



INSTITUTE FOR TESTING AND CERTIFICATION

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TEST REPORT

Ref. No: 753501162/2016

Applicant: **SOTRALENTZ Sp. z o.o.**
ul. Unii Europejskiej 26
96-100 Skierniewice, Poland

Products: **Wastewater treatment plant - Actibloc**

Assessed by: **Lubomír Martiník, Notified Body No. 1023**

Issued on: **2016-02-25**



A handwritten signature in blue ink, appearing to read 'RNDr. Radomír Čevelík'.

RNDr. Radomír Čevelík
Representative of the NB 1023



Introduction

Small wastewater treatment systems for up to 50 PT as construction products have to be assessed on the basis of relevant clauses of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC (hereafter CPR; Construction Products Regulation).

1. Product specification

Wastewater treatment plant - Actibloc

Products are manufactured in the factory

SOTRALENTZ Sp. z o.o., ul. Unii Europejskiej 26, 96-100 Skierniewice, Poland

They are manufactured of blow moulding polyethylene; (the all types).

Design of sewage treatment plants of all the series are based on static calculations made on the basis of the conditions for their installation.

2. Assessment of and Verification of Constancy of Performance (AVCP)

2.1. Harmonized technical specification and the AVCP system

For the attestation of conformity of small wastewater treatment systems with the essential requirements of the CPR the harmonized standard EN 12566-3+A2:2013 Small wastewater treatment systems for up to 50 PT - Part 3: Packaged and/or site assembled domestic wastewater treatment plants was adopted.

For these products the system 3 of the AVCP is laid down, which corresponds to Annex V, Section 1.4, of the Regulation (EU) No 305/2011. In this system, the initial type testing shall be performed by Notified Body, in compliance with the Annex ZA of the above mentioned standard („Clauses of this European Standard addressing the provisions of the Regulation (EU) No 305/2011”).

The AVCP shall be based on the clauses ZA.2 (Table ZA.3) and cl. 9 of the mentioned standard.

2.2 Properties specifying the essential requirements

The compliance of the small wastewater treatment systems with the essential requirements of the ZA Annex of the EN 12566-3+A2:2013 was assessed by evaluation of the following properties (The task of the notified body):

- **Structural behaviour test or static calculation**
- **Treatment efficiency test**
- **Watertightness test**

- **Durability**

2.3 Place and method of sampling

The samples were taken in the manufacturer's site by his representatives, subsequently sent to ITC and taken over in the testing laboratory of NB 1023 ITC, a. s. Zlín.

2.4 Sample description and identification

Client submitted for testing 1 piece of Actibloc small waste water treatment system tanks for up to 50 PT. The sample was registered under ITC number 753501162/1. (Photo No.1)

The system contains:

- ☐ 2 tanks (1-zbiornik-osadnik gnilny and 2- bioreactor)
- ☐ Electromagnetic air pump
- ☐ Control panel



Photo No.1 – Sample 753501162/1 – Sotralentz Actibloc

The wastewater treatment facility is operated using SBR technology (Sequential Batch Reactor).

The Actibloc wastewater treatment facilities may be operated with a unit for sludge dewatering and with the use of coagulating agent or without these components.



2.5 Place and date of the tests

The tests were performed in the laboratories of the Institut pro testování a certifikaci, a. s. in Zlín, (Notified Body No. 1023). The tests were completed in May 2015 – February 2016.

2.6 Request

The subject of this report is the treatment efficiency according to the request of the manufacturer (application for the AVCP No. 753501162).

2.6.1 Treatment efficiency test according to EN 12566-3 +A2, annex B

Analytical tests according:

Suspended solids – according to ČSN EN 872

BOD₅ – according to ČSN EN 1899-2

COD according to ČSN ISO 15705

Nitrogen tested acc. to Kjeldahl according to ČSN EN 25663

Phosphorus according to ČSN EN ISO 6878

Power consumption according to ČSN EN 12566-3 +A2 art. 6.7

2.6.2 Test conditions:

Ad 2.6.1 Nominal inflow rate = 600 l/day. Universal testing simulating system ITC acc. to EN 12566-3+A2.

