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Item 5 (b) of the provisional agenda

Proposals for amendments to RID/ADR/ADN: new proposals

Carriage of pressure receptacles that require to have their conformity assessment completed at a location different from the place of manufacture

Transmitted by the European Cylinder Makers Association (ECMA)*,**

Introduction

1. The manufacturing process of pressure receptacles is evolving with the growth of composite constructions. One particular type is a fully wrapped pressure receptacle with a non-load sharing liner and composite reinforcement on both the cylindrical portion and the dome ends. These are referred to as type 4 pressure receptacles.
2. These pressure receptacles are constructed to standards that are referenced into Chapter 6.2 of the RID/ADR.
3. Due to the nature of the construction of these pressure receptacles there are additional requirements that need to be applied when the pressure receptacles are carried. Some manufacturers require a minimum pressure be maintained during carriage which could be at least five bar and possibly up to 20 bar. The reason for this is to ensure that the liner of the pressure receptacle does not separate from the wrapping during carriage.
4. Not every manufacturer of these type 4 pressure receptacles have all the facilities at the manufacturing site to carry out all the tests required for the conformity assessment. These tests could include for example burst testing and blunt impact tests. In such situations these tests need to be carried out at a third party and requires that the pressure receptacle is carried with a gas pressure that prevents the liner from separating from the wrapping.
5. Whilst the pressure receptacle has not undergone all the tests for conformity assessment required by the standard, the pressure receptacle would have undergone as a

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

** Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2024/35.



minimum the supervision of manufacture, the requirements for material tests and a pressure test.

6. As a consequence of paragraph 5 above, the pressure receptacle is considered to be safe to be carried with either UN 1002 AIR, COMPRESSED or UN 1066 NITROGEN, COMPRESSED provided that the pressure during carriage does not exceed 20 bar or 10% of the working pressure, whichever is the lower figure, the closures are protected to prevent damage during carriage and that the pressure vessel is labelled.

7. The exemptions related to the carriage of gases (see 1.1.3.2 (c)) have a limit of 200 kPa (2 bar) and it is considered that to increase this would not be practical as it could exempt the carriage of many gases from the regulations.

I. Proposal

8. To be able to carry pressure receptacles that have not undergone all requirements for conformity assessment for the purpose of performing the conformity assessment a new special provision is proposed:

"xxx Pressure receptacles that have not undergone all requirements specified by one of the standards for type 4 composite cylinders or type 4 composite tubes listed in Chapter 6.2 and designed for a test pressure of at least 100 bar may be carried with up to 20 bar of UN No. 1002 AIR, COMPRESSED or UN No. 1066 NITROGEN, COMPRESSED for the purpose of performing the conformity assessment required by the standard provided that the supervision of manufacture, the requirements for material tests and a pressure test at the prescribed test pressure of the design standard has been satisfactorily completed. Each pressure receptacle shall be marked in accordance with 5.2.1 and labelled in accordance with 5.2.2.

Closures of pressure receptacles shall be protected during carriage.

The transport document shall include the following statement: "Carriage in accordance with special provision xxx".

9. In Chapter 3.2, Table A for UN Numbers 1002 and 1066, insert "xxx" in column (6).

II. Justification

10. This special provision will permit the carriage of pressure receptacles that have not undergone all requirements required by a standard listed in Chapter 6.2 for conformity assessment whilst containing either UN 1002 AIR, COMPRESSED or UN 1066 NITROGEN, COMPRESSED for the purpose of carrying out the conformity assessments.

11. This proposal contributes to the following United Nations Sustainable Development Goals 7, *Affordable and Clean Energy*, 9, *Industry Innovation and Infrastructure* and 13, *Climate Action*.

III. Safety implications

12. No negative safety implications are to be expected as the pressure receptacles will have undergone a supervision of manufacturer and as well a pressure test and the purpose is for a single journey.
