



PRESSURE RETEST

49 CFR, 180.407(g)

Co#: _____ Vin#: _____ DOT Spec: _____ MAWP: _____

Retest Date: _____ Location: _____

* External Inspection Performed: _____ * Internal Inspection Performed: _____

Test Pressure: _____ psig Held for: _____ min. **(Must be at least 10 min.)**

Test Method Used: Hydrostatic: YES NO Pneumatic: YES NO Insulated: YES NO

ITEM	COMPLIANCE	DEFECT
Visual Inspection of Re-closing Pressure Relief Valves		
Removal and Testing of Re-closing Pressure Relief Valves		
Visual Inspection of Upper Coupler		
Signs of Leakage Bulging or Other Defects		
Pressure Bearing Portions of Cargo Tank Heating System		

Remarks: _____

Upper Coupler Dropped and Inspected: YES NO

Cargo tank returned to service: _____ Cargo tank withdrawn from service: _____

Inspector's Name: _____ CT#: _____

Inspector's Address: _____

I CERTIFY THAT THE INSPECTION NOTED ON THIS FORM WAS PERFORMED BY ME AND ALL REQUIRED ENTRIES WERE MADE CONCERNING OBSERVATIONS MADE DURING THIS INSPECTION.	
_____ Inspector's Signature	_____ Date
_____ Owner or Authorized Representative's Signature	_____ Date

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(g) Pressure test.

All components of the cargo tank wall, as defined in § 178.320(a) of this subchapter, must be pressure tested as prescribed by this paragraph.

(1) Test Procedure—

- (i) As part of the pressure test, the inspector must perform an external and internal visual inspection, except that on an MC 338 cargo tank, or a cargo tank not equipped with a manhole or inspection opening, an internal inspection is not required. All reclosing pressure relief valves must be:
 - (A) Removed from the cargo tank for inspection and testing. Each reclosing pressure relief valve must open at the required set pressure and reseal to a leak-tight condition at 90 percent of the set-to-discharge pressure or the pressure prescribed for the applicable cargo tank specification; or, (B) Replaced.
- (iii) Except for cargo tanks carrying lading corrosive to the tank, areas covered by the upper coupler (fifth wheel) assembly must be inspected for corroded and abraded areas, dents, distortions, defects in welds, and any other condition that might render the tank unsafe for transportation service. The upper coupler (fifth wheel) assembly must be removed from the cargo tank for this inspection.
- (iv) Each cargo tank must be tested hydrostatically or pneumatically to the internal pressure specified in the following table:

Specification	Test pressure
MC 300, 301,302, 303, 305, 306.	20.7 kPa (3 psig) or design pressure, whichever is greater.
MC 304, 307.	275.8 kPa (40 psig) or 1.5 times the design pressure, whichever is greater.
MC 310, 311, 312.	20.7 kPa (3 psig) or 1.5 times the design pressure, whichever is greater.
MC 330, 331.	1.5 times either the MAWP or the re-rated pressure, whichever is applicable.
MC 338	1.25 times either the MAWP or the re-rated pressure, whichever is applicable.
DOT 406.	34.5 kPa (5 psig) or 1.5 times the MAWP, whichever is greater.
DOT 407.	275.8 kPa (40 psig) or 1.5 times the MAWP, whichever is greater.
DOT 412.	1.5 times the MAWP.

- (v) Each owner of 5 or more MC 300, MC 301, MC 302, MC 303, MC 304, MC 305, MC 306, MC 307, MC 310, MC 311, or MC 312 cargo tanks must pressure test at least 20 percent of the cargo tanks in his ownership each year beginning in 1991. The owner of fewer than five MC specification cargo tanks has until August 31, 1995, to pressure test these units.
- (vi) Each cargo tank of a multi-tank cargo tank motor vehicle must be tested with the adjacent cargo tanks empty and at atmospheric pressure.

