

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

8 February 2022

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

Bern, 14–18 March 2022

Item 2 of the provisional agenda

Tanks

Tanks: Clarification of the thickness required by partitions and surge-plates in RID/ADR 6.8.2.1.20

Transmitted by the Government of the United Kingdom

Summary

Executive summary:	Following discussions in the Working Group on Tanks, the United Kingdom would welcome further consideration of the options to clarify the thickness required for partitions and surge-plates in RID/ADR 6.8.2.1.20 (b).
Action to be taken:	Consideration of the options developed by the Working Group on Tanks to clarify RID/ADR 6.8.2.1.20 (b).
Related documents:	Informal document INF.15 of the March 2021 session Report of the March 2021 session (ECE/TRANS/WP.15/AC.1/160/Add.1, paras. 24 to 26) ECE/TRANS/WP.15/AC.1/2022/4

Issue

1. RID/ADR 6.8.2.1.19 allows tank shells to have a reduced thickness in cases where the tank is protected against damage through lateral impact or overturning in accordance with the requirements laid down in RID/ADR 6.8.2.1.20.
2. RID/ADR 6.8.2.1.20 (b) states that the protection against damage referred to in 6.8.2.1.19 requires the shell to be reinforced with either stiffening rings or partitions and surge-plates. ADR 6.8.2.1.20 (b) requires the thickness of partitions and surge plates to “in no case be less than that of the shell”. As drafted therefore, ADR 6.8.2.1.20 (b) applies the minimum thickness requirements for partitions and surge plates in all cases. However, we question whether this is the intention.
3. In cases where the protection against damage of the shell is provided by stiffening rings and the partitions and surge-plates do not contribute to other calculations relating to the design or provide protection against damage of the shell, it would seem unnecessary to require partitions and surge-plates to have a thickness that is not less than that of the shell.

Recent discussions

4. The United Kingdom submitted INF.15 to the March 2021 session of the Joint Meeting. The discussions in the Working Group on Tanks can be found in the report (ECE/TRANS/WP.15/AC.1/160/Add.1, paras. 24 to 26) but the relevant section has been reproduced below for convenience:

“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.”
5. This issue was not considered at the September 2021 session due to time constraints and as requested by the secretariat, the United Kingdom submitted a Working Document to the March 2022 of the Joint Meeting (ECE/TRANS/WP.15/AC.1/2022/4) to progress discussions.
6. An initial exchange of views on document ECE/TRANS/WP.15/AC.1/2022/4 took place at the intersessional meeting of the Working Group on Tanks on 14 December 2021. The experts taking the floor were in favour of the clarification provided by Option 2.
7. Following these discussions, the United Kingdom agreed to submit this informal document. with the current text of 6.8.2.1.20 (b) reproduced and the draft Option 2 amendments developed by the group inserted. This is below (deleted text ~~struck~~ through, new text in **BOLD** and underlined):
- “1. For shells with a circular or elliptical cross-section having a maximum radius of curvature of 2 m, the shell is equipped with strengthening ~~members~~ **elements** comprising partitions, surge-plates or external or internal rings, so placed that at least one of the following conditions is met:
- Distance between two adjacent strengthening elements of not more than 1.75 m.
 - Capacity contained between two partitions or surge-plates of not more than 7 500 l.
 - The vertical cross-section of a ring, with the associated coupling, shall have a section modulus of at least 10 cm³.
 - External rings shall not have projecting edges with a radius of less than 2.5 mm.
 - Partitions and surge-plates shall conform to the requirements of 6.8.2.1.22.
 - 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.”
8. The United Kingdom would therefore appreciate further consideration of the proposals that have been developed by the Working Group on Tanks.
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