

### **DETAILS OF PROPOSED SEWAGE TREATMENT PLANT**

The Environment Agency provided a response to the previous planning application in their letter dated 16 January 2009 (EA reference: WA/2008/105705/01-L01). The Environment Agency objected to the proposed development on the following grounds:

***We OBJECT to the application as submitted because it involves the use of a non-rains foul drainage system but no assessment of the risks of pollution to the water environment has been provided by the applicant. We recommend that planning permission should be refused on this basis.***

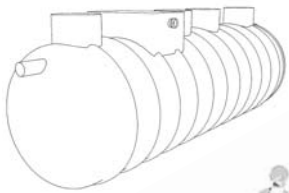
The Environment Agency advised that either a package sewage treatment plant is installed and a discharge consent applied for, or a mains drainage connection be implemented. Therefore, in response to the Agency's objection it is now proposed to install a package sewage treatment plant (STP) on site with controlled discharge to the Gagle Brook. An appropriate treatment plant will be provided which meets the requirements of the discharge consent and the anticipated flow. An application for a discharge consent will be made to the Environment Agency and discussions held with the Agency to agree an appropriate treatment plant for the site post-planning. At this stage a package STP such as the Conder clereflo SAF50 is being considered which is appropriate for a population of up to 50 (a full-time staff of 40 is proposed) and meets stringent effluent standards.

# demand special treatment

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

clereflo™ SAF 25-50

techflo™ SAF 75-150



# about conder environmental solutions ltd

Protecting the water environment has been the mission of Conder Environmental Solutions (Conder), since it was established in the early 1970s. The business is organised into specialist divisions: Conder Products, Conder Technical Solutions, Conder Pumping Solutions and Hydrosolve, our service division. 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 2000pe, 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 – HYDROSERVE

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, **Hydrosolve**, Conder's service division, offers a full service and technical package which can include product support, commissioning, waste management and ongoing service and maintenance programmes.

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. In standard configuration the plants offer treatment to a 20mg/l BOD; 30mg/l SS; 20mg/l NH<sub>3</sub> effluent quality standard. The configuration of the plants can be adapted to achieve higher rate nitrification, to 5mg/l NH<sub>3</sub>.

Designed in accordance with BSEN12566-3:2005 (applicable for plants up to 50 population size) and with the British Water Code of Practice for Flows and Loads, the Conder SAF range will serve a population range from 25-150.



## PRODUCT RANGE

**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 Techflo SAF 75-150** range is suitable for larger-scale commercial applications including leisure facilities, hotels, schools, offices and industrial situations.

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

- 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<sub>3</sub>
- High Rate nitrification options available

## 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.

Standard Range plants produce an effluent quality of 20mg/l BOD; 30mg/l SS; 20mg/l NH<sub>3</sub>. High rate nitrification is available down to 5mg/l NH<sub>3</sub>. The correct plant should be selected to meet the requirements of the discharge consent granted by the Environment Agency, SEPA or EHS.

PRODUCT REFERENCE (pe)	MAX FLOW PER DAY (m <sup>3</sup> )	MAX LOAD PER DAY		MINIMUM DESLUDGE PERIOD
		BOD kg	NH <sub>3</sub> kg	
Clereflo SAF 25	5	1.5	0.2	180
Clereflo SAF 35	7	2.1	0.28	120
Clereflo SAF 50	10	3	0.4	120
Techflo SAF 75	15	4.5	0.6	90
Techflo SAF 100	20	6	0.8	90
Techflo SAF 125	25	7.5	1	90
Techflo SAF 150	30	9	1.2	60

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

## process and plant description

The Conder SAF 25-150 treatment plant comprises a single tank (unitank). Within the tank there are three treatment stages: primary settlement; biological treatment (biozone) and humus settlement. The flow from inlet to outlet is by gravity.

