SPEL Puraceptor®

Class 1 Full Retention Separators

Overview

SPEL Puraceptor® oil separators treat 100% of the flow and have been designed and tested to meet the stringent British/European Standard BS EN 858-1. For peace of mind, install SPEL Puraceptors in high risk areas where the maximum hydrocarbon concentration in the outlet must not exceed 5mg/l.

All SPEL Puraceptors (Full Retention Separators) are fitted with a special automatic closure device (ACD) which shuts the separator down when the contained oil exceeds the maximum oil spill capacity.

The 'heart' of SPEL Separators is the unique long life, low maintenance coalescer unit which 'polishes' the final effluent after 90% of hydrocarbons and silt have been separated out.

Product Range

Series 200
(1.2m inside diameter):
NS 4 - NS 10
Catchment area: 222m² - 556m²

Series 300
(1.8m inside diameter):
NS 15 - NS 50
Catchment area: 833m² - 2,778m²

Series 400
(2.6m inside diameter):
NS 65 - NS 280
Catchment area: 3,611m² - 15,555m²

Series 500
(3.5m inside diameter):
NS 300 - NS 500
Catchment area: 16,665m² - 27,775m²

Series 600
(4m inside diameter):
NS 500 - NS 1,000
Catchment area: 27,775m² - 55,550m²

Note: NS 1,000 unit does not have silt capacity

Applications

Fuel storage/handling areas

Refuelling facilities

Vehicle maintenance yards

Heavy industrial areas

Distribution centres

Power/sub stations

Fire training grounds

Shell Design

Designed with reference to BS EN 13121. All tank shells carry the SPEL 25 Year Warranty and life expectancy in excess of 50 years.

Shell Specifications

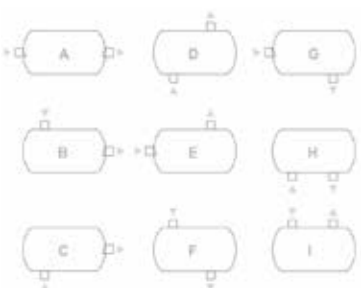
Different tank shell specifications are available dependent upon tank invert levels, ground conditions and ground water levels.

Inlet/Outlet Connections

160/225/300mm diameter PVCU socket/spigot.

450, 600, 750, 900 and 1200mm diameter GRP spigot available, for connecting to site pipework via Flex-Seal/Band-Seal or similar flexible couplings.

The nine inlet/outlet options below are available to assist with design and installation.

