

Custom Car Emblem - How To Cast Your Own Plastic Badges And Emblems

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You've learned by now that if you break the Bow Tie off your grille, you should be able to find one on eBay or at a swap meet. But what about that 383 Magnum hood script or Buick GS fender insignia? We're always on the lookout for new and interesting techniques, and we are also always breaking stuff; it's how we have developed some of our repair and restoration skills, which brings us to the subject of casting plastics.

Typically, plastic parts are injection-molded by the manufacturer or an aftermarket company using tooling and machines to which the average person has no access. That, however, is not the case here. Using a few products readily available from Freeman Supply, anyone can mold and cast his own creations or reproduce OE parts that are no longer available. It may sound complicated, but it is really quite simple.

The process is called mass casting, and if you follow a few simple rules, you can cast pretty much whatever you want in the comfort of your own garage. Simple mass casting is used for three-dimensional castings with flat open backs. Think of an emblem without mounting studs. The back side of the cast would remain open, where the liquid plastic can be poured in.

Complex mass casting is the next step in casting, where a single parting line runs through the part connecting two halves of the whole. This requires two molds that fit together, such as a flat, front-side emblem attached to a back side that has the studs attached to it.

Thin-wall casting is used for parts such as armrest bases to replicate the thin walls with a cavity on the back side of the part.

Complex irregular casting is the most difficult of the casting techniques, as this process involves multiple steps and features an irregular-shaped parting line and possibly a hollow or thin-wall section combined into one piece.

We re-created an SS396 fender badge to demonstrate the mass-casting technique using silicone rubber tooling material and clear liquid polyurethane. Using silicone rubber to create the mold eliminates the need for special mold releases, since it acts as its own release agent.



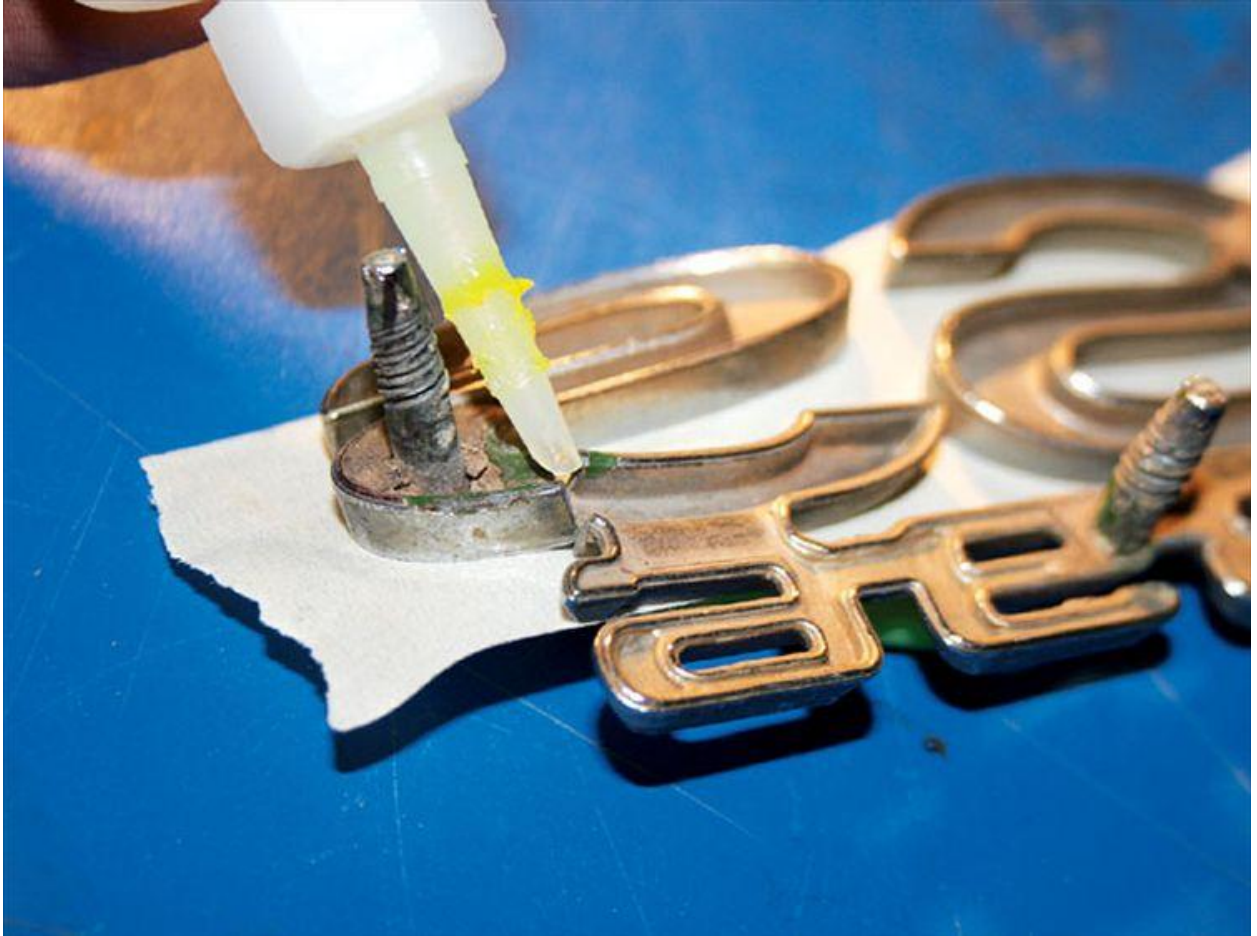
The results of the plastic-casting process yield many different products. With some practice and patience, some very cool trick parts are waiting to be created.



