Celtra® Duo

Zirconia – Reinforced Lithium Silicate (ZLS)

Guidelines for processing Celtra Duo

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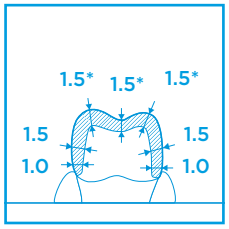
SOLUTIONS
COMPANY™

Dentsply Sirona

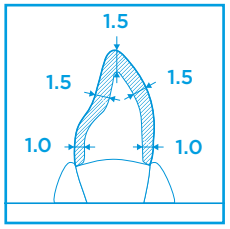
1 Minimum wall thickness

Proper reduction of the hard tissue of the tooth during preparation is essential for maximizing the strength, shade, and retention of the finished restoration. When preparing anterior or posterior teeth, the anatomic shape has to be reduced as shown below.

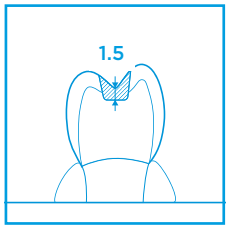
The following diagram shows the specified minimum wall thickness for each indication.



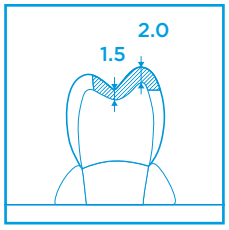
Posterior crowns



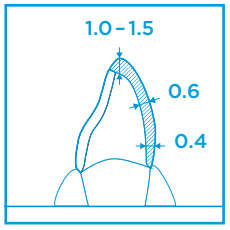
Anterior crowns



Inlays



Onlays



Veneers

**1.5 – 2 mm for frameworks that have been polished only*

! The minimum wall thickness must still be ensured after all manual adjustments have been made.

2 CAD / CAM processing

Celtra Duo restorations are produced with CEREC® and inLab® CAD/CAM systems by Dentsply Sirona. For detailed processing steps, please consult the Directions for Use and technical manuals of the appropriate CAD/CAM systems.

3 Finishing | Polishing

Celtra Duo provides two processing pathways where the material can be milled and polished or milled, glazed and fired for additional strength. Alternatively, the restoration can also be polished and fired for added strength. For polishing instructions go to section 3/3/1, and stain and glaze instructions go to section 3.3.3.

Polishing instructions (optional)

1. Clean the restoration in an ultrasonic water bath, or with a steam cleaner or clean the restoration using soap and water. Carefully blow-dry the restoration in an air stream.
2. Try in the final restoration to examine its fit. If necessary, adjust the proximal and occlusal contacts.
3. When making adjustments to the ceramic material, **make sure to avoid overheating**.
4. Sprue removal should be made using a suitable grinding instrument, between 8,000-12,000 rpm's and using light pressure with a laboratory motor and hand piece. After sprue removal, use a coarse rubber wheel to remove any bur marks using a lab motor at a speed of between 8,000 – 12,000 rpm's with light to medium pressure.
5. Diamond polishing bodies (< 60 um) are recommended for polishing the occlusal surfaces using a lab motor at a speed between 8,000 – 12,000 rpm's with light to medium pressure. Do Not Overheat. Follow the steps below for complete polishing:

In clinical situations where maximum strength is needed, we recommend firing the restoration

The following steps must be followed in order to achieve the healing effect and increase in strength to 210MPa (three-point bending test method) for the Mill and Polish option

- Use a coarse grit to prepare the surface for polishing and to create a more uniform surface
- Followed by a medium and then a fine wheel (8,000-12,000 rpm) using light to medium pressure
- An optional final step is to go over the entire restoration with fine diamond paste using a soft-medium Robinson brush (4,000-8,000 rpm) with light pressure
- Celtra Duo quickly becomes shiny, there is a risk to under polish the material and not achieve the strength of 210 MPa. It is not the shiny surface that gives the material its strength, it is the effect of the smoothing and polishing that strengthens the material.

4 Staining and glazing

Custom staining of Celtra Duo restorations can be performed using Celtra Universal Stains and Glaze or Dentsply Sirona Universal Stains and Glaze instructions below.

- For best results, any sanding marks on the surface should be removed with a suitable coarse rubber wheel
- Before applying the stains and glaze, the restoration must be clean and free of grease. Clean the surface of the restoration with a steam cleaner or submerge for 10 minutes in an ultrasonic cleaner with distilled water. If a steam cleaner or ultrasonic cleaner isn't available clean thoroughly with soap and water. Any contamination after cleaning must be prevented.
- Mix the mass thoroughly with a spatula. Do not use a metal spatula.
- Withdraw desired amount of Celtra stain or glaze and place it on the mixing palette. For a thinner consistency dilute the material with Dentsply Sirona Stain and Glaze Liquid.
  - Use Dentsply Sirona stain and glaze liquid to clean the brush, do not use water to clean the brush as water can create an "orange peel" appearance.
- Apply a sufficient amount of glaze to the entire crown surface using a brush. Apply a thin layer of stain in the gingival area and spread with a brush toward the incisal region (or as needed). Check the shade using the shade tab. Use the brush to increase or decrease the stain amount to achieve the desired shade.
- Again using the brush, apply a thin layer of incisal stain to the incisal edge. Check the shade using the shade ring. Use the brush to increase or decrease the stain amount to achieve the desired esthetic incisal effects.

