

# Compressed breathing air and systems



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*CSA Z180.1:19*

*July 2019*

**Title:** *Compressed breathing air and systems*

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**CSA Z180.1:19**  
**Compressed breathing air and  
systems**



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Published in July 2019 by CSA Group  
A not-for-profit private sector organization  
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3

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ICS 11.040.10  
ISBN 978-1-4883-2315-7

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# Contents

Technical Committee on Compressed Breathing Air and Systems	3
Preface	6
<b>1 Scope</b>	<b>7</b>
<b>2 Reference publications</b>	<b>8</b>
<b>3 Definitions</b>	<b>9</b>
<b>4 Compressed breathing air</b>	<b>12</b>
<b>5 Compressed breathing air systems</b>	<b>12</b>
5.1 Design, installation, and commissioning	12
5.2 Capacity to deliver air	12
5.3 Initial and periodic compliance evaluation	12
5.4 Compliance with pressure vessel code (CSA B51)	13
5.5 Electrical components	13
5.6 Carbon monoxide monitoring	13
5.7 Maintenance of critical records	13
<b>6 Air intakes</b>	<b>13</b>
<b>7 Air compressors</b>	<b>14</b>
7.1 General	14
7.2 Oil-lubricated air compressors	14
<b>8 Ambient air systems</b>	<b>15</b>
8.1 System commissioning	15
8.2 Assessing risk to workers	15
8.3 Quality of air delivered	15
8.4 Respecting jurisdictional contaminant limits	15
8.5 Ambient air systems using outdoor air intakes	15
8.6 Ambient air systems using indoor air intakes (not recommended)	15
8.7 Air sampling frequency	16
8.8 Need for additional controls	16
<b>9 Purification systems</b>	<b>16</b>
<b>10 Receivers</b>	<b>16</b>
<b>11 Cylinders</b>	<b>17</b>
<b>12 Air cylinder filling stations</b>	<b>17</b>
<b>13 Compressed breathing air pipelines</b>	<b>17</b>

**14 Sampling, analysis, and purity of compressed breathing air 18**

- 14.1 General 18
- 14.2 Sampling 19
- 14.3 Analysis 20
  - 14.3.1 Oxygen 20
  - 14.3.2 Nitrogen and rare gases 20
  - 14.3.3 Carbon monoxide 21
  - 14.3.4 Carbon dioxide 21
  - 14.3.5 Methane 21
  - 14.3.6 Volatile non-methane hydrocarbons 21
  - 14.3.7 Volatile halogenated hydrocarbons 21
  - 14.3.8 Oil, particulates, and condensates 21
  - 14.3.9 Pressures less than 15.3 MPa (2216 psig) 22
  - 14.3.10 Pressures equal to or greater than 15.3 MPa (2216 psig) 22
  - 14.3.11 Odour 22
  - 14.3.12 Other significant contaminants 22

**15 Additional testing 23**

- 
- Annex A (informative) — Guidelines for the selection, installation, maintenance, and cleaning of compressor/purification-type breathing air systems 32
  - Annex B (informative) — Guidelines for the selection, installation, operation, maintenance, and cleaning of ambient air systems 48
  - Annex C (informative) — Recommended procedures for analysis of compressed breathing air 54
  - Annex D (informative) — Sample collection for compressed breathing air analysis 56
  - Annex E (informative) — Moisture content in compressed breathing air at typical user pressures 61
  - Annex F (informative) — Compliance checklist 63
  - Annex G (informative) — Bibliography 65

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# Preface

This is the sixth edition of CSA Z180.1, *Compressed breathing air and systems*. It supersedes the previous editions published in 2013, 2000, 1985, 1978, and 1973.

Where appropriate, this Standard has been harmonized with other national and international standards dealing with compressed breathing air and systems, e.g., CSA Z275.2.

New to this edition is a compliance checklist (Annex F). This checklist is provided in order to assist users in compliance auditing. It highlights the critical requirements of the Standard that should be regularly checked as part of a respiratory protection program (as detailed in CAN/CSA-Z94.4).

This Standard was prepared by the Technical Committee on Compressed Breathing Air and Systems, under the jurisdiction of the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

## 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.*
- 3) *This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
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  - b) *provide an explanation of circumstances surrounding the actual field condition; and*
  - c) *where possible, phrase the request in such a way that a specific “yes” or “no” answer will address the issue.*

*Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standard Activities page at [standardsactivities.csa.ca](http://standardsactivities.csa.ca).*
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  - a) *Standard designation (number);*
  - b) *relevant clause, table, and/or figure number;*
  - c) *wording of the proposed change; and*
  - d) *rationale for the change.*

# CSA Z180.1:19

## Compressed breathing air and systems

### 1 Scope

#### 1.1

This Standard provides the minimum requirements, unless otherwise specified by the authority having jurisdiction, for the purity of compressed breathing air supplied to the service outlet and for breathing air systems required to produce, store, and distribute such air.

#### 1.2

This Standard is limited to compressed breathing air and compressed breathing air systems used in the following applications:

- a) supplied-air respirators;
- b) supplied-air suits;
- c) self-contained breathing apparatus (SCBA) (open circuit);
- d) ambient air systems; and
- e) other applications for which qualified persons deem it appropriate to reference the compressed breathing air purity requirements described in this Standard, e.g., vortex tubes used for heating and cooling supplied-air suits.

#### Notes:

- 1) *Implementation of the requirements of this Standard within a respiratory protection program is addressed in CAN/CSA-Z94.4.*
- 2) *The manufacturer, the applicable testing agency, and the authority having jurisdiction should be consulted for quality requirements for breathing gas in closed-circuit SCBA.*
- 3) *For diving operations, refer to CSA Z275.2.*

#### 1.3

This Standard includes requirements applicable to the design, construction, commissioning, calibration, testing, operation, and maintenance of components for compressed breathing air systems.

#### 1.4

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the Standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the Standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.