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Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods

Report of the Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods on its spring 2022 session*

held in Bern, on 14 - 18 March 2022

Addendum**

Annex II

Report of the Working Group on Tanks

1. The Working Group on Tanks (TWG) met 15 and 16 March 2022 on a hybrid basis on the mandate from the RID/ADR/ADN Joint Meeting, under the chairmanship of Mr. Arne Bale (United Kingdom), with Mr. Kees de Putter (Netherlands) as secretary. The relevant documents were submitted to the Working Group for consideration.

2. For the Working Group on Tanks, thirty-four experts registered for participation from fifteen countries and seven non-governmental organizations. They dealt with the following official and informal documents:

Documents:	ECE/TRANS/WP.15/AC.1/2021/29 (UIC) ECE/TRANS/WP.15/AC.1/2021/42 (Netherlands) ECE/TRANS/WP.15/AC.1/2022/3 (United Kingdom) ECE/TRANS/WP.15/AC.1/2022/5 (United Kingdom) ECE/TRANS/WP.15/AC.1/2022/10 (UIP) ECE/TRANS/WP.15/AC.1/2022/13 (Germany) ECE/TRANS/WP.15/AC.1/2022/19 (France)
Informal documents:	INF.3 (Netherlands) (autumn 2021 session) INF.6 (CLCCR) (autumn 2021 session)

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INF.6 (ITCO)
INF.9 (United Kingdom)
INF.10 (Germany)
INF.29 (United Kingdom)

Section 1: Amendments that may be approved for inclusion in RID/ADR 2023

Item 1 - Clarification of the content of the type-approval certificate referred to in 1.8.7.2.2.1 of RID/ADR

Document: ECE/TRANS/WP.15/AC.1/2022/19 (France)

3. During discussion it was decided to refine the proposal in document ECE/TRANS/WP.15/AC.1/2022/19 to cover all situations.

4. *Proposal 1* – delete the last sentence of 1.8.7.2.2.1 and amend 1.8.7.2.2.1 (f) to read (new wording is underlined):

> *"The data contained in the documents for the type-examination according to 1.8.7.8.1, necessary for the identification of the type and variation, as defined by the relevant standards. The documents, or a list identifying the documents, containing the data shall be included or annexed to the certificate;"*

Item 2 – Non-destructive testing according to 6.8.2.1.23

Informal documents: INF 10 (Germany) and INF 6 (CLCCR) (autumn 2021 session)

5. As no consensus could be reached on these documents under agenda item 2 (a) of the agenda of the Joint Meeting they were referred to the working group on tanks.

6. It was felt essential that for longitudinal, circumferential, and radial welds (normally butt welds) radiography or ultrasound methods are used. Other types of welds such as corner welds and lap joints, allowed to be used by the tank design and construction standards, should be allowed to be tested by one of the alternative methods mentioned in the applicable test standard. It was also noted that the elements in brackets in Table 1 in section 5.3.6.1 of standard EN 12972:2018 are to be considered as examples. After discussion and a drafting exercise, the following proposal was agreed upon.

7. *Proposal 2* - Introduce a new paragraph in 6.8.2.1.23 after the paragraph for λ=1 to read:

> *"The non-destructive checks of the circumferential, longitudinal and radial welds shall be carried out by radiography or by ultrasound. Other welds allowed in the appropriate design and construction standard shall be tested using alternative methods in accordance with the relevant standard(s) referenced in 6.8.2.6.2. The checks shall confirm that the quality of the welding is appropriate to the stresses."*

8. Consequential amendments:

** Delete the last sentence before the paragraph for λ=0.8 (as approved for the RID/ADR 2023).*
** Delete footnote 6 (RID) and 7 (ADR) and renumber subsequent footnotes.*

Section 2: Amendments that may be approved for inclusion in RID/ADR 2025

Item 3 - Filling degree of substances carried at and above 50 ^{0}C

Document: ECE/TRANS/WP.15/AC.1/2021/42 (Netherlands)

9. The application of 4.3.2.2.3, on the maximum filling degree at and above 50 ^{0}C, is limited by its wording. The wording not only limits the application to tanks with a heating device but also does not allow an increase in temperature above the filling temperature, that does not represent the industry practice.

10. There was general support for the proposal that was accepted with editorial modifications.

11. *Proposal 3* - Amend 4.3.2.2.3 to read:

"*4.3.2.2.3 The provisions of 4.3.2.2.1 (a) to (d) above shall not apply to tanks carrying liquids at a temperature above 50 °C.*

The degree of filling of;

- *liquid substances carried at a temperature above 50 °C;*
- *liquid substances filled below 50 °C but intended to be heated above 50 °C during the carriage operation, and*
- *solids carried above their melting point,*

shall at the outset be such that the tank is not more than 95 % full at any time during carriage.

The maximum degree of filling shall be determined by the following formula:

$$\text{Degree of filling} = 95\frac{d_r}{d_f}\ \%\ \text{of capacity}$$

in which d_f and d_r are the densities of the substance at the mean temperature during filling and the maximum mean bulk temperature during carriage respectively.

Tanks with a heating device shall have the temperature so regulated that the maximum degree of filling of 95 % of capacity is not exceeded at any time during carriage."

Section 3: Results of discussions on other documents

Item 4 – Validity of the provisions on the holding time for refrigerated liquefied gases

Document: ECE/TRANS/WP.15/AC.1/2021/29 (UIC)

12. It was questioned by UIC if the holding time would also be applicable to empty uncleaned tanks. Initial discussions revealed that holding time is only determined for full tanks. It was said that it is very difficult to determine a holding time if only a limited amount of refrigerated liquefied gas remains in an empty uncleaned tank.

