Technical Instruction Sheet

Properties:

AKEPOX® 1099 Invisible is a very fluid two-component epoxy resin system with a modified amine hardener which is used for closing cracks and pores. The product has the following properties:

- fast hardening
- has good penetrative properties on account of its low viscosity
- transparent and pale
- generally no colour deepening, therefore excellently suited for light stones
- solvent-free
- weather-resistant
- good grinding and polishing properties
- increases the firmness and improves the quality of natural stone surfaces
- increases the yield and the productivity
- classification according to the Berufsgenossenschaft der Bauwirtschaft (Accident Prevention and Insurance Association of the German Building Industry): **GISCODE: RE 01**

Application areas:

AKEPOX® 1099 Invisible is mainly used in the stone-working industry for strengthening porous and fissured natural stone slabs, concrete and concrete ashlars as well as for the rear side reinforcement of brittle natural stone slabs in combination with glass fibre. The hardened product shows a tendency to yellow if exposed to ultraviolet light or to warmth.

Instructions for use:

1. The stone slabs which are to be treated must be pre-calibrated according to their nominal thickness and must be clean and dry.
2. Four parts by weight of Component A are to be thoroughly mixed with one part by weight of Component B (e.g. 100 g and 25 g) until the mixture is free of streaks. Alternatively, 7.5 parts by volume of Component A are to be mixed with two parts by volume of Component B (e.g. 150 ml and 40 ml) until the mixture is free of streaks; large amounts can be worked more easily with a dosing and mixing apparatus for AKEPOX® products.
3. AKEPOX® Colouring Concentrates or Stone Ink can be used for colouring if required (max. 5 %).
4. The mixture remains workable for approx. 4 to 8 minutes at 20°C (68°F) and is applied to the whole surface with a fine-toothed spreader; apply more than once in the event of larger fissures or areas of greater absorption. Close continuous fissures on the rear side before application.
5. The surfaces can be ground and polished after approx. 6 hours at room temperature.
6. The contact pressure of the grinding and polishing segments should be maximum 1 to 1.5 bar.
7. Tools can be cleaned with AKEMI Universal Dilution.
8. Warmth accelerates and cold retards the hardening process.
9. In order to ensure orderly waste disposal, the container must be completely emptied.

Special notices:

- The optimal mechanical and chemical properties can only be attained by adhering to the exact mixing proportions; excess adhesive or hardener has the effect of a plasticizer.
- Depending on the type of stone the treated surfaces may deepen the colour to a greater or lesser extent. Colour deepening may be more noticeable in the fissured area. Therefore, it is advisable to try on a testing area.
- Component A and B must be taken from their containers with separate receptacles.

- The resin is no longer to be used when it is already thickened or gelling.
- For optimum surfaces high quality grinding and polishing segments must be used.
- The product is not to be used at temperatures below 15°C because it will not sufficiently harden.
- The hardened resin can no longer be removed by means of solvents, only mechanically or by applying higher temperatures (> 200°C).
- If the resin has been correctly worked it presents no hazard to health when the hardening process is completed.

Technical data:

Colour:	transparent, pale	
Density:	Component A:	1.12 g/cm³
	Component B:	1.04 g/cm³
Consumption:	approx. 100 - 200 g/m²	

Working time

a) at varying temperatures and a quantity of 125 g:	15° C:	6 – 8 minutes
	20° C:	4 – 6 minutes
	30° C:	2 – 3 minutes
b) at 20°C (68°F) and different quantities:	25 g:	5 – 8 minutes
	125 g:	4 – 6 minutes

Hardening time for stone slabs which have been pre warmed to the given temperatures:

20° C:	6 hours
30° C	3 hours

Shelf life: approx. 1 year under cool conditions in the firmly closed original container.

Safety Measures:

- Both the reactive single components as well as the ready-for-use mixture can be corrosive and can cause irritation or sensitisation until it has hardened.
- Epoxy resins are potential allergens. They can cause skin allergies.

Marking

Resin components:
- Irritant; (Xi), dangerous for the environment (N)
- Irritating to eyes and skin; (R36/38)
- May cause sensitisation by skin contact (R43)
- Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment (R51/53)

Hardener components:
- Corrosive; (C)
- Harmful by inhalation, in contact with skin and if swallowed (R20/21/22)
- Causes burns (R34)
- May cause sensitisation by skin contact (R43)

- Direct contact with the skin must be avoided at all costs. This is why personal protective equipment is particularly important.
- When working with epoxy resins, protective gloves and safety goggles must be worn and skin protection and skin care products used.
- Recommended protective gloves (as per laboratory measurements carried out by the company KCL in accordance with EN 374)

- Butoject (KCL, item no. 897, 898)
- Camatril (KCL, item no. 730, 731, 732, 733)
- Dermatril (KCL, item no. 740, 741, 742)

- Eye and face protection:
  - Safety goggles (danger of splashes)
  - Face shield when working overhead, when applied by spraying or crack injection
- Breathing protection:
  - The product should only be applied in well-ventilated areas.
  - Respirators: Type A2/P2
- Skin protection: (from the company Stockhausen)
  - Protection of uncovered parts of the body (face, neck area) without contact with epoxy resin products: ARRETIL
  - Preventive skin protection in combination with protective gloves: STOKO EMULSION
  - Skin cleansing after working: SLIG SPEZIAL
  - Skin care after working: STOKO VITAN
  - Do not use aggressive cleaning agents, abrasive agents or solvents
  - In the event of contamination, remove as quickly as possible with a clean cloth or paper towel, then wash with water and soap
- Preventive occupational health examinations
  - To be carried out before a person starts work with epoxy resins and is to be repeated at regular intervals

- Observation of general protection and hygiene measures
  - Avoid contact with the eyes and the skin
  - Do not eat, drink, smoke or take snuff whilst working
  - Use a skin protection ointment as a preventive measure
  - Clean skin thoroughly after handling the product
  - Remove soaked and soiled clothing immediately

  - Do not inhale gases / vapours / aerosols
  - Wear protective gloves when cleaning tools or use disposable tools
- First Aid
  - Eye contact:
    - Rinse for 15 minutes under running water
    - Then consult a doctor without fail
  - Skin contact:
    - Remove soaked clothing immediately
    - Wash affected parts with plenty of water and mild soap or take a shower
    - If larger areas of skin are affected or in the event of skin redening, irritation or itching, consult a doctor
  - Inhalation:
    - Fresh air and consult a doctor
- Please take heed of
  - The **danger notices and safety advice on the container** and the **safety data sheet**

- The **practical guide for the handling of epoxy resins** issued by the Berufsgenossenschaft der Bauwirtschaft
- The data sheet **BGR 227: Tätigkeiten mit Epoxidharzen** (“Handling epoxy resins“) issued by the Hauptverband der gewerblichen Berufsgenossenschaften (German Federation of Institutions for Statutory Accident Insurance and Prevention).

Notice:

The above information is based on the latest stage of our 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 trails of the product, in an inconspicuous area or fabrication of a sample piece.

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