



TECHNICKÝ A SKÚŠOBNÝ ÚSTAV STAVEBNÝ, n. o.
BUILDING TESTING AND RESEARCH INSTITUTE, Slovak Republic
Studená 3, 821 04 Bratislava

Product Certification Body



PRODUCT CERTIFICATE No. 00026/TSUS/Y/2022

Product: **Wastewater treatment systems AT**

Product types: **according to Annex No. 1**

Manufacturer: **AUGUST IR KO
Meiliakalnio k.1, Jauniūnų sen.
LT – 19154 Širvintų r., Lithuania**

Business ID: 124600588

Manufacture place: **AUGUST IR KO
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This product was the subject of the certification in accordance with the working procedures of TSÚS, as an accredited certification body for product certification and

declares, that the product characteristics:

Load capacity (shaped tank stability), Waterproofing, Concentrations of substances in effluent wastewater, Durability —

respond to the following criteria:

SK Technical Assessment SK TP – 17/0129 – version 03, Wastewater treatment systems AT, issued by TSÚS TP04, 3 August 2021 —

Purpose and conditions of product use: Wastewater treatment plants AT for 75 up to 2000 PT are used for cleaning of sewage from residential buildings, group homes, small municipalities or parts of municipalities and waste water from sources where it is produced by sewage water. After pre-treatment of industrial wastewater with organic pollution serve as a biological stage of final treatment. —

This certificate is issued on the basis of the Report of product certification No. 00026/TSUS/Y/2022 of the 14 November 2022.

Validity of the certificate from: **21 November 2022** to: **without restriction**.

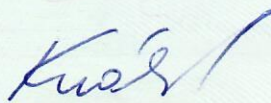
A part of the product certification is the continuous surveillance and the taking of test samples for control testing, once in every 12 months.

Note:

The reproduction of the Product Certificate is possible only as whole, or a part of it only with the written approval of the Certification Body. The misuse of the certificate will be by the certification body sanctioned under the provisions of relevant laws.

Bratislava 21 November 2022




Ing. Daša Kozáková
Head of certification body

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Annex No. 1 of the Product Certificate No. 00026/TSUS/Y/2022

Product: **wastewater treatment biological reactors**

Types: **AT75 – AT900; AT-75 oval – AT-500 oval; AT75 oval iPS – AT225 oval iPS; AT300 maxi – AT2000 maxi.**

The bioreactor tank is divided into four or five chambers:

- integrated pumping station with mechanical pre-cleaning (AT75 oval iPS - AT225 oval iPS);
- non-aerated chamber for mechanical pre-treatment, denitrification and collection of excess sludge that form a “vertical flow labyrinth” – VFL®;
- aerated activated sludge chamber;
- final clarification chamber;
- retention zone over the normal water level in the biological reactor up to the overflow in the flow regulator.

Air blower is installed inside or next to the wastewater treatment plant.

Basic parameters of biological reactors AT75-AT900:

Type of WWTP		AT 75	AT 100	AT 120	AT 150	AT 200	AT 250
Number of PE		75	100	120	150	200	250
Maximal flow rate, in m ³ /d		11,3	15,0	18,0	22,5	30,0	37,5
Organic load, in kg BOD ₅ /d		4,5	6,0	7,2	9,0	12,0	15,0
Biological reactor	Height	3 000	3 000	3 000	3 000	3 000	3 000
	Diameter	3 300	3 500	4 000	4 500	5 000	5 300
	Inlet height	2 900	2 900	2 900	2 900	2 900	2 900
	Outlet height	2 600	2 600	2 600	2 600	2 600	2 600
	Inlet DN	50/200	50/200	50/200	50/200	50/200	50/200
	Outlet DN	150/200	150/200	150/200	150/200	150/200	150/200
	Number of reactors	1	1	1	1	1	1
	Lid	plastic	plastic	plastic	plastic	plastic	plastic

Type of WWTP		AT 300	AT 400	AT 500	AT 600	AT 750	AT 900
Number of PE		300	400	500	600	750	900
Maximal flow rate, in m ³ /d		45,0	60,0	75,0	90,0	112,5	135,0
Organic load, in kg BOD ₅ /d		18,0	24,0	30,0	36,0	45,0	54,0
Biological reactor	Height	3 000	3 000	3 000	3 000	3 000	3 000
	Diameter	5 500	5 000	5 300	5 500	5 300	5 500
	Inlet height	2 900	2 900	2 900	2 900	2 900	2 900
	Outlet height	2 600	2 600	2 600	2 600	2 600	2 600
	Inlet DN	50/200	50/200	50/200	50/200	50/200	50/200
	Outlet DN	150/200	150/200	150/200	150/200	150/200	150/200
	Number of reactors	1	2	2	2	3	3
	Lid	plastic	plastic	plastic	plastic	plastic	plastic

