



U.S. Department of Transportation
**Pipeline and Hazardous Materials
Safety Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

MAY 11 2011

Mr. David Thompson
Thompson Tank Inc.
8029 Phlox Street
Downey, CA 90241

Ref. No.: 11-0002

Dear Mr. Thompson:

This is in response to your December 28, 2010, letter requesting further clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) based on a letter issued by this office (Ref. No. 10-0219) regarding inspection and use of non-DOT specification cargo tank motor vehicles constructed from glass fiber reinforced plastics (GFRP) authorized by Department of Transportation Special Permit, (DOT-SP) 11903. Your questions are restated and answered below:

Q. Does DOT-SP 11903 require compliance with § 178.347-1(c)?

A. No, § 178.347-1(c) does not apply to non-DOT specification glass fiber reinforced plastic (GFRP) cargo tanks manufactured in accordance with DOT SP-11903 paragraph 7.b(viii). Section VIII of the American Society of Mechanical Engineers (ASME Code) referenced in § 178.347-1(c) contains design and manufacturing rules applicable to metallic pressure vessels and is not applicable to GFRP cargo tanks manufactured in accordance with DOT-SP 11903.

Q. If § 178.347-1(c) does not apply, is the internal maximum allowable working pressure (MAWP) unlimited?

A. DOT-SP 11903 paragraph 7.a states that the cargo tank must have a design pressure of 35 psig. For the purposes of DOT-SP 11903, the design pressure is the same as the MAWP.

Q. Is vacuum loading permissible without ASME certification?

A. ASME certification ("U" stamp) is not required for vacuum loaded non-DOT specification GFRP cargo tanks manufactured in accordance with DOT-SP 11903.

Q. Will the DOT correct the applicable special permits that specifically require compliance with § 178.347-1(c)?

A. As stated in the response to Question 1, no currently active DOT special permits that authorize the manufacture, marking and sale of non-DOT specification GFRP cargo tanks require compliance with Section VIII of the ASME Code referenced in § 178.347-1(c).

Q. Are GFRP cargo tank motor vehicles manufactured in accordance with DOT-SP 11903 required to meet § 180.407(f)(3), which requires thickness testing of the tank wall if affected by a lining or resin rich corrosion barrier failure?

A. As specified in DOT-SP 11903 paragraph 7.c, non-DOT specification GFRP cargo tank motor vehicles must meet the requirements in Subpart E of Part 180 for the periodic testing and inspection of DOT 407 and DOT 412 specification cargo tank motor vehicles. In our December 21, 2010 letter to you, we stated that the lining inspection requirements of § 180.407(f) do not apply since these cargo tanks do not have a liner. Instead, the cargo tank motor vehicles authorized by DOT-SP 11903 are fabricated with a resin rich corrosion barrier that is part of the GFRP construction.

The certificate of compliance you supplied with your letter states this particular non-DOT specification GFRP cargo tank is equipped with a “Durakane 510A 40 BPO” lining material. Durakane 510A 40 BPO is an epoxy vinyl ester resin. This material comprises the corrosion barrier and not lining material as used in § 178.345-2.

Q. Must we verify the minimum shell and head thickness specified on the DOT specification plate and in the manufacturer’s certificate of compliance?

A. Yes, in accordance with DOT-SP 11903 paragraph 7.c, during periodic inspection, the shell and head thickness must be measured in accordance with § 180.407(i).

Q. Can this cargo tank comply with both DOT-SP 11903 and TC 412?

A. If the TC 412 specification allows cargo tanks to be manufactured of GFRP, it is possible that a cargo tank can comply with both DOT-SP 11903 and TC 412. DOT-SP 11903 requires conformance with all regulations applicable to a DOT 407 or DOT 412 cargo tank except as specified. DOT specification cargo tanks made in the United States are generally recognized for use in Canada as equivalents to the corresponding Transport Canada specifications. Provided Transport Canada recognizes the DOT special permit, this cargo tank would be suitable for use in Canada.

Q. Please define what the DOT considers to be the specific differences between an interior lining and a corrosion barrier.

A. The application of a lining material is one option to protect a DOT specification cargo tank motor vehicle from corrosion or abrasion. Typical lining materials applied to the cargo tank wall are rubber, Kynar or polytetrafluoroethylene. A corrosion barrier serves the same purpose as a liner (i.e. protect the cargo tank from attack by the lading). In the case of DOT-SP 11903 and other GFRP cargo tanks, the corrosion barrier is a thin resin rich area which is part of the cargo tank wall. The requirements of § 178.345-2(c)(2) do not apply to cargo tanks manufactured in accordance with DOT-SP 11903 (see DOT-SP 11903, paragraphs 4 and 7.b(ii)). While some persons may use the phrases “lining material” and “corrosion barrier” interchangeably, for the purposes of the HMR, non-DOT specification GFRP cargo tanks manufactured in accordance with DOT-SP 11903 are considered unlined cargo tanks.

