

DDcontrast[®]

color and form concept by *A. Wille*

CLOSE TO YOU

DDcontrast[®]
color and form concept by *A. N. He*

Wicked stuff!



»A solution to every
patient's individual case.«





»DD contrast® is what everyone looks for in a color – the fluorescence resembles the natural tooth and the application of color and pastes creates the illusion of depth that we dental technicians have always sought after.«

A Nolte

Andreas Nolte, Enamelum et Dentinum Münster

Aurora:

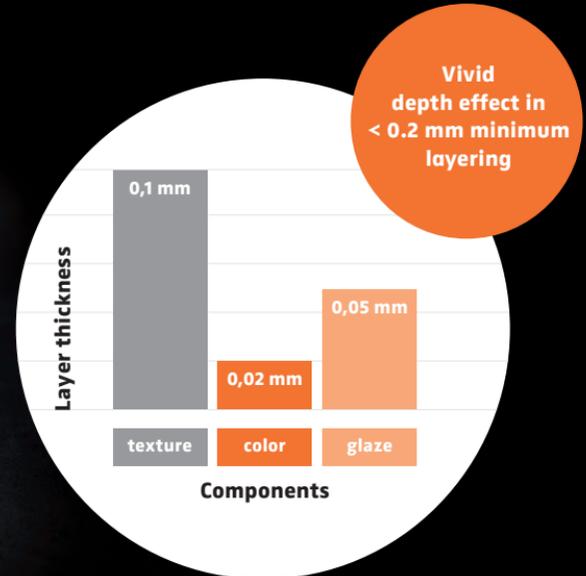
The magnificent name given to the spectacle of nature that is the northern lights. A show of colors – simple and clear, translucent and brilliant, emotive and mysterious. The perfect illusion, like our DD contrast® by Andreas Nolte.

System philosophy

DD contrast®, the color and texture system from Dental Direkt, gives full monolithic restorations optimum color dynamics, vivid depth effect and various intensities of fluorescence. It creates a wonderful symbiosis with the color and light systems of our monolithic zirconium oxides.

Benefits

- While painting before firing: »What you see is what you get.«
- The durable pastes are intensive colorants and have a high color stability. No color distortion after firing.
- Flexible workflow and fascinating results (example: Single-firing and double-firing technique: from simple and very fast to the individual yet time-saving).
- Simple, fast and economical.



Indication

The DD contrast® color and form concept is a veneering ceramic system of type I, class 1b according to ISO 6872:2019. It is intended for the aesthetic individualization of full anatomical or minimally reduced dental crown and bridge constructions made of zirconium dioxide (ZrO₂) or lithium disilicate (Li₂O-2SiO₂).

Technical specifications

The properties are perfectly matched to the CTE value of zirconium dioxide (Dental Direkt provides a zirconium oxide CTE-range from $-10-10,5 \cdot 10^{-6} \text{ K}^{-1}$). In addition, you can customize restorations made of lithium disilicate (Li₂O-2SiO₂). For more information please follow the manufacturer's recommendations.

Technical specifications	WAK (25-500°C) [10^{-6} K^{-1}] (± 0.5)	Tg [°C] (± 20)
DD contrast® color	7.5	540
DD contrast® texture	8.0	540
DD contrast® glaze	7.5	530

Properties tested in accordance with ISO 6872.



For further processing guidelines, warnings and other languages, please see:

[DD contrast_instruction for use](#)

For ideal preparation and processing of DD zirconium oxide:

[DD Bio Z](#) | [DD Bio ZX²](#) | [DD cube ONE](#) |

[DD cubeX²_instruction for use](#)

When using ZrO₂ staining solutions before sintering:

[DD Shade Concept_coloring liquids_instruction for use](#)

The current revision, safety data sheets and other documents can be found online at any time on www.dentaldirekt.de/en/downloads



Guidelines for use

- DD contrast® is exclusively intended for dental use.
- Store in a dry place away from sunlight.
- Before applying the pastes, the framework has to be dry, clean and free of grease.



- The pastes must not come in contact with water.
- Stir the pastes well before each use with a metal-free spatula, as the materials separate. This means that the excess liquid must remain in the containers.
- We recommend portioning and mixing on a ceramic palette (not in the jars).



- Shake liquids well before use.
- Always use a clean and dry brush. Wet the brush with one of the DD contrast® liquids before layering. After each application, clean the brush with one of the DD contrast® liquids and then dry it.



