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

16 September 2014

Report of the Working Group on Tanks

1. The Working Group on Tanks met from 15 to 16 September 2014 in Geneva on the basis of an appropriate mandate from the RID/ADR/ADN Joint Meeting, under the chairmanship of Mr. Arne Bale (United Kingdom) and with Mr. Michaël Bogaert (Belgium) as secretary. The relevant documents were submitted to the plenary session and transferred to the Working Group for consideration.

2. The Working Group on Tanks, consisting of 16 experts from 10 countries and 3 non-governmental organizations, dealt with the following official and informal documents :

Documents: ECE/TRANS/WP.15/AC.1/2014/13 (Ukraine)
ECE/TRANS/WP.15/AC.1/2014/40 (Sweden)
ECE/TRANS/WP.15/AC.1/2014/49 (CEN/AEGPL)
ECE/TRANS/WP.15/AC.1/2014/50 (France)

Informal documents:INF.48 (March 2014 session) (Russian Federation)
INF.14 (UIP)
INF.17 (Belgium)
INF.18 (Belgium)
INF.32 (France)
INF.35 (Romania)

Item 1: ECE/TRANS/WP.15/AC.1/2014/13 (Ukraine) – Proposals of amendments to special provisions TU21 and TU16 to align with the requirements of SMGS, Appendix 2 + INF.48 (Russian Federation)

3. The Working Group recalled its discussions on this topic during the spring session of 2014, reflected in the tank report ECE/TRANS/WP.15/AC.1/134/Add.1 paragraphs 20 - 24. Following the discussions in the plenary session in March 2014, the Group was asked to re-examine possible interpretations of TU21.

4. After discussion and an explanation of the current practice in transport between Ukraine and Germany, the Group did not come to a consensus if the current provisions under TU21 allow the use of water without additional nitrogen for the stable transport of phosphorus (UN 2447 and UN 1381). While SMGS Appendix 2 allows water on its own to be used, it was noted that the water height in this system is 30-60 cm, whereas ADR/RID only require a minimum of 12 cm. It is unclear however if the overall system in SMGS is identical to the ADR/RID system (e.g. are the tanks hermetically sealed,…). Some experts felt that using only 12 cm of water, without additional nitrogen, could not guarantee that the

solid phosphorus would be entirely covered during transport and little information was found on the origin of these technical provisions in the regulations.

5. Ultimately, the Group agreed that the current text leads to problems of interpretation and should be amended. In order to do this, the Group felt that it requires more information on:

- current practices in countries (through feedback from the concerned industry)
- the substance behaviour in the tank when only 12 cm of water is present
- the substance behaviour at different degrees of filling
- the physical state of the phosphorus during carriage

The Group agreed to invite the concerned industry to participate at a future session of the Working Group to help clarify the issue.

6. The Group also considered in detail the question set out in INF.48, if filling to 96% or 98% was necessary for empty, uncleaned tanks when the majority of the residue is at the bottom of the tank. The Group felt that this question was linked to the first one since it is necessary to understand fully the substance behaviour in the tank (e.g. do residues adhere to the sides of the shell, does caking occur,…) to evaluate this provision.

Item 2: ECE/TRANS/WP.15/AC.1/2014/50 (France) – Introduction of standard EN 13648-1 in Chapter 6.8

7. The Working Group endorsed the proposal made by France. Additionally, it was mentioned that clause 5 of the standard EN 13648-1 related to 6.8.3.2.12 of ADR/RID, dealing with the functioning of pressure relief devices at low temperatures. For this reason, the Group amended the proposal to include a reference to this paragraph:

Proposal

8. In the table in 6.8.2.6.1 of ADR, add:

EN 13648-1:2008	*Cryogenic vessels – Safety devices for protection against excessive pressure – Part 1: Safety valves for cryogenic service*	*6.8.2.4, 6.8.3.2.12 and 6.8.3.4*	*Until further notice*

Item 3: INF.17 (Belgium) – Screw threaded plug or blank flange for tank openings

9. The Working Group considered INF.17 in detail and felt that the provisions in 6.8.2.2.1, requiring all tank openings for filling or discharging to have closures, as stated more explicitly in 6.7.2.5.2 for UN Portable Tanks, should be clarified. Specific provisions were only found for gases and the bottom closures of A and B coded tanks. Additionally, when specifying dust protection devices for tank closures, the different existing situations should be taken into account (e.g. self-operating ventilation valves, bottom operated top valves,…) and the proposed text would need to be modified.

