

REQUALIFYING ALUMINUM LP-GAS CYLINDERS USING THE EXTERNAL VISUAL INSPECTION METHOD

PROPANE SAFETY MEETING OUTLINE

Summary

This module covers the steps to be followed when using the external visual inspection method to determine if an aluminum LP-gas cylinder can be requalified.

Only persons who have been issued a current U.S. Dept. of Transportation (DOT) requalifier identification number (RIN) may inspect cylinders for requalification purposes. The inspection must be made and the results recorded and maintained in accordance with 49 CFR §180.215.

A separate module, *Requalifying Steel LP-Gas Cylinders Using the External Visual Inspection Method*, covers the procedures for requalifying steel cylinders.

Who should attend

- Cylinder plant employees (filling)

NOTE: Employees in this category who do not attend this meeting should be trained on this subject as soon as possible.

Additional material

Compressed Gas Association (CGA) Pamphlet C-6.3, 1999 edition (Reaffirmed 2005), *Guidelines for Visual Inspection and Requalification of Low-Pressure Aluminum Compressed Gas Cylinders*.

Key information for this topic

49 CFR §180.205, General requirements for requalification of specification cylinders.

49 CFR §180.209, Requirements for requalification of specification cylinders.

49 CFR §180.213, Requalification markings.

49 CFR §180.215, Reporting and record-retention requirements.

Company Standard Operating Procedures (SOP)

Note any additional materials used on the attached documentation form, or indicate not applicable.

The attached inspection steps should be posted in a conspicuous location where the steps are readily visible to necessary personnel during requalification activities.

Documentation

Complete the attached documentation form listing the date, time and location of the safety meeting and the printed names and signatures of attendees, names of person who need to attend but did not, and copies of any materials distributed, video shown, or visual aids used in a demonstration. These materials should be properly filed in a safe location.

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Inspection Equipment

Depth gauges, scales

Exterior corrosion, bulging, gouges, denting or digs are normally measured by taking direct measurements with a scale or depth gauge.

Exterior inspection

Cylinders must be inspected for corrosion, dents, gouges, leaks, cuts, digs, fire damage, general distortion, or any other defect that could indicate a weakness that would render a cylinder unfit for service.

Corrosion limits

The maximum allowable corrosion depth is 15 percent of the minimum wall thickness. The corrosion area must not extend over 15 percent of the exterior surface of the cylinder.

Isolated pits

The maximum allowable depth of a pit must not exceed 25 percent of the cylinder's minimum wall thickness.

Line corrosion

For line corrosion 3 inches long or shorter, the maximum allowable depth of the deepest pit must not exceed 25 percent of the cylinder's minimum wall thickness. For line corrosion longer than 3 inches, the depth of the deepest pit must not exceed 15 percent of the cylinder's minimum wall thickness.

Cuts, digs and gouges

If the cylinder's original wall thickness at time of manufacture is known or the actual wall thickness is measured, the cylinder must be condemned if the original

wall thickness less the depth of the defect is less than 75 percent of the original wall thickness.

If the cylinder's original wall thickness at time of manufacture is not known and cannot be measured, the maximum allowable depth of a gouge, dig or cut must not exceed 25 percent of the minimum designed wall thickness as determined by the specification of the cylinder.

Dents

No dent must exceed one-tenth the average diameter of the dent. If any portion of the dent deformation includes a weld, the maximum allowable dent depth is 0.25 inches.

Bulges

A cylinder with any visible bulges must be condemned.

Fire damage

49 CFR §173.34(f)(4) requires any aluminum cylinder subjected to a fire to be condemned.

Inspection report

49 CFR Subpart C requires results of cylinder inspections to be recorded and a record retained by the owner or his authorized agent until either the retest period expires or the cylinder is reinspected or retested, whichever occurs first. Any cylinder passing a visual inspection must be marked as required by 49 CFR §180.213. The "E" following a requalification date indicates the cylinder was recertified by the visual external inspection method.

Refer To CGA C-6.3 (Aluminum Cylinders) for specific information regarding the inspection criteria described in this document.