

# WATstop (A+B+C)

Epoxy cement waterproofing (water barrier).

Waterproofing product formulated with special tri-component epoxy resin suitable for all applications where excellent waterproofing in negative or positive thrust is required; the product is ideal for use as an osmotic on walls against the ground, to encapsulate rising damp that may be generated and to create vapour barriers. The product consists of a characteristic epoxy resin (part A), a catalyst (part B) and special cement (part C).

## BENEFITS

- Withstands 9.5 atm of pressure in positive and negative thrust (counter-thrust).
- Applied indoor it avoids demolitions and excavations outside.
- Avoids removal and disposal of old plaster.
- For *Diasen Dehumidification Systems* (in combination with *Diathonite Regularization* and *Diathonite Deumix+* – see technical sheets) it is used as water barrier on walls against the ground (both completely and partly underground).
- Excellent waterproofing, consolidating and filling capacities.
- Versatile in many applications.
- Also acts as a vapour barrier on cementitious substrates.
- Easily plastered, painted and tiled.
- Application even at low temperatures (+5°C / +41°F).
- *Solvent free* product.
- CE (EN 1504-2) and UKCA (BS EN 1504-2) marked product.

## YIELDS

- 1.0 kg/m<sup>2</sup> (0.21 lb/ft<sup>2</sup>) as a vapour barrier with a substrate moisture content < 4%.
- 2.0 kg/m<sup>2</sup> (0.41 lb/ft<sup>2</sup>) as a counter-thrust waterproofing.

## COLOUR

Black; white.

## PACKAGING

Each bucket contains the 3 components (A+B+C) already pre-dosed, to be mixed. 5 or 10 kg plastic buckets.

Pallet:

- n° 84 buckets of 5 kg each (tot 420 kg = 926 lb);
- n° 48 buckets of 10 kg each (tot 480 kg = 1058 lb).

## APPLICATION FIELDS

Product designed for waterproofing in positive and negative thrust (counterthrust). *WATstop* is suitable for solving many moisture-related problems, when it is not possible to intervene on the direct source of the infiltration (walls against the ground, underground rooms, lift shafts, garages, cellars, tunnels, swimming pools/tanks). *WATstop* also acts as an encapsulant for rising damp and saltpetre in *Diasen Dehumidifying Systems*. The product acts as a vapour barrier for counter-ground floors and can be used as a joint filler on tile floors and crack filler on substrates to be restored. Product for indoor and outdoor applications.

## STORAGE

The product must be stored in the original tightly closed containers, in a well-ventilated area, away from sunlight, water and frost, at temperatures between + 5 °C (+ 41 °F) and + 35 °C (+ 95 °F). Storage time 12 months.



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### PREPARATION OF THE SUPPORT

The substrate must be completely hardened (properly cured) and sufficiently strong. If this is not the case, the substrate must be repaired with suitable cement mortar.

The surface must be thoroughly clean, well consolidated, without crumbling and inconsistent parts. The substrate must be as even and workable as possible.

Before application, it is advisable to cover thresholds, window frames and any element that should not be covered.

#### Vertical and irregular supports

Level the surface with lime or cement-based mortars or thick plasters (such as *Diathonite Regularization* - see technical data sheet).

#### Plasters

Make sure that the plaster has a good adhesion to the support, otherwise remove it or restore it. In case of painted or smoothed plasters make sure that the superficial layer is well adhered to the substrate.

#### Concrete

In the case of new concrete substrates, they must be sufficiently cured and have undergone adequate shrinkage. The concrete substrate must have a relative humidity of 4% or less.

#### Tiles

Old floor tiles must be attached to the substrate (if this is not the case, remove them and fill them with cement mortar) and have no traces of detaching substances on the surface, such as grease, waxes, oils, chemical products, etc.

Given the wide variety of tiles on the market, it is advisable to carry out a test to check the perfect adhesion of the product; in the event of poor adhesion, use *Grip Primer*.

