
**Gas cylinders — Design, construction
and testing of refillable composite gas
cylinders and tubes —**

Part 3:
**Fully wrapped fibre reinforced
composite gas cylinders and tubes
up to 450 l with non-load-sharing
metallic or non-metallic liners or
without liners**

AMENDMENT 1

*Bouteilles à gaz — Conception, construction et essais des tubes et
bouteilles à gaz rechargeables en matériau composite —*

*Partie 3: Tubes et bouteilles à gaz entièrement bobinés en matériau
composite renforcés de fibres d'une contenance allant jusqu'à 450 l
avec liners non métalliques ou métalliques non structuraux, ou sans
liners*

AMENDEMENT 1



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AMENDMENT 1

8.5.9.4.1

Replace the subclause with the following:

Two cylinders shall be fitted with a steel or aluminium plug with diameter no greater than the neck diameter, to protect threads and sealing surfaces.

Both cylinders shall be dropped twice, in each of the five positions shown in Figure 1, from the calculated drop height on to a smooth concrete surface or a protective steel plate of a minimum of 5 mm thickness. The drop surface shall be sufficiently flat so that the difference in level between any two points on the surface is no more than 2 mm.

The drop height, h , shall be calculated as per Formula (3):

$$h = 1,2 + (0,6 * V / m) \quad (3)$$

where

V is the water volume of the cylinder in litres;

m is the mass of the empty cylinder in kilograms.

One cylinder shall then be subjected to the burst test in 8.5.3.

The other cylinder shall be subjected to the pressure cycling test in 8.5.4.

The following parameters that shall be monitored and recorded are:

- a) visual appearance after each drop: record position and dimensions of impact damage;
- b) parameters specified in 8.5.3;
- c) parameters specified in 8.5.4.

8.5.9.4.2

Replace the subclause with the following:

First cylinder: burst pressure, p_b , shall be equal to or greater than 100 % of the minimum burst level required in the burst test (see 8.5.3).

Second cylinder: the cylinder shall satisfy the requirements of the ambient cycle test (see 8.5.4).

8.5.9.5.2, *first paragraph*

Replace the first paragraph with the following:

The cylinders shall withstand 3 000 pressurization cycles to 2/3 of the test pressure, p_h , without failure by burst or leakage. The test shall continue for a further 9 000 cycles, or until the cylinder fails by leakage, whichever is sooner. In either case, the cylinder shall be deemed to have passed the test. However, if failure during this second part of the test is by burst, then the cylinder shall have failed the test.

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