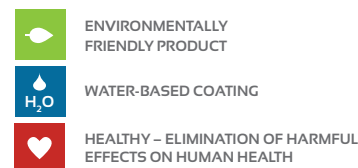


# Vulmproepox CS



## Product description:

**Vulmproepox CS** is a two-component water-based coating consisting of component A (aqueous dispersion, epoxy resin containing additives, pigments and fillers) and component B (polyamine hardener).

## Use:

It is used for coating of concrete surfaces at least 7 days old with a maximum moisture content of 35%, and for uninsulated surfaces. Coatings are very tough, but also hard and resistant to abrasion. They are resistant to water, chemicals and detergent solutions. Used for concrete structures and cement screeds and epoxy mortars.

## Benefits:

- easy maintenance and application
- good covering, resilient and hard surface
- good chemical and mechanical resistance
- good anti-skid properties
- resists penetration of liquids
- adhesive even to a slightly greasy surface
- possibility to achieve a greater thickness in one coating
- very low VOC and emissions
- almost odourless

## Test data:

Conformity Certificate	1301-CPD-0199
TSÚS 151/2006	STN EN 1062-3 (67 2020)
	STN EN 1062-6 (67 2020)
	STN EN 1062-11 (67 2020), art. 4.2
	STN EN 1062-11 (67 2020), art. 4.1
	STN EN ISO 7783-2 (67 3093)
	STN EN 13687-2 (73 2124)
	STN EN 13687-1 (73 2124)
	STN EN 1542 (73 2115)

## Product data:

colour:	RAL according to customer's choice
appearance:	matte, semi-gloss
shelf life:	12 months in original packaging in dry conditions at the temperature 10 – 35 °C

## Physical data:

binder content:	15 %
solids content:	70 %
water content:	15 %
flow:	15,9 cm

hardness:	after 24 hours	60 Shore D
	3 days	70 Shore D
	7 days	78 Shore D
	28 days	82 Shore D
	at a relative air humidity of 65 % and temperature of 20 °C	
abrasion resistance:	156 md/1000 cycles	
handling time:	45 minutes	
density:		
component A:	2,37 g/ml	
component B:	1,08 g/ml	
component A + B:	2,07 g/ml	

#### Processing temperature:

minimum temperature of the substrate:	5 °C
maximum temperature of the substrate:	30 °C
ideal temperature for processing:	20 °C
maximum relative air humidity:	85 %

#### Theoretical capacity:

##### Coating

4 m<sup>2</sup>/kg at a thickness of about 250 µm of dry film in 2 – 3 layers (0,25 – 0,3 kg/m<sup>2</sup> per layer depending on the grading of the substrate)

##### Self-levelling

1,1 – 1,6 kg/m<sup>2</sup> for self-levelling by discharge at a thickness of 1 mm (1,15 kg/m<sup>2</sup> binder + 0,45 kg/m<sup>2</sup> quartz sand)

#### Application methods:

roller, brush, spray, self-levelling by discharge

#### Instructions for use:

##### Impregnation:

Impregnate a dry or wet surface by **Vulmpropox**; the mixture of components A and B are in the ratio 10 : 1 (by weight – 1 kg of component A and 0.1 kg of component B). Mixing of the reactive components takes 2 – 3 minutes, but ends after achieving a homogeneous mixture. Viscosity may be adjusted by the addition of water (15 – 50%). The prepared material is applied by a brush or roller. After 2 – 5 hours, we can apply a second coat.

##### Coating application (roller, brush, spray):

The mixture of components A and B is in a ratio of 10 : 2 (by weight – 1 kg of component A and 0.2 kg of component B). Mixing of the reactive components takes 2 – 3 minutes, but ends after achieving a homogeneous mixture. Viscosity may be adjusted by the addition of water (10 - 15 %). The coating is applied in two layers.

##### Self-levelling application (by discharge):

Levelling material is prepared by mixing the components A and B in a ratio of 10 : 2 (by weight – 1 kg of component A and 0.2 kg of component B) with silica sand of thickness from 0.1 to 0.3 mm (as necessary – max. 50%) and by addition of water (15 – 25 %). Thereby prepared material is applied onto the substrate to the desired thickness (1.5 to 3 mm). The discharged material is ruled off by a smoothing trowel or wide trowel and deaerated by a vent roller.

#### Substrate:

The substrate must be sufficiently coherent and supporting. Surface must be flat, solid, free of dirt and loose particles. It may contain max. of 35% humidity, which should be measured by a hygrometer. The coating can be applied on slightly oily surfaces. Surface must be dusted and without rough particles, preferably cleaned by pressurized water. Degreasing is not necessary.

**Time data for application:**

processability of the mixed material:	approx. 45 minutes
dry to touch and re-coating interval:	approx. 2 hours
walkable:	24 hours
fully loadable:	65 hours
at a relative air humidity of 65 % and temperature of 20 °C	

**Cleaning of tools:**

Immediately after use, with water.

