



Report of the Secretariat
 for the 18th plenary meeting of ISO/TC 197 on 14 October 2009 in Seoul, Republic of Korea

<input checked="" type="checkbox"/> Next plenary meeting of ISO/TC 197 on: 14 October 2009	<input checked="" type="checkbox"/> Deadline for appointment of delegates: 20 September 2009
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Dear members,

We are pleased to provide our report in preparation for the next meeting of ISO/TC 197, which report consists of the following:

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1 General information

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2 Scope of the technical committee

Standardization in the field of systems and devices for the production, storage, transport, measurement and use of hydrogen.

3 Previous meetings of ISO/TC 197

<u>No.</u>	<u>Date</u>	<u>Location</u>	<u>Report reference</u>	<u>Resolutions</u>
17	2008-06-13	Brisbane, Australia	N 428	319 to 324 incl.
16	2007-11-08	Montecatini Terme, Italy	N 397	312 to 318 incl.
15	2006-06-08	La Plaine Saint-Denis, France	N 367	306 to 311 incl.
14	2005-11-10	Palm Spings, USA	N341	299 to 305 incl.
13	2004-07-02	Yokohama, Japan	N 307	288 to 298 incl.
12	2003-09-04	Grenoble, France	N 269	279 to 287 incl.
11	2002-06-13/14	Montréal, Canada	N 249	254 to 278 incl.
10	2001-10-25	Paris, France	N 204	218 to 253 incl.
9	2000-09-15	Höllriegelskreuth/Munich, Germany	N 162	186 to 217 incl.
8	1999-04-06	Vienna, Virginia, USA	N 135	156 to 185 incl.
7	1998-06-26	Buenos Aires, Argentina	N 119	126 to 155 incl.
6	1997-05-27	Toronto, Canada	N 96	104 to 125 incl.
5	1996-06-28	Stuttgart, Germany	N 79	84 to 103 incl.
4	1995-06-07	Quebec City, Canada	N 68	69 to 83 incl.
3	1994-06-17	Cocoa Beach, USA	N 58	44 to 68 incl.
2	1993-06-24/25	Tokyo, Japan	N 47	19 to 43 incl.
1	1990-06-21/22	Zurich, Switzerland	N 5, 6, 7, 8, 9	1 to 18 incl.

4 Work programme

The current structure of ISO/TC 197 consists of working groups reporting directly to the technical committee. Each of these working groups has the responsibility of one or two projects as described below:

ISO/TC 197 Work programme	
<p>ISO 17268 Compressed hydrogen <u>land surface</u> vehicle refuelling connection devices <i>Dispositifs de raccordement pour le ravitaillement des véhicules terrestres en hydrogène comprimé</i></p>	<p>WG 5 (Joint with ISO/TC 22) Convener: Livio Gambone, Canada</p>
Scope	Status update
<p>1.1 This International Standard applies to design, safety and operation verification of Compressed Hydrogen <u>Land Surface</u> Vehicle (CHLSV) refuelling connection devices hereinafter referred to as nozzle and receptacle. CHSV Refuelling nozzles and receptacles consist of the following components, as applicable.</p> <ul style="list-style-type: none"> — Receptacle and protective cap (mounted on vehicle); — Nozzle. <p>1.2 This International Standard applies to devices which have working pressures of <u>11MPa</u>, 25 MPa and 35 MPa, <u>50MPa and 70 MPa</u>, hereinafter referred to in this International Standard as the following:</p> <ul style="list-style-type: none"> — <u>H11 – 11 MPa at 15 °C</u> — <u>H25 - 25 MPa at 15 °C</u> — <u>H35 - 35 MPa at 15 °C</u> — <u>H35HF – 35MPa at 15 °C (high flow for commercial vehicle applications)</u> — <u>H50 – 50 MPa at 15 °C</u> — <u>H70 – 70 MPa at 15 °C</u> <p>1.3 Nozzles and receptacles designed and tested in accordance with this International Standard will allow CHLVs to be fueled by dispenser stations with nominal working pressures equal to or lower than the vehicle fuel system working pressure. 1.3 This International Standard applies to nozzles and receptacles which (1) prevent hydrogen fuelled vehicles from being refuelled by dispenser stations with working pressures higher than the vehicle; (2) allow hydrogen vehicles to be refuelled by dispenser stations with working pressures equal to or lower than the vehicle fuel system working pressure; (3) prevent hydrogen fuelled vehicles from being refuelled by other compressed gases dispensing stations; and (4) prevent other gaseous fuelled vehicles from being refuelled by hydrogen dispensing stations.</p> <p>1.4 All dimensions used in this document are in metric units [International System of Units (SI)].</p> <p>1.5 For the purposes of this document, compressed hydrogen gas meeting the requirements of ISO 14687 is to be used.</p> <p>1.6 All references to pressures (MPa) throughout this document are considered gauge pressures unless otherwise specified.</p> <p>1.7 All test procedures listed in this document are design verification test procedures unless otherwise noted.</p> <p>1.8 All products are to pass all tests to be considered to have met this design standard.</p>	<p>The Joint WG5 is working on the revision of the standard to address some technical issues that were deferred as well as the incorporation of the 70 MPa profile.</p> <p>The CD was circulated as ISO/TC 197 doc. N 414 on 16 March 2009. The comments received were circulated as ISO/TC 197 doc. N 416 on 16 July 2009 and returned to the working group for consideration.</p> <p>In the CD, the WG proposed changes to the title and scope (see the text in red). These changes will have to be formally approved at the upcoming ISO/TC 197 plenary meeting on 14 October 2009 in Seoul.</p> <p>Agreed target dates:</p> <p>CD: 2008-08 DIS: 2009-02 FDIS: 2010-02 IS: 2010-08</p>

