



# Marine Safety Information Bulletin

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## IMPROPER REPAIR AND MAINTENANCE OF IMMERSION SUITS

**BACKGROUND:** The major function of an immersion suit is to provide thermal insulation, buoyancy, and flotation stability when a person enters the water. Recently, Marine Inspectors from Sector Detroit and Sturgeon Bay discovered immersion suits with improper repairs to the gloves (See Photos), a general lack of servicing documentation, and suits that were beyond 10 years old with no inflation tests. These particular Immersion suits were last inspected and serviced in the fall of 2016 by American Marine (Superior Wisconsin). American Marine closed due to improper and faulty life raft servicing. The closure of American Marine left few approved and available equipment repair facilities located within the Mid-West.

Not just any neoprene suit satisfies Coast Guard requirements for immersion or survival suits. On the aforementioned suits, the original neoprene gloves had been removed and replaced with rubber glove with an unapproved, uninsulated general industrial rubber glove (See Photos). At a glance, the repair appears to be an approved repair making the watertight seal between the gloves and the suit. However, after a closer inspection, it was discovered that the gloves were not Coast Guard approved, having no thermal insulation properties.

Immersion Suits must be CG Approved and repairs must be made in accordance with manufactures specifications. Approved suits, gloves, boots, and hood are integral to the entire suit that must pass rigorous testing procedures by Coast Guard-accepted, independent laboratory. The neoprene material itself provides buoyancy, and the bladder at the back is designed to turn an unconscious person face-up immediately. Reflective tape patches are installed by the manufacturer according to Coast Guard requirements that specify the number of patches and their positions. The locations of these reflective patches should not be changed. Per NVIC 01-08, the seams and closures of immersion suits experience deterioration over time. However, even under ideal conditions, the materials and adhesives used have a finite service life, and will inevitably experience reductions in strength, buoyancy, and/or water-tightness with age. NVIC 01-08 can be located at: <http://www.dco.uscg.mil/Our-Organization/NVIC/Year/2000/>.

**ACTION:** Spring Break-out provides an opportunity for close inspection of a vessel's Immersion Suits; Owners and Operators should pay particular attention to immersion suits, looking for improper repairs and serviceability. Ensure owner/operators are having immersion suits repaired to the manufactures specification. Owner/Operators should ask the approved servicing location to evaluate whether an old suit is still serviceable and safe. In additions to the proper repairs, ensure immersion suits are being correctly stowed being readily accessible. The suit must fit. Have the mariner try it on again this spring. The suit must have working, lubricated zippers and Coast Guard-approved lights (strobe lights are best). The oral inflation tubing and the flotation bladder must be free of leaks. The material also must be free of rips and tears. Neoprene fabric degrades over time and can lose its original buoyancy and fabric integrity.

**Below:** The following pictures show that the original neoprene glove was removed and replaced with a heavy duty generic rubber glove.





**REFERENCES:** 46 CFR 199.70 and 199.273  
Marine Safety Manual Vol. II  
NVIC 01-08

**CONTACTS:** Please contact LT Jerry Federer at (216) 902-6343, if you have any further questions.

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