WASTEWATER TREATMENT

Compact filter

From 10 to 54 EH/PE

TRICEL

GENERATIONS OF INNOVATION

Tricel® Seta

Simple

Robust

Reliable

Model discontinued - replaced by Tricel Filtro

www.tricel.fr

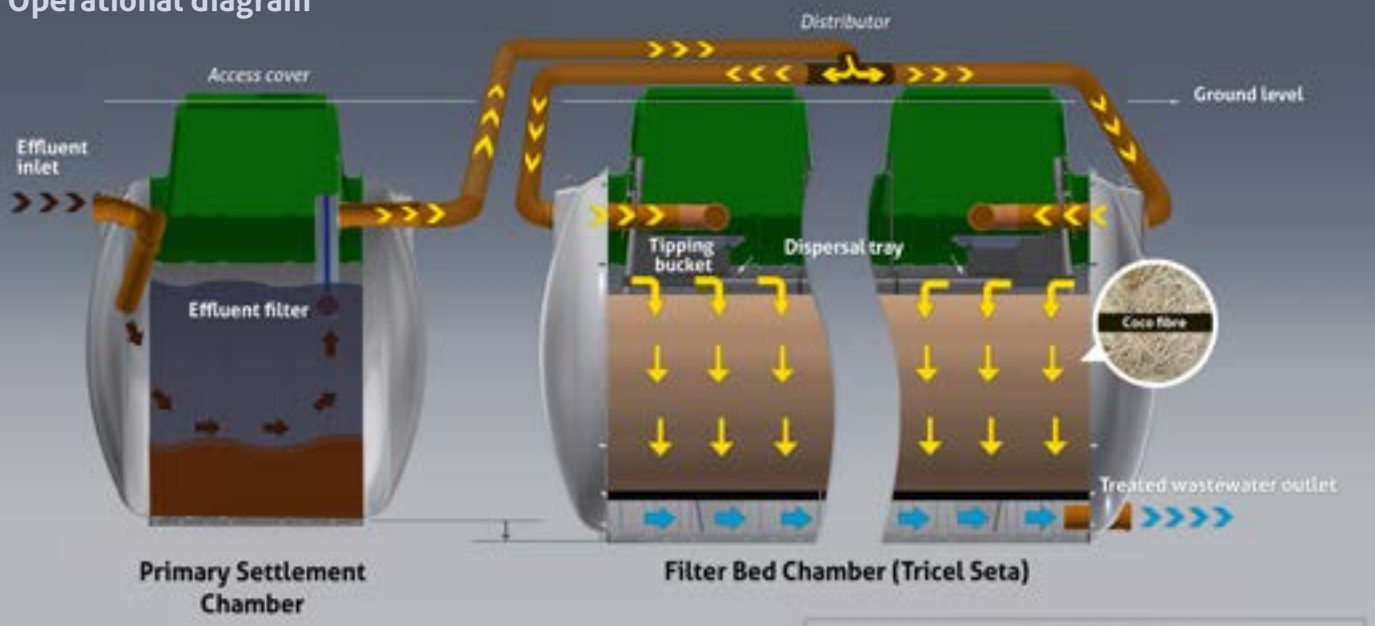
How does a Tricel Seta work?

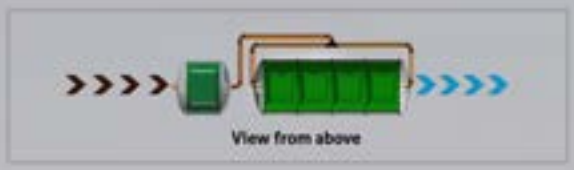
Tricel Seta compact filter is suitable for permanent (main residence) and intermittent (secondary house/holiday home) applications. It is also suitable for "small communities" such as restaurants, hotels, campsites, grouped dwellings etc. The technologies on which it is built provide users with exceptional reliability and low maintenance costs.

Tricel Seta compact filter consists of two main elements: a primary settlement chamber for the primary treatment of the wastewater and a filter bed chamber for secondary treatment.

Tricel Seta FR12

Operational diagram





1st phase: Primary treatment

Primary treatment takes place in the Primary Settlement Chamber, where the wastewater from sinks, showers, toilets enters... The Primary Settlement Chamber slows the effluent's velocity, allowing solids and heavy sludge to settle at the bottom of the tank, while lighter substances (fats) float to the top of the tank to create a scum. The prefilter fixed at the end of the Primary Settlement Chamber prevents solids/scum passing through to the Filter Bed Chamber. Anaerobic bacteria, naturally present in the effluent, develop in the Primary Chamber and liquefy sludge and solids by digesting the organic components they contain.

