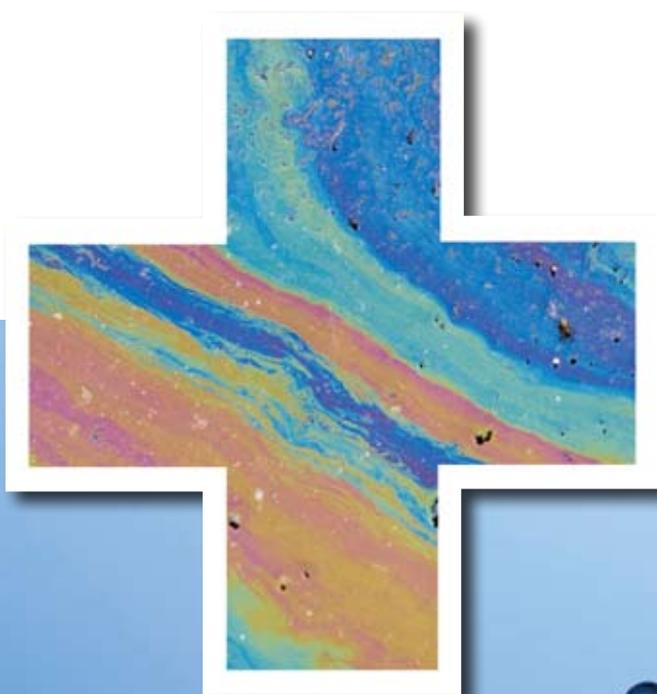


Solutions
for Water
Framework Directive
Compliance

SMART+
sponge
P R O D U C T S L T D

Oil Filtration Products



The Smarter Solution to:
Deal with hydrocarbon
pollution and comply with the
Water Framework Directive

- Treats stormwater & urban run-off
- Removes hydrocarbons
- Destroys bacteria
- Filters heavy metals
- Allows solid waste recycling
- Complies with the Water Framework Directive



Used Oil Facts

- It is estimated that a quarter of a billion gallons of used oil is generated each year in the UK from industry and motor vehicles
- The fate of much of this used oil is unknown but a large proportion is presumably disposed of improperly
- 1 in 5 households have a do-it-yourself oil changer
- The oil from a single oil change (1 gallon) can contaminate 1 million gallons of drinking water - a year's supply of water for 50 people
- Oil contributes to 20% of all UK water pollution incidents
- Used oil is a useful substance that, when recovered, can be used as a fuel and save resources

Used Oil's Impact On The Environment

- 10 litres of oil from one car can pollute a lake the size of two football pitches
- Used motor oil contains toxic substances such as toluene, lead, cadmium and benzene
- Oil films prevent replenishment of dissolved oxygen, impair photosynthesis and block sunlight
- Sump oil accounts for 40% of oil pollution of the nation's harbours and waterways
- Concentrations of 50 to 100 parts per million of used oil can foul sewage treatment plants
- Oil dumped on land reduces soil productivity
- Many industrialised countries, worldwide, recover a greater portion of their used oil as fuel and lubricants than the United Kingdom



It is estimated that a
quarter
of a billion
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of used oil is generated each year in the UK from industry and motor vehicles

THE **SMARTER** SOLUTION TO: Treat surface water pollution

"A revolutionary new product that has been taking the global surface water market by storm for the past 10 years"

Smart Sponge®

- Treats stormwater & urban run-off
- Removes hydrocarbons
- Destroys bacteria
- Filters heavy metals & sediment

Smart Sponge® is a revolutionary new product that has been taking the global surface water market by storm for the past 10 years. Developed for the oil industry, the Smart Sponge is based on patented polymer technologies and is the only non-toxic, fully recyclable filtration system that destroys bacteria and absorbs hydrocarbons on contact. Contaminated stormwater run-off, known as 'non-point source pollution', is a major source of contamination for lakes, streams, rivers, estuaries, coastal waters and even groundwater and forms part of the focus for the Water Framework Directive.

Smart Sponge® is a proprietary combination of synthetic polymers with a unique molecular structure that is chemically selective to hydrocarbons. Smart Sponge® fully encapsulates recovered oil, preventing absorbed oil from leaching and is also capable of removing low levels of oil from water, thereby successfully removing sheen. The spent product is able to be used within a Waste for Energy process as it produces between 10,000 - 18,000 BTU, thereby creating a closed-loop solution with no resultant waste product.

THE SMARTER SOLUTION TO: Spill kits

Smart Sponge® technology, Smart Sponge® is NOT a spill kit

"Smart Sponge® has the capacity to absorb up to five times its own weight (depending on the type of oil contaminant) and remove up to 95% of the hydrocarbons present in stormwater run-off."

Absorbent VS Adsorbent

The Smart Sponge® proprietary blend of polymers is oleophilic - an absorbent, which means that hydrocarbons are bonded within its chemical matrix. Therefore, absorption is permanent and saturated product cannot be washed off, squeezed out, or leached from the material during subsequent rain events.

Once absorbed, those pollutants are transformed into a stable solid for easy recycling, providing a closed-loop solution to water pollution. Traditional adsorbents lack this absorbent characteristic. Instead they feature an adsorbent capability that merely attracts hydrocarbons to their surface, but cannot prevent them from leaching back into the environment.

