



ISO/TC 197
Hydrogen technologies

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58SC3 - Report to ISO 197 November 2015

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Background: Here is the liaison report received from ISO/TC 58/SC 3, Gas cylinders -- Cylinder design.

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Date: 16th November 2015

**Secretariat of ISO/TC 58/SC 3
Gas cylinders — Cylinder design**

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ISO/TC 58/SC 3, *Gas Cylinders – Cylinder design*

**Liaison Report for the meeting of ISO/TC 197, *Hydrogen technologies*,
3rd & 4th December 2015**

Extract from the draft report of the 2015 meeting of ISO/TC 58/SC 3

14 ISO/TC 197, Hydrogen technologies

A liaison report from Dr Barthélémy has been circulated as **N 1618** in his absence the Chairman led a review.

14.1 ISO/TC 197/WG 15, Gaseous hydrogen - Cylinders and tubes for stationary storage (N 1618)

The update was welcomed by the meeting; no issues were raised.

14.2 Joint working groups – ISO/TC 197 lead (N 1618) ISO/TC 197/WG 18, Gaseous hydrogen land vehicle fuel tanks and TPRDs

The meeting noted the update in the development of ISO/CD 19881 & ISO/WD 19882.

ISO/TC 197/WG 25, Hydrogen absorbed in reversible metal hydride

ISO/TC 197/WG 25 had been formed to carry out a revision of ISO 16111:2008. The work is at an early stage with a first working draft recently circulated (N 1613). It was noted that although the scope had not been altered 3 new *notes* had been added to the foreword of the WD.

Work programme – Progress in the last 12 months

ISO standards published

ISO 11120, Gas cylinders – Refillable seamless steel tubes for compressed gas transport, of water capacity between 150 l and 3000 l – Design construction and testing

ISO 21172-1, Gas cylinders – Welded steel pressure drums up to 3 000 litre capacity for the transport of gases – Design and construction – Part 1: Capacities up to 1 000 litres

ISO 11118, Gas cylinders – Non-refillable metallic gas cylinders – Specification and test methods

Draft standards progressing to the FDIS stage

ISO 11119-4, Gas cylinders – Refillable composite gas cylinders and tubes – Design, construction and testing – Part 4: Fully wrapped fibre reinforced composite gas cylinders and tubes up to 450 l with load-sharing welded metallic liners

Draft standards progressing to the DIS stage

ISO 17519, Gas Cylinders – Refillable permanently mounted composite tubes for transportation

**Selected resolution passed by ISO/TC 58/SC 3
on 22nd October 2015**

Resolutions 063 to 065/2015 and 070 to 073/2015 concerned internal committee management issues.

Resolution 066/2015

Subject: ISO/DTR 13086-2 – Change of scope & title

ISO/TC 58/SC 3: Gas cylinders – cylinder design

Acknowledges;

- the scope of ISO/DTR 13086-2 covers the following technical subjects;
 - Bonfire test issues
 - Calculation of stress ratios
 - Cyclic fatigue of fibers and liners

Considers;

- that the scope of DTR 13086-2 is too broad to enable a timely publication of the technical report

Decides;

- to restrict the scope to include;
 - Bonfire test issues
- that Cyclic fatigue of fibers and liners and Calculation of stress ratios would be subject of future separate technical report(s)
- to change the title to
 - '*Gas cylinders – Guidance for design of composite cylinders – Part 2: Bonfire test issues*'

Asks;

- The BSI editing department to assist the convenor by reviewing the current draft for clarity and structure

Unanimous

Resolution 067/2015

Subject: Registration of new technical report: ISO/TR 13086-3

ISO/TC 58/SC 3: Gas cylinders – cylinder design

Decides;

- to register the following new work item:
 - ISO/TR 13086-3: *Gas cylinders – Guidance for design of composite cylinders – Part 3: Calculation of stress ratios*

Confirms;

- the adoption of the 2 year development track for the project
- the appointment of Mr Newhouse as project leader
- assigns the project to ISO/TC 58/SC 3/WG 24

Unanimous

Resolution 068/2015

Subject: Registration of new technical report: ISO/TR 13086-4

ISO/TC 58/SC 3: Gas cylinders – cylinder design

Decides;

- to register the following new work item:
 - ISO/TR 13086-4: *Gas cylinders – Guidance for design of composite cylinders – Part 4: Cyclic fatigue of fibers and liners*

Confirms;

- the adoption of the 2 year development track for the project
- the appointment of Mr Newhouse as project leader
- assigns the project to ISO/TC 58/SC 3/WG 24

