yardney
WATER FILTRATION SYSTEMS

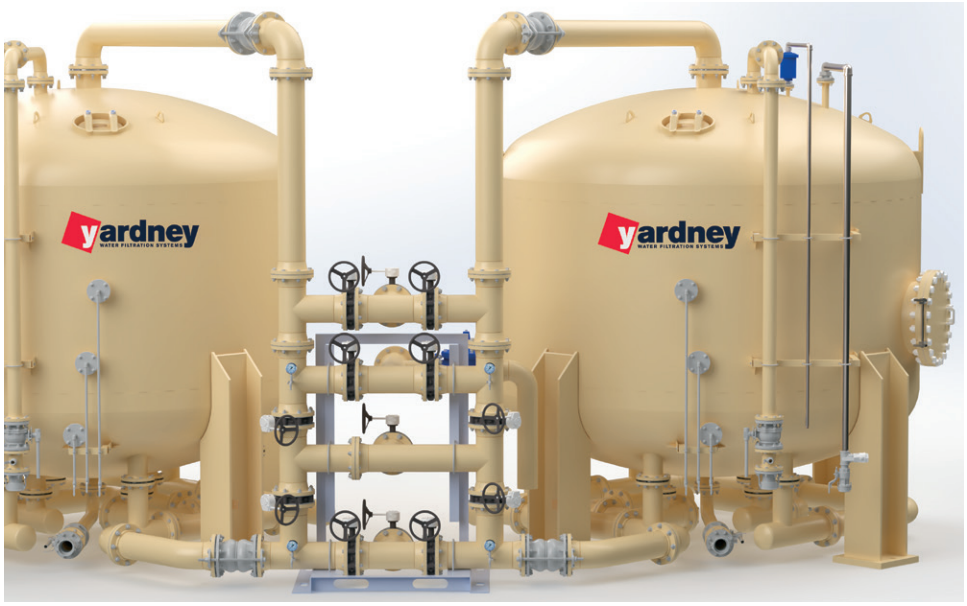
Water and Waste Water Filters

Granular Activated Carbon (GAC), Ion Exchange (IX) Resin and specialty media filters for the drinking and waste water applications.

Yardney Granular Activated Carbon (GAC), IX resin and specialty media filtration systems are engineered for high-efficiency removal of PFAS, Iron, Manganese, Arsenic, other emerging contaminates and suspended solids.

These advanced media filtration systems combine the adsorption capabilities of Granular Activated Carbon (GAC) with the selective removal performance of Ion Exchange (IX) resin and specialty medias can be customer tailored site specifically with unlimited flow rate capability. The filtration systems are designed to target a broad spectrum of PFAS compounds, including both short-chain and long-chain variants, emerging contaminants and suspended solids.

The systems can be utilized as GAC, IX resin or a dual media design (One vessel GAC, One vessel IX resin), allowing for optimized performance based on site-specific water quality parameters and water treatment.



Yardney Per-and polyfluoroalkyl (PFAS) Granular Activated Carbon (GAC) & IX Resin media filtration systems - Ideal for remediation applications requiring reliable and effective PFAS mitigation in drinking water, waste water and ground water treatment applications.

Applications

- Removal or Per-and Polyfluoroalkyl substances (PFAS), Iron, Manganese, Arsenic, Chrome 6, and other emerging contaminates
- Designed for 125 psi standard operating pressure; high-pressure configurations available upon request
- Configurable with Granular Activated Carbon (GAC), Ion Exchange Resin (IX) Resin, Dual-media beds (GAC & IX Resin), and specialty medias.
- Capable of accommodating ultimated flow rates with scalable system engineering

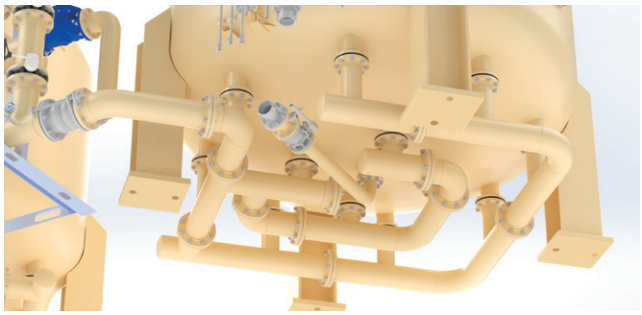
Engineered Advantages

Structural Design & Fabrication:

