

**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*

**QUESTIONS**



**ANSWERS**

### **WHAT IS EDELWEISS T-BLOCK?**

edelweiss T-BLOCK or Translucent Blocks are highly translucent CAD/CAM BLOCKS that mimic the natural enamel in optical properties. Restorations milled from these blocks have a more life-like appearance resembling the natural tooth. The luminance of the edelweiss T-BLOCK matches that of the natural enamel blending the final restoration to its surrounding giving an excellent bio-harmonious and highly esthetic final outcome.

### **WHAT IS EDELWEISS C-BLOCK?**

edelweiss C-BLOCK or Chroma Blocks are highly chromatic CAD/CAM BLOCKS that correspond to shades A0, A1, A2 and A3. These blocks have higher chroma values and can easily blend with its surroundings when the restoration is correctly color matched.

### **WHAT IS EDELWEISS i-BLOCK?**

edelweiss i-BLOCKS are CAD/CAM BLOCKS used for precise and reliable fabrication of implant-supported restorations. Precision manufacturing processes guarantee the new edelweiss i-BLOCKS fit precisely onto Titanium Base (Ti-Base or similar attachments) so that the final restoration can be placed in the same appointment, reducing treatment sessions and improving the patient experience.

### **WHEN SHOULD THE T-BLOCK BE USED?**

For an highly esthetic case, the edelweiss T-BLOCK will be best suited. The T-BLOCKS are highly translucent blocks that mimic the natural enamel in optical properties and tends to adapt better to their surroundings due to increased light translucence. This leads to a better blend-in effect, which is desirable for an highly esthetic outcome.

The underlying dentin shade can then be duplicated through the use of various resin composite/cement shades. The final shade matching of the restoration can be adjusted by using the appropriate composite shades. This can be further individualized by varying the composite shades according to cervical and incisal color variations in the natural tooth.

### **WHEN SHOULD THE C-BLOCK BE USED?**

The C-BLOCKS are high chromacity blocks and corresponds to Shades A0, A1, A2 and A3. For simplicity of use these blocks can be easily matched to the tooth shade. They are better suited for covering discolorations and also ideal on elderly patients with a reduced enamel content. Both the T-BLOCKS and the C-BLOCKS can be individualized for optimum esthetics using internal or external characterizations.

### **WHEN SHOULD THE i-BLOCK BE USED?**

The edelweiss i-BLOCK can be easily integrated into your practice's digital workflow. Our new edelweiss i-BLOCKS fit perfectly with TiBase solution (or equivalent). Precision manufacturing processes ensures a precise fit. It can be used as screw retained single abutment crowns as well as for mesostructure and crown.

### **WHAT IS EDELWEISS i-BLOCK COMPATIBLE WITH?**

It is compatible with systems of the following providers via the TiBase interface: Alphatec, BIOMET 3i, Dentsply Sirona, Nobel Biocare, Straumann and many others.

### **WHAT DOES A SINGLE HYBRID GLASS PHASE MEAN?**

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

### **WHAT IS THE IMPORTANCE OF A SINGLE GLASS PHASE?**

The glassy matrix defines the esthetic properties of the material. The higher the glass content, the greater the translucency is, which will work best to imitate the properties of enamel and dentin. This glassy matrix permits the diffusion of light for translucency. The glass component also allows for adhesively bonding to tooth structure, which is critical to the restoration's long-term retention and durability.

### **DOES THE GLASSY PHASE MAKE THE EDELWEISS BLOCK MORE BRITTLE?**

No, through a controlled manufacturing process, edelweiss dentistry has retained a small portion of resin component that provides elasticity to the block. The modulus of elasticity of the block is 20GPa which is very similar to that of dentin. In this way the edelweiss BLOCK has the esthetics of that of feldspathic glass without having the brittleness of pure ceramics. It maintains its flexibility similar to dentin giving it the best of both worlds, flexibility and esthetics in one block.

### **HOW STRONG IS EDELWEISS CAD/CAM BLOCKS?**

Restorations milled from edelweiss CAD/CAM BLOCKs offer exceptional mechanical properties. High flexural strength provides for resistant restorations. The modulus of elasticity, which is similar to dentin (20 GPa), allows for a shock-absorbing effect to reduce tension during masticatory load and provides the patient with a pleasant bite feeling. In addition, edelweiss CAD/CAM restorations are highly abrasion-resistant. At the same time the wear-resistance of the material proves to be especially kinder on the antagonist teeth causing no abrasion to the opposing enamel in comparison to other ceramic restorations.

