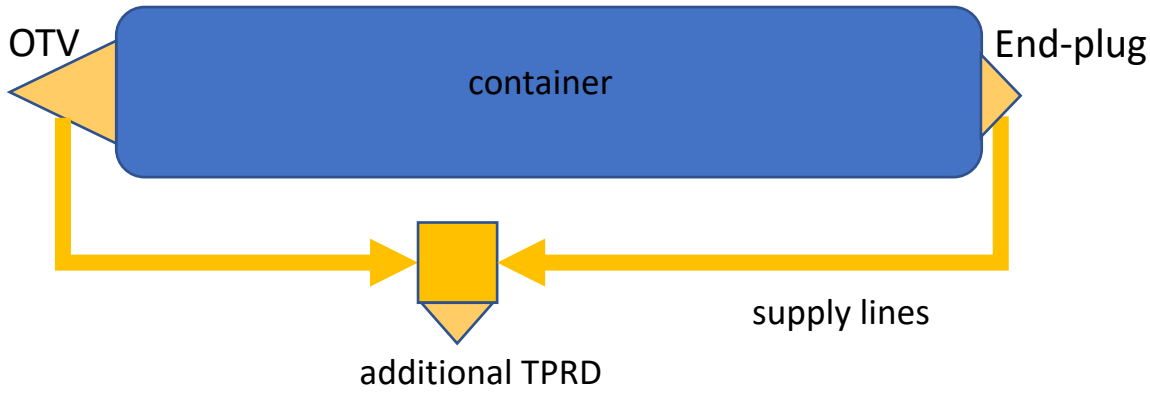
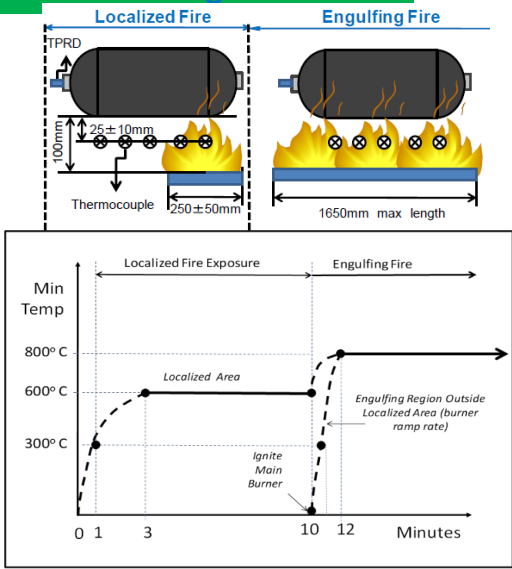
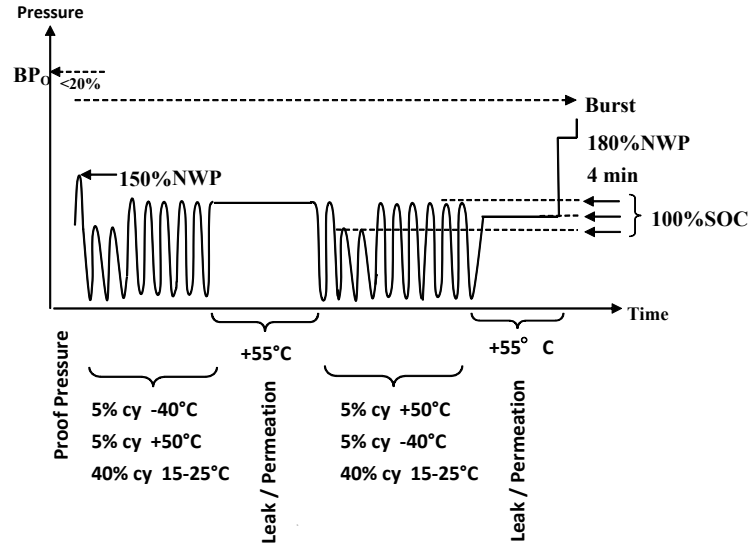


