

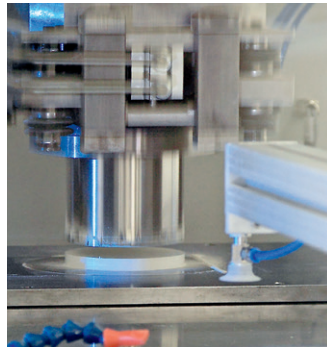
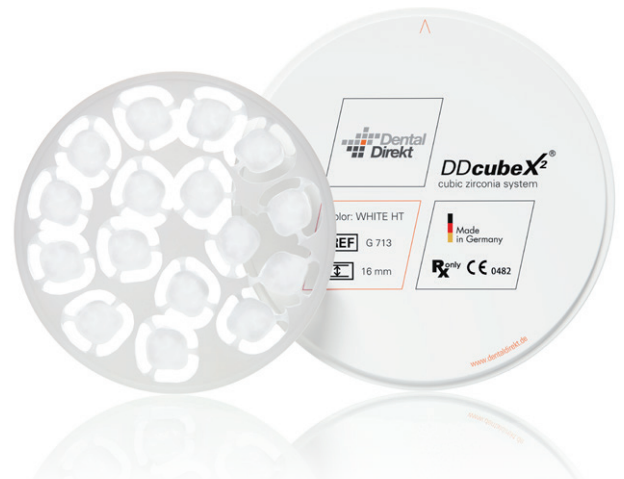
The transparent zirconia production



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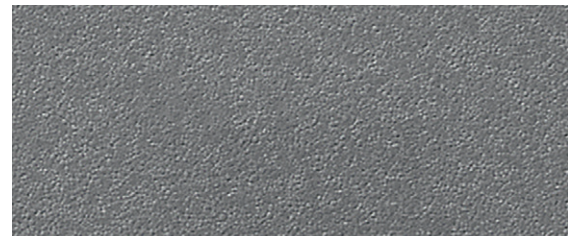
High performance ceramics – high performance processes

Our production processes are the result of extensive research and development efforts and undergo continuous further development. It is the refinements in industrial process management that ensure the quality of medical high-performance ceramics.



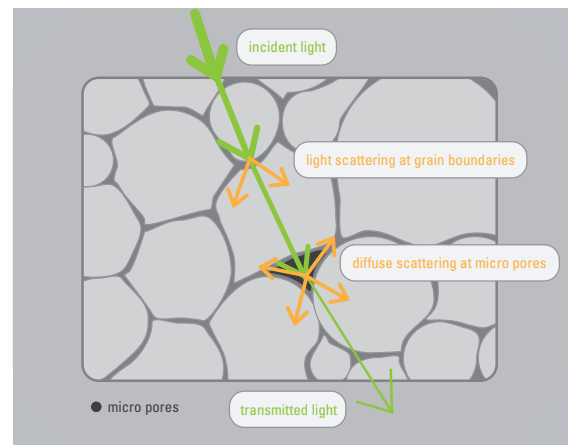
Defect-free ceramics

The quality of zirconium oxide is determined primarily by things that are hardly visible to the naked eye – the homogeneity and flawlessness of the microstructure.



