Technical data sheet for Easy One wastewater treatment plant

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Plant size — 6 PE

Maximum hydraulic load	Qd	0,90	m³/d
Maximum organic load	Bd	0,36	kg/d

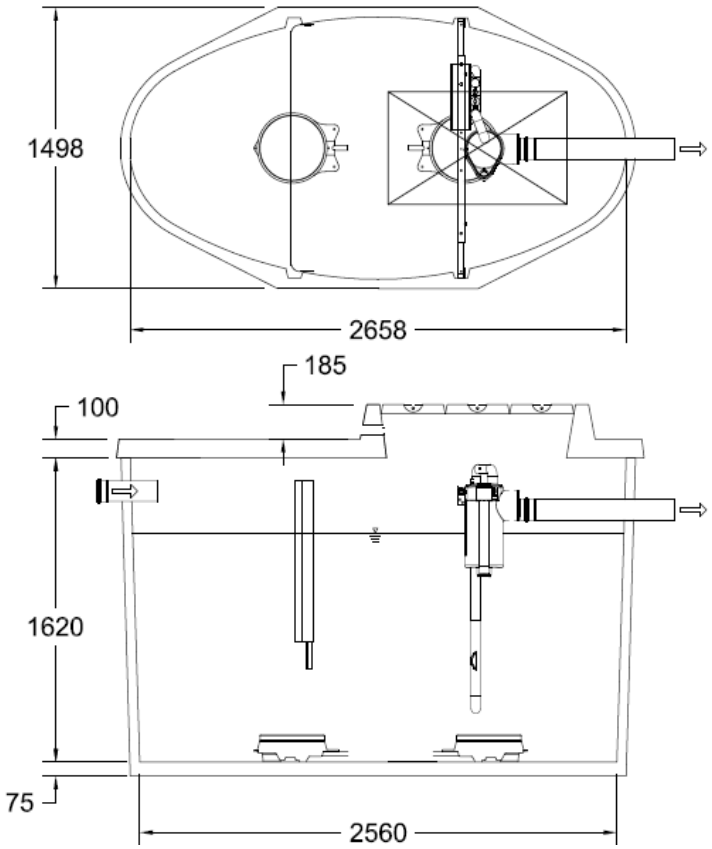
Design according to EN 12566-3

effluent values:

	BOD5	COD	SS	NH4N	Ntot	P	colif. germs
<	20 mg/l		30 mg/l	20 mg/l			

Total tank capacity: 4,0 m³

air compressor	type:	Linear				HP100
	installed motor power					0,10 kW
	power consumption at 0 bar					0,10 kW
	motor design		0,2 bar	50 Hz	1~	230 V
calculated maximum daily operating time						7,0 h/d



symbolic representation

stage	number	container, material	diameter width [m]	length [m]	maximum water depth [m]	volume maximum [m³]
sbr	1	rectangular, concrete	2,56	1,15	1,35	4,0

calculation for Easy One wastewater treatment plant according to EN 12566-3

basic data / project data

customer	Graf Ireland	date	19.04.2018
project		editor	Pilarski Iwo
type of waste water	domestic		
particularities			

base of calculation

	BOD5	COD	SS	NH4N	Ntot	P	colif. germs
outlet	**< 20 mg/l**		**< 30 mg/l**	**< 20 mg/l**			

population equivalent				6	PE
wastewater	Q_d	at Q_{PE}	150 l/(PE*d)	0,90	m³/d
daily peak factor				10	h/d
waste load	BOD5	B_d	60 g/(PE x d)	0,36	kg/d
waste load	COD		120 g/(PE x d)	0,72	kg/d
total solids	TS		70 g/(PE x d)	0,42	kg/d
waste load	P		1,6 g/(PE x d)	0,01	kg/d
supposed water temperature				12	°C
cleaning cycles per day				2	

calculation

type of container			real: oval	rectangular	
number of containers / proportion of chambers				100%	
number of chambers				2	
connection of the chambers			dividing wall with submerged opening		
width				2,56	m
length				1,15	m
water depth				1,35	m
partition height				1,30	m
total area				2,93	m²
required volume			650 l/PE x 6 PE =	3,90	m³
existing total volume			V_{BB}	3,96	m³
minimum water depth after clear water extraction					
	required volume		500 l/PE x 6 PE =	3,00	m³
	required water depth			1,02	m
	selected water depth			1,04	m
	selected volume			3,05	m³
buffer	percentage of daily load			100%	
	required volume		100% x 0,9 m³/d =	0,90	m³
	required water depth			0,30	m
	selected water depth		1,35 m - 1,04 m =	0,31	m
	selected volume		100% x 0,9 m³/d =	0,91	m³
during the aeration phase					
	average volume		3,05 m³ + 60% x 0,9 m³ =	3,59	m³
	average water depth			1,22	m
	BOD5 volume load	B_R	0,36 kg/d / 3,59 m³ =	0,10	kg / (m³ x d)
maximum water depth before clear water extraction					
	maximum volume		3,05 m³ + 100% x 0,9 m³ =	3,95	m³
	maximum water depth		1,00 m <	1,34	m
	control exchange ratio		0,66 <	0,77	