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MARINE SAFETY ALERT

Inspections and Compliance Directorate

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COMBUSTIBLE INSULATION PANELS DISCOVERED ON FIBERGLASS SMALL PASSENGER VESSELS

Coast Guard marine inspectors discovered a serious structural fire protection deficiency while conducting an inspection of a certificated small passenger vessel (SPV) that had been converted from recreational service. This led to the discovery of similar deficiencies on other SPVs around the United States and a multi-year project that brought forty-six certificated vessels into compliance with the requirements in title 46 Code of Federal Regulations (CFR) Part 177.410.

Recreational vessels are designed to a different safety standard than certificated vessels, particularly with regard to fire resistance of fiber reinforced plastic (FRP) structures. When a vessel converts to commercial service, it can be difficult to determine if the existing FRP structures meet the regulatory requirements to be considered fire retardant and may even require destructive testing.

A SPV constructed of FRP may be built with general purpose resin only if it complies with additional fire safety measures compared to vessels built with fire retardant resin. Those additional requirements include fire boundaries surrounding cooking areas, protection of ignition sources, a fire detection system, fire resistant furnishings, limits on the number of overnight accommodations and cargo carriage, and limits on use with gasoline engines. Finally, machinery space bulkheads must be lined with noncombustible panels or insulation approved in accordance with 46 CFR 164.009.

Marine inspectors raised concerns during the aforementioned SPV's certification process, that the insulation panels installed throughout the vessel were not constructed with non-combustible material. The key distinguishing feature that initially raised the concern was the black color of the panel's insulation, which was only visible on the sides of the insulation exposed on the underside of the deck hatch leading to the engine room. For the majority of the insulation panels in the space, the sides were concealed from an inspector's viewpoint due to the typical side-by-side arrangement of engine room panels, with the



silver outer layer being the most noticeable. Marine inspectors subsequently wrote a deficiency after the vessel owner was unable to provide documentation proving the installed panels complied with 46 CFR 164.009. Insulation panels, particularly on vessels converted from recreational service, are often installed by the manufacturer or the owner for noise reduction purposes and may actually increase the risk of fire spread.

The Coast Guard **strongly recommends** that vessel owners and operators seek documentation from their vessel's manufacturer on (1) the test specifications of the resin used to build their vessels and (2) the approval standard of insulation panels installed on machinery space boundaries. Vessel owners and operators that are unsure are encouraged to contact their cognizant Marine Inspection Office when considering purchasing new noncombustible panels.

This Safety Alert is provided for informational purposes only and does not relieve any domestic or international safety, operational, or material requirement. It was developed by Marine Safety Unit Chicago and distributed by the Office of Investigations and Casualty Analysis. Questions may be sent to HQS-SMB-CG-INV@uscg.mil.