

**DCM hotbond**  
We connect systems





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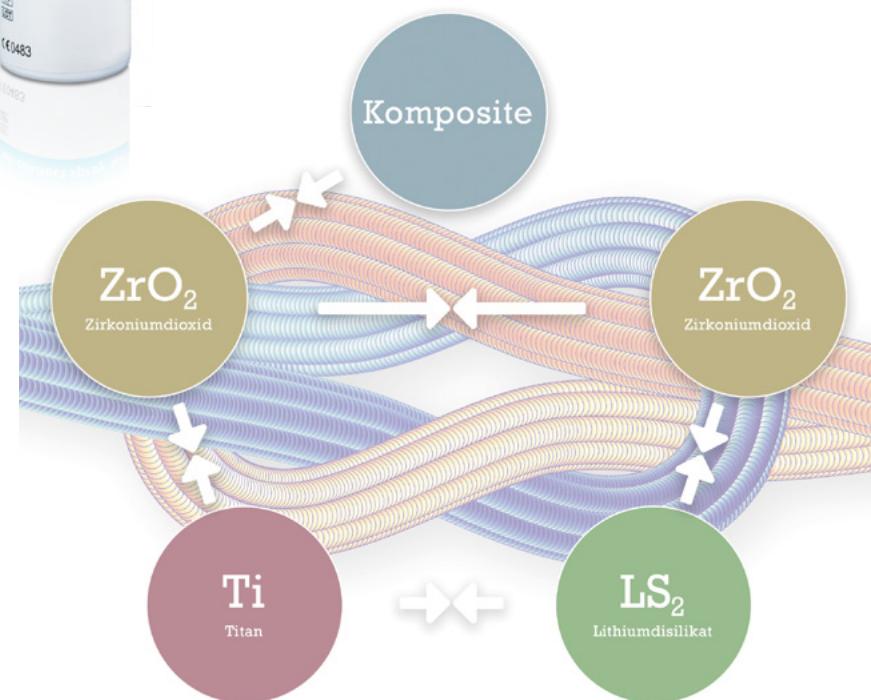
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- ✓ bonds the same, similar and dissimilar types of materials
- ✓ conditions the surface of ceramic materials
- ✓ unique in the world
- ✓ certified according to DIN EN ISO 13485

## hotbond

- is synonymous with a durable bond of ceramic material combinations and ceramic surface sealing
- was formed from a glass solder developed in 2003 for dental technology applications.



# DCM hotbond Family



**DCMhotbond zirconnect**  
creates the perfect ZrO<sub>2</sub> bond  
surface **using a glass matrix**.



**DCMhotbond fusio**  
bonds together **similar and dissimilar types of** materials.



**DCMhotbond zircon**  
bonds together **the same types of** materials – such as ZrO<sub>2</sub> bridge segments or passive-fit elements.

→ Using only one firing cycle! ←

# **DCM** hotbond *Indications*



## **DCMhotbond zirconnect**

creates the perfect surface with a **diffused** glass matrix  
**for bonding of:**

Ceramic veneers | Composite veneers | Cold polymers and their combinations

### **for mounting of:**

Maryland bridges | Retainers | All-ceramic crowns and bridges and their combinations

**ZrO<sub>2</sub>**



## **DCMhotbond fusio**

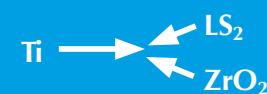
bonds similar materials



## **DCMhotbond fusio +**

## **fusio connect spray**

bonds dissimilar materials



## **DCMhotbond zircon**

bonds homogeneous materials such as ZrO<sub>2</sub> bridge segments | ZrO<sub>2</sub> passive-fit elements