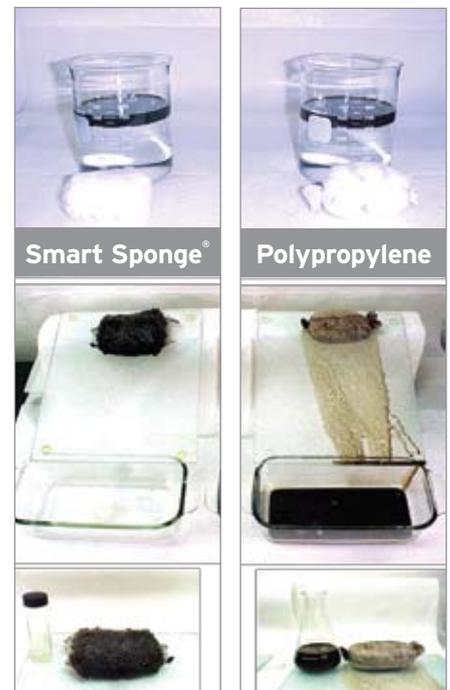
Smart Sponge® Key Features:

- Chemically selective to hydrocarbons
- Removes sheen
- Transforms pollutants into a stable solid
- Non-leaching
- Fully recyclable



Smart Sponge® - a proprietary polymer technology unique in its ability to effectively remove, absorb and retain hydrocarbons from flowing or static water. Smart Sponge technology maximises the effectiveness of its oil-absorbing polymers by forming them into an extremely porous structure that allows effective, long-lasting absorption, without clogging or channelling, which is common among any other filtration media in a powder, particulate or fibre form.

Oil contributes to 20% of all UK water pollution incidents.



The Smart Sponge polymers are also hydrophobic and oleophilic - allowing water to pass through while hydrocarbons are absorbed. The structure is so effective, that even as it swells with contaminants, high flow rates and filtering capabilities are still maintained. Field and laboratory tests have confirmed the Smart Sponge capacity to absorb up to five times its own weight (depending on the type of oil contaminant) and remove up to 95% of the hydrocarbons present in stormwater run-off.

THE SMARTER SOLUTION TO: Support infrastructure

Wiltshire Council Trials Case Study

“Wiltshire Council is always seeking ways of improving its service to the community while at the same time remaining as kind to the environment as possible.

Through innovative thinking, there are many ways of achieving our desired goals. So when Wiltshire Council was introduced to the Smart Sponge technology (SST) with its synthetic polymers used for removing hydrocarbons and oil derivatives from surface water, we decided to trial the product.

The various tests demonstrated just how the technology built into the Smart Sponge system offered an easy solution to the problem many local authorities face when dealing with gully waste and the ever-increasing costs associated with its disposal. Currently Wiltshire Council disposes of gully waste by way of landfill, which has environmental and cost implications. Therefore, Wiltshire Council was eager to explore alternative ways of processing this waste.

Wiltshire Council undertook its own trials over a period of around a year. They have shown quite clearly that financial savings can be made by the reduction in disposing of contaminated waste as the Smart Sponge transforms captured pollutants into a solid waste for recycling as a Waste to Fuel energy or as landfill waste. In addition to this we also obviously had a significant reduction in environmental impact!



Brian Lanham Weather and Drainage Manager

“Working alongside the Smart Sponge team whilst investigating this product has made the decision making so much easier, and I believe we have chosen the right product for the job.”

Sarah Peterson Technical Assistant

“Smart Sponge has shown excellent results throughout our entire trial. I have been impressed with every aspect of Smart Sponge, especially the ease of using and maintaining the product. I am very much looking forward to the next developments involving the use of Smart Sponge within Wiltshire.”

Water quality samples and weight of SST were taken every three months from each gully along a stretch of highway over a 12 month period. Eight road gullies and one petrol interceptor had PAH values averaging 8500ppm. The PAH levels have decreased over this 12 month period to under 1ppm.

To date, the trial has clearly proven that SST reduces the level of PAH in contaminated surface water run-off, far exceeding EU legislations criteria. In the future, Wiltshire Council is aiming to recycle the spent SST as a waste to fuel energy, which burns at 10,000 to 18,000 British Thermal Units (BTU), overall greatly reducing the financial costs involved in the disposal of wastewater whilst increasing environmental sustainability.

In the immediate future we are installing Smart Sponge technology in all of the depots we use to tip out gully waste. This will mean our disposal costs will be reduced considerably because of the unique way that the Smart Sponge works and of course the longevity of the sponge.

We regularly clean out the gullies that collect the water from our roads, and more often in problem areas. It is hoped that by installing the Smart Sponge in strategic areas in the near future, our disposal costs will be reduced even further. “

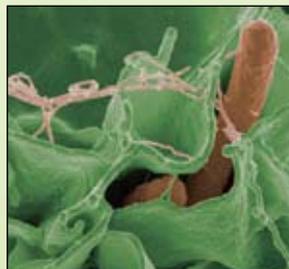
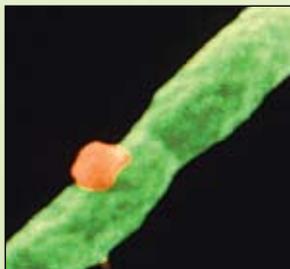
THE **SMARTER** SOLUTION TO: Remove pathogens from stormwater

"The presence of bacteria in stormwater is a serious problem and poses significant health risks that increasingly result in the contamination of water bodies."

