

# DURESIL EB

Epoxy modified paint with hydrocarbon resins for anti-acid protection of concrete and steel surfaces



## WHERE TO USE

For the protection of sewage treatment plants, cisterns and concrete sewer pipes in contact with aggressive chemicals such as acids, alkalis, hydrocarbons, detergents and sewage.

### Some application examples

- Anti-acid protection of sewage treatment tanks.
- Anti-acid protection of sewer mains.
- Coating of recycling tanks for oils and hydrocarbons.
- Safety reserve tanks.
- Drain wells.
- Anti-corrosive coating of sandblasted steel surfaces.
- Protection of reinforced concrete and steel exposed to salt air.
- Protection of the outer face of concrete joists on bridges and viaducts.

## TECHNICAL CHARACTERISTICS

**Duresil EB** is a two-component epoxy modified paint based on hydrocarbon resins and special admixtures manufactured to a formula developed in the MAPEI Research Laboratories.

Once it hardens completely, **Duresil EB** is resistant to acids, alkalis, salts, oils, and hydrocarbons, as shown in Table 1. The hardened **Duresil EB** film is designed for contact with sewage and can be used for the protection of sewage treatment tanks and sewer mains.

**Duresil EB** is also resistant to frost and sunlight, and creates a vapour barrier.

**Duresil EB** complies with the principles defined by EN 1504-9 standards ("*Products and systems for protecting and repairing concrete structures: definitions, requirements, quality control and conformity assessment. General principles for the use of products and systems*") and the requirements of EN 1504-2 coating (C) according to principles PI, MC, RC and IR ("*Concrete surface protection systems*").

## RECOMMENDATIONS

- Do not use **Duresil EB** on damp surfaces.
- Do not dilute **Duresil EB** with water. For spray applications, nitrosolvent or white spirits may be used as needed.
- Do not use **Duresil EB** when rain threatens.
- Do not use **Duresil EB** at temperatures below +5°C.
- Do not use **Duresil EB** on friable, damp or dusty substrates.
- Do not use **Duresil EB** on substrates subject to rising damp (consult MAPEI's Technical Services Department).
- Do not use for surfaces in contact with drinking water (use **Mapecoat DW 25**).

## APPLICATION PROCEDURE

### Preparation of the substrate

Substrates must be thoroughly clean, solid, and dry. Completely remove loose materials, dust, traces of formwork, release agents, paints and varnishes by sandblasting.

Fill any cracks and repair degraded sections with the products from the **Mapegrout** line.

Seal and level any irregularities in the substrate with **Mapefinish**, fine finishing mortar.

**Duresil EB** should be applied after the substrate and any repairs made with cement-based mortars have completely cured.

For steel surfaces always sandblast with silica sand graded up to SA 2<sup>1</sup>/<sub>2</sub> or clean mechanically (ST3).

## Preparation of the product

**Duresil EB**'s two components must be mixed together. Pour component B (hardener) into component A (resin) and mix at low speed with a mechanical stirrer until completely homogenised.

Avoid using partial quantities of material from the package in order to prevent measuring errors that could interfere with the complete hardening of **Duresil EB**.

## Application of the product

**Duresil EB** can be applied using conventional techniques, brush, roller or spray, in at least two coats. Wait from 6 to 24 hours between coats, depending on ambient conditions.

If the viscosity must be lowered to facilitate spray applications, dilute **Duresil EB** with 5-10% of nitrosolvent or white spirit.

If **Duresil EB** is used to protect the outer face of concrete joists on bridges and viaducts, the product must be applied at a rate of at least 2 kg/m<sup>2</sup> and distributed in several layers on the surface using traditional techniques or with a squeegee.

Immediately after applying **Duresil EB**, the surface must be sprinkled with dry sand with a suitable grain size to help the next layer form a better grip.

## Maintenance

Surfaces treated with **Duresil EB** can be cleaned with water and detergent.

## CLEANING

Clean brushes, rollers and spraying equipment (airless) before **Duresil EB** hardens using nitro solvent or xylol.

## COLORE

Black or grey.

## CONSUMPTION

0.4-0.45 kg/m<sup>2</sup> for a thickness of approximately 250 µm.

## PACKAGING

10 kg kits (5 kg component A + 5 kg component B).

