

**Committee of Experts on the Transport of Dangerous Goods  
and on the Globally Harmonized System of Classification  
and Labelling of Chemicals**

28 November 2018

**Sub-Committee of Experts on the Transport of  
Dangerous Goods**

**Fifty-fourth session**

Item 2 (f) of the provisional agenda

**Miscellaneous pending issues**

**Report of the informal working group on fibre-reinforced  
plastics (FRP) portable tanks**

**Transmitted by the Chairman of the informal working group**

**Introduction**

1. The informal working group on FRP portable tanks met from 26-27 November 2018. Representatives from 13 member governments and numerous industry representatives were in attendance. The group discussed the proposals referred to them by the Sub-Committee, reviewed work completed through correspondence prior to the session on application and general provisions, discussed appropriate provisions for general design and construction provisions, and specific FRP portable tank design criteria.

**Issues referred by Sub-Committee**

2. 2018/99 – The group acknowledged the view of the explosive working group that Class 1 materials should be included in the types of dangerous goods that should be authorized for transportation in FRP portable tanks. Some members expressed concerns about the behaviour of explosives in a fire and management of static electricity if in FRP tanks. The group agreed to consider explosives when considering the design parameters for FRP tanks, and to continue to communicate with the explosives working group as provisions are developed during the next biennium.

3. 2018/91 – The group acknowledged the ability of FRP portable tanks to carry dangerous goods of Class 2, but noting there are additional complexities involved in the transport of these materials it was decided to prioritize and finalize work on FRP portable tanks designed to carry the other hazard classes first, and then begin work on tanks for gasses.

4. INF.11 –The group discussed the comments in detail and made adjustments as appropriate to the core text based on the work presented in this draft.

**Discussions in working group**

5. The working group continued discussion on the general provisions and definitions that were began through informal correspondence. Additional work is still necessary based on the outcome of further sections, but a large portion was provisionally agreed to and sections that still need work have been identified.

6. The group began discussion on general design construction provisions. There was lengthy discussion on the quality assurance/quality management system and appropriate elements. The group went on to discuss the basis of layers versus functionality of the tank elements. Current design is for a 3-layer system with each layer meeting the 3 main functionalities which are chemical resistance, strength, and protection from external environment. However, some viewed that an individual element may meet 2 of these functions. France volunteered to draft language that utilizes this functionality approach for further consideration by the working group. This functionality based approach, if acceptable could potentially facilitate new technologies and manufacturing techniques.
7. Design criteria- The group also discussed specific design criteria requirements. The group focused on the issue of multiple ways to calculate maximum allowed stress and appropriate safety factors. There were discussion of the various ways to measure and calculate stress and strains based on the composite versus an individual test sample. Further discussion is expected through correspondence.

### **Actions requested**

8. The Sub-Committee is invited to consider the report of the working group and provide comments to the working group chair.
  9. Noting the original terms of reference in UN/SCETDG/53/INF.64, the Sub-Committee is asked to endorse the continuation of this work by the informal working group into the next biennium.
  10. The working group will continue to correspond through email and teleconference in-between the sessions. Noting, the value added to the group by having face-to-face discussions concerning important safety concerns in the development of these standards, the working group suggests having a three-day working group session running concurrently with the 55th TDG Sub-Committee session. If approved by the Sub-Committee, and noting the limited availability of meeting space at the Palace of Nations, the chairman requests the Secretariat inquire about the availability of meeting space for approximately 30 persons at their earliest convenience.
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