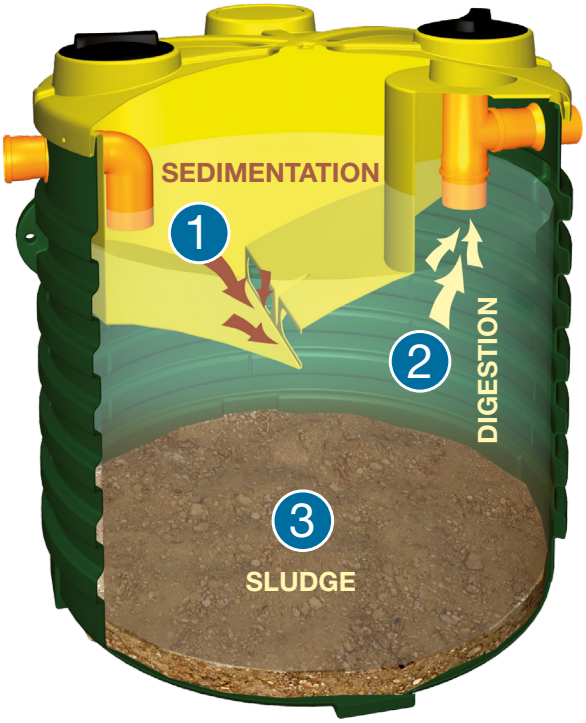
IMHOFF BIOLOGICAL TANKS

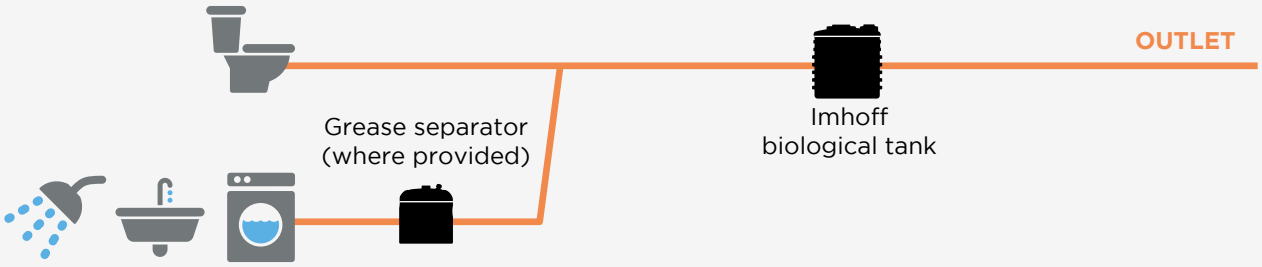


1 SEDIMENTATION
sedimentation area for incoming solids.

2 DIGESTION
area into which the treated effluent flows for digestion.

3 SLUDGE
area in which the biological sludge responsible for purifying the effluent is formed.

INSTALLATION DIAGRAM



SPECIFICATIONS

TECHNICAL CHARACTERISTICS

Imhoff type septic tanks consist of two overlapping and hydraulically communicating compartments. In the upper compartment the sedimentable solids fall to the bottom of the sedimentation chamber by gravity. The chamber is suitably inclined to allow the sludge to pass into the lower compartment where digestion takes place.

