

conceptPress

TRAINING KIT



conceptPress

TRAINING KIT



942/5000

The easy training method to connect digital and classic dental technology!

To perfect the press technology of lithium disilicate ceramics, we submit this training kit and its extensive documentation. Three different types of restorations (anterior; for the cut-back technique, premolar and molar-onlay for the stain & glaze technique) were scanned and milled in Zubler's millable wax using the DC5™ milling machine from Dental Concept Systems. Use these wax patterns to optimize press technology for lithium disilicate in your laboratory without the loss of time, created by the modeling of the objects, and experience the extraordinary fit of the "mill and press technique". Finished with DC Ceram™ 9.2 ceramics and conceptArt stains, you will see all-ceramic restorations of the highest precision and quality produced with ease.



conceptPress TRAINING KIT

- Contents:
- Training Model
 - Ø 98 mm Milled Wax Disc
 - 5 Lithium Disilicate Ingots
 - Stains
 - Glaze & Glaze Liquid
 - DC Ceram™ 9.2 Enamel
 - Build up Liquid
 - ring Base Ø 13mm
 - Disposable Plungers
 - **Item No. 46-1007**

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The course model

The ConceptPress Training Kit is designed to help the modern dental laboratory quickly and efficiently optimize the processing of high-strength lithium disilicate press ceramics. The training kit is also a great tool for use as in-house training of new employees. Afterwards, the attractive master model with the finished full ceramic work can be used for client acquisition as a sample, or as an illustrative component for the patient during an explanation of aesthetic all ceramic restorations by the dentist.

In the modern dental laboratory, more and more virtual modeling is carried out. In the training kit, a wax disc with milled crowns and inlays is included. Milling technology and press technology form a perfect synergy.

The milling of the restorations modeled in a CAD program in wax, and the subsequent pressing of the patterns is absolutely sensible and efficient. The following table is intended to illustrate the advantages of this synergy:

| CAD/CAM + Press Technique | CAD/CAM + Blue Block |
|---|---|
| Approx. 6 minutes Milling time (dry) | Approx. 20 min Grinding time (wet) |
| No tool wear | Strong tool wear & cooling liquid usage |
| Perfect fit - also for inlays and veneers | Not suitable for delicate inlays and thin veneers |
| Approx. 420 MPa Flexural | Approx. 350 MPa Flexural |
| Low material costs: Max. EUR 20, - for up to 3 units | High material costs: at least EUR 30, - for 1 unit |



Simple & Inexpensive



Expensive

The TRAINING KIT Includes:

- 1 Model with anterior, posterior and inlay preparation
- 1 Wax disc with anterior patterns, pre-molar patterns and posterior inlay patterns.
- 1 Tube with 3 conceptPress dentin pellets A2
- 1 Tube with 3 conceptPress Color Transpa pellets CT2
- 1 ConceptArt Stain shade A fluor.
- 1 ConceptArt Stain Gray Blue fluor.
- 1 ConceptArt Glaze paste
- 1 Glaze / Stain Liquid 5ml
- 1 Build Up Liquid 25 ml
- 1 DC Ceram TM 9.2 layered ceramic Enamel1 20g
- 1 Ring base Ø 13 mm
- 4 Disposable Plungers
- 1 Processing instructions
(Optional desired test pack 1 ConceptVest LiSi2 special investment 500g + Liquid)

conceptPress TRAINING KIT



The conceptPress TRAINING KIT is designed for the production of:

1. An anterior full contour crown in dentin A2 and / or
2. An anterior crown in the cut-back technique (staining + layering) with Dentin A2
3. A premolar full contour crown in dentin A2
4. An inlay in the stain & glaze technique with CT2

Please refer to the detailed instructions that follow for detailed information on how to proceed.

For more information, please contact our technical support team at (972-) 600-9187 OR (770) 921-2131.



Instructions

1. General

1.1 Parameters for the correct ingot selection

The basis for creating a natural-looking restoration is the correct choice of the press ingot. This should be selected on the basis of the circumstances present in the patient.

For this purpose, the dental technician needs the following information from the practitioner:

- Color of the natural tooth stump.
- The color to be achieved with the restoration. According to the patient's residual dentition.
- Color of the cementing material.

The color of the "base" on which the restoration is attached plays a significant role in the final color effect in the mouth of the patient.

