PLASTIVO 250

PRODUCT DESCRIPTION

PLASTIVO 250 is a waterproof coating featuring high elasticity and versatility of use to waterproof surfaces subject to positive and negative hydrostatic pressure.

PRODUCT APPLICATION

Positive and negative hydrostatic pressure waterproofing of structures made of concrete, cement blocks or mixed masonry, previously levelled with suitable VOLTECO mortars, affected by moderate settlements and/or movements.
Particularly suitable for:

- Reinforced concrete foundation walls and floor slabs of garages, cellars, basements in general
- Slabs and structures exposed to contact with water
- Substrates in general, also lightened with expanded clay
- Tanks, canals, swimming pools and structures designed to contain water, including drinking water

ADVANTAGES

- High flexibility
- Suitable for contact with drinking water
- Suitable for contact with purifier water and domestic wastewater
- Protects concrete surfaces from CO_2 (Carbonation)
- Excellent workability and quick application
- Good water vapour permeability

• Adheres to different types of surfaces (concrete, brickwork, brick, gypsum board, plastic, metal, ceramic, polystyrene, wood)
• Protection against radon
• Reduced environmental impact thanks to the use of raw materials with low carbon footprint and obtained from recycling processes
• Reduced volatile organic compound (VOC) emissions
• The product helps earning points for LEED certification
• Resistant to U.V. radiation

PREPARATION AND APPLICATION

The preparation and installation data refer to normal environmental conditions (temperature +20°C; relative humidity 60%).

Preparing the surfaces

Verify the structure suitability for the hydrostatic loads; if intended to contain water, perform a preload test.

Remove any dirt, oil, paint and any material or deposit that could compromise adhesion of PLASTIVO by pressure blasting, sandblasting or bush-hammering lightly.

The surface that is to be treated must be solid and perfectly clean from cement laitance.

Repair the surface with suitable VOLTECO mortar if the surfaces are very uneven, have gravel nests or in the case of mixed masonry.

In the case of old or dusty surfaces, apply PROFIX 30 primer; for substrates partially saturated with water, use BI MORTAR ULTRA SEAL as a barrier against rising damp (see relevant technical data sheets).

Preparation of elements of discontinuity on reinforced concrete structures (positive hydrostatic pressure)

• CONSTRUCTION JOINTS The joints between the slab and the vertical wall must be connected with a 3×3 cm shell made with SPIDY 15 quick mortar (see relevant data sheet). Use BI FLEX System or GARVO for an elastic tape, even in the presence of the shell (see relevant data sheets)

• SPACERS Remove the spacers (form worker tensioning blades) on both sides of the wall and plaster with SPIDY 15 rapid-setting mortar

• PENETRATIONS Seal all penetrations (pipes, lighting points, etc.) by means of AKTI-VO 201 mastic (see relevant data sheet)

• STRUCTURAL JOINTS and CRACKS Structural joints must be sealed using BI FLEX System. Cracks should be treated with BI FLEX System or GARVO (see relevant data sheets)

Preparation of elements of discontinuity on reinforced concrete structures (negative hydrostatic pressure)

• WATER INFILTRATIONS Promptly seal water seepage with application of TAP 3/I-PLUG quick mortar (see relevant data sheets)

• CONSTRUCTION JOINTS Seal the construction joints by means of BI FLEX System (see relevant technical data sheet)

• PENETRATIONS Seal all penetrations (pipes, lighting points, etc.) by means of AKTI-VO 201 mastic (see relevant data sheet)

• JOINTS and CRACKS Seal any structural joints and cracks by means of BI FLEX System (see relevant data sheet)

Preparing the mixture

Stir the liquid component in its container, then pour it into a bucket.

Gradually add the powder while continuing to stir.

Use a whip-fitted drill with a low rpm and mix for approx. 3-5 minutes.

The mixture must be smooth and free of lumps.

Application

PLASTIVO 250 must be applied in two layers with a VOLTECO ROLLER, brush or trowel.