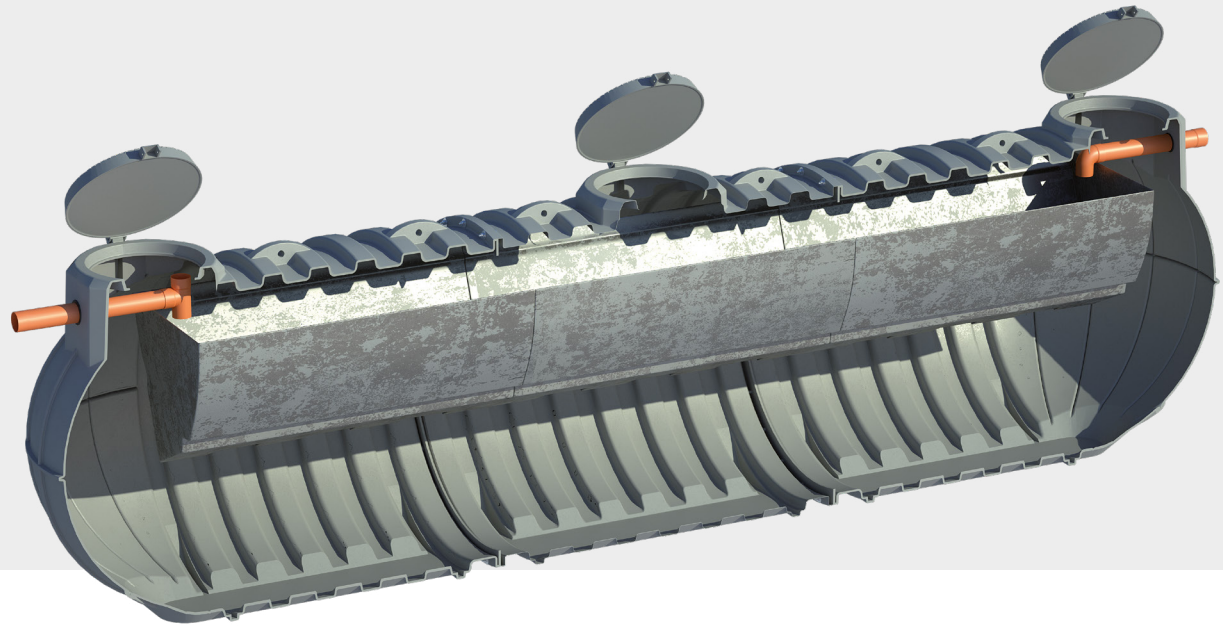
USE

Primary treatment of sewage from toilets.

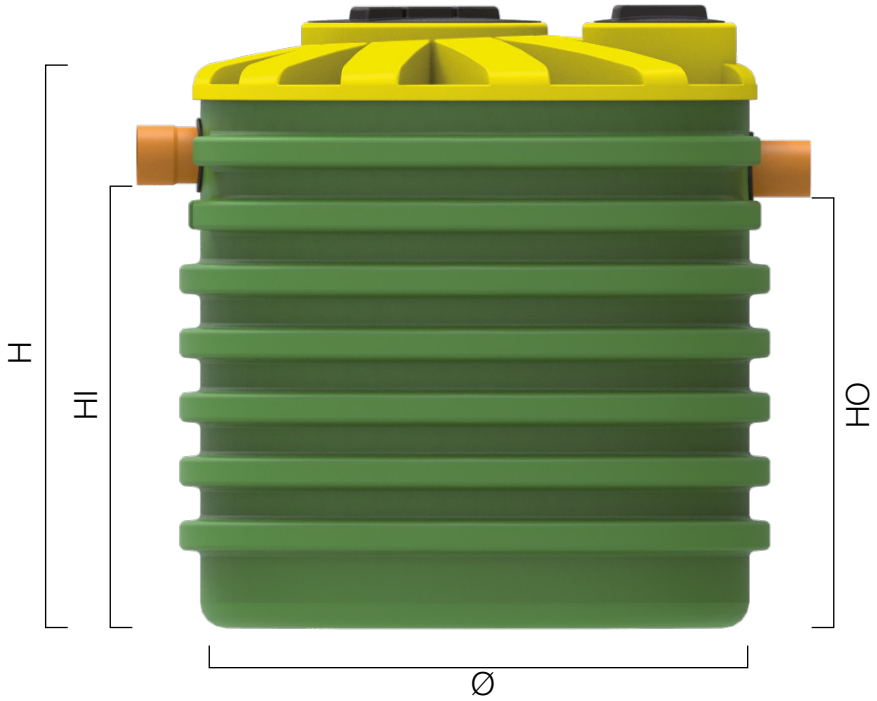
DAILY HYDRAULIC LOAD: 200 l/PE

Please note: it is possible to size the treatment plant according to different daily hydraulic loads.