Smart Sponge® **PLUS**

Apart from the standard Smart Sponge® there is also Smart Sponge® **PLUS** which has all the features of being able to remove hydrocarbons as well as being the only non-toxic, fully recyclable filtration system that destroys bacteria at street level.

The presence of bacteria in stormwater is a serious problem and poses significant health risks that increasingly result in the contamination of water bodies. The greatest opportunity to reduce this bacterial count is during rain events through the control and treatment of stormwater run-off. This can be achieved by the Smart Filter system fitted with Smart Sponge® **PLUS** which can also be adapted and used as part of a full treatment system for Combined Sewer Overflows (CSO's)



Smart Sponge® Plus's
ability to remove E.coli, Salmonella, Legionnaire's etc. from moving water makes it the ideal solution.

THE SMARTER SOLUTION TO: Remove pathogens from stormwater

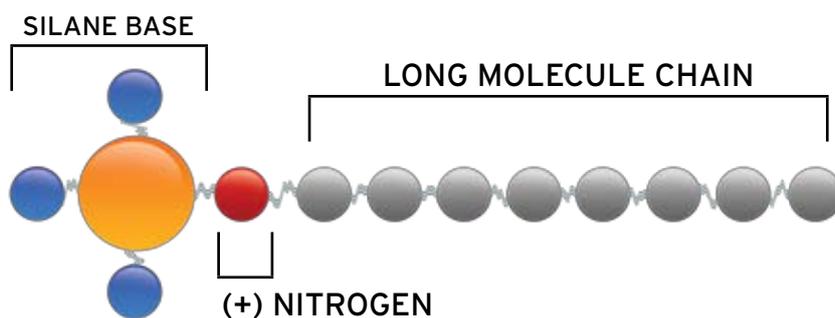
Smart Sponge® PLUS technology

Smart Sponge® PLUS for Hydrocarbons Plus Bacteria

- Smart Sponge® PLUS dramatically reduces coliform bacteria found in stormwater, industrial wastewater and municipal wastewater
- Smart Sponge® PLUS can be engineered using controlled test parameters (such as modifying flow rates and coliform bacteria concentration) to meet your performance requirements
- Smart Sponge® PLUS is designed to assist water systems to meet Total Maximum Daily Load Limits (TMDLs) for coliform bacteria
- When properly installed and maintained Smart Sponge® PLUS provides a significant reduction in coliform bacteria

Smart Sponge® PLUS - has all the features of standard Smart Sponge as well as the dual action capability of destroying disease-causing micro-organisms from surface water such as:

- Aspergillus Niger • Trichophyton Mentagrophytes • Penicillium Pinophilum
- Chaetomium Globosum • Trichoderma Virens • Aureobasidium Pullulans
- Escherichia Coli • Salmonella • Streptococcus



Anti-microbial agent

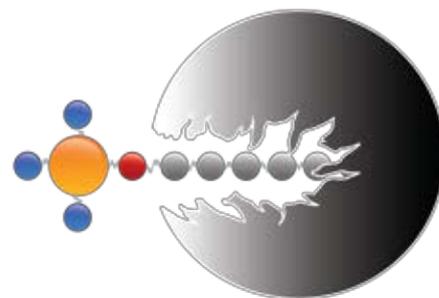
In the Smart Sponge® PLUS, the anti-microbial agent is chemically and permanently bound to the polymer surface and serves to control fungi, static odour and mildew.

The anti-microbial mechanism is based on the agent's electromagnetic interaction with the micro-organism cell membrane, causing the micro-organism disruption but no chemical or physical change in the agent.

Anti-microbial activity does not reduce the agent capability or cause its depletion and, therefore, maintains long-term effectiveness. Test results demonstrated the maximum bacterial removal rates of Smart Sponge® PLUS in both dry and wet weather sampling for fecal coliform ranged from 89.4 to 99.6 percent; and for Enterococcus, 96.2 to 99.9 percent.

Contaminants	Concentration Range	P.S.D d50	Performance	Filter bed depth
Oil & Grease	> 100ppm	-	>95%	> 100mm
	< 100ppm	-	>75%	> 100mm
Bacteria				
E.coli	< 103 CFU*/100ml	-	>90%	>1.5m
Fecal Coliform	< 103 CFU*/100ml	-	>90%	>0.9m
Enterococcus	< 104 CFU*/100ml	-	>90%	>0.9m
Total Coliforms	< 104 CFU*/100ml	-	>90%	>1.5m
TSS	100-300pm	>15µ	>80%	>1.5m
TSS	>100ppm	>100µ	>80%	>0.6m
T. Phosphorous		>15µ	>40%	>1.5m

* Colony Forming Units



Physical inactivation of Bacteria - Rupture of the Cell Wall

THE SMARTER SOLUTION TO:

Remove hydrocarbons from carriageway run-off

"In tests, Wiltshire County Council reduced hydrocarbon concentrations in their road gullies from 8,000ppm to 1ppm"

Smart Gully Range

The clever push fit design incorporates a finned rubber gasket ensuring a snug fit replacing the rodding bung ensuring no loss of hydraulic capacity or engineering design. Smart Gully incorporates the unique Smart Sponge technology that removes hydrocarbons from stormwater.

