

**LOOK** at the suit's fabric, reflective tape, zipper and any attached accessories.

Examine **fabric** for tears, rips, punctures, or burns. Note areas for repair.

Replace **reflective tape** if it is yellowed, peeling, cracked or missing. There should be 16 square inches of reflective tape on the front and the back of every immersion suit.

Look for signs of corrosion (green color) on the **zipper**. If present, attempt to eliminate it by brushing several times with baking soda and water. Then lubricate with a non-petroleum product recommended by the manufacturer. If corrosion cannot be removed, the suit should be condemned.

Make sure each immersion suit has an attached **whistle**, a **toggle handle** for the zipper, and a **USCG-approved light** with batteries in-date.

**FEEL** the suit's fabric. It should feel flexible, not stiff. It should not feel thin or compressed; neoprene suit fabric should be 5mm to 6.5mm thick.

Test how easily the zipper goes up and down. Lubricate it regularly with a product recommended by the manufacturer.



This guide provides only an overview of neoprene immersion suit maintenance, leak-testing and repair.

## FOR ADDITIONAL INFORMATION:

### **Immersion Suit Care & Inspection Booklet**

U.S. Marine Safety Association.  
5050 Industrial Road, Farmingdale, NJ 07727  
(732) 751-0102  
[www.usmsa.org](http://www.usmsa.org)

Alaska Marine Safety Education Association  
2924 Halibut Point Road, Sitka, AK 99835  
(907)747-3287  
[www.amsea.org](http://www.amsea.org)

### **Circular No. 01-08: Shipboard Inspection & Testing Of Immersion Suits**

Commandant, U.S. Coast Guard  
2100 Second St. SW, Washington, DC 20593  
(202)372-1395  
[www.uscg.mil/hq/cg5/nvic/](http://www.uscg.mil/hq/cg5/nvic/)

Online **Gear Repair & Care Guide**  
McNett Corporation  
1411 Meador Ave. Bellingham, WA 98229  
(360)671-2227  
[www.mcnettt-dive.com](http://www.mcnettt-dive.com)

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# YOUR IMMERSION SUIT



## HOW TO:

- **Maintain it**
- **Leak-test it**
- **Repair it**

This is a quick guide to maintaining, leak-testing and repairing neoprene immersion suits. Although this guide outlines processes similar to those performed in an authorized repair facility, it does not substitute for having suits inspected and repaired at an authorized facility.

A manufacturer's authorized facility may find defects undetectable with the do-it-yourself methods explained here. It will have the latest information on potential problems and their fixes, as well as the experience gained from testing and repairing hundreds of suits.

However, this guide can help keep your neoprene suit performing optimally between visits to an authorized facility.

## REGULAR INSPECTION AND MAINTENANCE

### **Use your senses.**

**SMELL** your suit inside and out. It should not smell of diesel fuel, gasoline, oil, mold or mildew.

If odors are present, soak the suit in a mild soap or shampoo safe for neoprene. Dive shops usually sell neoprene shampoo. Your suit's manufacturer can also recommend a cleaner. After washing, turn suit inside out and hang to dry using a padded, non-metal hanger. Dry in a warm, well-ventilated area out of direct heat or sunlight. When inside is dry, reverse suit to dry the outside.

