Hot Water Storage Tanks

Series RLU/RWU/RSE

Operation, Maintenance & Installation Manual

www.flofab.com

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General Notes and Warnings

NOTES:
This manual is intended to detail installation and maintenance procedures for FLOFAB® Tanks. Since each unit is built to meet customer specifications, instructions may seem general in nature at times.

If questions are not answered by this manual, or if specific installation or maintenance procedures are not clearly understood, contact FLOFAB for clarification before proceeding.

All installation and maintenance procedures should be performed only by experienced, trained, and certified personnel. Personnel should be trained in correct piping procedures and methods, and should be experienced in working with steam, boiler water, high temperature water, and high pressure systems.

FLOFAB has no control over the use of FLOFAB® Tanks or the type of system into which they may be integrated. Depending on the system in which the tank has been installed, the possibility for bodily injury or death may be present if the system is not properly prepared for maintenance procedures. If any of the following elements apply to the system, follow all accepted / recommended practices, and use common sense before attempting any maintenance procedures.

1. Steam
2. High Temperature or Boiler Water
3. Connected Energy Source
4. Connected Power Source
5. Pressurized System
6. Any Combination of the Above

FLOFAB® Tanks are designed for indoor use only, unless otherwise required by design specifications. Each unit requires at least two feet (2') of clearance around and above the unit. It should be located on a level surface (no more than one-half degree [½º] of slope), capable of supporting the total weight of the unit when filled to capacity.

The tank should be mounted to the floor following applicable architectural and local code requirements for the specific installation site.

In areas prone to seismic activity, it is recommended that the tank be mounted to the floor according to recommended procedures and codes for the site / location, to make it less susceptible to seismic damage.

Inspection procedures and periodic maintenance, as well as suggested intervals, are detailed on pages 5 to 8 of this manual.

FLOFAB® Tanks are available in a wide range of operating pressures. For the specific design range for your tank, refer to the design specifications. The maximum rated working pressure is also stamped on the tank for quick reference.

If the tank is damaged during installation or maintenance, contact FLOFAB for instructions.

General Notes and Warnings

For all piping connections, the use and / or type of joint compound or sealer should be determined by referring to local codes, accepted standards, and / or the requirements of the installing contractor.

An A.S.M.E. approved pressure, or pressure / temperature relief valve, rated higher than the maximum heat in Btu / hr must be installed. The valve should have a pressure setting no higher than the maximum design pressure of the tank.

Warnings

As with any tank designed for use as a pressure vessel, the potential exists for severe personal injury if proper installation and maintenance procedures are not followed. Listed below are specific warnings pertaining to FLOFAB® Tanks. In addition, throughout this manual, warnings are restated when procedures are described pertaining to areas of potential danger. All warnings should be carefully read and understood. All precautions contained in the warnings should be carefully followed to reduce the chance of injury.

Note: Throughout this manual, warnings will be denoted by the symbol ▼.

In addition, most components which will be connected to the tank by the purchaser, will be accompanied by their own documentation. This documentation may contain warnings specific to the component. It is strongly recommended that each document be reviewed before attempting any installation or maintenance procedures.

▼ Areas of potential danger:
1. all inlet and outlet lines, joints, and valves;
2. all pressure regulators;
3. all power connections and cables;
4. all energy lines, joints, and valves; and
5. all pneumatic (instrument air) lines and joints.

▼ Before attempting any installation or maintenance procedure:
1. assure that any energy source connected to the system has been turned off;
2. if the unit has been in operation, allow the water in the tank, as well as all components and surfaces, to cool before starting the procedure;
3. assure that all power has been shut off / disconnected before attempting any procedures; and
4. assure that all inlet and outlet lines have been turned off at the manual shutoff valves.

▼ If the tank will be used for holding hot water, it can present a very dangerous situation due to the fact it is under pressure and at very high temperatures. To avoid possible injury or death, use common sense and follow all accepted / recommended procedures when performing installation and maintenance procedures.

▼ If both electricity and water / steam are to be used in the system, the combination can pose a very dangerous situation. Assure that all power has been shut off and disconnected before attempting any installation or maintenance procedures.

INSTALLATION

Transporting and Unpacking the Tank

Most FLOFAB® Tanks are not crated at the factory. Larger tanks are shipped with lifting lugs attached to provide a safe means for lifting and moving the unit.

▼ The tank should only be lifted by the lifting lugs provided. Improper lifting of the tank may result in damage to the unit.

▼ Care should be taken not to «drop» or damage the tank during transport and unpacking. This could result in damage to the hydraulic cement lining of the tank.

Location Requirements

FLOFAB® Tanks are designed for indoor use only, and require at least two feet (2') of clearance around and above the unit, unless otherwise required by the design specifications. The tank should be located on a level surface (no more than one-half degree [½º] of slope), capable of supporting the total weight of the tank when filled to capacity.

Examining the Tank

After the tank has been set in place and uncrated (if necessary), it should be carefully examined to assure that it was not damaged during shipping. If any evidence of damage is detected that could affect the tank, contact FLOFAB, or your authorized sales representative, to report the damage and to receive instructions on how to proceed.

Mounting the Tank

The tank should be mounted to the floor, following applicable architectural / local code requirements, or accepted standards for the specific installation site and for the tank purchased.

In areas prone to seismic activity, it is recommended that the tank be mounted to the floor, according to recommended procedures for the site, to make it less susceptible to damage from seismic activity.

INSTALLATION

Connecting a Pressure Relief Valve

Each FLOFAB® Tank has been built to exact customer specifications. An A.S.M.E. approved pressure or pressure / temperature relief valve must be installed in the tank. While the pressure rating of the valve can be lower, it must not exceed the working pressure of the tank.

