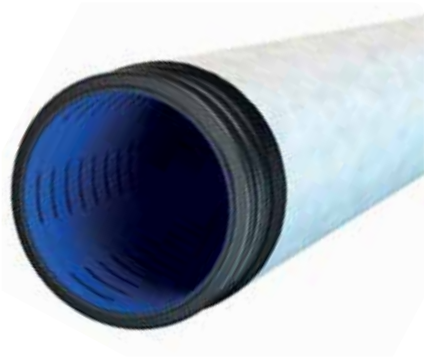
Ridgitreat **Surface Water Treatment Pipe**

Ridgitreat surface water treatment pipes can provide enhanced stormwater treatment when incorporated into sustainable drainage systems (SuDS) applications, including:

- Infrastructure projects for roads and rail
- Residential & commercial schemes as part of a wider SuDS solution



Ridgitreat comprises of perforated HDPE Ridgidrain structured wall surface water drainage pipe, wrapped in Permafilter Geotextile. The permeable Permafilter Geotextile is engineered to catch, filter and break down hydrocarbons, such as oil and petrol from surface water, before infiltrating stormwater into the surrounding soil. The pipework system has a black outer and a blue inner wall and is supplied plain ended in pipe diameters: 100mm, 150mm, 225mm and 300mm.

Treatment

Surface water run-off from hard standing areas may contain many pollutants such as nitrates, heavy metals and hydrocarbons. With traditional drainage systems this polluted water would typically enter the local environment.

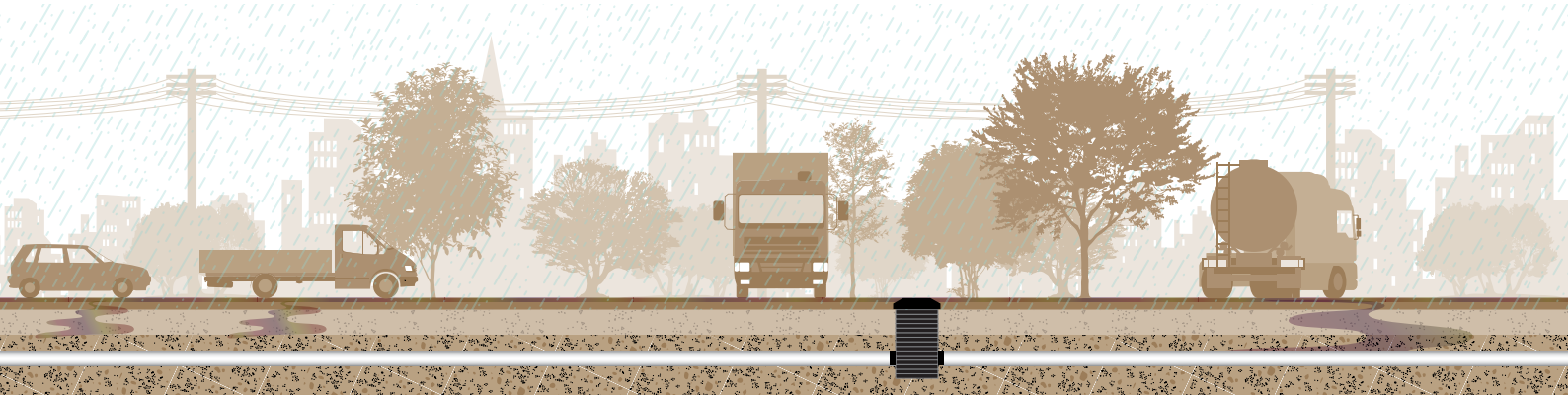
Diffuse pollution from surface water run-off can have a significant, adverse impact on the overall local water quality. The capture of surface water at source and subsequently control and treatment is integral to SuDS philosophy.