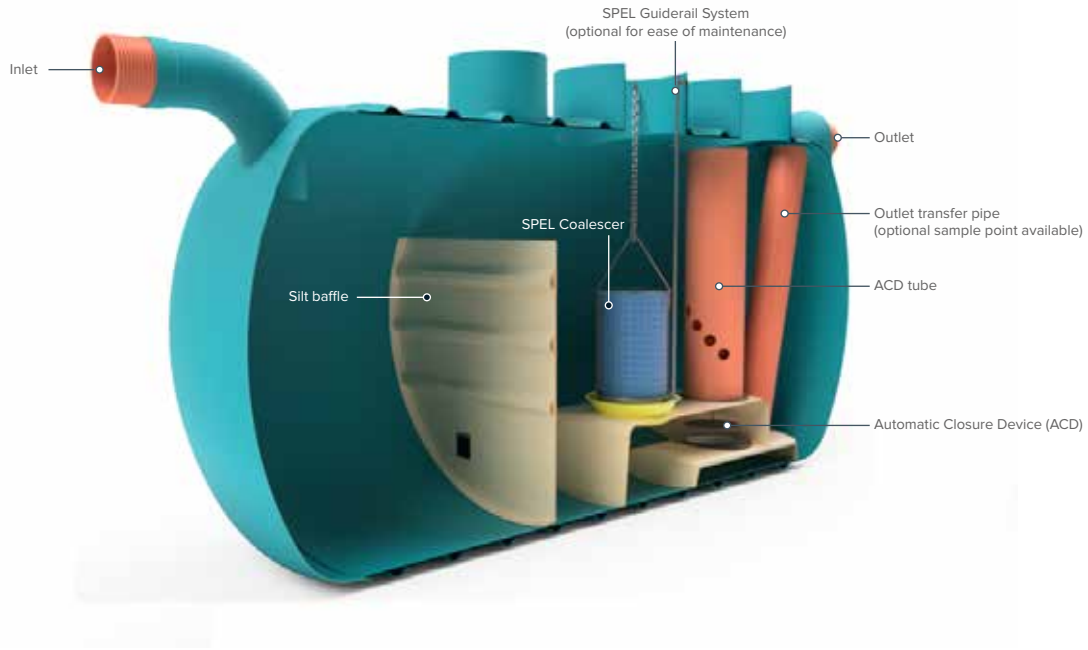


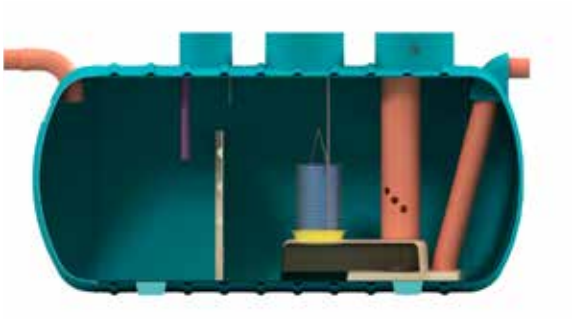
This graphic shows indicative locations only. For accurate location, please contact our technical team.

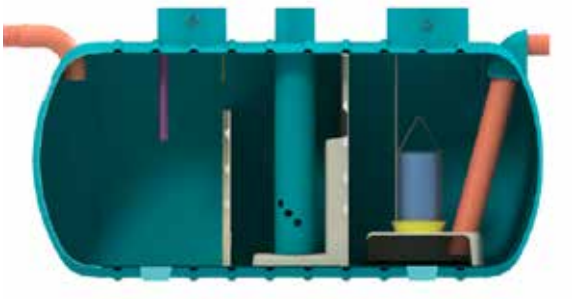
SPEL Puraceptor® Class 1 Single & Two Chamber Separators

Introduction

The SPEL Puraceptor® is a full retention model treating all the flow from the connected catchment area, it is available in two versions, single or two chamber, dependent upon the site application and requirements. See specification detail below. This system benefits from **BS EN 858 testing conducted by HR Wallingford** and the inclusion of the unique SPEL coalescer, ensuring the **highest performance and simple maintenance.**







Class 1 Single Chamber Separator

Operation:

Flow enters the chamber from the inlet pipe, and the separation process begins as the flow moves towards the coalescer. Oil rises to the surface, silt settles out and the cleanest water then enters the coalescer which polishes the flow to a higher level prior to discharge.

The SPEL Puraceptor® benefits from the unique SPEL coalescer which is the heart of all SPEL separation systems. The foam insert is located in a stainless steel basket and delivers high quality water, long life, and ease of maintenance.

The other key component is the fail safe Automatic Closure Device (ACD) which will shut the system down in the event of a catastrophic oil spill.

Class 1 Two Chamber Separator

Operation:

The SPEL Two Chamber Separator is the result of long development with National Grid and has resulted in a system that can substantially reduce maintenance costs.

The Two Chamber unit has all the benefits of the Class 1 Puraceptor® but the addition of a strategically located full height baffle wall protects the unique coalescer from the bulk of the silt load.

The coalescer is mounted in the second chamber (clean zone) where it is more effective as well as being protected. The result is that it will not clog as quickly and this can equate to longer periods between maintenance.

SPEL Automatic Closure Device (ACD)

Overview

The purpose of the Automatic Closure Device (ACD) is to close the separator off automatically when the maximum capacity of light liquid/oil is reached.

The ACD ensures that in the event of a major spillage, pollutants do not pass into the drainage system; it should not be regarded as a substitute for an automatic alarm/monitoring system. The oil alarm and ACD are both required to comply with BS EN 858.

If the tank should fill with light liquid/oil the ACD, which is calibrated for a specific gravity of 0.85, will automatically sink and close off the SPEL Puraceptor®.

Normally routine maintenance would include removing light liquid intercepted within the Puraceptor®. If a SPEL automatic alarm/monitoring system is incorporated, it will automatically indicate when the Puraceptor® should be emptied. Only in an emergency will the Puraceptor® fill to its maximum and activate the ACD.

In such an event the Puraceptor® should be completely sucked out/emptied and the ACD lifted out.

Prior to installation

Prior to installation the ACD retaining tube should be covered with polythene to prevent ingress of concrete etc., which would fall onto the ACD and cause a malfunction.

