

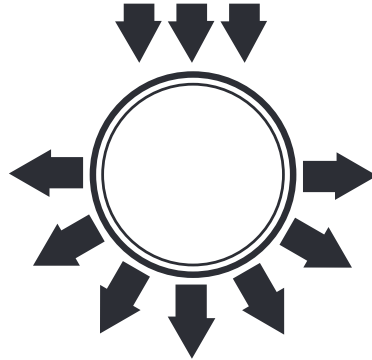
Hepworth



PLASTICS DRAINAGE AND SEWERAGE SYSTEMS

TECHNICAL / PRODUCT GUIDE

FLEXIBILITY



P.V.C.u. pipes and fittings are regarded as flexible under the stresses set up by backfill and surcharge loads. Properly installed in a suitable bed and surround, part of this load is transmitted to the side fill which is correspondingly consolidated.

The modulus of elasticity of P.V.C.u. varies from about 400,000 p.s.i. when new to about 200,000 p.s.i. after 50 years.

In the event of unforeseen excess loading which could cause fracture of pipes of rigid materials, the P.V.C.u. pipes merely take on a small, and generally temporary, increase in deformation.

PRECISION MANUFACTURE

The P.V.C.u. system has been based on the past usage and experience with pressure pipe for gravity purposes. Sewerdrain joints are made with the same precision as pressure pipe there is no need to allow for it in design. Connections at a later date can be done with equal confidence.

Precision joints together with longer pipe lengths reduce the risks of blockage and have a minimal effect on flow.

LIGHT WEIGHT

Handling costs reduced to a minimum. Easily stored, easily laid with fewer men and less machinery.

RUGGEDNESS

P.V.C.u. can reduce breakage dramatically because of its higher impact strength. Even pipes which have suffered some damage can be partially saved by removing the damaged section.

CORROSION RESISTANCE

Normal acid or alkali soil conditions have no adverse effect. Sewerdrain can be used for a wide range of industrial effluents. For more detailed information contact our technical department or consult BS code of practice CP.312, Part 1 : 1973.

EASILY WORKED

No special tools required and not unkind to the hands.

Hepworth Plastics Drainage and Sewerage Systems

EXPERIENCE

P.V.C.u. pipes are a proven part of modern building and civil engineering and pressure pipes up to 24" diameter have for many years been used for gravity drainage schemes in all parts of the United Kingdom. They have been used on many major trunk roads and motorways, often with the original pipe design changed to make the most of the wider ranges of sizes available in P.V.C.u.

The crushing strength requirements of rigid material are not relevant to P.V.C.u. because of its flexibility. The wall thickness/diameter ratio of Sewerdrain has been selected so as to be comparable with class B "Pressure Pipes" to BS 3505. The outside diameters are in accordance with ISO/R161 recommendations.

PREFERRED METRIC RANGE



Because the SEWERDRAIN system has been designed to use a logical size progression from 110mm to 400mm with a single wall thickness to diameter ratio, a more accurate system using the extra available sizes can be designed, often resulting in considerable cost saving.

GENERAL INFORMATION

STANDARD LENGTHS

Pipes are normally available and supplied with integral joints in 6m or 9m lengths, but lengths of 3m can be produced if required. Colour, the metric Sewerdrain system is terracotta coloured. Imperial pipe to BS 3505/BS 3506 is grey.

FLOW

See Appendix III (Flow Charts), page 35. For the Colebrooke white formula the following co-efficients of friction should be used.

When new 0.003mm.

Mature 0.6mm (the normal accepted value for a mature sewer).

NOTE

Whilst it is difficult to claim the use of the lower value for a mature P.V.C.u. sewer it should be noted that because of the long lengths and precision joints, it is difficult to induce roughness by misalignment of joints. Stepping does not occur.

PHYSICAL PROPERTIES

Specific Gravity	1.42
Inflammability	Will not support combustion
Specific Heat	1.00kJ / kg / °C
Thermal Conductivity	0.180 J/m ² /s/°C/m
Co-efficient of Linear Expansion	0.06mm/m/°C
Vicat Softening Point (5kg)	79 °C
Impact Strength	Complies with EN 1401 - 1,3505
Modulus of Elasticity	3000 MN / m ² at 20 °C
Poisson's Ratio	1 : 3
Tensile Strength	In excess of 45 MN / m ² at 20 °C
Elongation at Break	In excess of 80%