



---

**Economic Commission for Europe****Inland Transport Committee****Working Party on the Transport of Dangerous Goods****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 2021 session\***

held in Bern, on 14–19 March 2021

**Addendum\*\***

**Annex I****Report of the Working Group on Tanks**

1. The Working Group on Tanks met from 15 to 17 March 2021 on a virtual 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 plenary session and transferred to the Working Group for consideration.

2. For the Working Group on Tanks, 43 experts registered for participation from 15 countries and 8 non-governmental organizations. They dealt with the following official and informal documents:

*Documents:*

- ECE/TRANS/WP.15/AC.1/2021/3 (UIP)
- ECE/TRANS/WP.15/AC.1/2021/5 (France)
- ECE/TRANS/WP.15/AC.1/2021/6 (Germany)
- ECE/TRANS/WP.15/AC.1/2021/8 (Belgium)
- ECE/TRANS/WP.15/AC.1/2021/10 (Poland)
- ECE/TRANS/WP.15/AC.1/2021/11 (Netherlands)
- ECE/TRANS/WP.15/AC.1/2021/19 (United Kingdom)
- ECE/TRANS/WP.15/AC.1/2021/21 (OTIF secretariat)

---

\* Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2021-A. Unless otherwise indicated, the other documents referred to in this report under the symbol ECE/TRANS/WP.15/AC.1/ followed by the year and a serial number were circulated by OTIF under the symbol OTIF/RID/RC/ followed by the year and the same serial number.

\*\* Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2021-A/Add.1.

*Informal documents:* INF.9 (ITCO)  
 INF.18 (Secretariat)  
 INF.11 (United Kingdom)  
 INF.21 (EIGA)  
 INF.12 (Netherlands)  
 INF.13 (CEN)  
 INF.23 (Germany and UIP)  
 INF.31 (United Kingdom)  
 INF.14 (Netherlands and UIP)  
 INF.35 (France)  
 INF.15 (United Kingdom)  
 INF.37 (UIC)  
 INF.16 (Poland)

## I. Section 1: Outcome of discussions requiring endorsement by the Joint Meeting

### Item 1: Extra-large tank-containers: Manholes and dome covers

*Documents:* ECE/TRANS/WP.15/AC.1/2021/8 (Belgium)  
 ECE/TRANS/WP.15/AC.1/2021/21 (OTIF secretariat)

*Informal document:* INF.23 (Germany and UIP)

3. There was general consensus among the experts for the use of manhole covers designed for a test pressure of not less than 4 bar. These would only be used on tanks for the carriage of liquids and possibly solids in the molten state. Tanks for powdery or granular substances and gases would not be affected due to the lack of surge and higher calculation pressures of tanks and manhole covers. It was decided to keep the proposed text in square brackets pending the development of specific criteria for these tank-containers. It was decided to include the new provisions in RID and ADR to enable their future use in road transport.

4. The development of a specific definition for “extra-large tank-container” was supported, as several additional requirements may apply. However, it proved impossible to develop a definition during the session, as the criteria for distinguishing these particular containers were not yet clear. It was felt that not only capacity, but also maximum gross weight and external dimensions may be criteria.

5. On informal document INF.23, no conclusions could be reached on the issue of specific accelerations that would apply to these tank-containers during shunting above the standard 2g for RID and ADR. As this was a typical rail issue, it was felt that this should be further discussed in the RID Committee of Experts’ standing working group.

6. Although all known extra-large tank-containers complied with the new provision, it was decided to include a new transitional measure in case any other extra-large tank-containers existed. It was decided to keep the transitional measure in square brackets, together with the proposed new text for 6.8.2.2.4, for further consideration.

**Proposal 1: in 6.8.2.2.4 RID/ADR include new wording on the right-hand side after the first sentence (new text underlined):**

["These openings for tank containers with a capacity of [more than 40,000 litres/36,000 kg gross weight] intended for the carriage of [liquids] [substances in the liquid state] which are not divided by partitions or surge plates into sections of not more than 7,500 litres capacity shall be provided with closures designed for a test pressure of at least 0.4 MPa (4 bar). Hinged dome covers for

these tank-containers with a test pressure of more than 0.6 MPa (6 bar) shall not be permitted."

