



# Clay plasters

Work sheet 5.1



## conluto – diversity of clay



“Our passion for earth is what motivates us every day to find new solutions and develop new products – for you, your home and your environment.”

*Jörg Meyer, Director of conluto*

At conluto, we think, feel and design with earth. Ever since its founding in 1993, Jörg Meyer and his team at conluto have been dedicated to the development, production and distribution of contemporary ecological building products made of earth. From its beginnings as an earth building contractor, conluto has grown over the last twenty years to become one of Europe’s leading earth building materials producers.

On its 14,000 m<sup>2</sup> large site, conluto now produces an extensive range of wet and dry earth building products ranging from clay plasters and paints to earth mortars and rammed earth. The production of top-quality earth building projects and productive and collaborative working relationships with our clients are what drives the team at conluto.

We’d be glad to assist you with your next project!

### The benefits of conluto:

- Personal assistance
- Innovative solutions
- Ecologically sound
- Seminars and workshops
- Experts in earth building since 1993



## Contents

Clay plaster – a strong bond .....	4
Where can clay plasters be used? .....	4
The properties of clay plasters .....	5
Supply forms .....	6
Naturally-moist and dry plasters .....	6
Mixing plasters .....	6
A who is who of clay plasters? .....	7
conluto clay undercoat plaster, coarse terra clay plaster, topcoat plaster ..	7
fine terra clay plaster, clay fine-finish plaster .....	8
conlino deco clay facing plaster for creative surface finishes .....	8
Light clay insulating plaster 600, clay adhesive and reinforcing mortar ....	9
The substrate – suitable bases for clay plaster finishes .....	9
1. Assessment of the substrate .....	10
2. Requirements of the substrate .....	10
3. Cleaning the substrate .....	10
Important factors .....	11
Plaster application .....	11
Plaster build-up .....	12
Single / two-coat plasters .....	12
Substrates in detail .....	12
Old masonry .....	12
New masonry .....	13
Concrete .....	13
Plastering steel beams, rammed earth walls .....	14
Existing plaster surfaces in new and old buildings .....	14
Existing earth walls or clay plaster surfaces .....	15
Plaster bases: when are they required? .....	15
Clay plaster with wall heating systems .....	16
Plaster reinforcement .....	16
Panel materials .....	16
Reed board and reed plaster mesh .....	16
Wood wool insulation boards .....	17
Clay panels .....	17
Plasterboard and gypsum fibreboard, OSB panels .....	17 / 18
Plaster beads and trowel incisions .....	18
Drying .....	19
Natural drying .....	19
Forced drying .....	19
Surface treatment and finishes .....	19
Appearance .....	19
Dealing with shrinkage cracks .....	20 / 21
Clay paints and brush-applied clay plasters, lime paints .....	21
Silicate paints, emulsion paints .....	21
Wallpaper, wall tiles .....	21
Table: Plaster systems at a glance .....	22 / 23
conluto product finder .....	24 / 25 / 26
Notes .....	26

## Clay plaster – a strong bond

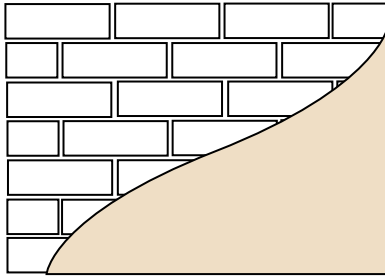


Fig. 1: Clay plaster, single coat

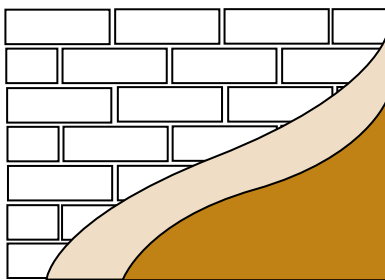


Fig. 2: Clay plaster, two coats

Earth is a building material that bridges the traditional and the modern. Many cultures around the world have traditionally used and still use earth building materials, especially clay plaster. There are many good reasons: few building materials have such good environmental and mechanical properties and are also so abundantly available. In addition, the material's ease of use as well as the ability to recycle it completely make it a good choice for users of all levels of experience.

Plasters are one of the most popular surface finish materials for walls both inside and outside. The composition of clay plasters and the ability to shape and work the material in many different ways make them an extremely versatile surface finishing material. Whether strongly textured or smoothed and polished, whether applied with a trowel or brushed-on like paint, conluto's wide range of different clay plaster products can be used to achieve almost any surface finish in many different colours.

conluto clay plasters fulfil all the key criteria necessary for creating durable plaster surfaces on walls and ceilings: they bond well to the substrate, are sufficiently hard and particularly easy to prepare and apply.

conluto clay plasters are made and declared in accordance with DIN 18947, and they are applied according to the recognised state of the art given in the German earth building code, the "Lehmbau Regeln" (4.5) issued by the German Association for Earth Building, the Dachverband Lehm e.V.

This work sheet provides information on:

- The properties of clay plasters
- Types of clay plasters
- The condition of substrates
- Preparation of the material
- Different plaster build-up variants
- Clay plasters on different substrates
- Drying
- Surface finishes
- Coatings applied to clay plasters

### Where can clay plasters be used?

conluto clay plasters are mostly used for indoor surfaces, but can be used outdoors on surfaces not exposed to the weather. Clay plasters are not only used as finishing or decorative facing plasters but are increasingly replacing conventional choices such as lime, lime-cement or gypsum plasters.

In bathrooms and kitchens, clay plasters can be used on all surface not directly exposed to splash water.

For surfaces that are exposed to greater wear and tear, for example, corridors or staircases in heavy use, the suitability of a clay plaster, or the selection of a suitably durable clay plaster should be assessed on an individual basis. We can advise you on suitable options.



## The properties of clay plasters

Clay plasters do not set chemically but dry physically, hardening as the moisture in the material evaporates into the environment. By adding water, they can be made soft and malleable. This property means that mixed plaster mortar remains workable for long periods and that the material can be re-used without the need for energy-intensive recycling processes.

Drying characteristics

Clay plasters have good capillary conduction at a low level of equilibrium moisture. That means that it is effective at dissipating moisture and is therefore an ideal material for keeping the wooden structure of half-timbered buildings dry.

Moisture transport

Clay plasters have the capacity to buffer fluctuating levels of humidity in rooms (for example from showering, cooking or heating): the material absorbs humidity in the air, retaining the moisture in its pores until the air in the room is drier, whereupon it is released again. This property is termed sorption capacity.

Positive room climate

conluto clay plasters are simple and easy to use. They are available in normal-sized packaging forms and can be prepared and applied by hand or using a plastering machine.

Easy to use

conluto clay plasters are electrostatically neutral and do not therefore attract dust and dirt.

Electrostatically neutral

The clay minerals within the clay plaster are able to bind foreign substances and pollutants. Clay plasters are therefore widely held to "clean" the air. This cleansing property of earth is also used in naturopathy in healing earth and mud packs as well as in waste water treatment systems.

Absorbs odours and binds pollutants

Clay plaster requires comparatively little energy for its manufacture. The extraction and refinement of clay plasters do not destroy the face of the landscape nor pollute air or water.

