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

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

Technical Committee on Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods  xiii

Preface  xvi

1 Scope  1
  1.1 General  1
  1.2 Designations and descriptions of containers  1

2 Reference publications  1

3 Definitions  4

4 General requirements and specifications for cylinders, spheres, and tubes  8
  4.1 Materials and parts  8
  4.2 Wall thickness  8
  4.2.1 General requirements  8
  4.2.2 Additional requirements for tubes  9
  4.3 Openings in cylinders, spheres, and tubes  10
  4.4 Welding or brazing  11
  4.5 Heat treatment  11
  4.6 Nondestructive inspection of finished or partly finished containers  11
  4.6.1 Magnetic particle inspection  11
  4.6.2 Liquid penetrant inspection  11
  4.6.3 Ultrasonic inspection  11
  4.6.4 Radiographic inspection  11
  4.7 Leakage test  12
  4.8 Tensile test  12
  4.9 Weld tests  13
  4.10 Impact tests  13
  4.11 Flattening test  13
  4.12 Lot qualification burst test  13
  4.13 Hydrostatic test  14
  4.14 New design  14
  4.14.1 New design criteria  14
  4.14.2 Qualification of a new design  14
  4.14.3 Containers submitted for design qualification and registration  15
  4.14.4 Pressure-cycling test  15
  4.14.5 Burst test  15
  4.14.6 Microstructure examination  15
  4.15 Additional requirements for cylinders in liquid propane gas (LPG) service  16
  4.15.1 Fixed liquid-level gauges  16
  4.15.2 Water capacity  16
  4.16 Pressure-relief devices  16
  4.17 Inspection  16
  4.18 Marking  17
  4.19 Certificate of compliance and test report  18

5 Specifications TC-3AM, TC-3ANM, TC-3ASM, and TC-3AXM  18
  5.1 General  18
  5.2 Materials  18
  5.2.1 General  18
5.2.2 TC-3AM cylinders  18
5.2.3 TC-3ANM cylinders  18
5.2.4 TC-3ASM cylinders  18
5.2.5 TC-3AXM tubes  19
5.3 Wall thickness  19
5.3.1 Cylinders  19
5.3.2 Tubes  19
5.4 Openings  19
5.5 Manufacture  19
5.6 Welding or brazing  20
5.6.1 Cylinders  20
5.6.2 Tubes  20
5.7 Heat treatment  20
5.7.1 General  20
5.7.2 Cylinders  20
5.7.3 Tubes  21
5.8 Tensile test  21
5.8.1 Cylinders  21
5.8.2 Tubes  21
5.8.3 Requirements  21
5.9 Flattening test  21
5.9.1 Cylinders  21
5.9.2 Tubes  21
5.9.3 Alternative bend test  21
5.9.4 Requirements  22
5.10 Hydrostatic test  22
5.11 Rejected containers  22
5.12 Marking  22

6 Specifications TC-3AAM and TC-3AAXM  23
6.1 General  23
6.2 Materials  23
6.2.1 General  23
6.2.2 Cylinders  23
6.2.3 Tubes  23
6.3 Wall thickness  23
6.3.1 Cylinders  23
6.3.2 Tubes  23
6.4 Openings  24
6.5 Manufacture  24
6.6 Welding or brazing  24
6.7 Heat treatment  25
6.8 Magnetic particle or liquid penetrant inspection  25
6.9 Tensile test  25
6.9.1 Cylinders  25
6.9.2 Tubes  25
6.9.3 Requirements  25
6.10 Flattening test  26
6.10.1 Cylinders  26
6.10.2 Tubes  26
6.10.3 Alternative bend test  26
6.10.4 Requirements  26
6.11 Hydrostatic test  26
6.12 Ultrasonic inspection  26
6.13 Rejected containers 27
6.14 Hardness test 27
6.15 Marking 27

7 Specification TC-3ALM 27
7.1 General 27
7.2 Materials 27
7.3 Wall thickness 28
7.4 Openings 28
7.5 Manufacture 28
7.6 Welding or brazing 28
7.7 Heat treatment 28
7.8 Tensile test 28
7.9 Flattening test 29
7.10 Hydrostatic test 29
7.11 Rejected cylinders 29
7.12 Marking 29

8 Specification TC-3EM 30
8.1 General 30
8.2 Materials 30
8.3 Wall thickness 30
8.4 Openings 30
8.5 Manufacture 30
8.6 Hydrostatic test 30
8.7 Rejected cylinders 30
8.8 Marking 30