**Proposal 2: introduce a new transitional measure to read:**

"[1.6.4.xx Tank-containers constructed before 1 July 2023 in accordance with the requirements in force up to 31 December 2022, but which do not conform to the requirements of 6.8.2.2.4 second paragraph applicable from 1 January 2023, may still be used.]"

**Item 2: Clarifying inspection expiry dates in Chapters 6.8, 6.10 and 6.12**

*Document:* ECE/TRANS/WP.15/AC.1/2021/19 (United Kingdom)

7. The experts supported the amendments proposed to clarify the inspection dates and to harmonize with the terms used in 6.7. The amendments would apply in principle to the English version of RID and ADR, but there are consequential amendments in other language versions.

**Proposal 3: amend 6.8.2.4.3, 6.8.3.4.6, 6.8.4, 6.10.4 and 6.12.3.2.6 to read (new wording underlined, and deleted wording crossed out):**

"6.8.2.4.3 Shells and their equipment shall undergo intermediate inspections ~~at least no later than every~~

four years (RID) / three  
years (ADR)

two and a half years

after the initial inspection and each periodic inspection. These intermediate inspections may be performed within three months before or after the specified date.

However, the intermediate inspection may be performed at any time before the specified date.

If an intermediate inspection is performed more than three months before the ~~due specified~~ specified date, another intermediate inspection shall be performed ~~at the latest no later than every~~

Four years (RID) / three  
years (ADR)

two and a half years

after this earlier date."

"6.8.3.4.6 For tanks intended for the carriage of refrigerated liquefied gases:

(a) By derogation from the requirements of 6.8.2.4.2, the periodic inspections shall ~~take place~~ be performed no later than:

~~at least after~~ eight years  
(RID) / six years (ADR)

at least after eight years

~~of service~~ after the initial inspection and thereafter ~~at least no later than~~ every 12 years.

(b) By derogation from the requirements of 6.8.2.4.3, the intermediate inspections shall ~~take place at least~~ be performed no later than every six years after each periodic inspection."

6.8.4 Special provisions (d), Test (TT)

"TT3 By derogation from the requirements of 6.8.2.4.2 periodic inspections shall ~~take place~~ be performed at least no later than every eight years and shall include a thickness check using suitable instruments. For such tanks, the leakproofness test and check for which provision is made in 6.8.2.4.3 shall be ~~carried out performed~~ at least no later than every four years."

- “TT4 (RID only) Tanks shall be inspected no later than every  
4 years | 2½ years  
for resistance to corrosion, by means of suitable instruments (e.g. by ultrasound).”
- “TT5 The hydraulic pressure test shall ~~take place~~ be performed at least no later than every  
4 years (RID) / 3 years (ADR) | 2½ years.”
- “TT6 The periodic inspection shall be ~~carried out~~ performed at least no later than every 4 years (RID) / 3 years (ADR).”
- “TT10 The periodic inspections according to 6.8.2.4.2 shall ~~take place~~ be performed at least no later than every:  
4 years (RID) / 3 years (ADR) | 2½ years.”
- 6.10.4 (ADR) “Vacuum-operated waste tanks shall be subject no later than every three years for fixed tanks or demountable tanks and ~~at least~~ no later than every two and a half years for tank-containers and tank swap bodies to an examination of the internal condition, in addition to the inspection according to 6.8.2.4.3.”
- 6.10.4 (RID) “Vacuum-operated waste tanks shall be subject ~~at least~~ no later than every two and a half years to an examination of the internal condition, in addition to the inspection according to 6.8.2.4.3.”
- 6.12.3.2.6 (ADR only) “The requirements ..... owner of the MEMU. Shells and their equipment shall be subject to visual examination of their external and internal condition and a leakproofness test to the satisfaction of the competent authority ~~at least~~ no later than every three years.”

