

INTERNATIONAL STANDARD

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Aluminium alloy gas cylinders — Operational requirements for avoidance of neck and shoulder cracks

*Bouteilles à gaz en alliage d'aluminium — Exigences opérationnelles pour
éviter les fissures du goulot et de l'ogive*

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Foreword

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International Standard ISO 13770 was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 4, *Operational requirements for gas cylinders*.

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Introduction

Over the years it has become recognized that in general, aluminium alloy cylinders should be treated differently in some respects than cylinders constructed of other materials, e.g., steel. One concern for certain alloy/manufacture processes is neck and/or shoulder cracking. Conditions occurring in aluminium cylinders which may lead to neck and/or shoulder cracking depends on material sensitivity, cylinder design, manufacturing defects or uncontrolled operational stresses. The intent of this document is only to provide recommended procedures for operational controls to reduce the risk of neck/shoulder cracking in aluminium cylinders. The material sensitivity, cylinder design and manufacturing defects are covered in ISO 7866.

Aluminium alloy gas cylinders — Operational requirements for avoidance of neck and shoulder cracks

1 Scope

This International Standard specifies operational procedures for avoidance of neck and shoulder cracks in aluminium alloy cylinders having water capacities from 0,5 l to 150 l.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7866:—¹⁾, *Refillable transportable seamless aluminium alloy gas cylinders for worldwide usage — Design, construction and testing.*

ISO 10461:1993, *Seamless aluminium alloy gas cylinders — Periodic inspections and testing.*

ISO 10463:1993, *Cylinders for permanent gases — Inspection at time of filling.*

ISO 10920:1997, *Transportable gas cylinders — 25E taper thread for connection of valves — Specification.*

ISO 11113:1995, *Cylinders for liquefied gases (excluding acetylene and LPG) — Inspection at time of filling.*

ISO 11116:—¹⁾, *Gas Cylinders — 17E taper thread for connection of valves to gas cylinders — Specification.*

ISO 11191:1997, *Gas Cylinders — 25E taper threads for connection of valves to gas cylinders — Inspection gauges.*

ISO 11219:—¹⁾, *Gas Cylinders — 17E taper thread for connection of valves to gas cylinders — Inspection Gauges.*

ISO 11372:1995, *Cylinders for dissolved acetylene-Inspection at time of filling.*

ISO 11755:1996, *Cylinders in bundles for permanent and liquefiable gases (excluding acetylene) — Inspection at time of filling.*

ISO 13341:—¹⁾, *Transportable gas Cylinders — Fitting of valves to gas cylinders.*

3 Definitions

For the purposes of this International Standard the following definitions apply.

3.1 neck crack: Defect which manifests itself as a line which runs vertically down the thread (it should not be confused with tap marks) and/or across the top face of the neck. [See figures 1 a) and 1 b).]

1) To be published.