

PIPE TYPES, PIPE SIZE & FRICTION LOSS

PIPE TYPES

Low Density (LDPE)

Common uses for LDPE are domestic irrigation and pipes are joined with barbed connectors and plastic clamps. The pressure rating on LDPE is lower than Rural and Metric Poly. It is generally rated at a maximum working pressure of 300kPa (43.5 PSI) at 35°C. At higher temperatures the working pressure reduces. Common sizes for Low Density pipe are 13, 19 and 25mm. Low density pipe does not normally have a stripe.

Rural Poly Pipe (Green Line PN8)

Rural Poly PN8 is an old standard which remains popular with farmers and irrigators for irrigation supply. It is often referred to as B Class poly and generally has a green stripe. The maximum Pressure Rating on Rural Poly PN8 is 800kPa (115psi). Rural pipe sizes are ¾", 1", 1 ¼", 1 ½" and 2". It is recognised by its green stripe.

Metric Poly Pipe Range (Blue Stripe PN8 – PN16)

There are several classes within the Metric pipe range each with a different pressure rating and wall thickness. It is often required for domestic plumbing with a mains supply. Metric pipe ranges from 16mm up to 110mm and beyond (16, 25, 32, 40, 50, 63, 75, 90 and 110mm) and have a blue stripe. They typically have pressure ratings of 800kPa up to 1600kPa (PN8, PN10, PN12.5, PN16).

PVC Pressure Pipe Range (PN4.5 – PN20)

There are several classes within the PVC Pressure pipe range each with a different pressure rating and wall thickness. It is often required for domestic plumbing with a mains supply. PVC Pressure Pipe ranges from 15mm up to 150mm. Pressure ratings of 450kPa up to 2000kPa (PN4.5, PN6, PN9, PN12, PN12.5, PN15, PN16, PN18, PN20) and are based on a temperature of 20°C. Most common pressure rating is PN12 for domestic applications. Higher ratings are used in commercial applications. PVC Pressure Pipe is White and Connections are made using PVC Primer & Solvent.

DWV Pipe (Drain Waste Vent)

DWV is similar to PVC Pressure pipe but is not designed for pressure. DWV pipe and fittings system is used for non-pressure drain, waste, and vent applications which use gravity to create the flow of water and waste through the pipe line in above ground and below ground applications. Sizes range from 40mm to 375mm. DWV is light grey and connections are made using PVC Primer & Solvent.

Copper & Stainless Steel Tube

Copper Pipe is used extensively in domestic plumbing applications. Stainless Steel is more expensive and is used in commercial applications. Copper is supplied in a range of types based on wall thickness – Types A,B,C & D. The most common type of Copper Tube is Type B Hard Drawn Copper Tube which is supplied in straight lengths or Annealed Copper which is in coils. The reason copper is used for plumbing is because it has a tensile strength of 2200kPa on annealed tube and up to 3800kPa on hard drawn tube, making it up to 10 times stronger than plastic piping materials. Also copper is not affected by hot water like PVC. In addition copper does not harden or soften with age and is UV resistant meaning it's also suitable for use in direct sunlight. Traditionally Copper Tube has to be soldered together but in recent years it is more commonly joined using special fittings and a press tool.

Other Pipe Types

There are many other pipe types including, Galvanised Pipe, Steel Pipe, Aluminium Pipe & Hoses in a wide range of materials including rubber and PVC and Layflat Hoses.