Basically:

The thinner the restoration and the more translucent the press ingot used, the more the color of the "substrate" will carry through the dull color, the color of the cement or glue. In addition to the information from the dentist, the dentist must consider the following factors when choosing the press ingot:

- The type of restoration (anterior crown, posterior crown, inlay, onlay, etc.).
- The thickness of the crown to be expected (higher layer thicknesses may be needed to increase the opacity of the ingot to avoid graying in the mouth).
- The brightness value to be achieved (the more value to be achieved, the more opacity is required, especially for larger layer thicknesses).
- The preparation margin is in the visible range, e.g. For inlays and partial crowns an ingot with high translucency should be chosen (CT ingot).

The color overall appearance of the restoration in the mouth of the patient is created only after insertion!

1.2 Ingot concept and portfolio

DC conceptPress CT (colored transpa.): are available in 3 colors CT1 - CT3 and in ingot sizes 2g and 3g. Due to their high translucency, these ingots are ideal for the production of small restorations such as classic inlays or veneers with moderate layer thickness. The high translucency and natural coloring of these ingots creates a pronounced chameleon effect, which makes the restoration invisible to the adjacent dentition. Prerequisite: An intact, not discolored background.

DC conceptPress Pearl (opalescent): available in three grades Pearl 1 - Pearl 3 and in ingot sizes 2g and 3g. Due to their natural opalescence, these ingots are ideal for the production of minimally invasive veneers or non-prep veneers or classic veneers which require a correction of the tooth shape. Also suitable for permanent bleaching.

DC conceptPress (D) Dentin: available in all 16 vita shades A1-D4 plus 3 Bleach shades BL1- BL3 and in the ingot sizes 2g and 3g. These ingots have a medium translucency for the production of full contour crowns, 3-unit bridges, as well as onlays and partial crowns. For the full contour and cutback techniques. The fluorescence of these ingots prevents graying in the mouth and ensures a natural appearance. Even slight discoloration can be covered at appropriate layer thicknesses.

DC concept Press (ID) Intensive dentin: available in 5 values ID1 - ID5 and in ingot sizes 2g and 3g. Due to their high opacity these ingots are ideal for the production of bridges on medium to strongly stained stumps or as a substructure if a high brightness value is to be achieved with large layer thicknesses. Bridges should be designed in a reduced tooth shape which is then to be finished with DC Ceram 9.2 ceramic technology.

12.3 Product information conceptPress Silicate glass ceramics

| | |
|--|--|
| | |
| Chemical composition (essential constituents) | SiO ₂ , Li ₂ O, K ₂ O, Al ₂ O ₃ , ZnO, ZrO ₂ , P ₂ O ₅ |

Classification according to ISO 6872: 2008

| | |
|----------|-----------|
| Type: II | Class: 4b |
|----------|-----------|

Physical / chemical properties (tested according to ISO EN)

| | |
|---------------------------------|---|
| Thermal expansion (WAK) | 10,0 x 10 ⁻⁶ . K ⁻¹ |
| Transformation Temperature (TG) | 520 °C |
| Flexural strength (3 point) | 420 MPa |
| Chemical solubility | < 40µg . cm ⁻² |

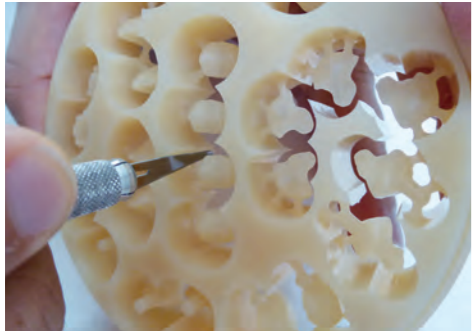
Applications

Indication:

- Thin Veneers
- veneers
- inlays
- onlays
- Table tops
- partial crowns
- full crowns
- 3-unit bridges in the front and posterior area up to the 2nd premolar
- Hybrid abutments in the front or lateral area
- Hybrid abutment crowns with direct screw connection in the front or lateral area

Contraindication:

- Side tooth bridges in the molar area
- Cantilever
- Inlay bridges / Maryland bridges
- Bridges that go beyond 3 limbs
- For bruxism
- Very deep subgingival preparation
- When the residual bite is greatly reduced
- Cross-section of connector cross-sections and minimum wall thickness
- For temporary integration
- All applications not listed under indications
- Restorations from Concept Press, finished with third-party materials from other manufacturers
- In the case of a known intolerance to one or more components of the conceptpress ceramic



2. Removing the wax parts from the disc

Carefully remove the milled wax parts from the disc, and use a wax knife to remove the attachment points of the milling bars.



3. Control of Margins

Please check the edges of the milled parts on the model. If necessary, correct and re-wax or smooth at individual points. Please pay attention to an exact margin, because the pressed ceramic restoration corresponds exactly to the wax model.