Notes

- A more intensive shade effect can be achieved by repeating cycles of applying and firing the material. However, the use of too many layers of stain may result in an unnatural appearance.
- The cusps and fissures can be individually characterized with stains.
- The basic shade is determined based on the Vita shade groups (A, B, C, D) (see Table 1). Please use the Vita classical shade guide.

Table 1: Assignment of Shade Groups

Vita Shade Group	Bleach	A	B	C	D
Universal Stain Shade	Stain 0	Stain 1	Stain 2	Stain 3	Stain 4

Table 2: Use of Incisal Stains

Stain	Tooth Shade
Incisal Stain i1	A1, A2, A3, B1, B2, B3, B4, D2, D3, Bleach
Incisal Stain i2	A3.5, A4, C1, C2, C3, C4, D4

Use of glazes and stains by third-party manufacturers

Only the native range of glaze and stains (Dentsply Sirona Universal Stain & Glaze) in conjunction with the appropriate liquid is recommended for customizing and glazing Celtra Duo, as its compatibility with Celtra Duo has been tested and is guaranteed. Glazes and stains by third-party manufacturers may require other firing temperature and cycles than those recommended for Celtra Duo.

5 Applying Correction Porcelain

Mix correction porcelain with distilled water or Dentsply Sirona Modeling Liquid U to desired consistency (thick consistency). Apply porcelain where applicable. Fire to complete the restoration following the procedures and firing programs:

1. **First Glaze and Correction Porcelain:** Apply Dentsply Sirona Universal Glaze over the entire Celtra crown then apply Celtra Correction porcelain to the required areas and fire at 820°C according to the first correction firing program in Table 3. Polish to a high gloss, if needed.
2. **Second Glaze:** If after first firing the required glaze appearance is not achieved, re-apply glaze, and fire according to 2nd and subsequent glaze firing program in Table 3.

6 Firing the restoration

Firing Universal Stains and Glaze Only

- Place the restoration on a firing pad and then on a honeycomb tray.
- Always use a firing pad for all restorations, placed onto a honeycomb sagger tray.
- If firing an anterior, place the restoration with the lingual facing down and with premolars, place the restoration with the interproximal facing down. If there are any imperfections left of the glaze from the firing pad, it can be easily corrected by polishing that area.

General firing recommendations

- The optional firing will increase the flexural strength of Celtra Duo to 370 MPa (three-point bending test method). To increase the flexural strength it is only necessary to fire the restoration up to 820°C. The application of glaze is an option but not necessary. In case of firing without glaze skip the Pre-drying and drying steps of the firing program. Make sure to completely polish the restoration first before firing.
- Starting temperature 500°C
- Place the object on a firing pad then on honeycomb tray, then place on the firing tray/firing table of the furnace.
- Additional glaze firings may be performed at 770°C in order to accentuate the shade or to correct it with glaze, or increase the gloss. It is necessary to coat the entire surface with Dentsply Sirona Universal Glaze (available separately, see complete Directions for Use) to obtain a uniform glossy finish.
- Check the shade against a shade tab and adjust if necessary.
- **Note:** After the first firing, the restoration may not appear sufficiently glazed. In this case, apply a thin layer of Dentsply Sirona Universal glaze to the entire surface with a brush. After applying the glaze, perform a second stain/glaze firing as defined in the firing recommendations (see table 3). Additional stain/glaze firing cycles can be performed using the same parameters.

Table 3: Firing Charts

Celtra Duo General Firing Recommendations

	Pre-Drying/Drying (depending on the type of furnace)	Closing/Drying (depending on the type of furnace)	Pre-heating	Start tem-perature	Heating rate	Final tem-perature	Vacuum	Holding time	Long-term cooling
	min	min	min	°C	°C/min	°C	on/off	min	min
Celtra Paint-On Glaze	2:00	2:00	2:00	500	60	820	off	1:30	3:00
2nd & Subsequent Glaze Firing – if needed	2:00	2:00	2:00	500	60	770	off	1:30	3:00
Spray Glaze (Indenco)	1:00	1:00	1:00	500	60	820	off	1:30	3:00
Polish and Fire	0:30	0:30		500	60	820	off	1:30	3:00
Correction Porcelain	2:00	2:00		500	60	820	on	1:30	3:00

Celtra Duo Firing Recommendations for the Programat CS/CS2, Programat EP 3000/5000, P 500

