

Appendix 5C
Wastewater Treatment Plant

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UK*

* EXCLUDING NORTHERN IRELAND



WASTEWATER TREATMENT

Tricel® Novo

For Single Dwellings & Small Communities

Innovative design for superior performance



What is the Tricel Novo

Tricel Novo wastewater treatment plants are reliable, easy to install and simple to maintain for all wastewater requirements. These highly functional plants can cater for ranges from 1 to 50 PE (Population Equivalent).

The Tricel Novo submerged aeration plant is suitable for domestic and light commercial or communal applications and uses simple proven fixed bed technology. Each system comprises of three independent treatment zones, all fulfilling a different stage of the purification process.

The Tricel Novo treatment efficiencies are as follows:

BOD ₅	11 mg/l
SS	16 mg/l
NH4-N	8mg/l

European Certification Requirements

All Tricel wastewater treatment plants have been tested to European certification EN 12566-3. This certification tests all plants for strength, water tightness, durability and treatment efficiency.

By using a wastewater treatment plant which is CE certified clients can rest assured that it has complied with tests and inspections which guarantee a high level of security and efficiency.

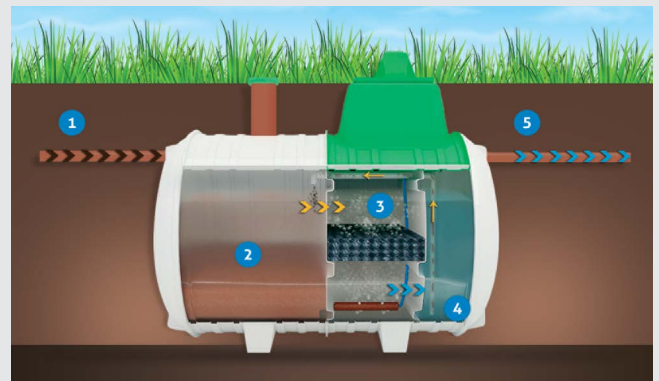
How a Tricel Novo works

These plants use a simple, proven technology, consisting of three treatment zones. In each zone a different stage of the treatment occurs.

1. Wastewater from the dwelling, toilets, sinks, shower etc., enters the plant.
2. Effluent enters the primary settlement chamber. Settlement occurs when the heavier solids drop out of the wastewater and settle to the bottom of the tank to create sludge, and the lighter solids float to the top of the water to create a scum. The top layer acts as a seal and stops odours escaping. This chamber separates up to 70% of the solids present.
3. Next is the aeration chamber, where masses of naturally occurring bacteria inhabit specially designed plastic filter media. The bacteria feed on the waste removing it from the liquid. A continuous supply of air from a low pressure, high volume compressor in the top section of the unit sustains these bacteria. Wastewater passes through the filter media over and over, ensuring a very high treatment efficiency.
4. The liquid then proceeds to the final settlement chamber. Any remaining minute bacterial particles separate from the liquid within this chamber before discharge from the plant. This process slows the liquid's velocity,

allowing for any final trace impurities to settle to the bottom of the tank section. A sludge return system then returns these impurities back to the primary settlement chamber.

5. The remaining treated liquid now meets the required standard and is safely passed out of the Tricel Novo plant system. This treated effluent is now ready for discharge to a suitably designed discharge area as required by the relevant local authority.