## HOW TO LEAK-TEST AN IMMERSION SUIT

### Items Needed:

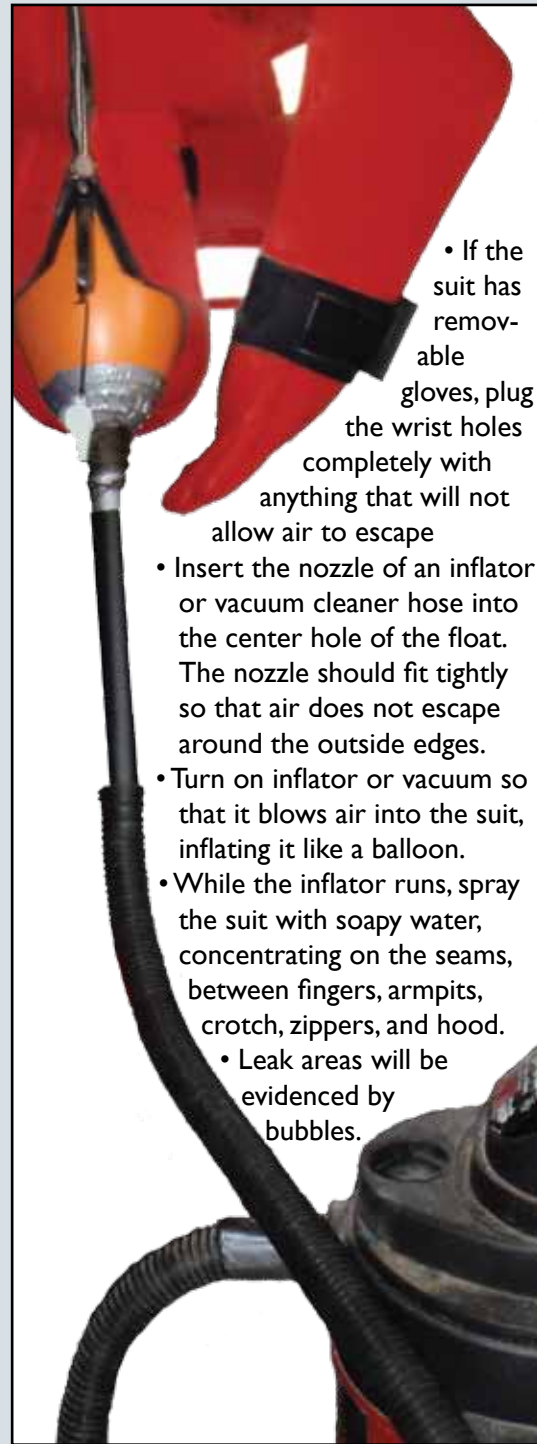
- Conical buoy or float such as a pole float with a hole running completely through the center in the longest dimension, and made of a non-porous material so that air cannot pass through the float itself.
- Vacuum, with hose and wand attachments, that blows air out or an electric inflator with a stiff nozzle.
- Duct tape.
- Soapy water in a spray bottle.
- Sketch of rough shape of suit (front and back) on which to note leaks.



### Procedure:

- Lay suit out on table or hang by the feet with a pair of large spring clamps.
- Tape over the air valve inside foot (if present) with duct tape.
- Place the widest end of buoy inside face opening of the hood.
- Pull zipper up to buoy to make a good seal. The float should fit tightly so that air does not escape around the outside edges.
- Tie the float to the immersion suit's zipper toggle, if necessary, to keep it in place during inflation.

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- If the suit has removable gloves, plug the wrist holes completely with anything that will not allow air to escape
- Insert the nozzle of an inflator or vacuum cleaner hose into the center hole of the float. The nozzle should fit tightly so that air does not escape around the outside edges.
- Turn on inflator or vacuum so that it blows air into the suit, inflating it like a balloon.
- While the inflator runs, spray the suit with soapy water, concentrating on the seams, between fingers, armpits, crotch, zippers, and hood.
  - Leak areas will be evidenced by bubbles.

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- Areas in the material itself, as well seams, may leak.
- Make careful note of all leak locations. Once the suit is rinsed of soap and dried, most leak sites will be invisible.
- Rinse suit in fresh water. Hang to dry completely before attempting repairs.

**NOTE:** *If leaks are numerous or in large areas in the material itself, effective repair using the following method may not be possible. Also, repair in the field of the fabric may void the USCG approval of the suit. Consult the manufacturer's authorized repair facility.*

Don't forget to inspect your immersion suit's buoyancy ring or pillow. To leak-test it, inflate with the oral inflation hose. It should stay inflated overnight.



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## REPAIRING NEOPRENE IMMERSION SUITS

- Only attempt repairs on a clean and completely dry suit.
- Turn suit inside out.
- Clean and prepare areas to be repaired with a product such as CotoL-240™ Cure Accelerator & Pre-Cleaner.
- Repair using urethane-based repair adhesive/sealant designed for neoprene wet suits such as Aquaseal®, available from most dive shops. Mix three parts adhesive with one part thinner, such as CotoL-240™, if desired.
- If repairing more than one suit, mix enough Aquaseal® and CotoL™ to repair no more than four suits or the mix may cure before finished.
- Apply to leaking seams or fabric areas with a small, stiff brush.
- Allow repair to set for 24 hours.
- Turn suit right side out and repeat repair process on reverse side of problem areas.
- Inflate repaired suit to retest for leaks and do additional repairs as needed.
- If fabric field repair was done, have suit inspected by the manufacturer's authorized service station as soon as is practical.



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