



# PLASTIVO 180



FLEXIBLE LIQUID SYSTEMS



## PRODUCT DESCRIPTION

PLASTIVO 180 is a two-component, thixotropic and flexible modified polymer waterproof coating with CORE CURING TECHNOLOGY based on highly reactive binders for effective curing even under low temperature conditions and partially damp surfaces.

## PRODUCT APPLICATION

For negative/positive hydrostatic pressure waterproofing of wall surfaces or concrete, affected by slight settlements and/or movements.

Particularly suitable for:

- Balconies
- Ledges, concrete gutters, flower boxes (set-up anti-root protection beforehand) and wells
- Tanks, canals, swimming pools and structures designed to contain water, including drinking water
- Reinforced concrete foundation walls of basements
- Slabs and structures exposed to contact with water
- Substrates in general, also lightened
- Roofs and screeds temporarily waterproof awaiting definitive works
- All indoor surfaces such as kitchens, bathrooms and showers even if made of gypsum board or fibre concrete
- Protection of concrete from CO<sub>2</sub> penetration, contact with sea water, de-icing salts, aggressive atmosphere, etc.
- Protection of reinforced concrete surfaces with inadequate concrete cover thickness

## ADVANTAGES

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- Fast curing allowing for short waiting times between the first and second coat and subsequent tiling, even under low temperature conditions (all in 24 hours)
- Effective curing on even partially moist substrates
- Suitable for contact with drinking water
- Anticarbonation protection with "barrier" function
- Resistant to negative hydrostatic pressure
- Reduced risks caused by after application with rain, fog, other
- Elastic up to -5 °C
- 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

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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.

If the surfaces are old or dusty, apply PROFIX 30 primer with a roller, a brush or by spray (see related technical data sheet).

For substrates that are not completely dry but adequately cured, the surface relative humidity must not exceed 5% (measured using a Storch type electric hygrometer).

If the substrate is partially soaked in water, with relative surface humidity between 5% and 10% (measured using a Storch type electric hygrometer), apply BI MORTAR ULTRA SEAL (see relevant technical data sheet).

### Preparation of elements of discontinuity on balconies and screeds in general

- **JOINTS and CRACKS** Any deformation joints (expansion and contraction/splitting), construction joints and cracks on the surface must be covered with GARVO joint cover strip (see relevant technical data sheet). Use BI FLEX System in case of structural joints; in case of insulation joints, fill all wall/floor corners with GARVO or AQUASCUD JOIN BT adhesive staff bead (see relevant technical data sheet).

At low-height situations use AQUASCUD JOIN BT or BI MASTIC adhesive mastic (see relevant technical data sheet)

- **DRAINS** Prepare the connections to the drains by using the relative DRAIN MANIFOLD

When constructing new drains, prepare the connection using GARVO QUADRO as the waterproof connection element.

- **GUTTER** In case of metal parapets, along the external perimeter, set up the AQUASCUD LINE draining gutter profile and relative special pieces (see relative data sheet) to finish and protect the tiled edge

### **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-SEAL 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-SEAL 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 180 must be applied in two layers with a VOLTECO ROLLER, brush or trowel.

Apply the first layer of PLASTIVO 180 on the surface, approximately 1 mm thick (average consumption: 1.5÷1.7 kg/m<sup>2</sup>), 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: 1.5÷1.7 kg/m<sup>2</sup>) must be applied after at least 2 hours.

In the event of application on horizontal surface with spatula, it is recommended to apply the first coat with the specific 3.5 mm NOTCHED TROWEL or with NOTCHED SQUEEGEE acting to regulate thickness.

In that case the second coat is applied with the specific ROUNDED PLASTERING TROWEL used to saturate and smooth the serrated surface.

It is recommended to apply the second layer of PLASTIVO 180 only when the previous one is completely 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 16 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 16 hours after application.

With low temperatures till +5°C wait almost 24 hours.

When waterproofing structures intended to contain water, allow a curing phase of at least 3 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**

When applied indoors, it is recommended to coat the walls with the macroporous CALIBRO (see relative data sheet) as an anti-condensation layer.

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

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.



References available at [www.volteco.com](http://www.volteco.com)

## CONSUMPTION AND YIELD

3÷3.5 kg/m<sup>2</sup> depending on the roughness of the surface.

