Polcat 400 S

Polyurethane-Based, 3-Component Polymer Concrete Floor Coating System

Description

Hammerfast Polcat 400 S is a high-performance, fast-curing, self-leveling polymer concrete floor coating material based on polyurethane, solvent-free, water-based, cement and aggregate modified.

Hammerfast Polcat 400 S is a durable, long-lasting, solid and decorative coating system that is resistant to thermal shocks, solvents and chemical effects, has excellent abrasion and impact resistance, prevents bacterial growth and is easy to clean.

Thanks to its excellent physical properties and impermeable structure, Hammerfast Polcat 400 S protects the substrate from external effects and allows maintenance methods such as pressurized hot/cold water washing and steam cleaning.

Advantages

- Solvent-free, harmless and environmentally friendly
- Ideal for load-bearing floors due to excellent abrasion resistance
- Unaffected by heavy traffic conditions
- Resistant to many chemicals
- Excellent thermal compatibility with concrete
- Resistant to thermal shocks (+70 °C)
- Very high impact resistance; does not crack, delaminate or break
- Can be applied on 7-day-old concrete thanks to its water-based structure; suitable for areas with wet cleaning
- Solvent-free (VOC = 0) and odorless; suitable for hygienic areas such as food processing facilities, hospitals and laboratories
- Provides safe usage areas with its anti-slip surface
- Wide range of applications due to its easy-to-clean structure that prevents bacterial growth
- Can follow concrete joints and does not require additional expansion joints

Areas of Use

Hammerfast Polcat 400 S is suitable for all indoor areas exposed to forklift, pallet truck and vehicle traffic. It is especially preferred in environments where frequent cleaning, thermal shocks, solvents and corrosive chemicals are present.

It can be used in all chemical process areas, wet and dry areas of food preparation facilities, heat treatment areas and cold storage rooms, beverage plants, water bottling facilities, cafeterias, laboratories, medium and heavy-duty industrial facilities, warehouses and packaging areas, maintenance and repair areas, production facilities, printing houses and all areas where high performance is required.

Surface Preparation

The tensile strength of the surfaces to be coated with Hammerfast Polcat 400 S must be at least 1.5 MPa. Application can be carried out on fresh concrete after a minimum curing period of 7 days, provided that the required tensile strength is verified.

There must be no water on fresh or old concrete surfaces. If water is rising from the substrate, it must be stopped before application.

The concrete surface must be free from dust, dirt, grease, oil, contaminants, irregularities and loose particles that may reduce adhesion. The laitance layer formed naturally on new or old concrete surfaces should preferably be removed by shot blasting and/or suitable abrasive equipment.

Voids, holes and cracks on the concrete surface must be repaired by filling with suitable primers or with Hammerfast Polcat 400 S itself.

Temperature / Humidity: Ambient and surface temperature during application must be between 10–30 °C. This temperature range must be maintained for one week following application.

Priming:
Depending on the quality of the concrete surface, Hammerfast Polcat 400 S can be applied without primer, or surface preparation can be done by applying the product itself as a 1–2 mm skim coat.

For dry concrete surfaces, the preferred primer is Hammerfast EP-112 epoxy primer.
If the surface moisture exceeds 5%, the surface should be primed with water-based epoxy primer Hammerfast N-200.
If a primer is used, sand broadcasting must be carried out.

For surfaces primed with Hammerfast EP-110 or Hammerfast N-200, the waiting times specified in the primer's technical data sheet must be observed.

If Hammerfast Polcat 400 S is used as a primer, a waiting time of 24 hours is required before applying the next layer.

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Hammerfast®
Construction Chemicals

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Application

The application process consists of homogenizing Component A, mixing Components A and B together, adding Component C into the A–B mixture, pouring the material onto the floor, spreading it with a trowel and removing entrapped air using a spiked roller.

Hammerfast Polcat 400 S has a short pot life affected by temperature. From the start of mixing Components A and B, all mixing, pouring, spreading, joining and rolling operations must be completed within 7–10 minutes.

The application must proceed continuously and at a steady pace so that joints between batches can be concealed. There should be no waiting time between finishing one batch and pouring the next. Therefore, separate teams for mixing, transporting and spreading should be organized and work in coordination.

