CHEMFIT EPOCEM 1700

Three Part Epoxy Modified Cementitious Self-Smoothing Mortar

PRODUCT DESCRIPTION

ChemFit EpoCem 1700 is a three part, epoxy modified cementitious, self-smoothing mortar designed for applications requiring a thickness of 1.5 to 3.0 mm in a single layer. This unique polymer-cement hybrid combines the adhesion and chemical resistance of epoxy with the water vapor permeability and economy of a cementitious material. It is specifically engineered to function as a **Temporary Moisture Barrier (TMB)**, allowing the application of solvent-free epoxy, polyurethane, and PMMA flooring systems onto green or high-moisture content concrete without the risk of osmotic blistering. The material provides a level, impervious surface that bonds exceptionally well to damp substrates.

PRIMARY APPICATIONS

ChemFit EpoCem 1700 is recommended for use in conditions such as:

- Applied as a minimum 2 mm thick self-smoothing screed over high moisture substrates or green concrete prior to resin flooring
- Levelling and patching horizontal concrete surfaces in new works or aggressive chemical environments
- Can be extended with quartz sand for patching surface irregularities up to 9 mm deep
- Suitable for non-ventilated damp substrates where a smooth finish is required
- Suitable for moisture control , physical resistance , restoration, and increasing resistivity

KEY FEATURES AND BENEFITS

- **Temporary moisture barrier** – Allows resin floor application on green or damp concrete; prevents osmotic blistering
- **Three part, epoxy-cement hybrid** – Excellent adhesion, good chemical resistance, and water vapor permeability
- **Self-smoothing** – Provides a level substrate for final floor coverings
- **Impervious yet breathable** – Blocks liquid water but allows water vapor transmission
- **Good chemical resistance** – Superior to standard cementitious screeds
- **Fast curing** – Can be top coated with resin floors after approximately 24 hours (+20°C)
- **Excellent bond** – Adheres to green or hardened concrete, whether damp or dry
- **Non-caustic** – Easier and safer to handle than traditional cementitious products
- **Solvent free** – Safe for indoor use

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Three part: Resin (white), Hardener (yellow), Filler (grey aggregate)
Color (mixed)	Light grey / Matt grey
Basis	Epoxy modified cementitious mortar
Density (mixed A+B+C)	~2.10 kg/L (+20°C)
Mix Ratio (by weight)	Part A : Part B : Part C = 1 : 2.5 : 17 (standard)
Pot Life (+20°C)	~40 minutes
Application Temp.	+8°C to +30°C (ambient and substrate)
Overcoating (to resin)	Min. 12-24 hours (+20°C)
Full Cure	7 days
Service Temperature	-30°C to +80°C
Shelf Life (unopened)	12 months (A, B, C stored properly)

MECHANICAL PROPERTIES

Property	Value
Compressive Strength (28 days)	~60 N/mm² (Class R4)
Flexural Strength (28 days)	~14 N/mm²
Reaction to Fire	Class A2 (fl) S1
Adhesion to Concrete	> 1.5 N/mm² (substrate failure)
Vapour Permeability	Impervious to liquids / Permeable to vapour
Freeze-Thaw/De-Icing Salt	Resistance factor WFT 98% (High)

PACKAGING AND STORAGE

Packaging:

- 23 kg unit (Part A: 1.14 kg, Part B: 2.86 kg, Part C: 19 kg)

Storage:

- Store original, unopened containers in dry conditions between +5°C and +30°C
- Protect Part A & B from frost
- Protect Part C from humidity
- Keep containers tightly sealed when not in use

Shelf life: 12 months from date of manufacture when stored properly

DOSAGE AND COVERAGE RATES

Standard Self-Smoothing Screed (1.5 – 3 mm):

- Consumption: 2.25 kg/m² per mm thickness
- Minimum for TMB: 4.5 kg/m² for a 2 mm thickness

Yield (23 kg unit): Approx. 3.4 m² at 3 mm thickness / Approx. 10.2 m² at 1 mm thickness

As a Repair Mortar (Extended with Sand):

- Add 5 – 10 kg of 0.7 – 1.2 mm quartz sand and 5 – 10 kg of 2.0 – 3.0 mm quartz sand to the 23 kg unit
- Achieves a thicker, trowel-applied mortar for filling deeper defects (3 – 9 mm)

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

APPLICATION GUIDLINES

Surface Preparation:

- Substrate must be sound, clean, and free from dust, oil, grease, laitance, and loose particles
- Mechanically abrade (shot blasting or grinding) to achieve an open textured surface (minimum pull-off strength 1.5 N/mm²)
- The substrate can be damp but must be free of standing water

Priming:

- For standard application over prepared concrete: Apply one coat of **ChemFit Floor 155WN** primer at 0.3 – 0.5 kg/m²
- Allow primer to become tacky before applying **ChemFit EpoCem 1700**

Mixing:

- Pre-mix Part A & B separately, then combine and mix thoroughly
- Add Part C (powder) to the mixed liquids while mixing with a low-speed drill (400-600 rpm)
- Mix for 2-3 minutes until a uniform, lump-free, self-smoothing consistency is achieved
- Do not add water to thin the mix

Application:

- Pour the mixed material onto the prepared and primed substrate
- Spread using a notched trowel or squeegee to the desired thickness

- Immediately roll with a spiked roller to remove entrapped air and aid leveling
- Protect from drafts, direct sunlight, and rain during curing

Curing & Overcoating:

- The surface will become tack-free and ready for overcoating when the moisture content has dropped below 4%
- **Overcoating with Epoxy/PU/PMMA:** Typically possible after 12 – 24 hours at +20°C
- **Full cure:** 7 days

Limitations:

- For indoor use only (unless top coated with a UV-stable system)
- Do not apply below +8°C or if rain is expected within 24 hours
- Must be overcoated with a UV-resistant resin top coat for external exposed applications

HEALTH AND SAFETY

The mixed product is based on epoxy resin and hardener and may cause skin and eye sensitization. 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. Refer to the Safety Data Sheet for detailed information.

CLEAING OF TOOLS

Clean all tools and equipment with water immediately after use. Dried material requires mechanical removal.

APPROVALS AND STANDARDS

ChemFit EpoCem 1700 complies with the following standards:

- **EN 1504-9** – Principles for the protection and repair of concrete structures. Moisture control (Principle 2, Method 2.3), Physical resistance (Principle 5, Method 5.1), Restoration (Principle 3, Method 3.1), Increasing resistivity (Principle 8, Method 8.3)
- **EN 13813** – Screed material and floor coatings
- **EN 1504-3** – Structural and non-structural repair (Class R4)
- **EN 1504-2** – Surface protection systems for concrete
- **ITT Reports** – Provided by Applus Laboratory (EN 1504-2 Ref. 09/349-963, EN 1504-3 Ref. 09/351-965)
- **CE marked** – Certified by Factory Production Control Body
- Three part epoxy modified cementitious self-smoothing mortar (1.5-3 mm)
- Suitable as a temporary moisture barrier under epoxy, PU, and PMMA floors over high moisture substrates

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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