

Celtra[®] Duo

Zirconia-Reinforced Lithium Silicate (ZLS)

Developed to make a difference

Celtra® Duo

Zirconia-Reinforced Lithium Silicate (ZLS)

Thanks to the unique ultra-fine microstructure, Celtra® Duo (ZLS) is the only CEREC block that allows choice of processing options: MILL & POLISH and MILL & FIRE. It is always up to the dentist to decide which solution is appropriate for the case at hand. The unique microstructure provides a final restoration that combines strength and beauty with high edge stability.

Just try it!

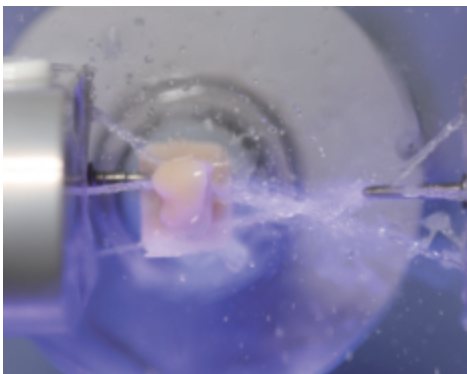
Celtra® Duo - Indications

- ›Crowns
- ›Inlays
- ›Onlays
- ›Veneers



Option 1: Mill and polish

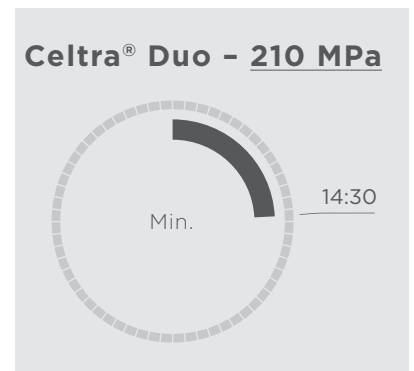
(210 MPa flexural strength)



Milling



Polish



■ Milling

Esthetic

High level of translucency and opalescence resulting in excellent esthetic properties.

Fast

With fast and safe workflow the patient can get the final restoration in just one visit.

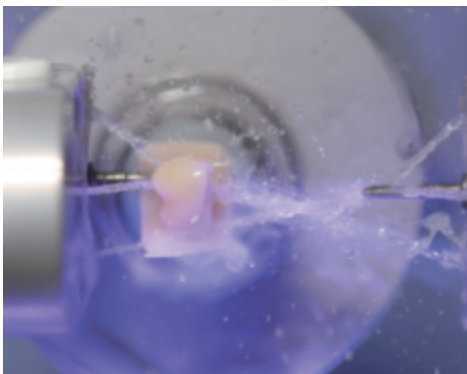
Strong

Thanks to the unique ultrafine microstructure Celtra® Duo has extremely high edge stability all the way down to 200 µm.



Option 2: Mill and fire

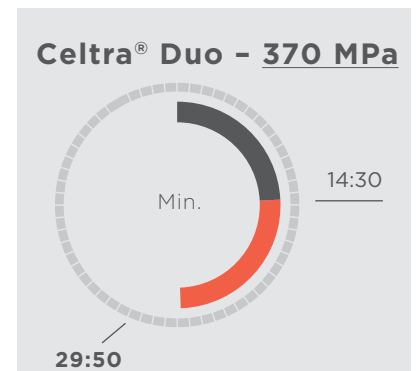
(370 MPa flexural strength)



Milling



Fire



■ Milling
■ Stain and Glaze

The structure makes the difference

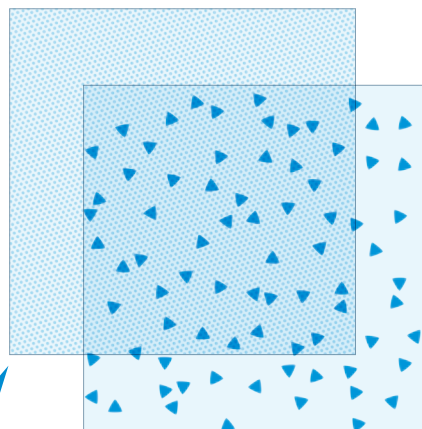
Celtra[®] Duo

Zirconia-Reinforced Lithium Silicate (ZLS)

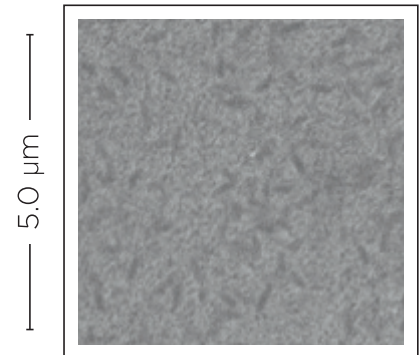
With crystallites four to eight times smaller than lithium disilicate blocks, Celtra[®] Duo (ZLS) possesses an ultra-fine microstructure that combines high flexural strength with high glass content, resulting in an impressive strength and beauty profile.

