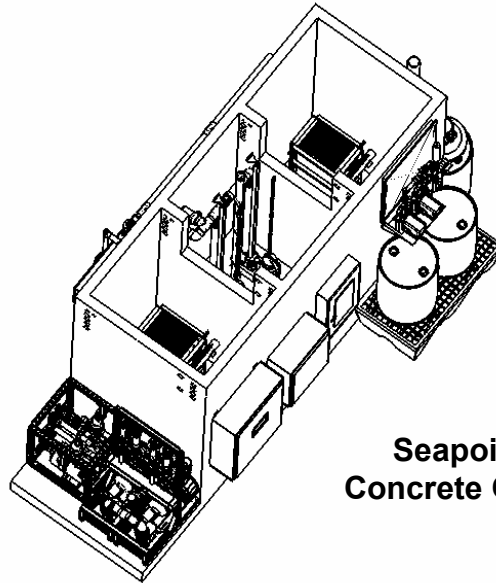




Seapoint P-5D Specification

Palletized Wastewater Treatment Package Plant



Seapoint™ P-5D
Concrete Construction

Wastewater Processing Capabilities:

- Treatment system based on flat-plate membrane bio-reactor (MBR) technology
- Up to 4.3 GPM, 6,250 GPD average flow
- Up to 8.7 GPM, 12,500 GPD emergency flow (up to 24 hours)
- Effluent *Supplied Head Pressure*: 15' minimum

Influent, Effluent, and Process Characterization: The following influent and effluent values are for standard plant equipment. Additional treatment options are available for influent concentrations that exceed these values and effluent concentrations that must be lower.

- **Wastewater Influent**
 - *Maximum Particle Size*: 1/8" (3 mm)
 - *TSS*: 30-day average not to exceed 300 mg/L
 - *BOD₅*: 30-day average not to exceed 300 mg/L
 - *TKN*: 30-day average not to exceed 45 mg/L
- **Process Conditions**
 - *Operating Temperature*:
 - For 6,250 GPD: 59°F (15°C) to 80°F (27°C)
 - For 5,000 GPD: 50°F (10°C) to 80°F (27°C)
 - *MLSS Concentration*: 12,000 mg/L (typical)
 - *pH*: 5.0 – 9.0
- **Treated Effluent**
 - *TSS*: 30-day average not to exceed 5 mg/L
 - *BOD₅*: 30-day average not to exceed 5 mg/L
 - *Total Nitrogen*: 30-day average not to exceed 10 mg/L
 - *Turbidity*: 30-day average not to exceed 1.0 NTU
 - *Fecal Coliform Bacteria*: None detectible

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Materials of Construction

Pallet and tanks are fabricated as a monolithic reinforced concrete unit

- All concrete used in the pallet has a minimum compressive strength of 5,000 psi and conforms with the requirements of ACI standard 318-83.
- All reinforcing steel bars conform to ASTM 615 Grade 60.
- Wire mesh and flat sheets used for reinforcing conform to ASTM 185.
- Test samples are taken during manufacturing.
- Interior of tanks is sealed with an epoxy coating.

Mechanical Equipment

- Effluent pumps, recirculation pumps, aeration blowers, control valves, and ultraviolet disinfection units are pre-mounted on the P-5D
- Supply pumps are included with the P-5D for installation in the equalization tank
- Standard system has installed backups for pumps, blowers, and UV disinfection
- An odor control system treats the process air released from the MBR

Electric Power Requirements:

- *Customer Supplied Inlet Power:* 3 phase power standard. Single phase option available.
- *Voltage and Frequency:* will match local requirements.
- *Frequency Stability Limit:* +/- 1 Hz of specified line frequency
- *Line Voltage Fluctuation Limit:* +/- 5%
- *Power:*
 - Average Operating: 12 kW
 - Peak Operating: 16 kW
 - Connected Equipment: 28 kW

Note: Estimated power usage is based on pump and blower ratings.
Actual power usage depends on operating conditions and will normally be lower.

Plumbing Connections (at the P-5D interface):

- *Wastewater Influent:* a 1 ½" PVC connection for inflow from the equalization tank
- *Treated Effluent:* a 1" PVC connection for permeate discharge
- *Sludge Wasting:* a 1 ½" PVC connection for wasting sludge to either a holding tank or to a tank truck
- *Drain:* a 2" PVC connection to drain MBR tanks to equalization tank

System Controls & Process Monitoring:

- Control system based on a GE Fanuc PLC
- Display panel for alarms and faults
- System designed for total automatic operation including automatic switchover to standby equipment if required
- Optional automatic telephone dialer for emergency notification

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Environmental Conditions:

- *Operating Temperature:* ambient temperatures ranging from 40°F (4°C) to 90°F (32°C)
- *Seasonal Usage:* when drained, system is designed for long-term non-use (24 months or greater) with a temperature range from -40°F (-40°C) to 140°F (60°C)

System Size and Weight:

- Empty Weight (without water) = 31,000 pounds (14,000 kg)
- Operating Weight (with water) = 48,000 pounds (22,000 kg)
- Size: 15'-9" long, 8'-5" wide, and 9'-8" high
(480 cm long, 257 cm wide, and 305 cm high)
 - Note 1: Dimensions include allowances for piping and wiring on side of pallet, but do NOT include allowances for:
 - Chemical addition system (approximately 54" x 30")
 - Odor control system (approximately 24" diameter)
 - Removable cover for foam and odor containment (add approximately 24" to height)
 - Note 2: A clearance of 6 feet from the top of the tank to a lifting hook (15 feet 8 inches from floor) is required for membrane cassette removal and replacement. In an enclosure, this can either be roof height or through a hatch in the roof.

Site Preparation Requirements:

- **Location:** The installation site should be located in close proximity to the wastewater collection area and a power source sufficient to operate the system. The installation site must permit access by equipment capable of transporting, offloading, and handling the unit empty weight.
- **Site Suitability:** The site must be level and stable enough to support the system gross weight, when fully loaded and processing wastewater. Foundation or concrete pad must be prepared in accordance with local codes.
- **Additional Tanks:** A collection/separation tank, which receives all wastewater, and an equalization tank, which supplies the treatment unit, are required. The minimum size of each tank is determined in consultation with Seapoint after evaluation of the application's flow distributions. Typically, the volume of each is at least 1/2 the average daily flow. Filtering capable of removing all particles greater than 1/8" (3 mm) is required between tanks. These filters are supplied by Seapoint for installation into the collection tank. A sludge holding tank is optional. The need for this tank depends on how the owner decides to operate and maintain the system.
- **Site Work:** Installation of enclosure, pallets, and tanks, and all on-site plumbing, electrical, and mechanical connections are the responsibility of the customer.

Seapoint™ Package Plants
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