4. Sprueing

Please note the following when creating your press objects:

General information:

- Please make sure that the press canal former of the ring base on which you are studying has the correct diameter. The press channel must have a diameter of 13 mm, corresponding to the press ingots (The 200g ring former in the TRAINING KIT)! When using the press ring systems from Zubler, 13mm bases are gray in color.
- When using the 100g ring please note that only one press ingot can be pressed. Please calculate the wax weight accordingly. We recommend using the 200g ring when pressing multiple ingots.
- The use of surfactants is not recommended. If the investment compound absorbs enough, these can adversely affect the setting of the investment compound and can cause material inclusions in the pressed object.
- Please pay attention to the instructions given by your investment manufacturer for processing your investment material (mix time, speed, storage temperature, and bench set time)



Sprueing

- To determine the weight of the wax, please weigh the ring base prior to sprueing and note the weight on the scale (value B) of the ring base. Once sprueing is complete, weigh the ring base again, including attached objects (value A). Now subtract the weight of the ring base (value B) from the weight of the ring base with the wax objects (value A).

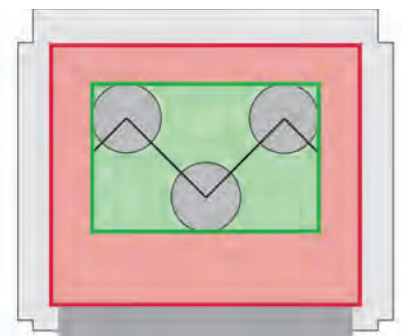
(Value A - value B = wax weight). Optionally, it is also possible to simply weighed the milled press objects (which are provided with press channels) in order to obtain the exact wax weight. The required pellet quantity, based on the wax weight can be found in the table on page 14.

- Depending on the size of the wax object, choose a sprue gauge diameter of 2.5 mm - 3 mm.
- The length of the sprue should be 3-5 mm.
- Always wax to the thickest part of your press object in the direction of flow. It is recommended to choose large cusps to wax in the posterior region. In the anterior tooth area, incisal edge is always sprued to position the unit in an axial direction in line with that of the base former pressing channel.
- Ensure that the press channel is properly sealed. Subdivisions in this area can cause investment compound inclusions in the press object.
- The total height of the pressed object and sprues should not exceed 16 mm.
- Maintain a minimum distance between the 3mm model and a distance of 10mm to the silicone ring.
- Push your press objects at a 45 ° angle at the edge of the press canal. Please also pay attention to a clean, undercut-free adhesion.
- When crowns are pressed onto small-diameter dyes, choose your connection so that the dye is always loaded axially in the direction of flow in order to prevent the investment from breaking away during the pressing process. e.g. In the case of hybrid abutments, please do not apply the wax object from two sides so that the lateral thrust forces against the investment dye formation can be lessened as much as possible and the investment dye formation can be held in a stable position.
- Bridges: never sprue to an adjoining member of a bridge.



5. Investing

- Process the investment material according to the manufacturer's instructions. Pay particular attention to the mixing time, mixing speed, duration of the bench set time, as well as the storage conditions of your investment material.
- Apply light vibration when pouring investment compound into prepared ring formers until the wax objects are completely filled with an investment material and covered, then completely fill the ring without vibration to the fill indicator on the ring former. Air bubbles must be avoided during investing! Use a thin brush for filling crowns.
- When placing the ring cover (ring gauge), pull the upper edge of the silicone ring with one hand to the side and place the ring gauge obliquely on the ring former with the other hand. In this way air can escape and you avoid bubble formation on the surface of the ring.
- After filling the ring, the investment compound has to be placed in a vibration free environment. Please follow the manufacturer's instructions, setting and operating times exactly!

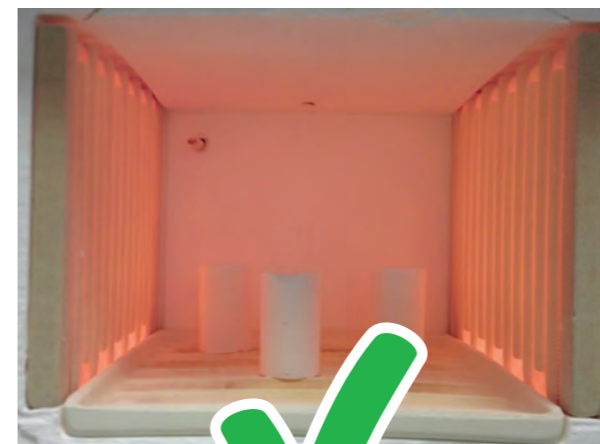


6. Burnout (Pre-Heating)

- We recommend to pre-heat the ring utilizing the speed technique. Tests have shown that, in comparison to the conventional (overnight burnout) method, the fit is significantly better, and the reaction layer tends to be less.
- Set your burnout (preheat) oven to 850°C. The Press ring is preheated at 850°C. The burnout oven must be clean and the temperature accuracy is critical.

