



PREMIUM ZIRCONIA SOLUTIONS

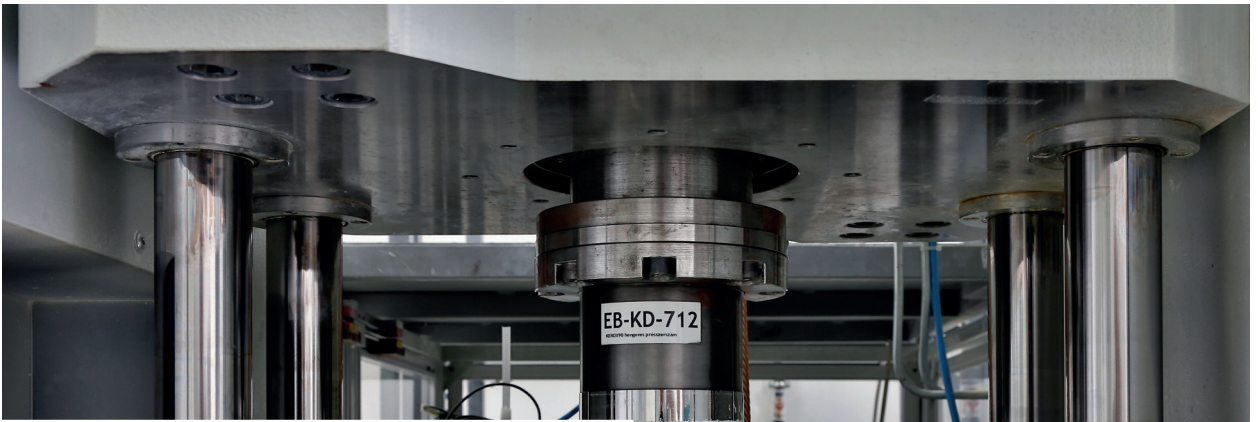
THE **SECRET** BEHIND A CONFIDENT SMILE

PREMIUM QUALITY WITH 30 YEARS OF EXPERTISE
IN HIGH PRECISION CERAMIC MANUFACTURING



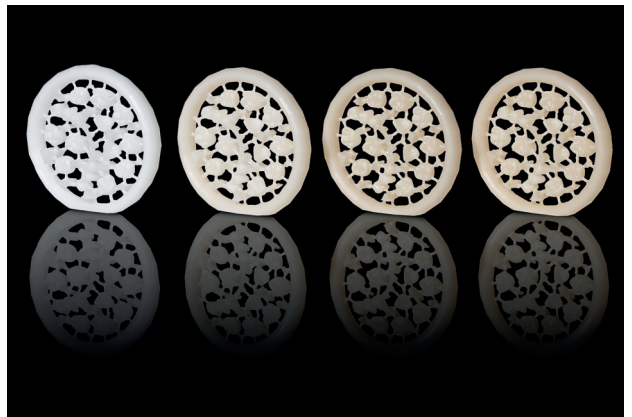
100 YEAR
LIFETIME WARRANTY

www.kerodental.com



INDUSTRIAL BACKGROUND

30 YEARS OF EXPERTISE
IN HIGH PRECISION
CERAMICS MANUFACTURING



Kerox Dental is a 30+ year old high precision ceramics manufacturer based in the EU, with a production facility in Hungary.

WE MANUFACTURE AND SELL OVER 60 MILLION HIGH TECH CERAMIC PRODUCTS ANNUALLY,

specializing in creating the highest quality dental zirconia on the market, which is backed up by our dedicated R&D and engineering team of 35 that only works on zirconia and alumina ceramics.

Kerox has a unique pressing and sintering technology, with total quality management. We combine the use of the most advanced qualifying methods and automatic inspection machinery, as well as demanding multi-stage quality control procedures including 100% inspection of all parts.

Our motto is **“No technological compromise to quality”**

We never compromise our high standards or cut corners. Utilizing the latest technology, the very best raw materials and most experienced professionals in the industry, our innovative high strength/high translucent dental zirconia products have quickly grown to be admired and used by lab technicians and dentists from all over the world.

Kerox has customers in more than 40 countries worldwide, including those in Europe, North America, South America, Asia, Australia and Africa, providing them superior customer service care, reliable on-time delivery and competitive prices.