(continued)



Annex No. 1 of the Product Certificate No. 00026/TSUS/Y/2022 (continued)

Basic parameters of biological reactors AT-75 oval – AT-500oval:

Type of WWTP		AT 75 oval	AT 100 oval	AT 120 oval	AT 150 oval	AT 175 oval	AT 200 oval
Number of PE		75	100	120	150	175	200
Maximal flow rate, in m ³ /d		11,3	15,0	18,0	22,5	26,3	30,0
Organic load, in kg BOD ₅ /d		4,5	6,0	7,2	9,0	10,5	12,0
Biological reactor	Height	2 500	2 500	2 500	2 500	2 500	2 500
	Length	5 100	6 350	7 050	8 500	9 700	10 900
	Overall length	5 160	6 410	7 110	8 560	9 760	10 960
	Width	2 200	2 200	2 200	2 200	2 200	2 200
	Overall width	2 260	2 260	2 260	2 260	2 260	2 260
	Inlet height	2 200	2 200	2 200	2 200	2 200	2 200
	Outlet height	1 900	1 900	1 900	1 900	1 900	1 900
	Inlet DN	50	50	50	50	50	50
	Outlet DN	160/200	160/200	160/200	160/200	160/200	160/200
	Number of reactors	1	1	1	1	1	1
Lid	plastic	plastic	plastic	plastic	plastic	plastic	

Type of WWTP		AT 225 oval	AT 250 oval	AT 300 oval	AT 350 oval	AT 400 oval	AT 450 oval	AT 500 oval
Number of PE		225	250	300	350	400	450	500
Maximal flow rate, in m ³ /d		33,8	37,5	45,0	52,5	60,0	67,5	75,0
Organic load, in kg BOD ₅ /d		13,5	15,0	18,0	21,0	24,0	27,0	30,0
Biological reactor	Height	2 500	2 500	2 500	2 500	2 500	2 500	2 500
	Length	11 940	13 400	8 500	9 700	10 900	11 940	13 400
	Overall length	12 000	13 460	8 560	9 760	10 960	12 000	13 460
	Width	2 200	2 200	2 200	2 200	2 200	2 200	2 200
	Overall width	2 260	2 260	2 260	2 260	2 260	2 260	2 260
	Inlet height	2 200	2 200	2 200	2 200	2 200	2 200	2 200
	Outlet height	1 900	1 900	1 900	1 900	1 900	1 900	1 900
	Inlet DN	50	50	50	50	50	50	50
	Outlet DN	160/200	160/200	160/200	160/200	160/200	160/200	160/200
	Number of reactors	1	1	2	2	2	2	2
	Lid	plastic	plastic	plastic	plastic	plastic	plastic	plastic

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Basic parameters of biological reactors AT75 oval iPS – AT225 oval iPS:

Type of WWTP		AT 75 oval iPS	AT 100 oval iPS	AT 125 oval iPS	AT 150 oval iPS	AT 175 oval iPS	AT 200 oval iPS	AT 225 oval iPS
Number of PE		75	100	125	150	175	200	225
Maximal flow rate, in m ³ /d		11,3	15,0	18,8	22,5	26,3	30,0	33,8
Organic load, in kg BOD ₅ /d		4,5	6,0	7,5	9,0	10,5	12,0	13,5
Biological reactor	Height	2 500	2 500	2 500	2 500	2 500	2 500	2 500
	Length	5 900	7 050	8 500	9 700	10 900	11 940	13 300
	Overall length	5 960	7 110	8 560	9 760	10 960	12 000	13 360
	Width	2 200	2 200	2 200	2 200	2 200	2 200	2 200
	Overall width	2 260	2 260	2 260	2 260	2 260	2 260	2 260
	Inlet height	1 200	1 200	1 200	1 200	1 200	1 200	1 200
	Outlet height	1 900	1 900	1 900	1 900	1 900	1 900	1 900
	Inlet DN	200	200	200	200	200	200	200
	Outlet DN	160/200	160/200	160/200	160/200	160/200	160/200	160/200
	Number of reactors	1	1	1	1	1	1	1
Lid	plastic	plastic	plastic	plastic	plastic	plastic	plastic	