Note: The working pressure of each tank is listed on the Submittal Sheet and stamped on the data plate attached to the tank for reference.

▼ Installing a pressure relief valve that is rated for a higher pressure then the working pressure of the tank will create a potentially dangerous situation. The pressure relief valve must not exceed the working pressure of the tank and should be installed following all accepted / recommended procedures to avoid possible injury or death.

Note: For all piping connections, the use and / or type of joint compound or sealer on the joint should be determined by referring to local codes, accepted practices, or the requirements of the installing contractor.

Connecting Components to the Tank

Care should be taken when connecting any component(s) to the tank. Each component should be carefully mounted to the appropriate fitting and properly aligned before tightening.

Note: For all piping connections, the use and / or type of joint compound or sealer on the joint should be determined by referring to local codes, accepted practices, or the requirements of the installing contractor.

After the tank is filled, each fitting should be examined to assure that no leaks are present. Leakage at fittings can cause the outside of tank to rust, effectively shortening the life of the tank.

INSPECTION

Because of the superior design and construction of FLOFAB® Tanks, very little is required in the way of inspection or maintenance. The following table identifies the three (3) inspections that are recommended and their suggested frequency.

Recommended Inspections

Because of the superior design and construction of FLOFAB® Tanks, very little is required in the way of inspection or maintenance. The following table identifies the three (3) inspections that are recommended and their suggested frequency.

	Time Interval	
To be inspected	Each Month	Every Time (3) Years
Sediment Buildup in Tank	✓	
Leaks at Fittings	✓	
Tank Interior and Lining		✓

Note: Anodes must be changed every year or warranty will be void.

If any problems are detected during inspections, refer to the Maintenance section (page 6) for specific

MAINTENANCE

The information contained in this section will detail maintenance procedures suggested for all FLO-FAB® Tanks. Remember, this manual serves all FLOFAB® Tanks.

Therefore, the maintenance procedures may be general in some instances. If there are any questions concerning maintenance procedures that are not clearly explained in this manual, contact FLOFAB. Be sure to have the serial number of the tank available before making contact.

▼ FLOFAB has no control over the use of FLOFAB® Tanks or the type of system into which they may be integrated. Depending on the system in which the tank has been installed, the possibility for bodily injury or death may be present if the system is not properly prepared for maintenance procedures. If any of the following elements apply to the system, follow all accepted / recommended practices, and use common sense before attempting any maintenance procedure.

1. Steam
2. High Temperature or Boiler Water
3. Connected Energy Source
4. Connected Power Source
5. Pressurized Systems
6. Any Combination of the Above

Removal of Sediment Buildup in the Tank

Each month, it is recommended that the tank be «drained down» to remove any sediment that has accumulated in the tank. To drain down the tank, follow the steps detailed below.

1. Be sure the drain line is piped to floor drain and that any water from the tank will go into the floor drain.

If the system is under pressure, relieve the pressure from the tank via the pressure relief valve.

2. After assuring that step 1 has been completed, and any other special circumstances present within the system have been addressed in an accepted / recommended manner, open the drain valve on the bottom of the tank.

3. Allow the contents of the tank to drain until no evidence of sediment is present.

4. Close the drain and return it to operation within the system.

MAINTENANCE

Repairing Leaking Fittings

If leaks are detected at any of the fittings in the tank, follow the steps detailed below to correct the leak.

1. Isolate the tank from the system in which it is installed.
2. If the system is under pressure, relieve the pressure from the tank via the pressure relief valve.
3. If the system operates at a high temperature, allow time for the tank, its contents, and all components to cool.
4. After assuring that steps 1 through 3 above, have been completed, and any other special circumstances present within the system have been addressed in an accepted / recommended manner, open the drain valve on the bottom of the tank.
5. Allow the contents of the tank to drain until the fluid level is below the level of the leaking fitting.
6. Break the joint at the fitting.
7. Inspect both the threads of the fitting and the pipe for signs of damage. If damage is found, either rethread or replace the damaged component.
8. If no damage is detected, thoroughly clean the threads of both the fitting and pipe.
9. Insert the pipe into the fitting and carefully tighten.

Note: For all piping connections, the use and / or type of joint compound or sealer on the joint should be determined by referring to local codes, accepted practices, or the requirements of the installing contractor.

10. Close the drain and refill the tank. As the tank is filling, inspect the fitting for any signs of leakage.
11. If no signs of leakage are detected, return the tank to operation within the system. After the tank has been returned to operation, and the system has had time to return to normal operation, reinspect the fitting for leakage.

MAINTENANCE

Inspection of the Interior of the Tank and Lining

It is recommend that every three (3) years the interior of the tank and lining be inspected. On larger FLOFAB® Tanks, a «manhole» is supplied to allow this inspection. To inspect the interior of the tank and lining, follow the steps detailed below.

1. Isolate the tank from the system in which is installed.
2. If the system is under pressure, relieve the pressure from the tank via the pressure relief valve.
3. If the system operates at a high temperature, allow time for the tank, its contents, and all components to cool.
4. After assuring that steps 1 through 3 above, have been completed, and any other special circumstances present within the system have been addressed in an accepted / recommended manner, open the drain valve on the bottom of the tank.
5. Allow the contents of the tank to drain completely.
6. Break the bolts securing the manhole cover to the tank.

Note: Do not allow the manhole to fall into the tank. If the manhole falls into the tank during removal or replacement, the interior and lining of the tank may be damaged.

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