

## **OICA Response on ACTION ITEMS RESULTING FROM SGS 8 IN GENEVA**

TF2. OICA will draft supplemental rationale for taxis to be considered as passenger vehicles (basically, that the 5,500 cycles are sufficient for taxis).

**See “Toronto Hybrid Taxi Pilot”: Taxi mileage about 400.000 km**

TF5. US and OICA will propose modification to the language in section B.5.1.3.2 so that it is not a mix of procedure and requirement.

**The requirement is given in B.5.1.3 : A hydrogen storage system must not leak during the following sequence of tests,...**

**B.5.1.3.2 is describing the test itself, this is in line with other clauses**

11. OICA will provide justification for the changes to the LBB test to support the change from 150% to 125% and for the reduction in the number of cycles from 15,000 to 11,000.

**Leak-Before-Burst is established as the probable sequence of failure to provide secondary mitigation against burst. (Note: the primary mitigation is provided by design qualification according to B.5.1.2 and B.5.1.3). The detection of leak results in vehicle shut-down, which is expected to result in the repair or replacement of the vessel before a burst condition develops. For systems with extraordinary resistance to leak and rupture (i.e., no leak within 22000 full fill cycles, expected to be equivalent to over 10 million km (6 million mi) of driving, the order of the failure occurrence is too far (greater than 6x) beyond real-world conditions to be meaningful. Leak-before-burst is demonstrated under the most stressful repeatable on-road conditions which are < 2MPa to 125% NWP pressure cycles. (Note: testing with high cycle counts to higher pressures would provide for faster testing, but could elicit failure modes that could not occur in real world service.)**

12. OICA will provide rationale for the removal of the boss torque test requirement, text to be included in Part A.

**Rationale: requirements for boss torque testing to verify robustness with respect to maintenance and installation errors are not included because this issue and the large number of other potential maintenance errors are addressed by maintenance training procedures and tools and fail safe designs.**

14. CS/OICA will provide documentation/rationale to support the modified Expected On-Road Performance test sequence is equivalent to previous sequence

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15. GS, CS, OICA, and Paul Adams (HySAFE) will draft text for Part A that explains how the equation of allowable permeation rate as a function of vehicle size and garage size.

**See Paul Adams and JASIC comments**

20. OICA will draft text for performance-based requirements for safe refueling.

**The profile of receptacles must not be part of a regulation. This is design restrictive. Compatibility has to be part of a standard.**

**Proposal for wording: "The profile of fueling receptacles shall prevent fueling of containers with pressures for which they are not designed, for example a 35MPa container with 70MPa fueling pressure. Examples of receptacle designs can be found in ISO 17268 and SAE J2600 and SAE J2799.**

**Note: Further measures such as data communication between the vehicle and the fueling station and/or adequate pre-cooling of the H2 gas coming from the fueling station may support a safe fueling process."**

22. OICA, in collaboration with JASIC and Japan delegation, will prepare alternate text and test procedure for air tightness.

**Proposal for wording : "The hydrogen system(s) downstream of the main shut off valve(s) shall show no leaks at Maximum Allowable Working Pressure (MAWP), compliance may be tested e.g. by using a gas detector, leak detection spray or a detector liquid."**

24. Manufacturers will provide information on the telltales/warnings that are visible or provided in their demonstration vehicles

**See attached example**