

nen

do



Application

1.6

Clay Plaster



General preparation of the subsurface

Like all paint substrates, the surface must be completely dry, smooth, firm, stable, clean, dust-free and free of grease and penetrating substances. Permanent moisture or high salinity must be prevented. The surface to be painted, as well as the air in the room, must be completely dry with a minimum temperature of 5°C.

The plaster base must be completely dry, level, firm, stable, clean, dust-free, sufficiently rough (non-slip) and free of grease. Strongly alkaline substrates, such as concrete, must be sealed, especially with dark and strong colors, otherwise a light discoloration may occur.

When coating with open-pore clay plasters, substances such as lignin, nicotine, rust, various salts, etc., may penetrate the paint and lead to discoloration or color deviations. Therefore, it is essential to carry out preliminary tests (on sample areas). If penetrating substances cannot be safely ruled out, the subsurface must be properly sealed. This is particularly important when using light shades such as the color pale-clay.

Dark surfaces can show through thin layers of light plaster. All surfaces should be sufficiently and evenly absorbent. Permanent moisture or salt exposure must be avoided, this also applies to deeper plaster layers. The plaster base, as well as the air in the room, must be completely dry with a minimum temperature of 5°C.

Particular attention should be paid to the solidity of the plaster base, its structural stability and a secure joint reinforcement of the drywall construction. Clay plasters are demanding surface coatings and cracks are difficult to repair once set. The installation of a reinforcement mesh in the plaster layer can significantly stabilize the plaster base.

An expert surface finish begins with the preparation of the plaster base. A uniform **“degree of dryness”** of the plaster during its application is decisive for the quality of the finished surface. The reason: wet (timely) processed plaster appears rougher, while dry (delayed) processed plaster appears finer. Plaster material may even be rubbed off of areas that have dried too early. The plaster’s smoothness or roughness may be perceived as having a different color. Therefore, the following aspects are particularly important:

Constancy: Thin-layer coatings should only be applied consistently on very even substrates in order for them to dry evenly. Differences in consistency may lead to „cloudy“ plaster surfaces. The preparation of clay-covered, flush-mounted surfaces for nen-do plaster is more time-consuming than the subsequent clay-finishing plaster, coarse or fine.

Equalized absorbency: The plaster absorbs faster on highly permeable surfaces than on nonabsorbent surfaces, differences may only become apparent later. While preparing the substrate, attention should be paid to a uniform absorption behavior of all materials. The same applies to leveling compounds on drywall. For preparation of nen-do clay plaster, we recommend a commercially available silicate primer for all absorbent building substrates. PU or epoxy resin products should be used for substrates without absorbency (oil and lacquer coatings, tiles, adhesives, etc.).

Profitipp

Be careful with old plasterboard! The plaster may contain yellowing substances that bleed through.

Professional tip

Stir the primer regularly during application. Use a stirrer and stainless-steel spatula (e.g. Bernese trowel) to remove the sediment from the bottom of the bucket.



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The primer serves to equalize the permeability of the substrate. Furthermore, it slows down absorption and thus helps extend the handling time. Strongly absorbent substrates may have to be primed twice. Non-water-soluble substrates can also be primed, to a limited extent, by careful wetting (fine spray-mist).

Closing shrinkage cracks in the substrate: Cracks may form on the surface, when the viscosity of the applied nen-do clay plaster varies in the area of the cracks. Cracked substrate surfaces must therefore be evened out with a sponge or coated with an additional fine layer of plaster. Hairline cracks are not a problem.

Professional tip

As with all plastering work, protect other surfaces from damage by using drop cloths, masking, etc.

Preparation of various substrates

nen-do clay plaster surface

- Wait for plaster to dry completely
- Close larger shrinkage cracks
- Use felt or sponge on the entire surface until a fine structure is achieved

mineral based plaster surface

- Completely remove remnants of wallpaper and paste residues
- Check for permeating substances
- Perform additional plastering work using the pervious plaster mortar or a similar, mineral mortar
- Fix heavily sandy substrates with a deep primer and setting agent
- Partially reinforce problematic areas if necessary
- Apply a silicate primer

concrete surface

- Check the concrete for lubricants and forming oils
- Fresh concrete surfaces with sintered skin, especially areas with dark or strong tones, are to be processed and fluorinated properly
- Concrete is only, in exceptional cases, sufficiently smooth enough for silicate primer and the direct application of colored plaster
- Apply a coating of fluoropolymer binder, especially with dark and strong colors

