

DCMhotbond



**DCMhotbond PRODUCTS**

*Instructions*

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The patient target group is defined by its need for dental reconstructions and is only restricted due to contraindications.

There are no known side effects / complications with DCMhotbond products, but possible complications are described in the literature in relation to the overall procedures of dental reconstruction.

# DCM hotbond zirconnect



## DCMhotbond zirconnect spray

CTE  $9.7 \times 10^{-6} \text{ C}^{-1} \pm 0.5$  (25 - 500°C)

DCMhotbond zirconnect spray is a glass based on a silicate material, which can be used as a bonder or surface conditioning agent. It is used to create a cohesive bond for dental work made from  $\text{ZrO}_2$  framework materials with suitable veneering ceramics and composites. The zirconium dioxide ceramic is to be used here as a hiped  $\text{ZrO}_2$  or fully sintered  $\text{ZrO}_2$  material after processing white or green parts.

With DCMhotbond zirconnect spray an even thickness of the surface coating of less than 20  $\mu\text{m}$  is achieved.

### Indication:

- Surface conditioning of crowns and bridges made of  $\text{ZrO}_2$  before ceramic veneering
- Surface conditioning of crowns and bridges made of  $\text{ZrO}_2$  before veneering with composites
- Surface conditioning of monolithic  $\text{ZrO}_2$  treatments
- Surface conditioning of the retention areas of retainers and Maryland bridges for bond preparation through adhesive attachment

### Contraindication:

- is not to be used as a joining material between  $\text{ZrO}_2$  -  $\text{ZrO}_2$  and  $\text{ZrO}_2$  - titanium
- Must not be used in connection with liners for ceramic veneers
- Combination with materials outside the intended purpose of the DCMhotbond product system described
- Not suitable for patients with bruxism and parafunction

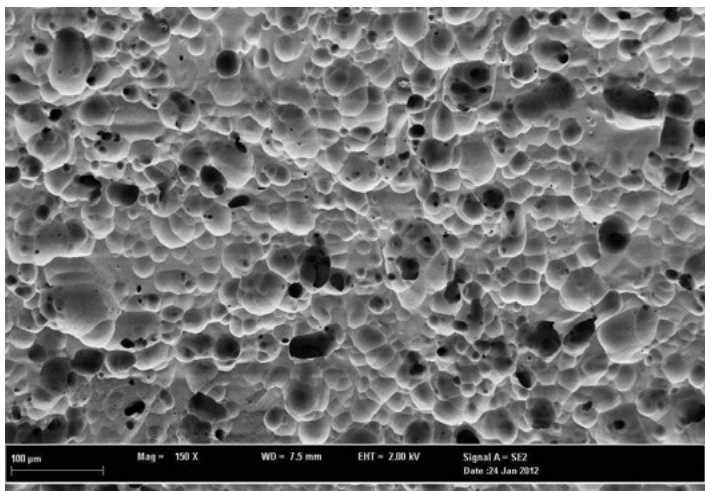
### Areas of application for DCMhotbond zirconnect spray

→  $\text{ZrO}_2$



Composites,  
veneering ceramics,  
press ceramics,  
adhesive attachment materials ←

DCMhotbond zirconnect spray is the basis for  $\text{ZrO}_2$  composite surfaces. The generated roughness depths in the glass matrix form what is required for the micromechanical bond.



To coat the ZrO<sub>2</sub> surface, the **DCMhotbond zirconnect** spray bottle **must be shaken vigorously and in all directions for at least three minutes, even if the glass balls are audible**. During the mixing process, make sure the spray can is moved sufficiently in all directions so that a noticeably even weight distribution of the spray can contents is achieved. Then spray a layer of coating slowly and evenly from a distance of approx. 20 cm.

#### Procedural warnings:

In accordance with its specific function, it is only intended for dental use.  
 The procedure may only be carried out by trained specialist staff.  
 When dealing with ceramic products (grinding, polishing), dust and splinters may occur. Protect your eyes and avoid inhaling spray and sanding dust.  
 Use a suction device or wear a protective mask and goggles.  
 Take care when dealing with high temperatures when firing. There is a risk of burns.  
 Use personal protective equipment.  
 Avoid contact of the material with skin, mucous membranes and eyes.  
 Take special care that the spray device is clean. Any contamination introduced from outside may have a negative effect on the firing result. Risk of contamination.  
 Due to the different designs of ceramic kilns on the market, there are some different firing conditions. This fact must be taken into account and the customer is responsible for clarifying this.  
 The specified firing temperatures are only **guidelines**.



