

CERAMAGE

Light-cured microhybrid composite
for anterior and posterior teeth



Advanced product information



As a manufacturer of direct and indirect filling crown and bridge composite systems SHOFU set standards for light-cured materials, because these materials fulfil 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 a material, which combines the advantages of ceramics and composite – CERAMAGE.

CERAMAGE features excellent physical properties and allows you to accurately reproduce tooth shades even when space is very limited. It is highly abrasion-resistant and elastic.

Therefore CERAMAGE can be used for a wide range of clinical applications, including highly aesthetic anterior and molar restorations that require long-term durability.

Note:

Please read this "Advanced product information" carefully before use to attain maximum benefits of the CERAMAGE system. Keep this manual at hand for your future reference!

Contents

1. System components

1-1. Indications	4
1-2. Characteristics	4
1-3. Components and shades	4
1-4. Single components	5
1-5. Shade charts	7
1-6. LITE ART stains	7
1-7. Presentation	8

2. Application

2-1. Layering recommendations	10
2-2. Layering technique for metal-free composite restorations	12
2-3. Layering technique for faced crowns	14
2-4. Layering technique for inlays and onlays	17

3. Special applications

3-1. Application of Flowable Composite Resin	18
3-2. Application of Opaque Dentin	18
3-3. Application of Modelling Liquid	19
3-4. Application of Oxy-Barrier	19
3-5. Addition of material to cured CERAMAGE	20
3-6. Addition of material to fully cured and polished CERAMAGE after 24 hours with CRB	20

4. Contouring, finishing and polishing

4-1. Contouring	21
4-2. Finishing and polishing	21
4-3. Super-polishing	22
4-4. Finishing	22
4-5. Preparing of metal free restorations for cementation	22
4-6. Contour and colour correction after finishing – Modelling Liquid	23

5. Specifications

5-1. Light-curing chart	23
5-2. Depth of cure	24
5-3. Physical properties	25
5-4. Bond strength to metal (semi-precious alloy)	25

6. General notes

6-1. Important information	26
6-2. Precautions	26
6-3. Information on use	27
6-4. Other information	27
6-5. Contraindications	27

1. System components

1-1. Indications

- Crown restorations, e.g. anterior and posterior metal-free crowns, anterior and posterior faced crowns, inlays, onlays, laminate veneers, implant superstructures
- Veneering of metal and hybrid-ceramic frameworks made by CAD/CAM
- Intra- and extraoral repairs of crowns and defective prosthetic restorations

1-2. Characteristics

- CERAMAGE is an easy-to-apply paste.
- Accurate reproduction of the natural tooth shade
- Its abrasion resistance ensures molars are protected from the opposing dentition
- Flowable Composite Resin suitable for adjustments to the build-up and repairing small areas
- In combination with SHOFU Universal Primer a strong bond to any type of metal including precious alloys is produced

1-3. Components and shades

Pre-Opaque (SHOFU Universal Opaque) (1 shade, 2 ml)	
Opaque (SHOFU Universal Opaque) (31 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, R2O, R3O, R3.5O
CERAMAGE - Composite resin for crowns and bridges (79 shades, 4.6 g)	
Cervical (8 shades)	AC1, AC2, BC1, BC2, CC1, CC2, DC1, DC2
Opaque Dentin (20 shades)	ODA1, ODA2, ODA3, ODA3.5, ODA4, ODrootA, ODB1, ODB2, ODB3, ODB4, ODC1, ODC2, ODC3, ODC4, ODD2, ODD3, ODD4, ODR2, ODR3, ODR3.5
Body (24 shades)	W0B, W1B, W2B, W3B, A1B, A2B, A3B, A3.5B, A4B, rootAB, B1B, B2B, B3B, B4B, C1B, C2B, C3B, C4B, D2B, D3B, D4B, R2B, R3B, R3.5B
Incisal (6 shades)	56, 57, 58, 59, 60, 61
Translucent (10 shades)	T, HVT, LVT, T-Glass, BG, GT, CT-A, CT-B, CT-R, GUM-T
Concentrate (11 shades)	MI, WE, OC, AM-Y, AM-R, AM-V, MY, MP, GUM-L, GUM-D, GUM-Or
CERAMAGE - Flowable Composite Resin (12 shades, 2 ml)	
Opaque Dentin (1 shade)	F-ODA3
Body (2 shades)	F-A3B, F-rootAB
Incisal (1 shade)	F-59
Translucent (3 shades)	F-T-Glass, F-CT-A, F-BT
Concentrate (5 shades)	F-W, F-Br, F-GUM-Br, F-GUM-V, F-GUM-R

1-4. Single components

SHOFU Universal Primer (1 bottle, 5 ml)

- Metal primer for a stronger bond between the metal work and SHOFU Universal Opaque
- Improved bond when applied to the surface of precious alloys, semi precious and nonprecious alloys as well as zirconia

