

Permavoid System – Surface Water Treatment

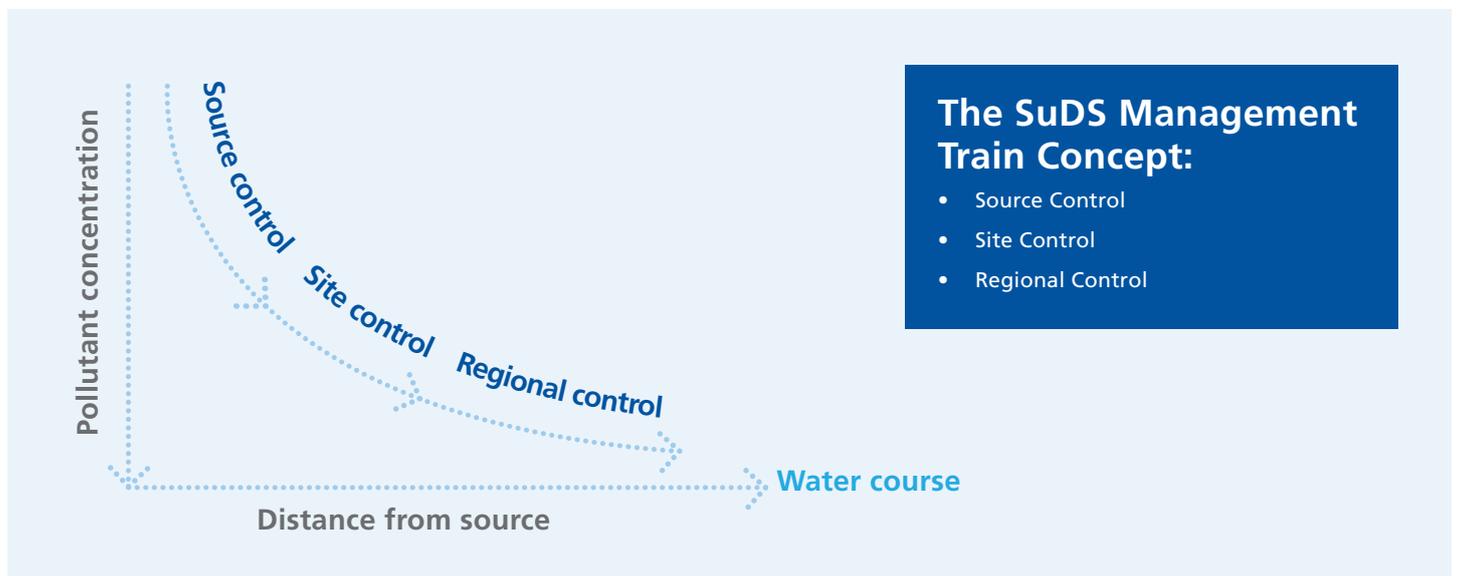
Stormwater run-off from hardstanding areas contains many pollutants such as silt, nitrates, heavy metals and hydrocarbons. The polluted water is conveyed to open and closed water bodies, watercourses and into the ground.



Pollution is collected from many sources and hardstanding areas and is known as 'diffuse' pollution. The overall environmental impact can be very serious to the quality of the receiving water bodies.

High levels of built up pollutants are conveyed during the initial flush, particularly during a stormwater event, if it is occasional.

The SuDS Management Train provides measures for preventing and reducing pollution, with stormwater run-off treated as close to the source as possible.



Source control is a vital element of the SuDS management train, allowing silt/debris and contaminants to be managed at the head of the system.



