CAMouflage® NOW Milling Blocks

User Manual

GLIDEWELL DENTAL

CONTENTS

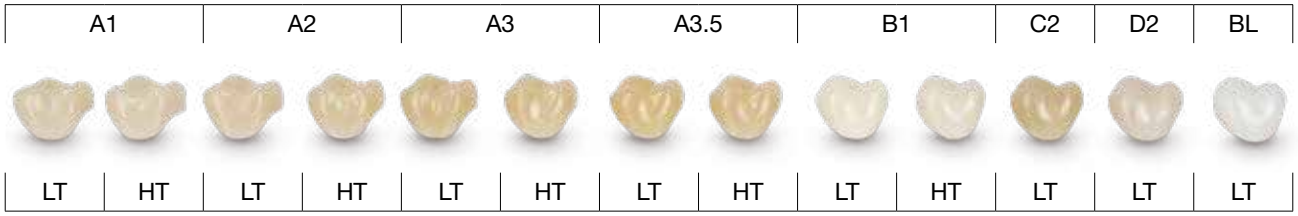
PRODUCT DESCRIPTION

The CAMouflage® NOW Milling Block is a ceramic-filled nanohybrid resin composite material that is designed for use as an indirect restorative for both anterior and posterior restorations, including occlusal surfaces. It is highly heat-cured and no firing is required.

The CAMouflage NOW Milling Block can produce a variety of temporary and permanent restorations with great esthetics, lifelike translucency and high strength, including inlays, onlays, veneers and full crown restorations.

CAMouflage NOW is available in eight VITA® classical shades, five of which are available in two translucencies:

- High Translucency (HT): A1, A2, A3, A3.5, B1
- Low Translucency (LT): A1, A2, A3, A3.5, B1, C2, D2, BL



The CAMouflage NOW Milling Blocks Starter Kit includes:

- CAMouflage NOW Milling Blocks
- Gluma® Desensitizer
- OptiBond™ XTR Primer
- OptiBond XTR Adhesive
- Maxcem Elite™ cement
- Micro brushes
- Automixing tips

CAMouflage NOW | Gluma Desensitizer | OptiBond XTR Primer | OptiBond XTR Adhesive | Maxcem Elite cement | Micro brushes | Automixing tips

The overall workflow/procedure for preparing a restoration using a CAMouflage NOW Milling Block is shown below *(Figure 1)*.

***Figure 1**: Overall workflow/procedure for preparing a restoration using a CAMouflage NOW Milling Block.*

INDICATIONS FOR USE

The CAMouflage NOW Milling Block is indicated as an indirect restorative for both anterior and posterior restorations, including occlusal surfaces. It is designed for fabricating temporary and permanent restorations such as inlays, onlays, veneers and full crown restorations.

CONTRAINDICATIONS

In rare cases this product may cause sensitivity. If such reaction is experienced, discontinue use of the product and consult a physician.

TECHNICAL DATA

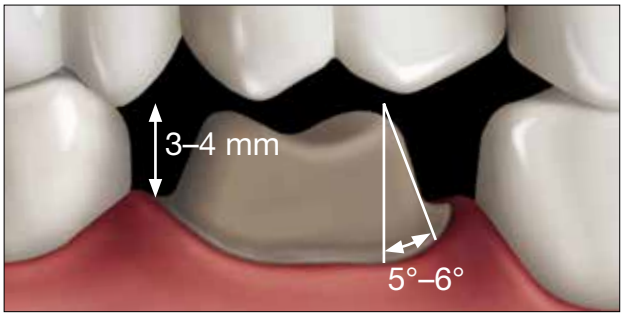
CAMouflage NOW Milling Blocks are composed of 100% cured dental restorative that conforms to applicable subsections of ISO 4049:2009 (“Polymer-based restorative materials”) and ISO 10477:2004 (“Polymer-based crown and bridge materials”).

MATERIALS NEEDED

a. CAMouflage NOW Milling Block
b. Gluma Desensitizer
c. OptiBond XTR Primer
d. OptiBond XTR Adhesive
e. Maxcem Elite cement
f. Micro brushes
g. Automixing tips
h. Fine diamond burs
i. Fine and extra-fine rubber polisher
j. MicroEtcher™
k. 50 µm alumina
l. 37% phosphoric acid (inlays/onlays, veneers only)
m. In-office milling machine
n. Ultrasonic cleaner
o. Light-curing unit (halogen lamp: ≥850 mw/cm^2; LED: ≥1100 mw/cm^2)

TOOTH PREPARATION GUIDELINES

- Preserve axial wall height; ≥3 mm preferred.
- For nonretentive preparations, employ retentive features (parallelism, boxes and grooves) in the cavity prep that allows it to retain restoration securely during function.
- Employ an established path of insertion.

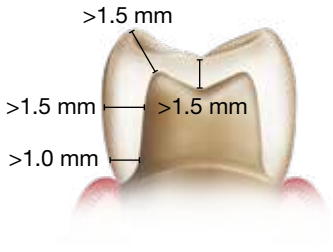


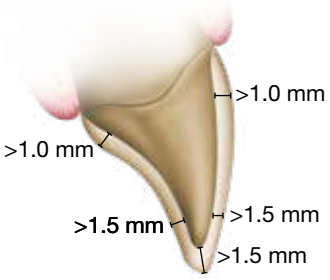
RESTORATION DESIGN GUIDELINES

The following minimum dimensions should be met:

Crowns

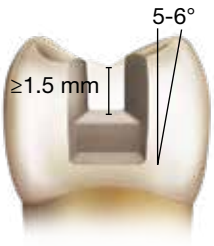
- Wall thickness should be at least 1.5 mm; 1.0 mm at margins.
- Prepare margins with a deep chamfer or a rounded shoulder.