Q. Can the visual examination **only**, as recommended by the cargo tank manufacturers, satisfy the DOT requirements that the “structural integrity of the GFRP cargo tank must be determined prior to the repair or the replacement of the corrosion barrier.” Are we correct to assume that this requirement also applies to an interior lining?

A. The non-DOT specification cargo tanks manufactured in accordance with DOT-SP 11903 are subject to all requirements of Subpart E of Part 180 including an external and an internal visual inspection, a pressure test, and a leakage test (see DOT-SP 11903 paragraph 7.c). In accordance with the table in § 180.407(c), if the cargo tank is equipped with a liner, the lining must be inspected as required by § 180.407(f), and for unlined cargo tanks, the shell and head thickness must be measured in accordance with § 180.407(i).

Q. When will the DOT inform the manufacturers of the GFRP cargo tanks of their responsibilities and enforce compliance?

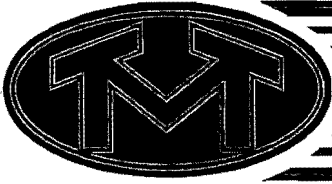
A. The Pipeline and Hazardous Materials Safety Administration independently reviews and evaluates the information provided in each special permit application and application for renewal. This review includes a technical analysis, an evaluation of the past compliance history of the applicant (including incident history and enforcement actions) and coordination with the other modal administrations to gather additional relevant information. If you are aware of a manufacturer or inspection facility that does not comply with the HMR or the terms of a DOT special permit, you may file a complaint at <http://www.phmsa.dot.gov/hazmat/enforcement> or contact our enforcement office directly at (202) 366-4700.

I hope this answers your inquiry. If you need additional assistance, please contact the Standards and Rulemaking Division at (202) 366-8553.

Sincerely,



Ben Supko
Chief, Standards Development
Standards and Rulemaking Division



THOMPSON TANK, INC.

**ASME - D.O.T. CERTIFICATION
D.O.T. INSPECTIONS - TESTING
DESIGN ENGINEERING - CONSTRUCTION**

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§178.347-1
§180.407
Cargo Tanks
IP-0002

THOMPSON VACUUM-PRESSURE UNITS

December 28, 2010

U.S. Department of Transportation
PHMSA Office of Hazardous Materials Standards
Attn: PHH-10
East Building
1200 New Jersey Avenue, SE
Washington, D.C. 20590-0001

Attention: Mr. Ben Supko
Acting Chief, Standards Development
Standards and Rulemaking Division

Ref. No.: 10-0219 Dated: December 21, 2010

Gentlemen:

Thank you for your prompt reply. My questions as you chose to paraphrase do not accurately represent my request for interpretations. I will attempt to be more specific.

Q1. Is 178.347-1 (c) applicable as specifically required in DOT-SP-11903, Section b., paragraph (viii), page 5?

If 178.347-c (c) is not applicable is the internal MAWP unlimited and is vacuum loading permissible without ASME Code Certification?

Will DOT correct the applicable special permits that specifically require compliance with 178.347-1 (c)?

Q2. Are GFRP cargo tank motor vehicles manufactured in accordance with DOT-SP-11903 required to meet 180.407 (f) (3) which requires thickness testing of the tank wall if affected by a lining or a resin rich corrosion barrier failure?

Must we verify the minimum shell and head thickness specified on the DOT Specification Plate and in the manufacturer's Certificate of Compliance?

We have attached a copy of Comtank's Manufacturer's Certificate of Compliance for the 2008 FRP tank trailer, Serial No. ZC9LTAB28B075487 in question.

Please note that the manufacturer's DOT Certificate of Compliance specifies the following:

1. Complies with TC 412 as shipped.
2. Minimum shell thickness .50 inches.
Minimum head thickness .75 inches.
3. Lining Material Durakane 510A 40 BPO.

Q3. Can this cargo tank comply with both DOT-SP-1193 and TC 412?

Q4. Please define what DOT considers to be the specific differences between an interior lining and a corrosion barrier.