Tricel Novo wastewater treatment plant has an overall efficiency of 95.9% BOD removal

Key features & benefits

- ▶ **Compression moulded SMC tank.** The compression moulding process is one of the most technologically developed processes available to manufacture structural composites. Components are manufactured under heat and high pressure and have unrivalled strength and durability over standard tanks or polyethylene tanks.
- ▶ SMC is unique in the wastewater treatment industry with Tricel SMC tanks operating in some of the harshest climatic conditions for over 50 years with no defects.
- ▶ Tricel's **ceramic diffuser** is unique in the domestic wastewater treatment plant market and will last twice as long as all standard competitor rubber equivalents. This saves money in both call out fees and replacement parts.
- ▶ **No concrete backfill** for installation on most sites saving up to £300 over lower quality GRP or polyethylene alternatives from competitors.
- ▶ Complies with Environment Agency general binding rules in England, Natural Resources Wales exemption criteria and SEPA requirements. Tricel advise consulting with your local agency on the level of effluent treatment required.
- ▶ No moving parts or pumps in the plant ensuring reliable operation and minimal maintenance and repair costs.
- ▶ **Factory fitted alarm** on all systems.
- ▶ Integrated pumped outlet available on all systems.

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environment@tricel.co.uk

Homeowners: individual domestic installation



- ▶ The lightweight nature of the system makes for easy on-site delivery.



- ▶ No need for big excavators and large holes that disrupt and disturb your garden.



- ▶ Very low visual impact from fully installed units.

Larger projects: commercial installations up to 50 PE



- ▶ These plants are suitable for installation at housing estates, camping sites, hotels etc., and have low maintenance and running costs.



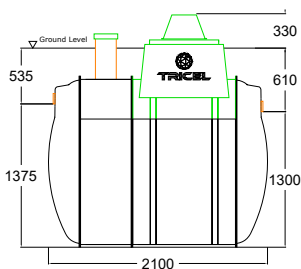
- ▶ Each wastewater treatment plant is constructed of lightweight SMC and is easy to manoeuvre which simplifies the installation process.



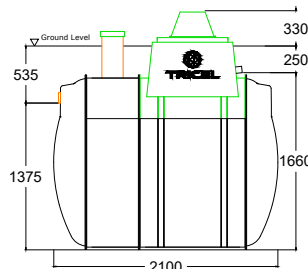
- ▶ Example of a fully installed 50 PE Novo wastewater treatment plant in a 5-star hotel.

Technical characteristics/ Plant dimensions

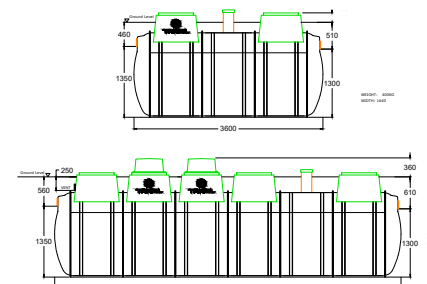
Novo Design population	No. of people	Length	Width	Height	Nominal inlet/outlet diameter	Weight empty	Inlet invert to base	Outlet invert to base	Inlet invert to ground level	Air blower rating
		m	m	m	mm	kg	m	m	watts	
UK6	1-6	2.1	1.64	2.24	110	270	1.375	1.3	0.535	64
UK8	2-8	2.6	1.64	2.24	110	300	1.375	1.3	0.535	86
UK10	3-10	3.1	1.64	2.24	110	370	1.375	1.3	0.535	86
UK12	4-12	3.6	1.64	2.27	110	400	1.375	1.3	0.535	100
UK18	6-18	4.6	1.64	2.27	110	500	1.375	1.3	0.535	215
UK24	8-24	5.6	1.64	2.27	110	600	1.375	1.3	0.535	215
UK30	10-30	6.6	1.64	2.27	150	700	1.35	1.3	0.56	215
UK36	Tank A	12-36	2.6	1.64	150	300	1.35	1.3	0.46	215 + 86
	Tank B		5.6	1.64	2.27	150	600	1.35	1.3	
UK42	Tank A	14-42	3.6	1.64	150	400	1.35	1.3	0.46	215 x 2
	Tank B		5.6	1.64	2.27	150	600	1.35	1.3	
UK50	Tank A	16-50	3.6	1.64	150	400	1.35	1.3	0.46	215 x 2
	Tank B		6.6	1.64	2.27	150	700	1.35	1.3	



- ▶ **UK6 gravity outlet**
Up to 6 PE domestic gravity flow outlet.