Unanimous

Resolution 069/2015

Subject: ISO 9809 parts 1,2 & 3 – Result of 5 year review

ISO/TC 58/SC 3: *Gas cylinders – Cylinder design*

Acknowledges;

- The result of the recent systematic reviews of the following published standards circulated as N 1624, N 1625 & N 1626
 - ISO 9809-1:2010, *Gas cylinders – Refillable seamless steel gas cylinders – Design, construction and testing – Part 1: Quenched and tempered steel cylinders with tensile strength less than 1 100 MPa*
 - ISO 9809-2:2010, *Gas cylinders – Refillable seamless steel gas cylinders – Design, construction and testing – Part 2: Quenched and tempered steel cylinders with tensile strength greater than or equal to 1 100 MPa*
 - ISO 9809-3:2010, *Gas cylinders – Refillable seamless steel gas cylinders – Design, construction and testing – Part 3: Normalized steel cylinders*

Decides;

- That the three standards require revision and that such revisions would have a technical impact on the scope of the current standards

Asks;

- the convenor and members of WG 26 to prepare new work proposals taking into account the issues raised by delegates and the comments submitted during the systematic review
- the secretary to conduct a new work item ballot on the ISO livelink platform for each proposal

Voting

For: Austria, Canada, China, Germany, Korea, Italy, Japan, Norway, Portugal, South Africa, Sweden, UK, USA,

Against: Nil

Abstain: France

Passed by majority

Resolution 074/2015

Subject: ISO 17519 amendment to scope & submission to a 2nd DIS ballot

ISO/TC 58/SC 3: *Gas cylinders – Cylinder design*

Acknowledges;

- the result of the DIS ballot of ISO 17519; *Gas Cylinders – Refillable permanently mounted composite tubes for transportation* circulated as N 1602
- the work carried out by WG 35; during 2015 in;
 - the resolution of the DIS comments and the
 - request for an amendment to the scope to read as follows:

This International Standard ISO 17519 specifies the minimum requirements for the material, design construction, workmanship, manufacturing processes, examination and testing at time of manufacture of an assembly of permanently mounted composite tube(s) in a frame with associated components.

The tube(s) shall be:

- of composite construction, permanently mounted in a transport frame and suitable for specified service conditions, designated as:
 - Type 3 - fully wrapped tube with a seamless metallic liner and composite reinforcement on both the cylindrical part and the dome ends; or
 - Type 4 - a fully wrapped tube with a non-load sharing liner and composite reinforcement on both the cylindrical part and the dome ends.
- with water capacities (V) from 450 l up to and including 10.000 l.
- containing compressed gases but excluding liquefied gases, dissolved gases and gas mixtures which are classified for transport as toxic or oxidizing gas as specified in ISO 10298 and ISO 10156.
- with working pressure up to 1000bar.

This standard does not address tubes with working pressure times water capacity ($p \times V$) more than 3 000 000 bar l.

Accepts;

- the recommendation from the convenor of WG 35 that the draft should be submitted to a 2nd DIS ballot and not proceed to the FDIS ballot stage.

Decides;

- to amend the scope of ISO 17519 as above
- submit the project to a 2nd DIS ballot

Reminds the members of WG 35 that;

- ISO/TC 58/SC 3 expects a draft suitable for submission to a 2nd DIS ballot to be sent to the secretary no later than **end of January 2016**

Voting

For: Austria, Canada, France, Germany, Korea, Norway, Portugal, South Africa, Sweden, UK, USA,

Against: Nil

Abstain: China, Italy, Japan,

Passed by majority

Resolution 075/2015

Subject: Approval to submit ISO/TR 19811 – Modification of scope

ISO/TC 58/SC 3: *Gas cylinders – Cylinder design*

Acknowledges;

- the proposal from the convenor of working group 36 in his progress report (N 1630) to remove the lower water capacity limit from the scope.

Decides;

- To amend the scope as follows:

Scope

*Comparison of the existing service life testing programmes for cylinders and tubes of composite construction having a water capacity **from 0.5** up to 3000 litres.*

Recommendations for the design of the service life testing programmes.

Unanimous

Resolution 076/2015

Subject: ISO 18172 parts 1 & 2 – Result of 5 year review

ISO/TC 58/SC 3: *Gas cylinders – Cylinder design*

Acknowledges;

- The result of the recent systematic reviews of the following published standards circulated as N 1627 & N 1628
 - ISO 18172-1:2007, *Gas cylinders -- Refillable welded stainless steel cylinders – Part 1: Test pressure 6 MPa and below*
 - ISO 18172-2:2007, *Gas cylinders -- Refillable welded stainless steel cylinders – Part 2: Test pressure greater than 6 MPa*

Decides;

- To confirm the two standards for a further period of 5 years

Unanimous