

(2) Horizontally and parallel to the boat's center line for a duration of one minute fore and one minute aft.

(3) Horizontally and perpendicular to the boat's center line for a duration of one minute to starboard and one minute to port.

(b) Each battery must be installed so that metallic objects cannot come in contact with the ungrounded battery terminals.

(c) Each metallic fuel line and fuel system component within 12 inches and above the horizontal plane of the battery top surface as installed must be shielded with dielectric material.

(d) Each battery must not be directly above or below a fuel tank, fuel filter, or fitting in a fuel line.

(e) A vent system or other means must be provided to permit the discharge from the boat of hydrogen gas released by the battery.

(f) [Reserved]

(g) Each battery terminal connector must not depend on spring tension for its mechanical connection to the terminal.

[CGD 73-217, 42 FR 5944, Jan. 31, 1977, as amended by CGD 81-092, 48 FR 55736, Dec. 15, 1983]

§ 183.425 Conductors: General.

(a) Each conductor must be insulated, stranded copper.

(b) Except for intermittent surges each conductor must not carry a current greater than that specified in Table 5 for the conductor's gauge and temperature rating.

(c) For conductors in engine spaces, amperages must be corrected by the appropriate correction factor in note 1 of Table 5.

(d) Each conductor in a multiconductor sheath must be at least a No. 18 AWG conductor.

(e) Each conductor installed separately must be at least a No. 16 AWG conductor.

(f) Each No. 18 AWG conductor in a multiconductor sheath may not extend out of the sheath more than 30 inches.

(g) This section does not apply to communications systems; electronic navigation equipment; electronic circuits having a current flow of less than one ampere; conductors which are totally inside an equipment housing; resistance conductors that control circuit amperage; high voltage secondary conductors and terminations that are in ignition systems; pigtailed of less than seven inches of exposed length and cranking motor conductors.

TABLE 5—ALLOWABLE AMPERAGE OF CONDUCTORS

Conductor size (AWG)	Temperature rating of conductor insulation						
	60 °C (140 °F)	75 °C (167 °F)	80 °C (176 °F)	90 °C (194 °F)	105 °C (221 °F)	125 °C (257 °F)	200 °C (392 °F)
18	10	10	15	20	20	25	25
16	15	15	20	25	25	30	35
14	20	20	25	30	35	40	45
12	25	25	35	40	45	50	55
10	40	40	50	55	60	70	70
8	55	65	70	70	80	90	100
6	80	95	100	100	120	125	135
4	105	125	130	135	160	170	180
3	120	145	150	155	180	195	210
2	140	170	175	180	210	225	240
1	165	195	210	210	245	265	280
0	195	230	245	245	285	305	325
00	225	265	285	285	330	355	370
000	260	310	330	330	385	410	430
0000	300	360	385	385	445	475	510

NOTES

1. See the following table:	60 °C (140 °F)	75 °C (167 °F)	80 °C (176 °F)	90 °C (194 °F)	105 °C (221 °F)	125 °C (257 °F)	200 °C (392 °F)
Temperature rating of conductor	0.58	0.75	0.78	0.82	0.85	0.89	1.00
2. See the following table:	<i>Correction factor</i>						
Number of current carrying conductors:							
3	0.70						

TABLE 5—ALLOWABLE AMPERAGE OF CONDUCTORS—Continued

Conductor size (AWG)	Temperature rating of conductor insulation						
	60 °C (140 °F)	75 °C (167 °F)	80 °C (176 °F)	90 °C (194 °F)	105 °C (221 °F)	125 °C (257 °F)	200 °C (392 °F)
4 to 6 .....	.60						
7 to 24 .....	.50						
25 and above .....	.40						

[CGD 73-217, 42 FR 5944, Jan. 31, 1977; 42 FR 24739, May 16, 1977, as amended by CGD 81-092, 48 FR 55736, Dec. 15, 1983]

**§ 183.430 Conductors in circuits of less than 50 volts.**

(a) Each conductor in a circuit that has a nominal voltage of less than 50 volts must:

(1) Meet the requirements of § 183.435; or

(2) Meet:

(i) The insulating material temperature rating requirements of SAE Standard J378; and

(ii) SAE Standard J1127, or SAE Standard 1128.

(b) This section does not apply to communication systems; electronic navigation equipment; resistance conductors that control circuit amperage; and pigtailed of less than seven inches of exposed length.

[CGD 73-217, 42 FR 5944, Jan. 31, 1977, as amended by CGD 87-009, 53 FR 36971, Sept. 23, 1988]

**§ 183.435 Conductors in circuits of 50 volts or more.**

(a) Each conductor in a circuit that has a nominal voltage of 50 volts or more must be:

(1) A conductor that has insulation listed and classified moisture resistant and flame retardant in Article 310, NFPA No. 70, National Electric Code;

(2) A flexible cord type SO, STO, ST, SJO, SJT, or SJTO listed in Article 400, NFPA No. 70, National Electric Code;

(3) A conductor that meets IEEE Standard 45.

(4) A conductor that meets UL Standard 1426.

(b) Where the nominal circuit voltage of each of three or more current carrying conductors in a duct, bundle, or cable is 50 volts or more, the amperages of each of those conductors must not exceed the value in table 5 multi-

plied by the correction factor in note 2 to Table 5 for the number of conductors that carry 50 volts or more.

(c) This section does not apply to communication systems; electronic navigation equipment; resistance conductors that control circuit amperage; conductors in secondary circuits of ignition systems; and pigtailed of less than seven inches of exposed length.

[CGD 73-217, 42 FR 5944, Jan. 31, 1977; 42 FR 24739, May 16, 1977, as amended by CGD 80-047 and CGD 80-046, 45 FR 85450, Dec. 29, 1980; CGD 87-009, 53 FR 36972, Sept. 23, 1988]

**§ 183.440 Secondary circuits of ignition systems.**

(a) Each conductor in a secondary circuit of an ignition system must meet SAE Standard J557.

(b) The connection of each ignition conductor to a spark plug, coil, or distributor must have a tight fitting cap, boot, or nipple.

[CGD 73-217, 42 FR 5944, Jan. 31, 1977, as amended by USCG-1999-5832, 64 FR 34716, June 29, 1999]

**§ 183.445 Conductors: Protection.**

(a) Each conductor or group of conductors that passes through a bulkhead, structural member, junction box, or other rigid surface must be protected from abrasion.

(b) Each ungrounded terminal or stud that is continuously energized must meet § 183.455 or must have a boot, nipple, cap, cover, or shield that prevents accidental short-circuiting at the terminals or studs.

[CGD 81-092, 48 FR 55736, Dec. 15, 1983]

**§ 183.455 Overcurrent protection: General.**

(a) Each ungrounded current-carrying conductor must be protected by a