

the ONE zirconia



DDcubeONE®

high strength – cubic zirconia system

Flexural strength

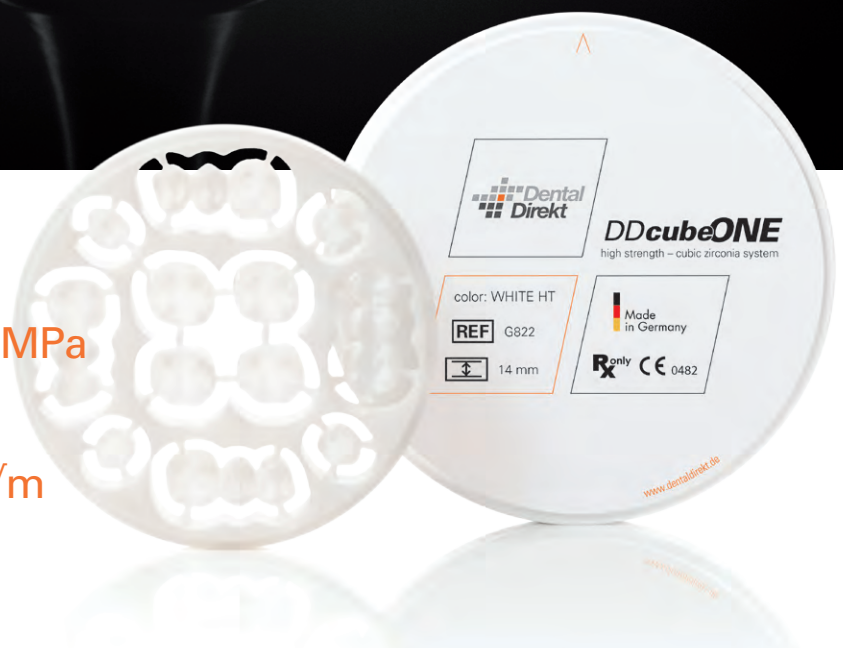
> 1.000 MPa

Translucency

45 %

Fracture toughness

9 MPa√m



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color: WHITE HT

REF G822

14 mm

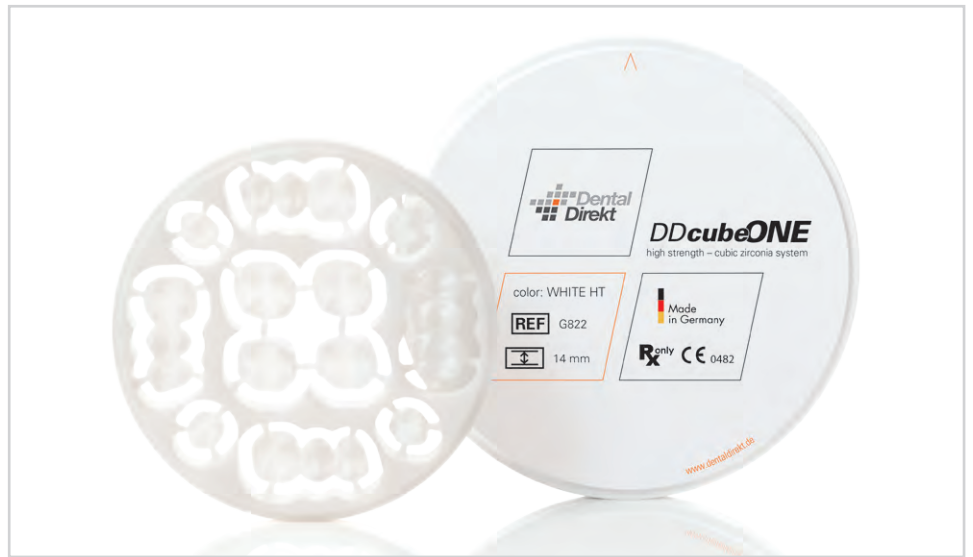
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in Germany

Rx only CE 0482

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Direkt**



“We don’t always want to change the dental industry.
But continuously improve it.”

Your dental technology developers from Dental Direkt.

