



# U. S. Department of Homeland Security United States Coast Guard Certificate of Approval

Coast Guard Approval Number: 159.015/10175/0

Expires: 02 June 2026

SEWAGE POLLUTION PREVENTION EQUIPMENT  
CERTIFICATION OF COMPLIANCE WITH 33 CFR 159 - Type II Marine Sanitation Device

AHEAD SANITATION SYSTEMS  
329 Hardware Road  
Broussard LA 70518

Models: AT-10STP, AT-10STP-D, AT-18STP, and AT-18STP-D

The models listed above have a designed hydraulic loading of 0.21, 0.21, 0.33 and 0.33 m<sup>3</sup>/day and an organic loading of 0.90, 0.90, 1.62 and 1.62 kg/day Biochemical Oxygen Demand without nitrification (BOD), respectively. The design shown on drawings AT-10STP, AT-10STP-D1, AT-18STP, and AT-18STP-D1 have been examined and satisfactorily tested in accordance with IMO resolution MEPC.227(64) to meet the operational requirements referred to in regulation 9 of Annex IV of the International Convention for the Prevention of Pollution from Ships (MARPOL).

The tests on the equipment were carried out ashore at TEi-Testing Services, LLC on May 20, 2016. The equipment tested produced an effluent which did not exceed the geometric mean of 100 thermotolerant coliforms per 100 mL, Total Suspended Solids of 35 mg/L, a geometric mean of 5-day biochemical oxygen demand without nitrification of no more than 25 Qi/Qe mg/l, a geometric mean of chemical oxygen demand (COD) of no more than 125 Qi/Qe mg/l, a pH between 6 and 8.5, a geometric mean of total nitrogen of not more than 20 Qi/Qe mg/l or at least 70% reduction, and a geometric mean of total phosphorus of not more than 1.0 Qe mg/l or at least 80% reduction.

The Administration is satisfied that the sewage treatment plant can operate at angles of inclination of 22.5 degrees in any plane from the normal operating position.

Details of tests and results obtained are shown on the Appendix to this Certificate.

This equipment does not meet the hazardous locations requirements specified on 46 CFR 111.105, and therefore may not be installed in hazardous locations on U.S. flag vessels.

A copy of this certificate should be carried on board any ship equipped with the above described sewage treatment plant.

This certificate documents compliance with 33 CFR Part 159.

\*\*\* End \*\*\*

THIS IS TO CERTIFY THAT the above named manufacturer has submitted to the undersigned satisfactory evidence that the item specified herein complies with the applicable laws and regulations as outlined on the reverse side of this Certificate, and approval is hereby given. This approval shall be in effect until the expiration date hereon unless sooner canceled or suspended by proper authority.



GIVEN UNDER MY HAND THIS 02<sup>nd</sup> DAY OF  
JUNE 2021, AT WASHINGTON D.C.

*Jodi Min*

J. J. MIN  
Chief, Engineering Division  
BY DIRECTION OF THE COMMANDANT

**TERMS:** The approval of the item described on the face of the Certificate has been based upon the submittal of satisfactory evidence that the item complies with the applicable provisions of the navigation and shipping laws and the applicable regulations in Title 33 and/or Title 46 of the Code of Federal Regulations. The approval is subject to any conditions noted on this Certificate and in the applicable laws and regulations governing the use of the item on vessels subject to Coast Guard inspection or on other vessels and boats.

Consideration will be given to an extension of this approval provided application is made 3 months prior to the expiration date of this Certificate.

The approval holder is responsible for making sure that the required inspections or tests of materials or devices covered by this approval are carried out during production as prescribed in the applicable regulations.

The approval of the item covered by this certificate is valid only so long as the item is manufactured in conformance with the details of the approved drawings, specifications, or other data referred to. No modification in the approved design, construction, or materials is to be adopted until the modification has been presented for consideration by the Commandant and confirmation received that the proposed alteration is acceptable.

**NOTICE:** Where a manufacturer of safety-at-sea equipment is offering for sale to the maritime industry, directly or indirectly, equipment represented to be approved, which fails to conform with either the design details or material specifications, or both, as approved by the Coast Guard, immediate action may be taken to invoke the various penalties and sanctions provided by law including prosecution under 46 U.S.C. 3318, which provides:

"A person that knowingly manufactures, sells, offers for sale, or possesses with intent to sell, any equipment subject to this part (*Part B. of Subtitle II of Title 46 U.S.C.*) and the equipment is so defective as to be insufficient to accomplish the purpose for which it is intended, shall be fined not more than \$10,000, imprisoned for not more than 5 years or both."

APPENDIX  
U. S. Coast Guard Approval Number: 159.015/10175/0  
Expires: June 2, 2026

TEST DATA AND RESULTS OF TESTS CONDUCTED ON SAMPLES FROM THE SEWAGE TREATMENT PLANT IN  
ACCORDANCE WITH IMO RESOLUTION MEPC.227(64)

Sewage Treatment Plant, Type: IMO Res. MEPC.227(64), Reg 9.1.1, and 33 CFR 159 Subpart C  
Manufactured by: Ahead Sanitation Systems  
Organization conducting the test: TEi Testing Services/Model AT-10STP, Report Number TS-P1600974 dated May 20, 2016  
Designed hydraulic loading: 0.21 m<sup>3</sup>/day  
Designed organic loading: 0.90 kg/day BOD

Number of effluent samples tested: 40  
Number of influent samples tested: 40  
Raw sewage (influent) quality: 667 mg/l total Suspended Solids  
Maximum hydraulic loading: 0.105 m<sup>3</sup>/day  
Minimum hydraulic loading: 0.021 m<sup>3</sup>/day  
Average hydraulic loading: 0.042 m<sup>3</sup>/day  
Total Nitrogen influent quality: 15.8 mg/l  
Total Phosphorus influent quality: 9.3 mg/l  
Dilution Compensation Factor (Q<sub>i</sub>/Q<sub>e</sub>): 1.0

Geometric Mean of Total  
Suspended Solids: 6.2 mg/L  
Geometric Mean of the Thermotolerant  
Coliform Count: 14 tcu/100 ml  
Geometric Mean of BOD<sub>5</sub>: 10.2 mg/l  
Chemical Oxygen Demand (COD): 32 mg/L  
Geometric mean of total nitrogen: 0.78 mg/l or 95.6% reduction  
Geometric mean of total phosphorus: 0.05 mg/l or 99.5% reduction  
Maximum pH: 7.5  
Minimum pH: 6.8

Type of disinfectant used: Chlorine  
If Chlorine – Residual Chlorine: 0.2 mg/L  
Maximum: 0.6 mg/L  
Minimum: 0.1 mg/L  
Geometric Mean: 0.5 mg/L

Was the sewage treatment plant tested with:  
Fresh Water flushing? Yes  
Salt Water flushing: No  
Fresh and Salt Water flushing: No  
Greywater added: Yes- Black to Grey Water; 20% Black to 80% Grey Water

Was the sewage treatment plant tested against the environmental conditions specified in section 5.0 paragraph 5.9 of resolution  
MEPC.227(64):  
Temperature: Yes  
Humidity: Yes  
Inclination: Yes  
Vibration: Yes  
Reliability of Electrical and Electronic Equipment: Yes

Limitations and the conditions of operation are imposed:  
Salinity: N/A  
Temperature: After 0 Deg. C and 55 Deg. C  
Humidity: After 90% RH at 55 Deg. C  
Inclination: 22.5 Deg.  
Vibration: N/A

\*\*\* END \*\*\*