**Item 3: Clarification of the requirements for non-destructive tests in RID/ADR 6.8.2.1.23**

*Informal document:* INF.11 (United Kingdom)

8. The document proposed several improvements to 6.8.2.1.23 concerning welding and inspection of welds. The proposed amendments could be divided into four parts. There was consensus:

- (a) for moving the last sentence of the first paragraph to the end of the second paragraph,
- (b) for inserting a new paragraph before the last one of 6.8.2.1.23 after discussion and modification of the wording,
- (c) not to adopt the proposal for the last paragraph of 6.8.2.1.23. Giving an exhaustive list of parties involved in the construction, maintenance and repair of tanks could result in some parties not feeling obliged to follow the requirements of 6.8.2.1.23, and
- (d) for the modification of the table in 6.8.2.6.2 for EN 12972:2018, as this would make the standard applicable to the welding requirement.

**Proposal 4: amend the first and second paragraph of 6.8.2.1.23 to read (deleted wording crossed out and relocated wording underlined):**

“6.8.2.1.23 Welding and inspection of welds

The inspection body ..... (including any heat treatments required) has been demonstrated by tests. ~~Non-destructive tests shall be carried out by radiography or by ultrasound<sup>7</sup> and shall confirm that the quality of the welding is appropriate to the stresses.~~

The following checks shall be carried out for welds made by each welding process used by the manufacturer in accordance with the value of the coefficient  $\lambda$  used in determining the thickness of the shell in 6.8.2.1.17. Non-destructive tests shall be carried out by radiography or by ultrasound<sup>7</sup> and shall confirm that the quality of the welding is appropriate to the stresses.”

**Proposal 5: insert a new penultimate paragraph to read (new wording underlined):**

“Welds made during repairs or alterations shall be assessed as above and in accordance with the non-destructive tests specified in the relevant standard(s) referenced in 6.8.2.6.2.”

**Proposal 6: amend the third column of the table of 6.8.2.6.2 for EN 12972:2018 to read (new wording underlined):**

EN 12972:2018	Tanks for transport of dangerous goods – Testing, inspection and marking of metallic tanks	<u>6.8.2.1.23</u> 6.8.2.4 6.8.3.4	Mandatorily from 1 July 2021
---------------	--	---	------------------------------

**Item 4: Dry Break Coupling**

*Informal document:* INF.14 (Netherlands and UIP)

9. At the autumn session of the Joint Meeting in 2013, the use of so-called “dry-break couplings” had already been discussed. At that time, there was agreement that these could be used as second or third closures in series in bottom-filling and discharge pipes. However, no modification to the text had been prepared for a future session.

10. Option 1 was preferred by the experts, as the additional wording “and similar systems” in option 2 was found to lead to unwanted interpretations. As there was consensus between the experts, it was proposed to adopt option 1 with editorial modifications.

**Proposal 7: Introduce a new footnote<sup>9</sup> at the end of the seventh paragraph of 6.8.2.2.2 and renumber the following footnotes accordingly:**

“<sup>9</sup> The mode of operation of dry break couplings is self-closing. Consequently, an open/closed indicator is not necessary. This type of closure shall only be used as a second or third closure.”

**Section 2: Results of discussions on documents that do not require endorsement of the outcome****Item 5: Clarification on using tanks after the deadline specified for the next test or inspection**

*Documents:* ECE/TRANS/WP.15/AC.1/2021/3 (UIP)  
ECE/TRANS/WP.15/AC.1/2021/10 (Poland)

*Informal documents:* INF.16 (Poland)  
INF.37 (UIC)

11. 6.8.2.4.3 allows the intermediate inspection to be performed up to three months after the specified date. The question is what is allowed in this three month period. Certain experts

were of the opinion that the tank could be filled, carried and emptied as usual during this period, given that the periodic inspection is still valid and 4.3.2.3.7 makes no reference to the intermediate inspection, while others were of the opinion that the tank could only be carried and emptied if filled before this period in line with 6.7.

