

FIBERGLASS TANKS

CORROSION RESISTANT EQUIPMENT FOR INDUSTRIAL APPLICATIONS



- **BULK STORAGE**
- **WASTE TREATMENT**
- **PROCESS TANKS**
- **DESIGN/ENGINEERING**
- **CUSTOM FIBERGLASS/PVC/POLY PRO FABRICATIONS**

- **FIBERGLASS TANKS**
- **PIPING SYSTEMS**
- **SCRUBBERS**
- **MIST ELIMINATORS**



15' Diameter Vertical, Cylindrical, Open Top



Rectangular Pickle Tanks for Steel Strip Mill



Vertical, Elongated Cone Bottom



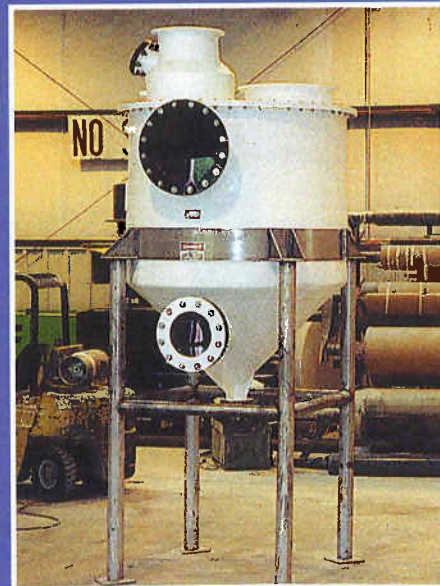
Emergency Chlorine Venturi Scrubber



Dished Bottom Tank, Steel Legs



Flat Bottom, Dished Head, WWTP Storage Tank



Cone Bottom Process Tank, Steel Legs

FIBERGLASS (FRP) THE COMPOSITE SOLUTION

Vanaire serves the needs of industrial plants where corrosion is a major maintenance or production consideration. Our engineering staff will assist your personnel in the proper application of the many Fiberglass Reinforced Products available. The lasting success of the products we manufacture are paramount in our organization. We strive to offer you the best quality of materials, technology and workmanship.

Composites are generally known as reinforced plastics. Most composites feature a reinforcing fiber within a polymer matrix. The reinforcing fiber most commonly used is **fiberglass**, while the polymer matrix is a **thermoset resin** such as polyester, vinyl ester, and/or epoxy resins. Thermoset resins begin as liquid polymers and are irreversibly converted to solids during the molding process. This conversion process results in composite materials having increased heat, chemical and corrosion resistance, and a high degree of structural durability.

Vanaire brings these technologies and processes together in a **Total System QualitySM** fabrication environment, resulting in high-quality, durable fiberglass tanks, piping systems, and a full line of corrosion resistant industrial products custom-designed with the customer's intended application in mind.



VANAIRE PEOPLE MAKE THE DIFFERENCE

Vanaire has assembled a team of more than 80 engineers, production technicians, and administrative staff who are at the top of their respective professions.

Vanaire's customer relationships are long-term because Vanaire customers are loyal. The reasons for this loyalty can be found in Vanaire associates' dedication to Total System QualitySM; their overriding belief in on-time delivery of quality products that **meet customer specifications** and **inspire customer satisfaction**; and, their personal pride in their industry and the work they do, which compels them to advance their knowledge of **new technologies and techniques** within an ever-changing competitive environment.

DESIGN AND FABRICATION: A CLOSER LOOK

The Vanaire production process begins and ends with the customer. Vanaire engineers will work with your requirements and specifications or provide custom engineering for your intended application. Using state of the art computer-aided design systems (Auto-CAD), the Vanaire engineering team designs and plans each step of the fabrication process, from resin system selection to manufacturing technique.

The **hands-on participation of the Vanaire engineering and project management team** in each phase of production helps ensure the product's design accuracy, structural strength, and suitability for long-term service.

