Celtra® Duo

Developed to make a difference

Brochure for the dental laboratory

THE DENTAL
SOLUTIONS
COMPANY™

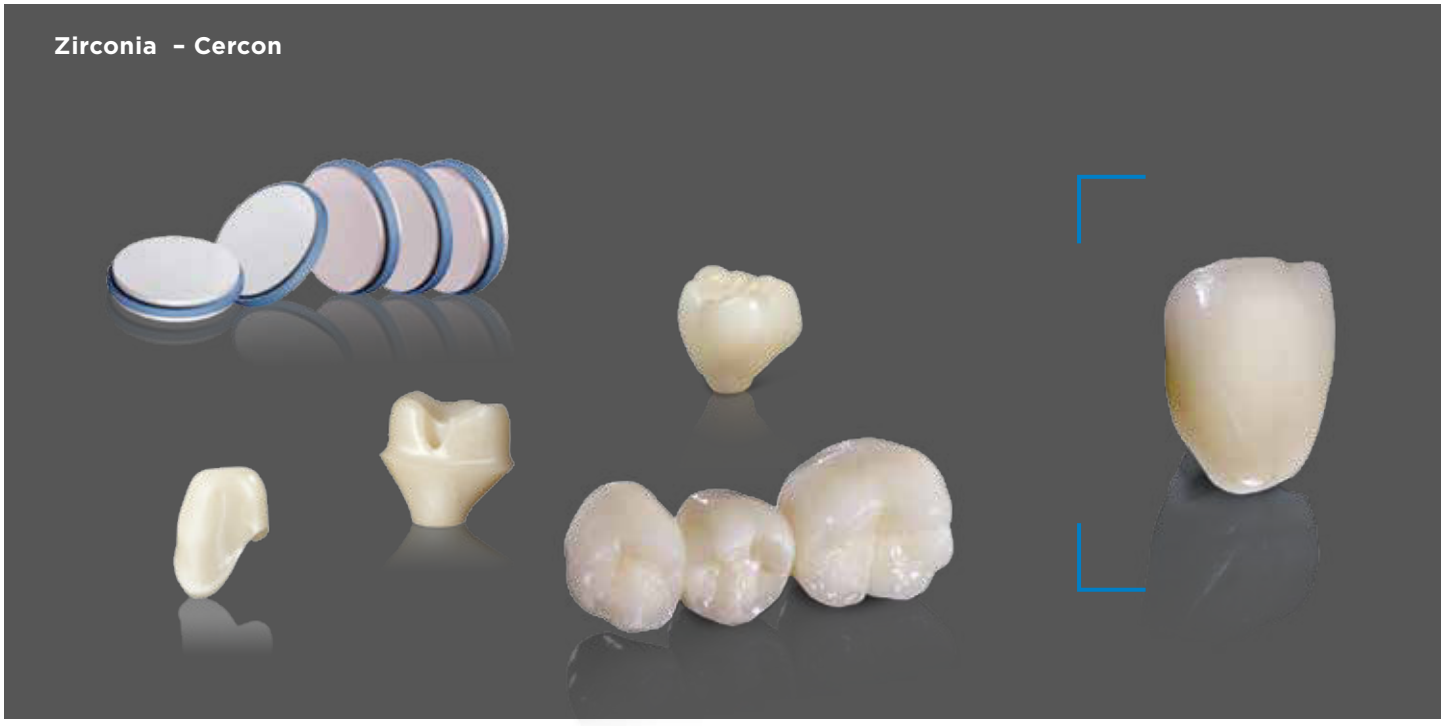
Dentsply Sirona

Introduction

All-ceramics as a therapy concept

In the past 10 years, zirconia (e.g. Cercon) and high-strength glass-ceramics (e.g. lithium disilicate) have become established in prosthodontics and restorative dentistry and are clinically proven.

The primary reason for this development is that zirconia offers sufficiently high strength **of about 1000 MPa** and high-strength **glass-ceramic in the range of 360 to 400 MPa**, to provide safe ceramic options for a broad range of indications. With the CAD/CAM technology the full potential of these materials are covered.



Cercon® ht is indicated in the anterior and posterior segments for:

- Crowns
- Telescopic primary crowns
- Multi-unit bridges (with no more than two pontics between abutment crowns; with no more than 6 units*)
- Two piece abutments**

Cercon ht can be used as a substructure (framework) which is then veneered with a dental veneering ceramic or can be used for full-contour application (without veneering) as well. In the case of telescopic primary crowns, the substructure is not veneered.

