

# Immediate Dentin Sealing and Cerec

**How to avoid sensitivities  
100 pc and how to have  
lots of practical  
advantages**

# Some abbreviations in this ppt.

- IDS: Immediate dentin sealing means the application of the adhesive right after the excavation
- OI: Optical impression
- Bath tub design means the creation of a smooth preparation without undercuts edges and picks ideal for Cerec OI without the need for mechanical retention
- I: steps to be done before the OI
- II: steps to be done before cementation

## Excavation, Immediate Dentin sealing with Prelude SE, PhotoCore, final preparation for bath tub design, optical impression, cementation of the restoration



# Decay under old amalgams



**During excavation preservation of most of the remaining tooth structure, the use of excavators helps a lot**



# Excavation done, Prelude SE, Photocore, ready for OI



# Restorations seated



# Steps of the IDS/Photocore approach

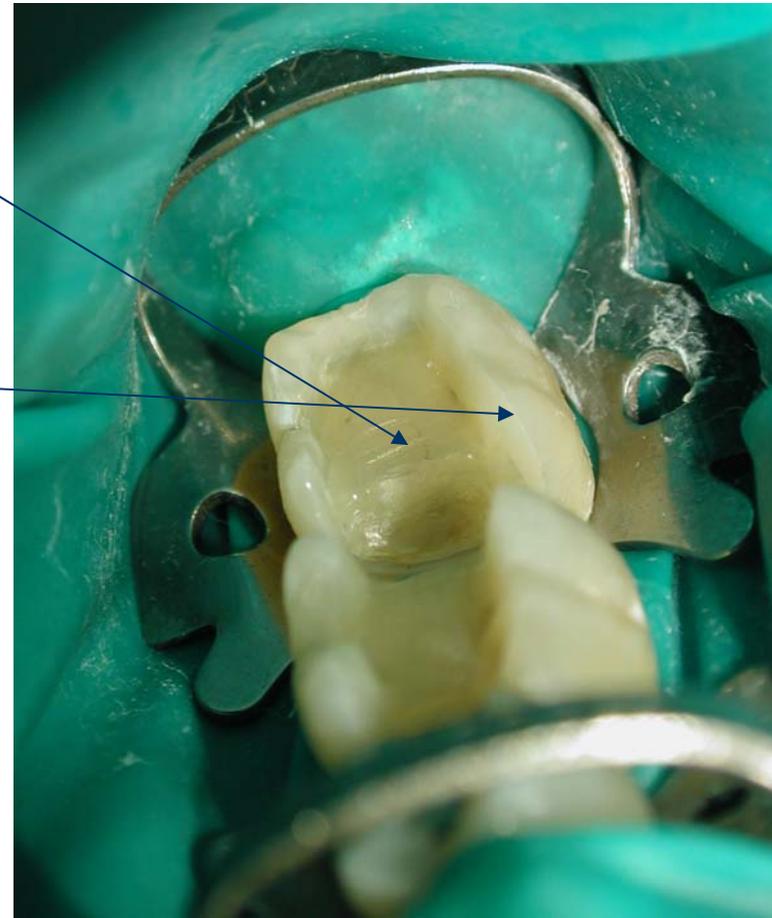
- Prepare tooth.
- Apply primer (Prelude Primer), air dry, and apply bonding agent (Prelude Adhesive), dry and light cure.
- Apply a layer of Photo Core and light cure.
- Do the final cavity preparation in a bath tub design
- Optical impression
- Air abrade composite with 50 aluminum oxide/Cojet to remove powder.
- Silanate (Danville's S-Bond) composite surface.
- Reapply Prelude Adhesive, air thin and light cure. Apply activator (Link) and dry.
- Cement (Variolink or any dual during cement) freshly milled restoration.
- Light cure margins.

# Ready for cementation of the restoration

**Cavity floor (I: Immediate dentin sealing with Prelude SE, PhotoCore, optical impression - II: Sandblasting combined with silicatisation (Cojet) and silanation , S-Bond,)**

**Margins (I: final preparation in bath tub design for CEREC - II: Sandblasting Prelude Primer, Adhesive, Link)**

**Cementation with dual curing composite cement such as Variolink**



## The biggest fault:

- Don't underestimate the need for occlusal thickness of min. 1,5 mm for the final restoration