Vanaire fabricates tanks to meet or exceed standards such as ASTM D3299 for filament winding, and ASTM D4097 and PS 15-69 for contact molding. Vanaire selects an appropriate resin system and corrosion barrier to suit the application of each tank to ensure long-term service.



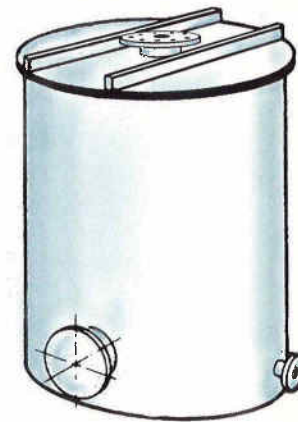
TANK SIZES - VERTICAL CYLINDRICAL - CAPACITY IN GALLONS

| Diameter | Height | Capacity | Diameter | Height | Capacity | Diameter | Height | Capacity |
|-------------|--------|----------|-------------|--------|----------|-------------|--------|----------|
| 1'-6" | 2' | 26 | 5' | 10' | 1,469 | 9' | 19' | 9,041 |
| 1'-6" | 3' | 39 | 5' | 11' | 1,616 | 9' | 20' | 9,517 |
| 1'-6" | 4' | 57 | 5' | 12' | 1,763 | 9' | 21' | 9,993 |
| Dish Bottom | | 2 | 5' | 13' | 1,909 | 9' | 22' | 10,469 |
| Cone Bottom | | 3 | 5' | 14' | 2,056 | Dish Bottom | | 439 |
| 2' | 2' | 48 | 5' | 15' | 2,203 | Cone Bottom | | 714 |
| 2' | 3' | 72 | Dish Bottom | | 73 | 10' | 10' | 5,874 |
| 2' | 4' | 96 | Cone Bottom | | 122 | 10' | 11' | 6,462 |
| 2' | 5' | 120 | 6' | 6' | 1,268 | 10' | 12' | 7,049 |
| Dish Bottom | | 4 | 6' | 7' | 1,480 | 10' | 13' | 7,637 |
| Cone Bottom | | 8 | 6' | 8' | 1,691 | 10' | 14' | 8,224 |
| 2'-6" | 3' | 111 | 6' | 9' | 1,903 | 10' | 15' | 8,812 |
| 2'-6" | 4' | 148 | 6' | 10' | 2,114 | 10' | 16' | 9,399 |
| 2'-6" | 5' | 185 | 6' | 11' | 2,326 | 10' | 17' | 9,987 |
| 2'-6" | 6' | 222 | 6' | 12' | 2,537 | 10' | 18' | 10,574 |
| 2'-6" | 7' | 259 | 6' | 13' | 2,749 | 10' | 19' | 11,162 |
| Dish Bottom | | 9 | 6' | 14' | 2,960 | 10' | 20' | 11,749 |
| Cone Bottom | | 15 | 6' | 15' | 3,172 | 10' | 21' | 12,337 |
| 3' | 4' | 211 | 6' | 16' | 3,383 | 10' | 22' | 12,924 |
| 3' | 5' | 264 | Dish Bottom | | 127 | 10' | 23' | 13,512 |
| 3' | 6' | 317 | Cone Bottom | | 211 | 10' | 24' | 14,099 |
| 3' | 7' | 370 | 7' | 7' | 2,014 | Dish Bottom | | 604 |
| 3' | 8' | 423 | 7' | 8' | 2,302 | Cone Bottom | | 979 |
| 3' | 9' | 475 | 7' | 9' | 2,590 | 11' | 11' | 7,819 |
| Dish Bottom | | 16 | 7' | 10' | 2,878 | 11' | 12' | 8,529 |
| Cone Bottom | | 26 | 7' | 11' | 3,166 | 11' | 13' | 9,240 |
| 3'-6" | 4' | 287 | 7' | 12' | 3,454 | 11' | 14' | 9,951 |