12. During the discussion, no consensus was reached, other than to agree that a common approach was needed and that the deliberations of the Working Group on Tanks would benefit from an exchange of views in the plenary.

13. It was considered that safety would not necessarily be compromised, and it was pointed out that the flexibility to perform the intermediate inspection 3 months before or after the specified date had been agreed at the autumn 2006 session of the Joint Meeting (see ECE/TRANS/WP.15/AC.1/104/Add.1, paragraph 6). At that time, the working group on tanks had concluded that: "It was unanimously agreed that flexibility in terms of timing should be shown in respect of only the intermediate inspection, and not the periodic inspection".

**Item 6: Vacuum-operated waste tanks: Non-electrical explosion protection**

*Document:* ECE/TRANS/WP.15/AC.1/2021/6 (Germany)

14. When flammable substances are to be carried in vacuum-operated waste tanks, ignition of the vapours shall be prevented by flame arrestors, spark free design of the pump/exhauster or the tank shall be explosion pressure shock resistant. So called "liquid ring" pumps are considered to be of a spark free design. After recent assessments in Germany, it was felt that there may be particular risks if the supply of water was insufficient. It was therefore proposed that the design should be checked against standard ISO 80079, parts 36/37 for non-electrical explosion protection.

15. Several experts expressed the view that these pumps have not resulted in any problems with ignition in the past. It was also said that if new standards have become available, these should be taken into account. Questions were asked about the availability of these pumps and the additional costs. As a consequence of complying with the standard, it was said that introducing sensors that check the supply of water and flow into the pump would be needed. It was remarked that technical provisions for this kind of pump could also be included. It was agreed that 6.10.3.8 would be the best place for such provisions. The representative of Germany took note of the remarks made, with the intention of returning to the topic at a future session.

**Item 7: Revisit of the requirements of 6.8.3.2 in RID/ADR on items of equipment and automatic closing function of valves on connections to the vapour phase on tanks for flammable and toxic refrigerated liquefied and liquefied gases**

*Document:* ECE/TRANS/WP.15/AC.1/2021/11 (Netherlands)

*Informal document:* INF.21 (EIGA)

16. Most experts expressed support in principle for the proposals made by the Netherlands. It was also said that refrigerated liquefied hydrogen may require a different approach and that chapter 6.7 should also be addressed. It was proposed to organize an ad-hoc working group dealing with the specific issues. The expert from the Netherlands agreed that some further improvements are needed, but stressed that some clarification on the equipment on liquefied natural gas should be included in RID/ADR 2023.

**Item 8: Adoption of the UN Model Regulations on fibre reinforced plastics portable tanks in RID/ADR**

*Informal document:* INF.9 (ITCO)

17. The Working Group on Tanks was asked to discuss informal document INF.9 from ITCO to prepare for the discussion in plenary. ITCO explained that sufficient resilience had not been proven by the informal working group on Fibre Reinforced Plastics (FRP) portable tanks of the Sub-Committee of Experts on the Transport of Dangerous Goods (TDG). The intention was to raise this at the June 2021 session of the TDG. The ITCO paper asked that adoption of the new chapter 6.9 in RID/ADR be deferred until the issue was resolved.

18. The expert of ITCO presented research reported by German Federal Institute for Materials Research and Testing (BAM) which demonstrated that an energy level of 22 kJ was commensurate with a thickness of 6 mm in mild steel, which the ITCO paper considered would be useful in determining the resilience of other materials. Several experts mentioned that minimum wall thickness in metal could not easily be translated into an equivalent thickness in FRP material, as such materials behave differently. The view was expressed that due to the high safety factors for FRP tanks, there would be sufficient thickness to resist external impacts. It was also said by experts that they were confident that FRP tanks were sufficiently strong and expected them to perform better than metal tanks in particular aspects. Whilst the concerns expressed in the ITCO paper were shared by one of the delegations, other delegations who took the floor supported the adoption of chapter 6.9 for FRP portable tanks from the UN Recommendations.