Joints can be filled with *WATstop* applied with a steel or rubber trowel.

### MIXING

The product consists of three components.

Open the epoxy mortar (part A) and pour it completely into the larger bucket. Then open the cement (part C) and *slowly* pour it into the bucket; stir to homogenise the two components. Open the catalyst bucket (part B), pour it fully into the bucket and thoroughly mix *WATstop's* three components (A+B+C), until a homogeneous, lump-free mixture is obtained. Use a professional mixer.

At this point, proceed with the addition of clean water in the following proportion:

- 10 – 20% by weight if the product is applied by trowel;
- 30 – 40% by weight if the product is applied with a short-hair roller or brush.

Do not close the container after mixing. *WATstop* gives rise to an exothermic reaction.

Depending on the degree of water absorption of the substrate and environmental conditions, it is advisable to dose the right amount of water to obtain the correct consistency (maximum 40%). The addition of a higher percentage of water could compromise the effectiveness of the product. Never add other products to the mix.

### APPLICATION

#### Application by hand

1. *WATstop* should be applied in at least two coats until the yield specified in the technical data sheet is achieved.
2. Apply the first coat of *WATstop* with a trowel or a short-hair roller, making sure that the product penetrates well into the substrate and ensure the total coverage of the surface. In case of rain on a not perfectly hardened product, check carefully the suitability for the following covering.
3. Wait a maximum of 24 hours between one coat and the next.
4. Any further coats (levelling compounds, renders, paints, etc.) must be applied within 48 hours at the latest.

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### Dehumidification of a completely underground wall from the inside of the building

1. Remove completely any damaged plaster back to bare brick or stone.
2. If the wall is very irregular, level it with a layer of lime or cement-based plaster such as *Diathonite Regularization* (see technical data sheet).
3. Please note that the surface where *WATstop* will be applied must not be wet. Apply the first coat of product with a yield of 0.50 kg/m<sup>2</sup> (0.10 lb/ft<sup>2</sup>), as reinforcing on the whole wall.
4. At a temperature of 23 °C and 50% relative humidity, the product dries out in 5 – 12 hours. Depending on environmental temperature and humidity degree, drying time may increase.
5. Wait a minimum of 24 hours and a maximum of 48 hours between one coat and the next.
6. Proceed with the application of the second coat of *WATstop* until the yield foreseen by the technical data sheet is reached.
7. Before the complete drying of *WATstop* (not before 24 hours and within 48 hours after the application of the last layer of product), apply on the surface the dehumidifying plaster *Diathonite Deumix+* (see technical data sheet) with a homogeneous thickness of minimum 2.0 cm (0.79 in).

### Dehumidifying of a partially underground wall from the inside of the building

1. Remove completely any damaged plaster back to bare brick or stone, up to 60 – 70 cm (23.6 – 27.6 in) above the ground line or maximum moisture level (choose the highest elevation).
2. If the wall is very irregular, level it with a layer of lime or cement-based plaster such as *Diathonite Regularization* (see technical data sheet).
3. Please note that the surface where *WATstop* will be applied must not be wet.

Apply the first coat of product with a yield of 0.50 kg/m<sup>2</sup> (0.10 lb/ft<sup>2</sup>), up to the ground line.

4. At a temperature of 23 °C and 50% relative humidity, the product dries out in 5 – 12 hours. Depending on environmental temperature and humidity degree, drying time may increase.
5. Wait a minimum of 24 hours and a maximum of 48 hours between one coat and the next.
6. Proceed with the application of the second coat of *WATstop* until the yield foreseen by the technical data sheet is reached.
7. Before the complete drying of *WATstop* (not before 24 hours and within 48 hours after the application of the last layer of product), proceed with the application of the dehumidifying plaster *Diathonite Deumix+* (see technical data sheet), maintaining a minimum homogeneous thickness of 2.0 cm (0.79 in).
8. For interventions where, for technical or economic reasons, it is not possible to remove the old plaster, restore the wall realizing a 2–3 mm (0.08 – 0.12 in) layer with *WATstop*. This layer of product can be directly coated with smoothers, finishes or coatings of various types, not earlier than 24 hours and no later than 48 hours after application of the last layer of product. Apply the product up to 60 – 70 cm (23.6 – 27.6 in) above the ground or moisture line (whichever is higher).