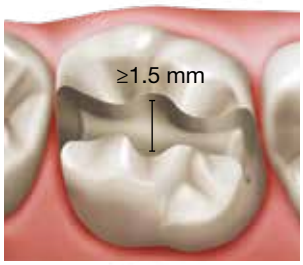


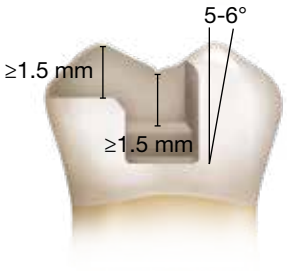


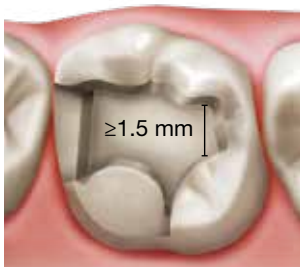
Inlays/Onlays

- Prepare cavity walls with tapered 5–6° to the long axis.
- Wall thickness should be ≥1.5 mm.
- Isthmus thickness should be ≥1.5 mm.



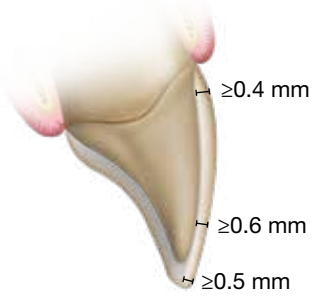


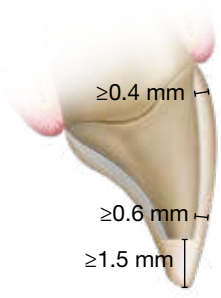




Veneers

- Standard reduction of labial surface is 0.6 mm; 0.4 mm at the gingival portion.
- Incisal thickness should be ≥1.5 mm.
- Prepare margins with a deep knife edge.





MILLING

Please follow the manufacturer's operating instructions specific to the CAM device for selecting a milling program.

- Select the milling program for **composite resin block materials**.
- Once milled, check the restoration for discolorations linked to the milling process, cracks or chips. If the restoration is defective, discontinue the manufacture of the restoration.

⚠ CAMouflage NOW is provided to the user in a highly cured state. This material should not be fired under any circumstances.

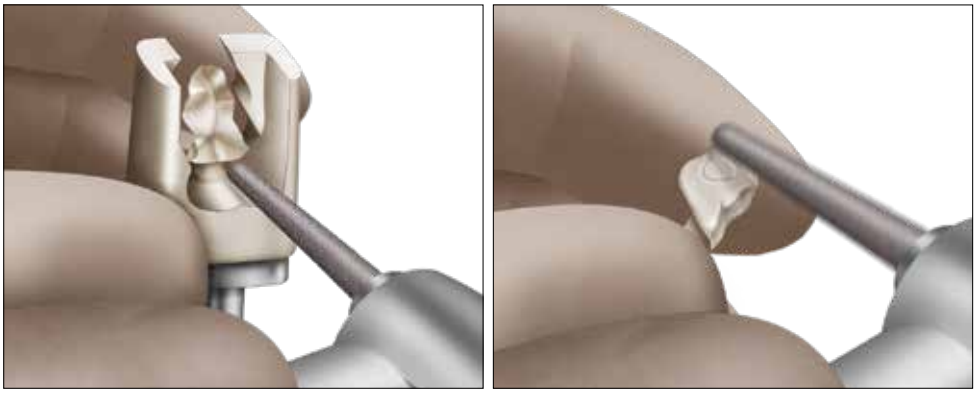
EXTRAORAL FINISHING AND POLISHING

⚠ Avoid inhaling dust. Use a dust vacuum and wear protective mask and glasses.

After milling, carefully remove the restoration from the still-attached block. Based on individual restoration requirements, finish the restoration using the suggested tools.

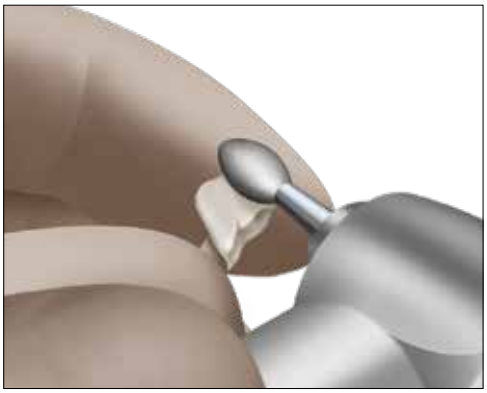
***Figure 2**: Finishing guidelines for CAMouflage NOW milled restorations.*

Table 1: Finishing guidelines for CAMouflage NOW milled restorations

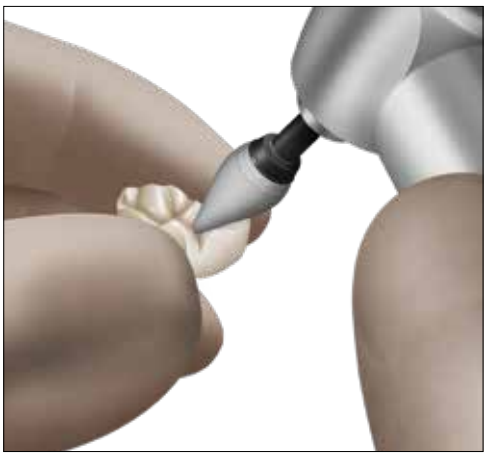
Step	Representative Pictures
1. **Sprue removal**: Use a fine diamond bur to finish the sprue area (preferably Meisinger Diamond Tapered Round End 852C).	
2. **Cleaning**: Clean using pressurized water with a 3-way syringe. Optional: Sonicate in water for 2 minutes. Use gentle air pressure to dry.	

3. **Trial fit**: Trial fit the restoration to the preparation and check proximal and occlusal contacts.

4. **Adjustments**: Adjust contacts and occlusion with a fine diamond bud bur (preferably Busch® Fine Diamond Football Bur). If necessary, define anatomy and remove distortions.

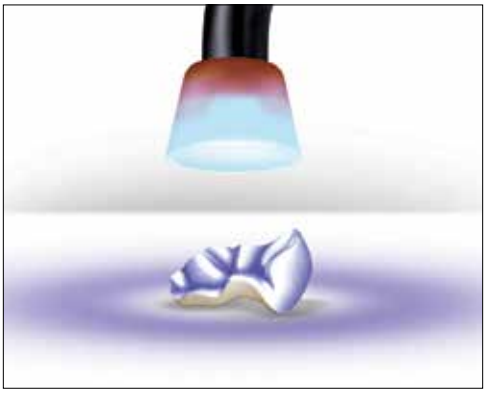


5. **Polishing**: To achieve a high gloss, use a fine and extra-fine rubber polisher (preferably Gazelle™ COMP-POINT 2).
   - Apply with a low-speed handpiece and polish with feather-light pressure.
   - Do not use polishing paste.



