

# MasterShield WP 580

Single-component, cement-based osmotic waterproofing agent for concrete and masonry structures.

## Material description

**MasterShield WP 580** is a single-component osmotic waterproofing agent formulated with hydraulic binders, siliceous aggregates and special additives.

By mixing the powder content with water following the recommended dosages, you obtain an easy-to-work mixture which, once cured, forms an ideal coating for substrates with moisture infiltration and seepage, as well as for positive pressure waterproofing.

## Main uses

The cementitious coating **MasterShield WP 580** is suitable for the protection and waterproofing of concrete structures, cementitious substrates and masonry substrates such as:

- hydraulic structures such as dams, canals and reservoirs;
- reinforced concrete structures exposed to the air;
- underground concrete or masonry structures.

If the structure is subject to specific operating conditions (e.g. aggressive water), always contact Master Builders Solutions Technical Service to validate the application.

## Features

- **Can be applied on ground-level structures** or structures subject to negative hydraulic pressure.
- **Highly resistant to weathering and UV rays**, it can therefore be left exposed.

In compliance with the European Regulations (EU No. 305/2011 and EU No. 574/2014), the product is CE marked in accordance with UNI EN 1504-2 and the relevant DoP (Declaration of Performance).



## Consumption

1.45 kg/m<sup>2</sup> per cm of thickness.

## Packaging and storage

**MasterShield WP 580** is available in 25 kg bags.

Keep the products in their original packaging in a dry, protected location at a temperature between +5°C and +35°C. Do not expose to direct sunlight.

Under the above conditions, the products have a shelf life of 12 months.

## Preparation and method of application

### Preparing the substrates

- The concrete surface to be coated with **MasterShield WP 580** must be perfectly clean, solid, free from any deteriorated or loose parts, free from any irregularities that might compromise the application of the product, and free from cement laitance, traces of release agents or any substance that could affect the adhesion of the product to the substrate.
- Once the above has been verified, you can proceed according to the possible scenarios described below:
  - if it is not necessary to repair degraded areas or repair significant surface irregularities, the substrate must nevertheless be made slightly rough by sandblasting, hydro-sandblasting or high-pressure washing.
  - If there is no need to repair damaged areas or smooth out surface irregularities, the substrate must nevertheless

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be made slightly rough by sandblasting, hydro-sandblasting or high-pressure washing.

- If, on the other hand, the substrate has minor irregularities or slight non-planarity, these must be repaired – following appropriate treatment and saturation of the dry surface of the substrate with water – using fine-grained skim-coats or surface-restoration mortars from MasterCrete range.
- If the substrate shows deterioration with thicknesses to be restored exceeding 1 cm and any exposed reinforcement rods, the latter must be treated with MasterCrete range passivating mortar, while the appropriate MasterCrete product must be used for the volume to be restored, depending on the nature of the project.
- All joints between floor slab and vertical elements must be treated by creating coves.
- All structural joints, expansion joints or discontinuities subject to continuous dynamic stress must be adequately treated using elastic strips or sealants from MasterJoint range.
- Before applying MasterShield WP 580, ensure that the substrate is free of dust and that the surface is thoroughly saturated and dry, with no film of water remaining on the surface; any such film should be removed using compressed air or absorbent cloths if necessary.

## Preparation of mortar

Pour 3/4 of the necessary water into a clean, sufficiently large container to create the final mixture. Gradually add the powder while mixing with a mechanical mortar mixer or drill with a whisk attachment, at low speed (< 500 rpm) to avoid excessive air incorporation. Continue mixing and add the remaining water to the mixture to comply with the mixing ratios indicated in this document. Mix for a few minutes until the mixture is smooth and lump-free.

Leave the mixture to rest for a few minutes, then remix for about a minute.

## Application

For manual application of MasterShield WP 580, use a smooth trowel to apply a thin layer, applying constant pressure to promote adhesion of the product to the substrate, then complete with a second coat of product on the first layer once it has hardened sufficiently, to achieve a minimum thickness of 2 mm.

The second coat can also be applied by spraying with a suitable plaster spraying machine.

## Cleaning of equipment

To clean tools whilst the product is still fresh, use fresh water.