Cercon base is indicated for crowns, multi-unit bridges and inlay bridges. Applications include both anterior and posterior regions.

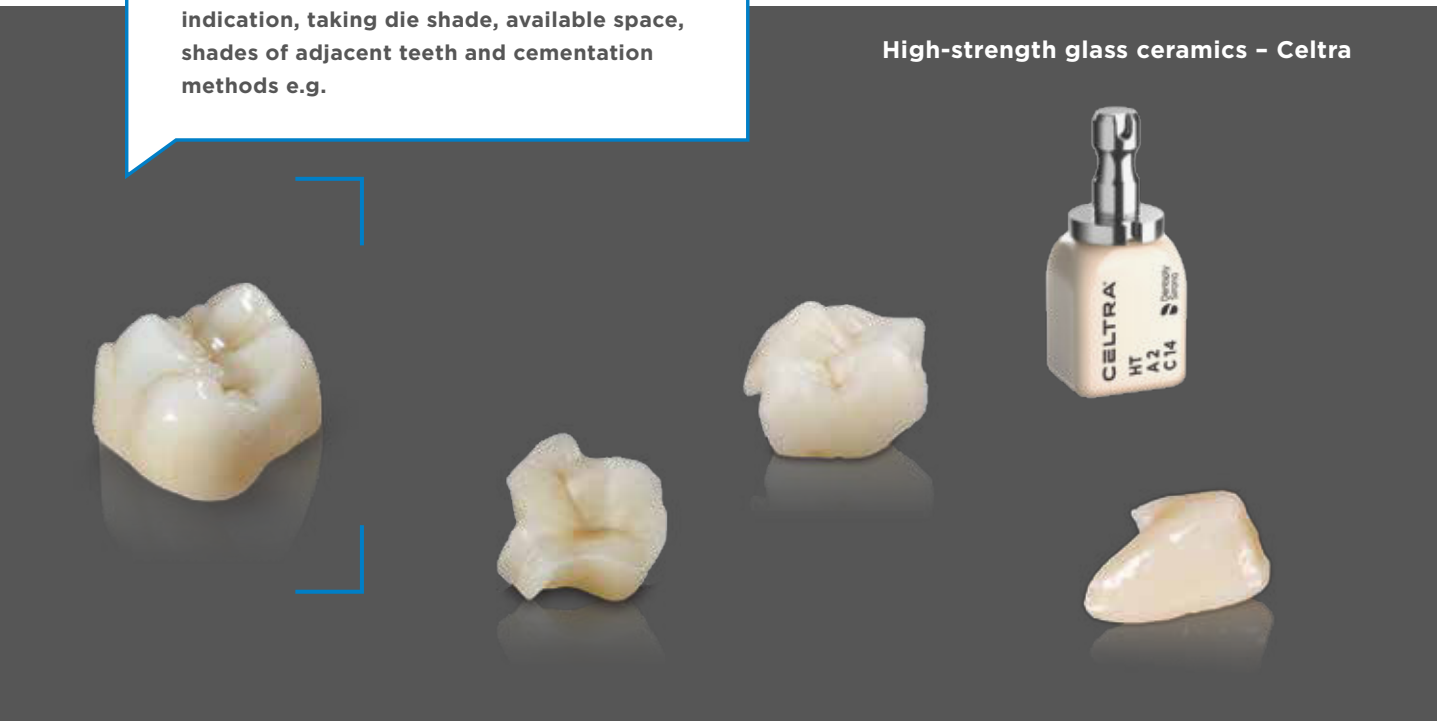
** for Canada only*

*** Not valid for US*

Restoration of an upper molar with a CAD/CAM-fabricated onlay made of Celtra Duo. The monolithic restoration was merely polished before adhesive bonding.

Material selection depending on the indication, taking die shade, available space, shades of adjacent teeth and cementation methods e.g.

High-strength glass ceramics – Celtra



Indications for Celtra® Duo

- Crowns
- Bridges, anterior*
- Partial crowns
- Inlays
- Onlays
- Veneers

** Available soon*

Innovative material

A material to make a difference

The outstanding properties of ZLS (zirconia-reinforced lithium silicate) are a function of its unique microstructure. The presence of 10% zirconia in the glass phase in atomically dissolved form provides high strength and ensures safe and long-lasting restorations. The zirconia is essentially responsible for the nucleation of crystal phase.