6. **Optional staining**: Stain/ characterize restorations with methacrylate-based, light-curable stains. Please follow the stain manufacturer's Instructions for Use.

7. **Optional glaze**: Apply a light-curable coating agent (preferably OPTIGLAZE™). Please follow the manufacturer's Instructions for Use.



PRETREATMENT AND CEMENTATION – CROWNS (ANTERIOR AND POSTERIOR)

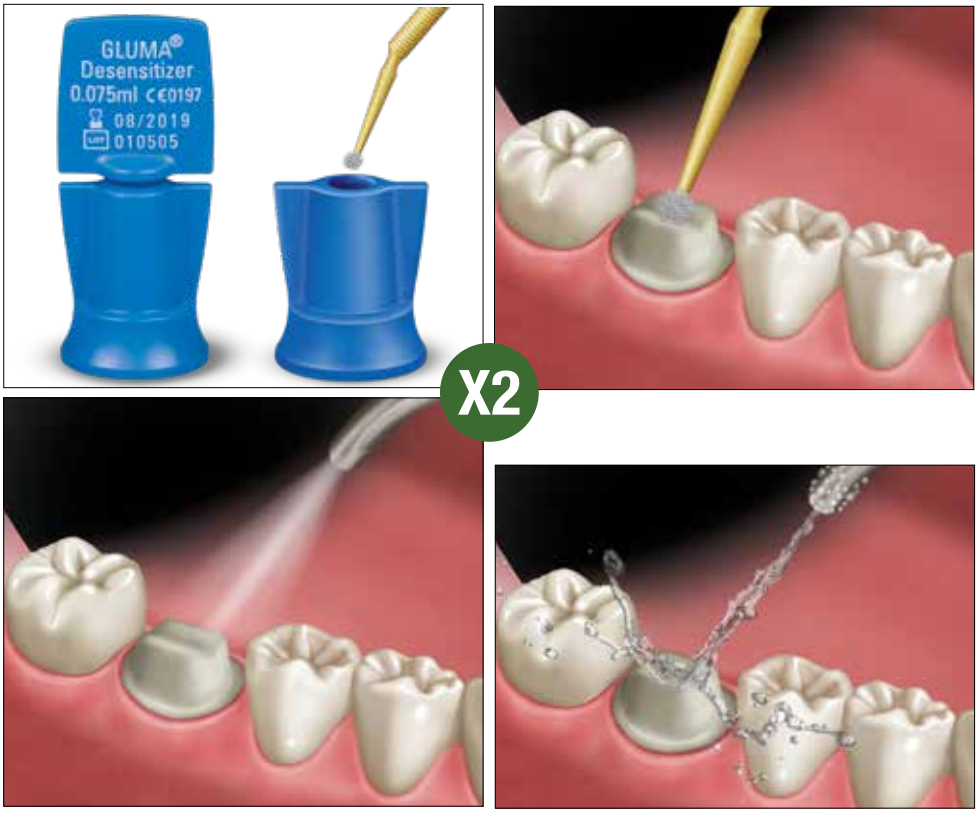
Pretreatment of Tooth

⚠ Do not mix applicator tips. Always use a fresh applicator tip and discard it after each application.

Protect mucous membranes by using a rubber dam.

Ensure Gluma does not contact soft tissue during application.

Table 2: Pretreatment of tooth for crowns (anterior and posterior)

Step	Representative Pictures
1. **Clean**: Remove loose preparation debris by spraying with water. Optional: Use pumice slurry. Clean the stump thoroughly, rinse with water, and lightly air dry.	
2. **Apply Gluma**: Using a new applicator, apply the smallest amount of Gluma needed for treatment to the dentinal surface and leave for 30–60 seconds. Dry the surface carefully by applying a stream of compressed air until the fluid film has disappeared and surface is no longer shiny. Discard the used applicator. Repeat the Gluma application, using a new applicator. When the fluid film has disappeared and the surface is no longer shiny, rinse thoroughly with water. See Gluma instructions for additional details.	

3. **Apply primer**: Using a new applicator, apply a coat of OptiBond XTR Primer with medium scrub pressure to enamel/dentin for 20 seconds.

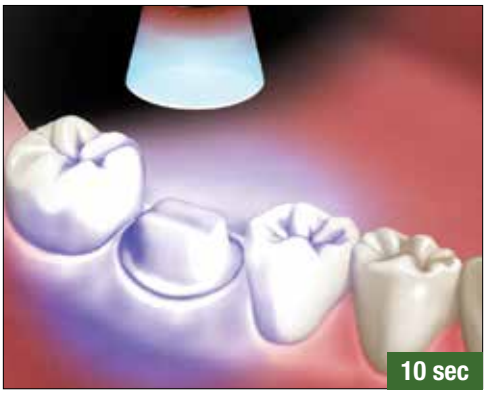
   Air thin with medium pressure for 5 seconds.

4. **Apply adhesive**: Shake the OptiBond XTR Adhesive. Using a new applicator, apply a coat with medium scrub pressure to enamel/dentin for 15 seconds.

   Air thin with gentle pressure followed by strong pressure for at least 5 seconds.

   Light cure for 10 seconds with minimum light intensities for the following curing units:

   - Halogen lamp: ≥850 mW/cm^2
   - LED: ≥1100 mW/cm^2

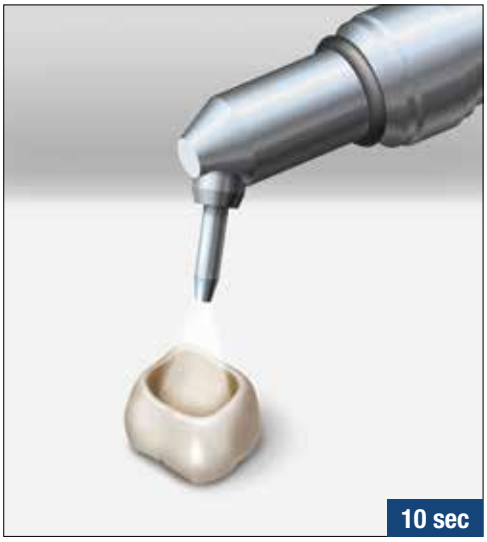
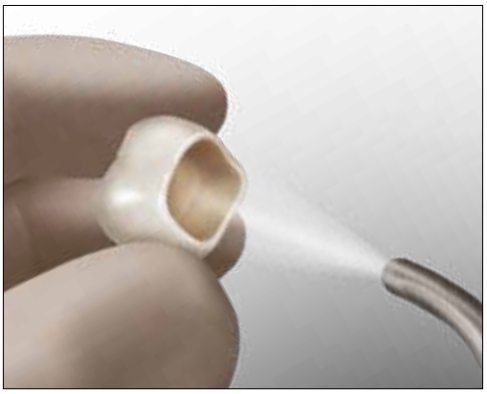