Medical and dental technology **patented** surface coating

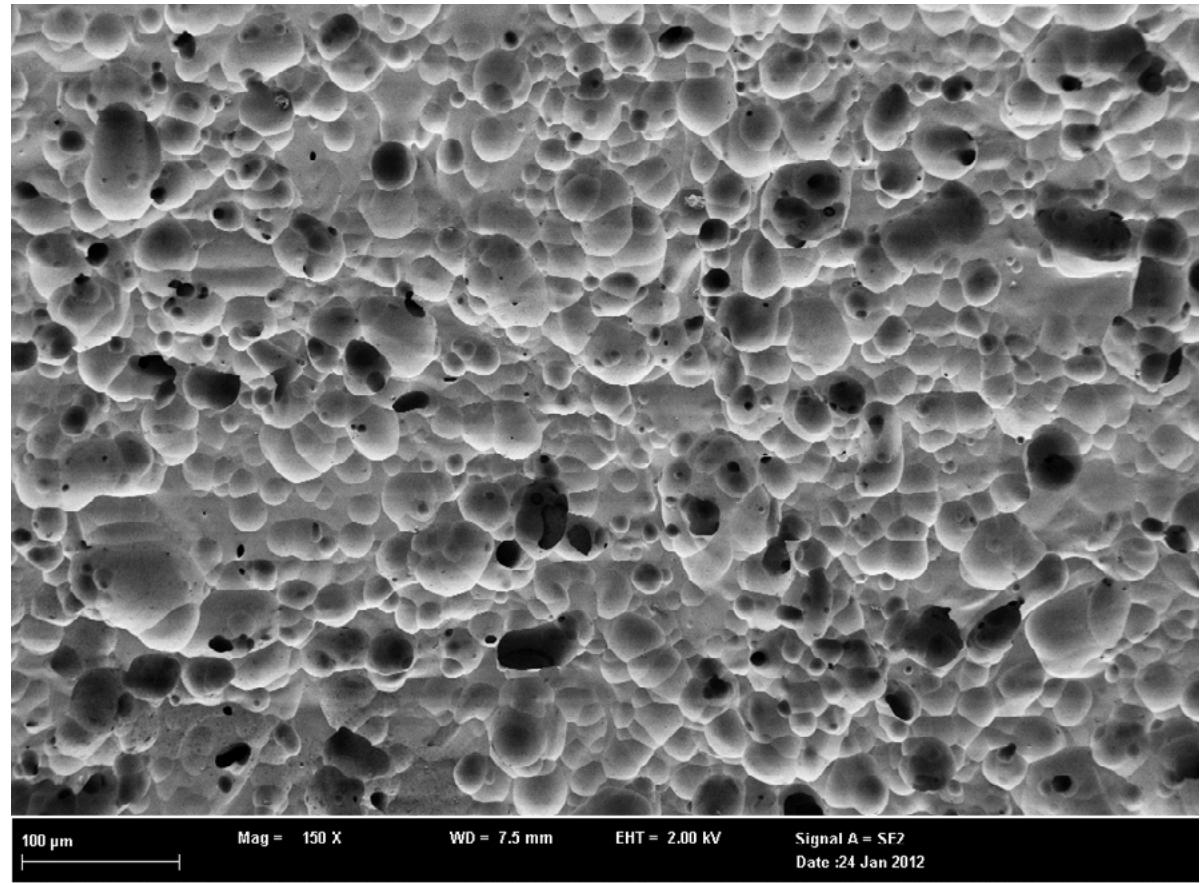
## Quality advantage

**DCMhotbond zirconconnect**,  
base for perfect zirconia ( $\text{ZrO}_2$ ) bonding surfaces  
– using only one firing cycle

## Quality benefit

Increase in the bond strength of

- Veneering porcelain/ $\text{ZrO}_2$  framework
- Composite/ $\text{ZrO}_2$  framework<sup>1</sup>
- PMMA/ $\text{ZrO}_2$  framework<sup>2</sup>
- $\text{ZrO}_2$  framework/luting material<sup>3</sup>



<sup>1-3</sup> The **surface roughness in the glass matrix** produced by **DCMhotbond zirconconnect** creates the conditions for the **micromechanical bond**.  
(Source: DOT GmbH, Rostock, Germany, 2012)

## Product profile and indications

DCMhotbond zirconconnect forms a **glass matrix**

- ✓ for perfect **bond surfaces for veneers**  
fabricated from
  - ceramics
  - composites
  - cold-curing resins (including their combination)

- ✓ for **improving the luting**
  - of all-ceramic single crowns and bridges
  - Maryland bridges
  - and orthodontic retainers



**DCMhotbond zirconconnect** is particularly indicated for connections that are subjected to high loading stress.

## Application

Prepare the framework, apply material and fire  
– as described in the detailed instructions for use

## Firing protocol

|                   |          |
|-------------------|----------|
| Start temperature | 450°C    |
| Dry               | 2 min.   |
| Burn              | 1.000°C  |
| Acceleration rate | 60°C/min |
| Hold              | 1 min    |
| Vacuum at         | 450°C    |
| Vacuum till       | 1.000°C  |



**DCM** hotbond  
fusio



Patent „Dental implant“ (titanium- ceramic)

## Quality advantage

DCMhotbond fusio system,  
bonds together **similar** and **dissimilar** types  
of materials  
– using only one firing cycle

## Quality benefit

Possibilities of connecting

- ZrO<sub>2</sub> / LS<sub>2</sub>
- Ti / ZrO<sub>2</sub>
- Ti / LS<sub>2</sub>



The **DCMhotbond fusio system** produces a seamless material bond.

## Product profile and indications

**DCMhotbond fusio system** is a glass solder

✓ for the perfect bond of

- anatomical ceramic secondary units with crown and bridge primary frameworks
- ceramic mesostructures on metal abutments (hybrid abutments)



**DCMhotbond fusio system** ensures a homogeneous material bond, particularly in critical combination areas – such as hybrid abutments.

