

Stop That Leak!

Modern chemistry has presented us with new choices of sealants for everything, including the kitchen sink.

The trick is to choose the right one. Some sealants get hard enough to sand or drill, and others stay supple. Some will stick to anything; others pull away from glass and certain plastics. Some will writhe and stretch as your boat "works." Others crack. And some, designed for household use, won't hold up in the harsh heat, cold, wind, and ultraviolet your boat is subject to. We recently took a look at a range of the most common types in the [August 2010 issue \(issues/36_8/features/Marine-Adhesives-Caulks_5953-1.html\)](#). If you've got a teak deck to caulk, then our test of teak deck caulks can be found in the [October 2008 issue \(issues/34_10/features/Teak-Caulk-Durability-Testing_5684-1.html\)](#).

There are six major sealant types, all with special uses. Read the labels to be sure, but a good marine sealant should perform as follows:

Bedding Compounds

Many boat builders still use bedding compounds such as Interlux 214 for bedding deck hardware, cleats, padeyes, flanges and more. The surface of this bedding compound hardens to allow painting, but stays flexible underneath the surface to provide a flexible waterproof seal. Bedding compounds will tend to dry out over time and hardware will need to be re-bedded.

Silicones

Sticks to almost everything including glass, electrical insulation, and most metals. Ideal insulator and waterproof for wiring including trailer wiring, windshields and ports, and emergency gaskets in applications where temperatures don't exceed 400 degrees F. Don't use with polypropylene, under water, or in areas where you want to sand and paint. Not as good as polysulfide in areas that take a lot of twisting, compression, contraction, and expansion. They are generally safe to use with most plastic glazing, including Lexan and acrylic (Plexiglas).

Polysulfides

Use above and below the waterline. Can take up to 25 percent stretching, twisting, expansion and will bond difficult surfaces including oily woods, aluminum, glass. (Read directions for possible surface preparation steps.) Can be sanded and painted. Available in liquid form to ease filling of hairline cracks.

Drawback: takes up to 10 days to cure in a humid climate; longer in dry climate. If you're not counting on it as a waterproofer, you can launch the boat right after caulking because water speeds curing time. Other caulks cure faster

Polyurethane

Polyurethane sealants and adhesives have grown in popularity and are preferred by boatbuilders for projects like sealing hull-to-deck joints and installing through-hulls. The long-chain molecules that crosslink in the curing process include isocyanate resin that reacts with moisture to form a flexible solid. These highly adhesive polymers offer both excellent surface grip and desirable gap-filling characteristics. There are numerous formulations that lead to products with different cure rates, elongation characteristics, and tensile strength.

Polyether-based caulks

These are the newest genre of ultra flexible gap-filling adhesive/sealants, and their cure is dramatically accelerated by a more reactive methyl silyl-enhanced reaction with water vapor that causes polyether products to skin cure faster than silicone and deep cure much quicker than polyurethanes. Their lack of solvents eliminates odor and minimizes shrinkage-based skin stress. They have very favorable stretch capacity and good resistance to ultraviolet rays and weathering.

Butyls

Cure fast, stick well, can be used on polypropylene where polysulfide cannot. Not sandable, but can be painted. Easy to apply, and cures to supple rubber.

Acrylics

Ideal for bedding on wood, fiberglass, metals. Skins over quickly and can be painted after half an hour; full cure in one to two days. Water soluble which means easy, water clean-up but also that it's not suitable for underwater use.

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