ISO/TC 197
Hydrogen technologies

Email of secretary: jonathan.lafontaine@bnq.qc.ca
Secretariat: SCC (Canada)

ISO FDIS 19881 Collated Comments

Document type:	Other committee document
Date of document:	2018-12-06
Expected action:	INFO
Background:	Here are the collated comments collected from the FDIS Ballot closed earlier in the fall 2018. Apologies from the ISO/TC 197 Secretary. Please find the FDIS 19881 Ballot results in N 1040.
Committee URL:	https://isotc.iso.org/livelink/livelink/open/tc197

Template for comments and secretariat observations

Date:2018-09-23	Document:	Project:

MB/ NC[1]	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment[2]	Comments	Proposed change	Observations of the secretariat
CN 001				GE	UN GTR13 applies to all hydrogen fuelled vehicles with a gross vehicle mass (GVM) of 4,536 kilograms or less, and all contracting countries should transfer UN GTR 13 into its national code and standard. It means that both type 3 container and type 4 container used for such vehicle should meet the requirements of UN GTR 13. However, only type 4 container can and should meet the requirements in UN GTR 13 according to ISO/FDIS 19881. There is big difference between UN GTR 13 and ISO/DIS 19881. Type III containers are widely manufactured and used in China. We developed our national standard for gaseous hydrogen-land vehicle fuel type 3 container（GB/T35544）, which meets the requirements in UN GTR 13. China has been trying to solve this problem by sending emails and proposal to ISO/TC197 and UN GTR since Nov.11,2017. Chairman Nguyen Nha said in his email to Prof. Jinyang Zheng on 2017-11-13 that “You’re correctly interpreted GTR No. 13. Both type 3 and type 4 for light duty vehicles (under 4,536 Kg) are subjected to the same set of requirements including cycling and fire exposure tests”. Unfortunately, ISO/FDIS does not accept our proposal.		
GB 016			Table 2	te	Clarification	Change heading of first column to “Production	

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002						inspection requirements”	
JP 003 002		03.17		ed	There is a superfluous round bracket after “Ncc”	Delete “()” OR “Ncc(normal cubic centimeter)”	
GB 001 004		03.23		te	ISO 19078 applies to CNG cylinders, the pressures and stresses in these containers will be significantly different to those in the containers described here. Furthermore, manufacturers recommendations could vary significantly	Definition to be modified accordingly.	
GB 002 005		04.01.2		ed	Categories are already defined in 3.4 , not necessary to repeat.	Remove 4.1.2	
NZ 006	Last line	04.02.2.(b)		ed	Please give more guidance as to what is meant by “infrequently”.		
GB 003 007		04.03	b)	te	What is the rationale for the three values for b)? What determines which is to be used?	Define the three different cycle lives as B1, B2 and B3 and give improved definitions of the difference between them.	

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GB 004 008		04.04.1		te	A written, there is no requirement so the clause serves no purpose.	Remove clause.	
GB 005 009		04.04.3		te	The clause as written is non-specific.	Change to “Transient gas temperatures (temperatures that would be insufficient to change the bulk temperature of the liner material) during filling and discharge may vary between -40°C and 85°C. Containers shall be able to operate within this range. Note Containers qualified to meet this International Standard can be considered capable of being filled safely utilizing fuelling protocols that meet the process limits of ISO 19880-1”	
GB 006 010		06.02		te	This is a performance based standard, therefore appropriate criteria and test methods need to be specified. A note is not acceptable as this is not mandatory.	Add a mandated requirement to test for material compatibility according to ISO 11114 parts 1, 2 and 4 as appropriate.	
GB 007 011	3	06.03.1	3rd para.	te	Improve description of impurities and the restricted alloys. Material specification is critically important for aluminium alloys as incorrect specification can lead to cracking problems in service.	Change to “Aluminium alloys shall be quoted in line with the Aluminium Association practice for a given alloy system. The impurity limit for lead and bismuth in any aluminium alloy shall not exceed 0.003%. Aluminium alloys AA6351 and AA6082 shall not be used.”	
JP 012		06.03.2	1st para	ed	Tolerance required for temperature “-40°C”.	“-40°C **or lower**”	

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003							
JP 013 004		06.03.2	Table	ed	Unclear which impact strength is applied when the width is exactly 7.5mm.	"5.0 <= (notation of Width) < 7.5" and "7.5 <= (notation of Width) < 10.0."	
JP 014 005		06.06	NOTE	ed	"Tg" is not defined.	Insert "(Tg)" in the 2nd paragraph: "Resin system materials shall have a glass transition temperature (Tg) of at least 20 °C above…"	
JP 015 006		06.07	3rd para	te	Even though the cold temperature of tensile testing of liner weld specimens in Clause 9.3 was changed from -50°C (DIS) to -40°C (FDIS), the cold temperature of tensile or impact testing of non-metallic liner material in Clause 6.7 is "at temperatures down to **-50°C**." And also container temperatures are restricted from -40°C up to +85°C in Clause 4.	"Tensile or impact testing shall be conducted … at temperatures ~~down to~~ **-40°C or lower**" in line with Clause 9.3 and Clause 4.	
GB 008 016		07.03.1	1st para.	te	Why is B not included? Stress analysis MUST be included for all categories of cylinders	Change to "The stress analysis is applicable to all categories."	
JP 017 007		07.03.1	NOTE	ed	The terms "nominal **container** working pressure" are used(two places).	Amend to read "nominal working pressure."	

