CERAMAGE UP

Light-Curing Flowable Composite for Crowns & Bridges, Inlays and Veneers

INSTRUCTIONS FOR USE

SHOFU INC.

As a manufacturer of direct and indirect filling as well as crown & bridge composites, SHOFU sets new standards for light-curing hybrid composites, which fulfill the clinical demands of dentists, dental technicians and patients in physical and aesthetic respect with optimal satisfaction.

The acquired knowledge and many years of experience led to the development of new materials, which combine the advantages of ceramic and composite – CERAMAGE UP.

Presented in a dispenser, the new flowable light-curing hybrid composite enables a free layering application for high-quality aesthetic veneerings on metal frameworks and non metal restorations. CERAMAGE UP has outstanding physical properties, allowing accurate shade reproduction, even where space is limited.

Due to its thixotropic properties, CERAMAGE UP flows bubble-free when applied from the dispenser and features excellent build-up and modeling characteristics. While providing substantial material savings the flowable composite can be processed quickly and accurately.

Moreover, CERAMAGE UP has a high abrasion resistance and elasticity, a tooth-like reflection index, translucency and opalescence.

CERAMAGE UP is indicated for a wide range of clinical applications, including aesthetic anterior and molar telescopic and implant superstructures that require long term durability.

Note:

Please read these instructions carefully before use to attain maximum benefits of the CERAMAGE UP system. Keep this manual at hand for your future reference!

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1. Notes on Use

1-1. Precautions

- Do not use this product on patients with known allergies to this material and/or methacrylate monomer.
- Operators with known allergies to this material and/or methacrylate monomer must not use this product.
- If any inflammation or other allergic reactions occur on either the patient or operator, immediately discontinue use and seek medical advice.
- Do not use this product on patients with malocclusion and bruxism (clenching, grinding and tapping).
- Do not handle unpolymerized material with bare hands. Use protective plastic gloves and glasses to avoid sensitization to this product. Avoid contact of this material with skin and eyes. In case of accidental contact with skin, immediately blot with alcohol moistened cotton ball and rinse with plenty of water. In case of contact with eyes, immediately flush the eyes with plenty of water and seek medical advice.
- Use local dust extractor, dust protective mask, etc. while grinding this product to avoid harmful influence of the dust on the human body.
- Give the patient proper instructions for daily cleaning to avoid getting stained or plaque adhesion.
- This product is intended for use by dental professionals only.

1-2. Hazard warnings

- Pre-Opaque (UNIVERSAL OPAQUE), Opaque (UNIVERSAL OPAQUE) contains UDMA
- CERAMAGE UP flowable composite contains UDMA
- M.L. Primer contains acetone
- CERAMAGE SEP contains ethanol
- CERAMAGE SPACER contains natural rubber latex

1-3. Notes on use

- Store in a dark place at room temperature (1-25°C / 34-77°F). Avoid high humidity and keep away from direct sunlight and any source of ignition.
- Use separate brushes for Pre-Opaque (UNIVERSAL OPAQUE) and Opaque (UNIVERSAL OPAQUE). After application, clean the brush with alcohol or ethanol.
- Don't apply surface lustering or glazing agents to the surface of the CERAMAGE UP restoration.
- When using CERAMAGE UP for intraoral repair, dispense adequate amount of the material onto a paper pad and apply with a suitable instrument.
- Average light-curing time for intraoral repair with CERAMAGE UP

Dental light-curing unit	Halogen light-curing unit	LED light-curing unit
Light-curing time	40 sec.	20 sec.

- When using a hand-held light-curing unit, operators must use protective glasses or light shielding plate to avoid looking directly at the curing light. Operators must also protect patients' eyes from direct exposure to the curing light.
- After using intraorally, disinfect the hand-held light-curing unit with alcohol to avoid cross-contamination.
- Follow the instructions for use of each dental material, instrument or equipment to be used in conjunction with this product.
- Tightly close the cap immediately after each use.
- The paste dispensed onto the dish or paper pad should be shielded from ambient light by light-shielding cover to avoid unintended polymerization of the material.
- Do not mix CERAMAGE UP with other materials including CERAMAGE to avoid degradation of the performance of this material and entrapping air bubbles.
- Do not use this product in places with intense light such as close to a window or under the work light to avoid unintended polymerization of the paste.
- Do not use this product for any purposes other than specifically outlined in the Indications in these instructions for use.
- Use this product within the expiration date indicated on the package and container.

  (Example YYYY-XX→Shelf life: at the end of XX month, YYYY year)

1. Notes on Use

1-4. Cleaning Information

- Avoid cleaning with ultrasonic cleaning liquid, because they are highly aggressive. The composite surface may begin to dissolve if the liquid is used inappropriately. Therefore, alkaline cleaning agents with a pH higher than 8 should not be used.