Conserves resources

Because clay plasters do not set chemically, they do not suffer from the dehydration problems<sup>1</sup> that affect conventional curing plasters, and it is not necessary to apply corresponding primers or barriers to prevent moisture loss. Wall surfaces should, however, be wetted with a fine spray of water to bind dust and prolong the workability of the plaster coat.

Are clay plasters subject to curing problems? <sup>1</sup>

Clay plasters are differentiated according to their composition, particle granularity, additives and mixing proportions. conluto clay plasters are made of naturally-occurring earths excavated from suitable earth pits along with sands of varying granularity. Different variants may be mixed with chopped straw or fine plant fibres.

Composition of clay plasters

<sup>1</sup>: Curing problems occur with conventional plasters, mortars or paints when mixing water is absorbed too quickly by high-suction backgrounds. The water is absorbed from the plaster before it can adequately cure. This problem does not affect clay plasters.

## Supply forms

conluto clay plasters are available in a naturally-moist and/or dry state depending on the respective product. The package sizes, supply forms, and quantities are detailed at the end of this work sheet in the "conluto product finder" section and in conluto's product overview brochure.

Information on preparing conluto clay plasters is contained in work sheet **conluto Arbeitsblatt Putzmaschinen 5.2** (German only)



The advantage of closed plastering machines is that there is no danger of freezing in winter.

### Naturally-moist clay plaster

Naturally-moist clay plaster is made directly from freshly-excavated pit earth and is not mechanically-dried. The energy input required to make these earth mixtures is therefore very low. Naturally-moist clay plasters are supplied in big bags. They should be used within three months of delivery on site. In the winter months, the material may freeze, however this has no effect on the quality of the product; it only leads to delays on site as the material must thaw fully before plastering can continue. Naturally-moist plasters can be processed using all open plastering machine systems (compulsory mixer plus mortar pump). Suitable machines include the PFT Wing N2V or PFT ZP3 with corresponding mixer, the Putzmeister S5 with corresponding mixer or the SP11 or P13, and the UMP1 L-Power by Deutsche Fördertechnik. These are just some common examples; other manufacturers also have suitable plastering machines in their product ranges.

### Dry clay plaster

Dry clay plasters are mechanically-dried mixtures that are supplied in big bags or in sacks. When stored dry, these products will last indefinitely. Dry clay plasters can be processed using closed plastering systems, for example the PFT G4 and G5 plastering machines or the UMP1 L-Power by Deutsche Fördertechnik.

### Mixing plasters

conluto's naturally-moist and dry clay plasters are both ready-mixed plaster mortars that only need mixing with water to be ready for use. The quantity of mixing water required varies depending on the kind of plaster and method of application. When applying plasters by hand, the mixture is usually prepared slightly thicker than when applied with a plastering machine. Likewise, the consistency of the plaster mortar should be adjusted depending on the thickness of the coat and the properties of the substrate. Further product-specific details are provided in our technical datasheets and on the sack labels.



## A who is who of clay plasters

### conluto clay undercoat plaster

This coarse plaster can be processed with a plastering machine and is made of excavated earth, sand and 30 mm long strands of chopped straw. It is used as a levelling plaster on uneven backgrounds to create a smooth base for subsequent plaster coats. Undercoat plasters can be applied in thicknesses ranging from 5 mm to 30 mm in one coat. Technical installations such as electrical wiring and heating pipes can be embedded in the coat of plaster. Clay undercoat plaster is used to create a level base coat for use with conluto insulation board systems and for the first coat of plaster applied to insulation boards. It serves as a base coat for two-coat plaster applications with a top coat of clay topcoat plaster, terra clay plasters (coarse and fine) or clay fine-finish plaster. It can only be used as a base coat for deco clay facing plasters if the surface finish quality corresponds to quality level Q2 (very flat and even surfaces). This requires good experience with clay plasters and is not recommended for inexperienced users. conluto clay undercoat plaster is supplied either in naturally-moist form in big bags or dry in sacks or big bags.



Clay undercoat plaster

### conluto terra clay plaster, coarse (without organic additives)

This plaster is made of excavated earth and sand without additional organic or animal additives and can be applied in thicknesses of 5 to 15 mm per coat. It can be used as a bedding mortar for conluto insulation board systems or for multicoat plasters on masonry, wood fibreboard, reed mats or gypsum dry-lining boards (primed with a coarse granular primer). When finished to a good surface quality, it can be painted directly with a clay paint or plastered over with deco clay facing plaster. Before applying the plaster, the substrate should first be given a slurry coat of terra clay plaster (coarse), worked in with a thick brush. conluto terra clay plaster (coarse) is supplied as a naturally-moist or dry mix in big bags and is suitable for processing with plastering machines.



Clay terra plaster, coarse

### conluto topcoat plaster

Made of excavated earth, sand and chopped straw  $\leq 10$  mm, topcoat plaster can be applied with a plastering machine in coats of between 5 and 10 mm thick. It can be used as a bedding mortar for conluto insulation board systems or for single- or multicoat plasters on masonry, wood fibreboard, reed mats or gypsum dry-lining boards (primed with a coarse granular primer). The finely chopped straw gives the surface finish a fine texture. In most cases topcoat plaster is left as the final finish and painted. It can also serve as a base for a facing coat of deco clay facing plaster. Depending on when the surface is worked after plastering, the surface finish can be given a different texture. As a rule, the texture of the surface finish is finer the later the plaster mortar is rubbed or sponged. Smooth surfaces can be achieved by subsequently working the surface with a smoothing trowel. conluto topcoat plaster is supplied either naturally-moist in big bags or as a dry mix in sacks or in big bags.



Clay topcoat plaster



Clay terra plaster, fine

#### **conluto terra clay plaster, fine (without organic additives)**

This plaster is made of excavated earth and sand without additional organic or animal additives and can be applied in thicknesses of 3–4 mm per coat. It is suitable for use on flat, even surfaces, such as clay plaster surfaces, conluto clay panels and plasterboard (when primed with a coarse granular primer). conluto terra clay plaster (fine) can be used to create paint-ready surfaces with a smoothed or sponged surface texture, or as a preparatory coat for a deco clay facing plaster. Its granular composition means that it can be used to create surfaces with a very fine surface finish ready for painting.

conluto terra clay plaster (fine) is supplied as a naturally-moist mix in big bags and is suitable for processing with plastering machines.



Clay fine-finish plaster

#### **conluto clay fine-finish plaster**

This plaster is made of excavated earth, sand and fine plant fibres. It is applied in thicknesses of 2–3 mm on flat background surfaces such as clay plaster surfaces, clay panels or plasterboard (when primed with a coarse granular primer). Clay fine-finish plaster is used to create paint-ready surfaces with a smoothed or sponged surface texture. Its granular composition means that it can be used to create surfaces with a very fine surface finish ready for painting.

conluto clay fine-finish plaster is supplied as a dry ready-mix mortar in sacks or big bags and is suitable for processing with plastering machines.