- ▶ **UK6 pumped outlet**
1-6 domestic pumped unit. Suitable for pumping to a raised discharge area (over).



- ▶ **UK50 gravity outlet**
Suitable for commercial installation, caters for up to 50 people.

Tricel Novo riser options for deep installation

Tricel offer three different manhole riser heights to suit different invert/inlet levels. Manhole risers allow for the positioning of the treatment plants at the depth which is optimum to each individual installation. Wastewater is gravity fed from the home to your treatment plant. The inlet pipe's position from the premises determines the excavation depth for the wastewater treatment plant. Tricel offer a choice of manhole risers 250mm/500mm/750mm to help with installation where site conditions require a flexible solution.

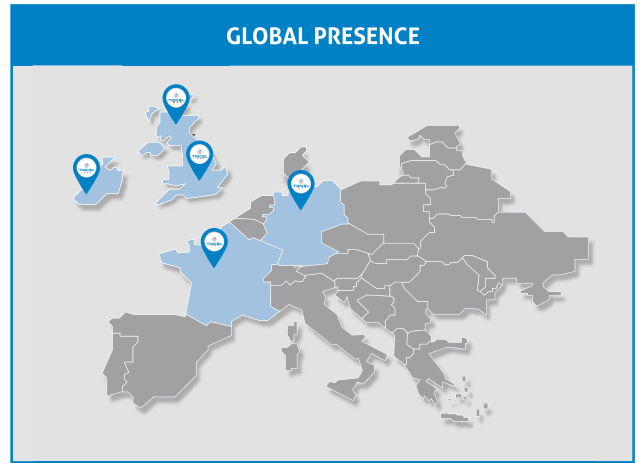
Tricel Group

Tricel is a world recognised global provider of **high-performance solutions**. Today, the company operates across multiple industries such as **Environmental, Construction, Water and Distribution**, including both composite materials and lubricants.

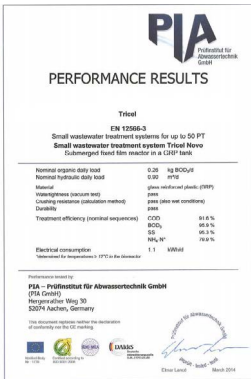
We occupy a unique position in the field of reinforced plastics, combining the technical expertise of **over 60 years in the press-moulding and composites industry**. Tricel is proud of being one of the largest manufacturers of wastewater treatment plants in Europe, and are regarded by regulators as the standard setters within the industry.

Tricel are **experts in Sheet Moulding Compound (SMC)** processes and produce the only wastewater treatment plant in Europe constructed from this material. This process gives the highest strength to thickness ratio of any tank on the market, and has no risk of corrosion over time.

Our company offers industry **leading innovative solutions** that our customers can trust, and with operations in 12 locations across Europe we supply a comprehensive range of products to **over 50 countries worldwide**.



Membership of European governing bodies on wastewater treatment



Tricel wastewater treatment plants are fully tested and accredited to **European standards for CE certification**.

PIA (Prüfinstitut für Abwassertechnik GmbH) are the leading Test Institute in Europe for wastewater technology.

Tricel wastewater treatment plants meet with **EN12566-3** requirements which test both the quality of the components as well as the overall performance of the plant.



British Water is the leading association representing suppliers, manufacturers, contractors, consultants and others in the UK water industry supply chain.

WARRANTY - UK ONLY* *EXCLUDING NORTHERN IRELAND



- The warranty period for **mechanical parts** within the products is **3 years** from the date of purchase. This includes the compressor, control panel, ceramic diffuser and all internal components.
- The SMC structure of the tanks carry a **20 year warranty** from date of purchase.
- All products are **CE certified to EU safety, health and environmental requirements**.

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In accordance with Tricel's normal policy of product development these specifications are subject to change without notice.