KEROX GROUP

- 300,000 Zirconia ceramic parts capacity in 1 day
- More than 700 employees
- More than 35 engineers
- More than 20 press machines
- Two tunnel kilns
- In-house tool shop
- Several fully automated assembly lines and devices for complex products



MANUFACTURING PLANT:
22.000 m² / 250.000 ft²

PRESSING:

WHERE TECHNOLOGY MEETS TECHNIQUE

KEROX MULTI PRESSING

Kerox Dental Zirconia blanks are made with Yttria stabilized on every grain - manufactured with premium Japanese raw materials.

CHEMICAL PROPERTIES

Ingredients	Weight percentage
ZrO ₂	90.2 - 94.3%
Y ₂ O ₃	5.7 - 9.8%
Al ₂ O ₃	< 0.25%
SiO ₂	< 0.02%
Fe ₂ O ₃	< 0.02%
Na ₂ O	< 0.02%

PHYSICAL PROPERTIES

Typical properties of sintered body

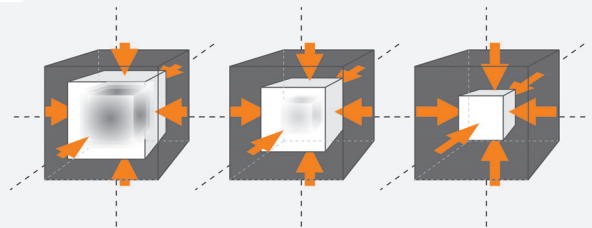
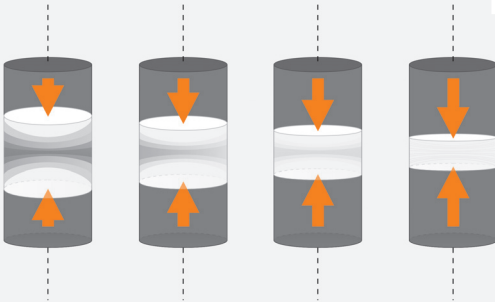
Density (g/cm ³)	6.05
Bending strength (MPa)	1500
Surface hardness (HV10)	1250
Radioactivity (Bq/g)	< 0.01

AXIAL PRESSING ALONE IS INSUFFICIENT

If used alone, will create uneven density, shrinkage and hardness in the blank.

COLD ISOSTATIC PRESSING

- Extreme pressure
- Even densification & mass
- Less porosity
- Less unevenness
- Maximum homogeneity



KEROX DENTAL MULTI PRESSING⁺

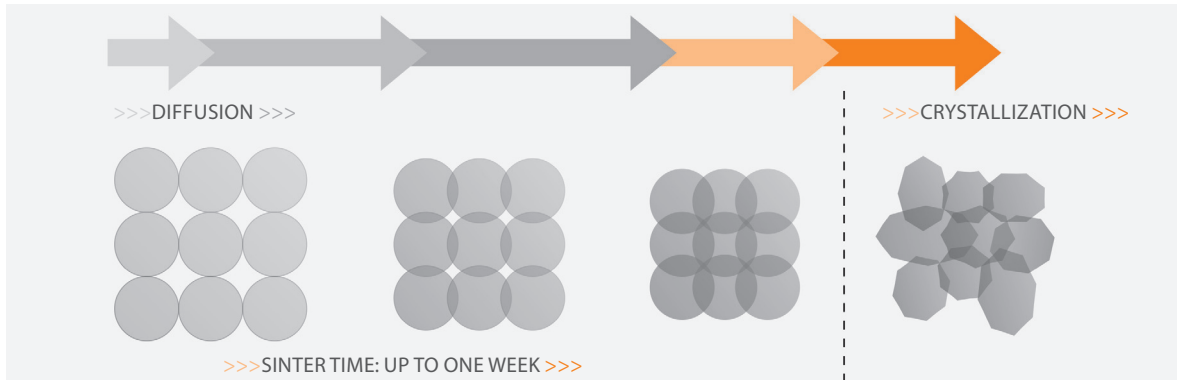
Axial pressing is not enough, properly manufactured dental zirconia needs to be pressed from all sides. Cold Isostatic pressing is time-consuming, but the extreme pressure applied ensures maximum homogenous density in all Kerox blanks.

Optimal blank porosity and density also increases lifetime of milling machines and burrs.

SINTERING: THE BASICS

Pre-sintering At Kerox

Final Sintering In Your Lab



PRE-SINTER

"Neck formation" by diffusion during pre-sintering.
Ensures best crystal sizes and mechanical properties.