ISO/TC 197 Work programme	
<p>ISO 15869 Gaseous hydrogen and hydrogen blends —Land vehicle fuel tanks <i>Hydrogène gazeux et mélanges d'hydrogène gazeux — Réservoirs de carburant pour véhicules terrestres</i></p>	<p>WG 6 (Joint with ISO/TC 22 and ISO/TC 58/SC 3) Convener: Craig Webster, Canada</p>
Scope	Status update
<p>This International Standard specifies the requirements for lightweight refillable fuel tanks intended for the onboard storage of high-pressure compressed gaseous hydrogen or hydrogen blends on land vehicles.</p> <p>This International Standard is not intended as a specification for fuel tanks used for solid, liquid hydrogen or hybrid cryogenic high-pressure hydrogen storage applications.</p> <p>This International Standard is applicable for fuel tanks of steel, stainless steel, aluminium or non-metallic construction material, using any design or method of manufacture suitable for its specified service conditions.</p> <p>This International Standard applies to the following types of fuel tank designs:</p> <ul style="list-style-type: none"> — Type 1: metal fuel tanks; — Type 2: hoop-wrapped composite fuel tanks with a metal liner; — Type 3: fully wrapped composite fuel tanks with a metal liner; — Type 4: fully wrapped composite fuel tanks with no metal liner. 	<p>The final results of voting on ISO/DIS 15869.3 were circulated as ISO/TC 197 doc. N 410 on 19 September 2008.</p> <p>These results showed considerable support for the publication of a technical specification (TS) instead of moving to the FDIS stage. The TS was published by the ISO Central Secretariat in February 2009.</p> <p>In order to ensure that this ISO work continues, the work item was registered as a new project on 29 June 2009. We have initiated the process for refreshing the composition of the working group so that we have a stronger involvement of OEM, fuel tanks manufacturers and other relevant stakeholders (see ISO/TC 197 doc. N 430). Please note that on their way to developing an international standard, the restructured WG will also deal with the technical comments received from the DIS circulation (ISO/TC 197 doc. N 410 Annex C).</p>
<p>ISO 22734-2 Hydrogen generators using water electrolysis process — Part 2: Residential applications <i>Générateurs d'hydrogène utilisant le procédé d'électrolyse de l'eau — Partie 2: Applications résidentielles</i></p>	<p>WG 8 Convener: Randy Dey, Canada</p>
Scope	Status update
<p>This standard defines the construction, safety and performance requirements of packaged hydrogen gas generation appliances, herein referred to as hydrogen generators, using electrochemical reactions to electrolyse water to produce hydrogen and oxygen gas.</p> <p>This standard is applicable to hydrogen generators that use the following types of ion transport medium:</p> <ul style="list-style-type: none"> • group of aqueous bases; • solid polymeric materials with acidic function group additions such as acid proton exchange membrane (PEM). <p>This standard is applicable to hydrogen generators intended for indoor and outdoor residential use (non-commercial and non-industrial use) in sheltered areas such as car-ports, garages, utility rooms and similar areas of a residence. This standard includes cord-connected equipment for outdoor and garage use only.</p> <p>Hydrogen generators that can also be used to generate electricity such as reversible fuel cells are excluded from the scope of this standard.</p> <p>This standard does not include portable hydrogen generators.</p> <p>Hydrogen generators that also supply oxygen as a product are excluded from the scope of this standard.</p> <p>This standard is intended to be used for certification purposes.</p>	<p>The working group is actively preparing the DIS text. A task group was set up to look into the particular safety issues for residential electrolyzers.</p> <p>After the publication of Part 2, the working group will look at the harmonization of the requirements of Part 1 and Part 2, where applicable.</p> <p>Agreed target dates: DIS: 2008-11 FDIS: 2009-11 IS: 2010-05</p>

