



# MAXEPOX<sup>®</sup>

## FIX



### **HIGH-STRENGTH, SOLVENT-FREE, FLUID EPOXY MORTAR FOR ANCHORAGES, FIXING AND FILLINGS BY POURING**

#### **DESCRIPTION**

**MAXEPOX<sup>®</sup> FIX** is a three-component fluid mortar formulated with solvent-free epoxy resins and well-graded mineral products, that provides high mechanical properties and fluidity. It is specially designed for anchoring bolts and filling voids by pouring.

**MAXEPOX<sup>®</sup> FIX** meets the requirements of R4 Class according to EN-1504-3 and the requirements for rebars anchoring according to EN-1504-6.

#### **APPLICATION FIELDS**

- Anchoring of bolts in horizontal surfaces.
- Filling of column bases and machinery foundations.
- Anchoring of bolts, cables, and metal elements in concrete and stone.
- Repairing of cracks and joints in pavements by pouring.
- Fixing of rebars for connection in horizontal surfaces.
- Structural concrete repair by pouring.
- Grouting mortar for anti-acid tile in areas exposed to chemical attacks.

#### **ADVANTAGES**

- Very good adhesion on concrete substrates and metal surfaces.
- High mechanical strength and non-shrinkage, providing an excellent tensile strength. Withstands repeated loads and vibrations.
- Excellent fluidity and easy placement. High cohesion of the fresh mortar without segregation or bleeding.
- Good chemical resistance against oils, greases, fuels, diluted acid and base solutions.
- Waterproof product.
- Non-toxic, solvent-free, and non-flammable. Suitable to use in poor ventilated areas.

#### **APPLICATION INSTRUCTIONS**

##### **Surface preparation**

Surface must be structurally sound and clean, free of dust, coatings, efflorescence, oil, demoulding agents, gypsum or any foreign material that could affect to adherence. Substrate should be levelled and with light roughness. Moisture content of the surface must be below 4%. Consult our technical note *Preparation of concrete surfaces for application of epoxy-based coatings*.

All steel and metal surface must be thoroughly cleaned by shot or sandblasting to remove any corrosion and must be degreased.

##### **Mixing**

**MAXEPOX<sup>®</sup> FIX** is supplied as a pre-weighed three-component set. The hardener, component B, is poured into the resin, component A. To ensure the proper reaction between both components, make sure that all of component B is added.

Mix mechanically using a slow speed drill until achieving a homogeneous product in colour and appearance. Small quantities of product can also be mixed by hand. Do not mix for prolonged period nor use high speed mixer which may heat the mixture or introduce air bubbles. Then add component C and continue the mixing until a complete homogeneity.

##### **Application**

**MAXEPOX<sup>®</sup> FIX** is placed directly by pouring from the mixing container in a continuously way, in one direction from one side to the other, to minimize the chance of air entrapment. If it is necessary, a manual vibration element can be used to help to fill the volume, but an excessive vibration must be avoided because it may cause bleeding and air entrapment. Air vents should be provided to facilitate the exit of air from the space to be filled.

In case of using de-moulding formworks, these should be protected with plastic sheets and de-moulding agents.

The pot life at 20°C is 30-40 minutes, increasing the time at lower temperatures or when small quantities the mixture are done. Higher temperatures reduce pot life.

### Application conditions

Optimum application temperature range is from 8°C to 30°C. Do not apply with substrate temperature at or below 8°C or when these conditions are expected within 24 h after application.

Temperatures above 30°C lead a quick setting between components and heat production, so the pot life is greatly reduced.

Ambient and surface temperature must be at least 3°C higher than dew point. Do not apply with R.H. higher than 85%. Measure the relative humidity and dew point before applying the product. With low temperatures, high humidity levels or both, use dry and warm air to get the suitable conditions, such as with an electric powered air blower system. Do not apply when rain, contact with water, condensation, dampness and dew is expected within the first 24 h after application.

### Curing

Allow a curing time of 7 days at 20°C and 50 % R.H. for total curing and before putting into service. Applications carried out at lower temperatures, with high humidity or with poor ventilation will require longer drying and curing times.

### Cleaning

Tools and equipment can be cleaned with **MAXEPOX® SOLVENT** immediately after use. Once the product hardens, it can only be removed by mechanical methods.

### CONSUMPTION

A 32,5 kg set of **MAXEPOX® FIX** fills a volume of about 17 litres, that is approximately 1,9 kg/m<sup>2</sup> and mm thickness of **MAXEPOX® FIX**.

This estimative consumption may vary depending on the roughness and surface conditions. A preliminary test on-site will determine the coverage exactly.

### IMPORTANT INDICATIONS

- Never use leftovers from previous mixes.

- Surface moisture content of substrate must not exceed 4%. Do not apply on substrates subject to rising humidity.
- Allow new concrete and mortar to cure a minimum of 28 days before application.
- Avoid contact with water, humidity, condensation, dew, etc. within 24 h after application. Do not apply with relative humidity above 85%. In that case, a poor curing and/or loss of colour intensity could result.
- Do not add cements, solvents or any other non-specified compounds to **MAXEPOX® FIX**.
- Observe the resin/hardener proportions.
- Component C must be totally dry before mixing with resins (A+B).
- For other uses not specified in this Technical Bulletin consult our Technical Department.

### PACKAGING

**MAXEPOX® FIX** is supplied in three-components pre-weighed sets of 32,5 kg (4 kg component A, 1 kg component B and 27,5 kg component C). It is available in light grey colour.

Prolonged storage and below the indicated temperatures can produce resin crystallization. In such a case, to return the product to its normal conditions, it must be heated to a moderate temperature while being shaken regularly.