Apply the first layer of PLASTIVO 250 on the surface, approximately 1 mm thick (average consumption: 1.8÷2 kg/m^2), making sure the product penetrates well into the substrate, in order to obtain uniform coverage.

If the roller/brush tends to drag the product, do not add water, but dampen the substrate avoiding water stagnation.

The second layer, approximately 1 mm thick (average consumption: 1.7÷2 kg/m^2) must be applied after at least 6 hours.

In any case, it is recommended to only apply the second coat when the previous one is dry and hardened.

The average thickness of approx. 1 mm per layer must continue to be applied according to the previous layers in applications that require a thickness greater than the standard 2 mm.

Sprayed application

The product can also be applied with a pneumatic pump or plastering machine with levelling lance, taking care to apply a certain amount of pressure with a spatula until a compact surface is obtained (for further information contact Volteco's Technical Service).

FLEXONET or XNET reinforcement mesh

To improve elastic performance, in case of application in positive pressure (ex. crazing with dynamic behaviour, in roof top pools and structures that are potentially subject to cracking), it is advisable to place the FLEXONET or XNET (see the relative technical data sheets) mesh “fresh on fresh” on the 1st coat, pressing it down with a metal spatula until it is completely embedded.

The edges of adjacent sheets must overlap by 10 cm.

We recommend pre-cutting the reinforcement meshes in order to obtain complete coverage of the required surfaces, positioning the interruption at the intersection of different laying surfaces, at BI FLEX tapes and GARVO cover strips.

Curing

When waterproofing foundation walls, let it cure for at least 24 hours after application before backfilling.

When coating the waterproofing with any type of protective layer or finish (ceramic coating, protective screed, plaster, cement-based levelling compound, plastic drainage, etc.), let it cure at least 3 days after application.

When waterproofing structures intended to contain water, allow a curing phase of at least 7 days once the product is applied.

When used in contact with drinking water, wash the surfaces with running water before filling the container.

The curing times can be longer in the presence of a low temperature, high humidity or premature contact with water.

Finishing

Depending on the intended use, the product can be finished either by painting with CRYSTAL POOL or with BI MORTAR RASO SEAL cement-based coating (see method and stratigraphy in the relevant technical data sheets) or with ceramic.

Ceramics must be laid with a large grout gap and C2-type adhesive (preferably with an S1 and S2 deformation class).

Line grouting works must be carried out with CG2 class cement-based grouting mortars.

When applied indoors, it is recommended to coat the walls with the macroporous CALIBRO as an anti-condensation layer.

It is also possible to complete the finish with X-LIME (see relative data sheet).

References available at www.volteco.com

CONSUMPTION AND YIELD

3.5÷4 kg/m^2 depending on the roughness of the surface.

PACKAGING AND STORAGE

PLASTIVO 250 is supplied in 20.6 kg packages (14 kg in powder + 6.6 kg in liquid).

The product must be stored in a dry place without being exposed to frost and heat (maximum temperature: 40°C) or direct exposure to the sun before being applied.

WARNINGS - IMPORTANT NOTES

The product is not a vapour barrier.

Do not apply PLASTIVO 250 on water soaked surfaces (see application).

Do not apply PLASTIVO 250 on water-soaked surfaces; first seal with TAP 3/I-PLUG hydraulic mortar.

Do not add water to the mixture or alter the mixing ratio.

Do not apply the product if the temperature is higher than +30°C or lower than +5°C or if it is expected to drop below this temperature within 24 hours.

If more than 28 days have passed since the second coating, an additional layer must be applied to ensure the subsequent coating adheres well.

When installation is performed in closed and poorly ventilated environments, it is recommended to use forced ventilation during installation itself and throughout the curing process.

Significant condensation may occur in environments with poor ventilation or high humidity.

If waterproofing earth retaining walls, it is recommended to protect PLASTIVO 250 with a non-woven application of at least 300 g/m^2 in weight before backfilling.

Do not use PLASTIVO 250 for layers thicker than 1.5 mm.

Protect wet product from rain.

