



*If somebody tells you his epoxy stick will pull an 80,000-pound truck, tell him you've got a great bridge in Brooklyn for sale. Epoxy sticks are wonderful, but not for pulling such vehicles.*

## EPOXY PUTTY STICKS: WHAT THEY CAN DO (AND WHAT THEY CAN'T)

Epoxy putty sticks have been enjoying a lot of publicity recently via television commercials and other media. Some of the comments we've heard have been favorable, while some have been not only unfavorable but downright damning.

### What's the real story?

First, a bit of background. Epoxy putty sticks were invented by an entrepreneurial chemist in 1973. Several different ways of combining the two ingredients (the epoxy and the hardener) were tried, and the ultimate answer was a cylinder within a cylinder. The inner cylinder was the hardener, and the outer the epoxy, not unlike one Tootsie Roll wrapped inside another. This design keeps the two parts from reacting with one other until the putty is mixed. And the hardener, which goes bad when exposed to air, was protected by the outer epoxy. This design lengthens the shelf life of the product.

The user simply cut off as much as he wanted (giving the perfect amount of each ingredient), then kneaded the different-colored ingredients until they reached a consistent color, ready for application.

Using that technology, a whole line of application-specific epoxy putties was developed for a

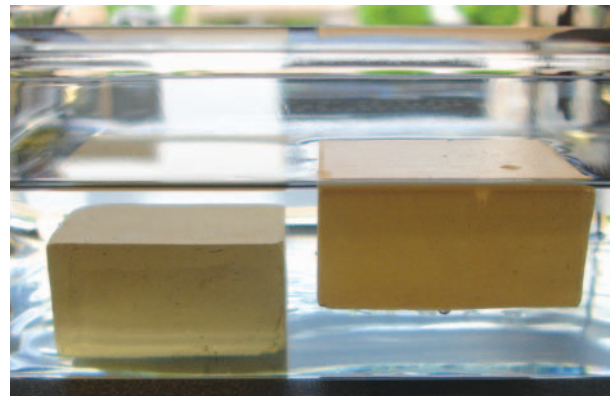
wide variety of uses. Today, there are specific products for the repair of wood, steel, concrete, aluminum, copper, plastic and fiberglass as well as a generic repair putty. A version for fiberglass repair that contains fiberglass actually bonds and cures underwater. The wood version floats, is easily sanded and can be stained or painted.

While the original technology has been refined over the years, the basic principles remain the same.

### What are they used for?

Let's start with how they should not be used.

There is a basic misunderstanding of these remarkably useful and versatile products, which

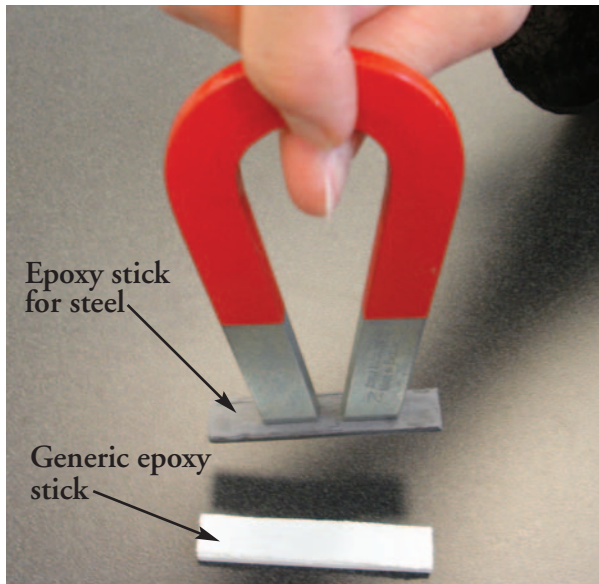


*The best epoxy sticks are designed for specific end uses. Here the generic epoxy stick sinks to the bottom, while the stick made specifically to repair wood actually floats.*

has not been helped by some of the hype seen on television. While epoxies are often used as adhesives, epoxy putties perform best when used as a permanent filler, replacing some other material that has been broken off, gouged out, or worn away from another product. They are not intended to perform some of the tasks for which they are advertised, such as:

1. Towing and hauling very heavy loads.
2. Solving structural problems almost instantly, such as gluing a heavy shelf onto a wall.
3. Replacing the common adhesives that glue paper together.

Unfortunately, the hyperbole all too common to some sales pitches since the days of snake-oil salesmen preaching from the rear of a



*The epoxy stick designed for steel actually contains steel, so an ordinary magnet picks it up. The generic epoxy stick has no steel, so it is not only less strong but cannot recognize the magnetic force.*

Conestoga wagon continues with epoxy sticks. One TV infomercial indicates that its epoxy stick can stick a heavy shelf to a wall in seconds, or be used to haul an 80,000-pound truck. Reputable manufacturers neither make such claims nor suggest such applications.

