

Technical Datasheet

EPOMAX-LD

Two-component, epoxy impregnation adhesive for composite fabrics

Description

EPOMAX-LD is a two-component solvent-free epoxy system. After hardening it provides strong bonding to the substrate, high hardness and increased compressive and flexural strength. Certified according to EN 1504-4 and classified as a structural bonding agent for external reinforcement of concrete. CE marked. Certificate No. 2032- CPR -10.11.

Fields of application

EPOMAX-LD is used for the impregnation of fabrics made of synthetic fibers, during the static and seismic strengthening of concrete elements. It is equally suitable for glass fiber and carbon fiber fabrics.

Technical data

Basis:	two-component epoxy resin
A-component color:	white
B-component color:	black
A+B color:	grey
Form:	paste
A-component density:	1.10 ± 0.02 kg/l
B-component density:	1.000 ± 0.007 kg/l
A+B density:	1.08 ± 0.03 kg/l
Mixing ratio (A+B):	100:19.4 by weight
Viscosity:	70,000 ± 20,000 mPa·s (at +23°C)
Open time:	45 min at +20°C
Pot life:	35 min at +20°C
Minimum hardening temperature:	+8°C
Final strength:	after 7 days at +20°C

Tensile adhesion strength between steel plates: (EN 12188)	20.0 N/mm ²
Shear adhesion strength between steel prisms: (EN 12188)	16.8 N/mm ²
Shrinkage: (EN 12671-1)	0.05%
Workability: (EN ISO 9514)	25 minutes at +20°C
Modulus of elasticity in compression: (EN 13412)	2,600 N/mm ²
Coefficient of thermal expansion: (EN 1770)	64 X 10 ⁻⁶
Glass transition temperature: (EN 12614)	≥ 75°C
Reaction to fire: (EN 13501-1)	Euroclass E
Durability: (EN 13733)	Pass
Tensile strength: (ASTM D 638)	44.6 MPa
Elongation at break:	1.7%
Compressive strength: (ASTM D 695)	≥ 50.0 MPa
Flexural strength: (ASTM D 790)	≥ 30.0 MPa
Modulus of elasticity: (flexural) (ASTM D 790)	2,500 MPa
Adhesive strength (on concrete):	> 3 N/mm ² (breaking point of concrete)
Cleaning of tools:	Tools should be cleaned with SM-25, immediately after use.

EPOMAX-LD

Directions for use

1. Substrate preparation

The substrate must be:

- Dry and sufficiently strong and stable.
- Free of materials that might impair bonding, e.g. dust, loose particles, grease or oil, etc.

It is recommended that the substrate be mechanically treated by sandblasting or milling and cleaned with a high suction vacuum cleaner, before application.

If there are cracks in the concrete, they have to be repaired with a resin injection process, using materials like EPOMAX-L10, EPOMAX-L20 or DUREBOND.

The substrate should be as flat as possible. Surface imperfections are repaired using MEGACRET-40 fiber-reinforced cement mortar or EPOMAX-EK epoxy paste.

The edges of the structural element that will be covered with fabric have to be rounded off to a radius of 10-30 mm to achieve more effective confinement.

2. Mixing of the components

Components A (resin) and B (hardener) are packed in two separate containers, having the correct predetermined mixing ratio by weight. Mix thoroughly the whole content of comp. A with that of comp. B. The components should be mixed for about 5 minutes with a low speed mixer or an appropriate hand tool (e.g. small trowel), until a uniform grey color mixture is obtained. It is important to thoroughly stir the mixture near the sides and bottom of the container, to achieve uniform dispersion of the hardener.

3. Application - Consumption

After mixing the two components, EPOMAX-LD is applied on the dry and clean substrate with a brush, roller or trowel with a consumption of approx. 0.7 kg/m².

Then, the fabric is affixed by pressing with a plastic roller, so that it gets thoroughly impregnated (saturated) with the resin. A second layer is applied, if required.

After the last layer is dry, a final sealing layer of EPOMAX-LD is applied, with a consumption of approx. 0.3 kg/m².

While the sealing layer is still fresh, quartz sand is broadcast on the surface to secure adequate bonding of the subsequent protective cementitious coating.

Packaging

EPOMAX-LD is supplied in containers (A+B) of 5 kg, with components A and B having a fixed ratio by weight.

Shel life – Storage

12 months from production date if stored in original sealed packaging, in areas protected from humidity and direct sunlight. Recommended storage temperature between +5°C and +35°C.

Remarks

- The workability of epoxy materials is affected by temperature. The ideal temperature of application is between +15°C and +25°C, for which the product obtains optimal workability and curing time. Room temperature below +15°C will expand the curing time, while temperatures above +30°C will reduce it. It is recommended to mildly preheat the product in the winter, and store the product in a cool room before application in the summer.
- After hardening, EPOMAX-LD is totally safe for health.
- After application, the EPOMAX-LD layer should be protected from direct sunlight.
- Please consult the safety instructions written on the packaging before use.
- EPOMAX-LD is intended for professional use only.

Volatile Organic Compounds (VOCs)

According to Directive 2004/42/CE (Annex II, table A), the maximum allowed VOC content for the product subcategory g, type SB is 350 g/l (2010) for the ready-to-use product.

The ready-to-use product EPOMAX-LD contains a maximum of 350 g/l VOC.

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2032

ISOMAT S.A.

17th km Thessaloniki – Ag. Athanasios
P.O. BOX 1043, 570 03 Ag. Athanasios, Greece

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2032-CPR-10.11

EN 1504-4

DoP No:EPOMAX-LD/1262-03

Structural bonding product for bonded fabric
reinforcement for uses other than low
performance requirements

Bond/Adhesion strength: Pull off strength $\geq 14\text{N/mm}^2$

Slant shear strength at:

50° $\geq 50\text{ N/mm}^2$

60° $\geq 60\text{ N/mm}^2$

70° $\geq 70\text{ N/mm}^2$

Shear Strength: $\geq 12\text{ N/mm}^2$

Shrinkage/expansion: $\leq 0.1\%$

Workability: 25 minutes at +20 °C

Modulus of elasticity: $\geq 2,000\text{ N/mm}^2$

Coefficient of thermal
expansion: $\leq 100 \times 10^{-6}$ per K

Glass transition temperature: $\geq 40\text{ °C}$

Reaction to fire: Euroclass E

Durability: Pass

Dangerous substances: comply with 5.4

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BUILDING CHEMICALS AND MORTARS

MAIN OFFICES - FACTORY:

17th km Thessaloniki - Ag. Athanasios Road,
P.O. BOX 1043, 570 03 Ag. Athanasios, Greece,
Tel.: +30 2310 576 000, Fax: +30 2310 576 029

www.isomat.eu e-mail: info@isomat.eu