2nd phase : Secondary treatment

The pre-treated effluent then proceeds to the Seta filter bed. The primary treated effluent is then evenly dispersed by a bespoke dispersion system ensuring the equal distribution of effluent over the entire filter bed, thus guaranteeing the optimum treatment of the wastewater.

Tricel Seta compact filter technology is made of coconut fibre ("coir"), which serves both as a filtering medium and bacterial support. Coconut fibre is a generic term for the natural plant fibre which, made of fibrous mesocarp, surrounds and protects the coconut. These fibres are lignin-rich, which gives them great rigidity, makes them resistant to water and gives them excellent resistance to decomposition - resulting in a long lifespan.

Coconut fibre

As the effluent passes down through the coconut fibres, it undergoes two types of secondary treatment:

- physical filtration thanks to the coconut fibre, and
- biological purification, mainly thanks to the aerobic bacterial flora that develops there naturally. Anaerobic bacteria also kill nitrates.

At the outlet of the compact filter, the wastewater has been treated in accordance with current legislation and may discharge to the sewer network.

Equivalence between filter beds and septic tanks

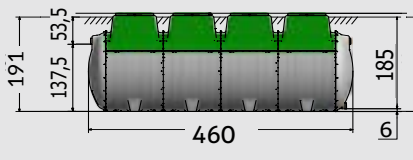
Septic tank					Filter bed		
Approved models	Septic tank material	Septic tank volume	Dimensions (m) length x width x height	Number of access covers	Seta FR12	Seta FR15	Seta FR18
Una (Tricel)	GRP	5600	3.6 x 1.64 x 1.99	1	S1FR121106		
		7350	4.6 x 1.64 x 1.99	2	S1FR121107	S1FR151107	
		9100	5.6 x 1.64 x 1.99	2	S1FR121109	S1FR151109	S1FR181109
		10850	6.6 x 1.64 x 1.99	2		S1FR151111	S1FR181111
Epurbloc (Rikutec)	HDPE	8000			S1FR123108	S1FR153108	
		9000			S1FR123109	S1FR153109	S1FR183109
		10000			S1FR123110	S1FR153110	S1FR183110
Oblongue (Thébault)	Concrete	6000			S1FR122406		
		8000			S1FR122408	S1FR152408	
		10000			S1FR122410	S1FR152410	S1FR182410

Characteristics of Seta filter beds from 10 EH/PE to 18 EH/PE

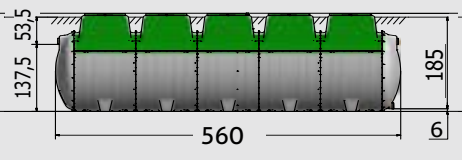
Seta filter beds		Seta FR12 Up to 12 EH/PE	Seta FR15 Up to 15 EH/PE	Seta FR18 Up to 18 EH/PE
French Ministerial decree numbers		2016-004-ext04	2016-004-ext05	2016-004-ext06
Treatment Capacity and number of inhabitants	EH/PE	12	15	18
Hydraulic load	l/day	1800	2250	2700
Organic load	BOD5 kg/d	0.720	0.900	1.080
Total length	cm	460	560	660
Total width	cm	164	164	164
Total height	cm	199	199	199
Inlet/outlet diameter	mm	100	100	100
The distance between ground level and inlet invert	cm	53,5	53,5	53,5
Max. distance between ground level to inlet invert	cm	103,5	103,5	103,5
Max. distance between base and ground level	cm	241	241	241
Height of available risers	cm	25 - 50	25 - 50	25 - 50
Height of max. backfill above sup. generator	cm	81	81	81
Number of access covers/risers	Units	4	5	6
Tank weight without hydraulic load	kg	850	1050	1250

(1) The "treatment capacity and a number of inhabitants" of a system is its reported treatment capacity in EH/PEs. This system is adapted to treat the effluents of any dwelling having a number of main rooms (which include bedrooms, living rooms, office/library) less than or equal to this EH/PE number. For example, a Tricel Seta FR12 / 3200 can treat the wastewater of any dwelling of houses with a number of main rooms less than or equal to 12.

