FT&V RP 2007–1 Recommended Practice for the In-Service Inspections of Aboveground Atmospheric Fiberglass Reinforced Plastic (FRP) Tanks and Vessels © Foot Note

This Recommended Practice was developed for the Fiberglass Tank & Pipe Institute by Curran Consulting Ltd. beginning in 2003 to respond to requests from aboveground fiberglass tank & vessel owners, operators, engineering companies, and governmental bodies for in-service fiberglass atmospheric pressure tanks and vessels. As part of the development process, a Recommended Practice Peer Review Group was formed that included representatives from the U.S. Environmental Protection Agency's Office of Solid Waste and Emergency Response; N.Y. State Dept. of Environmental Conservation's Spill Response & Bulk Storage Tank Section, Lyondell Chemical, Inc., two fiberglass inspection companies, three fiberglass consultants, engineering companies, and both Institute and non-Institute aboveground fiberglass tank manufacturers. Members of the Recommended Practice Peer Review Group shared their fabrication, operation and maintenance expertise on aboveground fiberglass tanks in corrosion-resistant applications.

In 2007, the Recommended Practice was approved by the Recommended Practice Peer Review Group after rounds of public and stakeholders comment and responses to those comments. The Recommended Practice subsequently was approved by the Fiberglass Tank & Pipe Institute.

Footnote: FT&V RP 2007-1 was formally known as FTPI RP 2007-1 where the "P" included, but the RP did not address, "piping." FT&V is for the inspection of atmospheric pressure FRP tanks and vessels, not piping. Piping may be inspected by following API 570 "Piping Inspection Code: In-service Inspection, Rating, Repair and Alteration of Piping Systems (steel & FRP)."

FT&V RP 2007-1: The Recommended Practice includes recommended inspector qualifications, periodic preventive maintenance inspections, trained personnel integrity inspections, external inspections, internal inspections, and alternate non-intrusive inspection methods. The document also includes report forms for monthly, annual and periodic preventive maintenance inspections that are required to be performed by a trained inspector, and a section on aboveground fiberglass tank fabrication information.

The purpose of this Recommended Practice is to provide procedures for conducting periodic preventive maintenance (PM) inspections and Trained Inspections of fiberglass reinforced plastic (FRP) atmospheric tanks and vessels in corrosive industrial and commercial service after a set period of time and when there is a change of service. The procedures are intended to:

- Minimize maintenance costs,
- Ensure compliance with environmental and safety requirements,
- Minimize system failures, and
- Ensure that proper engineering, construction and maintenance practices are in place.

PM Inspections: The Preventive Maintenance inspections are required to document tank or vessel inspections in written reports using, where applicable, the minimum information included in FT&V RP 2007-1 standardized check lists. In addition, the reports shall contain conclusions, recommendations and supplemental sketches with dimensions and or photographs. The photographs shall have a minimum resolution of 3 mega pixels with the photograph locations identified.

PM Inspector Qualifications: The Preventive Maintenance (PM) inspector shall be a person familiar with the equipment to be inspected, this FT&V RP 2007-1 Recommended Practice, and is designated by the equipment owner or operator. Periodic preventive maintenance tank and vessel inspections are the process of ongoing data.

Collection through exterior inspections using investigative tools and methods: The inspection data should be documented in a manner that provides for a long-term trend evaluation.

a. Qualified Inspectors shall have education and experience equal to at least one of the following: A degree in engineering plus one year of experience in the inspection of FRP tanks or vessels.
b. A 2-year certificate in engineering or technology from a technical college, and two years of experience in manufacturing, repair, operation or inspection of FRP tanks or vessels manufactured in accordance with applicable standards or codes.
c. The equivalent of a high school education, and three years of experience in manufacturing, repair, operation or inspection of FRP tanks or vessels manufactured in accordance with applicable standards or codes.

Trained External Inspections: Certified external tank and vessel inspections shall be performed by a Trained tank or vessel inspector as follows:

- Every 5 years for tanks or vessels in Hazardous Substance service or every 10 years for tanks/vessels greater than 10,000 gallons capacity and in other service, or if evidence of material stress appears, or tank or vessel leaks occur, or
- Before there is a change in service to a dissimilar stored material, or
- If a tank or vessel is relocated.

Trained Inspector Report: The report of Trained Inspections shall be delivered to the owner. These reports shall include the inspector's recommendations, which shall include one or more of the following:

1. No remedial action
2. Further investigation or analysis
3. Repairs
4. Changes in tank or vessel operation
5. Replacement

FT&V RP 2007-1 Applications and Availability: Recommended Practice FT&V RP 2007-1 may be used for the inspection of aboveground fiberglass tanks or vessels in Animal Fats, Vegetable Oil (AFVO) oily water, or other materials subject to the SPCC Rule or in Hazardous Substance service. Such FRP tanks and vessels would include those fabricated to meet the following standards:

1. ANSI/AWWA D120 Thermosetting Fiberglass-Reinforced Plastic Tanks
   Aboveground or underground potable water service
2. ANSI/AWWA D121 Bolted Aboveground Fiberglas-Reinforced Plastic Panel-Type Tanks for Water Storage; Aboveground FRP field assembled water storage tanks
3. NFPA 22 Standard for Water Tanks for Private Water Protection
   Aboveground FRP Tanks for Private Fire Service
4. API Specification 12P Specification for Fiberglass Reinforced Plastic Tanks
   Aboveground vertical cylindrical tanks for processing typical petroleum oilfield liquids

Other standards where FT&V RP 2007 may not apply:

1. ASME, ASTM and UL standards: see FT&P Institute white paper
   "Fiberglass Reinforced Thermoset Plastic Tank & Piping Standards"
2. ASME RTP-1 Reinforced Thermoset Plastic Corrosion-Resistant Equipment
   "RTP Vessels operating at pressures not exceeding 15 psig above any hydrostatic head"

Availability: Those interested in purchasing a copy of the FT&V RP 2007-1 Recommended Practice for the In-Service Inspections of Aboveground Atmospheric Fiberglass Reinforced Plastic Tanks and Vessels by credit card and PayPal via the download link: **http://www.storagetanks.info**

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