Whereas some members of the Group supported the principle of the proposal for inclusion of dust protection, others felt however that it was not necessary to include something in ADR/RID since it should be dealt with via industry practice.

10. The Group agreed to submit the issue if some text in the regulations is necessary to the plenary session. If the Joint Meeting so agrees, Belgium is invited to come back with a document at the next session.

Item 4: INF.18 (Belgium) – Colour coding for tanks

13. The Working Group analysed INF.18 and agreed that much of the detailed situation should be remedied through operational procedures and driver training. Additionally, the Group did see merit in considering ways of further identifying the function of equipment on the tank.

14. However, the Working Group identified several issues with colour coding for tanks:

- tanks are often not dedicated to the transport of one substance, which would each attract a different colour
- mistakes could be made when re-installing coloured flanges
- no harmonized standard is available

It was recalled that a different approach exists for UN Portable Tanks in 6.7.2.5.5, where there is a marking of the function of the equipment, typically on a metal plate near the equipment, and this was felt to be the most appropriate way forward. Particular attention was drawn to vacuum operated waste tanks, where the function of some equipment can vary depending on the use of the tank.

15. The Working Group invited Belgium to come back with a paper at a later session, taking this feedback into account.

Item 5: ECE/TRANS/WP.15/AC.1/2014/49 (CEN/AEGPL) – Amended reference to EN 12252 in ADR

16. The Working Group recalled that the latest revision of standard EN 12252 was discussed in the Standards Working Group in March 2012. The standard gave rise to several remarks at that time, and CEN TC 286 was invited to modify the standard. It was ultimately modified in 2013 and published in 2014.

17. The revised standard was however never re-evaluated by the Standards Working Group, to verify if the necessary modifications have been carried out, nor was it distributed to the members of the Standards Working Group. For this reason, the Tanks Working Group, which contains several members of the Standards Working Group, agreed that the standard should follow the normal procedure for adoption and reference in the regulations and be distributed and evaluated at the next Standards Working Group. The Group also indicated that the note, which currently appears under the existing reference to EN 12252:2005 + A1:2008 and clarifies the meaning of “road tankers” should be checked.

Item 6: ECE/TRANS/WP.15/AC.1/2014/40 (Sweden) – Interpretation of standards + INF.32 (France)

18. The Working Group discussed the proposals from Sweden and France to either delete the headings of the tables in 6.2.4.1 and 6.8.2.6.1, or to amend 6.8.2.6.1 in order to avoid the interpretation problems with regards to the applicability of standards listed under

the heading “for all tanks”. Finally, the Group agreed to a modified version of the French proposal, which is consistent with the approach taken for pressure receptacles and retains a structure for user-friendliness. The revised table is reproduced completely for clarity:

Proposal

19. Restructure the table under 6.8.2.6.1 as follows (standards for RID version are highlighted):

Reference	Title of document	Applicable sub-sections and paragraphs	Applicable for new type approvals or for renewals	Latest date for withdrawal of existing type approvals
(1)	(2)	(3)	(4)	(5)
For design and construction of tanks				
EN 14025:2003 + AC:2005	Tanks for the transport of dangerous goods – Metallic pressure tanks – Design and construction	6.8.2.1	Between 1 January 2005 and 30 June 2009	
EN 14025:2008	Tanks for the transport of dangerous goods – Metallic pressure tanks – Design and construction	6.8.2.1 and 6.8.3.1	Between 1 July 2009 and 31 December 2016	
EN 14025:2013	Tanks for the transport of dangerous goods – Metallic pressure tanks – Design and construction	6.8.2.1 and 6.8.3.1	Until further notice	
EN 13094:2004	Tanks for the transport of dangerous goods – Metallic tanks with a working pressure not exceeding 0.5 bar – Design and construction	6.8.2.1	Between 1 January 2005 and 31 December 2009	
EN 13094:2008 + AC:2008	Tanks for the transport of dangerous goods – Metallic tanks with a working pressure not exceeding 0.5 bar – Design and construction	6.8.2.1	Until further notice	
EN 12493:2001 (except Annex C)	Welded steel tanks for liquefied petroleum gas (LPG) – Road tankers – Design and manufacture ***NOTE:*** *Road tankers is to be understood in the meaning of "fixed tanks" and "demountable tanks" as per ADR.*	6.8.2.1 (with the exception of 6.8.2.1.17); 6.8.2.4.1 (with the exclusion of the leakproofness test); 6.8.2.5.1, 6.8.3.1 and 6.8.3.5.1	Between 1 January 2005 and 31 December 2010	31 December 2012
EN 12493:2008 (except Annex C)	LPG equipment and accessories - Welded steel tanks for liquefied petroleum gas (LPG) – Road tankers – Design and manufacture ***NOTE:*** *Road tankers is to be understood in the meaning of "fixed tanks" and "demountable tanks" as per ADR.*	6.8.2.1 (with the exception of 6.8.2.1.17), 6.8.2.5, 6.8.3.1, 6.8.3.5, 6.8.5.1 to 6.8.5.3	Between 1 January 2010 and 31 December 2013	31 December 2014