# Air abrasion by Danville for application of Aluminum Oxide or Co-Jet

## MICROETCHER CD



## MICROETCHER IIA



## PREPAIR



PrepStart  
and  
PowerPlus  
Booster

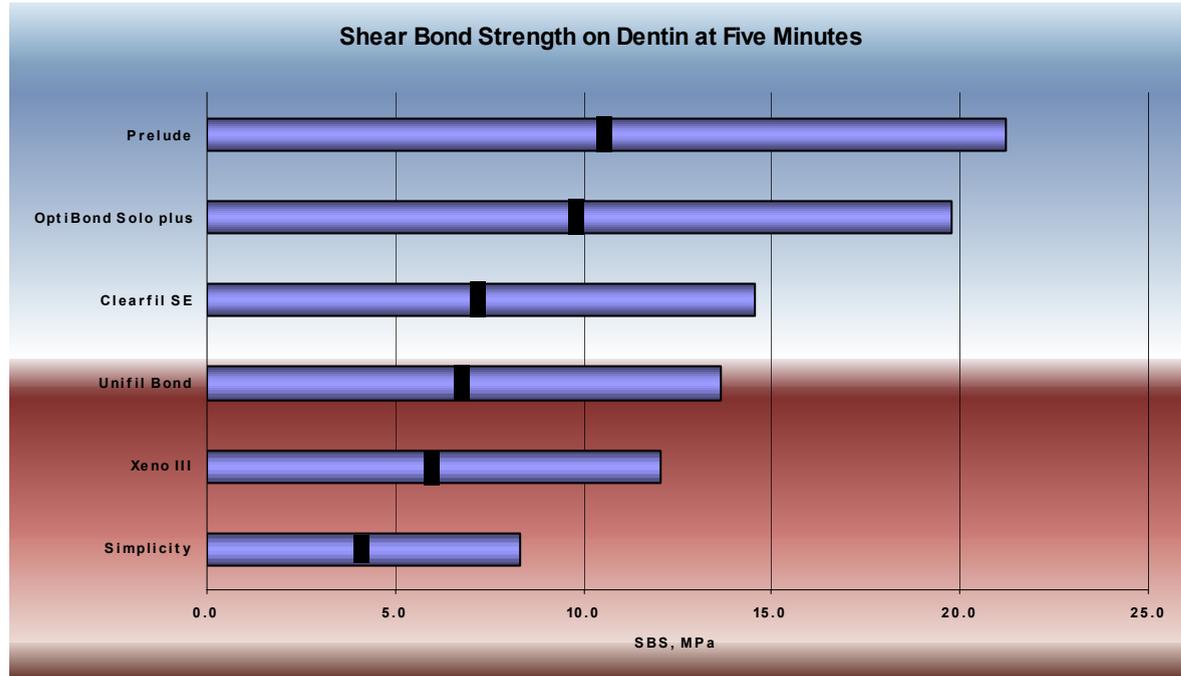


# Prelude Self Etch System for all kind of composite materials (light cure, dual cure, chemical cure)

Photocore Kuraray



# Shear bond strength values for Prelude after 5 minutes on dentin



# Advantages of the IDS/Photocore approach

- Dentin sealing right after excavation
- Creation of an ideal Cerec preparation
- No undercuts left
- No sensitivity after IDS/Photocore
- No need for temporaries
- No need for second anaesthesia for cementation
- 100 pc no sensitivity after cementation
- Minimal stress for the tooth/adhesive interface as polymerization is complete before the restoration is seated.
- PhotoCore layer may be seen as outer surface of the dentin seal
- In case of failure/ fracture protection of the tooth as breakage occurs at the Photocore/Ceramic interface