- Precision-engineered fabrication enhances mechanical integrity and pressure resistance, contributing to extended operational lifespan
- ASME Code pressure vessels stamped per Section VIII, Division 1
- NSF-61 internal linings for all wetted surfaces
  - Vessels: Carboline Plasite 4110 (post application cured) or Sherwin Williams Sherplate PW
  - Process piping: 3M Scotchkote 134

Industrial, Commercial & Municipal

Engineered Advantages - *continued*



Coplanar Dual Ring Header Effluent System: *(Patent Pending)*

- Dual-ring header effluent system with twelve (12) process nozzles to reduce differential pressure and extend media bed life
  - Inner Ring Header: Four (4) wedgewire septa
  - Outer Ring Header: Eight (8) wedgewire septa
- Engineered to ensure full internal lining coverage and mitigate corrosion risk

Underdrain Assembly:

- Constructed with 316 stainless steel V-shaped wedgewire septa
- Engineered for high structural integrity under extreme conditions
- Hydraulically balanced design optimizes media utilization and flow uniformity
- Proven collapse resistance exceeding 600 psi
- Anti-clogging geometry minimizes head loss and maintenance
- Externally serviceable septa eliminates the need for confined space entry or media removal during inspection or media changes

Influent Diffuser System:

- Modular, removable influent diffuser allows for adjustment of hydraulic distribution characteristics

Thermal & Mechanical Compensation:

- Steel expansion joints included to accommodate thermal or mechanical fluctuation

Manway Access Points:

- Top Manway: 14" x 18" elliptical with yoke-style closure and integrated stainless steel safety chain to prevent internal displacement
- Side Manway: 24" round with hinge for safe, efficient vessel access

Process & Maintenance Features:

- 4" slurry connections with cam-lock fittings for rapid media loading and service
- Sampling ports positioned at 25%, 50%, and 75% of bed depth for efficient and accurate media and process water performance evaluation
- Service and slurry line support structure utilizes welded mounting tabs with reinforced structural bracing and replaceable supports; eliminates in-field welding on lined surfaces
- 316 stainless steel process nozzles for all connections 2" and smaller
- Insulating gasket kits to mitigate galvanic corrosion at dissimilar metal interfaces
- Two (2) lifting lugs with integrated weep holes located on the upper sideshell to prevent top-head damage during installation
- Stainless steel grounding lugs provided on each vessel and valve tree assembly

Installation Configurations:

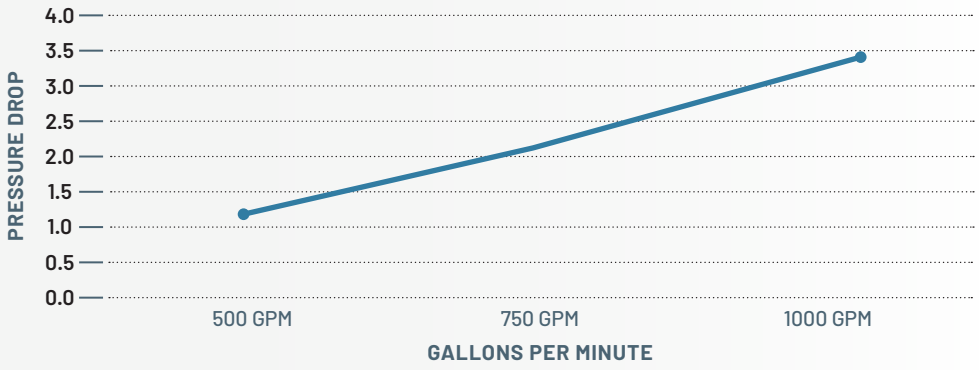
- Available in field-installed format
- Flexible process piping configurations support:
  - Lead/Lag
  - Lag/Lead
  - Parallel
  - Series

Water and Waste Water Filters - Comparisons

COMPARISON	GAC	IX RESIN
EBCT	10 - 15 min.	1.5 - 3 min.
Media Bed Depth	7 - 12 ft.	3 - 5 ft.
Filtration Media		

