

Commandant (G-MMT-4)  
U. S. Coast Guard  
Washington, DC 20593

NVIC 8-80  
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## NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 8-80

Subj: Fire Hazard of Polyurethane and Other Organic Foams

1. **PURPOSE.** This Circular is intended to alert vessel inspectors, designers, builders, and operators of the potential fire hazard of polyurethane and other organic foam materials.
2. **BACKGROUND.** Serious fires involving polyurethane or other organic foams have occurred on several ships and in a number of buildings.
3. **DISCUSSION.**
  - a. Polyurethane and other organic foams are finding increased use on vessels because of their excellent insulating properties and light weight. When properly installed and protected against fire, organic foams present no more fire hazard than other combustible materials. However, when organic foams (including those described as self-extinguishing, non-burning, fire resistant, flame resistant, and similar terms) are exposed to fire or heat, they may ignite and burn with rapid flame spread, high temperatures, toxic gases and voluminous quantities of smoke.
  - b. Coast Guard regulations specifically prohibit combustible construction, including organic foams, in most living and working areas of inspected vessels. These specific regulations do not apply to cargo spaces and certain machinery spaces on inspected vessels and do not apply to uninspected vessels. Extensive use of polyurethane and other foamed plastics in occupied spaces is further prohibited by more general regulations that require fire hazards to be minimized insofar as is reasonable and practicable on inspected vessels. Cargo holds are usually unoccupied and the cargo itself is often combustible, so the flammability of construction materials within cargo holds is not regulated by the Coast Guard. Normally, cargo holds are safe for hot work when emptied of cargo. However, several fires have occurred involving foam insulation in otherwise empty holds. Therefore, certain precautions are necessary in holds and other spaces containing significant quantities of organic foam insulation.
4. **ACTION.**
  - a. Whenever polyurethane or other organic foam insulations are installed in cargo holds or other spaces, it is recommended that a covering of 22 USSG steel or another suitable non-combustible material with at least a 15 minute fire rating be installed over the foam

containing organic foam insulation.

- (1) Organic foam should be removed by cold means from the work area before hot work is done on the protective covering, on a bulkhead or deck adjoining the insulated compartment, or on equipment in a space with any exposed organic foam;
  - (2) One or more charged fire hoses should be laid out on the work area;
  - (3) Portable extinguishers and breathing apparatus should be readily available;
  - (4) Effective and rapid means of escape should be continually available for all workers;
  - (5) The protective covering should be replaced as soon as possible after completion of repairs;
  - (6) Combustible waste materials should not be allowed to accumulate;
  - (7) The safety recommendations of the foam supplier should be observed.
- c. Coast Guard inspection personnel shall not knowingly enter spaces where unprotected polyurethane and other organic foams are being exposed to ignition by hot work or other sources and shall notify the person in charge of the danger of such materials.

  
**HENRY H. BELL**  
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