PRE-OPAQUE (SHOFU Universal Opaque)

- 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)

Paste opaque for masking the metal framework and abutment teeth of metal-free crowns. In addition to the basic shades the following special shades 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)**
For blue-gray characterisation by mixing with SHOFU Universal Opaque
- **InO (Incisal Opaque)**
For gray characterisation by mixing with SHOFU Universal Opaque
- **GO (Gray Opaque)**
For transparent areas and for adjusting the brightness of SHOFU Universal Opaque
- **WO (White Opaque)**
For adjusting the brightness of SHOFU Universal Opaque
- **GUM-O (Gum Opaque) / PO (Pink Opaque)**
For colouring and preparing the framework for GUM color

CERAMAGE composite

- **Cervical**
For reproducing cervical shades
 - **Opaque Dentin**
Highly opacious dentine shade; for reproducing the dentine shade at thin layered dentine areas
 - **Body**
For reproducing dentine shades
 - **Incisal**
For reproducing enamel shades
 - **Translucent**
 - **T (Translucent)**
For reproducing translucent shades
 - **HVT (High-Value Translucent)**
For reproducing bluish translucent shades with higher brightness
 - **LVT (Low-Value Translucent)**
For reproducing grayish translucent shades with lower brightness
- The translucency sequence 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)
 - **CT-R**
For R-shade range (reddish tone)
 - **GUM-T (Gingiva Translucent)**
For translucent gingiva areas

1. System components

- **Concentrate**

- **MI (Milky)**

- Opaque white paste

- For reproducing the milky characterisation in enamel

- **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 sequence is: MI > WE > OC

- **AM (Amber)**

- For reproducing amber enamel effects

- **AM-Y**

- Amber Yellow (yellowish)

- **AM-R**

- Amber Red (reddish)

- **AM-V**

- Amber Violet (violet)

- **MY (Mamelon Yellow)**

- For reproducing yellowish mamelon effects by mixing with Body shades

- **MP (Mamelon Pink)**

- For reproducing pinkish mamelon effects by mixing with Body shades

- **GUM**

- For reproducing gingival shades

- **GUM-L**

- Gum Light (light shade)

- **GUM-D**

- Gum Dark (dark shade)

- **GUM-Or**

- Gum Orange (orange shade)

- **CERAMAGE FLOWABLE COMPOSITE RESIN**

- Flowable paste, designed to flow into very narrow spaces; can be used to correct air bubbles, fill pontics and fine-adjust shade and shape

- **CERAMAGE MODELLING LIQUID**

- (1 bottle, 7 ml)

- Special modelling liquid for use during composite layering and for corrective composite application after using rotary instruments on prepolymerised material

Accessories

- **UNIVERSAL OXY-BARRIER** (1 jar, 10 g)

- Designed for overall application prior to final curing, to protect the restoration surface from the influence of air and prevent the formation of an oxygen-inhibited layer

- **CERAMAGE SEP** (1 bottle, 7 ml)

- Separating liquid for isolation between plaster and CERAMAGE. Used when fabricating metal free crowns, inlays, onlays and veneers.

- **CERAMAGE SPACER** (1 bottle, 7 ml)

- Spacer for plaster models; forms a silicone-like layer and ensures space for cement between metal free restorations, such as metal free crowns, inlays, onlays and veneers to the prepared tooth.

1-5. Shade charts

1. Composition of basic shades

Shade	A1	A2	A3	A3.5	A4	B1	B2	B3	B4
Opaque	A1O	A2O	A3O	A3.5O	A4O	B1O	B2O	B3O	B4O
Cervical	–	AC1		AC2		–	BC1		BC2
Opaque Dentin	ODA1	ODA2	ODA3	ODA3.5	ODA4	ODB1	ODB2	ODB3	ODB4
Body	A1B	A2B	A3B	A3.5B	A4B	B1B	B2B	B3B	B4B
Incisal	58		59		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. Composition of NCC shades

Shade	rootA	R2	R3	R3.5
Opaque	rootAO	R2O	R3O	R3.5O
Opaque Dentin	ODrootA	ODR2	ODR3	ODR3.5
Body	rootAB	R2B	R3B	R3.5B
Incisal	60	58	59	

3. Composition of Whitening shades

Shade	W0	W1	W2	W3
Opaque	W0		W2O	W3O
Body	W0B	W1B	W2B	W3B
Incisal	56			57

These complementary shades form a useful extension of the classical shade variants. RootA (intensive A) has a higher chroma than the A4 shade. The red shift shades R2, R3, and R3.5 refer to the A-group and exhibit somewhat more reddish shades. Thus, the R3 shade is a slight shift more reddish than A3 at the same intensity.

1-6. LITE ART stains

For individual shade characterisation of the CERAMAGE restorations the ready-to-use LITE ART stains are recommended. LITE ART light-curing stains are designed to recreate the shades and characteristics of natural teeth 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 light-curing veneering composites.