# Pascal Magne et al.: IDS Immediate Dentin Sealing

## A procedure in the right direction

- **Immediate dentin sealing improves bond strength of indirect restorations**
- Pascal Magne et al.
- Statement of problem. Delayed dentin sealing is traditionally performed with indirect restorations. With this technique, dentin is sealed after the provisional phase at the cementation appointment. It was demonstrated that this chronology does not provide optimal conditions for bonding procedures. Immediate dentin sealing (IDS) is a new approach in which dentin is sealed immediately following tooth preparation, before making the impression. Purpose. The purpose of this study was to determine whether there were differences in microtensile bond strength to human dentin using IDS technique compared to delayed dentin sealing (DDS). Material and methods. Fifteen freshly extracted human molars were obtained and divided into 3 groups of 5 teeth. A 3-step etch-and-rinse dentin bonding agent (DBA) (OptiBond FL) was used for all groups. The control (C) specimens were prepared using a direct immediate bonding technique. The DDS specimens were prepared using an indirect approach with DDS. Preparation of the IDS specimens also used an indirect approach with IDS immediately following preparation. All teeth were prepared for a nontrimming microtensile bond strength test. Specimens were stored in water for 24 hours. Eleven beams (0.9 x 0.9 x 11 mm) from each tooth were selected for testing. Bond strength data (MPa) were analyzed with a Kruskal-Wallis test, and post hoc comparison was done using the Mann-Whitney U test ( $\alpha=0.05$ ). Specimens were also evaluated for mode of fracture using scanning electron microscope (SEM) analysis.
- Results. The mean microtensile bond strengths of C and IDS groups were not statistically different from one another at 55.06 and 58.25 MPa, respectively. The bond strength for DDS specimens, at 11.58 MPa, was statistically different ( $P=0.0081$ ) from the other 2 groups. Microscopic evaluation of failure modes indicated that most failures in the DDS group were interfacial, whereas failures in the C and IDS groups were both cohesive and interfacial. SEM analysis indicated that for C and IDS specimens, failure was mixed within the adhesive and cohesively failed dentin. For DDS specimens, failure was generally at the top of the hybrid layer in the adhesive.
- SEM analysis of intact slabs demonstrated a well-organized hybrid layer 3 to 5 mm thick for the C and IDS groups. For DDS specimens the hybrid layer presented a marked disruption with the overlying resin. Conclusions. When preparing teeth for indirect bonded restorations, IDS with a 3-step etch-and-rinse filled DBA, prior to impression making, results in improved microtensile bond strength compared to DDS. This technique also eliminates any concerns regarding the film thickness of the dentin sealant. .
- **CLINICAL IMPLICATIONS**
- Tooth preparation for indirect bonded restorations such as composite/ceramic inlays, onlays, and veneers can generate significant dentin exposure. The results of this study indicate that freshly cut dentin surfaces may be sealed with a dentin bonding agent immediately following tooth preparation, prior to impression making. A 3-step etch-and-rinse dentin bonding agent with a filled adhesive resin is recommended for this purpose.
- *J Prosthet Dent 2005;94:511-9*

