COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS
(Twentieth session,
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agenda item 5(b))

PROGRAMME OF WORK

Programme of work for the 1999/2000 biennium and related proposals
Provisions for Gas Cylinders

Transmitted by the Expert from Canada

Proposal

It is the opinion of the expert from Canada that the development of the provisions for gas cylinders, for which paragraph 6.2.1 of Chapter 6.2 “Requirements for the Construction and Testing of Receptacles for Gases” is currently reserved, be included in the programme of work for the 1999/2000 biennium.

Background

1. As noted in ST/SG/AC.10/C.3/30, paragraph 15, the expert from the United States of America has proposed that the Committee’s programme of work for the 1999/2000 biennium should include provisions for gas cylinders, in light of ISO’s work on standardisation.

2. Under ISO Technical Committee 58, Gas Cylinders, (ISO/TC58), numerous International Standards have been published with respect to technical requirements for gas cylinders. These standards include requirements for the design, construction, testing, operation, and fittings of gas cylinders. (See Attachment A.)

3. Under ISO/TC58, numerous draft documents pertaining to technical requirements for gas cylinders are near publication as International Standards. These documents address requirements for the design, construction, testing, operation, and fittings of gas cylinders. (See Attachment B.) Three notable draft standards, 9809-1 and 9809-2 pertaining to the construction of seamless steel cylinders and 7866 pertaining to the construction of seamless aluminum cylinders, are approaching the final stages.

4. These technical International Standards should be considered for reference by the Recommendations on the Transport of Dangerous Goods Model Regulations.

5. Under ISO/TC58, a document entitled ISO/CD 14600, “Basic Rules for an International Quality Acceptance System for ISO Gas Cylinders”, is being developed to accompany the technical construction standards. This document addresses the inspection, quality assurance, and certification requirements for the manufacture of gas cylinders.

Once published, this standard will provide a framework for the harmonisation of inspection and quality assurance requirements and a basis for the worldwide recognition of cylinders manufactured in accordance with these ISO Standards.

It is anticipated that this document will be published as an International Standard towards the end of the next biennium. At that time, it should also be considered for reference by the Recommendations on the Transport of Dangerous Goods Model Regulations.
ATTACHMENT A

STANDARDS AND TECHNICAL REPORTS PUBLISHED

ISO/TC58  Gas cylinders

ISO 32:1977  Gas cylinders for medical use – Marking for identification
ISO 3500:1990  Seamless steel CO₂ cylinders for fixed fire-fighting installations on ships
ISO 3807:1977  Dissolved acetylene cylinders – Basic requirements
ISO 10286:1996  Gas cylinders – Terminology

ISO/TC58/SC2  Gas cylinders – Cylinder fittings

ISO 407:1991  Small medical gas cylinders – Pin-index yoke-type valve connections
ISO 5145:1990  Cylinder valve outlets for gases and gas mixtures – Selection and dimensioning
ISO/TR 7470:1988  Valve outlets for gas cylinders – List of provisions which are either standardized or in use
ISO 10156:1996  Gases and gas mixtures – Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets
ISO 10298:1995  Determination of toxicity of a gas or gas mixture
ISO 13338:1995  Determination of tissue corrosiveness of a gas or gas mixture
ISO 13341:1997  Transportable gas cylinders – Fitting of valves to gas cylinders

ISO/TC58/SC3  Gas cylinders – Cylinder design

ISO 4705:1983  Refillable seamless steel gas cylinders
ISO 4706:1989  Refillable welded steel gas cylinders

ISO/TC58/SC4  Gas cylinders – Operational requirements for gas cylinders

ISO 6406:1992  Periodic inspection and testing of seamless steel gas cylinders
ISO 10460:1993  Welded carbon steel gas cylinders – Periodic inspection and testing
ISO 10461:1993  Seamless aluminum-alloy gas cylinders – Periodic inspection and testing
ISO 10463:1993  Cylinders for permanent gases – Inspection at time of filling
ISO 11113:1995  Cylinders for liquefied gases (excluding acetylene and LPG) – Inspection at time of filling
ISO 11372:1995  Cylinders for dissolved acetylene – Inspection at time of filling
ISO 11621:1997  Gas cylinders – Procedures for change of gas service
ISO 11625:1998  Gas cylinders – Safe handling
ISO 11755:1996  Cylinders in bundles for permanent and liquefiable gases (excluding acetylene) – Inspection at time of filling
ISO 13770:1997  Aluminum alloy gas cylinders – Operational requirements for avoidance of neck and shoulder cracks
ATTACHMENT B

