CHEMFIT FLOOR 381

2-Part Self-Smoothing Epoxy Coating, Highly Chemically and Mechanically Resistant – For Chemically Resistant Coating for Concrete and Screed in Bund Areas

PRODUCT DESCRIPTION

ChemFit Floor 381 is a two part, self-smoothing, colored epoxy resin coating with high chemical and mechanical resistance. This high-performance, solvent-free system cures to form an impervious, seamless, and hard-wearing surface with excellent resistance to a wide range of aggressive chemicals. The 100% solids formulation ensures low shrinkage and safe application in confined spaces. It is specifically designed as a chemically and mechanically highly resistant coating for concrete and screed surfaces in bund areas for protection against water contaminating liquids.

PRIMARY APPICATIONS

ChemFit Floor 381 is recommended for use in conditions such as:

- Chemically resistant coating for concrete and screed surfaces in bund areas for protection against water contaminating liquids
- Secondary containment bunds (oil, diesel, chemical storage tanks)
- Chemical storage areas, tank farms, and process areas
- Concrete sumps, spill containment areas, and drip trays
- Heavy-duty industrial floors with high chemical exposure
- Protection against water contaminating liquids and hazardous substances

KEY FEATURES AND BENEFITS

- **Two part, solvent-free epoxy** – 100% solids; low odor and safe for indoor use
- **Self-smoothing** – Seamless, high-gloss, liquid-tight finish
- **High chemical resistance** – Excellent protection against many chemicals including mineral oils, fuels, dilute acids/alkalis, and salts
- **High mechanical resistance** – High compressive strength (> 80 N/mm²) and abrasion resistant (< 62 mg Taber)
- **Liquid proof and impermeable** – Forms an effective barrier against aggressive water contaminating liquids, preventing ground pollution
- **Slip resistant surface possible** – Can be combined with aggregate broadcast for anti-slip properties
- **Good thermal resistance** – Permanent up to +50°C, short-term up to +80-100°C
- **Low VOC** – Conforms to LEED EQ Credit 4.2 for low-emitting materials
- **Good opacity** – Excellent coverage and hiding power
- **Available in 25 kg pack** – Convenient ready-to-mix unit

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Part A: colored liquid; Part B: transparent liquid
Color	Range of RAL colors available (almost unlimited choice)
Basis	Two part, solvent-free epoxy resin
Mix Ratio (by weight)	Part A : Part B = 85 : 15
Density (Part A)	~1.77 kg/l at +23°C
Density (Part B)	~1.04 kg/l at +23°C
Density (mixed resin)	~1.6 kg/l at +23°C
Solids Content	~100% (by weight and volume)
Pot Life (at +20°C)	~30 minutes
Touch Dry (at +20°C)	~12-18 hours
Full Cure	7 days
Application Temperature	+10°C to +30°C
Relative Humidity	Max. 80%
Substrate Moisture	< 4% (no rising moisture)

MECHANICAL PROPERTIES (typical, 7 days @+23°C)

Property	Value	Test Method
Shore D Hardness	~82	DIN 53 505
Abrasion Resistance	62 mg (CS 10/1000/1000)	EN ISO 5470-1 / Taber
Compressive Strength	> 80 N/mm²	EN 13892-2
Flexural Strength	> 55 N/mm²	EN 13892-2
Tensile Adhesion Strength	> 1.5 N/mm² (failure in concrete)	ISO 4624 / EN 1542

THERMAL RESISTANCE

Exposure Type	Temperature
Dry heat – permanent	+50°C
Dry heat – short-term max. 7 days	+80°C
Dry heat – short-term max. 12 hours	+100°C
Moist/wet heat – short-term	Up to +80°C (occasional, e.g., steam cleaning)

NOTE: No simultaneous chemical and mechanical exposure during thermal exposure

CHEMICAL RESISTANCE

ChemFit Floor 381 is resistant to many chemicals including mineral oils, fuels (diesel/petrol), dilute acids, dilute alkalis, salts, and many industrial chemicals. For a detailed chemical resistance table specific to your application, contact ChemFit technical service.

PACKAGING AND STORAGE

Packaging:

- 25 kg pack (Part A + Part B ready-to-mix unit)
- Part A: 21.25 kg containers
- Part B: 3.75 kg containers

Storage:

- Store in original sealed containers at +5°C to +30°C
- Protect from direct sunlight, moisture, and freezing
- Store in dry conditions
- Keep containers tightly sealed when not in use

Shelf life: 24 months from date of manufacture when stored properly

DOSAGE AND COVERAGE RATE

Application Type	Consumption (approx.)	Coverage per 25 kg unit
Self-smoothing wearing course (1 mm)	~1.6 - 1.8 kg/m² per mm	~14 - 15.5 m² per mm
Self-smoothing wearing course (1.5-2.0 mm)	~2.5 - 3.3 kg/m² total	~7.5 - 10 m²
Seal coat (roller application)	~0.75 - 0.85 kg/m²	~29 - 33 m²

For self-smoothing wearing course (filled with quartz sand 0.1-0.3 mm):

- At 10-15°C: without filling – ~1.65 kg/m² binder
- At 15-20°C: 1:0.1 pbw (binder + sand) – 1.65 + 0.15 kg/m²
- At 20-30°C: 1:0.2 pbw (binder + sand) – 1.5 + 0.3 kg/m²

