TECHNICAL REPORT

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Gas cylinders — Guidance for design of composite cylinders —

Part 2: Bonfire test issues

Bouteilles à gaz — Recommandations pour la conception des bouteilles en matière composite —
Partie 2: Aspects concernant les essais à la flamme vive

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword

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This document was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 3, *Cylinder design*.

Introduction

Composite reinforced cylinders have been used in commercial service for about 40 years. Common fibres used in composite cylinders include glass, aramid, and carbon. Resin matrix materials are commonly epoxy or vinyl ester.

Composite cylinders are known to be exposed to the action of fire, ranging from radiant heating to full engulfment in the fire. Cylinder performance during exposure to fire might depend on the cylinder materials of construction, size of the fire, dimensions of the cylinder, its orientation, its contents, and the use of temperature or pressure activated relief devices.

Fire exposure tests are often included in composite cylinder standards, sometimes as a mandatory test and sometimes as an optional test. This document addresses issues related to composite cylinders exposed to fire, summarizes test requirements, and offers a new approach to qualifying cylinders with relief devices.