ZLS

Glass with completely dissolved zirconia



Lithium silicate crystallites
500-700 nm



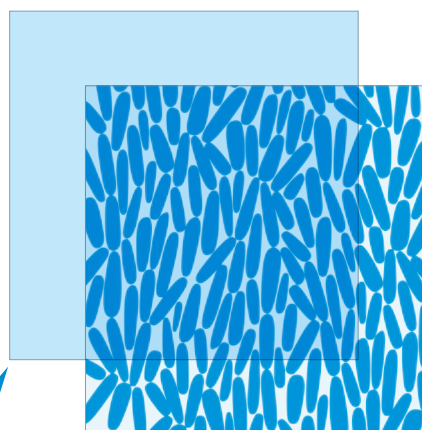
SEM Image
Celtra[®] Duo (ZLS) milled

Lithium disilicate ceramic

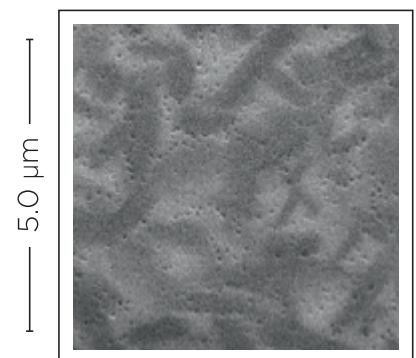
The crystallites embedded in the glass phase are 2000-4000 nm in size, which is four to eight times larger than Celtra[®] Duo (ZLS). The larger crystallite size negatively influences both the light-optical and the mechanical properties of the material.

