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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, 14–18 March 2022

Item 5 (a) of the provisional agenda

**Proposals for amendments to RID/ADR/ADN:
pending issues****Proposal to amend the Note related to EN ISO 18119:2018 in
RID/ADR 6.2.3.5.1 and 6.2.4.2****Transmitted by the European Industrial Gases Association (EIGA)*, **, ******Summary*

Executive summary:	An amendment is proposed for a simple concession which will allow seamless cylinders and tubes to be declared safe at the periodic inspection when the wall thickness is less than the minimum guaranteed thickness by a defined amount for a small area.
Related documents:	ECE/TRANS/WP.15/AC.1/2020/63; Informal documents INF.50 and INF.51 of the Joint Meeting in September 2020; ECE/TRANS/WP.15/AC.1/158, paragraph 17; Informal document INF.16 of the Joint Meeting in September 2021; Informal document INF.24 of the Joint Meeting in March 2021; ECE/TRANS/WP.15/AC.1/160, Annex II

Introduction

1. When document ECE/TRANS/WP.15/AC.1/2020/63 was presented at the Joint Meeting in September 2020, delegates were not prepared to adopt the proposal and called for

* A/76/6 (Sect.20), para. 20.76.

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*** This document was scheduled for publication after the standard publication date owing to circumstances beyond the submitter's control.

more information, particularly on training for inspectors. EIGA committed to further discussions to further develop the proposal.

2. The original proposal was to completely remove the restriction on using those parts of annex B of the standard EN ISO 18119:2018 which allowed wall thicknesses less than the guaranteed minimum to pass periodic inspection. This document proposes a less comprehensive application of annex B which will limit the size and type of defect which can be accepted.

Background

3. The concept of allowing wall thicknesses below the guaranteed minimum at periodic inspection has been present in RID/ADR for many years. Table C2 of EN 1968:2002 has the following footnote:

“^b If corrosion has reached limits of depth or extent, the remaining wall thickness should be checked with an ultrasonic device. The wall thickness may be less than the minimum, with the acceptance of the inspection body, e.g. small (depth and extent) isolated pits. When applying the rejection criteria given in this table, the conditions of use of the cylinders, the severity of the defect and safety factors in the design shall be taken into consideration.”

In practice, inspection bodies have been reluctant to make judgements based on such general criteria.

4. To develop more specific criteria industry sponsored research work backed up by extensive testing which resulted in the publication of ISO/TR 22694:2008 *Gas cylinders – Methods for establishing acceptance/rejection criteria for flaws in seamless steel and aluminium alloy cylinders at time of periodic inspection and testing*. This work was used in the development of annex B of ISO 18119:2018.

5. Industry has adopted ultrasonic inspection which gives a complete inspection of seamless cylinders and tubes and automatically rejects wall thicknesses less than the minimum. The result is that more cylinders and tubes are rejected than would occur if visual inspection was employed because ultrasonic inspection finds minor thickness variations such as isolated pits that would be either unnoticed or recognised as too small to be unsafe.

6. Industry is not content to be scrapping cylinders which are known to be safe. This is not only an economic loss but is an unnecessary cost to the environment. This proposal provides a simple rule for judging the safety of cylinders and tubes which can be readily understood and used by inspection bodies having followed the training on the basis of the requirements of the retesting standard EN ISO 18119.

Proposal

7. EIGA proposes the following amendments (new text is underlined):

6.2.3.5.1 **NOTE 3:** Amend the final sentence as follows:

"Notwithstanding clause B.1 of this standard, all cylinders and tubes whose wall thickness is less than the minimum design thickness, shall be rejected, after taking into consideration a measurement allowance of ultrasonic inspection of up to 2 %."

6.2.4.2 Entry in the table for EN ISO 18119:2018: Amend the NOTE in Column 2 as follows:

"NOTE: Notwithstanding clause B.1 of this standard, all cylinders and tubes whose wall thickness is less than the minimum design thickness, shall be rejected, after taking into consideration a measurement allowance of ultrasonic inspection of up to 2 %."

Justification

8. The ultrasonic probes on the market have an accuracy of ± 0.1 mm. So, the measured value is 0.1 mm above or below the real wall thickness. For a typical 5 mm wall thickness this is ± 2 %. In addition, standard ISO TR 22694:2008 has shown that deviation of up to 5 % are not critical for the safe use of the cylinder.
