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JUB Group

Colours complete your home

TECHNICAL SHEET 07.02-eng
CONCRETE PAINTS

EPOKSIL

Two-component epoxy concrete paint

1. Description, Application

EPOKSIL is a **two-component dispersion paint intended for decorative protection of exposed interior floor and wall surfaces**. It is made on the basis of epoxy and polyamine resins. **It is used primarily for decorative protection of:**

- **More exposed floor surfaces bound by cement**: cement overlays and coverings, polished terrazzo, and floors made of raw concrete (if loads do not yet require installation of special highly load-bearing industrial floorings resistant to wear and tear but nonetheless driving with hand carts and forklifts has to be enabled across the painted surfaces), - such premises include: garages, small-trade plants and other workshops, larger boiler rooms, laboratories, and warehouses,

- **Intercepting containers and pools under tanks containing fuel and other oils** as well as in storage of other aggressive liquids,

- **Wall and ceiling surfaces of tunnels, underground passages** and other underground structures, and

- **Heavily exposed interior wall surfaces of schools**, in the feedingstuffs industry, laboratories, workshops, laundries, and warehouses.

The coat has an **exceptional CO2 diffusion-resistance number and it is distinguished by high resistance to wear and tear** (it is approximately ten times higher than in case of the strongest water-based acrylic paints). **Painted surfaces are resistant to effects of different aggressive liquid substances for a shorter of longer period of time** – see the table below, and they are damaged by alcohol (96 %), ethyl acetate, xylene, and brake oil if they are in contact with them for less than a day.

Medium	Resistance of paint film to effects of the medium at T = +20 °C (DIN 53168)		
	1 day	7 days	30 days
Acetic acid, 3 %	+	+	+
Lactic acid, 5 %	+	+	-
Tartaric acid, 5%	+	+	+
Citric acid, 3 %	+	+	+
Hydrochloric acid, 10 %	+	-	-
Sulphuric acid, 40 %	+	-	-
Sodium lye, 20 %	+	+	+
Sodium chloride, 20 %	+	+	+
Gasoline	+	+	+
Petroleum	+	+	+

Diesel oil	+	+	+
Fuel oil	+	+	+
Vegetable oil	+	+	+
White spirit	+	+	+

+ resistant, - not resistant

2. Packaging and Colour Shades

Plastic containers holding 6 liters:
· Paints 2, 3, 7, 8, and 10 under the CONCRETE PAINTS colour chart

3. Technical Data

Density (kg/dm^3)			~1.50 (component A) ~1.05 (component B)
Content of vaporous organic substances (VOC) (g/l)			<131 The EU VOC requirement – category A/j (from 1 January 2010): <140
Dry to recoat T = +20 °C, relative air humidity = 65 % (hours)		Suitable for further treatment	See instruction for paint application!
		Protection against flushing with water is still necessary	~24
		Foot traffic of painted surfaces is achieved	~24
Characteristics of a dry paint film	Suitable strength	Ready for average loads	~5 days after painting
		Ready for maximum mechanical loads	~10 days after painting
	Vapour permeability EN ISO 7783-2	μ coefficient (-)	<22000
		Sd value (d = 100 μm) (m)	<2.20 class III (low water-vapour permeability)
	Resistance to wet scrubbing EN 13300		Resistant, class 1
	CO2 diffusion-resistance number EN 1062-6	μ_{CO2} coefficient (-)	<1700000
		SdCO2 value (d = 100 mm (m)	170
	Water absorption w24 EN 1062-3 ($kg/m^2h^{0,5}$)		<0.03 class III (low water absorption)
	Adhesion to concrete EN 1542 (MPa)	Before ageing	>2.0
		After ageing EN 13687-3	>3.0
	Slip resistance – friction coefficient - EN 13552, method A	In dry	0.70 1.00 (with sand coat)
		In wet	0.70 0.98 (with sand coat)

Classification under SIST EN 13813: **SR – B1.5**

4. Surface Preparation

Surface should be solid, dry, and clean - without any badly-adhered particles, dust, remains of panelling oils, fat, or other dirt. Drying time of new concrete surfaces in normal conditions (T = +20 ºC, relative air humidity = 65 %) is at least 1 month and of new cement or lime-cement renders at least 7 to 10 days for each centimetre of their thickness. In case of paint renovation, thoroughly remove all old badly-adhered particles as well as paint coats, paints, precoats and other decorative coats, all of which get easily and quickly soaked in water. Washing with a jet of hot water or steam is strongly recommended mainly for very dirty surfaces, all new concrete surfaces and surfaces infected with wall algae and mould. Disinfect such surfaces after washing. Application to well-adhered old dispersion coats is possible.

Only more than 1 month old concrete floorings are suitable for painting if their strength exceeds 1.5 MPa, if their humidity does not exceed 4 % and if they are suitably insulated against soil damp and water. Prior to painting, suitably roughen very smoothly polished surfaces of concrete and cement coatings as well as polished terazzo surfaces by sandblasting. Thus, a layer of cement milk, which extracts and hardens on the coat surface, is also removed.

