FlowLine

The complete underground uPVC Sewer System

DADEX

Flowline is the first complete u-PVC based underground sewer pipe system in Pakistan and conforms to international quality standards. This easy push-fit rubber ring jointing system is durable, corrosion free and lightweight.

Flowline is suitable for underground drainage and sewer applications in homes, commercial plazas, community buildings, and so on.

MATERIAL & SPECIFICATIONS

• Material
Flowline pipe system is manufactured from unplasticised Polyvinyl Chloride (uPVC) compound.

Flowline pipes and fitting are terra cotta (orange brown) in colour due to which they can be easily distinguished.

• Standard Specifications
Flowline pipes and fittings are manufactured in accordance with EN 1401.

RANGE

Flowline pipes are available in the following sizes in standard lengths of 3 and 4 meters.

1. Socket end with one end socketed for rubber ring.

2. Plain end with both ends plain.

Nominal Outside Diameter OD (mm)	Mean Outside Diameter $OD_{min-max}$ (mm)	Min Wall Thickness (mm) SN 8, (SDR 34)	Min Wall Thickness (mm) SN 4, (SDR 41)
110	110.0 - 110.3	3.2	3.2
160	160.0 - 160.4	4.7	4.0
200	200.0 - 200.5	5.9	4.9

(Wall thickness and outside diameter refers to pipes only)

A complete range of rubber ring (R/R) injection moulded fittings is available that are imported from Wavin Overseas, b.v, of the Netherlands, one of the world's leaders in thermoplastic pipe systems.

Flowline sewer system ensures smooth and secure drainage. It does not contaminate its surroundings or other pipelines laid underground which is a major drawback of conventional sewer systems in Pakistan. Due to its superior jointing system (pipe to pipe, pipe to fitting), it ensures a leak free drainage.

FEATURES & BENEFITS

• Efficient Disposal
Flowline is designed to carry solids present in both foul and surface water effluents with minimum risk of blockage. Exceptionally low friction and smooth inside surface of Flowline minimizes the build up of deposits commonly seen in conventional sewer pipe systems.

• Low Bacterial Growth
All conventional sewer pipes collect a coating of algae or slime. Flowline offers reduced grip for slime and can be easily flushed by peak discharge. Furthermore, algae and bacteria in the effluent have no detrimental effect on it.

• Thermal Expansion/Contraction
Flowline pipe system with its rubber ring socket joint allows provisions against thermal expansion/contraction.

• Non-Corrosiveness and Chemical Resistance
One of the most remarkable features of Flowline is its non-corrosiveness. It also resists chemical reactions from acids, alkalis and salt solutions present in domestic sewer.

• Lightweight and Easy to Install
Flowline pipes are lightweight and easy to install. This leads to lower transportation and installation costs.

• Leak-free
Flowline has water tight connections. There are no chances of infiltration of ground water or pollution of ground water provided installation is as per guidelines provided below.

• Easy to Maintain
Flowline pipe systems are easy to access after installation for inspection, cleaning, repairs, etc.

INSTALLATION

Flowline pipe systems are easy to install because of the rubber ring socket connections.

• Rubber-ring/Push fit jointing
For jointing by means of rubber ring/push fit jointing, the cut end of the pipe should be deburred and the spigot or plain ended fitting should preferably be chamfered. This is important to avoid displacement of the rubber ring. When the parts are clean, lubricant (soap and water solution) should be applied on the pipe and rubber ring, after which the pipe can be fully pushed into the socket.

JOINING uPVC TO VARIOUS OTHER MATERIALS (SUCH AS CONCRETE, CLAY, etc.)

As uPVC is inert to any other material for joining purpose, a 'cement base' is required to join materials other than uPVC.

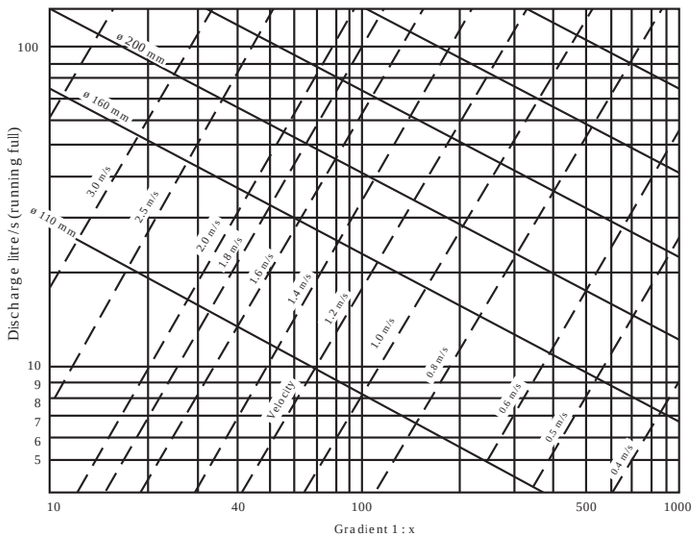
• uPVC solvent cement, medium size sand particle and brush are required to complete the joint.

• Apply a thin layer of the uPVC solvent cement solution to the surface, to be used for joining with other material.