Incorporating Ridgitreat within a filter drain/stormwater/ bioretention application can be used to reduce the risk of environmental damage by:

- Enhancing surface water run-off to reduce pollution
- Protecting amenity and biodiversity

Liquid hydrocarbons (oil, petrol, diesel) are a major polluter of the water environment. The Pollution Prevention Guide, PPG (April 2006) gives guidance on hydrocarbon separation.

Ridgitreat can be used to reduce the risk of surface water pollution at source for permeable and non-permeable areas, facilitating compliance with British Standards. Ridgitreat provides a more effective alternative to end of line oil separators.



Source Control Treatment Infiltration

Polypipe

Performance

Ridgidrain is manufactured to SN6 with a predicted design life in excess of 60 years. The system is resistant to the most common chemicals naturally found in surface water run-off or uncontaminated ground.

The dimpled Permafilter Geotextile comprises a proprietary blend of hydrophilic (water attracting and oil repellent) and hydrophobic (oil attracting and water repellent) polyester fibres, with properties to achieve superior oil retention.

Permafilter Geotextile is capable of retaining oil contaminations ranging from daily car drip losses up to catastrophic spillages, i.e. originating from car oil-sump failures. The entrapped hydrocarbons are biodegraded by naturally occurring microorganisms providing a self cleaning mechanism.

Approvals (for Ridgidrain component)

- BBA
- BBA HAPAS
- Network Rail Parts and Drawing Systems (PADS)

Certificate Number: PA05/05460

Applications

Ridgitreat is a versatile gravity surface water and sub-surface water drainage system that can be incorporated into SuDS relevant for numerous applications including:

- Rail
- Highways
- Commercial
- Retail
- Leisure
- Residential

RIDGITREAT PLAIN ENDED PIPES			
ID mm	Code	Length m	Weight kg
100	RDT100X6PEP	6	5
150	RDT150X6PEP/1	6	7.5
225	RDT225X6PEP/1	6	15
300	RDT300X6PEP/1	6	25.5

PERMAFILTER WRAP	
Mechanical Properties	
Weight (EN 965)	300g/m²
Tensile strength (EN ISO 10319)	9/12KN/m
Hydraulic Properties	
Water permeability (EN ISO 11058)	36l/m²/s
Other Properties	
Air permeability (ISO 9237)	57 l/m²/s
Oil retention*	800ml/linear m
Maximum oil loading	10ppm
Material	Modified Polyester

Weights stated are nominal.
*Result from laboratory testing carried out under idealised conditions.

JOINTING		
Nominal Size mm	Coupler Code	Seal Code
100	CRD100	SRD100
150	CRD150	SRD150
225	CRD225	SRD225
300	CRD300	SRD300

Note: One coupler and two seals required per joint.

Figure 1 - Typical French Drain installation incorporating Ridgitreat (allowing infiltration)

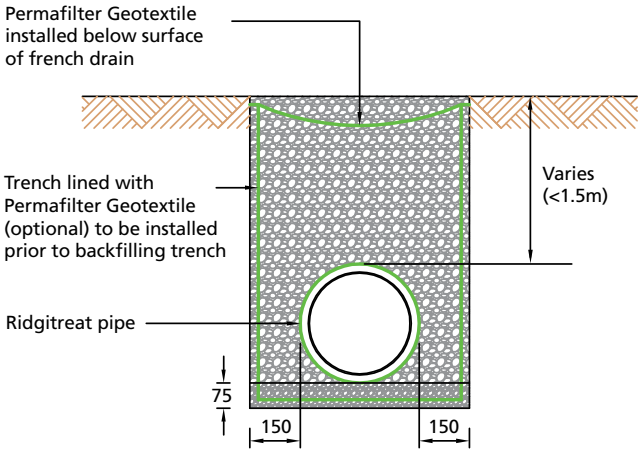
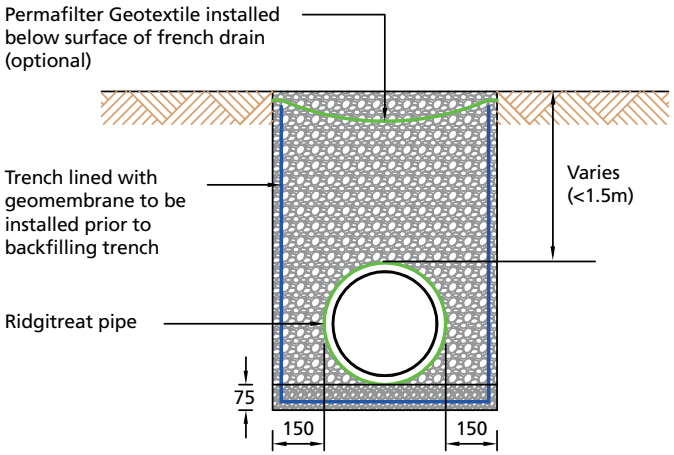


