

AKELUX Repair System

Instructions for Use

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I. System Description

The AKELUX Repair System is a complete system for the high-quality repair of surfaces and defects on natural and artificial stone (such as marble, granite, quartz) as well as ceramics. AKELUX Repair System uses the light-hardening compound material technology and is designed for professional craftsmen and users.

II. Areas of application

The AKELUX Repair System is suitable for the high-quality and professional repair of all natural and artificial stone as well as ceramics in the interior and exterior:

- Surface scratches > 0.5 mm depth
- Chipping of edges
- Holes and bouncers
- Cracks > 0.5 mm depth
- Corner cut-outs
- Defects caused during installation or processing
(not to be used for damage affecting the statics)

III. Repair Process

The success of the repair process depends on the proper use of all materials, tools and accessories:

- Check all system components before starting work.
- Read all of the separate instruction manuals before starting a repair.
- Working temperature: 12 - 28°C

Before starting: The damage must be analysed fundamentally in order to achieve an optimal result. In the following, a distinction is made between edge damage, holes as well as scratches and cracks.

A. Repair of edges

Instructions for use in the event of a break-off or chipping of an edge (e.g. kitchen counter-top, window sill, bathroom, stair tread):

1. Mill out the damaged area and remove all loose parts and dust. Milling can be done manually or mechanically, for example with a Dremel and matching diamond grinding head.
2. Clean the damaged area thoroughly with AKELUX Cleaner.

3. Apply AKELUX Primer and allow to dry for approx. 60 seconds to ensure a permanent chemical bond between natural and artificial stone or ceramics and the AKELUX repair materials.
4. Ceramic shards that differ greatly from the decor can now be covered with a very thin layer of AKELUX Opaquing Agent. This layer must then be cured for 60 seconds with the AKELUX LED Light Emitter.

IMPORTANT:

- Thicker layers may lead to incomplete hardening.
- If a work step does not lead to a covering success, repeat the application after hardening.

5. Mask the damaged area at the edge with transparent tape to be able to check the degree of filling. Then apply AKELUX Filler transparent liquid or AKELUX Filler transparent gel crystal for the first filling.
6. Cover damaged area with AKELUX Transparent Film or, in the case of textured surfaces, with a surface structure stamp (see p. 7) and harden 60 s/cm² with AKELUX LED Light Emitter.

IMPORTANT:

- Follow the instructions for use of the AKELUX LED Light Emitter.
- For larger damaged areas, move the AKELUX LED light source slowly over the damaged area and extend the hardening time depending on the size of the damage.
- Do not press on the film or stamp and do not create air pockets.

7. If necessary, mix AKELUX Filler transparent liquid with different coloured AKELUX Fillers on the AKELUX Mixing Plate (max. 50% colour portion) and adapt as closely as possible to the object colour. Use fine screening to reproduce the colour structure of the natural and artificial stone or ceramics. Harden each colour shade for approx. 60 seconds to prevent mixing of the individual colours.
8. To imitate crystalline effects, fill the damaged area with AKELUX Filler transparent liquid or mixed with coloured AKELUX Filler. Add AKELUX Structure in the appropriate colour shade and slightly overfill the damaged area. Cover the damaged area with AKELUX Transparent Film and harden for 60 s/cm² with AKELUX LED Light Emitter.
9. Carefully remove excess material with AKELUX Planer. For limestone, we recommend the use of cuttlebone.
This step is not necessary when using a surface structure stamp.

IMPORTANT:

- Always check AKELUX Planer for damage to the planing surface before use.
- If micro-holes appear on the surface after removal, fill with AKELUX Filler transparent liquid, cover with AKELUX Transparent Film and harden 60 s/cm² with AKELUX LED Light Emitter.

10. Place AKELUX Silicone Abrasive Cloth on the polishing block and wet grind the damaged area in the sequence 2400-3200-4000.

This step is not necessary when using a surface structure stamp.

IMPORTANT:

- For dark stones with black components (e.g. Nero Assoluto), raster the edge of the damage with AKELUX Retouching Pen to create a harmonious transition.

11. Apply AKELUX Polishing Paste to the repair area. Polish manually with AKELUX Polishing Cloth and the felt side of the AKELUX Grinding/Polishing Block or mechanically (e.g. Dremel with felt wheel).