Pretreatment of Restoration

⚠ Do not mix applicator tips. Always use a fresh applicator tip and discard it after each application.

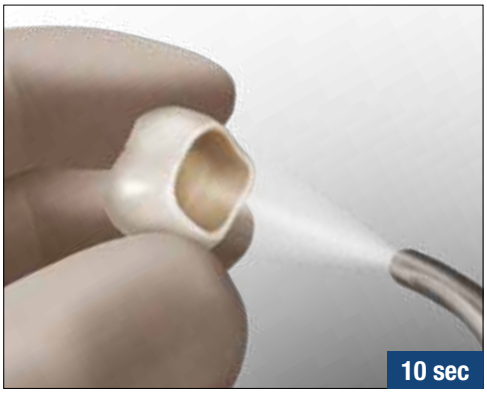
Ensure restoration has been thoroughly cleaned prior to pretreatment.

Table 3: Pretreatment of restoration for crowns (anterior and posterior)

Step	Representative Pictures
1. **Sandblast**: Sandblast using MicroEtcher with 50 µm alumina at 30–40 psi for 10 seconds.	
2. **Clean**: Clean using pressurized water with a 3-way syringe. Optional: Sonicate in water for 2 minutes. Thoroughly air dry.	 

3. **Apply adhesive**: Shake the Optibond XTR Adhesive. Using a new applicator, apply a coat to the internal surface.

4. **Air thin**: Air thin with gentle air pressure followed by strong air pressure for a total of 10 seconds. Discard the used applicator.



5. **Light cure**: Light cure for 10 seconds with minimum light intensities for the following curing units:

   • Halogen lamp: ≥850 mW/cm^2

   • LED: ≥1100 mW/cm^2

Cementation

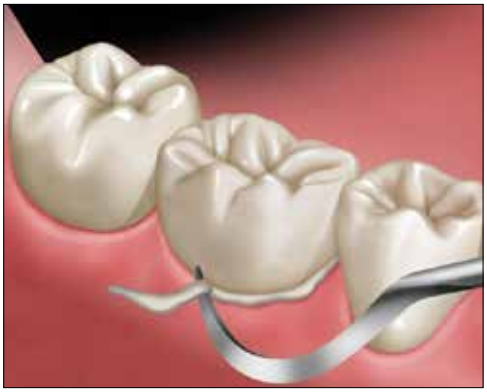
⚠ Avoid any kind of saliva or blood contamination for optimal bonding.

Table 4: Cementation of crowns

Step	Representative Pictures
1. **Prepare cement**: Remove the syringe cap of Maxcem Elite cement. Before the first use, bleed the syringe by dispensing a small quantity of the paste onto a pad to equalize the pastes. Secure the appropriate automix tip.	
2. **Apply cement**: Dispense a uniform layer of Maxcem Elite cement into the restoration.	

3. **Seat**: Seat the restoration and hold with moderate pressure to allow excess to flow. Maintain pressure during the cement setting period and complete **one** of the following:

    - Recommended method: Allow to self-cure for 2–3 minutes to achieve a gel state and then remove all excess cement around the margins. Proceed to step 4.
    - Tack cure for 2–3 seconds and then remove all excess cement around the margins. Proceed to step 4.



4. **Light cure**: Light cure all surfaces, including margins, for 10 seconds each.

    Allow the cement to set for a total of 4 minutes after seating of the restoration (steps 3 and 4).

PRETREATMENT AND CEMENTATION – INLAY AND ONLAY RESTORATIONS

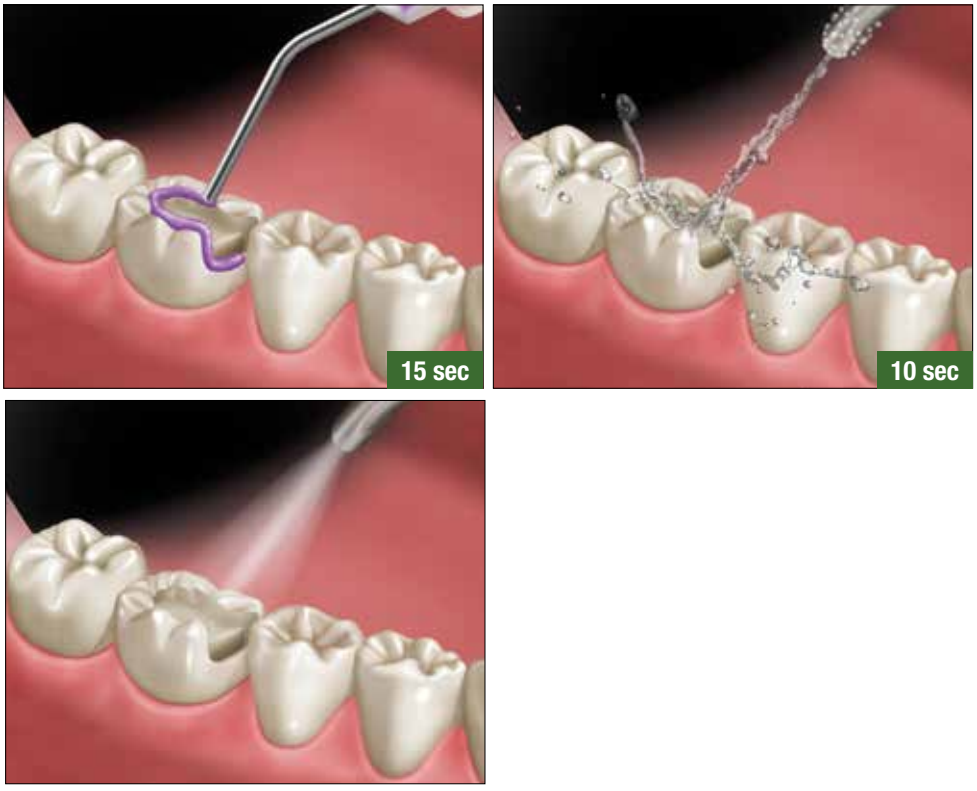
Pretreatment of Tooth

⚠ Do not mix applicator tips. Always use a fresh applicator tip and discard it after each application.

