

clay today

for sustainability tomorrow

Clay - The Environmentalist's First Choice in Sewer Materials

Environmental issues are moving up the agenda. Why is clayware such a fitting 'green' material?

Increasingly, environmental issues are affecting our purchasing decisions in all aspects of life. Political commitment to halving our CO₂ emissions by 2050 and carbon neutral construction form the framework in which policies and decisions will be made in the future.

In order to achieve these objectives, we will not only have to construct environmentally efficient buildings, but also to use environmentally friendly, sustainable products.

It is in this context that the environmental and long term sustainable characteristics of clayware pipes come into their own:

- These pipes are made from a natural material, in abundant supply, sourced from within a ten mile radius of the factories from quarries fully reinstated after use.

- The manufacturing process uses no harmful additives and recycles both waste heat and production waste within the process.
- Research in 1996 by leading European academic Professor Jeschar, demonstrated that clayware pipe production resulted in far less energy consumption and consequent CO₂ emissions per metre and with reduced emissions of both Nitrous Oxide and Sulphur Dioxide when compared with pipe made from other materials e.g. PVCu pipes. Since then, developments in kiln technology have reduced energy consumption even further.

Clay Fact:
Clayware pipes have the longest proven life expectancy

- Clayware pipes have a proven longevity and with developments which increased crushing strength and improved flexible joint technology, these predicted life expectancies can be extended even further, to well in excess of 100 years. This results in longer replacement cycles and consequently lower demand on resources and lower social disruption costs.
- In most cases, the high crushing strength of the clay pipe alone will provide enough load bearing capability for the sewer structure. This provides the opportunity for

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savings in financially and environmentally costly bedding and surround material and the ability to use narrower trenches in soft ground conditions.

- Reduced dig and fill costs mean less imported granular, less on-off site haulage and less spoil to landfill or to spread around the site.
- Clayware pipes have been third party certified for use with recycled material which is increasingly available as crushed material on "brownfield sites".
- Another feature is clayware's high chemical resistance, providing more protection than either PVCu or concrete against contaminants and aggressive ground or sewer effluents.
- On disposal, at the end of its long life cycle or more likely during redevelopment, this natural material, if not re-used, can simply be crushed and returned to the ground as aggregate or fill material without risk to the environment.

As concern for our environment grows, specifiers will become increasingly aware of the relative environmental merits of the available building materials. They will move towards the "greener" alternatives and away from those materials, such as PVCu, which have long since been highlighted by environmental activists, such as Greenpeace, as having harmful affects on our environment both during manufacture and on disposal.

In comparison, the natural sustainable benefits will ensure that clay achieves the title of "The Environmentalist's First Choice In Sewer Materials".

Clay Fact:
Granular surround can cost more than the pipe



Strength in every circumstance

Clayware Pipes Reduce Risk in Variable Ground Conditions

At up to 6.0m depth, and with some products even deeper, the load-bearing strength of clay pipes laid on a granular bed will provide the sewer structure without reliance on side support from either the surrounding material or the trench walls.

Conversely, in most situations, plastic pipes rely almost entirely on adequate side support to provide the load bearing structure, without which plastic pipe will deform excessively and, in the most extreme case, may even collapse.

This reliance by plastic pipes requires greater care to ensure the side support is achieved through proper compaction and that, once achieved, compaction is not lost through subsequent disturbance.

In soft ground conditions, or in variable conditions that might be anticipated on redeveloped sites, there is a greater risk that adequate side support is not achieved. Under these circumstances plastic pipes will be at

greater risk and will require far more care on installation or by building in additional safety through design by insisting on substantially wider trenches. Wider trench widths are extremely costly through increased dig costs and extra granular fill and spoil disposal, not to mention the additional consequential environmental costs of excessive quarried aggregate. Even if such costly contingencies are built into the design, without supervision, there is no guarantee that the design will be delivered on site.

In such situations the risk can be avoided by using rigid clay pipes where the load bearing capacity is independent of side support. The load bearing structure is provided by the pipe which is certified ex-factory. This ensures that the specified structure is delivered on site, as it is not reliant on the side support, which in turn is dependent on the quality of installation and the surrounding soil conditions. This is another reason to specify rigid clayware pipes in soft or brownfield site conditions.

Clay Fact:
Clay pipes can be laid without granular surround



Wimpey assured a trouble-free handover with clay

Here we see clayware sewers, supplied by Naylor, being installed on behalf of major housebuilder, Wimpey in Colchester. Destined for adoption by Anglian Water, sewers must meet their 4000 PSI jetting requirement, which clayware easily exceeds. Clayware sewer pipes were also installed for Wimpey's Groby site in Leicestershire. With no risk of deformation and national acceptance in "Sewers for Adoption", Wimpey can anticipate a trouble free adoption by Severn Trent.

