AllCeram

Description and Instructions for Use

for high grade, aesthetic porcelain veneerings.
Every dream which has come true is the outcome of your original vision.

AllCeram® is an all-ceramic system with which you can fabricate biocompatible, aesthetic facings using the Procera® System. This material can be processed perfectly and its multiple options provide for a wide range of indications – from standard veneerings right up to light dynamic restorations.

These instructions are intended for you to use as your personal handbook – they include hints on processing, numerous illustrations and tables as well as a troubleshooting guide. The service section allows enough space for you to make your own notes on specific applications.

Indications:  
- Veneering of aluminium oxide cores or tooth preparations.

Contraindications:  
- Use only with Procera cores or Inceram Alumina, Spinell, Zirconia single crowns.

Precautions:  
- To avoid microcracking, the framework must be trimmed wet (water cooled turbine) and only minimal pressure exerted.
- Only use AllCeram stains.

Data:  
- CTE Dentine 7.0 µm/m·K
- Dental ceramics, type 1, class 2–8 – acc. to DIN EN ISO 6872
- Metall-ceramic bond characterization, flexural strength and chemical solubility acc. to DIN EN ISO 9693

Transport and Storage:  
- Protect the liquids from temperature below freezing.
  Store containers tightly closed at temperatures between 10 and 25 °C.
- Powders and pastes: Protect from light. Store in a vibration-free place.
- Protect from humidity.

Safety notes:  
- Do not inhale dust particles during grinding.
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Thank you for choosing AllCeram – and paying us a compliment for our competence in ceramics.

Nowadays, DeguDent is considered one of the leading companies for innovations and technology in alloys and ceramics. This was also confirmed by the development of AllCeram. When placed in the appropriate surroundings, the veneering porcelain creates impressively aesthetic restorations. The success we achieved with this veneering porcelain prompted us to make use of our ceramics know-how for AllCeram.

While developing AllCeram further, DeguDent took into account patients’ growing interest in highly aesthetic porcelain restorations. For example, since November 2000 users have been able to combine AllCeram with the light dynamic porcelains to create shades and reflective properties virtually identical to those of nature. In addition, Bleaching Ceram can be used for a rapidly increasing number of patients who have had their teeth bleached. And finally, we would like to present two more innovations for creating natural margins between the crown and gingiva – even in this region, our shoulder porcelains adapt perfectly to the shade of the tooth. The Gum Shades produce a smooth transition between the restoration and gingiva.

Apart from its outstanding aesthetics, AllCeram has been proven to exhibit excellent materiological properties over more than six years of practical use in dental laboratories and is proof of the competence for which DeguDent has stood for more than a century.
AllCeram at a glance:

Top materialological properties

- matched optimally to the CTE of aluminium oxide
- smooth surfaces, gentle to the opposing dentition
- gingiva friendly
- minimal plaque accumulation
- minimal radiopacity
- reliable and rational processing
- clinically proven for many years

Perfect aesthetics

- brilliant shade reproduction
- high shade stability
- highly translucent
- excellent shade adaptation
- compatible with bleach
- light dynamic crowns can be fabricated
Information for dentists.

Incorrect types of preparation

No anatomical tooth reduction

No shoulder preparation! Do not prepare inverse shoulders.
Requirements for tooth preparation/ Cementation

Correct preparations

For further up-to-date details and a description of how to use the Procera® Diamond Kit correctly, please refer to the Procera® preparation.

Cementation

This is a real advantage when using the Procera® AllCeram system – you can cement the restoration as you consider best. Conventional or adhesive procedures, Procera® AllCeram gives you the choice! The interior of the crown never has to be prepared or conditioned.
The following pages describe the individual stages involved in the standard build-up technique. The boxes at the top and bottom of each page are intended to help you find your way around. Important sections of the instructions have a blue background.

A description of the optional light dynamic porcelains has been added to the first section (page 18 f.).

Starting on page 22, further indications are described and include medically indicated as well as aesthetically motivated preparations together with the required working stages.

To simplify your daily workload, we have depicted each firing cycle curve exactly as it is displayed on your porcelain furnace.

The service section at the end (pages 31 ff.) is intended to enable all necessary processes to be carried out smoothly and allows space for personal notes.
Procera® AllCeram copings are supplied in this state

Trimming and cleaning Procera® AllCeram copings

Minor adjustments such as to the margin can be carried out with diamond instruments. The Procera® AllCeram coping is sandblasted with 100–150 mm Al₂O₃ at a pressure of 4 bars and then cleaned with a steam-cleaner or in a clean ultrasonic unit.

To avoid microcracking, Procera® AllCeram must always be trimmed wet (water-cooled turbine) and only minimal pressure exerted.
Building up AllCeram.

