



<b>PRELIMINARY REPORT OF VOTING ON ISO/DIS 17268.2</b> <i>Gaseous hydrogen land vehicle refuelling connection devices</i>	
Closing date of voting <b>2011-10-06</b>	<b>ISO/TC 197 N 525</b>
Secretariat SCC/BNQ	

A report shall be returned to ISO/CS no later than 3 months after the closing date of voting on the DIS, whether or not comments have been reviewed and/or a new text has been prepared.

- Preliminary report**  
*(submitted in those cases where comments are still to be considered and/or a decision has not yet been taken, or where it is decided that the nature of comments indicates a need for further consultation and/or reversion to a previous project development stage). To be followed by a 'Final report'. Any preliminary report is for ISO/CS for information, and is not circulated to member bodies)*
- Final report**  
*(submitted either immediately, when all comments have been reviewed and a decision can be taken, or following a 'Preliminary report'. The final report is circulated by ISO/CS to member bodies, and is distributed with any associated DIS or FDIS text)*



<p><b>1 Result of the voting</b></p> <p>The above-mentioned document was circulated to member bodies with a request that the ISO Central Secretariat be informed whether or not member bodies were in favour of registration of the DIS as a Final Draft International Standard or for publication in the case of unanimous approval.</p> <p>The vote closed on the date indicated above. The replies listed in annex A have been received.</p> <p><b>2 Comments received</b></p> <p><b>3 Observations of the secretariat</b> See annex B</p> <p><b>4 Decision of the Chairman</b></p> <p><b>Preliminary report</b> (no annexes required)</p> <ul style="list-style-type: none"><li><input type="checkbox"/> The comments are under review and/or a decision on further procedure has not yet been taken</li><li><input type="checkbox"/> The project is to revert to the Preparatory Stage (a new working draft will be developed)</li><li><input type="checkbox"/> The project is to revert to the Committee Stage (a new committee draft will be developed)</li></ul> <p><b>Final report</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Having received 100% approval from the member bodies voting, the DIS is approved for direct publication without change other than editorial (no FDIS vote) <i>(Option not applicable to projects progressing under the Vienna Agreement)</i></li><li><input type="checkbox"/> A revised text is to be submitted to ISO/CS for the approval procedure (FDIS vote)</li><li><input type="checkbox"/> A revised text is to be submitted to ISO/CS for a further enquiry (DIS) vote</li></ul>
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**Remarks** (e.g. observations on how comments were reviewed, date by which a decision is to be taken, date when a text is expected)

We are pleased to inform you that the ISO/DIS 17268 has been approved with tremendous support. You will find attached in Annexes 1 & 2 the results of voting and comments received. Please note that even though the document could proceed directly to publication, the Chair has made the decision to return the comments received to ISO/TC 197 WG 5 for consideration in preparation for the FDIS text.

**Enclosures**

- Annex 1 - Voting results on DIS**
- Annex 2 - Compilation of comments**

Signature of the Secretary  Date 2011-10-12	Signature of the Chairman  Date 2011-10-12
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## Voting results on ISO/DIS 17268.2 Gaseous hydrogen land vehicle refuelling connection devices

Result of voting
<p><b>P-Members voting: 14 in favour out of 14 = 100 % (requirement <math>\geq</math> 66.66%)</b>  <i>(P-Members having abstained are not counted in this vote.)</i></p> <p><b>Member bodies voting: 0 negative votes out of 15 = 0 % (requirement <math>\leq</math> 25%)</b></p> <p style="text-align: center;"><b><i>Approved</i></b></p>

