



## **DRENATECH<sup>®</sup>**

A THREE-COMPONENT PRODUCT FOR CREATING PERMEABLE AND DRAINING PAVEMENTS FOR PEDESTRIAN, CYCLE AND VEHICULAR USE.

PRODUCT FOR PROFESSIONAL USE ONLY

### **Description and uses**

Tri-component product [components A+B "non-yellowing solvent-free epoxy-polyurethane bicomponent binder", component C "aggregate"] to be used to create permeable and draining pavements for road, pedestrian and bicycle use; aggregates of different types, colours and sizes can be used, and an infinite number of patterns and geometric shapes can be created (for information on colours, sizes and appearance of aggregates, we recommend viewing the types on the website [www.drenatech.com](http://www.drenatech.com) or contacting our sales offices).

*DRENATECH<sup>®</sup>* can be installed on the main types of substrates such as concrete, bituminous conglomerate, tiles and natural stones provided that the substrate is adequately prepared. It can also be installed on the ground, subject to suitable preparation of the substrate and creation of permeable concrete.

Flooring made in light colours can undergo natural colour changes over time due to weathering and sunlight. It is useful to carry out regular cleaning and maintenance as indicated in the installation manual.

If extraordinary maintenance work has to be carried out (e.g. excavations for the construction or renovation of sub-services), it is advisable to remove the parts affected by the work and confined by the profiles, so that once the work is complete, Drenatech can be installed to restore the original appearance of the paving.

Pavements made with Drenatech<sup>®</sup> have the ability to drain 100% of the water over their entire surface.

### **Before installation**

#### ***Preparation of the substrate***

Before installing *DRENATECH<sup>®</sup>*, make sure that the substrate is adequately prepared and has a minimum slope of 2 cm/sq.m. in order to be suitable to receive *DRENATECH<sup>®</sup>*, as better indicated below and illustrated in the installation stratigraphy, available by contacting our technical offices or on the website [www.drenatech.com](http://www.drenatech.com)

#### ***Application on absorbent substrate***

If expansion joints are present, they must be "carried over" to the overlying layer of *DRENATECH<sup>®</sup>* by means of aluminium or stainless steel profiles of the same height as the installation thickness. On concrete or pervious concrete foundations, it is advisable to use Progress Profiles "Pro Terminal" or "ProCurve" profiles with a height equal to the installation thickness, while on bitumen foundations it is necessary to position "blade" or "T" profiles so as not to have problems due to the different expansion of the bitumen compared to Drenatech.

If there are no expansion joints in the substrate, cuts must be made in the substrate (every 25-30 m<sup>2</sup> in the case of concrete - every 15-20 m<sup>2</sup> in the case of bitumen), which must be "copied" with the profiles used during the installation of *DRENATECH<sup>®</sup>*. Proceed as follows when installing the profiles:

- tracing of joints with a powdered line marker
- position the profiles and secure them using chemical anchors or by hammering in dowels, after drilling holes of the correct diameter at the bottom.

### Newly created fund

In the case of new foundations, their compliance with the EN 13813:2004 standard (for concrete foundations) or EN 12697:2004 standard (for bitumen foundations) must be verified, and the minimum slope of 2 cm/sq.m. must be respected to ensure that no water stagnates on the ground.

### Existing Fund

In the case of existing foundations, the state of the existing foundations (presence of structural cracks, micro-cracks or insufficiently compact foundations) and the slope of the existing foundations must be checked before installing *DRENATECH*<sup>®</sup> in order to allow the water to drain away regularly to the collection points and avoid stagnation. If the base needs to be restored, these operations must be carried out using suitable products that guarantee the same resistance characteristics as those required for new bases.