- Nominal organic daily load 0,3 kg/day.
- Power consumption 0,4 kWh / 24 hours (based on the test report of the notified body (NB 0679) No. CAPE AT 09-021, issued by Centre Scientifique et Technique du Bâtiment (CSTB), Marne-la-Vallée Cedex 2, France)

2.7 Test results:

Ad. 2.6.1 Treatment efficiency

Tab. No. 1 : Test schedule

Sequence	Characteristic	Time elapsed weeks
1	Sequence name: Biomass Establishment Hydraulics daily flow: Nominal Sampling: no	4
2	Sequence name: Nominal Hydraulics daily flow: Nominal Sampling: 4 measurements	6
3	Sequence name: Under loading Hydraulics daily flow: 50% Nominal Sampling: 2 measurements	2
4	Sequence name: Nominal – Power Breakdown ¹⁾ Hydraulics daily flow: Nominal Sampling: 5 measurements	6
5	Sequence name: Low occupation stress Hydraulics daily flow: No Sampling: No	2
6	Sequence name: Nominal Hydraulics daily flow: Nominal Sampling: 3 measurements	6
7	Sequence name: Overloading ²⁾ Hydraulics daily flow: Nominal and overload Sampling: 2 measurements	2
8	Sequence name: Nominal – Power Breakdown ¹⁾ Hydraulics daily flow: Nominal Sampling: 5 measurements	6
9	Sequence name: Under loading Hydraulics daily flow: 50% Nominal Sampling: 2 measurements	2
10	Sequence name: Nominal Hydraulics daily flow: Nominal Sampling: 3 measurements	6

1) A 24 h power breakdown is organized 2 weeks after the beginning of the sequence.

2) An overload is organised for duration of 48h at the beginning of the sequence.



Table No. 2: Water quality - INFLOW values

sample	influent	sequence	Unit	Temp. °C	SS	COD	BOD5	N-NH4	N-Kj.	P-total
1	100% Nominal	2	mg/l	20	550	930	260	10,4	34,7	7,98
2		2	mg/l	22	470	820	230	7,58	29,2	5,12
3		2	mg/l	22	480	1000	290	12,8	53,6	7,49
4		2	mg/l	22	330	810	280	15,3	50,7	4,32
5	100% Nominal	4	mg/l	27	630	1000	290	17,4	32,7	5,82
6		4	mg/l	26	440	720	250	15,7	28,0	5,31
7		4	mg/l	22	370	620	210	7,17	18,9	3,10
8		4	mg/l	21	250	450	170	9,65	25,8	2,64
9		4	mg/l	24	510	920	300	10,7	29,7	7,32
10	100% Nominal	6	mg/l	17	340	600	180	15,8	33,4	3,99
11		6	mg/l	15	480	780	220	11,6	27,0	5,31
12		6	mg/l	14	420	730	210	12,2	29,2	5,04
13	100% Nominal	8	mg/l	13	360	940	290	20,2	36,7	5,57
14		8	mg/l	14	650	1200	330	32,0	53,6	6,08
15		8	mg/l	12	980	1600	610	23,1	66,2	9,90
16		8	mg/l	9	410	1100	400	22,0	43,0	6,31
17		8	mg/l	12	790	1800	500	23,7	64,1	9,97
18	100% Nominal	10	mg/l	3	690	1400	420	36,4	68,4	7,41
19		10	mg/l	6	570	1300	450	14,3	52,0	7,60
20		10	mg/l	6	700	1500	500	22,3	65,8	7,46
1	50% Nominal	3	mg/l	21	530	840	240	7,88	32,1	6,33
2	Nominal	3	mg/l	19	560	1300	400	15,1	56,0	17,6
3	50% Nominal	9	mg/l	10	990	3100	1000	27,0	70,1	6,86
4	Nominal	9	mg/l	10	2000	4600	1900	30,9	93,4	12,0
1	150% Nominal	7	mg/l	16	670	1200	260	19,7	39,7	6,18
2	Nominal	7	mg/l	13	470	1600	440	19,1	35,6	17,9