- If necessary, paint with a mineral silicate primer

resin-bonded previously plastered surface

- Check the stability of the surface materials
- Fill cracks with a mineral filler if necessary
- Apply a silicate primer

clay building panel, clay hemp panel and fiberboard surface

- Fill in the gaps ≥ 1 mm wide, if necessary with clay adhesive and reinforcement mortar.
- After drying, coat the surface with 3mm clay adhesive mortar and a layer of reinforcement mortar
- On the still wet surface, work in fiberglass resin over a large area

gypsum board surface (with recessed joints)

- Check the stability of the overall construction
- Ensure the panels are free of residual moisture
- Reinforce joint areas, e.g. glue on a self-adhesive joint tape, also work in gauze fleece tape when applying plaster
- If necessary, level out the whole surface
- Prepare the surface properly with a deep

primer, recommended by the panel manufacturer

- After drying, carefully prime the surface with a silicate primer and remove any imperfections

gypsum board surface (without recessed joints)

- Check the stability of the overall construction
- Ensure the panels are free of residual moisture
- Glue according to the manufacturer's instructions
- Prepare the surface properly with a deep primer, recommended by the panel manufacturer
- After drying, carefully prime the surface with a silicate primer and remove any imperfections

porous dispersion paint surfaces

- Check stability carefully
- Sand very smooth surfaces
- Apply a silicate primer

fiberglass wallpaper surfaces

- Check stability carefully
- With sufficient grip, plaster can usually be applied without a primer (test work sample). Otherwise prepare with a silicate primer

In any case: create a test sample area!

All information on substrates is based on experience. In individual cases, a different approach may be advisable based on given variables (e.g. grip, absorbency, strength). It is therefore always necessary to assess the specific surface on site. This is the responsibility of the executor. For the purpose of assessment, a sufficiently large test sample area should always be created. The test area is also used to check the surface and color results.

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Professional tip

A sufficient amount of mortar should be mixed to create large yet harmonious surfaces.

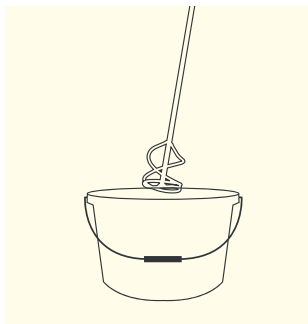
The reasons for this are:

- Slight color differences cannot be ruled out when using different product lots.
- The mixed mortar gradually becomes thinner; the consistency of the mortar influences the surface and its color effect.
- Different storage times may result in differences in color.

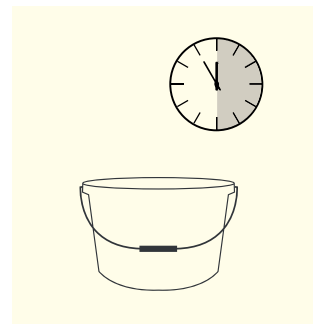
A correspondingly large bucket of mortar should therefore be prepared for large areas!

Mortar preparation

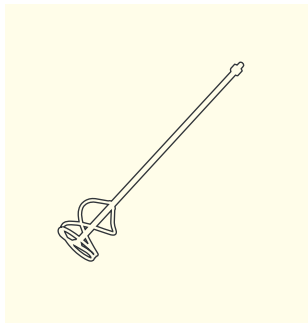
The mortar should be prepared with clean water. Approx. 5.5-6.5 l of water per container are required for mixing; the water requirement may vary depending on the material. Use a commercially available plastic bucket. First, the water is poured in. The bucket contents of 20 kg is gradually stirred into clean water using a drill (≥ 800 watts) or an agitator and stirrer ($\varnothing 125$ mm). If a drill is used, it must have an output of >800 watts. After a resting time of at least 30 minutes, the mortar is again worked through vigorously and, if necessary, made ready for use with additional water. The possible application period, when stored in a sealed container, is up to 24 hours. The mortar is only roughly premixed at the factory. The final color homogenization should take place during preparation on the construction site.