Epoxy sticks have thousands of uses and, when used for what they are designed, perform wonders. They are perfect for plugging knot holes in wood, replacing or rebuilding pieces

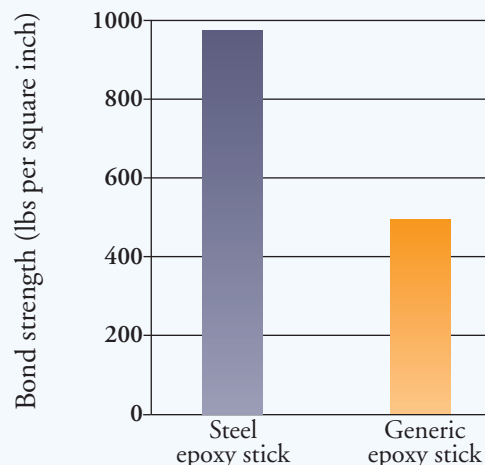
broken off surfboards, filling chips in concrete, plugging holes in metal and plastic piping, closing breaks in metal gutters...the list is endless.

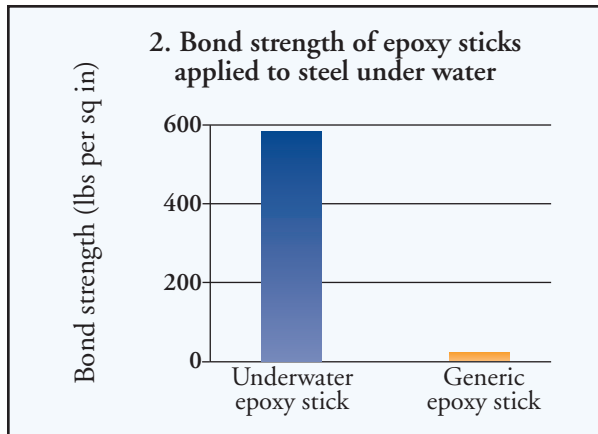
### One size does not fit all

If you decide to purchase an epoxy stick, remember that reputable manufacturers have tailored their products to solve specific problems. A few examples:

1. An epoxy stick for patching concrete that actually contains stone aggregate, giving an appearance that resembles concrete.
2. An epoxy stick designed for wood repair that comes in various colors to match different woods. It can be sanded and stained or painted.
3. Several epoxy sticks to be used with potable (drinkable) water. These have received Standard 61 approval for such use from the National Sanitation Foundation, something that most generic epoxy sticks do not have (and you should not use to repair water pipes).
4. An epoxy stick that contains steel for patching metal that is designed to adhere to steel and is magnetic. Note: Some epoxy sticks are colored to appear as if they contained steel or other materials, but do not.
5. An epoxy stick for repairing boats that can be applied underwater while the boat is floating, since it cures and creates a strong bond even if submerged.

1. Bond strength of epoxy sticks to steel





There is a wide variety of specialty epoxy sticks, each tailored to maximize its benefits to a specific task. No one generic stick, no matter what the commercials tell you, is as good as any of the individual sticks.

Note the first graph, which compares the bond strength of an epoxy stick designed for steel versus a generic stick. The steel stick has more than twice the strength of the generic. So, if bond strength with metal is what you want, avoid the generic brands. Now look at the second graph, which compares the bond strength when applied underwater of the epoxy stick tailored for that type of application versus the generic stick. It's more than *20 times* stronger.

**How to get the most out of an epoxy putty stick**

Above all, choose the best stick for the job at hand (note: multi-purpose sticks are fine for some applications). You will usually find a specialty stick tailored for your repair job. In addition, follow these simple guidelines:

1. Clean and prepare the surface to ensure good adhesion.
2. Wear gloves while mixing (disposable rubber gloves are ideal). They help keep the putty clean as they protect your hands.
3. Mix the two ingredients thoroughly. Make sure the putty achieves a uniform color before applying.
4. Pay attention to the cure time on the instructions. Waiting too long to use can reduce the effect you want.

5. Apply pressure on the repair. Clamping a joint or applying pressure makes the bond stronger by assuring maximum surface contact.

6. Be patient before returning the repaired part to service. Some putties continue to cure (and strengthen) over a few days.

7. Protect the unused portion carefully. Re-sealing the package to prevent extra exposure to air helps save the putty for future use.

8. Embellish the repair. A great benefit of these products is that they can be shaped, sanded, drilled and painted to give you precisely the appearance you want, helping hide the fact that the part has been repaired.

The invention of the epoxy putty stick was a giant step forward, especially for do-it-yourselfers. To use them to full advantage, make sure you pick the stick best designed for the specific repair job you're about to do!