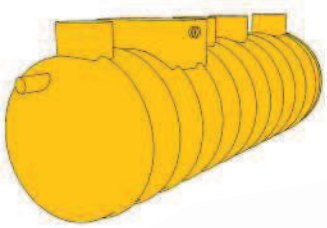
conder
ENVIRONMENTAL SOLUTIONS



the conder **SAF range** of package sewage treatment plants

techflo™ SAF 60-600 - single stream

techflo™ SAF 700-1800 - multi stream

above or below ground installation
granular or concrete backfill

demand special treatment

Conder Environmental Solutions (Conder) has further developed its range of package sewage treatment plants utilising proven Submerged Aerated Filter (SAF) technology for optimum performance and dependability. Using reliable, cost effective and energy efficient blowers for aeration with an integral flow management system, the range is packaged for installation completely below ground. The range can be adapted to provide an above ground treatment solution.

In standard configuration the plants offer treatment to a 20mg/l BOD: 30mg/l SS effluent quality standard with options for 20, 10 or 5mg/l NH_3 effluent quality.

Designed in accordance with the British Water Code of Practice for Flows and Loads, the Conder range will serve a population range from 60-600PE as a single stream unit. Larger populations can be accommodated with multiple stream plants. The SAF technology utilised in the Conder Techflo range has been type tested in accordance with BSEN 12566-3.

PRODUCT RANGE

The Techflo 60-600 range is suitable for larger-scale commercial applications including leisure facilities, hotels, schools, offices and industrial situations.

For larger applications, Conder's Technical Solutions division offers a range of modular sewage treatment systems up to 1800PE, utilising SAF technology. This modular system includes flow balancing, primary settlement/sludge storage, SAF Biozone (BOD removal and nitrification) and humus settlement as discrete stages. This design flexibility means that we can offer a bespoke solution within a package format. Please call our sales office for more information: 08702 640004. **Clereflo SAF 25-50** is the solution for housing developments and other smaller scale projects where access to mains drainage is not available. Typical applications include small communities or developments in rural areas.

The combination of features, benefits, high performance, reliability and quality assurance makes the Conder SAF range the product choice for 'off mains' drainage solutions.

FEATURES AND BENEFITS

- Type tested in accordance with BSEN 12566-3
- Proven SAF technology with reliable performance
- Completely below-ground installation
- Low running cost air-blower
- Easy to install – reduced costs
- Quiet, odourless operation
- Compact unitank design with no below ground moving parts
- Deeper inverts available
- Option for pumped influent or effluent
- Effluent Standard: 20mg/l BOD; 30mg/l SS; 20-5mg/l NH_3
- High Rate nitrification options available
- Plants suitable for installation with either granular or concrete backfill

PRODUCT SELECTOR

All applications should be specified to comply with the British Water Code of Practice for Flows and Loads. Further advice and assistance is available from our experienced internal and external sales teams. Site visits and assessments are recommended to ensure the correct equipment is proposed for each application.

The correct plant should be selected to meet the requirements of the applicable discharge consent granted by the Environment Agency, SEPA or EHS (NI).

PLANT	DRY WEATHER FLOW (DWF) m^3/d	MAX LOAD PER DAY		MINIMUM DESLUDGE PERIOD
		BOD kg	NH_3 kg	
Techflo SAF 60	12	3.6	0.48	90
Techflo SAF 75	15	4.5	0.6	90
Techflo SAF 100	20	6	0.8	90
Techflo SAF 125	25	7.5	1.0	90
Techflo SAF 150	30	9	1.2	90
Techflo SAF 200	40	12	1.6	60
Techflo SAF 250	50	15	2.0	60
Techflo SAF 300	60	18	2.4	60
Techflo SAF 350	70	21	2.8	60
Techflo SAF 400	80	24	3.2	60
Techflo SAF 500	100	30	4.0	60
Techflo SAF 600	120	36	4.8	60

* Desludge period is at maximum loading, plants not loaded to maximum will have longer desludge periods

**Different desludge periods can be accommodated, please contact us for further information

process and plant description

The Conder SAF 60-600 treatment plant comprises a single tank (unitank) or two tanks (semi-modular), or three tanks (modular). The tank(s) form three treatment stages: primary settlement, biological treatment (biozone) and humus settlement. Flow through all of the treatment stages from inlet to outlet is by gravity.