LS₂

Glass



Lithium disilicate crystallites
2000-4000 nm

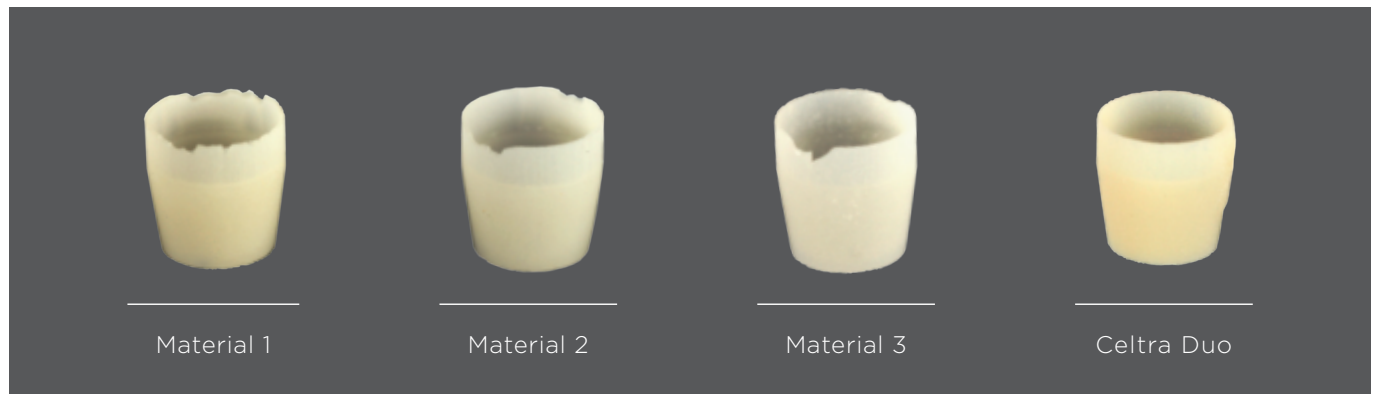


SEM Image
Lithium disilicate, milled

Strength you can rely on

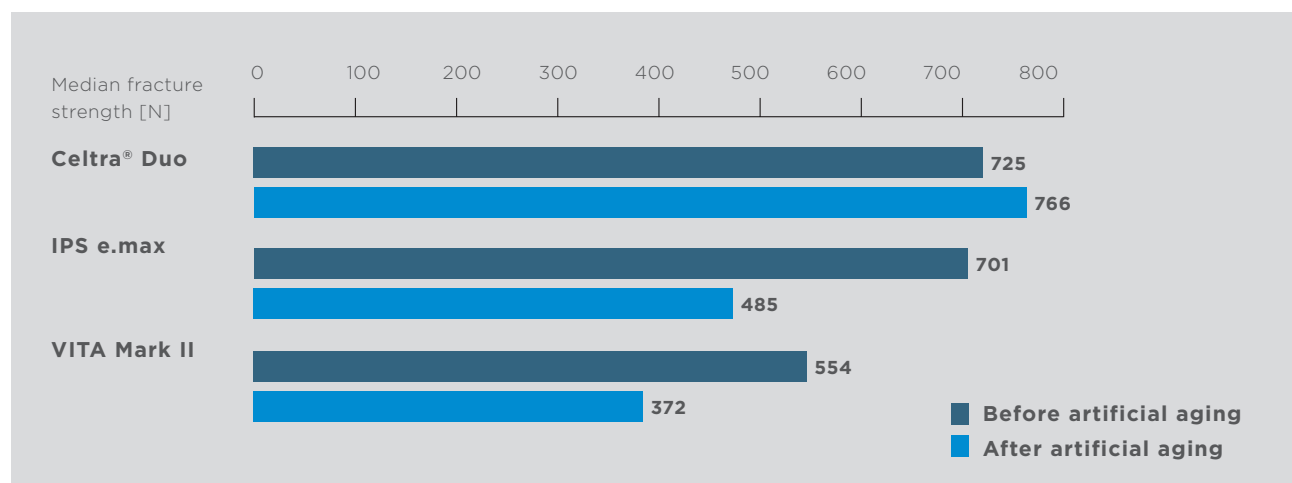
High edge stability thanks to ultra-fine microstructure

The high edge stability of Celtra® Duo is evident. Both in the actual grinding process and in the manual mechanical processing, fine edges and structures are safely retained. With these tests, standardized caps are ground in the edge area to 200 µm wall thickness in order to check the edge stability.



Strength reserves after artificial aging/chewing simulations

In the chewing simulation, Celtra® Duo (ZLS) behaves in a way that is atypical of ceramic materials. While ceramics usually lose some of their strength in the aging process, Celtra® Duo (ZLS) retains its high level of strength – a strength that contributes to the long-term safety of the restoration.



Load at fracture, anterior crowns - thermal cycling (5C - 55C), 6000 cycles, followed by 1,2 million chewing cycles at 70 N.

Source: Rues S, Muller D, Schmitter M, University of Heidelberg 2012. Data available on request.

Clinical success you can count on

Restorations with Celtra® Duo (ZLS)



Baseline situation



Final restoration with Celtra® Duo (ZLS)



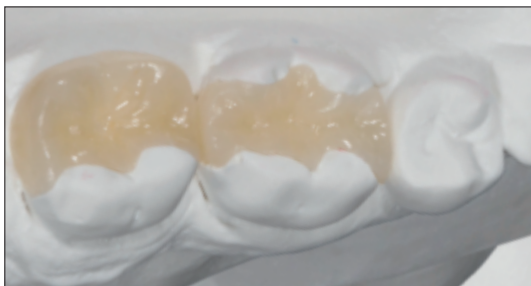
Baseline situation



Final restoration with Celtra® Duo (ZLS)

Fluorescence and chameleon effect

The fluorescence of Celtra® Duo (ZLS) materials is graded by brightness. The fine crystals of the microstructure and the high glass content create a deep fluorescent effect and make the intensity easy to adjust. The high light conductivity and shade adaption of Celtra® Duo (ZLS) in conjunction with the remaining natural teeth and the pronounced opalescence create the desired chameleon effect. With its light-optical properties based on the ZLS microstructure, Celtra® Duo (ZLS) has a reduced greying risk.



Perfect shade in situ

Celtra® Duo (ZLS) Product Portfolio

Celtra® Duo (ZLS) is available in a complete range of shades to satisfy the clinical esthetics of any case. Additionally, stains are available for dentists who wish to add characterization.