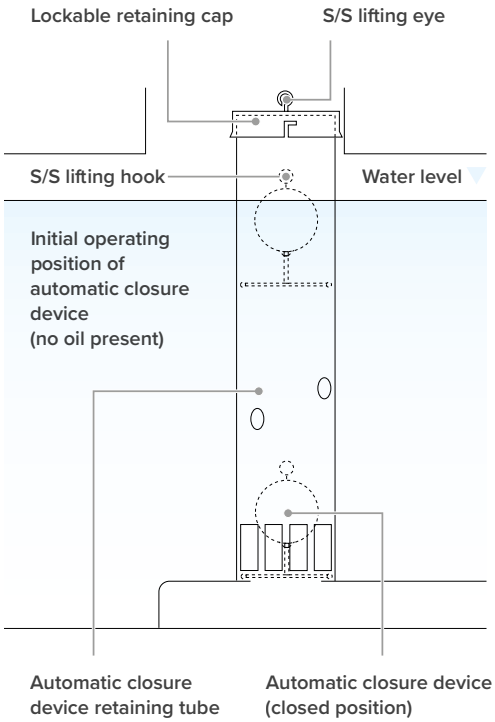
Maintenance

Dependent upon site conditions it is advisable to remove the ACD periodically taking care not to raise it too quickly and damage the plastic/copper float. Clean it from debris/silt to prevent premature closing. Check the seating in the base unit is free of debris/silt that could prevent proper closing in an emergency.

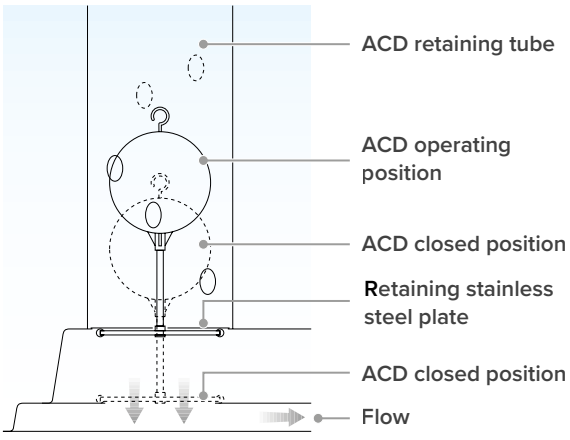
For Installation/Commissioning get in touch with our team: engineers@spelproducts.co.uk

'Companies who pollute the environment can be hit with unlimited financial penalties from the Environment Agency from today (11 December 2023).' *gov.uk, 'Unlimited penalties introduced for those who pollute environment' (11 December 2023)*

Automatic closure device **Type F** (Floating)
SPEL Puraceptor® class 1 separators
(two chamber) & full retention class 2 separators.



Automatic closure device **Type R** (Retained)
SPEL Puraceptor® class 1 separator
(single chamber).



