



# EXTERNAL VISUAL INSPECTION

49 CFR, 180.407(d)

Manufacturer: \_\_\_\_\_ Year: \_\_\_\_\_ DOT Spec: \_\_\_\_\_

Co#: \_\_\_\_\_ Vin#: \_\_\_\_\_ Test Date: \_\_\_\_\_

Cargo Test Insulated:  YES  NO Lined:  YES  NO

ITEM	PASSED	FAILED	REMARKS
Tank Shell			
Tank Heads			
Piping			
Valves			
Valve Gaskets			
Manhole Locking Devices			
Manhole Gaskets			
Emergency Devices & Valves			
Tightness of Bolts & Devices			
Remote Closure Devices			
Self-Closing Stop Valves			
Fusible Elements			
Frame & Barrel Supports			
Ring Stiffeners			
Attachment of Appurtenances			
Upper Coupler Assembly			
Suspension			
Pressure Relief Valves			
Metal Certification Plate			
Required Markings			

Upper Coupler Dropped and Inspected:  YES  NO

Re-closing pressure relief valves removed and tested:  YES  NO

Cargo tank returned to service: \_\_\_\_\_ Cargo tank withdrawn from service: \_\_\_\_\_

Inspector's Name: \_\_\_\_\_

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 of Authorized Representative's Signature

\_\_\_\_\_  
Date

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**(d) External visual inspection and testing.**

- (1) Where insulation precludes external visual inspection, the cargo tank, other than an MC 330 or MC 331 cargo tank, must be given a visual internal inspection in accordance with 180.407(e). The tank must be hydrostatically or pneumatically tested in accordance with § 180.407(c) and (g) where:
  - (i) Visual inspection is precluded by internal lining or coating, or
  - (ii) The cargo tank is not equipped with a manhole or inspection opening.
- (2) The external visual inspection and testing must include as a minimum the following:
  - (i) The tank shell and heads must be inspected for corroded or abraded areas, dents, distortions, defects in welds and any other conditions, including leakage, that might render the tank unsafe for transportation service;
  - (ii) The piping, valves, and gaskets must be carefully inspected for corroded areas, defects in welds, and other conditions, including leakage, that render the tank unsafe for transportation service;
  - (iii) All devices for tightening manhole covers must be operative and there must be no evidence of leakage at manhole covers or gaskets;
  - (iv) All emergency devices and valves including self closing stop valves, excess flow valves and remote closure devices must be free from corrosion, distortion, erosion and any external damage that will prevent safe operation. Remote closure devices and self closing stop valves must be functioned to demonstrate proper operation;
  - (v) Missing bolts, nuts and fusible links or elements must be replaced, and loose bolts and nuts must be tightened
  - (vi) All markings on the cargo tank required by parts 172, 178 and 180 of this subchapter must be legible; (vii) [Reserved]
  - (viii) All major appurtenances and structural attachments on the cargo tank including, but not limited to, suspension system attachments, connecting structures, and those elements of the upper coupler (fifth wheel) assembly that can be inspected without dismantling the upper coupler (fifth wheel) assembly must be inspected for any corrosion or damage which might prevent safe operation;
  - (ix) For cargo tanks transporting lading corrosive to the tank, areas covered by the upper coupler (fifth wheel) assembly must be inspected at least once in each two year period 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.
- (3) All reclosing pressure relief valves must be externally inspected for any corrosion or damage which might prevent safe operation. All reclosing pressure relief valves on cargo tanks carrying lading corrosive to the valve must be removed from the cargo tank for inspection and testing. Each reclosing pressure relief valve required to be removed and tested 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.
- (4) Corroded or abraded areas of the cargo tank wall must be thickness tested in accordance with the procedures set forth in paragraphs (i)(2), (i)(3), (i)(5) and (i)(6) of this section.
- (5) The gaskets on any full opening rear head must be:
  - (i) Visually inspected for cracks or splits caused by weather or wear; and
  - (ii) Replaced if cuts or cracks, which are likely to cause leakage, or are of a depth one-half inch or more, are found.
- (6) The inspector must record the results of the external visual examination 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 ½ inch. For dents away from the 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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