The result is a large number of very fine-grained lithium silicate crystals, whose high glass content give the material its excellent light-optical and mechanical properties. Translucency, opalescence, fluorescence and the chameleon effect all benefit, with high edge stability and excellent polishability being an added plus. This ultra fine microstructure allows Celtra to be processed quickly and efficiently in a dental laboratory in its crystalline state and in the appropriate tooth shade.

Extensive composite restorations on a molar and premolar that require replacement.

Preparation for the restoration with a partial crown (molar) and a full crown (premolar).

Final occlusal adjustment of the adhesively bonded monolithic Celtra Duo restorations.

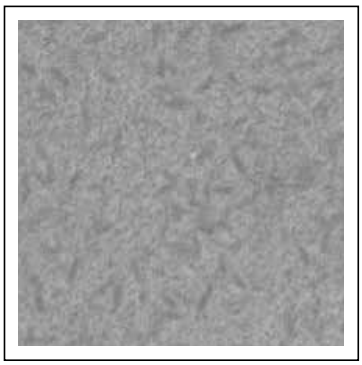
Buccal view of the Celtra Duo restorations customized using the staining technique. Perfect adaptation of the shade to that of the remaining natural tooth structure.

Photos: Dr med. dent. Sven Rinke M.Sc., M.Sc., Hanau / Klein-Auheim, Germany

Microstructures compared

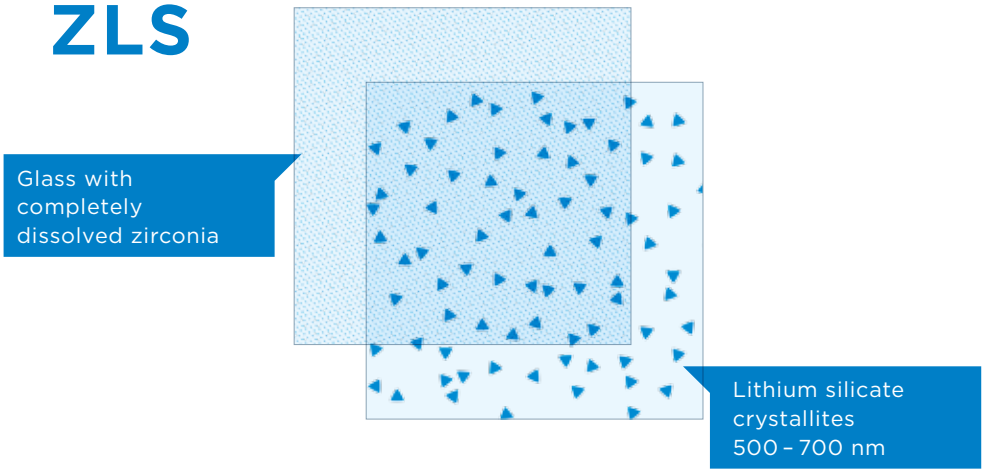
CELTRA – ZIRCONIA-REINFORCED LITHIUM SILICATE

The inclusion of 10% zirconium oxide ensures particularly high strength. The crystallites formed are four to eight times smaller than crystals of conventional lithium disilicates.
The result is an ultra-fine microstructure that combines high average flexural strength with a high glass content.
This has positive effects on the light-optical and mechanical properties of the material.