Layering diagram

Standard build-up technique

Shade combination chart for every type of build-up

| Shades    | A1 | A2 | A3 | A3.5 | A4 | B1 | B2 | B3 | B4 | C1 | C2 | C3 | C4 | D2 | D3 | D4 |
|-----------|----|----|----|------|----|----|----|----|----|----|----|----|----|----|----|
| Opaque-Liner | LA1 | LA2 | LA3 | LA3.5 | LA4 | LB1 | LB2 | LB3 | LB4 | LC1 | LC2 | LC3 | LC4 | LD2 | LD3 | LD4 |
| Dentine    | DA1 | DA2 | DA3 | DA3.5 | DA4 | DB1 | DB2 | DB3 | DB4 | DC1 | DC2 | DC3 | DC4 | DD2 | DD3 | DD4 |
| Incisal    | I  | I  | III | III | IV  | I  | I  | II | IV  | I  | II | II | IV  | I  | II | II |
Applying Opaque-Liner

AllCeram Opaque-Liner provides the crown with its basic chroma. It is mixed similar to opaque, using OL liquid, and applied in a thin, masking coat. After firing, the entire surface of the coping is shiny. This stage can be repeated if necessary.

Apart from the 16 Opaque-Liners (LA1–LD4), there are seven modifiers for creating special effects:

- white
- yellow
- orange
- gingiva
- purple
- brown
- grey

Shading

A fired Opaque-Liner surface

The furnace display for Opaque-Liner
AllCeram paste-liner is applied and fired using standard procedures. It should be applied with the brush supplied or a glass instrument. Ensure that the paste-liner is applied in a thin, uniform layer.

**Viscosity**
Paste-liner can be thinned with moderate amounts of our opaquer paste thinner.

**Firing chart – AllCeram Paste-Liner**

<table>
<thead>
<tr>
<th>Programme</th>
<th>Preheating temp. °C</th>
<th>Drying time min</th>
<th>Firing time min</th>
<th>Firing temp. °C</th>
<th>Heat-rate °C/min</th>
<th>Vacuum hPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liner paste firing</td>
<td>575</td>
<td>8</td>
<td>1</td>
<td>930</td>
<td>55</td>
<td>50</td>
</tr>
</tbody>
</table>

Unlike with liner powder, please extend the drying time to 8 minutes. All other settings remain the same.
Building up the dentine

The dentine and incisal porcelains are built up on the Opaque-Liner as shown in the AllCeram build-up diagram.

Building up the dentine
Reducing the dentine body
Contouring the mamelons
Building up the incisal and transparent porcelains
The crown after the first firing

The modifiers, Opal porcelains and Flu-Dentines included in the Professional Assortment and the Light dynamic assortment can be used for creating special effects.

Firing cycle curve: dentine
Glaze firing – contouring, glazing, staining, firing

Once the anatomy and surface structures of the AllCeram crown have been contoured, it can be glazed and special effects added with AllCeram stains.

Only use AllCeram stains.

Contouring the anatomy and surface
Glazing and applying AllCeram stains

Firing cycle curve: glaze
Correction porcelain – indications, application, firing

AllCeram correction porcelain can be used for all minor modifications to the anatomy or adding contact areas.

This correction porcelain is mixed with "SD" modelling fluid and fired in vacuum. As it is fired at only 840°C, existing anatomy and contours remain.

Adding a contact area

The finished crown after modification

Firing cycle curve: correction porcelain
Shoulder porcelains

Indication
Even where the preparation margin is supragingival, AllCeram shoulder porcelains create perfectly shaded crown margins. These porcelains guarantee perfect “red/white” aesthetics, even where the preparation is subgingival.

Clinical requirements:
Pay particular attention to the recommended Procera preparation technique.

Laboratory procedures

Crown margin – CAD reduction
- When using AllCeram shoulder porcelains, we recommend designing the Procera® coping with the CAD programme so that its margin remains approximately 0.5 mm–0.8 mm above the preparation margin.
- The coping margin can also be reduced approximately 0.5 mm (max. 0.8 mm) by hand (refer to the blue box).

Reducing the coping with a diamond
- Copings must only be reduced with precisely balanced, medium grit diamonds.
- Always cool the area thoroughly and only exert minimal pressure on the diamond.
- The coping margins must include smooth junctures. Otherwise, they create uncontrolled stresses within the porcelain (see Fig.).

Sandblasting and cleaning
- Sandblast the coping carefully (110 µm Al₂O₃; 4 bars pressure).
- Clean the coping.

Extending the coping – optional
- If required, build up the coping at this stage using AllCeram coping porcelain.

Firing
- The firing temperatures are in the AllCeram instructions – page 32 onwards.
- The die can be coated with Duceram-Sep or Duceram separating agent. When using Duceram-Sep, the procedure may have to be repeated. The die does not have to be coated with sealant in advance.

