Technical Instruction Sheet

Characteristics:

AKEPOX® 5000 is a liquid, two-component adhesive, is free of solvents, is based on epoxy resins and has a cycloaliphatic polyamine hardener.

The product is characterised by the following properties:

- it has a very neutral colour
- little yellowing
- during hardening there is very little shrinkage, and therefore minimal tension within the adhesive joint
- the bondings are very weather resistant
- can be excellently coloured with AKEPOX colour pastes
- the adhesive layer retains it's form well
- it's tendency to fatigue is slight
- it has a very high stability in contact with alkalis and is therefore very suitable for bondings with concrete
- because it is free of solvents, it is especially suitable for bonding materials which are impermeable to gas
- it is suitable for bonding load-bearing constructional elements
- it is excellent as a lamination resin in the making of sandwich parts
- it adheres well to stone even if it is slightly damp
- it is suitable for bonding materials which react in contact with solvents (e.g. polystyrene, ABS)

Field of Application:

AKEPOX® 5000 is mainly used in the stone-working industry for the weather-resistant bonding and gluing of natural stone (marble, granite) as well as artificial stone or building materials (terrazzo, concrete). By means of the application of high-quality raw materials it was possible to develop a system which hardly yellows. It is thus possible to use it in combination with light-coloured or even white natural stone without the usual intensive yellowing of conventional epoxy-resin systems. The low viscous consistency enables very thin adhesive joints. In combination with spun glass fabrics even lamination can be done. Other materials can also be glued with AKEPOX® 5000, e.g. plastics (hard PVC, polyester, polystyrene, ABS, polycarbonates), paper, wood, glass and many other materials. AKEPOX® 5000 is not suitable for the gluing of polyolefin (polyethylene, polypropylene), silicones, hydrocarbon fluorides (teflon), soft PVC, soft polyurethane and butyl rubber.

Instructions for Use:

1. Contact surfaces must be thoroughly cleaned and lightly abraded.
2. Two parts (by weight or volume) of component A are to be thoroughly mixed with one part of component B until a homogeneous colour is attained.
3. A coloration is possible by adding AKEPOX colour pastes up to a maximum of 5 % of the total volume.
4. The mixture remains workable for ca. 20 – 30 minutes at 20° C. After ca. 6 – 8 hours (20° C) the bonded parts can be transported, after 12 – 16 hours (20° C) they can bear loads and be tooled. The maximum strength is reached after 7 days (20° C).
5. Tools can be cleaned with AKEMI Nitro Dilution.
6. Warmth accelerates and cold retards the hardening process.

Special Hints:

- The optimal mechanical and chemical properties can only be attained by adhering to the exact mixing proportions; excess of component A or B has the effect of a plasticizer and can cause discolouration of the marginal area.
- Use AKEMI Liquid Glove to protect your hands.
- Component A and B should be extracted with separate spatulas.
- The adhesive is no longer to be used if it has already thickened or is jellifying.

- The product is not to be used at temperatures under 10° C because it will then insufficiently harden.
- At constant temperatures above 50° C the hardened adhesive is inclined to yellow.
- The hardened adhesive can no longer be removed by means of solvents. This can only be achieved mechanically or by applying higher temperatures (> 200° C).
- If adhesive has been correctly worked it presents no hazard to health when the hardening process is completed.
- The A-component tends slightly to crystallise (honey effect). The product can be made workable again by warming it.
- The stability of the bonding is highly dependent upon the natural stone which is to be bonded: Silicate-bound stones react better than carbonate-bound stones.

Safety Measures: see EC Safety Data Sheet

Technical Data:

1. Component A: colour: colourless – slightly yellow, transparent
   density: ca. 1,15 g/cm³

   Component B: colour: colourless – slightly yellow, transparent
   density: CA: 10 G/cm³

2. Working time:

a) a mixture of 100 g of component A + 50 g of component B

at 10° C:	60	-	70 minutes
at 20° C:	20	-	30 minutes
at 30° C:	15	-	20 minutes
at 40° C:	5	-	10 minutes

b) at 20° C with varying amounts

20 g of component A +	10 g of component B:	35 – 45 minutes
50 g of component A +	25 g of component B:	25 – 35 minutes
100 g of component A +	50 g of component B:	20 – 30 minutes
300 g of component A +	150 g of component B:	15 – 25 minutes

3. The hardening process (Shore D hardness) of a 20 mm layer at 20° C

3 hours	4 hours	5 hours	6 hours	7 hours	8 hours	24 hours
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4. Mechanical properties

bending strength (DIN 53452):	60	-	70 N/mm²
tensile strength (DIN 53455):	30	-	40 N/mm²
modulus of elasticity:	2500	-	3000 N/mm²

5. Chemical Resistance

Water absorption DIN 53495	> 0.5 %
Sodium Chloride Solution 10%	stable
Salt Water	stable
Ammonium 10%	stable
Soda Lye 10%	stable
Hydrochloric acid 10%	stable
Acetic acid 10%	conditionally stable
Formic acid 10%	conditionally stable
Petrol	stable
Diesel oil	stable
Lubricating oil	stable

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6. Shelf life:	1 year approx. if stored in cool place free from frost in its tightly closed original container.

Notice: The above information is based on the latest stage of technical progress. It is to be considered as a non-binding hint and does not release the user from a performance test, since application, processing and environmental influences are beyond our realm of control.

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