ISO/TC 197 Work programme	
ISO 16110-2 Hydrogen generators using fuel processing technologies — Part 2: Test methods for performance <i>Générateurs d'hydrogène utilisant les technologies de traitement du carburant — Partie 2 Méthodes d'essai de performance</i>	WG 9 Convener: Falco Thuis, Netherlands
Scope	Status update
<p>This International Standard provides test procedures for determining the performance of packaged, self-contained or factory matched hydrogen generation systems with a capacity less than 400 m³/h at 0 °C and 101,325 kPa, herein referred as hydrogen generators, that convert a fuel to a hydrogen- rich stream of composition and conditions suitable for the type of device using the hydrogen (e.g. a fuel cell power system, or a hydrogen compression, storage and delivery system).</p>	<p>The DIS was released on 11 April 2008 for a five-month voting period. The preliminary report of voting, which was released as ISO/TC 197 doc. N 411 on 15 October 2008, showed that the DIS had been approved. The comments were returned to the WG for consideration.</p> <p>The FDIS text was submitted to the ISO Central Secretariat on 8 July 2009. It is being processed.</p> <p>Agreed target dates FDIS: 2009-04 IS: 2009-10</p>
ISO 20100 Gaseous hydrogen — Fuelling stations <i>Hydrogène gazeux — Stations de remplissage</i>	WG 11 Convener: Randy Dey, Canada
Scope	Status update
<p>This international standard specifies the design, operation and maintenance characteristics of outdoor public and non-public fuelling stations that dispense gaseous hydrogen used as fuel onboard land vehicles of all types.</p> <p>Residential and home applications to fuel land vehicles are excluded from this technical specification.</p> <p>The fuelling station may comprise, as applicable, the following as shown in Figure 1:</p> <ul style="list-style-type: none"> • Delivery of hydrogen by pipeline, trucked in gaseous and/or liquid hydrogen; • On-site hydrogen generators using water electrolysis process or hydrogen generators using fuel processing technologies; • Liquid hydrogen storage, pumping and vaporizering systems; • Gaseous hydrogen compression and purification systems; <p>NOTE When the fuelling station comprises an on-site hydrogen generator, a compressor/purifier system is commonly integrated into it.</p> <ul style="list-style-type: none"> • Pre-cooling device; • Gaseous hydrogen buffer storage; • Gaseous hydrogen dispensers. 	<p>The Technical Specification was published on 1 December 2008.</p> <p>The WG continues its work towards the publication of the international standard.</p> <p>The WG is proposing an expansion of the scope of the work (see the text in red). This change in scope will have to be formally approved at the upcoming ISO/TC 197 plenary meeting on 14 October 2009 in Seoul.</p> <p>Agreed target dates CD: 2008-12 DIS: 2009-12 FDIS: 2010-12 IS: 2011-06</p>

ISO/TC 197 Work programme	
<p>ISO 14687-2 Hydrogen Fuel — Product Specification — Part 2: Proton exchange membrane (PEM) fuel cell applications for road vehicles</p> <p><i>Carburant hydrogène — Spécification de produit — Partie 2: Applications pour piles à combustible de membrane pour échange de protons (MEP) pour les véhicules routiers</i></p>	<p>WG 12</p> <p>Convener: Yasuo Takagi, Japan</p>
Scope	Status update
<p>This International Standard specifies the quality characteristics of hydrogen fuel in order to assure uniformity of the hydrogen product as dispensed for utilization in PEM fuel cell road vehicle systems.</p>	<p>The Technical Specification (TS) and Technical Corrigendum 2 to ISO 14687:1999 were published on 1 March 2008.</p> <p>The WG is further advancing the preparation of the international standard. The CD was circulated for comments as ISO/TC 197 doc. N 417 on 7 August 2009. The deadline for comments is 7 October 2009.</p> <p>A JRC Workshop on Fuel and Air Quality Issues in Fuel Cells was held on 9-11 September 2009 in Berlin. This workshop contributed to increase the visibility of the ISO/TC 197 WG 12 work in Europe and provided the working group with a number of recommendations, which could help towards the development of the DIS.</p> <p>Agreed target dates CD: 2008-10 DIS: 2009-10 FDIS: 2010-10 IS: 2011-04</p>

