Technical Datasheet

DUREBOND

Bonding agent - Two-component epoxy injection resin for cracks wider than 3 mm

Description

DUREBOND is a two-component epoxy system without solvents, offering excellent bonding to concrete and steel and high compressive and flexural strength, even when applied on damp substrates.
It complies with the requirements of ASTM C 881-90, Type II, Grade 2, Class B+C.
It is classified as a structural bonding agent for mortar or concrete and as a product for concrete injection, according to EN 1504-4 and EN 1504-5. Certificate Nr. 2032-CPR-10.11.

Fields of application

DUREBOND is used as a bonding bridge for bonding fresh concrete or mortar to old hardened concrete, mortar or metallic surfaces.
DUREBOND is also used to repair concrete cracks wider than 3 mm by injection, in order to bond and restore the original monolithic structure.
DUREBOND is an ideal aid for installing and anchoring reinforcement rods into existing concrete elements.

Technical data

Basis:	two-component epoxy resin
A-component color:	grey
B-component color:	brownish green
A+B color:	grey
Viscosity:	2.500 ± 500 mPa·s at +23^{0}C
A-component density:	1.57 ± 0.03 kg/l
B-component density:	1.04 ± 0.03 kg/l
A+B density:	1.47 ± 0.03 kg/l
Mixing ratio (A+B):	100:20 by weight
Pot life:	approx. 40 min at +20^{0}C
Minimum hardening temperature:	+8^{0}C
Final strength:	after 7 days at +23^{0}C
Flexural strength: (DIN EN 196-1)	≥ 40.0 N/mm^2
Tensile strength: (ASTM D 638)	29.9 N/mm^2
Modulus of elasticity: (DIN 1048)	3,500 N/mm^2
Water absorption: (ASTM D 570)	0.29% w/w after 24 h
Adhesion:	> 3.0 N/mm^2 (breaking point of concrete)

EN 1504-4 as a structural bonding agent:

Adhesion for hardened concrete to hardened concrete and for fresh concrete to hardened concrete: (EN 12636)	Pass (fracture in the concrete)
Shear adhesion strength for hardened concrete to hardened concrete: (EN 12615)	8.8 N/mm^2
Compressive strength: (EN 12190)	≥ 90.0 N/mm^2
Shrinkage: (EN 12671-1)	0.05%
Workability: (EN ISO 9514)	35 minutes at +20°C
Sensitivity to water: (EN 12636)	Pass
Modulus of elasticity in compression: (EN 13412)	3,470 N/mm^2
Coefficient of thermal expansion: (EN 1770)	52 X 10^{-6}
Glass transition temperature: (EN 12614)	≥ 73 °C
Reaction to fire: (EN 13501-1)	Euroclass E

DUREBOND

Durability: (EN 13733)	Pass *

**The compressive shear load at failure after exposure to thermal cycling shall not be less than the lowest tensile strength of the bonded or the original concrete.*

EN 1504-5, as an injection product for concrete:

Adhesion by tensile bond strength: (EN 12618-2)	5.9 N/mm^2
Adhesion by slant shear strength: (EN 12618-3)	Monolithic failure
Volumetric shrinkage: (EN 12617-2)	1.5 %
Glass transition temperature: (EN 12614)	≥ 73 °C

Workability:
- Minimum crack width: 3 mm.
- Suitable for injection into dry and slightly damp medium.

(EN 12618-2)

Durability: (EN 12618-2)	Pass
Corrosive behavior:	No

Cleaning of tools:
Tools should be cleaned with SM-27 solvent, immediately after use.

Directions for use

1. Substrate preparation
The application surface should be:
- Dry and durable.
- Free of materials that prevent bonding, e.g. dust, grease, loose particles etc. and without standing water.

2. Mixing of the components
Components A (resin) and B (hardener) are packed in two separate containers, having the correct predetermined mixing proportion by weight. The whole quantity of comp. B is added into comp. A and they are mixed for about 5 minutes, using an appropriate hand tool (e.g. small trowel) or with a low speed mixer (300 rpm). It is important to stir the thoroughly mixture near the sides and bottom of the container, to achieve uniform dispersion of the hardener.
In case less quantity is required (than the one available in the package), 5 parts by weight of comp. A and 1 part by weight of comp. B should be poured into a clean container and mixed as above.

3. Application – Consumption
A) Bonding of fresh concrete to hardened concrete
DUREBOND is applied by roller or brush in one layer.
Consumption: Approx. 0.6 kg/m^2.
Then, the concrete or mortar is applied, while DUREBOND is still fresh (within 90 min from application, at +20^{0}C).