2. System components

2-1. Indications

- Veneering of metal-supported crown and bridgeworks
- Veneering of telescopic combination dentures
- Veneering of fixed and removable implant superstructures
- Veneering of gingival areas of fixed and removable implant superstructures
- Veneering of CAD/ CAM fabricated metal and hybrid ceramic frameworks
- Anterior and posterior metal free crowns
- Inlays, onlays and veneers
- Indirect and direct repairs of crown restorations and defects in prosthetic restorations

2-2. Characteristics

- CERAMAGE UP is an easy to apply flowable hybrid composite in a dispenser
- Free layering technique for material and time saving application
- Accurate reproduction of the natural tooth shade, even where space is limited
- Wide color range of translucent and opalescent flowable composites, effect and gingival masses
- Its abrasion resistance ensures molars are protected from the opposing dentition
- In combination with M.L. Primer and UNIVERSAL OPAQUE a strong bond to any type of metal including precious alloys is produced

2-3. Components and shades

Pre-Opaque (SHOFU UNIVERSAL OPAQUE) (1 shade, 2 mL)	
Opaque (SHOFU UNIVERSAL OPAQUE) (28 shades, 2 mL)	
	WO, W2O, W3O, A1O, A2O, A3O, A3.5O, A4O, B1O, B2O, B3O, B4O, C1O, C2O, C3O, C4O, D2O, D3O, D4O, rootAO, MO, BGO, GO, InO, VpO, VrO, PO, GUM-O
CERAMAGE UP flowable composites for Crowns and Bridges (74 shades, 5 g)	
Cervical (8 shades)	AC1, AC2, BC1, BC2, CC1, CC2, DC1, DC2
Opaque Dentin (17 shades)	ODA1, ODA2, ODA3, ODA3.5, ODA4, ODrootA, ODB1, ODB2, ODB3, ODB4, ODC1, ODC2, ODC3, ODC4, ODD2, ODD3, ODD4
Body (21 shades)	W0B, W1B, W2B, W3B, A1B, A2B, A3B, A3.5B, A4B, rootAB, B1B, B2B, B3B, B4B, C1B, C2B, C3B, C4B, D2B, D3B, D4B
Incisal (5 shades)	56, 57, 58, 59, 60
Translucent (8 shades)	T, HVT, LVT, T-Glass, BG, GT, CT-A, CT-B
Concentrate (5 shades)	MY, WE, OC, AM-Y, W
GUM (10 shades)	GUM-L, GUM-D, GUM-Or, GUM-Br, GUM-V, GUM-R, GUM-DP, GUM-LP, GUM-P, GUM-T

2. System components

2-4. Components / Accessories

M.L. Primer (1 bottle / 5 mL)

- Metal Primer for stronger bond between the metal frameworks and UNIVERSAL OPAQUE
- Improved bond when applied to the surface of precious alloys, semi precious alloys and non-precious alloys

PRE-OPAQUE (SHOFU UNIVERSAL OPAQUE) (1 shade / 2 mL)

- Paste Opaque for the first layer when veneering on metal frameworks
- Highly flowable, flows easily even into small areas of retainers. Higher depth of cure ensures full light curing and a strong bond to the alloy.

OPAQUE(SHOFU UNIVERSAL OPAQUE) (28 shades / 2 mL)

Paste Opaque for masking the metal framework and abutment teeth of jacket crowns. In addition to basic shades following special colors are available:

- **MO (Margin Opaque)**
  Applied after Pre-Opaque in widths of 1mm around the cervical margins for masking unwanted shadows of the alloy
- **BGO (Blue-Gray Opaque, Incisal Opaque)**
  For blue-gray characterization by mixing with UNIVERSAL OPAQUE
- **GO (Gray Opaque)**
  For transparent areas and for adjusting the brightness of the UNIVERSAL OPAQUE
- **InO (Incisal Opaque)**
  For gray characterization by mixing with UNIVERSAL OPAQUE
- **VrO (Value Reduce Opaque)**
  For reducing the value (brightness) of the UNIVERSAL OPAQUES
- **VpO (Value Plus Opaque)**
  For increasing the value (brightness) of the UNIVERSAL OPAQUES
- **WO (White Opaque)**
  For adjusting the brightness of the UNIVERSAL OPAQUES
- **GUM-O (Gum Opaque, dark pink)**
  For coloring and preparing the framework for GUM colors
- **PO (Pink Opaque, light pink)**
  For coloring and preparing the framework for GUM colors

CERAMAGE UP Flowable Composite

- **CERVICAL (8 shades / 5g)**
  For reproducing cervical shades
- **OPAQUE DENTIN (17 Shades / 5g)**
  - Highly opacious dentine shade
  - For reproducing the dentin shade at thin layered dentine areas
- **BODY (21 shades / 5g)**
  For reproducing dentine shades
- **INCISAL(5 shades / 5g)**
  For reproducing enamel shades
- **TRANSLUCENT (8 shades / 5g)**
  - **T (Translucent)**
    For reproducing translucent shades
  - **HVT (High-Value Translucent)**
    For reproducing bluish translucent shades with higher brightess
  - **LVT (Low-Value Translucent)**
    For reproducing grayish translucent shades with lower brightness

The translucent level is LVT > T > HVT

- **T-Glass**
  For reproducing glass clear translucent shades (maximum translucency)
- **BG (Blue Glass)**
  Light blue T-Glass
- **GT (Gray Trans)**
  Gray translucent effect shade
- **CT (Cervical Trans)**
  Translucent effect shade for cervical areas
  - **CT-A**
    For A-shade range (orange tone)
  - **CT-B**
    For B-shade range (yellow tone)

• CONCENTRATE (5 shades / 5 g)

