Pressure Testing Procedures

Double-Wall Tanks

Fiberglass Tank SOLUTIONS

KEY NOTIFICATIONS

Failure to follow the warnings below could result in damage to the tank, property damage, serious personal injury, and/or death.

Note: Although pressure testing is not required during installation if the requirements are met, the pressure testing procedures (this document) can be used on any project to meet requirements.

NOTICE

Do not pressurize 4', 6', 8' and 10' diameter tanks over 5psig. Do not pressurize 12' diameter tanks over 3 psig.

NOTICE

Do not connect the air supply directly to the monitoring fitting on the tank.

Note: The manifold must be moved from the interstitial monitor fitting to a fitting on the primary tank when testing the primary tank.

Note: Refer to the last pages of these instructions and the FTS website for full-scale drawings of the test manifold and other equipment that may be required.

1. Introduction

1.1. About These Instructions

1.1.1. These instructions are provided as a supplement to the Fiberglass Tank Solutions Installation Manual and Operating Guidelines (IMOG).

1.1.2. All double-wall tanks may be pressure tested using these instructions, but FTS does not require any pressure testing during installations unless the tank fails to meet the IMOG requirements shown in Section 2.7 (Side Section "As Received Requirements") and section 2.8 ("Troubleshooting Double-Wall Tanks").

- Refer to IMOG before continuing with these instructions.

1.2. Testing Equipment

1.2.1. On double-wall dry tank, FTS ships the tank factory-equipped with a test manifold attached to the dry interstitial monitor fitting that may be used for pressure testing a primary tank. See Figure 1 and the layout drawing at the end of this document. Layout drawings for the test manifold are also available on the FTS website.

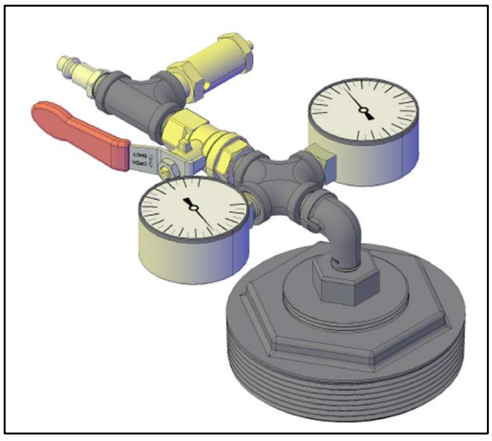

Figure 1 – FTS-Supplied Test Manifold

1.2.2. If a second primary space is to be simultaneously pressurized (for multi-compartment tanks), or if the interstice is to be pressure tested, additional equipment is required, including:

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⚠ WARNING

Prior to pressure testing the tank, notify all people on the site to remain in a safe location. Stand clear of manways, fittings, and tank ends during testing. When a tank is pressurized fittings and/or manways may dislodge, or the tank could rupture.

⚠ WARNING

Do not overpressurize the tank.

⚠ CAUTION

Position the pressure gauges so that they can be clearly read at all times. The pressure gauge must have a pressure-relief valve that is used and set at 6 psig or 4psig for 12' diameter tanks.

Note: Refer to the drawings at the end of this document and available on the FTS website for drawings of the test manifold: https://fgtsolutions.com/resources/dw-pressure-testing/

- A tee fitting (or cross fitting) allowing for more than one hose connection, a tapped fitting and valve will all be needed to pressurize more than a single primary space. See the example layout at the end of this document.

1.2.1. The installer is responsible for ensuring all equipment is working condition, tank is properly sealed and testing apparatus is assembled correctly and properly calibrated. It is highly recommended to purchase the testing apparatus from the tank manufacturer (if it is not already included in the order).

1.2.2. Testing apparatus must have (2) pressure gauges with a maximum full-scale reading of 15 psig with ½ psig or smaller increments. Testing apparatus must also have a pressure relief device set to a maximum of 6 psig or 4 psig for 12' tanks.

1.2.3. Remove all factory supplied threaded plugs, apply sealant, and replace and tighten plugs. Flanged fitting and manway bolts should be torqued to 25 ft-lb.

1.2.4. The installer may need to supply gaskets, hardware, steel blind flanges, and additional tapped fittings and shut off valves if testing more than a single-compartment primary tank.

