

CHEMFIT EPOXYGROUT HE

3-Part, High Performance, High Precision Epoxy Grouting System – For Starter Bars, Anchors, Fasteners, Crane Tracks, Light Rail & Bridge Bearings

PRODUCT DESCRIPTION

ChemFit EpoxyGrout HE is a high-performance, three-part, high precision epoxy grouting system designed for demanding anchoring and grouting applications requiring exceptional accuracy and load transfer. This advanced epoxy system combines an epoxy resin, hardener, and selected filler to produce a durable, ultra-high strength mortar with excellent adhesion and minimal shrinkage. The high precision formulation provides superior dimensional stability and flow characteristics, making it ideal for applications requiring exact alignment and load distribution. The solvent-free formulation ensures zero VOC emissions and negligible shrinkage during cure. This product is designed for critical applications including starter bars, anchors, fasteners, crane tracks, light rail, and bridge bearings where high precision, ultra-high strength, and superior performance are essential.

PRIMARY APPLICATIONS

ChemFit EpoxyGrout HE is recommended for use in conditions such as:

- Starter bars and reinforcement bar anchoring requiring high precision
- Anchor bolts, fasteners, and high load connections
- Crane tracks and heavy rail grouting
- Light rail and transit system grouting
- Bridge bearings and structural support points requiring exact alignment
- High precision machine foundation grouting
- Base plate leveling for sensitive equipment
- Post-installed rebar connections for critical structures
- Turbine and compressor foundations
- High load transfer points and bearing areas

KEY FEATURES AND BENEFITS

- **Solvent free** – Zero VOC; safe for indoor and confined space use; no shrinkage
- **High precision** – Superior dimensional stability for exact alignment and load transfer
- **High performance** – Ultra-high strength for demanding applications
- **High flow** – Excellent pourability for complete void filling
- **Three component system** – Consistent, reliable performance
- **Ultra-high adhesion** – Exceptional bond to concrete, steel, and other substrates
- **Chemical resistant** – Resists oils, fuels, solvents, dilute acids, and alkalis

- **Waterproof** – Impermeable; ideal for encapsulation and protection
- **Good yield** – Approximately 2,100 kg per cubic meter
- **Low shrinkage** – Negligible dimensional change during cure
- **High modulus** – Provides rigid, load-bearing connections under dynamic loads

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Three component: Resin, Hardener, Filler
Color	Mixed: Gray
Form	Pourable, high flow paste after mixing
Basis	High performance epoxy resin with selected filler
Solvent Content	Nil (solvent free)
Density (mixed)	Approximately 2,100 kg/m ³
Pot Life (at 25°C)	20 – 40 minutes (faster curing for high precision)
Initial Cure (at 25°C)	8 – 16 hours
Full Cure (at 25°C)	7 days
Application Temperature	+10°C to +35°C
Shrinkage	Negligible (< 0.02%)

MECHANICAL PROPERTIES

Property	Value (typical at 7 days / 25°C)
Compressive Strength	90 – 110 MPa (13,050 – 16,000 psi)
Tensile Strength	20 – 30 MPa (2,900 – 4,350 psi)
Flexural Strength	40 – 55 MPa (5,800 – 8,000 psi)
Bond Strength (to concrete)	> Concrete substrate failure
Elastic Modulus	10,000 – 15,000 MPa

NOTE: Mechanical properties depend on curing temperature, mixing accuracy, and proper substrate preparation. High precision formulation provides superior dimensional stability for exact alignment.

PACKAGING AND STORAGE

Packaging:

- 12 kg unit (pre-weighed components)
- 144 kg bulk unit (pre-weighed components)

Storage:

- Store resin and hardener in original sealed containers at +10°C to +30°C
- Store filler in dry conditions, protected from moisture
- Protect from direct sunlight, extreme heat, and freezing
- Keep containers tightly closed when not in use

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

DOSAGE AND COVERAGE RATES

The density of mixed **ChemFit EpoxyGrout HE** is approximately 2,100 kg per cubic meter.

Container Size	Approximate Yield
12 kg unit	Approximately 5.7 liters
144 kg bulk unit	Approximately 68.6 liters

Coverage per 12 kg unit (area x depth):

- At 10 mm depth: Approximately 0.57 m²
- At 25 mm depth: Approximately 0.23 m²
- At 50 mm depth: Approximately 0.11 m²

NOTE: One cubic meter (1 m³) of mixed epoxy grout requires approximately 2,100 kg of material (175 units of 12 kg).

APPLICATION GUIDELINES

Surface Preparation:

- Substrate must be clean, dry, sound, and free from dust, oil, grease, laitance, curing compounds, and loose particles
- Concrete: mechanically abrade (grinding, shot blasting, scabbling) to achieve open texture
- Steel: remove rust, scale, and oil by sandblasting or wire brushing
- Anchor bolts and starter bars: degrease thoroughly
- Drill holes to specified diameter and depth; clean with compressed air and brush
- Ensure surfaces are completely dry before application
- For high precision applications, use formwork or leveling guides as required

Mixing:

- Pre-mix each component individually before combining
- Combine according to specified mix ratio on product label
- Mix with low-speed drill (400-600 rpm) for 3-5 minutes until uniform, lump-free, pourable consistency
- Scrape sides and bottom during mixing; avoid introducing air
- Use entire batch within pot life (20-40 minutes at 25°C – shorter in hot weather, longer in cold)

Placement:

- Pour continuously from one side to allow air to escape and avoid air pockets
- For anchor bolts and starter bars: pour grout into hole before inserting bar, or inject after placement
- For crane tracks, light rail, and bridge bearings: pour or pump into prepared cavity ensuring complete fill
- For high precision applications, ensure formwork is level and secure
- Do not use mechanical vibration
- Deep pours exceeding 75 mm: place in layers

Curing:

- Cure undisturbed above +15°C for minimum 24 hours before light loading; 7 days for full strength
- Protect from water, moisture, and chemicals during cure
- Lower temperatures slow curing significantly; higher temperatures accelerate curing
- For high precision applications, maintain constant temperature during cure
- 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, tools, and spillages with solvent (acetone, xylene, or epoxy thinner) immediately after use before material cures. Dried epoxy requires mechanical removal. Dispose of cleaning materials in accordance with local regulations.

APPROVALS AND STANDARDS

ChemFit EpoxyGrout HE conforms to the following standards:

- **ASTM C881 / C881M** – Standard Specification for Epoxy-Resin-Bonding Systems for Concrete (Type II, Grade 3, Class B – suitable for moisture tolerant applications)
- **ASTM C579** – Standard Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts, and Monolithic Surfacing
- **ASTM C307** – Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacing
- **100% solids, solvent-free formulation** – Zero VOC emissions
- High performance, high precision formulation for demanding applications
- Suitable for starter bars, anchors, fasteners, tie rods, crane tracks, and bridge bearings

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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