12. Optional: To imitate glossy structures or surfaces, apply AKELUX Clear Coat very thinly to natural and artificial stone or ceramics, to achieve a perfect finish. Subsequently cover with AKELUX Transparent Film or with a surface structure stamp and cure with AKELUX LED Light Emitter.

B. Repair of holes

Instructions for use in case of a hole (e.g. kitchen countertop, window sill, bathroom, flooring, stair tread):

1. Mill out the damaged area and remove all loose parts and dust. Milling can be done manually or mechanically, for example with a Dremel and matching diamond grinding head.
2. Clean the damaged area thoroughly with AKELUX Cleaner.
3. Apply AKELUX Primer and allow to dry for approx. 60 seconds to ensure a permanent chemical bond between natural and artificial stone or ceramics and the AKELUX repair materials.
4. Ceramic shards that differ greatly from the decor can now be covered with a very thin layer of AKELUX Opaquing Agent. This layer must then be cured for 60 seconds with the AKELUX LED Light Emitter.

IMPORTANT:

- Thicker layers may lead to incomplete hardening.
- If a work step does not lead to a covering success, repeat the application after hardening.

5. Apply AKELUX Filler transparent liquid or AKELUX Filler transparent gel crystal for initial filling.

6. Cover damaged area with AKELUX Transparent Film or, in the case of textured surfaces, with a surface structure stamp (see p. 7) and harden 60 s/cm² with AKELUX LED Light Emitter.

IMPORTANT:

- Follow the instructions for use of the AKELUX LED Light Emitter.
- For larger damaged areas, move the AKELUX LED light source slowly over the damaged area and extend the hardening time depending on the size of the damage.
- Do not press on the film or stamp and do not create air pockets.

7. If necessary, mix AKELUX Filler transparent liquid with different coloured AKELUX Fillers on the AKELUX Mixing Plate (max. 50% colour portion) and adapt as closely as possible to the object colour. Use fine screening to reproduce the colour structure of the natural and artificial stone or ceramics. Harden each colour shade for approx. 60 seconds to prevent mixing of the individual colours.

8. To imitate crystalline effects, fill the damaged area with AKELUX Filler transparent liquid or mixed with coloured AKELUX Filler. Add AKELUX Structure in the appropriate colour shade and slightly overfill the damaged area. Cover the damaged area with AKELUX Transparent Film and harden for 60 s/cm² with AKELUX LED Light Emitter.

9. Carefully remove excess material with AKELUX Planer. For limestone, we recommend the use of cuttlebone.

This step is not necessary when using a surface structure stamp.

IMPORTANT:

- Always check AKELUX Planer for damage to the planing surface before use.
- If micro-holes appear on the surface after removal, fill with AKELUX Filler transparent liquid, cover with AKELUX Transparent Film and harden 60 s/cm² with AKELUX LED Light Emitter.

10. Place AKELUX Silicone Abrasive Cloth on the polishing block and wet grind the damaged area in the sequence 2400-3200-4000.

This step is not necessary when using a surface structure stamp.

IMPORTANT:

- For dark stones with black components (e.g. Nero Assoluto), raster the edge of the damage with AKELUX Retouching Pen to create a harmonious transition.

11. Apply AKELUX Polishing Paste to the repair area. Polish manually with AKELUX Polishing Cloth and the felt side of the AKELUX Grinding/Polishing Block or mechanically (e.g. Dremel with felt wheel).

12. Optional: To imitate glossy structures or surfaces, apply AKELUX Clear Coat very thinly to natural and artificial stone or ceramics, to achieve a perfect finish. Subsequently cover with AKELUX Transparent Film or with a surface structure stamp and cure with AKELUX LED Light Emitter.

C. Repair of scratches

Instructions for use in case of a scratch or crack (e.g. kitchen countertop, window sill, bathroom, flooring, stair tread):

1. Mill out the damaged area and remove all loose parts and dust. Milling can be done manually or mechanically, for example with a Dremel and matching diamond grinding head.
2. Clean the damaged area thoroughly with AKELUX Cleaner.
3. Apply AKELUX Primer and allow to dry for approx. 60 seconds to ensure a permanent chemical bond between natural and artificial stone or ceramics and the AKELUX repair materials.
4. Ceramic shards that differ greatly from the decor can now be covered with a very thin layer of AKELUX Opaquing Agent. This layer must then be cured for 60 seconds with the AKELUX LED Light Emitter.