The Smart Gullies have a Smart Gully Adaptor already fitted and are supplied complete with a purpose designed Smart Pak® already installed and are available for both plastic and concrete gullies.

Range table (Complete Smart Gully units)

Prod No.	Description	Dims (mm)
SGC02	Concrete Smart Gully	375 ID 900 deep
SGC03	Concrete Smart Gully	450 ID 750 deep
SGC04	Concrete Smart Gully	450 ID 900 deep
SGC05	Concrete Smart Gully	450 ID 1050 deep
SGP02	Plastic Smart Gully	375 ID 900 deep
SGP03	Plastic Smart Gully	450 ID 750 deep
SGP04	Plastic Smart Gully	450 ID 900 deep
SGP05	Plastic Smart Gully	450 ID 1050 deep

* all Smart Gullys c/w 1 x Adaptor.

The special Smart Gully Adaptors (SGA) are also available for retrofitting in existing gullies:



SGA - Backplate



SGA - Frontplate

Range table (Smart Gully Adaptor units & spares)

Prod No.	Description	Dims (mm)
SGA01 - 12	Smart Gully Adaptor (body only)	220 x 200 x 160
SGA02 - 12	Smart Gully Adaptor c/w Smart Pak & seal	220 x 200 x 160
SGS01	Smart Seal for SGA (spare)	100 x 110 dia
SMPK - 1 - 28	Smart Sponge Smart Pak refill	150 x 150 x 62.5



Smart Sponge technology is based on its proprietary blend of synthetic polymers aimed at removal of hydrocarbons and oil derivatives from surface water.

This unique process creates a very porous structure with hydrophobic and oleophilic characteristics capable of selectively removing hydrocarbons while allowing high flow through rates for water.

As hydrocarbons are absorbed into its structure, the Smart Sponge swells and maintains porosity and filtering capabilities.



The Smart Sponge unique molecular structure is based on innovative polymer technologies that are chemically selective to hydrocarbons.

The SGA's have a purpose designed Smart Pak fitted to absorb the hydrocarbons - it is specially designed to last 12 months in a worst case scenario and maintenance is simplicity itself and takes just a few seconds.

The Smart Sponge technology transforms the pollutants into a stable solid waste for easy recycling.

Smart Sponge waste to energy finalises the closed-loop solution with the spent Smart Sponge creating 10,000-18,000 BTU with no resulting waste product.

Smart Sponge can also be used as an anti-microbial technology capable of destroying disease causing micro-organisms from surface water such as E.coli, Streptococcus and Legionnaire's to name but a few.

THE SMARTER SOLUTION TO: Remove hydrocarbons from oil water interceptors

In recent tests carried out on a 'typical' MOD facility, it was shown that a 64% saving in maintenance costs could be achieved together with a 99% saving in the volume of environmental waste

Interceptor Enhancer / Passive Skimmer Range

The Smart Sponge® Passive Skimmers are installed within existing interceptors/separators (OWI's) to dramatically increase the effectiveness of the OWI (from typically 45% removal to 95% removal) whilst at the same time reducing annual maintenance costs by up to 64%.

The regulations controlling the maintenance of interceptors/separators (OWI's) advise six monthly inspections and emptying and recharging with clean water when required. A new method of reducing both maintenance costs and environmental waste when servicing OWI's by the use of the Smart Sponge Interceptor Enhancers has shown dramatic results.

The Smart Sponge absorbs the hydrocarbon contamination and locks it into the molecular structure of the polymer, transferring the hydrocarbons into a solid waste suitable for either controlled disposal or for use as an alternative fuel. This unique ability means that instead of disposing of tonnes of contaminated liquid waste it is now possible to reduce this dramatically to a few kilos of solid waste, thus achieving dramatic savings in both cost and environmental benefits.

Range table (Interceptor Enhancers/Passive Skimmers)

Prod No.	Description	Dims (mm)
IE1313-40	Small interceptor enhancer	330 X 330
IE1818-20	Medium interceptor enhancer	457 X 457
IE2727-10	Large interceptor enhancer	686 X 686

Pack sizes: Small - 40pk, Medium - 20pk, Large - 10pk



Traditionally, maintenance of an OWI would consist of a tanker with a 2 man gang extracting the whole volume of the OWI (in the case of even a medium sized OWI this could amount to 110,000 litres or 110 tonnes) which would take many trips plus the disposal costs of the contaminated waste. The tanker would then have to re-charge the OWI to bring it back to operating condition.

Taking the same OWI as an example and now using a Smart Sponge Passive Skimmer as a solution, this would transform the 116 tonnes of liquid waste into just 145 kg of solid waste and the maintenance procedure becomes just a 2 man job with a van. The cost and environmental benefits of this new system are obvious, particularly when many such OWI's can be serviced in a typical day.