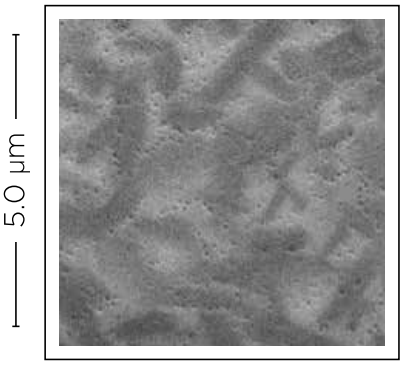
SEM image
Celtra milled

ZLS



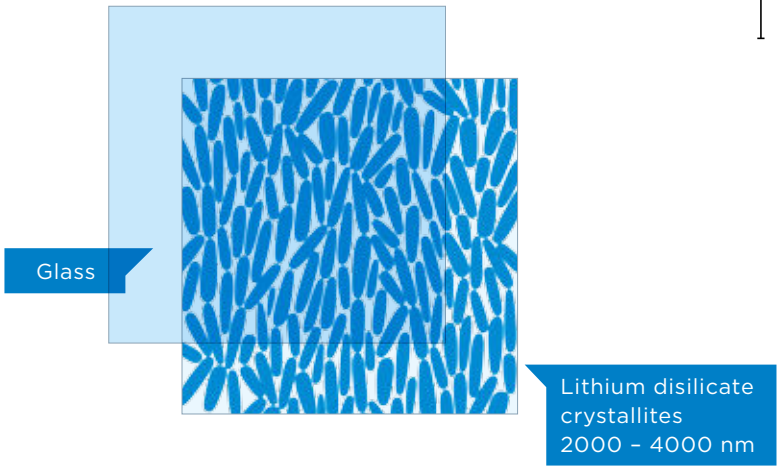
LITHIUM DISILICATE CERAMIC

The crystallites embedded in the glass phase are 2000–4000 nm in size and thus significantly larger than Celtra, influencing both the light-optical and mechanical properties of the material. This is associated with lower light conductivity and requires a greater polishing effort.



SEM image
Conventional Lithium disilicate, milled

LS_2



Aesthetics

Optical properties and their benefits

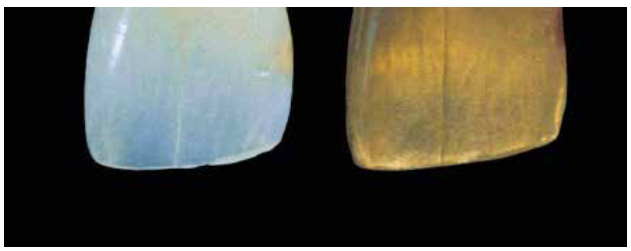
Celtra meets the highest aesthetic standards: Natural opalescence, fluorescence and pronounced chameleon effect give Celtra restorations the appearance of natural teeth.

Opalescence

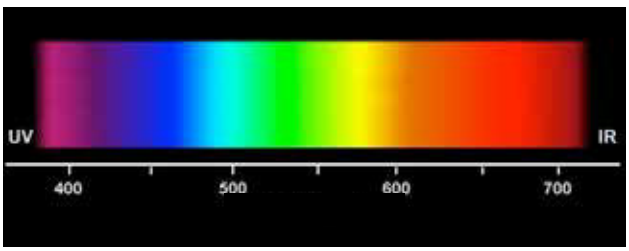
NATURAL OPALESCENCE

Opalescence is a light-scattering effect. The blue short-wave portion of the daylight spectrum are scattered in all directions, while the orange long-wave light passes the enamel almost without scattering. The dynamic colour interplay of blue, yellow, amber and orange affects the appearance of the entire tooth.

The lithium silicate crystallites in Celtra, 500–700 nm in size, correspond exactly to the wavelength range of natural daylight that is responsible for the opalescence. Celtra thus behaves like a natural tooth enamel.

