

**§ 111.105-3 General requirements.**

All electrical installations in hazardous locations must comply with the general requirements of section 43 of IEEE Std 45 and either the NEC articles 500-505 or IEC series 79 publications. When installations are made in accordance with the NEC articles, marine shipboard cable that complies with subpart 111.60 of this chapter may be used instead of rigid metal conduit, if installed fittings are approved for the specific hazardous location and the cable type.

[CGD 94-108, 61 FR 28284, June 4, 1996]

**§ 111.105-5 System integrity.**

In order to maintain system integrity, each individual electrical installation in a hazardous location must comply specifically with NEC articles 500-505, as modified by § 111.105-3, or IEC series 79 publications, but not in combination in a manner that would compromise system integrity or safety. Hazardous location equipment must be approved as suitable for use in the specific hazardous atmosphere in which it is installed. The use of non-approved equipment is prohibited.

[CGD 94-108, 61 FR 28284, June 4, 1996]

**§ 111.105-7 Approved equipment.**

When this subpart or the NEC states that an item of electrical equipment must be approved or when IEC 79-0 states that an item of electrical equipment must be tested or approved in order to comply with IEC 79 series publications, that item must be—

(a) Listed or certified by an independent laboratory as approved for use in the hazardous locations in which it is installed; or

(b) Purged and pressurized equipment that meets NFPA No. 496 or IEC 79-2.

[CGD 94-108, 61 FR 28284, June 4, 1996]

**§ 111.105-9 Explosionproof and flameproof equipment.**

Each item of electrical equipment that is required in this subpart to be explosionproof under the NEC classification system must be approved as meeting UL 1203. Each item of electrical equipment that is required in

this subpart to be flameproof must be approved as meeting IEC 79-1.

[CGD 94-108, 61 FR 28284, June 4, 1996]

**§ 111.105-11 Intrinsically safe systems.**

(a) Each system required under this subpart to be intrinsically safe must use approved components meeting UL 913 or IEC 79-11(I<sub>a</sub>).

(b) Each electric cable of an intrinsically safe system must—

(1) Be 50 mm (2 inches) or more from cable of non-intrinsically safe circuits, partitioned by a grounded metal barrier from other non-intrinsically safe electric cables, or a shielded or metallic armored cable; and

(2) Not contain conductors for non-intrinsically safe systems.

(c) As part of plan approval, the manufacturer must provide appropriate installation instructions and restrictions on approved system components. Typical instructions and restrictions include information addressing—

(1) Voltage limitations;

(2) Allowable cable parameters;

(3) Maximum length of cable permitted;

(4) Ability of system to accept passive devices;

(5) Acceptability of interconnections with conductors or other equipment for other intrinsically safe circuits; and

(6) Information regarding any instructions or restrictions which were a condition of approval of the system or its components.

(d) Each intrinsically safe system must meet ISA RP 12.6, except Appendix A.1.

[CGD 94-108, 61 FR 28284, June 4, 1996, as amended at 62 FR 23909, May 1, 1997]

**§ 111.105-15 Additional methods of protection.**

Each item of electrical equipment that is—

(a) A sand-filled apparatus must meet IEC 79-5;

(b) An oil-immersed apparatus must meet either IEC 79-6 or NEC article 500-2;

(c) Type of protection “e” must meet IEC 79-7;

(d) Type of protection “n” must meet IEC 79-15; and