

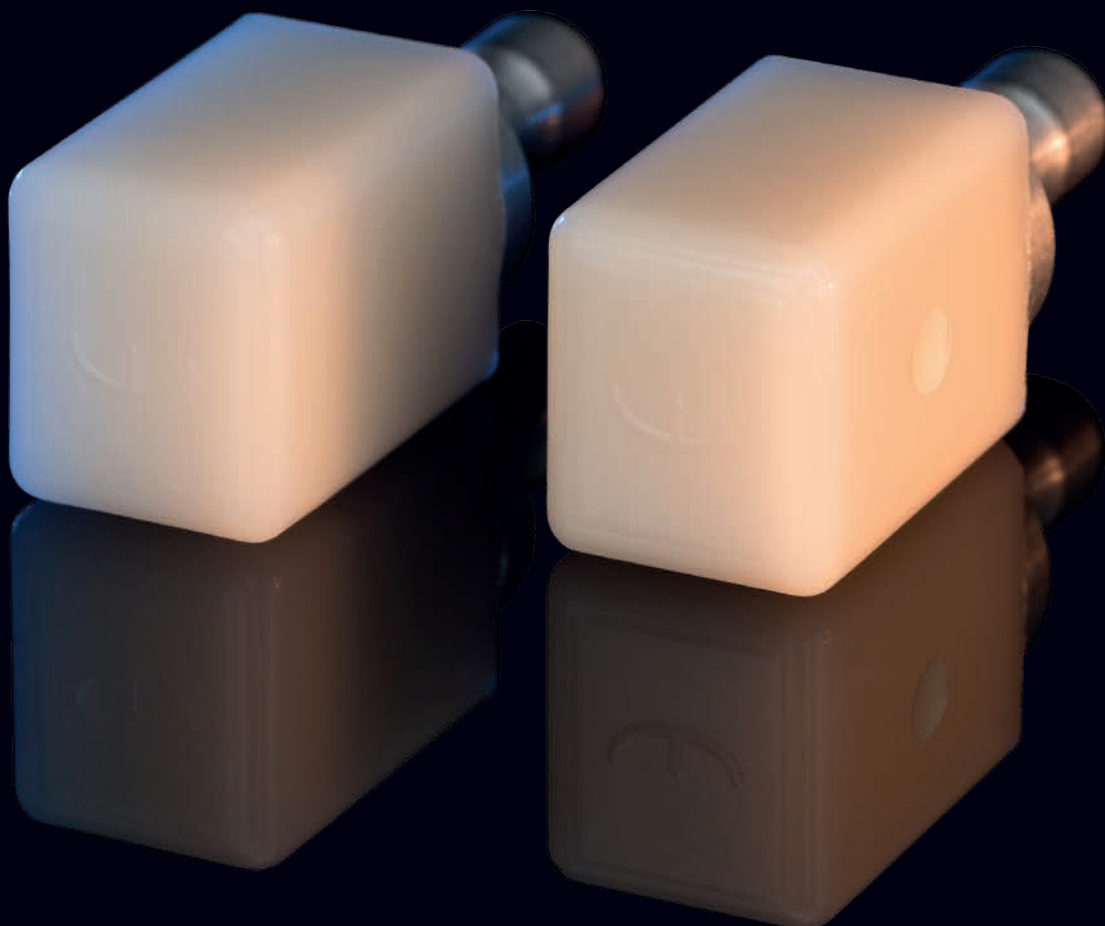
edelweiss  
DENTISTRY

shaping the future of dentistry

## edelweiss CAD/CAM BLOCK T-BLOCK/C-BLOCK/i-BLOCK

*Explore a single glass-phase embedded in a hybrid matrix  
developed by the patented edelweiss laser sintering process*

■ Minimally Invasive ■ Bio Esthetic ■ Bio Functional



# Bio-Esthetics and function in one appointment

**The edelweiss SYSTEMS** with its natural concept of the layering technique is the quintessence of bio-esthetics, bio-mimetics and bio-compatible restorations in direct, semi-direct and indirect digital workflows.

It offers the clinical user as well as the technician a precise understanding of the inner structure of the natural tooth, its optical as well as functional properties and enables the development of unsurpassed bio-esthetics and bio-function with simple, controllable technical and clinical procedures.

Its unique patented production process consists of a modern laser sintering and vitrification process that produces a material with outstanding physical and esthetic properties.

The end result of this manufacturing process is a single glass-phase embedded in a hybrid matrix to obtain a material that:

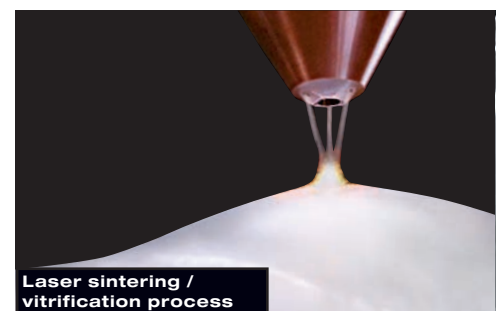
1. resembles esthetics of pure glass ceramics
2. strength of particle filled ceramics
3. simulates the modulus of elasticity of dentin

The bio-mechanical properties have been reconstructed optimally, merged together with natural bio-esthetics.



**Stephan Lampi**  
CEO, Founder & Inventor  
of edelweiss dentistry

**Desigar Moodley**  
Chief Scientific Officer  
of edelweiss dentistry



**Laser sintering /  
vitrification process**

# New Era of Design in CAD/CAM Blocks

## BREAKTHROUGH IN CAD/CAM MATERIALS

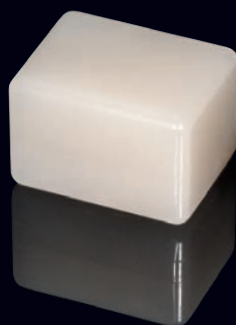
edelweiss dentistry presents a breakthrough in the fabrication of CAD/CAM materials. Through a process of laser sintering and vitrification, edelweiss has developed state of the art CAD/CAM blocks. Through this process, the finished product consists of a single glass-phase embedded in a hybrid matrix. As a result, the esthetic properties are similar to that of feldspathic glass ceramic without having the brittleness of pure ceramics.

## SILICA AND BARIUM GLASS AS A BASE

The base material of the edelweiss block is glass, in which crystals are joined by controlled laser sintering. The edelweiss CAD/CAM BLOCK is mainly composed of silica and barium glass with a very small portion of resin, combining the added advantages of ceramic and polymer materials into one block.

## STRONG BUT FLEXIBLE

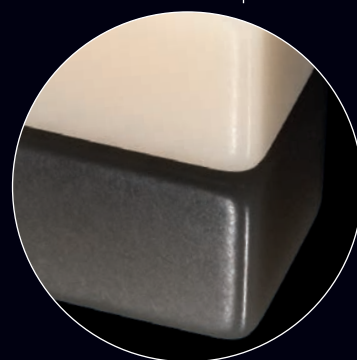
The strength and optical properties are similar to that of ceramics but maintaining the flexibility and repairability of polymer based materials. The addition of zinc oxide nanoparticles and fluoride provides antibacterial properties, a unique feature of the edelweiss CAD/CAM BLOCK.



edelweiss  
CAD/CAM BLOCK



Manufacturer B  
CAD/CAM Block



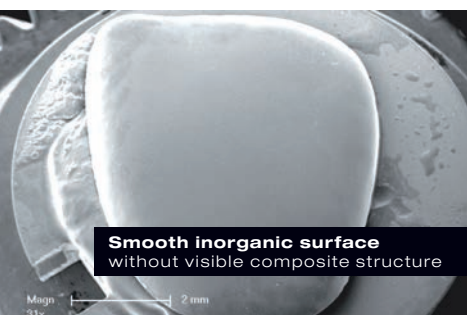
## VISUAL COMPARISON

edelweiss CAD/CAM BLOCK exhibits natural translucency, with light reflection showing an extremely glossy surface. The edelweiss blocks are more translucent

than other blocks giving a more natural appearance which may be attributed to the aluminium oxide and barium silicate glass.

