

## E-Series MBR systems

**ZeeWeed\* 500 systems for 10,000 to 75,000 GPD (1.6 to 11.8 m<sup>3</sup>/h)**

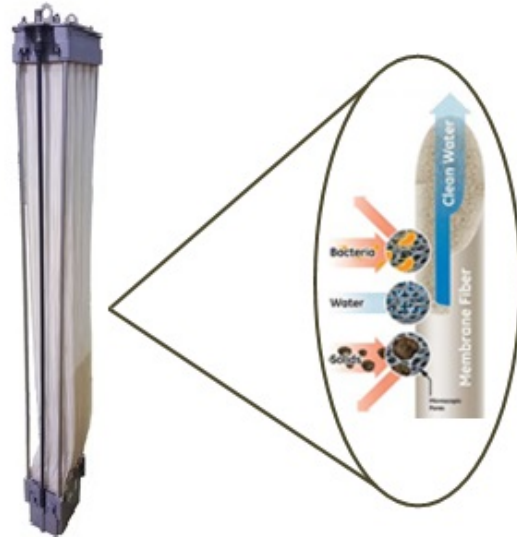
### description and use

SUEZ's E-Series Membrane Bioreactor (MBR) is a fully integrated wastewater treatment system that incorporates all biological processes and ultrafiltration membranes into a single compact tank, enabling simple installation and operation, and giving you high quality water at an attractive price.

E-Series MBR features SUEZ's ZeeWeed 500 hollow fiber membrane. With decades of experience, ZeeWeed membrane have an excellent reputation for quality and durability and are in operation all over the world.

### benefits

- E-Series MBR treats your waste in a small footprint, typically 30% less than conventional wastewater treatment.
- The effluent is virtually free of bacteria and suspended solids, making it ideal for reuse for flushing, irrigation, firewater and cooling tower makeup water.
- Short delivery timeline from order to a fully operating system.
- Prefabricated, skid-mounted equipment makes installation quick and easy.
- Simple operation with few units of operation required.
- Effluent and sludge are virtually free of odour.



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## major equipment

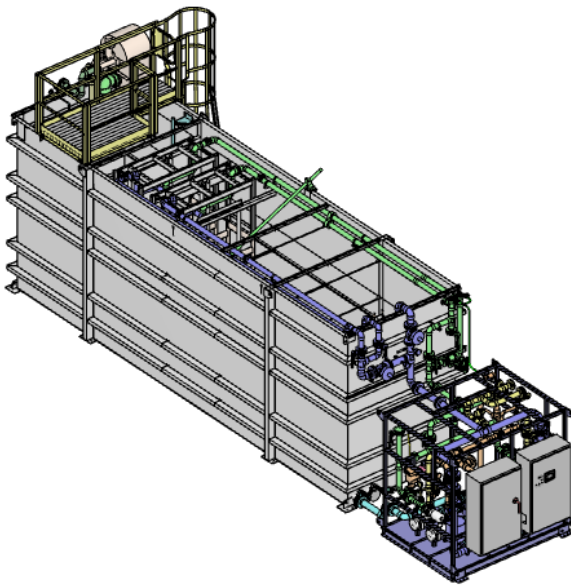
- Regenerative membrane/process blower
- Centrifugal permeate pump
- Fine bubble diffusers
- CIP tank and cleaning equipment

## options available

- SS bioreactor/membrane tank
- Installed standby equipment
- Permeate storage tank
- TP removal – coagulant dosing
- TN removal – RAS pumps and anoxic zone
- UV
- 2 mm rotating brush screen
- Process skid containerized
- Permeate turbidity meter

## electrical & instrumentation

- Allen Bradley Micro Logix PLC
- Allen Bradley Panelview HMI
- NEMA 4 control panel
- Permeate flow mag meter
- Transmembrane pressure transmitter
- Bioreactor level transmitter



## water quality (typical)\*\*

Parameter	Influent	Effluent
<b>BOD<sub>5</sub></b>	300 mg/L	<5 mg/L
<b>TSS</b>	300 mg/L	<2 mg/L
<b>TN<sup>1</sup></b>	50 mg/L	~10 mg/L
<b>TP<sup>2</sup></b>	8 mg/L	<1 mg/L

\*\* Design based on 70°F (20°C) water temperature and max month flow. Effluent flow if <sup>1</sup>TN Removal and <sup>2</sup>TP removal options selected.

## materials of construction

- 304 SS tank
- S80 PVC piping
- S80 CPVC air
- Epoxy coated carbon steel frame

## lifecycle services with lifetime support

- Most extensive service team in the industry
- 24/7 technical support, free of charge during business hours.

System Parameters						
Customer feed pressure	5 psig					
Permeate discharge pressure	12 psig					
Electrical Information						
Power	480/575 VAC, 3 phase, 60 Hz					
Control circuit	120VAC single phase					
Biological Capacity	E- 10K	E-20K	E- 30K	E- 40K	E- 50K	E- 75K
Max month flow (gpd)	10,000	20,000	30,000	40,000	50,000	75,000
Peak day flow (gpd)	12,000	24,000	36,000	48,000	60,000	90,000
Peak hourly flow (gpd)	16,000	32,000	48,000	64,000	80,000	120,000
Permeate Pump(s)						
Pump instantaneous flow (gpm)	17	33	50	67	83	125
Motor (Hp)	¾	¾	1	1.5	2	3
Total Dynamic Head (ft.)	55					
Process/Membrane Blower(s)						
Pressure (psi)	5					
Max flow (SCFM)	130	220	300	470	550	720
Motor (Hp)	7.5	10	15	15	20	25
RAS Pump(s) for TN Removal option						
Max flow (gpm)	35	70	100	140	170	250
Motor (Hp)	¼	¾	1.5	5	5	5
Total Dynamic Head (ft.)	12	22	22	23	31	60

Membrane Modules and Cassettes	E-10K	E-20K	E-30K	E-40K	E-50K	E-75K
Membrane type	Reinforced, Hollow Fiber, PVDF, 0.04 micron nominal pore size					
Membrane name	ZeeBlok* 500S					
Surface area (ft. <sup>2</sup> )	300					
# of modules	4	6	8	12	16	20
# of cassettes	4	3	4	3	4	5
<b>Dimensions</b>						
Tank total length - aerobic only (ft.)	6	10	14.5	18.5	23	34
Tank total length - with TN removal (ft.)	8	15	20	25	30	45
Tank height (ft.)	9.7					
Operating depth (ft.)	8.5					
Membrane lifting height (ft.)	18					
Aerobic volume (gal.)	2200	4300	6500	8600	10700	16100
For Low TN option, ADD: Anoxic volume (gal.)	700	1400	2100	2900	3600	5400
Process skid length (ft.)	8	8	8	8	8	8
System width (ft.)	9					
<b>Connections</b>						
Feed (in.)	3	3	3	3	3	4
Overflow drain (in.)	4	4	4	4	4	6
Optional RAS (in.)	3	3	3	4	4	4
WAS drain (in.)	3	3	3	3	3	3
Permeate (in.)	1 ½	2	2	2	3	3
<b>Operation and Maintenance</b>						
Power (kW/yr) <sup>3</sup>	27,000	54,000	64,000	75,000	93,000	120,000
Citric acid (L/yr) <sup>3</sup>	<90	<130	<180	<270	<380	<500
Sodium hypochlorite (L/yr) <sup>3</sup>	<35	<50	<70	<100	<140	<190

<sup>3</sup> Approximate