

## Beginners Guide

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For this guide we will be casting common red bricks using the 1:16 Scale German Standard Size Brick Mould.

*Wash mould before use (new moulds have been dusted with talcum powder).*

### Items and Materials



Some of the items we used.

You will need:

- A silicone rubber mould.
- Casting material.  
We used Pre-Coloured Terracotta Casting Plaster with Iron but you could use any hard casting plaster and colour it yourself. Try not to use cheap Plaster of Paris as it is too soft and not very durable.
- A couple of disposable plastic cups.
- A small old paintbrush.

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## Mixing the Plaster



Measure out the desired amount of water into a plastic cup (10ml in this case). We recommend using a syringe for this as most of the moulds only require a small amount of plaster. It is good practice to accurately measure everything as it is easy to mix too much. It is also easier to make adjustments if the mix is too wet or dry.

***Important:*** always add plaster to the water never water to the plaster.



Weigh out the plaster (we recommend a set of digital scales for this) and sprinkle over the surface of the water.



Wait until there is no sign of dry plaster before mixing (mixing dry plaster will add air bubbles). Mix gently as you do not want to add bubbles

**DO NOT** wash the brush under the tap. Wash the brush in a disposable plastic cup filled with water and then remove the brush from the cup. The plaster will settle to the bottom of the cup and go hard. When you have finished and the plaster in the cup has gone hard you can then pour off the water and dispose of the plaster. Never wash anything containing plaster in the sink.

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## Filling the Mould



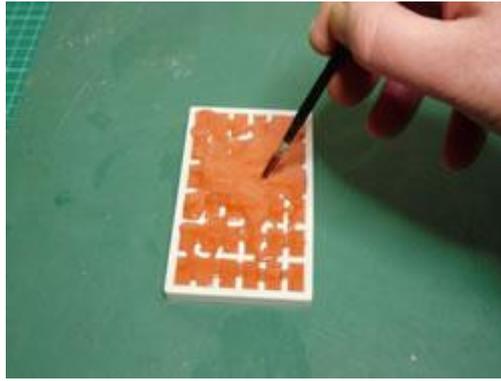
Dip the mould into a mixture of water and a small amount of dishwasher rinse agent. Pouring plaster into a dry mould makes it harder to remove any bubbles in the plaster. The rinse agent breaks the surface tension and makes it harder for the bubbles to stick to the mould.



Remove the excess water by tapping against a cloth.



Pour the plaster into the mould. You do not need a mould release agent with silicone rubber moulds unless you are using resin (the mould release agent helps protect the mould from aggressive resins).



Using the small brush work the plaster into the corners of the brick cavities. This will also help remove any trapped bubbles.



Using the small brush you could now add some black powder pigment to some of the brick cavities to vary the colour of the bricks. We recommend colouring the plaster rather than painting the finished items.

**Note:** When casting items that are supposed to be made of stone such as stone wall blocks we would vary the colour of the plaster mix with each pour.

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## Removing the Excess Plaster

Before the plaster has gone hard you must remove the excess. There are two methods to do this and the best method depends on what you are making and personal preference.

### 1. The Scraping Method.



After pouring the plaster wait 5 to 15 minutes for it to thicken (the exact time is dependent on the type of plaster and how thick it was mixed) then using a straight edge, drag of the excess plaster from the top of the mould to leave a smooth surface. If the plaster is too liquid you may pull some plaster from the brick cavities reducing the depth of bricks. If this happens wait a few minutes more until plaster thickens. A slightly thicker mix of plaster may help.

This method is best for moulds that produce items that do not have to be an exact thickness or you want them to have a textured bottom. For example setts (cobblestones) do not need to be the exact same thickness, they actually look better if some appear to have sunk into the ground.

**Tip:** If you are casting stone wall blocks you may not want them to have a smooth bottom (for example if they are to be used as rubble). If so, smooth the bottom off as above then while the plaster is still soft, dab with a piece of sponge. Do not press too hard as the mould could flex distorting the blocks.

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## 2. The Glass Method

Although it is commonly referred to as the glass method you can use plastic or both glass and plastic as we do in the photos. The problem with using glass alone is that the plaster will stick to the glass. Plaster may stick to plastic but by bending the plastic the plaster can easily be removed. The mould we are using here is the brick wall section mould.



With this method you do not have to wait for the plaster to thicken. Slightly bend a piece of plastic away from you and lower it into the wet plaster. By bending it you will push the excess plaster to the ends.



Gently press down while moving the plastic in small circles until you can see the white edges of the mould bellow. Do not press down too hard.



