ISO/TC 197
Hydrogen technologies

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DIS 19880-5 Collated Comments

Document type:	Other committee document
Date of document:	2018-08-14
Expected action:	INFO
Background:	Here are the comments that were submitted with the DIS 19880-5 ballot that closed 2018-07-25.
Committee URL:	https://isotc.iso.org/livelink/livelink/open/tc197

Template for comments and secretariat observations

Date:2018-07-25	Document:	Project:

MB/ NC[1]	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment[2]	Comments	Proposed change	Observations of the secretariat
JPN 17 001					Conversion formula listed in 7.12.4 is only applied to Method A and it is a general conversion to the normal state. 7.12.4 is not necessary as the unit is specified as “mlN/m·h”	Delete 7.12.4	
US 01 002		01		ed	Item 1 in PP3 is covered per reference to ISO 19880-6, et al. The scope of the hose assembly and applicability to the standard should be explained.	*Delete item 1 in PP3.* *Replace the NOTE with the following PP:* Hose assemblies include the hose with connectors on each end. See Figure 1. Each connector has two basic functional elements that are addressed as described below: 1) Coupling to hose. This function is defined by requirements and verified (along with the hose itself) by performance-based tests in this document. 2) Fitting for transition and connection to the piping system or equipment. This function is addressed by reference to appropriate hydrogen equipment standards and piping codes. *Adjust the figure as follows:* There is a connector on each end of the hose. Show the mirror image in the figure.	

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					The figure should reinforce the definition of a hose assembly. Keep it simple: The connector has a coupling to connect the hose and a mechanical fitting.	Call out the coupling to the hose and the fitting at the end – but additional detail is not necessary!	
** 003		01	1	ed	The scope should clearly define the subject of the document. The expression “this document relates to …” is vague and not clear enough.	**ISO/IEC Directives, Part 2, 2016, 14.5** Forms of expression such as the following shall be used: “This document specifies the dimensions of …” “This document specifies a method of …” “This document specifies the characteristics of …” “This document establishes a system for …” “This document establishes general principles for …” “This document gives guidelines for …” “This document defines terms …”	
** 004		01	Figure 1	ed	• The phrase at the bottom of the figure “Typical structure of hose assembly” should be removed. If it is the title of the figure, please update the figure title underneath. • ISO 19880-6 is withdrawn. Please remove reference to the document in the figure. • “Section 4” should be “Clause 4”. • According to **ISO/IEC Directives, Part 2, 28.5.3,** figures shall be language neutral and shall use key references or figure footnotes instead of textual descriptions. Please consider moving all the descriptions into keys	Please update Figure 1 accordingly. Refer to **ISO/IEC Directives, Part 2, Figure 5** for an example.	

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					and footnotes and replace with key numbers in the figure.		
GB 005		01	Para 1	Ed	Service pressure or nominal working pressure? (Can this be standardised across TC 197 docs?)	Unless the meaning is different, change to nominal working pressure. Or maybe, as the document is talking about the dispenser, use the “hydrogen service level”?	
GB 006		02		Ed	Reference to ISO 19880-3 and -6, also other uses of “fueling” throughout the document	Correct to “fuelling”	
** 007		02		ed	ISO 19880-6 has been cancelled and should not be listed as a normative reference.	Removed ISO 19880-6 from Clause 2 in the DIS edit file.	
** 008		02		ed	ISO 8330 is normatively referenced in Clause 3 and should be included in Clause 2. ISO/TR 11340 is normatively referenced in 7.8.6 and should be included in Clause 2. ISO 20444 is normatively referenced in 7.16 and should be included in Clause 2. ISO 8331 is normatively referenced in 9.4 and should be included in Clause 2.	Added ISO 8330, ISO/TR 11340, ISO 20444 and ISO 8331 to Clause 2 in the DIS edit file.	
** 009		02		ed	IEC 60243-1 is normatively referenced in 7.18.2 and 7.18.3 and should be included in Clause 2.	Please add IEC 60243-1 with the title to Clause 2.	
** 010		03		ed	**ISO/IEC Directives, Part 2, 2016, 16.5.5** ‘The definition shall be written in such a form that it can replace the term in its context. It shall not start with an article (“the”, “a”) nor end with a full stop.’	Text updated according to ISO/IEC Directives, Part 2 in the DIS edit file.	
US 02 011		03.01		ed	The item being described is a “connection” – which is formed by 2 connectors (the nozzle and receptacle). The term “connector” or “connection” is very general – but the defined item is very specific. The connection between the nozzle and receptacle is beyond the scope of the dispenser hose	*Take the approach used in DIS 19880-1 for “connector” and “connection” using a general definition with specific examples that are relevant to this document.* 3.12 connector matching parts (such as male and female parts)	

