

# Solvent Weld Sewer Pipe and Fittings

## Submittal Data Sheet



Job or Customer: .....

Engineer: .....

Contractor: .....

Submitted by: .....

Date

Approved by: .....

Date

Order No: .....

Date

Specification: .....

## introduction



D3034  
D2729

The solvent weld assembly method offers tight joints, eliminating infiltration, exfiltration and root infestation. Solvent welded joints are able to resist large tensile loads and will not pull apart. SDR35 solvent weld sewer pipe and fittings also exhibit exceptional chemical and abrasion resistance.

# Solvent Weld Sewer Pipe and Fittings

## Product Data Sheet

### PIPE AVAILABILITY

#### D-2729 Belled End

3" through 6"

Size	10' Lengths
3	205000
4	205002
6	205105

#### D-3034 Belled End

3" through 8"

Size	10' Lengths	20' Lengths
3	203000	-
4	203001	203010
	203003*	203011*
6	203006	203012
	203008*	203013*
8	-	203014

\*available in white

### SDR35 FITTINGS AVAILABILITY

Molded	3" through 8"
Fabricated	8" through 24"

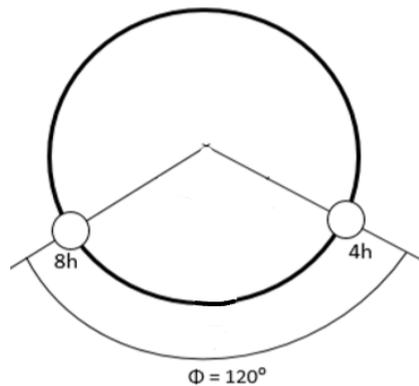
Tees  
Wyes  
90° Elbows  
45° Elbows  
22-1/2° Elbows  
Reducer Bushings  
Adapter Bushings  
Cleanout Adapters  
Couplings  
Cleanout Plugs  
Caps

Adapters  
Cast Iron Adapters  
Downspout Adapters  
One Piece Closet Flanges  
Grates  
P Traps  
Saddles  
Clamps  
Cross  
Cleanouts

# Solvent Weld Sewer Pipe and Fittings

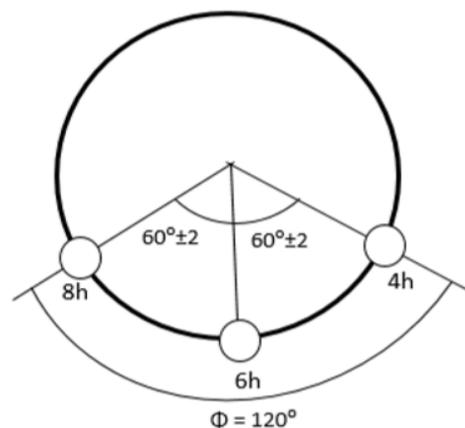
## Perforation Patterns

### 2-Hole (Meets New England Specification)



2 Rows of 1/2" holes, 120° a part at 4-8 o'clock positions  
2 Rows of 5/8" holes, 120° a part at 4-8 o'clock positions  
Spacing between holes shall be 5"

### 3-Hole (Meets Ohio Specification)



3 Rows of 5/8" holes, 120° a part at 4-6-8 o'clock positions  
Spacing between holes shall be 5"

# Solvent Weld Sewer Pipe and Fittings

## *Handling & Installation*

### JOINING METHOD – SOLVENT WELDING

#### Installation

To make consistently tight joints, the following points of solvent cementing should be clearly understood:

1. The appropriate PVC one-step cement must be used.
2. Sufficient cement must be applied to fill the gap between pipe and fittings.
3. Assembly of pipe and fittings must be made while the surfaces are still wet and fluid.
4. Joint strength will develop as the cement cures. In the tight part of the joint, surfaces tend to fuse together; in the loose part, the cement bonds to both surfaces.