Basic parameters of biological reactors AT300maxi – AT2000 maxi:

Type of WWTP		AT 300 oval maxi	AT 400 oval maxi	AT 500 oval maxi	AT 600 oval maxi	AT 800 oval maxi
Number of PE		300	400	500	600	800
Maximal flow rate, in m ³ /d		45,0	60,0	75,0	90,0	120,0
Organic load, in kg BOD ₅ /d		18,0	24,0	30,0	36,0	48,0
Biological reactor	Height	3 400	3 400	3 400	3 400	3 400
	Length	9 600	11 600	13 600	9 600	11 600
	Overall length	9 660	11 660	13 660	9 660	11 660
	Width	2 940	2 940	2 940	2 940	2 940
	Overall width	3 000	3 000	3 000	3 000	3 000
	Inlet height	3 000	3 000	3 000	3 000	3 000
	Outlet height	2 800	2 800	2 800	2 800	2 800
	Inlet DN	50/200	50/200	50/200	50/200	50/200
	Outlet DN	160/200	160/200	160/200	160/200	160/200
	Number of reactors	1	1	1	2	2
Lid	plastic	plastic	plastic	plastic	plastic	

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Annex No. 1 of the Product Certificate No. 00026/TSUS/Y/2022 (continued)

Type of WWTP		AT 1000 oval maxi	AT 1200 oval maxi	AT 1500 oval maxi	AT 2000 oval maxi
Number of PE		1000	1200	1500	2000
Maximal flow rate, in m ³ /d		150,0	180,0	225,0	300,0
Organic load, in kg BOD ₅ /d		60,0	72,0	90,0	120,0
Biological reactor	Height	3 400	3 400	3 400	3 400
	Length	13 600	11 600	13 600	13 600
	Overall length	13 660	11 660	13 660	13 660
	Width	2 940	2 940	2 940	2 940
	Overall width	3 000	3 000	3 000	3 000
	Inlet height	3 000	3 000	3 000	3 000
	Outlet height	2 800	2 800	2 800	2 800
	Inlet DN	50/200	50/200	50/200	50/200
	Outlet DN	160/200	160/200	160/200	160/200
	Number of reactors	2	3	3	4
	Lid	plastic	plastic	plastic	plastic

Ascertained performances of relevant essential characteristics of the product

Essential characteristic	Performance	Ascertained performance
Load capacity (shaped tank stability)	Strain values from loads defined pursuant to STN EN 1990 and STN 73 0037 cannot exceed the standard-defined strength of the material multiplied by the appropriate coefficient for conditions affecting the material (or partial reliability coefficient) at any point on the element.	Conformity
Waterproofing	No leaks	No leaks
Concentrations of substances in effluent wastewater	Concentrations cannot exceed the indicators given in Annex 6 of Regulation of the Government of the Slovak Republic No 269/2010 Coll. as amended by Regulation No 398/2012 Coll. COD: max. 135 mg/l BOD ₅ : max. 30 mg/l TSS: max. 30 mg/l N-NH ₄ : max. 20 mg/l N _{total} : max. 25 mg/l P _{total} : max. 5 mg/l Insurmountable value of the waste water pollution indicator expressed in KTJ (colony forming units)/100 ml according to the government of the Czech Republic No. 57/2016 Coll. Escherichia coli max. 150 KTJ/100 ml Enterococetes max. 100 KTJ/100 ml	COD: 51,8 mg/l BOD ₅ : 5 mg/l TSS: 12,1 mg/l N-NH ₄ : 0,8 mg/l N _{total} : 14,8 mg/l P _{total} : 3,3 mg/l P _{total} *: 0,44 mg/l Escherichia coli**: 10 KTJ/100 ml Enterococetes **: 4 KTJ/100 ml
Durability	Material used must meet the requirements defined in 6.5 of EN 12566-3: 2005 + A2: 2013: MFR (230/2,16): 0,5 g/10 min ± 0,1 g/10 min Density: min. 908 kg/m ³ The material used shall meet the requirements set out in 6.5 of EN 12566-3+A2: 2014: MFR (230/2,16) = 0,5 g/10 min ± 0,1 g/10 min density min. 908 kg/m ³	MFR (230/2,16): 0,46 g/10 min Density: 914 kg/m ³

* with precipitation of phosphorus with iron salts

** with UV lamp