	Standby Temperature B	Closing time S	Heating rate t ↑	Firing temperature T	Holding time H	Vacuum on/off	Long-term Cooling L	Cooling temperature tL
	°C	min	°C/min	°C	min	Vac 1 (°C) Vac 2 (°C)	°C	°C
Celtra Paint-On Glaze	500	3:30	60	820	1:00	off	750	50
2nd & Subsequent Glaze Firing – if needed	500	3:30	60	770	1:00	off	750	50
Spray Glaze (Indenco)	500	2:00	60	820	1:00	off	750	50
Polish and Fire	500	1:00	60	820	1:00	off	750	50
Correction Porcelain	500	3:30	60	820	1:00	V1=500 °C V2=819 °C	750	50

Celtra Duo Firing Recommendations for VITA ovens

	Start Temperature	Pre-drying	Heating rate	End temperature	Holding time	Long-term Cooling	VAC
	°C	min	°C/min	°C	min	min	min
Celtra Paint-On Glaze	500	4:00	60	820	1:00	3:00	-
2nd & Subsequent Glaze Firing – if needed	500	4:00	60	770	1:00	3:00	-
Spray Glaze (Indenco)	500	3:00	60	820	1:00	3:00	-
Polish and Fire	500	2:00	60	820	1:00	3:00	-
Correction Porcelain	500	4:00	60	820	1:30	3:00	1:30

7 CEMENTING

Preparation of the Celtra restoration

- Clean the restoration with an ultrasonic or steam cleaner or with alcohol.
- Apply 5%–9% hydrofluoric acid etching gel (Available separately, see manufacturer's complete Directions for Use) to the interior of the restoration only. Etching time 30 seconds.
- **CAUTION:** Follow manufacturer's precautions. Do not allow tissue or eyes to come into contact with the acid! Remove the hydrofluoric acid as per the manufacturer's instructions.
- Dry the restoration in an air stream.
- It is recommended to silanate the etched surfaces immediately.
- At chairside, apply silane only to those surfaces required for adhesive cementing.
- Allow to soak for 60 seconds. If the silane layer is no longer liquid, add more silane. Blow-dry in a powerful air stream. (Recommended material: Calibra® Silane Coupling Agent, Available separately, see complete Directions for Use).

Cementation

Depending on the indication, Celtra Duo restorations can be self-adhesively or fully adhesively cemented. Compatible time-proven adhesive cementing materials are available as part of the Dentsply Sirona range of products. (Recommended material: Calibra® Ceram for fully adhesive and Calibra® Universal for self-adhesive Cements are available separately. See complete Directions for Use.

	Self-adhesive	Fully adhesive
Inlays	R	HR
Onlays	R	HR
Crown	R	HR
Veneers		HR

R = recommended HR = highly recommended

Ordering information

Product		REF
Celtra® Duo CAD Blocks		
Starter Kit	1 ea.	5365490113
Celtra Duo LT BL2, C14	4 pcs.	5365411175
Celtra Duo LT BL3, C14	4 pcs.	5365411185
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 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 HT A1, C14	4 pcs.	5365411205
Celtra Duo HT A2, C14	4 pcs.	5365411215
Celtra Duo HT A3, C14	4 pcs.	5365411225
Celtra Duo HT B1, C14	4 pcs.	5365411255
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
Universal Glaze		
Universal glaze	5 g	605540
Universal glaze High Flu	5 g	605542
Universal Liquids		
Universal Stain and Glaze liquid	15 ml	601315
Universal Stain and Glaze liquid	50 ml	601350
Universal Stains		
Universal Stain and Glaze Kit	1 ea.	600700
DS Universal Body Stain - S0	5 g	605520
DS Universal Body Stain - S1	5 g	605521
DS Universal Body Stain - S2	5 g	605522
DS Universal Body Stain - S3	5 g	605523
DS Universal Body Stain - S4	5 g	605524
DS Universal Incisal Stain - i1	5 g	605531
DS Universal Incisal Stain - i2	5 g	605532

Product		REF
DS Universal Stain - White	5 g	605500
DS Universal Stain - Crème	5 g	605501
DS Universal Stain - Sunset	5 g	605502
DS Universal Stain - Copper	5 g	605503
DS Universal Stain - Khaki	5 g	605504
DS Universal Stain - Olive	5 g	605505
DS Universal Stain - Mahogany	5 g	605506
DS Universal Stain - Violet	5 g	605507
DS Universal Stain - Raspberry	5 g	605508
DS Universal Stain - Purple	5 g	605509
DS Universal Stain - Grey	5 g	605510
DS Universal Stain - Chestnut	5 g	605511
DS Universal Stain - Blue	5 g	605512
DS Universal Stain - Pink	5 g	605513
DS Universal Overglaze	5 g	605540
DS Universal Overglaze - High Flu	5 g	605542
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 Duo Correction Porcelain	15 g	601229

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