

# Construction Resources



## TIERRAFINO TECHNICAL SHEET T1

### THROUGH-COLOUR CLAY FINISHING PLASTER

**Uses** *Tierrafino Clay Finishing Plaster* is a textured, through-colour finishing plaster for use on interior walls and ceilings. It creates a 'breathing' surface which helps to improve air quality and combat indoor air pollution by absorbing fluctuations in temperature, humidity, sound and odour. *Tierrafino Clay Finishing Plaster* is suitable for use in areas of high humidity, (however the surface will be damaged if subjected to a stream of water and it should not be used on excessively wet walls). It is suitable for use in kitchens and bathrooms so long as it is out of regular splash range.

**Properties** *Tierrafino Clay Finishing Plaster* has excellent adhesion, durability and colour purity. It is a non-flammable, 100% natural building material with no chemical or pigment additives. The more clay used in a room the greater the beneficial effects, therefore *Tierrafino Clay Finishing Plaster* works best when applied over a thick undercoat of *Tierrafino Base* plaster; a 40mm combined depth will give a humidity level of approximately 50% to a room. (Please note *Tierrafino Clay Finishing Plaster* is not a suitable adherent for tile adhesive)

**Colours** *Tierrafino Clay Finishing Plaster* is available in 8 colours: Dover White, Delphi White, Iquitos Green, Djenne Red, Ayers Rock, Roman Ochre, Nassau Orange, and Gomera Grey. As it is a natural product, small variations in colour may occur.

Dover White	Delphi White	Iquitos Green	Djenné Red	Ayers Rock	Roman Ochre	Nassau Orange	Gomera Grey
							

(Please note: this chart is for illustration purposes only and does not constitute accurate colour reproduction)

These colours can be mixed on site to obtain a wide spectrum of shades. Additives of Mother of Pearl; Nero Ebano; Runkel Red; Yellow Sienna; and Black Glass are available separately.

**Coverage** 3-7m<sup>2</sup> per 25kg bag (0.12-0.28m<sup>2</sup>/kg).

**Containers** 25kg bags; 40 bags per pallet (1 tonne).

**Preparation** Minimum temperature should be 5°C. All surfaces should be clean, sound, smooth, dry and grease-free. Loose particles should be removed. Treat smooth substrates with *Tierrafino Contact* and highly absorbent substrates with *Tierrafino Fix*. Moisten absorbent substrates with water before applying clay plaster to provide enough time to finish *Tierrafino Clay Finishing Plaster* at a good tempo. (Once *Tierrafino Contact* has been applied, do **not** moisten the wall before application).

**Application** *Tierrafino Clay Finishing Plaster* is a specialist finish applied using techniques that differ from those employed for conventional gypsum plaster. In particular please note the section on 'Finalising'.

Mix a 25kg bag of *Tierrafino Clay Finishing Plaster* with 4-6 litres of water in a bucket and mix to a smooth paste. The plaster may be applied directly after mixing, but will be a little easier to apply after leaving the wet plaster to rest for a day. Once mixed, the plaster will remain usable for several days. If mixing clay plaster with straw, apply the mixture within a week.

Apply in the normal way with a stainless steel float to a thickness of 2-4mm. The recommended thickness is 2-3mm, though it can be applied at thicknesses below 1mm. (While this will increase coverage rates, thin layers of *Tierrafino Clay Finishing Plaster* are difficult to repair. In addition the benefits of using *Tierrafino* are reduced when it is applied in a very thin layer). Continue the Finishing process for either a smooth or textured surface as below.

**Smooth finish** It should be remembered that *Tierrafino Clay Finishing Plaster* is primarily a textured finish and therefore a gypsum-style mirror finish should not be expected.

Once applied, depending on the absorbency of the background, the plaster will start to stiffen straight away. Once the plaster has firmed up - whilst the top 1mm is still workable - the wall should be shaped with a moist sponge, cleaning the sponge as often as possible. The cleaner the sponge is kept at this stage, the better the final finish will be. By rubbing the wall in circular motions excess material is removed from some areas and deposited in neighbouring areas to even out the surface. Rub lightly along the wall; pushing too hard will create dents in the surface.

After the shine of water has disappeared from the surface, the plaster should be polished with a plastic trowel. (A metal trowel will leave oxidation stains). If too much pressure is applied with the plastic trowel onto too wet plaster small or larger air bubbles will appear behind the plaster. Puncture this bubble with a needle, and press the plaster back onto the substrate from all angles in the direction of the puncture. Then fill the puncture itself, if necessary.

Now let the wall dry out and complete the Finalising process as described.

**Textured finish** First shape the surface with a sponge as above.

Instead of polishing with a trowel, continue to rub the surface with the sponge and the texture will become finer; more and more small holes will be closed. However, as the surface is not polished with a trowel a more-or-less coarse textured finish will remain.

Now let the wall dry out and complete the Finalising process as described.

### **Finalising**

Now 'brush' the surface to finalise it: while the surface is almost fully dried yet still evenly moist, the wall must be gently wiped over with a damp sponge and then brushed firmly with a stiff (horsehair or coconut) brush, such as used to be used with dustpans. NOTE: Do not brush the plaster when it is dry; *Tierrafino Clay Finishing Plaster* is ready for brushing when it will not yield to moderate finger pressure.

This process removes loose particles, compresses and strengthens the plaster, and causes the plate-shaped clay particles to lie flat on the surface. This allows the particles to cling together using the moisture in the air, in the same way that two sheets of glass with a thin film of water in the vacuum between them are inseparable. The surface will then be hard and wipeable.

If this final brushing is done too soon brush-marks will be left in the soft plaster. If brushing is done when the plaster is too dry the surface will be damaged; clay and sand will be rubbed off the wall. The surface will be hard and wipeable when brushing is done intensely enough; if brushed too softly the wall will not be wipeable.