- **WE (White Enamel)**
  Slightly whitish translucent enamel effect shade for occlusal ridges and proximal areas of anterior teeth
- **OC (Occlusal)**
  Slightly less translucent enamel shade for occlusal surfaces on molars or proximal areas (anterior / posterior)

The opacity level is WE > OC

- **AM-Y (Amber Yellow)**
  For reproduction of translucent amber enamel effects
- **MY (Mamelon Yellow)**
  For reproduction of yellowish mamelon effects by mixing with Body shades
- **W (White)**
  For reproduction of whitish effects by mixing with Body or Incisal shades
- **GUM (10 shades / 5 g)**
  For reproduction of gingival shades
  - **GUM-L**
    Gum Light (light color)
  - **GUM-D**
    Gum Dark (dark color)
  - **GUM-Or**
    Gum Orange (orange color)
  - **GUM-Br**
    Gum Brown
  - **GUM-V**
    Gum Violet
  - **GUM-R**
    Gum Red
  - **GUM-DP**
    Gum Dark Pink
  - **GUM-LP**
    Gum Light Pink
  - **GUM-P**
    Gum Pink
  - **GUM-T**
    Gum Translucent

• ACCESSORIES

- **UNIVERSAL OXY-BARRIER (1 jar / 10 g)**
  Creates an air barrier to guarantee a complete polymerization of the composite and avoid an inhibition layer.
- **PRO-PAD (2 x 30 sheets)**
  Two colored paper pad for the optional use of composites and light curing stains on a black or white area. The black area creates more contrast and extends the working time of the composites.
- **CERAMAGE UP TIPS + Caps (50 pcs.)**
  Tips for using with special CERAMAGE UP dispenser.
- **CERAMAGE SEP (1 bottle / 7 mL)**
  Separating Liquid for isolation between plaster and CERAMAGE UP. Used when fabricating metal free crowns, inlays, onlays and veneers.
- **CERAMAGE SPACER (1 bottle / 7 mL)**
  Spacer for plaster models to form a silicone-like layer and ensure space for cement between metal free restorations, such as metal free crowns, inlays / onlays and veneers to the prepared tooth.
- **Ceramage Finishing & Polishing Kit (1 set)**
  Well matched instrument kit for systematically contouring and finishing of CERAMAGE UP and other micro filled hybrid composites.
- **DURA-POLISH (1 jar / 20 g)**
  Aluminum oxide impregnated (73% by weight) polishing paste for pre-polishing of CERAMAGE UP and other micro filled hybrid composites.
- **DURA-POLISH DIA (1 jar / 5 g)**
  Diamond impregnated (67% by weight) polishing paste for high gloss polishing of CERAMAGE UP and other micro filled hybrid composites after using DURA-POLISH
- **UNI BRUSH No.4**
- **UNI BRUSH No.5**

2. System components

2-5. Shade charts

1. Basic Shade Composition										
Shade	A1	A2	A3	A3.5	A4	root A	B1	B2	B3	B4
Opaque	A1O	A2O	A3O	A3.5O	A4O	rootAO	B1O	B2O	B3O	B4O
Cervical	-	AC1		AC2		-	-	BC1		BC2
Opaque Dentin	ODA1	ODA2	ODA3	ODA3.5	ODA4	ODrootA	ODB1	ODB2	ODB3	ODB4
Body	A1B	A2B	A3B	A3.5B	A4B	rootAB	B1B	B2B	B3B	B4B
Incisal	58		59		60	60	57	58	59	60

Shade	C1	C2	C3	C4	D2	D3	D4
Opaque	C1O	C2O	C3O	C4O	D2O	D3O	D4O
Cervical	-	CC1		CC2	DC1		DC2
Opaque Dentin	ODC1	ODC2	ODC3	ODC4	ODD2	ODD3	ODD4
Body	C1B	C2B	C3B	C4B	D2B	D3B	D4B
Incisal	58	59		60	59	60	59

2. Whitening Shade Composition				
Shade	W0	W1	W2	W3
Opaque	WO		W2O	W3O
Body	W0B	W1B	W2B	W3B
Incisal	56			57

The supplementing four Whitening colors and root-A color form a meaningful extension of the “classical” color range.
Root A (intensive A) has higher chroma than the color A4.

2-6. LITE ART Stains

For individual characterization of the CERAMAGE UP restorations the ready to use LITE ART stains are recommended. LITE ART light curing stains are designed to recreate the color and shade characteristics easily. In a very simple way the reproduction of every natural tooth characteristic can be created with a vital appearance during the build-up of CERAMAGE UP.