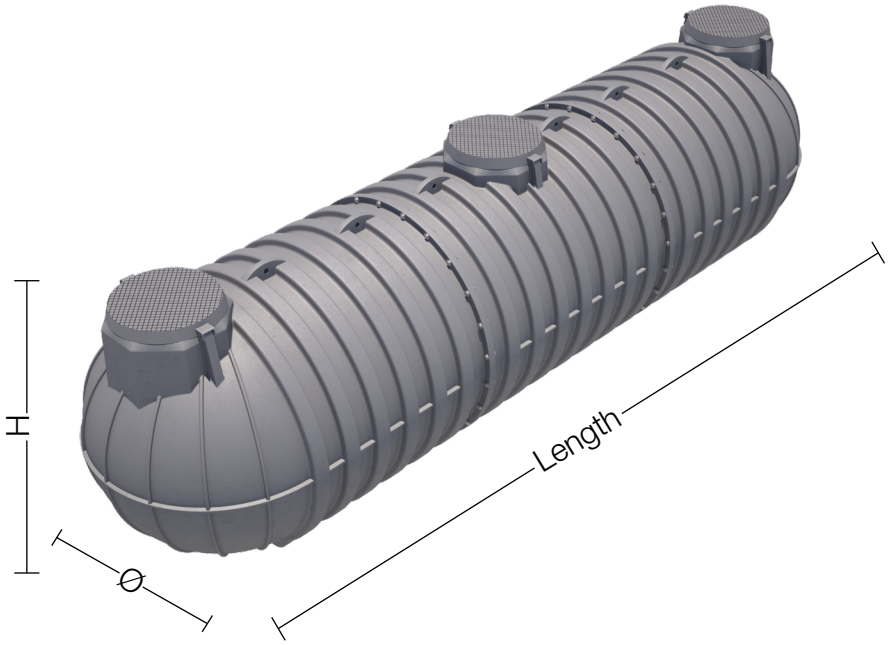
IMHOFF BIOLOGICAL TANKS – MODULAR



IMHOFF BIOLOGICAL TANKS



IMHOFF BIOLOGICAL TANKS MODULAR



MODEL

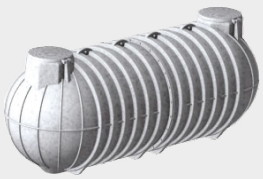
SMOOTH

CORRUGATED

REINFORCED

ELIPSE

MODULAR



IMHOFF BIOLOGICAL TANKS

Item	Mod.	Length mm	Width mm	Ø mm	H mm	HI mm	HO mm	Ø I/O mm	Cover 1	Cover 2	Extension 1 (optional)	Extension 2 (optional)	Sed. Vol. l	Digester Vol. l	Organic load KgBOD5-d	Hydraulic load m3/d	Tot. vol. l	PE
IM500		-	-	790	790	620	600	110	CC200	CC130	PP30	-	87	218	0,18	0,6	305	**3**
RIM500		-	-	950	900	720	700	110	CC400	CC300	PP45	PP35RIM	75	411	0,18	0,6	486	**3**
NIM700		-	-	1050	1030	760	740	110	CC400	CC200	PP45	PP30	168	418	0,3	1	586	**5**
NIM1000		-	-	1150	1220	880	860	110	CC400	CC200	PP45	PP30	243	607	0,48	1,6	850	**8**
RIM1000		-	-	1160	1300	1140	1110	110	CC600	CC300	PP60RIM	PP35	190	850	0,48	1,6	1040	**8**
NIM1250		-	-	1050	1650	1370	1350	110	CC400	CC200	PP45	PP30	335	818	0,66	2,2	1153	**11**
NIM1200		1900	708	-	1630	1250	1230	110	CC300	CC300	PP35	PP35	290	910	0,72	2,4	1200	**12**
NIM1500		-	-	1150	1720	1360	1340	110	CC400	CC200	PP45	PP30	362	906	0,84	2,8	1268	**14**
RIM1500		-	-	1160	1500	1320	1300	110	CC600	CC300	PP60RIM	PP35	262	1010	0,84	2,8	1272	**14**
NIM1700		1900	708	-	2140	1760	1740	110	CC300	CC300	PP35	PP35	412	1363	0,96	3,2	1775	**16**
NIM2100		-	-	1350	1975	1540	1520	110	CC400	CC300	PP45	PP35	480	1470	1,08	3,6	1950	**18**
NIM2600		-	-	1710	1450	1000	980	125	CC400	CC300	PP45	PP35	629	1432	1,2	4	2061	**20**
NIM3200		-	-	1710	1725	1240	1220	125	CC400	CC300	PP45	PP35	760	1765	1,5	5	2525	**25**
NIM3800		-	-	1710	1955	1490	1470	160	CC400	CC300	PP45	PP35	965	2139	1,86	6,2	3104	**31**
NIM4600		-	-	1710	2225	1710	1690	160	CC400	CC300	PP45	PP35	1085	2713	2,4	8	3798	**40**
NIM5400		-	-	1950	2250	1660	1640	160	CC400	CC400	PP45	PP45	1210	3137	2,7	9	4347	**45**
NIM6400		-	-	1950	2530	1970	1950	160	CC400	CC400	PP45	PP45	1322	3778	3	10	5100	**50**