**GHS02**

**H222 – Extremely flammable aerosol**  
**H229 – Container is under pressure; it may burst if heated**



Do not attempt to manipulate the spray can or spray device.  
 Do not pierce or burn it.  
 Keep away from sources of heat, hot surfaces, and naked flames.  
 No smoking.  
 If the spray bottle is damaged, it must not be used.  
 Keep out of the reach of children.

#### Storage and safety regulations:

Recommended storage temperature: Room temperature. **Store dry, upright and away from sunlight.**  
 The instructions for use apply to all areas of application for **DCMhotbond zirconnect spray**.

The current safety data sheets and further information can be viewed at:  
[www.dcm-hotbond.com](http://www.dcm-hotbond.com)

#### Disposal:

Once the **DCMhotbond zirconnect** spray bottle is completely empty, it can be disposed of as light-weight packaging. Otherwise, it should be treated as hazardous waste and disposed of accordingly.

#### Dental procedure:

##### Caution

If the manufacturer recommends decompression firing before the ceramic veneering, this should be carried out before coating with **DCMhotbond zirconnect spray**.

##### Caution

Any required stain fixation firing should be carried out before coating with **DCMhotbond zirconnect spray**.

##### Caution

Retention areas for adhesive attachment in the mouth (wings of the Maryland bridges, etc.) must be coated with **DCMhotbond zirconnect spray** before the ceramic veneering.

##### Caution

In the event of frames that are soldered with **DCMhotbond zircon**, a support structure should be provided by means of a customised firing tray design.

#### Preparation:

##### 1. Sandblasting

Before applying the **DCMhotbond zirconnect spray** conditioning is carried out with coarse grain diamonds under water cooling. Dry processing results in increased cracking and loss of stability.  
 The recommended surface conditioning consists of sandblasting with aluminium oxide (Al<sub>2</sub>O<sub>3</sub>) at a particle size of 110 µm and jet pressure of up to max. 2 bar. It is important to ensure that work is completed in clean and grease-free conditions. The best results are achieved if the items are first cleaned in an ethanol solution.

#### Processing:

##### 2. Spraying

To coat the ZrO<sub>2</sub> surface, the **DCMhotbond zirconnect** spray bottle **must be shaken vigorously and in all directions for at least three minutes, even if the glass balls are audible**. During the mixing process, make sure the spray can is moved sufficiently in all directions so that a noticeably even weight distribution of the spray can contents is achieved. Then spray a layer of coating slowly and evenly from a distance of approx. 20 cm.

The sprayed area should have a powdery surface.

### 3. Firing

The item should then be placed on a firing tray. Make sure the item is properly supported on the firing tray, in order to prevent it tipping over during the firing process. Maryland bridge frames, retainers and contouring elements should be placed on the firing tray with conventional firing cotton.

The firing process takes place based on the data specified below.

The **firing data** for the **DCMhotbond zirconnect spray** are:

Starting temperature: 450°C  
Drying: 2 min.  
Firing temperature: 1,000°C  
Acceleration rate: 60°C/min  
Hold time: 1 min.  
Vacuum at: 450°C  
Vacuum until: 1,000°C

The **DCMhotbond zirconnect spray** must be spread in an even glassy shiny manner on the frame after firing.

### 3. Completion

For the adhesive attachment or for composite veneers, the surfaces of the pre-coated bridges or retention areas should be treated with aluminium oxide ( $Al_2O_3$ ) at a particle size of 110  $\mu m$  and a jet pressure of max. 1 bar and then with commercially available etching gels for ceramics based on the manufacturer's instructions.

The safety regulations when dealing with ceramic etching gels must be complied with, as they contain hydrofluoric acid (HF).