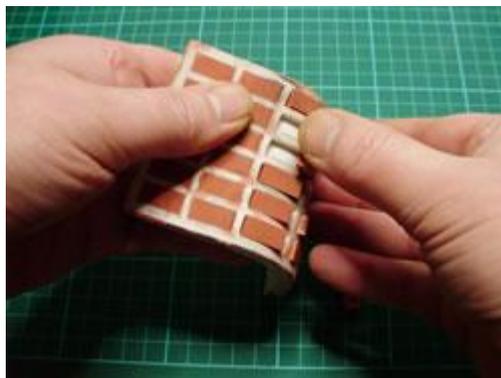
Slide a piece of glass over the plastic (this is to make sure the plastic is flat). Do not let the plastic rise up or you will get air bubbles. If you do find it hard to slide the glass over the plastic without the plastic rising up, try a thicker mix of plaster. Once the glass is in position place a weight on top to hold it down (a regular can of drink will do).

With a little practice and the right plaster mix this method will give your cast pieces a consistent thickness and very smooth finish.

We recommend using this method for the Brick Wall Section Mould and the Plaster Sheet Mould as they both need to be a consistent thickness to fit together properly.

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## **Removing the Bricks from the Mould and Weathering**



When the plaster has set (20 to 45 mins) you can remove the bricks from the mould.



The new bricks will have smooth surfaces and sharp angular edges.



Place the bricks in a plastic container with a lid and shake so that any sharp angular edges are softened, doing this when they are still damp or when completely dry will have a slightly different effect so it is best to experiment (try adding some sharp stones to make 1:16 scale old stocks).

When making stone items such as stone wall blocks you can follow the steps below to weather them (do not over shake stone blocks as it will remove their texture):

1. Remove blocks from mould as above.
2. Leave them to dry.
3. Place them into the plastic container with some black powder pigment and a small amount of water (do not use paint as it will soak into the dry plaster).
4. Give them a very gentle shake for a few seconds so that the black gets into the crevices.
5. Empty them out onto a tray and let them dry completely.
6. When dry place them back into the plastic container and give them a good shake (do not shake them for too long as you may remove their texture).
7. Flush the container with water while giving a gentle shake to remove the excess black.
8. Tip them out onto a tray and let them dry.



Weathered stone blocks.

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## Sticking Bricks and Blocks Together

**Important:** *In most cases you will want the items you are casting to vary in colour, if so make sure to make enough to finish whatever it is you intend to build. This is important as in most cases you will not want a marked change in the variation of colours.*

We normally stick bricks and stone blocks together using diluted Polyfilla ready mixed multipurpose filler which comes in a tube. Some of the other makes are a little bit too course for this purpose. When coloured with powder pigments and dry it looks like mortar.

To mix it:

- Squeeze some filler into a disposable plastic cup.
- Gradually add very small amounts of water until you reach the desired thickness (the thicker the mix the wider the mortar course will be).
- To make a mortar colour we normally add Yellow Ochre and a tiny amount of black (black is a very strong pigment so be careful).
- Wet some kitchen towel and place it over the plastic cup to stop the filler setting.

Sticking bricks and blocks together:

- With a small paint brush put some of the filler onto your base.
- Press the brick or block down onto the filler leaving the desired mortar thickness (1:35 scale would be about 0.5mm).
- The filler will turn solid within a few seconds as its moisture is soaked up by the dry plaster so you will need to position the brick or block fast. Although the filler has turned solid it will have very little strength at first. Slightly dampening the brick or block first will give you more time for adjustment.
- Use a cocktail stick to remove solidified filler that may interfere with laying your next brick or block.
- After about 5 mins remove any mortar that has pushed out the sides with the cocktail stick.
- Leave your wall section to harden, then paint some more filler over the mortar joints and when it has solidified remove the excess with a cocktail stick. If the filler dries too much and is hard to remove dampening it with a wet cloth will soften it. Do not try to wash the excess filler off with a damp cloth as you will just smear it over the surface and make harder to remove.

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## Making Rubble



A 1:35 scale wall fragment.

To make rubble:

- Start by sticking some bricks together as above to make a small wall section (we use a thin flexible plastic kitchen chopping mat as a base). This wall section does not need to be perfect as the next step is to break it into smaller pieces.
- When you have finished your wall section paint what is left of your filler mix onto the chopping mat (for 1:35 scale this should be about 0.5mm thick). When dry this will be used for broken mortar.
- When dry break up the wall section and the filler you painted onto the chopping mat.
- Add some whole and broken bricks.
- Add some other debris like broken wood and give it all a good mix.
- If you are making a large pile of rubble you may want to make a rough mound from polystyrene to reduce the amount of rubble you need to make.
- Paint some diluted PVA glue onto the polystyrene and pour on your rubble.

**Tip:** *Making realistic rubble is essential and whenever possible work from photos even if you are constructing the standing part of the building from your imagination. The DVD Blitz Street presented by Tony Robinson is well worth watching for the detailed scientific investigation on the effects of different bombs on buildings.*

## Storing Moulds

Wash and dry your moulds after use. Dust with talcum powder and store laying flat.

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