Application of a primer is not necessary.

5. Preparation of Paint

Paint is prepared by blending the well mixed components A and B. When preparing smaller quantities, take into consideration that components A and B are mixed at a volume ratio of 2 : 1 or at mass balance of 3 : 1. Mix the obtained compound well, so that it becomes fully homogenous. For the first application it can be thinned with water up to 10 %, but thinning for the second application should not exceed 5 %.

Quantity of paint, which is prepared for an application, should suffice only for a single coating of a finished floor or wall surface or, even better, of all surfaces, which are painted with the same paint. Take into consideration that prepared paint can be used at temperature of +10 ºC for 2 hours at the most, at temperature of +20 ºC for 1.5 hour at the most, and at temperature of +30 ºC for 1 hour at the most. Thus, prepare as much paint as you can apply within the stated time-limits. Apply only paint of the same production batch onto a finished surface. If paint of different production batches is used to cover such a surface, the paint should be suitably equalised.

Any “repairs” of the paint during painting (thinning, and similar) are not allowed. Quantities of paint needed to cover individual surfaces are calculated from panel surfaces and consumption rate data. In specific cases, consumption is determined by test painting.

6. Paint Application

Paint is applied in two (exceptionally three) coats using a long-bristle fur or textile paint roller (length of hairs or threads is 18 to 20 mm; the following can be used: natural and artificial fur or textile linings made of different synthetic threads – polyamide, dralon, vestan, nylon, perlon or polyester), a painting brush suitable for application of dispersion wall paints or it can be sprayed.

When applying the paint with a roller, use a suitable bucket grid. The second or the third application can be applied only onto a completely dry previous coat – in normal conditions (T = +20 ºC, relative air humidity = 65 %) it is usually after at least 12 hours and not more than 48 hours after the previous coat has been applied. In case of lower temperatures and high relative air humidity drying time can be extended, and in case of higher temperatures and lower relative air humidity it can reduced, e.g.: at T = +10ºC and relative air humidity 65 % to at least 24 hours and not more than 48 hours, at T = +30 ºC and relative air humidity 65 % to at least 8 hours and not more than 48 hours.

Paint can be sprayed onto a surface using traditional high pressure and modern low pressure spray guns of different types (with “external” or “internal mixing of air”), as well as airless aggregates of a variety of manufactures. As regards to the choice of diameter of spraying nozzles and service pressure, follow producer's instructions. An individual wall surface is painted without interruptions from one end to the other. Without prejudice to the before stated, always treat surfaces inaccessible for a standard long-bristle paint roller or a spray gun (corners, gutters, narrow reveal surfaces, and similar) first using suitable brushes or smaller paint rollers adjusted to existing conditions.

Higher resistance to slip or higher friction coefficient on painted surfaces can be achieved by sanding the still fresh penultimate paint application with dry, fine quartz sand (suitable sand graininess: 0.1 to 0.4 mm; consumption:

~ 75 to 100 g/m^2). If paint is applied by a roller or a brush, sand can be blended into the paint, which should be stirred well several times during painting.

Painting is possible only in suitable microclimatic conditions: temperature of the air and the surface should not be lower than +8 ºC and not higher than +35 ºC and relative air humidity should not exceed 80 %. Surface temperature should

exceed the dew point temperature for at least 3ºC!

Approximate or average consumption for a two coat application (depends on absorption and coarseness of surface):
EPOKSIL 250 - 350 g/m^2

7. Tool Cleaning, Waste Management

Thoroughly clean all the tools with water immediately; dried stains cannot be removed.

Keep unused paint – components A and B - in a well sealed package for potential repairs. Waste liquid remains of components A and B and liquid remains of paint, which has been prepared for use, must not be emptied into drains, watercourses or environment and they must not be disposed together with domestic wastes. In accordance with waste management regulations, they are classified as hazardous - irritant waste with classification number 08 01 19*. It should be disposed only in an organized manner - by dumping it onto specially adjusted dumping areas, by physico-chemical treatment or by high temperature incineration. Search for an authorised waste collector to process the waste and packaging. Do not mix the waste with other waste substances. Classification number of uncleaned waste packaging is 15 01 10*.

8. Safety at Work

Both components of the EPOKSIL paint are classified among hazardous preparations (indication of danger: Xi – IRRITANT, component B also: N – DANGEROUS FOR THE ENVIRONMENT) – use them safely, follow also special instructions from the technical sheet in addition to general instructions and regulations on safety at construction work or works including painting and further instructions stated below.

Protection of the respiratory system: protection mask only during spraying. Protection of hands and body: work clothing, use of protective gloves made of nitrile or butyl rubber is recommended in case of prolonged exposure of hands. Protection of eyes: protective glasses or face shield during spraying.

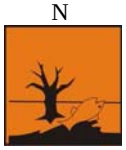
Occupational hygiene: wash your hands with soap and water immediately after each contact with the substance, do not eat or drink while working. Protect your hands with protective cream prior to painting. Store protective clothing separately.