- Carefully remove the ring from the silicone mold. If necessary, dry-scrape any surplus, which has formed at the outlet hole of the ring gauge carefully with a plaster knife. Then (depending on manufacturer's instructions) leave the ring setting on the bench for evaporation until the end of the bench-set time, then place in the pre-heated (850°C) burnout oven.
- Always place your press ring in the burnout oven as centrally as possible.
- If you load several rings, please pay attention to a minimum separation of 2cm between each ring as well as to the insulating wall of your burnout oven (see sketch on page 12).
- Please keep a minimum distance of 5 cm from the oven door of your burnout oven.
- Never decrease the necessary holding times in the burnout oven. A 100g ring must be held at the end temperature (850°C) for at least 45 minutes and a 200g at a final temperature (850°C) for at least 60 minutes before the press can be started.
- If several rings are placed simultaneously in the preheating furnace, the preheating time is extended by 10 minutes for each ring. Before the complete heating of the ring, no further cold rings should be placed in the same preheating furnace.
- Press plungers and press ingots are not preheated!

The preheating process plays an important role in the processing of pressed ceramics. Not only is wax burnt out, but you also generate a certain ring-core temperature in the burnout oven, on which your press furnace is tuned. The preheating process should therefore be kept as precisely as possible and a certain quality of the equipment must be ensured (cleanliness, temperature accuracy and maintenance is important for all burnout ovens).



Pressing

- Ensure that your press furnace is well-heated with the press insert placed on the pressing insulation. If necessary, please allow the preheating program to run through. Optionally, start the pressing program - 15min before the first ring is ready for pressing . Leave the press furnace in the closed state for 15 minutes at the starting temperature (700°C) (possible in the ZUBER VARIO 300.e / 300.eZR press furnace).
- Place the required quantity of press ingots (*refer to chart below as well as points 4 and 5*) and the disposable plunger on the press furnace. The press ingots are beveled on the non-printed side. Please place the ingot with the beveled side down. The press plungers (Zubler disposable plungers) are marked with a dot on one side. This side has no contact with the press ingot, and should point upwards.

| Wax Weight | Ceramic Amount |
|-------------|----------------------------|
| Up to 0,6 g | 1 x 2g Ingots |
| Up to 0,9 g | 1 x 3g Ingots |
| Up to 1,2 g | 2 x 2g Ingots |
| Up to 1,6 g | (1 x 2g) + (1 x 3g) Ingots |
| Up to 2,0 g | 3 x 2g or 2 x 3g ingots |

Please pay attention to the correct diameter of the press plunger. It must be 13mm!

- We recommend the use of disposable plungers. If you use reusable plungers, an adjustment (increase) of the pressing temperature may be necessary and an increased reaction layer on the pressing object is to be expected.
- Start the corresponding press program (press parameter on page 15). Once the oven has reached the standby temperature of 700°C and has been held for 15 minutes, place the press ring, with the ingot (inserted label up) and disposable plunger (inserted black point upwards) - into the press furnace.
- The transfer process into the press furnace should not exceed 20 seconds for a 100g ring and 30 seconds for a 200g ring.
- Do not expose the ring to drafts (if necessary, close the window) to prevent it from cooling down.

- When inserting the ring into your pressing oven, make sure that the ring is centered on the 3 steps of the press plate, in a vertical position relative to the base of your press furnace. If the ring is tilted or rocked, this can lead to a serious mis-pressing, or can lead to ring breakage!

Press ingots as well as press plungers are not to be preheated!

- After completing the press program, remove the ring from the oven and allow the ring to cool to room temperature. It is possible that cracks appear on the surface of the press ring during cooling. This is perfectly normal as the investment compound cools abruptly to room temperature on the outside of the ring.
- Only use new press ingots for pressing. The pressing of re-used ingots leads to a change in the WAK (coefficient of thermal expansion), a change in the color and, above all, a loss of the bending strength (approx. 60% -70% loss of strength).

Never re-use pressed ingots for pressing!