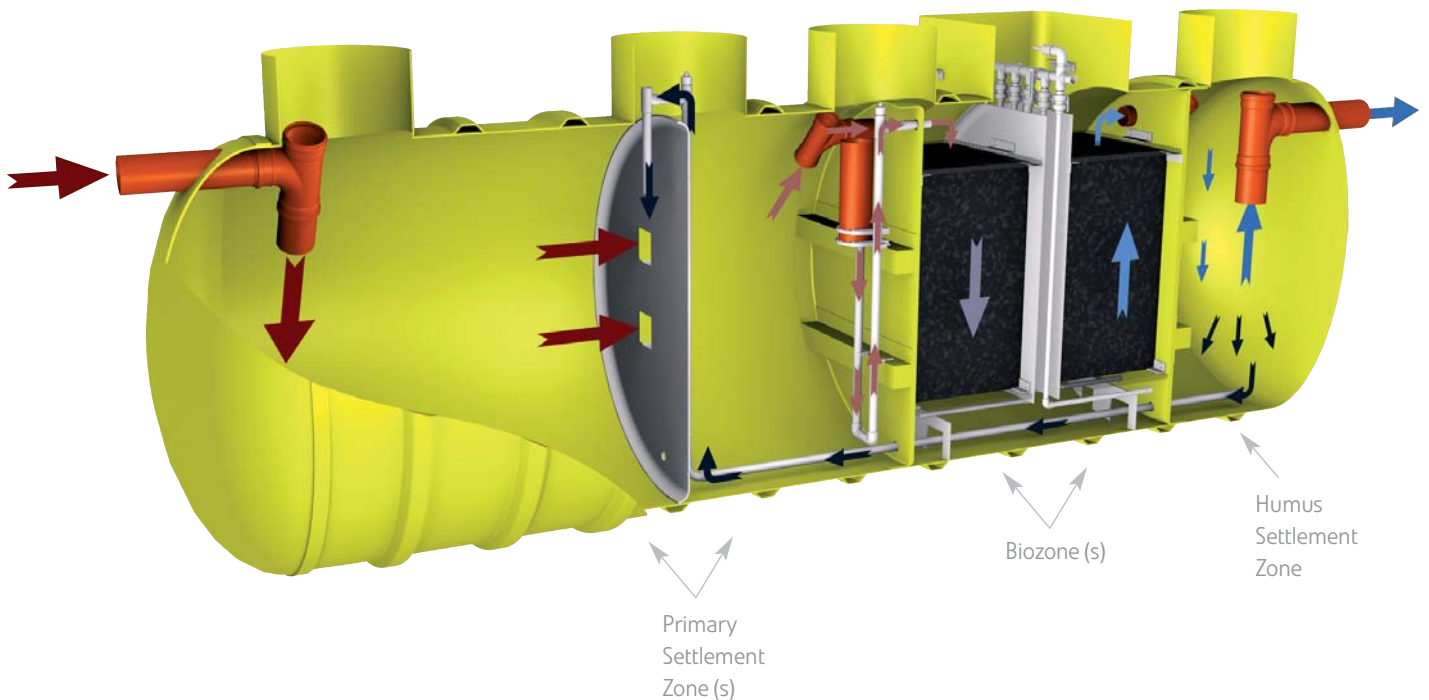
The incoming wastewater is received in the primary settlement zone. The purpose of the zone being twofold; to remove the majority of the incoming settleable material reducing the biological load passing forward to the biozone; and to store this material (primary sludge) along with humus sludge (returned 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.