Figure 2 - Typical French Drain installation incorporating Ridgitreat (preventing infiltration)



Source Control Treatment Infiltration

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Installation

1. Trench Preparation

Trenches should not be excavated too far in advance of pipe installation and should have adequate support to guarantee the safety of the works, in accordance with the Health and Safety at Work Act 1974 and all other relevant legislation or code of practice.

Trenches should be as narrow as practicable, while still maintaining sufficient space for the operation of appropriate compaction or access for site personnel.

The trench width will typically correspond to the pipe's outer diameter, plus a minimum additional 150mm of embedment material either side of the pipe: the exact trench width is dictated by the pipe diameter and assumed installation conditions.

Where multiple pipes are installed in a trench, sufficient space should be allowed between adjacent pipes to ensure that material can be placed and compacted. The trench base should be assessed to ensure it meets the required, level/gradient. Any soft spots should be excavated and filled with a suitable compacted granular material.

Water should not be allowed to accumulate in the trench and where required, adequate provision should be made for the removal of groundwater, to a consented disposal point during installation.

2. Pipe Bedding

The bedding material is laid below the pipe to provide uniform support and to permit small adjustments of the pipe's line and level. In cases where the 'as dug' material is suitable as pipe surround, imported bedding is not required and the trench bottom should be loosened. Otherwise a minimum of 150mm bedding depth of granular material should be placed and compacted in the trench bottom. Depressions should be formed within the bedding material to accommodate couplers.

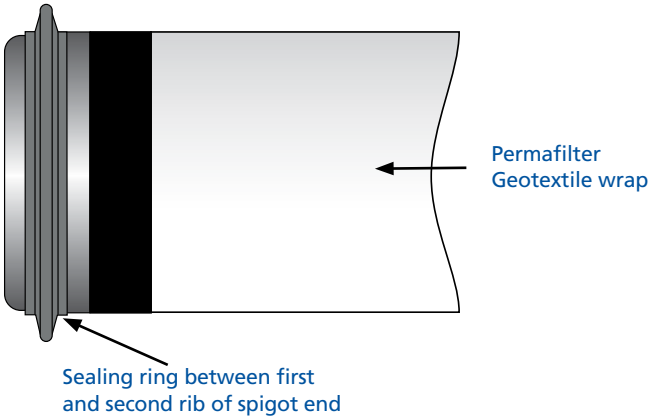
Bricks, stones, blocks of wood or other similar objections should not be placed below the pipe, to facilitate adjustment of line and level; as this may cause high local stress concentrations and pipe deformation.

3. Jointing (Double Socket Coupling)

Place a sealing ring in the first recess of both plain ended pipes being jointed. Lubricant can be used to help pull the seal into position.

Ensure the connecting pipe ends and coupler are clean and free from silt and debris. Apply a liberal amount of Polypipe lubricant all around the pipe ends, seal and inside of the coupling.

