ISO/TC 197
Hydrogen technologies

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ISO TC 220 Liaison Report from ISO TC 220 2015 to ISO TC 197

Document type: Other meeting document

Date of document: 2015-11-24

Expected action: INFO

Background: Here is the Liaison Report from TC 220 that will be presented by Hervé Barthélémy at the Dec. Plenary meeting.

Committee URL: http://isotc.iso.org/livelink/livelink/open/tc197

« Cryogenic vessels »	ISO/TC 220
Date: **2015-11-19**	Doc. Number:

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ISO/TC 220 Cryogenic vessels

Liaison report for the plenary meeting of ISO/TC 197 "Hydrogen technologies" to be held on 3rd and 4th December 2015

ISO/TC 220 “Cryogenic vessels”

1 Scope

Standardization in the field of insulated vessels (vacuum or non-vacuum) for the storage and the transport of refrigerated liquefied gases of class 2 of "Recommendations on the Transport of Dangerous Goods - Model regulations - of the United Nations", in particular concerning the design of the vessels and their safety accessories, gas / materials compatibility, insulation performance, the operational requirements of the equipment and accessories.

2 Structure and organization

ISO/TC 220 Chairman	ISO/TC 220 Secretariat
Mr Hervé BARTHELEMY AIR LIQUIDE 75 Quai d’Orsay 75321 Paris Cedex 7 France	Ms Laurie JARDEL AFNOR 11rue Francis de Pressensé 93571 Saint Denis La Plaine Cedex France
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ISO/TC 220 Working Groups:

- **Working Group 1**: Cryogenic vessels - Design and construction
  Convenor: Mr Hervé BARTHÉLÉMY (France)
  Title: Cryogenic vessels - Design and construction
- **Working Group 2**: Cryogenic vessels - Operational requirements
  Convenor: Mr Wolfgang OTTE (Germany)
  Title: Cryogenic vessels - Operational requirements
- **Working Group 3**: Cryogenic vessels - Supporting standards
  Convenor: Mr Alex VARGHESE (USA)
  Title: Cryogenic vessels - Supporting standards

3 Participation table

3.1 P Member (13)

Australia (SAI)	Italy (UNI)	Switzerland (SNV)
Austria (ASI)	Japan (JISC)	United Kingdom (BSI)
China (SAC)	Korea, Republic of (KATS)	United States (ANSI)
France (AFNOR)	Russian Federation (GOST R)	
Germany (DIN)	Spain (AENOR)	

3.2 O Member (22)

Algeria (IANOR)	Croatia (HZN)	Netherlands (NEN)
Argentina (IRAM)	Czech Republic (UNMZ)	Poland (PKN)
Belgium (NBN)	Egypt (EOS)	Romania (ASRO)
Bosnia and Herzegovina (BAS)	Finland (SFS)	Saudi Arabi (SASO)
Bulgaria (BDS)	Iran, Islamic Republic of (ISIRI)	Serbia (ISS)
Canada (SCC)	Lithuania (LST)	Sweden (SIS)
Colombia (ICONTEC)	Montenegro (ISME) *(Correspondent member)*	Tunisia (INNORPI)

4 Liaison

4.1 Internal Liaison Organization (7)

○	ISO/TC 11	Boilure and pressure vessels	Reverse liaison
○	ISO/TC 22/SC 41	Specific aspects for gaseous fuels	Reverse liaison
○	ISO/TC 185	Safety devices for protection against excessive pressure	Reverse liaison
○	ISO/TC 197	Hydrogen technologies	Reverse liaison
○	ISO/TC 252	Project committee: natural gas fuelling stations for vehicles	Reverse liaison

4.2 External Liaison Organization (3)

- ○ EIGA – European Industrial Gases Association — Category A
- ○ MEGA – Middle East Gases Association — Category A
- ○ NGV Global – Natural Gas Vehicle Knowledge Base — Category A

Category A: Organizations that make an effective contribution to the work of the technical committee for questions dealt with by this technical committee or subcommittee.

5 Meeting calendar

Date	Location	Agenda	Report
2015-06-19	SAC CHINA Beijing	ISO/TC 220 N 425	ISO/TC 220 N 447
2014-06-18	DIN GERMANY Berlin	ISO/TC 220 N 394	ISO/TC 220 N 410
2013-06-11	Chantilly USA	ISO/TC 220 N 351	ISO/TC 220 N 375
2012-06-12	AFNOR, Saint Denis FRANCE	ISO/TC 220 N 311	ISO/TC 220 N 336
2011-06-23	AFNOR, Saint Denis FRANCE	ISO/TC 220 N 293	ISO/TC 220 N 303
2010-06-10	DIN, Berlin, GERMANY	ISO/TC 220 N 255	ISO/TC 220 N 291
2009-06-17	AFNOR, Saint Denis FRANCE	ISO/TC 220 N 243	ISO/TC 220 N 250
2008-09-24	AFNOR, Saint Denis FRANCE	ISO/TC 220 N 219	ISO/TC 220 N 220
2007-05-11	AFNOR, Saint Denis FRANCE	ISO/TC 220 N 198	ISO/TC 220 N 208
2006-06-02	AFNOR, Saint Denis FRANCE	ISO/TC 220 N 188	ISO/TC 220 N 192 ISO/TC 220 N 193
2005-06-09	Chicago, USA	ISO/TC 220 N 177	ISO/TC 220 N 182 ISO/TC 220 N 183
2004-06-17	AFNOR, Saint Denis FRANCE	ISO/TC 220 N 145	ISO/TC 220 N 164 ISO/TC 220 N 165
2003-06-20	Roma, ITALY	ISO/TC 220 N 119	ISO/TC 220 N 131
2002-06-21	Montreal, QUEBEC	ISO/TC 220 N 071	ISO/TC 220 N 094
2001-06-20	Arlington, VA, USA	ISO/TC 220 N 046	ISO/TC 220 N 051