## PACKAGING AND STORAGE

PLASTIVO 180 is supplied in 20 kg packages (15 kg in powder + 5 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 180 on water-saturated substrates (see surface preparation).

Do not apply PLASTIVO 180 on water-soaked surfaces; first seal with TAP 3/I-PLUG hydraulic mortar.

Do not add water, cement or aggregates and do not alter the required mixing ratio in any way.

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 180 with a non-woven application of at least 300 g/m<sup>2</sup> in weight before backfilling.

Do not use PLASTIVO 180 for layers thicker than 1.5 mm.

Protect wet product from rain.

Finishing with solvent-based paints may degrade PLASTIVO 180, 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            | > 1.7 kg/l                |
| Liquid/powder mixing ratio | 33/100                    |

| Feature                                                   | Test method                   | Performance requirements UNI EN 1504-2                       | Declared performance (*)                    | Certified performance (**)                   |
|-----------------------------------------------------------|-------------------------------|--------------------------------------------------------------|---------------------------------------------|----------------------------------------------|
| Bond strength                                             | UNI EN 1542                   | ≥ 0.8 MPa                                                    | ≥ 0.8 MPa                                   | ≥ 0.89 MPa                                   |
| Resistance to accelerated ageing                          | UNI EN 1062-11                | No swelling                                                  | -                                           | Fulfilled requisite                          |
| Capillary absorption                                      | UNI EN 1062-3                 | ≤ 0.1 kg*m <sup>-2</sup> *h <sup>-0.5</sup>                  | ≤ 0.1 kg*m <sup>-2</sup> *h <sup>-0.5</sup> | ≤ 0.01 kg*m <sup>-2</sup> *h <sup>-0.5</sup> |
| Water vapour permeability (equivalent thickness: Sd)      | UNI EN 7783-2                 | Class 1 - Sd < 5 m                                           | -                                           | Sd 3.2 m                                     |
| Permeability to CO <sub>2</sub> (equivalent thickness Sd) | UNI EN 1062-6                 | Sd > 50 m                                                    | -                                           | Sd 102 m                                     |
| Crack Bridging Ability                                    | UNI EN 1062-7 (static method) | A2 > 0.25 mm<br>A3 > 0.50 mm<br>A4 > 1,25 mm<br>A5 > 2.50 mm | -                                           | Class A4<br>1.3 mm                           |
| Crack Bridging Ability (product + Flexonet mesh)          | UNI EN 1062-7 (static method) | A2 > 0.25 mm<br>A3 > 0.50 mm<br>A4 > 1,25 mm<br>A5 > 2.50 mm | -                                           | Class A5<br>3.1 mm                           |
| Reaction to fire                                          | UNI EN 13501-1                | Classification                                               | -                                           | Class F                                      |

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

| Feature                                                   | Test method             | Performance requirements | Performance             |
|-----------------------------------------------------------|-------------------------|--------------------------|-------------------------|
| Crack Bridging Ability (+23 °C)                           | UNI EN 14891 Met. A.8.2 | > 0.75 mm                | > 0.8 mm                |
| Crack Bridging Ability (+23 °C) (product + Flexonet mesh) | UNI EN 14891 Met. A.8.2 | > 0.75 mm                | > 1.5 mm                |
| Crack Bridging Ability (-5 °C) (product + Flexonet mesh)  | UNI EN 14891 Met. A.8.3 | > 0.75 mm                | > 1.5 mm                |
| Initial adhesion                                          | UNI EN 14891 Met. A.6.2 | > 0.5 N/mm <sup>2</sup>  | > 1.2 N/mm <sup>2</sup> |
| Adhesion after immersion in                               | UNI EN 14891 Met. A.6.3 | > 0.5 N/mm <sup>2</sup>  | > 0.9 N/mm <sup>2</sup> |

