

This guide show you a brief description of the ways to cast metal using sand or resin.

Our workshop undertakes bespoke casting, so if you don't want to tackle it yourself, you can find out about this service at the back of this guide.

We have simplified descriptions for clarity. Bear in mind each master throws up unique problems, so don't despair if it does not work first time.

One of the main problems with metal casting is getting the metal to the correct temperature. Too cool and it will not flow properly. Too hot and the metal starts to absorb gas causing the low melting elements (lead, tin, etc.) to drop out.

You can melt metal in an old sauce pan, but we recommend a melting pot with temperature control.

## METAL CASTING WITH SILICONE



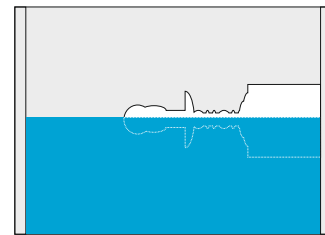
To reproduce a simple figure using silicone rubber.

You will need:

- Silicone rubber (CL10008)
- 1mm Styrene sheet (RS10038)
- Scola colour clay (CC41011)
- Modelling tools (TC00043)

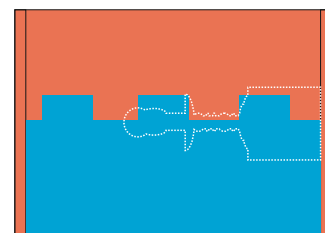
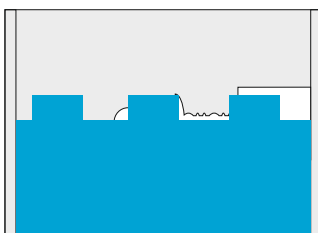
also: material to build a box (lego/wood) and talc.

## FIRST HALF OF THE MOULD



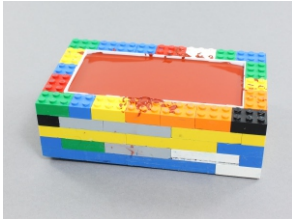
Build a container large enough for your master. Now build a box from 1mm styrene that fits snugly into the container.

Fill the bottom half box with colour clay and push the master into the clay up to half way. Spend some time getting the newplast as smooth as possible. Use the rubber end of a clay shaper to push newplast tightly around the original. Add some protruding blocks of the clay as registration keys.



Pour enough silicone to fill the mould a mixing cup. Mix 2-4% (40 drops = 1g = 1cm<sup>3</sup>) of catalyst with the resin and mix thoroughly. When mixed, pour the silicone into the mould and leave to set.

## SECOND HALF OF THE MOULD



After 3 hours curing time, remove the newplast and master. Make sure all the clay is removed. You can use water to remove the last remnants. Once the silicone is clean and dry, replace the master, cover the surface with a thin layer of talc.

Mix up some resin and fill the rest of the mould.

After a further 3 hours disassemble the mould. When removing the original, do not stretch the silicone too much. The mould should be first stored for 4-5 days before casting begins. Correctly used and handled, well vulcanised moulds can be used for casting well over 100 times.



## METAL CASTING WITH SAND



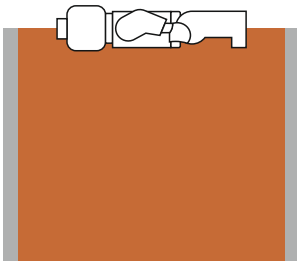
This guide shows you how to reproduce a simple figure using casting sand. Here we use a melting pot, which gives good temperature control, but you could use an old saucepan.

You will need:

- Melting pot (CE30001)
- Tin casting form sand (CE20000)
- Casting metal (CE10000)
- Casting ladle (CE30000)
- Heat protection gauntlets (TY00047)
- Short PVC tubes fitting into each other

also: talcum powder, brush, skewer, wooden spatula, rubber hammer, craft knife & a mini figure.

## FIRST HALF OF THE MOULD



Fill the larger PVC pipe with form sand and press down with your hand.

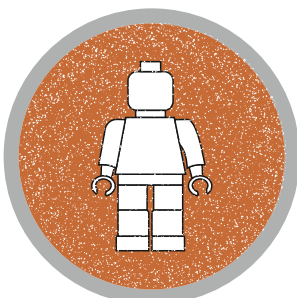
You can beat lightly with the rubber hammer for better filling.

Push the mini figure in the mould and ensure (or make sure) that it adheres well everywhere

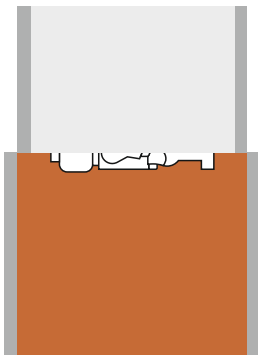
You can use the back of the brush to push the edges.

Cover the surface with talcum powder and spread it with a brush.

This prevents the two mould parts adhering to each other.

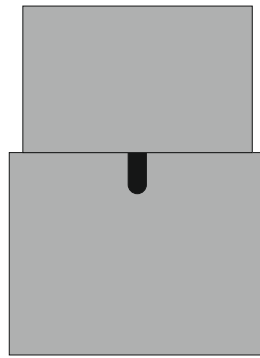


## SECOND HALF OF THE MOULD



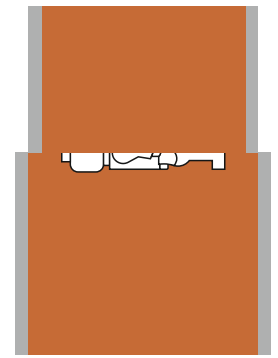
Put the second half of the mould in the first half and press lightly.