B) Resin injections
1. Remove any existing plaster on either side of the crack and thoroughly clean the concrete substrate.
2. Seal the crack using EPOMAX-EK and fix injection nozzles along the crack, approx. every 20 cm, with the same product.
3. After EPOMAX-EK has hardened, start injecting DUREBOND into the crack, by pressing the material through the nozzles, following this procedure:
   a) Place the resin outflow tube (e.g. spirit level tube) in the first nozzle. For a horizontal crack, start from one end. For a vertical crack, start from the lowest nozzle.
   b) Inject into the first nozzle by adjusting the outflow valve of the compression boiler, until DUREBOND begins to flow out of the adjacent nozzle or until no further pressure can be applied.
   c) Cap the first nozzle and continue the injection through the next nozzle.
   d) Repeat this process until the entire length of the crack has been treated. Allow the material to cure and the next day, remove (break) the beetling nozzles and restore plastering.

The technical information and instructions supplied in this datasheet are based on the knowledge and experience of the Department of Research and Development of our company and on results from long-term applications of the product in practice. The recommendations and suggestions referring to the use of the product are provided without guarantee, since site conditions during the applications are beyond the control of our company. Therefore the user is responsible for confirming that the chosen product is suitable for the envisaged application. The present edition of this technical datasheet automatically cancels any previous one concerning the same product. | Edition: 03.12.2025

DUREBOND

Consumption: To fill an empty space of 1 l, approx. 1.5 kg of DUREBOND is required.

C) Anchoring
Open holes of a bigger diameter than the rods to be installed and as deep as possible. For vertical elements, holes should not be opened horizontally, but in a dipping direction (downwards). Blow compressed air to clean the holes. Pour DUREBOND into the holes in a quantity slightly bigger than necessary, so that putting the rod inside the hole will cause the material to flow out.
Consumption: To fill an empty space of 1 l, approx. 1.5 kg DUREBOND is required.

Packaging

DUREBOND is supplied in packages (A+B) of 1 kg and 4 kg with components A and B having a fixed proportion by weight.

Shelf-life - Storage

12 months from production date, if stored in original sealed packaging, in areas protected from humidity and direct sun exposure. 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, DUREBOND is totally safe for health.
- Before application, consult the directions for safe use and precautions written on the package.

The technical information and instructions supplied in this datasheet are based on the knowledge and experience of the Department of Research and Development of our company and on results from long-term applications of the product in practice. The recommendations and suggestions referring to the use of the product are provided without guarantee, since site conditions during the applications are beyond the control of our company. Therefore the user is responsible for confirming that the chosen product is suitable for the envisaged application. The present edition of this technical datasheet automatically cancels any previous one concerning the same product. | Edition: 03.12.2025

DUREBOND

CE

2032

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

10

2032-CPR-10.11

EN 1504-4

DoP No:DUREBOND/1809.4-02

Structural bonding product for bonded mortar or concrete for uses other than low performance requirements

Adhesion: Pass

Shear Strength: ≥ 6.0 N/mm^2

Compressive strength: ≥ 30.0 N/mm^2

Shrinkage/expansion: ≤ 0.1%

Workability: 35 minutes at +20 °C

Sensitivity to water: pass

Modulus of elasticity: ≥ 2,000 N/mm^2

Coefficient of thermal expansion: ≤ 100 X 10^{-6} per K

Glass transition temperature: ≥ 40 °C

Reaction to fire: Euroclass E

Durability: Pass

Dangerous substances: comply with 5.4

CE

2032

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

10

2032-CPR-10.11

EN 1504-5

DoP No:DUREBOND/1809.5-02

Concrete injection product
U (F1) W (30) (1/2) (8/35) (1)
Force transmitting and filling of cracks
3 mm
Dry and damp cracks
8 °C to 35 °C

Adhesion by tensile bond strength: cohesive failure in substrate

Adhesion by slant shear strength: monolithic failure

Volumetric shrinkage: < 3.0 %

Glass transition temperature: ≥ 40 °C

Workability

Crack width from 3 mm
Moisture state of the crack: dry and damp

Durability: Pass

Corrosion behavior: deemed to have no corrosive effect

Dangerous substances: comply with 5.4

ISOMAT S.A.
BUILDING CHEMICALS, MORTARS & PAINTS
HEADQUARTERS – THESSALONIKI, GREECE
17th km Thessaloniki – Ag. Athanasios Road
P.O. BOX 1043, 570 03 Ag. Athanasios, Greece
T +30 2310 576000
www.isomat.eu e-mail: support@isomat.eu

The technical information and instructions supplied in this datasheet are based on the knowledge and experience of the Department of Research and Development of our company and on results from long-term applications of the product in practice. The recommendations and suggestions referring to the use of the product are provided without guarantee, since site conditions during the applications are beyond the control of our company. Therefore the user is responsible for confirming that the chosen product is suitable for the envisaged application. The present edition of this technical datasheet automatically cancels any previous one concerning the same product. | Edition: 03.12.2025