Strong Interlocking Raft



Beneath porous & non-porous surfaces



Source Control



Treatment



Detention

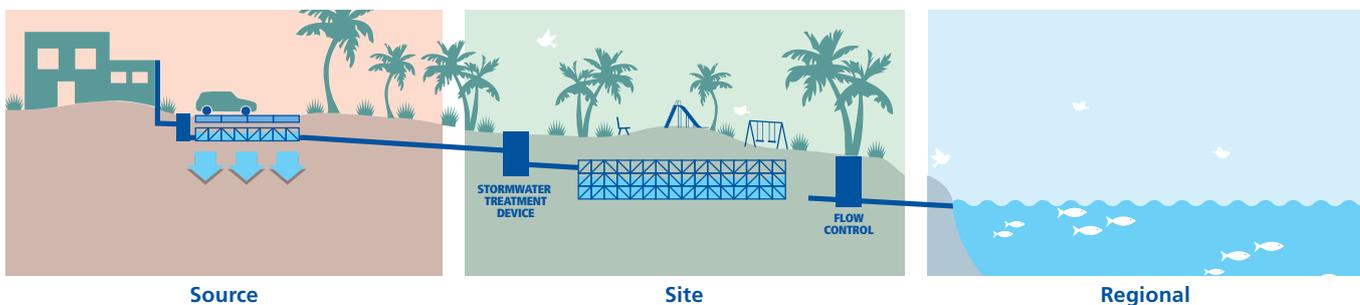
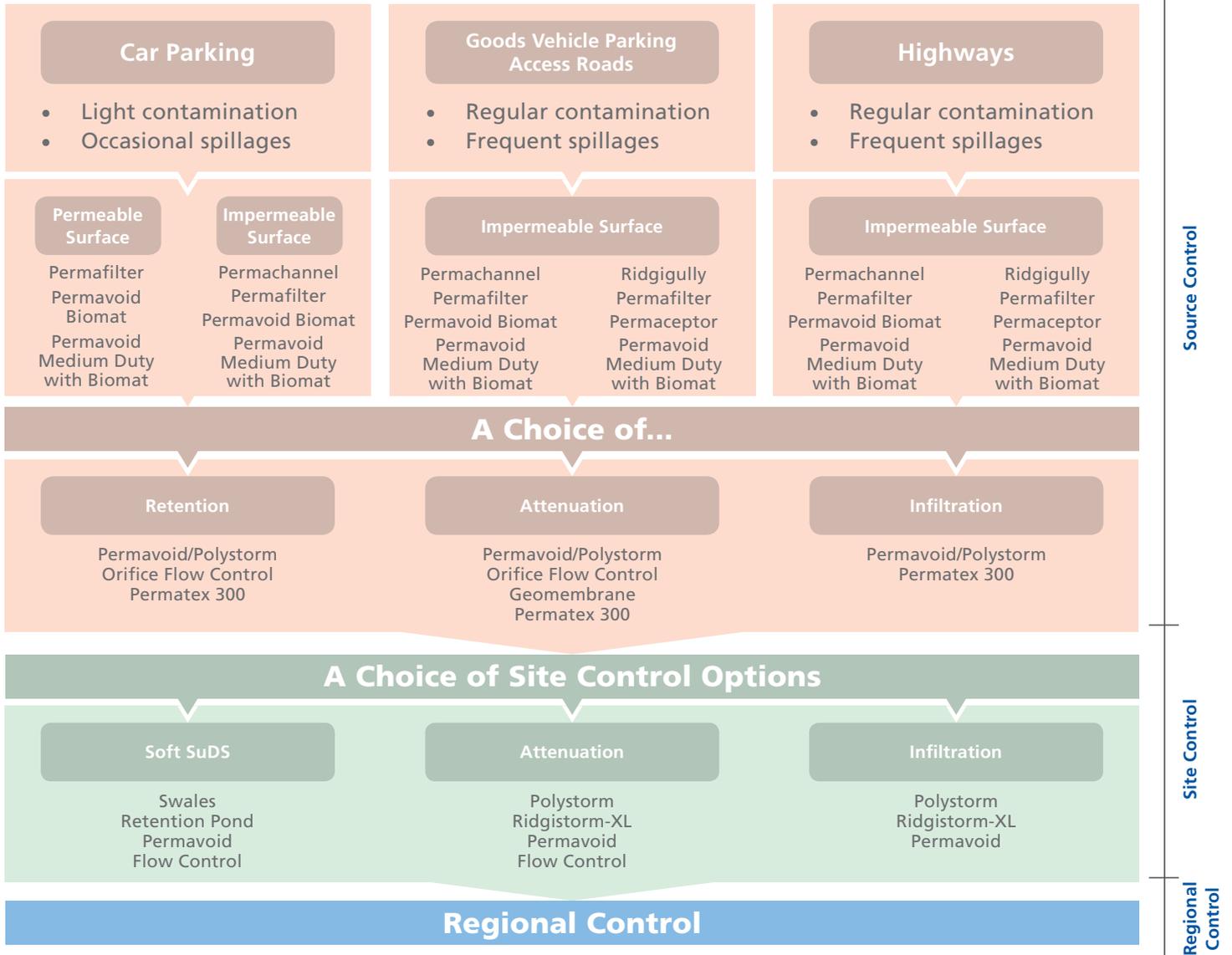