#### **conlino<sup>2</sup> deco clay facing plaster for unique surface finishes**

Deco clay facing plasters are a coloured, natural surface finish. They are made of coloured earths and clays, quartz sand and are thin facing plasters for creative interior wall finishes with a subtle, slightly cloudy appearance. Deco clay facing plasters can be applied to all flat and even substrates with a surface finish quality of Q2 or better. As deco clay facing plasters are made without additional pigments, their colours are a product of the specific earths and clays used. The result is a natural palette of colours that can be mixed with one another.

Deco clay facing plasters must be applied at a universal thickness of between 1 and 2 mm. Uneven thicknesses lead to subsequent uneven working characteristics which in turn can result in an uneven surface finish. Cracking or spalling can also result. It is important that the substrate is very flat (surface finish quality level Q2) as deco clay facing plasters are unsuitable for filling holes or uneven substrates. conlino deco clay facing plaster is supplied in 25 kg sacks.

For further information, see  
**conlino Work Sheet 6.1**  
**“Surface finishes”**



2: conlino is a range of creative clay plaster products by conluto and includes clay paints, brush-applied clay plasters, deco clay facing plasters and clay smoothing plasters, as well as additional tools and accessories such as Japanese trowels, brushes and stencils.





## Light clay insulating plaster 600

Light clay insulating plaster 600 is a lightweight clay ready-mix mortar made of excavated earth, foamed glass granules and straw. The light clay insulating plaster 600 is used as an insulating levelling plaster, as a base coat for conluto internal insulation board systems and to level uneven masonry walling both in interiors and in exterior situations not exposed to the weather. Each layer can be between 5 and 20 mm thick, up to a maximum overall plaster thickness of 50 mm.

Once fully dry, this levelling coat can then be covered with conluto internal insulation boards bedded in a coat of clay undercoat plaster or clay adhesive and reinforcing mortar. Alternatively, the levelling coat can be plastered over directly with one or more coats of clay plaster.

Light clay insulating plaster 600 is supplied naturally-moist in big bags.



Light clay insulating plaster 600

## Clay adhesive and reinforcing mortar

Clay adhesive and reinforcing mortar is a dry ready-mix mortar made of excavated earth, sands, plant fibres along with cellulose and organic starch. It is applied at a thickness of between 1 and 5 mm. Clay adhesive and reinforcing mortar is used to bond clay panels and insulation boards to a substrate, for embedding reinforcement fabric mesh and for notched spatula undercoats for subsequent plastering.

It is packaged in dry form and supplied in 25 kg sacks.



Clay adhesive and reinforcing mortar

## The substrate – suitable bases for clay plaster finishes

The quality of a finished plaster surface is very dependent on the condition of the substrate on which it is applied. This must therefore be carefully inspected and prepared in advance. The following section describes the steps necessary to assess the quality of the substrates as well as any preparatory steps necessary to prepare it to receive a clay plaster.

The details on the different approaches for different plaster backings described are based on years of experience. It is nevertheless important that the plasterer checks the relevant specific conditions on site, as they are responsible for the subsequent plaster coats to be applied. If in doubt, undertake a sufficiently large trial surface in advance.

## 1. Assessment of the substrate

Assessment of the substrate	Evaluation
1.1 Visual inspection	Identify presence of soiling, residues of release agent, soot stains and loose material.
1.2 Wipe test	Wipe the surface with the flat of a hand to determine the degree of dust and dirt. Test in several places per surface.
1.3 Scratch test	Scratch the surface with a hard, pointed utensil (e.g. trowel or spatula) to determine the material strength and integrity.
1.4 Wetting test	Wet the surface with water. If droplets form and run down the wall, the surface needs cleansing or mechanical abrading.
1.5 Moisture measuring device	Test the moisture content of the substrate to determine fluctuations in moisture levels across its surface.

## 2. Requirements of the substrate

Requirements of the substrate	Preparatory measures (examples)
2.1 Flat, continuous surface	Fill holes and chases, and level irregular surfaces.
2.2 Sufficiently rough	Roughen with a corresponding tool and remove any sintered material (e.g. wire brush), apply bonding agents (e.g. conluto primer), apply spatter coat as key.
2.3 Stable surface	Knock off any loose material, stabilise the substrate, Apply conluto reed plaster base mesh to timber elements, Remove wallpaper, wall tiles and old paints/coatings.

## 3. Cleaning the substrate

Requirements of the substrate	Preparatory measures (examples)
2.4 Clean and free from stains and soiling substances	
e.g. rusty metal/iron	Remove or pre-plaster with a mineral plaster and plaster mesh
e.g. dust	Brush down and sweep off, pre-wet with water (light spray, do not soak).
e.g. release agent residues	Clean with solvent or sodium hydroxide.



e.g. salt efflorescence	Assess cause (expert assessment), remove mechanically, treat chemically or apply a renovation plaster. Clay plaster must not be applied to surfaces with salt efflorescence (blooming).
e.g. nicotine, soot, tar	Stains and soiled surfaces must be treated with an appropriate barrier or removed entirely if necessary.
2.5 Drying	New buildings: allow to dry sufficiently, where necessary with additional gentle forced drying. Old buildings: prevent rising damp. Prevent wetting of wall base through additional drainage.
2.6 Good, even suction characteristics	High suction substrates: pre-wet substrate to prolong workability. Low suction substrates: apply a spatter coat as key or primer as bonding agent.
2.7 Uniform characteristics	Apply spatter coat, conluto wall and ceiling primer, or conluto reed mat plaster base.

To achieve an optimal clay plaster surface within a relatively short drying time, it is important that the plaster background is fully dry. One should not plaster onto wet wall surfaces – check the plaster background according to VOB-C: DIN 18350. The plaster substrate must be free of dust and loose material that could inhibit plaster adhesion. In old buildings, walls should be inspected to determine any defects or damages that may cause dampness in the wall, for example water ingress from outside, rising damp from the wall base or the presence of salts, a common problem when converting barns or buildings previously used to keep livestock. The cause of any such defects and damages must be first be remedied. Clay plasters may only be used once the necessary repairs have taken place.

As clay plasters do not cure hydraulically but harden through drying, it is important that the space is adequately ventilated to ensure that moisture can evaporate from the wall (see “Drying” below).

The plaster base and ambient room temperature must be at least 5°C when applying the plaster.

Before beginning with plastering work, all adjoining surfaces or building elements must be covered to protect them against soiling. As clay plasters are water soluble, they are easily removed, however clay mortars can discolour other surfaces.

## Important factors

## Plaster application

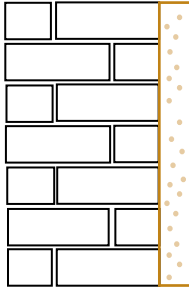
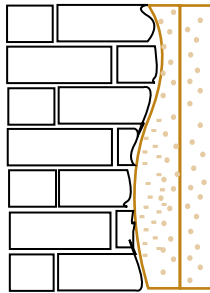
Clay plasters are applied like other plasters using normal plastering tools or plastering machines. Tools made of stainless steel, aluminium or plastic are recommended as the iron oxide in clay mortars can cause tools made of iron to rust.

