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CSA Z275.1:16
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Hyperbaric facilities

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Hyperbaric facilities

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Preface

This is the fifth edition of CSA Z275.1, *Hyperbaric facilities.* It supersedes the previous editions published in 2005, 1993, 1982, and 1974.

This Standard was prepared as a result of a formal review of industry requirements and takes into consideration current thinking and proven practices in the use of hyperbaric chambers for treatment as might be required in diving operations, work under compressed-air conditions, medical treatment, and research. It contains the requirements for the design, construction, maintenance, and testing of hyperbaric chambers.

For the purpose of improved application to dive support and clinical settings, this edition has been extensively reorganized from the fourth edition. It has been technically updated to correspond with updates to related standards in the CSA Z275 series of standards as well as with ASME PVHO-1. Changes to this edition include the following:

a) For purposes of international harmonization, the A, B, C classification for hyperbaric chambers has been replaced by descriptor categories – single-occupancy, stationary multiple-occupancy, transportable DDC, evacuation, submersible compression, and chambers for tunneling a caisson work.
b) Additional requirements for single-occupancy chambers have been added.
c) Additional requirements for clinical applications have been added.
d) Additional requirements for research applications have been added.
e) Guidelines for selection, installation, maintenance, and cleaning of compressor/purification-type breathing air systems have been added.
f) Sample collection for compressed breathing air analysis have been added.
g) Recommended analytical procedures for the analysis of compressed breathing air have been added.
h) Moisture content in compressed breathing air at typical user pressures have been added.

CSA Group acknowledges that the development of this Standard was made possible, in part, by the financial support of the Canadian government departments responsible for occupational health and safety. In addition, financial support was received from the Diver Certification Board of Canada, the Canadian Association of Diving Contractors, and several commercial diving companies.

This Standard was prepared by the Subcommittee on Hyperbaric Facilities, under the jurisdiction of the Technical Committee on Occupational Diving and Hyperbaric Environments and the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee.

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
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d) *rationale for the change.*

CSA Z275.1:16
Hyperbaric facilities

1 Scope

1.1 General

1.1.1
This Standard applies to hyperbaric chambers that have as their primary function the subjection of humans to pressure environments exceeding 1 atmosphere absolute, such as those required in diving operations, work under compressed-air conditions, medical treatment, training, and research.

1.1.2
This Standard establishes minimum requirements for the operation, use, design, construction, maintenance, and testing of all hyperbaric chambers.

1.2 Classification of human occupancy hyperbaric chambers

1.2.1 General
This Standard addresses the following classes of human-occupancy chambers:
a) chambers used for clinical HBO treatment and/or for research purposes;
b) chambers used for occupational diving operations;
c) chambers used for tunneling and caisson operations; and
d) hyperbaric chamber systems in support of offshore diving operations.

1.2.2 Chambers used for clinical HBO treatment and/or research purposes
A clinical HBO chamber is a hyperbaric facility that is overseen by a trained safety director and a Level 2 or Level 3 hyperbaric physician, licensed in the jurisdiction in which they practice medicine, who adheres to the Standard of practice as set out by the Canadian Undersea and Hyperbaric Medical Association (CUHMA). Refer to Clause 17 for requirements applicable to research facilities used for human-subject research.

1.2.3 Types of hyperbaric chambers

1.2.3.1 Single-occupancy chamber
A single-occupancy or mono-place chamber is a hyperbaric chamber normally intended for the treatment of one person and capable of oxygen or air pressurization to a depth not exceeding 20 msw (66 fsw) for the provision of hyperbaric oxygen therapy, normally for clinical applications only.

1.2.3.2 Stationary (multiple-occupancy chamber)
A stationary chamber is a multiple-occupancy or multi-place hyperbaric chamber permanently installed in a vessel, platform, or shore-based facility and fixed to a permanent foundation, i.e., the vessel, platform, or building in which it is housed.