



### **Features of SPEL Stormceptor**

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- Full bore inlet into solids chamber - no blockages. Inlet design traps in flammable vapours and stops them passing upstream into drainage system.
- Two separate treatment chambers - solids and oil - with discharge from cleanest zones in each chamber.
- Horizontal separation principle - high efficiency and minimum depth excavation. Suitable for high water table or rock areas.
- Large solids holding capacity of self-blocking design. Bottom tapered towards suction point for ease of cleaning.
- Oil / hydrocarbon chamber has large surface area. Not surcharged by storm flows.
- Storm bypass underflows to discharge, helping trap free oil or spills even during storm flows.
- Unit supplied fully assembled as a watertight unit with immensely strong one-piece shell. Designed to be impervious to water and withstand corrosion for entire life of installation.
- Large range to suit every application - 32 sizes from 1600m<sup>2</sup> to 29ha catchment area, with inlet/outlet sizes from 225mm to 1500mm. Able to treat flows up to 400l/s.
- Available with oil coalescer units in final chamber for extremely sensitive sites. Meets new EC standard for discharge to lakes.

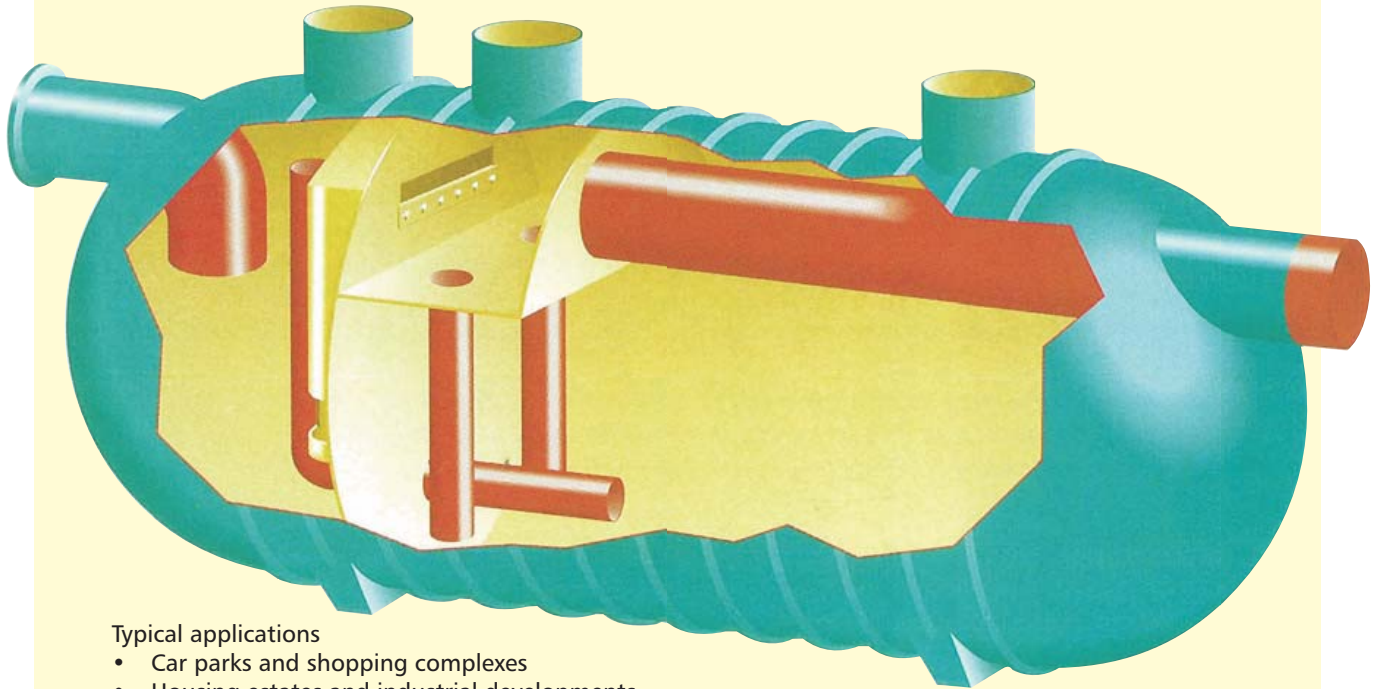
Options of automatic closure device and alarm / monitor system are available.