Example of how to apply DCMhotbond zirconnect surface conditioning of a monolithic  $ZrO_2$  crown:



Application video



Discover more application videos with DCMhotbond zirconnect:

Veneer



Upper jaw  
Longtermprovisional



Maryland bridge



Scientific  
publications  
and cases with  
DCMhotbond



# DCMhotbond fusio

## DCMhotbond fusio connect spray

CTE  $9.0 \times 10^{-6} \text{ C}^{-1} \pm 0.5$  (25°C– 500°C)

DCMhotbond fusio connect spray is a ready to spray glass based on a modern leucite-free, silicate material. It is coloured in accordance with the Vita classical B1 colour scale. The DCMhotbond fusio connect spray is intended for further processing of the positive substance joining of titanium with anatomical veneering units made of LS<sub>2</sub> and titanium with ZrO<sub>2</sub> in the DCMhotbond fusio system. DCMhotbond fusio connect spray further reduces oxidation of the titanium surface for subsequent procedures:

### Indication:

- For preparation of the positive substance joining of titanium with anatomical veneering units made of LS<sub>2</sub> and titanium with ZrO<sub>2</sub> in the DCMhotbond Fusio system
- Surface conditioning of pure titanium or Ti6Al4V or Ti6Al7Nb alloy for the production of a positive substance, gap-free and permanent connection between a titanium base with an individual superstructure made of ZrO<sub>2</sub> or with ceramic veneering units made of LS<sub>2</sub>

### Contraindication:

- Combinations with materials outside the described DCMhotbond product system and/or with materials from third party manufacturers.
- Coating of non-indicated materials
- Sharp corners and edges on the frame or non-anatomically minimised frame shapes
- This type of connection is not suitable for patients with bruxism and parafunction

### Areas of application for DCMhotbond fusio connect spray

→ Ti



ZrO<sub>2</sub>  
LS<sub>2</sub> ←

DCMhotbond fusio connect spray is the basis for the composite surface of dissimilar materials.





### Procedural warnings:

In accordance with its specific function, it is only intended for dental use.  
The procedure may only be carried out by trained specialist staff.  
When dealing with ceramic products (grinding, polishing), dust and splinters may occur.  
Protect your eyes and avoid inhaling spray and sanding dust.  
Use a suction device or wear a protective mask and goggles.  
Take care when dealing with high temperatures when firing. There is a risk of burns.  
Use personal protective equipment.  
Avoid contact of the material with skin, mucous membranes and eyes.  
Take special care that the spray device is clean. Any contamination introduced from outside may have a negative effect on the firing result. Risk of contamination.  
Due to the different designs of ceramic kilns on the market, there are some different firing conditions. This fact must be taken into account and the customer is responsible for clarifying this.  
The specified firing temperatures are only **guidelines**.



**GHS02**

**H222 – Extremely flammable aerosol**  
**H229 – Container is under pressure; it may burst if heated**



Do not attempt to manipulate the spray can or spray device.  
Do not pierce or burn it.  
Keep away from sources of heat, hot surfaces, and naked flames.  
No smoking.  
If the spray bottle is damaged, it must not be used.  
Keep out of the reach of children.

### Storage and safety regulations:

Recommended storage temperature: Room temperature. **Store dry, upright and away from sunlight.**  
The instructions for use apply to all areas of application for **DCMhotbond fusio connect spray**.

The current safety data sheets and further information can be viewed at:  
[www.dcm-hotbond.com](http://www.dcm-hotbond.com)

### Disposal:

Once the **DCMhotbond fusio connect** spray bottle is completely empty, it can be disposed of as light-weight packaging. Otherwise, it should be treated as hazardous waste and disposed of accordingly.

### Dental procedure:

#### Caution

In the case of titanium bases for individual abutments, the screw channel should be sealed with liquid firing cotton to protect against the inflow of solder.

#### Caution

Make sure the soldering area is large enough. The ratio of the titanium surface to the ceramic abutment must be at least 60% or 1.5 mm below the upper edge of the zirconium abutment.

### Preparation:

#### 1. Sandblasting

Before applying the **DCMhotbond fusio spray** conditioning is carried out with coarse grain diamonds under water cooling. Dry processing results in increased cracking and loss of stability. The recommended surface conditioning consists of sandblasting with aluminium oxide (Al<sub>2</sub>O<sub>3</sub>) at a particle size of 110 µm and jet pressure of up to max. 2 bar. It is important to ensure that work is completed in clean and grease-free conditions.