## KEY FEATURES

- Glass as a single phase for esthetics
- Silica glass plus Aluminium oxide for compressive strength
- Hybrid matrix for elasticity
- ZnO and F<sup>-</sup> for biocompatibility strength



**Solid and homogeneous glass phase**

**Laser sintered monobloc**

Magn. 2000x 100 µm

Technical Data	CAD/CAM BLOCK
Flexural Strength Biaxial	320 MPa
Flexural Strength Three Point	200 MPa
Compressive Strength	550 MPa
Flexural Modulus	20 GPa
Surface Hardness	100 HV

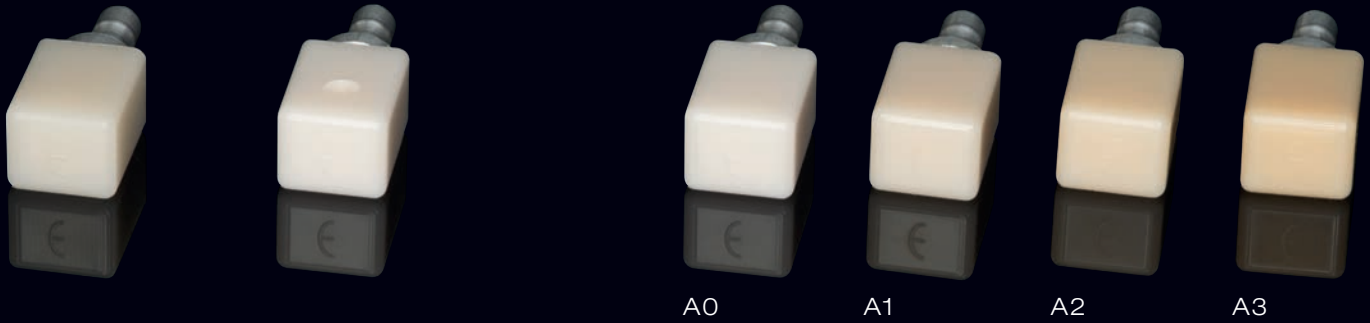
(Source: Technical data from manufacturer's documentation)

# Size & Color

**T-BLOCK**  
Translucent Enamel

**i-BLOCK** Implant  
Translucent Enamel & Chroma

**C-BLOCK**  
Chroma



## 1 ENAMEL TRANSLUCENT SHADE

T-BLOCK (Translucent): These are highly translucent blocks that mimic the natural enamel in optical properties while the underlying dentin shade can then be duplicated through the use of various resin composite/cement shades. This can be further individualized by varying the composite shades according to cervical and incisal color variations in the natural tooth.

## 4 DENTIN CHROMA SHADES (A0, A1, A2, A3)

C-BLOCK (Chroma): These are highly chromatic blocks that correspond to shades A0, A1, A2 and A3.

## AVAILABLE IN STANDARD SIZES

12 x 14 x 18 mm  
10 x 12 x 16 mm

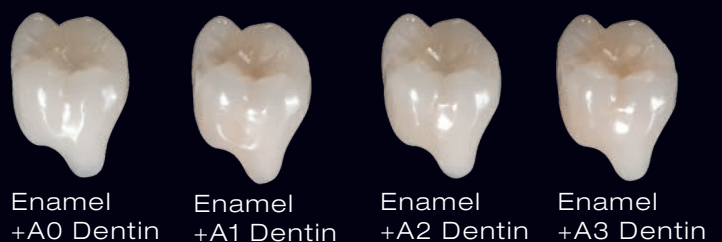
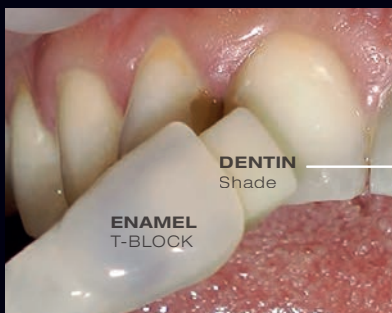


## INDIVIDUAL CHARACTERIZATION

Individual characterizations can be also accomplished using edelweiss EFFECT SHADES or other resin-staining kits.

Clinicians are now in complete control of the final esthetic outcome by being able to adjust the final shade matching and

characterizations according to the patient's needs, thereby eliminating any errors in shade matching.





# Advantages & Indications



**Marco Tudts**

Head of Advisory Board CAD/CAM  
edelweiss dentistry

## THE BEST FOR YOUR PATIENTS

*"The uniqueness of edelweiss CAD/CAM BLOCKs lies in the manufacturing process where through the patented vitrification and laser sintering process a state of the art hybrid glass block is manufactured. This ensures the edelweiss CAD/CAM BLOCK combines the properties of current CAD/CAM systems into one single block. It resembles the esthetics of a feldspathic glass, the strength of particle infiltrated ceramic and the resilience and ease of repairability of composite blocks."*

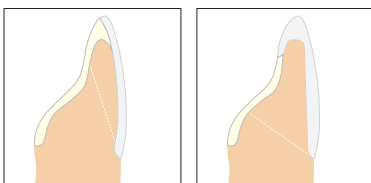
***"The difference lies in the high similarity with nature."***

## ADVANTAGES

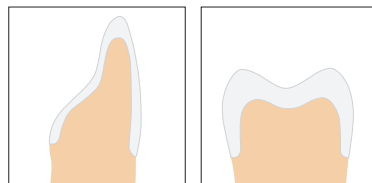
- Ultrafine sintered glass microstructure combines high strength with permanent high gloss
- Shorter milling time
- Kinder to the milling burs
- No additional firing required, simply polish and cement
- Simple cementation procedure with proven perfect seal
- Cost saving, faster processing time reduces chairside time
- Biomechanical and biocompatible
- Esthetically superior, life-like appearance
- Restoration can be easily fine tuned or repaired by the dentist

## INDICATIONS

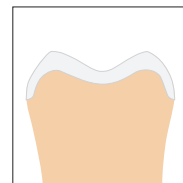
THIN VENEERS / VENEERS



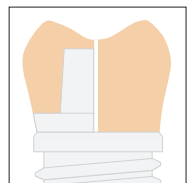
ANTERIOR / POSTERIOR CROWNS



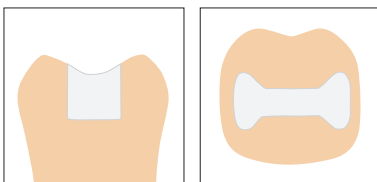
OCCLUSAL VENEERS



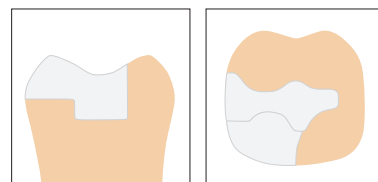
IMPLANT CROWNS



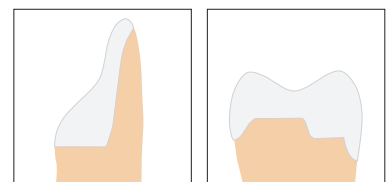
INLAYS



ONLAYS

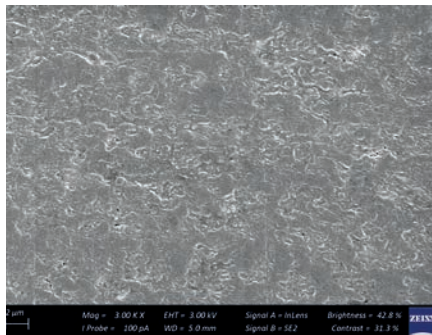


PARTIAL CROWNS

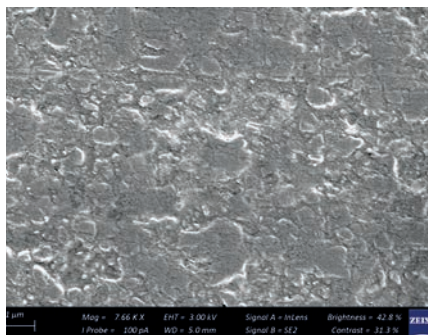


# SEM Analysis of edelweiss CAD/CAM BLOCKS

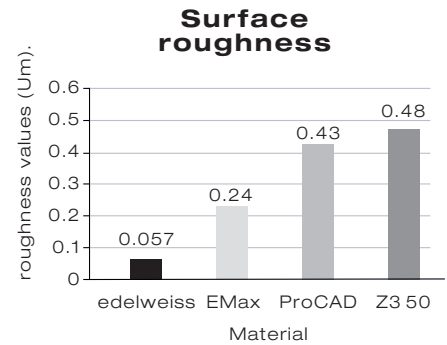
## EDELWEISS CAD/CAM MILLING BLOCK



The edelweiss CAD/CAM BLOCK shows an homogeneous layer of glass almost fused to form a single unit. There is a complete absence of voids or defects on the surface structure. (Mag = 3.00KX)

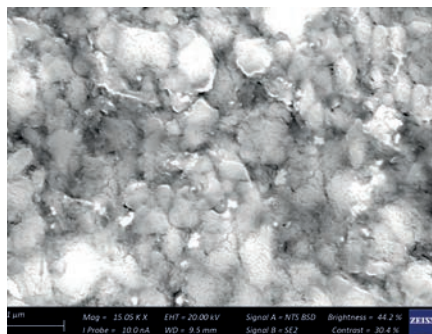


The edelweiss CAD/CAM BLOCK is extremely smooth and thus ensures a long-lasting shine.



Source: Saveetha Dental College, Chennai

Compared to other CAD/CAM blocks edelweiss has the smoothest surface.



(Mag = 15.05KX)

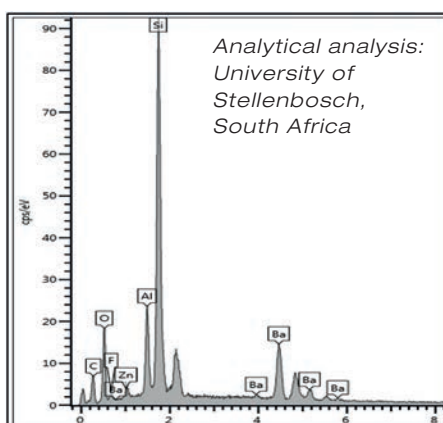
Through back scatter, the individual glass particles seem fused into a single mass devoid of any voids or defects. Unlike observed with other CAD/CAM blocks there are no cracks or defects within the material itself.

stable preventing surface staining. This is also important during the milling process resulting in smoother margins of the finished restorations and a much "softer" feel on the CAD/CAM milling bur.