Natural individualization with LITE ART light curing stains during the build-up

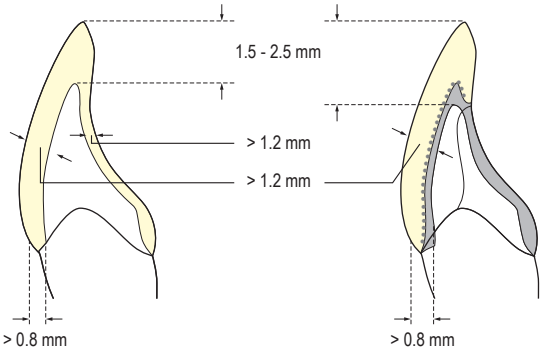
3. Application

3-1. Layering diagram

Guidelines for the minimum thickness of the abutment tooth

Anterior

	Metal free Crown	Faced Crown
Cervical	> 0.8 mm	> 0.8 mm
Labial Surface	> 1.2 mm	> 1.2 mm
Lingual Surface	> 1.2 mm	-
Incisal Edge Height	1.5 - 2.5 mm	1.5 - 2.5 mm
Others	The margins should be contoured with a round or deep chamfer.	The metal thickness should be > 0.3 mm. The labial margin should be contoured with a shoulder or rounded shoulder. The proximal and lingual area should be contoured with a deep chamfer.



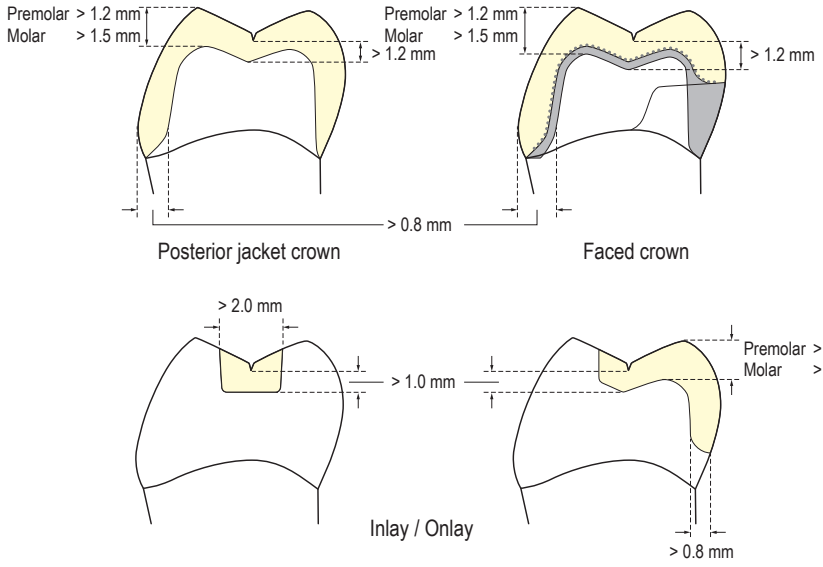
Anterior jacket crown

Anterior faced crown

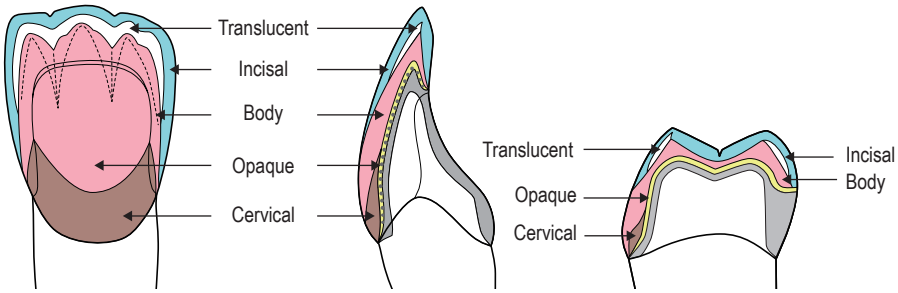
3. Application

Posterior

	Metal free Crown	Faced Crown	Inlay / Onlay
Cervical	> 0.8 mm	> 0.8 mm	> 0.8 mm
Pits & Fissures	> 1.2 mm	> 1.2 mm	> 1.0 mm
Tooth Cusp	Premolar > 1.2 mm Molar > 1.5 mm	Premolar > 1.2 mm Molar > 1.5 mm	Premolar > 1.2 mm Molar > 1.5 mm
Width of occlusal surface	-	-	> 2 mm
Bevel	-	-	-
Others	The margins should be contoured with a round or deep chamfer.	The margins should be contoured with a shoulder or round shoulder. The metal thickness should be > 0.3 mm.	The margins should be contoured with a deep chamfer. The cavity margin should not be bevelled. A box preparation should be used for the cavity. The edges of the cavity should be rounded. The cavity margins should be prepared away from the contact areas of the opposing dentition.



3-2. Layering technique for metal-supported restorations



1. Pre-Treatments

- The design of the wax framework is made according to the generally accepted guidelines. In order to obtain the correct shade with sufficient stability, the thickness of the veneer should be at least 1.0 mm. Then, apply retention beads of 150 µm.
- After casting adjust the metal framework and create a tapered chamfer design at the cervical area and polish the parts which are not veneered.
- The surface of the veneer area requires a blasting with aluminum oxide Al_2O_3 (50-100 µm) with a pressure of 2-3 bar.
- After sandblasting clean with steam cleaner or ultrasonic cleaner.

2. Conditioning of the framework with M.L. Primer

Dispense 1-2 drops of M.L. Primer on a dish and apply a thin layer M.L. Primer with UNI BRUSH No.5 on the surface where Opaque (UNIVERSAL OPAQUE) is to be applied. Dry for 10 seconds and apply the first layer of Pre-Opaque (UNIVERSAL OPAQUE).

