

CUSTOMER INSTALLATION GUIDELINES FOR FRP LADDERS

Pre-Installation

Tank will arrive with bracket attached



Ladders will arrive packaged



Unpacking the ladder components



To uncrate ladder, remove end panel & slide ladder out

Step 1

Layout the Ladder Components

FRP ladders are provided in a variety heights and assemblies. The example shown is a 15 foot ladder with cage, return, and adjustable support bracket. EACH FRP "part" provided is labeled for easy installation. Hardware needed for each part is packaged individually for the specific use.

Laying out the components of your ladder will ensure you have all the parts needed and make installation simple.

1

Vertical cage slats are numbered as shown in the photo and must be installed in this sequence. Both of the FS-1 slats will have additional bolt holes for attachment to the cage brackets

2

Feet and hardware

3

Main ladder span

4

Upper Cage Hoops

5

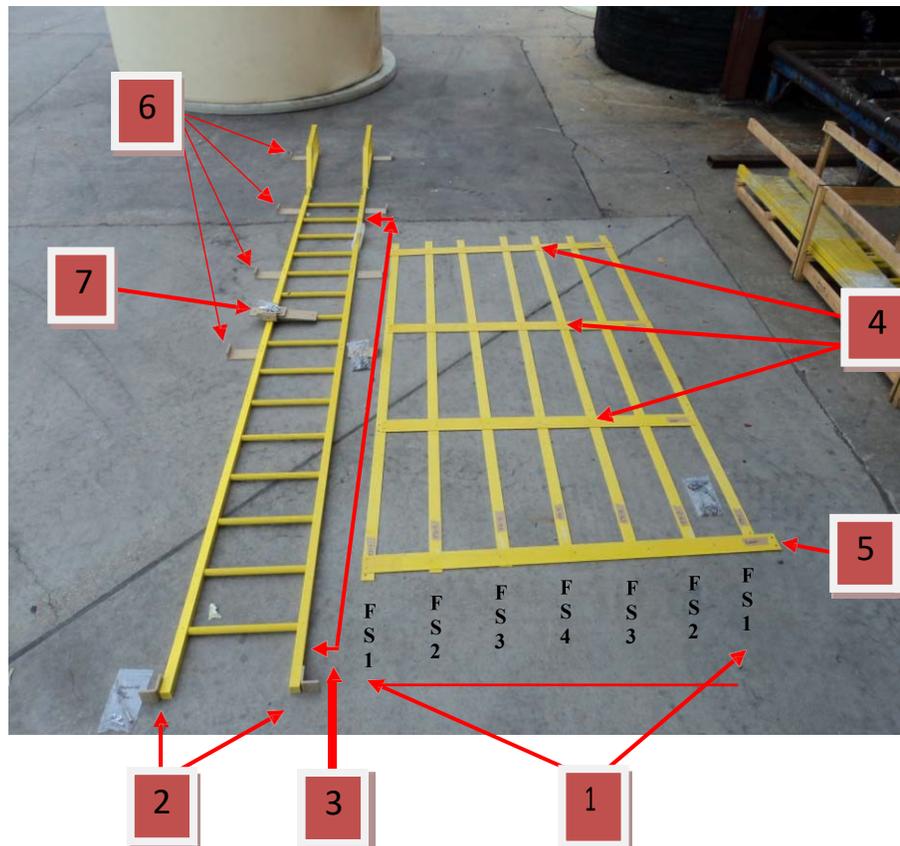
Lower Cage Hoop (the longest of the hoops)

6

Cage Attachment bracket for both sides of the ladder span

7

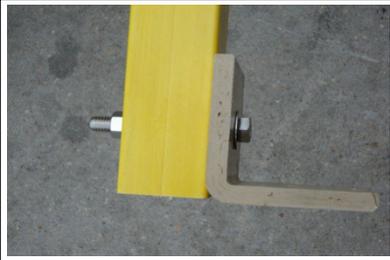
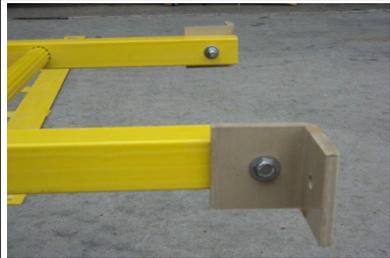
Adjustable support bracket



Ladder assembly and installation WARNINGS:

1. Make certain there is an adequate, level landing where the ladder will be installed.
2. Ladder is heavy. Use mechanical lifting equipment to raise ladder to vertical position.
3. Do not climb ladder in any manner until it is fully attached both top and bottom. Use portable ladders, scaffolding, or personnel lifts when installing ladder.
4. Do not stand or work on top of tank. The tank surfaces are flexible and slippery and a dangerous fall could occur. There is no weight or load rating for the domes of tanks.