This makes the material more stable under occlusal forces preventing any fractures and better wear resistance. The absence of surface voids and defects makes the edelweiss CAD/CAM BLOCK more color

Milling time is much shorter and the milling bur lasts much longer than when used with other blocks. This results in smoother chip free margins and a more polished surface.

## ELEMENTAL ANALYSIS



The composition of edelweiss CAD/CAM BLOCKS are mainly barium/silicate glass, zinc oxide nanoparticles, carbon, aluminium oxide and fluoride.

Barium silicate glass provides a single glass phase for optimum esthetics and ensures adequate bonding to the tooth structure using the edelweiss bonding system.

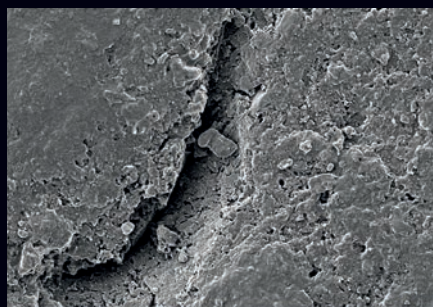
The addition of zinc oxide nanoparticles provides antibacterial properties preventing any plaque accumulation on the surface of the material.

Aluminium oxide provides additional strength and improves the optical properties of the CAD/CAM BLOCK.

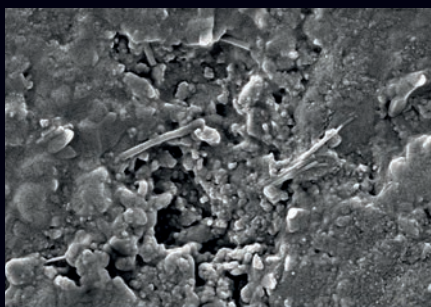
Fluoride enables possible hydroxyapatite regeneration if required. The addition of ZnO and F<sup>-</sup> is unique to the edelweiss CAD/CAM BLOCKS.

# SEM Analysis of Alternative CAD/CAM Blocks

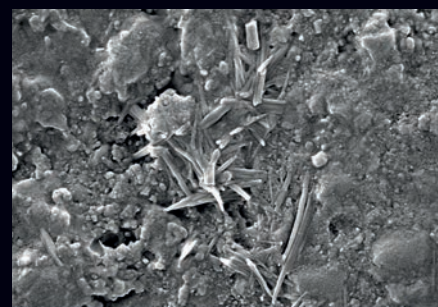
## PRODUCT B CAD/CAM MILLING BLOCK



The SEM of product B CAD/CAM block shows an inhomogeneous surface structure possibly due to it being a composite/ceramic hybrid. Several voids and cracks appear on the surface. (Mag = 2.83KX)



Irregularly shaped structures are easily observed on the surface presenting an uneven surface. (Mag = 15.27KX)



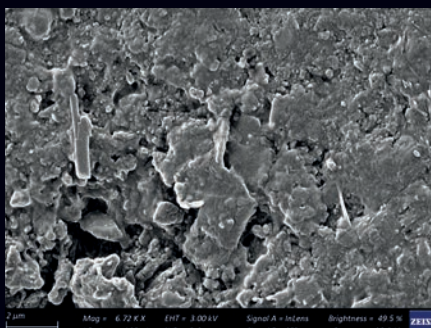
The product B blocks contain fine spicules that seem to be protruding from the surface. (Mag = 14.65KX)

## PRODUCT C CAD/CAM MILLING BLOCK



Product C shows a mottled appearance with gaps within the material itself. (Mag = 64X)

## PRODUCT D CAD/CAM MILLING BLOCK



Product D CAD/CAM shows an inhomogeneous surface with irregular shaped structures. Several gaps and voids are seen on the surface. (Mag = 6.72KX)

SEM done by Prof. Lydia-Marie Joubert (PhD, MPhil), Central Analytical Facilities, University of Stellenbosch, South Africa  
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## CONCLUSION

SEM shows the compactness in the structure of the edelweiss CAD/CAM BLOCKS. This ensures minimal chances of crack propagation under normal occlusal forces.

The geometry of the glass crystals within the material is similar to natural enamel enabling proper light scattering for optimal esthetics.

Optical properties of edelweiss CAD/CAM BLOCKS show superior esthetic properties due to the pure glass structure and aluminium oxide.

edelweiss CAD/CAM BLOCKS come with the added advantage of the inclusion of zinc oxide and fluoride making it antibacterial.



# Clinical Comparison: Two CAD/CAM Systems in one patient



edelweiss VENEERS (11, 12 and 13)

## **SPLIT-MOUTH CLINICAL STUDY: ONE WEEK AFTER TREATMENT**

- edelweiss VENEERS maintain its original gloss as a result of its single hybrid glass phase.
- The veneers have a shiny appearance giving it a more natural enamel life-like appearance.

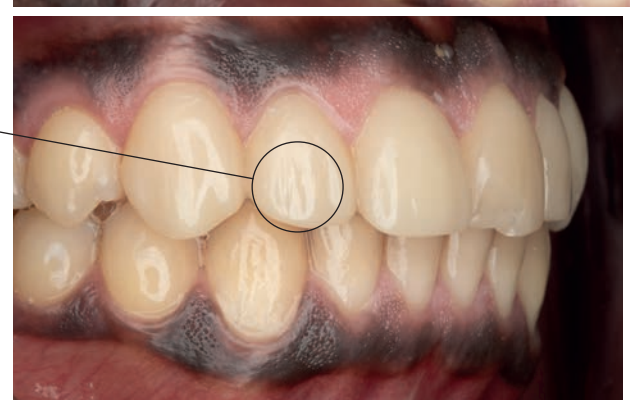
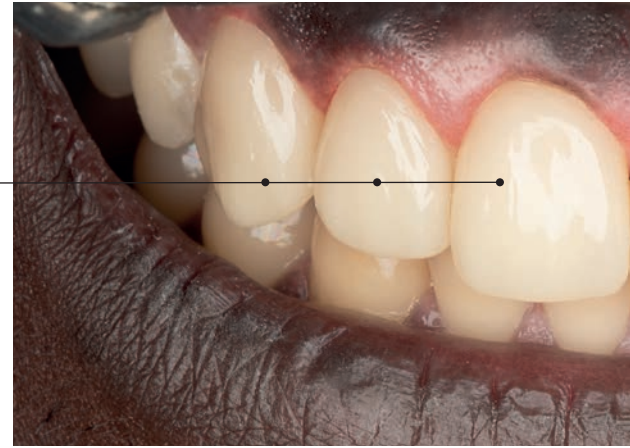
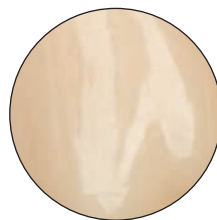
## **TWO WEEKS AFTER TREATMENT**

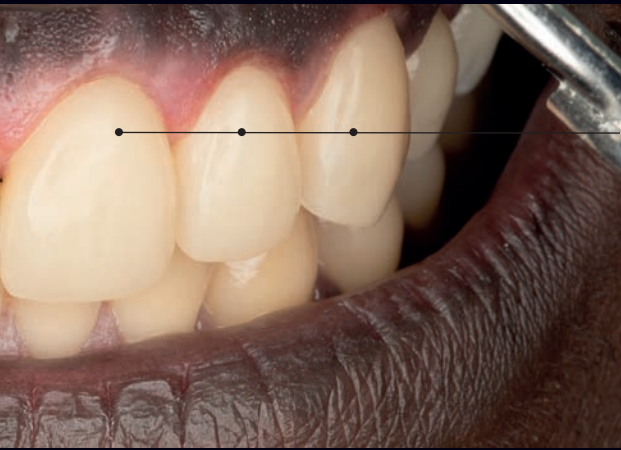
- edelweiss VENEERS still have its glass like shiny appearance maintaining its original gloss.
- There is no sign of wear or abrasion as a result of tooth brushing.
- There is no loss of surface anatomy. Original line angles and surface characterizations still present.

## **THREE WEEKS AFTER TREATMENT**

- Long lasting gloss can still be seen after 3 weeks.
- There are no signs of abrasion or loss of surface anatomy.
- Proper canine guidance can still be observed with no wear facets on the canine veneer.

- Patient says, "The veneers on the right side feel like his original teeth, a very smooth and polished surface".
- Higher magnification shows a very smooth glossy surface devoid of any surface roughness or scratches.