Framework after cleaning and drying

Application of M.L Primer with UNI BRUSH No.5

Note: M.L. Primer contains solvents, close the cap tightly immediately after use. Dispensed liquid should be used immediately.
After applying M.L. Primer, clean the brush with alcohol. The brush should not be cleaned with self curing resin liquid.

3. Application

3. Application and light-curing of Universal Pre-Opaque

The special polymerization characteristics and viscosity of Pre-Opaque (UNIVERSAL OPAQUE) enables it to cure completely even in undercuts and ensure secure bonding. Apply Pre-Opaque (UNIVERSAL OPAQUE) in the undercuts of the retentions beads using a UNI BRUSH No. 4 and light-cure for 1 minute with the Solidilite V light-curing unit. Ensure that Universal Pre-Opaque flows completely into these areas.

Apply Universal Pre-Opaque 10 seconds after M.L. Primer

Cover the framework evenly in a thin layer

Cure for 1 minute with Solidilite V

4. Application and light-curing of Universal Opaque

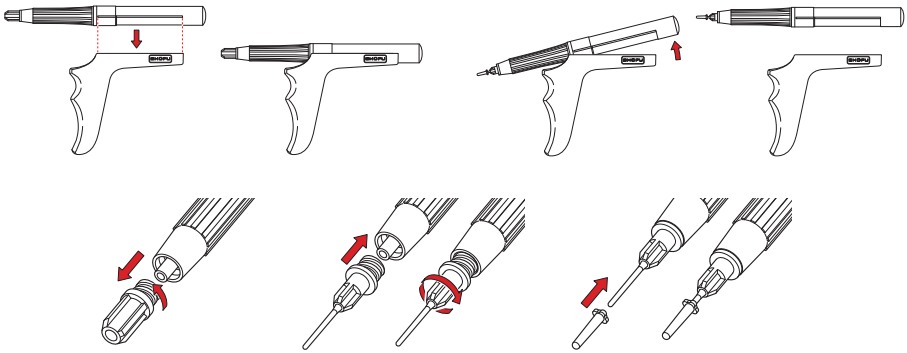
The first thin masking layer of Opaque (UNIVERSAL OPAQUE) creates a good masking effect. Apply the first Opaque layer uniformly with a brush and light-cure for 3 minutes with Solidilite V. After the application of the second layer the framework is uniformly masked in the desired shade. Light-cure the second Opaque again for 3 minutes with Solidilite V.

First application of first Universal Opaque

With the second Opaque layer the framework is uniformly masked

5. Mounting of handle and tips on the dispenser

CERAMAGE UP is supplied in a ready to use dispenser with a tip. The system also contains handles which make a free layering technique possible.



Attach Nozzle Tip securely

After dispansing, cap with the Nozzle Cap securely

Note: Due to the viscosity of CERAMAGE UP, it's possible to apply the single composite in a free build up technique directly out of the dispenser. The layering technique is carried out in accordance with porcelain restorations, building up in the order of Cervical, Body Translucent and Incisal. It's recommended to build up the veneer segment by segment (tooth by tooth) and to separate them during the build-up.

6. Application and light-curing of Cervical

Cervical composites are highly chromatic and reproduce cervical shade even in thin layers. The maximum thickness of each individual layer should not exceed 1 mm. Dispense Cervical composite by turning the dispenser sleeve clockwise to apply from the marginal area of the restoration towards to the centre in a half moon shape and intermediate cure (fixation) for 5-20 seconds with Sublite V. Continue towards the proximal area and pre-cure for 1 minute with Solidilite V.

Apply Cervical composite directly from the dispenser to the cervical area

Continue proximal and / or palatal area

The composite can be smoothed with a brush before pre-curing

3. Application

7. Application and light-curing of Body

Build up Body composite step by step with the dispenser corresponding to the anatomical body shape of the natural tooth. Fix the buildup for 5-20 seconds with Sublite V. Design the dentin in a way that mamelon shape remains outlined.
Make sure to provide adequate space for the subsequent application of translucent and incisal materials and cure for 1 minute with Solidilite V.

Apply Body composite and fix the build up

Continue step by step directly with the dispendser or brush

Design the dentin anatomically

8. Application and light-curing of Translucent and Incisal

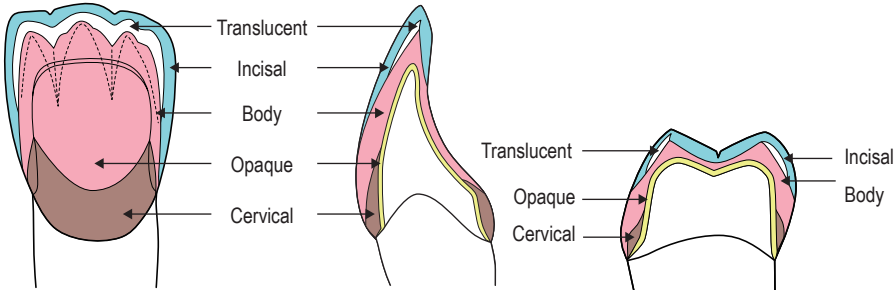
Apply translucent composite e.g. HVT for standard layering as intermediate layer to the incisal / interproximal area and fix for 5-20 seconds with Sublite V. Then, complete the build up with incisal composite and fix for 5-20 seconds with Sublite V. After the layering procedure has been completed, apply UNIVERSAL OXY-BARRIER gel on the entire veneering surface and light-cure for 3 minutes with Solidilite V.

