

PRODUCT DATA:



GUIDANCE NOTES

FOR THE APPLICATION OF THE CLAYWORKS RANGE OF PRODUCTS:

BASE COAT, PLAIN COAT, SMOOTH PIGMENTED COAT (MICA and non-MICA)
and RUSTIC TOP COAT CLAY PLASTERS

Clayworks

Natural clay plaster wall finishes

www.clay-works.com

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FOR THE APPLICATION OF THE CLAYWORKS RANGE OF PRODUCTS: BASE COAT, PLAIN COAT, SMOOTH PIGMENTED COAT (MICA and non-MICA) and RUSTIC TOP COAT CLAY PLASTERS

1. SPECIFICATIONS

Standard shipment quantity: 25kg and 1 tonne bags.

VOLUME:

Base Coat: with water added - 4-5 litres to 25kg dry powder = approximately 20 litres.

Plain Coat: With water added - 8-10 litres to 25kg dry powder = approximately 20 litres.

Smooth Pigmented Top Coats: With water added - 10 litres to 25kg dry powder = approximately 20 litres.

Rustic Pigmented Top Coats: with water added - 4-5 litres to 25kg dry powder = approximately 20 litres.

COVERAGE (per 25kg bag):

Base Coat: 1.75 m² @ 10mm thickness.

Plain Coat: 4.5m² @ 5mm thickness.

Smooth Pigmented Top Coats: 25kg will cover approximately 7-8m² @ 2-3mm thickness.

Rustic Pigmented Top Coats:

Demi-Rustic: 3.5m² @ 5mm thickness.

Rustic: 1.75m² @ 10mm thickness.

Heavy Texture Rustic: 1.75 m² @ 10 mm thickness.

AMOUNT OF WATER (per 25kg bag):

Base Coat: with water added - approximately 4-5 litres.

Plain Coat: With water added - approximately 8-10 litres.

Smooth Pigmented Top Coats: With water added - approximately 10 litres.

Rustic Pigmented Top Coats: with water added - approximately 4-5 litres.

More or less than this can be used and is dependent on personal preference and the absorbency of the wall.

TEMPERATURE:

Apply Clayworks Top Coat clay plaster at between 5°C and 30°C for best results.

CLEANING:

All Clayworks Top Coat Clay Plasters can be wiped gently with a soft, damp sponge, if previously finished with Clayworks protective glaze.

HANGING PICTURES:

Observe protocol for conventional plaster i.e. picture hooks or screws.

CORNER DETAILING:

Plastic, aluminium or stainless steel corner and stop beading. Must be suitably primed before clay plaster application (for more information please see below: 'Wall Preparation' and refer to diagrams in 'Design Details' of website).

2. TOOLS FOR THE JOB

The tools needed to apply all Clayworks clay plasters are essentially the same as for any other plastering job:

- Hawk
- Laying on trowel
- Detail trowels
- Plastic polishing trowel
- Fine mist sprayer
- Clean buckets for mixing
- Clean water
- Hand held plasterer's whisk
- Sponges
- Masking tape
- Protective sheeting
- Appropriate respiratory protection.
- Specialist Japanese Rectangular trowels (essential for polishing/finishing)
- Plastic trowels (for polishing/application of glaze)

For large projects, spray application is also possible.

The following products can be obtained from Clayworks:

Kreidezeit Limewall Finish Primer

Gekkosol Primer

Baumit DG27 wall primer

Clayworks final protective wall glaze

Clayworks Japanese Trowels

Clayworks Plastic Trowels

We do not supply, but can recommend suppliers for the following:

Plastic beading/colour match plastic beading

Aluminium/stainless steel beading

Fine fibre glass mesh (scrim tape)

Plastic Meshing

3. WHERE TO USE CLAY PLASTER

Clayworks clay plasters are designed for internal spaces. They can also be used for limited external application provided that surfaces are not exposed to water (see below). Clayworks clay plasters do not chemically set and will therefore not withstand exposure to large amounts of liquid moisture (i.e. rain).