NOTE: Coverage is theoretical and does not account for substrate porosity, surface profile, variations in level, or wastage

APPLICATION GUIDLINES

Surface Preparation:

- Substrate must be sound, clean, dry, and free from dust, oil, grease, laitance, curing compounds, and loose particles
- Mechanically abrade (shot blasting or grinding) to achieve open texture (CSP 2-3)
- Concrete compressive strength: minimum 25 N/mm² with minimum pull-off strength of 1.5 N/mm²
- Substrate moisture content must be < 4% with no rising moisture
- Substrate temperature must be at least +3°C above dew point to prevent condensation
- Fill blowholes, voids, and repair damaged areas with suitable epoxy filler

Priming:

- Apply compatible epoxy primer (e.g**., ChemFit EpoxyPrime 1400**) at 0.3 – 0.5 kg/m²
- Allow primer to cure (10-12 hours at +20°C) before applying **ChemFit Floor 381**

Mixing:

- Thoroughly pre-mix Part A (resin) before combining
- Add Part B (hardener) to Part A according to ratio (85:15 by weight)
- Mix with low-speed drill (300-400 rpm) for 2-3 minutes until uniform
- For self-smoothing wearing course: add clean, dry, graded quartz sand (0.1-0.3 mm) at specified ratio and mix for further 2 minutes
- Pour into another container and mix again to ensure thorough blending
- Use within pot life: ~60 minutes at +10°C, ~30 minutes at +20°C, ~15 minutes at +30°C

Application:

- Self-smoothing: pour material onto prepared and primed substrate; spread using serrated trowel, pin rake, or squeegee; immediately roll with spiked roller to remove entrapped air and aid leveling
- Seal coat: apply by short-pile roller or squeegee; back-roll crosswise for uniform coverage
- For slip-resistant finish: broadcast clean, dry, graded anti-slip aggregate (silicon carbide 0.5-1.0 mm or quartz sand 0.4-0.7 mm) into wet coating
- Maintain wet edge to avoid lap marks; work in manageable sections

Curing Times (at +20°C):

- Touch dry: ~12-18 hours
- Light foot traffic: ~18-24 hours
- Light traffic: ~2-3 days
- Full chemical and mechanical resistance: 7 days

Curing Time Between Coats:

- At +10°C: minimum 24 hours, maximum 3 days
- At +20°C: minimum 18 hours, maximum 2 days
- At +30°C: minimum 6-12 hours, maximum 1 day

Limitations:

- Do not apply below +10°C or if relative humidity exceeds 80%
- Do not apply if substrate temperature is below dew point (+3°C margin)
- Protect from condensation, water, and mechanical damage during cure
- For interior use only; exterior exposure requires UV-stable top coat
- Under direct sun radiation, there may be some discolouration and colour deviation – this has no influence on function and performance of the coating

HEALTH AND SAFETY

Epoxy resins may cause skin and eye sensitization and irritation. If eye contact occurs, rinse immediately with plenty of water for 15-20 minutes and seek medical attention. For skin contact, wash immediately with soap and water; remove contaminated clothing. If swallowed, do not induce vomiting; rinse mouth and drink water, then seek medical attention. Use gloves (nitrile), safety glasses, and protective clothing during handling. Ensure adequate ventilation – use respiratory protection with organic vapor cartridges if ventilation is poor. Refer to the Safety Data Sheet for detailed information.

CLEAING OF TOOLS

Clean all brushes, rollers, mixing equipment, and spillages with xylene, acetone, or epoxy thinner immediately after use before material cures. Dried material requires mechanical removal. Dispose of cleaning materials in accordance with local regulations.

APPROVALS AND STANDARDS

ChemFit Floor 381 complies with the following standards:

- **EN 13813:2002** – Screed material and floor coatings (Synthetic resin screed material) – CE marked
- **EN 1504-2:2004** – Surface protection systems for concrete (Coating) – CE marked
- **ISO 14644-1 Class 5** – Cleanroom suitability (Report No. SI 1008-533)
- **EN 13501-1** – Fire classification
- **ISO 846** – Good biological resistance
- **LEED EQ Credit 4.2** – Low-Emitting Materials: Paints & Coatings (SCAQMD Method 304-91 VOC Content < 100 g/l)
- **DIN 53 505** – Shore hardness testing
- **EN ISO 5470-1 / DIN 53 109** – Abrasion resistance (Taber Abraser Test)
- **EN 13892-2** – Compressive and flexural strength testing
- **ISO 4624 / EN 1542** – Pull-off adhesion strength testing
- **ISO 9001** – Quality management system certified
- Two part self-smoothing epoxy coating, highly chemically and mechanically resistant
- Suitable for chemically resistant coating for concrete and screed in bund areas

LEGAL NOTES

All technical data provided in this Product Data Sheet is based on laboratory testing under controlled conditions. Actual field performance may vary due to differences in substrates, application methods, site conditions, and environmental factors. ChemFit makes no warranty of merchantability or fitness for a particular purpose. Users shall conduct their own trials to validate product suitability for the intended application. ChemFit reserves the right to modify product specifications without prior notice. For the most current documentation, request the latest Product Data Sheet and Safety Data Sheet from ChemFit.

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