ISO/TC 197 Work programme	
ISO 26142 Hydrogen detection apparatus — Stationary applications <i>Appareils de détection d'hydrogène — Applications stationnaires</i>	WG 13 Convener: Ichiro Matsubara, Japan
Scope	Status update
<p>This international standard defines the performance requirements and test methods of <u>stationary</u> hydrogen detection apparatus that is designed to measure and monitor hydrogen concentrations <u>in stationary applications</u>. The provisions in this standard cover the hydrogen detection apparatus used to achieve the single and/or multilevel safety operations such as nitrogen purging or ventilation and/or system shut-off corresponding to the hydrogen concentration. The requirements applicable to the overall safety control system as well as the installation requirements of such apparatus are excluded. This standard sets out only the requirements applicable to a product standard foref hydrogen detection apparatus, such as precision, response time, stability, measuring range, selectivity, and poisoning.</p> <p>This standard is intended to be used for certification purposes.</p>	<p>The DIS was released on 15 September 2008 for a five-month voting period. The preliminary report of voting, which was circulated as ISO/TC 197 doc. N 413 on 27 February 2009 showed that the DIS was approved. The comments were returned to the working group for its consideration in preparation for the FDIS text, which is being reviewed by the technical editing committee.</p> <p>The working group has recommended a change in scope (see the text in red). The editing committee is also recommending a change in title and scope to better reflect the actual application (see the text in blue). Both of these changes will have to be formally approved at the upcoming ISO/TC 197 plenary meeting on 14 October 2009 in Seoul.</p> <p>Agreed target dates for the next steps: FDIS: 2009-07 IS: 2010-01</p>
Ad hoc group on hydrogen components <i>Groupe ad hoc sur les composants à l'hydrogène</i>	
Scope	Status update
<p>This ad hoc group is looking at ways of fast-tracking the development of hydrogen components standards. It is looking at the stationary, automotive, portable/transportable applications.</p>	<p>The report of this ad hoc group was circulated as ISO/TC 197 doc. N 429.</p>
Ad hoc group on hydrogen vehicle fuel systems (HVFS) <i>Groupe ad hoc sur les systèmes véhiculaires de carburant à l'hydrogène</i>	
Scope	Status update
<p>This ad hoc group is responsible for defining a path forward for international standardization of HVFS.</p>	<p>A consultation was carried out through ISO/TC 197 doc. N 409 on 26 August 2008 inviting the P-members to nominate their experts to the HVFS ad hoc group. This consultation was initiated as a result of an action item from the ISO/TC 197 plenary meeting that specifically asked the P-members to target the OEMs.</p> <p>A technical consultation with the members of the ISO/TC 197 ad hoc group is underway.</p>

5 Subjects to be discussed at the 18th plenary meeting of ISO/TC 197

In order to help P-members prepare for the meeting, information relevant to the main subjects that will be discussed during the next plenary meeting of ISO/TC 197 is provided in the next sub-sections of this report.

5.1 Agenda Item 3: Adoption of the agenda

The draft agenda (document **N 421**) will be approved under this item of the agenda. P-members are invited to inform the ISO/TC 197 Secretariat of any other business they would like to discuss during the next plenary meeting of ISO/TC 197.

5.2 Agenda Item 4: Appointment of the drafting committee for this meeting

A drafting committee will be established for drafting the resolutions taken during the plenary meeting. This drafting committee should comprise at least a technical expert with an extensive knowledge of English and the Secretary of ISO/TC 197.

5.3 Agenda Item 5: Approval of the Report of the 17th Plenary Meeting

The *Report of the 17th plenary meeting of ISO/TC 197* (ISO/TC 197 document **N 428**) will be approved under this item of the agenda. Should there be some wrong or missing information, they should be reported to the Secretariat of ISO/TC 197.

5.4 Agenda Item 6: Report of the Chairman

The *Report of the Chairman* will be presented under this item of the draft agenda.

5.5 Agenda Item 7: Report of the Secretariat

The *Report of the Secretariat for the 18th plenary meeting of ISO/TC 197* (ISO/TC 197 doc. **N 429**) will be dealt with under this item of the agenda. This report reflects the status of the technical committee at the time of its drafting. Should there be errors in this document, they should be reported to the Secretariat of ISO/TC 197.

5.6 Agenda Item 8: Status of all items of the programme of work

Agenda items 8.1.to 8.8 will be combined with agenda item 9.1 *Update of target dates for work in progress and confirmation/withdrawal of items on which no progress has been made*.

Under items 8.1 to 8.8, the conveners will be invited to present the progress report of their working groups. The report should include an update on the activities of the working group since the last plenary meeting, any suggested changes in the title and scope and a review of the target dates that have been agreed to at the last plenary meeting. If these target dates have been exceeded (see summary table under item 4), conveners should provide details and suggest new target dates to the technical committee.

P-members should be prepared to review the target dates of the work items included in the ISO/TC 197 programme of work.

5.7 Agenda Item 9: Establishment of the work priorities

5.7.1 Agenda item 9.1 Update of target dates for work in progress and confirmation/withdrawal of items on which no progress has been made

This agenda item will be combined with agenda item 8.

5.7.2 Agenda Item 9.2: Published standards

Under this item of the agenda, the documents that have been published by ISO/TC 197 will be discussed. The documents that have been published since the last plenary meeting are highlighted. We would like to take the opportunity to thank the conveners and the WG members for these achievements.

