

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

Sub-Committee of Experts on the Transport of Dangerous Goods

22 November 2012

### Forty-second session

Geneva, 3 – 11 December 2012

Item 7 of the provisional agenda

### New proposals for amendments to the Model Regulations on the Transport of Dangerous Goods

## Report of the informal Working Group on the Life of UN Composite Cylinders, October 22 & 23, 2012

### Transmitted by the European Industrial Gases Association (EIGA)

### Background

At the thirty fifth session of the Sub-Committee in June 2009 ISO submitted document ST/SG/AC.10/C.3/2009/7 regarding the life of UN composite cylinders. In response to this submission two INF papers were submitted, one from EIGA supporting the proposal and the second from the experts of the United States and Canada objecting to the proposal. After some debate it was agreed that EIGA would form an informal Working Group to consider the subject. Since June 2009 a number of meetings have been held to try and arrive at an agreed text. The last meeting was held on 22<sup>nd</sup> and 23<sup>rd</sup> October 2012 in conjunction with the ISO TC 58 meeting, “Standardization of gas cylinders, their fittings and characteristics relating to their manufacture and use”. At the meeting new text was agreed, and this will be submitted in a formal paper to the forty third session of the Sub-Committee in June 2013.

### Meeting Summary

The meeting was held in Arlington, Virginia, United States on October 22 & 23, 2012, and was chaired in the absence of the EIGA representative, by a representative of the Compressed Gas Association. There were representatives from the Competent Authority of the United States of America, Compressed Gas Association, European Industrial Gas Association, European Cylinder Makers Association. Although experts from Canada and Germany were unable to attend, comments that they had submitted were considered.

#### 1. 6.2.2.1.1 Note 1

It was agreed by the informal Working Group that NOTE 1 of 6.2.2.1.1 of the Model Regulations should be replaced with the following

*NOTE 1: In the above referenced standards, composite cylinders shall be designed for a design life of not less than 15 years.*

## 2. 6.2.2.1.1 Note 2

It was agreed by the informal Working Group that NOTE 2 of 6.2.2.1.1 of the Model Regulations should be replaced with the following:

*NOTE 2: The service life of a composite cylinder shall not be extended beyond its initial approved design life. Regardless of the cylinder design life, composite cylinders shall not be filled after 15 years from the date of manufacture, unless the design has successfully passed a service life test programme. The programme shall be part of the initial design type approval and shall specify inspections and tests to demonstrate that cylinders manufactured accordingly remain safe to the end of their design life. The service life test programme and the results shall be approved by the competent authority that was responsible for the initial approval of the cylinder design.*

## 3. Marking

The following related marking requirements were agreed by the informal Working Group:

— MARKING CONCEPT:

- Date of manufacture (already required for all UN cylinders)

For UN composite cylinders with limited design life of 15 years:

- Design life

For UN composite cylinders with limited design life of greater than 15 years:

- Design life
- Initial service life (15 years from date of manufacture) – marking to be covered permanently if passes service life test programme (per NOTE 2) – covering of this marking should be addressed in the service life test programme
- Once the initial design type has passed the service life test programme requirements, the initial service life no longer needs to be marked for future production

For UN composite cylinders with non-limited design life:

- Initial service life (15 years from date of manufacture) – marking to be covered permanently if passes service life test programme (per NOTE 2) – covering of this marking should be addressed in the service life test programme
- Once the initial design type has passed the service life test programme requirements, the initial service life no longer needs to be marked for future production

— TO ADD IN THE UN MODEL REGULATIONS:

- Insert at the end of 6.2.2.7.4:

*(q) For composite cylinders having a limited design life, the letters "FINAL" followed by the design life shown as the year (four digits) followed by the month (two) digits separated by a slash (i.e. "/").*

(r) For composite cylinders having a limited design life greater than 15 years and for composite cylinders having non-limited design life, the letters "SERVICE" followed by the date 15 years from the date of manufacture (initial inspection) shown as the year (four digits) followed by the month (two) digits separated by a slash (i.e. "/").

NOTE: Once the initial design type has passed the service life test programme requirements in accordance with 6.2.2.1.1 NOTE 2, future production no longer requires this initial service life mark.

- Insert at the end of the first indent of 6.2.2.7.5:

..., except for the marks described in 6.2.2.7.4 (q) and (r) which shall be adjacent to the periodic inspection and test marks of 6.2.2.7.7.

#### 4. Test period

It was agreed by the informal Working Group to revise (2) of P200 as follows:

(2) The following three tables cover compressed gases (Table 1), liquefied and dissolved gases (Table 2) and substances not in Class 2 (Table 3). They provide:

- The UN number, name and description, and classification of the substance;
- The LC50 for toxic substances;
- The types of pressure receptacles authorised for the substance, shown by the letter "X";
- The maximum test period for periodic inspection of the pressure receptacles;

NOTE: For pressure receptacles which make use of composite materials, the maximum test period periodic inspection frequencies shall be 5 years. The test period may be extended to that specified in Tables 1 and 2 (i.e. up to 10 years), if approved as determined by the competent authority which approved the receptacles of the country of use.

- The minimum test pressure of the pressure receptacles;
- The maximum working pressure of the pressure receptacles for compressed gases (where no value is given, the working pressure shall not exceed two thirds of the test pressure) or the maximum filling ratio(s) dependent on the test pressure(s) for liquefied and dissolved gases;
- Special packing provisions that are specific to a substance.

→ The informal Working Group encourages ISO/TC58 to propose requirements regarding inspection at time of fill, referencing applicable ISO standards, in the UN Model Regulations.

→ The informal Working Group asks Andy Webb, as its chair, to submit an INF paper for the December 2012 session of the UN SCETDG, regarding the agreed amendments described in #1 to 4 above, and a formal paper for the June 2013 session of the UN SCETDG.

## **5. Progress re: service life test programme**

It was agreed by the informal Working Group to:

- Wait and see for now – leave up to competent authorities to work out details – there are already several different service life test programmes specified by various competent authorities
- Re-visit later – perhaps then either develop a high level guideline (at UN or ISO) or delete NOTE 2 (eventual goal)

## **6. Need for a further meeting**

It was agreed by the informal Working Group that no further meeting is required for now and it will depend on any feedback from the UN SCETDG.

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