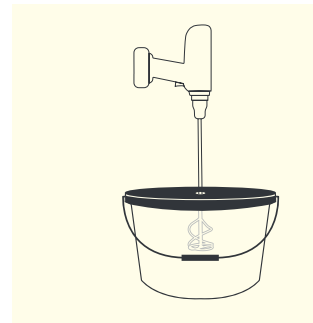
Stir the contents of the bucket into water



Work vigorously after 30 minutes



Agitating rod



Mixing rod on the drill - only mix with the lid closed

Mortar application

It is essential to use clean or better yet, new tools. An application layer (thickness of 2mm should not be exceeded! When applying with a stainless-steel trowel or a Japanese trowel, it is recommended that a thin layer is first "pulled over the grain" and that only once this layer has dried, the final application should take place. This makes the work easier and leads to better results. It goes without saying, however, that the application can be done in one go. The plaster can also be applied with a notched or a comb-type trowel (4mm teeth); this way, an even distribution of the material across the surface can be achieved quite simply. The mortar is thereby leveled and the surface may be treated further. However, a notched trowel application is not recommended on clay plaster. The mortar should be spread in either long pulls or in smaller „organic“ movements in varying directions. In any case, right angles, hard steps and straight



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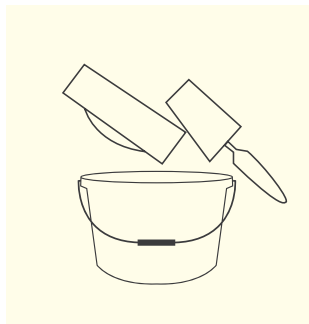
Clay Plaster

Professional tip

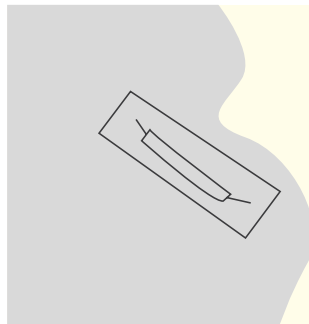
When masking in the edge of an area, the edge of the adhesive tape should be set back from the plaster application area by approx. 2 mm. Otherwise, the plaster will tear when removing the tape. The tape should be removed immediately after the surface treatment, i.e. while the plaster is still damp.

lines are to be avoided. Always start with a fresh edge („fresh on fresh“) working diagonally, e.g. from bottom left to top right.

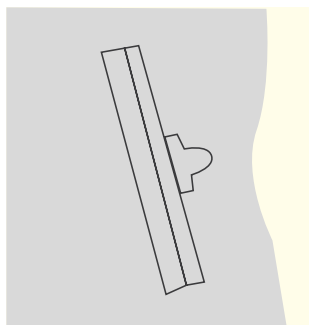
Burrs can easily be removed immediately after application with the use of a finishing spatula (squeegee). If both the walls and ceiling of the room are being plastered, start with the ceiling, followed by two opposite walls. After drying, the connections to the remaining two walls should be protected from damage to their finished surfaces, (e.g. through use of trowel or sponge float) with masking tape. This way, the same momentum and force may be used to brush on and smooth out the mortar, right up to the edges.



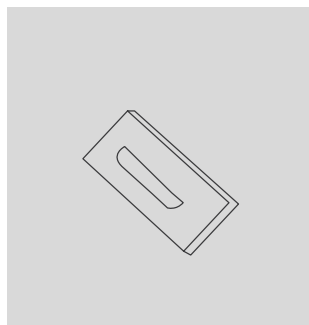
Removing the mortar



Applying with the trowel



Distributing with the spatula



First pass of felting

Plaster processing and surface

To ensure that all surfaces are processed evenly, partial surfaces should be prevented from drying out too quickly. Drafts, air flow regions near open windows, and heaters dry out the surfaces quickly; in warm rooms the upper wall areas will dry faster than the lower areas. If the plaster sets too quickly, this may also lead to cracks. Therefore, close windows and turn off the heating. After processing, moderate ventilation and heating can be used.

Every surface treatment begins with a first felting pass at an early point in the process, when the plastered surface changes from a wet, shiny state to a damp, matt state. Through this rubbing, sand and aggregates are distributed over the surface. Of course, the surface can be considered finished now or after another felting pass, the appearance is then correspondingly rough. The surface can be processed in various ways. Trowel curve forms or other rustic finishes are also possible. In addition to a sponge board, it is also possible to use a felt, wooden or plastic board. Basically, the later the processing time (i.e. the drier the plaster), the finer the surface will be.