- After the glaze firing, you can easily adjust the intensity of gloss with the instruments and the diamond paste from the Dental Direkt Panther Polishing System.

DD contrast® color



Example: Applying body color »dentin A«



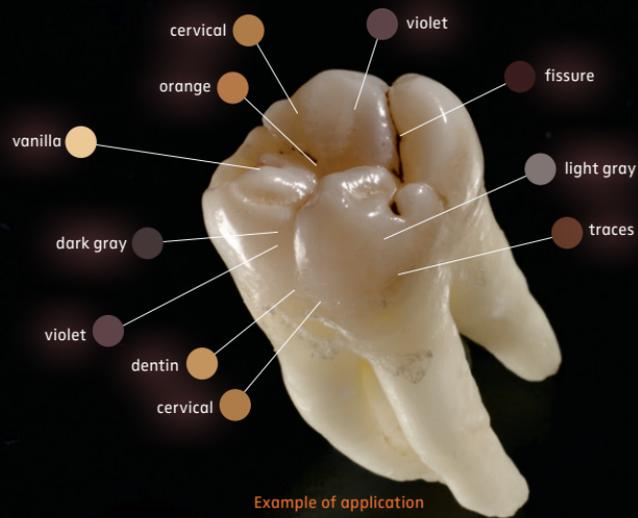
Example: Using »fissure«



Example: Comparison between painted/unpainted before the firing

- Body, mamelon and effect colors to create characteristic contrasts of light and dark, warm and cold.
- Creation of natural looking tooth effects such as translucency and mamelons.
- Simply mixing the other colors from the existing color palette (e.g. »halo«/»blue« to a green).
- With »fissure« the System contains a marking color.

Please note: »fissure« is to be used exclusively in the fissure area.



Example of application



Video DD contrast® color:
dentaldirekt.de/en/dd-contrast

Color matching

Application example:

If DD zirconium oxide and a tooth color match, then a glaze firing with DD contrast glaze® is sufficient to achieve an attractive color result. By applying the body color »dentin A« more intensively, a crown made of DD cube ONE® ML A2 zirconium oxide, for example, can be adapted to a darker tooth color A3.5 (according to VITA®). Through the use of effects and mamelons you can create an individual solution for each patient.

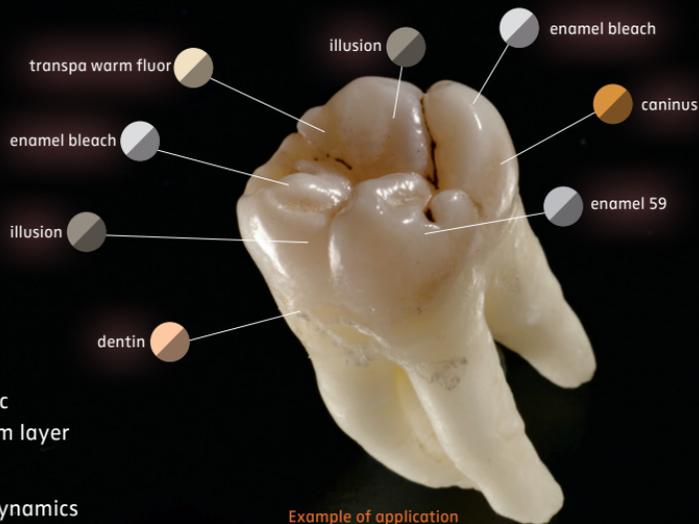
The zirconium oxide system from Dental Direkt and DD contrast® gives you full flexibility in color matching. With the system you can also lower your storage requirements due to the use of fewer zirconium oxide colors.



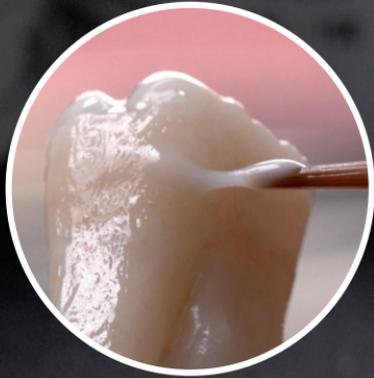
DD contrast® texture



- Individual modeling of surface structures.
- Vivid depth effect on monolithic crowns starting with a minimum layer thickness of 0.1 mm.
- Natural color effect and light dynamics are achieved by a fine feldspar structure.
- Can be used without additional glaze firing.
- Tip: »Bleach dentin, chroma dentin A1 and B4« can be used to increase the color intensity, the brightness effect and the opacity of a restoration in the labial or buccal area. The pastes are reflective and luminous – the covering property of the color is perfect.



