

Comments: EIHP – Draft: Liquid Hydrogen Rev. 11 (29.08.01)

Paragraph	Item	Proposed Modification / Comments
Definition 2.27	Definition of “normal operating range” should be clearer	Replace example in the second half of the definition by (see diagram 1 at the end of definition)
After definition 2.41	A diagram of the ranges will enhance the understanding	Add after 2.41: Diagram of ranges (example)
6.4.1.1	Inconsistency to definitions	Replace “...≤ 110% of the design pressure...” by “...≤ 100% of the design pressure...” and “...> 110% of the design pressure...” by “...> 100% of the design pressure...”
6.4.1.2	Inconsistency to definitions	Replace “...the maximum of the normal operating range...” by “...110% of the normal operating range..”
14.8.2	Hazardous zone 1 according to IEC 60079-10 will limit the possible solutions. In IEC 60079-10 it is foreseen to evaluate of the actual situation and according to the results different measures are allowed. This is common practice and should therefore be the same in an ECE regulation.	Replace in the first sentence “applicable for the hazardous zone 1” by “evaluated” and add at the end of the first sentence “if applicable”.
14.9.1.	A boil off management system should be mandatory according to the discussion in the ad hoc working group on 19.2.2002	Delete “...vent off in a safe way or shall be...”
14.9.2.	A boil off management system should be mandatory according to the discussion in the ad hoc working group on 19.2.2002	Delete “If present the boil off system and..”
14.9.4	A boil off management system should be mandatory according to the discussion in the ad hoc working group on 19.2.2002	Delete whole paragraph
Annex 7A-1, 2.2.2.1	If outer jacket has an additional safety device, it shall be allowed that the outer jacket is designed according to the set pressure of these additional safety device.	Delete “.but at least 0.05 MPa” at the end of the sentence.
Annex 7A-1, 6.1	The reference to paragraphs should be corrected	For the approval samples of the container shall be subjected to the tests according to 6.3.7 to 6.3.10 of this annex and shall be witnessed by the Technical Service. A crash test according to 6.3.11 shall be....
Annex 7A-1, 6.3.8	Head line should be corrected in order to be in line with annex 8A	Thermal autonomy test under fire
Annex 7A-1, 6.3.9	Head line should be corrected in order to be in line with annex 8A	Thermal autonomy test during normal operation
Annex 8A, 2.1.1.	15 minutes for the thermal autonomy under fire is too long. Remark: a conventional fuel tank is 2 minutes exposed to fire according to ECE R 34.	Replace “...be greater than 15 minutes..” by “...not less than 5 minutes...”
Annex 8A, 2.2.4.1	Inconsistency in the requirement	Replace text of the paragraph by: “The tank is filled with liquid hydrogen so that the quantity of liquid hydrogen measured by the mass measurement system shall be half of the maximum allowed quantity that may be contained in the inner vessel.”
Annex 8A, 2.2.4.4	15 minutes for the thermal autonomy under fire is too long. Remark: a conventional fuel tank is 2 minutes exposed to fire according to ECE R 34. The second sentence is not necessary	Replace “15 minutes” by “5 minutes”. Delete second sentence.
Annex 8A, 2.2.4.5	It is not necessary to measure the pressure	Delete “.and the pressure in the tank is fallen to 0,01MPa..”
Annex 8B, 7.1	Leakage test is not applicable for all components	Add after 3 and 4 above “.., if applicable..”
Annex 8B, 10.	Wrong reference to tests	Replace “.paragraphs 5,6 and 7..” by “...paragraphs 3 and 4...”