Procera coping: rounded edges
Shoulder porcelains – Laboratory procedure

- Mix the shoulder porcelains and build them up.
- Shoulder porcelains can be mixed with Quick, SD or SD-Form modelling liquids. To improve handling, we recommend the use of SM Fluid shoulder porcelain modelling fluid (according to Borenstein).
- Build up the porcelain shoulder using standard methods.
- Allow the shoulder porcelain to dry in air for five minutes.
  **Do not soak up the liquid!**
- Raise the coping with porcelain shoulder carefully from the die.

- Clean the inside of the coping carefully.
- To increase the stability of the shoulder porcelain, it should overlap the coping margin adequately toward the incisal aspect.
- Carry out the first firing as described in the charts beginning on page 32.
- Once the porcelain shoulder has cooled, sandblast it gently (pressure <1 bar).
- Where necessary, trim the shoulder to increase the precision of fit.
- If necessary, apply more shoulder porcelain and fire as described in the firing instructions.

Procera® coping with shoulder porcelain
**AllCeram Light dynamic porcelains**

**Twin-Dentines**
Twin-Dentines are fluorescent dentine modifiers for increasing the chroma of cervical and mamelon regions. In the mamelon region they are inlaid into the Bright-Body-Flu layer. This creates a vertical interface between the light and dark zones and disperses the contours of the Bright-Body-Flu layer.

**Bright-Body-Flu (BBF)**
Bright-Body-Flu porcelains control the brightness value in the central and upper thirds of the dentine body.

**True-Opalescence incisal porcelains**
(TOS 57–TOS 60)
True-Opalescence incisals are shade dedicated incisals which interchange colours like natural enamel.

**True-Opalescence incisal porcelains**
(TOS 5–TOS 50)
True-Opalescence incisals promote light dynamics by means of colours and interchanging transparency.

**Shade combination**
For increased shade saturation

<table>
<thead>
<tr>
<th>Shade combination</th>
<th>A1, A2, D2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twin-Dentine 1</td>
<td>B1, B2, C1</td>
</tr>
<tr>
<td>Twin-Dentine 2</td>
<td>B3, B4, D3, D4</td>
</tr>
<tr>
<td>Twin-Dentine 3</td>
<td>A4, C2, C3, C4</td>
</tr>
</tbody>
</table>

When using shades A3 and A3.5, Twin-Dentines 3 and 4 are mixed in equal parts! To create the required dentine modifiers, approximately 10% Twin-Dentine is mixed with the appropriate dentine porcelain.
For mamelons or secondary dentine

| Twin-Dentine 1 | light, reddish | for all shades |
| Twin-Dentine 2 | light, yellowish | for all shades |
| Twin-Dentine 3 | dark, yellowish-red | A3, A3.5, B3, B4, D4 |
| Twin-Dentine 4 | dark, greyish-brown | A4, C3, C4, D3 |

**Bright-Body-Flu**
For modifying the brightness value of the upper third of the dentine body.

| BBF 1 | A1, B1, C1 |
| BBF 2 | A2, B2, C2, D2 |
| BBF 3 | A3, B3, C3, D3 |
| BBF 4 | A3.5, A4, B4, C4, D4 |

**TOS 57–TOS 60**
Opalescent interchange of colours like natural enamel.

| TOS 57 | B1 |
| TOS 58 | A1, A2 |
| TOS 59 | A3, A3.5, B2, B3, B4, C2, C3, D3, D4 |
| TOS 60 | A4, C1, C4, D2 |

**TOS 5, 10, 15, 50, 5G, 10G, 10B**
For custom application with any shade.
Transpa-Opal incisal porcelains with successively increasing opalescence and decreasing translucency. The “G porcelains” have an extra yellow touch and the “B porcelains” a blue touch.

We would be pleased to send you our Light Dynamics brochure for more detailed information.
3D  
Chroma dentines which intensify the hue. They can be mixed with all porcelains marked in the diagram with a brown ring. These materials increase the basic hue of the build-up even where very little space is available for the porcelain.
Please note: The D, CD and 3D porcelains exhibit different degrees of intensity but the same translucency.

Build-up  
This core build-up material is for building up the ceramic copings to reproduce the anatomy of the tooth, but with smaller overall dimensions. It can also be used for extending the margins.

D  
Dentine porcelains

Flu  
Fluorescent dentines. These are very fluorescent dentines which increase the luminosity of the facing. Short wave light in the non-visible range is absorbed and long wave light in the visible range emitted.

Form, SD  
Modelling liquids for dentine, incisal and modifier porcelains as well as core build-up material.

Modifiers (e.g. Mango, Bamboo, Peach)  
These modifiers can be used for changing the tone of the basic shade and are for creating special effects.

PL  
Paste Liner determines the basic shade and masks the coping.

S  
Various incisal porcelains

TOS 10  
This opalescent, transparent modifier enables the shade of the restoration to be matched accurately to that of the residual dentition. The very small particles of this opalescent incisal porcelain are capable of filtering daylight as well as reflecting short wave, blue light. At the same time, the orange looking, boring portions of light are emitted.

TOS 15  
This porcelain exhibits the same light optical properties as TOS 10, but is more opalescent.