| 3'-6" | 5' | 360 | 7' | 13' | 3,742 | 11' | 15' | 10,662 |
| 3'-6" | 6' | 431 | 7' | 14' | 4,020 | 11' | 16' | 11,373 |
| 3'-6" | 7' | 503 | 7' | 15' | 4,317 | 11' | 17' | 12,083 |
| 3'-6" | 8' | 575 | 7' | 16' | 4,605 | 11' | 18' | 12,794 |
| 3'-6" | 9' | 647 | 7' | 17' | 4,893 | 11' | 19' | 13,505 |
| 3'-6" | 10' | 719 | 7' | 18' | 5,181 | 11' | 20' | 14,216 |
| Dish Bottom | | 26 | Dish Bottom | | 203 | 11' | 21' | 14,927 |
| Cone Bottom | | 42 | Cone Bottom | | 336 | 11' | 22' | 15,638 |
| 4' | 5' | 470 | 8' | 8' | 3,008 | 11' | 23' | 16,348 |
| 4' | 6' | 564 | 8' | 9' | 3,384 | 11' | 24' | 17,059 |
| 4' | 7' | 658 | 8' | 10' | 3,760 | 11' | 25' | 17,770 |
| 4' | 8' | 752 | 8' | 11' | 4,136 | 11' | 26' | 18,481 |
| 4' | 9' | 846 | 8' | 12' | 4,512 | Dish Bottom | | 813 |
| 4' | 10' | 940 | 8' | 13' | 4,888 | Cone Bottom | | --- |
| 4' | 11' | 1,034 | 8' | 14' | 5,264 | 12' | 12' | 10,151 |
| 4' | 12' | 1,128 | 8' | 15' | 5,640 | 12' | 13' | 10,997 |
| Dish Bottom | | 37 | 8' | 16' | 6,016 | 12' | 14' | 11,843 |
| Cone Bottom | | 63 | 8' | 17' | 6,392 | 12' | 15' | 12,689 |
| 4'-6" | 5' | 594 | 8' | 18' | 6,768 | 12' | 16' | 13,535 |
| 4'-6" | 6' | 713 | 8' | 19' | 7,144 | 12' | 17' | 14,381 |
| 4'-6" | 7' | 832 | 8' | 20' | 7,520 | 12' | 18' | 15,227 |
| 4'-6" | 8' | 951 | Dish Bottom | | 308 | 12' | 19' | 16,075 |
| 4'-6" | 9' | 1,070 | Cone Bottom | | 501 | 12' | 20' | 16,919 |
| 4'-6" | 10' | 1,089 | 9' | 9' | 4,283 | 12' | 21' | 17,765 |
| 4'-6" | 11' | 1,308 | 9' | 10' | 4,758 | 12' | 22' | 18,611 |
| 4'-6" | 12' | 1,427 | 9' | 11' | 5,234 | 12' | 23' | 19,457 |
| 4'-6" | 13' | 1,546 | 9' | 12' | 5,710 | 12' | 24' | 20,303 |
| Dish Bottom | | 53 | 9' | 13' | 6,186 | 12' | 25' | 21,149 |
| Cone Bottom | | 89 | 9' | 14' | 6,662 | 12' | 26' | 21,995 |
| 5' | 6' | 881 | 9' | 15' | 7,138 | Dish Bottom | | 1,026 |
| 5' | 7' | 1,028 | 9' | 16' | 7,614 | Cone Bottom | | --- |
| 5' | 8' | 1,175 | 9' | 17' | 8,090 | | | |
| 5' | 9' | 1,322 | 9' | 18' | 8,565 | | | |

Note: To determine the capacity of a tank with Dish or Cone Bottom add the gallon information. Cone Bottom capacity determined for a 45° angle Conical Bottom. Please consult Vanaire for other configurations.