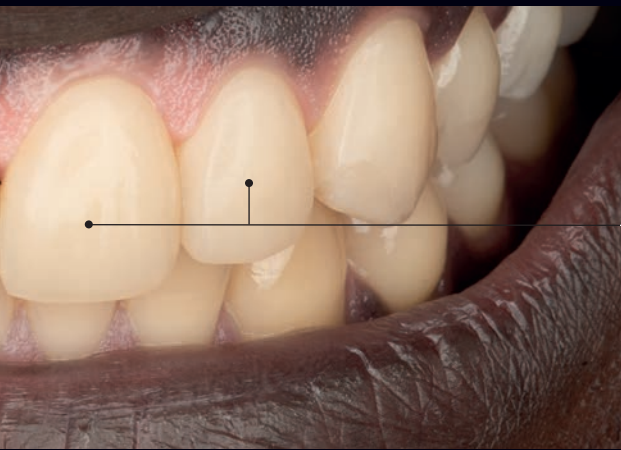




Alternate veneers (21, 22 and 23)

### **SPLIT-MOUTH CLINICAL STUDY: ONE WEEK AFTER TREATMENT**

- Alternate veneers seem to lose its original lustre.
- It appears dullish having a more opaque look.
- The dispersed particles within the resin matrix may account for the loss of the original shine over time.



### **TWO WEEKS AFTER TREATMENT**

- Alternate veneers become duller over time, looking more opaque.
- Some of its original surface anatomy is lost. Original surface contours seem to have been smoothed out.
- Fine micro abrasions start to appear on the surface possibly a result of tooth brush wear on the veneer.

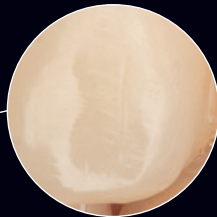


### **THREE WEEKS AFTER TREATMENT**

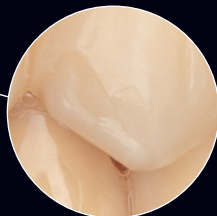
- Patient says, "The veneers on left side feel rough and is not as smooth as the right side of his mouth. It also has a dullish appearance".



- Veneer on tooth 21 chipped on incisal margin, extending to buccal side. It is a cohesive fracture occurring within the material itself.

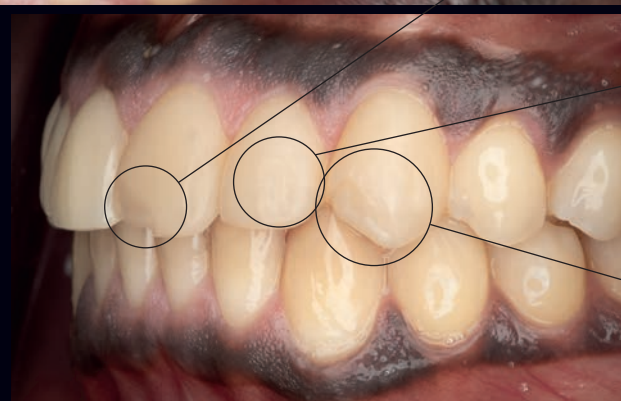


- Veneer on tooth 23 chipped on mesio-incisal margin. The fracture extends to buccal wall of the veneer.



- Fractures may possibly be a result of the weakness of the material itself. The material cannot withstand occlusal forces because of its lower micro-hardness and elastic modulus values.

- Higher magnification shows a rough surface with scratches.



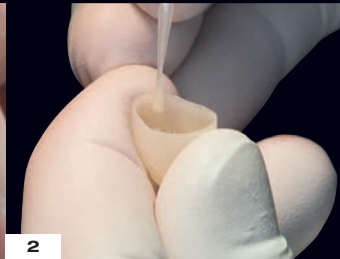
Alternative



# Step by Step/ Cementation of Restoration



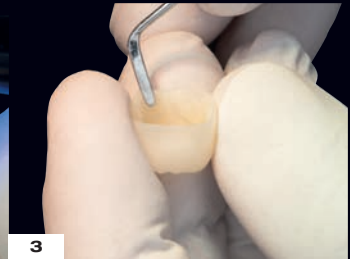
The attachment point of the block is smoothed out with fine-grain diamond burs. Final polish is achieved using cotton /linen buffs.



Coat the prepared fitting surface of the edelweiss restoration with edelweiss VENEER Bond using an applicator tip/microbrush and rubbing it gently. Dry edelweiss VENEER Bond using an oil and water free stream



of air, so that a slightly moist surface of the edelweiss restoration without any pooling of the VENEER Bond. Light cure edelweiss VENEER Bond for at least 20 seconds using a light curing device.



An appropriate amount of the composite is softened using the finger tips, pressed into a ball and inserted into the restoration. With a spatula instrument the composite is pressed onto the inner surface of the restoration to form a thin layer of cement.



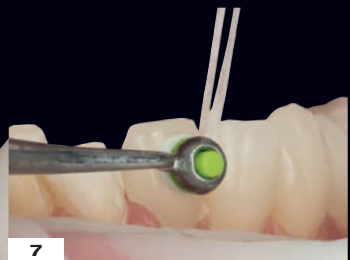
Apply 37 % phosphoric acid gel to the prepared tooth. The etchant should be left to react on the enamel for 15-30 sec. and on the dentin for 10-15 sec. Rinse thoroughly with water and gently dry.



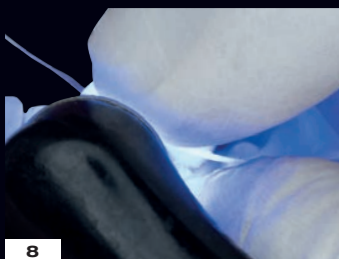
Starting with the enamel, thoroughly coat the tooth surfaces to be treated with Dentin Bonding Agent/Adhesive. The adhesive must be gently applied to the tooth surface for at least 20 sec. and light cured for 20 sec. in all directions.



After placing an appropriate amount of the composite cement into the restoration, gently seat the restoration onto the prepared tooth surface and retain it in place exerting uniform pressure. Remove all excess composite material.



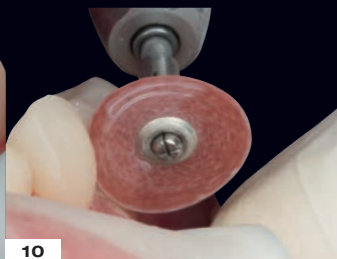
Cleaning and removing any excess cement from the interdental areas using dental floss.



Final light-cure for 20 sec. on all surfaces and margins with a curing unit with light intensity of 1000 mW/cm<sup>2</sup>.



After having adhesively cemented the restoration, adjust occlusion/articulation with suitable grinding instruments.



Work the interproximal areas with finishing strips then polish with polishing strips.



Final polishing is done with a silicone cup especially around the margins of the restoration. This will ensure a very high gloss surface.



# Perfect Bonding & Blending with edelweiss System Components

## **edelweiss VENEER BOND**

is used to provide adhesion to the glass phase/resin component of the edelweiss CAD/CAM restoration and has been shown to provide optimal bonding across the entire surface. The bond between the restorative interface and the tooth is enhanced through the use of edelweiss NANO-HYBRID COMPOSITE or edelweiss NANO-HYBRID FLOWABLE COMPOSITE.

## **PERFECT MARGINAL ADAPTION**

Since the edelweiss CAD/CAM restoration and the edelweiss cement have the same composition it acts as a monobloc ensuring a perfect marginal seal. In-vitro studies have shown no marginal leakage on both enamel and dentin interfaces when cemented with edelweiss bonding systems.

## **PERFECT STAIN FREE MARGINS**

In the case of the edelweiss bonding system sub-margination or ditching at the tooth interface is non-existent as the cement and the restoration are one system. Staining is completely absent with the edelweiss bonding system.

## **PERFECT MARGIN COLOR MATCH**

The monobloc system ensures there will be no color difference between the restoration and tooth surface at the cementation interface. The edelweiss cement and the edelweiss restoration have the same composition and optical properties, hence no unsightly restoration margins are visible.

### **Please note:**

Cementation can also be achieved using conventional resin luting cements, however, for optimum results it is recommended to use edelweiss components. Bioceramic cements like CERAMIR crown and bridge cement can also be used.



## **VENEER BOND**

edelweiss VENEER Bond is a light curing adhesive for bonding edelweiss restorations and for intraoral repairs to damaged restorations.



## **NANO-HYBRID COMPOSITE**

edelweiss NANO-HYBRID COMPOSITE is a light-curing, radiopaque, highly filled nano-hybrid composite filling material for restorations or cementation that meet the highest standards.



## **NANO-HYBRID FLOWABLE COMPOSITE**

edelweiss NANO-HYBRID FLOWABLE COMPOSITE is a light-curing, radiopaque filling material for restorative therapy or for cementation.



## **EFFECT SHADE**

edelweiss EFFECT SHADE is a light-curing, thin-flowing composite which has been specifically developed for the characterization of restorations. Due to the special pigmentation, Effect Shades allow color individualization of restorations.

# Biofunction

## GAP FORMATION

edelweiss CAD/CAM milled restorations exhibits the least marginal gap formation measured after milling and after cementation.