Combination table staining and layering technique (D, ID, and CT blanks):

| Shade | A1 | A2 | A3 | A3.5 | A4 | B1 | B2 | B3 | B4 | C1 | C2 | C3 | C4 | D2 | D3 | D4 |
|--|----|----|----|------|----|----|----|----|----|----|----|----|----|----|----|----|
| conceptPress D - Ingots Stain & Layering techniques | A1 | A2 | A3 | A3.5 | A4 | B1 | B2 | B3 | B4 | C1 | C2 | C3 | C4 | D2 | D3 | D4 |
| conceptPress ID - Ingots Layering technique | 1 | 2 | 2 | 2 | 4 | 1 | 1 | 2 | 2 | 1 | 3 | 3 | 4 | 1 | 5 | 5 |
| conceptPress CT - Ingots Stain technique | 1 | 1 | 2 | 2 | 3 | 1 | 1 | 2 | 3 | 1 | 3 | 3 | 3 | 1 | 1 | 3 |

General Pressing Parameters¹:

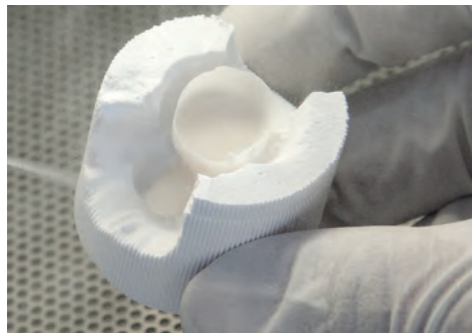
| | Start temp. in °C | Heat Rate in °C/min | Final Temp. in °C | Hold Time in min | Press Time in min | Vacuum |
|------------|----------------------|------------------------|----------------------|---------------------|----------------------|--------|
| 100 g ≤ 3g | 700 | 60 | 910 | 18:00 | 3:00 | Yes |
| 200 g ≤ 4g | 700 | 60 | 915 | 20:00 | 3:00 | Yes |
| 200 g > 3g | 700 | 60 | 920 | 20:00 | 3:00 | Yes |

¹ Die angegebenen Pressparameter sind Richtwerte und müssen bei Bedarf gegebenenfalls angepasst werden.



8. Divesting

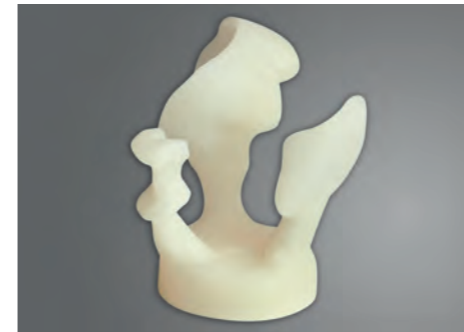
- Use a disc to separate the ring along the horizontal marks.
- Use 50 µm glass beads to expose the objects.
- Tip: First, shoot around the press objects. You can see where the objects are located in the ring by means of the sprue channels.
- Large-scale divesting can be carried out at a pressure of up to 4 bar. The fine divesting (removing the investment compound from the pressed object) should be carried out at 2-3 bar.
- Always keep a distance of approx. 5 - 10 cm from the pressed object to avoid puncturing and overheating of the ceramic surface.



9. Removing the reaction layer

- After the investing compound has been completely removed from the pressed object, a thin white layer may be visible on the surface of the restoration. This is a reaction layer which can be removed with 50-100 µm aluminum oxide.

- The use of hydrofluoric acid (even in very low concentrations) is not recommended.
- The reaction layer must be removed from the outer surfaces of the restoration at 50 - 100 µm at a pressure of 3 bar. Hold a distance of 5-10 cm with the blasting handle to the press object and avoid spot blasting, thus overheating.
- To remove the reaction layer in the cavity of the restoration, please reduce the jet pressure to 2 bar.
- If the reaction layer is completely removed, the restoration should fit effortlessly on the gypsum stump (assuming the stump is free of any debris).



10. Finishing

Only use suitable tools for cutting and grinding.

Our recommendations are:

- For cutting the cast channel: sintered diamond cutting disc
- Grinding of the casting channel: Grinding stone for ceramics (wheel) coarse grit.

- Finishing: Diamond grinders or grinding wheels suitable for the processing of ceramics with corresponding grain size, sandpaper (approx. 100-120 grain size) for conditioning the surface before the luster or glaze firing.