Reference	Title of document	Applicable sub-sections and paragraphs	Applicable for new type approvals or for renewals	Latest date for withdrawal of existing type approvals
(1)	(2)	(3)	(4)	(5)
EN 12493:2008 + A1:2012 (except Annex C)	LPG equipment and accessories –Welded steel tanks for liquefied petroleum gas (LPG) – Road tankers – Design and manufacture ***NOTE:*** *Road tankers is to be understood in the meaning of "fixed tanks" and "demountable tanks" as per ADR.*	6.8.2.1 (with the exception of 6.8.2.1.17), 6.8.2.5, 6.8.3.1, 6.8.3.5, 6.8.5.1 to 6.8.5.3	Until 31 December 2013	31 December 2015
EN 12493:2013 (except Annex C)	LPG equipment and accessories – Welded steel tanks for liquefied petroleum gas (LPG) – Road tankers – Design and manufacture ***NOTE:*** *Road tankers is to be understood in the meaning of "fixed tanks" and "demountable tanks" as per ADR.*	6.8.2.1, 6.8.2.5, 6.8.3.1, 6.8.3.5, 6.8.5.1 to 6.8.5.3	Until further notice	
EN 13530-2:2002	Cryogenic vessels – Large transportable vacuum insulated vessels – Part 2: Design, fabrication, inspection and testing	6.8.2.1 (with the exception of 6.8.2.1.17), 6.8.2.4, 6.8.3.1 and 6.8.3.4	Between 1 January 2005 and 30 June 2007	
EN 13530-2:2002 + A1:2004	Cryogenic vessels – Large transportable vacuum insulated vessels – Part 2: Design, fabrication, inspection and testing	6.8.2.1 (with the exception of 6.8.2.1.17), 6.8.2.4, 6.8.3.1 and 6.8.3.4	Until further notice	
EN 14398-2:2003 (except Table 1)	Cryogenic vessels - Large transportable non-vacuum insulated vessels - Part 2: Design, fabrication, inspection and testing ***NOTE:*** *This standard shall not be used for those gases which are carried at temperatures below -100 ºC.*	6.8.2.1 (with the exception of 6.8.2.1.17, 6.8.2.1.19 and 6.8.2.1.20), 6.8.2.4, 6.8.3.1 and 6.8.3.4	Between 1 January 2005 and 31 December 2016	
EN 14398-2:2003 + A2:2008	Cryogenic vessels – Large transportable non-vacuum insulated vessels – Part 2: Design, fabrication, inspection and testing ***NOTE:*** *This standard shall not be used for those gases which are carried at temperatures below -100 ºC.*	6.8.2.1 (with the exception of 6.8.2.1.17, 6.8.2.1.19 and 6.8.2.1.20), 6.8.2.4, 6.8.3.1 and 6.8.3.4	Until further notice	
For equipment				
EN 14432:2006	Tanks for the transport of dangerous goods – Tank equipment for the transport of liquid chemicals – Product discharge and air inlet valves	6.8.2.2.1	Until further notice	
EN 14433:2006	Tanks for the transport of dangerous goods – Tank equipment for the transport of liquid chemicals – Foot valves	6.8.2.2.1	Until further notice	
EN 12252:2000	Equipping of LPG road tankers ***NOTE:*** *Road tankers is to be understood in the meaning of "fixed tanks" and "demountable tanks" as per ADR.*	6.8.3.2 (with the exception of 6.8.3.2.3)	Between 1 January 2005 and 31 December 2010	31 December 2012
EN 12252:2005 + A1:2008	LPG equipment and accessories – Equipping of LPG road tankers ***NOTE:*** *Road tankers is to be understood in the meaning of "fixed tanks" and "demountable tanks" as per ADR.*	6.8.3.2 (with the exception of 6.8.3.2.3) and 6.8.3.4.9	Until further notice	
EN 14129:2014	LPG Equipment and accessories – Pressure relief valves for LPG pressure vessels	6.8.2.1.1 and 6.8.3.2.9	Until further notice	