Below comparison between 3 CAD/CAM blocks, lithium disilicate (LD), HIPC composite resin (CB), and edelweiss CAD/CAM material (CE) in 2 different margin preparation design: shoulder preparation

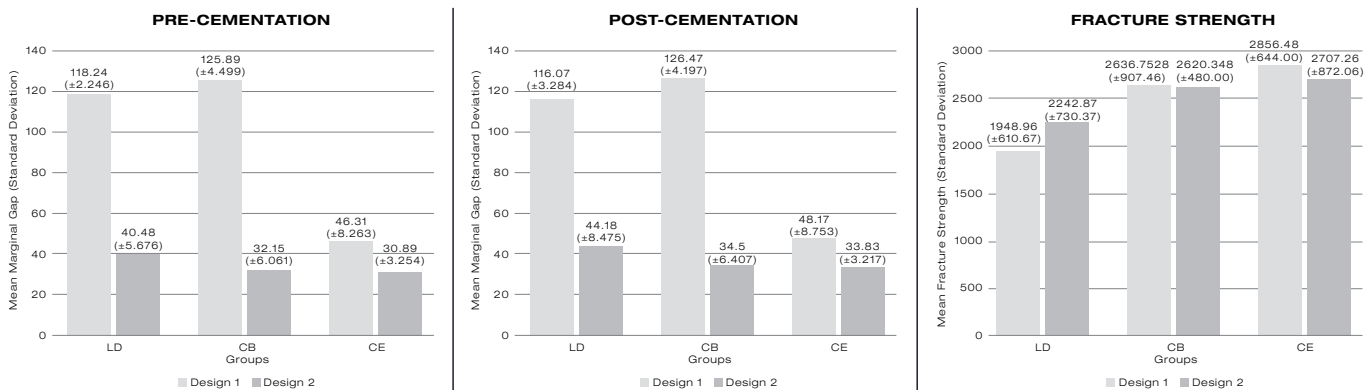
(design 1) and chamfer preparation (design 2).

In both preparation designs edelweiss CAD/CAM BLOCKs in both pre-cementation and post-cementation recorded the least mean marginal gap of 30.89  $\mu$ m in pre-cementation and 33.83  $\mu$ m and

## FRACTURE RESISTANCE

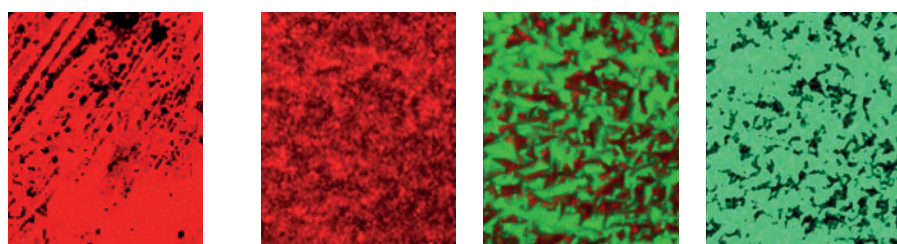
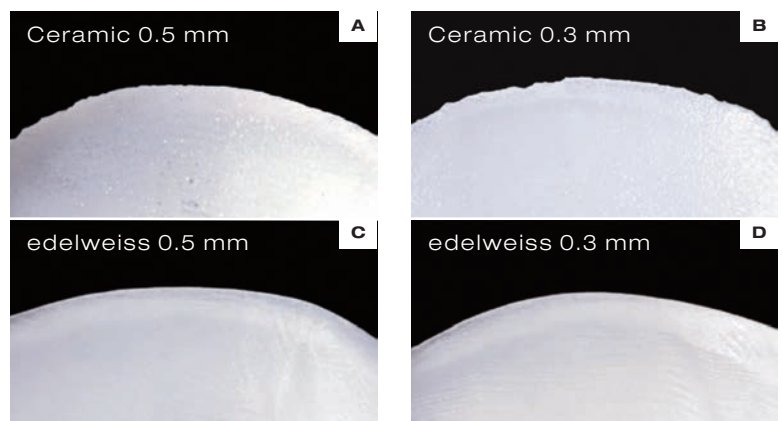
edelweiss CAD/CAM BLOCKs exhibits highest fractured strength compared to both lithium disilicate and HIPC CAD/CAM composite blocks in both pre-cementation and post-cementation.

Fracture strength measured after milling and after cementation.



## MARGIN CHARACTERISTICS

Photographs of veneers showing margin characteristics. Ceramic margins (A & B) milled at 0.5 mm and 0.3 mm compared to edelweiss VENEERS (C & D) milled at 0.5 mm and 0.3 mm. edelweiss VENEERS present an intact margin compared to ceramic margins that show chipping. This is more evident especially at thinner sections due to the fragility of the ceramic material. The intact smooth margin of edelweiss milled CAD/CAM BLOCKs ensures a perfect fit with no marginal leakage or staining.



Test sample

Control sample: Biofilm formation on composite restorative material following exposure to bacteria.

## NO BIOFILM OR BACTERIAL GROWTH

edelweiss CAD/CAM BLOCKs exhibit antibacterial properties with no biofilm or bacterial plaque formation on the surfaces.

Test sample: On edelweiss CAD/CAM BLOCKs no biofilm formation following exposure to bacteria.

# Biocompatibility

## WE CARE FOR YOUR HEALTH

We understand the importance of using safe and biocompatible materials in patients.

edelweiss CAD/CAM BLOCKs are crafted using high-quality materials that are specifically chosen to be safe and gentle to teeth and the gingiva.

ALL edelweiss products are BPA free and biocompatible.



### ZERO BISPHENOL A

edelweiss CAD/CAM BLOCKs are free of Bis-GMA & Bis-EMA.



### BIOSUSTAINABLE

The world's first biosustainable CAD/CAM block.



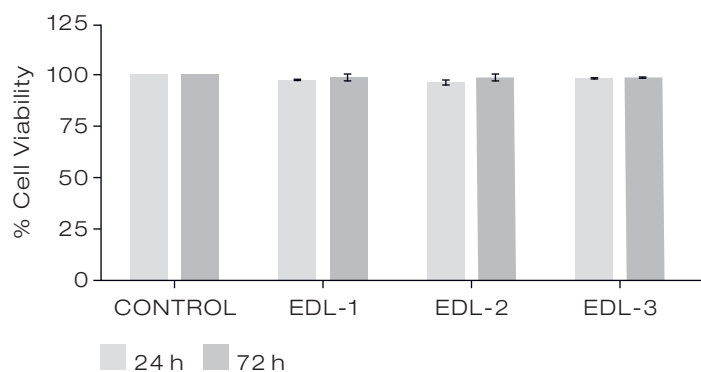
### EDELWEISS CAD/CAM BLOCKS ARE NON-TOXIC

Toxicity Studies done on:  
Human Stem Cells  
Intracutaneous reactivity test (ISO 10993-23:2021)

### NON-IRRITATING TO THE SKIN OR MUCOSA

Skin sensitization test (ISO 10993-10:2021)

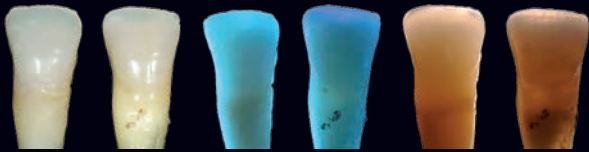
### HUMAN DENTAL PULP STEM CELLS (hDPSCs)



% MTT assay – cell viability of human dental pulp stem cells (hDPSCs) incubated with Control group and EW 1, EW 2 and EW 3 samples

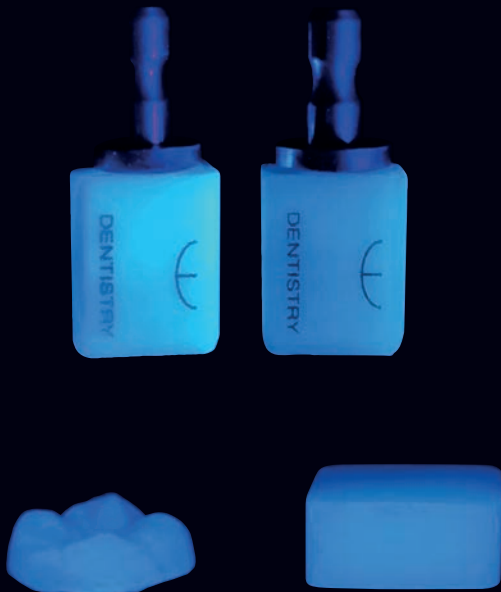
# Bioesthetic

The homogeneous glass-like structure of the edelweiss CAD/CAM BLOCKs behaves like the natural tooth in both fluorescence and opalescence mimicking nature.