## Plaster build-up

### Single or two-coat plasters

The key criteria for choosing whether to use a single-coat or two-coat plaster is the condition of the substrate, the desired thickness of the plaster and the quality of the desired surface appearance of the plaster. Single-coat plasters can only be applied to well-prepared, ideally perfectly flat backgrounds. Two-coat plasters are therefore more common, but the second coat can only be applied once the first is fully dry. This is a prerequisite for a good, even surface finish. On some substrates it is possible to replace the first coat with a spatter coat or rough base coat. A two-coat plaster is always necessary when a plaster reinforcement mesh is to be embedded.

**Table:**  
Single or two-coat plasters

	Single-coat clay plaster	Two-coat clay plaster
		
Substrate:	Flat, even, roughened with good suction	Uneven, rough, normal suction
Example:	Earth masonry, bonded masonry, plaster surfaces	Old masonry, old and irregular and uneven plaster surfaces, with holes, etc.
Build-up:	1 – 1.5 coats: 10-15 mm of coarse terra clay plaster or clay topcoat plaster	First coat: clay basecoat plaster (0.5-3 cm) or in several coats up to 10 cm Second coat: clay topcoat plaster, clay fine-finish plaster, terra clay plaster (coarse or fine)

## Substrates in detail

### Old masonry

Old masonry must be carefully cleaned of all soils, loose material, crusts and the surface stability tested (see table on page 8). Special attention should be paid to rising damp and salt efflorescence. Clay plaster is not suitable for surfaces with salt contamination.

Old masonry is typically plastered with a two-coat plaster. The existing surface must be thoroughly cleaned. Surfaces with high suction



characteristics (“thirsty” surfaces) should be pre-wetted prior to plastering. Lime-sandstone and low-suction surfaces, such as some natural stonework, should not be pre-wetted. To improve plaster adhesion in such cases a slurry of clay undercoat plaster or coarse terra clay plaster can be applied. This adheres any fine dust to the surface. In most cases, however, a level base first needs to be created using clay basecoat plaster as a levelling plaster. The thickness of the plaster depends on the irregularities or unevenness of the substrate. Plaster layers of greater than 2-3 cm thick (for example in the case of rough stonework) should be undertaken in several coats. Each layer must be allowed to dry fully before applying the next. The overall plaster thickness should not exceed 10 cm. Masonry with small-format bricks is usually plastered in two coats to prevent the masonry joints showing through. The first coat can be a conluto clay undercoat or topcoat plaster; the second coat any of the conluto finishing plasters. Masonry made of flush-fitting blocks or bricks usually has a high degree of powdery dust that should first be removed. Aerated concrete blocks and flush-fitting bricks are usually highly absorbent surfaces and must be pre-wetted before plastering. Lime-sandstone also has good suction characteristics but should not be pre-wetted. Instead it should be pre-sprayed with a thin spray coat of a correspondingly wet plaster.

## New masonry

Masonry walls with large-format bricks have a smaller relative proportion of masonry joints. Here too, the first coat of plaster can be replaced with a spray coat or rough coat of conluto clay topcoat plaster. Before applying plaster, any holes or chases in the masonry must be filled and the filling mortar allowed to dry fully. The second coat after the spray coat or rough coat should be a clay topcoat plaster to achieve a sufficient overall thickness.

conluto earth bricks (Application Classes<sup>3</sup> Ia and Ib and II according to DIN 18945) are plastered with two coats of plaster. Pre-wetting the masonry prolongs the workability of the plaster.

With masonry walls, a reinforcement mesh is only necessary to bridge changes in material across a plaster surface, for example around lintels.

Concrete substrates must be carefully inspected. Often there are residues of formwork release agent or other oils that prevent proper adhesion of the clay plaster (see “Cleaning the substrate: Release agent residues” in the table above). Smooth concrete surfaces should be primed with a bonding agent or a spray-coat, for example of sand-cement slurry, as otherwise smoothing can result in bubbling of the plaster. To determine the precise plaster adhesion characteristics, it can be advisable to produce a trial surface in advance.

## Concrete

<sup>3</sup>: Application class Ia: plastering of external masonry in half-timbered façades exposed to the elements\*

Application class Ib: plastering of the full surface of external masonry exposed to the elements\*.

Application class II: clad or otherwise weather-protected external masonry, and all internal masonry\*

\*Load group I according to DIN 4108-3 or after careful assessment of the exposure to driving rain on site.

## Plastering steel beams

Steel elements must be protected against corrosion with a suitable coating or galvanization process. They are typically encased in a mineral plaster mortar (e.g. lime-cement plaster) in combination with expanded metal mesh ensuring sufficient coverage according to recognised procedures. The clay plaster can only be applied once the plaster substrate has fully dried, i.e. after the mortar has fully set (~30 days). The different suction characteristics of the plaster base must be taken into account. Likewise, where different materials adjoin, reinforcement fabric mesh should be embedded in the upper third of the clay plaster layer.

## Rammed earth walls

Rammed earth walls are typically employed as a design element and only rarely plastered. They can, however, be plastered very easily once the rammed earth walls have dried fully throughout the entire depth of the wall. Smooth surfaces should be roughened. Pre-wetting the surface prolongs the workability of the plaster.

## Existing plaster surfaces in new buildings

Surfaces with new lime or lime-cement plasters can be covered with an additional layer of clay plaster. The substrate must, however, be fully dry (usually 30 days minimum) or else there is a risk of discolouration. The thickness of the clay plaster coat depends on the roughness of the backing and can range from a thin coat application to a proper two-coat plaster. On gypsum plasters, conluto wall and ceiling primer should be applied prior to plastering with a thin coat of clay plaster.

## Existing plaster surfaces in old buildings

Existing plastered surfaces of lime or lime-cement plaster should be inspected for stability. In many cases, dents, holes and chases may need patching with a mortar that corresponds to the existing plaster or else a clay undercoat plaster. In either case, it is important that the repairs are allowed to dry fully before proceeding. Very absorbent lime plasters are first treated with a deep stabilising primer before plastering. To even out different suction characteristics in the substrate, or when the substrate is a plaster that contains plastics, the surface should first be primed with conluto wall and ceiling primer. As with existing surfaces in new buildings, the thickness of the coat depends on the roughness of the backing and can range from a thin coat application to a proper two-coat plaster.



Existing earth walls and clay plasters are an excellent base for conluto clay plasters. Primers are generally not necessary as the plaster bond between old and new plasters functions well. In many cases, however, old clay plasters may be very dry and very dusty and a light pre-wetting with a fine spray is not sufficient. Here the wall may need to be wetted more thoroughly using a thick brush or a sponged float. Any holes resulting from the removal of loose plaster or unsuitable materials should be repaired in advance and allowed to dry thoroughly before proceeding. If the wall surface contains timber elements – beams, columns, struts – these must first be covered with a plaster base. A reed plaster base cut to the width of the timber element and stapled to the wood is usually best. In the upper third of the clay plaster layer an additional sufficiently wide strip of reinforcement fabric should be embedded, or alternatively reinforcement mesh across the entire wall surface. A two-coat plaster is commonly applied to existing earth walls or clay plasters. If an existing wall surface has a smooth, intact wall surface a single coat of new clay plaster may be sufficient. A thin coat application is, however, too thin for such purposes.