CHSS: Allow to locate additional TPRDs in alternative locations on the container

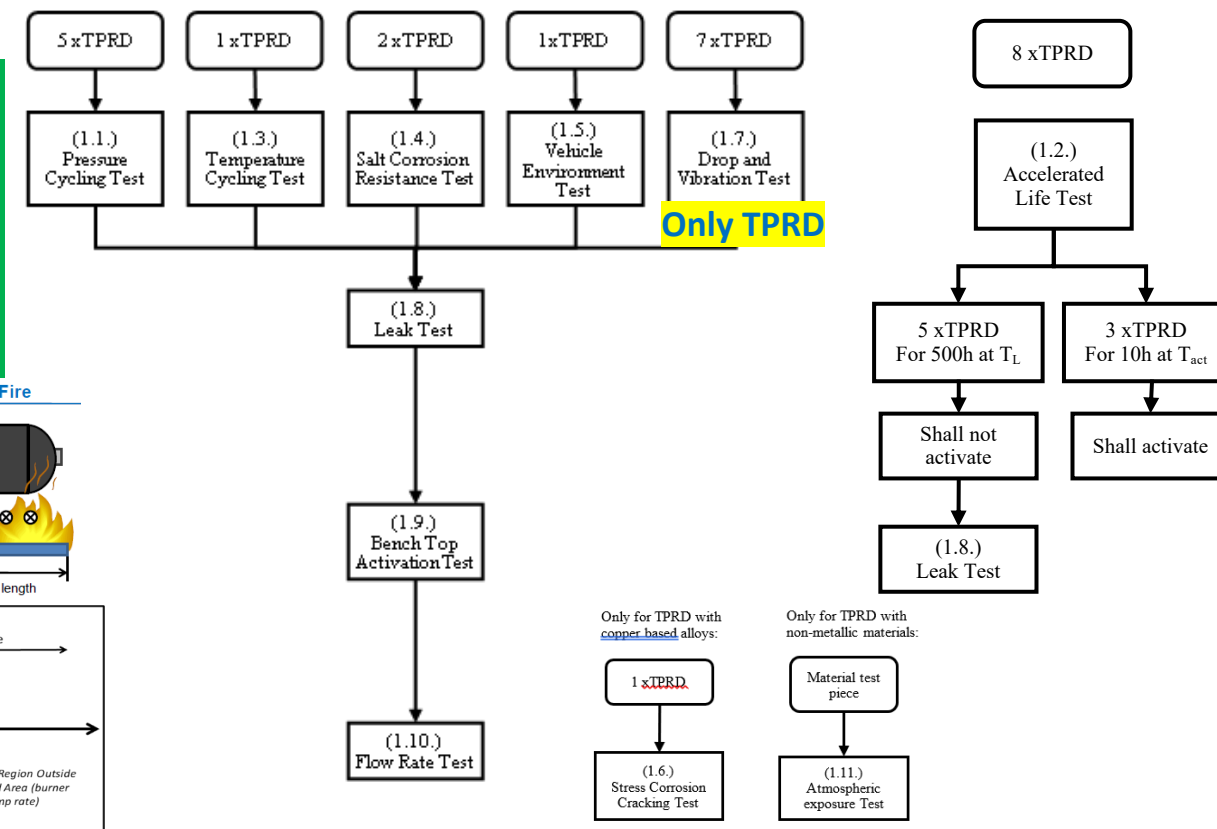


the safety performance of additional TPRDs with supply lines are assessed within the CHSS qualification tests where risks are addressed with a documented on-road stress factors and usages: fuelling/defueling, parking under extreme conditions, environmental conditions (i.e corrosion, chemical exposure) and performance in fires.

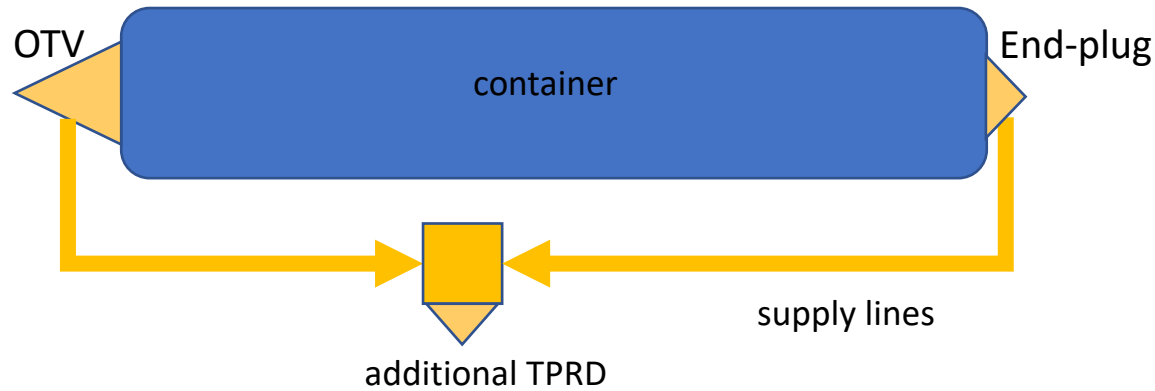
§ 5.3 CHSS verification test for expected on road stress factors and usages



§ 6.1 TPRD + supply pipes performance & stress tests



CHSS: Allow to locate additional TPRDs in alternative locations on the container



§ 5 (b) The primary closure devices shall be mounted directly on or within each container.

If needed, manufacturers can choose to locate additional TPRDs in alternative locations on the container. However, any additional TPRDs should be connected directly to the containers by using supply lines that have demonstrated mechanical integrity and durability as part of qualification tests for the CHSS (i.e., pneumatic sequential test § 5.3, fire test § 5.4 and verification of closure durability § 6.1)

as well as the specific loads related to the integration of this components to the vehicle (i.e crash, vibration)

OICA identified two main risks (mechanical loads related to the integration of the CHSS on the vehicle) in addition to those already addressed by the CHSS and TPRD qualification tests:

Risk A: Crash/impact loads

Risk B: Vibration loads

A- The risk related to crash loads is addressed in § 7.2, where the integrity and safety performance of the CHSS is assessed for :
LDVs: Complete vehicle crash tests (frontal and lateral impact tests).
HDVs: CHSS submitted to deceleration pulse test in addition to location constraint on the primary closure (i.e 420 mm /front of the vehicle & 200 mm / lateral sides of the vehicle - this latter condition can be disregarded if an alternative lateral impact test is used to demonstrate integrity of the CHSS)

B- The risk related to vibration loads

At component level the additional TPRDs is submitted to drop and vibration test in § 6.1g. The performance of the core and the glass part of the TPRD is assessed to qualify the performance of the closure.

The regulation do not define vibration test at vehicle level and at assembly TPRD/supply lines level. This criteria is handled by the manufacturer for each vehicle as the vibration load path is dependent on multiple parameters (vehicle structure, suspension, location and type of fixation of the CHSS ...)