



VOLTAIKA

Coating "Cool roof" for passive cooling of buildings



Description

VOLTAIKA is a special single-component coating, specifically **designed to reduce electricity consumption resulting from the use of air conditioners in the summer. It is also ideal for increasing the efficiency of photovoltaic systems.**

VOLTAIKA can also be applied on plasters, concrete & fiber cement, wood surfaces as well as roof tiles.

VOLTAIKA is particularly suitable for the protection of polymer bitumen membranes self-protected with sand, mineral slates or polypropylene mat.

The special copolymers used make VOLTAIKA resistant to aging, UV rays and chemical & physical aggressions.

The particular white reflective finish, besides extending the life of the waterproofing system, reduces the temperatures both on the external surface as well as in the interior of the building, with a consistent reduction of energy consumption.

Furthermore the very high emissivity benefits the dissipation of build up heat during the night time.

Used inside buildings, it can help reduce the formation of mould, making the temperature uniform in the wall-ceiling corner, where mold production is normally concentrated.

Areas of usage

VOLTAIKA is an ideal coating for reducing summer energy consumption, thanks to the passive cooling of the building's internal environments. It also increases the efficiency of the photovoltaic panels and gives excellent results in protecting bitumen-polymer membranes from atmospheric agents and solar radiation.

Application and consumption

Approximate consumption

The product is ready for use, eventually dilute with clean water (max. 10%).

To obtain the best results, the surface to be treated must be clean, exempt of oils, grease and dry.

Warning:

like all water-based paints, VOLTAIKA cannot be applied in the presence of ponding water.

Apply VOLTAIKA paint only on roofs with sufficient slope that allows for rainwater to runoff within 24 hours (UNI 8627).

Do not apply the product below +10°C and in adverse weather conditions (rain, wind, etc.).

The product can be applied by brush, roller and spray.

To obtain an ideal and homogenous application it is suggested to use between 200-400 g/m² per coat.

It is suggested to apply two coats to obtain a good result.

The second coat must be applied after the first has completely dried (approx. 3-6 h).

It is recommended to avoid spreading the product on new bituminous surfaces, just applied, because they could still release some hydrocarbons and cause problems of adhesion of the film on the sheath.

We therefore recommend waiting some months after the installation of the new membrane, this will allow complete deletion of hydrocarbon substances outcropping; even in this case before painting, wash with water and brush the surface for remove residual dust. Before applying the material, make sure to mix the product to obtain a homogenous solution.

The suggested consumption rate is purely an indication and refers to smooth and partially absorbing surfaces; slight differences may occur depending on the type of surface and the applicator.

We suggest that to verify the exact consumption a preliminary trial application be carried out.

N° of suggested coats

Minimum 2.

Method of application

VOLTAIKA can be applied by brush, roller, spray and airless.

Dilution (by volume)

The product is ready for use, therefore no dilution is necessary; if dilution is required this should be done with clean water and not above 5-10%.

Packaging

14 kg pails.

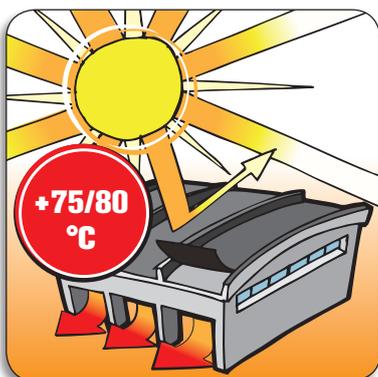
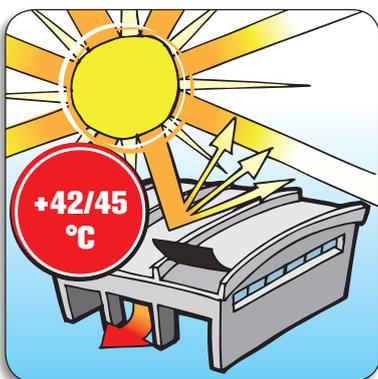
Storage

Store the product in its original pail, sealed and at temperatures between +5°C and +35°C, protected from direct sun light and frost.

- temperatures
- + reflected light
- = **increases efficiency of photovoltaic systems**



Roof with black membrane


 Roof with membrane + **VOLTAIKA**

LEGEND

Reflected heat

Transmitted heat

Advantages

Temperatures

Reduces considerably the temperature.

The temperature of a black membrane during summer can reach +75-80°C.

The temperature of a black membrane coated with VOLTAIKA during the same period is of +45°C.