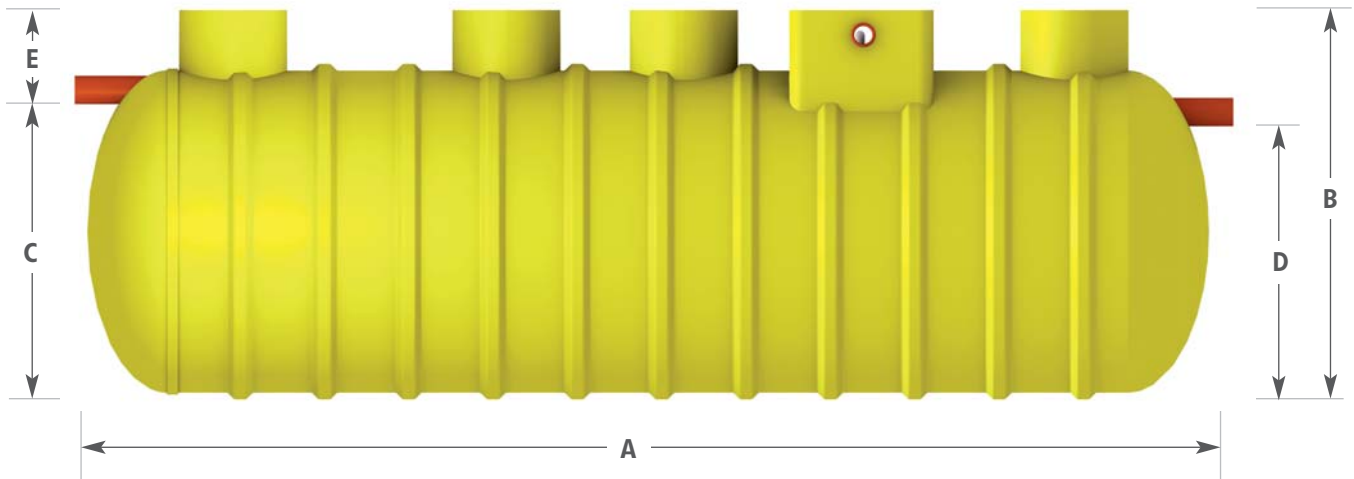
### THE CONDER SAF 25-150 TREATMENT PLANT



# 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).



PRODUCT REFERENCE (pe)	GROSS CAPACITY (l)	TANK DIA (mm)	INLET/OUTLET PIPE DIA (mm)	A (mm)	B* (mm)	C* (mm)	D* (mm)	E* (mm)
Clereflo SAF 25	12700	1800	160	5300	2625	1625	1500	1000
Clereflo SAF 35	15300	1800	160	6300	2625	1625	1500	1000
Clereflo SAF 50	20500	1800	160	8350	2625	1625	1500	1000
Techflo SAF 75	32000	2500	160	6960	3290	2290	2155	1000
Techflo SAF 100	39000	2500	160	8420	3290	2290	2155	1000
Techflo SAF 125	47000	2500	160	10030	3290	2290	2155	1000
Techflo SAF 150	51900	2500	160	11030	3290	2290	2155	1000

\* Deeper inverts can be accommodated with extension shafts.

## 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 division Hydroservice, offers a comprehensive range of services including commissioning and ongoing service contracts.

## OPTIONAL EXTRAS

- Client specified Control Panel e.g. Form 4
- Standby Blower
- Client specified Control Kiosk
- Access shafts (for deeper pipework inverts)
- Sample chamber

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



ASP 6-20pe Package Sewage Treatment Plant



SAF 25-150pe unitank & modular up to 2000pe



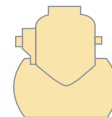
MBR Membrane Technology Package Sewage Treatment Systems (up to 5000pe)



General Underground Storage Tanks



Attenuation & Storm Water Balancing



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



Package Pumping Stations

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



t: 08702 640004 f: 08702 640005 e: sales@conderproducts.com

[www.conderproducts.com](http://www.conderproducts.com)

Conder Environmental Solutions Ltd, 2 Whitehouse Way,  
South West Industrial Estate, Peterlee, Co Durham SR8 2HZ

**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

For nationwide service enquiries please contact:



t: 08704 050902 f: 08704 050903 e: enquiries@hydroserve.net

[www.hydroserve.net](http://www.hydroserve.net)



Conder Environmental Solutions Ltd is part of Conder Environmental Group plc.  
We reserve the right to alter specification without prior notice.

TM – Techflo is a registered Trade Mark

TM – Clereflo is a registered Trade Mark