IMPORTANT:

- Thicker layers may lead to incomplete hardening.
- If a work step does not lead to a covering success, repeat the application after hardening.

5. Apply AKELUX Filler transparent liquid or AKELUX Filler transparent gel crystal for initial filling.
6. Cover damaged area with AKELUX Transparent Film or, in the case of textured surfaces, with a surface structure stamp (see p. 7) and harden 60 s/cm² with AKELUX LED Light Emitter.

IMPORTANT:

- Follow the instructions for use of the AKELUX LED Light Emitter.
- For larger damaged areas, move the AKELUX LED light source slowly over the damaged area and extend the hardening time depending on the size of the damage.
- Do not press on the film or stamp and do not create air pockets.

7. If necessary, mix AKELUX Filler transparent liquid with different coloured AKELUX Fillers on the AKELUX Mixing Plate (max. 50% colour portion) and adapt as closely as possible to the object colour. Use fine screening to reproduce the colour structure of the natural and artificial stone or ceramics. Harden each colour shade for approx. 60 seconds to prevent mixing of the individual colours.
8. To imitate crystalline effects, fill the damaged area with AKELUX Filler transparent liquid or mixed with coloured AKELUX Filler. Add AKELUX Structure in the appropriate colour shade and slightly overfill the damaged area. Cover the damaged area with AKELUX Transparent Film and harden for 60 s/cm² with AKELUX LED Light Emitter.

- Carefully remove excess material with AKELUX Planer. For limestone, we recommend the use of cuttlebone.

This step is not necessary when using a surface structure stamp.

IMPORTANT:

- Always check AKELUX Planer for damage to the planing surface before use.
- If micro-holes appear on the surface after removal, fill with AKELUX Filler transparent liquid, cover with AKELUX Transparent Film and harden 60 s/cm² with AKELUX LED Light Emitter.

- Place AKELUX Silicone Abrasive Cloth on the polishing block and wet grind the damaged area in the sequence 2400-3200-4000.

This step is not necessary when using a surface structure stamp.

IMPORTANT:

- For dark stones with black components (e.g. Nero Assoluto), raster the edge of the damage with AKELUX Retouching Pen to create a harmonious transition.

- Apply AKELUX Polishing Paste to the repair area. Polish manually with AKELUX Polishing Cloth and the felt side of the AKELUX Grinding/Polishing Block or mechanically (e.g. Dremel with felt wheel).

- Optional: To imitate glossy structures or surfaces, apply AKELUX Clear Coat very thinly to natural and artificial stone or ceramics, to achieve a perfect finish. Subsequently cover with AKELUX Transparent Film or with a surface structure stamp and cure with AKELUX LED Light Emitter.

D. Creating a surface structure stamp (imprint) for structured surfaces

To imitate structured surfaces with the AKELUX System, it is necessary to use a transparent surface stamp instead of the Transparent Film.

Please note that an exact filling must be ensured here, as in this case no planer, sanding cloth can be used after hardening.

1. Shake AKEMI Release Agent and apply thinly with a cloth to a suitable and clean surface and allow to dry.
2. Polish the surface with a clean cloth.
3. Apply AKELUX Filler transparent liquid to the pre-treated surface and allow to harden with the AKELUX LED Light Emitter.
4. Now carefully separate the hardened stamp from the surface with the help of a spatula or a thin knife blade.

5. Before repair, treat the structured side of the stamp again with AKEMI Release Agent according to points 1 and 2.
6. Remove residues of AKEMI Release Agent from the stone surface with AKELUX Cleaner.

For the creation of a surface structure stamp scan QR code or watch the video for step-by-step video instructions at <https://youtu.be/5hSR-YtVNEg>:

SCAN ME:



IV. Special Notes

- Before starting work, check all system components in question, especially the AKELUX LED Light Emitter, as well as the planing surface of the AKELUX Planer.
- Always ensure that the AKELUX materials are fully hardened with the AKELUX LED Light Emitter for at least 60 seconds per cm².

