

Requalifying DOT Cylinders

Description:

U.S. DOT specification cylinders used to transport LP-gas in commerce must be requalified 12 years after their original test date, and every 5, 7, or 12 years thereafter, depending on the method used for the last requalification.

Regulatory Reference

49 CFR § 107.805	Approval of cylinder requalifiers
49 CFR § 173.301	General requirements for shipment of compressed gases in cylinders...
49 CFR § 180.203	Definitions
49 CFR § 180.205	General requirements for requalification of 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

Applies to:

The regulations apply to all cylinders used to transport LP-gas in commerce and persons who fill cylinders or who must be registered with U.S. Department of Transportation to requalify specification cylinders.

General Requirements:

- (1) 49 CFR § 173.301 (a)(1) requires, “Compressed gases [includes LP-gases] must be in metal cylinders and containers built in accordance with DOT and ICC specifications... in effect at the time of manufacture, and requalified and marked as required by the specification and the regulation for requalification....”

(a)(2) states, “... Before each filling of a cylinder, the person filling the cylinder must visually inspect the outside of the cylinder. A cylinder that has a crack or leak, is bulged, has a defective valve or a leaking or defective pressure relief device, or bears evidence of physical abuse, fire or heat damage, or detrimental rusting or corrosion, may not be filled and offered for transportation. A cylinder may be repaired and requalified only as prescribed in subpart C of part 180 of this subchapter.”

Paragraph (a)(2) states, “Pressure relief devices must be tested for leaks before the charged [filled] cylinder is shipped from the cylinder filling plant.”

Paragraph (a)(6) requires, “No person may fill a cylinder overdue for periodic requalification with a hazardous material and then offer it for transportation. The prohibition against offering a cylinder for transportation does not apply to a cylinder filled prior to the requalification due date.”

Paragraph (b) requires, “Required markings on a cylinder must be legible and must meet the applicable requirements of subpart C of part 180....”

Paragraph (f) requires, "...a cylinder filled with a gas and offered for transportation must be equipped with one or more pressure relief devices sized and selected as to type, location and quantity, and tested in accordance with CGA Pamphlet[s] S-1.1 (compliance with paragraph 9.1.1.1 of CGA Pamphlet S-1 is not required)...."

- (2) 49 CFR § 180.209 (a) *Periodic qualification of cylinders* (1) requires, "Each specification cylinder that becomes due for periodic requalification as specified in the following table, must be requalified and marked in conformance with the requirements of this subpart. Requalification records must be maintained in accordance with § 180.215.

Table 1. —Requalification of Cylinders

Specification under which cylinder was made:	Minimum test pressure (psig) ²	Test period (years)
DOT 3A, 3AA	5/3 times service pressure, except non-corrosive service (see § 180.209 (g))	5, 10 or 12 (see § 180.209 (b), (f), (h), and (j))
3B, 3BN	2 times service pressure (see § 180.209 (g))	5 or 10 (see § 180.209 (f))
4B, 4BA, 4BW, 4B—240ET	2 times service pressure, except non-corrosive service (see § 180.209 (g))	5, 10 or 12 (see § 180.209 (e), (f), and (j))
DOT 4E	2 times service pressure, except non-corrosive service (see § 180.209 (g))	5

Paragraph (g), *Visual inspections*, permits requalification of specification cylinders used exclusively in LP-gas service by complete external visual inspection in accordance with CGA Pamphlet C-6 or C-6.3 at the time periodic requalification comes due. After May 31, 2004, inspections for cylinder requalification must be made only by persons holding a current U.S. DOT requalifier identification number (RIN) and the results must be recorded and maintained in accordance with § 180.215. Cylinders requalified by external visual inspection must be marked as required in § 180.213, or as specified in DOT's (RSPA) official letter of notification and issuance of a "visual requalifier identification number".

- (3) DOT and ICC specification cylinders used to transport LP-gas in commerce may also be requalified by one of two alternative tests:
- The (water jacket-type hydrostatic) volumetric expansion test at twice the marked service pressure, valid for a 12-year requalification period, and designated with the test month and year stamped on the cylinder (along with the RIN as illustrated in (d) of § 180.213); and
 - The proof pressure test at twice the marked service pressure, valid for a 7-year requalification period, and designated with the test month and year, followed by the letter "S" (along with the RIN as illustrated in (d) of § 180.213).
- (4) Cylinder rejection and condemnation. The meaning of the words "rejected cylinder" and "condemn" are defined in § 180.213. A condemned cylinder is one that cannot be repaired or rebuilt and subsequently requalified for continued service. Paragraph (h)(1) requires, "When a cylinder must be condemned, the requalifier must stamp a series of X's over the DOT specification number and the marked [service] pressure or stamp "CONDEMNED" on the shoulder, top head, or neck using a steel stamp. Alternatively, at the direction of the owner, the requalifier may render the cylinder incapable of holding pressure. In addition, the requalifier shall notify the cylinder owner, in writing, that the cylinder is condemned and may

not be filled with hazardous material for transportation in commerce where use of a specification packaging is required.” No person may remove or obliterate the “condemned” marking.

- (5) Record keeping. 49 CFR § 180.215 (b) requires, “Daily records of visual inspection, pressure test... must be maintained by the person who performs the requalification until either the expiration of the requalification period or until the cylinder is again requalified, whichever occurs first.”

Other specific record keeping requirements, including records for all cylinders requalified, RIN issuance letters and renewals, copies of CGA standards used for requalification, any notifications to the Associate Administrator [of U.S. DOT] required by the regulations, are found in §§ 180.215 and 107.803-805.

- (6) Marking Cylinder Requalifying Dates. Requalification markings must be made as specified in 49 CFR § 180.213 or as detailed in the notification of “visual requalifier identification number” letter issued by RSPA. The markings must be made by stamping, engraving, scribing or other method (including the use of a durable pressure adhesive label) that produces a legible, durable mark.

Illustration of Requalifying Marking Patterns

Requalifier Identification Number (RIN) Marking	Alternative “Visual Requalifier Identification Number” Markings
A 1	V10001
6 04 x	0604 E
3 2	0604 E
	V10001
	V10001 0604 E
Where: “6” is the month of requalification “A123” is the RIN “04” is the year of requalification (2004) “X” represents the symbols described in paragraphs (f)(2) through (f)(7) of § 180.213	Where: “V10001” is the RIN “0604” is the month and year of requalification “E” represents external visual inspection An RIN beginning with the letter “V” may be placed above, below or before the date of inspection.

Training Requirements:

When applying for a U.S. DOT requalifier identification number (RIN) the training and qualifications of persons who perform requalifying external visual inspection must be stated in the application. All persons who perform requalifying tasks must be trained so that they are familiar with the standards that apply; requalifiers using the external visual inspection method must be competent to use the Compressed Gas Association (CGA) external visual inspection methods and thoroughly familiar with the requirements of CGA Pamphlets C-6 and C-6.3.

Maintenance and Review

Operating companies that offer cylinder requalification should periodically review the record keeping requirements of the regulation, and the performance of persons authorized to perform

requalification. Documentation of requalification registration must be kept current. Means to document compliance on the part of all persons who inspect, fill, or transport cylinders should also be implemented and reviewed on a continuing basis.