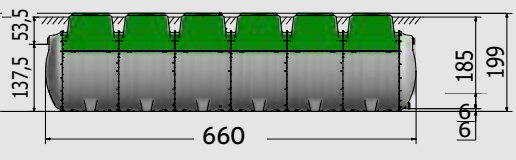
Seta FR12



Seta FR15



Seta FR18



Characteristics of Seta filter beds from 21 EH/PE to 54 EH/PE

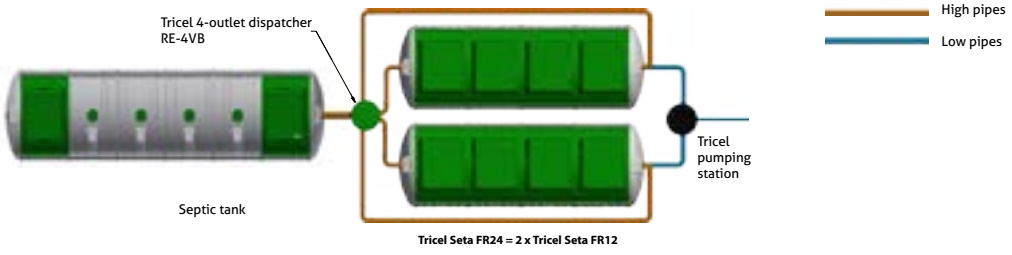
Beyond the basic Seta of 12, 15 and 18 EH/PE, filter bed tanks can be laid in parallel to achieve higher treatment capacities of 24, 30, 36, 45 and 54 EH/PE. These devices are not subject to ministerial approval since they fall under the ministerial decree of July 21, 2015 amended on August 24, 2017. The septic tank upstream of these filter beds will be correctly sized by a design office according to the specifics of the project: actual loads to be treated, target emptying frequency. This design office will also prescribe the implementation of any additional equipment required upstream of the compact filter, such as a grease separator or screen system.

Seta filter beds		Seta FR24 Up to 24 EH/PE	Seta FR30 Up to 30 EH/PE	Seta FR36 Up to 36 EH/PE	Seta FR45 Up to 45 EH/PE	Seta FR54 Up to 54 EH/PE
Treatment Capacity and number of inhabitants	EH/PE	24	30	36	45	54
Hydraulic load	l/day	3600	4500	5400	6750	8100
Organic load	BOD5 kg/d	1,44	1,8	2,16	2,7	3,24
Number of tank and tank models	Units	2 x Seta FR12	2 x Seta FR15	2 x Seta FR18	3 x Seta FR15	3 x Seta FR18
Length of each tank	cm	460	560	660	560	660
Width of each tank	cm	164	164	164	164	164
Height of each tank	cm	199	199	199	199	199
Inlet/outlet diameter	mm	100	100	100	100	100
The distance between ground level and inlet invert	cm	53,5	53,5	53,5	53,5	53,5
Max. distance between ground level to inlet invert	cm	103,5	103,5	103,5	103,5	103,5
Max. distance between base and ground level	cm	241	241	241	241	241
Height of available risers	cm	25 - 50	25 - 50	25 - 50	25 - 50	25 - 50
Height of max. backfill above sup. generator	cm	81	81	81	81	81
Number of access covers/risers/tank	Units	4	5	6	5	6
Tank weight without hydraulic load	kg	850	1050	1250	1050	1250

(1) The "treatment capacity and a number of inhabitants" of a system is its reported treatment capacity in EH/PEs. This device is adapted to treat the effluents of any dwelling having a number of main rooms (which include bedrooms, living rooms, office/library) less than or equal to this EH/PE number.

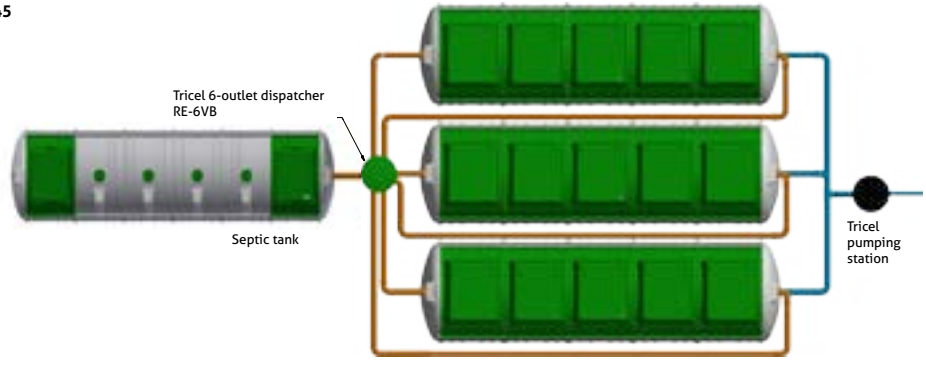
Configuration examples

Seta FR24



Tricel Seta FR24 = 2 x Tricel Seta FR12

Seta FR45



Tricel Seta FR45 = 3 x Tricel Seta FR15

Why choose a Tricel Seta:

Installation

- Ideal for new builds, especially in cases of limited space as well as for renovations: the Tricel Seta filter is ultra-compact, with a filter bed footprint (site coverage) of <17 m² for 18 EH/PE (to be compared with the 400m2 of a traditional installation).
- Compact single tank filter bed up to 18 EH/PE. Lightweight, easy to transport and handle.
- The Tricel system is delivered ready to install for fast and easy installation, with minimal site adjustments except for those made by the exclusive Tricel partner during the installation, thus reducing the risk of on-site errors.
- Extremely robust GRP tank moulded by heat compression: backfilled with sand or gravel, 81 cm of height of backfill allowed above the crown of the tank, resistant to groundwater.
- Manhole risers available in 25 and 50 cm for the filter bed.