### Waterproofing for tanking and swimming pools (positive and counter-thrust)

1. Prepare the substrate as mentioned above; if the substrate is not listed, contact DIASEN technical office.
2. Please note that the surface where *WATstop* will be applied must not be wet. Apply the first layer of product with a yield of 1.0 kg/m<sup>2</sup> (0.20 lb/ft<sup>2</sup>).
3. If necessary, depending on the project requirements, embed the geo-textile membrane, *Polites TNT* (see technical

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data sheet), in the first layer of *WATstop*, while still fresh.

4. Before the first layer of *WATstop* has completely dried out (approximately within 12 hours at 23°C and 50% R.H.), apply the second layer with a yield of 1.0 kg/m<sup>2</sup> (0.20 lb/ft<sup>2</sup>). If the yield indicated in the technical data sheet cannot be achieved with the two coats, proceed until the total yield is obtained. Between one coat and the next, wait between 5 and 12 hours from the end of the application of the previous one.
5. Proceed with the application of the covering layer (plaster, paint, tiles, etc.) between 24 and 48 hours maximum after the application of the last layer of *WATstop*.

### DRYING TIME

At a temperature of +23°C (+73.4°F) and relative humidity of 50%, the product dries in 24 hours.

- Drying times are influenced by ambient temperature and relative humidity conditions and can vary significantly.
- If applied at a higher yield than expected, drying times may increase significantly.
- Once cured *WATstop* can be coated with plasters (*Diathonite* line), smoothers (*Argatherm* line), *Diasen* acrylic, polyurethane or epoxy resins, adhesives, *Diasen* walkable, vehicular and reflective coatings, ties or paints, as it also acts as adhesion promoter.

### SUGGESTION

1. Do not apply at ambient and substrate temperatures below +5°C (+41°F) and +35°C (+95°F).
2. During the summer season apply the product during the cooler hours of the day, away from the sun.
3. Do not apply in case of imminent danger of rain or frost, in case of strong fog or with relative humidity higher than 70%.
4. On substrates with structural problems, use certified structural mortars, such as *Calce Storica* (see technical data sheet).
5. *WATstop* can also be used as a primer on smooth surfaces with a yield of 0.3 kg/m<sup>2</sup> (0.06 lb/ft<sup>2</sup>).
6. Depending on the structural needs of the project, *WATstop* can also be reinforced with *Polites TNT*, by inserting the non-woven reinforcement mesh in the first layer of product while still fresh.

### CLEANING

The equipment used can be washed with water before the product is completely dry.

### SAFETY

Always use personal protective equipment when handling and follow the product's safety data sheet.

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\* The above data, although carried out in accordance with standardised test methods, are indicative and may be subject to change as specific site conditions vary.