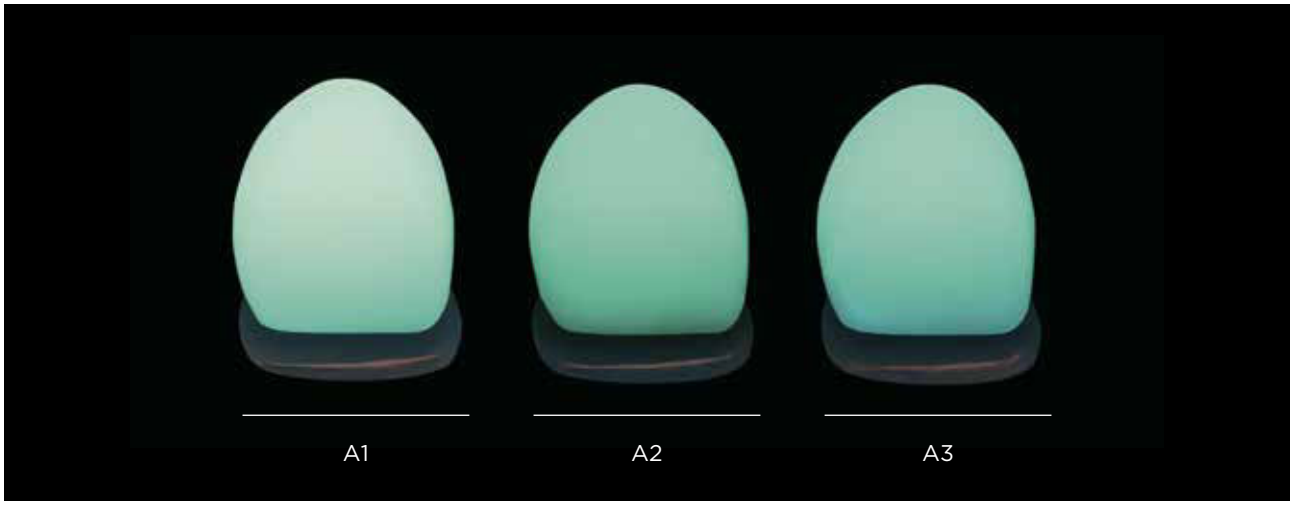


Opalescence of natural tooth enamel



Wavelength (nm)

Fluorescence



FLUORESCENCE AND CHAMELEON EFFECT

The fluorescence of Celtra 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 adaptation of Celtra 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 has a reduced greying risk.

Partial crown is only polished – neither stained nor glazed

Perfect shade adaptation in situ

Speed

The work process

Celtra can be processed rapidly in the laboratory. Thanks to the new microstructure, Celtra can be milled in the final crystallized state. Restorations are customized with stains and glaze directly on the tooth-coloured framework, which makes it easier to create a pleasant aesthetic design and to control the definitive appearance of the restoration.

CELTRA – WITH STAINING AND GLAZE FIRING

Only **29:50 minutes to 370 MPa** – Celtra attains the same bending strength as lithium disilicate in less time. In addition, its high edge stability and excellent polishability supports high-quality laboratory outcomes.

Designing

Finishing

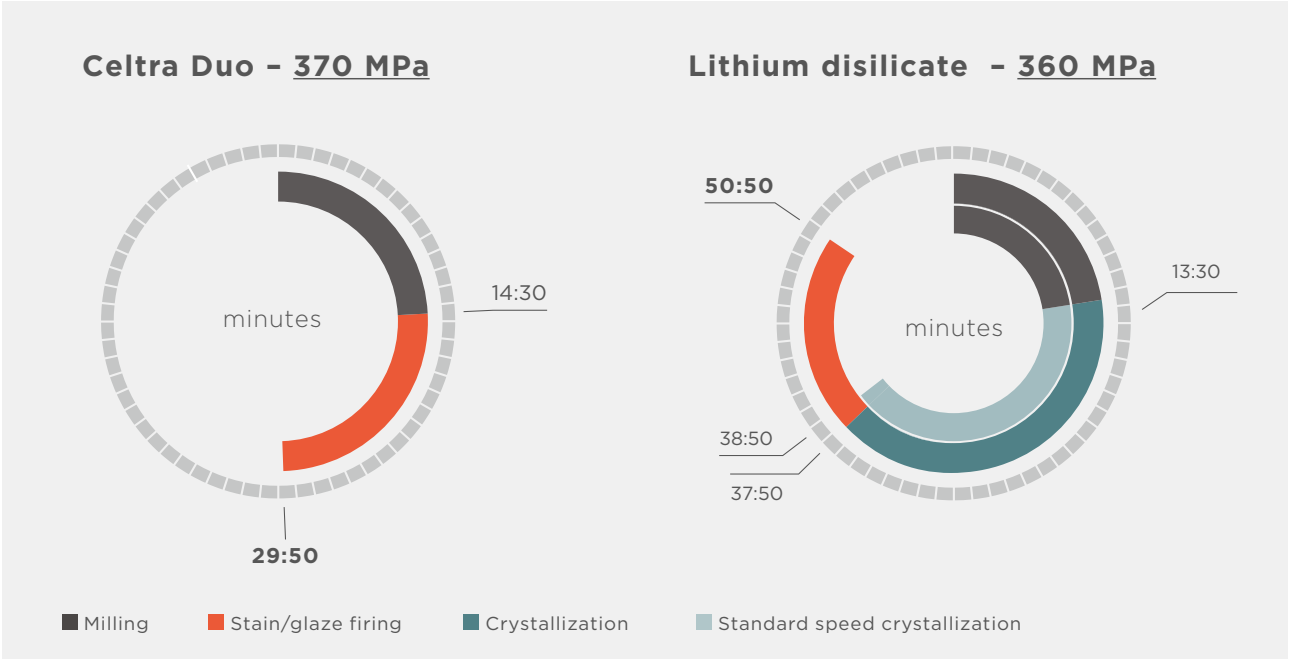
Staining and glazing

CELTRA – POLISHED ONLY

With just a single polishing step, inlays (to give one example) are milled within approx. **15:00 minutes** and, at **210 MPa**, become twice as strong as glass ceramics.