• Sprinkle medium sized sand particles over the uPVC solvent cement and let it dry. A cement base is ready.

FLOWLINE ACCESS JUNCTIONS: A Revolution Down Under

The revolutionary uPVC access junction is injection moulded. Imported from Wavin Overseas, b.v, of the Netherlands, access junctions are available in various configurations, giving you an option for all 110mm drainage applications.



Discharge rate of uPVC drain/sewer pipes in the nominal range from 110 to 200 for different gradients based on a roughness height of 0.06mm. Suitable for uPVC pipe with ring seal sockets at 6-9m intervals.

The 110mm inlets are swept to give maximum flow characteristics and to minimize the risk of blockage.

Adjustable Frame and Cover
Each access junction is supplied with an adjustable frame that can be tilted and rotated to suit the ground conditions. A cover is available for installations in light traffic areas with in the boundary such as driveways, car porches, etc. The cover has a load bearing capacity of 3.5 tons.

Revolutionary Riser
The Riser system allows maximum depth to an Access Junction and is suitable for use with adjustable top cover with frame. A 315mm uPVC Riser incorporates a ring seal. When fitted with frame and connected to an Access Junction base, it gives an invert ranging from 370mm and higher. Two Risers will give an invert ranging between 530mm-605mm. Shallower depths can be achieved by cutting riser with a fine-toothed saw.

Note: See back page for the Flowline range of 110mm Access Junctions' technical specifications. Access junctions, gullies and inspection chambers can be imported against confirmed orders.

Installation of Access Junction
No additional trench excavation is needed to install the range of Access Junctions.

1. Lay suitable bedding material
2. Make pipe connections in the same way as the standard ring seal jointing of fittings.
3. Set the WAJ on a minimum of 100mm bed of granular material and surround it with similar material which is 150mm wide.
4. A Riser may be fitted directly to the Access Junction to increase the invert depth. Intermediate depths may be easily obtained by cutting the Riser to the required depth. Concentric grooves at 30mm centres act as a cutting guide.

FLOWLINE GULLIES

The Flowline range of uPVC gullies fulfill domestic needs. Flowline gullies are directly imported from Wavin Overseas, b.v, of the Netherlands and meet world class standards.

1. Universal Gully
The Flowline Universal Gully is assembled from a universal trap and a universal hopper. The hopper has one inlet with ring seal joint for 110mm Flowline underground sewer pipe and knockouts on two other opposite sides of the hopper for cut-outs to accommodate 110mm Flowline sewer pipes.

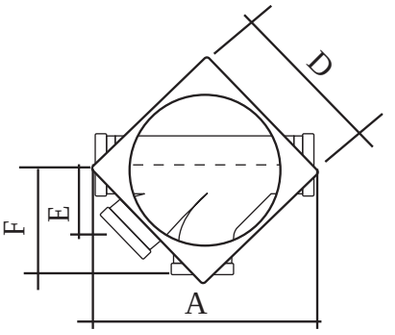
2. Plain and Simple Gully
Flowline Plain Gullies are the classic option. Available with a ring seal joint on the outlet bend, it allows greater flexibility in lining up the inlet "square" with the house or substituting the 45° bend supplied with a 67.5° or 87.5° bend to adjust for gradient.

3. Adjustable Option
The Adjustable Gully consists of the Gully Hopper and a unique Gully Grid, which is placed at certain depth into the hopper to prevent splashing from rainwater or waste outlets. As suitable site conditions are rarely guaranteed Flowline's adjustable gully option has an aperture socket to accommodate a Flowline 110mm sewer pipe. This allows for the height of the hopper to be specifically determined by cutting the 110mm pipe to suit each individual situation.

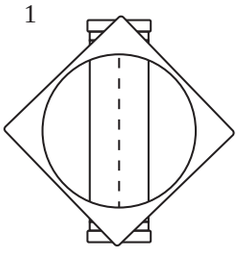
The Plain Gully Riser (6" x 6" or 150mm x 150mm) can be fitted to allow installation at depths greater than 340mm. The height of the Riser is 127mm and can be cut with a fine-toothed saw.