6 Activities of ISO/TC 220

6.1 Work item under study

- ISO/WD 20421-1 Cryogenic vessels - Large transportable vacuum insulated vessels - Part 1: Design, fabrication, inspection and testing ➔ WG 1
- ISO/NP 21012 Cryogenic vessels – Hoses ➔ WG 3
- ISO/WD 21029-1 Cryogenic vessels – Transportable vacuum insulated vessels of not more than 1 000 litres volume – Part 1: Design, fabrication, inspection and tests ➔ WG 1

- ISO/CD 23208 Cryogenic vessels -- Cleanliness for cryogenic service ➔ WG 2

- ISO/DIS 21028-1 Cryogenic vessels – Toughness requirements for materials at cryogenic temperature – Part 1: Temperatures below -80 degrees C ➔ WG 1
- ISO/DIS 21028-2 Cryogenic vessels – Toughness requirements for materials at cryogenic temperature – Part 2: Temperatures between -80 degrees C and -20 degrees C ➔ WG 1
- ISO/DIS 20421-2 Cryogenic vessels -- Large transportable vacuum-insulated vessels -- Part 2: Operational requirements ➔ WG 2

- ISO/FDIS 21009-2 Cryogenic vessels -- Static vacuum insulated vessels -- Part 2: Operational requirements ➔ WG 2
- ISO/FDIS 21013-3 Cryogenic vessels -- Pressure-relief accessories for cryogenic service -- Part 3: Sizing and capacity determination ➔ WG 3
- ISO/DIS 24490 Cryogenic vessels -- Pumps for cryogenic service ➔ WG 2

6.2 Work item under systematic review in 2016

Identification	Title	Current stage	Allocated to WG
ISO 21011:2008	Cryogenic vessels -- Valves for cryogenic service	90.93	3
ISO 21013-2:2007	Cryogenic vessels -- Pressure-relief accessories for cryogenic service -- Part 2: Non-reclosable pressure-relief devices	90.93	3

6.3 Published standards

Reference	Document title
ISO 12991:2012	Liquefied natural gas (LNG) -- Tanks for on-board storage as a fuel for automotive vehicles
ISO 20421-1:2006	Cryogenic vessels -- Large transportable vacuum-insulated vessels -- Part 1: Design, fabrication, inspection and testing
ISO 20421-1:2006/Cor 1:2007	Cryogenic vessels -- Large transportable vacuum-insulated vessels -- Part 1: Design, fabrication, inspection and testing -- Technical Corrigendum 1
ISO 20421-2:2005	Cryogenic vessels -- Large transportable vacuum-insulated vessels -- Part 2: Operational requirements
ISO 21009-1:2008	Cryogenic vessels -- Static vacuum-insulated vessels -- Part 1: Design, fabrication, inspection and tests
ISO 21009-2:2006	Cryogenic vessels -- Static vacuum insulated vessels -- Part 2: Operational requirements
ISO 21010:2004	Cryogenic vessels -- Gas/materials compatibility
ISO 21011:2008	Cryogenic vessels -- Valves for cryogenic service
ISO 21012:2006	Cryogenic vessels -- Hoses
ISO 21013-1:2008	Cryogenic vessels -- Pressure-relief accessories for cryogenic service -- Part 1: Reclosable pressure-relief valves
ISO 21013-2:2007	Cryogenic vessels -- Pressure-relief accessories for cryogenic service -- Part 2: Non-reclosable pressure-relief devices
ISO 21013-3:2006	Cryogenic vessels -- Pressure-relief accessories for cryogenic service -- Part 3: Sizing and capacity determination
ISO 21013-4:2012	Cryogenic vessels -- Pilot operated pressure relief devices -- Part 4: Pressure-relief accessories for cryogenic service
ISO 21014:2006	Cryogenic vessels -- Cryogenic insulation performance
ISO 21028-1:2004	Cryogenic vessels -- Toughness requirements for materials at cryogenic temperature -- Part 1: Temperatures below -80 degrees C
ISO 21028-2:2004	Cryogenic vessels -- Toughness requirements for materials at cryogenic temperature -- Part 2: Temperatures between -80 degrees C and -20 degrees C
ISO 21029-1:2004	Cryogenic vessels -- Transportable vacuum insulated vessels of not more than 1 000 litres volume -- Part 1: Design, fabrication, inspection and tests
ISO 21029-2:2015	Cryogenic vessels -- Transportable vacuum insulated vessels of not more than 1 000 litres volume -- Part 2: Operational requirements
ISO 23208:2005	Cryogenic vessels -- Cleanliness for cryogenic service
ISO 24490:2005	Cryogenic vessels -- Pumps for cryogenic service

Highlighted standards are under revision.