

CGA C-1—2009
METHODS FOR
PRESSURE TESTING
COMPRESSED
GAS CYLINDERS
TENTH EDITION



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Work Item 10-018
Cylinder Specifications Committee

NOTE—Due to the extensive changes in this document, technical changes from the previous edition are not identified.

NOTE—Appendices A, C, D, E, and F (Informative) are for information only.

NOTE—Appendix B (Normative) is a requirement.

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1 Introduction

Pressure testing of compressed gas cylinders is required for many newly manufactured cylinders and also is an accepted test method for the requalification of cylinders. The referenced edition of the applicable documents, as specified by the U.S. Department of Transportation (DOT) in Title 49 of the U.S. *Code of Federal Regulations* (49 CFR), in Canada by Transport Canada (TC) in CSA B339, *Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods*, as referenced by the *Transportation of Dangerous Goods Regulations*, or the authority having jurisdiction, shall be available at each facility conducting pressure testing/requalification [1, 2, 3].

For the testing/requalification of cylinders manufactured under an exemption/special permit or permit, a current copy of that exemption or permit shall also be available. (See Appendix A for addresses of agencies that produce these documents).

2 Scope

This standard contains operating and equipment requirements necessary to properly perform pressure testing of compressed gas cylinders.

3 Definitions

For the purpose of this standard, the following definitions apply.

3.1 Accuracy

Degree of conformity of a measured or calculated quantity to its actual (true) value.

3.2 Accuracy grade

Inherent quality of the device.

NOTE—Accuracy grade expresses the maximum error allowed for the device at any reading and is expressed as a percentage of the full scale of the device.

3.3 Actual test pressure

True, recorded pressure applied to a cylinder during a test.

3.4 Bar

Metric measurement used for marking service pressure (1 bar = 14.5 psi).

3.5 Calibration

Process of adjusting a device to match a known standard so that it indicates to within specified accuracy limits.

NOTE—See Appendix B for information on calibration devices.

3.6 Calibration verification

Checking of an individual device or test apparatus by comparison with a given standard to determine the indication error at specified points of the scale.

3.7 Calibrated cylinder

Cylinder that has certified calibration points of pressure with corresponding expansion values.

NOTE—It is a secondary, derived standard used for the verification and demonstration of test system accuracy and integrity.

3.8 Condemn

Determination that a cylinder is unserviceable for continued transportation of dangerous goods and that the cylinder may not be restored by repair, rebuild, requalification, or other procedures.