



MAXEPOX[®] JOINT

HIGH CHEMICAL AND MECHANICAL RESISTANCE EPOXY MORTAR FOR FLOORS AND WALLS

DESCRIPTION

MAXEPOX[®] JOINT is a two-component, 100 % solids, solvent-free epoxy mortar. It is designed for waterproof grouting, patching/sealing of cracks and fixing of elastic strips on concrete, providing high chemical and abrasion resistance, for both vertical and horizontal surfaces.

APPLICATION FIELDS

- Pointing or grouting of tiles and other ceramic elements with low porosity, subject to aggressive works and cleaning methods: hospitals and clinics, commercial kitchens, operating rooms and health facilities.
- Grouting of ceramic tiles in chemical, pharmaceutical and food industry: laboratories, retaining boxes, tanks, reservoirs, paper mills, slaughterhouses, canneries, bottling plants, wineries, breweries, etc.
- Waterproof grouting with high chemical resistance subject to permanent contact: waste water treatment plants, swimming pools, aquariums, spas and leisure facilities, mineral/thermal baths, industrial washing and water tanks.
- Tiling over mortar and concrete, as well as over low porosity substrates such as metal, polyester, etc and wherein a fast putting into service is required.
- Fixing of elastic strip **MAXFLEX[®] XJS** (Technical Bulletin n° 73) on expansion joints in potable water tanks.
- Patching and sealing of cracks, voids and surface defects on concrete, before injection works, application of polyurethane or epoxy coatings, etc.
- Surface sealing and trowel repair of cracks, small surface damages, voids, etc. on concrete and cement mortars.
- Joints repair and reprofiling.
- Crack sealing prior to epoxy injection with **MAXEPOX[®] INJECTION**

ADVANTAGES

- Excellent chemical resistance against oils, greases, fuels, diluted acid and alkali solutions, etc.
- Suitable for contact with drinking water.
- Good thixotropy, suitable for vertical and horizontal surfaces, indoor or outdoor.
- High mechanical strength and wear resistance. Withstands wheeled heavy traffic and impacts.
- Easy to clean and no maintenance.
- Very high adhesion on low porosity or non-porous tile.
- Long working time and water miscible: uncured material can be wiped off tiles with water.
- Once cured it is waterproof and non-permeable to water vapour diffusion.
- Suitable for joint widths from 2 to 20 mm.
- Non-toxic, solvent-free and non-flammable. Suitable for use in poor ventilated areas.

APPLICATION INSTRUCTIONS

Surface preparation

Surface must be solid and dry, perfectly clean, free of dust, coatings, efflorescences, oil, greases, loose particles, excess of bonding mortars or any foreign material that could affect the adhesion. Allow bonding mortars to cure for 24 - 48 hours.

Expansion joints and active cracks must be treated with a suitable sealant of **MAXFLEX[®]** range.

Mixing

MAXEPOX[®] JOINT is supplied as a pre-weighed two-component set. The hardener, component B, is poured into the epoxy resin component A, ensuring that all component B is added. Mix mechanically during 2 to 3 minutes using a slow speed drill (up to 300 rpm) 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.

Check the technical data table for the pot-life or time it takes the product to harden inside the container. The pot-life for a 10 kg set at 20 °C is 30 minutes.

Application

Grouting: Use a trowel or rubber float to spread over the face of the tile, strike it off diagonally, and press the material into the joints until these are completely full.

For large areas is advisable to use a caulking gun provided with a properly sized nozzle, filling the joint from the bottom up for the placement of mixture into the joint avoiding the risk of stain the tiles. Press the nozzle against the edges of the joint and against the bottom to prevent air bubbles. For thin joints, grouting mortar should be applied in a single pass from the deepest point to the surface. In wider joints, it should be applied in three steps, the first two, on the edges of the joint and the third, filling in the centre.

Before the initial setting-time of grouting mortar, use a tuck-pointing trowel in order to compact the material and get a smooth finish of the surface.

Tiling: Apply **MAXEPOX® JOINT** on areas not greater than 2 m² at a time with a 6x6 mm notched trowel (in horizontal direction in vertical walls) in order to control the application thickness and avoid the slumping of the tiles placed on vertical surfaces. Do not apply in thickness greater than 6 mm. While mortar is still fresh, place the pieces and press them with slight twisting motion, until flattening the ridges and ensuring the tile back achieves full contact with the mortar. Check the adhesion by occasionally removing a set piece and inspecting mortar transfer onto back of tile. Remove excess mortar from the joint or the face of the tiles before it sets.

Cleaning of excess material: Clean the surface of tiles after a few minutes the mortar is applied and before the initial setting of **MAXEPOX® JOINT**. Remove the heavy residue with clean water and a nylon scrub pad, using a circular cleaning motion, and then with a sponge by wiping diagonally across the face of the tile. Use two pails, one for rising out the heavy residue and the other for rising the rest with clean water. Change water and rinse sponge frequently to minimize the build up of epoxy grout. The use of a buffing machine equipped with a pad will increase efficiency on large jobs.