Attenuation



Infiltration/Soakaway

Surface Water Treatment System Selector



For example: An impermeable paved car park treats surface water with Permafilter and Biomat before storing water in Permavoid (source control). The water is then discharged into a larger Polystorm attenuation tank which is strategically located within the development (site control) before controlled release into a large scale attenuation basin (regional control).



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Attenuation



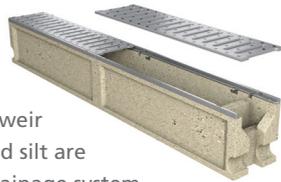
Infiltration/soakaway

Liquid hydrocarbons (oil, petrol, diesel) are a major polluter of the water environment. The Pollution Prevention Guideline, PPG 3 (April 2006) gives guidelines on the use, type and size of hydrocarbon separators. BS EN 858 refers to Class 1 separators required to achieve a discharge concentration <5mg/litre of oil (under standard test

conditions) for discharges to surface water drains and the water environment. The Permavoid geocellular system incorporates a number of effective passive treatment components to provide water treatment at source for permeable and non permeable areas, ensuring compliance with British Standards for Class 1 separators.

Permachannel

- Permachannel combines run-off collection, silt, oil interceptor and treatment system. Incorporating a weir and baffle outlet, contaminants and silt are separated before they enter the drainage system.
- Each channel can serve up to 30m² of catchment area and can reduce hydrocarbon pollution loadings below 5mg/l.



Permavoid Biomat

- Permavoid Biomat incorporates a tri-laminate low density plastic composite that retains any residual or emulsified oils. The biomat provides a habitat for microbes that digest and break down oil deposits naturally.
- One Permavoid Biomat cell is capable of retaining 56g of oil.



Permafilter Geotextile

- Permafilter Geotextile is a non woven, needle punched geotextile, designed for hydrocarbon pollution treatment using both hydrophilic and hydrophobic properties to maintain oil retention. Permafilter provides a habitat for microbes to naturally biodegrade hydrocarbons.
- 6 litres of oil retained per 10m²



Ridgigully

- Ridgigully is a light weight, durable HDPE gully. It is suitable for both trapped and untrapped systems. Incorporating a 160mm spigot outlet with a range of adaptors to suit other pipework materials.



Permaceptor

- Permaceptor has been developed to treat oil and hydrocarbons at source.
- For use with conventional road and yard gullies. Hydrocarbon pollution loadings can be reduced significantly lower than 5mg/l.
- The oil concentration limit of 5mg/l applies for standard test conditions, under field conditions separators do not always perform the same.
- Permachannel and Permaceptor have been proven to provide reduced oil concentrations for up to 1:30 year storm events.
- A secondary treatment system is incorporated into the treatment train to 'polish' the storm water discharge.
- One Permaceptor can treat a catchment area of 150m²



Permavoid Medium Duty with Biomat

- Permavoid Medium Duty with Biomat comprises of a tri-laminate of low density plastic composite ('Biomat'). The Biomat floats on water and is designed to intercept and treat any potential residual emulsified oils that may be present within the surface water.



The flexibility of the Permavoid modular system allows for numerous variations of stormwater treatment at source.



Contact Us
to visit our Technical Centre

Look out for our Permavoid Technical Manual, available to download from our website