DRINKING WATER TANKS AND RESERVOIRS

Vulmsidizol DW

ENVIRONMENTALLY FRIENDLY PRODUCT

WATER-BASED COATING

HEALTHY – ELIMINATION OF HARMFUL EFFECTS ON HUMAN HEALTH

Product description:

Vulmsidizol DW is a two-component water-based composition intended for the production of waterproof insulation system, developed on the basis of hydraulic binders, modifying additives and fillers. It fills and seals pores and cracks with thickness of up to 0.3 mm, and creates a perfect protection against moisture, water and carbon dioxide. It is resistant to UV radiation. The product is particularly suitable for coating of concrete tanks of drinking water. After application, the coating has very low gas permeability (K = 0.38 FPM); it is resistant to heavy mechanical stress and the surface has non-skid properties. Insulating coatings withstand pressure of up to 1.0 MPa.

Use:

Vulmsidizol DW is particularly suitable for use in contact with drinking water, namely the concrete tank of drinking water. It is designed for all concrete surfaces and surfaces exposed to severe weather conditions such as cement and lime plasters, concrete, fibre-cement boards and chlorinated rubber coatings, which require solely disinfection by chlorination. It has excellent covering and insulating properties.

Characteristics / Benefits:

- suitable for contact with drinking water
- high stability of the colour and stability to dechalking
- high resistance to water and chemicals
- possible overcoatability of old chlorinated rubber coatings
- easy cleaning and disinfection
- prolonged periods of treatment
- resistant to chlorinated water and the normal cleaners for swimming pools
- high water vapour permeability
- resistant to permanent exposure to water up to a temperature of 32 °C
- high dimensional stability

Test data:

Conformity Certificate	1301-CPD-0199 EN 1504-2:2004
TSÚS 151/2006	STN EN 1062-6 (67 2020)
	STN 67 3012
	STN 67 3016
	STN ISO 1515 (67 3031)
	STN 73 2577
	STN 73 2578
	STN 73 2579
	STN 73 2582
	STN 77 0332
	STN 74 4507:1981

P 50 1709 Determination of anti-slip properties of floor surfaces

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Product data:

colour:	RAL according to customer's choice
appearance:	matte, semi-gloss
shelf life:	12 months in original packaging in dry conditions at a temperature 1 – 35 °C, individual components separately Protect from frost
limit VOC:	according to Ministry of Environment Decree no.127/2011 Coll.,: 40 g/l Measured value: 3,22 g/l

Physical data:

solids content:	52 %
viscosity:	2,5 dPa.s
adhesion to the substrate:	1,62 MPa
after freez. cycles:	1,51 MPa
abrasion resistance:	over 60 md/1000 cycles
handling time:	6 – 8 hours after mixing with component B
component B (dry):	bulk weight 1400 kg/m^3
density:	
component A:	1,35 g/ml
component A + B:	1,50 g/ml

Theoretical capacity:

3,3 – 6,7 m^2/kg one layer, depending on the grading of the substrate

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 %

Substrate:

Surface must be firm, intact and coherent. Before application, it must be degreased and cleaned of dust and dirt by washing, preferably with high pressure fresh water. The area should be dry, or slightly moist (up to 12%). **Vulmsidizol DW** coating cannot seal active cracks and fissures thicker than 0.3 mm.

Old coatings:

Old, well-sealed chlorinated rubber coatings cleaned of oil, grease and pollution must be mechanically roughened, for example by steel brushes or abrasive sponges. Particular attention should be paid to verify adhesion of old coatings. Coatings with cracks and peeling surfaces must not be re-coated.

Instructions for use:

The impregnation agent (**Vulmpropen**) is applied on the clean substrate.

After 2 – 4 hours apply **Vulmsidizol DW** diluted with water. The procedure is as follows: Mix **Vulmsidizol DW** – component B with water in a ratio of 0.3 l of water : 0,0268 kg of component B and then add it to 1 kg of **Vulmsidizol DW** – component A.

After 4 – 6 hours it is possible to apply **Vulmsidizol DW** – component A (no more dry component) in a ratio of 1 kg : 0,2 l of water. The optimal method is to use the cross-layering. The surface is walkable after 6 hours after application and can withstand the full load after 24 hours. It is not recommended to form an overall thickness of more than 1 mm of the wet film.

