2. If possible, store fitting and the pipe, or at least the ends to be solvent welded, in shady area before cementing.
3. Cool surfaces to be joined by wiping with a damp rag. Be sure that surface is dry prior to applying solvent cement.
4. Try to do the solvent cementing in cooler morning hours.
5. Make sure that both surfaces to be joined are still wet with cement when putting them together. With large size pipe, more people on the crew may be necessary.
6. Use one of the heavier, high viscosity cements since they will provide a little more working time.

As you know, during hot weather, there can be a greater expansion-contraction factor. It is suggested that you follow the advice of the pipe manufacturer regarding this condition.

By using IPS' high-quality Weld-On products as recommended and by following these hot weather tips, you can be assured of producing strong, leak-proof joints even during very hot weather conditions.

JOINING PVC PLASTIC PIPE IN COLD WEATHER

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Good joints can be made with Weld-On at sub-zero temperatures. By following IPS' standard instructions and using a little extra care and patience, successful solvent cemented joints can be made at temperatures even as low as -15°F. In cold weather, solvents penetrate and soften the PVC surfaces more slowly than in warm weather. Also, the plastic is more resistant to solvent attack. Therefore, it becomes more important to pre-soften surfaces with P-70 Primer. And, because of slower evaporation, a longer cure time is necessary. Cure schedules printed in IPS' "Solvent Cementing PVC" booklet already allow a wide margin for safety. For colder weather, simply allow more time.

Tips to follow in solvent cementing during cold weather:

1. Pre-fabricate as much of the system as is possible in a heated work area.
2. Store cements and primers in a warmer area when not in use and make sure they remain fluid.
3. Take special care to remove moisture including ice and snow.
4. Use Weld-On P-70 Primer to soften the joining surfaces before applying cement. More than one application may be necessary.
5. Allow a longer cure period before the system is used.
6. Read and follow all of IPS' directions carefully before installation.

Regular Weld-On PVC cements are formulated to have well-balanced drying characteristics and to have good stability in sub-freezing temperatures. Some manufacturers offer special cements for cold weather because their regular cements do not have that same stability.

For all practical purposes, good solvent cemented joints can be made in very cold conditions with IPS' existing products provided proper care and a little common sense are used.

GENERAL SAFETY FOR PVC CEMENTS AND PRIMERS

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Over a period of 20 years, millions of solvent cemented joints have been made with only rare cases of mishap. However, since flammable and toxic solvents are a part of these products, appropriate safety precautions should be taken.

Virtually all solvent cements and primers for plastic pipe are flammable and should not be used or stored near heat, spark or open flames. Cement should be stored in closed containers at temperatures between 40°F and 110°F. They should be used only with adequate ventilation. In confined or partially enclosed areas, a ventilating device should be used to remove vapors and minimize their inhalation. Respirators especially designed to minimize the inhalation of organic vapors can also be used; they are commercially available. Containers should be kept tightly closed when not in use and covered as much as possible when in use. Use of an applicator can with applicator attached to a lid is especially recommended. Avoid frequent contact with skin and eyes. May cause eye injury. In case of contact, flush with plenty of water for 15 minutes. If irritation persists, get medical attention. If swallowed, call a physician immediately and follow precautionary statement given on side panel of cement container. Keep out of the reach of children.

SPECIFICATIONS

USE CAUTION WITH WELDING TORCHES

At construction sites where plastic pipe is being installed or has recently been solvent welded, special caution should be taken when using welding torches or other equipment where sparks might be involved. Flammable vapors from cemented joints sometimes linger within or around a piping system for some time.

Special care must be taken when using a welding torch in these applications:

- a) Well casing installations
- b) Installing pumps in irrigation water lines
- c) Installation of plastic pipe systems in industrial plants

In all cases, lines should be purged to remove solvent vapors before welding.

USE CAUTION WITH CALCIUM HYPOCHLORITE

Do not use a dry granular calcium hypochlorite as a disinfecting material for water purification in potable water piping systems. The introduction of granules or pellets of calcium hypochlorite with PVC solvent cements and primers (including their vapors) may result in a violent chemical reaction if a water solution is not used. It is advisable to purify lines by pumping chlorinated water into the piping system - this solution will be non-volatile. Furthermore, dry granular calcium hypochlorite should not be stored or used near solvent cements and primers.

Solvent cementing is no more dangerous than putting gasoline in your automobile. People have learned they must be careful with gasoline. Although solvent cements are not as flammable as gasoline, users must also learn to be careful. Again, accidents and injuries have seldom occurred in the use of these products. Help maintain and improve this excellent record by following the above recommendations.

HELPFUL REMINDERS FOR INSTALLERS OF PLASTIC PIPE AND FITTINGS

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Below are a few reminders for installing plastic pipe and fittings:

1. Have you reviewed all of the instructions on the cement container label?
2. Are you using the proper cement for the job? For the type and size of pipe and correct fittings being joined?
3. Do you need to take special precautions because of unusual weather conditions?
4. Do you have sufficient manpower? Do you need more help to maintain proper alignment and to bottom pipe in fitting?
5. Do you have the proper tools and sufficient quantities of Weld-On cements and primer?
6. Remember, primer is NOT to be used on ABS pipe or fittings.
7. Be sure to use a large enough applicator to quickly spread cement generously on pipe and fittings. Then assemble immediately.
8. Avoid puddling excess cement inside the socket, especially on thin wall, bell end PVC pipe and ABS in any schedule.
9. Be aware at all times of good safety practices. Solvent cements for pipe and fittings are flammable, so there should be no d smoking nor other sources of heat or flame in working or storage areas. Be sure to work only in a well ventilated space and avoid unnecessary skin contact with all solvents. More detailed safety information is available from IPS.
10. Take advantage of IPS' free literature on joining techniques. They offer a booklet on joining PVC pipe and fittings, a cartoon booklet illustrating joining and installation methods and individual bulletins.