The incoming wastewater is received in the primary settlement zone. The purpose of the zone being twofold; to remove the majority of the incoming settleable material reducing the biological load passing forward to the biozone; and to store this material (primary sludge) along with humus sludge (returned from the humus zone) until it is periodically removed by desludging. The primary zone has two compartments to ensure efficient operation. The primary zone also incorporates a flow balancing facility where, periodically, the liquid level is lowered by an airlift transferring some of the contents forward into the biozone. This creates a storage volume which is filled before gravity flow into the biozone continues.
Flow from the primary zone passes forward into the biozone.
The biozone contains a number of sections (depending on the plant size and required discharge consent), which contain structured plastic media. The high surface area of the media encourages growth of the bacteria and other organisms (biomass) which treat the wastewater. Air, by means of above ground blower(s), is introduced below the media. The air fulfils two functions: supplying the oxygen required by the biomass; scouring the media, removing excess biomass.

The combination of treated wastewater and excess humus solids is transferred forward into the humus settlement zone. In this zone the humus solids settle to the bottom of the tank with the treated water (final effluent) being discharged at the top. The humus solids (humus sludge) which settle to the bottom of the tank are transferred to the primary zone by means of an airlift pump, where they are ultimately removed by the desludging operation.

PLANT KIOSK

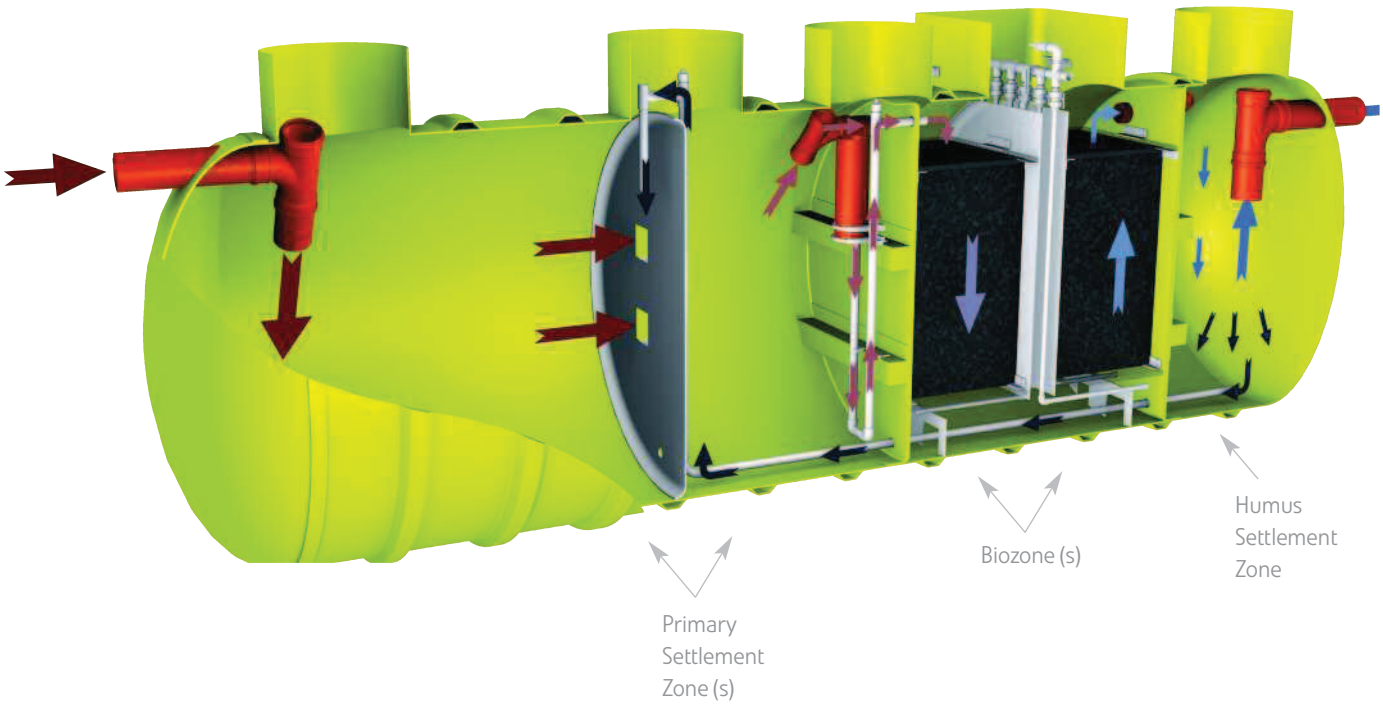
All Conder Techflo SAF plants are provided with a painted mild steel plant kiosk. This kiosk houses the aeration blowers, timer valve(s) and the electrical control panel.