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GB 009 018		07.03.3		te	Further explanation is required.	Add further details on when this can be allowed and what the consequences are when this route is followed. Extra conditions on the use of the cylinder must be required if the ratios are modified and a full rationale given.	
GB 010 019	3	09.01		te	The un-acceptable defects need to be specified. As written, a subjective opinion on what is acceptable is required, this is not acceptable in a standard.	Add specific requirements.	
JP 020 008		09.03	3rd para	te	Tolerances required for temperatures -40°C and 85°C. Though general temperature tolerances are defined in Clause 17.2, these are not effective in previous clauses.	"… at -40°C **or lower**, at an ambient temperature and at 85°C **or higher**"	
GB 011 021		09.10		te	A maximum batch size shall be specified and a definition given.	Amend clause and add definition.	
JP 022 001		1 Scope and D.1.10		ed	Three "tank(s)" are used (two in "1. Scope" and one in "D.1.10 in Annex D"). The same terminology should be used throughout the document.	Recommend to replace three "tank(s)" with "container(s)".	
GB 012 023		10.01	a)	te	There is no specific requirement within the standard for the manufacturer to specify limits.	Minimum requirements to be specified	

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GB 013 024		10.01	a)	te	Clarification.	Remove word “verification”.	
GB 014 025		10.01	b)	te	Clarification.	Remove word “verification”.	
GB 015 026		10.01	g)	te	Type 3 liners shall also be included.	Change to “For Type 1 containers and Type 2 and Type 3 liners, a hardness test or equivalent shall be required.”	
GB 017 027		10.02		te	As written, this test appears to assume that all containers will be subjected to a volumetric expansion test. This may not always be the case.	Revise text accordingly.	
GB 018 028	3	10.02		te	Delete reference to CGA publication as there is an ISO document that can be referenced.	Delete reference to CGA publication.	

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GB 019 029	3	10.02		te	30s is considered to be insufficient time to properly evaluate, particularly for large containers.	Give consideration to a longer period, e.g. 1minute for “portable” containers and 2 minutes for larger containers.	
GB 020 030		10.03		te	The hazards associated with the release of gas must also be highlighted.	Add suitable **“WARNING NOTICE”**	
GB 021 031	3	11.05.2.1	b)	te	See GB comment 003 regarding Cat B parts.	Change references to B1, B2, B3.	
JP 032 009		11.05.2.1 b)		te	Pressure tolerance is required in “Cycle the pressure in the container between 2 MPa +/- 1 MPa and **125 %** of the nominal working pressure…” Though general pressure tolerance is defined in Clause 17.2 as “Pmax +2.0 MPa”, this is not effective in previous clauses.	“… **at least** 125 % of the nominal working pressure …”	
GB 022 033	3	17.01		te	It is not appropriate to specify who conducts or witnesses the testing. Reference to ISO Directives.	Remove last sentence.	

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GB 022 034		17.02	Tables 3 and 4	te	There is no justification for having reduced testing for category B containers.	Remove table 4, rename table 3 “Test requirements for containers”	
JP 035 010		17.02 b)		ed	Temperature tolerance seems to be wrong. “b) +85°C (0, -5) °C.”	“b) 85°C (5, 0) °C.”	
JP 036 011		17.03.3.2.2	1st para	ed	The unit of impact energy “30 Nm” is not appropriate(“Nm” is used for torque or moment).	“30 J”	
GB 023 037	3	17.03.6	2nd para.	te	To clarify what is required, a diagram should be added.	Add diagram of test arrangement.	
GB 024 038	1	17.03.6.2	a)	te	The geometry of the flaws need to be defined more precisely. Comment previously accepted but change not implemented	Define the flaws more specifically. See ISO7866 Annex E as an example.	

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GB 025 039		17.03.8.2.1	2nd para.	te	The dangers associated with using hydrogen in the fire test need to be emphasised and highlighted.	Add further **WARNING**, bold text etc.	
GB 026 040		17.04	2nd para.	te	It is not the duty of the inspector to define test requirements, these should be included in the standard.	Add specific requirements.	
JP 041 012		17.05.4.7	2nd para	te	Tolerance is required for "at 95 % relative humidity." It is impossible to keep ">95 % relative humidity" due to condensation on the piping at lower temperature of fluid at the start of the testing. Actual measurement value was 89%RH to 98%RH humidity setting of constant temperature chamber from the results of JARI's testing.	">=80 % relative humidity" as discussed in the Taskforce#3-UN GTR Test Procedures meeting this June in Korea.	
GB 027 042		Annex A		te	It is not ideal for an ISO standard to quote CGA publications, replace with ISO standards where possible to do so. CGA publications are designed for the North American market and may not be appropriate to use in an international standard.	Option to Remove Annex A and update 5.1.4 and 10.4	
GB 028		Annex A and B		te	It is not acceptable to write Annexes using mandatory language and then to add a simple	Re-draft Annexes A and B accordingly.	

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043					note. This will be confusing to users.		

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