# Solvent Weld Sewer Pipe and Fittings

## Handling & Installation

### Step 1 Preparation

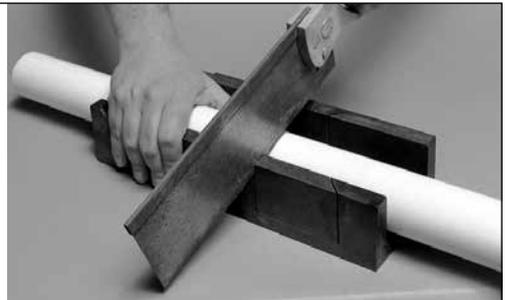
Assemble proper materials for the job. This includes the appropriate cement, primer and applicator for the size of piping system to be assembled.



### Step 2 Cut Pipe

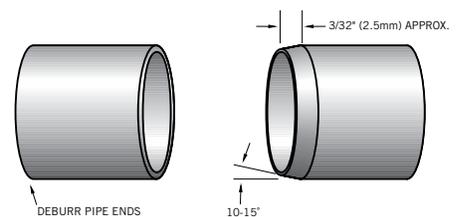
Pipe must be cut as square as possible. (A diagonal cut reduces bonding area in the most effective part of the joint.) Use a handsaw and miter box or a mechanical saw.

Plastic tubing cutters may also be used for cutting plastic pipe; however, some produce a raised bead at the end of the pipe. This bead must be removed with a file or reamer, as it will wipe the cement away when pipe is inserted into the fitting.



### Step 3 Deburr Pipe Ends

Use a knife, plastic pipe deburring tool, or file to remove burrs from the end of small diameter pipe. Be sure to remove all burrs from around the inside as well as the outside of the pipe. A slight chamfer (bevel) of about 15° should be added to the end to permit easier insertion of the pipe into the fitting. Failure to chamfer the edge of the pipe may remove cement from the fitting socket, causing the joint to leak.



# Solvent Weld Sewer Pipe and Fittings

## Handling & Installation

### Step 4 Clean Pipe Ends

Remove all dirt, grease and moisture. A thorough wipe with a clean dry rag is usually sufficient. (Moisture will retard cure, dirt or grease can prevent adhesion).



### Step 5 Check Fit

Check pipe and fittings for dry fit before welding together. For proper interference fit, the pipe must go easily into the fitting one quarter to three quarters of the way. Too tight a fit is not desirable; you must be able to fully bottom the pipe in the socket during assembly. If the pipe and fittings are not out of round, a satisfactory joint can be made if there is a "net" fit, that is, the pipe bottoms in the fitting socket with no interference, without stop.

All pipe and fittings must conform to ASTM and other recognized standards.



### Step 6 Select Applicator

Ensure that the right applicator is being used for the size of pipe or fittings being joined. The applicator size should be equal to half the pipe diameter. It is important that a proper size applicator be used to help ensure that sufficient layers of cement.



### Step 7 Cement Application

Stir the cement or shake can before using. Using the correct size applicator, aggressively work a full even layer of cement on to the pipe end equal to the depth of the fitting socket. Do not brush it out to a thin paint type layer, as this will dry within a few seconds.



# Solvent Weld Sewer Pipe and Fittings

## Handling & Installation

### Step 8 Cement Application

Aggressively work a medium layer of cement into the fitting socket.

AVOID PUDDLING THE CEMENT IN THE SOCKET. ON BELL END PIPE DO NOT COAT BEYOND THE SOCKET DEPTH OR ALLOW CEMENT TO RUN DOWN INTO THE PIPE BEYOND THE SPIGOT END.



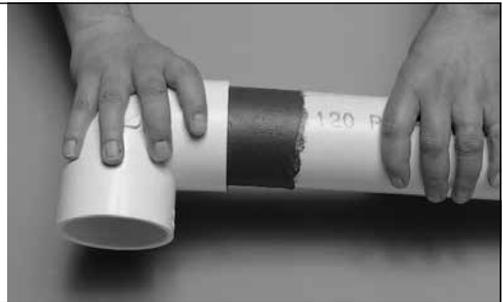
### Step 9 Cement Application

Apply a second full, even layer of cement on the pipe.