## STORAGE

Store **Duresil EB** for 12 months in its original, closed packaging in a dry place, far from sources of heat and open flames, at a temperature of between +5°C and +30°C.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Duresil EB** component A is irritant for the skin and the eyes.

**Duresil EB** component B is corrosive and may cause burns. Both component A and component B may cause sensitization in contact with the skin of predisposed subjects. The product contains low molecular weight epoxy resins that may cause sensitisation if cross-contamination occurs with other epoxy compounds. We recommend to use protective gloves and goggles and to take the usual precautions for handling chemicals. If the product comes into contact with the eyes or skin, wash immediately with plenty of clean water and seek medical attention.

Furthermore, **Duresil EB** component A and B are dangerous for the aquatic life, do not dispose of it in the environment. When the material reacts it generates a high amount of heat. We recommend applying the product as soon as possible after mixing components A and B and to never leave the container unattended until it is completely empty.

For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)			
PRODUCT IDENTITY			
	Component A	Component B	
Consistency:	fluid paste	fluid paste	
Density (g/cm <sup>3</sup> ):	1.75	1.4	
Brookfield viscosity (mPa·s):	15,000 (N° 5 needle - 10 revs)	3,500 (N° 4 needle - 20 revs)	
Dry solids content (%):	100	100	
APPLICATION DATA (at +23°C - 50% R.H.)			
Mixing ratio:	component A : component B = 1 : 1		
Consistency of mix:	fluid		
Colour of mix:	black or grey		
Density of mix (kg/m <sup>3</sup> ):	1,560		
Brookfield viscosity of mix (mPa·s):	3,600 (needle 6 - revs 20)		
Application temperature range:	from +5°C to +30°C		
Pot life (EN ISO 9514):	50 minutes		
Hardening time:	5-6 hours		
Waiting time between first and second layer:	6-24 hours		
Final hardening time:	7 days		
FINAL PERFORMANCE DATA			
Performance characteristic	Test method	Requirements according to EN 1504-2 coating (C) principles PI, MC, RC and IR	Performance of product
Permeability to CO <sub>2</sub> (m):	EN 1062-6 (sample preparation according to prEN 1062-11)	S <sub>D</sub> > 50 m	500
Permeability to water vapour (m):	EN ISO 7783-1	Class I S <sub>D</sub> < 5 m Class II 5 m ≤ S <sub>D</sub> ≤ 50 m Class III S <sub>D</sub> > 50 m	5 m ≤ S <sub>D</sub> ≤ 50 m Class II
Capillary absorption and permeability to water (kg/m <sup>2</sup> ·h <sup>0.5</sup> ):	EN 1062-3	W < 0.1	0.01
Resistance to thermal shock (MPa):	EN 13687-5	≥ 1	3.5
Resistance to severe chemical attack Class II: 28 days without pressure	EN 13529	Reduction in hardness less than 50% when measured using the Shore method according to EN ISO 868, 24 hours after removing the coating from immersion in the test liquid	No alteration. Opacification with a 10% acetic acid and 20% sulphuric acid solution
Direct tensile adherence test (MC 0.40 type substrate) according to EN 1766 (MPa):	EN 1542	For rigid systems with no traffic: ≥ 1.0	3.5 (after 7 days)
Reaction to fire:	EN 13501-1	Euroclass	E

**CHEMICAL RESISTANCE OF DURESIL EB AT +23°C**

CHEMICAL PRODUCTS	CONTACT	
	CONTINUOUS	INTERMITTENT
Water	+	+
Acetic Acid 10%	-	+
Hydrochloric Acid 10%	+	+
Lactic Acid 10%	-	+
Nitric Acid 10%	-	+
Nitric Acid 50%	-	-
Oleic Acid 10%	-	+
Caustic Soda 30%	+	+
Sodium Hypochlorite (64 g/l of active chlorine)	+	+
Sulphuric Acid 50%	-	+
Diesel oil	-	+
Ethyl Alcohol	-	-
Xylene	-	-
Toluene	-	-
+ Excellent resistance – Poor resistance		

## WARNING

*Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.*

**Please refer to the current version of the Technical Data Sheet, available from our website [www.mapei.com](http://www.mapei.com)**

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