Video DD contrast® texture:
dentaldirekt.de/en/dd-contrast



- Stirring with DD contrast® texture liquid gives the pastes a perfect consistency to create structures or for example, to modeling contact points.



DD contrast® glaze



Example: »DD contrast® glaze clear fluor«, fluorescent glaze with a brightening factor to lighten up colors.



Example: »DD contrast® glaze clear«, non-fluorescent glaze for reducing the brightness effect in the occlusal surface.



Example: »DD contrast® glaze clear fluor«, fluorescent glaze in the body area.

DD contrast® glaze clear (non-fluorescent):

- To seal the surface.
- Glaze with a slight opacity/gray shimmer. Especially advantageous for elderly patients whose teeth are more translucent.

DD contrast® glaze clear fluor (fluorescent):

- To seal the surface.
- You can achieve the necessary fluorescence especially in the body area – just like with a natural tooth.



Video DD contrast® glaze:
dentaldirekt.de/en/dd-contrast

DD contrast® liquid



standard liquid for DD contrast® color



The DD contrast® standard liquid can only be used for diluting DD contrast® colors. With the liquid you can adjust the thickness of the transparent layer.

The DD contrast® texture liquid should only be used for DD contrast® texture in order to maintain the special consistency and modeling properties of the material.



texture liquid for DD contrast® texture



- Shake liquids well before use.
- Always use a clean and dry brush.
- Wet the brush with one of the DD contrast® liquids before layering. After each application, clean the brush with one of the DD contrast® liquids and then dry it.



Video DD contrast® tips and tricks:
dentaldirekt.de/en/dd-contrast

DD contrast® color

Body colors

	Quantity	Art-no.	FG
 dentin A	4 g	DDCCDA	F+
 dentin B	4 g	DDCCDB	F+
 dentin C	4 g	DDCCDC	F+
 dentin D	4 g	DDCCDD	F+

Mamelon colors

	Quantity	Art-no.	FG
 mamelon maize	4 g	DDCCMM	F+
 mamelon corn	4 g	DDCCMC	F+
 mamelon pink	4 g	DDCCMP	F+

Effect colors

	Quantity	Art-no.	FG
 white	4 g	DDCCWH	F++
 vanilla	4 g	DDCCVA	F+
 halo	4 g	DDCCHA	F+
 cervical	4 g	DDCCCE	F
 orange	4 g	DDCCOR	–
 traces	4 g	DDCCTR	–
 fissure (marking)	4 g	DDCCFI	–
 light gray	4 g	DDCCLG	–
 dark gray	4 g	DDCCDG	–
 violet	4 g	DDCCVI	–
 blue	4 g	DDCCBL	–

DD contrast® texture

Enamel masses

	Quantity	Art-no.	FG
 enamel 59	4 g	DDCTE59	F+
 enamel bleach	4 g	DDCTEB	F++
 transpa warm fluor	4 g	DDCTTWF	F++

Intensive enamel masses

	Quantity	Art-no.	FG
 retzius	4 g	DDCTRE	F
 opal blue	4 g	DDCTOB	–
 illusion	4 g	DDCTIL	–

Dentine

	Quantity	Art-no.	FG
 bleach dentin	4 g	DDCTBD	F++
 chroma dentin A1	4 g	DDCTCDA1	F++
 chroma dentin B4	4 g	DDCTCDB4	F+

Special textures

	Quantity	Art-no.	FG
 mask	4 g	DDCTMA	F
 caninus	4 g	DDCTCA	F

Fluorescence Grade (FG):

F

F+

F++

DD contrast® color, DD contrast texture® and DD contrast glaze® have various intensity of fluorescence.

For a better orientation we have designated the level of intensity as follows: F = low fluorescence, F+ = high fluorescence and F++ = very high fluorescence.