Votes by members					
Country	Member	Status	Approval	Disapproval	Abstention
Argentina	IRAM	P-Member	X		
Austria	ASI	O-Member			X
Brazil	ABNT	P-Member			X
Canada	SCC	Secretariat	X *		
China	SAC	P-Member	X		
Denmark	DS	P-Member			X
Egypt	EOS	P-Member			
France	AFNOR	P-Member	X *		
Germany	DIN	P-Member	X		
India	BIS	P-Member	X		
Italy	UNI	P-Member			X *
Japan	JISC	P-Member	X *		
Korea, Republic of	KATS	P-Member	X		
Netherlands	NEN	P-Member	X		
Norway	SN	P-Member	X		
Russian Federation	GOST R	P-Member	X		
Spain	AENOR	P-Member			X
Sweden	SIS	P-Member	X *		
Switzerland	SNV	P-Member	X		
Turkey	TSE	O-Member	X		
United Kingdom	BSI	P-Member			X
USA	ANSI	P-Member	X		
<b>P-Member TOTALS</b>			14	0	5
Total of P-Members voting: 14					
<b>TOTALS</b>			15	0	6
(*) A comment file was submitted with this vote					

<b>Compilation of comments received on ISO/DIS 17268.2 Gaseous hydrogen land vehicle refuelling connection devices</b>	Date:2011-10-12	Document: ISO/DIS 17268.2
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MB <sup>1</sup>	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph Figure/ Table/ Note	Type of comment <sup>2</sup>	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
SC25			Ge	SC25 approves the technical content of the draft		
IT				Abstention due to lack of national interest		
FR			te	We recommend that as soon as this standard is approved, work begins on improving the current 70 MPa sealing interface in order to enhance its robustness, as the current sliding seal configuration may be prone to potential wear/damage of the o-ring that would be difficult to detect before a leak occurs.		
SIS, SW	-	-	Te	The location of the o-ring, i.e. on the receptacle or nozzle, should be clearly stated or shown for the different connector pressure ratings to avoid confusion.	Add new clarifying text to §5: "5.x The main O-ring seal for all pressure ratings less than 70 MPa is situated at the leading edge of the receptacle. For the 70 MPa receptacle, the O-ring is situated in the bore of the receptacle." or to the notes on Figures B1 to B5.	
SIS, SW	1	-	Ge	In order to avoid potential confusion over the scope, hydrogen blends should be specifically excluded.	Add new sentence: "Refuelling by stations dispensing with blends of hydrogen with natural gas are not covered by this standard."	
**	Scope		ed	To avoid CASCO issues and the implication that certification is mandated by this International Standard, which is not permitted, the final sentence of the Scope should be redrafted as a note.	Redraft the final sentence of the Scope as follows:  NOTE This International Standard can be used for certification purposes.	
JP1	4.5		ed	Typo	Change 7,7 to 6,9. -- "Nozzles and receptacles shall be manufactured of materials suitable and compatible for use with compressed hydrogen at the pressure and the temperature ranges to which they will be subjected as specified in 5.8 and <del>7.7</del> 6.9."	

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JP2	4.8		te	It is difficult to avoid foreign matter completely using a cap. Description in the previous DIS is appropriate.	Change the sentence as previous DIS. -- "Protective caps <del>shall</del> <b>are intend to</b> protect the receptacle from foreign debris and shall not hold pressure. Resistance shall be appropriate to prevent inadvertent dislodging. All protective caps shall have a retainer to attach them to the receptacle or vehicle."	
JP3	7.6	Figure 1	ed	Typo	Change Coupling to Nozzle.	
CA	7.12.3		TE	240 hours of flow that cause chatter is excessive. SAE J2600 requires 24 hours.	Following 15 000 cycles of operation, the receptacle check valve shall then be subjected to <b>240 24</b> hours of flow at the inlet/outlet flow conditions that cause the most severe chatter.	
JP4	7.12.3	P6	ed	Typo	Change "10.8" to "7.11". -- "Following the test, the receptacle check valve shall comply with the leakage tests specified in 7.7 <del>and 10.8</del> <b>7.11</b> and the electrical resistance test as specified in 7.15."	
JP5	7.12.4		te	Modify the test procedure to replicate actual fuelling properly.	Change test procedure as described below: -- a) Properly connecting the receptacle to the nozzle. b) Pressurizing the connector to maximum working pressure using leak test gas. c) Holding maximum working pressure for 30 seconds, minimum. d) Depressurizing the connector ( <b>nozzle</b> ). e) Disconnecting the nozzle. <b>f) Depressurizing the receptacle</b>	
JP6	7.12.4	P7	ed	Typo	Change "10.8" to "7.1". -- "Following the tests, the receptacle shall then comply with the leakage tests specified in 7.7 <del>and 10.8</del> <b>7.11</b> and the electrical resistance test specified in 7.15."	

