

NAYLOR
DRAINAGE

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**PLAIN-ENDED VITRIFIED CLAY
SEWER PIPE SYSTEM
WITH SLEEVE JOINTS**

DENSLEEVE

The Naylor Densleeve underground drainage system of DN100, 150, 200, 225, 250 and 300 plain-end vitrified clay pipes and fittings with flexible sleeve couplings, was developed for building drainage and associated sewerage and is all manufactured to comply with the stringent requirements of BS EN295.

When installed in general accordance with the Naylor Sitework Instruction Booklet the Naylor Densleeve system meets the latest technical requirements of the Building Regulations, BS8005 and BS8301.

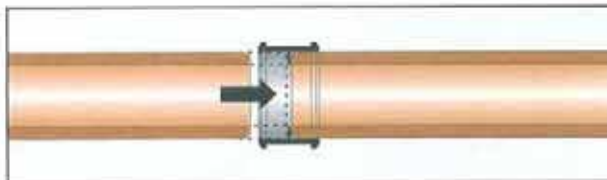
Description

Clayware

Vitrified clay plain-end pipes and fittings, manufactured in accordance with the requirements of BS EN295-1. The standard lengths of pipes are convenient for handling and laying and allow for flexible joints at sufficiently frequent intervals to enable the pipeline to withstand settlement or other ground movement after installation.

Sleeve Couplings

Manufactured in high impact polypropylene with elastomeric seals providing watertight, flexible mechanical joint assemblies, complying with BS EN295-1: System G.



Standard Coupling Seals

These are manufactured from elastomers conforming to the performance requirements of BS EN681-1.



Joint Performance

Densleeve joint assemblies meet all the requirements of BS EN295-1. They accept angular deflection and shear resistance without leakage, when tested under an internal or external water pressure of 50kPa (5 metres head).

Aggressive Environments

The standard Densleeve pipes, polypropylene couplings and elastomeric sealing rings are resistant to attack from substances which are commonly encountered in sewers.

Where more aggressive effluents or environments are present, other types of coupling seals may be required. Alternatively, a range of extra and fully chemical resistant pipes is available as are pipes and fittings for high temperature operations.

Specification

The following statement is a suitable clause for inclusion in contract specification.

Pipes and Fittings

Vitrified clay plain-end pipes & fittings with flexible polypropylene coupling joints, all to BS EN295-1 : System G. (Densleeve type as manufactured by Naylor Drainage Ltd, Clough Green, Cawthorne, Barnsley S75 4AD England).

Availability

Densleeve is available either directly from the manufacturer, from Naylor stocking depots or from hundreds of Merchant Stockists throughout Britain as well as Naylor Agents overseas. Contact the Naylor Sales Department for details.

Structural Performance

Densleeve pipes can usually be laid directly on a hand trimmed natural trench bottom with selected, excavated materials (Class D Bedding) used as backfill.

Crushing Strengths

BS EN295-1 includes a variety of crushing strengths for each nominal size of pipe as it takes into account the strength requirements in various parts of Europe. As it is impracticable for any single manufacturer to offer pipes and fittings in the full range of strengths, Naylor has standardised on the strengths shown in the table below.

Pipe Nominal Size (DN)	Crushing Strength kN/m (System G)	Standard Length (metres)
100	34	1.6
150	40	1.75
200	56	1.75
225	45	1.75
250	70	1.75
300	72	1.75

Advantages

It is a major advantage of the Densleeve system that the plain-end pipes can be quickly and easily cut to intermediate lengths on site and can still be jointed using the flexible couplings. This feature retains the ease in jointing, reduces wastage and damage and is particularly cost effective.

Flexibility

The flexible joints ensure that the pipeline will accommodate minor settlement and ground movement without failure.

Strength

Vitrified clay pipes and fittings are rigid and do not distort under loading. Their high inherent strength ensures stability even at extreme depths of cover.

Bedding Economy

Densleeve pipes can often be laid on the natural, trimmed trench bottom or where not possible on a 50mm bed of inexpensive granular material such as recycled aggregates. As dug material can be used for the backfill, all resulting in significant savings in granular bedding materials.

Chemical Resistance

For more extreme operational conditions, a full range of Extra Chemically Resistant (ECR) and Fully Chemically Resistant (FCR) pipe systems is available.

Durability

The Densleeve system is extremely durable. For design purposes, a vitrified clay pipeline can be considered to have unlimited life.

Range

A full system is offered from DN100 to DN300 with an extensive range of fittings, including bends, junctions, tapers and access items, particularly suitable for building drainage applications.

Densleeve can be used in conjunction with other Naylor underground and with other above-ground systems. Connections are made by using purpose made connectors and adaptors or by use of Band-Seal couplings.

Pipe Trench Beddings

See the Naylor Drainage Design Handbook for the depths of cover between which Naylor Densleeve pipes conforming to BS EN295 : 1 can be laid in any width of trench.

Water Jetting

The Densleeve system, when installed in general accordance with the Naylor Sitework Instructions Booklet is guaranteed for the lifetime of the system against penetration of the pipe wall caused by high pressure water jetting when operated within the following maximum parameters.

- Pressure - 7500psi (510 bar)
- Flow rate - 20gals/min (1.5ltrs/sec)
- Time - Static for 5 minutes

Temperature Resistance

Naylor offers a high temperature (HT) pipe system to deal with very high temperature discharges and thermal shock cycling.

Quick Installation

Pipe jointing is a straightforward manual push fit operation. Testing and backfilling can start immediately.

Pipe Lengths and Delivery

Naylor Pipes are supplied in easy-to-handle lengths. They are delivered in convenient packs with optional mechanical offloading equipment available on the delivery vehicle.

Easy Cutting

Where shorter lengths of pipe are required, pipes may be easily cut on site. Naylor Pipe Cutters can be supplied.