Protect mucous membranes by using a rubber dam.

Ensure Gluma does not contact soft tissue during application.

Table 5: Pretreatment of tooth for inlay and onlay restorations

Step	Representative Pictures
1. **Clean**: Remove loose preparation debris by spraying with water. Optional: Use pumice slurry. Clean the cavity thoroughly, rinse with water, and lightly air dry.	
2. **Etch**: Selectively etch enamel with 37% phosphoric acid[a] for 15 seconds with medium scrub pressure OR etch enamel and dentin for 15 seconds with medium scrub pressure. Rinse with water for 10 seconds. Lightly air dry or blot, and leave the tooth moist. [a] Protect mucous membranes with a rubber dam isolation.	

3. **Apply Gluma**: Using a new applicator, apply the smallest amount of Gluma needed for treatment to the dentinal surface and leave for 30–60 seconds. Dry the surface carefully by applying a stream of compressed air until the fluid film has disappeared and surface is no longer shiny. Discard the used applicator.

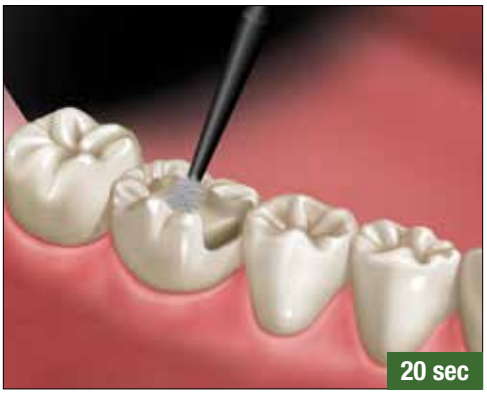
   Repeat the Gluma application, using a new applicator.

   When the fluid film has disappeared and the surface is no longer shiny, rinse thoroughly with water. See Gluma instructions for additional details.

X2

4. **Apply primer**: Using a new applicator, apply a coat of OptiBond XTR Primer with medium scrub pressure to enamel/dentin for 20 seconds.

   Air thin with medium pressure for 5 seconds.



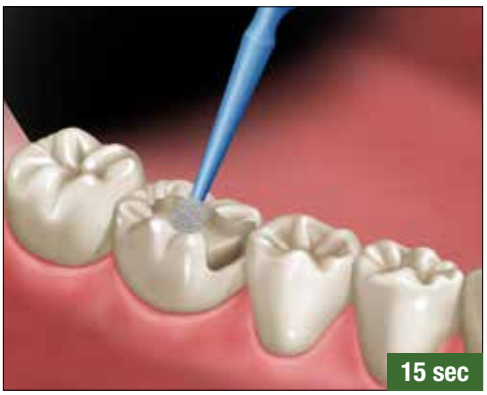
5. **Apply adhesive**: Shake the OptiBond XTR Adhesive.

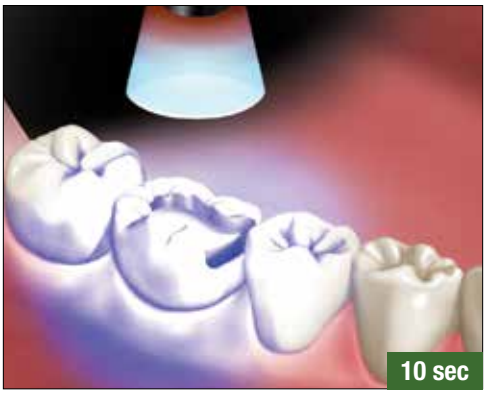
   Using a new applicator, apply a coat with medium scrub pressure to enamel/dentin for 15 seconds.

   Air thin with gentle pressure followed by strong pressure for at least 5 seconds.

   Light cure for 10 seconds with minimum light intensities for the following curing units:

   - Halogen lamp: ≥850 mW/cm^2
   - LED: ≥1100 mW/cm^2



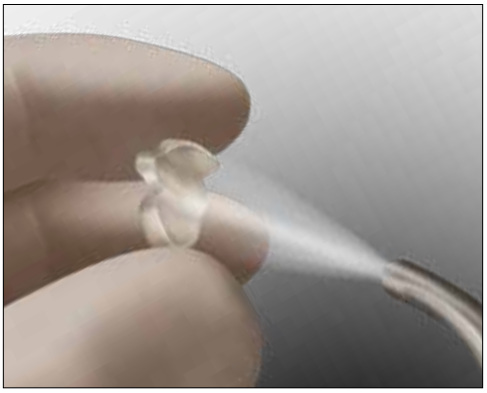


Pretreatment of Restoration

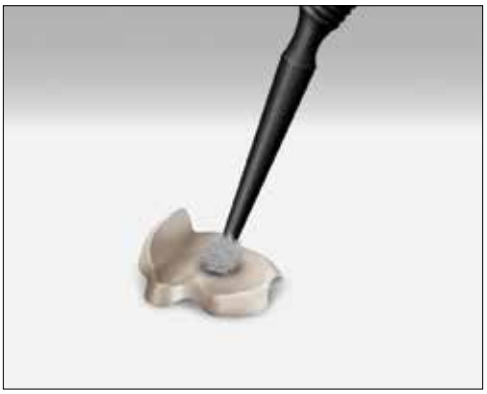
⚠ Do not mix applicator tips. Always use a fresh applicator tip and discard it after each application.

Ensure restoration has been thoroughly cleaned prior to pretreatment.