Source:  
Dr. Dietschi, Geneva Smile Centre, Switzerland

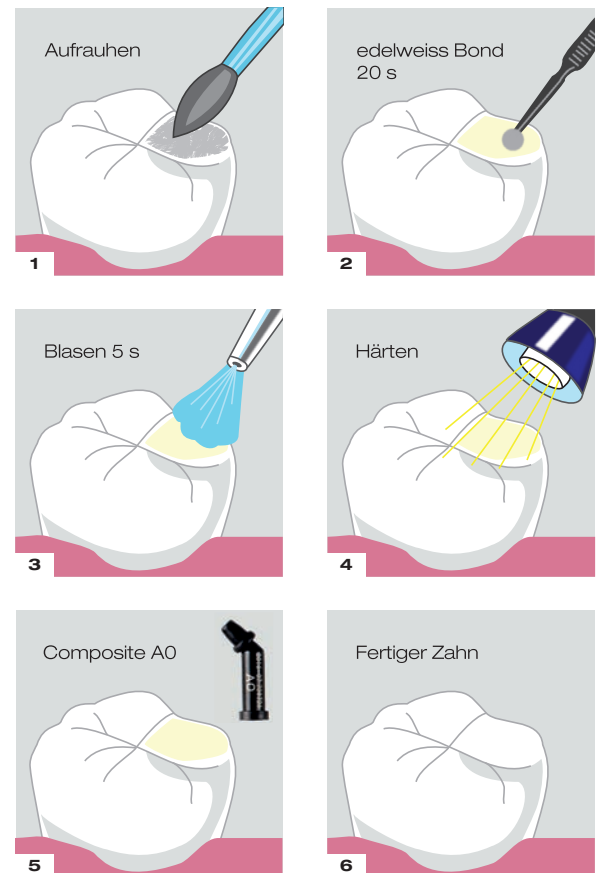
Natural tooth (right side) compared to edelweiss restoration (left side) under different lighting conditions. edelweiss restorations matches the optical properties of the natural tooth.



edelweiss CAD/CAM BLOCKs and milled edelweiss restoration has fluorescence mimicking natural enamel as a result of the sintered hybrid glass material.

# Repairability

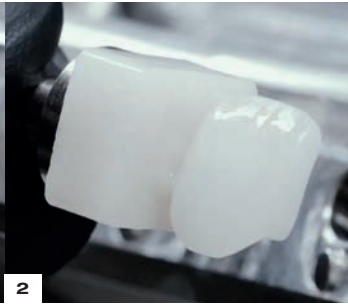
edelweiss CAD/CAM restoration can easily be repaired in the mouth as shown below.



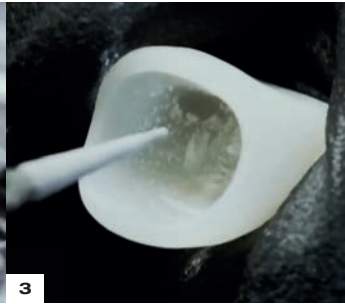
# Staining & characterization



1 edelweiss CAD/CAM T-BLOCK (enamel shade).



2 After milling of edelweiss CAD/CAM BLOCK.



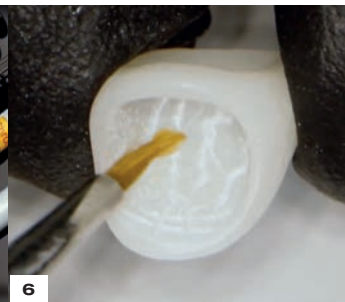
3 Internal grooves made using a fine diamond bur to accentuate the stains.



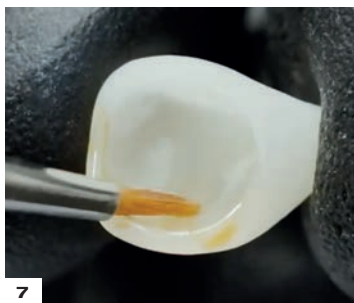
4 The inside is cleaned and edelweiss VENEER BOND applied and light cured.



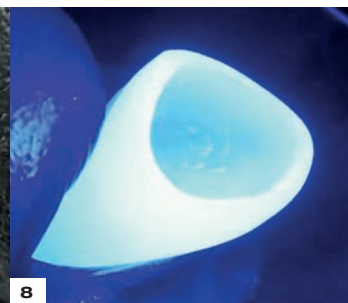
5 edelweiss Staining Kit ranging from white to brownish stains.



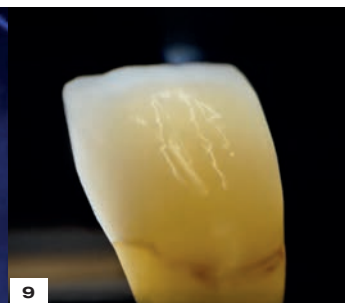
6 edelweiss EFFECT SHADES applied using a fine brush.



7 Application of edelweiss EFFECT SHADES around the neck area to obtain a more natural appearance of the cervical neck area.



8 Light curing of the edelweiss EFFECT SHADES.



9 Staining and characterization achieved easily chair-side.



# One Session – Change for a Lifetime

## BEFORE



## AFTER



## Bruxism

Patient was worried about her teeth being worn down and discolored. Following splint therapy to treat the bruxism, the teeth were restored using edelweiss T-BLOCKS and NANO-HYBRID COMPOSITE A2 to the new vertical height.



## BEFORE



## AFTER



## Deep bite with diastema

Patient was concerned about the midline gap between the two front teeth. The vertical dimension was increased following the use of splint therapy. Restorative treatment was followed with edelweiss CAD/CAM T-BLOCKS and cemented with edelweiss NANO-HYBRID COMPOSITE A1.





**BEFORE**

**AFTER**



**Retroclined teeth**

Patient was concerned about the way her teeth were positioned and was conscious of her smile. Her teeth were slightly retroclined and this was corrected using edelweiss CAD/CAM T-BLOCKS to mill ultra thin veneers and cemented using edelweiss NANO-HYBRID COMPOSITE A1.



**BEFORE**

**AFTER**



**Old defective restorations**

Patient presented with defective restorations and compromised esthetics. Because of the translucent nature of the edelweiss T-BLOCKS, the restorations blended in with the shade and vitality of the natural surroundings whilst using the least invasive method of restoring the teeth.



# edelweiss CAD/CAM BLOCK

## i-BLOCK

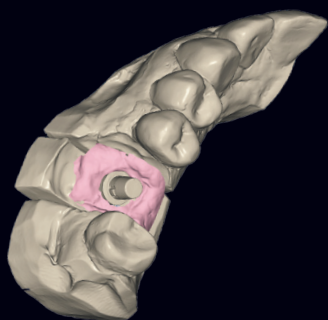
### i-BLOCK FOR IMPLANT SOLUTIONS

edelweiss i-BLOCKS are CAD/CAM blocks used for precise and reliable fabrication of implant-supported restorations. Manufactured from a patented laser sintering process to produce a single hybrid glass phase ensuring optimum esthetics and exceptional strength with long lasting polish and wear resistance.

■ *biological*   ■ *functional*   ■ *esthetic*



### PRECISE INTERFACE INTEGRATION



With the new edelweiss i-BLOCK, you can now create customized abutments and crowns. This allows the quick and safe restoration of implants. The edelweiss i-BLOCK can be easily integrated into the practice's digital workflow.

12 x 14 x 18 mm



Precision manufacturing processes guarantee the new edelweiss i-BLOCKS fit precisely onto Titanium Base (TiBase or similar attachments) so that the final restoration can be placed in the same appointment, reducing treatment sessions and improving the patient experience.

### INDICATIONS WITH TWO SIMPLE SOLUTIONS

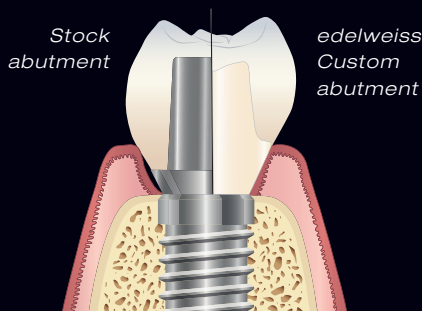
The edelweiss i-BLOCK can be used as screw retained single abutment crowns as well as for mesostructure (abutment) and final crowns. This ensures a perfect emergence profile for optimal esthetics. Its antibacterial properties and a good mucosal seal helps prevent peri-implantitis thereby protecting the implant.



■ *Single unit as abutment crown*



■ *Mesostructure and crown*



## WHY EDELWEISS CUSTOM ABUTMENTS?

The edelweiss custom abutments offer several advantages over stock abutments, including:

- Patient-specific soft tissue management that conforms precisely to the patient's gingival contours, makes them an excellent biologic and esthetic option for implant treatment.
- The edelweiss custom abutments offer a tissue-level cement junction compared to subgingival location of the cement junction seen in a typical stock abutment.
- The two-piece structures provide stability to the components, and are very easy to use.
- The edelweiss abutment crown (TiBase + crown) can be simply screwed on to the implant.
- The edelweiss crown and the TiBase can be assembled extra-orally. This avoids any problems that may arise due to unclean adhesive surfaces.
- The edelweiss abutment is antibacterial offering exceptional biocompatibility in the oral mucosa.
- The edelweiss abutments guarantee optimal esthetics resembling dentin shades with the final crown mimicking that of natural enamel.
- In-Office Fabrication – With CAD/CAM dentistry, the ultimate benefit is the ability to fabricate this in the office the same day. With edelweiss i-BLOCK you don't need an expensive sintering furnace like you would for most other materials.
- The edelweiss i-BLOCK is time and cost-efficient.