| Feature                                                        | Test method             | Performance requirements | Performance             |
|----------------------------------------------------------------|-------------------------|--------------------------|-------------------------|
| water                                                          |                         |                          |                         |
| Adhesion after heat application                                | UNI EN 14891 Met. A.6.5 | > 0.5 N/mm <sup>2</sup>  | > 0.5 N/mm <sup>2</sup> |
| Adhesion after un/freezing cycles                              | UNI EN 14891 Met. A.6.6 | > 0.5 N/mm <sup>2</sup>  | 0.9 N/mm <sup>2</sup>   |
| Tensile adhesion strength after contact with chlorinated water | UNI EN 14891 Met. A.6.7 | > 0.5 N/mm <sup>2</sup>  | 0.9 N/mm <sup>2</sup>   |
| Adhesion after immersion in alkaline water                     | UNI EN 14891 Met. A.6.9 | > 0.5 N/mm <sup>2</sup>  | > 0.5 N/mm <sup>2</sup> |
| Crack Bridging Ability (-5 °C)                                 | UNI EN 14891 Met. A.8.3 | > 0.75 mm                | > 0.8 mm                |
| Water impermeability                                           | 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                                  | 8 Bar: no passage          |
| VOC content                                                                  | Eurofins 392-2017-00479601           | Directive 42/2004/EC ISO 11890-2 ASTM D 6886-12 | 1 g/l                      |
| Radon diffusion coefficient                                                  | CZECH TECHNICAL UNIVERSITY IN PRAGUE | ISO/TS 11665-13                                 | 1,4 E-10 m <sup>2</sup> /s |

| Feature                                                                                                  | Certification                                                    |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Suitable for contact with drinking water (Italian Ministerial Decree 174 of 06/04/2004: global transfer) | ELLETIPI Srl<br>Report n° 14743/15                               |
| Tanks and water reserves waterproofing approval                                                          | SOCOTEC FRANCE S.A Report (ETN): n° 240368080000031 (30/06/2029) |
| Environmental Product Declaration 0298 (EPD)                                                             | EPDItaly 0298 (30/05/2027)<br>www.epditaly.it                    |

### Initial requirements UNI 11928-1:2023

| Feature                                            | Test method     | Performance requirements                          | Declared performance                              |
|----------------------------------------------------|-----------------|---------------------------------------------------|---------------------------------------------------|
| Reaction to fire                                   | UNI EN 13501-1  | F                                                 | F                                                 |
| Watertightness (water passage with 60 KPa)         | UNI EN 1928     | No passage                                        | No passage                                        |
| Water vapour transmission properties               | UNI EN ISO 7789 | Class                                             | Class I                                           |
| Direct tensile adhesion, concrete type MC (0.40)   | UNI EN 1542     | ≥ 0.5 N/mm <sup>2</sup>                           | ≥ 0.8 N/mm <sup>2</sup>                           |
| Impact resistance                                  | UNI EN 6272-1   | Class                                             | Class III                                         |
| Static punching                                    | UNI EN 12730    | ≥ 50 N                                            | ≥ 50 N                                            |
| Dynamic crack bridging (23 °C)                     | UNI EN 1062-7   | Class B2                                          | Class B2                                          |
| Dynamic crack bridging at low temperatures (-5 °C) | UNI EN 1062-7   | Class B1                                          | Class B1                                          |
| Slipping resistance                                | UNI EN 13036-4  | Class                                             | Class III                                         |
| Capillary absorption                               | UNI EN 1062-1   | $W \leq 0.1 \text{ Kg/m}^2 \cdot \text{h}^{-0.5}$ | $W \leq 0.1 \text{ Kg/m}^2 \cdot \text{h}^{-0.5}$ |

### Durability UNI 11928-1:2023

| Feature                                                   | Test method                            | Performance requirements   | Declared performance       |
|-----------------------------------------------------------|----------------------------------------|----------------------------|----------------------------|
| Heat ageing resistance 7 days at 70±3 °C (Watertightness) | point 4.1 of EN 1062-11:2003           | No passage                 | No passage                 |
| Acceptance criteria after exposure                        | UNI EN ISO 4628-2<br>UNI EN ISO 4628-4 | No swelling<br>No cracking | No swelling<br>No cracking |

