



## Have you checked your immersion suits lately?

Any defect that compromises the watertight integrity of an immersion suit can drastically reduce survival time and put lives at risk. Such failures are not always obvious, so do not wait to discover them during a real emergency.

Published 11 February 2026

The information provided in this article is intended for general information only. While every effort has been made to ensure the accuracy of the information at the time of publication, no warranty or representation is made regarding its completeness or timeliness. The content in this article does not constitute professional advice, and any reliance on such information is strictly at your own risk. Gard AS, including its affiliated companies, agents and employees, shall not be held liable for any loss, expense, or damage of any kind whatsoever arising from reliance on the information provided, irrespective of whether it is sourced from Gard AS, its shareholders, correspondents, or other contributors.

Research and experience have demonstrated that seams and closures of immersion suits deteriorate over time, reducing their strength and watertightness. The rate and severity of deterioration vary depending on the materials and manufacturing processes used, as well as the conditions under which the suits are stored. Even under ideal conditions, materials and adhesives have a finite service life and will inevitably lose strength or watertightness with age.

## Defective immersion suits are not uncommon

In a [Safety Alert](#) issued in January 2026, the United States Coast Guard (USCG) reports that inspectors frequently find immersion suit defects caused by adhesive failures between the main zipper and the suit body, failures that compromise watertight integrity and pose serious survival risk from water ingress. Contributing factors cited in the alert include use of non-approved lubricants or scented powders, improper storage, and neglecting to conduct periodic pressure testing.

A similar [warning](#) was issued by the Maritime Administration of Republic of Marshall Islands (RMI) in 2023 and renewed in 2025, reporting that immersion suit defects account for a significant portion of all life-saving deficiencies observed during inspections of RMI-flagged ships. Consistent with the findings reported by the USCG, inoperable zippers and failed seams are the most common defects reported, with seams at the hands, feet, and around the zipper being the most susceptible to failure. However, inspections also reveal other defects, such as holes or other material defects, inoperative or missing lights and/or whistles, and overdue air pressure testing are observed. The RMI has also noted that zipper or seam failures rarely affect only a single suit onboard. When one defective suit is identified, a closer examination of the remaining suits often reveals many in similarly poor condition.

## Regulatory requirements

For large internationally trading ships, mandatory requirements for the carriage, construction, maintenance, and inspection of life-saving appliances, including immersion suits, are established by SOLAS and the associated LSA Code. In addition, a ship's Flag Administration may impose further requirements.

As a general principle under SOLAS Regulation III/32, every person on board a cargo ship must have easy access to an approved immersion suit in the correct size in the event of an emergency. Requirements for maintenance and monthly inspections are covered in Regulations III/20.3 and III/20.7, respectively, while Regulation III/36 specifies the content and format of maintenance instructions.

The IMO has also published guidelines on how to meet these requirements and ensure immersion suits remain fully operational at all times:

- [MSC/Circ.1047](#) , Guidelines monthly shipboard inspection of immersion suits and anti- exposure suits by ships' crews
- [MSC/Circ.1114](#) Guidelines for periodic testing of immersion suit and anti-exposure suit seams and closure

For non-SOLAS vessels, such as smaller crafts and fishing vessels, the carriage of life-saving appliances varies according to a vessel's nationality, vessel size, and trading area. However, many owners choose to equip their vessels with immersion suits even when not legally required.

## **A success story – with important lessons learned**

*In October 2022, a collision between the trawlers Guiding Star and Guiding Light in the North Sea resulted in the flooding and eventual sinking of Guiding Star. Although the vessel was lost, her crew successfully abandoned ship without sustaining any serious injuries. The MAIB investigation concluded: “The commendable decision to equip both vessels with immersion suits significantly improved the crew’s chances of survival and likely saved the lives of those who entered the water.” The report also highlighted that immersion suits are only effective if they can be accessed during an emergency. On Guiding Star, lifejackets and immersion suits were stored in crew cabins, which became inaccessible due to flooding. By contrast, Guiding Light kept survival equipment in weathertight boxes on deck, allowing it to be quickly transferred to Guiding Star, enabling her crew to don the suits and abandon the vessel safely into the liferaft. Source: MAIB Accident investigation report no. 13/2024*

## **Recommendations**

As illustrated by the story above, readily accessible and properly maintained life-saving equipment can do exactly what it is intended to do – save lives. We therefore recommend that owners and operators:

- Raise awareness of the importance of thoroughly inspecting and maintaining immersion suits, and ensure that crew members responsible for onboard inspections are fully trained and knowledgeable in the inspection procedures. In line with guidelines from the IMO, USCG and RMI:
  - Conduct thorough inspections of all immersion suits, focusing on zipper-to-body seams and seam-taped areas such as boots, gloves, and hoods. Look for signs of delamination, seam tape lifting, adhesive failure, and zipper malfunction.
  - Verify zipper function and apply only lubricants recommended by the manufacturer.
  - As deterioration of seams and zippers may not be apparent by visual inspection only, conduct air pressure leak testing at least every three years, or more frequent for suits over ten years old.
  - Store suits with zippers fully open and use monthly inspections as opportunities for crew to practice donning the suits.
  - Address any identified defects immediately and ensure repairs are performed by an authorized repair station in accordance with manufacturer instructions. Remove non-functional suits from service.
  - Replace any suits that cannot be restored to a watertight condition to the satisfaction of the ship's Flag Administration.
  - Update maintenance procedures to ensure manufacturer directions are followed and only manufacturer-approved products are used to service and maintain equipment.
  - Maintain detailed records of inspections, tests, defects, repairs, and replacements.
- Ensure all crew members are familiar with the onboard locations of immersion suits. On smaller crafts and fishing vessels, where mandatory requirements for life-saving appliances may be less stringent, it is particularly important to review storage arrangements to ensure survival equipment is readily accessible in an emergency.
- Where practicable, standardize equipment so that immersion suits onboard are of a common type and from the same manufacturer. If suits are designed to be worn with a lifejacket to achieve the required buoyancy, this must be clearly stated, and compatibility verified. Regular drills and standardization help crews become familiar with the suits' design and donning procedures.
- Consider crew variability. Crew members vary in body shape and height, and universally sized immersion suits may not provide an optimal fit for everyone onboard.
- Follow special procedures for vacuum-packed suits. If a ship carries approved vacuum-packed suits that cannot be unpacked for inspection under SOLAS Chapter III, maintenance and inspection procedures must comply with any special conditions set by the Flag Administration. This may include opening one or more suits during a survey, as exemplified by the conditions established by the [Norwegian Maritime Authority](#) .

The information provided in this article is intended for general information only. While every effort has been made to ensure the accuracy of the information at the time of publication, no warranty or representation is made regarding its completeness or timeliness. The content in this article does not constitute professional advice, and any reliance on such information is strictly at your own risk. Gard AS, including its affiliated companies, agents and employees, shall not be held liable for any loss, expense, or damage of any kind whatsoever arising from reliance on the information provided, irrespective of whether it is sourced from Gard AS, its shareholders, correspondents, or other contributors.