Publications	
ISO 13984:1999 Liquid hydrogen — Land vehicle fuelling system interface <i>Hydrogène liquide — Interface des systèmes de remplissage pour véhicules terrestres</i>	
Scope	Status update
<p>This International Standard specifies the characteristics of liquid hydrogen refuelling and dispensing systems on land vehicles of all types in order to reduce the risk of fire and explosion during the refuelling procedure and thus to provide a reasonable level of protection from loss of life and property.</p> <p>This International Standard is applicable to the design and installation of liquid hydrogen (LH₂) fuelling and dispensing systems. It describes the system intended for the dispensing of liquid hydrogen to a vehicle, including that portion of the system that handles cold gaseous hydrogen coming from the vehicle tank, that is, the system located between the land vehicle and the storage tank.</p>	<p>The International Standard was published in 1999.</p> <p>A systematic review is currently being carried out until 15 December 2009.</p>
ISO 13985:2006 Liquid hydrogen — Land vehicle fuel tanks <i>Hydrogène liquide — Réservoirs de carburant pour véhicules terrestres</i>	
Scope	Status update
<p>This International Standard specifies the construction requirements for refillable fuel tanks for liquid hydrogen used in land vehicles as well as the testing methods required to ensure that a reasonable level of protection from loss of life and property resulting from fire and explosion is provided.</p> <p>This International Standard is applicable to fuel tanks intended to be permanently attached to land vehicles.</p>	<p>The International Standard was published on 1 November 2006.</p>
ISO 14687-1:1999/ Cor. 1:2001/Cor. 2:2008 Hydrogen fuel — Product specification —Part 1: All applications except proton exchange membrane (PEM) fuel cells for road vehicles <i>Carburant hydrogène — Spécification de produit — Partie 1: Toutes applications à l'exception des à membrane d'échange de protons (MEP) pour les véhicules routiers</i>	
Scope	Status update
<p>This International Standard specifies the quality characteristics of hydrogen fuel in order to assure uniformity of the hydrogen product as produced and distributed for utilization in vehicular, appliance or other fueling applications (ground, water, air and space) except PEM fuel cell applications in road vehicles.</p>	<p>The International Standard was published in 1999. Technical corrigendum 1 was issued in 2001. Technical corrigendum 2 was published on 1 March 2008.</p> <p>It is registered as a preliminary work item as indicated in the results of the systematic review circulated as ISO/TC 197 doc. N 382 on 19 October 2008.</p> <p>NOTE: The new systematic review that had been initiated with a deadline of 15 December 2009 has been cancelled.</p>

Publications	
ISO/TS 14687-2:2008 Hydrogen Fuel — Product Specification — Part 2: Proton exchange membrane (PEM) fuel cell applications for road vehicles <i>Carburant hydrogène — Spécification de produit — Partie 2: Applications de piles à combustible à membrane échangeuse de protons (PEM) pour véhicules routiers</i>	
Scope	Status update
<p>This Technical Specification specifies the quality characteristics of hydrogen fuel in order to assure uniformity of the hydrogen product as dispensed for utilization in PEM fuel cell road vehicle systems.</p>	<p>This Technical Specification (TS) was published on 1 March 2008.</p>
ISO/PAS 15594:2004 Airport hydrogen fuelling facility <i>Installation aéroportuaire d'avitaillement en hydrogène</i>	
Scope	Status update
<p>ISO/PAS 15594:2004 specifies the fuelling procedures, hydrogen boil-off management procedures, hydrogen storage requirements, and characteristics of the ground support equipment required to operate an airport hydrogen fuelling facility.</p>	<p>The Publicly Available Specification (PAS) was published in 2004. It was reconfirmed in 2007.</p>
ISO/TS 15869:2009 Gaseous hydrogen and hydrogen blends —Land vehicle fuel tanks <i>Hydrogène gazeux et mélanges d'hydrogène gazeux — Réservoirs de carburant pour véhicules terrestres</i>	
Scope	Status update
<p>This Technical Specification specifies the requirements for lightweight refillable fuel tanks intended for the onboard storage of high-pressure compressed gaseous hydrogen or hydrogen blends on land vehicles.</p> <p>This Technical Specification is not intended as a specification for fuel tanks used for solid, liquid hydrogen or hybrid cryogenic high-pressure hydrogen storage applications.</p> <p>This Technical Specification is applicable for fuel tanks of steel, stainless steel, aluminium or non-metallic construction material, using any design or method of manufacture suitable for its specified service conditions.</p> <p>This Technical Specification applies to the following types of fuel tank designs:</p> <ul style="list-style-type: none"> — Type 1: metal fuel tanks; — Type 2: hoop-wrapped composite fuel tanks with a metal liner; — Type 3: fully wrapped composite fuel tanks with a metal liner; — Type 4: fully wrapped composite fuel tanks with no metal liner. 	<p>This Technical Specification (TS) was published by the ISO Central Secretariat in February 2009.</p>

