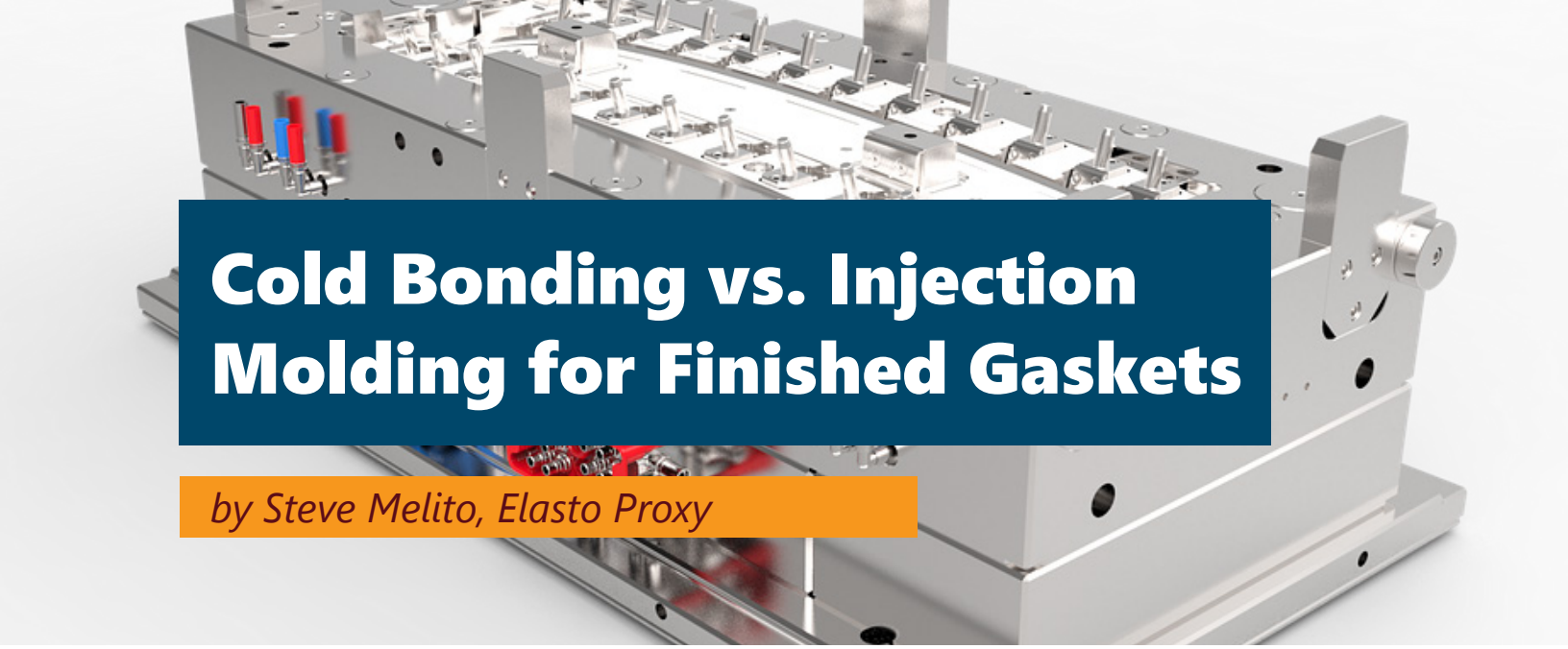

# Cold Bonding vs. Injection Molding for Finished Gaskets

*by Steve Melito, Elasto Proxy*

Cold bonding for finished gaskets joins cut lengths of rubber without the use of heat. This bonding technique isn't performed under low-temperature conditions but is a manual process that requires a brush and glue. By contrast, injection molding is a semi-automated process that uses a C-press machine with a heated barrel, metal plates, and tons of pressure. To join cut lengths, uncured rubber is used.

By understanding how these joining processes work, engineers can make better decisions about which types of finished gaskets to choose. It's also important to understand the advantages and disadvantages of each bonding technique. In this article, we'll compare cold bonding with injection molding in terms of capabilities, costs, and quantities.

**Cold Bonded Gaskets**

Cold bonded gaskets are recommended for lower-volume projects because cold bonding doesn't require tools or molds. Metal tooling can add significant costs to gasket fabrication – sometimes as much as tens of thousands of dollars. Higher-volume projects can spread the costs of tools across many finished gaskets, but the per-gasket cost for a mold may be too high for a low-volume project.

Unlike C-press injection molding, cold bonding is an entirely manual process. First, production personnel clean and dry the surfaces of the cut lengths. To promote optimum adhesion, some rubber may need to be abraded. Next, a glue or adhesive is applied with a brush. There are many different rubber bonding systems, and some glues or adhesives are designed for specific elastomers.

For engineers, it's important to understand that some glues crystallize when they contact water. All glues dry out over time. The right gasket fabricator can help with adhesive selection and also allocate labor resources to medium-volume jobs where cold bonding remains cost-effective. Cold bonded gaskets won't last as long as other types of finished gaskets, but cold bonding offers important advantages.

**Injection Molded Gaskets**

Injection molded gaskets are recommended for sealing applications that require rounded joints, the ability to withstand stretching, or high cycle times. This bonding technique is more expensive than hot splicing or vulcanizing (two other joining methods), but injection-molding can create radiused corners instead of the right-angle corners found in bezel or picture-frame gaskets.

Unlike cold bonding, injection molding requires metal tooling and a C-press machine. First, uncured rubber is heated and then injected into channels in the bottom half of the mold. The top half of the mold is then pressed down on the bottom half. Cut lengths are positioned in each half of the tool. The corners are formed, the top plate or mold half is removed, and cooling occurs.

C-press injection molding is used only with solid rubber profiles – and not with sponge rubber or silicone elastomers. Engineers need to consider the cost of tooling, but gaskets with molded corners support reduced cycle times and cost-effective processing. Injection molding also supports gaskets in a range of sizes and provides an enhanced appearance.

**Finished Gaskets and Custom Fabrication**

Elasto Proxy is a gasket fabricator that provides cold bonding, C-press injection molding, hot splicing, and vulcanizing services. If your project requires finished gaskets, we can also add value by providing design assistance and help with material selection. We use water jet cutting and abrasive water jet cutting to create fine, fast cuts that are ready to bond with whatever joining method you require.

Elasto Proxy has three C-press molding machines at its headquarters near Montreal, Canada. Once your mold is made, Elasto Proxy can store it for you and use it repeatedly. If you need cold bonded gaskets instead, we can help you with adhesive selection and even allocate additional labor resources for higher-volume quantities. Our Simpsonville, South Carolina (USA) facility also has bonding or joining capabilities.