TOS 50  
Opalescent incisal porcelain which is much more opalescent than TOS 15.

If you require further details on DeguDent products, please contact your local sales representative.
Further indications.

**Laminate veneering**
Laminate veneering to correct the shade and contours of natural teeth is not only increasing in popularity in the USA. Even in Germany, teeth restored with laminate veneers are becoming more and more of a status symbol.

Procera® AllCeram Laminat provides for excellent shade stability and transmits light very efficiently, even in very thin sections.

**Special requirements for tooth preparation**
The natural tooth structure should be reduced by approximately 0.3–0.7 mm before adhering the porcelain laminate veneers. The optimum outcome is teeth usually only seen in actors/actresses.
When building up custom laminate veneers, modifier can be applied directly on the veneer or mixed with the dentine.

Laminate veneers are fired as described in the instructions. The laminate veneers are placed on a firing pad supported on firing tray pins.

No liner is required for building up extremely thin laminate veneers.

Procera® laminate veneers

Step-by-step:

- Palatal view of a laminate veneer prior to trimming
- A laminate veneer after firing the liner
- The dentine build-up
- A finished Procera® AllCeram laminate veneer
**Standard build-up**

If the restoration is to be built up with dentine/incisal porcelain only and adequate space is available, the dentine (corresponding to the shade guide) is applied to the Procera® laminate veneer fired with liner. The dentine should be built up approximately 0.4 mm thick. Once the dentine body has been built up fully, it is reduced as described in the AllCeram instructions. The veneer is then built up completely with incisal porcelain and the special effects created.

If space is limited, we recommend using a mixture of dentine, modifier and Transpa Clear as shown in the following table:

<table>
<thead>
<tr>
<th>Description</th>
<th>Shade</th>
<th>Dentine</th>
<th>Modifier</th>
<th>Transpa Clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>LM 1</td>
<td>A1</td>
<td>4 large scoops A1</td>
<td>1 large scoop Flamingo</td>
<td>5 large scoops TC</td>
</tr>
<tr>
<td>LM 2</td>
<td>A2</td>
<td>4 large scoops DA2</td>
<td>1 large scoop Flamingo</td>
<td>5 large scoops TC</td>
</tr>
<tr>
<td>LM 3</td>
<td>A3</td>
<td>4 large scoops DA3</td>
<td>1 large scoop Flamingo</td>
<td>5 large scoops TC</td>
</tr>
<tr>
<td>LM 4</td>
<td>B1</td>
<td>4 large scoops DB1</td>
<td>1 large scoop Bamboo</td>
<td>5 large scoops TC</td>
</tr>
<tr>
<td>LM 5</td>
<td>B2</td>
<td>4 large scoops DB2</td>
<td>1 large scoop Bamboo</td>
<td>5 large scoops TC</td>
</tr>
<tr>
<td>LM 6</td>
<td>C2</td>
<td>4 large scoops DC2</td>
<td>1 small scoop Taiga, 1 small scoop Pearl</td>
<td>5 large scoops TC</td>
</tr>
<tr>
<td>LM 7</td>
<td>D2</td>
<td>4 large scoops DD2</td>
<td>1 small scoop Pink, 1 small scoop Pearl</td>
<td>5 large scoops TC</td>
</tr>
<tr>
<td>LM 8</td>
<td>D3</td>
<td>4 large scoops DD3</td>
<td>1 small scoop Pink, 1 small scoop Pearl</td>
<td>5 large scoops TC</td>
</tr>
</tbody>
</table>

These mixtures must only be used for the first dentine firing. The following layer should be built up with opalescent incisal porcelains. Please dispense the materials with a Fino Portioning Device produced by DT, Bad Kissingen, Order No.: 25442.
The AllCeram Bleaching Ceram Kit is used for fabricating radiant white, vital porcelain facings.

No special procedures are required for these materials. They should be built up as shown in the general layering diagram. The same firing cycle should be used as for the Liner-Dentine-Incisal build-up.

- Restoring gingival defects when fabricating implant-supported restorations
- Gingival masks
- Soft tissue maxillofacial appliances
- The pontic areas of Procera® bridges
Core build-up material –
Indication

For building up prefabricated implant abutments (e.g. CeraOne® or Procera® AllCeram copings) on severely reduced preparations.

The core build-up material is used for restoring the contours of the root or preparation before applying the remaining porcelains.

Mixing, applying, firing, adjusting

Core build-up material is mixed with “SD” modelling liquid, applied directly to the superstructure or Procera® AllCeram coping and fired in vacuum.

As it is fired at 1,050 °C, it is guaranteed to remain dimensionally stable during the following firings but can still be used for extending margins after firing.

The Liner-Dentine-Incisal porcelains are then built up as described on pages 18–19.

To avoid stress, the edges of the superstructure must be rounded with diamond burs and sandblasted.
All you need to be successful: the AllCeram assortment.