The side channel blower(s) fitted within the kiosk vary in capacity and utilise either single of three phase electrical supply. Please contact us for further information.

The electrical control panel provides all of the required electrical equipment for the starting, running and monitoring of the plant. The control panel can be adapted to accommodate other mechanical / electrical devices associated with the plant, for example a final effluent pump station.

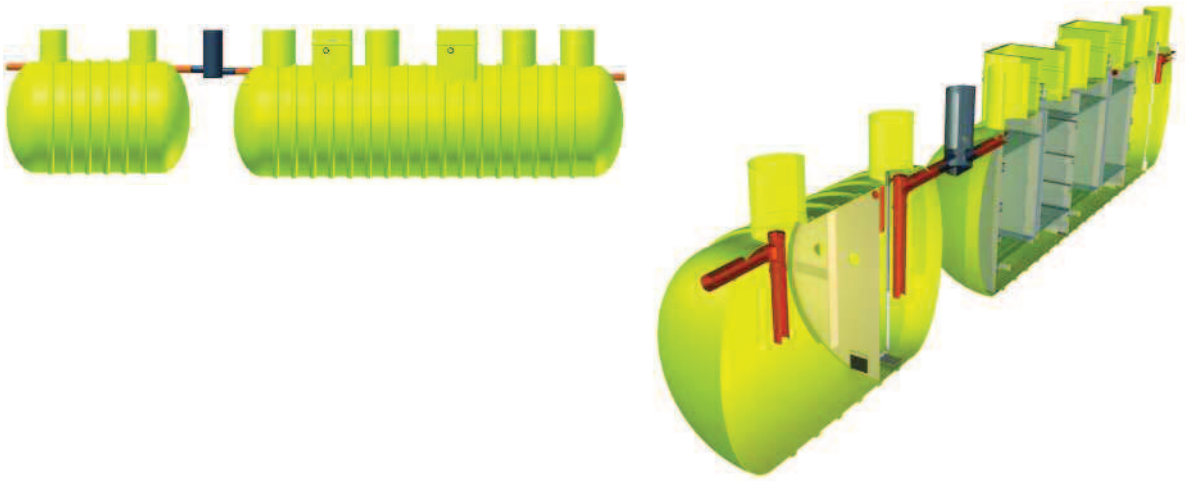
The kiosk is fitted with an alarm beacon as standard and can be provided with telemetry for remote plant monitoring.

