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four standards incorporated by reference; see 46 CFR 110.10-1), or equivalent standard.

(d) Switchboard wire must meet subpart 111.30 of this part.

(e) Wire must be of the copper stranded type.

[CGD 94-108, 61 FR 28281, June 4, 1996, as amended at 62 FR 23908, May 1, 1997; 62 FR 27659, May 20, 1997; USCG-2003-16630, 73 FR 65198, Oct. 31, 2008]

§ 111.60-13 Flexible electric cord and cables.

(a) *Construction and testing.* Each flexible cord and cable must meet the requirements in section 24.6.1 of IEEE 45-2002, Article 400 of NFPA NEC 2002, NEMA WC-3, NEMA WC-70, or UL 62 (all five standards incorporated by reference; see 46 CFR 110.10-1).

(b) *Application.* No flexible cord may be used except:

(1) As allowed under Sections 400-7 and 400-8 of NFPA NEC 2002; and

(2) In accordance with Table 400-4 in NFPA NEC 2002.

(c) *Allowable current-carrying capacity.* No flexible cord may carry more current than allowed under Table 400-5 in NFPA NEC 2002, NEMA WC-3, or NEMA WC-70.

(d) *Conductor size.* Each flexible cord must be No. 18 AWG (0.82 mm²) or larger.

(e) *Splices.* Each flexible cord and cable must be without splices or taps except for a cord or cable No. 12 AWG (3.3 mm²) or larger spliced for repairs in accordance with § 111.60-19.

(f) *Pull at joints and terminals.* Each flexible cord and cable must be connected to a device or fitting by a knot, tape, or special fitting so that tension is not transmitted to joints or terminal screws.

[CGD 74-125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94-108, 61 FR 28281, June 4, 1996; USCG-2003-16630, 73 FR 65198, Oct. 31, 2008]

§ 111.60-17 Connections and terminations.

(a) In general, connections and terminations to all conductors must retain the original electrical, mechanical, flame-retarding, and, where necessary, fire-resisting properties of the cable.

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All connecting devices must be suitable for copper stranded conductors.

(b) If twist-on type of connectors are used, the connections must be made within an enclosure and the insulated cap of the connector must be secured to prevent loosening due to vibration.

(c) Twist-on type of connectors may not be used for making joints in cables, facilitating a conductor splice, or extending the length of a circuit.

[CGD 94-108, 61 FR 28281, June 4, 1996]

§ 111.60-19 Cable splices.

(a) A cable must not be spliced in a hazardous location, except in intrinsically safe systems.

(b) Each cable splice must be made in accordance with section 25.11 of IEEE 45-2002 (incorporated by reference; see 46 CFR 110.10-1).

[CGD 94-108, 61 FR 28281, June 4, 1996, as amended by USCG-2003-16630, 73 FR 65198, Oct 31, 2008]

§ 111.60-21 Cable insulation tests.

All cable for electric power and lighting and associated equipment must be checked for proper insulation resistance to ground and between conductors. The insulation resistance must not be less than that in section 34.2.1 of IEEE 45-2002 (incorporated by reference; see 46 CFR 110.10-1).

[USCG-2003-16630, 73 FR 65199, Oct. 31, 2008]

§ 111.60-23 Metal-clad (Type MC) cable.

(a) Metal-clad (Type MC) cable permitted on board a vessel must be continuous corrugated metal-clad cable.

(b) The cable must have a corrugated gas-tight, vapor-tight, and watertight sheath of aluminum or other suitable metal that is close-fitting around the conductors and fillers and that has an overall jacket of an impervious PVC or thermoset material.

(c) The cable is not allowed in areas or applications exposed to high vibration, festooning, repeated flexing, excessive movement, or twisting, such as in engine rooms, on elevators, or in the area of drill floors, draw works, shakers, and mud pits.

(d) The cable must be installed in accordance with Article 326 of NFPA NEC 2002 (incorporated by reference; see 46