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**DOMESTIC HOT WATER STORAGE TANK SPECIFICATION**

**LARGE VOLUME TANKS**

A.  The vertical (horizontal) storage tank shall be a Thermal Solutions Model \_\_\_\_\_\_\_\_\_ with a diameter of \_\_\_ and having a true volume capacity of \_\_\_\_ US gallons and equipped with a steel skirt or (steel saddles on horizontal tanks) and constructed of carbon steel in accordance with standard ASME Boiler and Pressure Vessel Code requirements.  The storage tank will be stamped and registered with the National Board of Boiler and Pressure Vessel Inspectors.  Tanks shall be internally lined with single glass lining with premium enamel coating per ASME HLW Code procedures at a finished thickness of\_\_ mils (10 ~12 mils = single coat, 20 ~ 24 mils = double coat).  The premium enamel coating helps prevent the growth of bacteria, mold and mildew on the surface of the tank lining. The storage tank will be hydrostatically tested for 125 PSI (150 PSI) working pressure.  Tanks shall have two (2) lifting lugs, four (3) 3” npt fittings, one (1) 1” drain, one (1) 1 ¼” T&P Relief fitting, and two (2) npt fittings for aquastats.  Tanks shall be externally prime coated with red oxide primer.

B. Tanks shall be furnished with an electric anode system that will provide cathode protection through non-consumable titanium rods for maximum protection.  The electric anode system is to be a maintenance free system and requires no bi-annual anode inspection. ***(NOTE – The electric anode system is available on tanks up to 860 gallons. Larger sizes need to be properly sized)***

C.  Single glass lining with premium enamel coating to be applied in ambient room temperatures to a wet thickness of 24 mils to a sandblasted, white metal surface then cured in a drying oven at 400°F degrees.  All threaded fittings are to be wired brushed clean before the firing process.  Firing of the vessel is to be done at 1530°F degrees for a period of time which will allow the glass lining to liquefy and bond to the steel substrate.

**OPTION**: Double glass lining with premium enamel coating to be applied in ambient room temperatures to produce a finished glass thickness of 20 to 24 mils of glass lining and carry a 10 year warranty.  The tank(s) will be cooled and lightly sandblasted between coats to ensure proper adhesion.

D.  Jacketed and insulated tanks are to have an open cell 2-part rigid insulation sprayed into a 2” cavity surrounding the storage tank.  The foam insulation meets ASHREA 90.1b requirements with an insulation value of R-12.5.  The steel jacket is to be 24 gauge steel, painted on both sides with a baked-on enamel coating.

**OPTION**: Insulation shall be spayed-on rigid polyurethane insulation with acrylic topcoat which exceeds ASHREA 90.1b requirements.  Spray foam insulation to have a class I foam rating with less than a 25-flame spread rating suitable for boiler room applications.  Insulation shall be applied at the factory at room temperature directly to the tank in a 2-step application process with 2.25” of foam added per application with a total insulation value to be R-16.  The acrylic top coat is to be applied in a 2 step application process, applying approximately 12.5 mils of material per coat and allowed to dry between applications.

E.  The storage tank is to be equipped with a diverter tube.  The diverter tube is to be constructed with heavy gauge stainless steel and designed with an angled plate opening along the bottom of the tube.  The angled plate opening will have a 30% more combined volume than the sparge tube which will allow the incoming water to slow and gently enter the tank maintaining temperature stratification.  The diverter tube will allow 85% of the tanks usable water to be drawn without a noticeable temperature drop.

F.  Tanks shall have a minimum 5-year warranty. (Tanks shall have a 10-year warranty with the Double glass lining option.)