MORE STRENGTH* IN LESS TIME

Molar, C14 block size, standard milling program



* 3 Point Flexural Strength

SIGNIFICANTLY HIGHER STRENGTH* IN APPROXIMATELY THE SAME TIME

Molar, C14 block size, standard milling program

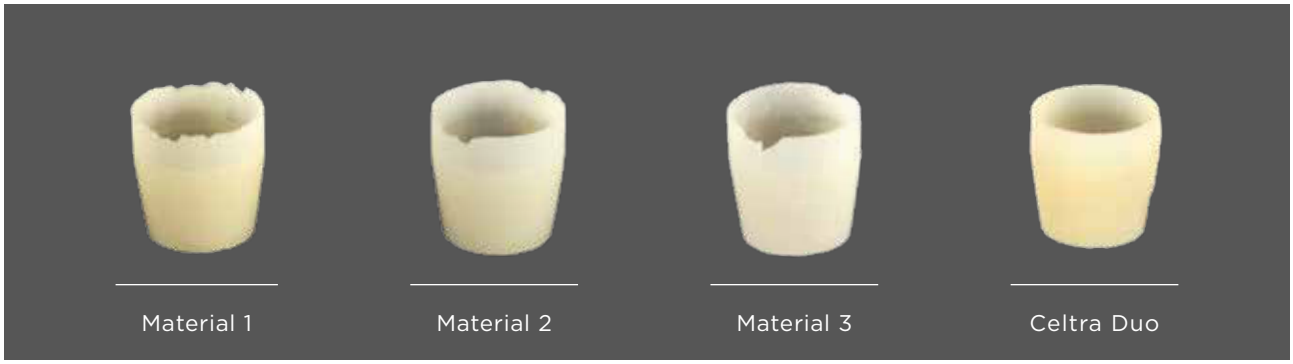
* 3 Point Flexural Strength

Mechanical properties

Strength

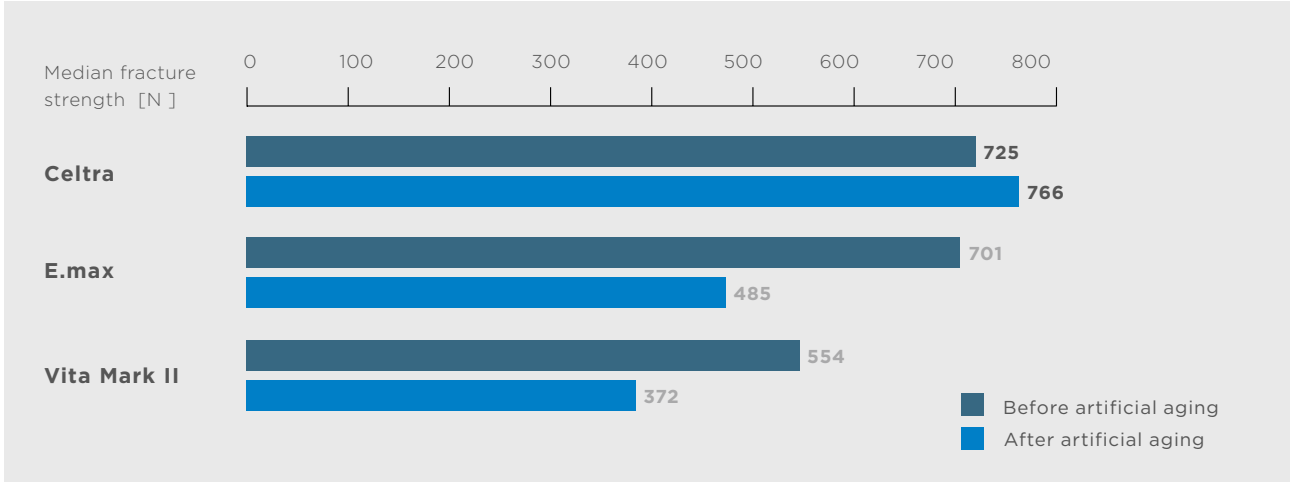
HIGH EDGE STABILITY

The high edge stability of Celtra is evident. During both the actual milling process and manual machining delicate edges and fine structures remain safely preserved. In testing, standardized copings are cut back at the edges to a wall thickness of 200 µm to examine edge stability.