In recent tests carried out on a 'typical' MOD facility, it was shown that a 64% saving in maintenance costs could be achieved together with a 99% saving in the volume of environmental waste - and even this 1% of remaining waste can be used as an alternative fuel as part of the Waste for Energy initiative creating a truly closed-loop system of maintenance where everyone benefits.

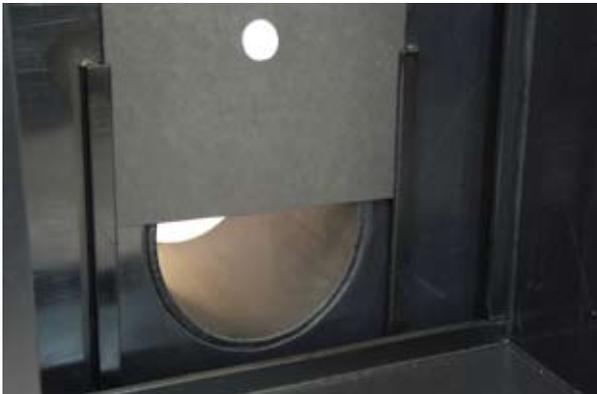
Deployment Guidance (Oil Water Interceptors)

NSB*	Area Drained	No of IE to absorb hydrocarbon		
		IE1313	IE1818	IE2727
1.5S	833	10	6	3
3.0S	1,666	19	11	5
4.5S	2,499	28	16	8
6.0S	3,332	38	22	10
10S	5,553	NA	36	17
12S	6,670	NA	43	20
15S	8,330	NA	NA	25
20S	11,106	NA	NA	34
25S	13,883	NA	NA	42

* Nominal Size Bypass

The Smart Sponge® Family

Smart Filter, Smart Brake & Smart Stop Range



The Smart Brake:

Is a collaboration of design from the Smart Filter and houses the Smart Paks within a more confined area which allows normal flow through the system. The Smart Brake's unique design works during an event and slows the flow rate whilst absorbing any hydrocarbons present, allowing the final outfall flow to disperse reducing flooding, resulting in the contaminated flow from travelling further along a water course. The Smart Brake will also absorb any hydrocarbons present within a normal flow, effectively acting as a Smart Filter.



The Smart Stop:

Uses the basic principles of the Smart Filter but houses the Smart Paks within a more confined area which allows normal flow through the system. The Smart Stop's unique design works during an event where more hydrocarbons are present within the resulting flow and the volume of hydrocarbons are quickly absorbed within the Smart Paks which swell into the defined cage and seal the outfall pipe providing the contaminated flow from travelling further along a water course. The contaminated water is then stopped at source enabling the hydrocarbon clean up to be targeted in one area reducing the impact to the environment. The Smart Brake will also absorb any hydrocarbons present within a normal flow, effectively acting as a Smart Filter.



The Smart Filter:

Specifically designed for end of pipe applications and installations through which contaminated or polluted water flows. The unique design allows the Smart Filter to either sit inside or outside the pipe connection and will absorb hydrocarbons that pass through the system during normal conditions. The Smart Filter is available in 2 different standard sizes and will accommodate standard pipe sizes. Flow rates are catered for through the design of the Smart Filter.

Smart Filter Standard Range

Prod No.	Description	Dims (mm)	Qty
SF01-30302	Smart Filter c/w 2 No. 305 x 305 Std Smart Paks. 150 dia outlet for flow up to 14 l/s	360 x 330 x 330	1
SF02-38382	Smart Filter c/w 2 No. 380 x 380 Std Smart Paks. 150 dia outlet for flow up to 22 l/s	400 x 400 x 400	1
SF01-30302P	Smart Filter c/w 2 No. 305 x 305 Plus Smart Paks. 150 dia outlet for flow up to 14 l/s	360 x 330 x 330	1
SF02-38382P	Smart Filter c/w 2 No. 380 x 380 Plus Smart Paks. 150 dia outlet for flow up to 22 l/s	400 x 400 x 400	1

Smart Brake Range

Prod No.	Description	Dims (mm)	Qty
SB01-30302	Smart Brake c/w 2 No. 305 x 305 Std Smart Paks. Specify orifice size for desired flow	360 x 330 x 330	1
SB02-38382	Smart Brake c/w 2 No. 380 x 380 Std Smart Paks. Specify orifice size for desired flow	400 x 400 x 400	1

Smart Stop Range

Prod No.	Description	Dims (mm)	Qty
SS01-30302	Smart Stop c/w 2 No. 305 x 305 Std Smart Paks. 150 dia outlet for flow up to 14 l/s	360 x 330 x 330	1
SS02-38382	Smart Stop c/w 2 No. 380 x 380 Std Smart Paks. 150 dia outlet for flow up to 22 l/s	400 x 400 x 400	1