**No organic material = No bacterial infestation**



## Application

Prepare the framework, apply material and fire  
– as described in the detailed instructions for use

## Firing protocol

|                   |          |
|-------------------|----------|
| Start temperature | 450°C    |
| Dry               | 6 min.   |
| Burn              | 800°C    |
| Acceleration rate | 55°C/min |
| Hold              | 1 min    |
| Vacuum at         | 450°C    |
| Vacuum till       | 800°C    |



**DM hotbond**  
zircon



Dental technology patent „Segmentation of bridge frameworks“



## Quality advantage

DCMhotbond zircon  
bonds the **same type** of materials together  
– using only one firing cycle

## Quality benefit

Possibilities of connecting  
• ZrO<sub>2</sub> / ZrO<sub>2</sub>



**DCMhotbond zircon** enables stress-free, long-span prosthetic restorations by means of a passive fit.



## Product profile and indications

**DCMhotbond zircon** is a glass solder

- ✓ for the perfect bond of
  - Zirconia ( $\text{ZrO}_2$ ) frameworks



Fabrication-induced stresses or distortions preclude the desired precise fit of frameworks and prevent their incorporation. A precise fit of these frameworks can be achieved by separating frameworks and then joining them using **DCMhotbond zircon**.



## Application

Prepare the framework, apply material and fire  
– as described in the detailed instructions for use

## Firing protocol

|                   |                 |
|-------------------|-----------------|
| Start temperature | 450°C           |
| Dry               | minimum 30 min. |
| Burn              | 1.000°C         |
| Acceleration rate | 30°C/min        |
| Hold              | 3 min           |
| Vacuum at         | 450°C           |
| Vacuum till       | 1.000°C         |



# **DCM** hotbond *Product costs*



## **DCMhotbond zirconnect (spray)**

EUR 245.00 (SP, net)

for up to 90 applications =  
€/application 2.72



## **DCMhotbond fusio (powder) 3 g**

EUR 99.00 (SP, net)

for up to 33 applications =  
€/application 3.00

## **DCMhotbond fusio (powder) 10 g**

EUR 198.00 (SP, net)

for up to 120 applications =  
€/application 1.67

## **DCMhotbond fusio (liquid)**

EUR 19.00 (SP, net)

for up to 100 applications =  
€/application 0.19

## **DCMhotbond fusio connect (spray)**

EUR 175.00 (SP, net)

for up to 90 applications =  
€/application 1.95



## **DCMhotbond zircon 3 g**

EUR 99.00 (SP, net)

for up to 33 applications =  
€/application 3.00

## **DCMhotbond zircon 10g**

EUR 295.00 (SP, net)

for up to 100 applications =  
€/application 2.95

## **DCMhotbond zircon liquid**

EUR 35.00 (SP, net)

for up to 100 applications =  
€/application 0.35

# hotbond Development Cooperations



- Prof. Dr. med. Dipl.-Ing. Rainer Bader – Head of the Research Laboratory for Biomechanics and Implant Technology of the Orthopaedic Clinic and Outpatient Clinic, Rostock University Medical Centre, Rostock, Germany
  - Prof. Dr. Andreas Podbielski – Director of the Institute for Medical Microbiology, Virology and Hygiene, Rostock University Medical Centre, Rostock, Germany
  - Prof. Dr. Hermann Lang – Director of the Department for Conservative Dentistry and Periodontology, Clinic and Outpatient Clinic for Oral and Maxillofacial Dentistry, Rostock University Medical Centre, Rostock, Germany
- 



- Prof. Dr. med. Dipl.-Ing. Rainer Bader – Orthopaedic Clinic and Outpatient Clinic, Head of the Research Laboratory for Biomechanics and Implant Technology, Rostock University Medical Centre, Rostock, Germany
  - Prof. Dr. Joachim Tinschert – Aachen University, Aachen, Germany
- 



- Aurica Zothner, Master Dental Technician, ZM Precision Technology, Rostock, Germany
  - Timea Wimmer, Jürgen Hostettler, Florian Beuer, Bogna Stawarczyk, Ludwig-Maximilians University of Munich, Germany
-



All dental/dental technology and medical technologies as well scientific studies are supported by patents.

Dental and medical business projects are funded by federal and regional governments.

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# **Company Profile**

## **About DCM GmbH**

**DCM – Dental Creativ Management GmbH**, Rostock, was formed from a network of dentists and dental technicians and was founded by Milija Mitrovic (Managing Director) in 1996. **DCM** is known worldwide as a developer of glass ceramic solders and other **DCMhotbond** products for applications in dental technology. With its expertise of over ten years, **DCM** today develops metal-free concepts for dental, dental technology and medical – in particular orthopaedic - applications. The company – certified according to DIN EN ISO 13485 – is a key specialist for the bonding and surface conditioning of ceramic materials for dental/dental technology and medical applications.

# hotbond Company Profile

## Contact

Dental Creativ Management GmbH

Breite Straße 16

D-18055 Rostock

Tel.: 0049 (0) 381/2035588

Email: [info@dcm-hotbond.com](mailto:info@dcm-hotbond.com)

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

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