ISO/TC 197
Hydrogen technologies

Email of secretary: jim.ferrero@bnq.qc.ca
Secretariat: SCC (Canada)

ISO DIS 17268 (Ed 3) Collated Comments

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Template for comments and secretariat observations

Date:2017-09-08	Document: DIS 17268	Project: WG 5

MB/ NC[1]	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment[2]	Comments	Proposed change	Observations of the secretariat
DE 001				ge	General question regarding the testing. Are the components currently available on the market fulfilling the test requirements? If not how big is the gap		
US 02 002		01	3		The statements defining the pressure classes do not indicate specifically the meaning of the pressure value. The information should be harmonized with ISO 19880-1 by using an edited version of Table 1 in section 8.3.2.	*Delete paragraph 3 and replace with the following:* This International Standard applies to fueling connectors with operating pressures and ratings as shown in Table 1. (See the proposed table sent to the ISO/TC 197 secretary and WG convenor).	
US 03 003		01	Para 3	ED	Paragraph 3 is a definition and should not be in the scope. (If this change requires TC/197 approval that will delay the document, please ignore this comment.)	*Move detailed specification pressure conditions and ratings to definition of pressure class in Section 3 using the Table sent to the TC197 secretary and WG convenor.* *Replace para.3 with a simple statement:* This International Standard applies to refuelling connectors which have nominal working pressures or hydrogen service levels up to 70 MPa.	
US 04 004		01	Para 5, 6	ED	Paragraphs 5 and 6 are requirements and does not belong in the scope. (If this change requires TC/197 approval that will delay the document, please ignore this comment.)	Delete.	
US 05 005		01	Para 7		The is not an appropriate subject for the SCOPE or even this document – other than perhaps in the INSTRUCTIONS so the dispenser operator is apprised of the limitation – if it really exists for a particular item.	Move this item to Chapter 8 for inclusions in the INSTRUCTIONS.	
US 06 006		03			Component rating is a key parameter of the component design. It should be designed and used where appropriate in the document.	*Add the following definition and notes:* **component pressure rating** maximum allowable pressure at which it is permissible	

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						to operate a component as specified by the manufacturer at a specified temperature. Note 1: Components designed to the Maximum Allowable Pressure per the European PED represent the component ratings by the manufacturer that as indicated by the value of "PS". Note 2: See Table 1 for required component pressure ratings for various pressure classes of fueling connectors. Note 3: Further guidance on dispenser pressure terminology is included in ISO 19880-1.	
US 07 007		03			Hydrogen Service Level (HSL) has been adopted for the dispenser system. Add definition and link to NWP on the vehicle.	Add the following definition and notes: Hydrogen Service Level (HSL) pressure level in MPa used to characterize the hydrogen service of the dispenser based on the NWP rating of the vehicle. Note 1 to entry: The numerical value of HSL also matches the number after the "H" in Pressure Class.	
US 08 008		03			Pressure class is a key parameter of the component capability and is used in the document without definition. It should be defined and used where appropriate in the document.	*Add the following definition and notes:* **pressure class** a non-dimensional rating of components that indicates the components are designed to dispense hydrogen to road vehicles at the required pressure and temperature Note 1: See Table 1 for pressure classes of fueling connectors. Note 2: Further guidance on dispenser pressure terminology is included in ISO 19880-1.	
NL 009		03	2	te	Alignment is missing with definitions, as used in refuelling protocols and storage specs in	Add definition of Maximum allowable working pressure according to several ISO standards.	

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					the vehicle, which are necessary'.		
FR 01 010		03.03		Ed	Type mismatched	Read : "the process of ~~a~~ making a positive connection …"	
US 09 011		03.07			The definition of MOP is not correct as it is the highest expected pressure during normal operation (fuelings).	*Replace as follows:* **maximum operating pressure** **MOP** highest pressure that is expected for a component or system during normal operation Note 1: Further guidance on dispenser pressure terminology is included in ISO 19880-1.	
GB 012		03.07	NOTE	Ge	Inclusion of the NWP temperature could cause confusion – this is unnecessary as is covered in the definition of NWP	The maximum operating pressure is 125 % of the nominal working pressure ~~at 15 °C~~ for the purpose of testing of nozzles and receptacles in this International Standard.	
GB 013		03.07	Para 1	Ge	Can this definition be aligned with WG24? It should be clear that under a fault condition, the maximum operating pressure may be exceeded (this may also happen routinely with Type A & B nozzles as they return to ambient temperature following a fill to close to the MOP, depending on whether or not the dispenser design includes additional automated venting). To enable use in a station that fills using a SAE J2601 protocol, there needs to be space between the MOP and the rated pressure of the nozzle to allow for a pressure relief valve, or other over-pressure protection, as recognised in Chap 9. (The WG24 definition of "component pressure rating" is possibly closer to the ISO DIS 17268 definition 3.7 for maximum operating pressure,	Consider using: "Highest pressure that is expected for a component during normal operation." (The WG24 definition includes "or system", but this is not appropriate in this document) Possibly with the inclusion of "independent of temperature – please discuss with Glenn Scheffler as to whether this should be across all ISO TC 197 standards	

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					which could lead to misinterpretation)		
US 10 014		03.08				*Replace as follows:* **nominal working pressure** **NWP** pressure of a full vehicle CHSS at a gas temperature of 15 ºC Note 1: See GTR#13 clause II-3.37, on page 54. Note 2: See Table 1 for NWPs covered in this document. Note 3: Further guidance on pressure terminology is included in ISO19880-1 Note 4: Also known as “settled pressure” in ISO 10286	
GB 015		03.x	New para		Consider need to explain “rated” pressure (used in Chapter 9), or “component pressure rating”	WG24 definition is: “maximum allowable pressure at which it is permissible to operate a component as specified by the manufacturer at a specified temperature”	
GB 016		04.02	All	Ge	Maybe it is overly picky but the nozzle alone cannot stop these things happening. There needs to be a clear indication in the instructions that when using a particular nozzle, certain conditions must be adhered to in the dispenser – potentially with reference to ISO 19880-1?	Consider addition of requirements for limits of conditions where nozzles and receptacles are fitted. (i.e. a standard nozzle must not be fitted to a high flow, 120 g/s dispenser, and a standard receptacle must only be fitted on a vehicle that can accept 60g/s, whilst an HF receptacle must only be fitted on a vehicle that can accept 120g/s Slightly more obviously, a 350 bar nozzle must not be fitted to a 700 bar dispenser, or a 700 bar receptacle must not be fitted on a 350 bar vehicle – however, theoretically, a 700 bar nozzle could be fitted to a 350 bar dispenser safely (it would just exclude 350 bar vehicles), so maybe this is only a recommendation?	
US 11 017		04.09	All	ED	Clause 4.9 conflicts with Clause 5.17 which provides more detail. The proposed text references 5.17. The phrase "permanently integrated" is misleading since the goal was to exclude "field replaceable"	Communications hardware which is supplied by the manufacturer shall be part of the testing as described in Clause 5.17. ~~and permanently integrated into the nozzle shall be attached to the nozzle and subjected to all of the~~	

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					IRdA from testing.	~~nozzle tests.~~ The communications hardware shall operate correctly upon completion of the tests listed in Clause 5.17 ~~all type and quality testing~~.	
DE 018		05.08			How can a hydrogen gas temperature of +85°C be reached within the nozzle?	Please for clarification	
DE 019		05.09			Is there a test that describes how the requirement can be proven? How does this requirement/test affect the receptacle?	Please provide test conditions like humidity, temperature, detachment and attachment forces.	
US 12 020		05.17	Bullet list	TE	The user abuse and freezing tests should be added to the list of tests the IRdA system must pass. These tests will help ensure the IRdA system works properly under stressful conditions. There have been instances where the IRdA system has failed when abused by the user.	Add -7.25 User abuse test -7.26 Freezing test	
US 13 021		05.17	Para 3	TE	There have been instances where the IRdA wire or connector has failed when abused by the user. If it is provided by the manufacturer, it should be included in the test	If the communication hardware consists of electrical connectors, wires, covers or IR filters….	
FR 02 022		07.06	last paragraph	Te	Add IrDA test to acceptance criteria of the drop test	Add to last paragraph : "… and communication test specified in 7.28 if applicable".	
US 14 023		07.07	Para 3	ED	Improved language	~~To verify the leakage rate of the nozzle, the receptacle and the connector,~~ The pressurized leak test gas shall be applied to the inlet of the connector, the disconnected nozzle and the outlet of the disconnected receptacle, to verify the leakage rate of the nozzle.	
US 15 024		07.07	Para 4	ED	Improved language. The purpose is to quickly disconnect the nozzle, not depressurize the receptacle. Also, "upstream" of the receptacle is the nozzle side.	To verify the leakage rate of the receptacle check valve, pressurized leak test gas shall be applied to the inlet of the connector. The ~~upstream portion of the receptacle shall be quickly depressurized,~~ the nozzle shall be quickly disconnected and the receptacle check-valve checked for leakage.	
FR 03		07.10	last	Te	Add IrDA test to acceptance criteria of the drop	Add to last paragraph :	

