

weber.therm 505 HDP High-performance insulating render

Mineral high-performance insulating render system with mineral top-coat renders

Fields of application

As underlay render with very low thermal conductivity performance.

For use on all massive exterior and interior walls of new or old buildings.

The **weber.therm insulating render system** consists of following components: bondcoat + insulating render **weber.therm 505 HDP** + reinforcement layer with woven mesh and mineral overlay render (finish top coat) according to EN 998-1.

Its low tension allows the levelling deep unevennesses (up to 100 mm) and reduces the crack risk at a large extent in combination with a reinforced mortar on top.

It provides seamless insulation layers, which adapt to all geometric forms of the substrate.

Thanks to its optimal features (open to water vapour diffusion and capillary active) it can be used as internal wall insulation without internal vapour-tight membrane in renovation areas.

For use outdoors and indoors.

Description

weber.therm 505 HDP is a factory-mixed mineral dry mortar.

Composition

Cement, organic lightweight aggregates, hydrophobic agents, additives for better workability and adhesion to substrate.

Main features

- low heat conductivity
- low crack risk
- total thickness from 20 up to 100 mm
- high yield
- open to diffusion of water vapour
- for use as insulating underlay render on all massive walls in new and old buildings
- also for use as de-coupling and levelling layer on critical and uneven substrates
- for use outdoors and indoors

Technical values

Application thickness:	20 mm - 100 mm
Thermal conductivity (λ) (DIN 1408):	0.05 W/mK
Bulk density:	approx. 150 kg/m ³
Compressive strength:	> 0.4 N/mm ² (class CS I)
Coefficient of water absorption (w):	< 2 kg/m ² * \sqrt{h}
Water vapour diffusion resistance value (μ) (EN 1745):	5 / 20
Class of capillary water absorption (EN 1062-1):	W 1
Class of reaction to fire (EN 13501-1):	C – s2, d0 (hardly combustible)

Quality control

weber.therm 505 HDP is subject to a regular internal quality control.

General notes

- Protect the fresh render from direct sunshine, strong wind or moisture rain; avoid a too quick water evaporation.
 - Comply with the national guidelines and/or standards (for ex. DIN 18550); if not issued and if necessary, request technical advice.
 - The consumption figures mentioned in this document refer to the minimum layer thickness of the render. Due to specific substrates and application variations the consumption might vary. Exact consumption must be determined on a job site mock-up (trial area).
 - Adjacent building parts must be separated from the built-in render system.
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Special notes

- As a rule, **weber.therm 505 HDP** must be always covered with a reinforcing mortar prior to application of overlay renders (see herebelow “Application of mineral overlay renders”).
 - The light reflectance value (LRV) of the top coat (overlay render) should be ≥ 20 .
 - Socket areas of facades must be covered with the perimetric insulation boards **weber.therm EPS Sockel** + bonding and reinforcing mortar **weber.therm 300** (or similar)+ woven mesh **weber.therm 310** + specific socket render and water-repellent paint. For full information request technical advice.
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Substrate preparation

- The substrate must be load-bearing, dry and free from dust, and all adhesion-impairing substances.
- Remove dirt, dust and loose particles.
- Remove cement laitance (hard sinter skin) with a notched large trowel before applying further layers.
- When used indoors on old masonries, knock off damaged old plasters, scrape out brittle mortar in the joints and clean the whole wall surface.
- High-porosity substrates or substrates with different porosity: spray the bondcoat **weber.therm 500** in approx. 10 mm thickness
- Normal absorbent substrates (e.g lightweight perforated bricks): no pre-treatment is necessary.
- Low-porosity substrates (dense and smooth surfaces, e.g concrete, hard-burnt clinker, XPS or EPS boards): spray/apply the mineral bonding layer **weber.dur 101** in at least 5 mm thickness at a rate of approx. 6 kg/m² and comb horizontally with a notched trowel.
- Respect the drying time of the pre-said products – **weber.therm 500** (at least 1 day per cm thickness), **weber.dur 101** (at least 1 day per mm thickness) – prior to next applications.
- Remove at least 70% of any existing old paint coats.
- The substrate evenness must comply with the allowed tolerances (variations) defined by the national standards and/or guidelines (for ex. DIN 18202 “Tolerances in Building Constructions”). If necessary, take the appropriate remedial measures for levelling the substrates; if in doubt, request technical advice.
- Carry out tensile adhesion tests (pull-off tests) in case of critical substrates; if they are insufficiently load-bearing, use a galvanised, welded wire mesh, like Distanet, Welnet or similar and fix it with at least 8 dowels/m² to the substrate.
- For the flush and vertical alignment of connections and terminations fix the render profiles with the profile bonding and installation mortar **weber.mix 125**.
- The substrate preparation must be adapted to the specific job site conditions.

