

PVC Pressure Pipe and Fittings

Joining Instructions - Solvent Welding

To achieve a strong, leak free joint in a pressure pipe the correct type of solvent cement must be used. For pressure applications, an adequate solvent cement must be used.

How solvent cement works:

solvent cement is a solution of resin in a mixture of solvents, which soften the surfaces when applied to PVC pipes and PVC fittings. It is not glue, as adhesion is due to the solidification of dissolved PVC polymer.

A thin uniform coat is applied to both the spigot and socket and the joint is assembled while the surfaces are still wet and fluid. The cement layers intermingle and become one. The strength of the joint develops as the solvent permeates the PVC and the volatile constituents evaporate.

Importance of priming fluids:

Before applying the solvent cement, it is essential to use Priming Fluid for successful jointing as the fluid not only cleans and degreases, but also removes the glazed surface from the PVC, which allows the solvent cement to permeate into the wall of the pipe or fitting.

Estimated usage rates of quality solvent cement x pipe diameter

(number of joints per 500 ml container)

No. of Joints per 1 Litre		
Nominal diameter DN	Solvent cement	Priming fluid
32	225	173
40	180	138
50	135	104
63	125	96
75	103	79
90	79	61
110	54	42
125	45	35
140	36	28
160	27	21
180	20	15
200	15	12
225	12	9
250	9	7
280	6	5
315	5	4

Solvent weld jointing instructions

Do not work with hot pipes or on hot windy days without protecting pipes. Keep lid on to minimize evaporation. Use quality solvent cements within twelve months of the date stamped on the bottom of the can.

1. Cut spigot square and deburr

Cut the spigot as square as possible using a mitre box and hacksaw or power saw. Remove all swarf and burrs from both inside and outside edges with a knife, file, reamer or sandpaper. Swarf and burrs if left will wipe off the solvent cement and prevent proper jointing. Also swarf inside pipes can become dislodged and jam taps and valves.



2. Check alignment

Check the pipe and spigot or fittings for proper alignment. The time for any adjustments is now, not later.



3. Mark clearly

Mark the spigot with a pencil or marker at a distance equal to the internal depth of the socket. Only use pencil or a marker. Do not score or damage the surface of the pipe or fitting.



4. Dry fit the joint

For pressure pipes interference fit must be reached before the spigot is inserted fully to the pencil mark.

5. Clean and soften the surface

Thoroughly clean the inside of the socket and the area between the pencil mark and the spigot end with a clean, lint free cotton cloth dipped in priming fluid (do not use synthetic material). This removes dirt and grease and softens the PVC surface. Apply priming fluid immediately prior to jointing. Do not brush or pour the priming fluid on.



6. Coat socket first - then spigot

Apply a thin, uniform coat of quality solvent cement to the socket. Take care to ensure that solvent build up does not occur in the root of the socket - pooling of cement there will severely weaken the pipe or fitting. Then apply a uniform coat of solvent cement to the external surface of the spigot up to the pencil mark.



7. Assemble-hold for 30 seconds

Assemble the joint quickly before the cement dries by pushing the spigot firmly into the socket as far as the pencil mark, ending with a quarter turn to spread the cement evenly. Hold the joint in this position for at least thirty seconds without movement.



8. A vital 5 minutes

Wipe off the excess solvent cement from the outside of the joint and where possible from the inside of the joint. Do not disturb the joint for at least a further five minutes-movement may break the initial bond.



9. Curing and testing

Cure time is the time taken for the solvent weld joint to reach the pressure rating of the pipe
- Do not pressure test the joint for at least 24 hours.



For solvent cement pipelines, the lines should be free to move until a strong bond has developed for rubber ring jointed pipelines backfill each length, at least partially, as laying proceeds.