

**DEPARTMENT OF TRANSPORTATION  
UNITED STATES COAST GUARD**

COMMANDANT (MMT-4)  
U.S. COAST GUARD  
WASHINGTON, D.C. 20591

5 June 1967

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 4-67

Subj: Application of Incombustible Insulation Requirements and Identification of Approved Materials

1. Purpose. This circular is intended to give practical guidance to designers, shipbuilders, and inspectors in the application of regulations relating to approved incombustible materials and interior finishes.
2. Background. For several years, Coast Guard regulations have required tank vessels and certain cargo vessels to meet minimum structural fire protection requirements within accommodation and service spaces. Sub-paragraphs 46 CFR 32.57-10(d)(7), Rules and Regulations for Tank Vessels (CG-123), and 46 CFR 92.07-10(d)(7), Rules and Regulations for Cargo and Miscellaneous Vessels (CG-257), require insulation to be approved incombustible materials. Subparagraphs 46 CFR 32.57-10(d)(8) and 46 CFR 92.07-10(d)(8) require that all sheathing, furring and holding pieces incidental to the erection of insulation be of approved incombustible materials. Rules and Regulations for Passenger Vessels (Paragraph 46 CFR 72.05-40) require incombustible material and erection details in almost all locations.
3. Discussion. Implementation of these regulations has shown that several problem areas exist. Those areas involve:
  - a. Application difficulties when strictly requiring that all materials incidental to the insulation of cold water piping and air conditioning ducting be approved as "incombustible";
  - b. Difficulty in determining on the vessel which materials qualify as "approved incombustible" and which materials and lay-up procedures qualify as an "approved interior finish".
4. Action.
  - a. For insulation on piping and ventilation ducting, the requirement that all materials incidental to the erection of insulation be incombustible" shall be applied as follows:
    - (1) The basic insulation shall be approved incombustible material.
    - (2) All adhesives, sealants, etc., used between the piping or ducting and the insulation, or between adjacent blocks of insulation, shall be approved incombustible materials.
    - (3) All other materials installed beneath the exterior surface (which will be considered to be a surfacing material) shall be approved incombustible materials. Factory assembled materials may be tested as a unit in determining compliance with paragraphs (1), (2) and (3).

- (4) Surfacing material includes not only the visible finish but all material used in its composition or its application to the incombustible base materials mentioned in 4a(1), (2) and (3) above. Surfacing material; whether factory applied or field applied, need not meet the requirements for approved incombustible materials, but, except for thickness, shall qualify as an approved interior finish in accordance with Coast Guard specification 164.012. To provide a greater flexibility in design, without an increased fire risk due to either the quantity or flammability of materials, the thickness of surfacing material will be limited as follows:
  - (a) The total thickness of surfacing material shall not exceed 0.125 inches.
  - (b) The total thickness of combustible components of a surfacing material shall not exceed 0.075 inches.
- b. All materials "incidental to the erection" of insulation required to be incombustible, other than that specified in paragraph 4(a), shall be incombustible. An approved interior finish may be applied on the exterior of such insulations providing the finish is not essential to the securing of the insulation. Specific requirements regarding securing of structural Insulation, when used for fire protection, are contained in NVIC 10-63.
- c. In order to determine that the regulations referred to in paragraphs 4(a) and (b) are being met, the following procedures shall be employed:
  - (1) The structural fire protection plans for new construction or conversion, in addition to other required items, shall include a detail for each typical installation to be used for insulating and/or vapor sealing piping and duct work. All materials employed shall be specifically identified by manufacturer, product designation and Coast Guard approval number. Where thickness is a parameter with respect to fire protection, this shall be specified also. The letter approving the plan will indicate which materials are acceptable on the basis of the identification furnished and which will require local certification in accordance with 46 CFR 164.012-15.
  - (2) The Coast Guard inspector shall check the installations against the approved plans while they are being erected and he shall identify the materials on-scene by reference to manufacturer's markings on sealed cartons, unopened cans, or by such cross reference between the materials on hand and the shipping invoices as will satisfy him regarding the identification. If there is reasonable doubt as to whether materials supplied are incombustible, a sample should be submitted to Commandant (MMT) for testing at the National Bureau of Standards.
  - (3) Structural fire protection installations, including the insulation and vapor-sealing of piping and duct work, cannot be inspected after the installations have been completed. Consequently, it is the responsibility of whoever is acting in behalf of the shipowner to obtain certification, to provide the required Coast Guard approved plans and to make timely arrangements with the cognizant Officer in Charge, Marine Inspection for the inspection of this work while it is in progress.
- d. It has not been the practice to list approved interior finish materials in CG-190 (Equipment Lists). The lack of such a listing complicates proper selection and identification of

materials. This is currently being studied with a view towards possibly requiring both the listing and labeling by a recognized laboratory to indicate that the material complies with Coast Guard specification 164.012. In the meantime, materials shall be identified as approved interior finishes in the manner described by paragraph (c) above, but not including a Coast Guard approval number. Reference shall be made to listing and labeling by a recognized laboratory. Alternately, copies of current test reports shall be furnished.



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- Dist: (SDL No. 84)
- A: None
- B: n(45); c(10); eg(3); q(6); b d p(1)
- C: m(4); o(2)
- D: i(2); k(1)
- E: m(1); o(2)
- F: None List 112-155