Apply translucent composite HVT to incisal and interproximal areas

Complete the build up with incisal composite

Final build up before final curing

3-3. Layering technique for metal free crowns



1. Pre-Treatments

- Fabricate the model with removable segments in a usual manner.
- Expose and mark the preparation margins.
- Ensure that the restoration can be removed after polymerization process without damaging the die.

2. Application of CERAMAGE SPACER and SEP

Apply CERAMAGE SPACER to mask the die. Avoid applying to marginal areas and dry for 1-2 minutes. After drying, CERAMAGE SPACER becomes transparent. Then apply CERAMAGE SEP to the die and to the proximal model surfaces that may come into contact with CERAMAGE UP. Remove excess material with oil-free compressed air.

Avoid applying CERAMAGE SPACER to marginal area

After drying CERAMAGE SPACER becomes transparent

Apply CERAMAGE SEP to the die and the proximal surfaces

Note: Shake the bottle well until the sediment disappears before applying CERAMAGE SEP. Since the SPACER contains solvents, close the cap immediately after use. The contents may solidify if the cap is not closed securely.

3. Application

3. Application and light-curing of UNIVERSAL OPAQUE

Apply the first thin masking layer of Pre-Opaque (UNIVERSAL OPAQUE) uniformly with a Uni Brush No. 4 and cure for 1 minute with Solidilite V. Avoid applying to marginal areas. After the application of the second Opaque layer with UNIVERSAL OPAQUE, the die should be uniformly masked in the desired shade. Cure the second layer again for 3 minutes with Solidilite V.

First application

Uniformly mask with UNIVERSAL OPAQUE

Note: After applying UNIVERSAL OPAQUE, clean the Uni Brush No 4 with alcohol. The brush should not be cleaned with self- curing resin liquid.

4. Application and light-curing of Cervical

Cervical composites are highly chromatic and reproduce cervical shade even in thin layers. Maximum thickness of each individual layer should not exceed 1 mm. Dispense Cervical composite by turning the dispenser sleeve clockwise to apply from the marginal area of the restoration towards to the centre in a half moon shape and intermediate cure (fixation) for 5-20 seconds with Sublite V. Continue toward to the proximal area and pre-cure for 1 minute with Solidilite V.

Apply Cervical composite directly from the dispenser to the cervical area

Continue to proximal and / or palatal areas and light-cure for 1 minute

5. Application and light-curing of Body

Build up Body composite step by step with the dispenser corresponding to the anatomical body shape of the natural tooth. Fix the build-up in between for 5-20 seconds with Sublite V. Design the dentin in a way that mamelon shape remains outlined.
Make sure to provide adequate space for the subsequent application of translucent and incisal materials and light-cure for 1 minute with Solidilite V.

Apply Body composite and fix the free build-up

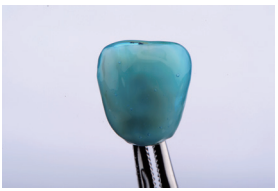
Continue step by step directly with the dispenser or brush to design the dentin anatomically

6. Application and light-curing of Translucent and Incisal

Apply translucent composite e.g. HVT for standard layering as intermediate layer to the incisal / interproximal area and fix for 5-20 seconds with Sublite V. Then complete the build up with incisal composite and fix for 5-20 second with Sublite V. After the layering procedure has been completed, apply UNIVERSAL OXY-BARRIER gel on the entire veneering surface and light-cure for 3 minutes with Solidilite V.

Apply translucent composite e.g. HVT at the incisal and interproximal areal

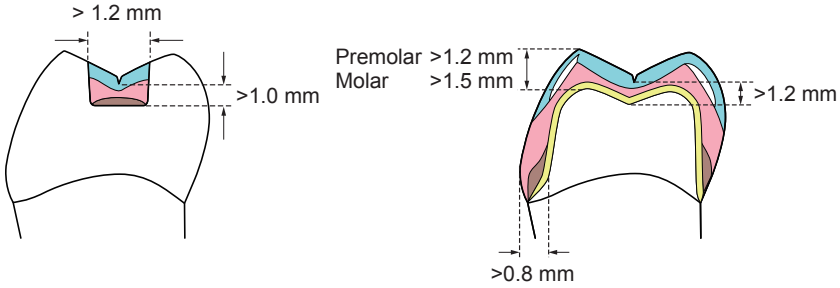
Complete the build-up with Incisal composite



Apply UNIVERSAL OXY-BARRIER completely on the entire veneering surface before final curing

3. Application

3-4. Layering technique for inlays and onlays

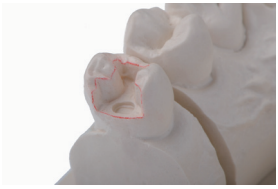


1. Pre-Treatments

- Fabricate the model with removable segments in a usual manner.
- Expose and mark the preparation margins.
- Block out undercuts with blocking wax or blocking out resin and ensure that the restoration can be removed after polymerization process without damaging the die.