### STORAGE

Twelve months in its original unopened containers in a dry and covered place, with temperatures between 5°C and 30°C. Protect against direct sunlight and frost.

### SAFETY AND HEALTH

**MAXEPOX® FIX** is non-toxic, but rubber gloves and safety goggles must be used during application. In case of eye contact, rinse immediately with clean water without rubbing and seek medical assistance. In case of skin contact, wash with abundant water and soap. If ingested, seek immediate medical assistance. Do not induce vomiting.

Do not aspirate vapours that may be produced by heating or combustion. Observe the usual precautions necessary for the application of such products.

For further information, Safety Data Sheet for **MAXEPOX® FIX** is available by request.

Disposal of the product and its empty packaging must be made by the final user and according to official regulations.

**TECHNICAL DATA**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <b>Product characteristics</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                            |
| <i>CE Marking, EN 1504-3</i><br>Description. Epoxy mortar for structural repair of concrete in building and civil engineering works. Class R4. Principles / Methods. Concrete restoration by recasting with concrete or mortar (Principle 3-CR/3.2). Structural strengthening by adding mortar (Principle 4-SS/4.4). Preserving or restoring passivity by increasing cover to reinforcement with mortar (Principle 7-RP/7.1), and by replacing contaminated concrete (Principle 7-RP/7.2). |                                                                            |
| <i>CE Marking, EN 1504-6</i><br>Description. Epoxy fluid mortar with high mechanical performance and without solvents for fastening, anchoring and filling by pouring. Principles / Methods. Installing bonded rebars in preformed or drilled holes in concrete (Principle 4-SS/4.2).                                                                                                                                                                                                      |                                                                            |
| A+B+C mixing ratio, (by weight)                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4:1:27,5                                                                   |
| A+B+C appearance and colour                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Light grey fluid mortar                                                    |
| A+B+C solids content, (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 100                                                                        |
| Apparent density for fluid mortar/ dry mortar, (g/cm <sup>3</sup> )                                                                                                                                                                                                                                                                                                                                                                                                                        | 1,90 ± 0,10                                                                |
| Flash point                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Non-flammable                                                              |
| <b>Application and curing conditions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                            |
| Application conditions, T (°C) / R.H. (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 8 - 30 / < 85                                                              |
| Pot life at 20°C, (min)                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 30 - 40                                                                    |
| Setting time at 20°C, (h)                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10 - 12                                                                    |
| Curing time at 20°C, (d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 7                                                                          |
| <b>Cured product characteristics</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                            |
| Requirement for repair products, EN-1504-3 (Class)                                                                                                                                                                                                                                                                                                                                                                                                                                         | Class R4                                                                   |
| Compressive strength at 28 days, EN 12190, (MPa)                                                                                                                                                                                                                                                                                                                                                                                                                                           | 96,5                                                                       |
| Flexural strength at 28 days, EN 12190, (MPa)                                                                                                                                                                                                                                                                                                                                                                                                                                              | 31,7                                                                       |
| Chloride content, UNE-EN 1015-17:2001+A1:2005, (% by weight)                                                                                                                                                                                                                                                                                                                                                                                                                               | < 0,01                                                                     |
| Carbonation resistance, EN 13295                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Pass                                                                       |
| Elasticity modulus, EN 13412, (GPa)                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 28,2                                                                       |
| Adhesion on concrete, EN 1542, (MPa)                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3,3                                                                        |
| Shrinkage / Expansion, EN 12617-4 (MPa)                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3,5 / 3,8                                                                  |
| Linear coefficient of expansion, (1/°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3,5x10 <sup>-5</sup>                                                       |
| Glass transition temperature, EN 12614, (°C)                                                                                                                                                                                                                                                                                                                                                                                                                                               | 59,8                                                                       |
| Anchoring resistance by pull-out method, EN 1881                                                                                                                                                                                                                                                                                                                                                                                                                                           | Displacement ≤ 0,6 mm under load of 75 kN                                  |
| Creep under tensile load, EN 1544                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Displacement ≤ 0,6 mm after 3 months under sustained tensile load of 50 kN |
| Chemical attack resistance                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Excellent                                                                  |
| Water resistance                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Excellent                                                                  |
| Resistance to severe chemical attack, EN 13529 (Reduction in Shore hardness)                                                                                                                                                                                                                                                                                                                                                                                                               | Class I: G-1 (2%), G-9 (2%), G-11 (1%)                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Class II: G-1 (3%), G-9 (3%), G-11 (1%)                                    |
| <b>Consumption*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                            |
| Estimated consumption, (kg/m <sup>2</sup> per mm thickness)                                                                                                                                                                                                                                                                                                                                                                                                                                | 1,9 ± 0,1                                                                  |

\* These figures are for guidance only and may vary depending on porosity, texture, substrate conditions and application method. Perform a preliminary test on-site to ascertain the total consumption exactly

**GUARANTEE**

The information contained in this leaflet is based on our experience and technical knowledge, obtained through laboratory testing and from bibliographic material. **DRIZORO®, S.A.U.** reserves the right to introduce changes without prior notice. Any use of this data beyond the purposes expressly specified in the leaflet will not be the Company's responsibility unless authorised by us. We shall not accept responsibility exceeding the value of the purchased product. The data shown on consumptions, measurement and yields are for guidance only and based on our experience. These data are subject to variation due to the specific atmospheric and jobsite conditions so reasonable variations from the data may be experienced. To know the real data, a test on the jobsite must be done, and it will be carried out under the client responsibility. We shall not accept responsibility exceeding the value of the purchased product. For any other doubt, consult our Technical Department. This version of bulletin replaces the previous one.

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