Limitations:

At a higher concentration of chlorine and ozone in water (see DIN 19643-2) there is a risk of dechalking, blanching. If necessary, you can apply a refresh coating for optical reasons.

Time data for application:

processability of the mixed material:	approx. 6 – 8 hours
dry to touch and re-coating interval:	approx. 4 hours
walkable:	6 hours
fully loadable:	24 hours

at a relative air humidity of 50% and temperature of 23 °C

Cleaning of tools:

Immediately after use, with water.

Resistance:

- withstands high mechanical loads
- resistant to chemicals, solvents, detergents and cleaners
- resistant to UV radiation, penetration of liquids and gases

Safety:

Vulmsidizol DW – 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.

Category and sub-category of a regulated product:

A/c/VR: Exterior paints for the surface treatment of inorganic materials. The limit value for the highest content of volatile organic compounds: 40 g/l.

The highest content of volatile organic compounds in the state in which the regulated product is ready for use: 3.22 g/l.

The initial tests verified:

Property	Declared value or class	Number of test report and laboratory reference
Capillary absorption and water permeability	< 0,1 kg/m^2.h^{0,5}	Test Report no. 90-13-0010 dated 16.01.2013
CO_2 permeability (equivalent diffusion thickness) (m)	> 50	Test Report no. 90-13-0010 dated 16.01.2013 Test Report no. 90-13-0010 dated 16.01.2013
Water vapour permeability – equivalent diffusion thickness	class I < 5 m	Test Report no. 90-13-0010 dated 16.01.2013
Adhesion in pull-off tests	0,8 N/mm^2	Test Report no. 90-13-0010 dated 16.01.2013
Resistance to temperature changes – cyclic exposure to storm rain	After the test without blistering, cracking, or peeling, adhesion strength 0,8 N/mm^2	Test Report no. 90-13-0010 dated 16.01.2013
Resistance to temperature changes – ageing 7 days at 70 °C	After the test without blistering, cracking, or peeling, adhesion strength 0,8 N/mm^2	Test Report no. 90-13-0010 dated 16.01.2013

Chemical examination

Quantification of specific migration of substances (in 3 consecutive water macerates from 1 sample).
(ŠPP ŠZÚ Poprad : ŠPP-V6, ŠPP-ŚA2, ŠPP-ŚA4,ŠPP-ŚA1, ŠPP-N16; STN 75 7360)

Result:

Indicator	Unit	1st macerate	2nd macerate	3rd macerate
ChSk-Mn	mg.l^{-1}	84,0	11,2	5,8
absorbance (254 nm)	–	0,145	0,027	0,024
ph	–	8,70 (co. sam. 6,52)	7,78 (co. sam. 5,66)	7,85 (co. sam. 5,54)
Cd*	mg.l^{-1}	0,016.10^{-3} (LOQ)	–	–
Pb*	mg.l^{-1}	0,610.10^{-3}	–	–
Cr*	mg.l^{-1}	0,702.10^{-3}	–	–
As*	mg.l^{-1}	0,640.10^{-3}	–	–
Hg*	mg.l^{-1}	ND LOD:0,005	–	–

* macerate from a sample of the blue paint
LOQ – limit of quantification
ND – not determined
LOD – limit of detection

Sensory evaluation

	1st macerate	2nd macerate	3rd macerate
taste	3 (considerably bitter)	2 (bitter)	1 (slightly bitter)
smell	0	0	0
colour	0	0	0
turbidity	0	0	0
sediment	0	0	0

0 – there is no difference between the sample and blank test
1 – slight difference, difficult to define
2 – clear difference (must be defined)
3 – significant difference inducing repulsion

Acrylonitrile content mg.l^{-1} I. macerate: ND LOD: 0.02

Analytical methods used:

Determination of Cd, Pb, Cr, As by AAS method
Determination of Hg on the atomic absorption spectrophotometer AMA 254
Determination of absorbance according to STN 757360
Analysis of drinking water – methods according to STN 75 7111
Determination of acrylonitrile by gas chromatography – by GC / FID / HS technique

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