Put a stripe on the outside of both halves of the pine for easy alignment.

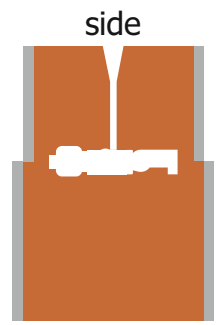
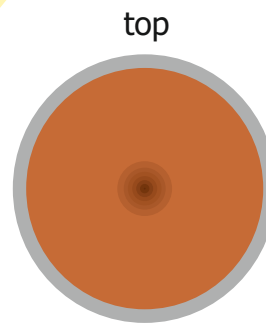
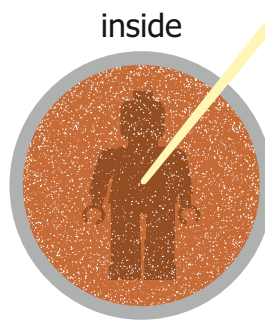
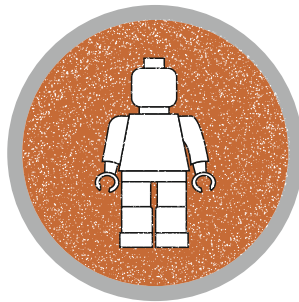
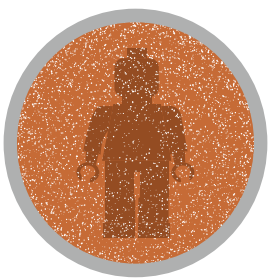


Fill the second half with form sand.

Carefully tamp down with the rubber hammer.



## PREPARING THE MOULD

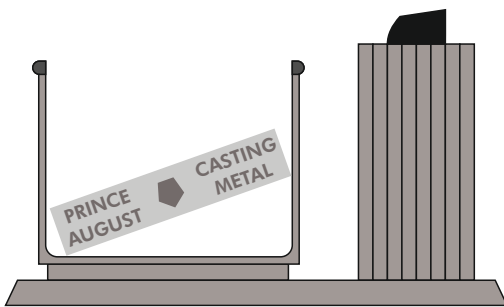


Open the pipes and remove the mini figure carefully with a craft knife, guard against any damage to the impression.

Create a pouring channel in the center of the impression with a skewer.

Widen the top of the channel to create a funnel shape.

## MELTING THE METAL

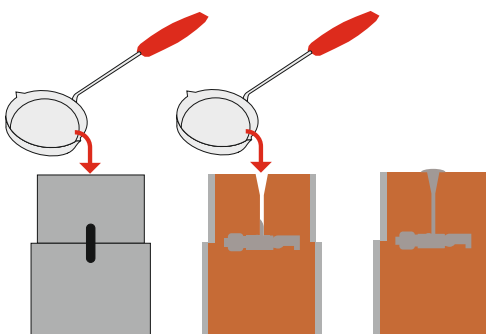


Put on your gauntlets and melt the metal in the melting pot, an old saucepan can also be used.

Remove any impurities that form on the melted metal with a wooden spatula. Use a spoon to stir in the pan, if necessary.

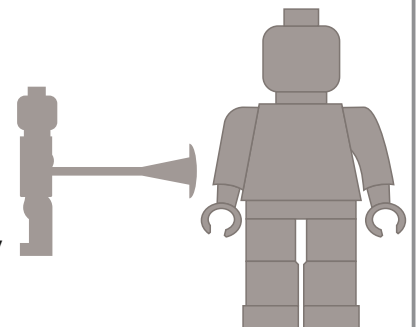
When the molten metal is good you can start casting using a ladle.

## CASTING THE METAL



With your gauntlets still on, carefully pour the metal into the channel until it reaches the top of the mould.

Allow to cool, then remove the metal mini figure from the mould. Snip off the excess metal. You can reuse any moulding sand that is not burned for a new project.



## METAL CASTING SERVICE



Our London workshop undertakes bespoke casting projects.

- We can replicate most 3D objects as many times as required.
- We assess each object and recommend the best way to reproduce it.
- We also cast in resin, dependent on the size & shape of the master.

Further details: 020-7264-1294 or [artwork@modelshop.co.uk](mailto:artwork@modelshop.co.uk)

## A CASTING JOB ESSENTIALLY INVOLVES

Receiving the master and prepping it for the rubber-mould (smoothing the finish if appropriate, sealing any holes etc). Once cured, the master is demoulded (removed from the mould).

After a suitable time, the casting is demoulded. The finished casting is then treated to produce the agreed final state.

## MASTERS

We do not make masters. These must be provided by the client. There are several sculptors listed on our website's 'Freelancers Directory'.

It is recommended that whomever makes the master, should be advised that it is for mould-making.

Please be aware, the master may not survive the process.

Pictures and dimensions are good for initial quotes, but a physical inspection of the master will be carried out before production cost/time is agreed.

## MOULDS

For metal casting we have a centrifugal method of casting, and so we use a wheel mould here. These come in a set size, which limits what can be cast in them.



The more objects you give us to put into the mould, the more cost effective the job becomes.

We have a small range of white metals to cast in, including pewter and bismuth.

Talk to us about what you require (strength, high polish, safe for children etc). Some shapes are difficult/impossible to cast in this way due to complexity.

Once paid for, the mould is your property. Sometimes we are asked to keep them for future castings, other times they are taken away for the client to try to use or keep-safe.