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					assembly so why is this defined?	that can be put together to form a "connection" which permits the transfer of fluids, electric power, or control signals Note 1 to entry: Examples of connectors commonly used in hydrogen filling systems are as follows: a) The fueling nozzle “connector” mates with the receptacle “connector” on the vehicle to form the connection for transfer of compressed hydrogen between the dispenser and the vehicle; b) The hose assemblies have connectors on each end that allow coupling to the hoses and connection to the piping system (e.g. breakaway coupling or fueling nozzle); c) Control systems often use electrical connectors to allow rapid and secure assembly or replacement. Note 2 to entry: Fittings as defined in 3.19 are a type of connector used in piping systems	
GB 012		03.01		Ed / Ge	Is there a need for a different definition for connector / coupling from that of ISO 19880-1? ISO DIS 19880-5 definitions: **connector** joined assembly of nozzle and receptacle which permits the transfer of hydrogen as shown in Figure 2 **coupling** integrated structure of nipple and socket with end portion of a hose crimped together as shown in Figure 1 ISO 19880-1 currently has (following changes after the DIS ballot): **connector** matching parts (such as male and female	Align if possible between WG24 and WG22 In ISO 19880-1 the same item is a “connector”, in ISO 19880-5 this is a “coupling”	

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					parts) that can be put together to form a "connection" which permits the transfer of fluids, electric power, or control signals Note 1 to entry: Fittings as defined in 3.22 are a type of connector used in piping systems Note 2 to entry: Examples of connectors commonly used in hydrogen systems are as follows: a) The fuelling nozzle “connector” mates with the receptacle “connector” on the vehicle to form the connection for transfer of compressed hydrogen between the dispenser and the vehicle, as defined in ISO 17268 for this specific application; b) The hose assemblies have connectors on each end that allow coupling to the hoses and connection to the piping system (e.g. hose breakaway device or fuelling nozzle); c) Control systems often use electrical connectors to allow rapid and secure assembly or replacement.		
US 03 013		03.02		ge	A simpler definition may be more appropriate.	Coupling connector on the end of a hose for connection to the piping system or equipment via a fitting, if necessary.	
GB 014		03.02	Fig 2	Ed	For consistency with ISO 19880-3 (and now ISO 19880-1 following changes post DIS)	Change to “hose breakaway device” (Also consider if this Figure was supposed to be within 3.1, connector, rather than 3.2, coupling)	
US 04 015		03.02	Figure 2	ed	The figure illustrates far more than a “connector” so a more general title may be appropriate. It’s really an illustration of the hose assembly installed as part of the Dispenser Fueling Assembly connected to vehicle.	Change the title of Figure 2 to “Typical Installation of Hose Assembly”.	

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					The word “connector” above ISO 17268 is not correct and unnecessary. The Dispenser extends to the tip of the nozzle.	Delete the word “connector” above ISO 17268. Update Figure 2 shading (or omit) for dispenser, as this goes to end of nozzle – or, in the figure, change Breakaway device to include “connected to dispenser”.	
** 016		03.02	Figure 2	ed	• ISO 19880-2 and 19880-6 are withdrawn. Please remove reference to these documents in the figure. • “Section 4” should be “Clause 4”. • According to **ISO/IEC Directives, Part 2, 28.5.3,** figures shall be language neutral and shall use key references or figure footnotes instead of textual descriptions. Please consider moving all the descriptions into keys and footnotes. • According to **ISO/IEC Directives, Part 2, 28.5.3,** footnotes to figures shall be distinguished by superscript lower case letters, starting with “a”. Please replace * with [a].	Please update Figure 2 accordingly. Refer to **ISO/IEC Directives, Part 2, Figure 5** for an example.	
JPN 4 017		03.03		ed	Usage of singular and plural should be corrected. Dispenser “hoses” should be dispenser “hose” Hose assemblies should be hose assembly	Change “hoses” to “hose” “assemblies” to “assembly”	
JPN 5 018	1	03.03 dispenser hosees		ed	Typo “fuelling” should be “fueling”	Change to fueling	
JPN 6 019	1	03.03 dispenser hosees		ed	Expression of “fuelling nozzle” and “nozzle” are mixed	Replace “fueling nozzle” with “nozzle” The same applies hereafter	
US 05 020		03.04		ed	Fitting does not necessarily require connection to a hose.	*Adjust definition:* a device~~,~~ usually made of metal~~, attached to the end of a hose~~ to facilitate connection to equipment	