STRENGTH RESERVES AFTER ARTIFICIAL AGING – CHEWING SIMULATIONS

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



Load at fracture, anterior crowns – thermal cycling (5°C–55°C), 6000 cycles, followed by 1.2 million chewing cycles at 70 N.
Source: Rues S, Müller D, Schmitter M. University of Heidelberg 2012. Data available on request.

Polishability

POLISHING IN THE LABORATORY

Thanks to the unique microstructure of Celtra, restorations can be polished quickly and easily. The fine lithium silicate crystallites embedded in the glass matrix give Celtra its homogeneous surface that retains its typical light-optical properties. On top of that, polishing does not take long at all.

POLISHING IN THE DENTAL OFFICE

With Celtra, the necessary intraoral occlusal adjustments and subsequent polishing of the milled surfaces are quickly accomplished by the dentist. The surface quality achieved is excellent thanks to the new microstructure.

Intraoral polishing

Final restorations

Workflow

The digital process

SCAN	CAD	MATERIALS

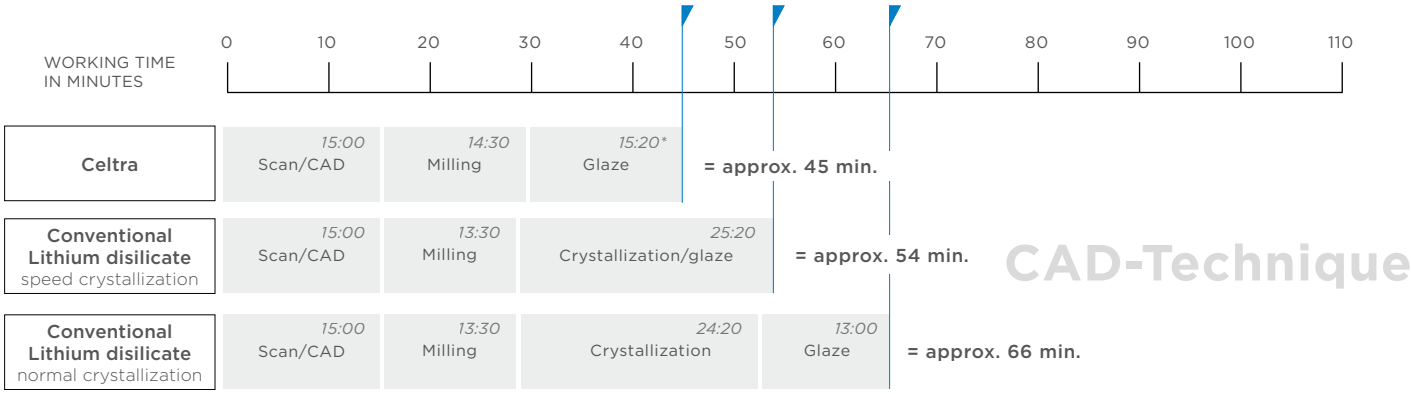
Sirona Workflow

Scanner, inEos

inLab Software

Celtra Duo – high-strength glass-ceramic

PROCESS STEPS AND TIMES – MOLAR CROWN (EXAMPLE)



** On firing pad*

Wet grinding

inLab

- Proven leading wet-grinding technology
- Fast two-sided processing with 4 motor drives
- Compact design
- Integrated cleaning system for a clean process
- Maximum precision and flexibility thanks to material characteristics matched with 3Shape and Dental Designer properties

Ordering information Celtra® Duo

Product		REF
Celtra® Duo CAD Blocks		
Starter Kit	1 ea.	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
Celtra® Universal Glaze		
Glaze	5 g	601322
Celtra® Universal Liquids		
Stain and glaze liquid	15 ml	601315
Stain and glaze liquid	50 ml	601350
Celtra® Universal Stains		
Starter kit		601590
Celtra® Universal Stains		
Stain 0	5 g	601500
Stain 1	5 g	601501
Stain 2	5 g	601502
Stain 3	5 g	601503
Stain 4	5 g	601504
Stain i1	5 g	601511
Stain i2	5 g	601512
Stain white	5 g	601520
Stain cream	5 g	601521
Stain sunset	5 g	601522
Stain copper	5 g	601523
Stain khaki	5 g	601524