Derakane is a rather ineffective and economical lining material, only one of many, that is applied to carbon steel, aluminum, stainless steel and FRP cargo tanks. The Derakane lining applied to the interior of the above identified cargo tank has been replaced or repaired many times in the past, twice in the last three months.

Q5. Can the visual examination *only*, as recommended by the manufacturers, satisfy the DOT requirement that "the structural integrity of the GFRP cargo tank must be determined prior to the repair or the replacement of the corrosion barrier." Are we correct to assume that this requirement also applies to an interior lining?

We do not understand how a visual examination can verify the minimum thickness, or the structural integrity of the cargo tank wall, such as stress cracks, impact damage, brittleness or laminations.

The manufacturers we have spoken with were unable to provide any recommended procedures that they believe would ensure that the structural integrity of the GFRP cargo tank motor vehicle had not been adversely affected.

Q6. When will DOT inform the manufacturers of these GFRP cargo tanks of their responsibilities and enforce compliance?

Please give this request your earliest consideration as other manufacturers, inspection and repair facilities, in addition to ours, requires clarification to resume providing these services to our customers.

Thank you in advance for your prompt responses,
THOMPSON TANK, INC.



David L. Thompson

DLT/cs

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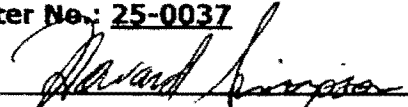
COMPTANK CORPORATION CERTIFICATE OF COMPLIANCE

This certifies that to the extent of the work performed by the manufacturer, the new cargo tank identified below, as well as the fittings, valves, piping and protective devices were designed, constructed and tested in accordance with both the U.S. Department of Transportation Motor Vehicle Specifications and DOT SP 11903 along with Transport Canada B620-2003 and TC 412 for cargo tanks used for the transportation of hazardous materials and dangerous goods. Using 1-35# pressure relief vent and 1-8Hg vacuum breaker per tank.

Vehicle Type: FRP TANK TRAILER
Year Fabricated: 2008
Date Shipped: _____

Capacity: 5500 US Gal
Serial Number: 2C9LTA2B28B075487
Register No.: 25-0037

Manufacturer: **Comptank Corporation**
CT # **0024** 30817 Zone Rd # 8


Howard Simpson

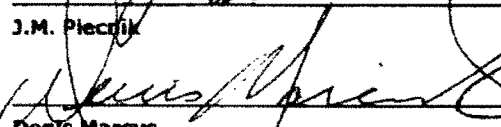
Bothwell, Ontario

Design Certifying Engineer: **J.M. Plecnik**
CT # **7533** 1250 Bellflower Blvd


J.M. Plecnik

Long Beach, CA

Registered Inspector: **Harold Marcus Ltd.**
CT # **1546** 15124 Longwoods Rd.


Harold Marcus

Bothwell, Ontario

Pressure test performed by: **Benson Herr**


Tank Inspector - Harold Marcus Ltd.

- CARGO TANK COMPLIES WITH DOT 11903 as shipped
- CARGO TANK COMPLIES WITH TC 412 as shipped**

Items not installed at time of shipment
 Electrical grounding for Class 3 materials per B620-03 Section 5.6.3.6

**TC 412 Certification does not include Class 3 materials for vessels manufactured after August 18, 2002

SERIAL # 2C9LTA2B28B075487 T.C.R.N. 25-0037 T.C. 412
D.O.T. SP 11903 Original test date: Feb 15, 2008 MAWP 35 PSI
TEST PRESSURE 52 PSI Des. Temp Range 0-200 F Max Lading Density 16 lbs/gal
WELD MATERIAL N/A SHELL MATERIAL FRP 510A HEAD MATERIAL FRP 510A
MIN. SHELL THICKNESS .50 In MIN. HEAD THICKNESS .75 In MFD SHELL THICKNESS .50 In
MFD HEAD THICKNESS .75 In EXPOSED SURFACE AREA 680 sq ft
TOTAL CAPACITY - Litres 2181 U.S.G. 5680 MAX PAYLOAD 72,000 lbs
MAX LOAD RATE 200 GPM @ 35 PSIG VACUUM FULL
MAX UNLOAD RATE 200 GPM @ 35 PSIG LINING MATERIAL Derakane 510A 40 BPO
C.T. CERTIFICATION DATE February 15/08 M.D.I.N. 04-12-16 CT MFR. 0024
C.T. DATE OF MANUFACTURE February 2008 EXEMPTION NO. SP 11903
HEATING SYSTEM PRESS XXXXX HEATING SYSTEM TEMP XXXXX