

EP-301



Epoxy-based, two-component, solvent-free, self-leveling floor coating

Description

Hammerfast EP-301 is a two-component, epoxy-based, self-leveling floor coating designed for industrial and commercial floors. It is a low-viscosity, high solids material that creates a smooth, glossy, dust-free colored surface with high mechanical and chemical resistance.

Advantages

- Low viscosity with self-leveling properties
- Solvent-free and low VOC content
- Broad chemical resistance (oils, fuels, many chemicals)
- Easy to clean and dust-free smooth surface due to low porosity
- Excellent adhesion (cohesive failure occurs in concrete)
- High mechanical and chemical resistance (compressive, abrasion, impact)
- Does not contain nonylphenol

Areas of Use

Hammerfast EP-301:

- Production facilities, warehouses, and logistics areas
- Parking garages, ramps, and workshops
- Flooring for pharmaceutical, food, beverage, chemical industries, and laboratories
- Hospitals, laboratories, schools, offices, and showrooms
- Any areas requiring a medium-heavy duty epoxy floor system
- Flooring for shopping centers

Surface Preparation and Application

Substrate Preparation:

All oil, grease, curing compounds, paint, and weak layers must be completely removed from the surface to be coated. The surface should be dry or only slightly damp. Care must be taken to ensure that there are no loose or crumbling layers on the substrate. The substrate must have a minimum compressive strength of 25 N/mm², a minimum tensile strength of 1.5 N/mm², and a maximum moisture content of 4% (no capillary moisture). If the substrate moisture content exceeds 4%, the Hammerfast N-200 moisture barrier should be used during the priming process.

It is essential that the substrate is sound and properly roughened. For this purpose, surface preparation should be carried out by grinding, shot blasting, or milling to achieve a CSP 2–4 surface profile, followed by the removal of dust using industrial vacuum cleaners. Any cracks or voids in the surface must be filled, and all necessary repairs should be carried out using Hammerfast EP-145 or EP-120 epoxy repair and casting materials.

Primer Application:

Before application, quartz sand (0.3–0.8 mm) is broadcast onto the Hammerfast EP-112 epoxy primer using the full broadcast method. The sand must be applied at a density sufficient to fully cover the surface, leaving no bare areas. After curing, excess quartz sand is swept away and vacuumed. This method provides mechanical interlocking for the Hammerfast EP-301 coating, significantly improving adhesion and preventing delamination of the coating from the substrate.

Intermediate Coat Application:

After the primer has been applied to the substrate, an intermediate coat should be applied to ensure a smooth final coating. Component B is added to Component A and mixed with a low-speed mixer (300–400 rpm) for 2–3 minutes until a homogeneous mixture is obtained. The mixture is then applied to the floor using a trowel at a consumption of approximately 400–500 g/m². The leveling material is necessary to smooth the surface and to ensure that the self-leveling topcoat achieves a uniform finish. After applying the intermediate coat, the floor must be protected until the topcoat is applied.

Topcoat Application:

For the topcoat application, Hammerfast EP-301 Component A is first mixed with a low-speed mixer (300–400 rpm) for 2–3 minutes. Component B is then poured into Component A and mixed for an additional 2–3 minutes until a homogeneous mixture is obtained. The mixed material is poured onto the floor and spread evenly using a notched trowel or squeegee at a consumption of 1.50–2.00 kg/m² (for an approximate thickness of 1–1.5 mm). A notched trowel appropriate for the desired coating thickness should be selected.

After spreading, a spiked roller is passed over the surface. The spiked roller is used to remove air bubbles and activate the self-leveling property. The rolling must be carried out within the pot life of the mixture without delay.

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Similarly, Component B is added to Component A and mixed with a low-speed mixer until homogeneous. The mixture is poured onto the surface and spread using a notched trowel or squeegee. While the coating is still fresh, quartz sand of appropriate grain size is broadcast onto the surface, or aggregate can be added directly to the mixture beforehand. The amount of sand/aggregate used is adjusted according to the desired level of slip resistance.