AllCeram is one of the largest and most versatile all-ceramic assortments on the dental market. It ranges from a well balanced starter set to a multiple range of optional porcelain for professional ceramists.

Further porcelain products are shown in the latest catalogue: “Porcelain Products for Laboratories”. 
Starter kit
For rational, sophisticated basic techniques.

Opaque-Liner-Set
- 16x 20 g LA1–LD4
- 7x 20 g Liner modifiers
- 1x Shade guide
- 1x 50 ml OL Modelling liquid

Liner paste assortment
- 16x 2 ml Liner pastes: PL A1–PL D4
- 7x 2 ml Liner paste modifiers
- 2x Liner paste brushes
- 1x Shade guide

Dentine set
- 16x 20 g LA1–LD4
- 1x Shade guide
- 1x 50 ml SD Modelling liquid

Incisal set
- 4x 20 g Incisal porcelains I–IV
- 3x 20 g Transparent porcelains TC, T, TO
- 3x 20 g Incisal porcelains – reddish, yellowish, bluish
- 1x 20 g Core build-up material
- 1x 20 g Gum shade
- 1x 20 g Correction porcelain
- 1x 20 g Glaze
- 1x Shade guide
- 1x 50 ml SD Modelling liquid
- 1x 15 ml Stain liquid
- 1x 10 ml Separating agent

Special Assortment
For top quality and aesthetics.

Shoulder porcelain set
- 7x 20 g SM 1–SM 11
- 1x 20 g SM Clear
- 1x 50 ml QUICK Modelling liquid
- 1x Shade guide

Bleaching shades set
- 3x 20 g Bleach dentine
- 1x 20 g Bleach shoulder porcelain
- 1x 2 ml Bleach opaquer paste
- 1x 20 g TO Incisal porcelain
- 1x 15 ml SD Modelling liquid
- 1x 15 ml SM Modelling liquid
- 1x 10 ml SEP Separating agent
- 1x Opaquer paste brush
- 1x Shade guide

Light dynamic set
- 4x 20 g (TOS 57–TOS 60)
- 7x 20 g (TOS 5–TOS 50)
- 4x 20 g Twin dentines
- 4x 20 g Bright-Body-Flu porcelains
- 1x 50 ml SD Modelling liquid
- 1x Shade guide
Assortments

**Gum shades set**
- 5x 20 g Gum shades
- 1x 2 ml Gum opaquer paste
- 1x Shade guide
- 1x Opaquer paste brush

**Stain set**
- 24x 4 g Stains
- 1x 15 ml Stain liquid
- 1x Shade guide

**Professional set**
- 13x 20 g Modifiers
- 5x 20 g Opalescent porcelains
- 4x 20 g Fluorescent dentines
- 1x 50 ml SD Modelling liquid
- 1x Shade guide

**Test set (4 g each)**
- Build-up
- 3 dentines 3D-A
- Dentine DA 1
- Dentine DA 2
- Dentine DA 3
- Dentine DA 3.5
- Flu Creme Fluorescent dentine
- Flu Bright Fluorescent dentine
- Modifier, bamboo
- Modifier, peach
- Incisal S1
- Incisal S3
- OS 10
- OS 15
- OS 50
- 1x 2 ml Liner paste PL A2
- 1x 2 ml Liner paste PL A3
- 1x 15 ml SD Model ling liquid
- 1x 15 ml SD Form Modelling liquid
- 1x Opaquer paste brush

Abridged instructions
### Troubleshooting

<table>
<thead>
<tr>
<th>Error</th>
<th>Cause</th>
<th>General recommendations</th>
</tr>
</thead>
</table>
| Shade too light, the crown appears opaque and the porcelain porous | Preheating temperature too high  
Firing temperature too low  
Vacuum pump switched on too late  
Vacuum too low | Always use new, high quality fully sintered diamond rotary instruments  
Only exert minimal pressure when trimming  
Cool properly during trimming  
Do not apply liner to moist copings  
Always clean the restoration thoroughly  
After trimming heavily, clean by firing as follows: 1,100°C/10 min, no vacuum |
| The porcelain surface is matte | Hold-time too short  
Furnace does not reach its final temperature | |
| The porcelain surface is rough | Furnace does not reach its final temperature | |
| Edges and contours are rounded | Hold-time too long  
Final temperature of furnace too high | |
| The porcelain surface shines brightly | Final temperature of furnace too high | |
| Crazing on the surface | Other manufacturer’s stains or glazes were used | |
### Recommended firing cycles