MTIM6000		3870	-	1550	1710	1420	1400	160	TAP800	-	PP77	-	1660	4030	3,3	11	6934	**55**
NIM7000		-	-	2250	2367	1850	1830	160	CC400	CC400	PP45	PP45	1460	5474	3,6	12	5690	**60**
NIM9000		-	-	2250	2625	2070	2050	160	CC400	CC400	PP45	PP45	2020	5803	4,8	16	7823	**80**
NIM9800		-	-	2270	2850	2320	2300	160	CC400	CC400	PP45	PP45	1780	7040	5,4	18	8820	**90**
ITIM11000		4420	-	2100	2200	1870	1840	160	TAP800	-	PP77	-	2910	7225	6	20	10135	**100**
MTIM12000		7180	-	1550	1710	1420	1400	160	TAP800	-	PP77	-	3240	8066	6,3	21	11306	**105**
ITIM13000		5010	-	2100	2200	1870	1840	160	TAP800	-	PP77	-	3495	8610	9,6	24	12105	**120**
ITIM15000		5620	-	2100	2200	1870	1840	160	TAP800	-	PP77	-	4070	10080	8,4	28	14150	**140**
MTIM18000		10510	-	1550	1710	1420	1400	160	TAP800	-	PP77	-	4880	12042	9,6	32	16842	**160**
ITIM18000		6680	-	2100	2200	1870	1840	160	TAP800	-	PP77	-	4820	12142	9,72	32,4	16962	**162**
ITIM20000		7270	-	2100	2200	1870	1840	160	TAP800	-	PP77	-	5330	13280	11,04	36,8	18610	**184**
ITIM22000		7880	-	2100	2200	1870	1840	160	TAP800	-	PP77	-	5860	14870	12	40	20730	**200**
ITIM25000		8940	-	2100	2200	1870	1840	160	TAP800	-	PP77	-	6575	16410	13,56	45,2	22985	**226**
ITIM28000		9530	-	2100	2200	1870	1840	160	TAP800	-	PP77	-	7240	18030	15	50	25270	**250**
ITIM30000		10140	-	2100	2200	1830	1800	200	TAP800	-	PP77	-	7690	19560	16,2	54	27250	**270**
ITIM33000		11200	-	2100	2200	1830	1800	200	TAP800	-	PP77	-	8440	21100	17,52	58,4	29540	**292**
ITIM35000		11790	-	2100	2200	1830	1800	200	TAP800	-	PP77	-	9040	22670	18,84	62,8	31710	**314**
ITIM36000		12400	-	2100	2200	1830	1800	200	TAP800	-	PP77	-	9680	24120	19,2	64	33800	**320**
ITIM40000		13460	-	2100	2200	1830	1800	200	TAP800	-	PP77	-	10370	25810	21,36	71,2	36180	**356**

PE. = population equivalent: **Ø** = diameter; **H** = height; **IH** = inlet pipe height; **OH** = outlet pipe height; **ØI/O** = inlet/outlet pipe diameter.