## **WHAT ARE THE ADVANTAGES OF EDELWEISS CAD/CAM BLOCKS?**

- a. Esthetically superior, lifelike appearance: Combines the esthetics of feldspathic glass and the strength of ceramics in a single hybrid glass for natural translucency and high strength.
- b. Flexible clinical color match: edelweiss BLOCKs are translucent to mimic the natural enamel. Final color match is adjusted through use of corresponding composite cement shade. edelweiss BLOCKs are also available in Vita shades A0, A1, A2, A3.
- c. Custom internal characterizations according to patients needs with edelweiss Opaque White, EFFECT SHADEs Ice and Blue.
- d. Ultrafine glass microstructure combines high strength with permanent high gloss.
- e. Proven high compressive strength.
- f. Biocompatible. Zinc oxide nanoparticles provide built-in antibacterial properties preventing any plaque accumulation on the surface of the material. Fluoride enables possible hydroxyapatite regeneration if required. The addition of ZnO and F<sup>-</sup> is unique to the edelweiss CAD/CAM BLOCKs.
- g. Simple cementation procedure with proven perfect seal and absence of micro-leakage.
- h. Shorter milling times, no additional firing required, simply polish and cement.
- i. Cost saving. Faster processing time reduces chairside times.
- j. Kinder to the milling burs. Because of the higher pure glass content and resin portion together with the absence of any ceramic component the milling process is much shorter and the milling burs tend to last longer. It is possible to be able to mill more restorations from a single milling bur.

## **WHICH CLINICAL SITUATIONS IS EDELWEISS CAD/CAM BLOCKS INDICATED FOR?**

The indications include single anterior and posterior full contour crowns, partial crowns, inlays, onlays, veneers and thin veneers. edelweiss i-BLOCKs are indicated for implant supported restorations.

## **HOW DOES EDELWEISS CAD/CAM BLOCKS DIFFER FROM OTHER BLOCKS ON THE MARKET?**

In the market today, CAD/CAM BLOCKs range from mainly glass component blocks like feldspathic glass which is highly esthetic but brittle to high strength zirconia blocks that lack esthetics. Composite CAD/CAM BLOCKs on the other hand lack both strength and esthetics, but have the flexibility of dentin. In contrast to other CAD/CAM materials, edelweiss CAD/CAM BLOCKs are made up of a single glass phase for excellent esthetics and a little resin component for an ideal modulus of elasticity. The modulus of elasticity, which is similar to dentin, allows for a shock-absorbing effect to reduce tension during masticatory load and provides the patient with a pleasant bite feeling. It is a block for all occasions and has components that give the block the best of both worlds, high esthetics without the brittleness of pure glass matrix.

### **WHAT PREPARATION GUIDELINES NEED TO BE OBSERVED?**

Minimum thickness at walls should be at least 0.5 mm. For veneers, minimal cervical thickness of at least 0.3 mm. Prepare margins with chamfer or rounded shoulder preparation. For inlays and onlays, all internal edges and angles should be rounded. Avoid having margins in direct occlusal contact with the opposing tooth. Minimum thickness of the restoration should be 1.5 mm in pit and fissure areas and 1.5 mm in cusp areas.

### **WHICH LUTING CEMENT SHOULD BE USED FOR CEMENTATION?**

The components of edelweiss VENEER BOND and edelweiss COMPOSITE perfectly match the composition of edelweiss CAD/CAM BLOCKs. In order to guarantee optimum esthetic results, it is highly recommended to use edelweiss cementing system. T-BLOCK (Translucent): The final shade matching of the restoration can be adjusted using the appropriate composite shades. This can be further individualized by varying the composite shades according to cervical and incisal color variations in the natural tooth. Individual characterizations can be also accomplished using edelweiss EFFECT SHADE or other staining kits.

C-BLOCK (Chroma): These are color matched to correspond to shades A0, A1, A2 and A3 and can be cemented using edelweiss Enamel shade or edelweiss FLOW-ABLE COMPOSITE. For substrates that are severely discolored a dentin shade is recommended to provide a more homogenous color.

### **CAN ANY OTHER TYPE OF CEMENT BE USED FOR CEMENTATION?**

Yes, cementation can also be achieved using conventional resin luting cements like Calibra Ceram (Dentsply). Instructions for use of the manufacturer should be followed.