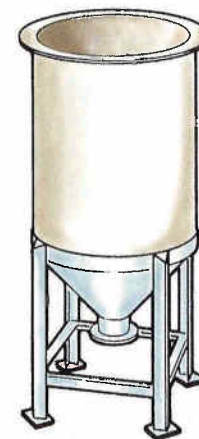
Tanks

Vanaire Filament Wound or Hand Lay-Up tanks offer the ultimate in corrosion protection. Our Filament Winding technique, based on the utilization of continuous strands of glass produce a fully laminated shell with no seams. The application of the glass is controlled to give the ideal helical angle and also the right proportion of glass to resin. Filament Wound tanks are fabricated according to ASTM D3299-74.



OPEN TOP WITH REINFORCED COVER FOR AGITATOR

Vanaire Hand Lay-Up tanks are produced per standard PS 15-69 and ASTM D4097 following the highest practices of quality in materials and workmanship. These tanks are reinforced by the Spray-Up method with interlayering layers of woven roving glass. The homogeneous quality of the laminate is achieved by careful removal of all air entrapment and through wetting of the glass with the resin.



OPEN TOP CONICAL BOTTOM STEEL SUPPORT STAND

Physical Properties

Density (lb./cu. in.)
Barcol hardness
Compressive strength (psi)
Flexural modulus (psi)

Hand Lay-Up

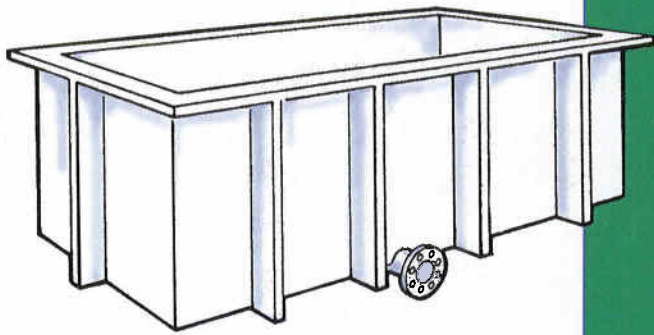
.067
25-45
 1.4×10^4
 1.0×10^6

Physical Properties

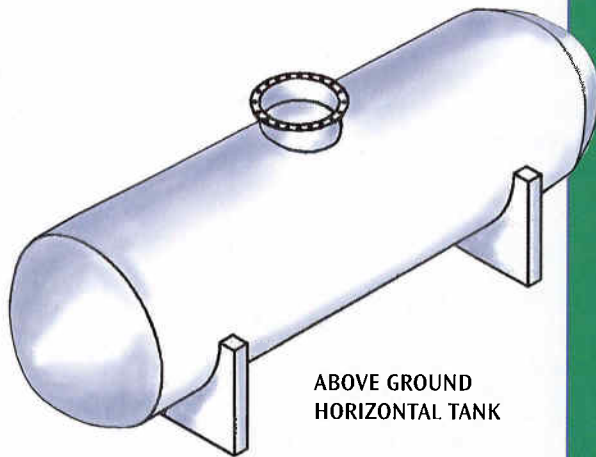
Specific gravity
Impact strength (ft.-lb. izod)
Hoop modulus (psi)
Ultimate tensile (psi)

Hand Lay-Up

1.8
40-50
 $.95 \times 10^6$
 1.5×10^4



RECTANGULAR TANK



ABOVE GROUND HORIZONTAL TANK



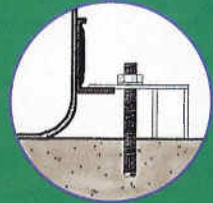
FLAT TOP FLAT BOTTOM

Accessories

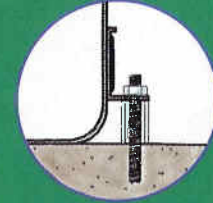
Vanaire tanks can be fitted with a wide variety of accessories tailored to meet the most demanding specifications. These accessories include:

- Threaded nozzles
- Flanged nozzles
- Top manways
- Side manways
- Lifting lugs
- Hold down lugs
- Ladders and cages
- Internal baffles
- Insulation
- Liquid level indicators
- Agitator supports
- Dip tubes
- Steam or electrical heat

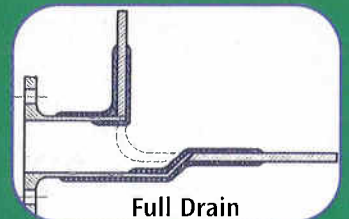
Hold Down Lugs



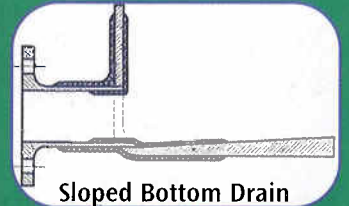
Clamping



Direct Bolting

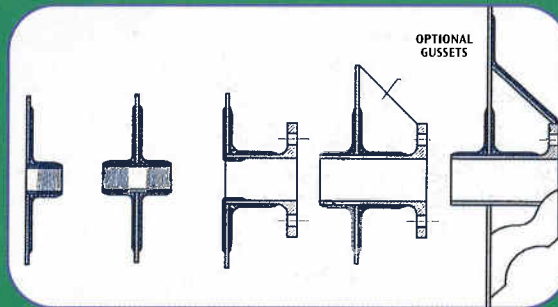


Full Drain



Sloped Bottom Drain

Nozzles and Couplings



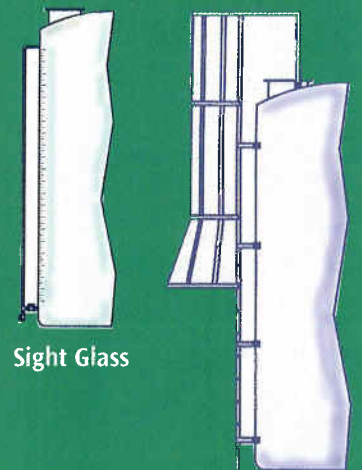
Half Coupling

Full Coupling

Flush Flanged Nozzle

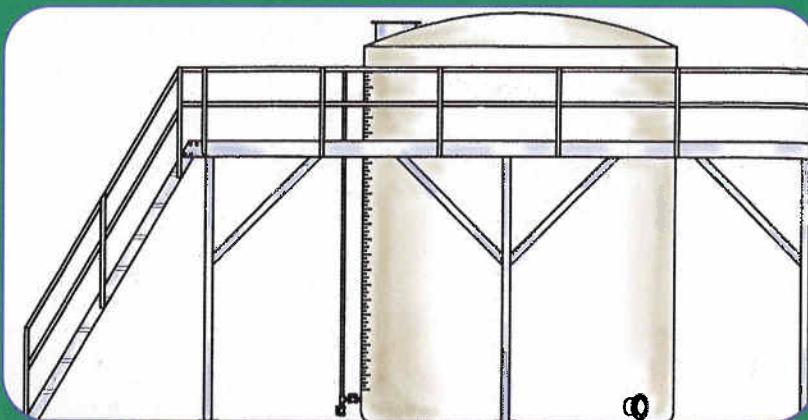
Gusseted, Recessed Flanged Nozzle

Conical Gusset Flanged Nozzle

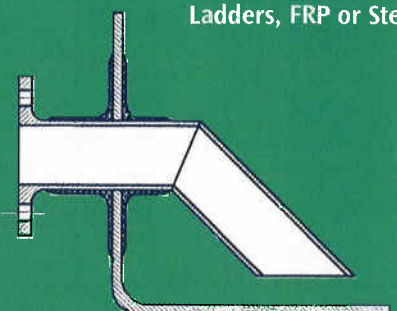


Sight Glass

Ladders, FRP or Steel



Dome Tank with Stand Alone & Integral Platforms



Siphon Drain