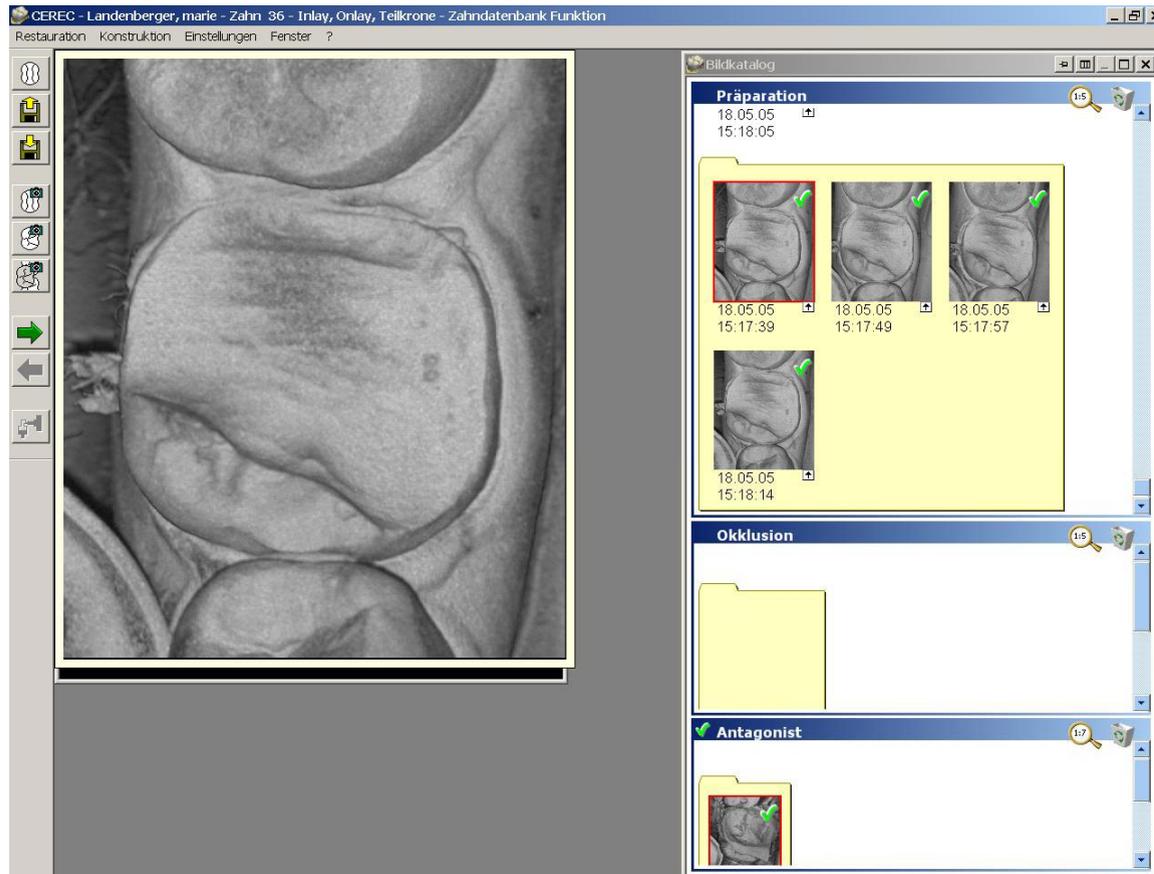
# Lower first molar



# Lower first molar after IDS/Photocore in bath tub design

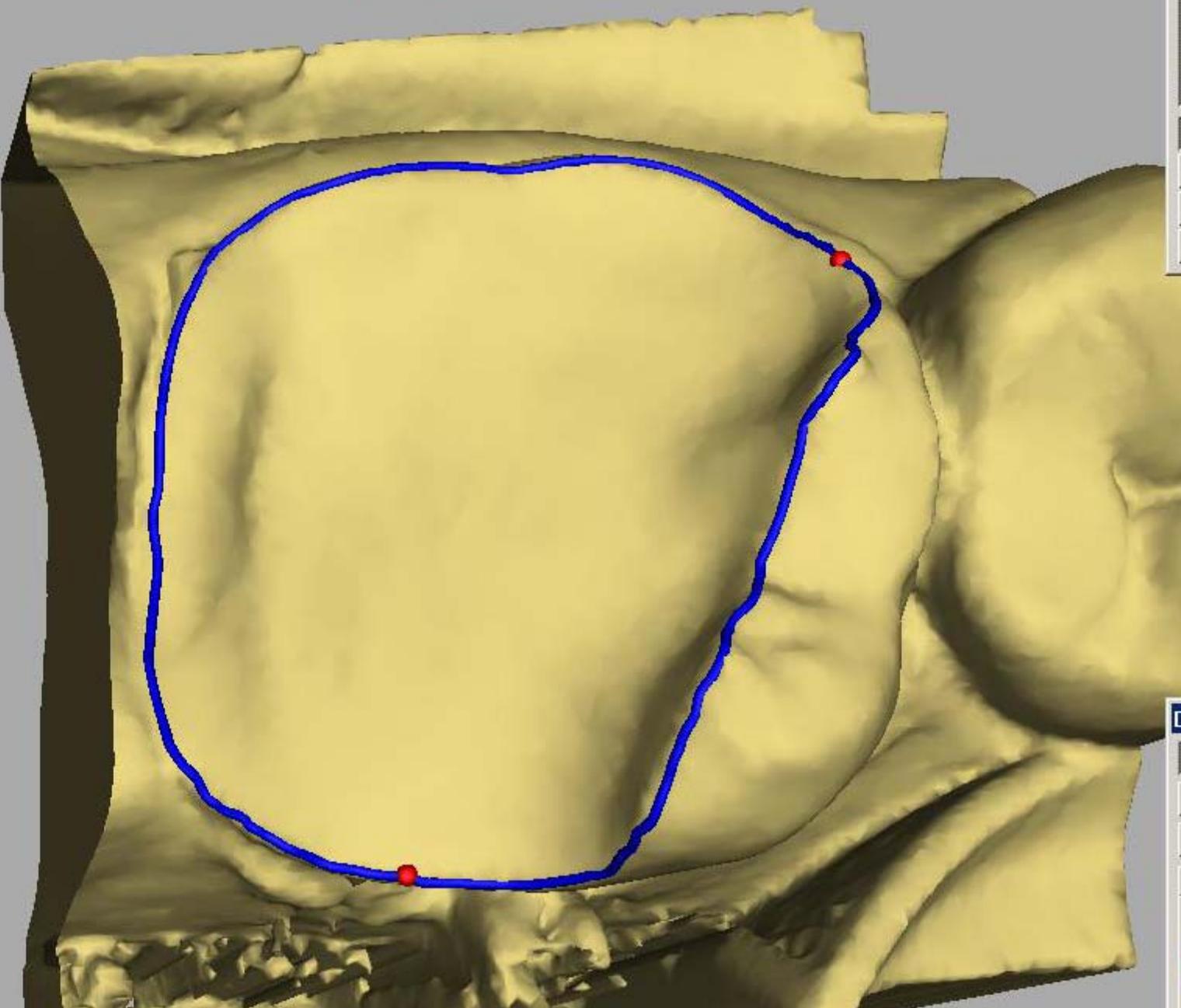


# Optical impression

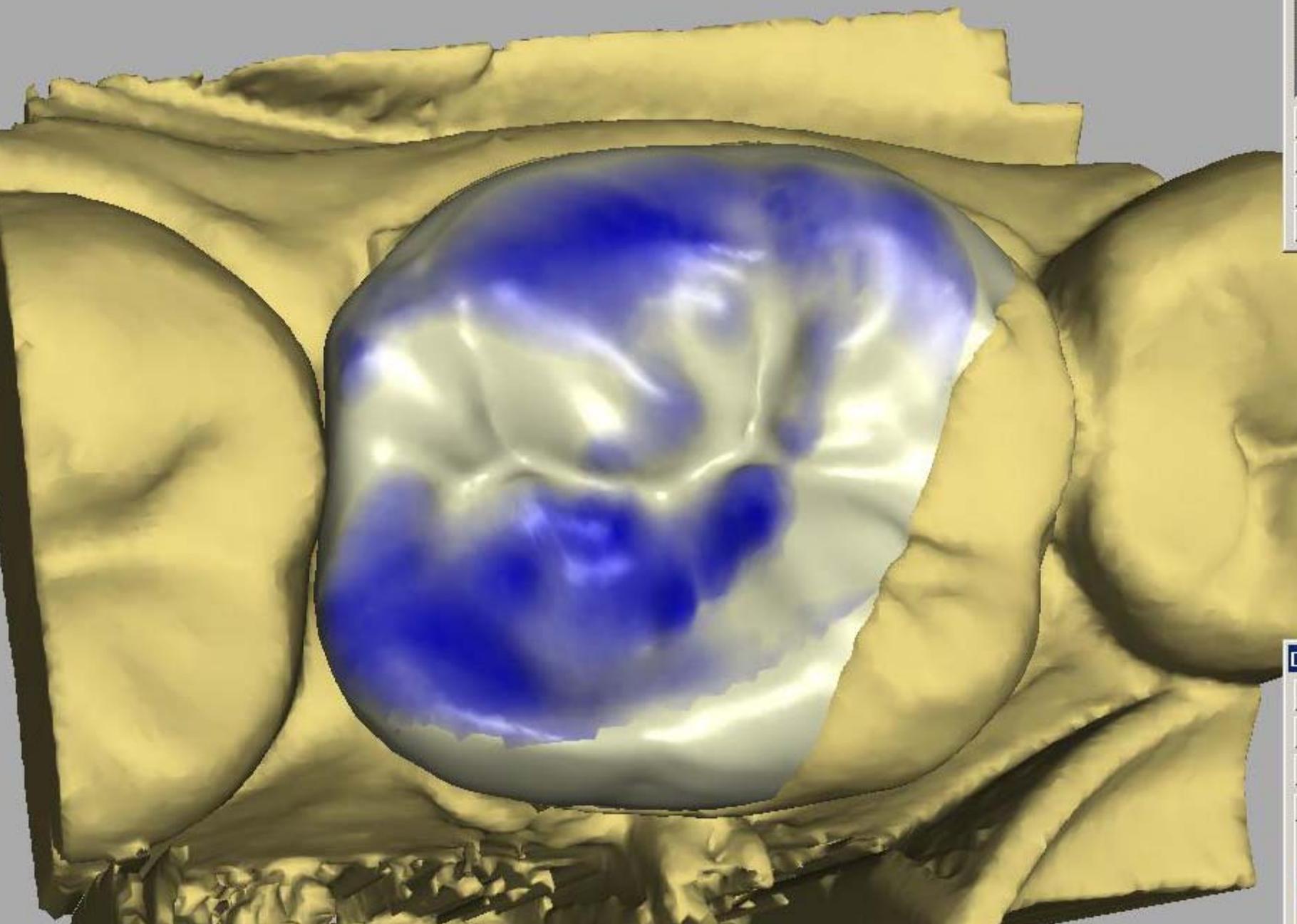


Distal

Distal



10/21/2022



# Final restoration



# Thank you Dad. The restoration was done in May, 2005



# Optical impression for Cerec made easy: PowderChamp

- **Manufacturer**  
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Fax: +49 6120 921760  
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