9 Specifications TC-3FCM, TC-3HWM, and TC-3CCM 31
9.1 General 31
9.2 Materials 31
9.2.1 Aluminum liners 31
9.2.2 Filament material 32
9.2.3 Resin system 32
9.3 Wall thickness 32
9.3.1 General requirements 32
9.3.2 TC-3FCM and TC-3CCM 32
9.3.3 TC-3HWM 33
9.4 Openings 33
9.5 Manufacture 33
9.5.1 TC-3FCM and TC-3CCM 33
9.5.2 TC-3HWM 34
9.6 Welding or brazing 34
9.7 Heat treatment 34
9.8 Resin curing 34
9.9 Tensile test 34
9.10 Lot acceptance cycling test 35
9.11 Burst test 35
9.11.1 General requirements 35
9.11.2 TC-3FCM 35
9.11.3 TC-3HWM 35
9.11.4 TC-3CCM 35
9.12 Hydrostatic test 35
9.13 Design qualification tests 36
9.13.1 General 36
9.13.2 New design criteria 36
9.13.3 Cylinder qualification tests 36
9.13.4 Cycling tests 36
9.13.5 Burst test 37
9.13.6 Gunfire test 37
9.13.7 Bonfire tests 37
9.13.8 Drop test 37
9.13.9 Qualification test report 38
9.14 Rejected liners and cylinders 38
9.15 Inspection 38
9.16 Marking 39
9.16.1 General 39
9.16.2 TC-3HWM 39

10 Specification TC-3HTM 39
10.1 General 39
10.2 Materials 39
10.3 Wall thickness 39
10.4 Openings 40
10.5 Manufacture 40
10.6 Welding or brazing 40
10.7 Heat treatment 40
10.8 Nondestructive inspection 40
10.9 Tensile test 41
10.10 Flattening test 41
10.11 Pressure-cycling and burst tests for lot acceptance 41
10.12 Hydrostatic test 41
10.13 Design qualification 41
10.14 Rejected cylinders 41
10.15 Marking 41

11 Specification TC-3TM 42
11.1 General 42
11.2 Materials 42
11.3 Wall thickness 42
11.4 Openings 42
11.5 Manufacture 42
11.6 Welding or brazing 43
11.7 Heat treatment 43
11.8 Hardness test 43
11.9 Tensile test 43
11.10 Impact test 44
11.11 Hydrostatic test 44
11.12 Ultrasonic inspection 44
11.13 Rejected tubes 44
11.14 Marking 44

12 Specification TC-4AAM33 45
12.1 General 45
12.2 Materials 45
12.3 Wall thickness 45
12.4 Openings 45
12.5 Manufacture 45
12.6 Heat treatment 46
12.7 Hydrostatic test 46
12.8 Tensile test 46
12.9 Weld tensile test 46
12.10 Weld guided-bend test 47
12.11 Rejected cylinders 47
12.12 Marking 47

13 Specification TC-4BM 47
13.1 General 47
13.2 Materials 47
13.3 Wall thickness 47
13.4 Openings 48
13.5 Manufacture 48
13.6 Heat treatment 48
13.7 Tensile test 48
13.8 Flattening test 49
13.9 Pressure test 49
13.10 Leak test of final assembly 49
13.11 Rejected cylinders 49
13.12 Marking 49

14 Specification TC-4BM17ET 50
14.1 General 50
14.2 Materials 50
14.3 Wall thickness 50
14.4 Openings 50
14.5 Manufacture 50
14.6 Heat treatment 51
14.7 Tensile test 51
14.8 Hydrostatic test 51
14.9 Flattening test 52
14.10 Rejected cylinders 52
14.11 Marking 52

15 Specification TC-4BAM 52
15.1 General 52
15.2 Materials 52
15.3 Wall thickness 53
15.4 Openings 53
15.5 Manufacture 53
15.6 Heat treatment 54
15.7 Pressure test 54
15.8 Tensile test 54
15.9 Weld tensile test 55
15.10 Weld guided-bend test 55
15.11 Leak test of final assembly 55
15.12 Rejected containers 55
15.13 Marking 55