Results

- A complete range of products up to 54 EH/PE with different volumes of Primary Settlement chambers to meet the specificities of all of your projects. Completed by the range of Tricel Seta Simplex single tank filter compacts from 1 EH/PE to 9EH/PE and by the range of Tricel Novo single tank wastewater treatment plants (micro stations) from 1 EH/PE to 60EH/PE.
- Underground installation is carried out for minimal interference with the surrounding landscape.
- Gravity functioning without power consumption.
- Eligible for zero interest eco-loan (eco-PTZ).
- No noise nuisance.
- Excellent purification performance, as demonstrated by the 38 weeks of intensive tests carried out at the PIA in Aachen (Germany).

Maintenance

- Extremely reliable, thanks to a simple and robust design.
- No electro-mechanical components, no electronic components, eliminates risk of system failure.
- Filter media made out of ecological, sustainable and natural coconut fibre.
- Excellent performance in overloading, under loading and no load conditions, even prolonged ones. Suitable for permanent (main residences) and intermittent use (secondary/holiday homes).
- No system adjustment, whatever the conditions of use.
- Low maintenance for customer peace of mind and minimal maintenance costs.
- Annual maintenance contracts available from Tricel's network of exclusive Partners.
- Visual indicator placed next to one of the access covers to alert in the event of an above normal water-level inside the tank.
- Frequency of desludging observed at full load in real conditions of use: every 18 months to 5 years depending on the type of tank. The desludging rate is obviously more spaced out when the compact filter operates at reduced load. For example, an FR12 (sized for 1 to 12 PE) receiving effluent from 6 permanent occupants has a statistical desludging frequency of 5 to 8 years.

Quality Assurance

- Tricel wastewater treatment system traceability and tracking ensured by Tricel France and its network of exclusive Partners.
- Manufactured in France for greater proximity to our customers ensuring better customer service.
- 20-year warranty on the GRP structure and 2-year warranty on the electro-mechanical components.
- Tricel: more than 15 years of experience in wastewater treatment systems for single dwellings and over 35,000 devices installed.

Tricel also offer:

Tricel Novo

Fixed bed wastewater treatment plant

From 1 to 60 EH/PE

Tricel Seta Simplex

Single tank filter compacts with septic tank and filter bed integrated

From 1 to 9 EH/PE

See each single product brochure for more information.

Tricel is an established and world recognised global supplier of high-performance solutions for Water, Environment, Construction and Distribution. Over the last 45 years, we have built our company ethos "Generations of Innovation", around three interlinking themes: Innovation, Quality and Heritage. We manufacture and deliver industry-leading innovative solutions that our customers fully trust. Our factories located in over 5 countries allow us to differentiate ourselves in terms of production capacities, versatility and adaptability, and thus to provide a full range of products in over 50 countries across the world.

Tricel France is:

2 factories in France with dedicated technical services and a head office based near Poitiers, for **greater proximity** to our customers and **reactive customer service.**

A **quality-orientated philosophy,** offering what is probably **the best value for money** to our customers: all of our equipment is **robust and of high quality,** the water tightness of every single tank (not based on random samplings) is tested at the end of the production process, **traceability** is ensured on all of our wastewater treatment systems...

... For flawless **reliability** and **absolute peace of mind.**

A network of exclusive distribution Partners, that are **specialists in wastewater treatment systems for single dwellings** (see list on our website), who ensure sales as well as the start-up, maintenance and after-sales service on each Tricel wastewater treatment system installed.

A network of installers selected by our Partners in their respective sectors to ensure the perfect installation of your wastewater treatment system.

Extensive **experience** in wastewater treatment systems: >35,000 Tricel wastewater treatment systems installed across the world in all types of soil and under all climates.

For more information or to get a free quote
contact your Partner Tricel:

or contact us on +33 (0) 5 17 03 00 00 (Monday to Friday from 8:30 to 17:30)
or on www.tricel.fr/contact

Ministerial Decree

12-15-18 EH
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In accordance with Tricel's normal policy of product development, these specifications are subject to change without notice.

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