Only after preparing and checking the suitability of the substrate, proceed as follows:

- apply *DRENATECH*<sup>®</sup> *Primer H<sub>2</sub>O* at a rate of 200-250 g/m<sup>2</sup> using a long-hair roller or brush (for the correct way to use the primer, please refer to the relevant product data sheet);
- apply *DRENATECH*<sup>®</sup> after *DRENATECH*<sup>®</sup> *Primer H<sub>2</sub>O* has dried on the surface (at a temperature of 23 °C approx. 60').

### **Application on non-absorbent substrate**

If the substrate is made of tiles or other non-absorbent material, make sure that there are no loose parts on the substrate before installing *DRENATECH*<sup>®</sup>. If this is not the case, remove the detached or damaged portion of the floor and restore the levelness of the base using a suitable repair product.

Only after verifying the suitability of the ground, proceed as follows:

- perform shot-blasting in the area where *DRENATECH*<sup>®</sup> is to be applied to improve mechanical adhesion to the substrate, wash with water and detergent and rinse thoroughly with water to remove any residue (if shot-blasting is not possible, use a brushing machine with an abrasive disc to roughen the surface);

- apply *DRENATECH*<sup>®</sup> *Primer H<sub>2</sub>O* at a rate of 150-200 g/m<sup>2</sup> using a short-haired roller or brush (for the correct way to use the primer, please refer to the relevant product data sheet);
- apply *DRENATECH*<sup>®</sup> after checking that *DRENATECH*<sup>®</sup> *Primer H<sub>2</sub>O* is dry on the surface.

### **Ground application**

Before installing *DRENATECH*<sup>®</sup> on soil, it is necessary to properly prepare the substrate according to the methods illustrated in the document containing the recommended installation stratigraphy; then install the permeable concrete in order to create a solid and compact, but at the same time pervious, substrate on which to install *DRENATECH*<sup>®</sup>.

### **Installation thicknesses**

- 1 cm for cycling and pedestrian use;
- 1.5 cm for vehicular use (up to 7.5 tonnes).

### **Installing *DRENATECH*<sup>®</sup>**

Once the operations of creation, preparation or consolidation of the substrate have been completed, it is possible to install *DRENATECH*<sup>®</sup> as indicated below:

1. pour the contents of 5 bags of Component C (for a total of 125 kg) into a 300-litre mixer (we recommend using the plastic "tumbler" for easy cleaning);
2. pour the contents of Component B into Component A and mix thoroughly for 30 seconds using a low-speed drill fitted with a whisk. Pour the mixture obtained (components A+B) into the mixer and leave it running for about 2 minutes until the mixture is completely homogenised (all the aggregate must be uniformly "wet");
3. unload the dough.

For small surfaces: Dump the mixture on the bottom and level with straight edges using a straight edge or use suitable equipment such as *DRENATECH*<sup>®</sup> *Trolley* and smooth with a stainless steel trowel with round corners or *DRENATECH*<sup>®</sup> *Trowel*.

For large surfaces: Dump the mixture on the bottom and level it with straight edges or suitable *DRENATECH*<sup>®</sup> *Trolley* equipment and while the product is still

fresh, smooth the entire surface with *DRENATECH<sup>®</sup> Hover Trowel* to best compact and remove any surface defects of *DRENATECH<sup>®</sup>*;

- wait at least 12 hours for pedestrian use and 24 hours for vehicular use. Data are based on an ambient temperature of 23 °C and R.H. 50%;
- after at least 12 hours from the installation of *DRENATECH<sup>®</sup>*, apply *DRENATECH<sup>®</sup> Finish* on the whole surface at a rate of 150 g/m<sup>2</sup>, according to the instructions in the relevant technical data sheet;
- once the installation operations have been completed, clean the tools and the mixer, while the product is still fresh, with specific *DRENATECH<sup>®</sup> Cleaner*.

## Product storage before use

Store Components [A +B+ C] in a dry place and at temperatures between +5 °C and +30 °C.

If moisture is found inside the bags of *DRENATECH<sup>®</sup> Part C*, they must **NOT be** used.

