TECHNOCORE

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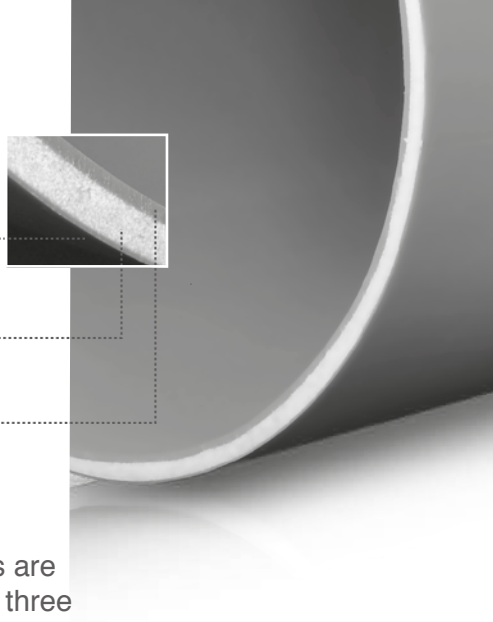
MULTILAYER
PVC PIPING SYSTEM

Hepworth

wavin

What is TECHNOCORE technology?



Traditionally in the Middle East, soil and drain PVC pipes are extruded as a single solid monolayer during the manufacturing process. Technocore pipes are manufactured by a more complex production process and are composed of three distinct layers – a solid PVC outer layer, a rigid PVC foam middle layer and a solid PVC inner layer. This innovative technique produces pipes with improved performance properties whilst reducing the total material content.

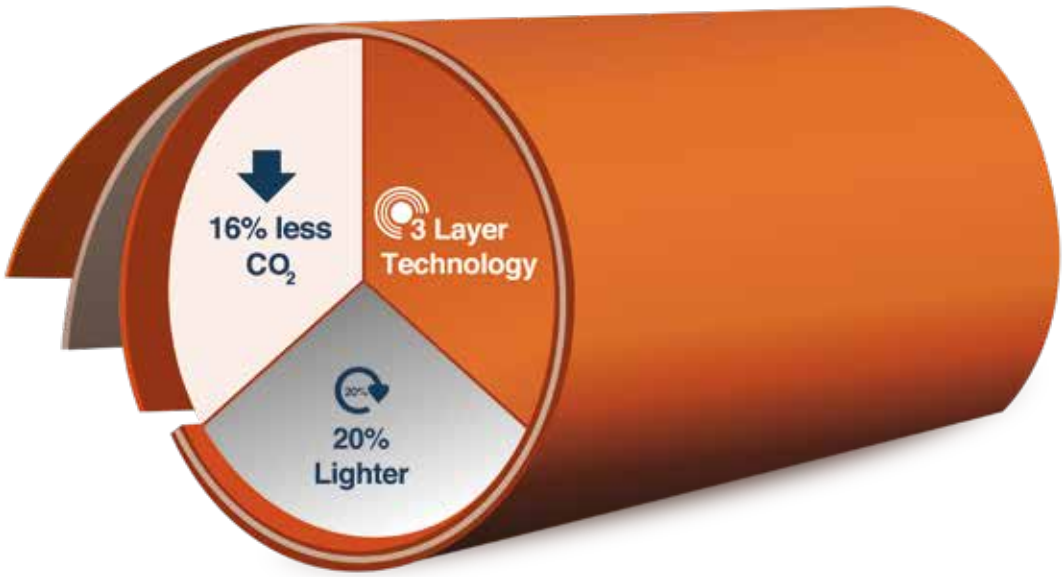
TECHNOCORE technology is proven

Hepworth's Technocore technology was developed together with the Wavin Group, based in the Netherlands, one of the world's leaders in PVC multilayer plastic pipe technology. Although this technology is new to the Middle East region, it has a solid track record and has been specified and used in Europe for over 25 years. Indeed, in Europe, the majority of PVC soil and drainage pipes are now manufactured using this technology. PVC multilayer plastic pipes are also widely accepted in North America, Australia, South Africa and many other countries around the world because of their superior performance and environmental advantages.

TECHNOCORE technology is green

Multilayer pipe technology was originally developed to improve the performance of pipes and to help the construction industry to achieve a lower carbon footprint, leading to a more sustainable world. There is a growing demand from governments, agencies and legislative bodies for greener products, i.e. those that require less energy and use fewer natural resources. Our new Technocore technology, which reduces the usage of carbon during manufacturing, helps our customers meet increasingly tough new regulations and their own sustainability commitments.