SPEL Puraceptor® Class 1 Full Retention Separators

Single Chamber

Model	Series	Nominal Size (NS)	Catchment Area (m²)	Oil Storage (litres)	Silt Capacity (litres)	Overall Length* (mm)	Overall Diameter (mm)	Inlet Invert (mm)	Base to Inlet (mm)	Base to Outlet (mm)	Optimum In/Out Pipe Diameter** (mm)	Number of Access Shafts (dia. mm)				
		Flow (l/s)				L		A	B	C		450	600	750	900	1200
P004 1C/SC	200	4	222	40	400	1,720	1,225	630	1,110	1,050	160	-	-	1	-	-
P006 1C/SC	200	6	333	60	600	2,310	1,225	630	1,110	1,050	160	-	-	1	-	-
P010 1C/SC	200	10	556	100	1,000	3,410	1,225	630	1,110	1,050	160	-	-	1	-	-
P015 1C/SC	300	15	833	150	1,500	3,200	1,875	350	1,800	1,740	225	1	-	1	-	-
P020 1C/SC	300	20	1,111	200	2,000	3,540	1,875	350	1,800	1,740	225	-	1	1	-	-
FP 1C/SC	300	20	1,111	200	2,000	4,290	1,875	350	1,800	1,740	225	-	-	1	-	-
P030 1C/SC	300	30	1,667	300	3,000	4,420	1,875	390	1,760	1,700	300	-	1	-	1	-
P040 1C/SC	300	40	2,222	400	4,000	5,760	1,875	390	1,760	1,700	300	-	1	-	1	-
P050 1C/SC	300	50	2,778	500	5,000	7,060	1,875	390	1,760	1,700	300	-	1	-	1	-
P065 1C/SC	400	65	3,611	650	6,500	4,860	2,700	425	2,625	2,525	300	-	1	-	2	-
P080 1C/SC	400	80	4,444	800	8,000	5,700	2,700	425	2,625	2,525	300	-	1	-	2	-
P100 1C/SC	400	100	5,555	1,000	10,000	7,400	2,700	475	2,575	2,475	450	-	1	-	2	-
P125 1C/SC	400	125	6,944	1,250	12,500	8,580	2,700	475	2,575	2,475	450	-	-	1	2	-
P150 1C/SC	400	150	8,333	1,500	15,000	10,180	2,700	475	2,575	2,475	450	-	-	1	2	-
P165 1C/SC	400	165	9,166	1,650	16,500	11,200	2,700	500	2,550	2,450	450	-	2	1	1	-
P200 1C/SC	400	200	11,110	2,000	20,000	13,710	2,700	660	2,390	2,290	600	-	2	1	1	-
P250 1C/SC	400	250	13,888	2,500	25,000	16,750	2,700	660	2,390	2,290	600	-	2	1	2	-
P280 1C/SC	400	280	15,555	2,800	28,000	18,800	2,700	660	2,390	2,290	600	-	1	2	2	-
P300 1C/SC	500	300	16,665	3,000	30,000	12,410	3,650	805	3,070	2,970	750	-	1	2	2	-
P400 1C/SC	500	400	22,220	4,000	40,000	15,760	3,650	805	3,070	2,970	750	-	2	2	2	-
P500 1C/SC	500	500	27,775	5,000	50,000	20,530	3,650	955	2,920	2,820	900	-	2	2	1	1
P500 1C/SC	600	500	27,775	5,000	50,000	16,040	4,150	925	3,250	3,150	900	-	2	2	1	1
P600 1C/SC	600	600	33,330	6,000	60,000	19,080	4,150	925	3,250	3,150	900	-	2	2	-	2
P700 1C/SC	600	700	38,888	7,000	70,000	21,460	4,150	925	3,250	3,150	900	-	3	2	3	-
P800 1C/SC	600	800	44,440	8,000	80,000	23,020	4,150	925	3,250	3,150	900	-	3	2	2	1
P900 1C/SC	600	900	49,846	9,000	90,000	24,658	4,150	925	3,250	3,150	900	-	3	2	-	3

All of the above models are available without silt capacity, below are selected models for size comparison.
The P1000 model is only available in non silt format.

P050 1C	300	50	2,778	500	-	5,070	1875	390	1,760	1,700	300	-	-	-	1	-
P065 1C	400	65	3,611	650	-	3,710	2,700	425	2,625	2,525	300	-		-	2	-
P100 1C	400	100	5,555	1,000	-	5,250	2,700	475	2,575	2,475	450	-		-	2	-
P125 1C	400	125	6,944	1,250	-	6,090	2,700	475	2,575	2,475	450	-	-	-	2	-
P165 1C	400	165	9,166	1,650	-	7,960	2,700	500	2,550	2,450	450	-	2		1	-
P250 1C	400	250	13,888	2,500	-	11,830	2,700	660	2,390	2,290	600	-	2		2	-
P300 1C	400	300	16,665	3,000	-	14,120	2,700	660	2,390	2,290	600	-	2		2	-
P500 1C	500	500	27,775	5,000	-	14,340	3,650	955	2,920	2,820	900	-	2	2	1	1
P500 1C	600	500	27,775	5,000	-	11,470	4,150	925	3,250	3,150	900	-	2	2	1	1
P700 1C	600	700	38,888	7,000	-	15,880	4,150	925	3,250	3,150	900	-	3	2	3	-
P1000 1C	600	1,000	55,550	10,000	-	21,407	4,150	925	3,250	3,150	900	-	3	2	1	3

**Overall length subject to inlet/outlet and orientation.*

***SPEL Separators are designed for a maximum flow (NS/NSB) but can be fitted with larger than the recommended maximum connection size IN/OUT or with the addition of adapters providing the maximum flow (NS/NSB) cannot be exceeded or any increase in the operating level in the SPEL Separator to cause the captured pollutants to escape into the vent connections or through access shaft connections. Any overriding of the above criteria could jeopardise performance to the European Standard BS EN 858-1.*