#### 2. Spraying

To coat each surface, the **DCMhotbond fusio connect** spray bottle must be **shaken vigorously in all directions for at least three minutes even if the glass balls are audible**. During the mixing process, make sure the spray can is moved sufficiently in all directions so that a noticeably even weight distribution of the spray can contents is achieved. Then spray a layer of coating slowly and evenly from a distance of approx. 10–20 cm.  
The sprayed area should have a powdery surface.

#### 3. Firing

The item should then be placed on a firing tray.  
Make sure the item is properly supported on the firing tray, in order to prevent it tipping over during the firing process. In the case of titanium bases for individual abutments, the screw channel should be sealed with liquid firing cotton to protect against the inflow of solder. The firing process takes place based on the data specified below.

The **firing data** for the **DCMhotbond fusio connect spray** are:

Starting temperature:	450°C
Drying:	6 min.
Firing temperature:	800°C
Acceleration rate:	55°C/min
Hold time:	1 min
Vacuum at:	450°C
Vacuum until:	800°C

**Note:** If the result does not produce enough coverage, an additional surface coating with **DCMhotbond fusio connect spray** can be carried out. It is important to note that the solder gap is reduced here by the application of the additional coating.

Depending on the spray action used, the layer thickness is approx. 40 µm per application after the firing process.

Example application of DCMhotbond fusio connect spray Production of a hybrid abutment:



Application video



Scientific publications and cases with DCMhotbond

# DCMhotbond fusio



## DCMhotbond fusio 12

CTE  $9.8 \times 10^{-6} \text{ C}^{-1} \pm 0.5$  (25°C– 500°C)

DCMhotbond fusio 12 is a glassy ceramic solder based on a silicate material. Its purpose is the positive substance joining of  $\text{ZrO}_2$  with anatomical veneer units made of  $\text{LS}_2$  with a CTE value of approx.  $10.0 \times 10^{-6} \text{ C}^{-1} \pm 0.5$  (25°C - 500°C), titanium with anatomical veneer units made of  $\text{LS}_2$  with a CTE value of approx.  $10.0 \times 10^{-6} \text{ C}^{-1} \pm 0.5$  (25°C - 500°C) and titanium with  $\text{ZrO}_2$  for the creation of dental work. The DCMhotbond fusio 12 is used for the connection of titanium with  $\text{ZrO}_2$  and titanium with  $\text{LS}_2$ , and  $\text{ZrO}_2$  with  $\text{LS}_2$ .

### Indication:

- For soldering with DCMhotbond fusio connect spray coated titanium with anatomical veneer units made of  $\text{LS}_2$
- For soldering with DCMhotbond fusio connect spray coated titanium with anatomical veneer units made of  $\text{ZrO}_2$
- For soldering of  $\text{ZrO}_2$  with anatomical veneer units made of  $\text{LS}_2$

### Contraindication:

- Combinations with materials outside the described DCMhotbond product system and/ or with materials from third party manufacturers
- Coating of non-indicated materials, such as  $\text{Al}_2\text{O}_3$  with  $\text{ZrO}_2$ ,  $\text{Al}_2\text{O}_3$  with titanium,  $\text{Al}_2\text{O}_3$  with  $\text{LS}_2$
- Sharp corners and edges on the frame or non-anatomically minimised frame shapes
- Use on individually layered  $\text{LS}_2$  veneers and/or  $\text{LS}_2$  variations outside the CTE of approx.  $10.0 \times 10^{-6} \text{ C}^{-1} \pm 0.5$  (25°C - 500°C)
- This type of connection is not suitable for patients with bruxism and parafunction

Areas of application for DCMhotbond fusio 12



DCMhotbond fusio 12 connects positive substance joining similar or dissimilar materials with each other.

### Procedural warnings:

In accordance with its specific function, it is only intended for dental use.  
The procedure may only be carried out by trained specialist staff.  
When dealing with ceramic products (grinding, polishing), dust and splinters may occur.  
Protect your eyes and avoid inhaling spray and sanding dust.  
Use a suction device or protective mask and goggles.  
Take care when dealing with high temperatures when firing. There is a risk of burns.  
Use personal protective equipment.  
Avoid contact of the material with skin, mucous membranes and eyes.  
Any powder mixed or that has come in contact with liquid or moisture must not be refilled in containers. Risk of contamination.  
No contact of the powder with damp brushes or damp instruments in the powder box.  
Risk of contamination.  
Take special care that the brush and spatula are clean. Any contamination introduced from outside may have a negative effect on the firing result. Risk of contamination.  
Due to the different designs of ceramic kilns on the market, there are some different firing conditions. This fact must be taken into account and the customer is responsible for clarifying this.  
The specified firing temperatures are only **guidelines**.

