

**Economic and Social Council**Distr.: General
21 December 2016

Original: English

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**

Bern, 13–17 March 2017

Item 2 of the provisional agenda

Tanks**Amendment of subsection 6.8.2.1.23****Transmitted by the Government of the Netherlands^{*, **}***Summary*

Executive summary: During discussions in the informal working group on the inspection and certification of tanks and in practical application of 6.8.2.1.23 shortcomings surfaced in the requirements for non destructive testing of weld of tanks. This proposal intends to resolve these shortcomings.

Action to be taken: Amend subsection 6.8.2.1.23.

Introduction

1. For ADR 2017, 6.8.2.1.23 was modified to be more precise in what sections and to what extent welds need to be checked by non-destructive testing (NDT). Further discussions in the informal working group on the inspection and certification of tanks during the December 2016 meeting showed that a typical design of connecting the tank end to the body of shells of gravity discharged tanks was not included in the NDT requirements.

* In accordance with the programme of work of the Inland Transport Committee for 2016-2017, (ECE/TRANS/2016/28/Add.1 (9.2)).

** Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2017/19.

2. Recently several weld defects were found in the knuckle area of tank ends composed of two plates. Although in the ADR 2017 modifications to section 6.8.2.1.23 welds in ends are mentioned, this proves not to be precise enough.

Proposal 1

3. Introduce a new footnote, as indicated below, in the last sentence of the first paragraph of 6.8.2.1.23 to read:

Non-destructive tests shall be carried out by radiography or by ultrasound and shall confirm that the quality of the welding is appropriate to the stresses.

4. Footnote

Lap joints may be tested using alternative methods to radiography or ultrasound.

Proposal 2

5. Amend 6.8.1.23 Lambda = 0.8: to read (deleted wording ~~stricken~~ through and new wording in *italic script*)

All weld beads shall so far as possible be inspected visually on both faces and shall be subject to non-destructive checks. The non-destructive checks shall include all weld “Tee” junctions ~~and~~, all inserts used to avoid welds crossing *and welds in the knuckle area and rim of the tank ends*. The total length of welds to be examined shall not be less than: (rest unchanged)

6. Amend 6.8.1.23 Lambda = 0.9 to read: (new wording in *italic script*)

All weld beads shall so far as possible be inspected visually on both faces and shall be subject to non-destructive checks. The non-destructive checks shall include all weld “Tee” junctions, inserts used to avoid welds crossing, *welds in the knuckle area and rim of the tank ends* and welds of assembly of large-diameter items of equipment. The total length of welds to be examined shall not be less than: (rest unchanged)

Proposal 3

7. Introduce a new transitional measure in 1.6.3 and 1.6.4 to read (new wording in *italic script*):

“1.6.3.xx/1.6.4.xx

Fixed tanks (tank-vehicles) and demountable tanks/Tank-containers constructed before 1 July 2019 in accordance with the requirements in force up to 31 December 2018 but which do not however meet the requirements of 6.8.2.1.23 relating the check of the welds in the knuckle area and for lap joints applicable as from 1 January 2019 may still be used.”

Justification

8. In particular gravity discharged tanks (6.8.2.1.14(a)) have inserted ends; the connection of the end to the shell body consists of corner welds of the overlapping sections. It is commonly agreed that this type of welds cannot be interpreted correctly by radiography or ultrasound testing. Although in these cases dye penetrant testing is done as an alternative this is not provided for in 6.8.2.1.23.

9. Changes to 6.8.2.1.23 introduced for ADR 2017 by the working group give more precise indication where and to what extent to test including welds in ends if composed of sections. Recently a significant number of faults were discovered in welds of end composed of two sections. The faults were discovered because of the radiography of resulting T junction but did not cover the complete knuckle zone of the weld, in which the most deformation took place when fabricating the knuckle and rim of the ends. It is proposed to specifically name the knuckle area to be checked.
