

MSC Guidelines for Hazardous Locations

Procedure Number: E2-12

Revision Date: 04/07/2010



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References:

- a. Title 46 CFR 111.105, Hazardous Locations.
 - b. National Electric Code (NFPA 70) 2002 - Articles 500-506 and 510.
 - c. Safety of Life at Sea (SOLAS), 1974, as amended 2003, 2004 & 2005.
 - d. ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways 2007
 - e. IMO International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) 2007 Ed., Ch. 10.
 - f. IEC Standard 60092-502, Electrical Installations in Ships- Part 502: Tankers- Special Features.
 - g. IMO Resolution A.673 (16) Guidelines for the Transport and Handling of Limited Amounts of Hazardous and Noxious Liquid Substances in Bulk on Offshore Support Vessels.
 - h. U.S. Coast Guard interpretation of IEC 60092-502: 1999 Supplement.
 - i. IEC 60079 Parts 0 (2000), 1 (2001), 2 (2001), 5 (1997), 6 (1995), 7 (2001), 11 (1999), 15 (2001), 18 (1992) - Electrical Apparatus for Explosive Gas Atmospheres.
 - j. NFPA No. 496: Standard for Purged and Pressurized Enclosures for Electrical Equipment.
 - k. Navigation and Inspection Circular (NVIC) 2-89, "Guide for Electrical Installations on Merchant Vessels and Mobile Offshore Drilling Units." It can be found on www.uscg.mil/hq/cg5/nvic/pdf/1989/n2-89.pdf
 - l. IMO Resolution A.673 (16): US Standards and Interpretation.
 - m. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC CODE) 2003 Edition, Chapter 10.
 - n. ABS Rules for Building and Classing Steel Barges 2003.
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Contact Information:

If you have any questions or comments concerning this document, please contact the Marine Safety Center (MSC) by e-mail or phone, referring to Procedure Number: E2-12.

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Responsibilities:

Using applicable portions of references (a) through (n), the submitter shall provide sufficient documentation and plans to indicate compliance. Hazardous location plans and related documents must be prepared for *Tank Vessels*, *Cargo Vessels*, *Mobile Offshore Drilling Units (MODU)*, *Offshore Supply Vessels* and vessels that carry *Certain Bulk Dangerous Cargos*. A typical hazardous location submittal includes a detailed drawing showing the hazardous areas, details for electrical equipment located inside the hazardous location and cargo gauging information. The submission shall be made in triplicate. To facilitate plan review and project management, all plans and information specified in these guidelines should be submitted as one complete package through a single point of contact.

General Guidance:

- ❑ Type and classification of hazardous cargoes to be carried as defined in 46 CFR Subpart 30.10, 150.115 and 153.40.
- ❑ Exhaust system location of cargo pump and other engines on tank barges must exceed 10ft from the nearest source of flammable vapor or gas per 4-1-1/15.3 of reference (d) and 46 CFR 110.20-1.
- ❑ On tank and cargo vessels, a hazardous area plan on weather deck locations per subparagraph 111.105-31(l) of reference (a), along with cargo and/or Tankerman houses (if installed). If the houses are placed within the hazardous areas, they must be elevated (cofferdams). Refer to 5-2-3/1.5.2(c) of reference (n) and 46 CFR 110.30-1(b). The plan should indicate if the interior of a deck house is or is not a hazardous area.
- ❑ In a hazardous area, engines with electrical and electronic starting, control and monitoring systems must be approved for installation. Approval is normally based on engine series and is performed by MSC. Please contact MSC if further guidance is needed.
- ❑ Per 46 CFR 110.25-1(i), a hazardous area submittal should include:
 - A plan identifying hazardous and non-hazardous areas and cargo engines and generators (if installed).
 - Complete and detailed Bill of Materials, including independent laboratory testing label or listing for explosion-proof and intrinsically safe equipment and systems, and purged and pressurized equipment per references (i) and/or (j).
 - Elementary one-line wiring diagram showing all electrical installation details, location and type of equipment, and wiring methods of 46 CFR 111.105-17.
 - Maximum temperature rating of electrical equipment in hazardous locations.
 - General criteria for hazardous areas in reference (k).

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General Guidance (continued):

- If reference (f) is the applicable standard when developing hazardous area plans and the installation of electrical equipment in hazardous areas, the plans must also comply with reference (h). Normally, this will involve plans for:
 - Vessels for which an equivalency to reference (a) has been requested and granted by Marine Safety Center per 46 CFR 110.20-1.
 - Offshore supply vessels to which references (g) and (l) apply.
 - Oversight of plans for vessels enrolled in the Alternative Compliance Program (ACP) under NVIC 2-95 where the rules of the Authorized Classification Society and applicable US Supplement is applicable or are based on compliance with reference (f).

Note: For vessels not normally allowed to comply with reference (f), an equivalency must first be requested and granted from MSC. For MODU's, applicable MODU material substitute requirements are contained in 46 CFR 108.105. For classified (hazardous) locations, material substitute requirements are found in 108.170 to 108.187.

Disclaimer:

This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is not intended to nor does it impose legally-binding requirements on any party. It represents the Coast Guard's current thinking on this topic and may assist industry, mariners, the general public, and the Coast Guard, as well as other federal and state regulators, in applying statutory and regulatory requirements. You can use an alternative approach for complying with these requirements if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative, you may contact the Marine Safety Center, the unit responsible for implementing this guidance.