# SPEL Stormceptor By-Pass Separators

**SPEL Stormceptors** are the most widely used separators where it is necessary to treat the first flush and normal flows up to 5mm/hr rainfall intensity, which covers approximately 90% of all rainfall events. They are specifically designed for applications where there is little or no risk of a major oil or fuel spillage. Any excess rainfall is bypassed without scouring collected pollutants.

**Standard or Class 2 Stormceptors** have been tested and shown to be capable of meeting a hydrocarbon concentration of less than 100mg/l and are specified for most stormwater interceptor duties.

**Class 1 Stormceptors** incorporate coalescer units in the main separator chamber and are designed to meet the much more stringent discharge standard of 5mg/l maximum hydrocarbon concentration up to the rated flow. This type is specified where stormwater is discharged to surface waters or lakes, or where there is oil or hydrocarbon contaminant present.



#### Typical applications

- Car parks and shopping complexes
- Housing estates and industrial developments
- Transport depots and loading bays
- Highways and transport corridors
- Aircraft aprons and shipping docks

The SPEL Stormceptor was designed to overcome two main problems encountered with the conventional full retention separators.

Firstly, to prevent the risk of intercepted contaminants being flushed through during storms and secondly the size of such units needed to cater for very large catchment areas.

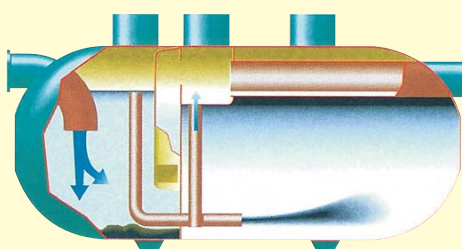
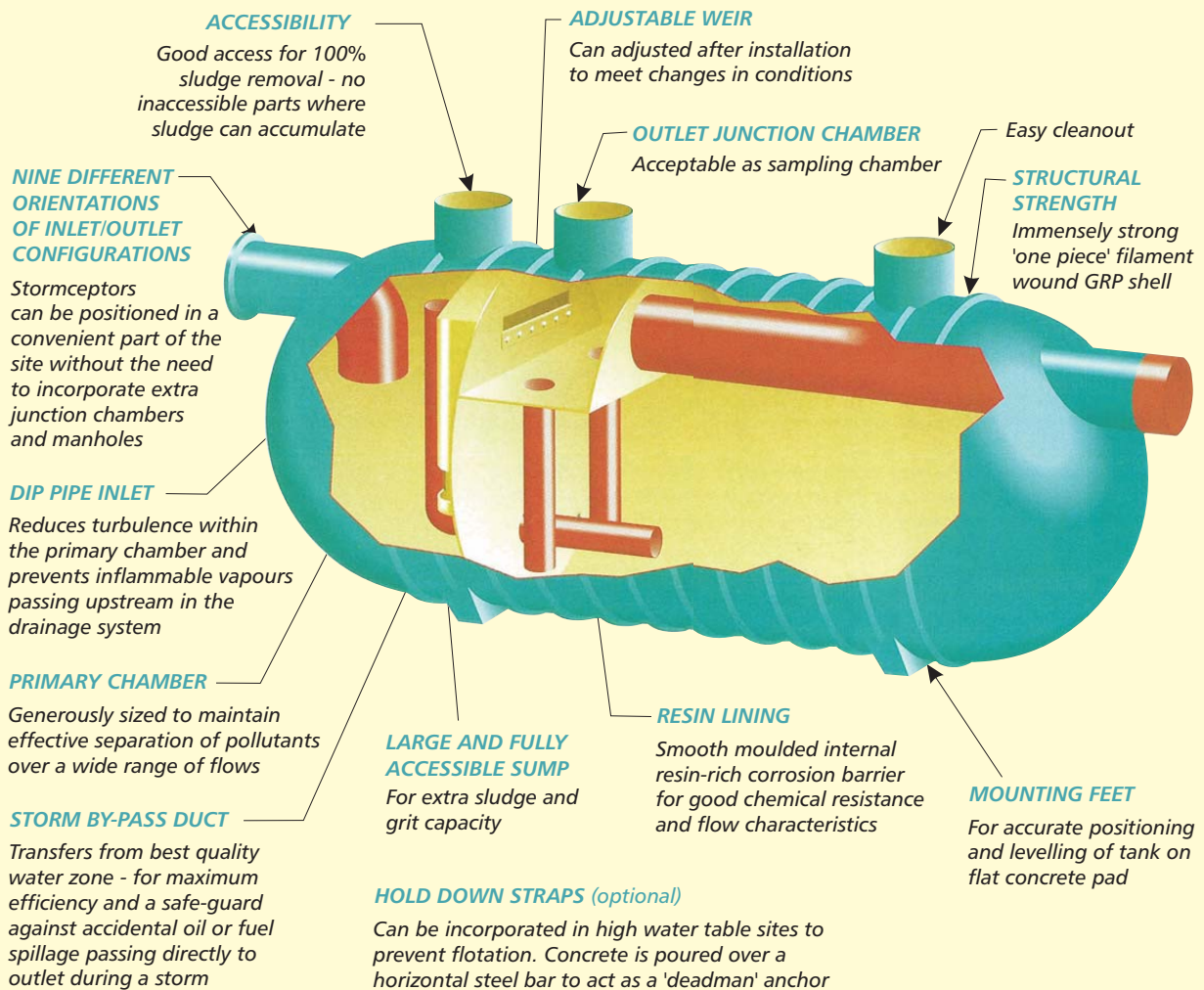
The SPEL Stormceptor provides for efficient separation of the normal flow and, as the flow increases during heavy rain, by-passes an increasing percentage ducted from the cleanest zone in the primary chamber through to the junction chamber before final discharge.