Note: Model FP1C/SC is a special Forecourt separator with 7600 litre spillage holding capacity. ***See Forecourt separator detail on Page 3.14***

SPEL Puraceptor® Class 1 Full Retention Separators

Two Chamber

Model	Series	Nominal Size (NS)	Catchment area (m²)	Oil storage (litres)	Silt capacity (litres)	Overall length* (mm)	Overall diameter (mm)	Inlet Invert (mm)	Base to inlet (mm)	Base to outlet (mm)	Optimum in/out pipe diameter** (mm)	Number of access shafts (dia. mm)				
		Flow (l/s)				L		A	B	C		450	600	750	900	1200
P006 2C/SC	200	6	333	60	600	3,050	1,225	340	1,200	1,140	160	-	1	1	-	-
P010 2C/SC	200	10	556	100	1,000	4,690	1,225	340	1,200	1,140	160	-	1	1	-	-
P015 2C/SC	300	15	833	150	1,500	4,015	1,875	350	1,800	1,740	225	-	-	2	-	-
P020 2C/SC	300	20	1,111	200	2,000	4,015	1,875	350	1,800	1,740	225	-	-	2	-	-
FP 2C/SC***	300	20	1,111	200	2,000	5,500	1,875	350	1,800	1,740	225	-	-	2	-	-
P025 2C/SC	300	25	1,389	250	2,500	4,290	1,875	350	1,800	1,740	225	-	-	2	-	-
P030 2C/SC	300	30	1,667	300	3,000	4,420	1,875	390	1,760	1,700	300	-	-	2	-	-
P035 2C/SC	300	35	1,944	350	3,500	5,070	1,875	390	1,760	1,700	300	-	1	2	-	-
P040 2C/SC	300	40	2,222	400	4,000	5,760	1,875	390	1,760	1,700	300	-	1	2	-	-
P050 2C/SC	300	50	2,778	500	5,000	7,060	1,875	390	1,760	1,700	300	-	1	2	-	-
P065 2C/SC	300	65	3,611	650	6,500	9,180	1,875	390	1,760	1,700	300	1	-	2	-	-
P080 2C/SC	400	80	4,444	800	8,000	5,700	2,700	425	2,625	2,525	300	-	-	1	1	-
P100 2C/SC	400	100	5,555	1,000	10,000	7,400	2,700	475	2,575	2,475	450	-	-	1	1	-
P125 2C/SC	400	125	6,944	1,250	12,500	8,580	2,700	475	2,575	2,475	450	-	-	2	1	-
P150 2C/SC	400	150	8,333	1,500	15,000	10,180	2,700	500	2,550	2,450	450	-	-	2	1	-
P200 2C/SC	400	200	11,110	2,000	20,000	13,710	2,700	660	2,390	2,290	600	-	1	2	1	-
P250 2C/SC	400	250	13,888	2,500	25,000	16,752	2,700	660	2,390	2,290	600	-	2	1	2	-
P300 2C/SC	500	300	16,665	3,000	30,000	12,530	3,650	675	3,200	3,100	600	-	1	2	-	1
P400 2C/SC	500	400	22,220	4,000	40,000	15,980	3,650	675	3,200	3,100	600	-	2	2	2	-
P500 2C/SC	500	500	27,775	5,000	50,000	20,530	3,650	955	2,920	2,820	900	-	2	2	1	1
P500 2C/SC	600	500	27,775	5,000	50,000	16,260	4,150	925	3,250	3,150	900	-	2	1	1	1
P600 2C/SC	600	600	33,330	6,000	60,000	19,080	4,150	925	3,250	3,150	900	-	2	2	3	-
P700 2C/SC	600	700	38,888	7,000	70,000	22,270	4,150	925	3,250	3,150	900	-	3	2	3	-
P800 2C/SC	600	800	44,440	8,000	80,000	23,020	4,150	925	3,250	3,150	900	-	3	2	2	1
P900 2C/SC	600	900	50,000	9,000	90,000	24,658	4,150	925	3,250	3,150	900	-	3	2	1	2

*Overall length subject to inlet/outlet and orientation.

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***Note: Model FP2C/SC is a special Forecourt separator with 7600 litre spillage holding capacity. See Forecourt separator detail on Page 3.14