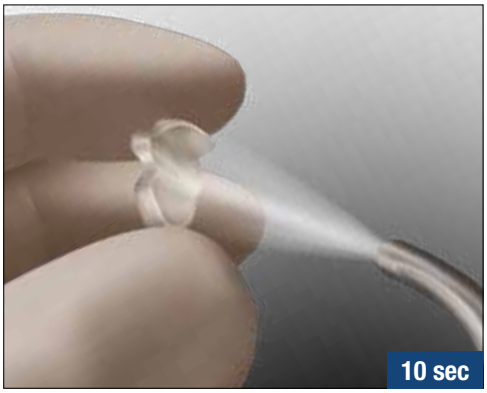
Table 6: Pretreatment of restoration for inlay and onlay (anterior and posterior)

Step	Representative Pictures
1. **Sandblast**: Sandblast using MicroEtcher with 50 µm alumina at 30–40 psi for 10 seconds.	
2. **Clean**: Clean using pressurized water with a 3-way syringe. Optional: Sonicate in water for 2 minutes. Thoroughly air dry.	 

3. **Apply adhesive**: Shake the OptiBond XTR Adhesive. Using a new applicator, apply a coat to the internal surface.



4. **Air thin**: Air thin with gentle air pressure followed by strong air pressure for a total of 10 seconds. Discard the used applicator.



5. **Light cure**: Light cure for 10 seconds with minimum light intensities for the following curing units:

   • Halogen lamp: ≥850 mW/cm²

   • LED: ≥1100 mW/cm²

Cementation

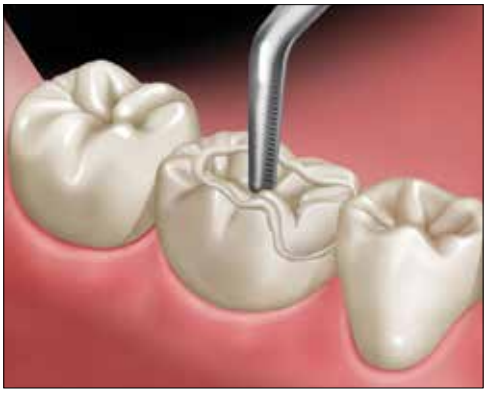
⚠ Avoid any kind of saliva or blood contamination for optimal bonding.

Table 7: Cementation for inlay and onlay restorations

Step	Representative Pictures
1. **Prepare cement**: Remove the syringe cap of Maxcem Elite cement. Before the first use, bleed the syringe by dispensing a small quantity of the paste onto a pad to equalize the pastes. Secure the appropriate automix tip.	
2. **Apply cement**: Dispense a uniform layer of Maxcem Elite cement into the restoration.	

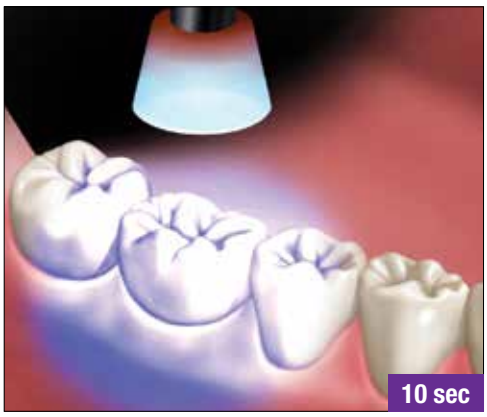
3. **Seat**: Seat the restoration and hold with moderate pressure to allow excess to flow. Maintain pressure during the cement setting period and complete **one** of the following:

    - Recommended method: Allow to self-cure for 2–3 minutes to achieve a gel state and then remove all excess cement around the margins. Proceed to step 4.
    - Tack cure for 2–3 seconds and then remove all excess cement around the margins. Proceed to step 4.



4. **Light cure**: Light cure all surfaces, including margins, for 10 seconds each.

    Allow the cement to set for a total of 4 minutes after seating of the restoration (steps 3 and 4).



PRETREATMENT AND CEMENTATION – VENEER RESTORATION

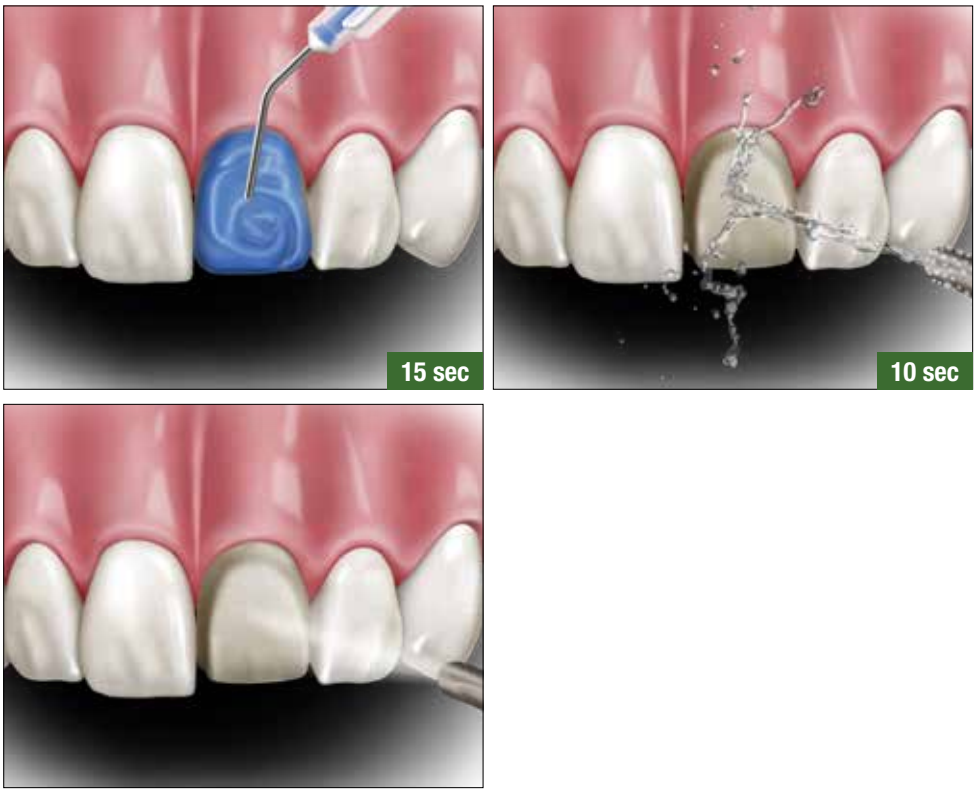
Pretreatment of Tooth

⚠ Do not mix applicator tips. Always use a fresh applicator tip and discard it after each application.

