

Kimitech EP-TX/311

ST8-0221



Two-component loaded thixotropic epoxy resin for plates, metal elements or of FRP systems bonding on substrates with planarity or irregularity defects up to 5 mm



DESCRIPTION

Kimitech EP-TX/311 is a solvent-free two-component epoxy adhesive mortar. The product is spreadable, has excellent adhesion to various substrates such as concrete, brick, stone, wood and steel.

Kimitech EP-TX/311 is used both as a leveling mortar and as a structural adhesive in consolidations with Kimitech mesh.

Kimitech EP-TX/311 is CE marked as structural bonding according to EN 1504-4 and as an anchor for steel reinforcement according to EN 1504-6.

USES

- High-strength structural bonding of materials commonly used in construction such as concrete, bricks, stones, wood, metals; "Béton Plaque"; structural reinforcements of vaults, walls, r.c. using Kimitech and Kimisteel range composite mesh and plate systems.
- Ensures a high adhesion to the substrate, it allows an optimal laying avoiding the formation of dangerous air bubbles.

APPLICATION



Manual application

For specific kind of works read the technical specifications and the technical data sheets of the materials to be used. The product is supplied in pre-dosed packages with a 1/1 resin/hardener ratio to easily prepare small doses on site avoiding mixing errors (the two products have a different coloring). Mix part A (resin) with part B (hardener) until you get an even color and apply with a spatula on perfectly clean, dry, dust-free surfaces and inconsistent parts. Mix the quantity of resin you expect to use within the frost time.

STRUCTURAL REINFORCEMENT WITH COMPOSITE SYSTEMS

Prepare the surfaces to be reinforced (the concrete supports must have a failure strength on direct traction greater than 1.5 N/mm²) and apply **Kimicover FIX** primer. Carefully mix the two components of **Kimitech EP-TX/311** and apply in uniform layers with an iron spatula; when dry, lay the mesh and, with a suitable metal roller, press it in order to favour adhesion and avoid the formation of dangerous air bubbles. When dry, impregnate the mesh with **Kimitech EP-IN** fluid resin. If you wish to make further reinforcement coats, contact our Technical Department.

ADHESION PROPERTY

- Tests carried out on class 500 concrete cured 28 days, with light sandblasting and application of **Kimicover FIX** on the parts intended for bonding.
- Flexural failure test between head-bonded concrete prisms with **Kimitech EP-TX/311**: 100% failure of the concrete.
- Shear failure test for concrete elements bonded with **Kimitech EP-TX/311**: 100% failure of the concrete.

CONSUMPTION

1,7 Kg/m² per millimetre of thickness.

For mesh and reinforcement plates bonding:

- 3,5 Kg/mq on irregular substrates;
- 3 Kg/mq on wooden substrates;
- 2-2,5 Kg/mq on substrate treated with Tectoria M15 or Betonfix FB;
- 1,6-2 Kg/mq on reinforced concrete or steel smooth substrates.

PACKAGING

- Com 10 Kg (A+B).
- Com 20 Kg (A+B).

STORAGE

The product fears moisture, store in tightly closed containers, in a sheltered and dry place. In these conditions it maintains its stability for 24 months.

Characteristics	Typical value
Complete hardening at 25°C	7 days
Consistency (A+B)	Thixotropic product
Dry residue (A+B) UNI 8309	> 98 %
Concrete adhesion	> 3 (substrate failure) MPa

Characteristics	Limits EN 1504-4	Typical value
Compressive strength [MPa] EN 12190	≥ 30	76,4
Elastic modulus on compression [MPa] EN 13412	≥ 2000	5130
Workability time EN ISO 9514	Declared value	Workability at 20°: 30 mins At 15 mins = 3,3 MPa At 30 mins = 3,3 MPa At 45 mins = 2,1 MPa
Thermal expansion coefficient [µm/m°C] EN 1770	≤ 100	83,3
Glass transition temperature [°C] EN 12614	≥ 40	45
Total shrinkage for structural adhesive agents EN 12617-1	≤ 0,1 %	0,03 %
Shear strength [MPa] EN 12615	≥ 6	Hardened concrete on hardened concrete
		16,7
		Fresh concrete on hardened concrete
		16,4

Adhesion EN 12636	For hardened concrete on hardened concrete the bending strength test must cause a concrete crack. For fresh concrete on hardened concrete the direct tensile test must cause a crack in the concrete.	Flexural failure load (79g) 7537 N (Concrete failure)
Open time EN 12189	Declared value ±20%	Ok
Durability EN 13733	The shear - compression load at the failure of the hardened concrete specimens on hardened concrete or of fresh concrete on hardened concrete after thermal or hot-humid cycles must not be less than the lowest tensile strength of the bonded concrete or the original concrete.	Ok

Bonding resin	Kimitech EP-TX/311
Type of resin	Epoxy
Density (g/cm ³)	1,9 ± 0,05 g/cm ³
Catalysis ratio by weight	A:B=1:1
Pot Life at 10 °C (min) measured as workability time EN ISO 9514	Workability at 10°: 30 mins At 0 min = 3,5 MPa; At 15 mins = 3,6 MPa; At 30 mins = 3,6 MPa
Pot Life at 20 °C (min) measured as workability time EN ISO 9514	Workability at 20°: 30 mins At 15 mins = 3,3 MPa; At 30 mins = 3,3 MPa At 45 mins = 2,1 MPa
Pot Life at 35 °C (min) measured as workability time EN ISO 9514	Workability at 35°: 5 mins A 0 min = 3,6 MPa; A 5 mins = 3,7 MPa
Suggested application temperatures range	10 °C – 35 °C
Glass transition temperature T _g	45°C
Elastic modulus on compression (MPa)	5130
Compressive strength (MPa)	76,4
Thermal expansion coefficient [µm/m°C] EN 1770	83,3
Total shrinkage for structural adhesive agents EN 12617-1	0,03 %

Characteristics	Limits EN 1504-6 "Steel reinforcement anchoring"	Typical value
Resistance to the extraction of steel bars Relative displacement to a load of 75 KN [mm] EN 1881	≤ 0,6	Ok

Characteristics	Limits EN 1504-6 "Steel reinforcement anchoring"	Typical value
Viscous sliding under load in traction after continuous loading of 50 KN for 3 months [mm] EN 1544	≤ 0,6	OK
Glass transition temperature [°C] EN 12614	≥ 40	45
Reaction to fire EN 13501-1	Euroclass	F
Chloride ion content	≤ 0,05%	Ok

WARNING

Product intended for professional use.

Do not apply on wet or dusty surfaces. The equipment used for the preparation and laying of the product must be cleaned with Solvente Epox before hardening. The product must be handled with care: use protective gloves and goggles to avoid contact with skin and eyes.

For further information and advice on safe handling, storage and disposal of chemical products, the user must refer to the most recent Safety Data Sheet, containing physical, ecological, toxicological and other data related to safety.

The information and requirements indicated in this Technical Data Sheet are based on our current knowledge and experience and are to be considered, in any case, purely indicative. They cannot guarantee the final result of the applied product and they have to be confirmed by exhaustive practical applications; therefore the user must test the suitability of the product for the intended application and its purpose. Users must always refer to the latest version of the local technical data sheet related to the product.