

**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**

**(Twenty-second session, 2-6 December 2002,  
agenda item 2)**

**ADDITIONAL PROVISIONS FOR THE TRANSPORT OF GASES**

**Comments on ST/SG/AC.10/C.3/42/Add.1 concerning Composite cylinders' lifetime**

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

**Summary**

1. In the last draft of the provisions being developed by UN Working Group on Gases, (see ST/SG/AC.10/C.3/42/Add.1) it was proposed to include a limitation on life for composite cylinders. The relevant text was put inside square brackets pending further investigation as to the necessity and value of such a limitation.
2. After review, EIGA has concluded that there is no need for such a limitation on any type of composite cylinder.

**Justification**

1. In view of the investment, gas cylinders are normally designed and manufactured for permanent use. Continuing safe use is guaranteed by carrying out periodic requalification. These periods are regularly reviewed in the light of experience.
  2. EIGA believes that composite cylinders should not be treated differently from other types of cylinders and the established principle outlined above should still be applied.
  3. The ISO standards referred to in the report have unique design criteria which give them a higher safety margin when compared to steel or aluminium alloy cylinders, for example, composite cylinders are designed with a higher burst ratio.
  4. Because the technology of this cylinder type is relatively new, and in order to gain experience, short retest periods have been imposed.
  5. Additionally, the gas industry in Europe together with notified bodies and authorities, are currently conducting research projects to develop retest procedures which are better adapted to the task than the presently practised volumetric expansion test. Future periodic inspection test methods by means of acoustic emission may further improve the safety of this type of cylinder in the near future.
  6. Composite cylinders have proved to be suitable and reliable gas cylinders in different applications which take advantage of their light weight, e.g. hydrogen trailers, medical applications or cylinders for breathing air. Many of these cylinders have already exceeded the proposed lifetime of 15 years.
  7. Since composite cylinders became available on the market, EIGA has not received any alerts for withdrawal or rejection of any type. Nor has EIGA received any reports of failures during retest of these cylinders.
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