We do not recommend application as an external wall finish. One exception is where an external wall is protected by a porch or veranda roof.

We also do not advise that they be used in internal areas that are subject to ongoing damp.

Clayworks clay plasters are beneficial in areas of high moisture vapour, such as kitchens, bathrooms and laundry rooms. They help regulate excess moisture vapour generated by showers, baths, cooking, washing etc. However, we advise to keep the plaster out of contact with water splash-back zones, such as behind sinks and baths. Tiles are better suited to these areas.

4. WALL PREPARATION PRIOR TO APPLICATION

- Suitable wall substrates for clay plasters
- When to use primers
- Suction balance and mechanical key
- Using lime and clay as base coats
- General wall preparation tips
- Corner reinforcement

Clayworks Top Coat clay plasters can be used on most internal wall and ceiling substrates, as long as they are prepared correctly.

The key to producing a good finish? It's about achieving:

- 1) The correct suction balance and ...
- 2) Strong mechanical adhesion.

Substrates that have little or too much suction, and no mechanical key must first be primed. Please talk to us if you are not sure.

General Wall Preparation for a range of common substrates:

Plasterboard or existing gypsum finished surfaces: Prime with a suitable primer, such as Baumit DG27 or Kreidezeit Lime Wall Finish. This will provide the necessary mechanical key and balanced suction. No additional base coat is needed, however, a clay base coat mix will build thickness and mass into the wall and maximize the health benefits of the plaster (it's ability to regulate temperature and relative humidity).

Prepare plasterboard joints with scrim tape, as per normal protocol using a standard joint compound (available at all builder's merchants).

If applying Clayworks Top Coat direct onto the primed plasterboard surface, it is advisable to use an extra fine fibreglass mesh (at 100mm wide joints) to scrim the joints to avoid them from 'grinning' through.

Friable surfaces: Scrape back all loose material, and apply a coat of Kreidezeit Gekkosol to consolidate the surface. This should then be primed with Kreidezeit Limewall Finish.

Lime or clay plaster backing coats: Apply direct to moistened surface. Ensure that score marks provided for mechanical key are shallow to prevent them from showing through to the top-coat. A devil float or roughly scoured surface is ideal.

Cement block, fired clay brick, smooth clay block, non-porous stone and similar substrates: Apply a primer such as Baumit DG27 or Kreidezeit Limewall finish, then follow with a 6-15mm clay base coat to level the surface.

Render carrying boards, such as Diffutherm, Heraklith, Pavatherm, Pavadentro (etcetera): Apply a coat of Plain Top Coat to surface of render carrying board (5mm thick), sink in glass fibre mesh across full surface of the wall ensuring that all edges overlap, then apply another coat of plain coat on top (4mm) whilst base coat is still wet. Apply top coat clay plaster direct once base coats have dried fully.

Coat Specific Wall Preparation guidelines

(Please also see diagrams in 'Design Details' section of website):

Smooth Pigmented Top Coats:

- Primed render carrying board or plasterboard with Baumit DG27 or Kreidezeit Limewall Finish.
- Clay or Lime base coats.

Plain Coat (when Used as a top coat):

- Primed render carrying boards or plasterboard with Baumit DG27 or Kreidezeit Limewall Finish.
- Clay or lime base coats

Rustic Pigmented Top Coats:

- Primed render carrying boards or plasterboard with Baumit DG27 or Kreidezeit Limewall Finish.
- Direct onto primed brick and concrete block walls, earth walls, straw-bale walls.
- Clay or lime base coats.

Base Coat:

- Primed render carrying boards or plasterboard with Baunit DG27 or Kreidezeit Limewall Finish.
- Lime base coats.
- Direct onto suitably prepared/primed brick, concrete block and stone walls, earth walls, strawbale walls.
- Clay or lime base coats.

