

**§ 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;

- (b) Have a manually activated inflation device;
- (c) Have an oral inflation device;
- (d) Have an over-pressure relief device; and
- (e) Have a manually operated exhaust valve.

**§ 197.346 Diver's equipment.**

(a) Each diver using SCUBA must have—

(1) Self-contained underwater breathing equipment including—

(i) A primary breathing gas supply with a cylinder pressure gage readable by the diver during the dive; and

(ii) A diver-carried reserve breathing gas supply provided by—

(A) A manual reserve (J valve); or

(B) An independent reserve cylinder connected and ready for use;

(2) A face mask;

(3) An inflatable floatation device;

(4) A weight belt capable of quick release;

(5) A knife;

(6) Swim fins or shoes;

(7) A diving wristwatch; and

(8) A depth gage.

(b) Each diver using a heavyweight diving outfit must—

(1) Have a helmet group consisting of helmet, breastplate, and associated valves and connections;

(2) Have a diving dress group consisting of a basic dress that encloses the body (except for head and hands) in a tough, waterproof cover, gloves, shoes, weight assembly, and knife;

(3) Have a hose group consisting of the breathing gas hose and fittings, the control valve, the lifeline, communications cable, and a pneumofathometer; and

(4) Be provided with a helmet cushion and weighted shoes.

(c) Each surface-supplied dive operation using a heavyweight diving outfit must have an extra breathing gas hose with attaching tools available to the standby diver.

(d) Each diver using a lightweight diving outfit must have—

(1) A safety harness;

(2) A weight assembly capable of quick release;

(3) A mask group consisting of a lightweight mask and associated valves and connections;

(4) A diving dress group consisting of wet or dry diving dress, gloves, shoes or fins, and knife; and

(5) A hose group consisting of the breathing gas hose and fittings, the control valve, the lifeline, communications cable, and a pneumofathometer (if the breaking strength of the communications cable is at least equal to that required for the lifeline, the communications cable can serve as the lifeline).

(e) Each surface-supplied air dive operation within the no-decompression limits and to depths of 130 fsw or less must have a primary breathing gas supply at the dive location.

(f) Each surface-supplied dive operation outside the no-compression limits, deeper than 130 fsw, or using mixed-gas as a breathing mixture must have at the dive location—

(1) A primary breathing gas supply; and

(2) A secondary breathing gas supply.

(g) Each diver diving outside the no-decompression limits, deeper than 130 fsw, or using mixed-gas must have a diver-carried reserve breathing gas supply except when using a heavyweight diving outfit or when diving in a physically confining area.

OPERATIONS

**§ 197.400 Applicability.**

Diving operations may only be conducted from a vessel or facility subject to the subpart if the regulations in this subpart are met.

**§ 197.402 Responsibilities of the person-in-charge.**

(a) The person-in-charge shall—

(1) Be fully cognizant of the provisions of this subpart;

(2) Prior to permitting any commercial diving operation to commence, have—

(i) The designation of the diving supervisor for each diving operation as required by § 197.210;

(ii) A report on—

(A) The nature and planned times of the planned diving operation; and

(B) The planned involvement of the vessel or facility, its equipment, and its personnel in the diving operation.