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Inland Transport Committee

Working Party on the Transport of Dangerous Goods

Joint Meeting of Experts on the Regulations
annexed to the European Agreement concerning the
International Carriage of Dangerous Goods by
Inland Waterways (ADN) (ADN Safety Committee)

Forty-fourth session

Geneva, 26–30 August 2024

Item 4 (b) of the provisional agenda

**Proposals for amendments to the Regulations annexed to ADN:
Other proposals**

Related amendments concerning “degree of filling” and “filling ratio”

Transmitted by the Government of Austria*, **

Summary

Executive summary: Document ECE/TRANS/WP.15/AC.2/2024/30 contains amendments from the RID/ADR/ADN Joint Meeting and the Working Party on the Transport of Dangerous Goods (WP.15). The definitions of “degree of filling” (for solids and liquids) and “filling ratio” (for gases) have thus been included in ADN. However, ADN also contains a definition of “filling ratio (cargo tank)”, which needs to be revised accordingly.

For each occurrence of the above-mentioned terms, it should be clarified which of the new terms is to be used.

This document is based on informal document INF.9 from the forty-third session, and on the outcome of discussions within the ADN Safety Committee.

Action to be taken: Decision on amendments for the 2025 edition.

Related documents: ECE/TRANS/WP.15/AC.2/2024/30, informal document INF.11 of the forty-second session, informal document INF.9 of the forty-third session

* Distributed in German by the Central Commission for the Navigation of the Rhine under the symbol CCNR-ZKR/ADN/WP.15/AC.2/2024/35.

** A/78/6 (Sect. 20), table 20.5.



Introduction

1. Document ECE/TRANS/WP.15/AC.2/2024/30 contains amendments adopted by the Joint Meeting and WP.15. In particular, it provides definitions of “*Degree of filling*” (for solids and liquids) and “*Filling ratio*” (for gases), to be included in ADN. As these terms are used in the harmonized parts of ADN, as well as in Parts 4 and 6 of ADR and RID, which refer to them, the definitions must be included in ADN.
2. However, ADN also contains a definition of “*Filling ratio (cargo tank)*”, which differs from the harmonized definitions. In ADN 2005, this definition mentioned a temperature of 15°C. However, that reference temperature was no longer included in the first official edition of ADN 2009. As a result, it is no longer permitted to exceed the maximum degree of filling when filling a cargo tank with a liquid at a temperature higher than 15°C. If the definition of “*Filling ratio (cargo tank)*” were to be deleted, this would reinstate the pre-2009 situation, which is not desirable. The definition of “*Filling ratio (cargo tank)*” without any reference to temperature should therefore be retained.
3. With the two new harmonized definitions, however, it is clear that, for liquids and solids, the degree of filling must be indicated as a percentage by volume, while the filling ratio for gases must be indicated as a percentage by mass. Until now, the German version of Table C used the expression “*maximal zulässiger Tankfüllungsgrad in %*” [maximum permissible filling ratio of the tank (%)], which allowed the definition “*Füllungsgrad (Ladetank)*” [filling ratio (cargo tank)] to be applied for liquids and the previous definition “*Füllungsgrad*” [filling ratio], which referred to gases, for gaseous substances. As this second definition has now been replaced by “*Füllfaktor*”, this interpretation is no longer possible. We therefore need to clarify what column (11) refers to.
4. In the English version, Table C uses “Maximum degree of filling (%)”, while 1.2.1 contains definitions for “Filling ratio” (for gases) and “Filling ratio (cargo tanks)”. In the French version, Table C uses “*Degré maximal de remplissage en %*”, while 1.2.1 contains definitions for “*Taux de remplissage*” (for gases) and “*Taux de remplissage (citerne à cargaison)*”. Clarification is needed in both languages.
5. It should also be determined for every other occurrence of the above-mentioned terms which of the two new terms is actually intended.
6. At its meeting in January 2024, the ADN Safety Committee concluded that, for carriage in cargo tanks, the definition of filling ratio should only be used for gases carried in gaseous form, while the degree of filling (percentage by volume) should be used for gases carried in pressurized or refrigerated liquefied form.