The inside temperature can diminish by up to 5°C, helping to reduce costs of air-conditioning.

A roof protected by VOLTAIKA is a “cool roof”, in other words with the capacity to reflect back the sun rays and with a high value of infrared emissivity, therefore the roof has the capability to return to the atmosphere, by means of reflection, most of the sun's heat.

Emissivity and reflection of light

VOLTAIKA refracts and increases the diffusion of direct light, **increasing the yield of photovoltaic systems.**

The excellent emissivity of VOLTAIKA benefits the dissipation of accumulated heat during the night.

Technical data

ID MAGS09

Product identification data / technical characteristics	Norm	Average value	Tolerance
Appearance		Opaque film	
Colour		Extra reflective white	
Viscosity		6500	± 1500
Specific weight	ISO 2811-1	1,05	± 0,05
Residual dry matter	ISO 3251	55%	± 2 pp
pH	ISO 2431	8,0	± 0,3
Flash point		Not flammable	
Physical - mechanical characteristics	Norm	Average value	Tolerance
Cold flexibility		-	
Operating temperature		da -5°C a +100°C	
Tensile strength		-	
Elongation at break		-	
Artificial exposure to atmospheric agents (QUV Test)		After 2000 hours no swelling or cracking. Slight variation in color that does not change its characteristics.	
Application data	Average value		
Shelf life in original packaging	12 months		
Storage conditions	Temperature higher than 0°C in unopened and closed package		
Final thickness of the layer	approx. 250 g/m ²		
Application type	brush, roller and spray (airless)		
Minimum layers	2, better if crossed		
Application stages	PRIMER	Dilute the product with max 15% of drinking water	Consumption: 200-250 g/m ² depending on the support
	FIRST COAT	Ready to use	Consumption: 0,5 kg/m²
	NEXT COATS	Ready to use	
Total full cycle consumption (including primer)	0,75 Kg/m ²		
Final dry product thickness	350-400 micron		
Air application temperature	min - max 10-35°C		
Surface application temperature	min - max 10-35°C		
Air humidity	max. 60%		
Surface humidity	max. 5%		
Minimum slope	min. 3%		
Waiting time touch dry	1 hour		
Waiting time second layer	3 hours (after completely dry)		
Waiting time complete crosslinking	3 days (+20°C - 50% U.R.)		

The product can only be walked on for maintenance and repairs. Protective paints for waterproofing membranes or cementitious structures may have cracking due to linear thermal expansion of the surfaces. It is therefore advisable to provide for their restoration by maintenance of the roof periodically according to the allocation of the structure, atmospheric pollution and degradation of the surface; typically every 2-4 years.

Final performance EN 1504-2	Norm	Limits of acceptability	Results
Adhesion to concrete by direct traction:	UNI EN 1542	For flexible systems no traffic: $\geq 0,8 \text{ N/mm}^2$	1,2 N/mm²
Permeability to water expressed as capillary absorption:	UNI EN 1062-3	$\leq 0,1$ ($\text{kg/m}^2 \cdot \text{h}^{0,5}$)	0,01 ($\text{kg/m}^2 \cdot \text{h}^{0,5}$)
Water vapor transmission:	UNI EN 7783-2	class I: $S_D < 5 \text{ m}$	0,78 m
Permeability to carbon dioxide (CO ₂):	UNI EN 1062-6 Method A	$\geq 50 \text{ m}$	> 50 m

Cool Roof values *

Technical characteristics	Norm	Average value
Reflectivity	ASTM E903-12	0,88
Emissivity	ASTM C1371-15	0,89
SRI (Solar Reflectance Index) Low / Medium / High wind speed	ASTM E1980-11	111 / 111 / 111

* Test report CERTIMAC

Regulatory requirements

CAM - Minimum Environmental Criteria *		
Type of roof	Slope	SRI
Low slope	$\leq 15\%$	76
High slope	$> 15\%$	29

* According to the national action plan on Green Public Procurement (PANGPP) 11/10/17 point 2.2.6

DM 26/06/2015 - National guidelines for the energy certification of buildings	
Type of roof	Reflectivity
Flat roof	0,65
High slope	0,30



Packaging

Pail size	Pails x pallet
14 kg	42

We reserve the rights to change or modify the nominal values without prior notice or advice. The information contained in this data sheet are based on our experience. We cannot take any responsibility for a possible incorrect use of the products. The customer has to choose under their own responsibility a product fit for the intended use.