

Bronze Casting Technique

The small metal statues in this room are made of a solid cast copper alloy, probably bronze. Bronze is an *alloy*, or mixture, of copper and a small amount of tin. The process of forming sculpture by pouring molten metal into a mold is called *casting*. These techniques are still used by artists today.

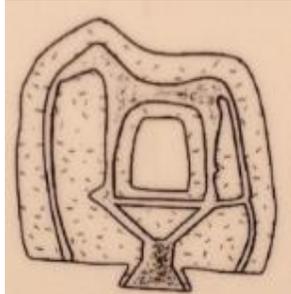
Although the process of bronze casting was well-developed by 2000 B.C., it was not until the tenth century B.C. that the Greeks began making small scale figures of animals and human beings in bronze. Greek craftsmen probably learned the bronze casting technique from Egyptian craftsman.

Making a Solid Bronze Sculpture by Lost Wax Casting

(1)



(2)



(3)



(1) The artist first makes the sculpture in solid beeswax.

(2) This beeswax sculpture is then covered in fine clay. The clay surrounds the wax sculpture, preserving all the details of the original. This clay covering is called a *mold*. The entire wax and clay mold is then heated. The heat hardens the clay and melts the wax sculpture. The wax is poured out through vents in the clay mold, which is then empty. The bronze is heated until it becomes liquid. The molten metal is quickly poured into the clay mold.

(3) The molten bronze fills the cavity left by the wax that melted away. The bronze takes on the shape of the lost wax original. In this case, the mold was turned upside-down to facilitate pouring the molten metal. When the bronze has cooled, the clay mold is broken to reveal the bronze sculpture inside. Because the clay mold is destroyed and thus cannot be reused, the bronze inside is a unique piece of sculpture. Other parts like spears and shields are then attached.

The Metal Workers

Although we tend to think of Greek sculpture as made of marble, the most prestigious sculptures were made of metal. Artists often worked in both media. In Athens, the metal workers had their workshops near the temple of Hephaistos, their patron deity. Hephaistos was the god of fire and forge who made the armor for the great hero Achilles. Like Hephaistos, metal workers made weapons, armor, mirrors, vessels, and sculptures.

Traveling bronze workers had shops near religious sanctuaries where they could sell portable religious sculptures to people on their way to pray. Often, these sculptures were used as *votive offerings*, or gifts given to the gods in hope of attaining some divine favor.