After further drying out the surface should then be brushed again, this time using a soft brush to remove any remaining loose material. It should be noted that this

method will remove some plaster and therefore is not recommended as a finishing method where the plaster has been applied less than 2.5mm thick.

To remedy having brushed the plaster when it is too dry; wet the surface with clean water in a plant spray prior to brushing the wall again.

**Notes** *Tierrafino Clay Finishing Plaster* is composed of natural clays and sand, and cannot be expected to be as hard as a gypsum plaster. While this is not a problem for a finished project, protection may be required if it is applied whilst heavy building works are in progress nearby.

If the plaster requires additional strengthening or a more washable surface *Tierrafino Fix* may be used as a seal. This must be finalised by brushing in the same way as above.

With appropriate care *Tierrafino Clay Finishing Plaster* can last indefinitely. Any damage may be repaired by reworking or by the local application of fresh plaster.

**Suitable Substrates** *Tierrafino Clay Finishing Plaster* relies solely on mechanical key for adhesion and this should be borne in mind when choosing a background.

**Smooth Surfaces** - plasterboard, concrete, varnish, glaze, glass, etc. These should be prepared with *Tierrafino Contact*.

**Heavily Textured or Patterned Surfaces** - brickwork, straw matts, metal mesh, willow-plaits etc. These should be prepared with *Tierrafino Base* at a thickness of 10-15mm per layer. When a surface is particularly rough or uneven two or more layers of *Tierrafino Base* should be applied.

**Wallpaper** This should be removed and the surface prepared with *Tierrafino Contact*.

**Porous Substrates** should be thoroughly cleaned then treated with *Tierrafino Fix*, followed by *Tierrafino Contact*.

**Highly Absorbent Substrates** - lime-stone blocks, plaster-blocks etc. These should be treated first with two coats of *Tierrafino Contact* or with two **thin** layers of *Tierrafino Clay Plaster*.

**Cracks and Profiles** These should be flattened with *Tierrafino Base*. Corner-profiles and cracks may be strengthened by covering with jute or glass-fibre mesh. Use a conventional gypsum plaster to make good scrimmed edges of taper-edge plasterboard. NOTE: All non-clay plasters must be allowed to dry out for one and a half days per 1mm thickness.

**Uneven Surfaces** of varying absorbency or uneven finish should first have an undercoat plaster such as *Tierrafino Base* applied. Bonding and Browning gypsum plaster undercoats are acceptable. All non-clay plasters must be allowed to dry out for one and a half days per 1mm thickness.

**In-Wall Heating** With an in-wall heating system (pipes in wall), *Tierrafino Base* should be applied in two layers, with a minimum of 20 mm in total. In between the 2 layers glass-fibre wire may be applied, although not strictly necessary.

**To reinforce external corners;** jute or glass-fibre mesh can be attached to the corner onto which clay plaster is applied. Avoid plastering thickly on external corners.

For further information speak to a CR specialist or see the *Tierrafino* website ([www.tierrafino.nl](http://www.tierrafino.nl))

**Repairs** *Tierrafino Clay Finishing Plaster* may be wetted and reworked in situ many times, and any leftovers can be re-used. This property is extremely useful for repairs.

**Small Cracks and Cracking** These may be caused by the plaster drying out too quickly (e.g. in hot weather or direct sun) and are easily prevented by an occasional spraying of water during the drying process. To remove cracks that have already formed; lightly spray the area with enough water to soften the surface of the plaster only. Work them out with a wet metal float then sponge and brush as described in the previous section.

**Large Cracks** These often occur when the plaster is applied thicker than 5mm and are usually accompanied by some lifting of the plaster from the substrate. Often the only solution is removal and re-application. The removed plaster, if kept clean, can be reused. Large cracks that occur for other reasons should be treated

in the following way: Spray the damaged area with a light mist of clean water; (this is best done with a garden sprayer). The surface should be wetted down gently with repeated light sprayings, to avoid drip runs. Once the area has become *live* again the defect can be filled with plaster and smoothed flat with a float. On substrates other than clay, care should be taken not to overwork the plaster as this could cause it to separate from the substrate. Once dry, the area should be sponged and brushed to finish it as described above.

**Ingredients** Clay, sand.

**Storage** Keep sealed in a dry place. Once *Tierrafino Clay Finishing Plaster* has been mixed with straw and water, it should be used within a few days, after that the straw will start to grow mould.

**Safety** Non-flammable. *Tierrafino Clay Finishing Plaster* is not harmful.

**Disposal** *Tierrafino Clay Finishing Plaster* is fully recyclable. As it is made from earth it may be composted or used directly as garden soil.

**Fire resistance** A 28mm overall thickness of clay plaster (which includes a skim finish of *Tierrafino*), applied to reed matting, has a fire resistance of 125 minutes according to Dutch Standard 6069.

**Physical Properties**

LINEAR EXPANSION :  $12 \times 10^{-6}$  m/mK

THERMAL CONDUCTIVITY :  $\lambda = 0.91$  W/mK

THERMAL CAPACITY :  $c = 1$  kJ/kgK

The raw materials are clay and sand, which are mixed together mechanically to form a powder (grains approx. 1mm) of density 1250kg/m<sup>3</sup> when loose and 1800kg/m<sup>3</sup> when mixed with water and applied.

**SPECIAL NOTE**

**Tierrafino Clay Finishing Plaster is a specialist finish applied using techniques that differ from those employed for conventional gypsum plaster. Therefore it is essential these instructions are passed on to the applicator.**

**Failure to do so could result in poor product performance for which Construction Resources cannot be held responsible.**

This sheet was printed on 15 December 2006 may be superseded by later editions.

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