## Existing earth walls or clay plaster surfaces

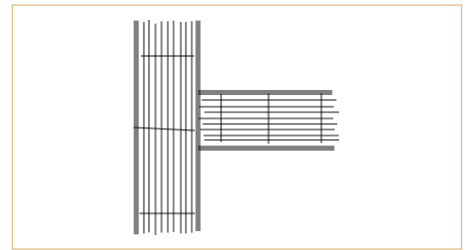


Fig. 3: Fixing reed plaster base to timber beams in the wall

Plaster bases are used when the substrate is not sufficiently stable or strong enough to support the layer of plaster, or when surfaces are difficult to plaster over, for example timber beams in wall surfaces. conluto reed plaster base (70 stems per metre) is used, fixed with galvanized staples.

## Plaster bases: when are they required?

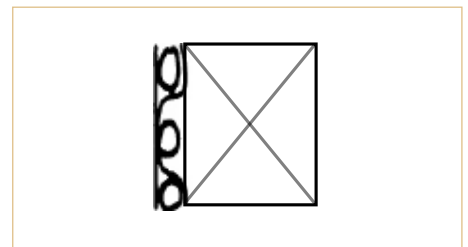


Fig. 4: Correct orientation of reed plaster base and wall

The reed stems are bound together with wire: on one side is a thicker taut carrier wire, on the other a binding wire that winds around each stem. The reed plaster base should be fixed to the wall with the thicker straight wire facing you and the binding wire and stems facing the wall.

## Clay plaster with wall heating systems

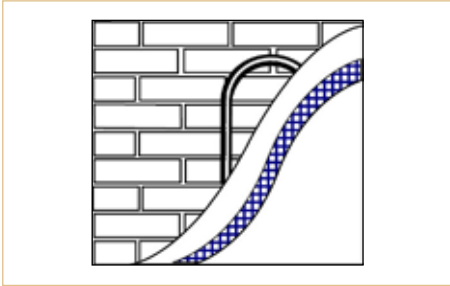


Fig. 5: Embedding coils of wall heating pipes

Three coats of clay plaster are used when plastering over wall heating pipes ( $\varnothing$  16 mm). To achieve a flat surface finish, the first two coats of plaster are applied using conluto undercoat plaster:

**Step 1:** A layer of clay undercoat plaster of about 25 mm thick is applied up to the top-surface of the heating pipes. The wall heating can then be switched on to accelerate the drying time of this first layer, or the layer can be plastered while the wall heating is on. Any cracks that appear will be filled by the next layer.

**Step 2:** After the first layer is fully dry, a second layer of clay undercoat plaster of about 3-5 mm thick is applied to cover all the heating pipes (if necessary pre-wet the first coat). A reinforcement fabric mesh is embedded in this layer to prevent cracking as a result of thermal tensions within the material. Separate sections of fabric mesh should overlap by at least 10 cm.

**Step 3:** The final coat of plaster is applied once the clay undercoat plaster has fully dried. A layer of between 3-5 mm is applied depending on the plaster used, for example a clay topcoat plaster, clay fine-finish plaster or terra clay plaster. To ensure that the wall heating responds relatively quickly, the uppermost surface of the heating pipes should not lie more 7-10 mm deep in plaster. The surface of the top coat can be coated with a clay paint or deco clay facing plaster.

## Plaster reinforcement

Plaster reinforcement in the form of a fabric mesh or tape helps distribute differential tension within the dry plaster. It minimizes or prevents the occurrence of cracking. Reinforcement mesh or tape is used when a plaster is applied to a background made of different materials, or when the background is made of large sections with joints (e.g. clay panels or insulation boards) or has been repaired, for example when plastering over channels and chases. Conluto offers meshes made of fibreglass or hessian. Reinforcement meshes are embedded in the upper third of the plaster build-up. Separate sections of fabric mesh should overlap by at least 10 cm.

## Reed board and reed plaster mesh

### Panel materials

Reed boards and reed plaster base meshes are plastered with two coats of plaster. The background should not be pre-wetted. For better plaster adhesion – especially on ceilings – a spray coat of clay plaster can be pre-applied. Reinforcement mesh should be embedded in the surface of the first coat of clay plaster (min. thickness 1 cm). Once the first coat has fully dried, a topcoat plaster can be applied.





As with reed boards, wood wool insulation boards are plastered with a two-coat plaster including a full-surface reinforcement mesh in the upper third of the plaster build-up. The boards should be pre-treated as per the manufacturer's instructions. A thin spray-coat using a hydraulic mortar improves the plaster bond for the subsequent clay plaster. To avoid the risk of cracking, all moisture in the panel should be allowed to dry fully (recommended duration: 4 weeks) after the first coat has been applied. As there are a large variety of panel types with different surface characteristics, it is worth undertaking a trial section in advance to determine the precise plastering characteristics..

## Wood wool insulation boards

Clay panels are likewise plastered with a two-coat plaster of clay fine-finish plaster or fine terra clay plaster. A reinforcement mesh can be applied across the entire surface or alternatively reinforcement tape (scrim tape) can be used to reinforce the panel joints. The simplest and most effective method is to embed reinforcement mesh over the entire surface in a layer of fine-finish plaster. This also avoids the problem of overlapping scrim tape showing on the final surface.

## Clay panels

See also conluto work sheet  
**conluto work sheet**  
**Clay panels 3.1**

It is nevertheless necessary to ensure that sections of mesh overlap by at least 10 cm. Once the first coat of plaster or filler has fully dried, a second coat of clay fine-finish plaster or fine terra clay plaster is applied.

Clay panels can also be plastered with clay topcoat plaster. However, each layer of plaster should not exceed 5 mm to avoid wetting the panels excessively which could cause them to warp. The overall plaster thickness should therefore not exceed 10 mm. The supporting construction for the clay panels must also be sufficiently strong to sustain the additional weight of the plaster.

When using scrim tape to reinforce panel joints, the tape is laid over the joint and then held in place with a slurry of clay fine-finish plaster applied with a brush. Where sections of tape cross, they should not overlap as two layers of tape will require a thicker layer of plaster to prevent the extra thickness of the overlapping mesh showing through on the plaster surface. The rest of the panel is then lightly wetted and a thin layer of clay fine-finish plaster applied – just enough to bury the scrim tape. Once the first coat is fully dry, a second thin coat of clay fine-finish plaster or fine terra clay plaster is applied. The wetting of the surface is necessary to ensure the thin layer of plaster remains workable for a longer period but should be done with care to avoid the panel getting too wet to avoid the risk of warping. When using scrim tape, special care must be taken to avoid the scrim tape showing when the sun illuminates the surface from the side.

As the moisture level of plasterboard and gypsum fibreboard may not be too high, the moisture content of the panels should be checked before starting. The moisture content should be less than 1.3% to avoid the panels warping. All surface preparation, such as joint filling or application of a wall fleece should be completed as per the manufacturer's instructions. Joint filling should conform to surface quality level Q2. This quality level means that the surface should be completely flat after application of the joint filler.