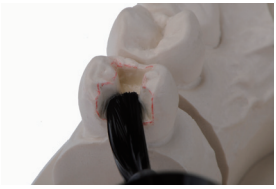
2. Application of CERAMAGE SPACER and SEP

Apply CERAMAGE SPACER to the cavity floor corners. Avoid applying to marginal areas and dry for 1-2 minutes. After drying, CERAMAGE SPACER becomes transparent. Then, apply CERAMAGE SEP in the cavity and the margins. Remove excess material with oil-free compressed air.



Block out undercuts with wax or resin before application of CERAMAGE SPACER

After drying CERAMAGE SPACER becomes transparent



Apply CERAMAGE SEP in the cavity and the margins

Note: Shake the bottle well until the sediment disappears before applying CERAMAGE SEP. Since the SPACER contains solvents, close the cap immediately after use. The contents may solidify if the cap is not closed securely.

3. Application and light-curing of Cervical, Body, Incisal / Occlusal

Apply the first layer of Cervical or Body composite to the cavity. Maximum thickness of each individual layer should not exceed 1 mm. Then, pre-cure for 1 minute with Solidilite V. Make sure to provide space for subsequent application of Incisal and Incisal Effect materials. Complete the restoration by using Incisal and Incisal Effect materials (e.g. Occlusal). After the layering procedure has been completed, apply UNIVERSAL OXYBARRIER gel on the entire inlay or onlay and cure for 3 minutes with Solidilite V. After removing the UNIVERSAL OXYBARRIER gel, finish the restoration as described in the chapter “5. Contouring, finishing, and polishing”.

Apply Cervical or Body composite to the cavity. Ensure enough space for the subsequent applications

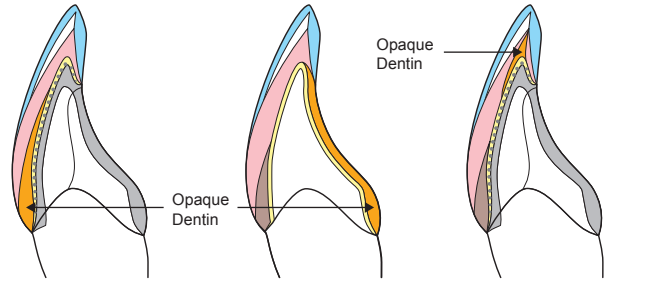
Cusps and ridges may be supplemented by Incisal or Incisal effect

Finished restoration after contouring and polishing

4. Special applications

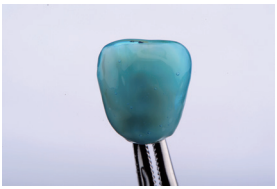
4-1. Application of Opaque Dentin

CERAMAGE UP Opaque Dentin shades are identical with Body shades, but slightly more opacious. They are recommended for thin layers to achieve a labial or lingual harmonious and correct dentin shade. They also can be used for characterizations e.g. application on Mamelons.



4-2. Application of UNIVERSAL OXY-BARRIER Gel

UNIVERSAL OXY-BARRIER is a masking gel that inhibits oxygen. It's applied to the restoration before final polymerization to minimize the formation of an inhibition layer on the surface of the veneering composite. Consequently the gel ensures complete curing of CERAMAGE UP.



Application on the entire veneering surface ensures a sufficient curing of CERAMAGE UP

Application to the occlusal areas of posterior restorations assists subsequent contouring and polishing

Note: After completing the final polymerization procedure, remove UNIVERSAL OXY-BARRIER gel completely from the restoration using running water and / or steam cleaner.

4-3. Additions after curing CERAMAGE UP

Polymerized and / or polished CERAMAGE UP surfaces must be roughened mechanically with diamond burs, Dura-Green stones or blasting with aluminum oxide Al_2O_3 (50-100 µm) with a pressure of 1-2 bar before further masses are applied. Scrub off any dust with a brush or blast it off with oil-free compressed air. Then, apply CERAMAGE UP masses supplementaly on the dry surface without using any modelling or bonding liquids.

Clean the roughed surface with compressed air

Apply the supplement material without using modelling liquid or any other bonding liquid

Note: Cleaning with water or steam cleaner must be avoided in order to get sufficient bonding of the supplement CERAMAGE UP layer. Don't use modelling liquid or any other bonding liquid before application of the supplement masses.

4-4. Additions after curing CERAMAGE

Polymerized and / or polished CERAMAGE surfaces must be roughened mechanically with diamond burs, Dura-Green stones by blasting with aluminum oxide Al_2O_3 (50-100 µm) with a pressure of 1-2 bar before further masses are applied. Scrub off any dust with a brush or blast it off with oil-free compressed air. Then apply one layer of Cera Resin Bond (CRB) I on the entire surface with a brush. Leave it undisturbed for 10 sec. Then, apply one layer of CRB Bond II on the entire surface and light-cure for 1 min. with Solidilite V. Apply CERAMAGE UP masses supplementaly on the dry surface.

5. Contouring, finishing and polishing

5-1. Contouring

Due to its high ultrafine ceramic filler content, CERAMAGE UP composite is extremely wear resistant and exhibits outstanding physical properties, just by light curing. Therefore, polymerized composite surfaces must be trimmed with suitable rotary instruments. It is not recommended to use carbide cutters or coarse diamond burs. The well suitable rotary instruments of the Ceramage Finishing & Polishing Kit allows you to contour, finish and pre-polish ceramic reinforced micro hybrid composites systematically.
First use Dura-Green abrasives, available in various shapes to contour composites and to structure the surface details with a rotation speed of approx. 10,000-15,000 rpm.