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JP7	7.12.5	P3	te	This requirement confirms the reliability of the parts in the connected nozzle and receptacle after the maximum gas flow by leak test. The leak test under room temperature is sufficient to confirm the test result.	Delete "7.11". -- "Following the tests, the connected nozzle and receptacle shall then comply with the leakage tests specified in 7.7 <del>and 7.14.</del> "	
JP8	7.21	P2	te	When single receptacle exposed to pre-cooled hydrogen in several times water dewed in the previous pre-cooling would cause sticking problem more easily than actual service. In the actual continuous fueling, multiple vehicles (=receptacles) are fuelled in series. It is appropriate to use dry receptacle for every exposure test.	Add "another dry" before receptacle. -- "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 minutes. The nozzle shall be depressurized, then disconnected within 10 seconds and re-connected to the <b>another dry</b> receptacle after a two minute hold period. This test shall be repeated 10 times."	
SIS, SW	7.21	.	Te	Is this test necessary for pressure ratings other than H70?	Limit application if appropriate.	
JP9	7.23.1	P2	te	This requirement confirms the down forward compatibility between nozzle and receptacle. Once a nozzle can be connected, leak check at ambient temperature is enough for performance test. Therefore no need low and high temperatures described in 7.11.	Delete "7.11". "The connector shall comply with the leakage tests specified in 7.7 <del>and 7.14.</del> "	

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JP10			te	It is necessary to add washout test for a 70MPa seal to be connected to 35MPa nozzle.	Washout test shall be described as a requirement.  <Referred from SAE J2600> Using hydrogen as a test gas at a flow rate of 65 g/s (+ 2 g/s), the connected nozzle and receptacle shall first be conditioned by subjecting it to an inlet pressure of 35 MPa *1.25 = 43 (+10%) MPa, and an outlet such that there is a critical pressure drop in the coupling for a total of 10 bursts of a minimum of 10 seconds with a delay of at least 5 seconds between bursts. The test shall be conducted at temperatures of - 40°C (+ 5°C) and + 85°C (+ 5°C) with the unpressurized coupling preconditioned for 30 minutes at the test temperature. There shall be no displacement of seal(s) after test. The receptacle shall then comply with the leakage test	
JP11	Annex B	Figure B.1 Note L1	te	The material should not be limited to only 316L. Right now some manufacturers are providing receptacles made by other material than stainless steel 316L without any problems. Section 4.5 in this standard sufficiently describes the requirement for materials compatibility for hydrogen.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP12	Annex B	Figure B.2 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP13	Annex B	Figure B.3 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	

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JP14	Annex B	Figure B.4 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel show hydrogen compatibility as described in sec. 4.5 and</del> with a minimum hardness of 80 Rockwell B (HRB)."	
JP15	Annex B	Figure B.4	ed	Typo	Change H35F to H35HF.  Figure B.4 — H35HF Hydrogen Receptacle (high flow for commercial vehicle applications)	
JP16	Annex B Figure B.5	1-Para	te	Manufacturer should choose appropriate material. Current requirement on material for receptacle describes too detail as follows: --- Material shall be 316L Stainless steel with the following mechanical properties: material hardness: 80 - 100 Rockwell B (HRB) 0,2% yield strength: 290Mpa - 440MPa tensile strength: 500MPa - 700MPa --- Above requirements allows only harden 316L stainless steel. The rationale to limit the material to be harden 316L is unclear.	Delete the definition of material.	
JP17	Annex B	Figure B.5 Note L1	te	The material should not be limited to only 316L. See JP11.  Also current note describes range of hardness, range of yield strength and range of tensile strength. To ensure the strength of receptacle we need minimum value for yield strength and tensile strength however maximum values are not necessary.	Change the sentence as described below: -- Material shall <del>be 316 L Stainless steel show hydrogen compatibility as described in sec. 4.5 and</del> with the following mechanical properties: <del>minimum</del> material hardness: 80—100 Rockwell B (HRB); 0,2% yield strength: 290MPa - 440MPa; tensile strength: 500MPa—700MPa Unless otherwise specified, surface finish shall be 0,4 µm to 3,2 µm.	
JP18	Annex B	Figure B.5	ed	There is no drawing and dimensions of seal part of nozzle side.	Add detail drawing and dimensions of seal part of nozzle side.	