## Plasterboard and gypsum fibreboard



With plasterboard and gypsum fibreboard, only thin layers of plaster of between 1-5 mm are permissible. Suitable plasters include clay fine-finish plaster (max. thickness: 3 mm), fine terra clay plaster (max. thickness: 4 mm), and conlino deco clay facing plaster (max. thickness: 2 mm). Prior to plastering, the plasterboard background should be treated with conluto wall and ceiling primer. This protects the panels from becoming too wet and improves the plaster bond due to the granularity of the primer.

## OSB panels

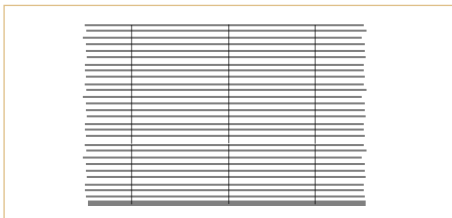


Fig. 6: Applying reed plaster base to OSB panels

OSB panels require preparatory measures before they can be plastered with clay plaster. A plaster base should be applied across the entire surface, for example conluto reed plaster mesh (70 stems per metre). The mesh is fixed with galvanized staples of > 16 mm for walls and > 25 mm for ceilings and roof inclines. Approx. 80-100 staples/m<sup>2</sup> should be used (see p15 for details on the correct fixing of reed plaster base). The OSB panel can then be plastered with a two-coat plaster including a layer of reinforcement mesh embedded in the surface of the base coat: usually a clay undercoat plaster of up to 15 mm thick. Once the base coat has fully dried, the second coat can be applied with clay topcoat plaster, fine terra clay plaster or clay fine-finish plaster. The overall plaster thickness should not exceed 20 mm.

**Important:** The plaster must dry in a controlled but rapid manner as OSB panels should not be exposed to excessive levels of moisture (see drying protocol).

## Plaster beads and edging strips

Plaster corner beads and edging strips made of galvanized metal, stainless steel or plastic are all suitable for use with clay plasters. They are usually fixed in place with dabs of gypsum-based binder or ideally with a mineral-based fixing mortar using more fixing points than usual. Any cut sections of galvanized profiles should be sprayed with a zinc spray to prevent rusting.

## Trowel incision

The handling of the junctions and edges of plaster surfaces are a sign of the skill of a plasterer. Clean junctions between materials give plaster surfaces better integrity and prevent cracking at the edges resulting from differential movement or tension. Plaster beads, edging strips or a simple, cleanly cut incision with a plasterer's trowel are all ways of delineating the boundaries of plaster surfaces.



## Drying

One of the most important factors when using earth and clay building materials is drying. Clay plasters do not set chemically like lime or lime-cement plasters but harden physically by dissipating moisture into the surrounding air. If drying is inhibited and the earth or clay material remains moist for prolonged periods, there is a risk of mould formation. This risk disappears as the material dries. Factors that influence the ability of a clay plaster to dry include temperature, air movement and air humidity. Drying can either occur naturally or with the help of machines. Natural drying involves ensuring sufficient cross-ventilation to transport evaporated moisture out of the building. Windows and doors should be left open around the clock, ideally with openings in opposite external walls: cross-ventilation ensures a complete change of air every 1-5 minutes compared to every 30-60 minutes when only a single window is open in tilt position (source: Moisture and mould formation, German consumer advice association, 2007).

To ensure good drying conditions are maintained, it is advisable to keep a drying protocol for all plaster thicknesses of 15 mm or more. See [www.conluto.de](http://www.conluto.de) (Source: Dachverband Lehm e.V.).

Under good drying conditions, approx. 1-2 mm of plaster will dry per day.

Forced drying entails using machinery such as drying equipment and heater fans. This has the advantage that drying takes place in a controlled manner. Various different methods are available but condensation dryers and ventilator fans have proven effective. The drying equipment should not be too powerful or the top layer of plaster will dry too quickly, leading to the risk of crack formation.

If poor ventilation has already given rise to slight mould formation, additional forced drying measures should be put into effect immediately. Drying equipment will then be necessary. Contact our technical support department to assess the seriousness of the mould and discuss possible ways of treating the surface. We can provide you with relevant advice.

## Surface treatment and finishes

Depending on the working method used, different textures can be achieved that influence the appearance of the plaster surface and in turn the room. "A smooth plaster surface is softer, more subtle and calm than a rough surface finish. It reflects light better and appears lighter as a result. A coarse plaster surface is rougher, more rustic and more active, as the texture casts small shadows across its surface. The surface appears darker than a fine surface finish. In small spaces, rough wall finishes can make a room feel smaller as it affects the scale of the space." (FAL e.V., Ganzlin).

The surface structure is influenced by the choice of materials, the choice of tools and the point in time at which is worked.

## Natural drying

conluto drying protocol

## Forced drying

## Appearance

**Table: Surface finishes**

<b>Tool</b>	<b>Surface finish</b>	<b>Time of working</b>	<b>Choice of material</b>
Sponged float	Active, coarse texture	Work early while plaster is still soft	Clay undercoat plaster, clay topcoat plaster, terra clay plaster (coarse)
	Fine texture with visible granular or fibrous particles	Work later when plaster has hardened to a leather-like consistency	Clay topcoat plaster, clay fine-finish plaster, deco clay facing plaster, terra clay plaster (coarse and fine)
	Smooth surface, very little texture		Clay fine-finish plaster, terra clay plaster (fine)
Rubbing with wood or plastic float	Compressed surface finish with little surface texture	Work later once plaster has hardened otherwise it will stick to the float	Clay fine-finish plaster, clay topcoat plaster, terra clay plaster (coarse and fine)
Smoothing trowel	Smooth surface	Work later once plaster has hardened, possibly after rubbing	Clay fine-finish plaster, clay topcoat plaster, terra clay plaster (fine and coarse)
Japanese trowel	Very smooth, polished surface	Smooth several times at different times, sometimes after slightly wetting the surface	Deco clay facing plaster, clay fine-finish plaster, terra clay plaster (fine)
Wide brush, wallpaper brush, broom	Ribbed structure	Work shortly after applying the plaster while still soft	Clay topcoat plaster, clay fine-finish plaster, terra clay plaster (coarse and fine)
Smoothing brush with leather insert	Quartz sand, pearlescent sand and other additives are brought to the fore	Work once fully dry	Deco clay facing plaster or all finishing plasters with additives

## Dealing with shrinkage cracks

If shrinkage cracks appear after plastering, these need to be closed again. Depending on the degree of cracking, this can be done in different ways. Thicker shrinkage cracks are cut into wider V-shaped channels and refilled with plaster mortar. Small shrinkage cracks in conluto topcoat plaster, terra clay plasters (coarse and fine) and fine-finish plasters can often be sponged partially closed if the surface is to be painted. If the surface is the final finish, the cracks need to be filled and once dry, the entire surface worked over with a slightly wet sponged float.

The surface is slightly wetted by spraying lightly from a spray bottle while rubbing with an almost dry sponged float in even circular cycles. Plaster surfaces that are not going receive a final coat should be worked evenly in one go to achieve an even appearance without visible junctions where work stopped and restarted.

