



## DOMESTIC WASTEWATER TREATMENT PLANTS FOR 2 TO 50 PE

### AS-MONOcomp

The wastewater treatment plant AS-MONOcomp is intended for purification of municipal sewage. This SBR-type wastewater treatment plant (further as WWTP), with its purification process, is equipped with a blower controlled electronically by a microprocessor control unit, and optionally fitted with phosphorus-precipitating equipment and/or UV lamp for the sensitisation at the cleaned water discharge. The certified product is easily installed and attended; the issues with its surplus sludge disposal are properly handled. In the WWTP the sludge is disposed by an integrated dewatering device, which provides for withdrawal of excessive sludge to a separated sludge section and its stabilisation with a possibility of consequent composting (4 to 16 PE) or removal and carrying away from an external sludge tank (20 to 50 PE).

This WWTP is available in several versions: for 2 to 50 PE it meets the requirements of Class DČOV III, according to Regulation 401/2015 Coll., PZV Category, and the limits of microbial contamination according to Regulation 57/2016 Coll.

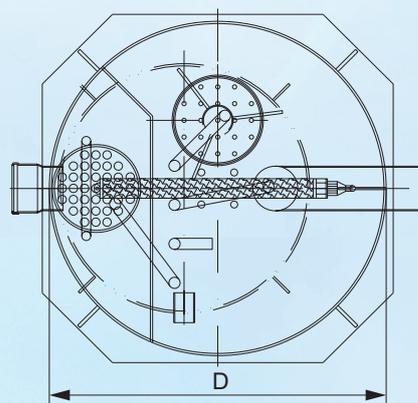
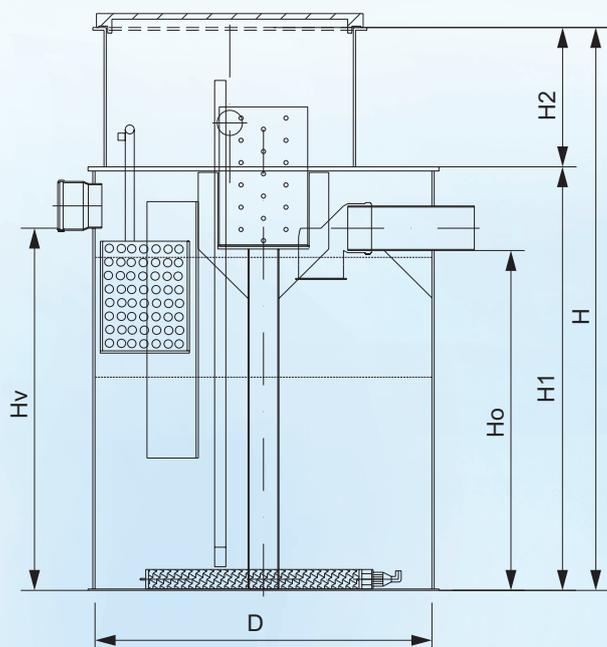
### Advantages of the AS-MONOcomp treatment plant

- Reliable, well-proven tank structure available in several options
- WWTP can be approved for discharge to underground and surface waters upon announcement
- Simple technology with proven, high reliability and efficiency
- Low-cost sludge disposal is solved
- Available phosphorus-precipitating and/or sanitisation options
- Possibility of using of cleaned water for irrigation purposes
- Possibility of remote supervision over the plant
- Entry stack, man-bearing cover, blower and control unit are included in the price
- Advantageous price for the PZV-type WWTP approved on announcement
- Low operating costs
- Customer support and servicing available throughout the Czech Republic



### AS-MONOcomp process description

Wastewater is brought over the feed basket to the feed section of the SBR reactor of the WWTP, where the inflowing water is steadied and partial sedimentation of mechanical impurities takes place. In the SBR, wastewater undergoes the purification process, where a controlled cleaning cycle is used during the day with alternating phases of aeration, sedimentation, flushing, discharge and sludging take place. During the aeration phase, the tank is filled and aerobic processes take place. Floating microorganisms are flocked to flocules, and remove by aerobic degradation organic contaminants and convert them into bio-mass. The sedimentation of flocules is supported by the interface created between the activated sludge and cleaned water. Flushing prevents undesirable withdrawal of insoluble materials into the discharge. Cleaned water is then withdrawn into the discharge trough. The surplus sludge that is produced in the WWTP is finally pumped to the de-watering equipment for its stabilisation and consequent disposal.



#### AS-MONOcomp – single-jacket, self-supporting tank

Size AS-MONOcomp	PE units	Nominal flow rate [m <sup>3</sup> /day]	Loading with substances [kg BOD <sub>5</sub> /day]	Diameter / height D / H [mm]	Height / in-flow/discharge Hv / Ho[mm]
4	2-5	0,60	0,24	1200 / 2020	1300 / 1220
8	5-9	1,20	0,48	1700 / 2020	1300 / 1220
12	6-13	1,80	0,72	2100 / 2020	1300 / 1220
16	8-18	2,40	0,96	1900 / 2820	2100 / 2020
20	10-23	3,00	1,20	2100 / 2820	2100 / 2020
30	15-34	4,50	1,80	2400 / 2820	2100 / 2020
40	20-44	6,00	2,40	2300 / 3470	2730 / 2650
50	25-55	7,50	3,00	2500 / 3470	2730 / 2650