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- (vii) All closures except pressure relief devices must be in place during the test. All prescribed loading and unloading venting devices rated at less than test pressure may be removed during the test. If retained, the devices must be rendered inoperative by clamps, plugs, or other equally effective restraining devices. Restraining devices may not prevent detection of leaks or damage the venting devices and must be removed immediately after the test is completed.
 - (viii) Hydrostatic test method. Each cargo tank, including its domes, must be filled with water or other liquid having similar viscosity, at a temperature not exceeding 100 °F. The cargo tank must then be pressurized to not less than the pressure specified in paragraph (g)(1)(iv) of this section. The cargo tank, including its closures, must hold the prescribed test pressure for at least 10 minutes during which time it shall be inspected for leakage, bulging or any other defect.
 - (ix) Pneumatic test method. Pneumatic testing may involve higher risk than hydrostatic testing. Therefore, suitable safeguards must be provided to protect personnel and facilities should failure occur during the test. The cargo tank must be pressurized with air or an inert gas. The pneumatic test pressure in the cargo tank must be reached by gradually increasing the pressure to one-half of the test pressure. Thereafter, the pressure must be increased in steps of approximately one-tenth of the test pressure until the required test pressure has been reached. The test pressure must be held for at least 5 minutes. The pressure must then be reduced to the MAWP, which must be maintained during the time the entire cargo tank surface is inspected. During the inspection, a suitable method must be used for detecting the existence of leaks. This method must consist either of coating the entire surface of all joints under pressure with a solution of soap and water, or using other equally sensitive methods.
- (2) When testing an insulated cargo tank, the insulation and jacketing need not be removed unless it is otherwise impossible to reach test pressure and maintain a condition of pressure equilibrium after test pressure is reached, or the vacuum integrity cannot be maintained in the insulation space. If an MC 338 cargo tank used for the transportation of a flammable gas or oxygen, refrigerated liquid is opened for any reason, the cleanliness must be verified prior to closure using the procedures contained in § 178.338–15 of this subchapter.
- (3) Each MC 330 and MC 331 cargo tank constructed of quenched and tempered steel (Part UHT of the ASME Code), or constructed of other than quenched and tempered steel but without postweld heat treatment, used for the transportation of anhydrous ammonia, or any other hazardous materials that may cause corrosion stress cracking, must be internally inspected by the wet fluorescent magnetic particle method immediately prior to and in conjunction with the performance of the pressure test prescribed in this section. Each MC 330 and MC 331 cargo tank constructed of quenched and tempered steel (Part UHT of the ASME Code) used for the transportation of liquefied petroleum gas must be internally inspected by the wet fluorescent magnetic particle method immediately prior to and in conjunction with the performance of the pressure test prescribed in this section. The wet fluorescent magnetic particle inspection must be in accordance with Section V of the ASME Code and CGA Technical Bulletin TB–2. This paragraph does not apply to cargo tanks that do not have manholes. (See § 180.417(c) for reporting requirements.)
- (4) All pressure bearing portions of a cargo tank heating system employing a medium such as, but not limited to, steam or hot water for heating the lading must be hydrostatically pressure tested at least once every 5 years. The test pressure must be at least 1.5 times the heating system design pressure and must be maintained for five minutes. A heating system employing flues for heating the lading must be tested to ensure against lading leakage into the flues or into the atmosphere.

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(5) Exceptions.

- (i) Pressure testing is not required for MC 330 and MC 331 cargo tanks in dedicated sodium metal service.
- (ii) Pressure testing is not required for uninsulated lined cargo tanks, with a design pressure or MAWP of 15 psig or less, which receive an external visual inspection and a lining inspection at least once each year.

(6) Acceptance criteria. A cargo tank that leaks, fails to retain test pressure or pneumatic inspection pressure, shows distortion, excessive permanent expansion, or other evidence of weakness that might render the cargo tank unsafe for transportation service, may not be returned to service, except as follows:

A cargo tank with a heating system which does not hold pressure may remain in service as an unheated cargo tank if:

- (i) The heating system remains in place and is structurally sound and no lading may leak into the heating system, and
- (ii) The specification plate heating system information is changed to indicate that the cargo tank has no working heating system.

(7) The inspector must record the results of the pressure test as specified in § 180.417(b)

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ACCEPTABLE RESULTS of TEST and INSPECTIONS

49 CFR, 180.411

(a) **Corroded or abraded areas.**

The minimum thickness may not be less than that prescribed in the applicable specifications.

(b) **Dents, cuts, digs and gouges.**

(See CGA Pamphlet C-6 for evaluation procedures.)

- (1) For dents at welds or that include a weld, the maximum allowable depth is 1/2 inch. For dents away from welds, the maximum allowable depth is 1/10 of the greatest dimension of the dent, but in no case may the depth exceed one inch.
- (2) The minimum thickness remaining beneath a cut, dig or gouge may not be less than that prescribed in the applicable specification.

(c) **Weld or structural defects.**

Any cargo tank with a weld defect such as a crack, pinhole, or incomplete fusion, or a structural defect must be taken out of hazardous materials service until repaired.

(d) **Leakage.**

All sources of leakage must be properly repaired prior to returning a tank to hazardous materials service.

(e) **Relief valves.**

Any pressure relief valve that fails to open and re-close at the prescribed pressure must be repaired or replaced.

(f) **Liner integrity.**

Any defect shown by the test must be properly repaired.

(g) **Pressure test.**

Any tank that fails to meet the acceptance criteria found in the individual specification that applies must be properly repaired.

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