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JP19	Annex C	Figure C.1 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP20	Annex C	Figure C.1 Detail Y	ed	Typo	Change $\phi 9,4\ 0/-0,02$ to $\phi 19,4\ 0/-0,02$ .	
JP21	Annex C	Figure C.2 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP22	Annex C	Figure C.3 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP23	Annex C	Figure C.4 Note L1	te		Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP24	Annex C	Figure C.4 Detail Y	ed	No dimensions in detail Y.	Add $9,2\ 0/-0,02$ .	
JP25	Annex C	Figure C.5 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	



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JP26	Annex C	Figure C.5 Note L1	te	There is no definition on lower limit of yield strength and tensile strength.	Add lower limit values. Change "shall" to "should". -- Material <b>should</b> be 316 L Stainless steel with the following mechanical properties: minimum material hardness of 80 Rockwell B (HRB), <b>minimum 0,2 % yield strength of 290 MPa, minimum Tensile strength of 500 MPa.</b>	
JP27	Annex D	Figure D.1 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP28	Annex D	Figure D.2 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP29	Annex D	Figure D.3 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP30	Annex D	Figure D.4 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP31	Annex D	Figure D.5 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	

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JP32	Annex D	Figure D.5 Note L1	te	There is no definition on lower limit of yield strength and tensile strength.	Add lower limit values. Change "shall" to "should". -- Material <b>should</b> be 316 L Stainless steel with the following mechanical properties: minimum material hardness of 80 Rockwell B (HRB), <b>minimum 0,2 % yield strength of 290 MPa, minimum Tensile strength of 500 MPa.</b>	
JP33	Annex D	Figure D.5	ed	Typo	Change $\phi 13,55 +0,02/0$ to $\phi 13,55 0/-0,02$ .	
JP34	Annex E	Figure E.1 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel show hydrogen compatibility as described in sec. 4.5</del> and with a minimum hardness of 80 Rockwell B (HRB)."	
JP35	Annex E	Figure E.1	ed	Typo	Change "30 0/-0,02" to " $\phi 30 0/-0,02$ ".	
JP36	Annex E	Figure E.2 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel show hydrogen compatibility as described in sec. 4.5</del> and with a minimum hardness of 80 Rockwell B (HRB)."	
JP37	Annex E	Figure E.2	ed	Typo	Change "30 0/-0,02" to " $\phi 30 0/-0,02$ ".	
JP38	Annex E	Figure E.3 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel show hydrogen compatibility as described in sec. 4.5</del> and with a minimum hardness of 80 Rockwell B (HRB)."	
JP39	Annex E	Figure E.3	ed	Typo	Change "30 0/-0,02" to " $\phi 30 0/-0,02$ ".	

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JP40	Annex E	Figure E.3	ed	Typo	Change 44° 0/-0.05° to 44° 0/-0.5°	
JP41	Annex E	Figure E.4 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP42	Annex E	Figure E.4	ed	No allows to point dimensions of 3,1±0.1 and 6±0,1.	Add allows on 3,1±0.1 and 6±0,1.	
JP43	Annex E	Figure E.5 Note L1	te	As same as comment of JP11.	Change the sentence as described below: -- "Material shall <del>be 316 L Stainless steel</del> show hydrogen compatibility as described in sec. 4.5 and with a minimum hardness of 80 Rockwell B (HRB)."	
JP44	Annex E	Figure E.5	ed	Typo	Change φ13,6±0,1 to φ13,6±0,05.	
JP45	Annex E	Figure E.5	ed	Typo	Change φ12,05 +0,05/0 to φ12,05 +0,05/0.	
JP47	Annex E	Figure E.5	ed	There is wrong dimensions in detail Y.	Delete current detail of Y and add detail Y of Figure E1 to E4.	