TECHNICAL SPECIFICATIONS OF MOST COMMONLY USED FLOWLINE ACCESS JUNCTIONS

SIZE	A	D	E	F
110mm	472	315	160	241

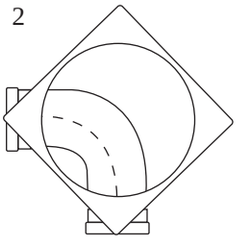


1



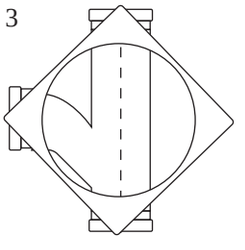
Straight through

2



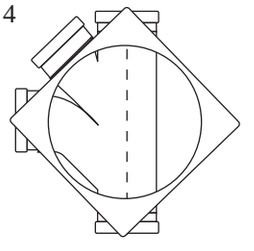
Left or right hand 90° Bend

3



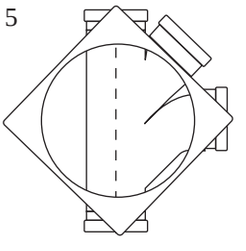
Left hand 90° Junction

4

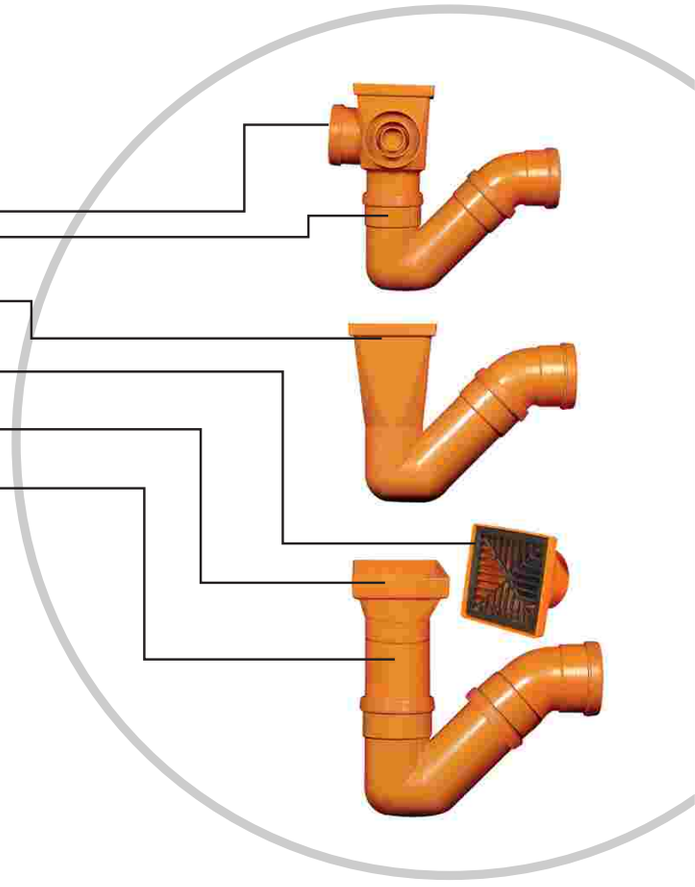


Left hand 90° and 45° Junction

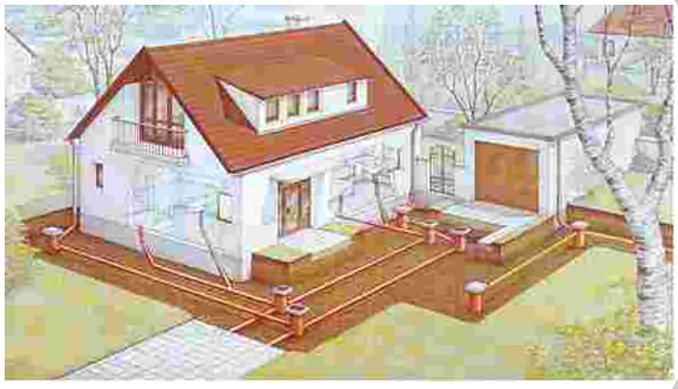
5



Right hand 90° and 45° Junction



TYPICAL PRIVATE LAYOUT SHOWING INSTALLED FLOWLINE PIPE SYSTEM WITH ACCESS JUNCTIONS “Around the House”



The Flowline Underground Sewer System has been designed to meet all under ground and around the house requirements of our valuable customers. Rigorous testing and quality control throughout the entire production process ensures that the Flowline uPVC Underground Sewer Systems are highly reliable and efficient.

Note: The Polypropylene (PP)/uPVC based Flowline Inspection Chambers are also offered by Dadex and can be imported against confirmed orders only. They are available with inlet/outlet size of 160mm.

DADEX

Dadex Eternit Limited

Dadex House, 34-A/1, Block 6,
P.E.C.H.S., Shahrah-e-Faisal,
P.O. Box 20040,
Karachi 75400 - Pakistan

UAN: (021) 111 000 789, Fax: (021) 4537076, 4313881 Email: info@dadex.com

For more information log on to www.dadex.com or contact a Dadex office near you:

- HYDERABAD
  Tel: (0223) 880613 Fax: (0223) 880623
  Email: hyderabad@dadex.com.pk

- ISLAMABAD
  UAN: (051) 111 000 789, 4440428 Fax: (051) 4440496
  Email: islamabad@dadex.com.pk

- LAHORE
  UAN: (042) 111 000 789, 5760735-36, 5712169 Fax: (042) 5760734
  Email: lahore@dadex.com.pk

- MULTAN
  Tel: (061) 545259 Fax: (061) 545259
  Email: multan@dadex.com.pk

- FAISALABAD
  Tel: (041) 8861981 Fax: (041) 8787944
  Email: faisalabad@dadex.com.pk

- PESHAWAR
  Tel: (091) 2212214 Fax: (091) 2212214
  Email: peshawar@dadex.com.pk

- QUETTA
  Tel: (081) 2446701
  Email: quetta@dadex.com.pk

- SUKKUR
  Tel: (071) 5616349
  Email: sukkur@dadex.com.pk

03/06

O2 Communications