

# Cercon® zirconia

## What Makes the Difference in Zirconia for Crown and Bridge Production?

### Zirconia Powder Production

The composition, purity and particle size of zirconia powder is very important. Natural zirconia oxide has many impurities and medical grade zirconia oxide must be purified in a tightly controlled manufacturing process. The selection of the powder and preparation is critical. How the powder is processed will affect the amount of porosity or defects in the material.

#### Cercon® Zirconia Powder

- After extensive research, we selected the finest raw materials
- Chosen optimum powder particle size for uniform density
- Every batch of material undergoes thorough testing and quality control
- Our unique, proven formulation consists of zirconium oxide combined with yttrium oxide (approx. 5%), hafnium oxide (<2%), aluminum and silicon oxide (<1%).
- Never any recycled, reused or waste material



### Zirconia Milling Blank Production

There are generally two methods for pressing or compacting the powder into blanks for milling. One is isostatic pressing, which is the most precise method because pressure is evenly applied from all sides creating dimensional stability in all three dimensions. The second is uniaxial pressing, where the powder is pressed on just two sides. These blocks can have non-uniform density through the block which can cause problems with the zirconia framework such as the fit after sintering.

#### Cercon® Milling Blanks

- Produced using isostatic pressing for optimal consistency and stability
- Yttria-stabilized zirconia which resists crack formation and propagation
- High strength zirconia tested at over 1300 MPa of flexural strength
- Controlled by DENTSPLY DeguDent's technologically advanced manufacturing process
- Quality management and controls compliant with EU and FDA requirements
- Every batch tested with the exact expansion factors imprinted on the Cercon Zirconia blank barcode



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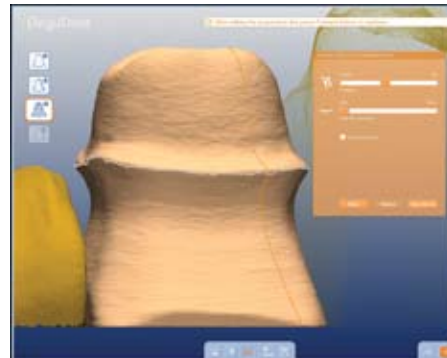
## What Makes the Difference in Zirconia for Crown and Bridge?

### Zirconia Milling Machines

All blanks are specifically designed and manufactured to fit into and meet the machining parameters of the particular milling machine. These machines are also programmed and designed to match the specific material requirements. Even the milling burs are selected for the specific equipment system and material usage.

### Cercon® Milling

- Integrated laser scanner and CAD program for precise results
- High precision machine which uses internal reference axes for self calibration before every milling
- Every block is bar coded uniquely to match the machine milling size to the final sintered framework for optimal fit
- Mills pre-sintered blocks which reduces the cost of milling burs as compared to milling sintered zirconia
- No ceramic particles chip or tear off as may occur with sintered zirconia
- Milling pre-sintered zirconia in the oversized state allows for elimination of any small defects, such as milling marks, once sintered



### Risks of Milling "Generic" Zirconia not Produced by the Manufacturer

- Generic materials have not undergone the years of clinical testing that Certified Cercon Zirconia has
- They are not manufactured to match a specific milling machine, which is critical when milling pre-sintered zirconia
- Not all zirconia sinters at the same temperature. Sintering at the wrong temperature will cause the zirconia to lose fatigue-strength and fail. Cercon zirconia is designed to sinter at a lower temperature (1350°C) than most other zirconias
- Questionable flexural strength of these generic materials may lead to pre-mature restoration failure
- Potential risk with Dentists and Patients



All zirconias are not the same, avoid unnecessary risk

### Cercon® Zirconia - Time Tested, Time Trusted

From the first research undertaken at the Engineering University in Zurich, Switzerland in 1996 and the first clinical studies in the industry at the Zurich Dental School in 1998, Cercon Zirconia has led the way in the all-ceramic revolution.

Now after 9-years of clinical success in more than 10 clinical trials, Cercon has proven to withstand the test of time, which is why Cercon Zirconia frameworks come with a 7-year guarantee against breakage.



For better dentistry

**DENTSPLY**  
PROSTHETICS

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