DDcubeONE[®]

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ALL indications with **ONE** zirconia



Full contour bridge by Christian Stöckemann

cubic zirconia system
Aesthetic high performance ceramics

DDcubeONE®

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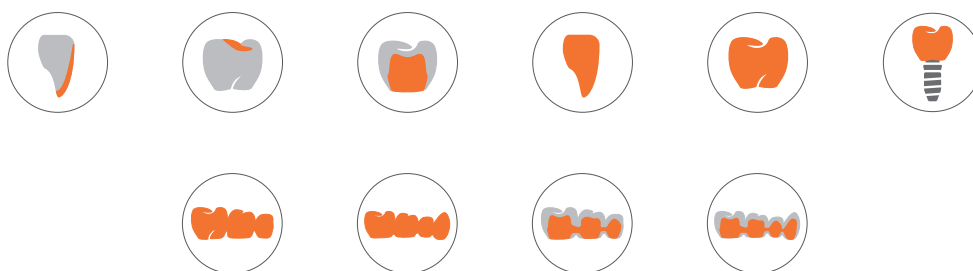
Digital workflow – real aesthetics – ONE zirconia

DD cube ONE® – the first cubic zirconia with unique break protection factor. The multi-indicative ceramic combines translucency and robustness to enable highly aesthetic full contour restorations and more.

Balance between mechanical robustness and translucency

- Flexural strength > 1000 MPa
- Translucency 45 %
- Fracture toughness 9 MPa√m

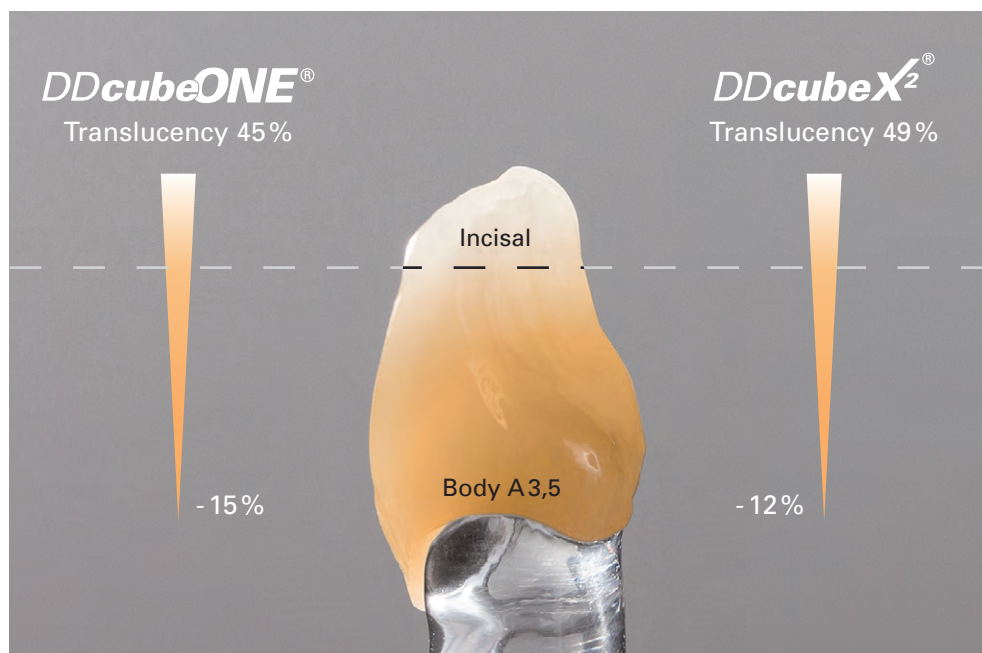
ALL indications with ONE zirconia



bridgework up to 14 units

Type II, class 5 ceramic according ISO 6872

- Indicated for all tooth positions and bridgework. Maximum of two teeth per pontic span.



- When using white blanks, the brightening in the incisal area is achieved, with the incisal liquids of DD Art Elements.
- By means of the increasing intensity of color from incisal to cervical, the material translucency is also reduced in a controlled way.
- The best masking effect is provided by DD cube ONE®. The translucency is similar to that of natural dentine.

cubic zirconia system
Aesthetic high performance ceramics

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Perfect Translucency – for ideal aesthetics with less greying

DD cube ONE® provides the best care especially for tooth stumps that are not the same color and for abutment crowns. The higher translucency in the incisal area ensures natural aesthetics. In the body area, the increasing color intensity creates the perfect balance between the natural vitality of the tooth and the covering of the stump color.

1.



1. Desired tooth shade: A2 (VITA®)
Shade of tooth stump: approx. A3,5

2.



2. **DD cube ONE®**
match ✓

3.