### Storage and safety regulations:

Recommended storage temperature: Room temperature. **Store dry, upright and away from sunlight. If the glass jar or the screwtop show signs of damage, the product must not be used.** The instructions for use apply to all areas of application for **DCMhotbond fusio 12**.

The current safety data sheets and further information can be viewed at:

[www.dcm-hotbond.com](http://www.dcm-hotbond.com)

### Disposal:

Once the **DCMhotbond fusio 12** container is completely empty, the glass jar can be disposed of as waste glass and the lid as lightweight packaging. Otherwise, it should be treated as hazardous waste and disposed of accordingly.

### Dental procedure:

#### Caution

Please note the following parameters when constructing the solder gap:

**Layer thickness DCM Hotbond Fusio Connect spray: 40–85 µm (depending on the opacity)**

**Layer thickness DCM Hotbond Fusio 12: 25–60 µm**

#### Caution

In the case of titanium bases for individual abutments, the screw channel should be sealed with liquid firing cotton to protect against the inflow of solder.

#### Caution

When joining the individual components together, always ensure there is an excess of solder at the solder gap. Do not spread on material that has oozed out, as the compound requires suction material during the sintering process. Remove excess only after the firing process.

#### Caution

Make sure the soldering area is large enough. The ratio of the titanium surface to the ceramic abutment must be at least 60% or 1.5 mm below the upper edge of the zirconium abutment.

### Preparation:

#### 1. Sandblasting

Before applying the **DCMhotbond fusio 12** conditioning is carried out with coarse grain diamonds under water cooling. Dry processing results in increased cracking and loss of stability. The recommended surface conditioning consists of sandblasting with aluminium oxide (Al<sub>2</sub>O<sub>3</sub>) at a particle size of 110 µm and jet pressure of up to max. 2 bar. It is important to ensure that work is completed in clean and grease-free conditions.

### Processing:

#### 2. Joining

**DCMhotbond fusio 12** powder is removed in the required amount with a spatula or ceramic portioner and then mixed with the **DCMhotbond fusio liquid** in a dosed amount to a creamy consistency (the mixed **DCMhotbond fusio 12** paste should form a thread when picked up with a spatula).

The mixed **DCMhotbond fusio 12** paste is applied evenly to all the soldering surfaces using a brush. The items to be soldered are then pressed together. Make sure there is an excess of **DCMhotbond fusio 12** as the compound requires suction material during the sintering process. Do not spread or remove the excess solder.

#### 3. Firing

The item should then be placed on a firing tray. Make sure the item is properly supported on the firing tray, in order to prevent it tipping over during the firing process.

#### Caution

The fixed items must be predried in the open furnace of the kiln at 400°C for at least 20 minutes. With large items it is advisable to extend the drying time accordingly.

#### Caution

In the case of titanium bases for individual abutments, the screw channel should be sealed with liquid firing cotton to protect against the inflow of solder.

#### Caution

Abutments should be fixed on the firing tray upside down, crowns and bridges in the conventional manner using liquid firing cotton.

The firing process takes place based on the data specified below.

The firing details should be individually adjusted for larger items.

The **firing data** for the **DCMhotbond fusio 12** are:

Starting temperature:	450°C
Drying:	30 min.
Firing temperature:	770°C
Acceleration rate:	40°C/min
Hold time:	1 min
Vacuum at:	450°C
Vacuum until:	770°C



#### 4. Completion

After removing the support pins, the insides of the crowns can be irradiated. The excess solder must be removed with diamond grinders using cooling water.

Example application of DCMhotbond fusio 12 Production of an Infix® crown:



Application video



Discover more application videos with DCMhotbond fusio 12:

Hybrid abutment  
Implant



Scientific publications and  
cases with DCMhotbond



# DCM hotbond zircon



## DCMhotbond zircon

CTE  $9.7 \times 10^{-6} \text{ C}^{-1} \pm 0.5$  (25 - 500°C)

DCMhotbond zircon is a glassy ceramic solder based on a silicate material. Its purpose is the positive substance joining of ZrO<sub>2</sub>- with ZrO<sub>2</sub> elements with a CTE of  $9.7 \times 10^{-6} \text{ C}^{-1} \pm 0.5$  (25 - 500°C).