<table>
<thead>
<tr>
<th>General firing cycle</th>
<th>AllCeram</th>
<th>Preheat temperature °C</th>
<th>Drying time min</th>
<th>Heat-rate °C/min</th>
<th>Firing-temperature °C</th>
<th>Hold-time min</th>
<th>Vacuum hPa</th>
<th>Slow cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liner firing</td>
<td>575</td>
<td>7:00</td>
<td>55</td>
<td>930</td>
<td>1:00</td>
<td>50</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Liner paste firing</td>
<td>575</td>
<td>8:00</td>
<td>55</td>
<td>930</td>
<td>1:00</td>
<td>50</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Shoulder porcelain</td>
<td>575</td>
<td>7:00</td>
<td>55</td>
<td>1.040</td>
<td>1:00</td>
<td>50</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Core build-up</td>
<td>575</td>
<td>9:00</td>
<td>55</td>
<td>1.050</td>
<td>1:00</td>
<td>50</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Dentine firing 1</td>
<td>575</td>
<td>9:00</td>
<td>55</td>
<td>920</td>
<td>1:00</td>
<td>50</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Dentine firing 2</td>
<td>575</td>
<td>8:00</td>
<td>55</td>
<td>910</td>
<td>1:00</td>
<td>50</td>
<td>–</td>
<td></td>
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<tr>
<td>Glaze firing</td>
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<tr>
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</table>

The values listed here are intended for orientation only and should be regarded only as guidelines. Your firing results may differ. All firing results depend on the performance of the furnace used, which in turn depends on the make, model and age of the furnace. Therefore, the guideline values will have to be adapted individually for each firing. We recommend running a test firing cycle to evaluate the performance of the furnace used.

We have compiled and checked all values and other data with great care. However, we cannot under any circumstances be liable for your results.
### Recommended firing cycles

<table>
<thead>
<tr>
<th>Cergo press / Cergo compact</th>
<th>Liner</th>
<th>Dentine 1</th>
<th>Dentine 2</th>
<th>Shoulder porcelain</th>
<th>Glaze</th>
<th>Build-up material</th>
<th>Correction porcelain</th>
</tr>
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<td>min</td>
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<tr>
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<td>min</td>
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<td>Vac on</td>
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<td>min</td>
<td>min</td>
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<td>min</td>
<td>min</td>
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<td>min</td>
<td>min</td>
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<td>Hold-time V</td>
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### Multimat MC II / Mach 2

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<th>Vacuum hold-time/min</th>
<th>Firing time min</th>
<th>Firing temp. °C</th>
<th>Heat-rate °C/min</th>
<th>Vacuum hPa</th>
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<tr>
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<td>4:00</td>
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<td>2:00</td>
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<td>3:00</td>
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<td>2:00</td>
<td>920</td>
<td>55</td>
<td>50</td>
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<tr>
<td>Dentine 2</td>
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<td>3:00</td>
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<td>2:00</td>
<td>910</td>
<td>55</td>
<td>50</td>
</tr>
<tr>
<td>Shoulder porcelain</td>
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<td>3:00</td>
<td>1:00</td>
<td>2:00</td>
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<td>2:00</td>
<td>840</td>
<td>55</td>
<td>50</td>
</tr>
</tbody>
</table>

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### Austromat 3001

<table>
<thead>
<tr>
<th>Process</th>
<th>Temp (°C)</th>
<th>Time (min)</th>
<th>Vacuum</th>
<th>End Temp (°C)</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Liner firing</td>
<td>575</td>
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<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Dentine firing 1</td>
<td>575</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Dentine firing 2</td>
<td>575</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Shoulder porcelain</td>
<td>575</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>9</td>
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<tr>
<td>Glaze firing</td>
<td>575</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Core build-up</td>
<td>575</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>9</td>
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### Austromat M

<table>
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<th>3</th>
<th>4</th>
<th>Vacuum</th>
<th>°C</th>
<th>Time (min)</th>
<th>END Temp (°C)</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
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<td>3</td>
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<td>0</td>
</tr>
<tr>
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<td>3</td>
<td>9</td>
<td>55</td>
<td>920</td>
<td>1:00</td>
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</tr>
<tr>
<td>Dentine firing 2</td>
<td>575</td>
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<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>Shoulder porcelain</td>
<td>575</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>55</td>
<td>1,040</td>
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<tr>
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<td>Core build-up</td>
<td>575</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>55</td>
<td>1,050</td>
<td>1:00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Correction porcelain</td>
<td>575</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>9</td>
<td>55</td>
<td>840</td>
<td>1:00</td>
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</tr>
</tbody>
</table>

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## Recommended firing cycles

