

Tricel® Sandcel

Sand Polishing Filter

Engineering a green future



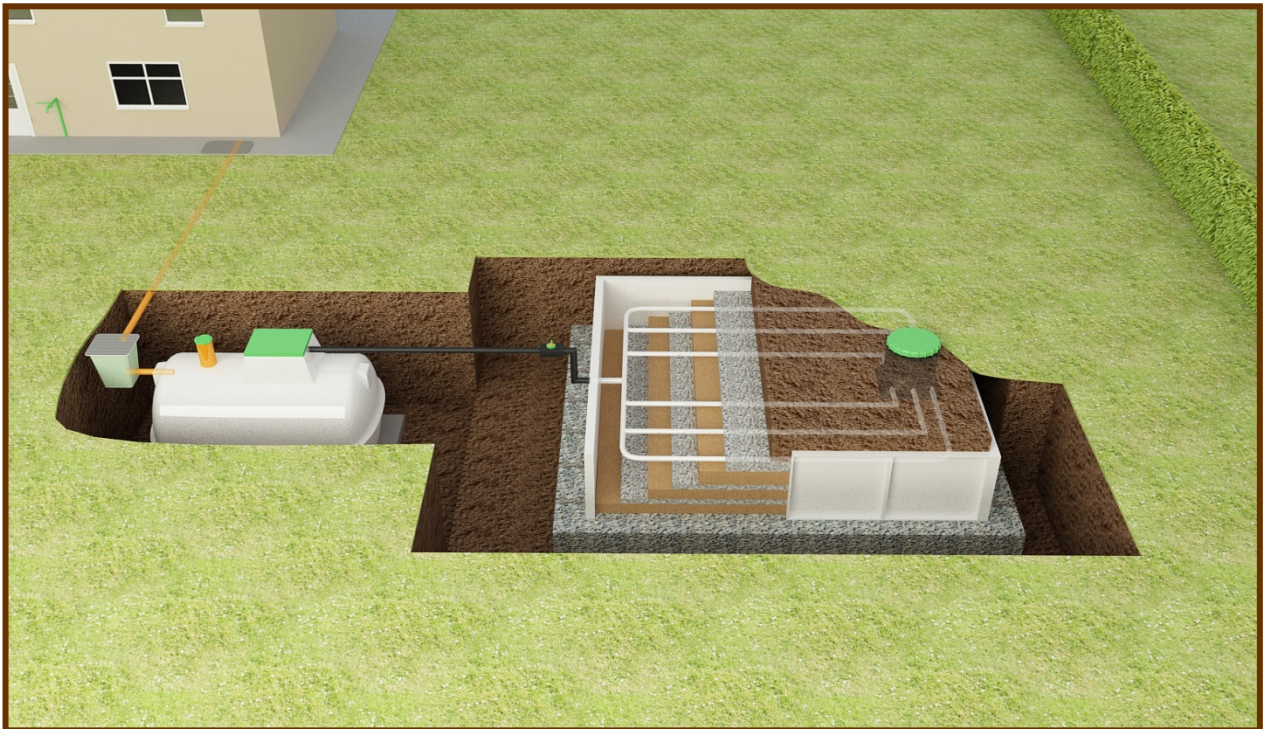
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1 Introduction

The Sandcel is a complete supply, fit and certified sand polishing filter comprising of the following;

- Design and technical advice based on site characterization report.
- Supply of external structure, certified sands and pipework.
- Installation of all stratified layers of sand and gravel according to EPA Code of Practice for Waste Water treatment and Disposal Systems serving single houses 2021.
- Full sign off and certification by approved site assessor.
- Report detailing installation works including photographic evidence of works carried out issued to client and council.
- 1 year follow up visit to site including a service of the Sandcel system.



2 Sandcel technical overview

The Sandcel Tertiary treatment system comprises of stratified sand filter layers as shown in **Fig. 1.0** below.