### Indication:

- For the soldering of all-ceramic ZrO<sub>2</sub> frame parts made of hiped or sintered ZrO<sub>2</sub> structures for horizontal extension / expansion of longer-span bridge frames with the exclusive use of joining elements produced specifically for the system, consisting of a primary part and a secondary part within the pontic (to be produced individually in the dental laboratory)
- For the soldering of all-ceramic ZrO<sub>2</sub> frame parts for vertical extension of the bridge frames if the blank height is too low and the and the interalveolar distance is too great with the specification of a tongue and groove connection between the basal and incisal part (to be produced individually in the dental laboratory)
- For the soldering of ceramic moulded parts made of ZrO<sub>2</sub>, such as abutments with customised treatment for lengthening or basal tissue trimming to optimise the emergence profile
- For the soldering of basic frames with shape-optimising contour parts that must not be subject to bending, torsion or shear stress, however

### Contraindication:

- Combinations with materials outside the described DCMhotbond product system and/or with materials from third party manufacturers
- Coating of non-indicated materials
- The material is not approved for butt (parallel surface) soldering of separated or broken bridges in the interdental area, bridge segments or the repair of other types of ZrO<sub>2</sub> structures
- This type of connection is not suitable for patients with bruxism and parafunction

### Areas of application for DCMhotbond zircon

→ ZrO<sub>2</sub>



ZrO<sub>2</sub> ←

zircon connects and joins similar materials with each other.

### Procedural warnings:

In accordance with its specific function, it is only intended for dental use.  
The procedure may only be carried out by trained specialist staff.  
When dealing with ceramic products (grinding, polishing), dust and splinters may occur. Protect your eyes and avoid inhaling spray and sanding dust.  
Use a suction device or protective mask and goggles.  
Take care when dealing with high temperatures when firing. There is a risk of burns.  
Use personal protective equipment.  
Avoid contact of the material with skin, mucous membranes and eyes.  
Any powder mixed or that has come in contact with liquid or moisture must not be refilled in containers.  
Risk of contamination.  
No contact of the powder with damp brushes or damp instruments in the powder box.  
Risk of contamination.  
Take special care that the brush or spatula is clean. Any contamination introduced from outside may have a negative effect on the firing result. Risk of contamination.  
Due to the different designs of ceramic kilns on the market, there are some different firing conditions. This fact must be taken into account and the customer is responsible for clarifying this.  
The specified firing temperatures are only **guidelines**.

### Storage and safety regulations:

Recommended storage temperature: Room temperature. **Store dry, upright and away from sunlight. If the glass jar or the screwtop show signs of damage, the product must not be used. Do not use any flocculated liquids for mixing.** The instructions for use apply to all areas of application for **DCMhotbond zircon**.

The current safety data sheets and further information can be viewed at:

[www.dcm-hotbond.com](http://www.dcm-hotbond.com)

### Disposal:

Once the **DCMhotbond zircon** container is completely empty, the glass jar can be disposed of as waste glass and the lid as lightweight packaging. Otherwise, it should be treated as hazardous waste and disposed of accordingly.

### Dental procedure:

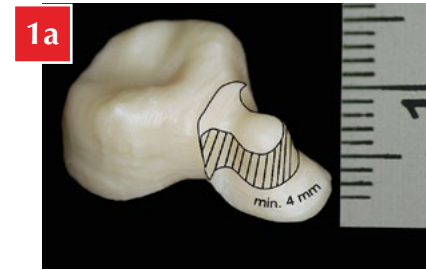
#### Caution

Thermal treatments of the frames or tempering of the ZrO<sub>2</sub> based on the manufacturer's specifications must be carried out before soldering with **DCMhotbond zircon**.