1.2.4.1. If pressure testing both of the primary tank spaces of a multicompartment tank simultaneously, or if pressure testing the interstice of the tank in addition to the primary tank space(s), additional equipment will be required. See 1.2.2.

1.3. During the pressure test, someone must always be present with the tank.

2. Soaping the Tank to Check for Leaks

2.1. When applying a soap solution to the tank, begin with the areas around the attachments to the tank (fitting and manways). Blemishes or light handling scratches on the tank surface should be examined if the tank testing pressure cannot be maintained. A leak can be indicated by a loss of test pressure or the presence of air bubbles forming in the soap solution.

2.2. Take extra care with coating fittings and manways with the soap solution. If bubbles are present around threaded plugs or gaskets; tighten and retest.

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NOTICE

Do not install any piping, manway extensions, or fittings other than test fittings until all preinstallation testing has been completed.

⚠ CAUTION

Never leave a tank under pressure unattended.

⚠ CAUTION

Never remove the pressure testing apparatus, threaded plugs, or blind flanges while tank is under pressure.

⚠ WARNING

Do not stand on or approach endcaps, manways, or fittings while pressurizing tanks. Do not lift or hoist tank under pressure.

2.3. Mixing the Soap Solution for

2.3.1. Warm weather soap solution:

- 5 gallons of water
- 8 ounces of household dish washing detergent

2.3.2. Freezing conditions soap solution:

- 5 gallons of water
- 8 ounces of household dish washing detergent
- 1 gallon of windshield washer solution

2.4. If a leak is found, do not install the tank, and immediately contact your sales representative to coordinate a field service inspection/repair.

3. Procedure for Pressure Testing the Tank

3.1. Install Test Manifold(s)

3.1.1. Install a test manifold in a service fitting on the part of the tank that stores product (primary tank).

- A test manifold(s) is provided by FTS on all double-wall dry-monitored tanks shipped with vacuum on the interstice.

Note: FTS does not send a test manifold with brine-monitored tanks. The contractor must supply the test manifold.

3.2. Pressurize the Primary Tank

- Pressurize the primary tank (product storage area).
- To pressure test more than one primary tank (for example, a second compartment with a multicompartment tank or the interstice of a dry-monitored double-wall tank), **additional equipment is required.** See 1.2.2.
- For multicompartment tanks, pressurize the base tank and end compartments (all may be pressurized simultaneously or separately).
- After reaching the correct test pressure, close the air supply valve on the testing apparatus and disconnect the air supply.

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Note: FTS Supplies a Test Manifold on with Double-Wall Dry-Monitored Tanks.

Note: Additional fittings/valves will be required if pressurizing multiple primary tanks or pressurizing the interstice of a dry-monitored double-wall tank.

Note: There is one interstitial space on our tanks, even with multicompartment tanks.

Note: During pressure tests, ambient air temperature can affect pressure-gauge readings.

- With the Primary Tank pressurized, proceed to paragraph 3.3.

3.3. Inspecting and Testing for Leaks

3.3.1. Double-Wall Brine-Monitored Tanks (Brine-Filled Interstice):

- The test manifold must be supplied by the tank installer with brine-monitored tanks. FTS does not supply the test manifold on brine-filled interstice double-wall tanks.
- **Never pressurize the interstice of brine-monitored tank.**
- Apply soap solution to the fittings, threads and connection points around accessories on the outside of the tank.
- While pressurizing the primary tank, remove the reservoir fitting plug and observe the reservoir for active bubbles, which indicate a leak from the primary space to the interstitial space.

3.3.2. Double-Wall Dry Tanks:

- Never apply direct pressure the interstice of a dry-double wall tank. Pressure must be bled over from the primary.
- For dry interstitial tanks, close the interstitial manifold valve prior to pressurizing the primary tank.
- If the pressure on the interstice builds when pressure is only applied to the primary tank, proceed to 3.4.2.
- After bleeding pressure from the primary to the interstice, soap the exterior of the tank, paying special attention to areas near service fittings, manways, and joints/seams.

3.4. Monitor and Release Pressure

3.4.1. When pressurizing the primary tank or dry interstitial space, hold and monitor pressure for at least 1 hour.

3.4.2. If a leak is found by the presence of air bubbles (in the soap solution or in the brine reservoir) or if you have observed loss/gain of pressure during the 1 hour pressure hold:

- Do not install the tank.
- Immediately contact your sales representative to coordinate a field service inspection/repair.