## UNIQUE PROPERTIES

edelweiss i-BLOCK has unique built in antibacterial properties. It is the only block with this feature. Through a patented manufacturing process, zinc oxide nanoparticles are added to the material ensuring optimal periodontal health. It also contains fluoride to prevent any plaque accumulation on the crown. The edelweiss i-BLOCK has perfect form to maintain the mucosal seal thus protecting the implant against peri-implantitis.

edelweiss i-BLOCK has a unique shock absorbing effect. Resin within the material provides resilience to the restoration having a shock absorbing effect to withstand any occlusal stresses. This is particularly important to avoid stresses being transmitted to the periodontal tissues, the implant, the opposing tooth or the TMJ. Having a modulus of elasticity of 20 GPa ensures it behaves similar to dentin, absorbing all stresses within the material.

edelweiss i-BLOCK offers the ultimate in esthetics, it allows you to create a custom abutment that is shaped and shaded like dentin. It allows for a more translucent enamel-like material over the abutment for optimum esthetics. The margin can be placed supragingival ensuring optimum gingival health. Esthetically there is no more of the grayish prefabricated abutment shining through.

## COMPATIBILITY

edelweiss i-BLOCKS are compatible with systems of the providers via the TiBase interface like Dentsply Sirona, Nobel Biocare, Straumann, etc.

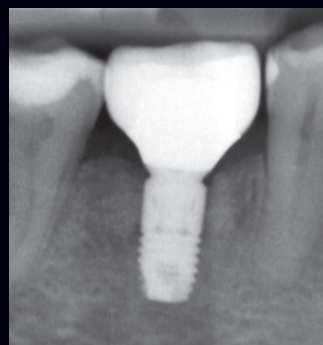
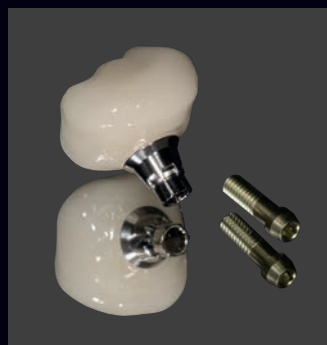
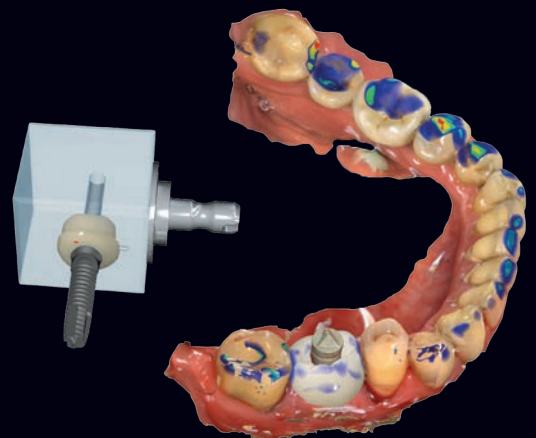
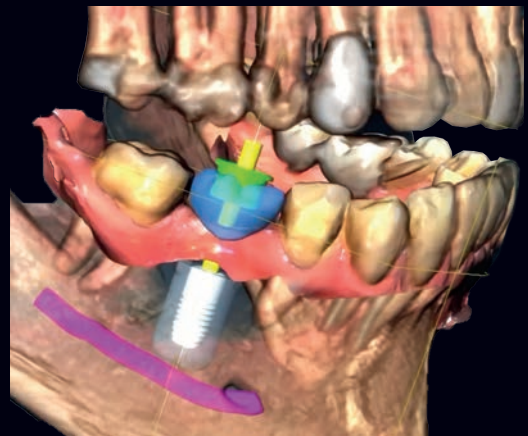
# Clinical Case



*Clinical case: Dr. Marco Tudts  
D.D.S, M.Sc.D*

## MODEL BASED DIGITAL WORKFLOW

- Plaster model was prepared.
  - Lab analogue was placed on the preferred implant position on the model for an ideal implant crown position.
  - Surgical placement of implant was done.
  - Implant crown placed on the same position as in the plaster model.
1. Intra oral scan of the initial situation was made using Primescan
  2. A 3D model was printed
  3. A 3D planning was done using CEREC software
  4. The CEREC guide was designed to place the implant lab analogue
  5. The implant lab analogue was placed on the model and scanned
  6. The base (edelweissi-BLOCK) + the crown (edelweiss C-BLOCK) was designed in the CEREC software
  7. The base substructure and the crown was milled
  8. The TiBase + edelweiss Base + edelweiss Crown was checked on the model for fit
  9. Using the template the implant was placed in the ideal position in the mouth
  10. The implant supported crown was attached to the implant
  11. Proper seating of the implant crown was checked with a control X-ray
  12. Final occlusion was checked
  13. Patient recall and follow up for implant maintenance



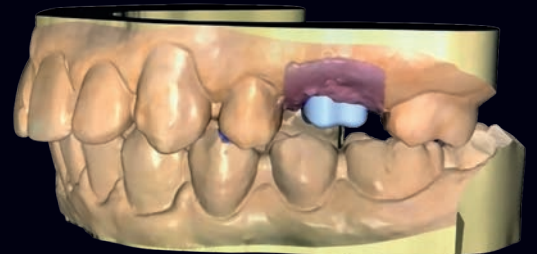
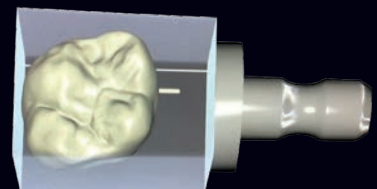
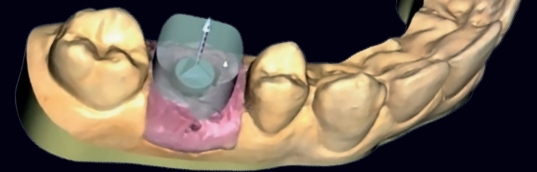
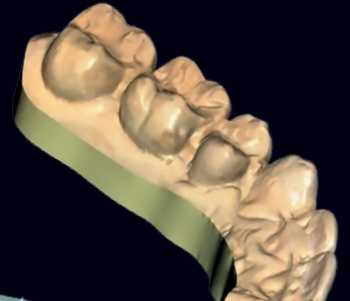
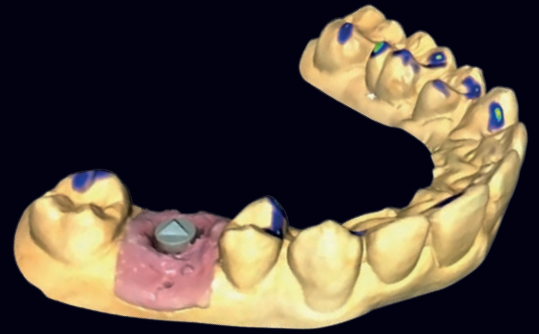


## IMMEDIATE LOADING DIGITAL WORKFLOW

Everything is done chairside from:

- Intraoral scanning
- 3D surgery planning
- 3D guide design planning
- 3D milling of the guide
- Surgical implant placement
- Immediate loading of the pre-designed implant supported crown.

1. Initial clinical situation was scanned using Primescan
2. CBCT taken using AXEOS 3D imaging system
3. The Dicom and STL files were merged
4. A segmentation and virtual extraction of the tooth was done
5. The virtual implant and crown was planned in SICAT
6. The SICAT virtual 3D planning was exported to CEREC software
7. A 3D surgical guide was made and milled
8. Tooth extraction was done on the patient
9. Using the CEREC milled guide the implant was placed and scanned
10. The original planned position was checked with the actual clinical position and adjusted if necessary
11. The custom base was milled using edelweiss i-BLOCK to provide optimum biological seal and emergence profile
12. The crown was milled with edelweiss C-BLOCK
13. The 3 pieces i.e. TiBase + edelweiss Base + edelweiss Crown were put together
14. The immediate loading crown was placed on the implant in the patient's mouth with a torque of 32 Ncm
15. With a control X-ray, the seating was confirmed and occlusion checked with articulation
16. Patient recall and follow up for implant maintenance



# Digital workflow – from planning to cementation

## EDELWEISS CAD/CAM BLOCKs AND EDELWEISS i-BLOCKs FOR THE IMPLANT SUPPORTED RESTORATIONS



Pre-operative image with mock-up temporary restorations showing missing teeth and lower anterior teeth discolored and with signs of abrasion.



Immediate post-operative photo of teeth in occlusion. Upper anterior teeth lower teeth with prep less veneers milled from edelweiss CAD/CAM BLOCKs and posterior teeth restored with implant supported crowns and bridges milled using edelweiss i-BLOCKs.



Upper jaw with crowns from 17 to 23, bridge from 24 to 26 and inlay on 27.

Lower jaw with veneers from 33 to 43 with crowns on 26 and 27.

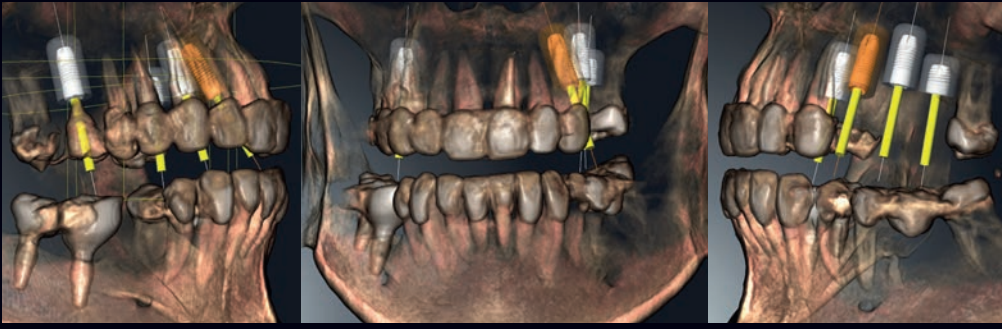
Pre-operative image showing failing crowns and bridges. Planning required extractions of 45 and 24.

