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CGA C-1—2022
METHODS FOR PRESSURE TESTING COMPRESSED GAS CYLINDERS AND TUBES

TWELFTH EDITION

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Work Item 20-036
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.

TWELFTH EDITION: 2022
ELEVENTH EDITION: 2016
TENTH EDITION: 2009
NINTH EDITION: 2006

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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].[1]

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.

For the manufacturing tests or requalification of a cylinder or tube manufactured under an international standard, pressure testing shall be performed in accordance with the requirements of the relevant cylinder design standard or relevant cylinder requalification standard specified by national or international competent authorities.

2 Scope

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

NOTE—For purposes of this standard, cylinder(s) also means tubes unless otherwise stated.

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.

[1] References are shown by bracketed numbers and are listed in order of appearance in the reference section.