

# Making a Mold for Sand Casting

## DELFT CLAY KIT



Sand casting is a method of pouring molten metal into a hollow form that has been created in specialist sand. Two part molds are usually made from aluminium or cast iron. These molds hold the sand and the form to be cast is held in between. When the original (male) is removed the hollow shape (female) is left. This is the same principle as lost wax casting where the wax shapes are cast in plaster which is then heated to remove the wax leaving the hollow shape.

### 1. PREPARE THE SAND

Take some sand and spread it out on a tray, use a steel ruler to chop and separate the sand ready for the next step.

### 2. SET UP THE MOLD

The molds come in two halves. Place one side (frame) upside down on a flat tray and fill it with sand, use a mallet to compact the sand and create a nice even surface. Use a steel ruler to scrap off the excess sand. Turn your frame over, you should have a reflection of the tray you used, nice and smooth.

### 3. PLACE THE OBJECT IN THE SAND

Consider the best route for the molten metal to flow and press your object into the sand halfway down. Sprinkle the whole surface including the piece pressed in with a light cover of talc. This will form a barrier so that the second layer of sand does not stick. Use a soft brush to remove any excess talc.

### 4. JOIN THE TWO HALVES OF THE FRAME

Press the other half of the frame onto the half filled object (keep the piece to be cast in) then fill with more sand, compact with a mallet as before. Scrap excess sand away with a ruler. Carefully open the two halves and allow the object to fall away. If it is stuck give it a gentle wiggle to release being careful not to move the sand.

### 5. ADD THE SPRUE AND AIR HOLES

The hole or gate created for the molten metal to reach the object is called a sprue. For best results this needs to be at least 5mm in diameter all the way to the object. A funnel shape is the best for pouring. Sandcasting uses gravity and so the weight of the metal poured needs to be enough to cause it to flow into the shape before cooling to it's solid state. The air holes are made around the shape and small line cut from the edge of the shape to the hole.

*Consider the form you'd like to cast - are there any undercuts or areas that molten liquid would find difficult to reach?*

