Note on English translation / Hinweise zur englischen Fassung
This is a translation of the product data sheet valid in Germany.
All stated details and properties are in compliance with the regulations of the German standards and building regulations. They are only applicable for the specified products, system components, application rules, and construction details in connection with the specifications of the respective certificates and approvals.
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Plaster & Façade Systems

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Product Data Sheet 2022-10

LUP 222

Lime-cement light basecoat

Product description

Mineral, high yield lime-cement light basecoat with organic lightweight aggregates (EPS). For interiors on all conventional types of masonry and concrete, and for exteriors on all types of masonry and concrete suitable for lightweight plasters type I.
In interiors the surface (secondary rooms) can be sponged by an additional plaster layer.

Composition

Hydrated lime, cement, graded limestone grains, organic (EPS) lightweight aggregate, water-retaining and water-repellent additives.

Storage

Store the bags on wooden pallets in a dry environment. Can be stored for at least 9 months.

Quality

In compliance with EN 998-1, the factory-made rendering/plastering mortar is subject to initial type testing and continuous factory production control and bears the CE marking.

Properties and added value

- Lightweight rendering/plastering mortar LW acc. to EN 998-1
- Compressive strength category CS II acc. to EN 998-1
- Lightweight plaster type I
- Organic (EPS) lightweight aggregates
- For interiors and exteriors
- For machine or hand application

Field of application

In exteriors particularly suitable as a basecoat (lightweight plaster type I) on

- Masonry with insulation material filling
- Lightweight vertical coring brick with a density class ≥ 0.8 kg/dm³
- On aerated concrete masonry with a density ≥ 500 kg/m³
- Lightweight concrete masonry with a thermal conductivity λ ≥ 0.14 W/(m·K)
- As a basecoat for mineral and paste-like finishing coats

In interiors as a base plaster on all types of masonry

- As a basecoat for mineral and paste-like finishing coats
- As a basecoat for tiles
- As a basecoat with sponged surface (secondary rooms)

Application

Substrate and pretreatment

Substrate	Pretreatment
Masonry made of brick, pumice and lightweight concrete masonry. Even and normally absorbent lime sandstone masonry	On highly absorbent substrates or in hot summer weather, apply a double plaster layer fresh in fresh
Masonry made of aerated concrete masonry	Apply a double plaster layer fresh in fresh.
Masonry on weakly absorbent to non-absorbent and/or smooth, glossy lime sandstone masonry	Lustro, SM700 Pro, SM700, SM300, Sockel-SM or Der Vorspritzer as a mineral bonding primer
Rough form work concrete, absorbent concrete, masonry with varying suction properties, small format multi-layer wood wool slabs	Lustro, SM700 Pro, SM700, SM300, Sockel-SM or Der Vorspritzer as a mineral bonding primer
Smooth concrete, prefabricated concrete units	Lustro, SM700 Pro, SM700, SM300 or Sockel-SM as a mineral bonding layer
XPS-R insulation boards	Lustro, SM700 Pro, SM700, SM300 or Sockel-SM as a mineral bonding layer
Absorbent masonry made of small format bricks, random rubble walling and mixed brickwork	Der Vorspritzer as a mineral bonding layer (mechanical key)

Mineral bonding layer (with the exception of Der Vorspritzer) should be spread and ruled across the full surface with a widely notched trowel. Wait at least 1 day and a maximum of 3 days before application of further coats.

Preparation

Check the substrate for compliance with VOB part C, DIN 18350, chapter 3.1 and/or according to VOB part B, DIN 1961 paragraph 4 section 3. Clean the substrate of dust and remove loose parts ensuring that the surface is smooth. Cover easily-soiled building components before commencement in accordance with Code of Practice “Abklebe- und Abdeckarbeiten für Maler und Stuckateurarbeiten - *Masking and covering for painting and stucco work*” issued by the German “Bundesverband Ausbau und Fassade”. Protect weather-exposed surfaces from precipitation and direct sunlight.
Preparation of the substrate in accordance with the Substrate/Pretreatment table.
All substrates must be stable, dry, even and free of grease and dust as well as free of any residual substances that may reduce the adhesion.

Machines / equipment

PFT mixing pump G 4

■ Stator	D6-3
■ Rotor	D6-3
■ Mortar hoses	Ø 25 mm
■ Wet mortar pumping distance	up to 40 m

Mixing

Mixing by hand

Mix the content of one bag with 8 litres of clean water and without further additives until an application-ready lump-free consistence is achieved.

Mixing by machine

For machine application using mixing pumps, e.g. PFT G4, set the desired consistence by adding water.

