



Bureau de normalisation  
du Québec

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# ANNEX TO THE CERTIFICATE

## WATERLOO BIOFILTER SYSTEMS INC.

65 Massey Road, Suite C  
Guelph, Ontario N1H 7M6

**CAN/BNQ 3680-600/2009-05-01 M2 (2017-07-18)**    *Onsite Residential Wastewater Treatment Technologies*

Certificate number:           **2312**  
Issue date:                       **2023-07-24**  
Expiry date:                      **2024-07-31**

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### Stand-alone wastewater treatment systems

#### Model Waterloo Biofilters®

#### Anaerobic Digester

Capacity:

Maximum Hydraulic capacity (L/d)	Minimum Digester Volume (L)	Minimum InnerTube™ Volume (L) <sup>(1)</sup>
1,100	2,077	220
1,600	3,021	320
2,000	3,776	400
2,400	4,531	480
2,500	4,720	500
3,000	5,664	600
3,500	6,608	700
4,000	7,552	800
4,500	8,496	900
5,000	9,440	1,000
5,500	10,384	1,100
6,000	11,328	1,200
6,500	12,272	1,300
7,000	13,216	1,400
7,500	14,160	1,500
8,000	15,104	1,600
8,500	16,048	1,700
9,000	16,992	1,800
9,500	17,936	1,900
10,000	18,880	2,000

(1) The "Inner tube" is the term used to describe the long corrugated pipe forcing a longer path of water in the digester. The volume of the inner tube is included in the minimum effective volume of the digester.

Designation:	AD.
Material:	Constructed using concrete, plastic, or fibreglass tank that conforms with the strength and watertightness requirements of Standard CAN/CSA-B66 or Standard BNQ 3680-905, or equivalent acceptable to the Authority having jurisdiction.
Dosing:	External or internal pump chamber. Demand or timed dosed.
Others:	Single or double compartment tank. No effluent filter required. InnerTube outlet opposite tank outlet or pump. One or multiple tanks.

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### Waterloo Biofilter

Capacity:

Designation	Maximum Hydraulic Capacity (L/d)	Minimum Foam Filter Media Volume (m <sup>3</sup> )	Minimum Foam Filter Media Volume (ft <sup>3</sup> )
11	1,100	1.5	54
16	1,600	2.2	79
20	2,000	2.8	99
24	2,400	3.4	119
25	2,500	3.5	124
30	3,000	4.2	148
35	3,500	4.9	173
40	4,000	5.6	198
45	4,500	6.3	222
50	5,000	7.0	247
55	5,500	7.7	272
60	6,000	8.4	297
65	6,500	9.1	321
70	7,000	9.8	346
75	7,500	10.5	371
80	8,000	11.2	396
85	8,500	11.9	420
90	9,000	12.6	445
95	9,500	13.3	470
100	10,000	14.0	494

Configuration:

- SH = Shed with open-bottom.
- SHFB = Shed with full bottom.
- BA = Baskets in concrete tank.
- BFCN = Bulk filled concrete tank.
- BFHD = Bulk filled plastic tank.
- BFFG = Bulk filled fibreglass tank.

### Certificate Precisions

Treatment Class:           Class B-IV.  
Influent Temperature:    The tests specified in articles 8.1 and 8.2 were carried out with influent wastewater, at a minimum controlled temperature of 11 °C ± 1 °C.  
Others:                        This treatment chain has no septic tank. The anaerobic digester is the first step of the treatment chain.

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### Waterloo Flatbed Biofilter

#### Capacity:

Designation	Flat Bed Modules	Flat Bed Chain Treatment Capacity <sup>(1)</sup> (L/d)	Minimum Foam Filter Media Volume (m <sup>3</sup> )	Minimum Foam Filter Media Volume (ft <sup>3</sup> )
11	2 units of FB-800	1,670	2.9	104
16	2 units of FB-800	1,670	2.9	104
20	2 units of FB-1000	2,000	3.5	125
24	3 units of FB-800	2,505	4.4	156
25	3 units of FB-800	2,505	4.4	156
30	3 units of FB-1000	3,000	5.3	187
35	2 units of FB-800 2 units of FB-1000	3,670	6.5	229
40	4 units of FB-1000	4,000	7.0	250
45	6 units of FB-800	5,010	8.8	312
50	6 units of FB-800	5,010	8.8	312
55	2 units of FB-800 4 units of FB-1000	5,670	10.0	354
60	6 units of FB-1000	6,000	10.6	375
65	8 units of FB-800	6,680	11.8	416
70	2 units of FB-800 6 units of FB-1000	7,670	13.6	479
75	2 units of FB-800 6 units of FB-1000	7,670	13.6	479
80	8 units of FB-1000	8,000	14.1	500
85	8 units of FB-800 2 units of FB-1000	8,680	15.3	541
90	6 units of FB-800 4 units of FB-1000	9,010	15.9	562
95	2 units of FB-800 8 units of FB-1000	9,670	17.1	604
100	10 units of FB-1000	10,000	17.7	625

#### Configuration:

FB: Flatbed with open-bottom.

Flat Bed Modules	Flat Bed Treatment Capacity <sup>(1)</sup> (L/d)	Minimum Foam Filter Media Volume (m <sup>3</sup> )	Minimum Foam Filter Media Volume (ft <sup>3</sup> )
FB-225	852	1.51	53.2
FB-800	835	1.47	52.1
FB-1000	1000	1.77	62.5
FB-1200	1167	2.06	72.9

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**Waterloo Flatbed Biofilter**

**Certificate Precisions**

Treatment Class:                Class B-IV.  
Influent Temperature:        The tests specified in articles 8.1 and 8.2 were carried out with influent wastewater, at a minimum controlled temperature of 11 °C ± 1 °C.