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Professional tip

For a homogeneous result, the mortar surface must be evenly dry at the time of processing!

Professional tip

Since nen-do clay plaster is water-soluble, the working time can be extended by carefully moistening the plastered surface.

Caution: Applying too much water to the plaster surface leads to shrinkage cracks and chalking!

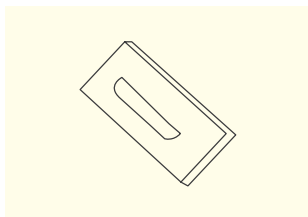
Felted surfaces

Depending on the number of treatments, felting can produce both very coarse and very fine surfaces. A rough orange felt board is used for felting. The pores of fine felt boards fill up quickly with mortar, and are, at most, suitable for one last, very fine felting pass. The felt board should not be wet, just slightly damp. This is best achieved by rolling it out over a roller bucket, as used when tiling. A second felting process can take place 2-4 hours after the first, depending on the absorbency of the surface and the weather. A third felting process can take place after another 2-3 hours. For this, the plaster must still be dark, i.e. damp. Bright spots should not yet appear.

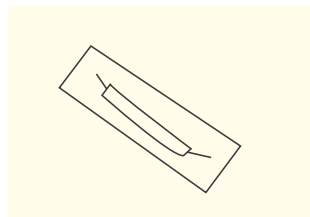
Smooth surfaces

Smoothing is more difficult and time consuming than felting. The process can be started soon after the first felting pass. The smoothing tool must be of high quality; therefore, it is best to choose a well-known manufacturer. Otherwise, metal abrasion is possible.

With the Japanese plastic smoother, a particularly smooth surface processing is possible; wear and tear, and thus the usage of the soft smoother, must be considered.



Felting



Smoothing



Result

Wiping, brushing, working in pigments

The final wiping or brushing of the plastered surfaces is a necessary step. This will remove any loose grit from the surface. Long-term durability and abrasion resistance are also improved. Visually, this step creates a deeper color brilliance, as structural elements are better accentuated.

The plaster must first dry completely (at least 48 hours). In the case of light colors, the surface is wiped in 2-3 strokes with a clean, damp sponge. The sponge is best rinsed with fresh water between wipes. Especially with dark and strong colors, work very sparingly with water when wiping, otherwise the color effect may turn inhomogeneous (cloudy).

Alternatively, the plaster can also be brushed off: after gently moistening it with a spray bottle, the damp, matt surface is softly rubbed off with a wallpapering wiper or a short-pile brush and thus, lightly polished.

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The most important things at a glance

- Prepare the substrates carefully, if necessary, apply a silicate primer.
- The surfaces must be suitable for a max. 2 mm thick plaster application and must be sufficiently flat.
- Shrinkage cracks should be filled.
- Absorption should be stabilized and slowed down, if necessary.
- Areas with penetrating substances should be sealed.
- The plaster should not be mixed with too much water.
- The plaster should swell for 30 minutes, then be mixed thoroughly.
- The water for the mortar and surface treatment should be clean.
- Containers and tools must be clean, especially with light-colored plasters.
- For contiguous surfaces, material from several containers should be mixed.
- A uniform application thickness must be strived for.
- Breaks in application are to be avoided.
- No heating or drafts during application.
- The surfaces may be sprayed with a little water and wiped free.
- Create a test work sample!

Wiping, brushing, working in pigments (continued)

Clay plasters are demanding coatings, so attention must be paid to the solidity and stability of the substrates and careful handling of the plaster surfaces. Any later occurring cracks or defects can be repaired with nen-do clay plaster. Sufficient dry material should be set aside for this, as the clay raw materials can vary in color over time.

The following work steps have proven effective when repairing defects:

- Moisten the defect (fine spray mist).
- Let the water work for a short time.
- Touch up the surrounding area of the flaw with a fine tool.
- After a short drying time (surface should be matt-damp), carefully rub the repaired area with a sponge and blend it into the existing surface, if necessary also swipe the entire surface.

Please note:

The information in the worksheets is based on many years of experience using clay materials and the use of our products. There is no binding legal obligation. Sufficient technical experience and the necessary knowledge of the relevant construction trades is required. The latest, current version of the worksheet applies; available at www.nen-do.de. Copying and publication are not permitted, even in extracts. Copyright nen-do©