IMPORTANT:

- Not hardened AKELUX materials cannot maintain their defined properties and turn yellow

- Correct and rework defects immediately in one work step.
- Apply AKELUX Primer to the AKELUX repair material for adhesion on the entire joint surfaces of the stone. This will help you achieve optimum bonding properties.
- Wash out AKELUX Silicone Abrasive Cloth well after use and allow to dry. This prolongs the readiness for use.
- Remove unsatisfactory retouching results immediately:
 - a) remove with solvent before light hardening.
 - b) after light hardening, grind out with a hand grinder.
- Protect all materials as well as the treated damaged area from direct sunlight. Prevents uncontrolled polymerisation of the material.
- When working with the AKELUX Planer, observe the red pressure point and always stay on the damaged area. Do not cut against the edge of the material. This way you will achieve the desired material reduction without affecting the surrounding area.
- Handle the AKELUX Planer with care and check it for functionality before starting work (e.g. the planer can be used on both sides).

V. Product Overview and Description

AKELUX Set

Product	Area of application	Size	Sales Unit	Article No.
AKELUX Repair System PRO complete kit based on UV-technology in a portable case of elegant design, includes all articles of the AKELUX system, especially AKELUX LED Light Emitter 2000	Repair of small damaged areas (edges, holes, scratches) on kitchen worktops, countertops and window sills made of natural and artificial stone (s.a. marble, granite, quartz) as well as ceramics. Enables the stone industry to effect small repair work and thus avoids an additional grinding and polishing process of the complete stone surface. Helps the professional processor of natural and artificial stone to quickly and safely repair small damages, especially if an installation has already been done. The set allows repair work on all stone colours and structures due to use of <u>all</u> colours of the AKELUX fillers contained.	1 set in a portable case	1	62000

AKELUX Cleaning

Product	Area of application	Size	Sales Unit	Article No.
AKELUX Cleaner transparent ethyl alcohol dilution	For the efficient cleaning of damaged areas.	150 ml bottle	5	62014

AKELUX Adhesive Layer

Product	Area of application	Size	Sales Unit	Article No.
AKELUX Primer 1-component liquid in a practical application pen	For the creation of the chemical compound of stones with silicon components and filler.	1 ml pen	5	62013

AKELUX Filler, liquid

Product	Area of application	Size	Sales Unit	Article No.
AKELUX Filler transparent liquid light-hardening, transparent, liquid filler in handy application syringe Colour: transparent CC 2200 MAGIC	To repair small damaged areas (edges, holes, scratches) on kitchen worktops, countertops and window sills made of natural and artificial stone (s.a. marble, granite, quartz).	3 ml syringe	5	62001

AKELUX Filler, gel-like

Product	Area of application	Size	Sales Unit	Article No.
AKELUX Filler light-hardening, gel-like fillers in handy application syringes Colour: Colour Code:	To repair small damaged areas (edges, holes, scratches) on kitchen worktops, countertops and window sills made of natural and artificial stone (s.a. marble, granite, quartz).			
transparent gel crystal /		3 ml syringe	5	62071
white 1100		2 ml syringe	5	62003
marble-white 1140		2 ml syringe	5	62004
green /		2 ml syringe	5	62005
yellow /		2 ml syringe	5	62006
blue /		2 ml syringe	5	62007
red /		2 ml syringe	5	62008
brown 2030		2 ml syringe	5	62009
black 1040		2 ml syringe	5	62010
AKELUX Opaquing Agent light-hardening, gel-like filler in handy application syringe	For covering dark surfaces when a light-coloured top coat is to be repaired above.	3 ml syringe	5	62070

AKELUX Structure-Crystals

Product	Area of application	Grain approx.	Size	Sales Unit	Article No.
AKELUX Structure ground structure crystals Colour: white	For the creation of a structured repair surface, which does not differ from the surrounding area.	0.8 mm	4 g can	5	62016
		1.5 mm	4 g can	5	62015
Colour: black		0.8 mm	4 g can	5	62018
		1.5 mm	4 g can	5	62017
Colour: transparent		0.8 mm	4 g can	5	62020
		1.5 mm	4 g can	5	62019

AKELUX Coating

Product	Area of application	Size	Sales Unit	Article No.
AKELUX Clear Coat light-hardening clear coat	To create a glossy surface on which no mechanical polishing is possible, e.g. on glazed tiles.	5 ml bottle	5	62069