CORNER REINFORCEMENT:

For primed plasterboard and other render carrying boards use either stainless steel, aluminium, plastic beads or glass fibre corner reinforcement mesh systems. If using glass fibre reinforcement corner mesh, corners can be rounded using limewall finish or a gypsum based backing coat. All corner reinforcement materials MUST be primed on all areas with either Limewall Finish or DG27 before Clayworks Clay Plaster is applied (Baunit DG 27 is best to paint onto the exposed areas of beading).

Plastic corner beading can be colour-matched through specialist suppliers (SAS Direct and LocusRite) to produce a seamless, durable corner.

A note on corners: rounding them off makes them stronger and decreases the risk of damage.

Tips for using Kreidezeit limewall finish:

- When acting as the penultimate coat, trowel on and sponge with a damp cloth to produce a flat, even surface. No further scoring is needed.
- Apply at a thickness of 1-3mm, depending on which grade is being used (please contact us for advice).
- Follow manufacturer's general guidelines.

Tips for using Baunit DG27 primer:

- Before using, thoroughly mix the contents of the bucket to evenly distribute the grit settled at the bottom. You may also have to keep mixing as you apply to prevent settling and ensure maximum grit in each stroke.
- Apply with a standard paintbrush, maintaining a wet edge at all times.
- Apply as thickly as possible, ensuring all areas receive a full coating of grit. Once applied, assess if there are any bald spots, and re-apply onto these areas if necessary. An even, thick covering of grit is ESSENTIAL for successful clay plaster performance.
- Ensure DG27 is fully dry before applying clay plaster.
- Follow manufacturer's general guidelines.

Guidelines for preparing the penultimate coat before applying Clayworks Smooth Pigmented Top Coats:

Clayworks clay plaster Top Coat is applied thinly (2-3mm) over the backing coat. For this reason, score the penultimate coat evenly and shallowly to provide mechanical key.

- Deep scoring and inconsistencies in the base coat will show through the Top Coat finish.
- A devil float is a great tool for this job.
- Make the base as smooth and flat as possible, unless an undulating finish is desired.

Guidelines for moistening the wall surface before plastering:

- Moisten backing coats with clean water before plastering, according to the type of wall substrate, as well as the temperature and humidity in the room.
- Backing coats with a lot of suction (such as clay or lime) require thorough moistening before application as well as during the plastering process.
- Primed plasterboard surfaces do not require moistening.
- Warm days require more generous moistening of the walls, whereas cold, damp days require less.
- Use a fine mist sprayer.
- For very thirsty backgrounds, or for the inexperienced plasterer, Kreidezeit Vega primer can be painted onto the base coat. This will slow the rate of suction from the background, allowing for a longer working time.

5. MIXING CLAY PLASTERS

- HEALTH AND SAFETY
- MIXING PROTOCOL
- STORAGE
- LEFTOVERS AND DISPOSAL
- TOOL CLEANING

The plaster is safe to handle without gloves. But please ensure adequate respiratory protection – avoid inhalation of fine dust particles. Clayworks dry powder clay plaster should be mixed in a bucket with a plasterer's whisk.

1. Pour the dry powder contents into a bucket.
2. Blend the dry powder with a plasterer's whisk for a few minutes to ensure even distribution of pigment and other ingredients, which may settle during transit.
3. Add half the amount of the required clean water (out of the total amount required) to a separate clean bucket.
4. Add the dry powder to the water in small increments, mixing with a plasterer's whisk as you add it.
5. Add most of the remaining water, one litre at a time, as you add the dry powder, until the desired laying on consistency is achieved: The plaster should resemble a mousse-like consistency – wet enough to flow smoothly off the trowel and onto the wall, but firm enough to hold its form on the hawk.
6. After initial mixing, let the mix sit for ten minutes to half an hour to 'tighten up'.
7. Finally, add the remaining water, to bring it back to the original consistency.

