B339-08

Cylinders, spheres, and tubes for the transportation of dangerous goods

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Preface

This is the fifth edition of CSA B339, *Cylinders, spheres, and tubes for the transportation of dangerous goods.* It supersedes the previous editions published in 2002, 1996, 1988, and 1983.

This Standard is one of a series of Standards intended for adoption by reference by the Transportation of Dangerous Goods Regulations. Because the Regulations might adopt this Standard with certain exceptions or additional requirements, they should be consulted to determine where they differ from the requirements of this Standard. Until the Regulations are amended to adopt this edition of the Standard, an earlier edition may be the one legally in effect in Canada.

The CSA Technical Committee on Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods, which is responsible for this Standard, has maintained close links with Transport Canada to ensure compatibility of the new edition of this Standard with the amended Transportation of Dangerous Goods Regulations. The Committee has also reviewed and made extensive use of Compressed Gas Association publications and the US *Code of Federal Regulations*. This edition of CSA B339 incorporates numerous amendments and refinements to the previous edition, while retaining the same basic format.

The CSA Technical Committee on Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods is made up of members having responsibility and expertise as manufacturers or users or in related areas that include testing and inspection of containers and materials, material production, and regulatory interests. The Committee considers this Standard, developed by consensus, to be practical, current with respect to technology and industry practices, useful, and acceptable to all interested parties.

Changes in the fifth edition include the following:

(a) revised definitions and the addition of definitions of steel-making terms;
(b) an alternative bend test for TC-3AAM cylinders and for TC-3AXM and TC-3AAXM tubes;
(c) allowance for marking methods other than stamping;
(d) revisions to the hydrostatic pressure test;
(e) alternative test specimens for the tensile test;
(f) allowance for the use of drawn plate or solid billet for the manufacture of TC-3EM cylinders;
(g) revised requirements for TC-4LM containers;
(h) for containers made to specifications TC-4AAM33, TC-4BAM, TC-4BWM, TC-8WM, or TC-8WAM, deletion of the requirement to perform the tensile test on a representative container that has passed the hydrostatic test;
(i) revised requirements for containers of reclaimed, recycled, or recovered refrigerant gases and new definitions for reclaimed, recycled, or recovered refrigerant gases;
(j) revised marking requirements for requalified containers;
(k) the addition of a new cylinder specification designated as TC-3CCM (previously manufactured under permits for equivalent level of safety); and
(l) revised tables.

This Standard is written in SI (metric) units, except for the cylinder marking requirements, where the service pressure and, where applicable (e.g., Specification TC-39M), the test pressure are expressed in bar. However, for consistency in the design and test requirements of all containers, MPa and kPa have been retained as units to express service pressure. Considering the use of the "bar" unit by ISO (International Organization for Standardization) to mark service and test pressures, the Technical Committee decided to use the same unit for marking service pressure. The capital letter "M" is added to each specification designation to identify formally that the container specification is metricated.

This Standard was prepared by the Technical Committee on Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods, under the jurisdiction of the Strategic Steering Committee on Mechanical Industrial Equipment Safety, and has been formally approved by the Technical Committee.

March 2008

Notes:

(1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*

(2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*

(3) *This publication was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.*

(4) *CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.*

(5) *All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.*

Requests for interpretation should

(a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;

(b) provide an explanation of circumstances surrounding the actual field condition; and

(c) be phrased where possible to permit a specific "yes" or "no" answer.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are published in CSA's periodical* Info Update*, which is available on the CSA Web site at www.csa.ca.*

B339-08
Cylinders, spheres, and tubes for the transportation of dangerous goods

1 Scope

1.1 General

This Standard covers requirements for the manufacturing, inspection, testing, marking, requalification, reheat treatment, repair, and rebuilding of cylinders, spheres, and tubes (containers) for the transportation of dangerous goods. In addition, it includes the requirements for the qualification of new designs and registration requirements.

1.2 Designations and descriptions of containers

1.2.1

This Standard covers the general requirements for containers (see Clause 4) and specific requirements, as specifications (see Clauses 5 to 23 inclusive), for the manufacture of each type of container. The general requirements are applicable to all containers, unless otherwise stated, or unless they are not relevant to the individual specifications.

1.2.2

The specification designations and descriptions of containers covered in this Standard are listed in Tables 1 to 6.

Note: *It should be noted that compliance with the provisions of the* Transportation of Dangerous Goods Act *and the Regulations thereto might call for additional requirements due to particular characteristics or properties of individual dangerous goods.*

1.3

In CSA Standards, "shall" is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; "should" is used to express a recommendation or that which is advised but not required; "may" is used to express an option or that which is permissible within the limits of the standard; and "can" is used to express possibility or capability. Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material. Notes to tables and figures are considered part of the table or figure and may be written as requirements. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

2 Reference publications

This Standard refers to the following publications and where such reference is made it shall be to the edition listed below, including all amendments published thereto. Where foreign standards are referenced, only the technical content applies. Where there is a variance with this Standard, the requirements of this Standard shall prevail except in the case of Canadian regulations. Users of this Standard are advised against the direct application of any of the following reference publications without careful consideration of this Standard's reference to that standard, specification, or code.

Note: *See Annex B for information on the reference organizations.*