16 Specification TC-4BWM 56
16.1 General 56
16.2 Materials 56
16.3 Wall thickness 56
16.4 Openings 56
16.5 Manufacture 57
16.6 Heat treatment 57
16.7 Radiographic inspection 58
16.8 Pressure test 58
16.9 Tensile test 58
16.10 Weld tensile test 59
16.11 Weld guided-bend test 59
16.12 Leak test of final assembly 59
16.13 Rejected cylinders 59
16.14 Marking 59

17 Specification TC-4DM 59
17.1 General 59
17.2 Materials 60
17.3 Wall thickness 60
17.4 Openings 60
17.5 Manufacture 60
17.6 Heat treatment 60
17.7 Tensile test 60
17.7.1 Spheres 60
17.7.2 Cylinders 60
17.8 Hydrostatic test 61
17.9 Flattening test 61
17.10 Requirements for the tensile and the flattening tests 61
17.11 Rejected containers 61
17.12 Marking 61

18 Specification TC-4DAM 61
18.1 General 61
18.2 Materials 61
18.3 Wall thickness 62
18.4 Openings 62
18.5 Manufacture 62
18.6 Heat treatment 62
18.7 Nondestructive inspection after heat treatment 62
18.8 Hydrostatic test 63
18.9 Radiographic inspection of welds 63
18.10 Tensile test 63
18.10.1 Spheres 63
18.10.2 Cylinders 63
18.10.3 Requirements 63
18.11 Flattening test 63
18.12 Rejected containers 63
18.13 Marking 63

19 Specification TC-4DSM 64
19.1 General 64
19.2 Materials 64
19.3 Wall thickness 64
19.4 Openings 64
19.5 Manufacture 64
19.6 Heat treatment 64
19.7 Process treatment 64
19.8 Hydrostatic test 65
19.9 Radiographic inspection 65
19.10 Flattening test 65
19.11 Rejected containers 65
19.12 Test conditions 65
19.13 Marking 65

20 Specification TC-4EM 65
20.1 General 65
20.2 Materials 65
20.3 Wall thickness 66
20.4 Openings 66
20.5 Manufacture 66
20.6 Tensile test 66
20.7 Weld tensile test 66
20.8 Weld guided-bend test 67
20.9 Hydrostatic test 67
20.10 Flattening test 67
20.11 Leak test of final assembly 67
20.12 Rejected cylinders 67
20.13 Marking 68

21 Specification TC-4LM 68
21.1 General 68
21.2 Materials 68
21.3 Wall thickness 68
21.4 Openings 69
21.5 Manufacture 69
21.6 Welding and joining 69
21.7 Radiographic inspection 69
21.8 Tensile test 70
21.9 Weld tensile test 70
21.10 Weld guided-bend test 70
21.11 Impact test 70
21.12 Proof pressure test 71
21.13 Rejected inner vessel 71
21.14 Marking 71

22 Specifications TC-8WM and TC-8WAM 72
22.1 General 72
22.2 Materials 72
22.2.1 TC-8WM 72
22.2.2 TC-8WAM 72
22.3 Wall thickness 72
22.4 Openings 73
22.5 Manufacture 73
22.6 Heat treatment 74
22.7 Radiographic inspection 74
22.8 Macro-etch test 74
22.9 Hydrostatic test 74
22.10 Tensile test 75
22.11 Weld tensile test 75
22.12 Weld guided-bend test 75
22.13 Proof test 75
22.14 Dissolved acetylene system 75
22.14.1 Porous filler 75
22.14.2 Solvents 76
22.14.3 Saturation acetylene 77
22.14.4 Acetylene capacity 77
22.15 New design 77
22.16 Rejected completed cylinder shells 77
22.17 Inspection 78
22.18 Marking 78

23 Specification TC-39M 78
23.1 General 78
23.2 Materials 78
23.2.1 Steel 78
23.2.2 Aluminum 79
23.3 Wall thickness 79
23.4 Openings 79
23.5 Manufacture 79
23.5.1 General 79
23.5.2 Welded seams 79
23.5.3 Brazed seams 79
23.6 Flattening test 80
23.6.1 Sample selection 80
23.6.2 Cylinders 80
23.6.3 Spheres 80
23.6.4 Steel samples 80
23.6.5 Aluminum samples 80
23.6.6 Rejection criteria 80
23.7 Pressure tests 80
23.7.1 Pneumatic pressure test 80
23.7.2 Burst test 80
23.8 Rejected containers 81
23.9 Marking 81

