

**§ 197.340**

- (b) Be protected from excessive heat;
- (c) Be prevented from falling;
- (d) Be tested after any repair, modification, or alteration to the pressure boundaries as set forth in §197.462; and
- (e) Meet the requirements of—
  - (1) Part 54 of this chapter; or
  - (2) 49 CFR 173.34 and 49 CFR part 178, subpart C.

**§ 197.340 Breathing gas supply.**

(a) A primary breathing gas supply for surface-supplied diving must be sufficient to support the following for the duration of the planned dive:

- (1) The diver.
- (2) The standby diver.
- (3) The decompression chamber, when required by §197.432(e)(2) or by §197.434(a) for the duration of the dive and for one hour after completion of the planned dive.
- (4) A decompression chamber when provided but not required by this subpart.
- (5) A closed bell when provided or required by §197.434(d).

(6) An open bell when provided or required by §197.432(e)(4) or by §197.434(c).

(b) A secondary breathing gas supply for surface-supplied diving must be sufficient to support the following:

- (1) The diver while returning to the surface.
- (2) The diver during decompression.
- (3) The standby diver.
- (4) The decompression chamber when required by §197.432(e)(2) or by §197.434(a) for the duration of the dive and one hour after the completion of the planned dive.
- (5) The closed bell while returning the diver to the surface.
- (6) The open bell while returning the diver to the surface.

(c) A diver-carried reserve breathing gas supply for surface-supplied diving must be sufficient to allow the diver to—

- (1) Reach the surface.
- (2) Reach another source of breathing gas; or
- (3) Be reached by a standby diver equipped with another source of breathing gas for the diver.

(d) A primary breathing gas supply for SCUBA diving must be sufficient to support the diver for the duration of the planned dive through his return to

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the dive location or planned pick-up point.

(e) A diver-carried reserve breathing gas supply for SCUBA diving must be sufficient to allow the diver to return to the dive location or planned pick-up point from the greatest depth of the planned dive.

(f) Oxygen used for breathing mixtures must—

(1) Meet the requirements of Federal Specification BB-0-925a; and

(2) Be type 1 (gaseous) grade A or B.

(g) Nitrogen used for breathing mixtures must—

(1) Meet the requirements of Federal Specification BB-N-411c;

(2) Be type 1 (gaseous);

(3) Be class 1 (oil free); and

(4) Be grade A, B, or C.

(h) Helium used for breathing mixtures must be grades A, B, or C produced by the Federal Government, or equivalent.

(i) Compressed air used for breathing mixtures must—

(1) Be 20 to 22 percent oxygen by volume;

(2) Have no objectionable odor; and

(3) Have no more than—

(i) 1,000 parts per million of carbon dioxide;

(ii) 20 parts per million carbon monoxide;

(iii) 5 milligrams per cubic meter of solid and liquid particulates including oil; and

(iv) 25 parts per million of hydrocarbons (includes methane and all other hydrocarbons expressed as methane).

**§ 197.342 Buoyancy-changing devices.**

(a) A dry suit or other buoyancy-changing device not directly connected to the exhaust valve of the helmet or mask must have an independent exhaust valve.

(b) When used for SCUBA diving, a buoyancy-changing device must have an inflation source separate from the breathing gas supply.

**§ 197.344 Inflatable floatation devices.**

An inflatable floatation device for SCUBA diving must—

(a) Be capable of maintaining the diver at the surface in a faceup position;