CGA C-1—2016

METHODS FOR PRESSURE TESTING COMPRESSED GAS CYLINDERS

ELEVENTH EDITION

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The Standard For Safety Since 1913

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Work Item 14-033
Cylinder Specifications Committee

NOTE—Technical changes from the previous edition are underlined.

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

NOTE—Appendix B (Normative) is a requirement.

ELEVENTH EDITION: 2016
TENTH EDITION: 2009
NINTH EDITION: 2006
EIGHTH EDITION: 2004

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1 Introduction

Pressure testing of compressed gas cylinders is required for many newly manufactured cylinders and is also 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*, and CSA B341, *UN pressure receptacles and multiple-element gas containers for the transport 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, 4].

For the testing/requalification of cylinders manufactured under a special permit or equivalency certificate, a current copy of that special permit or equivalency certificate shall also be available. See Appendix A for addresses of agencies and organizations 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 Publication terminology

3.1.1 Shall
Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

3.1.2 Should
Indicates that a procedure is recommended.

3.1.3 May
Indicates that the procedure is optional.

3.1.4 Will
Is used only to indicate the future, not a degree of requirement.

3.1.5 Can
Indicates a possibility or ability.

3.2 Technical definitions

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

3.2.2 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.

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

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