After the initial setting time, cleaning process is enhanced with the use of a water and ethanol mixture (10 %, by volume).

Application conditions

Do not apply if rain, water contact, condensation, dew or moisture, etc is expected within 24 hours.

Do not apply with ambient or substrate temperatures below 10° C or if lower temperatures are expected during the following 24 hours. Do not apply on frozen or frosted surfaces.

Surface and air temperature must be at least 3 °C higher than dew point for proper curing process. Temperatures above 30 °C increase the reaction speed and production of heat, and reduce greatly the workability time for application.

Application above 30° C shall lead to an excess of heat and reaction, and therefore a shortening of the pot life.

Curing

Allow a minimum curing time of 24 hours at 20 °C before putting into service for pedestrian traffic.

Complete cure is achieved after 7 days at 20 °C and 50% R.H. for permanent immersion or contact with aggressive chemicals. Minimum temperature during the full curing must be higher than 10°C. Lower temperature and/or poor ventilated areas require longer curing time.

Cleaning

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

CONSUMPTION

Grouting: One kg of **MAXEPOX® JOINT** fill about 0,6 liters approximately. Consumption depends on both the tile dimensions and joint dimension and it can be estimated from the following formula:

$$((A+B) / (A*B)) * C * D * 1,65 = \text{kg/m}^2$$

A: Width of the tile (mm). B: Length of the tile (mm)
C: Depth of the tile (mm). D: Width of the joint (mm).

For a 10 mm width and 5 mm depth joint, with a 20 x 20 cm ceramic tile size, 0,55 kg/m² is required.

Tiling: The estimated consumption of **MAXEPOX® JOINT** is 1,65 kg/m²·mm thickness approximately. Applied with a 6x6 mm notched trowel the average estimated consumption is 9,9 kg/m².

Consumption may vary depending on the roughness, porosity, texture and surface conditions, as well as on the tile characteristics and application method. A preliminary test on-site will determine the coverage exactly.

IMPORTANT INDICATIONS

- Do not add cement, water, solvent, aggregates or any other compound to **MAXEPOX[®] JOINT**.
- Never use leftovers from previous mixes and do not mix partial sets.
- Observe the recommended application thickness per layer and the mixing ratio.
- **MAXEPOX[®] JOINT** can be affected by a superficial colour change over a long period of time exposed to UV rays, although it does not affect to its mechanical properties.
- For further information and other uses not specified on this Technical Bulletin consult our Technical Department.

PACKAGING

MAXEPOX[®] JOINT is supplied in two-component pre-weighed sets of 10 kg. It is available in grey and white colour.

STORAGE

Twelve months in its original unopened packaging, in a dry and covered place with temperatures between 5 °C and 30 °C. Protect against direct sunlight and frost. Temperatures below 5 °C lead the crystallisation of the product. Should this happen, it must be heated slowly while is regularly stirred until achieving its homogeneous and original lump-free condition.

SAFETY AND HEALTH

MAXEPOX[®] JOINT is not a toxic product but skin and eye contact must be avoided. When mixing and applying, do not work without the protection of rubber gloves and safety goggles. In case of eye contact, rinse immediately with clean water but do not rub. In case of skin contact, wash affected area with abundant water and soap. If irritation persists, seek medical assistance.

For further information, Safety Data Sheet for **MAXEPOX[®] JOINT** 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

Characteristics of the product	
Appearance and colour for component A	Homogeneous paste with white or black colour
Appearance and colour for component B	Yellowish liquid
Appearance and colour for A+B mixture	White or grey thixotropic mortar
A:B mixing ratio (by weight)	100:8
Solids content (% , by weight)	100
Density A + B (g/cm ³)	1,65 ± 0,1
Application and curing conditions	
Minimum application and substrate temperature (°C)	>10
Pot life at 10/ 20/ 30 °C (min)	40 / 30 / 15
Drying time to touch at 20° C (hours)	5 - 8
Curing time at 20 °C (hours)	24
Total curing time for water immersion and chemical resistance at 20 °C (d)	7
Characteristic of cured product	
Compressive strength at 28 days at 20 °C, EN 12808-3 (MPa)	80
Flexural strength at 28 days and 20 °C, EN 12808-3 (MPa)	30
Adhesion on concrete at 28 days and 20 °C, EN 1015-12 (MPa)	2,5
Water absorption, EN 12808-5 (g)	0,05
Resistance to severe chemical attack, EN 13529 (Reduction in Shore hardness)	Class I: G-1 (1%), G-9 (1%) G-11 (1%)
	Class II: G-1 (1%), G-9 (1%) G-11 (1%)
Suitability for drinking water; RD 140/2003	Approved
Joint dimensions and Consumption*	
Recommended joint width (mm)	2 – 20
Estimated consumption for bonding tiles (kg/m ² · mm)	1,65
Estimated consumption for grouting a 10 x 5 mm joint and 20 x 20 cm tile (kg/ m ²)	0,55

(*)These figures may vary depending on the roughness and surface conditions. A preliminary test on-site will determine the coverage exactly.

