UniSystem® Package Wastewater Treatment Plant

High-Rate Activated Sludge (HRAS) and Extended Aeration

Industrial and Municipal Wastewater Treatment

Utilizing a modification of the activated sludge process, the "UniSystem®" can be designed as an extended aeration or a high-rate treatment plant. The system is designed to maintain sufficient oxygen, mixing, and detention time to allow micro-organisms to oxidize treatable wastes for removal of BOD, TSS, ammonia, and other wastewater constituents.

The standard UniSystem® package plant is a rectangular tank consisting of an aeration chamber, hopper bottom clarifier, sludge holding tank, and chlorine disinfection chamber. Aeration Industries can supply painted carbon steel tankage or all of the internals and ancillary equipment for installation in concrete tanks. Treatment modules can be easily added to the design of the UniSystem® depending on influent characteristics and effluent requirements. Treatment module options include a comminutor, flow equalization, denitrification equipment, filters, a membrane bioreactor, UV disinfection, post aeration, and phosphorus removal equipment.

The prefabricated UniSystem® is designed for ease of installation for customers located remote from municipal treatment facilities or for customers requiring pretreatment prior to discharge to a municipal sewer system. The standard UniSystem® is designed to treat single unit flow rates between 5,000 gallons per day (gpd) and 100,000 gpd. Multiple units can be installed to operate in parallel to accommodate higher flow rates and customized circular UniSystem® designs can be engineered for flow rates up to 500,000 gpd.

UniSystem® Design Advantages

- Small footprint reduces land use and allows plant to be easily covered
- Suitable for both municipal and industrial wastewater applications
- Flow capacities from
- Minimum operator attendance required
- Minimum maintenance requirements

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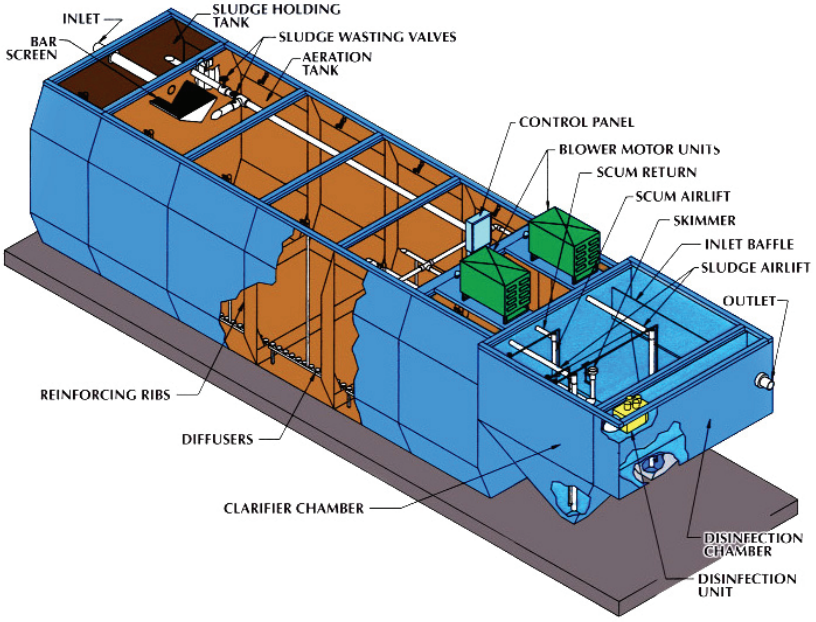
UniSystem® Applications

For locations requiring domestic wastewater treatment but unable to connect to an existing municipal sewer system, the UniSystem® offers a sustainable high-end wastewater treatment solution, requiring far less space, easy installation, and simple operation for the following applications:

- Small communities and remotely located housing developments
- Industrial office parks
- Recreational camps and mobile communities
- Truck stops and highway rest areas
- Industrial pretreatment, prior to discharge to municipal sewers
- Food and beverage processors
- Pulp and paper manufacturers
- Shopping centers and restaurants
- Resorts, golf courses, and country clubs
- Rural area schools
- Hospitals and retirement centers



① **Above-ground** HRAS UniSystem® for industrial wastewater treatment at a food processing facility, ② **In-Ground** Air UniSystem® for municipal wastewater treatment with tertiary filters and UV disinfection, ③ **Custom-engineered** circular tank UniSystem® with internal clarifier for treating 190,000 gpd of wastewater

UniSystem® Standard System Sizing*				
Average Design Flow (gpd)	**Average Design Flow (m^3/day)**	**Length**	**Width**	**Height**
5,000	18.93	18’-9” (15.72 m)	8’-0” (2.44 m)	9’-6” (2.89 m)
10,000	37.85	24’-9” (17.55 m)	10’-0” (3.05 m)	11’-0” (3.35 m)
20,000	75.71	36’-0” (10.98 m)	11’-11” (13.63 m)	11’-0” (13.35 m)
30,000	113.56	53’-0”(16.18m)	11’-11’ (13.63 m)	11’-0’ (13.35 m)
40,000	151.42	69’-0” (21.05 m)	11’-11” (13.63 m)	11’-0” (13.35 m)
50,000	189.27	83’-0” (25.33 m)	11’-11’ (13.63 m)	11’-0’ (3.35 m)
60,000	227.12	58’-0” (17.68 m)	23’-10” (7.26 m)	11’-0” (3.35 m)
70,000	264.98	65’-0” (19.82 m)	23’-10” (7.26 m)	11’-0” (3.35 m)
80,000	302.83	72’-0” (21.94 m)	23’-10” (7.26 m)	11’-0” (3.35 m)
90,000	340.69	79’-0” (24.11 m)	23’-10’ (7.26 m)	11’-0’ (3.35 m)
100,000	378.54	86’-0” (26.22 m)	23’-10” (7.26 m)	11’-0” (13.35 m)

** Includes Sludge Holding Tank, Aeration Tank, Clarifier, Chlorine Contact Tank*

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