Step 2 Attach feet to the bottom of the ladder legs



Step 3 Assemble and attach adjustable support bracket

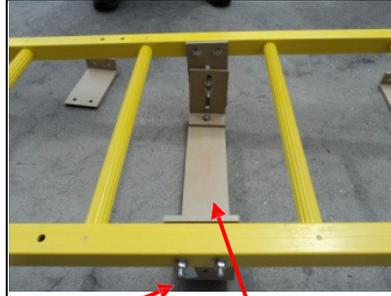
Bolt the mounting bracket to the adjustment plate



Completed assembly



Support bracket bolted to ladder rails



1

2

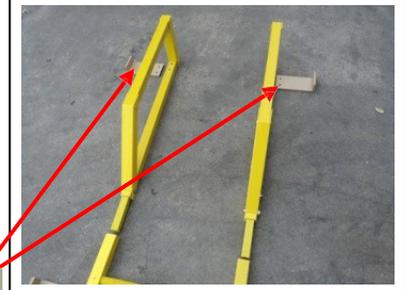
1

Use pre-drilled holes approximately at the midpoint of ladder. Install bolts with bolt head on the inside of ladder railing and nuts and washers on the outside.

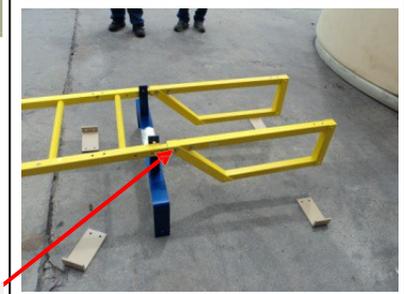
2

Flat side of support bracket is to be directed toward the tank

Step 4 Install returns or walk through if applicable at top of ladder



1



2

1

Returns/walk through sections are designed to slide inside the ladder railing

2

There are 2 pre drilled bolt holes for the returns. **INSTALL ONLY THE TOP** bolt, washer and nut as the bottom bolt holes will be used to attach to the ladder bracket, (blue), which comes already attached to the tank. Ladder bracket shown in photo has been removed from tank for clarity. **DO NOT** remove bracket from tank when making field installation.

Step 5

Install cage attachment brackets

Detail showing cage attachment bracket bolted to ladder railing



Photo showing location for cage attachment brackets to ladder railing (8 total). Heads of bolts are on climbers side of ladder.



Labeling and sequence of installation is critical



Begin by laying both of the FS-1 vertical slats EDGE ways on the cage attachment brackets



Install the hoops by bolting one side and then bending the hoop to the other side, install bolts



Note: That Vertical slat goes inside the hoop



Step 6

Install the cage to the ladder

Review the layout to ensure it is correct



Finished assembly of cage



*****STOP*** Carefully check tightness, 5 ft. lbs., of all nuts and bolts before proceeding.**

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 3. Do not climb ladder in any manner until it is fully attached at both top and bottom. Use portable ladders, scaffolding, or personnel lifts when installing ladder.
 4. Do not stand or work on top of tank. The tank surfaces are flexible and slippery and a dangerous fall could occur. There is no weight or load rating for the domes of tanks.
- In addition:
5. Make certain the four bolts associated with the metal ladder attachment bracket are tight before using ladder.
 6. No field drilling of holes in the ladder is required. Do not drill extra holes or enlarge factory drilled holes.
 7. When fully assembled, the ladder and accessories should have no unfilled bolt holes.
 8. Perform an annual routine inspection of the ladder tightening bolts and looking for signs of damage or deterioration. Remove any suspect ladder from service and destroy.

Step 7

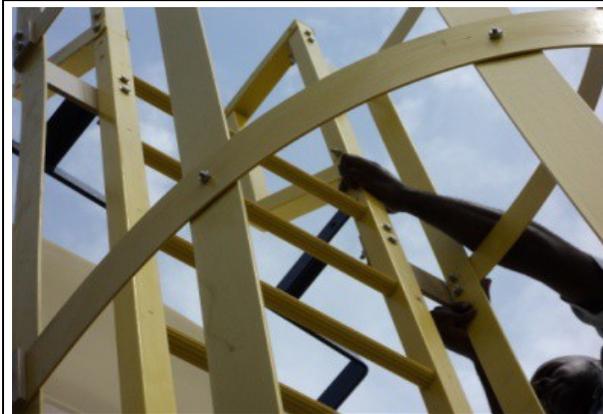
Attach the ladder to the tank using the metal ladder bracket

CAUTION

Lift the ladder by mechanical means such as a fork lift and align the pre drilled holes in the top of the ladder railing with the holes in the tank's metal ladder bracket. The tabs of the ladder bracket go inside the ladder rails.



Bolt the ladder and bracket to one another using the 3/8" x 2 1/2" bolts. Torque to 5 ft. lbs.



Step 8

Make Adjustments

Plumb the ladder. Mark the location for the anchor bolts. Drill anchor holes and attach ladder to foundation.



After the ladder has been aligned and securely attached at top and bottom, adjust to support bracket so that the flat side touches the outer wall of the tank, tighten support bracket bolts.