Contour the composite surface and structure anatomical details with Dura-Green abrasives

Note: Don't use carbide cutters or coarse diamond burs for contouring CERAMAGE UP.

5-2. Contouring of fissures

Fissure details of posterior restorations can be gently adjusted and smoothed in one step with the triangular shaped Robot Carbide Fissure Bur. The shape is particularly suitable for post contouring of pits and fissure with only minimal heat generation.

Contour with Robot Carbide Fissure Bur

5-3. Finishing and polishing

After contouring it's essential to pre-polish and smooth the surface and anatomical details with diamond impregnated silicone polishers e.g. CompoMaster coarse. These polishers contour and smooth rough composite surfaces in one working step, depending on the contact pressure. A speed of app. 10.000-15.000 rpm is recommended. Then, perform final pre-polishing and high gloss polishing by using DURA-POLISH and DURA-POLISH DIA polishing pastes.

Finish with CompoMaster Coarse

5-4. Pre-polishing and high-gloss polishing

For pre-polishing, use the aluminum oxide impregnated polishing paste DURA-POLISH with a brush. With a low pressure and a rotation speed of approx. 10,000 rpm it creates perfectly homogeneous surfaces even in difficult to reach areas (occlusal /interproximal area).

For final high-gloss polishing use the micro fine diamond particle impregnated polishing paste DURA-POLISH DIA at first with a brush with a low pressure and a rotation speed of app. 10.000 rpm. The particle size of DURA- POLISH DIA is matched to the ceramic filler of CERAMAGE UP. The subsequent polishing with a felt wheel or wool mop achieves long lasting high gloss and durable composite surfaces in a very short time.

The efficient two steps polishing system with DURA-POLISH and DURA-POLISH DIA polishing pastes

Pre-polish with DURA-POLISH on a brush with low pressure and a rotation speed of app.10,000 rpm

DURA-POLISH DIA on a wool mop achieves long lasting high gloss

5-5. Case examples

Anterior metal free crown

Anterior metal supported crown

Inlay

Posterior metal supported crown

5-6. Preparing for cementation of metal free restorations

In order to achieve an excellent bond between CERAMAGE UP composite, the cementation side of the restoration has to be carefully blasted with Al_2O_3 (50-100 µm) at 1-2 bar pressure. Following the try-in in the dental office and subsequent cleaning, the cementation side is again roughened with 50-100 µm diamond directly prior the adhesive cementation. The surfaces need to be silanized to enable a chemical bond.

6. Technical data

6-1. Light-curing chart

Procedure	Solidilite V	Solidilite EX
Curing of Pre-Opaque	1 min	1 min
Curing of Opaque	3 min	3 min
Preliminary curing	1 min	1 min
Curing of Pontic	3 min	3 min
Final light-curing	3 min	5 min

Procedure	XS / UNI-XS HiLite Power	Eclipse Junior
Curing of Pre-Opaque	1.5 min	1.5 min
Curing of Opaque	3 min	3 min
Preliminary curing	1.5 min	1 min
Curing of Pontic	3 min	3 min
Final light-curing	3 min	5 min

Note: CERAMAGE UP composites can be light-cured in all light-curing units recommended by SHOFU. The types of the unit and light-curing times are displayed in the Light-curing chart. In order to guarantee a sufficient light-curing of CERAMAGE UP materials, make sure that the restoration is placed at optimal position for sufficient curing. Please refer to the manufacturer's instructions of curing units you use.

6-2. Depth of cure (based on SHOFU test method)

Material	Shade	Curing time Solidilite V (min.)	Depth of cure (mm)
Pre-Opaque	-	60	0.7
Opaque	A1O	180	0.24
	A3O	180	0.23
	A4O	180	0.21
Cervical	AC1	60-180	1.3-1.8
	AC2	60-180	1.0-1.4
Opaque Dentin	ODA1	60-180	1.8-2.5
	ODA3	60-180	1.5-2.1
	ODA4	60-180	1.2-1.6
Body	A1B	60-180	2.5-3.4
	A3B	60-180	1.8-2.6
	A4B	60-180	1.8-2.5
Incisal	56	60-180	4.2-6.8
	59	60-180	4.0-5.8
Translucent	T	60-180	5.5-8.6
	T-Glass	60-180	6.2-9.6
Concentrate	MI	60-180	2.4-3.4
	OC	60-180	3.7-6.3
	AM-Y	60-180	3.2-4.6
	MY	60-180	1.6-2.4
	GUM-D	60-180	1.4-2.0

6-3. Physical data

	CERAMAGE UP	Test Method
Vickers hardness (HV)	40	Based on SHOFU test method
Flexural strength (MPa)	140	
Flexural modulus (GPa)	6.4	
Compressive strength (MPa)	300	
Water absorbtion (μg/mm^3)	24	
Toothbrush abrasion (%)	0.69	

6-4. Bond strength to metal (semi-precious alloy)

CERAMAGE UP	Test Method
28.0 MPa	Based on SHOFU test method

CE 0120

SHOFU

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