Others: This treatment chain has no septic tank. The anaerobic digester is the first step of the treatment chain.  
<sup>(1)</sup> *The Waterloo Biofilter treatment capacity of a Flat Bed system is the sum total of the Flat Bed Treatment Capacities of the Flat Bed Models used in the system. Flat Beds may be laid out in 'parallel', 'series', or combination thereof. The designation of a Flat Bed system is the total treatment capacity with the last two digits truncated. E.g. a system comprised of two FB-800 models has treatment capacity of 835 \* 2 = 1,670 L/d and a designation number of 16.*



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Model Designation	
Class B-IV:	AD-SH11, AD-SHFB11, AD-BA11, AD-BFCN11, AD-BFHD11, AD-BFFG11, AD-FB11 AD-SH16, AD-SHFB16, AD-BA16, AD-BFCN16, AD-BFHD16, AD-BFFG16, AD-FB16 AD-SH20, AD-SHFB20, AD-BA20, AD-BFCN20, AD-BFHD20, AD-BFFG20, AD-FB20 AD-SH24, AD-SHFB24, AD-BA24, AD-BFCN24, AD-BFHD24, AD-BFFG24, AD-FB24AD-SH25, AD-SHFB25, AD-BA25, AD-BFCN25, AD-BFHD25, AD-BFFG25, AD-FB25 AD-SH30, AD-SHFB30, AD-BA30, AD-BFCN30, AD-BFHD30, AD-BFFG30, AD-FB30 AD-SH35, AD-SHFB35, AD-BA35, AD-BFCN35, AD-BFHD35, AD-BFFG35, AD-FB35 AD-SH40, AD-SHFB40, AD-BA40, AD-BFCN40, AD-BFHD40, AD-BFFG40, AD-FB40 AD-SH45, AD-SHFB45, AD-BA45, AD-BFCN45, AD-BFHD45, AD-BFFG45, AD-FB45 AD-SH50, AD-SHFB50, AD-BA50, AD-BFCN50, AD-BFHD50, AD-BFFG50, AD-FB50 AD-SH55, AD-SHFB55, AD-BA55, AD-BFCN55, AD-BFHD55, AD-BFFG55, AD-FB55 AD-SH60, AD-SHFB60, AD-BA60, AD-BFCN60, AD-BFHD60, AD-BFFG60, AD-FB60 AD-SH65, AD-SHFB65, AD-BA65, AD-BFCN65, AD-BFHD65, AD-BFFG65, AD-FB65 AD-SH70, AD-SHFB70, AD-BA70, AD-BFCN70, AD-BFHD70, AD-BFFG70, AD-FB70 AD-SH75, AD-SHFB75, AD-BA75, AD-BFCN75, AD-BFHD75, AD-BFFG75, AD-FB75 AD-SH80, AD-SHFB80, AD-BA80, AD-BFCN80, AD-BFHD80, AD-BFFG80, AD-FB80 AD-SH85, AD-SHFB85, AD-BA85, AD-BFCN85, AD-BFHD85, AD-BFFG85, AD-FB85 AD-SH90, AD-SHFB90, AD-BA90, AD-BFCN90, AD-BFHD90, AD-BFFG90, AD-FB90 AD-SH95, AD-SHFB95, AD-BA95, AD-BFCN95, AD-BFHD95, AD-BFFG95, AD-FB95 AD-SH100, AD-SHFB100, AD-BA100, AD-BFCN100, AD-BFHD100, AD-BFFG100, AD-FB100

<b>List of recognized manufacturers for system components</b>
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<b>Concrete Precasters</b>
BOYD BROS CONCRETE 5450 CCuddy Street Osgoode, Ontario K0A 2W

<b>Plastic Component Manufacturers</b>
ROTH GLOBAL PLASTICS One General Motor Drive P.O. Box 245 Syracuse, New York, 13211

<b>List of recognized assemblers</b>
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BOYD BROS CONCRETE 5450 Cuddy Street Osgoode (Ontario) K0A 2W0
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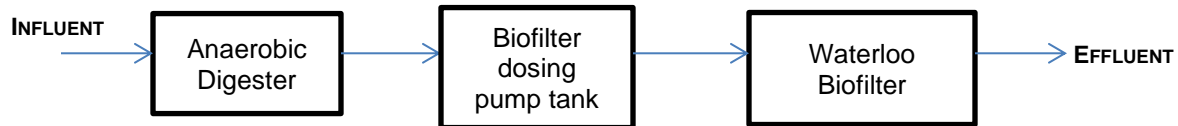
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### FLOW DIAGRAM OF WATERLOO BIOFILTER ®



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HISTORY	
Date	Modification description
2016-07-05	Issuance of certificate.
2016-08-08	Minor Corrections of different sections.
2018-05-22	Addition of Waterloo Flatbed biofilter systems.
2018-07-04	Renewal of the certificate.
2018-08-30	Addition of Waterloo Flatbed biofilters information.
2019-07-18	Update of the certificate according to the M2 changes to the standard and M1 changes to the protocol.
2020-07-15	Correction of ROTH GLOBAL PLASTICS site address. Renewal of certificate.
2021-04-26	Correction from Waterloo Biofilter Treatment capacity (L/d) to Maximum Hydraulic Capacity (L/d). Modification of the business address.
2021-08-30	Addition of models AD-SH24, AD-SHFB24, AD-BA24, AD-BFCN24, AD-BFHD24, AD-BFFG24, AD-FB24.
2021-11-26	Withdrawn of concrete precasters MacGregor Concret Products, Winona Concrete & Pipe Products and Unit Precast (Breslau) Ltd. Addition of Boyd Bros Concrete.
2022-07-19	Renewal of the certificate.
2023-07-24	Addition of configuration FB-225 Waterloo Flatbed biofilter.

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