Heraeus Kulzer
Mitsui Chemicals Group

KERASYS® LC

The Light Curing Repair System for Sanitary Ceramics and Porcelain

www.kerasys.de

Kerasys® LC

fast
easy
cost-effective

Kerasys® LC is a light curing repair system for sanitary ceramics and porcelain, developed by Heraeus Kulzer, one of the leading global providers of high-performance, light curing composites.
Kerasys® LC is used to repair defects such as bubbles or black spots created during manufacture, and minor damage incurred during storage, transportation and assembly, achieving excellent results and making the former damage nearly invisible. The Kerasys® LC system has formed an integral part of the production process of many well-known sanitary ceramic manufacturers across the world for more than 20 years and significantly contributes to lowering product reject rates thanks to the ease with which it can be applied and thanks to its competitive price.

ONE SYSTEM – MANY ADVANTAGES

In addition to being used in the ceramic industry, Kerasys® LC is also used by many restorers and porcelain manufacturers. For the service business the Kerasys® LC system is available as a “Sanitary Kit”. This “Kit” contains a selection of all necessary components to repair already build-in objects.
The premis – Keep it fast and easy

The most important features and advantages

- Low material and processing costs
- Efficiency – objects with multiple damages can be repaired using one repair process
- Individual shade matching possible – guaranteed to reproduce specific colors
- Free color and finish measurements
- Easy to apply – no prior knowledge required
- Unlimited processing time, fast curing time
- One-component material (colored and ready to use) – no mixing required
- Safe, non-toxic, cures under blue light (no UV light)
- Gap-free thanks to the one-component Primer RC bonding agent
- Suitable for deep cavities and areas that are constantly damp
- Material can be stored for more than 15 years
- Color-fast for 10 years and resistant to temperatures of up to 140 °C
- Wide range of standard colors
- Lye, acid and cleaning agent resistant

Tips & Tricks

- When drilling out the defect, use the Kerasys® Drill in a diagonal angle. Fix the Kerasys® Dremel with your hands to avoid slipping off

- Without Insulating Gel or Polyethylene film the surface won't get ideal hardness which leads to bad polishing results. Repaired area remains visible

- If one object has several areas that require repair, all of the repair steps should be preformed separately in the described order for each area. Scale economy!
- The Technovit 2500 LC Clear Filler is also suitable for repairing unglazed parts if used in conjunction with the Primer RC
- For the color measuring send a sample tile of your ceramic color with a flat surface in square of 50 x 50 mm to our service. The more even the surface of your sample tile, the more accuarate the color measurement!
- Start with low expenses? Order the Sanitary Kit

The Perfect Color

The repairs performed with Kerasys® LC should have the same demand of high quality as you expect from your products. The basic of this philosophy is, that the color of the repair material comes very close to the color of the ceramic objects. Heraeus Kulzer performs FREE measurements of color and glaze in its own R&D laboratories to choose the best color for your object out of more than 200 standard colors. If we cannot offer a standard color, we can provide an individual color matching service for corresponding purchase quantities.

... to strike the right shade
To ensure a maximum of quality please use our **FREE** color and glaze measurements.

This service is as easy as the whole Kerasys® LC system:

- please create a sample tile of your ceramic color with a flat surface in square of 50 x 50 mm
- send the tile to:
  Heraeus Kulzer GmbH
  Division Technique
  Philipp-Reis-Straße 8/13
  61273 Wehrheim (Germany)
- we perform the measurements of color and glaze to choose the best color paste for your object. Subsequent to this we send your tile with a well-done reparation as a reference back to you.
- Now it´s your decision about the result!

If we cannot offer a standard color, we can provide an individual shade matching service!

Please note for individual shade matching:
The more flat the surface of your sample tile, the more accurate the color measurement!

Step By Step Application

1. CLEANING

The defect must be drilled out with the Kerasys® Drill [1] or an air pressure hammer until the damaged spot or dirt particles have been completely removed. It must be ensured that the damaged area is free from dust and grease before performing the subsequent repair steps [2].

[1]

[2]

2. PREPARATION

Use the bottle of Primer RC and insert 1 drop of the Primer liquid into the damaged area [3]. Leave to dry for 30 - 60 seconds.

[3]

3. APPLYING THE TECHNOVIT RESIN OR TECHNOVIT FLOW RESIN

Technovit resin

Take the corresponding Technovit 25... paste out of the syringe, using the Plasmacoat Instrument (close the syringe again at once) and apply it to the defective area (height 1 – 2 mm). When doing so, work out from the middle to the edges to avoid air inclusions. Produce a flat surface with the Plasmacoat Instrument [4.1].
Then cover it with the Insulating Gel [5] or the Polyethylene film [6] and cure it for 10 seconds with the Pekalux POWER LED. Once polymerisation is complete, wipe off the Insulating Gel with a soft cloth or else remove the film, as the case may be.