FIRST AID:
Contact with skin: remove clothing, which has been wetted, and rinse your skin with water and soap. Contact with eyes: widen the eyelids immediately, rinse thoroughly with clean water (10 to 15 minutes), and seek medical help. Ingestion: rinse your mouth with water, do not enforce yourself to vomit, seek medical attention immediately, and show medical personnel the label or packaging.

EPOKSIL component A

Warning signs on packaging	Xi  IRRITANT! PRODUCT CONTAINS: 3-AMINO-METHYL-3,5,5-TRIMETHYLCYCLOHEXYLAMINE and M-XYLENEDYAMINE!
Special measures, warnings and observations required for safe work	R36/38 Irritating to eyes and skin. R41 Risk of serious damage to eyes. S2 Keep out of the reach of children. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28 After contact with skin, wash immediately with plenty of ... (to be specified by the manufacturer). S37/39 Wear suitable gloves and eye/face protection. S46 If swallowed, seek medical advice immediately and show this container or label.

EPOKSIL component B

Warning signs on packaging	N  HAZARDOUS TO NATURE! Xi  IRRITANT! THE PRODUCT CONTAINS: EPOXY RESIN (BISPHENOL-A-(EPICHLOROHYDRIN))! Follow the producer's instructions!
Special measures, and observations required for safe work	R36/38 Irritating to eyes and skin. R43 May cause sensitisation by skin contact. R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S2 Keep out of the reach of children. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28 After contact with skin, wash immediately with plenty of water. S37/39 Wear suitable gloves and eye/face protection. S46 If swallowed, seek medical advice immediately and show this container or label. S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

9. Maintenance and Restoration of Painted Surfaces

Painted façade surfaces do not require any special maintenance. The non-adhering dust and other non-adhering filth can be swept, vacuumed or washed away by a jet of water. Adhering dust and more obstinate stains can be removed by light rubbing with a soft brush soaked into a solution of usual universal household preparations and washed away by clean water.

Restore paint on surfaces, which cannot be cleaned of filth and stains in the above described manner. Restoration painting should include a new two-layer paint application as described in the chapter entitled “Paint application”.

10. Storage, Transportation Conditions and Durability

Warning signs on transport cardboard	

Details concerning transport conditions are stated in the safety sheet.

Storage and transportation in a closed packaging at temperature +5°C to +25°C, protected from the direct sunlight, out

of reach of children, away from food, strong acids, alkalies and oxidising agents. MUST NOT FREEZE.

Durability when stored in originally sealed and undamaged packaging: at least 12 months.

11. Quality Control

The product's quality characteristics are determined with the internal manufacturing specifications as well as with the Slovenian, European and other standards. The declared or set quality level is ensured by the ISO 9001 system for total quality management and control, which has been implemented at JUB for many years, which encompasses daily quality checks in our own labs and occasionally also at the Construction Institute in Ljubljana, at Forschungsinstitut für Pigmente und Lacke in Stuttgart, Germany as well as at other independent institutions at home and abroad. During the manufacturing process, we strictly comply with the Slovenian and European standards for protection of the environment and for ensuring security and health at work, which is confirmed by the ISO 14001 and OHSAS 18001 certificates.

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EN 13813 SR – B 1,5
INTERIOR PROTECTIVE COAT

Fire response:	NPD
Release of corrosive substances:	SR
Water permeability:	NPD
Abrasion resistance:	NPD
Adhesion:	B 1,5
Resistance to blows:	NPD
Sound insulation:	NPD
Sound absorption:	NPD
Thermal protection:	NPD
Chemical resistance:	NPD

NPD: No Performance Determined

12. Other Information

Technical instructions in this brochure are given based on our experiences and are given as a guideline for achieving optimal results. We cannot take any responsibility for the damage, caused by incorrect selection of a product, incorrect use or unprofessional work.

A paint may differ from the imprint in the colour chart or from the certified sample, and the total paint difference ΔE2000 for paints under the JUB PAINTS AND RENDERS colour chart - it is defined in accordance with ISO 7724/1-3 and mathematical model CIE DE2000 – amounts to maximum 1.5. If you wish to check the paint shade, the correctly dried paint application on a test surface and a standard of the concerned paint, which is stored in the TRC JUB d.o.o., are applicable. The best possible approximation for available JUB's bases and tinting pastes is a paint made in accordance with other colour charts, therefore total paint discrepancy from the desired paint may also be greater than the above stated guaranteed values. Difference in paint shade, which is a result of inadequate working conditions, of paint preparation, which does not follow instructions from this technical sheet, of non-compliance with equalisation rules, of application of the paint onto inadequately prepared surface, which is too absorbing or not absorbing enough, too rough or not rough enough, and onto a wet or not dry enough surface, cannot be subject of complaint.

This technical sheet supplements and replaces all preceding editions. We reserve the right to change and supplement data in the future.

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