The Smart Sponge® Family

Smart Filter Range

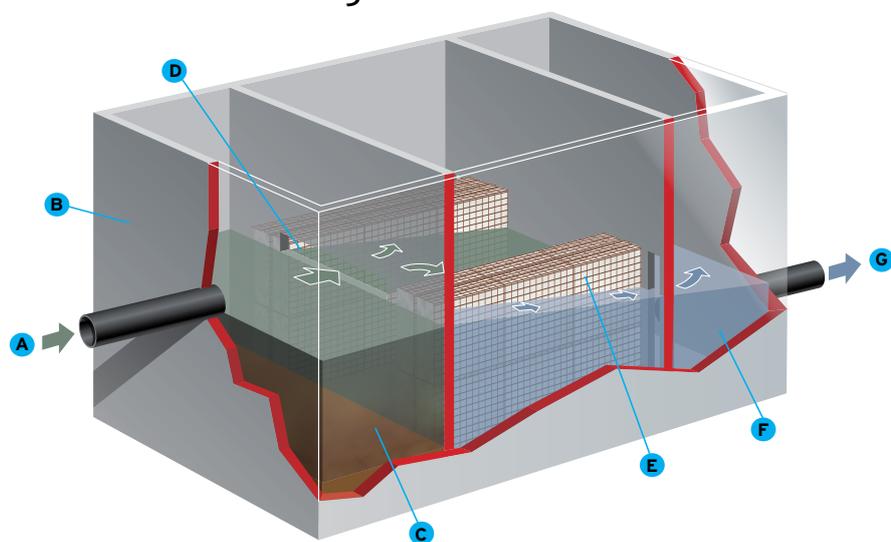


Diagram Key

- A. Inflow
- B. Lightweight composite chamber with vehicle loading capability
- C. Chamber with weir to trap sediment
- D. Flow passes through Smart Paks and through side orifices
- E. Smart Paks to absorb hydrocarbons
- F. Collection chamber with outlet to sewer
- G. Outflow

Note: Arrows show direction of water flow

Smart Filters for Highways, Large Catchment Areas etc:

Specifically designed for extreme storm events and larger flow situations, the basic principles of the smaller Smart Filters can be adapted to virtually any flow and also adapted to site restrictions.

The Smart Filters come in several standard modular chamber sizes but can also be manufactured bespoke to suit specific site conditions. Contaminated wastewater enters the system into a settlement chamber and passes through an orifice into a distribution chamber and then is passed through the Smart Sponge units (Paks) which removes up to 95% of all hydrocarbons. The cleaned water then passes through purpose designed side orifices to exit the treatment chamber via the outlet pipe.

Smart Filter's Advantages:

- Treats 100% of the storm flow
- Removes 95% of hydrocarbons
- Removes heavy metals & silts
- Can cope with extreme conditions
- Shallow excavations
- Low head drop
- Modular design
- Virtually any flow catered for
- Waste product 100% recyclable
- Easy maintenance procedure

Prod No.	Description	Dimensions (Width x Length x Height)	Silt Capacity	Smart Paks	Max Oil Capacity
SF03-11.5A	Smart Filter 44 l/s c/w 225mm inflow & outflow pipes	1m x 1.5m x 1.5m	300 litres	4 x 380 x 380	71 litres
SF03-11.5B	Smart Filter 88 l/s c/w 300mm inflow & outflow pipes	1m x 2.0m x 1.5m	300 litres	8 x 380 x 380	142 litres
SF03-22.5A	Smart Filter 130 l/s c/w 300mm inflow & outflow pipes	2m x 2.5m x 1.5m	600 litres	12 x 380 x 380	212 litres
SF03-22.5B	Smart Filter 264 l/s c/w 400mm inflow & outflow pipes	2m x 2.5m x 1.5m	1,200 litres	24 x 380 x 380	414 litres
SF03-22.5C	Smart Filter 396 l/s c/w 450mm inflow & outflow pipes	2m x 2.5m x 2.0m	2,000 litres	36 x 380 x 380	636 litres
SF03-23.0A	Smart Filter 352 l/s c/w 300mm inflow & outflow pipes	2m x 2.0m x 1.5m	1,500 litres	32 x 380 x 380	566 litres
SF03-23.0B	Smart Filter 528 l/s c/w 300mm inflow & outflow pipes	2m x 2.0m x 2.0m	2,500 litres	48 x 380 x 380	849 litres
SF03-23.0C	Smart Filter 704 l/s c/w 300mm inflow & outflow pipes	2m x 2.0m x 2.0m	3,500 litres	64 x 380 x 380	1,132 litres
SF03-23.5A	Smart Filter 220 l/s c/w 375mm inflow & outflow pipes	2m x 2.0m x 1.5m	1,000 litres	64 x 380 x 380	1,132 litres



Smaller Smart Filter being lowered into position

The Smart Sponge® Family

Ultra-Urban® Filter Range

The Ultra-Urban® Filter with Smart Sponge® is an innovative low-cost BMP that helps meet anti-pollution requirements with effective filtration, efficient application and moderate maintenance. The Ultra-Urban® Filter absorbs oil and grease and captures trash and sediment from stormwater run-off before it enters the storm drain system. The Ultra-Urban® Filter is ideal for commercial, industrial and construction applications. The filter is available in two standard designs; one designed to clip onto the side of a catch basin in a row according to the flow (CO) and the

other which is a single unit designed for typical drop-in catch basins and gullies (DI).