3. DD cubeX2®
Greying – adaption of stump shade

Due to the flow of light, super translucent ceramics such as DD cubeX2® are ideal for anterior restorations, if the tooth stump color enables an appreciated color or if the desired color can be achieved in combination with a colored dental cement.

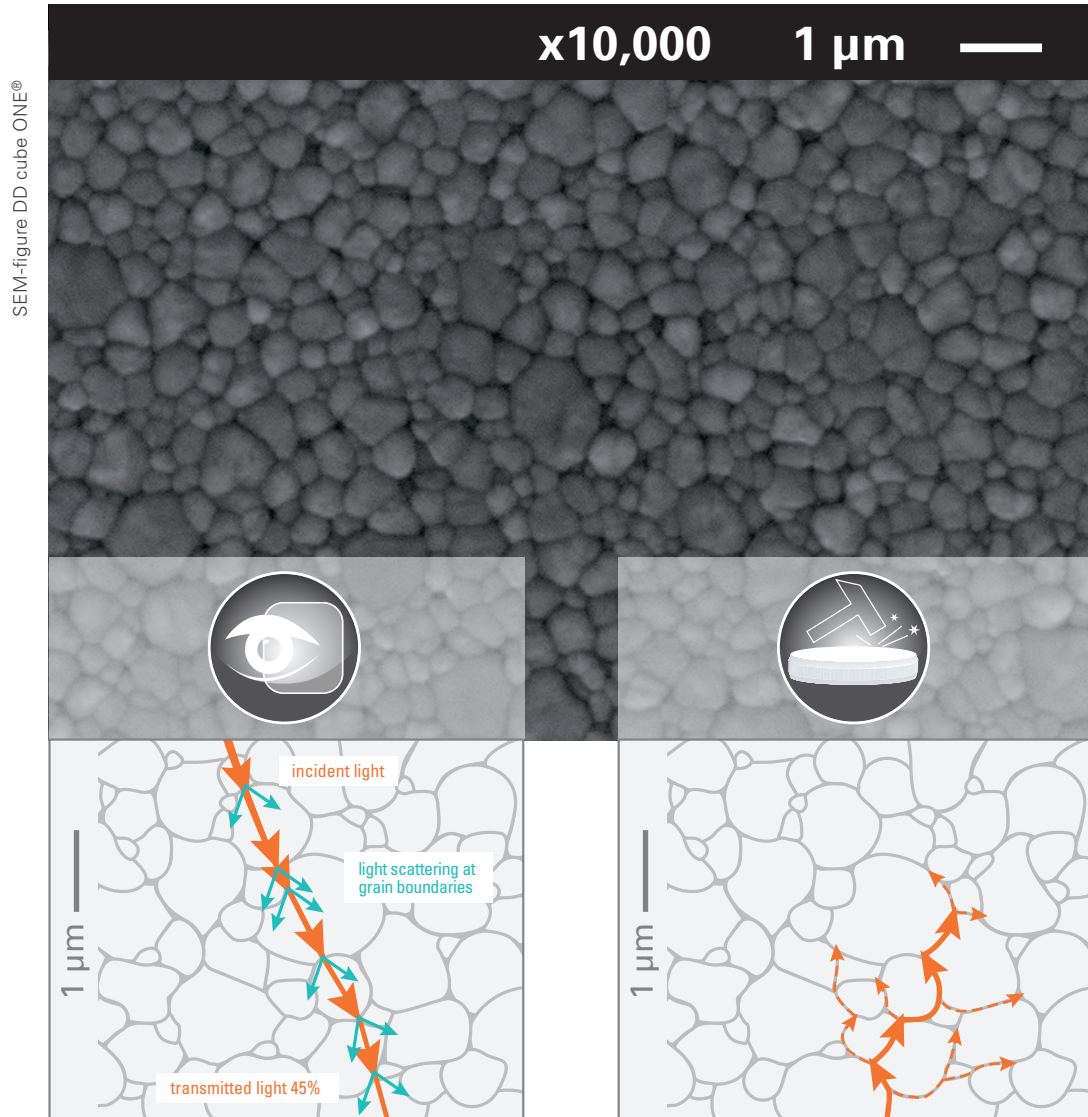
With DD cube ONE® you will reach the color,
regardless of the environmental conditions



By using the DD Shade Concept® Liquids in combination with the white DD cube ONE® blanks, you can achieve a flexible, patient-specific color adaptation in 16 dentin colors according to VITA®.

Crystalline Structure

Key to the “Perfect” blend of high Translucency and high Resistance.