The SS396 emblem we re-created in cast plastic was cleaned and the painted inner portions sanded with 500-grit paper



Since the emblem was broken, the front side was taped with thick, three-day tape from 3M. The cheap stuff leaves residue that gets transferred into the mold, which is not good.



With the emblem pieced back together, some super glue was added to the back side to make the badge whole again. Care was taken to ensure the glue didn't run through and get on the front side of the badge



Three holes were drilled in a piece of 11/42-inch MDF wood (particle board) that had been treated with Freeman's wood and plaster sealer so it wouldn't leak. The studs were coated with modeling clay to make sure the liquid silicone did not leak through.

The possibilities are endless with liquid tooling materials. Whether it's creating a custom fender emblem or simply casting a reproduction badge for your resto, plastic casting fits the bill. There are a few guidelines to follow to get the best results from liquid tooling. So read up and get casting.

PARTS

DESCRIPTION	SOURCE	PRICE
Rhodia V-330 silicone rubber, 1-gallon kit	Freeman Supply	\$125.00
Freeman FMSC 1090 liquid polyurethane	Freeman Supply	130.00
Plast-econ modeling clay	Freeman Supply	10.00
Digital scale	Local discount store	12.99
Mixing cups	Auto parts store	0.50
MDF wood for casting box	Lowes	10.00



The badge was pressed into the clay and the excess squeezed out.



Using a flat blade, the excess clay was removed, leaving a smooth, clean edge to prevent leakage and to lock the part in the mold.