Once the plaster surface is fully dry, a paint or coating can be applied. To retain the beneficial properties of the clay plaster, paints should be applied thinly and not form a sealed surface. conluto provide a range of breathable (i.e. vapour-permeable) clay paints and brush-applied clay plasters as part of its conlino range of products that have been specially developed to harmonise with conluto clay plasters and retain the positive effect of the clay plaster. conlino clay paints are made of coloured earths and clays with powdered marble and small quantities of cellulose and organic starch. The colours are entirely natural without the addition of pigments. In most cases, the paint is applied in two coats, allowing the first to dry before applying the second. conlino brush-applied clay plaster contains an additive that lends the paint a granular surface texture.

Lime paints and lime-casein paints are likewise suitable for use with clay plasters, and have good coverage properties. Lime paints should be applied thinly and as evenly as possible as excessively thick coats can lead to cracking. As a consequence, lime paints are usually applied in 2-3 coats of thin paint.

We don't recommend using pure silicate paints for clay plasters due to their special requirements and the skills required. Silicate emulsion paints and other emulsion paints can be used but inhibit the moisture-regulating properties of the underlying clay plaster.

Clay plasters are generally chosen for their surface qualities and are left exposed or painted. The application of wallpaper inhibits the moisture-regulating properties of the underlying clay plaster. It is, however, possible to wallpaper all smooth, fine-textured clay plasters in the same way as other plasters are wallpapered. Prior to wallpapering, the clay plaster should be pre-treated with a suitable base coat of paint or primer.

Clay plaster is not suitable as a background for tiling that protects against splash water, but small clay plaster surfaces that are not in the immediate vicinity of splash water can be coated with tiles. A deep stabilising primer is first applied several times over. The tiles are then fixed with a flexible tile cement.

In general, however, there is little reason to tile over clay plaster as the beneficial properties of the clay plaster has no effect from behind the tiles.

## Clay paints and brush-applied clay plasters

## Lime paints

## Silicate paints, emulsion paints

## Wallpaper

## Wall tiles

## Table: Plaster systems at a glance

The table shows the different most common plaster systems. Thin-coat plasters are used as finishing plasters. These require a smooth, flat background. If the original substrate is not suitably flat, a base coat is applied first. An initial spray-coat is only possible for plastered surfaces with a thickness of approximately 1 cm. Clay plasters are typically applied as two-coat plasters. Three-coat plasters are used only in specific circumstances, for example for embedding wall heating systems or as a levelling plaster on irregular and uneven substrates.

Substrate material	Clay undercoat plaster, 5-30 mm/coat	Clay topcoat plaster, 5-10 mm/coat	terra clay plaster, coarse, 5-15 mm/coat
Art. No.	05.001/05.002	05.010/05.011	05.003
<b>Masonry, old, uneven</b>	1st coat	2nd coat	2. Lage
<b>Masonry, old, flat</b>	1st or spray coat	1st or spray coat + 2nd coat	1st or spray coat + 2nd coat
<b>Masonry, new</b>	1st or spray coat	1st or spray coat + 2nd coat	1st or spray coat + 2nd coat
<b>Masonry, earth bricks</b>	1st coat	1st or spray coat + 2nd coat	1st or spray coat + 2nd coat
<b>Concrete, take special care to remove all film-forming release agents. Undertake a trial surface first (see work sheet)</b>			
<b>Concrete, smooth</b>	1st or spray coat	1st or spray coat + 2nd coat; also as single coat	1st or spray coat + 2nd coat; also as single coat
<b>Concrete, rough</b>	1st or spray coat	1st or spray coat + 2nd coat	1st or spray coat + 2nd coat
<b>Existing plaster surface, firm</b>	1st or spray coat	1st or spray coat + 2nd coat; also as single coat	1st or spray coat + 2nd coat; also as single coat
<b>Existing plaster surface, sandy</b>	1st or spray coat	1st or spray coat + 2nd coat; also as single coat	1st or spray coat + 2nd coat; also as single coat
<b>Plaster on half-timbered wall</b>	1st coat	2nd coat	1st + 2nd coat
<b>Old clay plaster</b>	1st coat	2nd coat	1st + 2nd coat
<b>Reed mat board or mesh</b>	1st or spray coat	2nd coat	1st + 2nd coat
<b>Softwood fibre insulation board</b>	1st coat	2nd coat	1st + 2nd coat
<b>Wall heating register</b>	1st coat	2nd + 3rd coat	2nd + 3rd coat
<b>Wood wool insulation board</b>	1st coat	2nd coat	1st + 2nd coat
<b>Clay panel</b>		1st + 2nd coat	1st + 2nd coat
<b>Plasterboard, gypsum fibreboard</b>		max. 5 mm	max. 5 mm
<b>OSB panel</b>	1st coat	1st + 2nd coat	1st + 2nd coat
<b>Rammed earth</b>	1st coat	1st + 2nd coat	1st + 2nd coat



<b>terra clay plaster, fine, 3-4 mm/coat</b>	<b>Clay fine-finish plaster, 2-3 mm/coat</b>	<b>Notes</b>	<b>Reinforcement mesh, 7×7, 160 g/m<sup>3</sup></b>
05.004	10.013		35.005
2nd coat	2nd coat	pre-wet as required	if required across full surface
2nd coat	2nd coat	pre-wet as required	if required across full surface
2nd coat	2nd coat	pre-wet as required	bridge changes in material
2nd coat	2nd coat	pre-wet as required	bridge changes in material
2nd coat; also as single coat	2nd coat; also as single coat	wall and ceiling primer for max. 1 cm total plaster build-up; otherwise spray coat with lime-cement plaster or similar.	bridge changes in material
2nd coat	2nd coat	wall and ceiling primer	bridge changes in material
2nd coat; also as single coat	2nd coat; also as single coat	pre-wet as required; gypsum plaster: wall and ceiling primer	bridge changes in material
2nd coat; also as single coat	2nd coat; also as single coat	stabilising primer /wall and ceiling primer	bridge changes in material
2nd coat	2nd coat	For timber members, reed plaster base (70 stems/m)	necessary
2nd coat	2nd coat	pre-wet, see p15	recommended
2nd coat	2nd coat	-	necessary
2nd coat	2nd coat	base coat with notched trowel	necessary
3rd coat	3rd coat	-	necessary in 2nd coat
2nd coat	2nd coat	apply filler acc. to manufacturer's guidelines	necessary
1st + 2nd coat	1st + 2nd coat	wet slightly	necessary
max. 4 mm	max. 3 mm	wall and ceiling primer; tape over board joints	-
2nd coat	2nd coat	Full-surface reed plaster base (70 stems/m)	necessary
2nd coat	2nd coat	pre-wet	-

## conluto product finder

### Reed plaster base

Reed plaster mesh can be mounted on timber members in half-timbered walls to provide better plaster adhesion, or as a full surface plaster base on sheathing or OSB panels..