### **HOW MUST THE EDELWEISS CAD/CAM RESTORATION BE PRETREATED?**

edelweiss CAD/CAM restorations need a pre-treatment to ensure reliable retention. Once the fit of the restoration is verified on the tooth the restoration is pre-treated. The prepared fitting surface of the edelweiss restoration should be coated with edelweiss VENEER Bond using an applicator tip/microbrush and rubbing it gently. The edelweiss VENEER BOND is gently dried using an oil and water free stream of air, so that a slightly moist layer remains on the inner surface of the edelweiss restoration without any pooling of the VENEER BOND. This is light cured for at least 20 seconds using a light curing device. If conventional resin cements are used ex. Calibra Ceram, replace the edelweiss VENEER Bond with the manufacturer's recommended bond ex. Prime&Bond Active.

Please note:

- i. edelweiss CAD/CAM BLOCKs do not require any additional firing process. Following the milling process, it simply needs to be polished and is ready for cementation process.
- ii. Etching the restoration with hydrofluoric acid is not recommended, as this step would dissolve the glass particles on the surface.
- iii. Silane should also not be used as this reduces bonding to the resin matrix.

### **HOW SHOULD THE TOOTH SURFACE BE PRETREATED PRIOR TO CEMENTATION?**

During adhesive luting/cementing protocol, thorough isolation of the operating field, preferably with a rubber dam or alternatively with cotton rolls and a saliva ejector should be obtained. The tooth surface should be cleaned using a polishing brush and an oil- and fluoride- free cleaning paste and rinsed with water spray. The area is lightly dried with water- and oil-free air and over-drying should be avoided. 37 % phosphoric acid gel is applied to the prepared enamel and then allowed to flow onto the prepared dentin. The etchant should be left to react on the enamel for 15–30 seconds and on the dentin for 10–15 seconds and rinsed thoroughly with water and gently dry with compressed air. Starting with the enamel, the tooth surfaces to be treated are coated with Dentin Bonding Agent/Adhesive. The adhesive must be gently scrubbed into the tooth surface for at least 20 seconds and light cured as per manufacturer's instructions.

### **CAN EDELWEISS CAD/CAM RESTORATIONS BE REPAIRED OR MODIFIED?**

edelweiss CAD/CAM restorations can be modified, characterized or repaired at any time without affecting the properties of the material. To achieve this, roughen the surface of the restoration using a diamond-coated rotary instrument. Bonding can be achieved by first coating the roughened surface with edelweiss VENEER BOND, lightly air dry, and light cure for 20 seconds. edelweiss COMPOSITE is then added to the defective portion to restore proper anatomy and light cured, following which final polish of the composite is obtained using rubber cups and/or linen buffs.

### **HOW MUST THE MILLED RESTORATION BE FINISHED?**

For finishing the restoration, appropriate grinding/finishing instruments are needed. Smooth out the attachment point of the block with fine-grain diamond burs paying particular attention to the proximal contacts. If necessary, carry out individual shape adjustments and smooth out the surface structure created by the CAD/CAM. Final polish is achieved using rubber cups/wheels and cotton/linen buffs.

### **HOW MUST THE COMPLETED RESTORATION BE FINISHED AND POLISHED?**

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

The interproximal areas need to be cleared of any excess cement with finishing strips then polished with polishing strips. The cervical areas are polished with silicone polishing cup, discs or points.

Final polishing is achieved effortlessly using cotton/linen buffs for a high gloss finish.

### **WHICH BURS ARE NEEDED TO PROCESS EDELWEISS CAD/CAM BLOCKS?**

Diamond burs are recommended during the milling process. To select the correct burs, it is suggested to refer to the device manufacturer's recommendation.

**SHOULD EDELWEISS CAD/CAM BLOCKS BE MILLED WET OR DRY?**

edelweiss recommends using a wet grinding/milling process to achieve best possible results.

**WHICH HARDWARE AND SOFTWARE CONDITIONS ARE REQUIRED FOR PROCESSING EDELWEISS BLOCKS?**

edelweiss CAD/CAM is available as a block 12 x 14 x 18 mm and is compatible with most CAD/CAM milling devices.

The block size and milling parameters are standard parameters and are available in all software settings of the CAD/CAM systems.

**HOW SHOULD EDELWEISS BLOCKS BE STORED?**

It is recommended for optimal performance, to be stored at room temperature away from direct sunlight and high humidity.



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