### Preparation:

#### 1. Construction

A requirement for the creation of a stable solder joint for ZrO<sub>2</sub> frames is the design of the special joining element based on the system regulations, consisting of a primary and secondary part, which are separated by a 30–50 µm wide, even soldering gap. The soldering gap width should not exceed 50 µm. The primary part must be placed directly after an anchoring crown. To avoid aesthetic and static losses, the primary and secondary parts should be integrated in a pontic. The primary part always includes the basal structure, so that the supported bridge area largely exerts pressure on the bonding area with the secondary part (fig. 1a and 1b). **As such, a protrusion of at least 4 mm must be ensured.**



To ensure an ideal fit, the primary part should first be modelled and its implementation carried out in ceramic. Only then is the secondary part to be produced with the bridge section and the remaining crowns.

The completed ZrO<sub>2</sub> frame segments must now be checked for fit. The solder gap arrangement should now be checked based on the above criteria and the soldering surfaces conditioned.

#### 2. Sandblasting

Before applying the **DCMhotbond zircon** conditioning is carried out with coarse grain diamonds under water cooling. Dry processing results in increased cracking and loss of stability. The recommended surface conditioning consists of sandblasting with aluminium oxide (Al<sub>2</sub>O<sub>3</sub>) at a particle size of 110 µm and jet pressure of up to max. 2 bar. It is important to ensure that work is completed in clean and grease-free conditions. The best results are achieved if the items are first cleaned in an ethanol solution.

#### 3. Joining

**DCMhotbond zircon** powder is removed in the required amount with a spatula or ceramic portioner and then mixed with the **DCMhotbond zircon liquid** in a dosed amount to a creamy consistency (the mixed **DCMhotbond zircon** paste should be solid when picked up with a spatula). One portion of powder is sufficient for each join of a composite element or one centimetre of a tongue and groove connection.

The mixed **DCMhotbond zircon** paste is applied evenly to all the soldering surfaces using a brush. The items to be soldered are then pressed together. Make sure there is an excess of **DCMhotbond zircon** as the compound requires suction material during the sintering process. **Do not spread or remove the excess solder.**

Then check how the bridge fits on the model. It is possible that a few bubbles will appear from the solder joints when the frame parts are pressed together. These must be sealed. The solder material is then solidified by heating it on all sides with a hot air blower. The acid test is whether the solder is hard and stable. The consistency of the dried solder is the same as that of blackboard chalk.

The bridge can now be removed from the model without the bridge parts moving in the composite. The frame is now so stable that final precautions can be taken before firing (such as checking on the bridge's ideal fit on the model or when inserted on the stumps). At this time, corrections are still possible without a problem. Excess solder that extends to the edge of the crown is removed with a scalpel.

Then everything is placed on a honeycomb firing tray – made of zirconium dioxide if possible – where it is important to ensure the pillars are properly supported. It is advisable to fix the pins on the firing tray with liquid firing cotton to prevent them from moving around.

**The firing cotton must be completely dry before ceramic firing.** To ensure this, it is dried in the radiant heat of the kiln until it is completely hardened. With large jobs, basal support with liquid firing cotton may also be useful.

#### 4. Firing

In order to prevent slippage during the firing process, an individual firing tray is set up with liquid firing cotton. A little of this firing cotton is injected to fill each individual crown. Depending on the size of the frame (circular bridges or very voluminous frames) the firing temperature can be increased by 10°C-20°C.

After the firing process has taken place, the item must cool down slowly – but without tempering – with the firing chamber open, until the firing chamber returns to its starting temperature once again. Any defects will have to be resoldered with **DCMhotbond zircon** using the same firing programme.

The firing temperature of the veneering ceramic must not exceed 980°C, whereby individual firings must always be used with liquid firing cotton until the last firing. Further processing depends on the composite material used. The manufacturer's instructions should be observed in this case.

The firing process takes place based on the data specified below.  
The firing details should be individually adjusted for larger items.

The firing data for the **DCMhotbond zircon** are:

Starting temperature:	450°C
Drying:	at least 30 min.
Firing temperature:	1,000°C
Acceleration rate:	30°C/min
Hold time:	3 min
Vacuum at:	450°C
Vacuum until:	1,000°C

#### Edition 5 Completion

After removing the support pins, the insides of the crowns can be irradiated. The excess solder must be removed with diamond grinders using cooling water. The check for fitting ends production of the frame.

#### Example of application DCMhotbond zircon Production of a customised ceramic abutment:



Application video



Discover more application videos with DCMhotbond zircon:

Soldering of passive-fit elements



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## Dental Creativ Management GmbH

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