CONDER TECHFLO SAF UNITANK TREATMENT PLANT

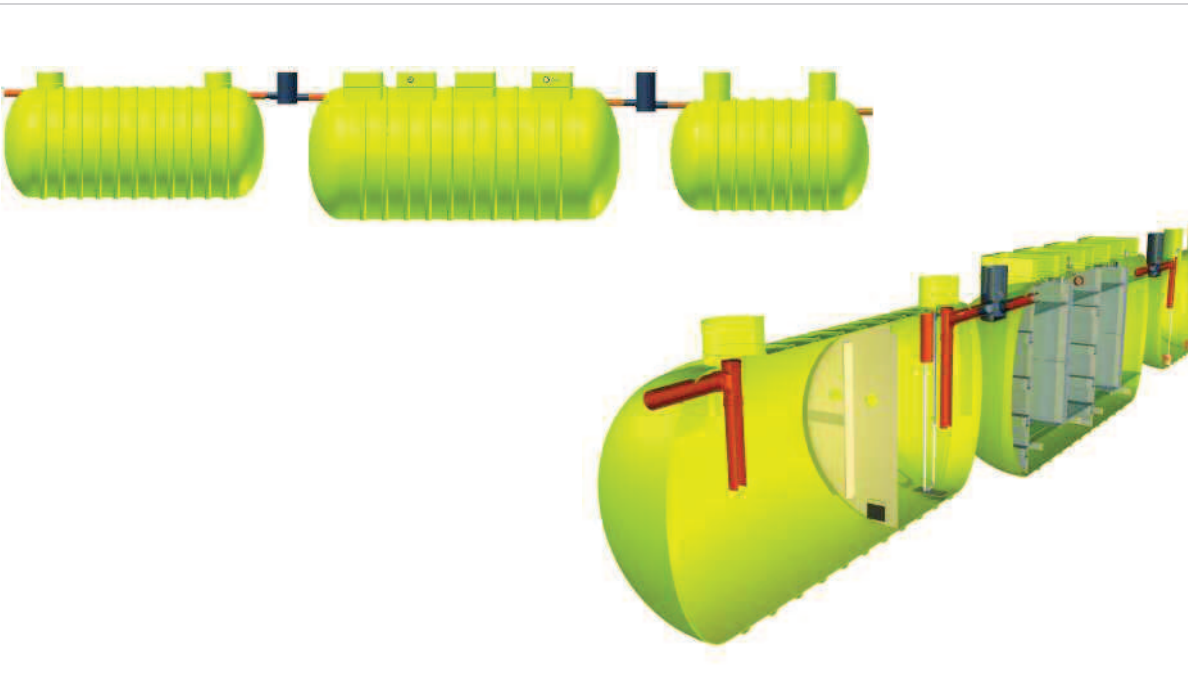


semi modular & modular

PRIMARY SETTLEMENT TANK AND COMBINED BIOZONE AND HUMUS SETTLEMENT TANK



PRIMARY SETTLEMENT TANK, BIOZONE TANK AND HUMUS SETTLEMENT TANK



* The system layout for semi-modular and modular plants is flexible, i.e. tanks can be installed in series or in parallel.
** Above ground options also available.

specification and installation

INSTALLATION

Conder advises the use of a suitably experienced and qualified installation company to install any of its products. For suggested installers in your area, please contact our sales team on: 08702 640004. Care should be taken to fully assess the site ground conditions prior to commencement of installation. Detailed installation guidelines are provided for each product. All electrical work should be carried out in accordance with current regulations (for example NIC EIC / building regulations). All Conder SAF plants are manufactured to allow installation with either granular or concrete backfill, client's choice. Granular backfill will provide significant reductions in installation costs.

TECHFLO SAF PLANT SELECTION TABLE

PLANT	DISCHARGE AMMONIA LEVEL (mg/l)		
	20	10	5
Techflo SAF 60	Unitank	Unitank	Unitank
Techflo SAF 75	Unitank	Unitank	Unitank
Techflo SAF 100	Unitank	Unitank	Unitank
Techflo SAF 125	Unitank	Unitank	Semi Modular
Techflo SAF150	Unitank	Unitank	Semi Modular
Techflo SAF 200	Unitank	Semi Modular	Semi Modular
Techflo SAF 250	Semi Modular	Modular	Modular
Techflo SAF 300	Semi Modular	Modular	Modular
Techflo SAF 350	Semi Modular	Modular	Modular
Techflo SAF 400	Modular	Modular	Modular
Techflo SAF 500	Modular	Modular	on request
Techflo SAF 600	Modular	on request	on request

* Larger applications, or those which are outside the scope of the above table are available, please contact us for details.

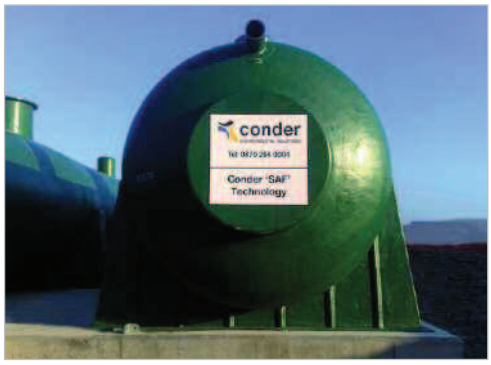
SERVICE

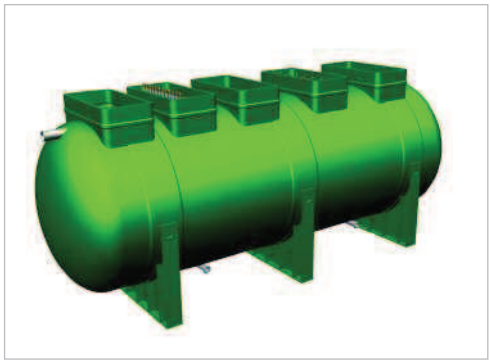
Conder recommends that a maintenance agreement is taken out to service the plant as indicated in the Environment Agency Guideline PPG4. Desludging of the Primary Tank should take place between 60-365 days depending on the size of the plant and the plant loading. Through a nationwide network of British Water accredited engineers, Conder's service partner Pims Service, offers a comprehensive range of services including commissioning and ongoing service contracts.

Hire/lease and buy back options available.