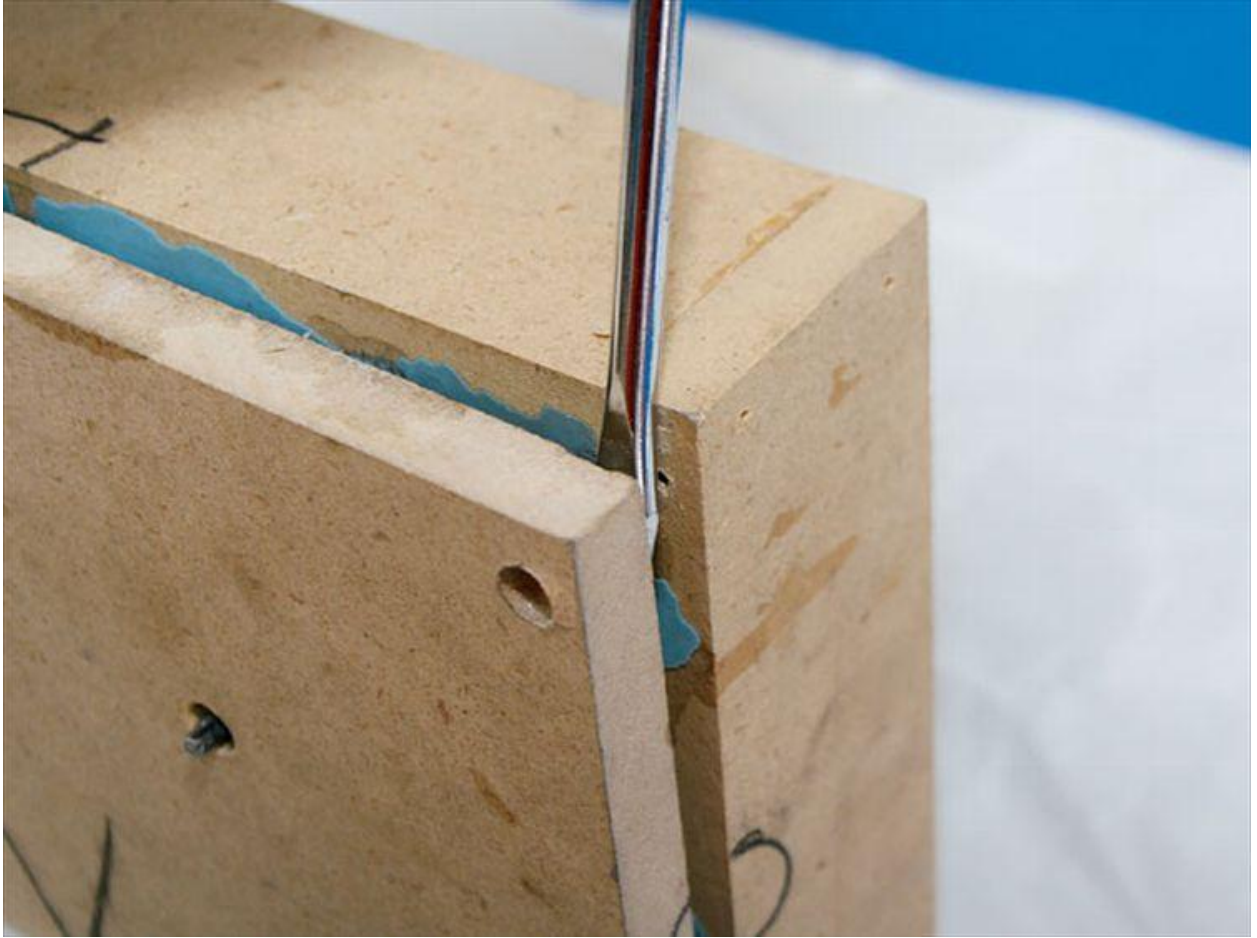
The wood base was then attached to the rest of the casting box that was constructed from 11/42-inch MDF. The casting box can be wood or plastic. Wood was used here because it is easier to drill for the mounting studs and seal.



