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# Types of Molding Processes

By Philippa Jones; Updated April 24, 2017



Molding is primarily used during the manufacturing process of plastic. Plastic is a synthetic materials, and to form it into the desired shape different molding processes are used. Each process requires the manipulation of molten plastic, and then leaving it to set. Thermoplastics can then be melted down and reformed if necessary, however thermoset plastics cannot be reheated.

## Casting

Casting is a basic molding process as it requires the least amount of complex technology. Plastic is simply heated so it turns into a fluid, and then transferred into a mold. It is left to cool and the mold is removed. This process can be used for intricate shapes and performed under a low pressure. However, it is a common process used for

making plastic sheeting, starting from 0.5 inches thick and greater.

## Injection Molding

Injection molding is used for creating high-quality three-dimensional objects, that can be commercially reproduced. The molding process begins by melting plastic in a hopper. Then the plastic is injected into a tightly closed, chilled mold. The plastic quickly takes the shape of the surrounding mold. Once it has completely set, the mold is opened and the plastic object is released. Yogurt pots, butter tubs, toys and bottle caps are made using this process.

## Blow Molding

Blow molding is a process used for making piping and milk bottles. Plastic is heated until molten. Then it is injected into a cold mold. The mold has a tube set within it, which has a particular shape when inflated. So, while the plastic is molten, air is blown into the tube and the plastic is formed around the tubing. It is then left to cool and removed from the mold.

## Compression Molding

The most labor-intensive type of molding process is compression molding. Therefore, it is only used for large-scale production purposes, and not for mass production. For example, boat hulls and car tires are made using this method. Molten plastic is poured into a mold. Then a second mold is pressed into it. This squeezes the plastic into the desired shape before being left to cool and removed from the mold.

## Rotational Molding

Toys, shipping drums, storage tanks and items of consumer furniture are made using rotational molding. Each object is made by coating a mold from the inside. A mold is held in place between two mechanical arms. Then, the arms rotate the mold constantly at the same level, while molten plastic is placed inside. As it turns, the plastic coats the inside of the mold to create a new hollow, plastic object.

### References

American Chemistry Council: How is Plastic Made?

### About the Author



Based in Bristol, Philippa Jones has been a music journalist and script writer since 2007, working across a range of radio programs in the U.K. and Australia. Her articles have appeared in "Impact Magazine," "The Mic" and in local newspapers. She holds a Bachelor of Arts in politics from the University of Nottingham.

