



August 8, 2012

ORENCO SYSTEMS  
GOVERNMENT RELATIONS  
NICHOLAS NOBLE  
814 AIRWAY AVE  
SUTHERLIN OR 97479

Re: Description: SEWAGE TREATMENT APPARATUS (Tier 3- downsizing & vertical separation credit)  
Manufacturer: ORENCO SYSTEMS  
Product Name: ADVANTEX® TREATMENT SYSTEMS  
**Model Number(s): AX20 and AX20-RT**  
[multiple pass, packed-bed aerobic treatment for domestic-strength wastewater in gravity or dosed systems incorporating a Biotube effluent filter in a min. 1000 gal. primary tank; the AX20-RT is housed in an 800 gal. AdvanTex Recirculating Treatment Tank]  
**Product File No: 20120256**

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance 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 DECEMBER 2017.**

This approval is contingent upon compliance with the following stipulation(s):

- This product may not receive backwash discharge from a water softener. Water softener backwash discharge must be discharged in another method acceptable to chs. SPS 382 and 383 (formerly Comm 82 and 83), Wis. Admin. Code.
- Installation and servicing of this product must be in accordance with the manufacturer's instructions. A copy of the manufacturer's installation and servicing instructions must be given to the owner of the system.
- Plan review for the installation of this product must be obtained from the department in accordance with SPS 382.20 (1) of the Wis. Adm. Code.
- All processing tanks used with AdvanTex Treatment Systems must be approved by Orenco Systems Engineering Department.
- For AX20, this product may only serve one- or two-family dwellings. The number of AX20 filter units and required tank/tank capacity must be in accordance with specifications contained in Orenco Systems, Inc. document number NDA-ATX-2 Rev. 4.3, copyright 11/05 entitled "AdvanTex Design Criteria for Residential Applications."

For AX20-RT, this product may only serve one- or two-family dwellings. The number of AX20-RT filter units and required tank/tank capacity must be in accordance with specifications contained in Orenco Systems, Inc. document number NIM-ATX-AXRT Rev. 1.0, copyright 1/10 entitled "AdvanTex AX20-RT Treatment Systems, Residential Applications,, Installation Manual."

- Based on testing data submitted and reviewed by the department, this approval recognizes that when the influent strength does NOT exceed the levels listed in Table 1., this device is expected to produce effluent not exceeding the performance levels indicated in Table 2.

Table 1  
 Recirculated-Blend Tank Influent\* Strength

|                     | Average | Average Weekly Peak | Rarely Exceed |
|---------------------|---------|---------------------|---------------|
| BOD5 (mg/L)         | 130     | 200                 | 300           |
| TSS (mg/L)          | 40      | 60                  | 150           |
| TKN (mg/L)          | 65      | 75                  | 150           |
| Oil & Grease (mg/L) | 20      | 25                  | 25            |

\* Influent is defined as primary sewage entering the recirculating tank from a septic tank (where separate tanks are used) or entering the recirculation compartment from the primary compartment where a two-compartment processing tank is used.

Table 2  
 AX20 & AX20-RT Treated Effluent Characteristics

|                             | Average                  |
|-----------------------------|--------------------------|
| BOD5 (mg/L)                 | 10 (maximum)             |
| TSS (mg/L)                  | 10 (maximum)             |
| Total Nitrogen (mg/L)       | 65% reduction* (minimum) |
| Fecal Coliform (cfu/100 ml) | 1000 (maximum)           |

\* Expected Total Nitrogen reduction relative to system influent.

- TABLE 3 INSPECTION, MAINTENANCE AND PUMPING**  
 PRODUCT/ (Models): ORENCO (AdvanTex AX20, AX20-RT)

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Initial/Startup Inspection/ Maintenance: Inspect at startup; inspect/maintain three to six months following startup, or more frequently as determined by local requirements or by system operator.

Routine Inspection/Maintenance: Inspect annually or more frequently as determined by local requirements or by system operator.

Ongoing Pumping Cycle And/Or Requirements: Check scum/sludge accumulation every 2 to 3 years at minimum; pump as necessary, or as per local requirements

Back-Wash Cycle: N/A

Effluent Performance Levels: BOD = 10 mg/L max.; TSS = 10 mg/L max.  
 Total Nitrogen = 65% reduction  
 Fecal coliform = 10,000 cfu/100 mL max.

BOD5 Credit For Downsizing Distribution Area: YES

Fecal Credit For Reduction Of Vertical Separation: YES.....

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Additional Comments: State-approved primary tank must be approved by Orenco representative  
 Backwash fro salt-type residential water softener prohibited

- With UV disinfection, this devices is expected to produce an effluent quality with a maximum monthly average value for BOD5 of less than or equal to 30 mg/L, TSS of less than or equal to 30 mg/L TSS and F.O.G. of less than 30 mg/L and fecal coliform of less than or equal to 10,000 cfu/100ml.
- Additional information is included as attachment(s) to this letter; see attachment A, B and C.

This approval supersedes the approval issued on 1/10/2011 under product file number 20100454.

This approval letter shall be incorporated with your previously approved plans and/or specifications approved under product file number 20100454..

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**Product File No: 20120256**

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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