Hammerfast Polcat 400 S is a 3-component coating system consisting of:

Component A: 2,8 kg colored liquid

Component B: 3,7 kg dark amber liquid

Component C: 13,5 kg graded aggregate and mineral fillers

Components must be mixed strictly in the specified ratios. Any excess or deficiency will negatively affect product performance.

Component A must be mixed for 30 seconds until homogeneous. Then Components A and B are transferred into a suitable mixing container and mixed for 30 seconds using a professional dual-shaft, variable-speed mortar mixer. While mixing continues, Component C is gradually added into the resin mixture. Component C must not be poured all at once.

Mixing continues until a fully homogeneous and wet mortar is obtained. Material sticking to the bottom and sides of the container must be incorporated into the mixture using a trowel.

Mixing time should be:

3 minutes at 10–20 °C
2 minutes above 20 °C

No water or solvent must be added for consistency adjustment, and Component C must not be under-mixed.

The prepared mixture is poured onto the surface and spread evenly using a suitable triangular notched steel trowel according to the desired thickness. To avoid joint marks, adjacent areas must be joined before hardening begins.

To release entrapped air, the applied surface must be rolled with a spiked roller within 2 minutes after spreading. At 20 °C, all operations must be completed within 10 minutes from the start of mixing Components A and B. At 30 °C, this time is reduced to approximately 7 minutes.

Application Tools:
Mixer: Variable-speed (500–1000 rpm), dual-shaft mortar mixer
Roller: Hard plastic spiked roller, professional quality
Trowel / Screed: Steel, triangular notched trowels and skirting screeds.

Consumption

1,90 kg/m² (value for 1 mm thickness; required coating thickness is 4–7 mm)

Technical Properties

Color/Appearance	A: Colored liquid
Content	B: Dark amber liquid
Mixing Ratio	C: White powder
Application Thickness	Water-based polyurethane base
Pot Life	A: 3 kg / B: 3 kg / C: 14
Suitability for Light Pedestrian Traffic	Min 4 mm
Suitability for Heavy Traffic	10 minutes
Mixing Density	24 hours
Volatile Matter Content	3 days
Shore D Hardness	1.88±0.02 g/cm3
Adhesion (to Concrete)	0%
Impact Resistance	D85-90 (ASTM D 2240)
Compressive Strength	> 3.63 N/mm² (TS EN 1542)
Flexural Strength	10 Nm > Class I > 4 Nm no damage
Linear Thermal Expansion Coefficient	(TS EN 6272-1)
Volume Shrinkage During Curing	Class II > 50 N/mm² (EN 12190)
Thermal Aging (70°C)	17 MPa (EN 13892-2)

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

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Important Notes

- The product is ready for use and must not be diluted with any liquid.
- Components A, B and C are sold as a set and must be mixed completely together.
- Do not apply on excessively damp surfaces (surface moisture > 5%).
- Adhesion must be completed within the usable working time.
- Underfloor heating systems must be switched off before application.
- Prevent contact with water during the initial curing period.
- Clean any contamination on the surface before the material cures.
- Ambient temperature must be above +15 °C and relative humidity below 75% during application.

Storage and Shelf Life

When stored in original, unopened packaging, in dry and moisture-free conditions, protected from direct sunlight, and at temperatures between +10 °C and +35 °C, shelf life is 12 months from the date of production. Packaging must be tightly closed when not in use. Pallets must not be stacked.

Packaging

- Component A: 3 kg pail
- Component B: 3 kg pail
- Component C: 14 kg kraft bag

Cleaning of Tools

All tools must be cleaned immediately after application using acetone, alcohol or oil-based cleaning agents.

Safety Precautions

- Keep out of reach of children
- Do not eat or swallow
- Keep away from foodstuffs
- Avoid inhalation and skin contact
- May cause allergic reactions
- In case of eye contact, rinse with plenty of water and consult a doctor
- Use gloves, goggles and protective clothing during application
- Wash hands thoroughly with water after use
- Refer to the Material Safety Data Sheet for detailed safety information

Quality Certificates

- ISO 9001
- ISO 14001
- CE

9001:2015 14001:2015

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