Publications	
ISO/TR 15916:2004 Basic considerations for the safety of hydrogen systems <i>Considérations fondamentales pour la sécurité des systèmes à l'hydrogène</i>	
Scope	Status update
<p>This Technical Report provides guidelines for the use of hydrogen in its gaseous and liquid forms. It identifies the basic safety concerns and risks, and describes the properties of hydrogen that are relevant to safety.</p> <p>Detailed safety requirements associated with specific hydrogen applications are treated in separate International Standards.</p>	<p>The Technical Report (TR) was published in 2004.</p>
ISO 16110-1:2007 Hydrogen generators using fuel processing technologies — Part 1: Safety <i>Générateurs d'hydrogène utilisant les technologies de traitement du carburant — Partie 1: Sécurité</i>	
Scope	Status update
<p>This part of ISO 16110 applies to packaged, self-contained or factory matched hydrogen generation systems with a capacity of less than 400 m³/h at 0 °C and 101,325 kPa, herein referred to as hydrogen generators, that convert an input fuel to a hydrogen-rich stream of composition and conditions suitable for the type of device using the hydrogen (e.g. a fuel cell power system or a hydrogen compression, storage and delivery system).</p> <p>It applies to hydrogen generators using one or a combination of the following input fuels:</p> <ul style="list-style-type: none"> • natural gas and other methane-rich gases derived from renewable (biomass) or fossil fuel sources, e.g. landfill gas, digester gas, coal mine gas; • fuels derived from oil refining, e.g. diesel, gasoline, kerosene, liquefied petroleum gases such as propane and butane; • alcohols, esters, ethers, aldehydes, ketones, Fischer-Tropsch liquids and other suitable hydrogen-rich organic compounds derived from renewable (biomass) or fossil fuel sources, e.g. methanol, ethanol, dimethyl ether, biodiesel; • gaseous mixtures containing hydrogen gas, e.g. synthesis gas, town gas. <p>This part of ISO 16110 is applicable to stationary hydrogen generators intended for indoor and outdoor commercial, industrial, light industrial and residential use.</p> <p>It aims to cover all significant hazards, hazardous situations and events relevant to hydrogen generators, with the exception of those associated with environmental compatibility (installation conditions), when they are used as intended and under the conditions foreseen by the manufacturer.</p> <p>NOTE A list of significant hazards and hazardous situations dealt with in this part of ISO 16110 is found in Annex A.</p> <p>This part of ISO 16110 is a product safety standard suitable for conformity assessment as stated in IEC Guide 104, ISO/IEC Guide 51 and ISO/IEC Guide 7.</p>	<p>The International Standard was published on 15 March 2007.</p>

Publications

ISO 16111:2008 Transportable gas storage devices — Hydrogen absorbed in reversible metal hydrides *Appareils de stockage de gaz transportables — Hydrogène absorbé dans un hydrure métallique réversible*

Scope	Status update
<p>This International Standard defines the requirements applicable to the material, design, construction, and testing of transportable hydrogen gas storage systems, referred to as “metal hydride assemblies” (MH assemblies) which utilize shells not exceeding 150 l internal volume and having a maximum developed pressure (MDP) not exceeding 25 MPa (250 bar). This International Standard only applies to refillable storage MH assemblies where hydrogen is the only transferred media. Storage MH assemblies intended to be used as fixed fuel-storage onboard hydrogen fuelled vehicles are excluded. This International Standard is intended to be used for certification purposes</p>	<p>This international standard was published on 15 November 2009, just in time for the Dec. 2008 Meeting of the ECOSOC Sub-Committee of Experts on the Transport of Dangerous Goods (SCETDG).</p> <p>It is now used in the Orange Book as the basis for the approval of hydrogen stored in metal hydride storage (UN 3468).</p> <p>This ISO/TC 197 work, which contributed to the removal of a potential barrier to trade, was presented in the ISO Focus article <i>Creating modern regulations for the transport of dangerous goods</i> that was co-authored by the ISO/TC 197 Chair and circulated as ISO/TC 197 doc. N 419.</p>

Publications

ISO 17268:2006 Compressed hydrogen surface vehicle refuelling connection devices

Dispositifs de raccordement pour le ravitaillement des véhicules terrestres en hydrogène comprimé

Scope	Status update
<p>1.1 This International Standard applies to design, safety and operation verification of Compressed Hydrogen Surface Vehicle (CHSV) refuelling connection devices hereinafter referred to as nozzle and receptacle. CHSV Refuelling nozzles and receptacles consist of the following components, as applicable.</p> <ul style="list-style-type: none"> — Receptacle and protective cap (mounted on vehicle); — Nozzle. <p>1.2 This International Standard applies to devices which have working pressures of 25 MPa and 35 MPa, hereinafter referred to in this International Standard as the following:</p> <ul style="list-style-type: none"> — H25 - 25 MPa at 15 °C — H35 - 35 MPa at 15 °C <p>1.3 This International Standard applies to nozzles and receptacles which (1) prevent hydrogen fuelled vehicles from being refuelled by dispenser stations with working pressures higher than the vehicle; (2) allow hydrogen vehicles to be refuelled by dispenser stations with working pressures equal to or lower than the vehicle fuel system working pressure; (3) prevent hydrogen fuelled vehicles from being refuelled by other compressed gases dispensing stations; and (4) prevent other gaseous fuelled vehicles from being refuelled by hydrogen dispensing stations.</p> <p>1.4 All dimensions used in this document are in metric units [International System of Units (SI)].</p> <p>1.5 For the purposes of this document, compressed hydrogen gas meeting the requirements of ISO 14687 is to be used.</p> <p>1.6 All references to pressures (MPa) throughout this document are considered gauge pressures unless otherwise specified.</p> <p>All test procedures listed in this document are design verification test procedures unless otherwise noted.</p> <p>All products are to pass all tests to be considered to have met this design standard.</p>	<p>The International Standard was published on 1 April 2006.</p>