Figure 3 - Installation of the ring seal position on the Ridgitreat pipe

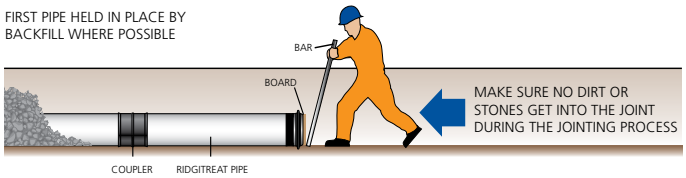


4. Jointing

It is possible to simply push the pipes together by hand, if this is not possible a lever bar can be used. Place the pipe against the socket and put a piece of wood or a plate across the end of the pipe to spread the load and prevent damage. Use a bar to lever the pipe home as shown.

Joints should not be left for long periods without backfill or unsecured as the pipes may creep out of the sockets. If significant pipe creeping occurs, push the pipe back into the socket and secure in place while backfill is used to secure the joint.

Figure 4 - A cross section of the trench



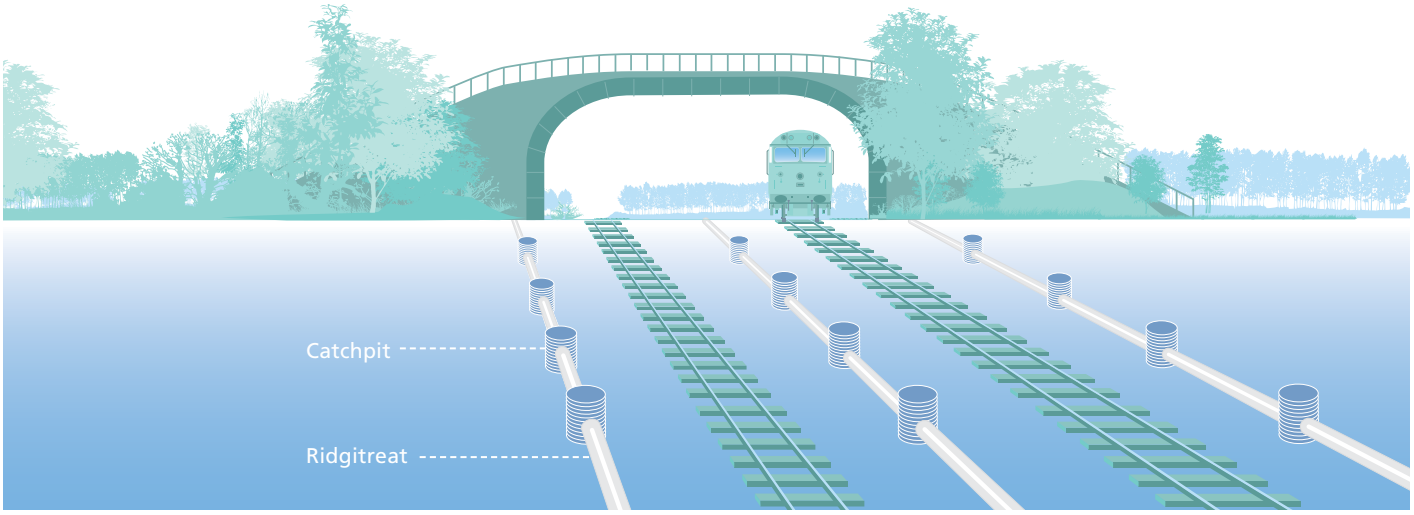
Ridgitreat maintenance

Ridgitreat would typically form part of a drainage element, within a SuDS treatment train. Installation of the various drainage elements should be designed with features to reduce and facilitate maintenance. Taking the example of a French Drain, design features could include:

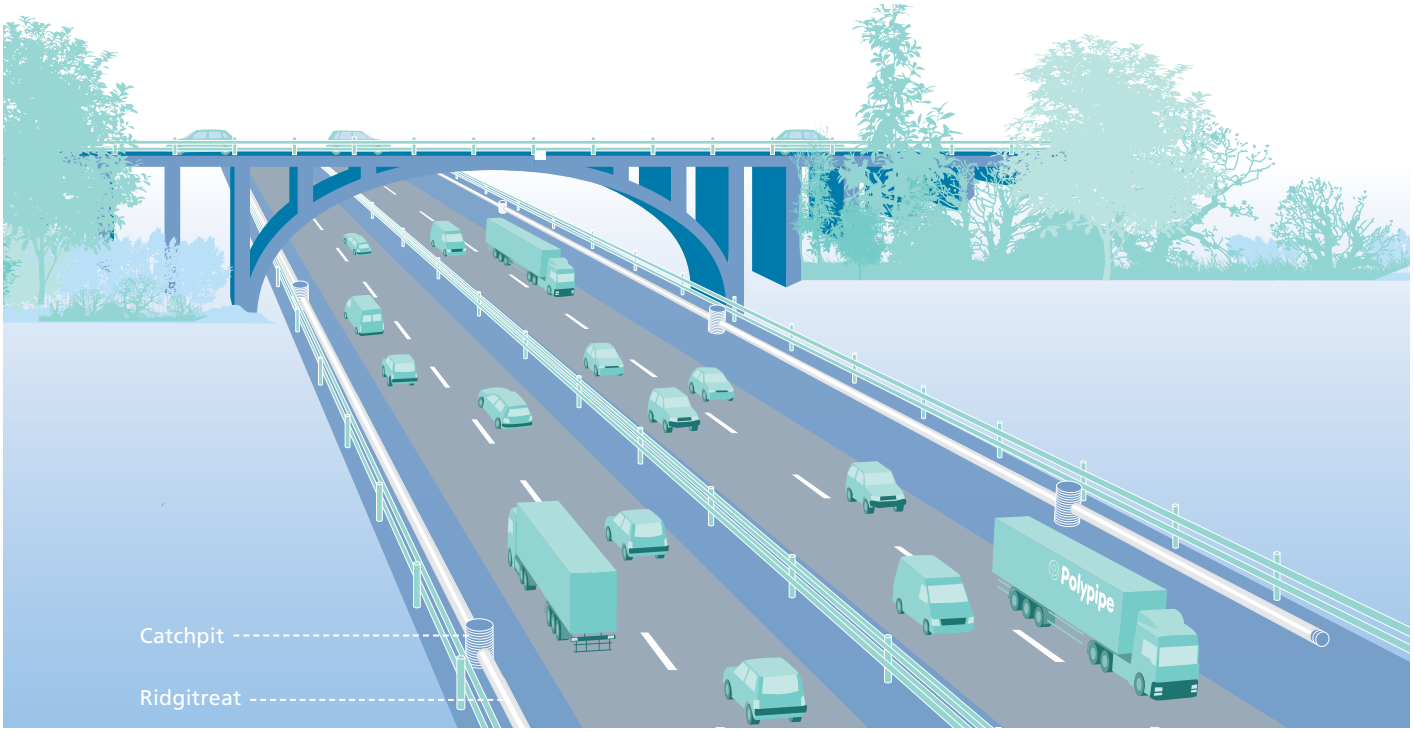
- The specification of a layer of Permafilter just below the surface of the French Drain (Figure 1, page 2)
- The installation of pre-fabricated RIDGISTORMSeparate Trap Catchpits, facilitating access for inspection and monitoring

Permafilter is a geosynthetic designed to maximise natural biodegradation of hydrocarbon pollutants; under normal conditions, this offers self-maintaining and self-cleaning properties.

Ridgitreat for Rail



Ridgitreat for Highways



Polypipe Civils,
Charnwood Business Park, Loughborough, Leicestershire LE11 1LE
Tel: +44 (0) 1509 615100 Fax: +44 (0) 1509 610215 Email: civils@polypipe.com
www.polypipe.com/civils