**Resistance:**

- withstands high mechanical loads
- resistant to chemicals, solvents, diluents, detergents and cleaning agents
- resistant to heat up to 140 °C (short-term), does not change the characteristics at 100 °C

**Safety:**

**Vulmproepox CS** – when handling, proceed in accordance with the general safety measures, follow the safety instructions on the packaging labels and on safety data sheets. Data, specifications, directions and recommendations given in this technical data sheet are based on experience gained in modeling of supposed ways of applications, or under specially defined conditions. Their accuracy, completeness or appropriateness under the actual conditions of any intended use is not guaranteed and must be determined by the user. The manufacturer and distributor are not responsible for the results achieved, loss, direct or consequential damages arising from failure to comply with the recommended use of the product, which go beyond the conditions herein.

**Tests:**

**Adhesion in pull-off test**

substrate used: concrete sample with dimensions 300 mm x 300 mm, thick. 100 mm from concrete type C (0,70) prepared and treated in accordance with STN EN 1766

samples conditioning before testing: 7 days at laboratory temperature

**Adhesion after the test of resistance to changes in temperature – Cyclic exposure to storm rain + freezing and thawing cycles with thawing salt**

- substrate used: concrete samples with dimensions 300 mm x 300 mm, thick. 100 mm, from one lot of concrete type MC (0,40) prepared and treated in accordance with STN EN 1766
- sealing of unpainted surfaces of samples: 2x two-component epoxy varnish EPONAL manufacturer: Chemolak, Smolenice
- samples conditioning before testing: 24 days at laboratory temperature
- test of resistance to temperature changes according to STN EN 13687-1 and STN EN 13687-2 was performed on the same samples, beginning with a storm rain test

**evaluation of coatings after testing resistance to temperature changes:**

**Evaluated immediately after exposure:**

- degree of blistering by a method according to STN EN ISO 4628-2
- degree of cracking by a method according to STN EN ISO 4628-4
- degree of peeling by a method according to STN EN ISO 4628-5

**Evaluated 7 days after the end of exposure:**

- adhesion of coatings in pull-off test by a method according to STN EN 1542

**Adhesion after ageing for 7 days at 70 °C**

- substrate used: concrete samples with dimensions 300 mm x 300 mm, thick. 100 mm, from one lot of concrete type MC (0,40) prepared and treated in accordance with STN EN 1766
- samples conditioning before testing: 24 days at laboratory temperature

**Evaluation of coatings after the exposure:**

**Evaluated immediately after exposure:**

- degree of blistering by a method according to STN EN ISO 4628-2
- degree of cracking by a method according to STN EN ISO 4628-4
- degree of peeling by a method according to STN EN ISO 4628-5

**Evaluated 24 hours after the end of exposure:**

- adhesion of coatings in pull-off test by a method according to STN EN 1542

**Behaviour after artificial ageing**

- substrate used: fibre-cement board with dimensions: 300 mm x 150 mm
- samples conditioning before testing: 24 days at laboratory temperature

**Exposure conditions:**

- irradiation of the sample surface by the UV lamps at a temperature of +60 °C (type of lamps: UVA 340);
- condensation of moisture on the surface of the samples at a temperature of + 50 °C; alternating irradiation by UV radiation and condensation on the surface at 4 hour intervals

**Total length of exposure: 2000 h**

**Evaluation of coatings after the exposure**

**Evaluated immediately after exposure:**

- degree of blistering by a method according to STN EN ISO 4628-2
- degree of cracking by a method according to STN EN ISO 4628-4
- degree of peeling by a method according to STN EN ISO 4628-5

**Information on measurement uncertainty:**

They are specified in tables of measured values in the form of the extended measurement uncertainty. (Measurement uncertainties are based on the internal procedures from 1996).

**Results of measurement:**

**Capillary absorption and water permeability**

Test area: 194,54 cm<sup>2</sup>

Sample no. [ μm ]	Coat thickness	Weight gain of the sample [ g ]					Speed coefficient of water permeability in a liquid phase [ kg/(m <sup>2</sup> .h <sup>0,5</sup> ) ]
		after 1 h	after 2 h	after 3 h	after 6 h	after 24 h	
1	905	0,5	0,5	0,5	0,5	0,5	0
2	880	0,4	0,5	0,5	0,5	0,5	0,0007
3	895	0,3	0,3	0,3	0,3	0,3	0
Arithmetic mean	893	-	-	-	-	-	0,0002
Measurement uncertainty	14,5	-	-	-	-	-	0,006

Note: Speed coefficient of water permeability in the liquid phase is a directive of the linear part of the graph of weight gain in kg/m<sup>2</sup> as a function of the square root of time.