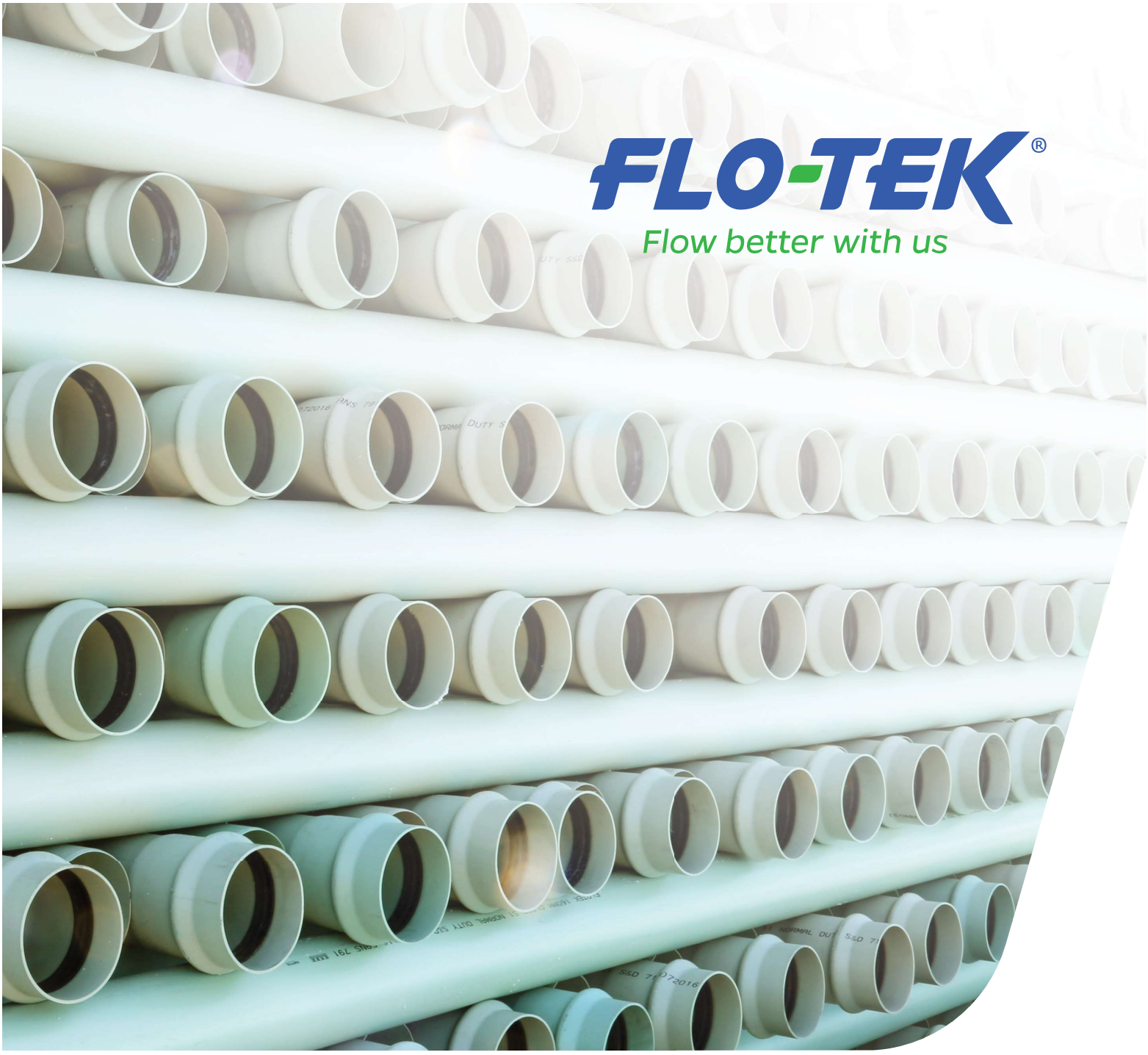


FLO-TEK®

Flow better with us

PVC *Sewer & Drain Systems*

Pipes | Fittings

FITTINGS

FITTINGS

Sewer and Drain (PVC-U Fittings SANS 791)

A range of injection moulded, rubber ring sewer and drain fittings are available in sizes 110mm and 160mm and are compatible with both solid wall (SANS 791) and foamcore (SANS 1601) sewer and drain pipes. The more popular fittings are shown in the pictures below:

- Reducing Junction
- Junction Plain
- Socket Single
- Bend Plain
- Junction Access Right
- Junction Access Left
- Bend Plain
- Stop-end Female
- Gully Head & Grate
- Rodding Eye
- Gully 'P' Trap

Fabricated Fittings

Fabricated fittings either rubber ring or solvent weld are also available in sizes from 110mm to 315mm. These include long and short radius bends, junctions, reducing junctions, reducers, channels, etc.

JOINTING PROCEDURE

Rubber Ring Joints of Pipes

1. Check the spigot end of the pipe for correct chamfering (12 - 15 with the correct length - see table) as described in "chamfering" above. Ensure that the "depth of entry" mark is visible and that there are no burrs and damage present.
2. Wipe the spigot end clean.
3. Check the socket end of the pipe to ensure that the rubber ring is present and correctly fitted. Make sure that no dirt or mud is present.
4. Apply the thin film of lubricant evenly around the circumference of the spigot up to about half the distance to the "depth of entry" mark.
5. Lubricate the rubber ring sparingly.
6. Place the spigot end of the pipe into the socket so that it rests against the rubber ring.
7. Ensure the two pipes are correctly aligned both horizontally and vertically. Failure to do this could lead to the rubber ring being dislodged when the next step is carried out.
8. Push the spigot into the socket until the "depth of entry" mark is just visible at the end of the socket. It should not be necessary to use undue force — if this becomes necessary it is normally an indication that something is amiss and the joint making process should be started again.

