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

6 December 2019

Sub-Committee of Experts on the Transport of Dangerous Goods Fifty-sixth session

Geneva, 4-10 December 2019

Item 6 (c) of the provisional agenda

Fibre-reinforced plastics (FRP) for amendments to the Model Regulations on the Transport of Dangerous Goods

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

Transmitted by Chairman of the informal working group

1. The informal working group on FRP portable tanks met from 4-6 December 2019. Seventeen representatives from ten different member governments and numerous industry representatives were in attendance. The group discussed and reviewed work completed through correspondence prior to the session on design approval, inspection, marking, manufacturers quality management systems, and specific FRP portable tank design criteria.

Discussions in working group

2. The working group continued past discussions on the general provisions, definitions, and design criteria to address updates of revised text. Additional work is still necessary, but a large portion of the requirements have provisional text that have been agreed to within the group.

3. Extensive discussion was had around the failure criteria, external design pressure, metal liners, testing criteria, heating elements and required physical tests (including elongation, strain, tensile, shell samples, gravitational forces, fire, chemical compatibility), inspection criteria, and the manufacturer's quality management system.

4. The group spent time identifying sections that require further work. The group has identified a few sub-correspondence groups to work to resolve certain issues identified in the Annex and to provide text on the inclusion of specific provisions.

Actions requested

5. The Sub-Committee is invited to consider the report of the working group and provide comments to the working group chair.

6. 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 57th 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.

Annex- Outstanding items:

Editorial work:

Alphabetize definitions

Verify and edit all section numbers and headings

Verify cross references are correct

In 6.9.2.3.3 insert table in accordance with EN 13121-2:2004 & EN 13121-3:2016

Create a “clean” version that accepts current edits

Substantive topics:

Provisions for metal liners

Heating elements

Environmental factors testing (e.g., UV exposure and salt water exposure)

Fire test minimum heat load and duration

Examine possibility of incorporating both FC and Rm design stress calculations

The stress level for evaluating K_1 creep and aging factors needs to be specified

Justification for minimum wall thickness of 3mm

Ensure roles of all parties are clear (e.g., manufacturer, approval agency, competent authority, inspection personnel)

Quality assurance system requirements

Inclusion of the ability to transport Class 1 materials

Bending deflection/bending creep test (creep factor α /ageing factor β)

Retention of samples set to 5 years

A document that provides support for the acceptance of the newly created regulations to aid in the ease of comparison to existing FRP regulations in ADR.