DD contrast® glaze

	Quantity	Art-no.	FG
glaze clear	4 g	DDCGC	—
glaze clear fluor	4 g	DDCGCF	F++



DD contrast® liquid

	Quantity	Art-no.
standard liquid	30 ml	DDCSLI
texture liquid	30 ml	DDCTLI

DD contrast® firing paste

DDCFP



DD contrast® Set

DDCSET

- 18x DD contrast® color, à 4 g
- 11x DD contrast® texture, à 4 g
- 1x DD contrast® glaze clear, 4 g
- 1x DD contrast® glaze clear fluor, 4 g
- 1x DD contrast® standard liquid, 30 ml
- 1x DD contrast® texture liquid, 30 ml

Firing chart

Firing parameters on zirconium oxide | All firing processes | Firing parameters can vary depending on the furnace type

Start temperature	Drying time*	Closing time*	Heating rate	Final temperature	Holding time	Cooling time**	Vacuum***
450 °C	3 min.	3 min.	45 °C/min.	810 °C	1 min.	3 min.	max. 100 %

Firing parameters on lithium disilicate | All firing processes | Firing parameters may vary depending on furnace type

Start temperature	Drying time*	Closing time*	Heating rate	Final temperature	Holding time	Cooling time**	Vacuum***
450 °C	3 min.	3 min.	45 °C/min.	780 °C	1 min.	3 min.	max. 100 %

* If a thicker layer is applied, the drying and closing times should be extended from three to five minutes.

** For solid restorations and significant differences in wall thickness, it is advisable to slow down the heating and cooling rate.

*** The maximum vacuum should be maintained until the specified final temperature is reached.

Notes on the firing process:

- To ensure the correct firing temperature of your ceramic furnace, carry out a calibration firing. For this purpose, use the glaze paste DD contrast® glaze clear on your firing sample.
- You should always check whether your ceramic furnace is operating at the »correct« temperature. This can be evaluated with the optical result of the firing sample.
 - At the correct firing temperature: transparent and homogeneously fired, consistent shine, sharp edges remain.
 - Firing temperature too high: edges are rounded.
 - Firing temperature too low: the firing result is matte or appears milky.

DD contrast® application example



Example above: The firing technique is shown. »DD contrast® color traces« is mixed with the previously applied »DD contrast® glaze clear«. Example image below: The comparison (from left) between the single-firing technique, double-firing technique and the unpainted molar.



Single-firing technique

- **Step 1:** Layer DD contrast® glaze clear fluor to the entire crown.
Please note: Do not apply glaze too thinly.
- **Step 2:** Apply DD contrast® color »wet on wet« directly afterwards.
- **Step 3:** Carry out firing.

Double-firing technique

- **Step 1:** Wet the crown with a thin layer of DD contrast® glaze clear fluor or one of the DD contrast® liquids to achieve a better layering of the DD contrast® colors.
- **Step 2:** Carry out first firing.
- **Step 3:** Layer DD contrast® texture (for intense depth effect) and one of the DD contrast® glaze pastes »wet on wet«.
- **Step 4:** Carry out second firing.

Comparison

For good and quick results with little effort you can use the single-firing technique. The double-firing technique allows you to achieve a greater depth effect within the restoration. This effect is created by the use of DD contrast® texture micro enamel pastes, which are applied before the second firing.



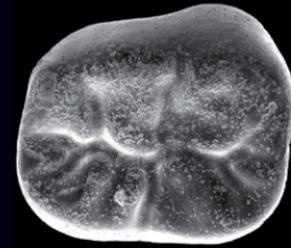
Video DD contrast® single-firing technique, the comparison: dentaldirekt.de/en/dd-contrast

DD contrast® is antagonist-friendly

Studies show that it is not the hardness of an all-ceramic, but its surface quality that has a decisive influence on the abrasion of the antagonist. The rougher the occlusal contact surface, the greater the resulting abrasion on the natural enamel. Therefore, polishing of the zirconium oxide occlusal surfaces is generally recommended. This means that due to the high abrasion resistance of zirconium oxide, no "sandpaper effect" can occur as a result of veneering ceramics or glaze wearing down (Fig. 1).

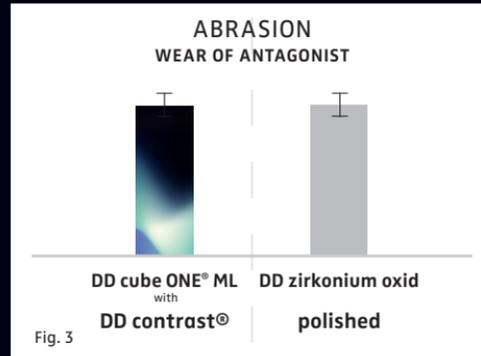
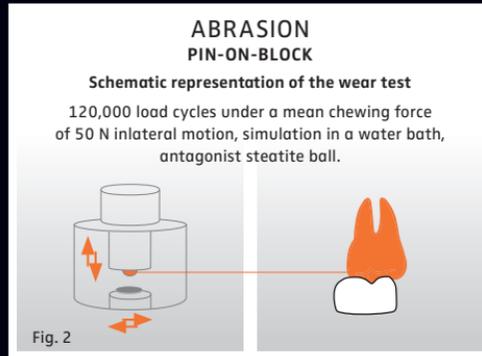
A study from 2019 shows that surfaces made of DD contrast® guarantee a comparable, gentle behavior like the polish.

