



BUILDINGS BULLETIN 2014-021

OTCR

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Purpose: This document establishes acceptance criteria for bolted Fiberglass-Reinforced plastic panel-type tanks for water storage (bolted FRP panel tanks) as an alternative material in accordance with the NYC Construction Codes.

Related Code/Zoning Section(s):	AC	28-113	BC	Q105
	PC	Table 303.4		
	PC	606.5.4		

Subject(s): Water storage, fiberglass-reinforced plastic panel tank; Water tank, water distribution system; Water tank, fire protection system

Background: The NYC Construction Codes prescribe the following requirements for water tanks:

- Water tanks used with water distribution systems.** Section PC 606.5.4.4 of the New York City Plumbing Code prescribes the use of wood, steel or equivalent materials for the design of gravity house supply tanks for use with water distribution systems.
- Water tanks used with fire protection systems.** The fourth (4) water supply source prescribed in section 9.1.4 of NFPA 14¹, as modified by BC Appendix Q 105, requires gravity water tanks used for fire protection to comply with NFPA 22². NFPA 22 does not address bolted FRP panel tanks.

The NYC Construction Codes do not specify the criteria used for acceptable bolted FRP panel tanks used for water distribution and fire protection storage tanks. Therefore this bulletin establishes acceptance criteria for the use of bolted FRP panel tanks as an alternative material.

Description: Bolted FRP panel tanks are typically field assembled from factory-produced modular panel units. Panels are manufactured using Sheet Molding Compound (SMC) in accordance with AWWA D 121³.

Evaluation Scope: NYC Construction Codes

Evaluation Criteria: Pursuant to AC 28-113, the Office of Technical Certification and Research (OTCR) recognizes bolted FRP panel tanks installed, inspected, and tested in accordance with AWWA D 121-12³

“Bolted Aboveground Thermosetting Fiberglass-Reinforced Plastic (FRP) Panel-Type Tanks for Water Storage” Acceptable bolted FRP panel tanks shall be listed by an approved agency in accordance AC 28-113.2.3 and PC Table 303.4 (see “Portable water supply system components and potable water fixture fittings”)

Uses: Bolted FRP panel tanks are used for domestic and fire protection storage water tanks.

Conditions of Acceptance: Bolted FRP panel tanks shall comply with the NYC Construction Codes and the following conditions:

A. Design and Installation

1. Bolted FRP panel tanks used for domestic water shall be designed and installed in accordance with applicable sections of the NYC Construction Codes, NYC Zoning Resolution, manufacturer instructions and the applicable listing.
2. Bolted FRP panel tanks used for fire protection shall comply with applicable provisions of NFPA 22-13 including chapter 11 “Fiberglass-Reinforced Plastic Tanks”
3. Bolted FRP panel tanks shall be tested in accordance with ASTM E 84⁴ and shall be used accordingly. Tanks shall not be used in exit corridors, occupancy group I, or rooms in which the net floor area per occupant is 10 sq. ft. or less.
4. When installed indoors bolted FRP panel tanks shall be protected by a sprinkler system designed and installed in accordance with section BC 903.
5. Bolted FRP panel tanks panels shall be listed in accordance with NSF 61⁵.

B. Inspection and Maintenance

1. Bolted FRP panel tanks shall be inspected and maintained in accordance with the manufacturers operating and maintenance manual, AWWA D121 Section 10.6 and NYC PC section 606.5.4.5.
2. Bolted FRP panel tanks used for fire protection shall be inspected and maintained in accordance with NFPA 25⁶.
3. Bolted FRP panel tanks used for domestic water shall be maintained in accordance with Sections 141.07 and 141.09 of the NYC City Health Code. See <http://www.nyc.gov/html/doh/downloads/pdf/notice/NOA-Article-141.pdf>.
4. Water quality in bolted FRP panel tanks used for domestic water shall be maintained in accordance with Section 141.11 of the New York City Health Code.

C. Labeling

Bolted FRP panel tanks shall be labeled as per section AC 28-113.2.3 and AWWA D121-12 Section 9.11. All shipments and deliveries of materials shall be accompanied by a certificate or label certifying that the materials shipped or delivered are equivalent to those tested and approved.

Referenced Standards:

1. *NFPA 14-03 “Installation of Standpipe, Private Hydrants and Hose System”*
2. *NFPA 22-13 “Standard for Water Tanks for Private Fire Protection”*
3. *AWWA D 121-12 “Bolted Aboveground Thermosetting Fiberglass-Reinforced Plastic (FRP) Panel-Type Tanks for Water Storage”*.
4. *ASTM E84-07 “Test Methods for Surface Burning Characteristics of Building Materials”*.
5. *NSF 61-07 “Drinking Water System Components—Health Effects”*.
6. *NFPA 25-11 “Standard for the Inspection, Testing, and Maintenance of Water-based Fire Protection Systems”*.