<table>
<thead>
<tr>
<th>Vacumat 100/200</th>
<th>Standby temp. °C</th>
<th>Final temp. °C</th>
<th>Drying time min</th>
<th>Heating-up time min</th>
<th>Hold-time min</th>
<th>Vacuum hold-time/ min</th>
</tr>
</thead>
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<tr>
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<tr>
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<td>575</td>
<td>930</td>
<td>6:00</td>
<td>6:00</td>
<td>1:00</td>
<td>6:00</td>
</tr>
<tr>
<td>Paste-liner firing</td>
<td>575</td>
<td>930</td>
<td>7:00</td>
<td>6:00</td>
<td>1:00</td>
<td>6:00</td>
</tr>
<tr>
<td>Shoulder porcelain</td>
<td>575</td>
<td>1,040</td>
<td>6:00</td>
<td>6:00</td>
<td>1:00</td>
<td>6:00</td>
</tr>
<tr>
<td>Core build-up</td>
<td>575</td>
<td>1,050</td>
<td>8:00</td>
<td>6:00</td>
<td>1:00</td>
<td>6:00</td>
</tr>
<tr>
<td>Dentine firing 1</td>
<td>575</td>
<td>920</td>
<td>8:00</td>
<td>6:00</td>
<td>1:00</td>
<td>6:00</td>
</tr>
<tr>
<td>Dentine firing 2</td>
<td>575</td>
<td>910</td>
<td>7:00</td>
<td>6:00</td>
<td>1:00</td>
<td>6:00</td>
</tr>
<tr>
<td>Glaze firing</td>
<td>575</td>
<td>900</td>
<td>5:00</td>
<td>6:00</td>
<td>1:00</td>
<td>–</td>
</tr>
<tr>
<td>Correction porcelain</td>
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<td>840</td>
<td>5:00</td>
<td>6:00</td>
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<table>
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<th>Final temp. °C</th>
<th>Drying time min</th>
<th>Heating-up time min</th>
<th>Hold-time min</th>
<th>Vacuum hold-time/ min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liner firing</td>
<td>575</td>
<td>930</td>
<td>6:00</td>
<td>6:00</td>
<td>1:00</td>
<td>6:00</td>
</tr>
<tr>
<td>Dentine firing 1</td>
<td>575</td>
<td>920</td>
<td>8:00</td>
<td>6:00</td>
<td>1:00</td>
<td>6:00</td>
</tr>
<tr>
<td>Dentine firing 2</td>
<td>575</td>
<td>910</td>
<td>7:00</td>
<td>6:00</td>
<td>1:00</td>
<td>6:00</td>
</tr>
<tr>
<td>Shoulder porcelain</td>
<td>575</td>
<td>1,040</td>
<td>7:00</td>
<td>6:00</td>
<td>1:00</td>
<td>6:00</td>
</tr>
<tr>
<td>Glaze firing</td>
<td>575</td>
<td>900</td>
<td>5:00</td>
<td>6:00</td>
<td>1:00–2:00</td>
<td>–</td>
</tr>
<tr>
<td>Core build-up</td>
<td>575</td>
<td>1,050</td>
<td>8:00</td>
<td>6:00</td>
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<td>6:00</td>
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<tr>
<td>Add-on porcelain</td>
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<td>6:00</td>
</tr>
</tbody>
</table>

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### Programat X1

<table>
<thead>
<tr>
<th>Process</th>
<th>Standby temperature °C</th>
<th>Closing time</th>
<th>Heat-rate °C/min</th>
<th>Firing temperature °C</th>
<th>Hold-time min</th>
<th>Vacuum level %</th>
<th>Vacuum START °C</th>
<th>Vacuum END °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liner firing</td>
<td>300</td>
<td>4:00</td>
<td>55</td>
<td>930</td>
<td>1:00</td>
<td>100</td>
<td>450</td>
<td>1° below T.</td>
</tr>
<tr>
<td>Paste-liner firing</td>
<td>300</td>
<td>7:00</td>
<td>55</td>
<td>930</td>
<td>1:00</td>
<td>100</td>
<td>450</td>
<td>1° below T.</td>
</tr>
<tr>
<td>Shoulder porcelain</td>
<td>300</td>
<td>7:00</td>
<td>55</td>
<td>1,040</td>
<td>1:00</td>
<td>100</td>
<td>450</td>
<td>1° below T.</td>
</tr>
<tr>
<td>Core build-up</td>
<td>300</td>
<td>9:00</td>
<td>55</td>
<td>1,050</td>
<td>1:00</td>
<td>100</td>
<td>450</td>
<td>1° below T.</td>
</tr>
<tr>
<td>Dentine firing 1</td>
<td>300</td>
<td>9:00</td>
<td>55</td>
<td>920</td>
<td>1:00</td>
<td>100</td>
<td>450</td>
<td>1° below T.</td>
</tr>
<tr>
<td>Dentine firing 2</td>
<td>300</td>
<td>8:00</td>
<td>55</td>
<td>910</td>
<td>1:00</td>
<td>100</td>
<td>450</td>
<td>1° below T.</td>
</tr>
<tr>
<td>Glaze firing</td>
<td>300</td>
<td>5:00</td>
<td>55</td>
<td>900</td>
<td>1:00</td>
<td>–</td>
<td>–</td>
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<tr>
<td>Correction porcelain</td>
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<td>55</td>
<td>840</td>
<td>1:00</td>
<td>100</td>
<td>450</td>
<td>1° below T.</td>
</tr>
</tbody>
</table>

