

NOTES ON NEWCLAY

In all significant respects, Newclay can be regarded as a conventional stoneware clay. Newclay differs from traditional stoneware clays only in that it contains a nylon fibre additive, designed to give the clay additional strength once it has hardened following air-drying.

If required, additional strength and hardness can be achieved by applying one of the two Hardeners specially formulated for use with Newclay. Both Hardeners are supplied as a powder. Hardener H1 is dissolved in hot water and is applied to the finished model by brush. Hardener H1 has a 'case hardening' effect on the surface of the model to a depth of around 1-2mm (1/16 of an inch).

Hardener H2 powder is mixed directly into the soft clay prior to use. Its effect is an all-through hardness. Once Hardener H2 has been mixed with Newclay, the hardening effect cannot be stopped.

Models made from Newclay can be decorated using most paints and varnishes. A coat of emulsion paint gives a good surface finish and also adds a little to the strength of the model, particularly of extremities such as fingers. However, almost all paints will adhere to the clay surface once it is dry. Acrylic paints give particularly good results.

If, after the hand painted surface has dried the finish is unsatisfactory, a varnish may be added. Newclay Gloss and Newclay Satin are water bound varnishes that should give a more suitable finish, as they have been formulated specially for use with Newclay. In certain circumstances, oil based varnishes may produce the sort of finish that is required. Where water colours are used for decoration, addition of a very little Gloss, Satin or PVA to the water will fix the colours.

It is important to stress that any advice or suggestions given in these notes should be tested on small, unimportant pieces of clay before being used on important models. Individual method and requirement differ widely, therefore any advice given will not suit all users under all conditions.

FIRING NEWCLAY

For those sculptors wishing to make their models more permanent, Newclay can be fired successfully in a pottery kiln in the range 1000°C to 1250°C using all conventional techniques and most glazes can be used with good results. Newclay can also be 'biscuit' fired.

The nylon in Newclay will disappear early in the firing process. This leaves the clay very slightly porous to allow vapours and gases to escape, hopefully reducing the chance of pieces exploding or disintegrating in the kiln.

POT MAKING

Newclay was originally designed for use by children at school, a purpose for which it is still very well suited. Children like to make pots and generally these pots are required to hold water. However, Newclay pots will not hold water when air-dried. Newclay pots must be fired and glazed (see above) if they are required to hold water.

This is not always practical or desirable for health and safety reasons, so the alternative is to use a jam jar or any other container that will hold water. Wrap a layer of corrugated paper around it, and with individual lengths of rolled clay build up an outer layer over the pot. The shape of the coils can be left exposed or they may be smoothed, with decoration pressed into the sides, if desired. The Newclay will dry and shrink normally, but it should not crack because the corrugated paper will be crushed to take up the shrinkage. Paint the pot, fill up with water and arrange the flowers.

TILES

To make tiles, a ball of Newclay about the size of a tennis ball (more or less will be required for different size tiles) is rolled out flat with a rolling pin on a piece of smooth thick cloth. It can then be cut to size using a cardboard template, allowing an extra 5mm ($\frac{1}{4}$ inch) or so to allow for shrinkage. Release the tile from the cloth and leave it out to dry, turning occasionally. The tiles can be fired, glazed and decorated as described above.

LARGER MODELS

It is impossible in notes such as these to cover in any detail the multiple aspects of model-making that arise with more delicate or bulky models. Some larger models, up to around 30cm in height can be made from a solid piece of Newclay but this can be wasteful and the model can become very heavy. With these, use of an armature is recommended and is essential with even larger models.

The armature should be made of wire of suitable thickness (Newclay Modelling Wire is suitable for all but very large models). The model can then be built around the armature. All clays shrink in drying. Newclay shrinks just 4%, but this should be allowed for in creating the model. Armatures do not shrink so some cracking of the model should be expected. If this occurs, when the model is completely dry damp the immediate area of the crack and tool in some firm Newclay. Paint can also be used to cover the damage.

Under no circumstances should a model that includes an armature be fired in a kiln. An alternative to an armature for some models, to avoid using a solid block of Newclay, is to start with damp newspaper shaped to be slightly smaller than model and cover this with a layer of clay. Build the rest of the model in the usual way. Pierce a small hole in the model (e.g. the base) with a needle to allow air and moisture to escape. Drying these larger Newclay models can be slow, so a little gentle warmth can be applied. Once dry a model constructed in this way may be fired with the paper inside, though a little smoke may be produced in the early stages.

Models can be decorated as described above. Bronzing is an effective finish for some types of models (but practice first) and many bronze paints and other metal finishes are available. Bronze powders mixed with varnish, either oil or water based, even a follow-up up with a wax and metal mixture can produce convincing highlights.

MOULD MAKING

Newclay does not contain any sulphur so it is ideal as a material for making a form prior to mould making. Newclay's big advantage is its low shrinkage (about 4% wet to dry, most of which takes place during the final stages of drying). Shapes made in soft clay should be tooled to the final exactness when the clay has stiffened and then kept in that condition for mould making. The nylon content adds an additional stability to the shave and extra strength to thin sections.

The slight disadvantage of Newclay can easily be overcome. When viewed in profile against the light many fine hairs might be seen protruding from the surface of the form. These should be removed from the surface using a match or candle flame or they will attach to the mould.

NEWPLAST

Newplast is a non-drying, non-setting modelling material that is also excellent for model making. No shrinkage will occur and small repairs in the mould itself can also be carried out using Newplast.

