

CHEMFIT EPOXYCERAMIC 54

Emulsifiable 2 Component Epoxy Mortar for Ceramic Tile Joints – To Seal Joints in Ceramic Wall/Floor Coverings Subject to Chemical/Mechanical Attack

PRODUCT DESCRIPTION

ChemFit EpoxyCeramic 54 is a high-performance, emulsifiable, two component epoxy mortar specifically formulated for sealing joints in ceramic wall and floor coverings. This advanced epoxy grout provides exceptional chemical and mechanical resistance, making it ideal for demanding environments where standard cementitious grouts would fail. The emulsifiable formulation allows for easy cleaning with water during application before full cure, simplifying the installation process. The two component system ensures consistent performance, high strength, and long-term durability. This product is designed for grouting ceramic tiles, porcelain tiles, natural stone, and mosaics in applications subject to chemical attack, mechanical stress, heavy traffic, and aggressive cleaning regimes.

PRIMARY APPLICATIONS

ChemFit EpoxyCeramic 54 is recommended for use in conditions such as:

- Grouting ceramic tile joints in industrial kitchens and food processing plants
- Grouting tile joints in chemical laboratories and pharmaceutical facilities
- Grouting joints in commercial kitchens and catering areas
- Sealing joints in swimming pools and water treatment facilities
- Grouting tiles in hospitals, operating theaters, and cleanrooms
- Joint sealing in dairies, breweries, and beverage production facilities
- Grouting tiles in car washes and vehicle maintenance areas
- Sealing joints in abattoirs and meat processing plants
- Grouting tiles in heavy traffic commercial flooring
- Joint sealing in areas subject to aggressive cleaning chemicals
- Grouting tiles in external facades and exposed areas

KEY FEATURES AND BENEFITS

- **Two component** – Simple mix ratio; consistent performance
- **Emulsifiable** – Cleanable with water before cure; no harsh solvents needed
- **Chemical resistant** – Withstands acids, alkalis, oils, fuels, solvents, and cleaning agents
- **Mechanical resistant** – High strength for heavy traffic and impact resistance
- **Waterproof** – Impermeable; prevents water ingress behind tiles
- **Stain resistant** – Does not absorb dirt, oils, or colored liquids
- **Non-shrink** – No cracking or shrinkage during cure

- **High bond strength** – Excellent adhesion to tile edges and substrate
- **Easy to use** – Mix, apply, clean with water before cure
- **Wide joint width capability** – Suitable for 2 mm to 20 mm joints
- **Food industry approved** – Suitable for food processing areas
- **Long service life** – Durable; resists degradation over time

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Two component: Part A (Resin), Part B (Hardener)
Color	Part A: White/Light; Part B: Amber; Mixed: White/Light Gray
Form	Pourable/scoopable paste after mixing
Basis	Epoxy resin with fillers
Mix Ratio	Refer to product label (typically 9:1 or specified by weight)
Density (mixed)	Approximately 1,700 – 1,900 kg/m ³
Pot Life (at 25°C)	30 – 60 minutes
Initial Cure (at 25°C)	6 – 12 hours
Full Cure (at 25°C)	7 days
Emulsifiable Cleanup	Yes – cleanable with water before cure
Application Temperature	+10°C to +30°C
Service Temperature	-20°C to +80°C

MECHANICAL PROPERTIES

Property	Value (typical at 7 days / 25°C)
Compressive Strength	50 – 70 MPa (7,250 – 10,150 psi)
Flexural Strength	20 – 35 MPa (2,900 – 5,100 psi)
Bond Strength (to tile)	> 5 MPa (725 psi)
Shore Hardness	75 – 85 (Shore D)
Water Absorption	< 0.1%
Abrasion Resistance	Excellent

NOTE: Mechanical properties depend on curing temperature, mixing accuracy, and proper substrate preparation.

CHEMICAL RESISTANCE

ChemFit EpoxyCeramic 54 resists the following chemicals (typical):

Chemical	Resistance
Dilute acids (up to 10%)	Excellent
Dilute alkalis (up to 10%)	Excellent
Mineral oils and greases	Excellent
Fuels (diesel, petrol)	Excellent
Aliphatic solvents	Good
Cleaning agents and detergents	Excellent
Chlorinated water (swimming pools)	Excellent
Food processing chemicals	Excellent

NOTE: Not recommended for concentrated strong acids or strong oxidizing agents.