We recommend the following points when working out your pressed restorations:

- Design your wax-up to require as little grinding as possible.
- When cutting or grinding the press channel, make sure that the minimum layer thickness is not exceeded.
- Avoid overheating the ceramic. If necessary, cool with water (to do this, moisten the object with water or moisten the abrasive with water).
- With bridges, the connectors must never be separated (breaking points).
- In the cutback process, make structures for mamelons as "soft" as possible.
- For the design of surface textures, it is recommended to use grinding stones instead of diamonds. These create a "softer design marks".
- When adjusting margin with abrasives, use a fine grit or a rubber polisher and work lightly, with low pressure and speed to avoid fractures.
- The smoother the surface of the restoration is, the easier it will be to achieve the desired degree of luster after glaze firing.
- Before further fires are carried out, clean the surface of the restoration with 50-100 µm alumina at approximately 1 bar of pressure. Then evaporate well, avoid spot overheating and dry with air.



11. Stain and glaze firing

For individualizing and polishing, we offer glaze paste and the conceptArt florescent stain system. The system can also be used to complete monolithic zirconium restorations. For details, please refer to the separate processing guide of the conceptArt stain system.

Please note these following points during this final step:

- Stains or glaze may only be applied to clean and dry surfaces.
- Contact points and surfaces should be reworked and smoothed.
- If necessary, adjust the consistency of the stains by diluting with Glaze / Stain Liquid according to the type of application.
- Avoid applying too much stain. To achieve the desired effect or more intense coloring, by repeated staining and firing.
- The glaze must be applied in the correct consistency and thickness. If applied too generously, surface anatomy may be lost.
- The consistency of the glaze is to be adjusted so that a thin uniform layer can be applied by means of a brush without the glaze clumping into crevices or the margin of the restoration.
- We recommend firing stain and glaze separately. However, it is possible to fire them together (requires practice). To do this, first apply the glaze and apply the stains directly onto the unfired glaze. This technique, however, requires some practice to acquire the correct consistencies between the glaze and stain. Incorrect consistencies cause the stain or glaze to run and will produce an unsatisfactory result (therefore not recommended).
- Further stain or glaze firings can be carried out with the same firing parameters. A lowering of the final temperature or holding time is not necessary.
- In preparation for firing, place your anterior or premolar crowns on a thin pin support placed on a honeycomb tray. Molar crowns, veneers and inlays can be placed directly on the honeycomb tray.

- Restorations with uneven thickness, as well as molars in general, should be cooled slowly after firing. An opening time of 6 minutes or cooling rate of 45°C/min to 450°C (Zubler VARIO 200ZR) is recommended.
- When staining or glazing molars, **do not to place these on a peg using Easy Fix or Peg Putty.** Instead, place directly on the honeycomb tray without firing wool.
- After firing, allow the fired object/s to cool to room temperature. Do not accelerate this process, do not touch with tweezers or similar during this process.
- Finally, check all contact points on the model.
- Should individual parts of the restoration have to be re-polished, the use of a diamond polishing paste and a goat hairbrush (bristles if possible) is recommended. Felt wheels should be used with great caution, as this often results in a considerable heat development.



General firing table:

| | Start Temp. in °C | Close Time in min | Heat Rate in °C/min | Final Temp. in °C | Hold Time in min | Vacuum | Open Time. in min |
|---------------------|----------------------|----------------------|------------------------|----------------------|---------------------|--------|----------------------|
| Shade/Stain | 450 | 5:00 | 45 | 780 | 1:00 | Yes | 2:00 - 6:00* |
| Luster/Fire W/Glaze | 450 | 5:00 | 45 | 790 | 1:00 | Yes | 2:00 - 6:00* |

* The duration of the cooling time depends on the size or quantity of the firing objects. Basically, we recommend a longer cooling phase during the production of molar crowns.

12. Ceramic Layering

The entire Concept press system ingot selection can also be finished in layers or combined staining and layering processes. DC Ceram™ 9.2, is a low-fusing ceramic for zirconia frameworks and lithium disilicate that offers you a versatile selection of layering materials and a simple, user-friendly process.

Please consider the following points when you layer conceptPress restorations:

- Use materials exclusively from the DC Ceram™ 9.2 system.
- Before applying the actual layering, please carry out a wash firing. Use a dentin or incisal material of your choice and apply a thin, even layer to the area of the pressed restoration to be coated. This can be done with a glass instrument or a thin brush. Combine the layering compound (powder) and build up liquid to the same consistency as when opaqueing.
- After the wash firing, supplement with layering materials.
- If desired, individualizations can be customized on the pressed restoration with the Concept Art stains prior to layering (after the wash firing). Please note the appropriate firing temperatures for ceramic-coated press restorations during the firing process.



