



Department of Safety and Professional Services
Division of Industry Services
Plumbing Product Review
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Governor Tony Evers **Dawn Crim, Secretary**

April 6, 2020

Re: Description: SEWAGE TREATMENT APPARATUS (TIER 1)
Manufacturer: Acuantia Incorporated
Product Name: Biorock
Model Number(s): Monoblock Model Number: 3 – 1,000
Ecorock Model Numbers: 1,000, 1,500, 2,000, 3,000 and 5,000
eSLA ID: PP-042000006-PTOWWTD

The specifications and/or plans for this plumbing product have been reviewed and determined to comply with chapters SPS 382 through 384, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. This approval is valid until the end of April 2025. This approval is contingent upon compliance with the following stipulation(s):

- The “Monoblock” device is comprised of a primary and secondary treatment tanks.
- The “Ecorock” devices are secondary treatment tanks and shall be vented separately from the primary tank.
- All tanks shall be filled with water incrementally as the backfilling process proceeds.
- These tanks shall be fitted with locking manhole covers in accordance with s. SPS 384.25 (7) (h) Wis. Adm. Code.
- These tanks shall bear warning labels, that are visible after installation, that conform to s. SPS 384.25 (8).
- A copy of this approval letter and a complete set of the manufacturer’s installation, operation and maintenance instructions shall be provided to the system owner and remain onsite.
- The installation of these products shall be performed by a properly Wisconsin licensed/credentialed person(s).
- A Sanitary Permit shall be obtained from the county for each installation of these systems.
- When these systems are installed within a pre-existing POWTS, it is considered a modification of the existing POWTS. Installation of these systems may require modification of the existing POWTS. The agency that approved the original POWTS installation plans shall also review the proposed modifications to the existing POWTS required to install these systems.
- Installation and servicing of these products shall be in accordance with the manufacturer’s published instructions, the plan approval and s. SPS 383.15 (4) Wis. Adm. Code. If there is a conflict between the manufacturer’s published instructions and a plan approval, then the plan approval and Wis. Adm. Code shall take precedence. A copy of the manufacturer’s installation and servicing instructions shall be provided to the owner of each system and remain onsite.

- “Ecorock” devices shall be preceded by properly sized and department approved septic tanks containing approved effluent filters.

The slope of the discharge piping from the primary tank to the secondary tank shall be $\geq 2\%$ and $\leq 4\%$.

- Only “Biorock” media, supplied by Acuantia, shall be used with these devices.

TABLE 1

Installation Parameters		
Parameter:	Monoblock	Ecorock
Base	Extend 300 mm beyond base on tanks on all sides	Extend 300 mm beyond base on tanks on all sides
Underbed	150 mm pea gravel/concrete slab	150 mm pea gravel/concrete slab
Backfill ^a	300 mm incremental layers of pea gravel on all sides	300 mm incremental layers of pea gravel on all sides
Bacterial carrier/media	Biorock	Biorock
Primary tank effluent filter	n/a	Required
Max. soil level above backfill	200 mm	200 mm

a = Native soil shall not be used. Do not completely fill tanks with water prior to backfilling, do not exceed 300 mm per filling and compaction cycle. All compaction shall be manual, no mechanical compaction.

- Tank contents removed, including “Biorock” media, shall be treated as septage and disposed of in accordance with NR 113 Wis. Adm. Code. The “Biorock” media is not biodegradable.
- The test results supporting the claims made for these devices were generated in accordance with EN-12566-3 Performance testing.
- No rainwater or groundwater shall be permitted to infiltrate these devices.
- This approval addresses residential strength waste only. These systems are approved to treat residential strength wastewater within the following parameters:

TABLE 2

INFLUENT WASTEWATER PARAMETERS	
CBOD ₅	30-day average ≥ 100 mg/l to ≤ 300 mg/l
TSS	30-day average ≥ 100 mg/l to ≤ 350 mg/l
TN	30-day average ≥ 50 mg/l to ≤ 70 mg/l
GPD	Daily average ≥ 100 to $\leq 1,500$ gallons

CBOD₅ = carbonaceous biochemical oxygen demand, 5-day test
 TSS = total suspended solids
 TN = total nitrogen
 GPD = gallons per day

TABLE 3

“BIOROCK” LOADING RATES			
REQUIRED EFFLUENT			LOADING RATE IN GPD FT.³
TSS (mg/l)	CBOD₅ (mg/l)	TN (mg/l)	
30	25	n/a	12.5*
15	15	n/a	9
15	15	15	8
10	10	n/a	7
10	10	10	6.5
5	5	10	6
2	2	10	5.5

* = maximum loading rate

High strength and/or commercial applications of these devices shall be on a site-specific basis via POWTS plan review.

TABLE 6

INSPECTION, MAINTENANCE AND PUMPING	
Initial Startup Inspection/Maintenance:	See Acuantia Inc."Installation and User Guide"
Routine Inspection/Maintenance:	See Acuantia Inc."Installation and User Guide"
Ongoing Pumping Schedule and/or Requirements:	No additional service intervals other than prescribed by state/local authorities having jurisdiction
Backwash Cycle:	N/A
Effluent Performance Levels:	< 30.0 mg/l monthly average of TSS/FOG/BOD ₅
BOD₅ Distribution Area Downsizing Credit?	Yes
Fecal Coliform Vertical Separation Credit?	No
Additional Comments:	None

The department is in no way endorsing this product or any advertising and is not responsible for any situation which may result from its use.

Sincerely,

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