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						Change (replace) note: See Figure 1 for illustration of application to the hose assembly.	
GB 021		03.05		Ed	Is there a need for a different definition for hose assembly from that of ISO 19880-1? ISO DIS 19880-5 definition: **hose assembly** includes the hose, appropriate couplings and fittings, bend restrictors (if necessary), and appropriate markings ISO 19880-1 currently has (following changes after the DIS ballot): **hose assembly** assembly which includes the hose and end connections, including any necessary fittings, bend restrictors, and appropriate markings	Align if possible between WG24 and WG22	
JPN 7 022	2	03.08 minimum bend radius		ed	Table 4 should be Table 3	Change to Table 3 Also, move subclause 3.8 between subclause 3.5 and 3.6 (alphabetical order)	
US 06 023		03.09		ed	Definition could be approved as it is equivalent to “component pressure rating” in DIS 19880-1. An ISO definition should be a simple sentence.	*Change definition to the following:* maximum pressure at which it is permissible to operate a component as specified by the manufacturer at the maximum temperature expected during service Move further comments to NOTES.	
GB 024		03.09		Ge	Is there a need for a different definition for component pressure rating from that of ISO 19880-1? The component pressure rating is not a	Consider whether a separate definition from ISO 19880-1 is required, and remove the definition if not needed. (ISO 19880-1 definitions are already covered by the cross-reference)	

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					"base" pressure for which the hydrogen hose is used in the dispenser system – it is the maximum it should be rated to (The maximum that can be expected in normal operation is the MOP, i.e. 1,25 * NWP, and the maximum that could be experienced in reasonably foreseeable fault conditions is 1,5 * NWP) The current ISO 19880-1 definition is as follows: **component pressure rating** maximum pressure at which it is permissible to operate a component as specified by the manufacturer at the maximum temperature expected during service Note 1 to entry: 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 to entry: This is sometimes referred to as the maximum allowable working pressure for the component, for example for vessels, see 3.41. Note 3 to entry: In addition to the specification of the maximum temperature, the manufacturer may define an allowable minimum temperature or temperature range expected for service. Thermal conditions and risks potentially experienced during fires should be addressed according to 5.3.5.3. Note 4 to entry: Further guidance on dispenser pressure terminology is included as		

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					Annex E.		
JPN 8 025		03.09		ed	Unify “137.5%” to “1,375”	Change to “1,375”	
US 07 026		03.10		ge	Consistency with 19880-1	Replace with the latest definition in DIS 19880-1	
US 10 027		04		te	With respect to the reference to ISO 16964, there may be an issue to resolve because ISO 16964 rates hoses at only 1.25xNWP, whereas ISO 19880-5 rates to 1.375xNWP. Our working pressure and pressure swing are greater than assumed in this document. We need to adjust to “permitted pressure” which is the MAWP, not the NWP as assumed in ISO 16964.	Modify current language: Some newly manufactured hose and hose assemblies include vent lines required by some fueling nozzles. Nozzle vent hose assemblies shall meet the requirements of ISO 16964 or the requirements in this document and be appropriately rated for operation in the vent system that has been defined based on and the nozzle manufacturer instructions and the dispenser design. *Add Note 3:* When using ISO 16964, the hose rating is 125% of the Working Pressure (WP) which is 10% lower than the pressure ratings relative to NWP in Table 1.	
** 028		04	2	ed	ISO documents are voluntary and shall not include contractual, legal or statutory requirements. **ISO/IEC Directives, Part 1, 2017, SR.1** “The ISO Technical Management Board adopted the following ISO/TMB Resolution 8/2012 regarding statements intended to limit the purpose or use of deliverables: (…) Further agrees that statements relating to contractual obligations or government regulation are also not permitted. Requests that any such statements be removed during the development of a deliverable (i.e. before the close of the DIS) and that any such statements in existing deliverables be removed when the deliverable is revised, (…)”.	Removed “or the nationally recognized piping regulations” in the DIS edit file.	