Working instructions

- Temperature of air, materials and substrate during application and drying: $\geq +5^{\circ}\text{C}$
- Do not add any foreign substances during mixing and application.
- Clean mixing equipment and tools with water (fresh product). Hardened material can only be removed mechanically.

Mixing

- **Mechanical application:** use a render machine with following equipment: special fan for insulating render - screw pump D 8 - 1.5 with tension clamp - material hopper - stripper - rotor blunger - fine spray machine 35 (nominal size) - spray nozzle F 14 mm - hoses with 35-mm diameter. We recommend the machine Putzmeister PFT G4. For full information refer to the **Weber** application tip "Machine application with PFT G4 for **weber.therm 505 HDP**" and/or request technical advice.
- **Manual application:** mix the bag content (75 liters) with approx. 9.5 liters of water until lump-free, using an electric drill and an appropriate stirrer.

Application

- Spray/apply **weber.therm 505 HDP** in the appropriate thickness (20 mm - 100 mm) in 1 or 2 layers and strike off with a stainless smoothing trowel.
- Max. thickness for single layer: 40 mm / total max. thickness in 2 layers: 100 mm
- Respect a delay of 1 - 3 days between 1st and 2nd layer.
- Rule level the 1st or the 2nd layer flush and perpendicular with a straight edge (for ex. aluminium beam), avoiding honeycombs or gaping holes.
- Remove cement laitance (hard sinter skin) with a notched large trowel on top of the render after hardening, prior to application of the reinforcing mortar.
- Roughen the surface of **weber.therm 505 HDP** with a grid float.

Application of reinforcement layer + mineral overlay renders

- As a rule **weber.therm 505 HDP** must always be covered with a reinforcement layer prior to application of a mineral overlay render. Therefore, always apply a reinforcement layer (in a thickness of 6 mm - 7 mm), consisting of the reinforcing mortar **weber.therm 300, 302 or 304** embedded in the woven mesh **weber.therm 310** (mesh size 8 x 8 mm); alternatively use **weber.therm 302** or **therm 304** with the woven mesh **weber.therm 311** (mesh size 4 x 4mm).
- Respect a drying time of 1 day/cm, at least 7 days prior to application of the reinforcement layer.
- The thick-layer mineral overlay renders (scratch renders **weber.top 200/203/204/206 AquaBalance**), the thin-layer ones (floated renders **weber.star 220/221/223/240/261 AquaBalance**) or the textured lime renders/plasters **weber.cal 286 or 288** can be used as finish top coats on top of the reinforcement layer.
- Depending on weather conditions and type of finish top coat, the reinforcement layer can be pre-wetted (preferably the day before); alternatively, the universal primer **weber.prim 403** can be applied in case of thin-layer overlay renders.
- Prior to application of top coats respect a drying time of approx. 7 days (scratch renders) or at least 14 days (other renders).

Practical information

Grain size:

2.0 mm

Colours:

natural white and grey

Water dosage:

approx. 9.5 liters / 75 liter bag

Tools:

Render machine Putzmeister PFT G4 with special equipment or electric drill + stirrer, straight edge (for ex. aluminium beam), stainless smoothing trowel notched large trowel; for finishing works: grid float.

Layer thickness:

approx. 20 - 100 mm

Drying time:

at least 3 days at + 20°C and 60% relative humidity rate, depending on weather conditions

Storage:

The product can be stored up to 12 months in its original unopened packaging, if kept dry and protected from moisture.

Consumption / yield

20 mm thickness:	approx. 3.0 m ² / 75 liters
30 mm thickness:	approx. 2.0 m ² / 75 liters
40 mm thickness:	approx. 1.5 m ² / 75 liters
60 mm thickness:	approx. 1.0 m ² / 75 liters
80 mm thickness:	approx. 0.7 m ² / 75 liters
100 mm thickness:	approx. 0.6 m ² / 75 liters

Packagings

Type	Sales unit	Number / euro-pallet
Paper bag	75 liters	32 bags

The information in this technical data sheet is based on our current knowledge and experience at the time of printing. However, they do not guarantee in the legal sense.