**Item 9: Filling degree of substances carried at and above 50 °C**

*Informal document:* INF.12 (Netherlands)

19. The opinion of the working group was requested on 4.3.2.2.3 concerning the filling degree for substances carried at and above 50 °C.

20. Experts that took the floor confirmed that 4.3.2.2.3 could be improved in line with the provisions of 4.2.1.9.5. It was also said that additional information may be required for cases where the substances are heated above the filling temperature during the journey.

21. The Netherlands was invited to submit an official proposal for a future session.

**Item 10: Clarification of the requirements for the application of standards in Chapters 6.2 and 6.8.**

*Informal document:* INF.13 (CEN)

22. It was brought to the attention of the Standards Working Group that some of the explanatory texts accompanying the tables in chapters 6.2 and 6.8 could be misinterpreted.

23. The experts that took the floor were of the opinion that the proposed amendments to 6.2.4.1 and 6.2.4.2 would also be helpful for the equivalent text in chapter 6.8. An official document for the next session would be welcomed.

**Item 11: Clarification of the thickness required by partitions and surge-plates in ADR 6.8.2.1.20**

*Informal document:* INF.15 (United Kingdom)

24. It was queried whether partitions and surge-plates in a tank would have to comply with the minimum shell thicknesses if either of the protection measures of ADR 6.8.2.1.20 (b) 1. are applied. The experts that took the floor agreed that this was only applicable when these partitions or surge-plates were used as strengthening elements. Although this was covered by the first paragraph of 6.8.2.1.20 (b) 1., it was agreed that this may be misinterpreted.

25. The following suggestions for improvement were made by the working group:

Option 1; introduce a note after the last paragraph of 6.8.2.1.20 (b) 1. to read:

*“NOTE: partitions and surge-plates that are not used as strengthening elements need not comply with these thickness requirements.”*

Option 2; amend the last paragraph of 6.8.2.1.20 (b) 1. to read (new wording underlined):

*“The thickness of the partitions and surge-plates that are used as strengthening elements shall in no case be less than that of the shell.”*

It was also found that in the English version of the first paragraph of 6.8.2.1.20 (b) 1., the use of the words “strengthening members” was not consistent and should be amended to read “strengthening elements”.

26. It was decided that these options would require careful consideration and the Working Group on Tanks decided to revisit the subject at the next session.

**Item 12: Inspection of tanks which have missed the timeframe for their scheduled inspections**

*Informal document:* INF.31 (United Kingdom)

27. The question raised was how to deal with tanks that have missed the inspection that was due to be performed. For portable tanks, 6.7 stipulates that if the tank has missed an intermediate inspection, a periodic inspection should be performed. A similar procedure was suggested in informal document INF.31 for RID/ADR tanks in the sense that if an intermediate inspection has been missed, an exceptional inspection should be performed that would fulfil the requirements of a periodic inspection.

28. Several experts said that no problems had been experienced with tanks being overdue for an inspection. If an intermediate inspection had been missed, a new intermediate inspection would be performed, at the latest, by the date for the next periodic inspection. Whenever a new periodic inspection is performed, the timeline for the periodic inspections is reset.

29. It was mentioned that RID/ADR does not currently contain any indication of how to react if an inspection has been missed and that clarification is needed. The representative of UIP offered to submit a proposal for the next session.

**Item 13: Pump/exhauster unit for vacuum-operated waste tanks**

*Informal document:* INF.35 (France)

30. In the case of a vacuum-operated waste tank semi-trailer, the pump/exhauster unit may have been placed on the drawing vehicle. Experts at the Working Group on Tanks were asked for their views on how the suitability and inspection of this unit for the tank was checked.

31. As this document had been submitted rather late, most experts said that they did not have an opportunity to take a position. However, some remarks were made that in general, these tractors and semi-trailers belonged to each other and were linked by referencing the other part under item 11 of the ADR certificate of the vehicle. It was concluded that an amendment to 9.7 of ADR may be helpful to clarify the situation.

---