Solvent Weld Joints

It must be stressed that solvent cement jointing is a welding and not gluing process. It is important therefore that there is an interference-fit between the spigot and socket to be joined.

Do not attempt to make a joint when an interference-fit between a dry spigot and socket is not achieved (ie. a rattle fit). There are different types of solvent cement available for pressure pipes and for non-pressure applications. Make sure that the appropriate cement is being used. Do not dilute or add anything to the solvent cement.

Excellent solvent weld joints can be made to withstand high pressures, providing the correct welding procedure is followed.

Solvent Cement Joints of Pipes & Fittings

Assemble all the required fittings, pipes and equipment. For the best results, follow the jointing procedure below. .

a. Make sure that the spigot has been cut square and that all burrs have been removed.

b. Mark the spigot with a pencil line (or similar) at a distance equal to the internal depth of the socket.

c. Check that, while dry, there is an interference fit between the spigot and the socket before the spigot reaches the full depth indicated by the pencil line.

d. Ensure that both the spigot and the socket are properly dry (not illustrated).

e. Degrease and clean both with an appropriate etch cleaner (not illustrated). This also acts as a primer first.

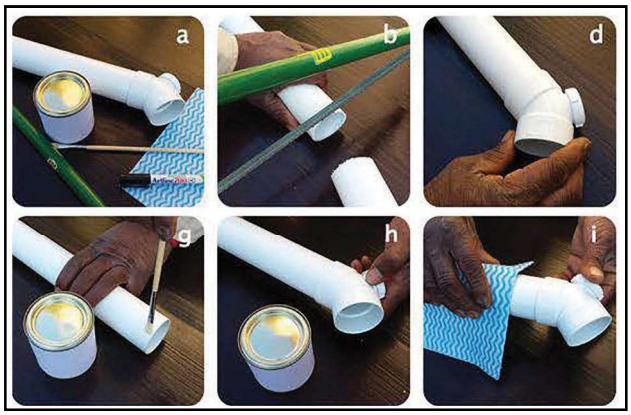
f. With a suitable brush apply a thin film of solvent cement to the internal surface of the socket. Then apply the solvent cement in a similar manner up to the mark on the spigot. Do not use excess solvent cement. The brush width should be such that the solvent cement can be applied to both surfaces within about 30 seconds.

g. Make the joint immediately. While inserting the spigot rotate it by about 90° and ensure that it is fully inserted up to the pencil mark, as there is a bead of excess solvent cement indicating the correct amount has been applied. Hold steady for at least 30 seconds. Mechanical assistance may be necessary for large pipes.

h. Wipe off any excess solvent cement with a clean rag.

i. Do not disturb for at least 5 minutes.

j. Do not apply pressure for at least 24 hours.



STORAGE AND TRANSPORTATION

Storage

Pipes should be sorted on level, flat ground, free of stones. They may be stored on timber supports of at least 75mm width placed 1.5 meters apart with side supports. The height of pipe stacks should not exceed 1.5 meters.

All pipe stacks and stored fittings should be covered to avoid prolonged exposure to direct sunlight. Where the pipes are fitted with an integral socket, they should be stacked with sockets protruding at alternate ends. This prevents damage or distortion of the socket and spigot, especially under hot storage conditions.

Transportation

A flat-bodied vehicle is ideal for transporting pipes and fittings. Pipes with integral sockets should be loaded and spaced so that sockets protrude at alternate ends. When a mixed load of pipes (i.e. varying diameters) is to be transported, the larger pipes should be place at the bottom. Pipes should not overhang the vehicle by more than 1 meter.

PIPE SELECTION CRITERIA

PRESSURE & NON-PRESSURE PIPES

A very good description of the criteria which may be used for the selection of the various plastics pipes available for each application is given in the SAPPMA Technical Manual (Second Edition, March 2009) (1).

The section in the Technical Manual covers the following:

HYDRAULIC REQUIREMENTS

- Basic Principles
- Operating Pressure, Hoop Stress and Wall Thickness
- Surge and Fatique
- Factory Tests

EXTERNAL LOADS

- Design Basis
- Load Classification
- Pipe Stiffness
- Determining Required Pipe Stiffness
- Vertical Deflection

DURABILITY REQUIREMENTS SYSTEM COMPONENTS

- Secondary Loads
- Manholes
- Joints and Fittings
- Valves

PIPE INSTALLATION

An excellent section in the SAPPMA Manual covers the following on pipe installation procedures:

- Pre-construction Activities
- Excavation
- Embedment
- Pipe Laying and Jointing
- Backfilling
- Anchoring
- Support Spacing for Mine Pipes
- Support Spacing for Soil, Waste and Vent Pipes
- Site Tests

REFERENCES

1. SANS 791: 2004. Unplasticised poly(vinyl chloride)(PVC-U) sewer and drain pipes and pipe fittings
2. SANS 1601: 2004. Structured wall pipes and fittings of unplasticised poly(vinyl chloride) (PVC-U) for buried drainage and sewerage systems
3. SANS 967: 2004. Unplasticised poly(vinyl chloride)(PVC-U) soil, waste and vent pipes and pipe fittings
4. Southern African Plastics Manufacturing Association (SAPPMA) Technical Manual 2013, 4th Revision