

Lost Wax Process

Step 1



Create clay model of sculpture. Clay is built up on a metal armature based on the artist's composition.

Step 2



Create a mother mold. This usually consists of a rigid outer mold made of plaster that is poured over a flexible inner mold that is brushed over the clay model. The mother mold can be used many times to create several wax models.

Step 3



Pour wax model of sculpture using the mother mold. Once cooled, add pour cup, gate, and sprues to wax model to create pathway for molten metal to enter and fill a ceramic shell mold (see next step) and vents for air to escape mold. The pour cup is a foam cup with wax in the bottom. The gate, sprues and vents are a red wax that has a lower melting temperature.



Step 4

Build ceramic shell mold around wax. This is done by dipping the wax mold in a silica slurry mixture and then coating it with very fine silica sand or 'stucco'. It is coated several times and allowed to dry between each coating until it builds up a thickness of about $\frac{1}{4}$ inch.

The mold is then put in a kiln to melt out the wax. After the wax is melted (e.g. 'lost') any cracks on the mold are repaired. The cavity that remains allows the poured bronze to flow into the hollow shape of the figure.



Step 5

Pour bronze. The ceramic shell is placed in a kiln and heated. It is then placed in a sandy area and molten bronze (2100 degrees) is poured into the mold. In this example, the figure would have been placed up side down so that the pour cup is on top. After the bronze has cooled, the shell mold is chipped away, and the gate and sprues are cut off and removed.



Step 6

Chase and burnish metal sculpture, apply patina and seal.