Table No. 3: Water quality - OUTFLOW values

sample	influent	sequence	Unit	Temp. °C	SS	COD	BOD5	N-NH4	N-Kj.	P-total
1	100% Nominal	2	mg/l	20	8,4	40	13	<1	3,47	0,16
2		2	mg/l	22	13	37	12	<1	3,80	0,17
3		2	mg/l	22	5,6	41	9,5	4,38	4,92	0,12
4		2	mg/l	22	6,4	40	9,5	7,94	9,55	0,15
5	100% Nominal	4	mg/l	27	7,6	38	13	1,25	2,01	0,29
6		4	mg/l	26	8,8	40	10	<1	2,01	0,30
7		4	mg/l	22	16	32	11	5,93	7,75	0,31
8		4	mg/l	21	9,2	32	9,5	5,38	8,33	0,20
9		4	mg/l	24	11	37	9,5	1,78	3,18	0,27
10	100% Nominal	6	mg/l	17	7,4	52	16	15,5	18,6	0,12
11		6	mg/l	15	5,6	29	8,8	<1	3,03	0,05
12		6	mg/l	14	3,0	22	7,3	<1	1,65	0,05
13	100% Nominal	8	mg/l	13	9,0	46	12	<1	4,38	0,19
14		8	mg/l	14	12	33	8,0	1,68	3,01	0,16
15		8	mg/l	12	7,2	36	9,0	<1	5,24	0,21
16		8	mg/l	9	13	47	14	<1	4,70	0,18
17		8	mg/l	12	13	50	14	<1	7,72	0,22
18	100% Nominal	10	mg/l	3	8,0	64	17	8,34	13,4	0,09
19		10	mg/l	6	6,2	52	13	1,49	4,15	0,08
20		10	mg/l	6	4,6	42	11	<1	3,05	0,06
1	50% Nominal	3	mg/l	21	50	62	17	<1	5,25	0,52
2	Nominal	3	mg/l	19	12	20	7,3	1,41	4,32	0,21
3	50% Nominal	9	mg/l	10	6,0	69	24	6,13	10,2	0,12
4	Nominal	9	mg/l	10	8,0	98	27	2,86	5,22	0,11
1	150% Nominal	7	mg/l	16	11	36	9,5	2,53	5,75	0,12
2	Nominal	7	mg/l	13	12	43	11	1,12	3,83	0,21

Table No. 4: Outflow water treatment quality at nominal flow rate

Parameter	Unit	Arithmetical mean	Uncertainty ¹⁾
SS	mg/l	8,75	0,74
COD	mg/l	40,50	2,12
BOD ₅	mg/l	11,36	0,58
N-NH ₄	mg/l	3,18	1,00
N-Kj.	mg/l	5,70	0,94
P	mg/l	0,18	0,02

1) Sample standard deviation

Table No. 5: Treatment efficiency

Daily load	Sample	Unit	SS	COD	BOD ₅	N-NH ₄	N-Kj.	P
nominal	average 20 values	%	98	96	96	77	85	97
Uncertainty ¹⁾		%	<1	<1	<1	<1	<1	<1

1) Sample standard deviation

Abbreviations explanation:

BOD ₅	– Total biochemical oxygen demand
COD	– Total chemical oxygen demand
SS	– Suspended solids
N-Kj	– Nitrogen acc. Kjeldahl
N-NH ₄	– Amonium nitrogen
P	– Total Phosphorus

No repair work was needed and no electrical or mechanical faults occurred during the test period.

Information on any problems, physical or environmental, occurring during the test period: There were no problems, physical or environmental.

Information detailing any physical deterioration of the plant that has occurred during the test period: There was no physical deterioration of the plant during the test period.

Information concerning deviations from the test procedure: There were no deviations from the test procedure.

Manufacturer uses scaling rules to ensure the same treatment efficiency and structural behaviour for all the products in the range.

No sludge removal was needed during the tested period.



There were no conflicts or deviations of the tested device in relation to the information provided by the producer before the test.

3. Conclusion

Assessment of and Verification of Constancy of Performance of the applied product - Wastewater treatment plant - Actibloc, with the essential requirements of Regulation (EU) No 305/2011 was carried out in accordance with the harmonized technical specification EN 12566-3+A2:2013 - Small wastewater treatment systems up to 50 PT - Part 3: Packaged and / or site assembled domestic wastewater treatment plants, annex ZA.

This Technical Specification specifies the use of the AVCP procedure (module) 3 according to Annex V, Section 1.4, of the Regulation (EU) No 305/2011 - Test type (initial testing of the product) by a Notified test laboratory.

4. List of the documents used for the Test Report elaborating

- Application for certification No. 753501162
- Regulation (EU) No 305/2011
- Test report of the accredited laboratory No. 753501162/01, issued by ITC, a.s. Zlín
- Test report of the notified body (NB 0679) No. CAPE AT 09-021, issued by Centre Scientifique et Technique du Bâtiment (CSTB), Marne-la-Vallée Cedex 2, France
- EN 12566-3+A2:2013 Small wastewater treatment systems for up to 50 PT - Part 3: Packaged and/or site assembled domestic wastewater treatment plants