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025			paragraph		test	"… and communication test specified in 7.28 if applicable".	
DE 026	P10	07.11.03 d)		te	Is it necessary to test the uncoupled receptable at 85°C, as only the inside the tank will see such temperatures during and after a refueling		
DE 027	P11	07.11.03 d)		te	Is it necessary to test the system at 85°C, as only the inside the tank will see such temperatures during and after a refueling		
US 16 028		07.12.02	Table 1 and following test	TE	Adding a column to Table 1 which lists the maximum pressure for the test would be helpful. Geometry is missing from 10 cycle @150% requirement. Adding the cycles to Table 1 would be helpful The use of MOP for the first 100K cycles, then 150% NWP for the last 10 is confusing. Shouldn't the last 10 cycles be 1XX% above MOP?	Add pressure column to Table 1 Add following cycles to Table 1, including Geometry Following 100 000 cycles of operation, the nozzle shall be subjected to 10 pressure cycles to 150 % of the nominal working pressure. Consider changing 150% NWP to X% of MOP	
NZ 029		07.12.04		ge	Last sentence does not stipulate what test outcome is required	"Following the tests" change to, "Following the successful completion of the tests".	
US 18 030		07.12.05	All	TE	30 cycles seems far too few for a durability test and will not show any wear. For a nozzle which is used ten times per day, the cycles are around 55,000 (10*365*15). Consider combining this test with 7.12.2.	Combine 7.12.2 and 7.12.15 by modifying 7.12.2 as follows a) Properly connecting the nozzle to the receptacle test fixture. b) Pressurizing the connector to maximum operating pressure using leak test gas. c) Depressurizing the connector by opening the outlet of the receptacle. d) Disconnecting the nozzle.	
US 17 031		07.12.05	Para 1	TE	Test fixture needs to be specified	~~A~~ The loose/tight/normal nozzle test fixture or a receptacle test fixture, as applicable, shall be connected to the device under test. The outlet of the receptacle shall be open to atmospheric pressure. The	

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US 19 032		07.16			Strength test requirements are typically stated relative to component pressure rating. Presuming this is a demonstration of ultimate strength, a requirement of not leaking is severe. A requirement of no leakage is more appropriate at a proof test level of 1,5 times the component rating.	*Add in parenthesis behind "3 times MOP":* (2.7 times the component pressure rating). *Replace "shall not leak" with the following:* "shall not leak at or below a pressure test level of 1.5 times the component pressure rating or rupture during the test."	
US 20 033		07.17.04	All	TE	This test should be done with the caps off since there is no guarantee the manufacturer will use them and if the user will always place the caps on properly. In addition, the "dust" caps are intended to protect from dust. If they are supposed to protect from spray, then there needs to be a specification in this document. If the WG disagrees with my comment then, the section clearly needs to state that the test shall be performed with the dust caps on. In addition, a section on dust cap requirements needs to be added to this document	The receptacle shall be supported in a horizontal position without the dust caps and shall be exposed for 1 000 hours to a salt spray as specified in ISO 9227…. Immediately following the 1 000-hour test, the areas of receptacles ~~protected by dust caps~~ shall be examined. The receptacle shall then be rinsed and gently cleaned of salt deposits. The receptacle shall not show evidence of corrosion or loss of protective ~~coatings and there shall be no evidence that water has entered the area protected by dust caps~~. The receptacle shall then comply with the leakage tests specified in 7.7.	
JP 034 01		07.21	all	te	Subclause 7.21 is specifying the test procedure for withstanding exposure to pre-cool hydrogen during fuelling, which is redundant. Verifying leakage at low temperature is performed in Subclause 7.11. The test for the failure to disconnect is also specified in Subclause 7.26, Further, the testing conditions for freezing tests are more reflecting a real environment than 7.21. Then, 7.21 is a kind of duplicate, and not be needed to be left.	Delete the whole Subclause 7.21.	
US 21 035		07.21	Para 2	TE	Three minutes is a goal for completing but five minutes is a more realistic fueling time.	The connector shall be subjected to pre-cooled hydrogen gas at -40 °C at a flow rate of 30 g/s at 15 °C and 90 % relative humidity for a minimum of ~~3~~ 5	