It is an efficient unit and safeguards against the intercepted contents being disturbed and flushed through during storms. It is more compact than the conventional full retention separator and therefore more economical and cheaper to install.

The SPEL Stormceptor, as with all the SPEL product range, is manufactured by the company to the highest specification.

Each model is designed, in conjunction with an independent consultant, to operate efficiently at all required flows with the minimal backing up at high flow and variation to the fully treatable 'first flush' 10% of 50mm/hr rainfall.

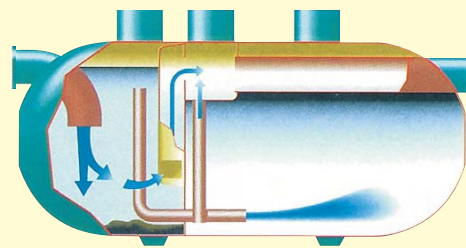
# SPEL 'Stormceptor'<sup>®</sup> By-Pass Separators



## Normal Flow Conditions up to 5mm/hr

The polluted surface water first enters the primary chamber where grit and sludge settles out and is retained. The fuel, oil and other pollutants lighter than water, rise to the surface and are efficiently skimmed off and transferred to the separation chamber.

In normal conditions all the flow is through the separation chamber, where the quiescent conditions allow the pollutants to separate out efficiently. Clean water flows from the separation chamber to the junction chamber and thence to the outlet.