PACKAGING AND STORAGE

Packaging:

- 5 kg pack (Part A + Part B pre-weighed units)

Storage:

- Store in original sealed containers at +10°C to +30°C
- Protect from direct sunlight, extreme heat, and freezing
- Keep containers tightly closed when not in use
- Do not expose to moisture

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

DOSAGE AND COVERAGE RATES

The coverage of **ChemFit EpoxyCeramic 54** is approximately 1.7 kg per square meter per mm of joint depth.

Coverage per 5 kg pack (by joint size):

Joint Width	Joint Depth	Coverage per 5 kg pack
2 mm	5 mm	Approx. 29 m ²
3 mm	6 mm	Approx. 16 m ²
4 mm	8 mm	Approx. 9 m ²
5 mm	8 mm	Approx. 7 m ²
6 mm	10 mm	Approx. 5 m ²
8 mm	10 mm	Approx. 4 m ²
10 mm	12 mm	Approx. 2.5 m ²

Coverage formula: kg required = (Joint width in mm x Joint depth in mm x Length of joints in meters) ÷ 1,000

NOTE: Coverage rates are approximate and vary based on joint size, tile type, and application technique. Allow 10-15% extra for waste and surface absorption.

APPLICATION GUIDELINES

Surface Preparation:

- Tile surface must be clean, dry, and free from dust, oil, grease, old grout residues, and loose particles
- Remove all loose or damaged existing grout to minimum 2/3 of tile depth
- Ensure joints are completely dry before application
- For porous tiles (terracotta, unglazed stone), apply a release agent or primer to prevent staining
- For non-porous tiles (glazed ceramic, porcelain), no primer required
- Ensure substrate behind tiles is sound and stable

Mixing:

- Pre-mix Part A (Resin) individually before combining
- Add Part B (Hardener) to Part A according to mix ratio on product label
- Mix with low-speed drill and mixing paddle (400-600 rpm) for 2-3 minutes until uniform consistency achieved
- Scrape sides and bottom during mixing
- Do not add water, solvents, or diluents to the mix
- Use entire batch within pot life (30-60 minutes at 25°C)

Application:

- Apply mixed epoxy grout using epoxy grout float or rubber squeegee
- Work grout diagonally across joints to ensure complete fill
- Force grout deep into joints – no voids or air pockets
- Remove excess grout from tile surface with float held at 45-60 degree angle
- Immediately after grouting (within 15-30 minutes), clean tile surface with water and sponge
- Emulsifiable formulation allows cleaning with water before cure
- For final cleaning, use clean water and cellulose sponge; change water frequently
- Polish tile surface with dry cloth after cleaning
- For heavy tile texture, use nylon brush for cleaning

Curing:

- Allow grout to cure for minimum 24 hours before light foot traffic
- Full cure achieved at 7 days before exposure to chemicals or heavy loads
- Protect from water and moisture during initial 24 hours of cure
- Lower temperatures slow curing; higher temperatures accelerate curing
- Do not apply below +10°C or when temperatures expected to drop below +10°C within 24 hours

HEALTH AND SAFETY

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

CLEANG OF TOOLS

Clean all mixing equipment, floats, trowels, and tools with water immediately after use while grout is still uncured and emulsifiable. For cured epoxy, use solvent (acetone, xylene, or epoxy thinner) followed by mechanical removal. Dispose of cleaning materials in accordance with local regulations. Do not dispose of uncured epoxy or wash water containing uncured epoxy into drains or watercourses.

APPROVALS AND STANDARDS

ChemFit EpoxyCeramic 54 conforms to the following standards:

- EN 13888 – Standard for Grouts for Tiles (Class RG – Reaction Resin Grout)
- EN 12004 – Standard for Adhesives for Tiles
- ISO 13007 – Ceramic Tiles – Grouts and Adhesives
- Emulsifiable formulation – Cleanable with water before cure
- Suitable for sealing joints in ceramic wall/floor coverings subject to chemical and mechanical attack

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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