OPTIONAL EXTRAS

- Client specified Control Panel e.g. Form 4
- Standby Blower
- Client specified Control Kiosk
- Access Shafts (for deeper pipework inverts)
- Sample Chamber
- Phosphate Reduction
- UV Disinfection
- Scada/Telenetry
- GMS Dial Out
- Tertiary Treatment
- Heavy-duty Covers
- Acoustically lagged controlled Kiosk





overground option

Techflo SAF Standard Plant Sizing Table

UNITANK

UNITANK SYSTEMS

PLANT	PRIMARY SETTLEMENT ZONE / BIOZONE / HUMUS ZONE TANK	
	TANK DIAMETER (m)	OVERALL LENGTH (m)
Techflo SAF 60N20	2.5	5.220
Techflo SAF 60N10	2.5	6.030
Techflo SAF 60N05	2.5	6.808
Techflo SAF 75N20	2.5	5.920
Techflo SAF 75N10	2.5	7.108
Techflo SAF 75N05	2.5	7.678
Techflo SAF 100N20	2.5	7.830
Techflo SAF 100N10	2.5	8.880
Techflo SAF 100N05	2.5	9.918
Techflo SAF 125N20	2.5	9.550
Techflo SAF 125N10	2.5	11.175
Techflo SAF150N20	2.5	11.215
Techflo SAF150N10	2.5	12.880
Techflo SAF 200N20	2.5	13.365

SEMI-MODULAR

SEMI-MODULAR-TWO TANK SYSTEMS

	PRIMARY SETTLEMENT TANK		BIOZONE / HUMUS ZONE TANK	
	TANK & DIAMETER (m)	OVERALL LENGTH (m)	TANK DIAMETER (m)	OVERALL LENGTH (m)
Techflo SAF 125N05	PT18-2.5	4.118	2.5	8.780
Techflo SAF 150N05	PT22-2.5	4.921	2.5	10.208
Techflo SAF 200N10	PT22-2.5	4.921	2.5	11.108
Techflo SAF 200N05	PT22-2.5	4.921	3.0	10.450
Techflo SAF 250N20	PT27-2.5	5.950	2.5	10.800
Techflo SAF 300N20	PT32-2.5	6.970	2.5	12.684
Techflo SAF 350N20	PT40-2.5	8.598	2.5	14.384

MODULAR

MODULAR-THREE TANK SYSTEMS

	PRIMARY SETTLEMENT TANK		BIOZONE TANK		HUMUS SETTLEMENT TANK	
	TANK & DIAMETER (m)	OVERALL LENGTH (m)	TANK DIAMETER (m)	OVERALL LENGTH (m)	TANK & DIAMETER (m)	OVERALL LENGTH (m)
Techflo SAF 250N10	PT27-2.5	5.950	3.0	7.135	HM20-2.5	4.524
Techflo SAF 250N05	PT27-2.5	5.950	3.0	8.850	HM20-2.5	4.524
Techflo SAF 300N10	PT32-2.5	6.970	3.0	8.250	HM24-2.5	5.430
Techflo SAF 300N05	PT32-2.5	6.970	3.0	10.210	HM24-2.5	5.430
Techflo SAF 350N10	PT40-2.5	8.598	3.0	9.150	HM27-2.5	5.950
Techflo SAF 350N05	PT40-2.5	8.598	3.0	12.340	HM27-2.5	5.950
Techflo SAF 400N20	PT45-2.5	9.616	3.0	7.135	HM32-2.5	6.970
Techflo SAF 400N10	PT45-2.5	9.616	3.0	10.210	HM32-2.5	6.970
Techflo SAF 400N05	PT45-2.5	9.616	3.0	13.328	HM32-2.5	6.970
Techflo SAF 500N20	PT54-2.5	11.450	3.0	8.850	HM45-2.5	9.616
Techflo SAF 500N10	PT54-2.5	11.450	3.0	12.340	HM45-2.5	9.616
Techflo SAF 600N20	PT65-2.5	13.690	3.0	10.210	HM45-2.5	11.450

* Standard plant inlet invert depth is 1m. Deeper inlet options are available.
The tank sizes detailed in the above table refer to our standard plant configurations. We can offer bespoke solutions to suit different plant configurations and footprint requirements, for both below ground and above ground plants. If you have particular plant requirements please contact us for further details.

about conder environmental solutions

Protecting the water environment has been the mission of Conder Environmental Solutions, since it was established in the early 1970s. The business is organised into specialist divisions: Conder Products, Conder Technical Solutions, Conder Pumping Solutions.
Our full capability extends beyond our successful range of 'sealed-design' commodity products, to providing expert consultancy and design for hi-specification bespoke packages across all areas of wastewater pollution control.