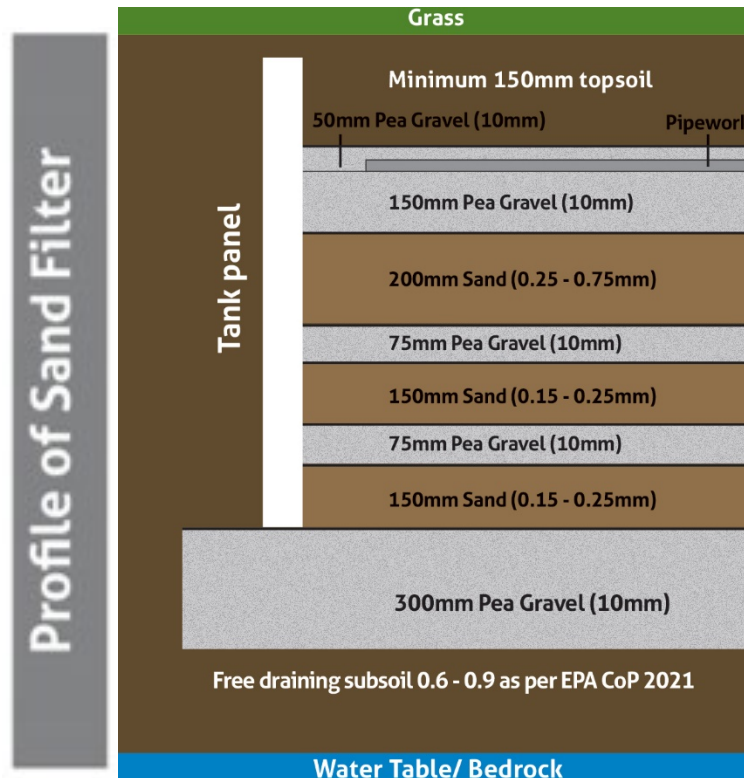


Fig. 1.0

The Sandcel comprises of three layers, an upper layer of coarse sand and lower layers of fine sand separated from each other by a thin layer of gravel (supplied by the client) as per Fig. 1.0. The sands used throughout each Sandcel are provided with an independent certification to ensure compliance with the EPA Code of Practice. The Sandcel can be loaded to a maximum of 60 litres per m² per day.

The Sandcel must be placed on a distribution layer comprising of a 300mm layer of 10mm pea gravel (supplied and placed by the client) as in Fig 2.0. The plan area, calculated by a site assessor, of the distribution layer is dependent on the T value or percolation rate of the receiving subsoil. It is compulsory that the T test is carried out at the infiltration level which is located at the base of 300mm thick distribution layer.

A layer of topsoil, sourced on site, to a minimum depth of 150mm is then placed over the Sandcel, blending the entire unit in with its surroundings as shown in **Fig. 2.0** below.

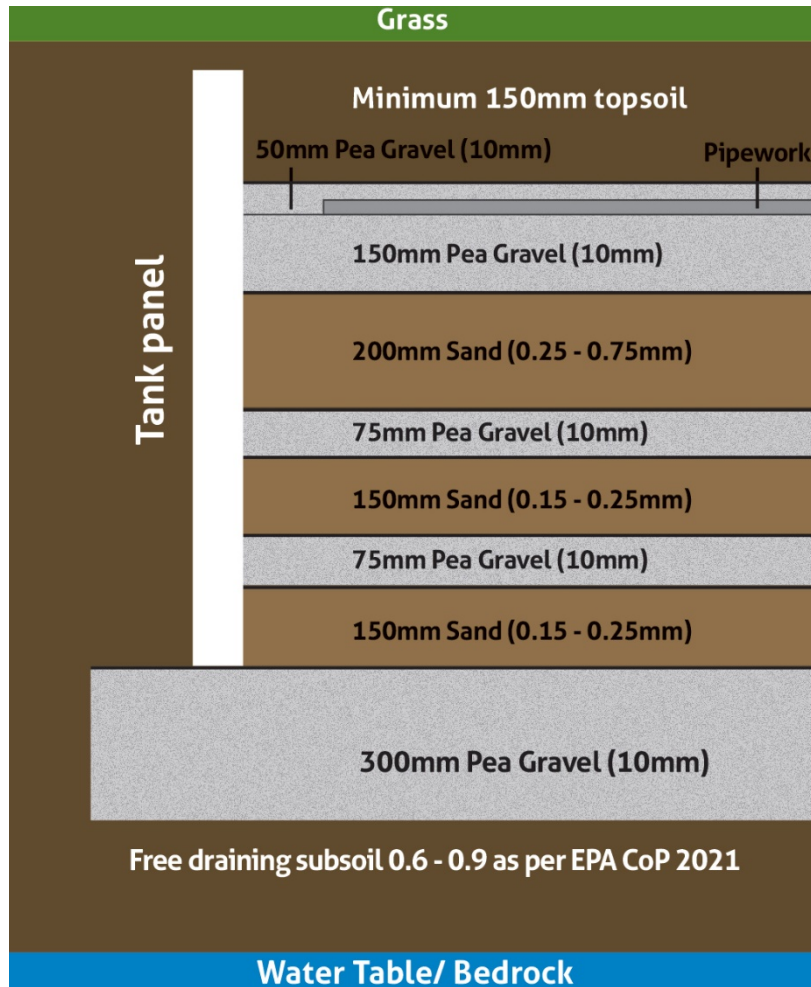


Fig. 2.0

The sands used throughout each Sandcel are provided with an independent certification to ensure compliance with the EPA Code of Practice. The Sandcel can be loaded to a maximum of 60 litres per m² per day