Product application

Apply LUP 222 as a basecoat on an existing pretreated plastering surface at an average plaster thickness of 15 mm in exteriors. In case of multi-layer render systems (basecoat, reinforcement and finish coats) ensure an average total plaster thickness of at least 20 mm. In interiors apply an average plaster thickness of 10 mm. Depending on the substrate, fins and protrusions etc. can be removed with a lattice plane when sufficiently hardened or the surfaces can be levelled and scraped. In case of secondary rooms in interiors, LUP 222 can be sponged on a single-layer.
Clean the machine and hoses with longer breaks / interruptions in application. Do not leave the mortar and water hoses lying in the sun. Do not stir and apply material that has started to harden.
Work with multiple layers in case of plaster thicknesses exceeding 30 mm.

Full surface reinforcement plaster in exteriors

A full surface reinforcement plaster layer on the basecoat is always preferable to substrate reinforcement.
For a reinforcement plaster with a mesh applied on a lightweight plaster, extensive decoupling of the upper plaster layer from the substrate is achieved. In this way, any stresses occurring in the plaster/render system can be absorbed and diffused. In case of exterior plaster surfaces where the plaster system is exposed to increased stress, e.g. particular exposure of the façade, use of freely structured, brushed or sponged finishing plasters, with finishing plasters < 2 mm grain size (acc. to DIN 18350, VOB part C, < 3 mm), high levels of moisture, considerable irregularities in the plaster substrate, increased residual moisture of the masonry, large plaster thickness greater than 30 mm and insulation layers made of XPS-R with a strip width > 60 cm, a reinforcement basecoat with full surface mesh insert (reinforcement mesh 4x4 or 5x5 mm) with SM700 Pro, SM700, SM300 or Lustro on the hardened basecoat is recommended. The plaster thickness of the reinforcement plaster layer should be between 3 and 5 mm. Insert additional diagonal reinforcement to reduce notch cracking on all building opening corners.

Upgrading the substrate

The substrate upgrade is undertaken using suitable Knauf Adhesive and basecoat (see Substrate pretreatment table) with reinforcement mesh directly on the substrate for plastering (e.g. in case of material change, XPS-R insulation boards, roller blind encasement, ceiling edges) in approx. 5 mm thickness. The overlap of the mesh inserts must be at least approx 10 cm. On flanking constructional components the overlap must be approx. 20 cm. Now roughen the reinforcement plaster without exposing the mesh. The minimum thickness is 5 mm. This arrangement serves both as a bonding layer and also as a stabilized substrate. This measure does not reinforce the plaster, but rather the substrate.

With this arrangement, the stresses originating from the diverse substrate properties are diffused across a larger partial surface. Stresses, which originate from external influences, e.g. from the hygrothermal load on the render system, cannot be dissipated using this arrangement.
It is a proven method for minimising the risk of plaster cracks and corresponds with the generally recognized building engineering rules, when a reinforcement plaster with a full suface mesh is applied on a lightweight plaster.
More information can be found in the “Leitlinie für das Verputzen von Mauerwerk und Beton - Guidelines for plastering masonry and concrete”, issued by the German Verband für Dämmsysteme, Putz und Mörtel e.V. (VDPM), (German only).

Note	A full surface reinforcement basecoat is always preferable to substrate reinforcement in exteriors.

Partial surface reinforcement in interiors e.g. with change of material, building openings etc.
In case of a change of materials in the plaster substrate, at locations where there is a risk of cracking, where XPS-R insulation boards are installed on a small surface, wood wool lightweight boards, different plaster thicknesses and expected stresses from the basecoat etc., embed basecoat mesh (8x8 mm) with at least 100 mm joint overlap and 200 mm overlap on all sides to the flanking component in the upper half of the basecoat.

Plinth application
On lighter and softer wall materials (stones of compressive strength category ≤ 8) in the plinth or splash-water zone and on surfaces in contact with the ground, Sockel Gigamit or Sockel LUP are to be used. On masonry of compressive strength category > 8 and concrete, cementitious plinth plaster UP 310 must be used. After drying out, all rendered surfaces below the ground line shall be waterproofed/protected against moisture ingress, starting from basement wall waterproof barrier up to approx. 50 mm above the ground line using Sockel-Dicht acc. to DIN 18533-3. Apply Sockel-Dicht in a layer thickness of at least 2.5 mm (dry layer thickness at least 2 mm) for this purpose.
On XPS-R, plinth insulation boards, perimeter insulating panels, mineral or bituminous waterproofing of buildings, Sockel-SM Pro (with mesh layer) can be applied as a polymer enhanced cementitious plaster at a total plaster thickness of at least 7 mm. Additional subsequent moisture protection is not necessary.
When using Sockel-SM Pro on Sockel Gigamit or Sockel LUP, apply Sockel-SM Pro over the lower plaster stop profile on the existing building waterproof sealing or flanking building material / substrate and overlap by at least 50 mm. Additional subsequent moisture protection is not necessary.
A protective layer with slip membrane (e.g. fleece laminated dimpled sheet) should be placed before the construction as protection against damage after drying.