The Ultra-Urban® Filter, made of a high strength corrugated recycled content plastic, is designed for use in surface water drains that experience oil and grease pollution accompanied by sediment and debris. Rubbish and sediment accumulate in the upper basket chamber while oil and grease are absorbed in the filtration media.

Drain Insert Module			Gross Weight (approx.)			
Part No	Description	Dimensions (mm)	With Smart Sponge	Trash & Debris Only	Flow Rate	Trash & Debris Capacity
DI1616N	UUF, Normal size	406 x 406 x 540	11Kg	3Kg	22.7 l/s	510cm ³
DI1616H	UUF, Half size	406 x 406 x 340	8Kg	2.3Kg	15.1 l/s	285cm ³
DI2020N	UUF, Normal size	489 x 498 x 540	13.6Kg	3.4Kg	31.5 l/s	850cm ³
DI2020H	UUF, Half size	489 x 498 x 340	10Kg	2.7Kg	23.0 l/s	480cm ³



Performance

Field and laboratory tests have confirmed the capability of the Smart Sponge to absorb, depending on the type of oil contaminant, up to five times its own weight and remove 70% to 95% of the hydrocarbons present in stormwater run-off, typically in the range of 5 to 30 mg/litre (ppm). The captured oil is permanently bound within the Smart Sponge, eliminating leaching and allowing for easy disposal of the filtration media. Flow rates through the CO1616 filters exceed 15 l/s.

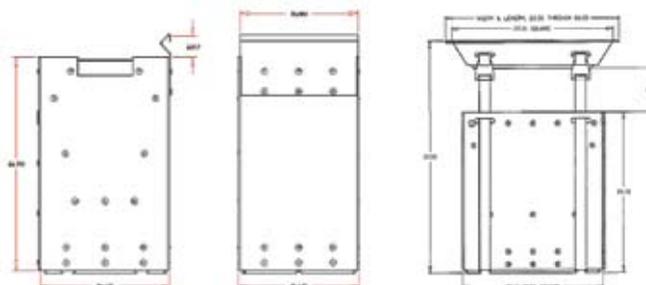
Installation

The Ultra-Urban® Filter is easily installed and installation time varies depending upon mounting devices selected. A single mounting bracket made of 16 gauge galvanised steel is required for the installation of the CO series of UUF. The Ultra-Urban® Filter should not be installed where modules obstruct the drain pipe outlet. The size of the drain should allow room for stormwater overflow. The Drain Inlet (DI) series Ultra-Urban® Filter will suspend from the drain into the catch basin through a structural plastic mount and funnel mechanism (see drawings).



Maintenance

The Ultra-Urban® Filter should be serviced as needed to remove sediment and debris, according to expected debris accumulation. The sediment and debris can be quickly vacuumed out of the modules through the opening of the drain with conventional maintenance equipment. For example, a CO installation with four to five Ultra-Urban® Filter modules can be typically serviced in 10 minutes or less. Under normal operating conditions the Ultra-Urban® Filter should be replaced every 1-3 years.



The Smart Sponge® Family

Line Skimmers

Line Skimmers are ideal for creating lines of hydrocarbon protection in areas such as ponds and streams as well as clarifying wells and marinas. Installation is carried out by placing the line skimmers across the water course, tied off to fixed points. The line skimmers can also be tied to one another to create longer protection booms as required.



Applications

- Preserving Ecologically Sensitive Areas
- Coastal Marshlands
- Estuaries
- Grass Flats
- Fishing and Breeding Grounds
- Boat Docks and Marinas
- Marine Fueling Locations
- Clarifying Wells



Prod No.	Dry Weight	Spent Weight	Litres
LS104-10 (1.2m)	0.7kg 	2.8kg 	2.4Ltr
LS110-04 (3m)	1.9kg 	7.6kg 	9.0Ltr
LS304-04 (1.2m)	2.2kg 	8.8kg 	6.5Ltr
LS308-04 (2.4m)	4.4kg 	17.6kg 	16.0Ltr
LS408-04 (2.4m)	5.9kg 	23.6kg 	18.0Ltr

Line Skimmer weights before and after application

Disposal Options

As local conditions, product use and exposure can vary widely, the end user must determine the most appropriate disposal method for a spent Smart Sponge or Smart Sponge Plus product. However Smart Sponge samples saturated with hydrocarbons both in the lab and in the field have been tested according to the USA EPA's Toxicity Characteristic Leaching Procedure ("TCLP"). These tests show that Smart Sponge is a "non-leaching" (i.e., non-detect or "N.D.") product. As a result, Smart Sponge technology can afford many cost effective and environmentally friendly disposal options. The following waste disposal and resource recovery systems are available for disposal and/or recycling of the spent Smart Sponge products.

Waste to Energy Facilities

This is a specialised segment of the solid waste industry and within the USA this is a recognised route for used spent Smart Sponge as an alternative fuel in the production of electricity. The

spent Smart Sponge generates between 10,000 - 18,000BTU per pound (0.45kg).

Cement Kilns

This industry has used the spent Smart Sponge as an alternative fuel in the production process of Portland Cement. This process is considered a beneficial re-use of waste products. The BTU value of spent Smart Sponge is consistently above the average acceptable levels set for this high temperature process.