Please note: The mix will 'tighten up' in the bucket over time. It may need more water to maintain its consistency. Throughout the plastering session, monitor and add water according to personal preference.

There are natural additives present in the Clayworks Smooth Pigmented Top Coat mixes. These have a shelf life of 1-2 days once mixed with water. We advise you to only mix what you will plaster that day. All other Clayworks Clay Plaster mixes (with the exception of when straw is added, which will decompose over time in the bucket once mixed with water) will remain useable indefinitely once water has been added – just add more water and blend for use.

Retain surplus dry powder for repairs. Store it in a sealed container, somewhere cool and dry.

Tools should be cleaned thoroughly with water after use.

6. APPLICATION OF CLAY PLASTERS

All Clayworks clay plasters are best applied using a hawk and steel 'laying on trowel'.

Application guidance for specific Clayworks plaster coats:

A. Clayworks Smooth Pigmented Top Coats and Plain Coat (when used as a Top Coat):

Clayworks Smooth Pigmented Top Coats and Plain Coat are ideally applied in two passes to a final thickness of 2-3mm. It is essential that it does not exceed 3mm. (The Plain Coat can tolerate a maximum thickness of 7mm).

The first pass is applied at an average thickness of 1mm to provide an even coverage across the full surface. Use broad, vertical strokes.

Do not overwork the plaster at the initial stage.

Once the section being worked on has firmed up slightly (approximately 15-20 minutes depending on localised conditions), apply a second, thin skim coat using a slightly wetter mix, to remove any imperfections in the original plaster coat.

Once the second pass has been applied, the plaster should be left to set for approximately 30 minutes to 2 hours (+/- will depend on room temperature/humidity and absorption rate of substrate).

When to continue? A good indication is when the plaster stops moving under the trowel and the moisture shine on the surface of the plaster has begun to dull. You can then smooth away the trowel marks. The best tool for this job is a rectangular Japanese trowel with a thin, slightly flexible blade. Apply light strokes with the trowel, moving in all directions. If the plaster is moving around under the trowel, and/or clay residue is left on the surface of the blade, it is too early. Stop, and wait until the plaster is dry enough to glide over the surface smoothly and cleanly. If the plaster feels too dry/hard under the trowel, gently mist the wall with a fine mist sprayer before trowelling. Alternatively, the trowel surface can be moistened. A plastic polishing trowel can also be used to good effect.

Clayworks Top Coat clay plaster likes to dry naturally. Gentle air circulation is best. Keep external heat sources/strong draughts to a minimum. An electric fan may be used to enhance air circulation.

B. Clayworks Rustic Pigmented Top Coats and Clayworks Base Coat:

Clayworks Rustic Pigmented Top Coats and Clayworks Base Coat are applied in one coat at a thickness of 6-15mm. Apply using broad strokes with the trowel taking care not to overwork the plaster at this stage. Use the trowel to work out any of the main imperfections in the plaster and remove any excess material from the wall to achieve an even spread across the surface.

7. FINISHING EFFECTS

Functionality and aesthetic preference

- Hard trowelled for a closed grain polished effect (more durable)
- Sponge finish for an open grained, softer finish (easier on undulating walls)

There are slight variations in the way each Clayworks plaster coat is finished. In general, the two principles are as follows: (for specific finishing guidelines for each coat see below).

1. Hard Trowelled

A great finish can be achieved with a stainless steel Japanese trowel with a flexible blade or a plastic trowel (see suppliers list above). Polishing with either of these trowels is an essential step to achieving a smooth, durable finish. We do not recommend using a steel laying on trowel for polishing, as the blade is not flexible enough, and this type of steel will oxidize on the plaster surface leaving black marks.

See above section for details on how to polish.

2. Sponge finish

As an alternative to hard polishing, the plaster can be finished with a sponge or sponge float. When the plaster has hardened sufficiently, work the plaster with a damp sponge. Use a circular motion. This will give a softer, grainy effect, as the sand particles are brought to the surface.