On plaster bases
On a plaster base applied according to manufacturers instructions, apply about a 10 mm thick coat of LUP 222 and level it while pushing it into the plaster base. Roughen the surface with a broom. After setting, apply another layer about 10 to 15 mm thick, rule level. To minimize the occurrence of cracks on the plaster surface, apply a reinforcement plaster with SM700, SM700 Pro, SM300 or Lustro with full surface mesh insert with Knauf reinforcement mesh 4x4 or 5x5 mm.
The plaster thickness of the reinforcement plaster layer should be between 3 and 5 mm.
Insert additional diagonal reinforcement to reduce notch cracking on all building opening corners.

Substrate for tiling
Suitable as a substrate for tiles and floor slabs, if the weight of the tiles and floor slabs including the thin-bed mortar does not exceed 25 kg/m². In case it is exceeded, use Sockel Gigamit, Sockel LUP or UP 310 (substrate dependent).
The basecoat is generally a single-layer with a plaster thickness of at least 10 mm. The suitability as a base for the application of tiles is improved, if the plaster surface is applied as a tight coat with a straight edge/feather edge or scratched. A concentration of organic lightweight aggregate (EPS) must be avoided with application on the plaster surface. The surface texture must be matched to the requirements of the respective waterproofing type.
Allow to dry and set fully before a tile covering is applied. The tile adhesive must be suitable for the basecoat.

Application with water action classes W0-I to W3-I acc. to DIN 18534.

Application temperature/climate
Do not apply with air, component and/or substrate temperatures below +5 °C and ensure that temperature does not fall below this temperature until the plaster has hardened sufficiently. Furthermore, the temperature should not exceed 30 °C during application.
In order to prevent rapid dehumidification of the fresh plaster by the exposure to direct sunshine (high surface temperatures), and/or strong wind (danger of cracks, reduction in strength) suitable protection measures / treatment (e.g. protective nets, keeping moist) are required.

Cleaning
Clean the machines and tools with water immediately after use.

Coatings

Finishing plasters
In favourable weather and drying conditions the application of further layers with Knauf top coats is undertaken after a drying time of 1 day per 1 mm plaster thickness. Substrate pretreatment will be required to suit the weather conditions and finishing plaster. With RP 240 in 2 mm thickness, a continuous closed surface must be produced or the basecoat must be covered with SM700 Pro, SM300 or Lustro.
In case of Mak3 as a top coat, a reinforcement basecoat with SM300 and full surface mesh insert with Knauf reinforcement mesh 5x5 mm is recommended.

Notes	Plaster must be applied according to EN 13914, DIN 18550 and DIN 18350, VOB part C as well as the generally recognized building engineering rules and valid guidelines. With previous application of gypsum plasters or plasters containing gypsum, it is essential that the plastering machine is thoroughly cleaned (wet zone, plaster spiral, rotor, dry zone, gear wheel, hoses: For dry material feed: transfer hood, supply hose, pressure vessel, injection hood, feed manifold). Always apply a further plaster layer in exteriors on a basecoat with organic lightweight aggregates (EPS). Should the basecoat remain exposed during the winter without a further coating (finish coat, reinforcement plaster), we recommend application of a primer such as Grundol Tiefengrund Primer before the finishing plaster is applied in spring. Heating in rooms should only be put into operation in stages. Rapid dehumidification, e.g. using dehumidifiers should be avoided.

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Lime-cement light basecoat

Technical data

Description	Standard	Unit	LUP 222
Reaction to fire	EN 13501-1	Category	A2-s1, d0
Graining	–	mm	1.5
Compressive strength	EN 1015--11	Category	CS II
Bond strength Failure pattern	EN 1015-12	N/mm^2 –	> 0.08 A, B or C
Capillary water absorption	EN 1015-18	Category	W_c 2
Water vapour diffusion resistance μ	EN 1015-19	–	≤ 20
Thermal conductivity $\lambda_{10,dry,mat}$ at P = 50 % P = 90 %	EN 1745	 W/(m·K) W/(m·K)	 ≤ 0.39 ≤ 0.43

The stated technical data were evaluated acc. to the respective test standards. Deviations under site conditions are possible.

Material requirement and efficiency

Coat thickness mm	Consumption approx. kg/m^2	Yield approx. m^2/bag	 m^2/ton
15.0	18.3	1.65	55.0

The stated values were determined under laboratory conditions. The exact consumption can only be determined with a test application on the individual object.

Product range

Description	Quantity	Packaging unit	Material number	EAN
LUP 222	30 kg	36 bags/pallet	00005687	4003950000201
	Bulk	Silo	00015125	4003950035258

Sustainability and environment

Short description	Unit	Value
VOC content acc. to RL2004/42/EC	%	Not relevant
VOC content acc. to RL2004/42/EC	g/l	Not relevant
Solvent-free and softener-free acc. to VdL-RL01 (Revision 4)	–	Not relevant

Observe safety data sheet!
For safety data sheets and CE marking see
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Knauf Direct
Technical Advisory Service:

knauf-direkt@knauf.com

www.knauf.de

Knauf Gips KG Am Bahnhof 7, 97346 Iphofen, Germany

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