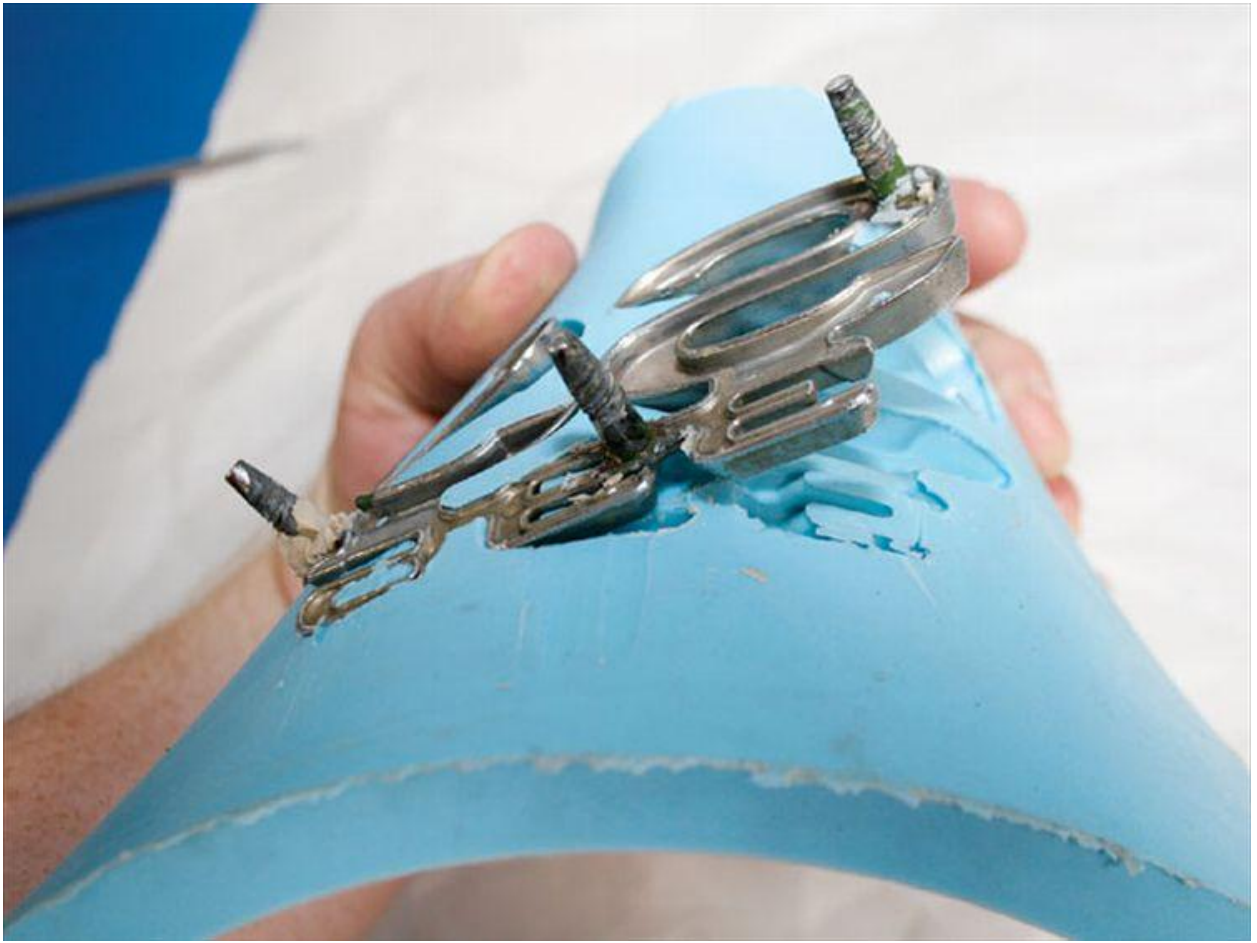
The V-330 silicone rubber comes in 1-gallon kits, including the hardener. The base is measured on a digital scale in a medium-sized mixing cup then mixed with the hardener.



Only about $\frac{11}{42}$ inch of silicone is needed around the part to achieve proper material thickness. The entire box does not need to be filled.



Once the silicone had set for the 24-hour cure time, the screws were removed and the base separated with a screwdriver.



The silicone flexes quite a bit without tearing, so the emblem popped right out of the mold.



The mold is a perfect impression of the original badge. Everything from minor scratches to brush strokes transfer from the original. Even the reflective shine of the original makes a difference in the final product. The silicone rubber requires no prep before casting, as the silicone acts as its own release agent.



The FMSC 1090 polyurethane resin was then mixed and poured into the mold. It only takes 2 ounces to make an emblem as small as this.



After the resin cured for 90 minutes, the mold was flexed, this time more carefully. The resin was still soft, as it takes several days to achieve full cure. The parts are thin, so they break easily in this state. Flashing around the edges of the new emblem can be sanded off with 220-grit paper.



The Mirra Chrome paint we used for the topcoat is the closest to dipped chrome as possible; it claims to retain 95 percent of the reflectivity of real chrome.



The centers of the letters needed to be painted white to match the original. A Paasche Flow Pencil was used to paint the centers. The pencil eliminates brush strokes, yielding a better-looking part.



This is the completed badge alongside the original. The badge only needs to be mounted to your beer fridge or toolbox with some double-sided body tape. The mold can be reused more than 100 times, leaving plenty of opportunity for practice and different materials. Clear and tinted plastics can even be used to create unique turn-signal badges.