Product		Ref. no.
Celtra® Duo CAD Blocks		
Celtra® Duo Starter Kit	1 Pcs.	5365490113
Celtra® Duo LT A1, C14	4 Pcs.	5365411005
Celtra® Duo LT A2, C14	4 Pcs.	5365411015
Celtra® Duo LT A3, C14	4 Pcs.	5365411025
Celtra® Duo LT A3.5, C14	4 Pcs.	5365411035
Celtra® Duo LT B2, C14	4 Pcs.	5365411065
Celtra® Duo HT A1, C14	4 Pcs.	5365411205
Celtra® Duo HT A2, C14	4 Pcs.	5365411215
Celtra® Duo HT A3, C14	4 Pcs.	5365411225
Celtra® Duo LT B1, C14*	4 Pcs.	5365411055
Celtra® Duo LT C1, C14*	4 Pcs.	5365411095
Celtra® Duo LT C2, C14*	4 Pcs.	5365411105
Celtra® Duo LT D2, C14*	4 Pcs.	5365411135
Celtra® Duo LT D3, C14*	4 Pcs.	5365411145
Celtra® Duo LT BL2, C14*	4 Pcs.	5365411175
Celtra® Duo LT BL3, C14*	4 Pcs.	5365411185
Celtra® Duo HT B1, C14*	4 Pcs.	5365411255
Celtra® Duo HT B2, C14*	4 Pcs.	5365411265
Celtra® Duo HT C1, C14*	4 Pcs.	5365411295
Celtra® Duo HT C2, C14*	4 Pcs.	5365411305
Celtra® Duo HT D2, C14*	4 Pcs.	5365411335
Celtra® Duo HT D3, C14*	4 Pcs.	5365411345
Dentsply Sirona Universal Stain		
DS Universal Stain and Glaze Kit		D600700
DS Universal Body Stain - S0	5g	D605520
DS Universal Body Stain - S1	5g	D605521
DS Universal Body Stain - S2	5g	D605522
DS Universal Body Stain - S3	5g	D605523
DS Universal Body Stain - S4	5g	D605524
DS Universal Incisal Stain - i1	5g	D605531
DS Universal Incisal Stain - i2	5g	D605532
DS Universal Stain - White	5g	D605500
DS Universal Stain - Crème	5g	D605501
DS Universal Stain - Sunset	5g	D605502
DS Universal Stain - Copper	5g	D605503
DS Universal Stain - Khaki	5g	D605504
DS Universal Stain - Olive	5g	D605505

Product		Ref. no.
DS Universal Stain - Mahogany	5g	D605506
DS Universal Stain - Violet	5g	D605507
DS Universal Stain - Raspberry	5g	D605508
DS Universal Stain - Purple	5g	D605509
DS Universal Stain - Grey	5g	D605510
DS Universal Stain - Chestnut	5g	D605511
DS Universal Stain - Blue	5g	D605512
DS Universal Stain - Pink	5g	D605513
Celtra Universal Overglaze		
DS Universal Glaze	5g	D605540
DS Universal Glaze	15g	D615540
DS Universal Glaze - High Flu	5g	D605542
DS Universal Glaze - High Flu	15g	D615542
Celtra Liquid for Stain and Glaze		
Celtra Liquid	15 ml	D601315
Celtra Liquid	50 ml	D601350
Auxiliary		
Firing pads	3 Pcs.	53 6590 1205

* New shades available 2017/2018.

Technical data on Celtra[®] Duo

	Celtra Duo directly from the CEREC¹ MC XL and polished	Celtra Duo with glass firing
CTE 500°C [$\cdot 10^{-6}$]/K]	approx. 11.8	
Intrinsic flexural strength ex works [MPa]	420	
Flexural strength [MPa]	210	370
E-modulus	approx. 70	
Crack resistance [MPa \cdot m ^{0.5}] (SENVB)	2.0	
Hardness [HV]	approx. 700	
Chem solubility [μ g/cm ²]	< 40 (intrinsic)	< 20 (solubility glazing)
Crystallization temperature [°C]	already fully crystallized	
Softening temperature [°C]	approx. 800	
Transformation temperature [°C]	approx. 620	
Density [g/m ³]	2.6	

- 1 Internal measurements, 3-point flexural strength, data available upon request.
- 2 Results of a user study with a total of 125 restorations, results available upon request.
- 3 Rues, D Müller, M. Schmitter, Heidelberg University 2012, data available upon request.
- 4 Wendler M, Belli R et al. Chairside CAD/CAM materials. Part 2: Flexural strength testing. *Dent Mater*, 2017 Jan;33(1):99-109, doi: 10.2016/j.dental.201610.008. Epub 2016 Nov 21.
- 5 Lawson NC, Bansal R, Burgess JO. Wear, strength, modulus and hardness of CAD/CAM restorative materials. *Dent Mater*. 2016 Nov; 32(11):e275-e283, doi:10.2016/j.dental.2016.08.222. Epub 2016 Sep 14.