Translucency

The integrated large cubic crystals reduce the light refraction index at the grain boundaries and increase translucency.

Resistance

The predominantly tetragonal crystal structure increases the stability. Microcracks are deflected and weakened in the fine structure.

cubic zirconia system

Aesthetic high performance ceramics

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Take a look at our Company Secret

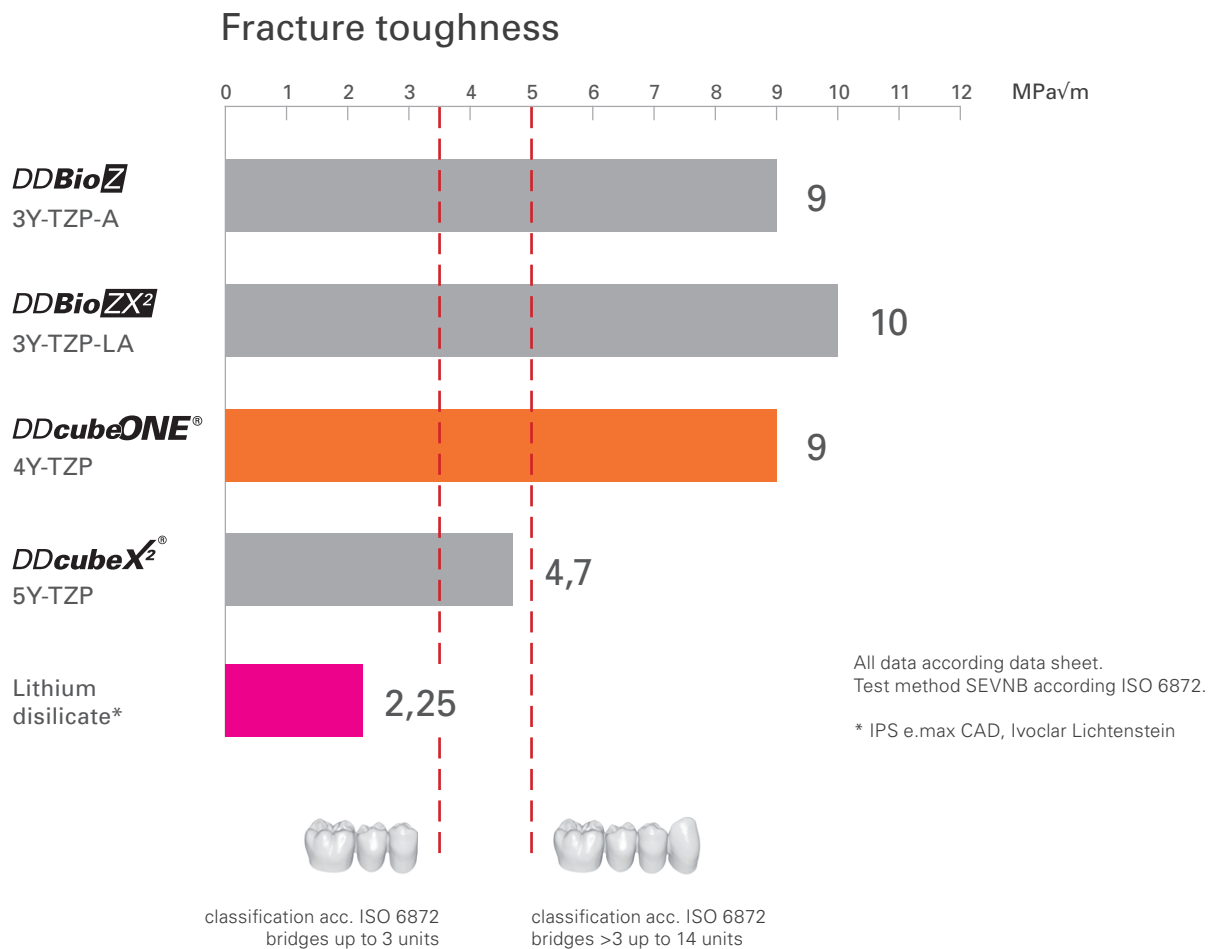
Through a newly developed material composition (4Y-TZP) and optimised manufacturing processes, a hybrid micro-structure is set in the ceramic. The crystal structure of DD cube ONE® has a perfect ratio between cubic and tetragonal zirconium oxide particles.