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						minutes. The….	
FR 04 036		07.21	paragraphs 2 & 4	Te	Time before disconnection is set at 10 s. This time is set at 30 s in Clauses 5.9 and 7.26	need to be consistant with 5.9 and 7.26 : change time from 10 s to 30 s	
US 22 037		07.22	Para 1	ED	Improved wording	This test shall be performed to verify that a misconnected Type C nozzle shall not flow gas, leak, or disconnect ~~blow off~~.	
NZ 038		07.24		te	Tolerance on temperature tests both positive, is this what was intended?	-40 ºC (-5, +0 ºC) and 85 ºC (-0, +5 ºC)	
US 23 039		07.26	All	TE	Consider merging or allowing the Pre-cooled H2 Exposure and Freezing test to be done at the same time.	Modify freezing test to allow for merging of Pre-cooled H2 Exposure and Freezing test or for them to be done at the same time.	
US 24 040		07.26	Bullet c	TE	Three minutes is a goal for completing but five minutes is a more realistic fueling time The gas flow rate should match the maximum in SAE j2601	…passing hydrogen through the interface for ~~3~~ 5 minutes at the following conditions…. Gas Flow Rate: 60+10% g/s ~~650 ± 50 g/min~~	
US 25 041		9 h)			Dispenser pressure protection is out of the scope of this document.	Delete.	
US 26 042		9 i)			Should refer to component pressure rating or “PS” mark.	*Replace with the following:* Include the appropriate component pressure rating (or PS mark) per Table 1. TC 197 U.S. Proposed new Table	
FR 05 043		Annex A	figure A.1	Te	Drawing unclear	Come back to previous definition :	

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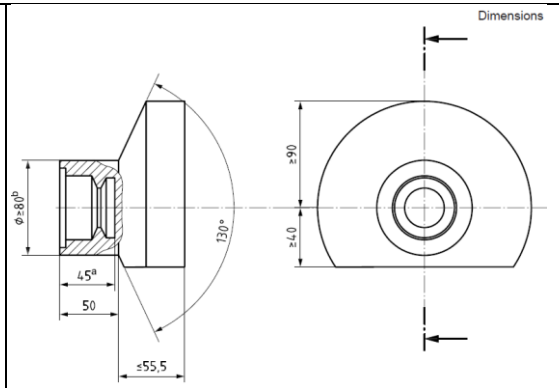
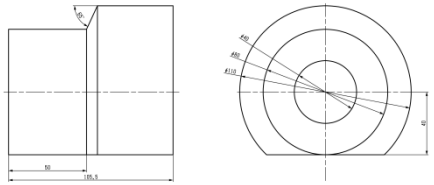
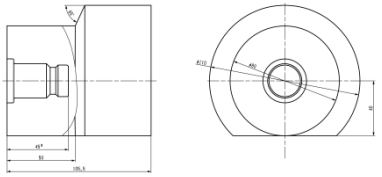
							
JP 044 02		Annex A	Figure A.1	ed	There is not the drawing of the receptacle in this figure. This comment is based on the consensus at previous WG5 meeting. 	Replace Figure A. 1 with following drawing. 	
DE 045		Annex B	Figure B.5	Te	Is the geometry (see arrow) meant as a closed cylinder or can the form be executed as for example hexagon (multi-corner)?	Please for clarification.	

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					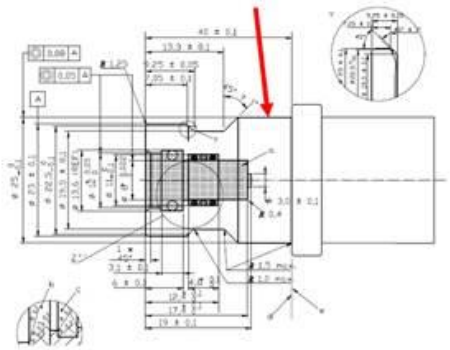		
FR 06 046		Annex F	figure F.1	Te	Mistake in drawing	suppress 45° chamfer between Ø 25 and Ø 30 to keep consistency with all other receptacle drawings and requirements of clause 7.22	
US 01 047		General			There are no production requirements. WG should consider adding tables similar to what is found in 19880-5 Annex A and B.	*Add a new Clause (probably between current 7 and 8):* Fabrication and assembly processes for the nozzles and receptacles shall be compliant with ISO 9000 with appropriate quality measures and tests to ensure that nozzles and receptacles comply with provisions of this standard. A proof pressure test to 1.5 times the component rating shall be conducted to demonstrate proper mechanical strength and assembly. Leakage shall be within allowables, and the component shall be fully functional after the test.	

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