Any remaining sandy residue can be brushed off the surface of the wall with a soft brush when it is fully dry.

Our preferred finish for Clayworks Smooth Pigmented Top Coat clay plasters is a trowelled polish. This is because the closed grain produces a harder, more durable finish. However, undulating walls such as old cob walls can be difficult to hard trowel. A tadelakt polishing stone can be used to navigate the undulations.

A sponge finish can be used on straight walls, if this finish is preferred for aesthetic reasons.

Finishing guidelines for specific clay plaster coats:

A. Clayworks Smooth Pigmented Top Coats and Plain Coat (when used as a top coat)

The plaster is ready for polishing when it has hardened sufficiently so that it does not leave any residue on the trowel and does not move around under the trowel. If the plaster is too dry, the wall can be finely misted with water to moisten it. Alternatively the trowel can be moistened before polishing. The ideal time is when the trowel makes a distinct high-pitched ringing sound as it glides across the wall and leaves a polished sheen.

B. Clayworks Rustic Top Coats:

B.1. Demi-Rustic Top Coat:

Hard Trowelled

Wait until the plaster has relinquished most of its moisture, but is still workable. Using a wooden or polyurethane float, scour the material back to eliminate high spots and fill in low spots, until a flat, smooth surface has been achieved (unless executing a highly textured, artisanal finish).

Use a stainless steel Japanese trowel to polish the plaster, making it smooth and closed.

Scoured

Wait until the plaster has relinquished most of its moisture, but is still workable. Using a wooden or polyurethane float, scour the material back to eliminate high spots and fill in low spots, until a flat, smooth surface has been achieved (unless executing a highly textured, artisanal finish).

Sponged

Wait until the plaster has relinquished most of its moisture, but is still workable. Using a wooden or polyurethane float, scour the material back to eliminate high spots and fill in low spots, until a flat, smooth surface has been achieved (unless executing a highly textured, artisanal finish).

Use a large, damp builders sponge to work the plaster in a circular motion, bringing the sand particles to the surface. Any remaining sandy residue can be brushed off the surface of the wall with a soft brush when it is dry.

B.2 Rustic Top Coat

Scoured

Wait until the plaster has relinquished most of its moisture, but is still workable. Using a wooden or polyurethane float, scour the material back to eliminate high spots and fill in low spots, until a flat, smooth surface has been achieved (unless executing a highly textured, artisanal finish).

Sponged

Wait until the plaster has relinquished most of its moisture, but is still workable. Using a wooden or polyurethane float, scour the material back to eliminate high spots and fill in low spots, until a flat, smooth surface has been achieved (unless executing a highly textured, artisanal finish).

Use a large, damp builders sponge to work the plaster in a circular motion, bringing the sand particles to the surface. Any remaining sandy residue can be brushed off the surface of the wall with a soft brush when it is dry.

B.3 Heavy Texture Rustic Top Coat

Scoured

Wait until the plaster has relinquished most of its moisture, but is still workable. Using a wooden or polyurethane float, scour the material back to eliminate high spots and fill in low spots, until a flat, smooth surface has been achieved (unless executing a highly textured, artisanal finish).

Sponged

Wait until the plaster has relinquished most of its moisture, but is still workable. Using a wooden or polyurethane float, scour the material back to eliminate high spots and fill in low spots, until a flat, smooth surface has been achieved (unless executing a highly textured, artisanal finish).

Use a large, damp builders sponge to work the plaster in a circular motion, bringing the sand particles to the surface. Any remaining sandy residue can be brushed off the surface of the wall with a soft brush when it is dry.

Now stand back and admire your beautiful work.

8. SUITABLE PROTECTIVE AND DECORATIVE FINISHES

- PROTECTIVE TRANSLUCENT WALL GLAZE
- SUITABLE PAINTS AND WASHES

Clayworks Top Coat clay plasters are perfectly paired with Clayworks translucent wall glaze to achieve a protective, non-toxic, breathable finish. This glaze makes the plaster more durable to knocks and bumps, as well as allows it to be wiped gently with a damp sponge. It also provides a deep, lustrous sheen, bringing out the rich nature of the plaster. Apply a minimum of two coats and up to four for areas of high traffic.