FINAL SINTER

Particles melted, density increased, pore sizes decreased at final sinter.

Ensures final metastable tetragonal structure.

Pressing and pre-sintering can be challenging

Underpressed and oversintered ▶ low density, too hard ▶
Overpressed and undersintered ▶ high density, too soft ▶

results in cracking and chipping
results in breaking

OPTIMAL PROCESS

Kerox measures grain size and density to optimize quality. Anything less than optimal pressing and sintering will lead to chipping or breaking during the milling process. Kerox's extensive experience with pressing and sintering provides labs with zirconia blanks that have the perfect combination of density, strength and millability.

By perfecting the right combination of raw materials, particle sizes, pressing protocols and sintering curves, Kerox has mastered the art of producing premium dental zirconia

AND THE FINAL PRODUCT IS A PREMIUM ZIRCONIA WITH A
FLEXURAL STRENGTH OF UP TO 1500 MPA AND COMES WITH
100 YEAR LIFETIME WARRANTY.

KEROX DENTAL ZIRCONIA

MATERIALS FOR EVERY RESTORATION



	Ultra High Translucent (UHT)	High Translucent (HT)	High Strength (HS)
Benefits	<ul style="list-style-type: none"> - 49% Translucency - Viable alternative to Lithium Disilicate 	<ul style="list-style-type: none"> - Highest fracture toughness on the dental market - Very versatile material 	<ul style="list-style-type: none"> - Our highest strength zirconia - Low translucency to cover abutments - Optimal milling properties
Usage	Monolithic anterior and posterior restorations	Full contour and frameworks	Frameworks
Colors	White Pre-shaded (Coming Soon)	White Pre-shaded (H1, H2, H3, H4)	White Pre-shaded (S1, S2, S3, S4)
Systems & Sizes	71, 98, 100 12mm, 14mm, 16mm, 18mm, 20mm, 25mm	71, 98, 100 12mm, 14mm, 16mm, 18mm, 20mm, 25mm	71, 98, 100 12mm, 14mm, 16mm, 18mm, 20mm, 25mm



ULTRA HIGH TRANSLUCENT (UHT)

Compatible system: 71, 98, 100

Available sizes: 12mm, 14mm, 16mm, 18mm, 20mm, 25mm

Strength: 760MPa

- ✓ Applications:
anterior and posterior, inlays onlays, crowns
- ✓ Can be used up to a 3-unit bridge + pontic
- ✓ 49% Translucency

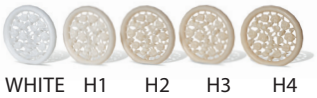
Ultra High Translucent (UHT) was developed to have aesthetics that resemble that of natural teeth. Not only does it come with lithium disilicate like translucency, but it's twice as strong at 760 MPa. It's optimal for full contour anterior restorations, but can also be used in the posterior due to the hard density of the material.

KEROX DENTAL ZIRCONIA

MATERIALS FOR EVERY RESTORATION



SHADES:



WHITE H1 H2 H3 H4



SHADES:



WHITE S1 S2 S3 S4

HIGH TRANSLUCENT (HT)

Compatible system: 71, 98, 100

Available sizes: 12mm, 14mm, 16mm, 18mm, 20mm, 25mm

Strength: 1370MPa

- ✓ Applications: full contour, frameworks, inlays, onlays, crowns, copings
- ✓ Ideal for long-span monolithic bridges
- ✓ Highest fracture toughness on the dental market
- ✓ High flexural strength and high translucency

High Translucent (HT) zirconia was developed to have the highest fracture toughness value on the dental market today. Normal zirconia has an average fracture toughness value of 5 (MPa m^{1/2}), but the Kerox HT is up to 16. This is important because MPa is only a one time measurement of strength, but fracture toughness measures how many times the material can take that force and shows how the finished tooth reacts to repeated pressure and mechanical impact in the mouth. Since we don't only chew once with our lives, but many times a day for years and years, a quality zirconia should have a high fracture toughness value to prevent possible micro cracks and chipping.

HIGH STRENGTH (HS)

Compatible system: 71, 98, 100

Available sizes: 12mm, 14mm, 16mm, 18mm, 20mm, 25mm

Strength: 1460MPa

- ✓ Applications: PFZ substructures, crowns, copings, long span bridges
- ✓ High flexural strength and low translucency
- ✓ Opacity covers abutments perfectly

High Strength (HS) zirconia has optimal milling properties and is recommended for porcelain fused to zirconia framework restorations. The material accepts porcelain layering exceptionally well and its low translucency perfectly covers abutments. It comes with an extremely high flexural strength (close to 1500 MPa) and higher fracture toughness for long span bridges and difficult jobs where additional strength is required.