Art. No.	Material	Supply form	Quantities
34.002.1	Reed plaster base, 70 stems/m Roll, 1.5 × 10 m, wire-bound every 10 cm	15 m <sup>2</sup> / roll	Timber members can be 25-40% of wall surface  Wall surface + 10% for overlapping sections

### Reinforcement mesh

A reinforcement mesh for embedding in clay plasters (in the upper third of the plaster build-up).

Art. No.	Material	Supply form	Quantities
35.001	Hessian fabric mesh, 125 g/m <sup>2</sup> , 1.0 × 50 m	50 m <sup>2</sup> / roll	Plaster surface + 10% for overlapping sections
35.005	Fibreglass mesh, 160 g/m <sup>2</sup> , 1.0 × 50 m	50 m <sup>2</sup> / roll	Plaster surface + 10% for overlapping sections

### Conluto clay plaster with and without additives

Clay undercoat plaster as levelling plaster for irregular and uneven surfaces. Clay topcoat plaster, coarse and fine terra clay plaster and clay fine-finish plaster for paint-ready surface finishes or exposed clay plaster walls. Deco clay facing plaster as coloured plaster coating for all smooth and flat plaster substrates.

Art. No.	Material	Supply form	Coverage / sales unit	Thickness	Coverage/ m <sup>2</sup> @ thickness
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#### Clay plasters with organic additives

05.001.1	Clay undercoat plaster, naturally-moist	1 m <sup>3</sup> / big bag	75 m <sup>2</sup>	1 cm	16 kg/m <sup>2</sup>
05.011.1	Clay undercoat plaster, dry	1 to / big bag	68 m <sup>2</sup>	1 cm	14,5 kg/m <sup>2</sup>
05.002.1	Clay undercoat plaster, dry	25 kg / sack	1,7 m <sup>2</sup>	1 cm	14,5 kg/m <sup>2</sup>
05.010.1	Clay topcoat plaster, naturally-moist	1 m <sup>3</sup> / big bag	75 m <sup>2</sup>	1 cm	16 kg/m <sup>2</sup>
05.011.1	Clay topcoat plaster, dry	1 to / big bag	68 m <sup>2</sup>	1 cm	14,5 kg/m <sup>2</sup>
05.011.1	Clay topcoat plaster, dry	25 kg / sack	1,7 m <sup>2</sup>	1 cm	14,5 kg/m <sup>2</sup>
10.013.2	Clay fine-finish plaster, dry	1 to / Big Bag	240 m <sup>2</sup>	3 mm	4,2 kg/m <sup>2</sup>
10.013.1	Clay fine-finish plaster, dry	25 kg / sack	6 m <sup>2</sup>	3 mm	4,2 kg/m <sup>2</sup>

#### Clay plasters without organic additives

05.003.1	Terra clay plaster, coarse, naturally-moist	1,2 to / big bag	72 m <sup>2</sup>	1 cm	16,6 kg / m <sup>2</sup>
05.005.1	Terra clay plaster, coarse, dry	1 to / big bag	68 m <sup>2</sup>	1 cm	14,5 kg / m <sup>2</sup>
05.005	Terra clay plaster, coarse, dry	25 kg / sack	1,7 m <sup>2</sup>	1 cm	14,5 kg / m <sup>2</sup>
05.004.1	Terra clay plaster, fine, naturally-moist	1,2 to / big bag	180 m <sup>2</sup>	4 mm	6,6 kg / m <sup>2</sup>

**erdfeuchtes Material:**  
suitable for open plastering machines

**trockenes Material:**  
suitable for closed plastering machines, e.g. G4 and G5.

See also our work sheet **Arbeitsblatt Putzmaschinen 5.2.** (German only)





## Primers

Art. No.	Material	Supply form	Quantities
00.990.1	conluto wall and ceiling primer with granular texture for deco	5 l / bucket	approx. 4-5 l/m <sup>2</sup>
00.990.2	clay facing plaster and clay fine-finish plaster	10 l / bucket	
00.990.5	conlino casein primer for clay paints, brushable clay plaster, deco clay facing plaster, clay smoothing plaster, also suitable for stabilising clay plaster surfaces	250 g / packet	approx. 5 g/m <sup>2</sup>

conluto wall and ceiling primer for interior surfaces creates a rough, textured surface as a mechanical key for applying a clay plaster. It can be used on all dry, dust-free and non-greasy substrates, and is specially developed for plasterboard and other dry lining panels. Also adheres well to old paints and existing plastered surfaces.



### conlino deco clay facing plasters

Coloured facing plaster for high-quality, creative surface finishes in interiors. A range of different textures and surface finishes can be achieved through the addition of surface finish effect materials.

## Deco clay facing plaster

Art. No.	Material	Supply form	Coverage / sales unit	Thickness	Coverage/ m <sup>2</sup> @ thickness
19.300-19.345	Deco clay facing plaster, dry, coloured clay plaster for creative and healthy interior surfaces, 16 colours (see colour card)	25 kg/ sack	9 m <sup>2</sup>	2 mm	2,8 kg/m <sup>2</sup>

## Clay paint

Art. No.	Material	Supply form	Coverage / sales unit	Thickness	Coverage/ m <sup>2</sup> @ thickness
19.400.2-19.444.2	conlino clay paint for walls and ceilings in interiors, 36 colours (see colour card)	10 kg/ bucket 5 kg/ bucket	av. 100 m <sup>2</sup> av. 50 m <sup>2</sup>	per coat per coat	70-130 g/m <sup>2</sup> 70-130 g/m <sup>2</sup>

### conlino clay paints

A natural, vapour-permeable paint for ceilings and walls in interiors.

## Brush-applied clay plaster additive

Art. No.	Material	Supply form	Coverage / sales unit	Thickness	Coverage/ m <sup>2</sup> @ thickness
19.505	conlino brush-applied clay plaster additive, for a granular surface texture	1.700 g / packet	for 5 kg conlino clay paint	per coat	140-240 g/m <sup>2</sup>

### conlino brush-applied clay plaster additive

Add to clay paints for a granular surface texture.



## conluto – our services

Further information on the following products and services can be found in the conluto product overview brochure.

### Clay plasters and paints

- Clay undercoat, topcoat and fine-finish plasters
- Coarse and fine terra clay plasters
- Clay adhesive and reinforcing mortars

**conlino** the creative plaster range by conluto

- Deco clay facing plasters, clay paints, brush-applied clay plasters and clay smoothing plasters
- Stencils and special tools

### Renovation systems

- conluto wood fibre internal insulation
- Light earth wall linings
- Light earth brick masonry wall linings

### Modern earth building solutions

- Rammed earth
- Clay panels, stacked walls
- Wall heating

### Building restoration materials

- Earth reels und straw-clay

### conluto work sheets

with detailed information and workmanship guidelines



2.1 conluto Dämmsystem  
(German only)

2.2 Leichtlehm-Innenschale  
(German only)

3.1 Clay panels

5.2 Putzmaschinen  
(German only)

6.1 conlino  
Surface finishes



Clay plasters and paints  
Renovation systems  
Modern earth building solutions  
Creative earth products  
Building restoration materials

Training and seminars  
Logistics and organisation  
Custom solutions and production  
Product, design and renovation consulting

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