

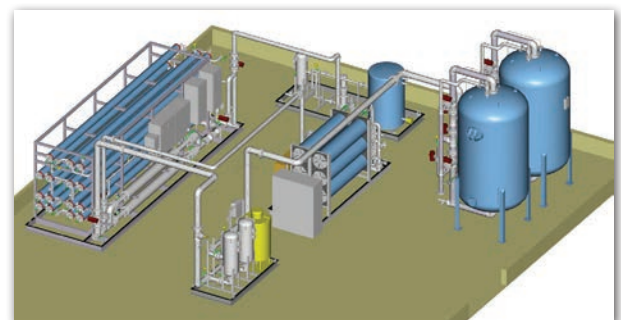
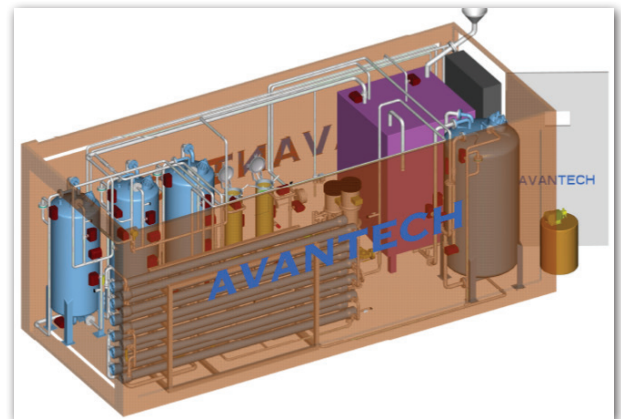
AVANTech designs and manufactures Make-up Water Treatment Systems that remove turbidity, iron, chlorine, ions, and undissolved solids, and reduce Total Organic Carbon (TOC).

The Make-up Water Treatment Systems AVANTech has delivered to our clients have incorporated chemical feed units, adsorption, filtration, oxidation, removal of carbon dioxide and/or oxygen, softening, and demineralization by ion exchange (cation, anion, mixed bed, packaged bed, and split flow technology). Current design includes nanofiltration, ultrafiltration, reverse osmosis (RO), and electrodeionization (EDI).

AVANTech's Make-up Water Treatment Systems are widely used in the US as well as many foreign countries, and they typically meet, as a minimum, the water quality standards shown below:

Parameters	Limits	Units
Resistivity	>1	MΩ-cm
TOC	<50	ppb
Sodium	<5	ppb
Chloride	<5	ppb
Silica	<3	ppb

AVANTech produces general arrangement and fabrication drawings in Creo Parametric. This integrated 3D CAD/CAM/CAE software runs on the Microsoft Windows platform and provides solid modeling, assembly modeling and drafting, and finite element analysis for mechanical engineers.



AVANTech Make-up Water Treatment (WT) Mobile Services



Our WT Mobile Systems integrate Double-Pass RO and EDI into one convenient mobile operating unit.

Process

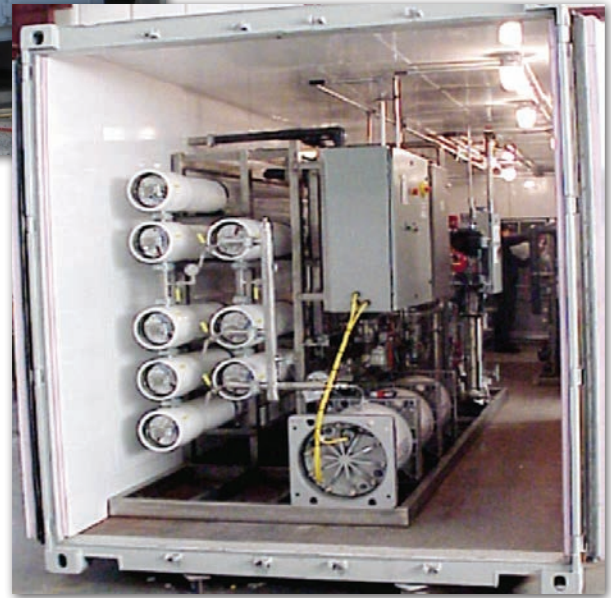
The RO System can remove 98%-99% of most ions, with an 85% recovery. EDI modules further purify the RO permeate to produce effluent water quality typically approaching 16 to 18 MΩ/cm resistivity and 5 ppb silica.

Piping

High pressure piping ≤ 2 " in diameter is stainless steel tubing, while > 3 " is schedule 10 stainless steel piping. High pressure fittings are welded, except where connections are needed to attach sample valves or instruments. Low pressure piping is schedule 80 PVC per ASTM standards D-2464, D-2467, and D-1784 for plastic pipe.

Controls

Electrical instruments are mounted in a National Electrical Manufacturers Association (NEMA) 4 enclosure. A Programmable Logic Controller (PLC) automatically operates the system based on level in the client's make-up treatment tank. Instrumentation includes pressure, temperature, and conductivity indicators, and alarm conditions such as low pressure switch/alarm and flow indicator.



Container

System containers can be ISO intermodal containers or trailer mounted. Our standard water treatment system (with ancillary equipment) is housed in a single, high cube ISO shipping container, 40 ft long.

To make the intermodal a self-contained unit, we include lighting, fire protection, heavy duty thermal insulation, HVAC, and auxiliary power outlets. Interface piping is typically hose that meets client specifications. This equipment can meet UL or European CE requirements and can be self-certified to the Declaration of Incorporation (DOI) - issued by the Machinery Directive 98/37/EC (Annex B).



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