



## MBR.ST Series

### Modular MBR Sewage Treatment System

The Clear<sup>3</sup> MBR.ST Series is a line of pre-engineered stand-alone decentralized modular treatment plant capable of treating sewage and waste water from residential, recreational, institutional and commercial developments up to **237,700 gallons per day**. The rugged, self-contained systems are housed in single modular building enclosures, built to meet local **weather conditions from extreme heat to extreme cold**, and designed to flexibly work with various in-ground configurations for tanks. The Clear<sup>3</sup> MBR.ST Series is built on Newterra's years of membrane bioreactor experience and utilizes world class proven ZeeWeed<sup>®</sup> membranes for exceptional permeate quality that meets the **most stringent regulatory requirements** for reuse applications or discharge to sensitive receptors.

#### Influent & Effluent Limits

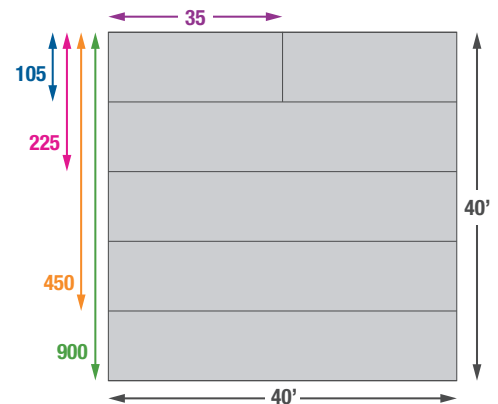
Designed for a range of wastewater strengths and the ability to meet the most stringent discharge and reuse requirements.

Flow Parameter	Influent From...	Effluent Limits
Biological Oxygen Demand (BOD <sup>5</sup> )	200 to 400 mg/L	5 mg/L
Total Suspended Solids (TSS)	150 to 350 mg/L	5 mg/L
Total Kjeldhal Nitrogen (TKN)	35 to 70 mg/L	-
Total Ammania Nitrogen (TAN)	25 to 50 mg/L	1 mg/L
Total Nitrogen (TN)	-	5 mg/L *
Total Phosphorous (TP)	5 to 10 mg/L	0.1 mg/L *
Fat, Oil, and Grease (FOG)	Less than 30 mg/L	-
Fecal Coliform	-	2.2 MPN/100 mL**
Water Temperature	10 to 25°C	-
Turbidity	-	0.5 mg/L

\*With nutrient reduction option(s) selected  
 \*\*With disinfection option(s) selected

#### Efficient Modular Design

- Fully functional building including, but not limited to insulation, heating, ventilation, lighting, operator work space, and eyewash station
- Optional exterior finishings (color, siding, and/or roofing)



#### Design Flow Parameters

With robust biology and a broad turn-down capability the Clear<sup>3</sup> MBR.ST Series is designed around the following flow conditions.

Flow Parameter	MBR.ST Model				
	MBR.ST-35	MBR.ST-105	MBR.ST-225	MBR.ST-450	MBR.ST-900
Average Daily Flow (ADF) (gal/day)	9,200	27,700	59,400	118,800	237,700
Maximum Monthly Flow (MMF) (gal/day)	11,000	33,200	71,300	142,600	285,300
Maximum Daily Flow (MDF) (gal/day)	18,400	55,400	118,800	237,700	475,500

#### Clear<sup>3</sup> Design Advantages

- Pre-fabricated modular facilities
- Rapid deployment
- Compact footprint
- Scalable
- Operator-friendly
- High-quality effluent
- No odor
- More discharge options
- Sound attenuation
- Reuse-ready effluent



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#### Base Unit Features

- Pre-treatment
- Flow equalization
- Aerobic biological treatment
- Membrane filtration with industry leading ZeeWeed® 500S membranes
- Sludge storage and thickening
- Advanced telemetry for remote control, monitoring & diagnostics
- Equipment or treatment train redundancy
- Low power, sludge production, and chemical consumption
- Pre-engineered for fast delivery
- Quality controlled factory assembled and tested
- MET/MET certified

#### Adders & Options

- Customized process design, tankage and equipment sizing
- Biological nutrient reduction, MLE process for denitrification
- Biological nutrient reduction, 4-stage bardenpho process for denitrification
- Coagulant dosing for phosphorous reduction
- UV disinfection
- Critical spare parts package
- Turbidity monitoring
- Sludge dewatering
- Increased chemical storage
- Building exterior finish (selection of colors, siding, roofing)
- Annual newtN™ service agreement

#### Flexible Tankage

The Clear<sup>3</sup> MBR.ST Series is designed for use with a variety of in-ground tank configurations. This flexibility allows the benefits of a pre-engineered product, while using the best available tank configuration based on project specific site conditions and availability of labour and materials.



#### Fiberglass

- 10' diameter FRP tanks provided by Newterra
- All in-tank components are factory installed prior to delivery
- Minimal mechanical and electrical site-work
- May not be suitable for all flow/loading conditions



#### Pre-Cast Concrete

- Pre-cast concrete tanks provided by Newterra or supplied locally
- Some mechanical and electrical site work
- All in-tank components are shipped loose for installation at site



#### Poured Concrete

- Poured in place concrete tanks supplied locally
- Smallest footprint of the tankage options
- More civil engineering and on-site civil, mechanical, and electrical work required
- All in-tank components are shipped loose for installation at site



#### newtN™ Advanced Remote Monitoring & Control

- Advanced cloud-based data acquisition and control
- Bank level security
- A real-time link to the treatment system familiar HMI screen
- Email/text out upon alarm and a daily system status report
- Operating data is collected and available for download from the customer portal or locally at the HMI
- The customer portal also includes other useful information at your fingertips including manuals, troubleshooting guides, parts lists, etc.