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US 08 029		04	pp 2	ed	There may be a better way of stating the requirement that is technically equivalent to the intent of this paragraph.	*Modify as follows:* Hoses and couplings shall meet the requirements in this document with end fittings selected by manufacturer, customer, or testing agency as required to connect to the test equipment. Fittings shall **be consistent with** the requirements of ISO 19880-6, ISO 19880-3, ISO 17268, ISO 15649, or the nationally recognized piping regulations.	
US 09 030		04	Pp 6 and/or Table 1	te	The obvious requirement is not stated – the rated pressure needs to be equal to or above the dispenser MAWP.	*Add the following as the second sentence to pp6 and/or within Table 1:* The rated pressure of the hose assembly shall be equal to or above the dispenser MAWP. *Within the table, add in MAWP row the following:* Dispenser System MAWP Minimum hose assembly pressure rating *or add note indicating that the minimum hose assembly pressure rating shall be equal or greater than the MAWP.* To be consistent with 19880-1.	
GB 031		04	Table 1	Ed / Ge	MOP is not used within this document – to minimise confusion, consider removal	Remove row (unless it is useful to understand due to this pressure, 1,25 * HSL, being used for numerous tests)	
GB 032		04	Table 1	Ed / Ge	ISO 19880-1 uses MAWP for the pressure system rather than individual components – can this line be replaced by “component rated	Change “MAWP” to “component pressure rating”. Introduce language to say:	

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					pressure"? Note, this is a minimum pressure rating for what WG24 feel should be labelled as an HX hose… It is desirable that the rated pressure of fuelling hoses is at least 1,375 * NWP (or HSL), otherwise the dispenser they are used in cannot achieve the fuelling pressures (MOP) desired by vehicle manufacturers.	"This is a minimum component (or hose assembly) pressure rating for a fuelling hose assembly marked with an Hydrogen Service Level (for example, an H70 hose could be rated to more than 96,25 MPa)" Maybe something to add to note 2 (which appears to be better located after the paragraph which follows it, rather than before?)	
US 11 033		05.05.1		ed	Amend. Static charges can be generated	Static electricity can be generated on the external and ~~potentially~~ interior surface of a hose assembly.	
US 12 034		07.02.3		ge	Method B has same method as method A ISO 4080 Method 3 with a different acceptance require "no visible leakage" which in water is 10 to 20 ml/hr. Merge the two acceptance requirements in part A and consider a new method B .	When tested in accordance with ISO 4080:2009 Method 3, with the following conditions, the ~~hourly~~ leakage rate shall be less than 20 mlN/h (based on no visible leakage in this test) ~~or how no leakage or failure~~.	
JPN 11 035		07.02.3		ed	As Method B is applied for Routine test and "a length of any assembly" can be used, ISO 4080: 2009 Method 3 is not applicable to Method B (Routine test) Sample length for Method 3 is free length of 0.5 m	1. Delete the first two lines in subclause 7.2.3 (Method B can be tested without this sentence) 2. Add "in the air" at the end of fourth paragraph	
JPN 12 036		07.03.1		te	Unify the pressure for Proof pressure test in accordance with the definition of the rate of Pressure test which is 2,1 X HSL This test needs to be performed for Routine test (all assemblies)	Replace "2,75" with "2,1"	
** 037		07.03.2	NOTE	ed	ISO documents are voluntary and shall not include contractual, legal or statutory requirements. **ISO/IEC Directives, Part 1, 2017, SR.1** "The ISO Technical Management Board adopted the following ISO/TMB Resolution 8/2012 regarding statements intended to limit the purpose or use of deliverables: (…) Further agrees that	Removed "NOTE: Ultimate strength test can be performed according to the national requirement." in the DIS edit file.	