| Technical Data*                                                                               |                                                                                                                                           |                    |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Features                                                                                      |                                                                                                                                           | Units              |
| Yield                                                                                         | 1,0 kg/m <sup>2</sup> as a vapour barrier with a substrate moisture content < 4%.                                                         | kg/m <sup>2</sup>  |
|                                                                                               | 2,0 kg/m <sup>2</sup> as a counter-thrust waterproofing.                                                                                  |                    |
|                                                                                               | 0.21 lb/ft <sup>2</sup> as a vapour barrier with a substrate moisture content < 4%.                                                       | lb/ft <sup>2</sup> |
|                                                                                               | 0.41 lb/ft <sup>2</sup> as a counter-thrust waterproofing.                                                                                |                    |
| Colour                                                                                        | Black; white                                                                                                                              | -                  |
| Mixing water                                                                                  | 10 – 20% by weight if the product is applied by trowel;<br>30 – 40% by weight if the product is applied with a short-hair roller or brush | -                  |
| Pot life (T = 23°C / 73.4 °F; U.R. 50%)                                                       | 2                                                                                                                                         | hours              |
| Waiting time between 1 <sup>st</sup> and 2 <sup>nd</sup> layer (T = 23°C / 73.4 °F; R.H. 50%) | maximum 24                                                                                                                                | hours              |
| Application temperature                                                                       | +5 / +35                                                                                                                                  | °C                 |
|                                                                                               | +41 / +95                                                                                                                                 | °F                 |
| Drying time (T = 23°C / 73.4 °F; R.H. 50%)                                                    | 5 – 12 hours                                                                                                                              | hours              |
| Storage                                                                                       | 12 months in original packaging and in a dry place                                                                                        | months             |
| Packaging                                                                                     | 5 or 10 kg plastic buckets                                                                                                                | kg                 |

\*\* 1680 hours of accelerated ageing corresponds to approximately 10 years. This correspondence is purely indicative and may vary considerably depending on the climatic conditions of the place where the product is used.

| Final performances                                   |           | Units               | Regulations     | Results |
|------------------------------------------------------|-----------|---------------------|-----------------|---------|
| Waterproofing with positive pressure                 | 9,5       | atm                 | UNI EN 12390-8  | -       |
|                                                      | 139.61    | psi                 |                 |         |
| Waterproofing with negative pressure (counterthrust) | 9,5       | atm                 | -               | -       |
|                                                      | 139.61    | psi                 |                 |         |
| Water vapour permeability                            | μ = 13361 | -                   | EN ISO 7783     | -       |
| Adhesion on concrete surface                         | 2,5       | N/mm <sup>2</sup>   | UNI EN ISO 4624 | good    |
|                                                      | 362.59    | lbf/in <sup>2</sup> |                 |         |
| Adhesion on tuff                                     | 3,0       | N/mm <sup>2</sup>   | UNI EN ISO 4624 | good    |
|                                                      | 435.11    | lbf/in <sup>2</sup> |                 |         |
| Adhesion on chipping floor                           | 1,5       | N/mm <sup>2</sup>   | UNI EN ISO 4624 | good    |
|                                                      | 217.56    | lbf/in <sup>2</sup> |                 |         |

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|                                                      |                        |                           |                                          |                            |               |
|------------------------------------------------------|------------------------|---------------------------|------------------------------------------|----------------------------|---------------|
| Adhesion on expanded polyurethane panel (PU)         |                        | 1,25<br>181.30            | N/mm <sup>2</sup><br>lbf/in <sup>2</sup> | UNI EN ISO 4624            | good          |
| Adhesion on expanded polystyrene (EPS)               | Adhesion test pull off | 1.50                      | N/mm <sup>2</sup>                        | EN ISO 4624                | good          |
|                                                      |                        | 217.56                    | lbf/in <sup>2</sup>                      | ASTM D4541                 |               |
| Adhesion on glazed ceramic tile                      |                        | 2.50                      | N/mm <sup>2</sup>                        | EN ISO 4624                | good          |
|                                                      |                        | 362.59                    | lbf/in <sup>2</sup>                      | ASTM D4541                 |               |
| Solvent resistance                                   |                        | -                         | -                                        | -                          | non resistant |
| Organic acids resistance                             |                        | -                         | -                                        | -                          | non resistant |
| Inorganic acids resistance (5% concentration)        |                        | -                         | -                                        | -                          | not good      |
| Resistance after 50 freeze-thaw cycles (-15°C/+15°C) |                        | -                         | -                                        | UNI EN 202<br>ASTM C666    | unchanged     |
| Weathering Test resistance**                         |                        | 1680 hours (> 10 years**) | hours / years                            | EN ISO 11507<br>ASTM D4587 | -             |
| Water tightness test                                 |                        | 2                         | kPa                                      | UNI EN 1928 (method A)     | test passed   |