Technovit flow resin

Attach the cannula to the syringe and apply the material directly into the defect by pressing the plunger of the syringe [4.2]. Leave a small amount of surplus, carefully cover it with the Polyethylene film and smooth it down a little with the Plasmacoat Instrument. After that, cure it with the Pekalux POWER LED [6] and then remove the film.
Technovit flow resin can be used alternatively to normal Technovit resin if you prefer working with flowable material.

[4.1]

[4.2]

[5]

[6]

Advice: The Insulating Gel or Polyethylene film ensures optimum surface hardness – without, it will be difficult to polish the area and means that the repair remains visible. So final polymerization must always be done by using the Insulating Gel or Polyethylene film in order to obtain a high gloss and dirt resistant finish.

4. FINISH THE REPAIR

The repaired ceramic surface is grinded smooth with the Silico grinder (2000 – 3000 Upm) [7] and polished with the Diafix polisher (3000 – 4000 Upm) [8] to achieve a high-gloss finish. Use the white trimming stone before using the grinder for the first time to round off any sharp edges and to shape it ergonomically.

[7]

[8]

For defects deeper than 2 mm

If the damage penetrates deeper than 2 mm, a layer of Technovit 2500 LC Clear Filler is used to fill the cavity 1 mm below the ceramic surface. Apply the Technovit 2500 LC Clear Filler into the damaged area (height up to 10 mm) and polymerize for 10 seconds by Pekalux POWER LED without using Insulating Gel or Polyethylene film. Apply the corredponding Technovit 25... resin on top and follow the usual application steps to finish the repair.
Advice: The filler is also suitable for repairing unglazed parts when used in conjunction with Primer RC. Technovit 2500 Clear Filler can be polymerized up to 10 mm in 10 seconds!

Components

1 Technovit® 25... colors

Lightcuring, inorganic filled composite in ceramic colors in middle viscosity, for nearly invisible repair of surface damage up to 2 mm depth. Cures in 10 seconds under blue light. Color can be matched to suit individual requirements!

2 Technovit® 25... flow colors

Lightcuring, inorganic filled composite in the color of the ceramic with a flowable viscosity. Possesses the same product properties as paste-type color composites, but can be filled directly into the repair area without the need for any shaping.

3 Technovit® 2500 LC Clear Filler

High viscosity, transparent resin for filling surface damage up to 10 mm depth, for use as an underfilling or for repairing unglazed component parts. Cures within 10 seconds under blue light.

4 Pekalux POWER LED

Cordless curing light with a powerful and stable Li-Ion battery. The curing time is easily set on the handpiece of the Pekalux POWER LED. There are four irradiation modes available. At the end of the set time, the Pekalux POWER LED switches off automatically. The high light output up to 3.000 nW/cm2 leads to deeper curing in less time. It consists of high performance electronic components for a long life and reliable usage. Due to the powerful light output the curing time of Technovit colors is only 10 seconds.

5 Primer RC

One-phase primer used to chemically bond polymers to ceramics. The Primer RC prevents gaps from forming between the ceramics and the repair material, and significantly increases the quality of the repair. To achieve the best resistance against dust, water and temperature variations, it is generally recommended applying Primer RC for all repairs.

6 Drill chuck for Kerasys® Dremel

Quick-action drill chuck to screw onto the Kerasys® Dremel. Suitable for all shank diameters of sizes 0.4 – 3.5 mm.

7 Kerasys® Dremel 8100

Continuously variable rotation tool that is suitable for all grinding and polishing instruments. The unit is operated by a powerful lithium-ion rechargeable battery and is easy to operate in a controllable way through the ergonomically cased housing.

8 Kerasys® rechargeable battery for Dremel

Rechargeable battery for the Kerasys® Dremel. The parallel charging of the second battery makes continuous repair work possible while discharging the battery that is being used.

9 Kerasys® Drill

Drill specifically designed for grinding ceramic surfaces with pinholes, cracks or soot particles. The drill is used by applying slight pressure and operates in short cycles at speeds of 2000 – 3000 rpm.

10 Diafix Polisher

Felt polisher with diamond wax for mirror polishing of repaired defects or dull areas on ceramic surfaces.

11 Silico Grinder

A special silicone grinder for grinding the surfaces of areas that require repair – operates at speeds of 2000 - 3000 rpm. The surface hardness of the Silico has been chosen to ensure that only Technovit resin – but not the ceramic surface – is removed. Silico must be grinded into shape with the included white trimming stone before first use.

12 Polyethylene films

Films to cover the filled repair area before polymerisation. The film is used to exclude oxygen during polymerisation, to increase surface hardness and to achieve a mirror finish.

13 Plasmacoat Instrument

Tool used for modelling Technovit repair pastes with different shaped ends and an ergonomic handle for optimum ease of application. The Plasmacoat Instrument is covered with a special coating to prevent Technovit resins from sticking to it.

14 Insulating Gel

Gel which has to be applied before light curing to cover areas which were filled with the resin. The Insulating Gel is used to exclude oxygen during polymerisation, to increase surface hardness and to achieve a mirror finish.

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