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					statements relating to contractual obligations or government regulation are also not permitted. Requests that any such statements be removed during the development of a deliverable (i.e. before the close of the DIS) and that any such statements in existing deliverables be removed when the deliverable is revised, (…)".		
US 13 038		07.04		te	API RP 2003 Section a.8.8 states "Note: As used here, grounding of personnel for electrostatic hazards does not mean a short circuit but a resistance on the order of 100 kilo-ohms from the body to ground.	*Modify as shown below:* When determined in accordance with clause 4.8 of ISO 8031:2009, electrical resistance between couplings at each end of a dispenser hose shall not be greater than 100kΩ, in order to dissipate static electricity from the nozzle and vehicle during fueling. *Add two notes after pp1:* NOTE: 1) The 100kΩ resistance for the hose assembly is consistent in meeting the requirement for the system as described in ISO 19880-1. *2) Move the note that is misplaced in 7.18 here.* *Add new requirement or alternatively add to 7.18:* The electrical resistance from any point on the outer surface of the hose to one of two couplings shall not be greater than 100kΩ,	

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US 14 039		07.05		ge	Adding a figure showing the four (4) loads would be helpful to understand the test method.	Consider adding a figure to each section showing the four (4) loads.	
JPN 13 040		07.05 Tensile test of hose assembly		te	Necessary to specify the hose length for this test. 100 mm or longer is applicable	"A hose assembly" replaced with "A hose assembly having free length of 100 mm or longer"	
JPN 18 041	2	07.05.2 Method of Test		ed	20 ± 10 °C	20°C ± 10 °C（ISO rule）。 The same rule applies to subclause 7.6.1、7.8.4、7.11、7.12.2、7.13	
** 042		07.08.5	Figure 3	ed	"r" and "d" need to be explained. Please add key references.	Please add key references for "r" and "d". Refer to Figure C.1 for an example.	
** 043		07.08.6	Figure 4	ed	The figure contains a capital *P* which is not explained in the key references.	Please review and confirm if the lower-case *p* in the key references should be capitalized.	
JPN 14 044		07.10.02 Test condition	test method	te	Need to add NSS (Neutral Salt Spray) ISO 9227 is listed as normative references. NSS is existed in ISO 9227	Add NSS (Neutral Salt Spray)	
JPN 15 045	1	07.12 Hose Permeation		ed	500mlN/m should be 500 mlN/[m･h] to avoid misunderstanding	Change to 500mlN/[m・h]	
JPN 16 046		07.12 Hose Permeation		ge	Length of hose is different from Method A and Method B. As for Method B, change to suitable length	Replace "minimum hose free length of 0,6 m excluding" with "suitable hose free length excluding"	
US 15		07.18		ed	Title of subclause is misleading and unclear	*Change title to:*	

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047						Electrical properties of liners *Also change "electric properties" to "electrical properties in first paragraph of 7.18.1.*	
US 16 048		07.18.01	Note	ed	Delete - the comment is misplaced	*Delete and move the comment to 7.4:*	
US 17 049		07.18.02		ge	The wording is not clear. Also, please verify that IEC 60243-1 Ed. 2.0 Electrical strength of insulating materials - Test methods Part 1 is correct and that JIS K6249 and ASTM D149 are equivalent. *Given the proposed change below to insert the figure of required dielectric breakdown voltage versus volume resistivity, a separate criterion may not be necessary.*	*Convert the first phrase to a sentence:* ~~When determined~~ The dielectric breakdown voltage of liner material shall be determined in accordance with IEC 60243-1~~,~~ *Delete the separate criterion from this section unless there a specific reason for retaining it. If retained, do so in a separate sentence:* The ~~the product of~~ dielectric breakdown voltage of liner material and liner thickness shall exceed 10kV~~, in order to be proof against the potential arose by static electricity~~.	
US 19 050		07.18.02 and 7.18.3		te	There is a relationship between the allowable dielectric breakdown voltage and volume resistivity of liner material that is not captured in the current requirements.	*Add a new section with new criterion:*	