### Step 10 Assembly

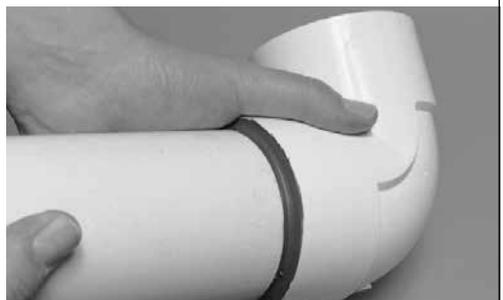
Without delay, while the cement is still wet, assemble the pipe and fittings. Use sufficient force to ensure that the pipe bottoms in the fitting socket. If possible, twist the pipe a quarter turn as you insert it.



### Step 11 Assembly

Hold the pipe and fitting together for approximately 30 seconds to avoid push out.

After assembly, a joint should have a ring or bead of cement completely around the juncture of the pipe and fitting. If voids in this ring are present, sufficient cement was not applied and the joint may be defective.

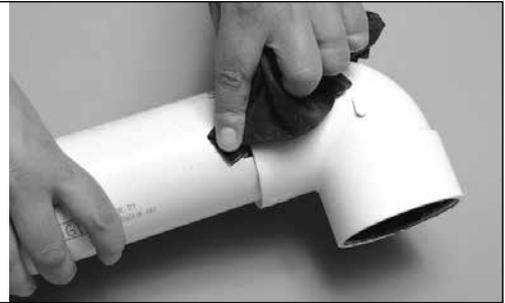


# Solvent Weld Sewer Pipe and Fittings

## *Handling & Installation*

### Step 12 Joint Cleaning

Using a rag, remove the excess cement from the pipe and fitting, including the ring or bead, as it will needlessly soften the pipe and fitting and does not add to joint strength. Avoid disturbing or moving the joint.



### Step 13 Joint Setting & Curing

Handle newly assembled joints carefully until initial set has taken place. Allow curing to take place before pressurizing the system. (Note: in humid weather allow for 50% more curing time.)

# Solvent Weld Sewer Pipe and Fittings

## *Handling & Installation*

### Cold Weather

Although normal installation temperatures are between 40°F (4°C) and 110°F (43°C), high strength joints have been made at temperatures as low as -15°F (-26°C).

In cold weather, solvents penetrate and soften the plastic pipe and fitting surfaces more slowly than in warm weather. In this situation, the plastic is more resistant to solvent attack and it becomes even more important to pre-soften surfaces with an aggressive primer. Be aware that because of slower evaporation, a longer cure time is necessary.

Tips for solvent welding in cold weather

- Prefabricate as much of the system as is possible in a heated work area.
- Store cements and primers in a warmer area when not in use and make sure they remain fluid.
- Take special care to remove moisture including ice and snow from the surfaces to be joined.
- Ensure that the temperature of the materials to be joined (re: pipe and fittings) is similar.
- Use Primer to soften the joining surfaces before applying cement. More than one application may be necessary.
- Allow a longer cure period before the system is used. Note: A heat blanket may be used to speed up the set and cure times.

### Hot Weather

There are many occasions when solvent welding plastic pipe at 95°F (35°C) temperatures and above cannot be avoided. If special precautions are taken, problems can be avoided.

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, the pipe surface temperatures may be 20°F to 30°F (10°C to 15°C) higher than the ambient temperature. In this situation, the plastic is less resistant to attack and the solvents will attack faster and deeper, especially inside a joint. It is therefore very important to avoid puddling the cement inside the fitting socket and to ensure that any excess cement outside the joint is wiped off.