Conder works closely with engineers, architects, specifiers, developers and self-builders. Providing support from detailed site surveys, plant selection, full technical proposals and liaison with regulatory bodies where necessary, we will ensure that our client achieves the most environmentally sound and cost-effective solution.

CONDER PRODUCTS

Our specialist commodity division offers a portfolio of products ranging from oil/water separators and small sewage treatment plant, to pumping stations and attenuation or storm water balancing tanks. Our Clereflo range of small-scale domestic sewage treatment plants serve 6-50 population equivalents, utilising either Activated Sludge Plant (ASP) or Submerged Aerated Filter (SAF) technology. Highly price-competitive, with minimal running costs, the Clereflo range is the low energy solution for applications where access to mains drainage is not available.

CONDER TECHNICAL SOLUTIONS

The capability of Conder's Technical Solutions division illustrates the breadth of the company's expertise and has established Conder as the authority in hi-specification projects. As a solutions provider our expertise extends across a product range that includes SAF technology unitank and modular sewage treatment systems up to 1800pe, Membrane BioReactor package sewage treatment up to 5000pe, attenuation, engineered vessels and other specialist tanks.

CONDER PUMPING SOLUTIONS

We offer a range of water and wastewater pumping solutions for domestic, commercial and industrial applications from off the shelf packages, through to custom-built pumping solutions.

SERVICE

Products installed to protect the environment must be maintained and serviced regularly to ensure that they continue to operate efficiently and effectively. Failure to do this will undoubtedly lead to pollution of the water environment, which is an offence and may result in prosecution. Through a nationwide network of British Water accredited engineers, Pims Service, Conder's service partner, offers a full service and technical package which can include product support, commissioning, waste management and ongoing service and maintenance programmes.

let us make your environment
a better place to be...
demand special treatment

ASP 6-20pe Package Sewage Treatment Plant

NSAF 25-50pe

Techflo SAF 60-600pe single-stream and multi-stream up to 1800pe

MBR Membrane Technology Package Sewage Treatment Systems (up to 5000pe)

General Underground Storage Tanks

For product enquiries, specification advice, project assessments or further information, please contact the Conder team on:

conder
ENVIRONMENTAL SOLUTIONS

t: 08702 640004 **f:** 08702 640005 **e:** sales@conderproducts.com
www.conderproducts.com
Conder Solutions Ltd, 2 Whitehouse Way,
South West Industrial Estate, Peterlee, Co Durham SR8 2RA

For nationwide service enquiries please contact:

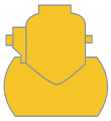
PIMS GROUP

Pims (Services) Ltd
t: 0870 405 0902 **f:** 01252 516404 **e:** sales@pimsgroup.co.uk
www.pimsgroup.co.uk

A member of

BRITISH WATER
UVDB UTILITIES PREQUALIFICATION SCHEME
CPD MEMBER Construction CPD Certification Service
FM 81587 BS EN ISO 9001:2000
eps Pumping & Treatment Systems

Attenuation & Storm Water Balancing

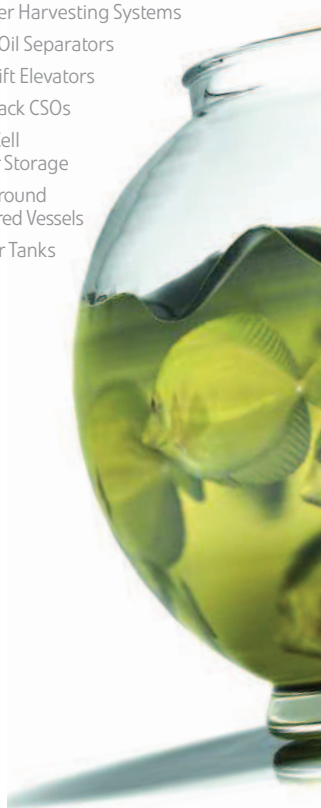


Class 1&2 Bypass & Full Retention oil/water separators

Package Pump Stations

Plus:

Double Wall Tanks
Fuel Tanks
Cesspools & Septics
Rainwater Harvesting Systems
Grease/Oil Separators
Bucket Lift Elevators
Screenpack CSOs
ConderCell Modular Storage
Above Ground Engineered Vessels
Sprinkler Tanks



Conder Solutions Ltd is part of the EPS group of companies.
We reserve the right to alter specification without prior notice.

TM – Techflo is a registered Trade Mark
TM – Clereflo is a registered Trade Mark