For subsurface range of $3 \leq PV \leq 75$ the area required on site is calculated using the Table 10.1 from EPA Code of Practice for Waste Water treatment and Disposal Systems serving single houses 2021 as shown in Fig 3.0

Table 10.1: Infiltration/treatment area and trench length design for tertiary treatment, per PE

Percolation values (PVs)	Tertiary infiltration area (Option 6)
	Area required per person (m ²)
$3 \leq PV \leq 20$	≥ 3.75
$21 < PV \leq 40$	≥ 7.5
$41 < PV \leq 50$	≥ 15
$51 < PV \leq 75$	≥ 25
$76 < PV \leq 90$	–
$91 < PV \leq 120$	–

Fig. 3.0

Sandcel comes in the following three standard sizes, and can also be bespoke designed to suit the site conditions.

		P6	P8	P10
Description	Unit	Qty	Qty	Qty
No of Residents	Persons	6	8	10
Daily Flow rate	litres	900	1200	1500
Polishing filter Loading Rate	l/m2	60	60	60
Size of Polishing Filter	m2	15	20	25
Length of Polish Filter	m	4	4	4
Width of Polishing Filter	m	3.75	5	6.25
Orifice Diameter	mm	4.8	4.8	4.8
Orifice Spacing	m	0.6	0.6	0.6
Lateral Spacing	m	0.6	0.6	0.6
No. of laterals		6	8	10
Length of laterals	m	3.4	3.4	3.4
Lateral Diameter	mm	32	32	32
No of Orifices/lateral		6	6	6
Total No. of Orifices		36	48	60
Size of rising Main	mm	37.5	37.5	37.5
Min Dose Volume	litres	200	230	285
Discharge Rate	l/min	90	120	150
Total Head	m	2	2.25	2.5
Pump		Tricel 75	Tricel 75	Tricel 75

A pumping chamber can be provided should the site and treatment system require it.

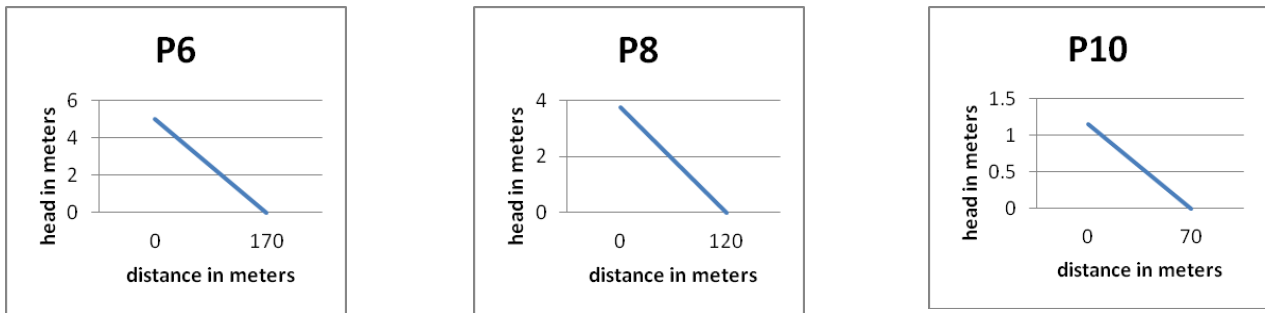


Fig. 3.0

The panels housing the Sandcel filter media comprises of a hybrid material known as Sheet Moulding Compound, SMC, which is a form of Glass Reinforced Plastic. These panels are used to form a durable, chemically and impact resistant, watertight structure. All fixings to the panels are marine grade stainless steel bolts.

The distribution pipework, which is housed within the top pea-gravel layer, comprises of a 32mm dia. uPVC pipe, which disperses the effluent evenly of the entire surface area of the filter media. The pipework consists of a series of 3.4m laterals spaced at 0.6m centers. Each lateral contains 6 no orifices 4.8mm in diameter spaced at 0.6m along each length. The laterals are fed from a pump at the wastewater treatment unit through the main pipe manifold. A full pressure test is carried out throughout the distribution pipework during the installation process. Fig. 4.0



Fig. 4.0

The Sandcel Service Pod, where all laterals terminate is used by Sandcel technicians to access the distribution line for regular maintenance as per the Sandcel service agreement. See **Fig 5.0**



Fig 5.0

3 Terms & Conditions

Subject to our standard terms and conditions, which are available on request. In accordance with our standard policy of product development, this specification is subject to change without notice.

Notes



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