## Curing and maturation

In environmental conditions such as dry, very windy or particularly hot climates, cure carefully the applied product to prevent excessive and sudden drying of the product itself. In such cases, proceed by keeping the surface moist with sprayed water or by using damp cloths for at least 24 hours.

## Application temperatures

Application environment temperature needs to be between +5°C and +35°C.

## Warnings

- Do not apply MasterShield WP 580 to surfaces that are overheated, frozen or thawing.
- Do not apply MasterShield WP 580 for very thick coatings.
- Do not add water, binders or aggregates to MasterShield WP 580.
- Do not add fresh mortar to the mixture that has already begun to set.
- Protect against rain or any water or other substances for at least 24 hours after application.

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## Technical data

| Product identification data  |                                               |
|------------------------------|-----------------------------------------------|
| Texture                      | Powder                                        |
| Colour                       | Grey                                          |
| Mixing ratio                 | 5.25 - 5.75 litres of water per bag (21 -23%) |
| Consumption                  | 1.45 kg/m <sup>2</sup> per mm of thickness    |
| Fresh density                | approximately 1600 kg/m <sup>3</sup>          |
| Mixture consistency          | Plastic - Thixotropic                         |
| Workability time (+20°C)     | 60 minutes                                    |
| Application temperature      | +5°C to +35°C                                 |
| Category (EN 1504-2)         | PI-MC-IR                                      |
| Minimum applicable thickness | 2 mm                                          |

## Performance – UNI EN 1504-2

(The performance values shown below are obtained in accordance with UNI EN 1504-2 for a thickness of 2 mm)

| Feature                                                | Test method                                      |           | Regulatory requirement                                                                                                | Product performance                       |
|--------------------------------------------------------|--------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Adhesion to concrete                                   | UNI EN 1542<br>(MC 0.40 substrate – UNI EN 1766) |           | ≥ 0.8 MPa                                                                                                             | 0.8 MPa                                   |
| Water permeability as capillary absorption coefficient | EN 1062-3                                        |           | $W < 0.1 \text{ kg/m}^2\text{h}^{0.5}$                                                                                | $W = 0.08 \text{ W kg/m}^2\text{h}^{0.5}$ |
| Permeability                                           | Water vapour                                     | EN 7783   | Class I, $S_d < 5 \text{ m}$<br>Class II, $5 \text{ m} \leq S_d \leq 50 \text{ m}$<br>Class III, $S_d > 50 \text{ m}$ | Class I, $S_d < 0.05 \text{ m}$           |
|                                                        | CO <sub>2</sub>                                  | EN 1062-6 | $S_d > 50 \text{ m}$                                                                                                  | $S_d > 300 \text{ m}$                     |

## Additional performance

(The performance values shown below are obtained for a dry thickness of 2 mm)

| Feature                                   | Test method    | Regulatory requirement | Product performance |
|-------------------------------------------|----------------|------------------------|---------------------|
| Resistance to positive hydraulic pressure | UNI EN 12390-8 | Test pressure: 5 bar   | 5 bar               |
| Resistance to negative hydraulic pressure | UNI 8298-8     | From 0 bar to 2.5 bar  | 2.5 bar             |

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## Safety instructions

For information on the correct and safe use, transport, storage and disposal of the product, please see the latest Safety Data Sheet (SDS).

## Additional services

For additional technical information, brochures, references, technical reports and technical assistance, please go to [www.master-builders-solutions.com/it-it](http://www.master-builders-solutions.com/it-it) or get in touch at [infomac@masterbuilders.com](mailto:infomac@masterbuilders.com).

Scan the QR code to go to the product page and download the latest version of this data sheet and any additional documentation.



## Disclaimer

Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System in accordance with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 standard and the Safety Management System is certified as per the UNI ISO 45001 standard.

For more information please get in touch with your local Master Builders Solutions Italia Spa technician.

Any technical advice provided verbally or in writing regarding how to use our products corresponds to the current state of our scientific and practical knowledge and in no way provides our guarantee and/or liability on the final result of work done using our products. As such, any advice does not relieve the customer from the exclusive duty and liability of verifying whether our products are suitable for the desired use and purposes.

This edition voids and replaces all previous editions.

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