Safety and aesthetics

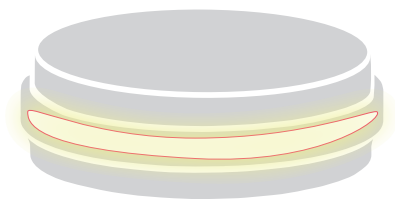
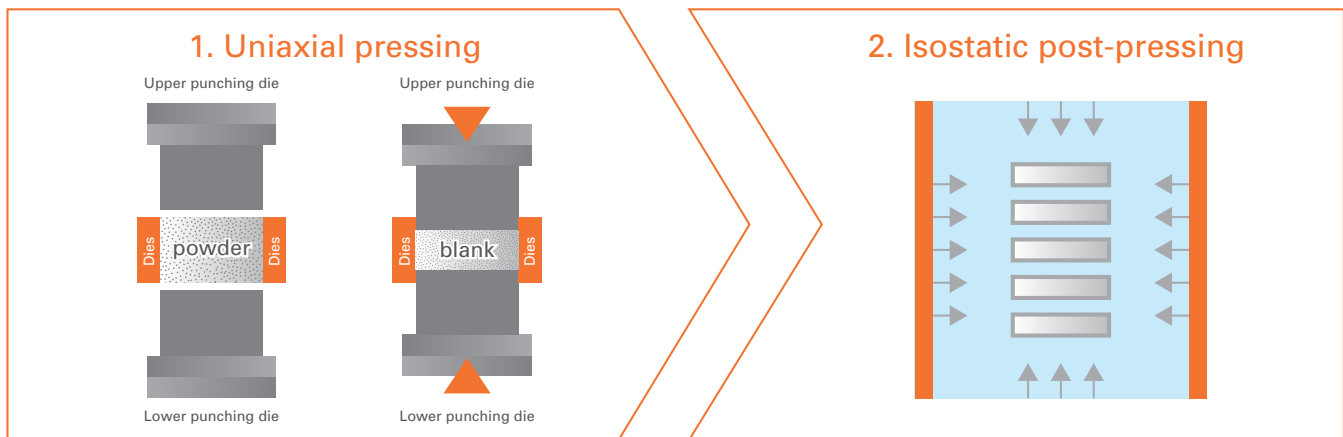
By adapting all the relevant parameters and systematically optimising the grain structure, we have succeeded in combining the otherwise conflicting properties of aesthetics and strength. In so doing, we have created the visual basis for a look very similar to natural teeth. By means of our process technology and optimally applied raw materials, we have reduced the scattering centres in the material and increased the translucency. Micro defects have been eliminated, which has also created an improvement in strength and durability. This has not caused an increase in the hardness and brittleness of the pre-sintered milling blanks, which has a positive effect on the milling properties.



Light scattering at grain boundaries and micro defects reduce the light transmission and increase the less aesthetic “white” value of the material.

Improving what's been tried and tested – isostatic post-pressing

Proven production techniques have been established in the zirconium oxide industry, which have resulted in verifiable quality enhancements. Thanks to this high quality level, high-performance ceramics have become established for wear-resistant and highly resilient applications. Our production methods have made the industry's benefits and high level of innovation available to the dental sector. Our processes and plant technology have been developed and optimized exclusively for medical use. Consequently, the complex isostatic post-pressing of every blank is one of our core processes and indispensable for obtaining the optimum properties.



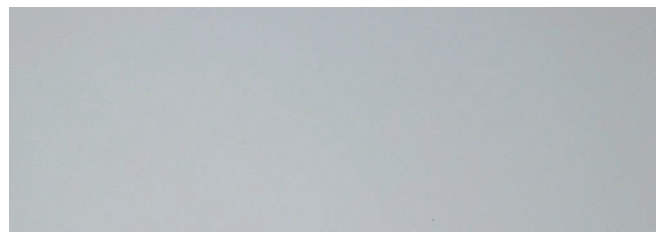
The moulded body still has negative density inconsistencies in the so-called press-neutral zone.



As a result of the low "basic density", there are an increased number of flaws and micro defects.



All-round hydrostatic pressing up to 3000 bar. Inconsistencies are neutralised.



The desired defect-free microstructure is set. The basis for optimum properties.

As a result, our defect-free microstructure guarantees the excellent properties

high translucency	optimum strength	Long-term durability
absolute biocompatibility	optimised milling properties	very good edge strength
homogeneous colors	high fracture resistance	ideal fit

Everything from a single source – this is us!

Whether high-strength, high translucent or super translucent, whether industrial precolored (monochrome and polychrome) or for coloring through liquid infiltration – Dental Direkt offers the right material concept for every workflow and every indication.

Our four material concepts:

