

FiberSystems

521 Kiser Street
Dayton, OH 45404-1641
Tel: 937-222-9000
Fax: 937-222-9020

FRP Composite Vertical Tank Specification Form

12-29-2003

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FRP Composite Vertical Tank Specification Form

Date: _____

Your inquiry #: _____

Your name: _____

Your company name: _____

Company mailing address: _____

City, State, & Zip Code: _____

Telephone # (please include extension or indicate if direct #): _____

Fax #: _____

E-mail address (for sending tank catalog "cut sheets"): _____

Your tank identification # or name: _____

Tank chemical service environment. (Include all chemicals tank will hold. Include concentrations of each chemical): _____

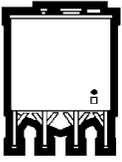
Tank operating temperature (maximum/minimum): _____

Materials of Construction: Based on your past experience with this same chemical service environment(s) - have you found a specific FRP composite resin matrix that has provided good service life? List known acceptable resins for your FRP composite equipment, or state "unknown": _____

Required nominal tank capacity (gallons): _____

Tank diameter: _____

Tank vertical shell sidewall height: _____



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Type of Tank Bottom:

- Flat.
- Dished.
- Cone, what degree included angle?: _____
- Sloped - non-corrected, what slope (inches per inch - i.e., 1/4" per inch): _____
- Sloped and internally corrected, what slope (includes per inch - i.e., 1/4" per inch): _____

Type of support for cone or dished bottom tanks:

- The cone or dished bottom tank is to be supported on an FRP skirt.
- The cone or dished bottom tank is to be supported on a steel support band and lugs.
- The cone or dished bottom tank is to be supported on a steel support band and legs with feet.

When steel support band and lugs, or legs, are used - all steel work will be:

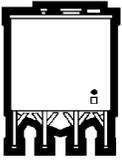
- Carbon steel, epoxy prime coated.
- Galvanized.
- Stainless Steel, Type _____

Type of Tank Top:

- Dished - ASME (standard).
- Dished - elliptical, 2 to 1.
- Flat reinforced.
- Reinforced shallow cone.
- Standard open top - inward reinforcing flange.
- Open top - with external top edge reinforcement.
- Open top - with removable reinforced shallow cone cover.
- Open top - with reinforced flat removable cover.
- Special - describe: _____

Vessel Exterior:

- Standard white/light gray/tan pigmented UV inhibiting resin coat.
- Clear exterior with UV inhibitor.
- Surfacing veil reinforced exterior corrosion barrier with UV inhibitor.



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Tank Insulation:

- Tank will be non-insulated.
- Tank will have sidewall insulated.
- Tank will have top and sidewall insulated.

How many inches (_____) of polyurethane foam insulation with filament wound FRP protection on the sidewalls, and contact molded FRP protection on the top?

Standard tank accessories - lifting and handling:

- Top lifting bar (for cone & dished top tanks having top center manway).
- Eye bolts (for flat top tanks with top inward or outward flanges).
- FRP sidewall mounted lifting lugs.

Standard tank accessories - holddowns:

- FRP sidewall mounted lugs with matching galvanized steel holddown clips.
- Sidewall mounted galvanized/stainless steel holddown lugs.
- None - inside location, holddowns not required.
- None - holddowns are part of the skirt, lugs, or leg feet quoted with dished and cone bottom tanks.

Tank Venting: (Diameter of vent should be at least one or two sizes larger than the largest tank inlet or outlet nozzle.)

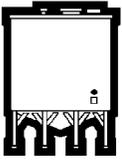
- "V" gooseneck style. Diameter of vent = (_____").
- "U" gooseneck style. Diameter of vent = (_____").
- Mushroom cap style. Diameter of vent = (_____").
- A flanged or NPT threaded nozzle for vent line, nozzle included in the nozzle listing below.
- Not applicable - this is an open top tank.
- Not applicable. It is important that you make provision for proper venting.

Material of construction for the vent:

- FRP.
- PVC.

Manways: (For future cleaning, inspection, and repair - based on current OSHA confined space requirements - sidewall installed manways are now recommended for closed top tanks, and for all tall open top tanks. The minimum manway size should be 24" diameter.)

- Top center 24" diameter with bolted cover.
- Top offset with flanged and bolted cover - diameter = (_____").



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- () Special top offset with hinged cover - diameter = (_____").
- () Sidewall mounted with flat or domed bolted cover - diameter (_____").
- () Special - please describe in detail: _____

Manway Hardware:

- () Galvanized.
- () Stainless Steel, Type _____.
- () Other special alloy (i.e., Monel, etc.) - describe: _____

Manway Gaskets:

- () Buna N.
- () Neoprene.
- () Special - specify material of construction: _____
- () None - customer will furnish.

Tank to include the following installed nozzles: (Please list **both** sizes and quantities required after each nozzle type. We recommend that all 4" diameter and smaller flanged nozzles be gusseted. Include top and sidewall nozzles, and any nozzles required for vents.)

FRP female NPT full/half coupling threaded fittings: _____

FRP flanged and gusseted nozzles: _____

FRP flanged straight (non-gusseted) nozzles: _____

FRP flanged and gusseted sidewall mounted siphon drains: _____

FRP flanged and gusseted side bottom drains: _____

FRP pad style flanges: _____

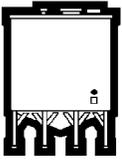
FRP blind flanges: _____

Flanges for flanged nozzles are to be:

- () Contact molded.
- () Heavy-duty 150 psi rated filament wound.

Flanges nozzle gussets are:

- () Conical.
- () Flat plate style.
- () None - not specified by customer.



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Flanged nozzles are to be furnished:

- Without hardware and gaskets - customer supplied.
- With galvanized hardware.
- With stainless steel hardware, Type _____.
- With Buna-N gaskets.
- With Neoprene gaskets.
- With EPDM or Viton gaskets.

Tank ladder & platform accessories: (Specify height.)

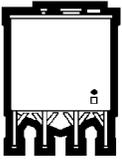
- FRP sidewall mounted ladder support lugs factory installed for customer supplied ladder.
Number of lugs = (_____).
- FRP tank top platform support lugs factory installed for customer supplied platform. Number of lugs = (_____).
- Sidewall ladder and support lugs with a ladder height of (_____).
- Sidewall transition platform (for very tall ladders - required by OSHA).
- Safety cage for sidewall factory supplied ladder with a height of (_____).
- Top safety platform walkway (to top center manway or nozzle) with support lugs.
- Top platform circumferential safety handrail, with toe plate, and support lugs.
- Tank top covered with an "anti-slip" material.
- None - ladders and/or platforms not specified by customer.

All ladders, cages, platforms, and handrails to be:

- FRP.
- Aluminum.
- Carbon steel - epoxy prime coated.
- Carbon steel - galvanized.
- Stainless steel, type _____.

Agitation & mixing accessories:

- None - agitation & mixing equipment and accessories not specified by customer.
- Sidewall reinforced mounting pad for "C" clamp style portable mixers.
- Sidewall/top mounted FRP gusseted agitator support nozzle, diameter = (_____").
- Top angled FRP pad mount.
- Top mounted I-Beam agitator support platform.
- Top I-Beam agitator support platform with sidewall mounted post supports.



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Agitator supports - (i.e., I-Beams, sidewall supports, etc.) to be:

- FRP.
- Aluminum.
- Carbon steel - epoxy prime coated.
- Carbon steel - galvanized.
- Stainless steel, type _____.

Internal FRP agitation baffles:

- Four baffles, (_____) wide, (_____) thickness, and (_____) in length.
- None. Agitator is side mounted, top offset, or angle mounted.
- None specified by customer, but should be considered.

Baffle Design:

- Standard wedge baffle
- Flat plate design, gusseted one side. Number of gussets per baffle = (_____).
- Flat plate design, gusseted both sides. Number of gussets per baffle = (_____).

Special plant and manufacturing procedures:

- Plant hydrotesting before shipping (we recommend field hydrotesting after installation in lieu of plant testing).
- Controlled temperature post curing.

Other special engineering, accessories, fittings, and design considerations:

- None.
- List in detail - use additional page if required. _____

Thank You!