DD contrast® is therefore also suitable for the highest clinical demands. The concept is based on an amorphous, modified glass structure, which ensures a robust surface and at the same time forms less abrasive particles when worn down.



Source: Courtesy of TRAC Research Clinical Studies Section, CR Foundation, Provo, Utah USA

Fig. 1: REM image of a crown with ordinary glaze, after three years in situ. The glaze has been bitten through in wide areas. The rough glaze surface and the broken particles can act as sandpaper. This effect is reduced with DD contrast®.



In the simulation, occlusal surfaces made of DD contrast® color, texture and glaze produce only slight wear on the natural antagonist. The values correspond to polished surfaces, which in studies regularly produce a similar abrasion like the natural enamel itself. (Fig. 2 + 3)

* University Hospital Regensburg, Department of Prosthetic Dentistry, Prof. M. Rosentritt. Excerpt from the report 'Pin on Block (POB) Wear Test'.



Figure: © Anton Sawizki, master dental technician, Essen
Use of a DD cubeX² posterior crown.

Zirconium oxide light management

Stump discoloration:



strongly discolored/metal

medium discolored

slightly discolored

DDBioZ

High Strength (HS)



DDBioZX²

High Translucent (HT)



wide-span bridges
(1.250* – 1.450* MPa)

DDcubeONE[®]

High Translucent
Plus (HT+)



DDcubeX²

Super High
Translucent (SHT)



max. 3-unit bridges
(< 800* MPa)

This is how you get the right color!

The light and color dynamics of the DD zirconium oxides allow the selection of the appropriate material for the indication (strength) and residual stump situation (opacity).

In particular, the different translucencies of our monolithic zirconium oxides DD cubeX²® and DD cube ONE® provide a perfect basis for DD contrast® individualization.

DD cubeX²® with the highest light translucency (Super High Translucent/SHT) in the material group is excellently suited for anterior aesthetics if the color of the residual stump is lighter or is not that much different from the desired tooth color. We recommend DD cube ONE® (High Translucent Plus/HT+) for bridges > 4 units or if more masking is required.

Tip: DD contrast® texture mask can be used on the inside of the restoration to mask residual stump discolorations.

Strength

Translucency

* Bending strength values according ISO 6872 are valid for the colored versions of the specific material.



DD contrast® Trainers and Workshops

Visit a workshop or book one of our trainers for your DD contrast® event on site and peer over our experts' shoulders. What you can expect:

- Preparation of colors and textures.
- Demonstrations of application examples for monolithic and minimally veneered restorations and a combination of both.
- Single-firing and double-firing techniques – firing management and the effect on the final result.
- Further tips and tricks for aesthetic demanded layering.
- Symbiosis of the color and light systems of the monolithic zirconium oxides from Dental Direkt.

A. Nolte

Andreas Nolte, Enamelum et Dentinum Münster

How is DD contrast® applied to the teeth?

It's simple:

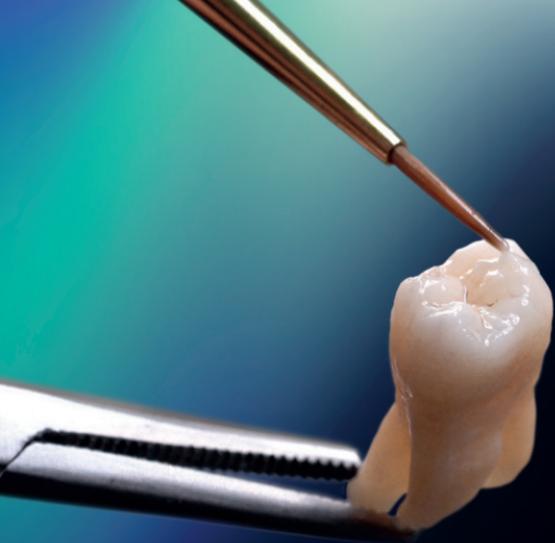
Follow the information and videos.

- Product information
- Examples of restorations
- Orders
- Workshops and dates
- User videos
- Interviews
- Testimonials



Videos: dentaldirekt.de/en/dd-contrast





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