AKELUX Emitter

Product	Area of application	Size	Sales Unit	Article No.
AKELUX LED Light Emitter 2000 unit with 2000 mW LED-diodes and power supply unit	Used for the specific hardening of all light-hardening AKELUX materials.		1	62032
AKELUX Protective Shield eye protection against UV-radiation	To be fixed to the LED Light Emitter (Art.No 62032/62061).		5	62033

AKELUX Surface Treatment / Accessories

Product	Area of application	Grain approx.	Size	Sales Unit	Article No.
AKELUX Silicone Abrasive Cloth silicone-containing cloth with micro-abrasives	For wet grinding of the area to be repaired.	2400		5	62025
		3200		5	62026
		4000		5	62027
AKELUX Grinding/Polishing Block multifunctional working block	For the optimal grinding of the damaged area (with AKEMI Silicone Abrasive Cloth) and high gloss polishing with the felt side.			5	62023
AKELUX Polishing Paste	For high gloss polishing of the damaged area.		150 ml bottle	5	62029
AKELUX Polishing Cloth	For final polishing with AKELUX Polishing Paste.			5	62028
AKELUX Cleaning Brush	For the efficient cleaning of the AKELUX Planer.			1	62024
AKELUX Planer handy special planer made of plastic	Takes away excess material on repaired area in order to reach the same level as the rest of the stone surface. Makes sure that the polish of the surrounding stone is not affected.			5	62048
AKELUX Blade for Planer	Spare blade for AKELUX Planer (Art.No 62048).			5	62022
AKELUX Retouching Pen acrylic varnish	To minimize the optical difference between the repaired and surrounding area of dark stones.		1 ml pen	5	62030
AKELUX Transparent Film transparent film	For the surface covering of the damaged area before light hardening. In this way the repaired area is levelled and the AKELUX LED Light Emitter is protected against soiling by AKELUX fillers.			5	62031
Release Agent high-quality, polymer-strengthened, solvent-free release agent based on a wax emulsion	Release layer for the creation of a surface structure stamp for the repair of structured or rough surfaces. This release layer does not leave any filler residues when the surface structure is copied using an impression stamp.		250 ml bottle	1	11909
AKELUX Dental Spike top for AKELUX Filler	For efficient filling of the damaged area.			15	62034
AKELUX Application Instrument	For specific application of AKELUX Structure or mixed colours on the damaged area			5	62036
AKELUX Microfibre Cloth high-quality, blue microfibre cloth, 39 x 39 cm	For repolishing surfaces wetted with AKELUX Release Agent or use as a cleaning cloth after repair works.			1	63323
AKELUX Mixing Plate	For the mixing of Akelux Filler.			1	62035

AKELUX Information

Product	Area of application	Size	Sales Unit	Article No.
AKELUX Repair System Instruction Manual	Instruction Manual AKELUX Repair System.		1	
AKELUX LED Light Emitter Instruction Manual	Instruction Manual AKELUX LED Light Emitter.		1	
AKELUX Repair System Flyer	Overview for reparations with AKELUX Repair System.		1	

AKELUX Package

Product	Area of application	Size	Sales Unit	Article No.
AKELUX Case	Stable case for the protection and transport of the AKELUX Repair System.		1	
AKELUX Case Inlay	Clear inlay for the accessories of the AKELUX Repair System.		1	

VI. Storage

Light-hardening fillers and adhesion promoters (primers) must be stored at room temperature in the range of 2°C to 28°C. Temperatures above or below this range may affect workability. Temperatures above or below this range may affect the workability of the materials.

The storage stability of the light-hardening filling materials (AKELUX Filler transparent liquid, AKELUX transparent gel crystal and coloured AKELUX Filler) is 4 years.

The storage stability of the AKELUX primer is 3 years.

All other materials, equipment and auxiliaries are subject to the usual adapted storage.

**IMPORTANT:
Keep out of reach of children!**

VII. Safety

Read Safety Data Sheets before handling or using the products (www.akemi.com).

VIII. Important Notice

The product was developed for use in natural and artificial stone as well as ceramics and must be applied according to the instructions for use. The manufacturer accepts no liability for damage resulting from misuse or improper application. In addition, the user is obliged to check the product for suitability and possible use for the intended purposes on his own responsibility before using it, especially if these purposes are not listed in the instructions for use.

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.