Protect mucous membranes by using a rubber dam.

Ensure Gluma does not contact soft tissue during application.

Table 8: Pretreatment of tooth for veneer restoration

Step	Representative Pictures
1. **Clean**: Remove loose preparation debris by spraying with water. Optional: Use pumice slurry. Clean the stump thoroughly, rinse with water, and lightly air dry.	
2. **Etch**: Etch tooth preparation with 37% phosphoric acid[a] for 15 seconds with medium scrub pressure. Rinse with water for 10 seconds. Lightly air dry or blot, and leave the tooth moist. [a] Protect mucous membranes with a rubber dam isolation.	

3. **Apply Gluma (required only if dentin is exposed; if not required, proceed to step 4)**: Using a new applicator, apply the smallest amount of Gluma needed for treatment to the dentinal surface and leave for 30–60 seconds. Dry the surface carefully by applying a stream of compressed air until the fluid film has disappeared and surface is no longer shiny. Discard the used applicator.

   Repeat the Gluma application, using a new applicator.

   When the fluid film has disappeared and the surface is no longer shiny, rinse thoroughly with water. See Gluma instructions for additional details.

X2

4. **Apply primer**: Using a new applicator, apply a coat of OptiBond XTR Primer with medium scrub pressure to enamel/dentin for 20 seconds.

   Air thin with medium pressure for 5 seconds.

5. **Apply adhesive**: Shake the OptiBond XTR Adhesive.

   Using a new applicator, apply a coat with medium scrub pressure to enamel/dentin for 15 seconds.

   Air thin with gentle pressure followed by strong pressure for at least 5 seconds.

   Light cure for 10 seconds with minimum light intensities for the following curing units:

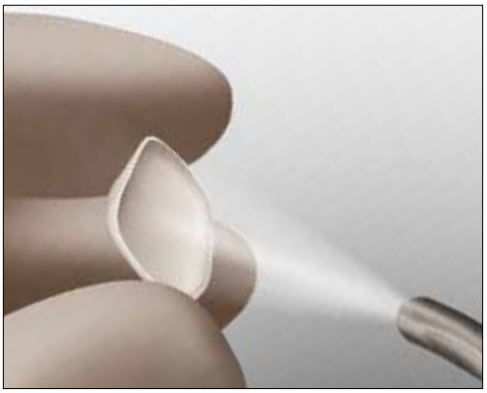
   - Halogen lamp: ≥850 mW/cm^2
   - LED: ≥1100 mW/cm^2

Pretreatment of Restoration

⚠ Do not mix applicator tips. Always use a fresh applicator tip and discard it after each application.

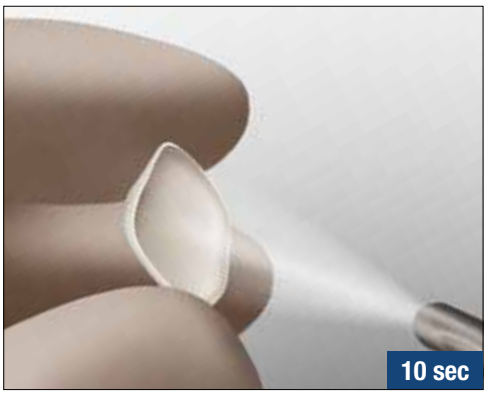
Ensure restoration has been thoroughly cleaned prior to pretreatment.

Table 9: Pretreatment of veneer restoration

Step	Representative Pictures
1. **Sandblast**: Sandblast using MicroEtcher with 50 µm alumina at 30–40 psi for 10 seconds.	
2. **Clean**: Clean using pressurized water with a 3-way syringe. Optional: Sonicate in water for 2 minutes. Thoroughly air dry.	 

3. **Apply adhesive**: Shake the OptiBond XTR Adhesive. Using a new applicator, apply a coat to the internal surface.

4. **Air thin**: Air thin with gentle air pressure followed by strong air pressure for a total of 10 seconds. Discard the used applicator.



5. **Light cure**: Light cure for 10 seconds with minimum light intensities for the following curing units:

   • Halogen lamp: ≥850 mW/cm^2

   • LED: ≥1100 mW/cm^2

Cementation

⚠ Avoid any kind of saliva or blood contamination for optimal bonding.

Table 10: Cementation of veneer restoration

Step	Representative Pictures
1. **Prepare cement**: Remove the syringe cap of Maxcem Elite cement. Before the first use, bleed the syringe by dispensing a small quantity of the paste onto a pad to equalize the pastes. Secure the appropriate automix tip.	
2. **Apply cement**: Dispense a uniform layer of Maxcem Elite cement into the restoration.	

3. **Seat**: Seat the restoration and hold with moderate pressure to allow excess to flow. Maintain pressure during the cement setting period and complete **one** of the following:

    - Recommended method: Allow to self-cure for 2–3 minutes to achieve a gel state and then remove all excess cement around the margins. Proceed to step 4.
    - Tack cure for 2–3 seconds and then remove all excess cement around the margins. Proceed to step 4.

4. **Light cure**: Light cure all surfaces, including margins, for 10 seconds each.

    Allow the cement to set for a total of 4 minutes after seating of the restoration (steps 3 and 4).

ADDITIONAL APPLICATION AND REPAIR

Camouflage NanoHybrid Composite is recommended for add-on or repair as it extends the resiliency of the restoration due to compatibility of both products and similar resin-ceramic hybrid technology. Please refer to respective Instructions for Use.

Precautions

- Do not inhale dust. Do not get dust into eyes or have prolonged contact directly with the skin. Personal protective equipment (PPE) such as gloves, masks and lab coat are recommended in order to avoid possible contact and irritation to skin or eyes during processing.
- Failure to follow preparation, bonding and cementation guidelines may lead to clinical failure.
- When cementing, secure the restoration with moderate pressure while cleaning excess cement.
- Allow cement to fully cure for a total of 4 minutes once the restoration has been seated. This avoids potential debonding.