DRAFT DOCUMENTS

ISO/TC58  Gas cylinders

ISO/DIS 3807-1  Dissolved acetylene cylinders – Basic requirements – Part 1: Cylinders without fusible plugs
ISO/DIS 3807-2  Dissolved acetylene cylinders – Basic requirements – Part 2: Cylinders with fusible plugs
ISO/DIS 11114-2  Transportable gas cylinders – Compatibility of cylinder and valve materials with gas contents – Part 2: Non-metallic materials
ISO/NP 11114-4  Transportable gas cylinders – Compatibility of cylinder and valve materials with gas contents – Part 4: Test methods for selecting metallic materials resistant to hydrogen embrittlement
ISO/CD 14600  Transportable gas cylinders – International quality assurance system

ISO/TC58/SC2  Gas cylinders – Cylinder fittings

ISO/FDIS 10297  Gas cylinder valves – Specifications and type testing (all gases except LPG)
ISO/CD 10692-1  Connections for gas cylinder valves for ultra-high integrity service – Part 1: Outlet connections
ISO/WD 10692-2  Connections for gas cylinder valves for ultra-high integrity service – Part 2: Inlet connections
ISO/DIS 11116-1  Gas cylinders – 17E taper thread for connection of valves to gas cylinders – Part 1: Specifications
ISO/DIS 11116-2  Gas cylinders – 17E taper thread for connection of valves to gas cylinders – Part 2: Inspection gauges
ISO/DIS 12209-1  Outlet connections for gas cylinder valves for compressed breathable air – Part 1: Yoke type connections
ISO/DIS 12209-2  Outlet connections for gas cylinder valves for compressed breathable air – Part 2: Threaded connections
ISO/DIS 12209-3  Outlet connections for gas cylinder valves for compressed breathable air – Part 3: Adaptor for 232 bar valves
ISO/WD 13339  Procedure for the determination of the oxipotential of oxidizing gases and gas mixtures including toxic and corrosive gases
ISO/DIS 13340  Valves for non-refillable gas cylinders
ISO/NP 14245  Specification and testing for liquefied petroleum gas (LPG) valves
ISO/DIS 14246  Transportable gas cylinders – Gas cylinder valves – Manufacturing tests and inspections
ISO/NP 15245  Gas cylinders – Parallel threads – Specifications
ISO/NP 15246  Gas cylinders – Parallel threads – Gauging
ISO/NP XXXXXX  Specifications and testing for manually operated liquefied petroleum gas valves
ISO/NP YYYYYY  Performance and type testing of residual pressure valves and their filling adaptors

ISO/TC58/SC3  Gas cylinders – Cylinder design

ISO/DIS 7866  Refillable transportable seamless aluminum alloy gas cylinders for world-wide usage – Design, manufacture, and acceptance
ISO/DIS 9809-1  Transportable seamless steel gas cylinders – Design, construction, and testing – Part 1: Quenched and tempered steel cylinders with tensile strength less than 1100 MPa
ISO/DIS 9809-2  Transportable seamless steel gas cylinders – Design, construction, and testing – Part 2: Quenched and tempered steel cylinders with tensile strength greater than or equal to 1100 MPa
ISO/DIS 11118  Non-refillable gas cylinders – Specifications and test methods
ISO/CD 11119-1  Gas cylinders of composite material – Specifications and test methods – Part 1: Hoop wrapped, metallic liner
ISO/CD 11119-2  Gas cylinders of composite material – Specifications and test methods – Part 2: Fully wrapped, metallic liner
ISO/CD 11119-3  Gas cylinders of composite material – Specifications and test methods – Part 3: Fully wrapped, nonmetallic liner
ISO/DIS 11120  Gas cylinders- Refillable seamless steel gas cylinders, capacity between 150 L and 3000 L – Design and testing
ISO/DIS 11439  High pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles
ISO/WD 12391  Seamless steel gas cylinders – Toughness and acceptance levels of steels of strength levels above 1100 N/mm²

**ISO/TC58/SC4  Gas cylinders – Operational requirements for gas cylinders**

ISO/DIS 10464  Liquefied petroleum gas cylinders – Periodic inspection and testing
ISO/DIS 10691  Cylinders for liquefied petroleum gas – Inspection at the time of filling
ISO/CD 11622  Filling ratios, filling pressures, and provisions for safety devices for gas cylinders
ISO/DIS 11623  Composite gas cylinders – Periodic inspection and testing
ISO/CD 13769  Gas cylinders – Stamp marking