Publications	
ISO/TS 20100:2008 Gaseous hydrogen — Fuelling stations <i>Hydrogène gazeux — Stations de remplissage</i>	
Scope	Status update
<p>This Technical Specification specifies the characteristics of outdoor public and non-public fuelling stations that dispense gaseous hydrogen used as fuel onboard land vehicles of all types.</p> <p>Residential and home applications to fuel land vehicles are excluded from this technical specification.</p> <p>The fuelling station may comprise, as applicable, the following as shown in Figure 1:</p> <ul style="list-style-type: none"> • Delivery of hydrogen by pipeline, trucked in gaseous and/or liquid hydrogen; • On-site hydrogen generators using water electrolysis process or hydrogen generators using fuel processing technologies; • Liquid hydrogen storage, pumping and vaporizing systems; • Gaseous hydrogen compression and purification systems; <p>NOTE When the fuelling station comprises an on-site hydrogen generator, a compressor/purifier system is commonly integrated into it.</p> <ul style="list-style-type: none"> • Gaseous hydrogen buffer storage; • Gaseous hydrogen dispensers. 	<p>The Technical Specification was published on 1 December 2008.</p>
ISO 22734-1:2008 Hydrogen generators using water electrolysis process — Part 1: Industrial and commercial applications <i>Générateurs d'hydrogène utilisant le procédé d'électrolyse de l'eau — Partie 1: Applications industrielles et commerciales</i>	
Scope	Status update
<p>This International Standard defines the construction, safety and performance requirements of packaged or factory matched hydrogen gas generation appliances, herein referred to as hydrogen generators, using electrochemical reactions to electrolyse water to produce hydrogen and oxygen gas. This International Standard is applicable to hydrogen generators that use the following types of ion transport medium:</p> <ul style="list-style-type: none"> • Group of aqueous bases; • Solid polymeric materials with acidic function group additions such as acid proton exchange membrane (PEM). <p>This part of ISO 22734 is applicable to hydrogen generators intended for indoor and outdoor commercial and industrial use (non-residential use). Hydrogen generators that can also be used to generate electricity such as reversible fuel cells are excluded from the scope of this International Standard.</p> <p>This International Standard is intended to be used for certification purposes.</p>	<p>This standard was published on 1 July 2008.</p>

5.7.3 Agenda Item 9.3: New work item proposals and creation of working groups

Potential new work items proposals (NWIP) will be discussed under this item of the agenda. P-members that are interested to discuss possible NWIP are invited to inform the ISO/TC 197 Secretariat before the meeting.

The originators of the NWIP will be invited to make a short presentation to the attendees. Please note that NWIP will not be formally approved at the meeting. The ISO rules require that NWIP be circulated for voting.

5.8 **Agenda item 10: Strategic discussion of committee's work**

5.8.1 Agenda Item 10.1: ISO/TC 197 Business plan

Under this item of the agenda, as indicated in ISO/TC 197 N 422, P-member countries will be invited to make a short presentation (10 –15 minutes) on their National Hydrogen Energy Programs.

5.8.2 Agenda Item 10.2: Membership

Under this item of the draft agenda, the membership of ISO/TC 197 will be reviewed. The actual membership of ISO/TC 197 consists of 20 **P**-members and 12 **O**-members. We are pleased to inform you that Brazil has recently upgraded its status from O to P-membership.

ISO/TC 197 P-MEMBERS (20)

ARGENTINA (IRAM)	JAPAN (JISC)
BRAZIL (ABNT)	NETHERLANDS (NEN)
CANADA (SCC)	NORWAY (SN)
CHINA (SAC)	REPUBLIC OF KOREA (KATS)
DENMARK (DS)	RUSSIAN FEDERATION (GOST R)
EGYPT (EOS)	SPAIN (AENOR)
FRANCE (AFNOR)	SWEDEN (SIS)
GERMANY (DIN)	SWITZERLAND (SNV)
INDIA (BIS)	UNITED KINGDOM (BSI)
ITALY (UNI)	USA (ANSI)

ISO/TC 197 O-MEMBERS (12)

AUSTRALIA (SA)	JAMAICA (BSJ)
AUSTRIA (ON)	LIBYAN ARAB JAMAHIRIYA (LNCSM)
CZECH REPUBLIC (CNI)	ROMANIA (ASRO)
FINLAND (SFS)	SERBIA (ISS)
HONG KONG, CHINA (ITCHK SAR)	THAILAND (TISI)
HUNGARY (MZST)	TURKEY (TSE)

5.8.3 Agenda Item 10.3: Ad hoc group on hydrogen components

The report of the ISO/TC 197 ad hoc group on hydrogen components (ISO/TC 197 doc. N 429) will be discussed under this item of the draft agenda.