24 Requalification, reheat treatment, repair, and rebuilding 82
24.1 General 82
24.1.1 Scope 82
24.1.2 Requirements 82
24.2 Requalification 82
24.2.1 General requirements 82
24.2.2 Ten-year requalification requirements 84
24.2.3 Cylinders with a service pressure of 2.1 MPa or less in nonflammable liquid or mixtures of nonflammable liquids and nonflammable, nonliquefied compressed gases in noncorrosive service 84
24.2.4 Containers used for fire extinguishers 84
24.2.5 Containers used for reclaiming, recycling, or recovered refrigerant gases 85
24.2.6 TC-3HTM and CTC-3HT cylinders 85
24.2.7 TC-3CCM, TC-3FCM, and TC-3HWM cylinders 85
24.2.8 Series-8 cylinders 85
24.2.9 Requalification by visual reinspection only 85
24.3 Requalification 86
24.4 Repair 87
24.4.1 General requirements 87
24.4.2 Additional requirements for TC-4LM and CTC-4L containers 87
24.4.3 Additional requirements for Series-8 cylinders 88
24.5 Rebuilding 88
24.5.1 General requirements 88
24.5.2 Series-4 containers, except TC-4LM and CTC-4L containers 88
24.5.3 TC-4LM and CTC-4L containers 89
24.5.4 Series-8 cylinders 89
24.6 Marking 90
24.6.1 General 90
24.6.2 Metal plate 90
24.6.3 Marking information 90
24.6.4 Marking maintenance 92
24.7 Reporting 92
24.7.1 Requalification 92
24.7.2 Repair 92
24.7.3 Reheat treatment and rebuilding 92

25 Registration 93
25.1 General 93
25.2 Registration of manufacturers of containers 93
25.2.1 Initial registration 93
25.2.2 Renewal of certificate of registration 93
25.3 Registration for requalification, repair, reheat treatment, and rebuilding of used containers 94
25.3.1 Manufacturers 94
25.3.2 Nonmanufacturers — Initial registration 94
25.3.3 Nonmanufacturers — Renewal of certificate of registration 94
25.4 Registration of independent inspectors 95
25.4.1 Initial registration 95
25.4.2 Renewal of certificate of registration 95
25.5 Addenda to certificates of registration 96

Annexes
A (normative) — Forms contained in the independent inspector’s report 119
B (informative) — Contact information 129
C (informative) — Suggested practice for tolerances not covered by this Standard 130

Tables
1 — Designation and description of seamless cylinders and tubes 97
2 — Designation and description of welded cylinders and spheres 98
3 — Designation and description of nonrefillable containers 99
4 — Designation and description of composite cylinders 99
5 — Designation and description of insulated containers 99
6 — Designation and description of cylinders for acetylene service 99
7 — Chemical composition requirements for steel and nickel 100
8 — Product analysis tolerances for steels in Table 7 (Grades A to G), Table 15, and Table 28 102
9 — Product analysis tolerances for Grade H steel as specified in Table 7 103
10 — Chemical composition requirements for aluminum alloys 104
11 — Specified mechanical properties for aluminum alloys for seamless and composite cylinders 105
12 — Flattening knife-edge radius for aluminum alloys 105
13 — Chemical composition requirements for carbon steel 105
14 — Charpy impact test requirements 106
15 — Chemical composition requirements for carbon and high-strength low-alloy steel sheet 106
16 — Elongation requirements for Type E specimens 107
17 — Chemical composition requirements for nonstandard Grade 4130 steel sheet 107
18 — Product analysis tolerances for alloy steel sheet and strip, hot-rolled and cold-rolled 108

March 2008
19 — Chemical composition requirements for stainless steel sheet 109
20 — Product analysis tolerances for flat-rolled stainless and heat-resisting steel plate, sheet, and strip 110
21 — Chemical composition requirements for aluminum alloy AA5154 110
22 — Service temperature requirements for TC-4LM cylinders 111
23 — Chemical composition requirements for stainless steel, Type 304 111
24 — Mechanical properties (annealed) of stainless steel, Type 304 111
25 — Impact values for stainless steel, Type 304 112
26 — Acetone correction factors 112
27 — DMF correction factors 113
28 — Chemical composition requirements for weldable carbon steel sheet 113
29 — Container requalification periods and procedures 114

Figures
1 — Typical marking arrangements 117
2 — Alternative bend test 118
## Technical Committee on Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods

<table>
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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.
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.