Advantages of TECHNOCORE technology



The main benefits of multilayer technology are:

- ✔ Pipes are up to 20% lighter, making handling easier and improving site efficiency
- ✔ Pipes are stronger and have more impact resistance than conventional solid wall pipes, so they are less prone to damage when being transported and when handled on site
- ✔ Reduced material usage means that there are environmental advantages with regard to the lower carbon footprint (16% reduction in CO_2 emissions over the whole supply chain)

Also, despite their other advantages, multilayer pipes are still equal to conventional solid wall pipes in terms of:

Dimensional accuracy

Chemical resistance

Working life

New Technology
Better Performance
Better for the Environment

Better mechanical properties

Faster installation

16% less CO_2

Drain Pipe

110/400mm

Technocore drain pipes are tested to BS EN 13476-2 and Kitemarked. Extensive and independent tests demonstrate that they have better performance characteristics than products that meet BS EN 1401-1:2009 (although this standard excludes multilayer pipes).

Soil Pipe

110/160mm

Technocore soil pipes are tested to BS EN 1453-1:2000 and Kitemarked. Extensive and independent tests demonstrate that they have better performance characteristics than products that meet BS EN 1329-1:2000 (although this standard excludes multilayer pipes).

Fittings

Technocore multilayer pipes are fully compatible with existing PVC fittings and can be utilized with push-fit or solvent-welded coupling systems.

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Technocore Pipe Dimension

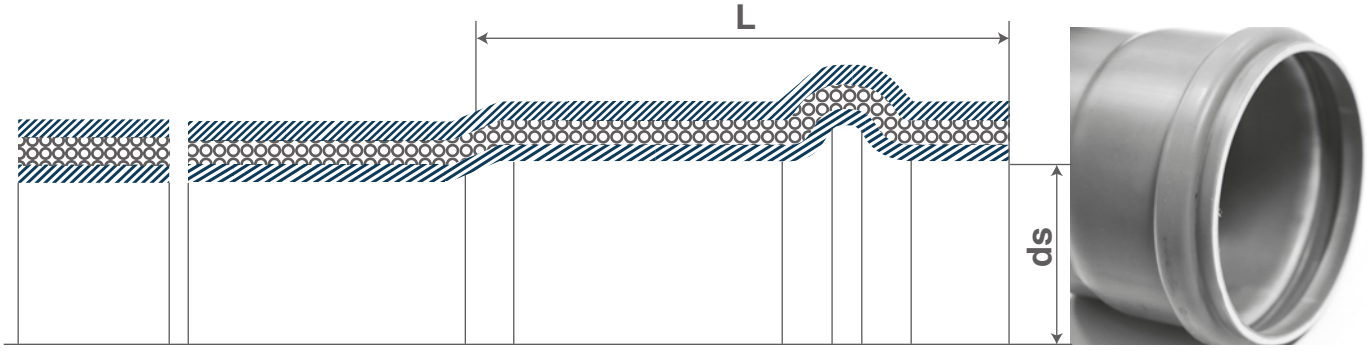
Specification as per standard

Soil (EN 1453-1)

	Pipe Dimensions				Solvent Socket		Rubber Ring Socket		
	Outer Diameter		Total Wall Thickness		Mean Min. Internal Diameter (dsm)	Socket Length (Min.)	Size	Mean Min. Internal Diameter (dsm)	Min. Socket Length (L)
Size	O.D Min.	O.D Max.	Min W.T	Max W.T					
110mm	110.0mm	110.30mm	3.20mm	3.80mm	110.20mm	48mm	110mm	110.40mm	58mm
160mm	160.0mm	160.40mm	3.20mm	3.80mm	160.30mm	58mm	160mm	160.50mm	74mm

Drainage (EN 13476-2)

	Pipe Dimensions				Solvent Socket		Rubber Ring Socket		
	Outer Diameter		Total Wall Thickness		Mean Min. Internal Diameter (dsm)	Socket Length (Min.)	Size	Mean Min. Internal Diameter (dsm)	Min. Socket Length (L)
Size	O.D Min.	O.D Max.	Min W.T	Max W.T					
110mm	110.0mm	110.30mm	3.20mm	3.80mm	110.30mm	48mm	110mm	110.40mm	58mm
160mm	160.0mm	160.40mm	4.0mm	4.60mm	160.40mm	58mm	160mm	160.50mm	74mm
200mm	200.0mm	200.50mm	4.90mm	5.60mm	200.50mm	66mm	200mm	200.50mm	90mm
250mm	250.0mm	250.50mm	6.20mm	7.10mm	250.50mm	66mm	250mm	250.50mm	125mm
315mm	315.0mm	315.60mm	7.70mm	8.70mm	315.60mm	66mm	315mm	315.60mm	132mm
400mm	400.0mm	400.70mm	9.80mm	11.00mm	400.70mm	66mm	400mm	400.70mm	150mm



Standard Length

Pipes are normally available and supplied with integral joints and solvent socket in 6m or 4m length.
The colour of sewerdrain system is terracotta.