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						The acceptability of the allowable dielectric breakdown voltage and volume resistivity of liner material shall be determined based on Figure xxx. Results to the left and above the dotted line shall be deemed acceptable. Results to the right or below the dotted line are not acceptable. NOTE If the material is found to not be acceptable, either the conductivity needs to be enhanced by adjustment to the formulation or a different material needs to be selected. *See embedded file for figure.* DIS_19880-5 new graphic.jpg	
US 18 051		07.18.03		ge	The wording is not clear. Also, please verify IEC 60093 (1993-12) Methods Of Test For Insulating Materials For Electrical Purposes; Volume Resistivity And Surface Resistivity Of Solid Electrical Insulating Materials and not IEC 60243 is the correct reference and that JIS K6911 and ASTM D257 are equivalent. *Given the proposed change below to insert the figure of required dielectric breakdown voltage versus volume resistivity, a separate criterion may not be necessary.*	*Convert the first phrase to a sentence:* ~~When determined,~~ The volume resistivity of liner material shall in determined in accordance with IEC 60243-1. *Delete the separate criterion from this section unless there a specific reason for retaining it. If retained, do so in a separate*	

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						sentence: The volume resistivity shall not exceed 10^{15} Ω•cm.	
GB 052		08.01			Tidy up language used. Also, this is pretty complicated! Is it absolutely necessary to have an exclusion for marking of the coupling components where the hose assembly is manufactured by the hose manufacturer? (The hose marking requirements appear to apply irrespective of who manufacturers the hose assembly?) If not, just make it an overall requirement to meet 8.2-8.4….	Marking of ~~hoses~~ hose assemblies is a function of the hose and end fitting design and the hose assembly fabrication and testing. ~~In some cases, the hose manufacturer is the hose assembly manufacturer (makes the hose, the hose fitting, assemblies and tests the assembly). However, often times the hose, end fitting and the assembling is done by different entities. In this case; the hose, the end fitting and the assembly each have special marking requirements.~~ In some cases, the hose assembly, including all components within the assembly, may be manufactured by one manufacturer. In other cases, the hose assembly may be manufactured by a different entity to the manufacturer of the individual components. Where the hose assembly manufacturer is also the manufacturer of each component in the hose assembly, the marking of the components within the hose assembly shall meet the requirements of 8.2-8.3. The marking of the hose assembly shall meet the requirements of 8.4, clearly indicating the limits of the hose assembly where these differ from the individual components	
US 20 053		08.02		ge	Amend as indicated	a) ~~classification~~ Pressure Class; (e.g. H70); or Component Pressure Rating	

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US 21 054		08.03		ge	Amend as indicated	a) the Pressure Class~~es~~, e.g. H70; or Component Pressure Rating	
JPN 19 055		08.03		ge	If the hose manufacturer is also the fitting and assembly fabricator, c) the number of ISO is not necessary. Only e) assembly date is sufficient.	Change NOTE as “The hose manufacturer is also fitting and assembly fabricator, only e) is necessary.	
GB 056		08.04			Suggest inclusion of the temperature ratings (high and low) in the markings of the hose assembly	Mark with the rated temperature of the hose assembly	
** 057		08.04		ed	The list after the EXAMPLE needs an introductory paragraph.	Please add an introductory paragraph before the list.	
GB 058		08.04	All	Ge	Overall, the marking requirements of a hose assembly are not clear.		
GB 059		08.04	Para 2		If the components have different ratings, and the assembly is not clearly marked, this could lead to confusion as to the rating of the overall assembly	Reconsider this statement.	
GB 060		08.04.1			Assuming this is saying that there is a requirement to include pressure information in the marking, marking the maximum working pressure, not the rated pressure, will cause confusion.	Mark with the rated pressure of the hose assembly	
US 23 061		09.04	b.2	ge	Amend	2) Soft spots, bulges, blisters, kinks, ~~or~~ stretching, or discoloration in the hose.	