13. It was mentioned that currently work is ongoing on the guidance document by EIGA that is referenced in footnote 4 to 4.3.3.5 (e). It was said that UIC and EIGA will work together on this topic that will be revisited in a future session. UIC will set up a meeting with EIGA and other concerned organizations.

Item 5 – Interpretation of RID/ADR 6.8.2.2.11 on level-gauges

Document: ECE/TRANS/WP.15/AC.1/2022/3 (United Kingdom)

Informal document: INF 9 (United Kingdom)

14. Clarification was sought on the application of level gauges to RID/ADR 6.8 tanks. Level gauges are permitted by 6.8.2.2.11 if not of fragile material. As certain transparent materials are not fragile, unlike glass, it was questioned whether the use of such materials was the intention.

15. Most experts that took the floor expressed the view that level gauges of the sight glass type should not be allowed on tanks according to 6.8 but accepted on tanks according to 6.10 (vacuum operated waste tanks). The United Kingdom was invited to come back with a proposal for a future session.

Item 6 – Clarification on using tanks after the deadline specified for the next test or inspection

Document: ECE/TRANS/WP.15/AC.1/2022/5 (United Kingdom)

16. Three different but related issues were identified on which clarification was sought.

17. Issue 1 - Periodic inspections performed up to one month before the due date would retain the date for the next inspection as if performed on the actual due date. Most experts did not support this proposal as it may lead to confusion for inspectors and control authorities.

18. Issue 2 - Missing one or more periodic inspections of a tank would lead to an exceptional inspection with extra items to be checked in addition to a periodic inspection. Delegations that spoke felt that a normal periodic inspection would contain all the necessary checks.

19. Issue 3 – It was proposed that the hydraulic pressure test of the initial inspection would be used to determine the periodic inspection dates. This was not supported, but a verification of the fitness of the tank may be performed if the completion of the initial inspection takes place, for example, after one year.

20. The United Kingdom thanked the experts for their opinions and informed that guidance may be prepared to help the national inspection bodies with a common approach.

Item 7 – Qualification for welding-Interpretation of EN 14025

Document: ECE/TRANS/WP.15/AC.1/2022/10 (UIP)

21. Most of the delegations that spoke were in favour of level 2. However, there was a sustained opinion that level 1 would also be sufficient. It was agreed that this issue would be returned to CEN/TC 296/WG3. An overview of the differences between the levels should be provided for consideration.

22. The TWG deferred the decision pending the further consideration of CEN/TC 296/WG3.

Item 8 - Vacuum-operated waste tanks: non-electrical explosion protection

Document: ECE/TRANS/WP.15/AC.1/2022/13 (Germany)

23. One measure to prevent ignition of flammable wastes by a vacuum pump is the use of a liquid ring vacuum pump that is safe by design in normal operation. The safe design is based on the presence of water as a sealant between the moving parts. These pumps can be designed to comply with standard ISO 80079-parts 36 and 37.

24. Experts that took the floor said that these pumps were already in use for a long time. In this time no problems with ignition were experienced without compliance to the standard. As proof of compliance with the standard would bring additional costs and burdens, the experts could not support the proposal. An expert mentioned that in his country a manufacturer of vacuum operated waste tanks used these pumps fitted with sensors to monitor water supply. The equipment with sensors could be implemented in the regulation.

Item 9 - Special provision TT4 of 6.8.4.(d) of RID

Informal document: INF 3 (Netherlands)

25. Special provision TT4 appears only in RID for tank wagons and tank-containers. However, it does not apply in ADR. The document contained two questions.

26. On the first question, it was confirmed that no rationale could be recalled for provision TT4 and why it was applied by RID only.

27. On question two, it was said that tanks were either equipped with an internal liner or constructed of mild steel and that exposure to hydrofluoric acid would create a protective layer of iron fluoride. This way of protection is also described in 6.7.2.2.2 (b). For both construction methods no problems with corrosion were experienced. It was felt that safety would not be enhanced by introducing TT4 in ADR and that a deletion from RID would not create safety issues. It was generally felt that the general compatibility requirements between substances carried, and tank materials would be sufficient. As TT4 is a RID issue this should be considered further at the RID Committee of Experts' standing working group.

Item 10 – Potential environmental restriction of polytetrafluoroethylene (PTFE) used for the manufacture of tank service equipment seals and gaskets

Informal document: INF 6 (ITCO)

28. It was brought to the attention that The European Chemicals Agency (ECHA) consultation process is considering the REACH proposal to limit risks to the environment and human health that might result from the manufacture and use of perfluoroalkyl and

polyfluoroalkyl substances (PFAS). ECHA estimate that 4700 substances are within the scope of PFAS which includes PTFE.

29. A ban on the use of PTFE and other similar materials would have serious consequences for the safe transport of dangerous goods. The material is used due to its superior properties in providing a tight seal and chemical resistance, performs better than the asbestos seals that it is replacing, as no equivalent alternative exists.

30. It was strongly advised that concerned parties should respond to the consultation that would close around June/July 2022. Environmentally sound recycling was also to be encouraged.

Item 11 - Proposal to develop a standard for relief valves on tank-vehicles carrying dangerous goods other than petroleum products and LPG

Informal document: INF 29 (United Kingdom)

31. A suggestion for a new EN standard on pressure relief devices was presented at the CEN/TC 296 meeting in November 2021. It was said that the ISO 4126 series is already available, that the scope of this standard should be checked to see if the new standard would be useful and the subject be raised at the spring session of the Joint Meeting.

32. Similar views were expressed in the working group, but as the scope of the ISO standard was not clarified an advice from TWG was not possible. It was said that duplication shall however be prevented. The United Kingdom offered to provide an explanatory document for discussion at the autumn 2022 session prior to the next CEN/TC 296 meeting.