Storage Requirements

CAMouflage NOW should be stored in proper storage conditions and away from dust and potential contamination sources. When not in use, store in original packaging.

Refrigerate contents upon receipt (4–8 °C/39–46 °F).

TECHNICAL FAQS

What are the benefits of CAMouflage NOW with the bonding kit?

CAMouflage NOW and the bonding kit has been developed based on rigorous testing for adequate preps to ensure a potential clinical success. When CAMouflage NOW and its bonding system was tested against industry competitors, the bonding strength results were compelling at both 24 hours and thermal aging test (projected 1 year in vivo) *(Figure 1)*.

Is sandblasting the intaglio surface of the restoration necessary?

Yes, it is important to sandblast the internal surface of the milled restoration using a MicroEtcher and 50 µm alumina at 30–40 psi.

Our studies have shown that sandblasting produces surfaces that have four times the irregularity of non-sandblasted surfaces. This is a crucial step for adhesion as it improves the adhesive property at the restoration-cement interface via micromechanical interlocking *(Figure 2)*.

How is Gluma Desensitizer beneficial for bonding?

Gluma improves the strength and durability of the dentin-restoration bond when it is incorporated into the recommended bonding procedure.

Gluma has been shown to maintain the crown retentive strength even after thermocycling equivalent of projected 1 year in vivo. In the absence of Gluma, the strength was decreased by about 50 percent *(Figure 3)*.

Why is the setting time of the cement important?

Maxcem Elite self-adhesive resin cement has a setting time of 4 to 5 minutes starting from the time it is seated in the oral environment. Allow Maxcem Elite to fully cure before making any intraoral adjustments.

Our studies have shown that cement tested demonstrates excellent fast-curing potential at 4 to 5 minutes for both self-cure and dual-cure modes *(Figure 4)*.

All data sourced by the Research and Development department at Glidewell Dental.

Figure 1

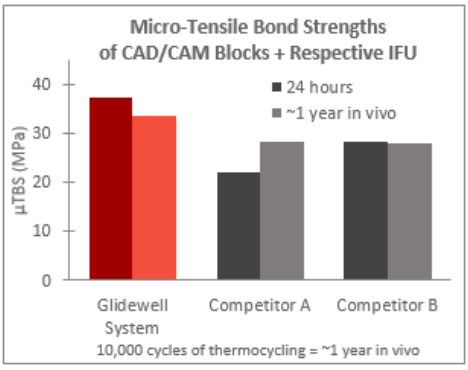


Figure 2

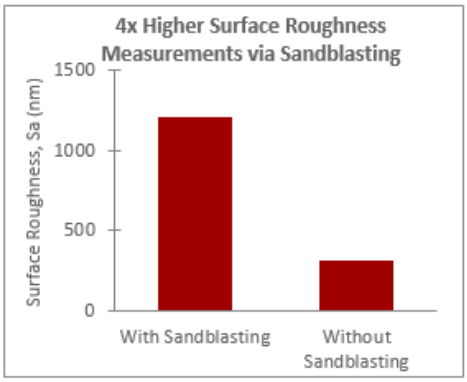


Figure 3

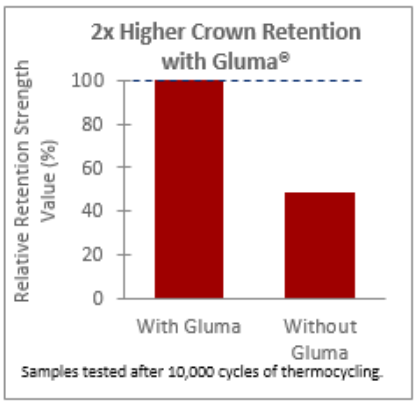
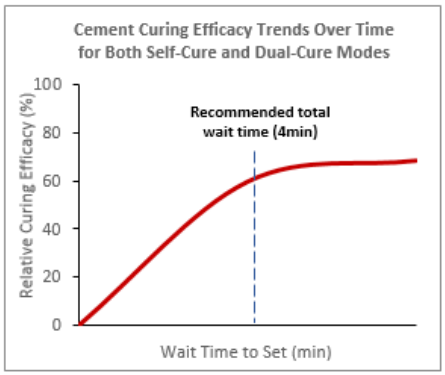


Figure 4



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Nejat A, Lee J, Shah S, Chavali R, Lin CP, Kulkarni P, Lawson NC. “Retention of CAD/CAM Resin Composite Crowns Following Different Bonding Protocols.” Am J Dent; 2018 Apr;31(2):97-102.

FURTHER READING

- Rother L, Contreras R, Nguyen E, Lee J, Shah S. “Surface Treatment Effects on Microtensile Bond Strength of CAD/CAM Block.” Annual Conference of International Association for Dental Research; March 22–25, 2017; San Francisco, CA (Oral Presentation).
- Contreras R, Rother L, Nguyen E, Lee J. “Is HF Etching an Alternative to Sandblasting in CAD/CAM Resin-Composites?” Annual Conference of International Association for Dental Research; March 22–25, 2017; San Francisco, CA (Oral Presentation).
- Rother L, Lee J, Contreras R, Nguyen E. “Vickers Hardness Comparison of Cements Under Self Cure and Light-Cure Polymerization.” Annual Conference of International Association for Dental Research; March 22–25, 2017; San Francisco, CA (Poster Presentation).
- Shah S, Rother L, Nguyen E, Contreras R, Lee J, Akash A. “Evaluation of Crown Retention of CAD/CAM Ceramic-Polymer Composite Block.” Annual Conference of International Association for Dental Research; March 22–25, 2017; San Francisco, CA (Poster Presentation).
- Amir. N, Kulkarni PS, Lamba S, Chavali R, Burgess J, Lawson NC. “Crown Retention of CAD/CAM Hybrid Resin Ceramic Following Various Surface Treatments.” Annual Conference of International Association for Dental Research; March 22–25, 2017; San Francisco, CA (Poster Presentation).

Note: To request the SDS or User Manual for this product, call Glidewell Direct at 888-303-3975.

Symbols											
	Manufacturer		Caution		Non sterile		Catalogue number		Storage temperature range		Use by date
	By prescription only		Consult instructions for use		Lot number		Do not reuse		Keep away from sunlight		


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