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**Technical Data Sheet**

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**Properties:**

AKEMI® Duro Impregnator is a ready for use product based on silane/siloxane. Special additives improve the durability of the hydrophobic effect, especially on calcareous stones. The product is absorbed by the capillary forces of the stone and can therefore penetrate especially deep. A very stable polysiloxane results from the catalytic reaction with air humidity. The product is distinguished by the following qualities:

- very good penetration into the stone surface
- very good weather resistance
- strong reduction of water and dirt absorption during periods of moisture
- decreases salting
- fast liberation of humidity during dry periods due to high vapour permeability
- maintenance of breathing properties because there is no surface layer
- good alkali resistance towards mineral joint mortar
- application indoors and outdoors
- resistance to UV radiation
- the colour of the stone is normally not enhanced (preliminary test)

**Application Area:**

AKEMI® Duro Impregnator is suited to achieve a water and dirt repellent effect on absorbent, calcareous mineral substances s.a. polished, ground or rough surfaces of marble, limestone, terrazzo, plaster etc. It is also very well suited for bricks, sand-limestone, concrete and mineral-based plaster.

**Instructions for Use:**

Disregarding the processing guidelines can lead to irreparable damage!

1. Cleaning: the surface must be clean, completely dry and free from all layers. Ensure that outdoors stone does not contain any detrimental salts (nitrates, sulphates, chlorides) because these can reduce the absorptive capacity of the impregnating material. Depending on the type of stone and the degree of soiling, the following products can be recommended, please pay attention to our care recommendations as well as our specification sheets: AKEMI® Stone Cleaner, AKEMI® Algae and Moss Remover, AKEMI® Wax Stripper, AKEMI® Oil and Grease Remover Paste, AKEMI® Graffiti-Remover. Rinse well with water after cleaning. Before the stone is given its protective treatment, it must be totally dry. As a rule, this is the case after 1-2 days at the earliest.
2. Preparation of a sample area  
Before starting we recommend to prepare a sample area of 1-2 m<sup>2</sup> in order to examine the efficiency of the impregnation, to evaluate the appearance of the treated object (colour enhancement) and to ascertain the material consumption as exactly as possible.
3. Impregnating procedure
  - a) The best conditions for impregnating are a cold object, an ambient temperature of 10-30°C and a protection from humidity for approx. 24 hours. The stone must not be warmed up by a under floor heating or direct sunlight.
  - b) The impregnating effect is sufficient for fissures which are smaller than 0.3 mm.

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- c) In general, one to two appliances wet-in-wet are sufficient. In case of less absorbent surfaces we recommend to dilute with AKEMI® Nitro-Dilution in the ratio of 1:1.
- d) Apply the product with a brush or a mop. Airless spraying equipment with low pressure (max. 1 bar over pressure) is suitable for treating façades using the flooding (multiple-coat) method and a jet distance of approx. 15 cm (condition: tubes and seals must be resistant to solvents). The impregnation is applied until it runs down 40-50 cm.
- e) Approx. 20 minutes after application, respectively before drying of the impregnation on the surface, any excess which has not been absorbed by the stone has to be completely removed with a suitable cloth. Polished surfaces must additionally be polished again until any blooming on the surface is removed.
- f) If the desired effect is not achieved or if the impregnation has been applied unevenly, it is possible to apply the impregnation once again. The water repellent effect develops after approx. 4 – 6 hours, full efficiency is reached after approx. 1 week.
- g) Tools can be cleaned with AKEMI® Nitro-Dilution.

**Special Notes:**

- Special protective measure in case of spray application: avoid formation of aerosols and risk to third parties. Do not breathe vapours (protective mask).
- Ensure sealing of the reverse side and lateral surfaces of the stone, so that rising moisture cannot penetrate into the stone. In this context we recommend the use of AKEMI® Anti-Stain Coating 2015 to seal the reverse side and the lateral surfaces.
- In case of loose laying outdoors it is recommended to treat the stone prior to laying from all sides with AKEMI® Duro Impregnator.
- If the treated area is cleaned, a drying time of 1 – 2 days (depending on the temperature) is necessary.
- A treatment with AKEMI® Duro Impregnator prevents the stone from getting dirty again, respectively, the process will be delayed considerably. Should the surface become dirty again it can be cleaned much more easily.
- Unsuitable or aggressive cleaning agents as well as pressure washers may destroy the impregnation and the stone. We recommend using AKEMI® Mild Stone Soap or AKEMI® Crystal Clean only for the regular cleaning.
- Product which has been inaccurately applied, can possibly be removed with AKEMI® Impregnation Remover.
- Existing joints must be tested in view of their resistance to solvents. In case wetting agents had been used to smoothen joint fillers, they must be removed prior to application of the impregnation.
- AKEMI® Duro Impregnator is not suited for glazed and non-absorbent surfaces.
- A surplus of the product causes blooming and spotting.
- Surfaces to be treated must be protected against direct solar radiation.
- Protect synthetic materials which are not resistant to solvents, window-screens, parts to be varnished or objects situated in the area of working (cars, gardens).
- An evaluation of the impregnation according to its water repellent effect is not sufficient because this effect shows on the surface only. The water repellent effect can be diminished or be invisible due to dust settings.

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- The colour of most stone surfaces will not or only slightly change. On quartzite and serpentine a clearly recognizable colour enhancement occurs. Therefore it is recommendable to test on a sample piece or an inconspicuous area.
- On some natural stones like e.g. Nero Assoluto or Nero Impala the stone-imminent structures may be stronger intensified than the residual stone surface if treated with AKEMI® Duro Impregnator. This might be seen as staining, however, the colour intensification is not a product defect but is attributed to the characteristics of the stone.
- For adequate waste disposal container must be completely emptied.
- When applying the product correctly it is not hazardous for the health.

**Technical Data:**

Coverage: approx. 5 – 20 m<sup>2</sup>/liter, depending on the absorptivity of the stone  
Colour: colourless to yellowish  
Density: approx. 0.76 g/cm<sup>3</sup>

**Storage:**

2 years if stored in cool place free from frost in its tightly closed original container.

**Health & Safety:**

Read Material Safety Data Sheet before handling or using this product.

**Important Notice:**

The above information is based on the latest stage of development and application technology. Due to a multiplicity of different influencing factors, this information – as well as other oral or written technical advises – must be considered as non-binding hints. The user is obliged in each particular case to conduct performance tests, including but not limited to trials of the product, in an inconspicuous area or fabrication of a sample piece.