

info about cleaning efficiency of ClearFox (small) treatment systems

The following waste water composition is based on the following values:

Daily waste water: 150 liters per person per day
 Sewage water input divided into 10 hours = Q10
 In the interpretation of accepted extraneous water content: 0%

No discharge of rainwater is accepted in the design, therefore is not allowed to put any drain or rainwater into the treatment plant. If to the sewage treatment plant - which is planned in this form(*)- extraneous rainwater is fed thus will be overloaded. This can effect exceeding the effluent and sludge output.

The following parameter and concentration, which are typical for the most countries are considered for the calculation of absolute outlet parameters. These are standards, when there is no effluent requirement mentioned.

inlet concentrations

Parameter	raw sewage water	sewage after settling 0,5 – 1 h	sewage after settling 1,5 – 2 h
	g/E*d	g/E*d	g/E*d
BSB ₅	60	45	40
CSB	120	90	80
TS	50	35	25
TKN	11	10	10
P	1,8	1,6	1,6

standard for activated sludge (SBR) systems

parameter	efficiency-rate acc. EN 12566-3 TEST	INPUT acc. to upstanding on base values	OUTPUT acc. to upstanding on base values
	%	mg/l	mg/l
BSB ₅	96,3	400	< 15
CSB	86,5	800	< 108
TS	86,7	330	< 44

The small systems are tested and there is no need for any design approval.

(*) For different parameters the design and the maximum number of person equivalent must be adapted on the cubature. The wastewater may not contain substances that interfere with the process of wastewater treatment and the function of the components or the individual purification steps. In particular, no additions may put in the wastewater, which are poorly or not biologically degradable or toxic or bactericidal. Furthermore, the waste water may not contain substances which disrupt the biological treatment process to delay.

C: N: P ratio (molar) influence

(CNP-value), the molar ratio of the three elements carbon, nitrogen and phosphorus in relation of the aqueous medium. The ratio is decisive for the effectiveness of the achievable performance degradation in biological wastewater treatment, since the nutrient salts are important for the achievable microbial metabolism.

As optimum molar ratio C: N: P for an aerobic degradation process is specified between 100:14:3 and 100:10:1. However, in urban waste water, the ratio is about 100:20:5.

Thus, there is phosphorus and nitrogen present in excess and must be eliminated separately. In biologically treated industrial wastewater but also eg in downstream denitrification may need Nutrients are metered.

higher effluent requirements

Of course lower outlet parameters can be achieved. With treatment systems based on sessil organism (fixed bed) and higher sludge ages in activated sludge process we are able to achieve all parameters according to the clients demand.