Upper jaw: 15 to 23 crowns; 16 immediate loaded implant crown and 17 and 27 onlay; 24, 25 and 26 immediate loaded implant crowns.

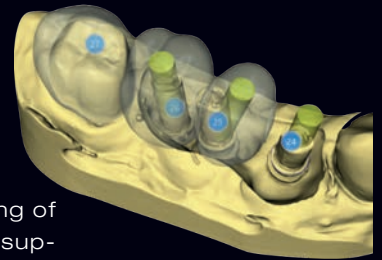
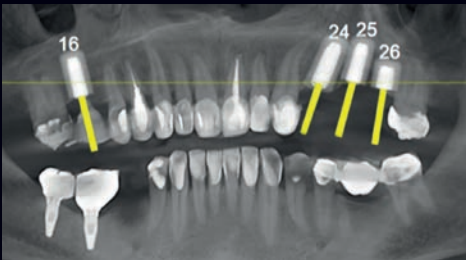
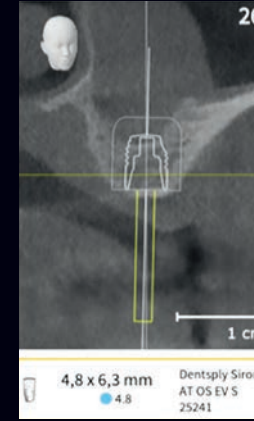
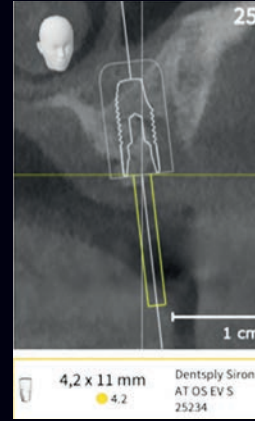
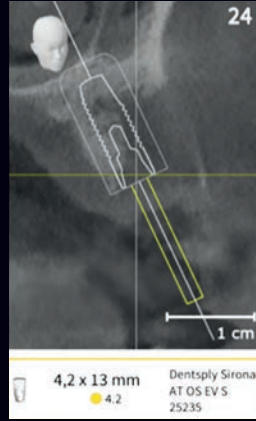
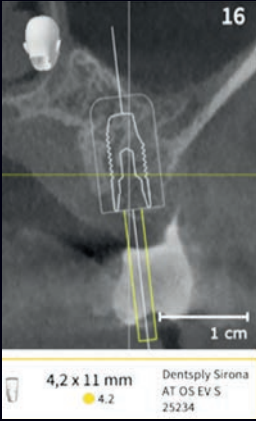
Lower jaw: 33 to 43 veneers; 34 and 44 crowns; 46 and 47 immediate loaded implant crowns; 35 to 37 bridge.







CBCT image showing position of the implants



Designing of implant supported crowns

Digital planning showing implant placement



All crowns and veneers milled using edelweiss CAD/CAM C-BLOCKS, and i-BLOCKS using shade A1



Implant supported crowns in place



CBCT image of implants and crowns in place



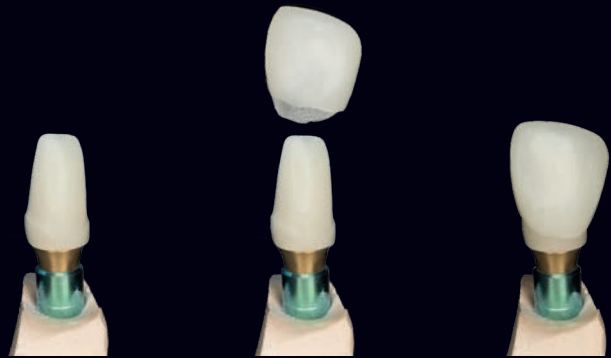
Surgical guide with implant position holes in place

# Patient case



*Clinical case: Dr. Frederic A. Sakete  
BDS, MSc-Implantology & Oral Surgery*

For optimum esthetics, the edelweiss i-BLOCK was first milled as a mesostructure and cemented to the implant abutment. The final crown was milled with edelweiss C-BLOCK A2. This ensured a perfect esthetically driven emergence profile and a biologically driven mucosal seal.





# Case Study

**NON-PREP FULL-MOUTH-REHABILITATION (only old restorations have been removed)**

**BEFORE**



**AFTER**



# Order Information / Refills

## **CAD/CAM BLOCK** (5 x 12/14/18 mm)

REF 19100	edelweiss CAD/CAM T-BLOCK Universal Enamel
REF 19101	edelweiss CAD/CAM C-BLOCK A0
REF 19102	edelweiss CAD/CAM C-BLOCK A1
REF 19103	edelweiss CAD/CAM C-BLOCK A2
REF 19104	edelweiss CAD/CAM C-BLOCK A3

## **CAD/CAM BLOCK WITH ABUTMENT HOLE** (5 x 12/14/18 mm, Ø S)

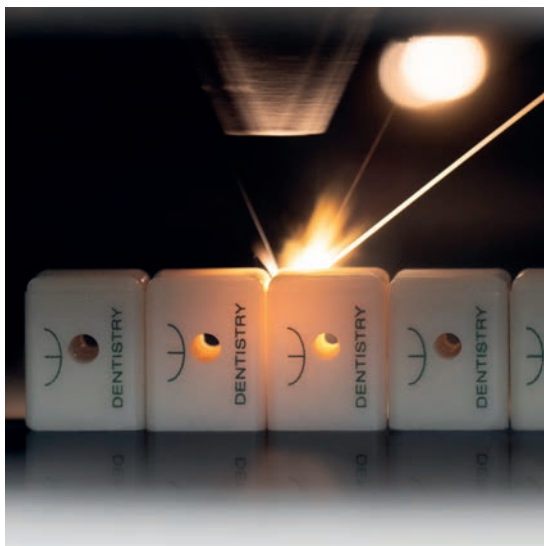
REF 19100.A	edelweiss CAD/CAM i-BLOCK (Ø S) Universal Enamel
REF 19101.A	edelweiss CAD/CAM i-BLOCK (Ø S) A0
REF 19102.A	edelweiss CAD/CAM i-BLOCK (Ø S) A1
REF 19103.A	edelweiss CAD/CAM i-BLOCK (Ø S) A2
REF 19104.A	edelweiss CAD/CAM i-BLOCK (Ø S) A3

## **CAD/CAM BLOCK WITH ABUTMENT HOLE** (5 x 12/14/18 mm, Ø L)

REF 19100.A.L	edelweiss CAD/CAM i-BLOCK (Ø L) Universal Enamel
REF 19101.A.L	edelweiss CAD/CAM i-BLOCK (Ø L) A0
REF 19102.A.L	edelweiss CAD/CAM i-BLOCK (Ø L) A1
REF 19103.A.L	edelweiss CAD/CAM i-BLOCK (Ø L) A2
REF 19104.A.L	edelweiss CAD/CAM i-BLOCK (Ø L) A3

## **CAD/CAM BLOCK SMALL** (5 x 10/12/16 mm)

REF 21100	edelweiss CAD/CAM T-BLOCK Universal Enamel (small)
REF 21101	edelweiss CAD/CAM C-BLOCK A0 (small)
REF 21102	edelweiss CAD/CAM C-BLOCK A1 (small)
REF 21103	edelweiss CAD/CAM C-BLOCK A2 (small)
REF 21104	edelweiss CAD/CAM C-BLOCK A3 (small)



**BONDING** (5 ml Bottle)

REF 10521 edelweiss VENEER Bond

**NANO-HYBRID COMPOSITE ENAMEL SHADE** (10 x 0.3 g Tip)

REF 10301 Enamel

**NANO-HYBRID COMPOSITE DENTIN SHADES** (15 x 0.3 g Tip)

REF 10201 Dentin A0

REF 10211 Dentin A1

REF 10221 Dentin A2

REF 10231 Dentin A3

REF 10241 Dentin A3.5

**NANO-HYBRID COMPOSITE FLOW** (1.5 g Syringe)

REF 13770 Enamel Flowable

REF 10401 Flowable A1

REF 10411 Flowable A2

REF 10421 Flowable A3

**EFFECT SHADES** (1.5 g Syringe)

REF 13760 Effect Blue

REF 13750 Effect Opaque White

REF 14702 Effect Ice

REF 23700 Effect Fissure

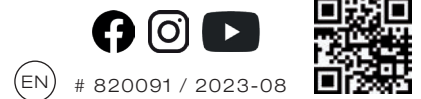
**edelweiss CAD/CAM BLOCKS all come with standard holder attachments - individual holder attachments are available on request.**





shaping the future of dentistry

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