Tips for solvent welding in hot weather:

- Store solvent cements and primers in a cool or shaded area prior to use.
- If possible, store fittings and pipe or at least the ends to be solvent welded, in a shady area before welding.
- Try to do the solvent welding in cooler morning hours.
- Cool surfaces to be joined by wiping with a damp rag.
- Make sure that the surface is dry prior to applying solvent cement.
- 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.
- Using a primer and a heavier, high-viscosity cement will provide a little more working time.

Note: During hot weather the expansion-contraction factor may increase. Refer to the expansion-contraction design criteria in this manual.

# Solvent Weld Sewer Pipe and Fittings

## *Handling & Installation*



### Handling and storage

PVC is strong, lightweight material. Piping made of this material is easily handled and, as a result, there is a tendency for them to be thrown about on the jobsite. Care should be taken in handling and storage to prevent damage to the pipe.

PVC pipe should be given adequate support at all times. It should not be stacked in large piles, especially in warm temperature conditions, as bottom pipe may become distorted and joining will become difficult.

### Prolonged Outdoor Exposure

Prolonged exposure of PVC pipe to the direct rays of the sun will not damage the pipe. However, some mild discoloration may take place in the form of a milky film on the exposed surfaces. This change in color merely indicates that there has been a harmless chemical transformation at the surface of the pipe. A small reduction in impact strength could occur at the discolored surfaces but they are of a very small order and are not enough to cause problems in field installation.

# Solvent Weld Sewer Pipe and Fittings

## Handling & Installation



### WARNING

- **NEVER** use compressed air or gas in pipe and fittings.
- **NEVER** test pipe and fittings with compressed air or gas, or air-over-water boosters.
- **ONLY** use pipe for water and approved chemicals.



### WARNING

During the curing of the solvent cement joints, vapors may accumulate inside the pipeline, especially should one end of the line be capped. Nearby sparks from welders or torches may inadvertently ignite these vapors and create a hazardous incident. Attention should be given to removing all vapors using air-blowers or water flushing prior to capping one end of an empty pipeline.



### U.V. LIGHT

Care should be taken to avoid prolonged exposure to sunlight, which will cause discoloration of the material. If stored outdoors, products must be underneath an opaque covering, e.g. a tarpaulin.

If installed in a location exposed to sunlight, the pipework should be painted.

# Solvent Weld Sewer Pipe and Fittings

## *Material Description*

### **Short Form Specifications**

#### **General**

Building sanitary or storm drain lines will be constructed in PVC sewer pipe and shall be in compliance with ASTM D2729 or ASTM D3034.

#### **MATERIALS**

PVC compounds used in the manufacturing of PVC Solvent Weld Sewer Pipe and Fittings shall comply with the material requirements of ASTM D2729 and ASTM D3034 and have cell classification of 12454 per ASTM D1784.

#### **JOINTS**

Joints must meet the requirements of ASTM D3212. In addition, the pipe joints must be able to withstand a minimum hydrostatic pressure of 50 psi (345 kPa) without leakage.

#### **PIPE STIFFNESS**

The minimum ring stiffness will be determined using the test methods prescribed by ASTM D2729 or ASTM D3034.

#### **FITTINGS**

Injection-molded solvent weld PVC fittings shall meet the requirements of ASTM D3034 and ASTM F1336. Fabricated fittings must conform to ASTM F1336.

# Solvent Weld Sewer Pipe and Fittings

*about IPEX*

## About the IPEX Group of Companies

As leading suppliers of thermoplastic piping systems, the IPEX Group of Companies provides our customers with some of the world's largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

- Electrical systems
- Telecommunications and utility piping systems
- PVC, CPVC, PP, PVDF, PE, ABS, and PEX pipe and fittings
- Industrial process piping systems
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- Electrofusion systems for gas and water
- Industrial, plumbing and electrical cements
- Irrigation systems

---

This literature is published in good faith and is believed to be reliable. However, it does not represent and/or warrant in any manner the information and suggestions contained in this brochure. Data presented is the result of laboratory tests and field experience.

A policy of ongoing product improvement is maintained. This may result in modifications of features and/or specifications without notice.