To apply the glaze, wait until the plaster is fully dry. Allow several days, depending on prevailing temperature/humidity and rate of wall suction. Mix the glaze with clean water in a ratio of 2 parts clean water to 1 part glaze (2:1).

It is preferable to spray the glaze onto the wall using a fine mist sprayer. It should be sprayed on evenly and systematically, using a plastic trowel to catch and re-distribute any drips, working it into the wall to achieve a high sheen (note: it is not possible to achieve this sheen with the Rustic Top Coats).

An alternative method is to apply the plaster using a clean, soft paintbrush, taking care not to saturate the wall.

Cover roughly 0.5m² at a time. Work the glaze into the plaster with a plastic trowel using forceful strokes in all directions, until all traces of white glaze have been distributed over the wall surface. Move excess glaze onto a dry section of wall using a brush or plastic trowel.

Continue this process until the wall has been covered.

Wait 24 hours before applying a second coat.

The second coat, as well as all subsequent coats, should be applied in a ratio of 1 part clean water to 1 part glaze (1:1). Glazes can be reapplied whenever the wall needs freshening (1:1 ratio).

Clayworks Top Coat clay plasters can be finished without applying the protective glaze. This will produce a lighter, matte finish.

It is essential to wear a protective face mask when spraying the glaze onto the wall.

Please note: When applying protective wall glaze over large areas of walling, it may produce some slight colour variation in the plaster, as it highlights the subtle nuances. Our natural clay plaster will not produce a uniform 'Dulux' finish and should not be used if this is what you are looking for! The overall effect is one of depth and movement as it dialogues with the light and environment throughout the day – just like nature.

9. PAINTING

FUNCTIONALITY AND AESTHETIC PREFERENCE

The Plain Coat has been designed so that it can be painted with limewash or a natural, micro-porous i.e. breathable, paint. However, it can also be glazed as per instructions above, to produce a lustrous, brown finish.

Clayworks Pigmented Top Coat clay plasters can also be painted as above if the colour needs to be changed. This can be applied straight onto the dry plaster, or on top of the glaze if painting is desired at a later date.

10. AFTER CARE FOR CLAY PLASTER WALLS

- How to mend knocks and chips

Clay plasters do not chemically set, which means that they can be repaired at any time.

1. Chamfer the edges of the damaged area and apply masking tape around it's edges. Locally moisten with a spray mister, taking care not to damage the surrounding area.
2. Push wet plaster into the damaged area using a steel trowel. For a tighter bond, use the fine blade of a rectangular Japanese trowel.
3. Press back with a plastic or Japanese trowel, working the edges to minimise creating a lip.
4. Polish the new plaster with the plastic trowel and allow to dry.

5. GLAZE (as described above)

There may be a slight discolouration of the repaired area, but if carefully done, any trace can be negligible. For small, hairline cracks, spray the wall with water, then press back the cracks with a plastic or Japanese trowel.

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11. HELP

Please contact us if you have any questions about using our clay plasters. We are plasterers too and we want you to enjoy Clayworks plasters as much as we do!

We have also written a book **Using Natural Finishes: Lime and clay based plasters, renders and paints** which is full of detailed advice and information on clay plasters and more. Please see our website for more detail.

12. TRAINING

Clayworks runs practical courses on how to apply Clayworks clay plaster – at home and away.

If you are interested in one of our periodic courses, please read about them in our detailed pages about training courses and the **Clay Plaster Network** on our website.

PLEASE NOTE

All effort has been made to ensure the accuracy of the statements made within this document at the time of publication. As with all construction related activities, please ensure you are adequately fit and prepared to undertake your chosen project. We wish you the best of results.

Clayworks

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