Landfills

As mentioned above, spent Smart Sponge products have been classified as a solid waste within the USA and have been accepted at Subtitle D Landfills. Discussions are ongoing with the Environment Agency to establish similar classification for the UK.

THE SMARTER SOLUTION TO: Quick Installation & Maintenance

Passive Skimmers

It is intended that proactive checks are completed on a six monthly basis, any remedial work will be managed reactively.

1. Fix a tether rope to the absorbent Passive Skimmer and record the weight in Kg
2. Fix the tether so that the Passive Skimmers can be recovered but allowing the skimmer to float freely.
3. Every 6 months withdraw the Passive Skimmer, shake off excess water and check and record weight. If weight is above trigger value replace skimmer.

Passive Skimmers are deemed spent if their weights are greater than:

Size	Dry Weight	Spent Weight
PS1313 (Small)	0.5kg 	2.0kg (approx. 2.4 litres) 
PS1818 (Medium)	0.9kg 	3.6kg (approx. 4.2 litres) 
PS2727 (Large)	1.9kg 	7.6kg (approx. 9.0 litres) 



Passive Skimmers are available in Small, Medium and Large packs

PS1313 (Small) shown

Smart Gully Adaptor

Smart Gully Adaptor. Instructions for SGA Installation and Maintenance.



Insert the back plate into the rodding eye of the gully



Slide the front plate with Smart Pak in down onto the back plate



Back plate will lock into position on the tabs provided



Remove the front plate by sliding upward



Weigh the unit with Smart Pak in



Remove and replace spent Smart Pak



Install new Smart Pak and refit

Size	Dry Weight	Spent Weight
SMPK (150X150X62.5)	0.5kg 	1.2kg (approx. 1.4 litres) 

Smart Gully Adaptor weights before and after application

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Ultra-Urban® Filters

The Ultra-Urban® Filters can be installed as a drop in unit with a collar or as a slot in system secured to the side of the gully or inlet with brackets.

The Ultra-Urban® Filter Is Easily Installed

Installation time varies depending upon mounting devices selected. A single mounting bracket made of 16-gauge galvanised steel is required for the installation of the Curb Opening (CO) series. The Ultra-Urban® Filter should not be installed where modules obstruct the drain pipe outlet. The size of the drain should allow room for stormwater overflow. The Drain Inlet (DI) series Ultra-Urban® Filter will suspend from the drain into the catch basin through a structural plastic mount and funnel mechanism.

Low Maintenance

The Ultra-Urban® Filter should be serviced as needed to remove sediment and debris, according to expected debris accumulation. The sediment and debris can be quickly vacuumed out of the modules through the opening of the drain with conventional maintenance equipment. Under normal operating conditions the Ultra-Urban® Filter should be replaced every 1-3 years.



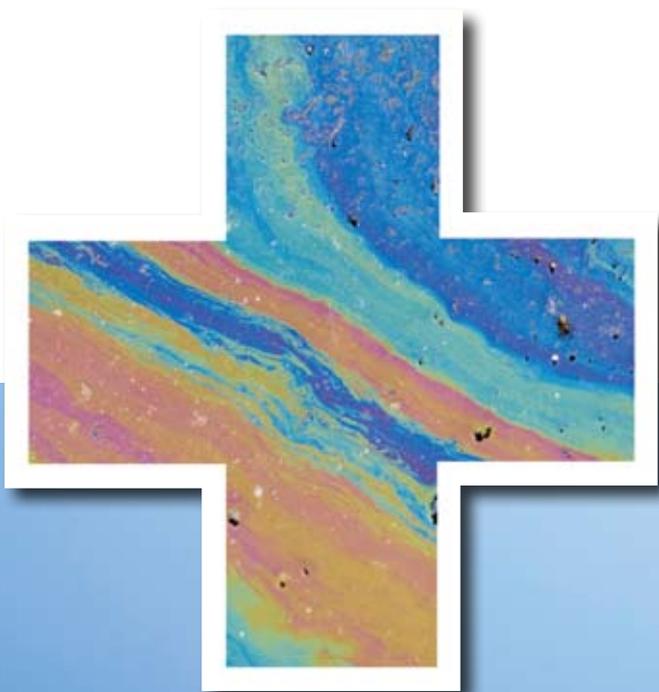
Prod No.	Dry Weight	Spent Weight	Litres
UUF1616N	11kg 	26.8kg 	28.0Ltr
UUF1616H	8kg 	18.4kg 	18.0Ltr
UUF2020N	13.6kg 	34.4kg 	36.7Ltr
UUF2020H	10kg 	25.4kg 	27.2Ltr

Solutions
for Water
Framework Directive
Compliance

Smart Sponge® & Smart Sponge® PLUS technology effectively and efficiently reduces the amount of coliform bacteria, debris and hydrocarbons, to keep the UK's beaches, marinas, airports in compliance with stormwater regulations.



**A revolutionary new product
that has been taking the
global surface water market
by storm for the past 10 years...**



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- Treats stormwater & urban run-off
- Removes hydrocarbons
- Destroys bacteria
- Filters heavy metals
- Allows solid waste recycling
- Complies with the Water Framework Directive