The defined amount and controlled size of the cubic crystals reduce the refraction index and increases the translucency. The dominant, smaller, tetragonal crystals increase the stability.

DD cube ONE® defines a class of its own and proves that aesthetics and high fracture resistance must not be a contradiction.



A material concept without compromises



Aging Resistance

The ability for phase transformation toughening is unique for a high translucent cubic zirconia. The crystalline structure begins to change in such a way that it stops the progress of a crack in the ceramic and closes it again. DD cube ONE® exhibits no signs of aging according in vitro tests.



Flexural strength by R&D Dental Direkt GmbH. Test method 3-point bending strength according ISO 6872. Aging according ISO 13356.

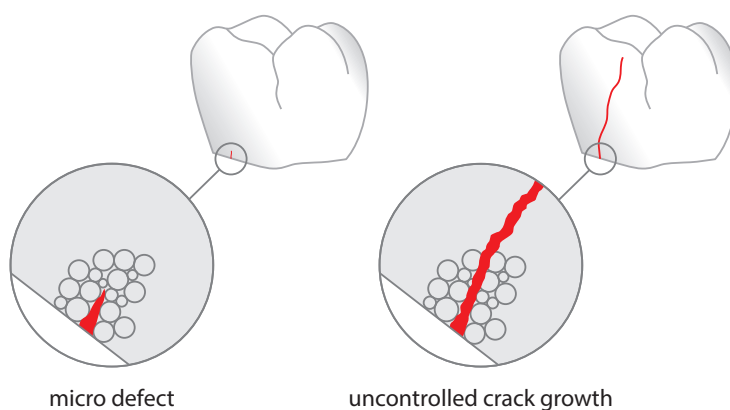
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Unique Break Protection Factor

DD cube ONE® is the first cubic zirconium oxide with increased break protection factor. High fracture toughness and additional phase transformation toughening effect make it unique.

Fracture toughness describes the resistance of a material against crack growth. The material characteristic value is the critical stress intensity factor K_{IC} and it is no less important for clinical success than the bending strength.



Micro defects on the surface caused by p.e. adjustments after sintering can be the origin of a crack. When the K_{IC} is exceeded uncontrolled crack growth occurs and lead to fracture. The higher the fracture toughness the higher the resistance against cracks.


DD cube ONE® with a K_{IC} of > 9 offers high robustness and ageing resistance thanks to additional phase transformation toughening.

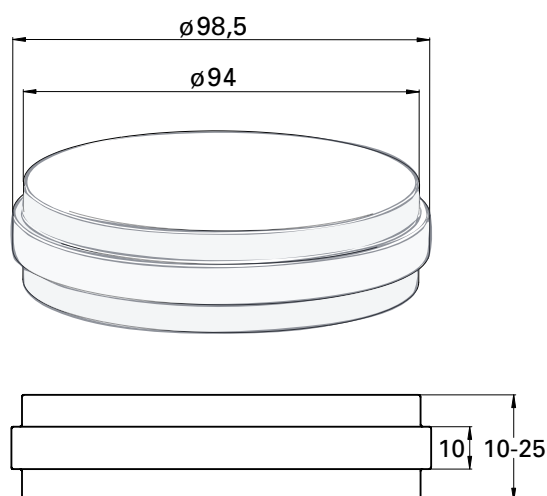
Since 2010, more than 16 million tooth elements have been manufactured from our established, high strength 3Y TZP zirconia types DD Bio Z (35% translucency) and DD Bio ZX² (40% translucency). By means of the documented, clinical success with these types, our developers have established a K_{IC} of > 9 as the break protection factor.

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Technical data	
Material	4Y-TZP ($ZrO_2 + HfO_2 + Y_2O_3 > 99\%$, $Y_2O_3 \sim 4 \text{ mol.}\%$)
Indication ISO 6872*	Type II, class 5 ceramic. Indicated for all tooth positions and bridgework. Maximum of two teeth per pontic span.
Color	White Recommended liquids for white blanks: DDBasicShade DDProShadeZ DDProShadeC
Flexural strength ISO 6872*	> 1.000 MPa (3 point test)
Crystal structure	30% cubic / 70% tetragonal
Translucency, 1mm	45% (white)

 See instructions for use.
*ISO 6872:2015



measures	art.-no.	item
98,5 x 10 mm	G820	1
98,5 x 14 mm	G822	1
98,5 x 18 mm	G824	1
98,5 x 20 mm	G825	1
98,5 x 25 mm	G826	1

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