Finishing with solvent-based paints may degrade PLASTIVO 250, check its compatibility via preliminary tests.

PHYSICAL AND TECHNICAL SPECIFICATIONS

Specification	Values
Appearance	Grey powder - white latex
Workability time at +20°C	20’
Working temperature	-5°C to +50°C
Maximum aggregate size	0.7 mm
Specific weight	> 1.6 kg/l
Liquid/powder mixing ratio	47/100

Feature	Test method	Performance requirements UNI EN 1504-2	Declared performance (*)	Certified performance (**)
Bond strength	UNI EN 1542	≥ 0.8 MPa	≥ 0.8 MPa	1.08 MPa
Resistance to accelerated ageing	UNI EN 1062-11	No swelling	-	Fulfilled requisite
Capillary absorption	UNI EN 1062-3	≤ 0.1 kg*m^{-2}*h$^{-0.5}$	≤ 0.05 kg*m^{-2}*h$^{-0.5}$	0.01 kg*m^{-2}*h$^{-0.5}$
Water vapour permeability (equivalent thickness: Sd)	UNI EN 7783-2	Class 2 5 m < Sd ≤ 50 m	-	Sd 14.76 m
Permeability to CO_2 (equivalent thickness Sd)	UNI EN 1062-6	Sd > 50 m	-	Sd 113 m
Crack Bridging Ability	UNI EN 1062-7 (static method)	A2 > 0.25 mm A3 > 0.50 mm A4 > 1,25 mm A5 > 2.50 mm	-	Class A4 1.6 mm
Crack Bridging Ability (product + Flexonet	UNI EN 1062-7 (static method)	A2 > 0.25 mm A3 > 0.50 mm	-	Class A5 3.6 mm

Feature	Test method	Performance requirements UNI EN 1504-2	Declared performance (*)	Certified performance (**)
mesh)		A4 > 1,25 mm A5 > 2.50 mm		
Crack Bridging Ability (product + Xnet mesh)	UNI EN 1062-7 (static method)	A2 > 0.25 mm A3 > 0.50 mm A4 > 1,25 mm A5 > 2.50 mm	-	Class A5 2.8 mm
Thermal compatibility Part 1 (adhesion after 50 un/freezing cycles)	UNI EN 13687-1	≥ 0.8 MPa	-	1.12 MPa
Resistance to severe chemical attack	UNI EN 13529	-	-	Reduction in hardness (Shore A): < 2%
Reaction to fire	UNI EN 13501-1	Classification	-	Class F

Feature	Test method	Performance requirements	Declared performance (*)
Crack Bridging Ability (+23°C)	UNI EN 14891 Met. A.8.2	> 0.75 mm	> 1 mm
Crack Bridging Ability (-5°C)	UNI EN 14891 Met. A.8.3	> 0.75 mm	> 1 mm
Crack Bridging Ability (+23°C) (product + Flexonet mesh)	UNI EN 14891 Met. A.8.2	> 0.75 mm	> 2 mm
Crack Bridging Ability (-5°C) (product + Flexonet mesh)	UNI EN 14891 Met. A.8.3	> 0.75 mm	> 2 mm
Crack Bridging Ability (+23°C) (product + Xnet mesh)	UNI EN 14891 Met. A.8.2	> 0.75 mm	> 2 mm
Crack Bridging Ability (-5°C) (product + Xnet mesh)	UNI EN 14891 Met. A.8.3	> 0.75 mm	> 2 mm
Initial adhesion	UNI EN 14891 Met. A.6.2	> 0.5 N/mm^2	1 N/mm^2
Adhesion after immersion in water	UNI EN 14891 Met. A.6.3	> 0.5 N/mm^2	0.7 N/mm^2
Adhesion after heat application	UNI EN 14891 Met. A.6.5	> 0.5 N/mm^2	0.7 N/mm^2
Adhesion after un/freezing cycles	UNI EN 14891 Met. A.6.6	> 0.5 N/mm^2	0.7 N/mm^2
Tensile adhesion strength after contact with chlorinated water	UNI EN 14891 Met. A.6.7	> 0.5 N/mm^2	0.8 N/mm^2
Adhesion after immersion in alkaline water	UNI EN 14891 Met. A.6.9	> 0.5 N/mm^2	0.7 N/mm^2
Water impermeabiity	UNI EN 14891 Met. A.7	150 KPa	150 KPa