Technical Properties

Color	A: Colored / B: Transparent-Light yellow
Mixing ratio (A:B)	4:1 (By weight)
Density (A+B)	1,50±0,1 kg/L
Viscosity (A+B)	~ 1200-1300 mPa·s
Working time / Pot life	~ 25 min.
Gel time	~ 60 min.
Time to open to light traffic	48 hours
Waiting time between coats (min/max)	Min.: 18 hours Max: 48 hours
Full cure time	7 gün
Application and substrate temperature	+10 °C / +35 °C
Service temperature (continuous)	-20 °C / + 60°C
Maximum substrate moisture content	Max. % 4
Shore D hardness (DIN 53505)	85 (7 days)
Compressive strength (EN 196-1)	50 N/mm ² (7 days)
Flexural strength (EN 196-1)	25 N/mm ² (7 days)
Adhesion strength (EN 1542)	≥ 2,0 N/mm ² (Concrete failure)
Impact resistance (ISO 5470-1)	~ 20 Nm
Abrasion resistance (ISO 5470-1 "Taber")	90 mg
BCA abrasion resistance (EN 13892-4)	50 µm
Fire classification (EN 13501-1)	E _{FL}
HS code	3907.30.00.00.00

Note: Values are determined at 23 ± 2°C temperature and 50 ± 5% relative humidity.

Consumption

For Primer Application:

Hammerfast EP-112: 0,4-0,6 kg/m²

Quartz sand: 1,2-1,5 kg/m²

For Intermediate Coat Application:

Hammerfast EP-301: 400-500 g/m²

For Topcoat Application:

Hammerfast EP-301: 1,00-1,50 kg/m²

Important Notes

- The given technical values are typical values obtained under laboratory conditions. Field conditions, substrate porosity, and temperature may cause variations.
- Epoxy resins are prone to yellowing under UV light; for outdoor or sun-exposed areas, the coating should be protected with a UV-resistant topcoat.
- Incorrect mixing ratios, insufficient mixing, or improper equipment may cause curing problems and surface defects.
- The product is intended for professional applicators. Perform a trial application on large areas before full-scale application.
- Do not apply in environments below +10 °C or above +30 °C; otherwise, pot life and curing times will be affected.
- Can be opened to light foot traffic after 24 hours.
- Exhibits resistance to heavy loads and chemical exposure after 7 days.
- A clean substrate is critical for the longevity of the application; do not apply before proper cleaning. Industrial vacuum cleaners are recommended for cleaning the floor.
- Do not apply directly on surfaces that are continuously exposed to water or subjected to negative-side hydrostatic pressure.
- The product has limited resistance to strong acids and solvents; a compatibility test is recommended before use.
- Consumption may vary depending on coating thickness, substrate conditions, and use of aggregate.

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Safety Precautions

- Keep out of reach of children.
- Do not eat or swallow.
- Keep away from foodstuffs.
- Do not inhale or allow contact with skin.
- May cause an allergic reaction.
- In case of contact with eyes, rinse thoroughly with plenty of water and seek medical advice.
- It is recommended to wear gloves, goggles, and protective clothing during use.
- Wash hands thoroughly with water after handling.
- For detailed safety information, refer to the Material Safety Data Sheet (MSDS).

Storage and Shelf Life

When stored in its original, unopened packaging in a dry environment, protected from direct sunlight and frost, and kept at temperatures between +10 °C and +30 °C, the A and B components have a shelf life of 12 months from the production date. If not in use, the packaging should be tightly sealed. Pallets should not be stacked on top of each other.

Packaging

Component A - Resin: 16 kg tin bucket
Component B - Hardener: 4 kg tin bucket

Cleaning of Tools

Clean the equipment immediately after application with epoxy thinner or a suitable cleaner. Cured material must be removed mechanically

Quality certificates

- CE
- ISO 9001
- ISO 14001