TECHNICAL SECTION - IMHOFF BIOLOGICAL TANKS

TECHNICAL CHARACTERISTICS

A series of chemical, physical and biological processes take place inside the biological septic tank, allowing a reduction in the values of the main reference parameters (BOD5, COD, SS (Suspended Solids).
More specifically, the Imhoff cone means that the turbulence of the inlet flow is dampened in the **upper sedimentation section**, with solids tending to settle and enter the lower digestion section. In the same way, any substances with a specific weight lower than that of water (e.g. oils and greases, foam,...) separate from the effluent and accumulate on the surface.
In the **digestion section**, in a **completely anaerobic environment**, the bacterial flora developed and maintained partially digests the accumulated sludge, transforming it into more stable, non-polluting products.
The Imhoff biological tank must be installed directly on the sewage line. It is good practice to install a grease separator tank for the pre-treatment of grey water from bathroom and kitchen sinks, showers, bidets, etc.

USE AND MAINTENANCE

From the moment the Imhoff is put into operation, the anaerobic bacterial flora starts to develop inside the tank. Obviously, a certain period of time is necessary in order to reach the correct balance and maximum treatment efficiency. This is known as the **start-up phase**, and can last between 2 and 5 weeks. To reduce this time, the use of a specific bio-activator is recommended.
An excessive accumulation of sedimentable material in the sludge compartment can cause **uncontrolled anaerobic digestion** phenomena, leading to an over-production of biogas and bad smells. Furthermore, the reduction in the volume available in the digestion compartment and the excessive production of gas bubbles will cause the settled material to rise, causing deterioration in the quality of the treated effluent.
The use of the Rototec BIO-ACTIVATOR is highly recommended for rendering the initiation of the biological processes more rapid, thus limiting the number of **sludge removal operations** and reducing the risk of malodorous emissions.
The DEPURO NIM Imhoff tank is designed to provide primary and secondary recirculation sludge storage for a period of 6-8 months of plant operation. A minimum of 1-2 inspections per year by qualified personnel and eventual emptying operations must be programmed according to the loads fed to the tank. Once the settled sludge has been removed, the internal surfaces of the tank must be cleaned in order to eliminate any material obstructing the effluent inlet and outlet pipes and the outlet of the sedimentation chamber.

MANAGEMENT

WHAT TO DO	WHEN	HOW
Inspect the Imhoff biological tank	From 1 to 2 times a year	Unscrew the inspection covers and check the level of sediments
Remove the settled sludge, clean the interior and the inlet and outlet pipes	Every 6 / 12 months	Contact a licensed waste disposal company

N.B. the frequency of operations will depend on the incoming organic load.

PROHIBITIONS

- **do not use toxic and/or poisonous substances** (bleach, solvents, insecticides, disinfectant substances, aggressive detergents), always use biodegradable products;
- **NEVER** flush paper tissues, kitchen towel, paper napkins or other materials except toilet paper down the toilet;
- **NEVER** allow rainwater to enter the system.

WARNINGS

- make sure that drains have a siphon;
- check that the pipes have sufficient gradient (approximately 1% - 2%);
- connect the biogas vent pipe (**see underground installation**);
- after emptying, fill the tank again with **clean water**;
- in the event of a maintenance operation of any kind, always comply with the **safety regulations** regarding operations within enclosed wastewater treatment areas and with the general technical procedures applicable.within enclosed wastewater treatment areas and with the general technical procedures applicable.