

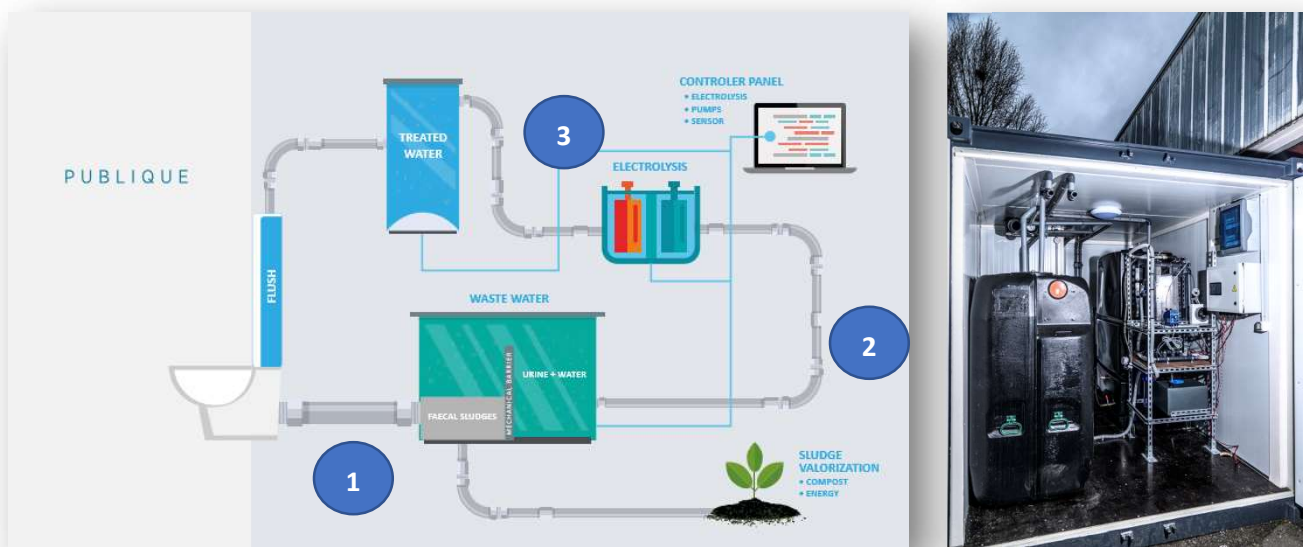
1 General

Key words: wastewater recycling, biological treatment, electrolysis, filtration

This technical sheet describes the main features of the WeCo system. It is not a user manual for the system.

2 System overview

The waste water, known as black water, from flushing toilets and excreta, is subject to on-site biological treatment of faecal sludge followed by electrolytic treatment that kills bacteria and clarifies the water, producing "bathing water" quality water for reuse in toilet flushing.



To achieve this performance, the system must follow a succession of wastewater treatment steps which are described below:

1

Transport of the raw material (urine and faeces) from the hunts to a grinder and then to sedimentation tank which the faeces sediment in the presence of bacteria.

2

Propulsion of liquids by a pump in the electrolysis tank which in the presence of salt generates chlorine compounds to decolour the urine and destroy bacteria, producing bacteria-free water.

3

Storage of purified water in a water tank for reuse in flushing or other applications such as cleaning or watering plants.

3 Features

3.1 Mechanics - Container

Modules		P10	P20	2xP20	G40
<i>Dimensions</i>		2,44 x 2,99 m	2,44 x 6,06 m	2 x (2,44 x 2,99) m	2,44 x 12,12 m
<i>Technical room surface area</i>		4,5 m ²	7 m ²	10 m ²	12 m ²
<i>Capacity/day</i>		60 people	150 people	200 people	330 people
Components	<i>Toilet</i>	1	1-2	2-4	2-6
	<i>Urinal</i>	0	1-2	2-4	2-4
	<i>Waste water tank</i>	1	1	1	1
	<i>Treated water tank</i>	1	1	1	1
	<i>Electrolysis reactor</i>	1	1	1	2
	<i>Filter</i>	3	3	3	3
	<i>Pump</i>	3	3	3	6
	<i>Blower</i>	1	1	1	1
	<i>Grinder</i>	1	Variable	Variable	Variable
	<i>Automaton</i>	1	1	1	1 with 2 alimentations

3.2 Mechanics – Technical room

Modules	P10	P20	2xP20	G40
<i>Reactor Volume</i>	20 L	20 L	20 L	40 L
<i>Treatment time (cycle)</i>	2 h	2 h	2 h	2 h
<i>Maximum volume treated per day</i>	240 L	240 L	240 L	480 L
<i>Septic tank Volume</i>	1000 L	2000 L	3000 L	3000 L
<i>Maximum Sludge volume before emptying</i>	500 L	950 L	1500 L	1500 L
<i>Treated water tank</i>	700 L	1275 L	2000 L	2000 L
<i>Initial water volume</i>	800 L	1475 L	2300 L	2300 L

3.3 Electrical

Modules	P10	P20	2xP20	G40
<i>Consumption treated water (l)</i>	55 Wh/l	55 Wh/l	55 Wh/l	55 Wh/l
<i>Average consumption/day</i>	3,3 kWh ^a	5,5 kWh ^b	6,6 kWh ^c	8,8 kWh ^d
<i>Supply Voltage</i>	230 V CA	230 V CA	230 V CA	230 V CA

Electricity consumption is estimated for a flushing volume set at 3,6l regardless of the type of container.

The **average consumption** is estimated for ^a6h, ^b10h, ^c12h, ^d16h of electrolysis per day.

3.4 Consumables

Modules	P10	P20	2xP20	G40
<i>Bacteria</i>	100 g / every emptying	200 g / every emptying	200 g / every emptying	400 g / every emptying
<i>Salt</i>	1kg / 2000l	1kg / 2000l	1kg / 2000l	1kg / 2000l
<i>Filter</i>	1 / year	2 / year	2 / year	4 / year

4 Miscellaneous information

The maximum capacities are not cumulative, which means that the maximum use per day cannot be reached every day because the maximum use per week will be exceeded.

Depending on requirements and subject to feasibility, the technical rooms can be combined differently with the containers.

The faecal sludge accumulated in the waste water tank is emptied at frequencies that depend on the daily use of the toilets, the volume of the tank but also on the number of urinals / toilets in the container.

Modules	P10	P20	2xP20	G40
<i>Draining frequency</i>	6 months	3 months	6 months	6 months
<i>Water economy</i>	45 000 l/year	88 000 l/year	170 000 l/year	215 000 l/year

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