Physical properties

Specific gravity	1,4 g/cm3
Inflammability	self-extinguishing
Specific heat	1, 00 kJ/kg K – 60 ˚C long term, 100 degr C short term
Thermal conductivity	Coefficient of heat conduction = 0,16 W / m ˚K (or ˚C)
Co-efficient of linear expansion	0, 08 mm / m K (or C)
Vicat softening point	79 ˚C
Impact strength	2-5 mJ/mm2
Modulus of elasticity	Emod = 3000 N/mm2
Poisson's ratio	0,39
Tensile strength	45 N/mm2
Elongation at break	= >80%

Corrosion resistance

The major finding of a recent study is that PVC Pipes have the lowest overall failure rate when compared to cast iron, ductile iron, concrete and steel pipes.

PVC Pipes won't rust or corrode over time because it does not react with air and water the way metal does which results in a significantly longer lifetime of the pipe.

Chemical Resistance

PVC pipes exhibit excellent resistance to a wide range of chemical reagents in temperatures up to 50°C. PVC pipes can be used indoors or to transport chemicals or waste products without risk of materials eating through the pipe.

Abrasion Resistance

PVC pipes exhibit outstanding resistance to wear and abrasion. PVC pipe has proven more durable than metal, concrete and clay pipe for the transport of abrasive slurries.

PVC is extremely tough and its abrasion resistance has been confirmed by numerous studies and over 50 years of proven service.

Flexibility – The flexibility of technocore pipes allow them to cope with soil movements, subsidence and expansive clays

Handling/Installation – The ease of handling, installation and transport provide overall project savings.

Easily Machined/Cut – It may be cut and machined with simple tools, ready for jointing, anywhere on the pipe barrel.

Jointing Techniques

Cutting

PVC pipes can easily be cut with a variety of hand or power tools. Be sure to remove burrs from the pipe after cutting.

Chamfering

Proper chamfering is important to facilitate the easy insertion of the spigot end into a socket without damaging or dislodging the rubber ring. Pipes that have had the chamfer cut off can easily be re-chamfered with a file.

The chamfer should have an angle of 12-15° and about half of the normal wall thickness should be removed.

Lubricant

A lubricant will considerably reduce the effort required to make a joint and will minimise the possibility of dislodging the rubber ring. The lubricant used should be water soluble, non-toxic and preferably of a gel consistency.

Rubber Ring Joints

The rubber ring joint is integrally moulded on one end of the pipe. The joint incorporates a factory fitted rubber sealing ring which is retained in position by a polypropylene lock ring. The opposite (spigot) end of the pipe is chamfered and has a “depth of entry” mark near the end. Each joint is capable of handling some expansion and contraction as well as angular deflection. The seal ring is designed to provide a watertight joint at high and low pressures.

Solvent Weld Joints

Solvent cement jointing is a welding process and not a glueing process. If done correctly, separation will not be possible after the curing period. Jointing of pipe should not be carried out on pipes and/or fittings if there is a rattle fit between dry pipes and/or fittings. There should be an interference fit between the components before solvent cement is applied. There are different solvent cements available for pressure applications and for non-pressure applications. Be sure to use the correct cement and that it has not “dried out” prior to use.

About wavin

Wavin is a leading global supplier of plastic pipe systems and solutions and has built its reputation on 60 years of high quality and innovation. The international headquarters are located in Zwolle, the Netherlands, and the company, which employs 5,500 people, has a direct presence in over 25 countries with 30+ manufacturing sites.

Wavin is part of Mexichem, one of the world’s leading suppliers of petrochemicals and plastics with over 18,000 employees and sales exceeding $3 billion. For further information, please visit www.wavin.com

About Hepworth

Hepworth is the leading manufacturer and supplier of integrated piping systems in the GCC. Operations were established over 40 years ago in Dubai and we now manufacture pipes and fittings on three locations in the UAE and Qatar. In addition, we serve customers through operating companies in Oman, Bahrain and Saudi Arabia and export throughout the MENA region and beyond. We supply PVC, PE, PPR and ABS piping systems and accessories to the building, utilities, infrastructure, industrial, agricultural, irrigation and water treatment sectors.

For further information, please visit www.hepworth.ae

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