In the case of low ambient temperatures (+12 / +15°C and in any case to be checked on the basis of the dew point) *DRENATECH<sup>®</sup> Component A* and *DRENATECH<sup>®</sup> Component B* must be stored at a temperature of at least 20-22°C at least 4 hours before use on site.

**Do not install *DRENATECH<sup>®</sup>* at temperatures below +12°C, in adverse weather conditions (rain or fog) and on wet substrates. Do not install, even on permeable concrete substrates exposed to heavy rainfall in the 48 hours prior to installation.**

## Other information

The product, once cured, cannot be removed in any way other than mechanically. The drying and curing times indicated refer to an ambient temperature of 23°C and R.H. 50% (lower temperatures lengthen the time, higher temperatures shorten it).

## Product characteristics

### Appearance:

Component A: transparent viscous liquid

Component B: transparent liquid

Component C: quartz and marble pebble or granulate

### Composition:

Component A: solvent-free, non-yellowing epoxy-polyurethane resin

Component B: mixture of amine hardeners

Component C: natural aggregate

### Mixing ratios:

Component A: 5 kg (1 bucket)

Component B: 2.2 kg (n.1 bucket)

Component C: 125 kg (no. 5 bags)

### Dilution: no

### Equipment needed:

300 litre mixing machine, manual screed, straight edges, special stainless steel spatula with round corners *DRENATECH<sup>®</sup> Trowel*, *DRENATECH<sup>®</sup> Trolley*, *DRENATECH<sup>®</sup> Hower Trowel* (as required)

Consumption: part A+B+C: 1.8 kg/m<sup>2</sup>/mm

### Application temperature:

between +10 °C and +30 °C

Background humidity: not more than 5%

### Workability time:

60 min. at 23°C and R.H. 50% (lower temperatures lengthen setting times; higher temperatures shorten them)

Setting time: 12 hours

Drive over time: 24 hours

Complete curing: 1 week

### Storage temperature:

between +5 °C and +30 °C

### Storage shelf life:

12 months in original, unopened containers

Tool cleaning: with *DRENATECH<sup>®</sup> Cleaner*

Suitable for use: outdoor

### Safety instructions:

Component A: Xi-irritant; N-harmful to the environment

Component B: C-corrosive

Component C: no classification

Packages:

Component A: 5 kg plastic bucket  
Component B: 2.2 kg plastic bucket  
Component C: 25 kg bag

## Product testing

(UNI EN 13892-2- 2005) Determination of flexural and compressive strength

(UNI E 13892-8) Determination of the adhesion strength to the substrate

(UNI EN 13653) Determination of shear strength

(UNI EN 13036-4/2011) Method for measurement of slip/skid resistance of a surface - The pendulum test

(UNI EN 12372-2007/ UNI EN 13687-1) Determination of flexural strength under concentrated load after freeze-thaw cycling with de-icing salt immersion

(UNI EN 12697-19) Permeability of specimen

Once hardened, the product does not release any hazardous substances in contact with the environment. If it is necessary to remove *DRENATECH*<sup>®</sup> flooring, the same disposal procedures can be used as for inert construction materials.

## Safety and disposal instructions

Before using the product, read the relative safety data sheet. During use, it is recommended to protect hands and eyes with appropriate P.P.E. (for hands we recommend the use of N.B.R. rubber gloves). Observe applicable safety regulations. Do not dispose of residual product on soil, in surface water or in drains. When disposing of the product and other waste produced during usage, comply with the terms of Italian Law Decree 152/2006 and subsequent modifications. (Unified Environmental Law).

## Warnings

For further information please contact our Technical Department. The contents of this sheet replace and supersede the contents of the previous edition.

The information given in this product technical data sheet is to the best of our theoretical and practical knowledge at the time of drafting this documentation. As it is not possible to go into the details of each individual application, the information given here is of a general nature. Each specific case must be subjected to a practical test on site by the user, who assumes full responsibility for the correct use of the product as indicated in this document and the final outcome of the work.