| Feature                                                            | Test method                                                 | Performance requirements                  | Declared performance                      |
|--------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------|-------------------------------------------|
|                                                                    | UNI EN ISO 4628-5                                           | No spalling                               | No spalling                               |
| Frost/thaw Without thawing salts 20 cycles (Adhesion to substrate) | UNI EN 13687-3                                              | $\geq 0.5 \text{ N/mm}^2$                 | $\geq 0.8 \text{ N/mm}^2$                 |
| Acceptance criteria after exposure                                 | UNI EN ISO 4628-2<br>UNI EN ISO 4628-4<br>UNI EN ISO 4628-5 | No swelling<br>No cracking<br>No spalling | No swelling<br>No cracking<br>No spalling |
| UV (400 MJ/m <sup>2</sup> , 2460 hours) and Spray (492 hours)      | UNI EN ISO 4892-3                                           |                                           |                                           |
| Acceptance criteria after exposure                                 | UNI EN ISO 4628-2<br>UNI EN ISO 4628-4<br>UNI EN ISO 4628-5 | No swelling<br>No cracking<br>No spalling | No swelling<br>No cracking<br>No spalling |
| Hazardous substances                                               |                                                             |                                           | See safety data sheets                    |

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

## WATCH VIDEOS AND INSIGHTS

Safety Data Sheets

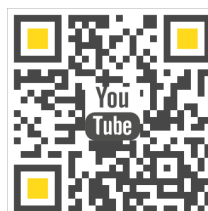
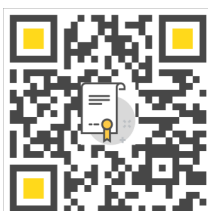
Declaration of performance

Specifications

Technical drawings and BIM

EPD Declaration

YouTube Video



## SAFETY

Refer to the related Safety Data Sheet.

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>VOLTECO S.p.a</b><br>Via delle Industrie, 47 - 31050 Ponzano Veneto (I) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>VOLTECO S.p.a</b><br>Via delle Industrie, 47 - 31050 Ponzano Veneto (I) |
| <b>10</b><br><b>DOP 0001</b><br><b>EN 1504-2:2005</b><br><b>1381-CPR-1160</b><br><b>PLASTIVO 180</b><br>Protection systems of the concrete surface.<br>Coating against the risks of penetration (PI), humidity control (MC) and increased resistivity (IR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                            | <b>14</b><br><b>DOP 0022</b><br><b>EN 14891:2012</b><br><b>PLASTIVO 180</b><br>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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                            |
| Reaction to fire: Class F<br>Water vapour permeability: Class I<br>Carbon dioxide permeability: $S_d \geq 50 \text{ m}$<br>Capillary absorption and permeability to water: $< 0.1 \text{ kg} \cdot \text{m}^{-2} \cdot \text{h}^{-0.5}$<br>Adhesion: $\geq 0.8 \text{ N/mm}^2$<br>Thermal compatibility:<br>• Part 1: Unfreezing cycles: NPD<br>Crack bridging properties (method A): Class A4<br>Performance after exposure to the action of artificial atmospheric agents: Test passed<br>Methods of conditioning before testing (7 days at 70°C): NPD<br>Linear shrinkage: NPD<br>Coefficient of thermal expansion: NPD<br>Cross cut: NPD<br>Slip resistance: NPD<br>Antistatic behavior: NPD<br>Adhesion on wet concrete: NPD<br>Hazardous substances: See SDS |                                                                            | Initial tensile adhesion strength: $\geq 0.5 \text{ N/mm}^2$<br>Tensile adhesion strength after water contact: $\geq 0.5 \text{ N/mm}^2$<br>Tensile adhesion strength after heat ageing: $\geq 0.5 \text{ N/mm}^2$<br>Tensile adhesion strength after freeze-thaw cycles: $\geq 0.5 \text{ N/mm}^2$<br>Tensile adhesion strength after contact with lime water: $\geq 0.5 \text{ N/mm}^2$<br>Tensile adhesion strength after contact with chlorinated water: $\geq 0.5 \text{ N/mm}^2$<br>Water impermeability: No penetration and $\leq 20 \text{ g}$ weight gain<br>Crack bridging ability under standard conditions (23°C): $\geq 0.75 \text{ mm}$<br>Crack bridging ability at low temperatures (-5°C): $\geq 0.75 \text{ mm}$<br>Hazardous substances: See SDS |                                                                            |

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## LEGAL NOTES

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