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### Programat P90/P95

<table>
<thead>
<tr>
<th>Process</th>
<th>Standby temperature °C</th>
<th>Heat-rate °C/min</th>
<th>Firing temperature °C</th>
<th>Closing time</th>
<th>Hold-time</th>
<th>Vacuum START °C</th>
<th>Vacuum END °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liner firing</td>
<td>300</td>
<td>55</td>
<td>930</td>
<td>4:00</td>
<td>1:00</td>
<td>575</td>
<td>929</td>
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<tr>
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<td>910</td>
<td>7:00</td>
<td>1:00</td>
<td>575</td>
<td>909</td>
</tr>
<tr>
<td>Shoulder porcelain</td>
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<td>55</td>
<td>1,040</td>
<td>7:00</td>
<td>1:00</td>
<td>575</td>
<td>1,039</td>
</tr>
<tr>
<td>Glaze firing</td>
<td>300</td>
<td>55</td>
<td>900</td>
<td>5:00</td>
<td>1:00–3:00</td>
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</tr>
<tr>
<td>Core build-up</td>
<td>300</td>
<td>55</td>
<td>1,050</td>
<td>9:00</td>
<td>–</td>
<td>575</td>
<td>1,049</td>
</tr>
<tr>
<td>Correction porcelain</td>
<td>300</td>
<td>55</td>
<td>840</td>
<td>5:00</td>
<td>1:00</td>
<td>575</td>
<td>839</td>
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</table>
### Centurion (Q100, Q200)

<table>
<thead>
<tr>
<th></th>
<th>Opaque- Liner</th>
<th>Dentine 1</th>
<th>Dentine 2</th>
<th>Glaze</th>
<th>Build-up porcelain</th>
<th>Correction porcelain</th>
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</thead>
<tbody>
<tr>
<td>LoT °C</td>
<td>575</td>
<td>575</td>
<td>575</td>
<td>575</td>
<td>575</td>
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<tr>
<td>Pos min</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Dry min</td>
<td>2:00</td>
<td>3:00</td>
<td>2:00</td>
<td>2:00</td>
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</tr>
<tr>
<td>Heat min</td>
<td>5:00</td>
<td>5:00</td>
<td>5:00</td>
<td>5:00</td>
<td>5:00</td>
<td>3:00</td>
</tr>
<tr>
<td>Ramp °C/min</td>
<td>55</td>
<td>55</td>
<td>55</td>
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</tr>
<tr>
<td>Vac %</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>–</td>
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<td>100</td>
</tr>
<tr>
<td>Hold min</td>
<td>1:00</td>
<td>1:00</td>
<td>1:00</td>
<td>1:00</td>
<td>1:00</td>
<td>1:00</td>
</tr>
<tr>
<td>Cool min</td>
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<td>0:00</td>
<td>0:00</td>
<td>0:00</td>
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<td>0:00</td>
</tr>
<tr>
<td>HIT °C</td>
<td>930</td>
<td>920</td>
<td>910</td>
<td>900</td>
<td>1,050</td>
<td>840</td>
</tr>
<tr>
<td>Vstp °C</td>
<td>930</td>
<td>920</td>
<td>910</td>
<td>–</td>
<td>1,050</td>
<td>840</td>
</tr>
<tr>
<td>Vstp min</td>
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</table>

### Vario/ Variopress

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<tr>
<th></th>
<th>Liner-firing</th>
<th>Dentine 1</th>
<th>Dentine 2</th>
<th>Glaze firing</th>
<th>Build-up porcelain</th>
<th>Correction porcelain</th>
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<tbody>
<tr>
<td>Preheating time</td>
<td>min</td>
<td>6:00</td>
<td>7:00</td>
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<td>Preheating temp.</td>
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<tr>
<td>Heat-rate °C/min</td>
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<td>55</td>
<td>55</td>
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<tr>
<td>Final temp. °C</td>
<td>940</td>
<td>930</td>
<td>920</td>
<td>910</td>
<td>1,050</td>
<td>840</td>
</tr>
<tr>
<td>Hold-time min</td>
<td>1:00</td>
<td>1:00</td>
<td>1:00</td>
<td>1:00</td>
<td>1:00</td>
<td>1:00</td>
</tr>
<tr>
<td>Cooling time min</td>
<td>0:00</td>
<td>0:00</td>
<td>0:00</td>
<td>0:00</td>
<td>0:00</td>
<td>0:00</td>
</tr>
<tr>
<td>Cooling temp. °C</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>–</td>
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<tr>
<td>Vacuum</td>
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<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Vacuum level cm</td>
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<td>73</td>
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</tbody>
</table>

The values listed here are intended for orientation only and should be regarded only as guidelines. Your firing results may differ. All firing results depend on the performance of the furnace used, which in turn depends on the make, model and age of the furnace. Therefore, the guideline values will have to be adapted individually for each firing. We recommend running a test firing cycle to evaluate the performance of the furnace used. We have compiled and checked all values and other data with great care. However, we cannot under any circumstances be liable for your results.
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