Shade chart:

| Shade | A1 | A2 | A3 | A3,5 | A4 | B1 | B2 | B3 | B4 | C1 | C2 | C3 | C4 | D2 | D3 | D4 |
|--------|----|----|----|------|----|----|----|----|----|----|----|----|----|----|----|----|
| Dentin | A1 | A2 | A3 | A3,5 | A4 | B1 | B2 | B3 | B4 | C1 | C2 | C3 | C4 | D2 | D3 | D4 |
| Enamel | 1 | 2 | 2 | 4 | 4 | 1 | 2 | 3 | 4 | 2 | 2 | 3 | 4 | 1 | 2 | 3 |

¹ A1 - D4 are part of the VITA color system. VITA is a registered trademark of VITA-Zahnfabrik, Bad-Säckingen.
The assignment of the interface press ceramic was determined on non-colored frameworks. The liner N is used in already dyed ZrO2 frameworks. It is not suitable for processing the DC Ceram™ 9.2 Interface Press Ceramics.

Firing chart for lithium disilicate framework material³:

| | Start temp. in °C | Pre-Dry in min | Heat Rate in °C/min | Final Temp. in °C | Hold Time in min | Vacuum | Open Time in min |
|------------------|----------------------|-------------------|------------------------|----------------------|---------------------|--------|---------------------|
| Wash Bake | 450 | 6:00 | 45 | 790 | 1:00 | Yes | 6:00 |
| Dentin 1 | 450 | 6:00 | 45 | 780 | 1:00 | Yes | 6:00 |
| Dentin 2 | 450 | 6:00 | 45 | 770 | 1:00 | Yes | 6:00 |
| Glaze Monolithic | 450 | 5:00 | 45 | 790 | 1:00 | No | 6:00 |
| Glaze Layering | 450 | 5:00 | 45 | 750 | 1:00 | No | 6:00 |
| Glaze | 450 | 4:00 | 45 | 750 | 1:00 | No | 6:00 |

³Rate of climb / holding time can vary according to the size of the LiSi2 framework structure.



13. Troubleshooting

| Problem Solution Press technology | | |
|-----------------------------------|--|--|
| Error / failure | Possible Cause | Solution |
| Ring bursts in the burnout oven | Investment setting time not properly observed - placed ring in burnout oven too early or too late. | Observe the manufacturer's instructions for the setting time of the investment compound. |
| | Speed in RPM and / or mix time not correct. | Check the mix speed and mix time (mfg.'s instructions). Mixing time for ConceptVest LiSi Special investment: 30 sec. at 350rpm. |
| | The temperature in the burnout oven is too high. | Set the burnout temperature to 850°C - Check the accuracy of the burnout oven. |
| | Insufficient vacuum in vacuum mixer. | Check the vacuum mixer for proper function. |
| | Ring removed too early / too late from the silicone ring. | Observe the mfg. instructions for setting time and ring removal. |
| | Gypsum residues in the mixing bowl. | Mixing bowls, use the mixing bowl and spatula only for investment material, and keep it clean. |
| | Incorrect storage of investment powder and liquid. | Store powder and liquid between 18°C and 21°C, if necessary in a climate controlled cabinet. |
| | Ring placed too close to the heating element of the burnout oven - uneven heating of the ring. | Observe placement and minimum spacing of rings in the burnout oven. |

| Error / failure | Possible Cause | Solution |
|-------------------------------|---|---|
| Ring breakage during pressing | Pressing pressure too high. | Check the oven setting - see the operating instructions for the oven. |
| | Too many objects in the ring. | Max. Pellet quantity in the 100 g muffle: 3 g, i.e. Wax weight: 0.9 g; Max. Pellet amount in the 200 g muffle: 6 g, i.e. Wax weight: 2.0 g |
| | Objects placed too close to the ring edge. | Observe a minimum distance of 10mm from the muffle edge. |
| | Ring placed incorrectly in the press furnace - Ring stands obliquely in the press furnace. | Ensure correct placement of the ring on the press base - ring misalignment when pressing by misalignment leads to muff elimination. |
| | Defective press base/stand in the press furnace. | Replace defective base with new base. |
| | Setting time of investment not properly observed - Ring placed in burnout oven too early or too late. | Observe the mfg.'s instructions for the setting time out of the investment. |
| | Ring was cooled again after heating and reheated. | Press the ring immediately at the end of the prescribed burnout time. |
| | Wrong press program was used. | Ensure correct program selection. |
| | Mixing ratio Liquid / Dist. Water not correct - Liquid quantity too high or too low. | Check the mixing ratio, and the total amount of liquid, using the processing instructions. |
| | Uneven ring due to contamination on the press base. | Remove any impurities from the press base - store in a clean, dry place |
| | Uneven ring by air bubble on the ring bottom. | Avoid bubble formation during investing- see pg. 4. investing. |