I. Proposal

7. 1.2.1: in the definition of “*Filling ratio*”, make the following amendments:
 - Add the following note: “Note: for the degree of filling of cargo tanks, see ‘Degree of filling of cargo tank’.”
 - Replace “a pressure receptacle” by “the means of containment”.
8. 1.2.1: add the following new definition in alphabetical order:

“*Degree of filling* means the ratio, expressed as a percentage, of the volume of liquid or solid introduced at 15 °C into the means of containment and the volume of the means of containment fitted ready for use;”
9. 1.2.1: the definition of “*Filling ratio (cargo tank)*” is replaced by “*Degree of filling of the cargo tank*”: when, for the carriage of liquid or molten substances, pressurized liquefied gases or refrigerated liquefied gases, a degree of filling is indicated for cargo tanks, this designates the percentage of the volume of the cargo tank that is filled with liquid. For the transport of gases carried in the gaseous phase in pressurized tanks, the degree of filling of the cargo tank refers to the ratio between the mass of gas and the mass of water at 15°C that would completely fill the pressurized tank, which corresponds to a *filling ratio*.”.

10. 1.6.7.2.2.2: in the transitional provision for 9.3.3.21.1 (b), replace “degree of filling” with “degree of filling of the cargo tank”.
11. 2.2.2.1.1: replace “*such as filling ratio*” by “*such as filling ratio, degree of filling of the cargo tank*”, as this provision relates to gases.
12. 3.2.3.1, Explanatory note for column (11): in the heading, replace “Maximum degree of filling (%)” by “Maximum degree of filling of cargo tank (%)”.
13. 3.2.3.1, Explanatory note 42 for column (20): replace “Degree of filling” by “Degree of filling of cargo tank”.
14. 3.2.3.2, Table C, heading of column (11): replace “Maximum degree of filling in %” by “Maximum degree of filling of cargo tank in %”.
15. 3.3.1, special provision 392 (f): in the German version, replace “*Füllungsgrades*” with “*Füllfaktors*”, as this provision relates to gases.
16. 7.2.4.16.17, third subparagraph: replace “degree of filling” by “degree of filling of cargo tank”.
17. 7.2.4.21.1: replace “The degree of filling given in column (11) of Table C of Chapter 3.2 or calculated in accordance with 7.2.4.21.3 for the individual cargo tank shall not be exceeded” by: “The degree of filling of the cargo tank indicated in column (11) of Table C of Chapter 3.2 or calculated in accordance with 7.2.4.21.3 shall not be exceeded”.
18. 7.2.4.21.2: replace “degree of filling” by “degree of filling of the cargo tank” and replace “maximum allowable degree of filling” by “maximum allowable degree of filling of the cargo tank”.
19. 7.2.4.21.3: in the introductory sentence, “degree of filling of the cargo tanks” is used. In the following sentence and in 7.2.4.21.4, “degree of filling” is used. Since “degree of filling” here clearly refers to the “degree of filling of the cargo tank” mentioned in the introductory sentence, it is not necessary to add “of the cargo tank” each time.
20. 8.2.2.3.3.1: replace “degree of filling” by “degree of filling of the cargo tank” and replace “maximum degree of filling” by “maximum degree of filling of the cargo tank”.
21. 8.2.2.3.3.2: replace “maximum degree of filling” by “maximum degree of filling of the cargo tank”. Replace “degree of filling” by “degree of filling of the cargo tank”.
22. 9.1.0.40.2.10, 9.1.0.40.2.11, 9.1.0.40.2.13, 9.3.x.40.2.10, 9.3.x.40.2.11, 9.3.x.40.2.13: add the following footnote to “degree of filling”: “* As the text has been taken from ES-TRIN, the definition of “degree of filling” is not applicable here.”.
23. 9.3.1.21.1 (c) and (d): replace “degree of filling” by “degree of filling of cargo tank”.
24. 9.3.1.21.2: replace “degree of filling” by “degree of filling of the cargo tank”.
25. 9.3.2.21.1 (a): replace “degree of filling” by “degree of filling of the cargo tank”.
26. 9.3.2.21.1 (c) and (d): replace “degree of filling” by “degree of filling of the cargo tank”.
27. 9.3.2.21.2: replace “degree of filling” by “degree of filling of the cargo tank”.
28. 9.3.3.21.1 (a): replace “degree of filling” by “degree of filling of the cargo tank”.
29. 9.3.3.21.1 (c) and (d): replace “degree of filling” by “degree of filling of the cargo tank”.
30. 9.3.3.21.2: replace “degree of filling” by “degree of filling of the cargo tank”.

II. Justification

31. Safety: the editorial changes ensure that the introduction of new definitions will have no impact on safety.

32. There is no need for a transitional period.
33. Applicability: these editorial changes make the text clearer.