Reference	Title of document	Applicable sub-sections and paragraphs	Applicable for new type approvals or for renewals	Latest date for withdrawal of existing type approvals
(1)	(2)	(3)	(4)	(5)
EN 1626:2008 (except valve category B)	Cryogenic vessels – Valves for cryogenic service	6.8.2.4 and 6.8.3.4	Until further notice	
EN 13082:2001	Tanks for transport of dangerous goods – Service equipment for tanks – Vapour transfer valve	6.8.2.2 and 6.8.2.4.1	Between 1 January 2005 and 30 June 2013	31 December 2014
EN 13082:2008 + A1:2012	Tanks for transport of dangerous goods – Service equipment for tanks – Vapour transfer valve	6.8.2.2 and 6.8.2.4.1	Until further notice	
EN 13308:2002	Tanks for transport of dangerous goods – Service equipment for tanks – Non pressure balanced footvalve	6.8.2.2 and 6.8.2.4.1	Until further notice	
EN 13314:2002	Tanks for transport of dangerous goods – Service equipment for tanks – Fill hole cover	6.8.2.2 and 6.8.2.4.1	Until further notice	
EN 13316:2002	Tanks for transport of dangerous goods – Service equipment for tanks –Pressure balanced footvalve	6.8.2.2 and 6.8.2.4.1	Until further notice	
EN 13317:2002 (except for the figure and table B.2 in Annex B) (The material shall meet the requirements of standard EN 13094:2004, Clause 5.2)	Tanks for transport of dangerous goods – Service equipment for tanks – Manhole cover assembly	6.8.2.2 and 6.8.2.4.1	Between 1 January 2005 and 31 December 2010	31 December 2012
EN 13317:2002 + A1:2006	Tanks for transport of dangerous goods – Service equipment for tanks – Manhole cover assembly	6.8.2.2 and 6.8.2.4.1	Until further notice	
EN 14595:2005	Tanks for transport of dangerous goods - Service equipment for tanks - Pressure and vacuum breather vent	6.8.2.2 and 6.8.2.4.1	Until further notice	
EN 16257:2012	Tanks for the transport of dangerous goods – Service equipment – Footvalve sizes other than 100 mm dia (nom)	6.8.2.2.1 and 6.8.2.2.2	Until further notice	

Item 7: INF.14 (UIP) – Maintaining the tank record according to 4.3.2.1.7

20. The Working Group agreed to the principle of the UIP proposal and recalled that the current definition of “tank record” in 1.2.1, as well as the provisions of 4.3.2.1.7, do not preclude that the tank record is kept in an electronic format. This is usual practice already for many companies and inspection bodies. It is clear in the text that the requirements for keeping the tank record and making it available on request to competent authorities and to the expert to carry out the inspection and checks remain as stated in 4.3.2.1.7. Editorial comments ultimately gave rise to an amended proposal for a note at the end of this paragraph.

Proposal

21. Add a note at the end of 4.3.2.1.7, to read as follows (changes indicated with respect to the proposed text in INF.14):

"**Note** : The tank record may ~~also~~ *alternatively* be maintained in suitable, ~~tamper-proof~~ *secure* electronic *form* ~~archiving systems~~."

Item 8: INF.35 (Romania) – Consequential amendments to the introduction of the "Reference steel" definition in 1.2.1

26. The Working Group considered the proposals from Romania to modify chapter 6.7 in light of the adopted definition for "reference steel" in 1.2.1. The Group agreed however that, even though currently the definitions in 1.2.1 and 6.7 are aligned, it was best not to modify the text in 6.7 since this text is taken over directly from the UN Model Regulations and is harmonised with the other modes of transport.