KEROX ON-SITE TECHNICAL SUPPORT

**MAXIMIZING AESTHETICS
AND PRODUCTIVITY**

KEROX DENTAL TECHNICIANS AND CERAMICS ENGINEERS PROVIDE ON-SITE SUPPORT IN YOUR DENTAL LAB

Kerox customer support is truly world class! No matter where you are in the world, if you have any issue that requires some personal attention, we will fly our lab technicians to you.

We don't just sell products, we are interested in long-term partnerships and making sure you always have your processes 100% dialed in from A-Z.

If you don't require a personal visit, we offer live Skype support from our lab to yours. Email and phone support is also available with your personal representative 7 days a week.

WE CUSTOMIZE INDIVIDUAL SOLUTIONS FOR YOU

- We adjust your milling strategies and advise on burrs, for improved aesthetics and cost savings.
- Labs often find coloring to be inconsistent, we help refine the process no matter what staining system you use.
- Sintering can determine the strength and translucency of the final product. Our ceramics engineers help optimize your furnace settings to not only maximize strength and translucency, but to also save on sinter time and preserve your heating elements.



QUALITY IS IN THE PROCESS

100% TQM WITH IN-HOUSE DEVELOPED SOFTWARE



QUALITY & INNOVATION COMMITMENT

Ongoing research, 100% quality checks and procedures ensure premium quality zirconia blocks for CAD/CAM dental restorations (crowns, bridges, long structures, inlays, and onlays).

This quality commitment contributes to our 100 year lifetime warranty. Units created with Kerox Dental zirconia will not break if fabricated in compliance with the manufacturer's instructions and in accordance with professional processing standards.

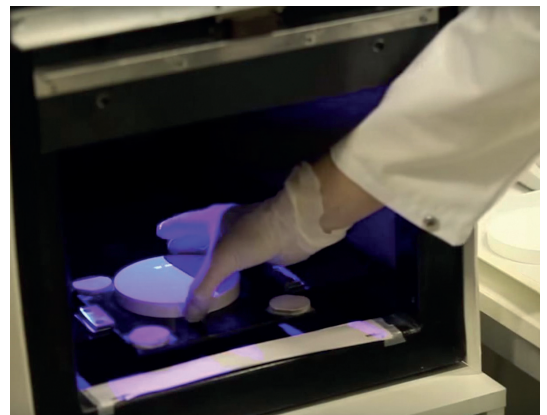
It's very rare that our materials fail, but in case they do, Kerox provides peace of mind and confidence to keep your business moving forward.

TOTAL QUALITY MANAGEMENT

- Failure Modes and Effects Analysis (FMEA) process
- Statistical Process Control
- Kerox stores lot numbers and individual serial numbers in a database for future traceability and claim handling.
- Quality Control Procedures
- 100% computer aided visual control (density, volume and geometry)
- Quality Management acc. to ISO 13485 & CE1008



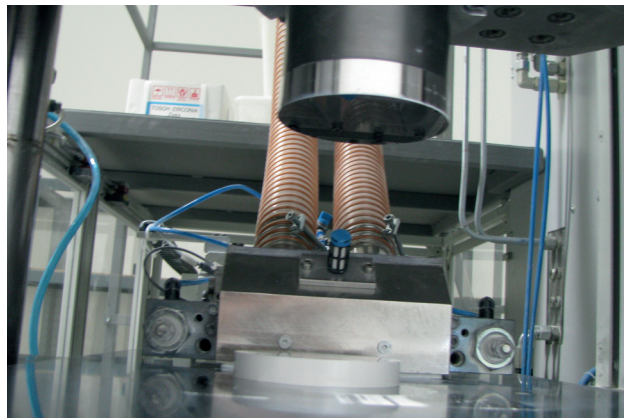
100 YEAR
LIFETIME WARRANTY





LOOK INTO THE WORLD OF KEROX DENTAL

**PREMIUM QUALITY ZIRCONIA
WITH LIFETIME WARRANTY**







Kerox is not your average zirconia company, we have been manufacturing high-tech precision ceramics for over 30 years.

Ceramics is what we know and we do it the best!



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