Feature	Certifying body	Test method	Certified performance (**)
Impermeability in negative pressure (concrete structure Water/Concrete: 0.7)	IMM SA (Switzerland)	UNI EN 12390-8	5 Bar: no passage
VOC content	Eurofins 392-2015-00130901	Directive 42/2004/EC ISO 11890-2 ASTM D 6886-12	1.5 g/l
Radon diffusion coefficient	CZECH TECHNICAL UNIVERSITY IN PRAGUE	ISO/TS 11665-13	1,6 E-11 m^2/s

Feature	Certification
Suitable for contact with drinking water (Italian Ministerial Decree	ELLETIPI Srl

Feature	Certification
174 of 06/04/2004: global transfer)	Report n° 28754/15
Suitable for use with water in domestic waste water purifiers	ELLETIPI Srl Report n° 14420/15
Tanks and water reserves waterproofing approval	SOCOTEC FRANCE S.A. Report (ETN) n° 240368080000031 (30/06/2029)

The quoted data are obtained in a laboratory at +20°C and 60% RH.

* Performance thresholds guaranteed by VOLTECO

** Performance values certified by accredited third parties

WATCH VIDEOS AND INSIGHTS

Safety Data Sheets | Declaration of performance | Specifications | Technical diagrams and DOPs | EPD Declaration | YouTube Video

SAFETY

Refer to the related Safety Data Sheet.

CE	VOLTECO S.p.a Via delle Industrie, 47 - 31050 Ponzano Veneto (I)

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DOP 0003
EN 1504-2:2005
1370-CPR-1299
PLASTIVO 250
Protection systems of the concrete surface.
Coating against the risks of penetration (PI), humidity control (MC) and increased resistivity (IR)

Reaction to fire: Class F
Water vapour permeability: Class I
Carbon dioxide permeability: Sd ≥ 50 m
Capillary absorption and permeability to water: < 0.1 $kg*m^{-2}*h^{-0,5}$
Adhesion: ≥ 0,8 N/mm^2
Thermal compatibility:
• Part 1: Un/freezing cycles: ≥ 0.8 N/mm^2
Crack bridging properties (method A): Class A4
Performance after exposure to the action of artificial atmospheric agents: Test passed
Methods of conditioning before testing (7 days at 70°C): NPD
Linear shrinkage: NPD
Coefficient of thermal expansion: NPD
Cross cut: NPD
Slip resistance: NPD
Antistatic behavior: NPD
Adhesion on wet concrete: NPD
Hazardous substances: See SDS

CE	VOLTECO S.p.a Via delle Industrie, 47 - 31050 Ponzano Veneto (I)

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DOP 0023
EN 14891:2012
PLASTIVO 250
Two-component liquid waterproofing product modified with polymer (CM 01P) for outdoor applications and in pools under ceramic tiles(applied with class C2 adhesive in compliance with EN 12004)

Initial tensile adhesion strenght: ≥ 0,5 N/mm^2
Tensile adhesion strength after water contact: ≥ 0,5 N/mm^2
Tensile adhesion strength after heat ageing: ≥ 0,5 N/mm^2
Tensile adhesion strength after freeze-thaw cycles: ≥ 0.5 N/mm^2
Tensile adhesion strength after contact with lime water: ≥ 0,5 N/mm^2
Tensile bond strength after immersion in lime water: ≥ 0.5 N/mm^2
Water impermeabiity: No penetration and ≤ 20 g weight gain
Crack bridging ability under standard conditions (23°C): ≥ 0,75 mm
Crack bridging ability at low temperatures (-5°C): ≥ 0.75 mm
Hazardous substances: See SDS

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