

## **Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals**

9 May 2018

### **Sub-Committee of Experts on the Transport of Dangerous Goods**

#### **Fifty-third session**

Geneva, 25 June-4 July 2018

Item 5 (b) of the provisional agenda

**Transport of gases: miscellaneous**

## **Incidents with composite cylinders without a liner manufactured from two parts joined together**

**Transmitted by the International Organisation for Standardisation  
(ISO)**

### **Introduction**

1. Recently, The Danish Working Environment Authority (DWEA) have registered a number of incidents on the Danish market, involving composite cylinders without liners manufactured from two parts joined together with an adhesive. These cylinders were constructed according to the European standard EN 12245 and were in Liquefied Petroleum Gas (LPG) service. Investigations showed that while DWEA found the 2-piece cylinders fulfilling the requirements in the type approval (based on EN 12245:2002), this was not deemed enough to provide sufficient safety to the user. The investigation also involved one-piece cylinders which showed satisfactory results. It was shown in the testing by DWEA that when overheated, the strength in the seam decreases and at some point it fails, and the two parts separate, releasing the cylinder contents as a result. This led to the Danish Working Environment Authority is suing a nationwide recall for these two-part cylinders.

2. This type of failure is not directly related to LPG, but could happen to any two-part cylinder of similar construction, used with other types of gases, e.g. refrigerants, CO<sub>2</sub> etc. Cylinders without liner manufactured from two parts joined together using a polymer adhesive would exhibit the same performance in fire no matter what type of gas it contained.

3. The CEN standards committee responsible for EN 12245 has initiated a revision of the standard. ISO 11119-3:2013 allows the same two-part construction so ISO/TC58/SC3 has been requested by its parent committee ISO/TC58 to examine the European experience of failures with a view to revising this standard. At the recent RID/ADR/ADN (March 2018) Joint Meeting a decision was taken to forbid the manufacture of composite cylinders to EN 12245, without a liner, made from two parts joined together. This was effected by adding a note to the reference to EN 12245.

4. Since EN 12245 and ISO 11119-3 are very similar and revision of the ISO standard will take a significant period to complete, ISO/TC58 requests that a note similar to that added to the RID and ADR forbidding manufacture of such cylinders be inserted in the UN Model Regulations in the references to ISO 11119-3 in section 6.2.2.

## Proposal

5. Add the following new Note in the central column of the table in 6.2.2.1 in the rows containing ISO 11119-3:2002 and ISO 11119-3:2013.

**"NOTE:** *This standard shall not be used for cylinders without a liner manufactured from two parts joined together; existing type approvals shall be withdrawn.*".

6. Add the following new Note in the central column of the table in 6.2.2.2 in the row containing ISO11119-3:2013.

**"NOTE:** *This standard shall not be used for tubes without a liner manufactured from two parts joined together; existing type approvals shall be withdrawn.*".

---