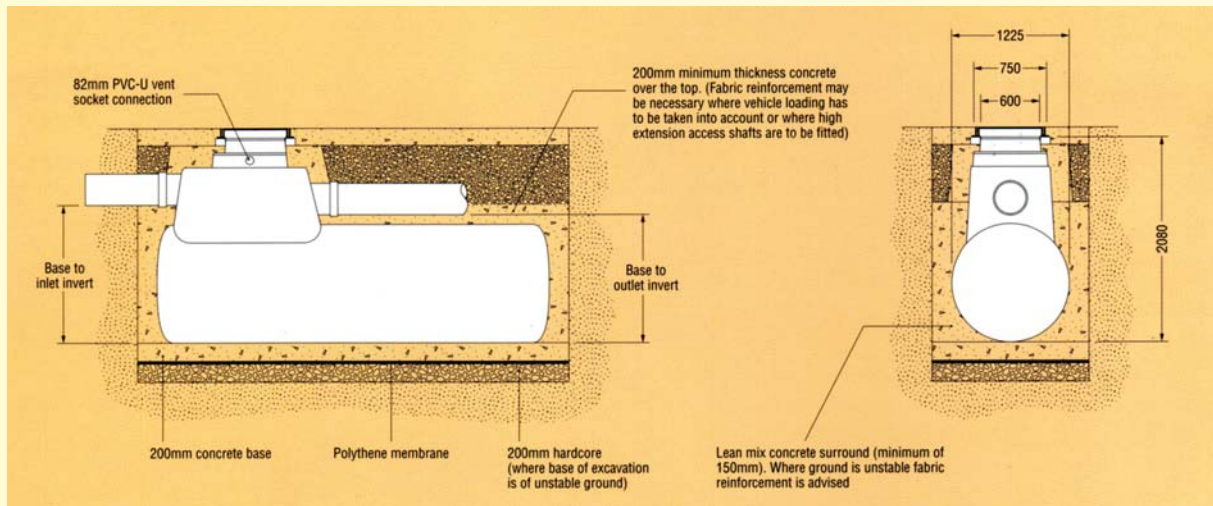


## Higher Flow Conditions

During a storm the level in the primary chamber rises and the storm water passes upwards from the cleanest zone over the weir via the storm by-pass duct into the junction chamber and to the outlet. The weir plate is set for the performance required and can be adjusted after installation.

The design keeps the turbulence within the separation chamber to a minimum which avoids disturbing the contaminants held. In the event of oil/fuel spillage during a storm it will be mostly separated and retained in the primary chamber and transferred to the separation chamber as the flow subsides.

# Notes for general guidance of installation



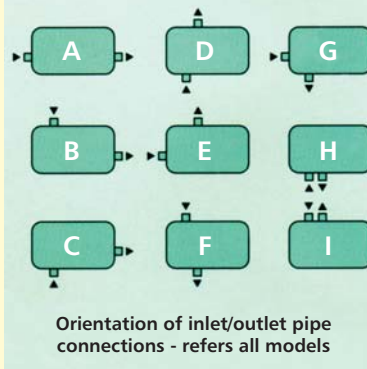
SPEL Light Liquid Separators must be installed in accordance with the installation instructions in the SPEL Data Manual – installation’. Some important steps are highlighted below.

## Concrete Surround

SPEL Tanks are supplied with feet to enable the tank to be placed on a flat concrete base and levelled up prior to surrounding with concrete. These feet are not load bearing and minimal water should be placed in the tank prior to placing backfill concrete.

- 1 Determine the size of the excavation allowing for the drain invert depth and a concrete surround as shown. Remember to allow for any sheeting or timbering that may be needed. Allowance should be made for consolidating concrete under the unit when backfilling.
- 2 Pour concrete base to correct depth and level off. Base to be reinforced as necessary.
- 3 **For 100/200 Series**  
While the concrete is still wet, place the tank in position, and check for level. When concrete has set, fill with water to a maximum depth of 300mm.

## Choice of pipe connections



### For 300 - 600 Series

When the concrete has set sufficiently, place the tank in position, check for level and fill with water to a maximum depth of 300mm.

- 4 Place backfill concrete\* (C20P Mix) up to the depth of water in the tank ensuring the concrete is properly consolidated under the tank to prevent voids. Consolidate by hand — do not use vibrating poker.
- 5 Continue by placing concrete round the tank at the same time filling with water to equalise pressure and resist floatation. Where the tank is divided into chambers ensure all chambers are filled equally.

## 6 Connect up pipework.

\*Minimum concrete surround thickness

SERIES:	100/200	300	400	500/600
MM	150	150	200-250	250-300

*Dependent upon ground conditions etc.*

- 7 Top up the tank with water to invert level and complete the concrete surround over the top of the tank. Extension access shafts (if fitted) can be surrounded in concrete once the main tank concrete surround has set.
- 8 Where the concrete slab over the tank is to take vehicle loading, it should be reinforced in accordance with good practice to take the maximum load and should be extended onto unexcavated ground. It is important that vehicle loading is not transferred to the tank itself.
- 9 Incorporate inspection covers and frames in the normal manner.

## Pea Gravel Surround

If the SPEL Tank is to be surrounded with pea gravel or similar approved backfill material please refer to the SPEL Data Sheet 3456 or SPEL Data Manual.