#### AS-MONOcomp /PB – double-jacket tank for setting under areas subjected to pedestrian and/or vehicular traffic

Size AS-MONOcomp	PE units	Nominal flow rate [m <sup>3</sup> /day]	Loading with substances [kg BOD <sub>5</sub> /day]	Diameter / height D / H [mm]	Height / in-flow/discharge Hv / Ho[mm]
4	2-5	0,60	0,24	1520 / 1670	1300 / 1220
8	5-9	1,20	0,48	2020 / 1670	1300 / 1220
12	6-13	1,80	0,72	2420 / 1670	1300 / 1220
16	8-18	2,40	0,96	2220 / 2470	2100 / 2020
20	10-23	3,00	1,20	2420 / 2470	2100 / 2020
30	15-34	4,50	1,80	2720 / 2470	2100 / 2020
40	20-44	6,00	2,40	2620 / 3120	2730 / 2650
50	25-55	7,50	3,00	2820 / 3120	2730 / 2650

#### AS-MONOcomp /PB-SV – double-jacket tank for setting under the groundwater level

Size AS-MONOcomp	PE units	Nominal flow rate [m <sup>3</sup> /day]	Loading with substances [kg BOD <sub>5</sub> /day]	Diameter / height D / H [mm]	Height / in-flow/discharge Hv / Ho[mm]
4	2-5	0,60	0,24	1520 / 1830	1450 / 1370
8	5-9	1,20	0,48	2020 / 1830	1450 / 1370
12	6-13	1,80	0,72	2420 / 1830	1450 / 1370
16	8-18	2,40	0,96	2220 / 2630	2250 / 2170
20	10-23	3,00	1,20	2420 / 2630	2250 / 2170
30	15-34	4,50	1,80	2720 / 2630	2250 / 2170
40	20-44	6,00	2,40	2620 / 3280	2900 / 2820
50	25-55	7,50	3,00	2820 / 3280	2900 / 2820

## WWTP AS-MONOcomp – versions

WWTP AS-MONOcomp can be supplied in four versions according the requirements for cleaned water parameters:

- **Type AS-MONOcomp**

A standard plant version without phosphorus-precipitation and sanitization of discharged cleaned water.

- **Type AS-MONOcomp P**

A standard plant version extended with the phosphorus-precipitation equipment, but without sanitization of discharged cleaned water.

- **AS-MONOcomp + UV lamp**

A standard plant version extended with the equipment for sanitization of discharged cleaned water, but without the phosphorus-precipitation equipment.

Comparison of WWTP version efficiencies					
Parameter	COD [mg/l]	BOD <sub>5</sub>	N-NH <sub>4</sub> <sup>+</sup>	N <sub>total</sub>	P <sub>total</sub>
AS-MONOcomp	96%	99%	93%	85%	71%
AS-MONOcomp P	95%	98%	86%	83%	91%
Required values					
Class: PZV	90%	95%	-	50%	40%
Class: I	70%	80%	-	-	-
Class: II	75%	85%	75%	-	-
Class: III	75%	85%	80%	50%	80%

Comparison of WWTP version efficiencies									
Parameter	COD [mg/l]	BOD <sub>5</sub> [mg/l]	NL [mg/l]	N-NH <sub>4</sub> <sup>+</sup> [mg/l]	N <sub>total</sub>	P <sub>total</sub>	E. coli [KTJ/100ml]	Enterococci [KTJ/100ml]	
AS-MONOcomp	90 / 130	20 / 30	20 / 30	10 / 20	18 / 20	6 / 8	-	-	
AS-MONOcomp P	90 / 130	20 / 30	20 / 30	10 / 20	18 / 20	1 / 2	-	-	
AS-MONOcomp + UV lamp	90 / 130	20 / 30	20 / 30	10 / 20	18 / 20	6 / 8	140 / 150	80 / 100	
Required values									
Reg. 57/2016 Coll.	< 10 PE	- / 150	- / 40	- / 30	- / 20	-	-	- / 150*	- / 100*
	10–50 PE	- / 150	- / 40	- / 30	-	- / 30	-	- / 150*	- / 100*
	Lodging fac.	- / 130	- / 30	- / 30	-	- / 20	- / 8	- / 150*	- / 100*
Reg. 401/2015 Coll.	150 / 220	40 / 80	50 / 80	-	-	-	-	-	

\*Compulsory based on an opinion of a professionally competent person (geologist) in cases of necessary limitation of microbial contamination.

## Installation of the WWTP

The plant installation is quite easy. The tank is settled into an excavation, on a foundation concrete slab, and then it is connected to the sewer system as well as interconnected (with hoses laid in protective sleeves) to the control unit (and the blower); the latter is connected to power supply (230 V/AC).

## Samples taken from the WWTP

If the plant is to be utilized in the framework of the standard water-management administration procedure, then it is recommended to construct downstream the plant an inspection and sampling point, or the REVO shaft, for taking the samples. Then it will be possible to take the samples individually.

## Additional possibilities

- Monitoring of the plant using the AS-GSM device, which enables to monitor the plant operations and inform the owner about operational conditions and out-of-order events, if any.
- For cases of long-term underloading of the treatment plant with wastewater, there is an artificial-feeding device available.
- A standalone pillar or a wall-hung cabinet accommodating the blower and the control unit can be provided for the WWTP.