5.9 **Agenda Item 11: Permanent editing committee**

Under this item of the draft agenda, the composition of the permanent editing committee will be reviewed. This permanent editing committee is responsible for:

- updating and editing committee drafts (CD), enquiry drafts (DIS) and Final Draft International Standards (FDIS) considered at meetings or circulated between meetings;
- ensuring their conformity with Part 2 of the ISO/IEC Directives;
- ensuring the equivalence of the texts in the official languages.

5.10 Agenda item 12: Liaison and report of liaisons

5.10.1 Agenda Item 12.1: Existing liaisons: ISO/TC 11, ISO/TC 22, ISO/TC 58/SC 3, ISO/TC 220, IEC/TC 31 and IEC/TC 105

Under this item of the draft agenda, P-members will be given an update on the activities of its most important liaisons: ISO/TC 11 *Boilers and pressure vessels* (ISO/TC 197 doc. N 427), ISO/TC 22 *Road vehicles*, ISO/TC 58/SC 3 *Gas cylinder design*, ISO/TC 220 *Cryogenic vessels* (ISO/TC 197 doc. N 423), IEC/TC 31 *Equipment for explosive atmospheres* and IEC/TC 105 *Fuel cell technologies* (ISO/TC 197 doc. N 426).

5.10.2 Agenda Item 12.2: Establishment of new liaisons and cancellation of liaisons

The relevance of maintaining, cancelling or creating liaisons will be looked at under this item of the draft agenda. The actual liaisons of ISO/TC 197 are listed below:

ISO/TC 197 LIAISONS WITH OTHER ISO AND IEC TECHNICAL COMMITTEES (18)

ISO/TC 11 <i>Boilers and pressure vessels</i>	ISO/TC 118 <i>Compressors, pneumatic tools and pneumatic machines</i>
ISO/TC 20 <i>Aircraft and space vehicles</i>	ISO/TC 153 <i>Valves</i>
ISO/TC20/SC14 <i>Space systems and operations</i>	ISO/TC 192 <i>Gas turbines</i>
ISO/TC 22 <i>Road vehicles</i>	ISO/TC 193 <i>Natural gas</i>
ISO/TC22/SC21 <i>Electrically propelled road vehicles</i>	ISO/TC 203 <i>Technical energy systems</i>
ISO/TC22/SC25 <i>Road vehicles using gaseous fuels</i>	ISO/TC 207 <i>Environmental management</i>
ISO/TC 58 <i>Gas cylinders</i>	ISO/TC 220 <i>Cryogenic vessels</i>
ISO/TC 58/SC3 <i>Gas cylinder design</i>	IEC/TC 31 <i>Equipment for explosive atmospheres</i>
ISO/TC 70 <i>Internal combustion engines</i>	IEC/TC 105 <i>Fuel cell technologies</i>

ISO/TC 197 LIAISONS WITH OTHER ORGANIZATIONS (6)

European Industrial Gases Association (EIGA) — Cat. D with ISO/TC 197 WG 11
 European Hydrogen Association (EHA) —Cat. A
 Joint Research Centre (JRC) —Cat. D with ISO/TC 197 WG 12 and WG13
 International Organization of Legal Metrology (OIML) – Cat. A
 National Hydrogen Association (NHA) — Cat. D

5.10.3 Agenda Item 12.3: Cooperation with other organizations

Under this item of the draft agenda, P-members will be given an update on the hydrogen vehicles related activities of the *World Forum for Harmonization of Vehicle Regulations* (WP.29) that acts within the framework of the policies of the *United Nations Economic Commission for Europe* (UN ECE). They will also be provided with an update with the *ECOSOC Sub-Committee of Experts on the Transport of Dangerous Goods*.

5.11 Agenda Item 13: Any other business

Any other business will be discussed under this item of the agenda.

5.12 Agenda Item 14: Requirements concerning a subsequent meeting

The location of the year 2010 and 2011 plenary meetings will be discussed under this item of the agenda.

6 Documents to bring to the meeting

Delegates should bring copies of the following documents. Hard copies of these documents will not be available at the meeting.

- Draft agenda **N 421**
- Report of the 17th plenary meeting **N 428**
- Report of the Chairman **To be distributed**
- Report of the Secretariat **N 431**
- Liaison reports **N 423, N 426 and N 427**
- Report of the ISO/TC 197 ad hoc group on hydrogen components **N 429**

We hope this report provides you with the necessary information required to be prepared for the plenary. Should you have any questions or need any additional information, please do not hesitate to contact us.

Yours sincerely,



Sylvie Gingras, Secretary of ISO/TC 197
Bureau de normalisation du Québec
on behalf of the Standards Council of Canada