VESSEL PRESSURE DROP

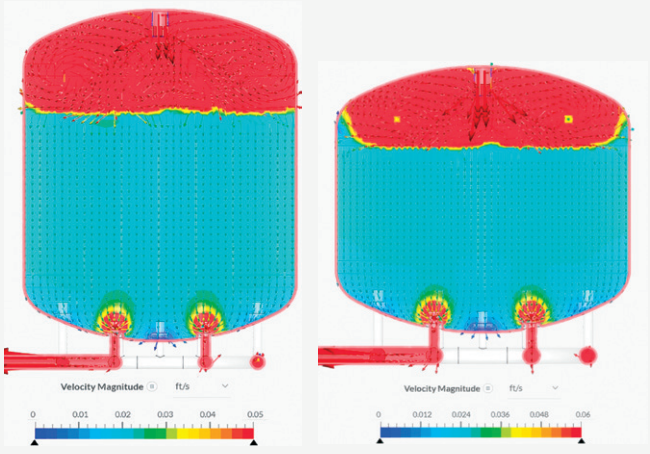
144" Diameter
20,000 lbs GAC
(Granular Activated Carbon)



CFD (Computational Fluid Dynamics) Models:

- Simulation of the flow of water through a media bed-specifically, modeling laminar flow through a Granular Activated Carbon (GAC) or Ion-Exchange (IX) Resin Bed. A less turbulent model, shown in blue is indicative of a higher effective flow rate through a vessel preventing channeling, improving effectiveness of the filtration media and reducing pressure differential across the vessel.

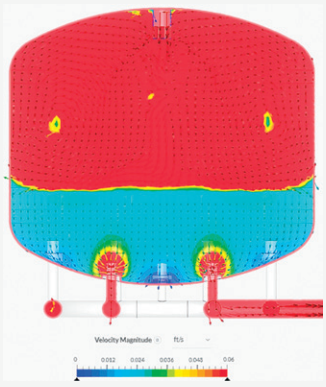
GAC Tanks



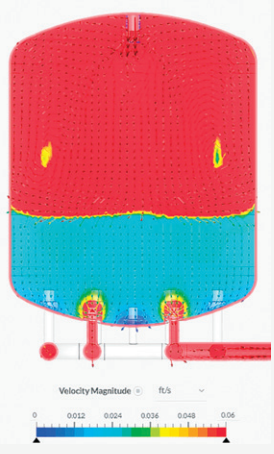
Yardney GAC
120 inch

Yardney GAC
144 inch

IX RESIN Tanks



Yardney IX Resin
144 inch



Yardney IX Resin
120 inch

Water and Waste Water Filters

Specifications

INDUSTRIAL, COMMERCIAL & MUNICIPAL														
Model	Quantity of Tanks in System	Standard Flow Range				Filtration Surface Area (total sq ft)	Backwash Flow Rate (per tank)		MEDIA Requirements (cubic feet)	Maximum Pressure (PSI)	Maximum Pressure (BAR)	Inlet/ Outlet Pipe Size	Inlet/ Outlet Pipe Size (Metric)	Back Wash Line Pipe Size	Back Wash Line Pipe Size (Metric)
		MINIMUM		MAXIMUM											
		GPM	m^3/hr	GPM	m^3/hr		GPM	m^3/hr							
12096-2M	2	1000	227	1500	341	628	1047	238	1428	125	8.6	6"	DN150	6"	DN150
4460-2M	2	1500	341	2200	500	904	1507	342	1428	125	8.6	8"	DN200	6"	DN510

Vessel EBCT may affect system definition and final engineering design parameters, the provided data are initial benchmarks.

Safety & Compliance:

- Three (3) top-mounted tie-off lugs per vessel for fall protection
- NSF-61 certified components for potable water applications

Standard Package Includes:

- Two (2) ASME Code pressure vessels
- Process valve tree
- Galvanized valve tree rack with forklift compatible base
- Four (4) pressure gauges, 6" turn-down elbows, and pressure relief valve (PRV) rated at 125 psi
- 8" Schedule 40 carbon steel process piping (influent and effluent lines)
- Combination air/vacuum relief valve
- 2" wash-down spray nozzle

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