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US 22 062		09.04	Caution	ge	Amend	CAUTION — ~~Matches, candles, open flame or other sources of ignition shall not be used for this purpose. Leak test solutions may cause corrosion — water rinse after test.~~ • Open flame testing is prohibited. Leak test solutions may contain halides and will require a potable water rinse after testing.	
JPN 1 063	1	1 Scope		ed	relates	Change to “applies”	
JPN 2 064	2	1 Scope		ge	Expression of “with precooling” is not appropriate as pressure class up to H35 does not necessary to be “precooled”.	Replace “precooling” with “with or without precooling “	
JPN 3 065	5	1 Scope		ed	It is not consistent the usage of “hose” or “hoses”: “hose and hose assemblies” should be “hoses and hose assemblies”	Replace “hose” with “hoses” The same applies hereafter	
** 066		10		ed	This clause should specify which information is to be included in the test report.	Please add more information in this clause according to **ISO/IEC Directives, Part 2, 18.5.8.**	
JPN 9 067	1	4 Classification		ge	“This document applies” should be “This clause applies”	Replace “document” with “clause”	
JPN 10 068	16	4 Classification		ed	Redundant description. “Definitions as shown in Table 1” is not necessary as “defined in Table 1” stated in proceeding sentence	Delete “Definition as shown in Table 1”	
** 069		A	1	te	“Table A.1 gives the tests to be carried out for type testing and routine testing as defined in Clause 10.” Clause 10 does not contain any information about type testing and routine testing. The definitions for	Please review and confirm. Suggest changing the sentence to the following: “Table A.1 gives the tests to be carried out for type testing and routine testing as defined in 7.1.”	

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					type test and routing test can be found in 7.1.		
JPN 20 070		Annex A		ge	<Type test> Impossible to check inside the hose unless hose is cut in half. Especially it is not practical to do for every hose assembly during routine test.	Separate Visual examination into Inside and Outside in Table A.1. The same as Table B.1 Inside Hose Hose assembly Type test --- --- Routine test --- --- Production test ---- --- Outside Type test X X Routine test X X Production test X X	
JPN 21 071	1	Annex A		ed	Clause 10	Clause 7	
JPN 23 072		Annex A	A.1	ed	Typo --X-	Replace "—X-" with "X"	
JPN 22 073		Annex C	C.2 Apparatus Key a	ed	7±15% MPa/s.	7%±15% MPa/s. (ISO rule)	
JPN 24 074		Annex C	C.3 Procedure of test	ed	(−40 ± 7, 0) is wrong. The meaning is -33 ~ -40 + 7,0 -40 0	+ 7,0 -40 0	
US 24 075		Annex C	C.3, 1st paragraph	ge	+/- 7 C (~ 13 F) is excessive for an ambient being held at +/- 3 (~5F)	Test gas temperature shall be (-40 ± ~~7, 0~~ 3) °C. Ambient temperature shall be controlled to the same temperature as that of gas with a tolerance of ±3 °C.	
** 076		Bibliography		ed	References that are not cited in the document should not appear in the Bibliography.	Removed documents that are not cited from the Bibliography in the DIS edit file.	

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** 077		Bibliography		ed	ISO 19880-1 and ISO 19880-3 are listed as normative references in Clause 2 and should be removed from the Bibliography.	Removed ISO 19880-1 and ISO 19880-3 from the Bibliography in the DIS edit file.	
** 078		Bibliography		ed	ISO 19880-2, ISO 19880-4 and ISO 19880-6 should be removed from the Bibliography because these documents have been withdrawn.	Removed ISO 19880-2, ISO 19880-4 and ISO 19880-6 from the Bibliography in the DIS edit file.	
** 079		C.2		ed	The content of an apparatus clause will usually comprise an optional introductory text together with a list detailing one or more pieces of apparatus.	Please reorganize the content in this clause into a list. Refer to **ISO/IEC Directives, Part 2, 2016, 18.5.4** or an example**.**	
FR 3 080		Scope		ge	Change to the scope	A sentence such as "Hoses used to transfill hydrogen from a transportable vessel (e.g. trailer) into a buffer of a station are excluded from the scope of this document" shall clearly be written and a sentence saying that such requirements are given in ISO 16964 shall be added.	
FR 1 081		Title		ge	English title is "Gaseous hydrogen -- Fuelling stations -- Part 5: Hoses and hose assemblies"	Proposed title : "Gaseous hydrogen -- Fuelling stations -- Part 5: **Flexible hoses assemblies"**	
FR 2 082		Title		ge	French title " Carburant d'hydrogène gazeux -- Stations-service -- Partie 5: Titre manque " is not good	French title should be : **Carburant d'hydrogène gazeux – Stations de recharge -- Partie 5: Tuyaux Flexibles**	

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Template for comments and secretariat observations

Date:2018-07-25	Document:	Project:

MB/ NC[1]	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment[2]	Comments	Proposed change	Observations of the secretariat

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