CHEMFIT IMPREG 300

2-Part, Solvent Free Epoxy Based Impregnating Resin – For Bonding High Density Fabrics to Concrete, Steel & Masonry

PRODUCT DESCRIPTION

ChemFit Impreg 300 is a low-viscosity, 2-part, solvent-free epoxy based impregnating resin specifically formulated for bonding high density fabrics (such as carbon fibre, glass fibre, and aramid fabrics) to concrete, steel, and masonry substrates. The solvent-free, 100% solids system ensures zero VOC emissions, making it safe for indoor and confined space use. The low viscosity allows deep penetration into fabric layers and porous substrates, creating a high-strength, durable composite bond. Ideal for structural strengthening, repair, and protective coating applications using externally bonded fabric reinforcement.

PRIMARY APPICATIONS

ChemFit Impreg 300 is recommended for use in conditions such as:

- Impregnation and bonding of high density carbon fibre (CFRP) fabrics to concrete, steel, and masonry
- Saturation of glass fibre and aramid fabrics for structural strengthening
- Wet-layup application of fibre reinforced polymer (FRP) systems
- Protective coating of concrete and steel surfaces
- Bonding of composite laminates to substrates for seismic retrofitting
- Bridge, building, and infrastructure strengthening works

KEY FEATURES AND BENEFITS

- **2-part, solvent free** – Zero VOC; safe for confined spaces; no odour
- **Low viscosity** – Excellent penetration into fabric and porous substrates
- **High strength** – Provides superior bond for structural loads
- **Good chemical resistance** – Resists moisture, oils, dilute acids, alkalis
- **Moisture tolerant** – Cures on damp substrates (no standing water)
- **Transparent when cured** – Allows visual inspection of fabric saturation
- **Easy to mix and apply** – Brush, roller, or squeegee application
- **Available in 10 kg pail** – Convenient size for medium projects

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Two components: resin (clear/amber), hardener (clear/amber)
Mixed color	Clear to light amber
Basis	Low viscosity epoxy resin
Solvent content	Nil (100% solids)
VOC	Zero
Viscosity (mixed, at 25°C)	600 – 1,200 mPa·s (low)
Density (mixed)	1.10 – 1.15 kg/L
Pot life (at 25°C)	30 – 60 minutes (100 g mass)
Tack-free time (at 25°C)	4 – 8 hours
Full cure (structural load)	7 days at 25°C
Application temperature	+10°C to +35°C
Service temperature	-40°C to +60°C
Glass transition temperature (Tg)	50 – 60°C

MECHANICAL PROPERTIES

Property	Value (typical at 7 days / 25°C)
Tensile strength (ASTM D638)	50 – 65 MPa (7,250 – 9,400 psi)
Tensile elastic modulus (ASTM D638)	3,000 – 3,500 MPa
Elongation at break	1.5 – 3.5%
Flexural strength (ASTM D790)	70 – 90 MPa (10,150 – 13,050 psi)
Bond strength – concrete shear	> Concrete substrate failure
Compressive strength	60 – 80 MPa (8,700 – 11,600 psi)

PACKAGING AND STORAGE

Packaging:

- 10 kg pail (pre-weighed resin + hardener)

Storage:

- Store in original sealed containers at +10°C to +30°C
- Protect from direct sunlight, moisture, 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

Coverage: 0.4 – 1.0 kg per square metre depending on fabric type and substrate porosity.

Fabric / Application	Coverage per coat (kg/m²)
Light fabric (100-200 g/m²) – single impregnation	0.4 – 0.6
Medium fabric (300-500 g/m²) – single impregnation	0.6 – 0.8
Heavy fabric (600-900 g/m²) – single impregnation	0.8 – 1.0
Primer coat on porous concrete (before fabric)	0.3 – 0.5
Top coat (sealer)	0.3 – 0.5

Yield per 10 kg pail: Approximately 10 – 25 m² depending on fabric and application.

NOTE: Coverage is approximate; varies with fabric density, substrate absorption, and application technique.

APPLICATION GUIDLINES

Surface Prep:

- Substrate: clean, sound, dry or damp (no standing water); free of dust, oil, grease, laitance, loose particles
- Concrete: mechanically abrade (grinding, shot blasting) to open texture
- Steel: sandblast to near-white metal (Sa 2½), remove rust and oil
- Masonry: clean and remove loose material; fill large voids

Mixing:

- Pre-mix resin component individually; combine with hardener as per label ratio
- Mix with low-speed drill (400-600 rpm) for 2-3 min until uniform
- Avoid air entrapment; use within pot life (30-60 min @25°C)

Application:

- Apply first coat as primer (if needed) by brush or roller; allow to become tacky
- Saturate fabric with mixed resin using brush, roller, or squeegee
- Ensure complete wet-out – fabric should be uniformly dark/transparent
- Apply second coat if required for full saturation or top sealing
- Remove air bubbles by rolling or using a ribbed roller

Curing:

- Allow to cure 24 hours before light handling; 7 days for full structural load
- Protect from water, chemicals during first 24 hours
- Lower temps slow cure; higher temps accelerate
- Do not apply below +10°C or if freezing expected within 24h

HEALTH AND SAFETY

Epoxy resin may cause skin and eye sensitisation. If eye contact: rinse 15 min with water, seek medical aid. Skin: wash with soap and water. If swallowed: do not induce vomiting – seek medical aid. Use nitrile gloves, safety glasses, protective clothing. Ensure ventilation. Refer SDS.

CLEAING OF TOOLS

Clean brushes, rollers, tools with acetone or epoxy thinner immediately after use. Cured resin requires mechanical removal.

APPROVALS AND STANDARDS

ChemFit Impreg 300 conforms to the following standards:

- **ASTM C881 / C881M** – Type II, III, Grade 1, Class B & C (epoxy for bonding and impregnation)
- **ASTM D638** – Tensile properties of plastics
- **ASTM D790** – Flexural properties
- **EN 1504-4** – Structural bonding systems for concrete protection and repair
- **ISO 834** – Fire resistance (component of larger systems)
- 2-part, solvent free epoxy based impregnating resin
- Suitable for bonding high density fabrics to concrete, steel, masonry

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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