CHEMICAL RESISTANCE FOR MAXEPOX® JOINT

TABLE I.- RESISTANCE TO ACIDS

Chemical Substance / Compound	Concentration (% by weight)	Type of exposure and temperature			
		Continuous		Sporadic	
		Temp = 20 °C	Temp = 50 °C	Temp = 20 °C	Temp = 50 °C
Acetic, acid	2,5	(+)	(+)	+	(+)
	10	+	-	+	(+)
Acrylic, acid	2,5	(+)	(+)	(+)	(+)
	10	-	-	-	-
Hydrochloric, acid	37	+	(+)	+	(+)
Chromic, acid	20	(+)	-	(+)	-
Citric, acid	10	+	+	+	+
	40	+	-	+	+
Hydrofluoric, acid	5	+	-	+	(+)
Formic, acid	2,5	+	(+)	+	+
	10	+	-	+	(+)
Phosphoric, acid	50	+	(+)	+	(+)
	75	-	-	(+)	-
Lactic, acid	2,5	+	(+)	+	+
	10	+	(+)	+	(+)
Maleic, acid	Pure	+	+	+	+
Nitric, acid	25	+	-	+	(+)
	50	-	-	-	-
Oleic, acid	Pure	+	-	+	-
Oxalic, acid	10	+	-	+	(+)
Sulphuric, acid	1,5	+	+	+	+
	50	+	(+)	+	(+)
	75	-	-	-	-
Tannic, acid	10	+	+	+	+
Tartaric, acid	10	+	+	+	+
Uric, acid	Pure	+	+	+	+

TABLE II.- RESISTANCE TO SOLVENTS

Chemical Substance / Compound	Concentration (% by weight)	Type of exposure and temperature			
		Continuous		Sporadic	
		Temp = 20 °C	Temp = 50 °C	Temp = 20 °C	Temp = 50 °C
Acetone	Pure	-	-	(+)	-
Dichloroethane	Pure	-	-	-	-
Methyl acetate	Pure	-	-	-	-
Ethylene glycol	Pure	+	+	+	+
Phenol (1% water)	Pure	+	-	+	(+)
Formaldehyde	Pure	+	-	+	(+)
Dibutyl Phthalate	Pure	+	(+)	+	+
Glycerine	Pure	+	+	+	+
Methanol	Pure	+	(+)	+	+
Perchloro ethylene	Pure	+	-	+	-
Carbon tetrachloride	Pure	(+)	-	+	-
Trichloro ethylene	Pure	(+)	-	+	-

TABLE III.- RESISTANCE TO OILS, GREASES AND FUELS

Chemical Substance / Compound	Concentration (% by weight)	Type of exposure and temperature			
		Continuous		Sporadic	
		Temp = 20 °C	Temp = 50 °C	Temp = 20 °C	Temp = 50 °C
Mineral oil	Pure	+	+	+	+
Motor oil	Pure	+	+	+	+
Olive oil	Pure	+	+	+	+
Diesel oil	Pure	+	+	+	+
Light gas oil	Pure	+	+	+	+
Heavy gas oil	Pure	+	+	+	+
Petroleum	Pure	+	+	+	+
White-spirit	Pure	+	+	+	+

+ High resistance. No damage observed.
 (+) Low resistance
 - Damaged by the tested medium

TABLE IV.- RESISTANCE TO ALKALIS AND SALT SOLUTIONS					
Chemical Substance / Compound	Concentration (% by weight)	Type of exposure and temperature			
		Conituous		Sporadic	
		Temp = 20 °C	Temp = 50 °C	Temp = 20 °C	Temp = 50 °C
Ammonia, solution	25	+	+	+	+
Sugar	Sat. Solution*	-	-	-	-
Sodium chlorate	Pure	+	+	+	+
Calcium chloride	Sat. Solution*	+	-	+	(+)
Ferric chloride	Sat. Solution*	+	(+)	+	+
Sodium chloride	Sat. Solution*	+	(+)	+	(+)
Sodium chromate	Sat. Solution*	+	-	+	(+)
Sodium hypochlorite, active chlorine	6,4 g/l	+	-	+	(+)
	162 g/l	-	-	-	-
Sodium hyposulphite	Sat. Solution*	+	(+)	+	+
Potassium hydroxide	29	+	+	+	+
Potassium permanganate	5	+	-	+	(+)
	10	(+)	-	(+)	-
Hydrogen peroxide (Agua oxigenada)	1	+	(+)	+	+
	10	+	-	+	(+)
Calcium sulphate	10	+	+	+	+
Potassium ammonium sulphate	10	+	+	+	+
Sodium hydroxide	50	+	+	+	(+)

* Saturated solution at 20 °C

- + High resistance. No damage observed.
- (+) Low resistance
- Damaged

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. In order 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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