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**AMENDMENT 1**  
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**Gas cylinders — Seamless steel  
and seamless aluminium-alloy gas  
cylinders and tubes — Periodic  
inspection and testing**

**AMENDMENT 1**

*Bouteilles à gaz — Bouteilles et tubes à gaz en acier et en alliages  
d'aluminium, sans soudure — Contrôles et essais périodiques*

*AMENDEMENT 1*

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This document was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 4, *Operational requirements for gas cylinders*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 23, *Transportable gas cylinders*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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# Gas cylinders — Seamless steel and seamless aluminium-alloy gas cylinders and tubes — Periodic inspection and testing

## AMENDMENT 1

### Clause 4

Add the following to the list of abbreviated terms and symbols:

$a/t$  flaw depth ratio (in per cent)

### 8.1

Replace the second paragraph with the following:

Particular attention shall be given to cylinders containing flammable, oxidizing, corrosive or toxic gases to eliminate risks at the internal inspection stage. See Annex C for a list of gases that are corrosive to steel cylinder material.

### Table A.1

Replace footnote f) with the following:

Corrosiveness is with reference to human tissue (see ISO 13338) and NOT cylinder material (e.g. as indicated in Annex C for steel).

### B.1

Replace the fourth paragraph with the following:

If the defect size is such that it has reached limits of depth or extent, the remaining wall thickness shall be checked with an ultrasonic device. The wall thickness may be less than the minimum guaranteed wall thickness, when authorized by the competent authority taking into consideration the severity of the defect and safety factors. ISO/TR 22694, and [Figures B.6](#) and [B.7](#) may be used for guidance to evaluate the acceptable size of the defect. When the flaw depth ratio ( $a/t$ ) is less than or equal to 5 %, the flaw length may be extended for the parallel length of the cylinder.

### B.3.3, Table B.3

In the third column (Linear flaws) for seamless steel cylinders, add a second paragraph as follows:

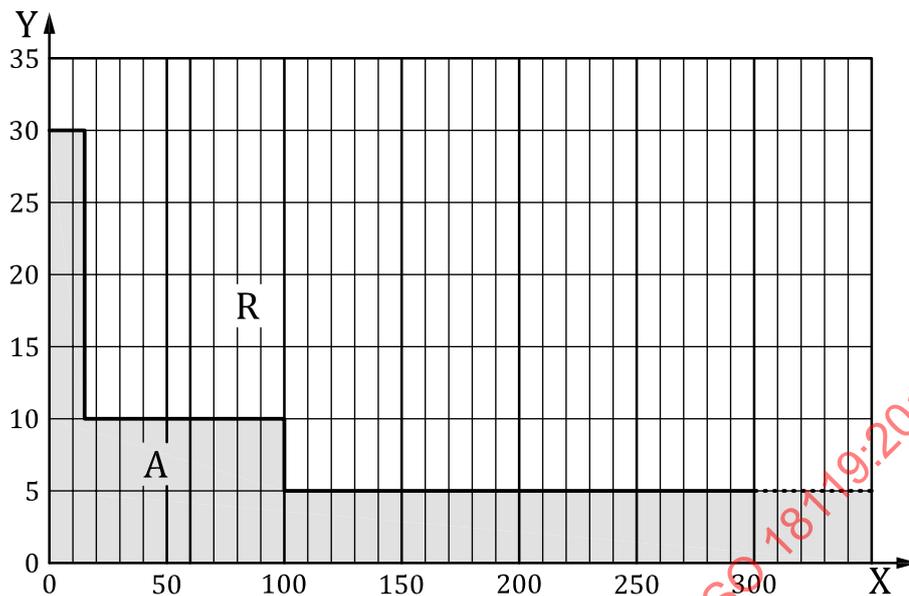
Depth less than or equal to  $0,05 t_m$  whatever the length (see [Figure B.6](#)).

In the third column (Linear flaws) for seamless aluminium-alloy cylinders, add a second paragraph as follows:

Depth less than or equal to  $0,05 t_m$  whatever the length (see [Figure B.7](#)).

B.3.3, Figure B.6

Replace Figure B.6 with the following:



Key

- |   |   |   |        |
|---|---|---|--------|
| X | flaw length, in mm                      | R | reject |
| Y | flaw depth ratio ( $a/t$ ), in per cent | A | accept |

SOURCE: ISO/TR 22694:2008, Figure 19 (modified).

Figure B.6 — Maximum allowable imperfection sizes for seamless steel cylinders of various compositions