

**607.1.1 Water Tanks Required.** Every building provided with water shall have one or a combination of the following arrangements:

- (1) Low level and high level tanks with transfer pump(s).
- (2) Low level tanks with a hydropneumatic pumping system.

**607.1.2 Location and Covering.** The elevated water tanks shall be positioned so that its contents are protected from direct sunlight. An assembly or shade system shall be provided to prevent the adverse impact from UV radiation and vaporization of water from the storage tank. Such assembly or system shall be designed to cover the top and sides of the water storage tank to resist temperatures of not less than 50°C (122°F). Reflective shade panels or coverings shall be permitted; and technical data, such as the shade factor or transmission level of material having puncture resistant, tear strength, burst strength and UV resistance shall be submitted and approved by the Authority Having Jurisdiction.

**607.1.3 Sizing.** The minimum storage capacity for a water storage tank not providing fire protection shall be based on the requirements in Section 607.1.1. Where fire protection is provided, fire storage capacity shall be in accordance with the provisions set forth by the Authority Having Jurisdiction. Hydropneumatic tanks shall not be used for fire protection.

Excessive storage capacity (exceeding 60 hours) shall be prohibited to minimize detention times and water quality deterioration.

**607.1.4 Materials and Construction.** Water storage tanks and appurtenant materials including, but not limited to: paints, linings, coatings, adhesives, bladders, gaskets and sealants in direct contact with potable water, shall be certified to NSF 61 (health effects testing criteria for products used in a drinking water system) or equivalent International Standard(s) approved by the Authority Having Jurisdiction and the following:

- (1) Water storage tanks shall be listed and labeled by a listing agency and shall conform to applicable standards referenced in Table 14-1 or equivalent International Standard(s) approved by the Authority Having Jurisdiction.
- (2) Water storage tanks shall be resistant to temperatures not less than 50°C (122°F).
- (3) Water tank shall be tight against leakage; dust and insect proof.

- (4) Water storage tanks shall be UV stabilized for outdoor applications.
- (5) Water storage tanks shall be designed and accessible for visual inspection.
- (6) Water storage tank materials that are in contact with stored water shall be compatible with the stored water quality and shall comply with referenced standards listed in Table 14-1 or equivalent International Standard(s) approved by the Authority Having Jurisdiction. Stainless steel, concrete, fiberglass, reinforced plastics (polypropylene, PVDF, HDPE and CPVC) are considered approved materials.
- (7) Interior coatings shall meet the requirements of NSF 61 or equivalent International Standard(s) approved by the Authority Having Jurisdiction. Interior coatings shall be properly applied and cured. After curing, the coating shall not transfer any substance to the water that causes toxic or taste odors. Wax coatings for the tank interior shall be prohibited.

Exterior coatings shall comply with referenced standards listed in Table 14-1 or equivalent International Standard(s) approved by the Authority Having Jurisdiction.

- (8) Material of the tank shall not be adversely affected by condensate that forms inside the tank and shall not cause pollution of the stored water.
- (9) Metallic materials shall be protected against internal or external corrosion.
- (10) Tanks constructed of erosive materials shall be lined with thick safe, non-corrosive, and non-leaking material.
- (11) Concrete tanks shall be seamless and reinforced.
- (12) Water storage tank materials shall be capable of withstanding internal and external forces to which they are subjected.
- (13) The design of the structural systems supporting water storage tanks shall include the necessary interfaces between the tank and the supporting structure or base. Engineered structural calculations shall be submitted and approved by the Authority Having Jurisdiction. The design of elevated water storage tanks shall include consideration of lateral loads due to seismic provisions. Individual foundations shall be designed