Product		REF
Stain olive	5 g	601525
Stain mahogany	5 g	601526
Stain purple	5 g	601505
Accessories		
Shade Guide Celtra Universal Stains		601591
DENTSPLY Prosthetics Die Material		
F1	4 g	613910
F2	4 g	613911
F3	4 g	613912
F4	4 g	613913
F5	4 g	613914
F6	4 g	613915
F7	4 g	613916
F8	4 g	613917
F9	4 g	613918
F10	4 g	613919
F11	4 g	613920
F12	4 g	613921
Die Material Shade Guide		418401
Die Material Release		4010803
Etchant Gel and Neutralizer		430491
Firing Pad	3 Pcs.	53 6590 1205
Celtra Correction 1	5 g	601229

Celtra Duo blocks – starter kit

Celtra – Universal stain starter kit

Product	REF
Calibra® Ceram	
Combo Kit 1 Automix Syringe (4.5 g) – Translucent Shade 10 Mixing Tips 1 Bottle Prime&Bond elect® Adhesive (5 ml) 25 Flocked Applicator Tips 1 Dispensing Well	607100
Dual Cure AutoMix Syringe Refill Package 1 Syringe (4.5 g), 10 Mixing Tips	
Light	607191
Medium	607192
Translucent	607194
Opaque	607195
Bleach	607196
Dual Cure AutoMix Syringe Tip Refill 50	607086
Calibra® Universal	
Dual Cure AutoMix Syringe Refill Package 2 Syringes (4.5 g each), 20 Mixing Tips	
Light	607402
Medium	607403
Translucent	607405
Opaque	607406
Bleach	607407
Dual Cure AutoMix Syringe Mixing Tip Refill 50	607086
Calibra® Veneer	
Kit 5 Syringes Light Cure (2 g each) 1 each Shade: Light, Medium, Translucent, Opaque, Bleach 5 Syringes Try-In Paste (1.8 g each) 1 each Shade: Light, Medium, Translucent, Opaque, Bleach 1 Bottle Prime&Bond® XP Adhesive (2.5 ml) 1 Syringe Calibra® Silane Coupling Agent (3 ml) 1 Syringe Caulk® Tooth Conditioner Gel (3 ml) 25 Applicator Needles 50 Flocked Applicator Tips 1 CliXdish™ Dispensing Well	607200

Product	REF
Refill Package 1 Syringe (2 g)	
Light	607201
Medium	607202
Translucent	607204
Opaque	607205
Bleach	607206
Calibra Veneer Try-In Paste Accessory Pack 5 Syringes Try-In-Paste (1.8 g each) 1 each Shade: Light, Medium, Translucent, Opaque, Bleach	
Calibra Veneer Try-In Paste Refill Package 2 Syringes (1.8 g)	
Light	607301
Medium	607302
Translucent	607304
Opaque	607305
Bleach	607306
Prime&Bond elect®	
Introductory Kit 1 Bottle Prime&Bond elect® (5 ml) 1 Syringe Caulk® 34 % Tooth Conditioner Gel (3 ml) 25 Applicator Tips 1 Dispensing Well	634602
Dual Cure Intro Introductory Kit 1 Bottle Prime&Bond elect® (5 ml) 1 Syringe Caulk® 34 % Tooth Conditioner Gel (3 ml) 25 Applicator Tips 1 Bottle Self Cure Activator (4.5 ml) 50 Flocked Applicator Tips 1 Dispensing Well	634600
Bottle Refill 1 Bottle Prime&Bond elect® (5 ml)	634601
Unit Dose Package 50 Unit Doses 50 Flocked Applicator Tips	634604
Unit Dose Package 100 Unit Doses 100 Flocked Applicator Tips	634603
Caulk® 34% Tooth Conditioner Gel Refill 2 Syringes (3 ml each) 25 Disposable Applicator Tips (Needles)	646125

DeguDent GmbH
Rodenbacher Chaussee 4
63457 Hanau-Wolfgang
Germany
+49 6181 59-50
www.celtra-dentsplysirona.com

US REP

Dentsply
38 West Clarke Avenue
Milford, DE 19963 USA
Tel. 1.855.7Celtra

22303/REV 2017-08

THE DENTAL
SOLUTIONS
COMPANY™

Dentsply Sirona