| Error / failure | Possible cause | Solution |
|--------------------------------------|--|---|
| Ring breakage during pressing | Press plunger was not placed correctly in the ring. | Ensure that the press ram is clean, and is in the vertical position in the ring. |
| | The surface of the ring bottom and / or ring top is not parallel to the press base. | When investing, ensure the ring is correctly seated, with the ring gauge on the silicone ring. |
| | Ingot or Plunger, placed in wrong direction (upside down) | install the ingot and plunger into the ring with the print and black dot facing upwards. |
| | Origin of disposable plungers | Only use manufacturer's disposable plungers - home made plungers may expand during the pressing process. |
| | Ring was shaken during the setting time / has fallen down afterwards. | Investment ring must be free of vibrations during the setting time . Do not apply air pressure. |
| | Excess investment material was not removed after the removal of the ring gauge (cover), the 100 g muffle | After the removal of the ring gauge, excess investment must be removed so the bottom of the 100g ring. Ring must be free of vibrations. |
| | too much force was used when removing the ring former | lightly spray plastic parts and inside the silicone ring with silicone spray from Ceramay. |
| | Ring was removed from the ring former too early or too late. | Ensure the exact setting times - follow the processing instructions for the investment material. |
| | The setting process of the investment material has already begun during the filling of the ring former. | Fill the ring quickly without bubbles. Deposit the investment and liquid at 18-21 ° C, if necessary in the temperature controlled cabinet. Do not invest too many rings at once, if necessary stir several times. |

| Error / Failure | Possible cause | Solution |
|---------------------------------------|--|--|
| Incomplete pressing / mispress | Temperature loss during the pressing process. | Observe, 30 second time limit between burnout oven ring removal to press oven ring insertion. |
| | Pressing furnace with press insert not preheated sufficiently. | Start the press program approx. 20 min early with the presser / base inserted, and preheat the press furnace (closed) at the starting temperature of 700°C. Keep the press furnace closed. |
| | Burnout oven too cold and / or in bad condition. | Check the preheating furnace for correct temperature, and adjust and / or repair if necessary. |
| | Ring placed incorrectly in the burnout oven. | Pay attention to the proper ring placement in the burnout oven - see pg. 5. |
| | Wrong pressing program used. | When starting the press program, ensure correct program input for the corresponding press ceramic and quantity. |
| | Drafts in the laboratory. | Too many drafts lead to massive heat loss in the ring - close windows. |
| | Too many press objects - too little pressed ceramic. | balance wax weight vs. press ingots according to the table in 6.Press. |
| | Press channel / press object too long. | Do not exceed 16mm total length (objects+sprues+base former) when spruing. Sprue Gauge 3-5 mm. |
| | Modeling too thin. | Minimum wall thickness of 0.4mm must be observed. |
| | Press ceramic has to flow from "thin to thick". | Always stick to the thickest part of the pressed object - in rare cases it is necessary to work with two press channels (for example, MOD inlay with very thin cavity and massive approximal walls). |

| Error / failure | Possible cause | Solution |
|--|--|---|
| Press flags between the press objects | Too little clearance between the press objects. | Minimum spacing of 3mm between press objects. |
| | Ring was removed from the ring former too early / too late. | Ensure the exact curing times - Observe the processing instructions for the investment. |
| | The setting process of the investment material has already begun during the filling of the muffle. | Fill the ring quickly without bubbles. Deposit the investment and liquid at 18-21°C, if necessary in a climate controlled cabinet. Do not invest too many rings at once, if necessary stir several times. |
| | Unsuitable milling wax was used. | When using the press in the wax with the CAD / CAM technology, use only the milling wax suitable for pressing. |
| Error / failure | Possible cause | Solution |
| Impurities / spots in the press object | Contaminated burnout oven. | Carefully clean the interior of the burnout oven, clean if necessary. |
| | Contaminated wax. | Use only ceramic system wax and keep clean - when not in use seal immediately. |
| Error / failure | Possible cause | Solution |
| Investment mold, broken during pressing. | Incorrect alignment of patterns of the wax patterns. | Always wax in the axial direction of the sprue channel, never laterally. |
| | Wax too thin (e.g., in the case of a solid hybrid abutment). | Work with 2 press channels so that the stump is held in position by the inflow of the press ceramic from 2 sides, and it is impossible to break. |

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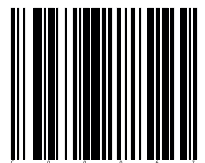
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