1. System components

1-7. Presentation

CERAMAGE Standard Set

- Pre-Opaque (1 shade / 2 ml)
- Opaque (10 shades / 2 ml):
A1O, A2O, A3O, A3.5O, A4O, B2O, B3O, C3O,
MO, BGO
- Cervical (4 shades / 4.6 g):
AC1, AC2, BC1, CC1
- Opaque Dentin (8 shades / 4.6 g):
ODA1, ODA2, ODA3, ODA3.5, ODA4, ODB2,
ODB3, ODC3
- Body (8 shades / 4.6 g):
A1B, A2B, A3B, A3.5B, A4B, B2B, B3B, C3B
- Incisal (3 shades / 4.6 g): 58, 59, 60
- Translucent (4 shades / 4.6 g):
T, HVT, LVT, T-Glass
- Flowable Composite Resin (3 shades / 2 ml):
F-59, F-A3B, F-root AB
- CERAMAGE Modelling Liquid (1 bottle / 6 ml)
- CERAMAGE Spacer (1 bottle / 7 ml)
- CERAMAGE Oxy-Barrier (1 bottle / 10 ml)
- UNI BRUSH No. 4
(1 handle / 10 brush tips)
- Dispo dish (10 pcs.)
- Paper pad (50 sheets)
- Light shield cover (1 pc.)
- Advanced product information

CERAMAGE Intro Set A2

- Pre-Opaque (1 shade / 2 ml)
- Opaque (1 shade / 2 ml): A2O
- Cervical (1 shade / 4.6 g): AC1
- Body (1 shade / 4.6 g): A2B
- Incisal (1 shade / 4.6 g): 58
- Flowable Composite Resin (1 shade / 2 ml): F-59
- UNI BRUSH No. 4
(1 handle / 10 brush tips)
- Dispo dish (10 pcs.)
- Paper pad (50 sheets)
- Light shield cover (1 pc.)
- Advanced product information

CERAMAGE Intro Set A3

Contents as Intro Set A2, except:

- Opaque (1 shade / 2 ml): A3O
- Body (1 shade / 4.6 g): A3B

CERAMAGE Gum Color Full Set

- Opaque (2 shades / 2 ml): GUM-O, WO
- Translucent (1 shade / 4.6 g): GUM-T
- Concentrate (3 shades / 4.6 g): GUM-L, GUM-D, GUM-Or
- Flowable Composite Resin (4 shades / 2 ml): F-GUM-Br, F-GUM-V, F-GUM-R, F-W
- Advanced product information

Accessories / Single components

- Pre-Opaque (1 shade / 2 ml)
- Opaque (31 shades / 2 ml)
- Cervical (8 shades / 4.6 g)
- Opaque Dentin (20 shades / 4.6 g)
- Body (24 shades / 4.6 g)
- Incisal (6 shades / 4.6 g)
- Translucent (10 shades / 4.6 g)
- Concentrate (11 shades / 4.6 g)
- Flowable Composite Resin (12 shades / 2 ml)
- CERAMAGE Modelling Liquid (1 bottle / 6 ml)
- SHOFU Universal Primer (1 bottle / 5 ml)
- UNIVERSAL OXY-BARRIER (1 jar / 10 g)
- CERAMAGE Sep (1 bottle / 7 ml)
- CERAMAGE Spacer (1 bottle / 7 ml)
- CRB - Ceraresin Bond
- UNI BRUSH No. 4 (1 handle / 10 brush tips)
- Dispo dish (10 pcs.)
- Paper pad (2 pcs., 50 sheets each)
- Pro-Pad mixing pad (2 pcs., 30 sheets each)
- Light shield cover (1 pc.)
- CERAMAGE Finishing & Polishing Kit
- DURA-POLISH polishing paste (prepolishing)
- DURA-POLISH DIA polishing paste (super-polishing)

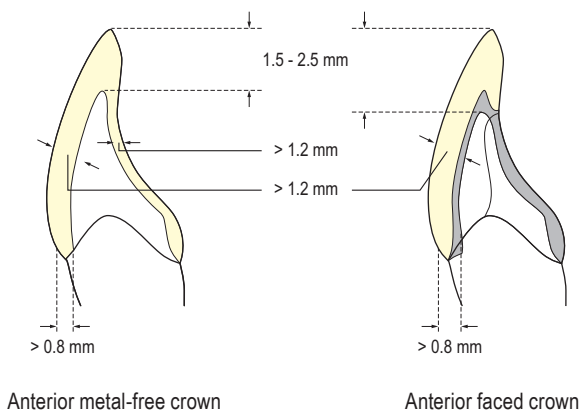
2. Application

2-1. Layering recommendations

Guidelines for the minimum thickness of the composite material

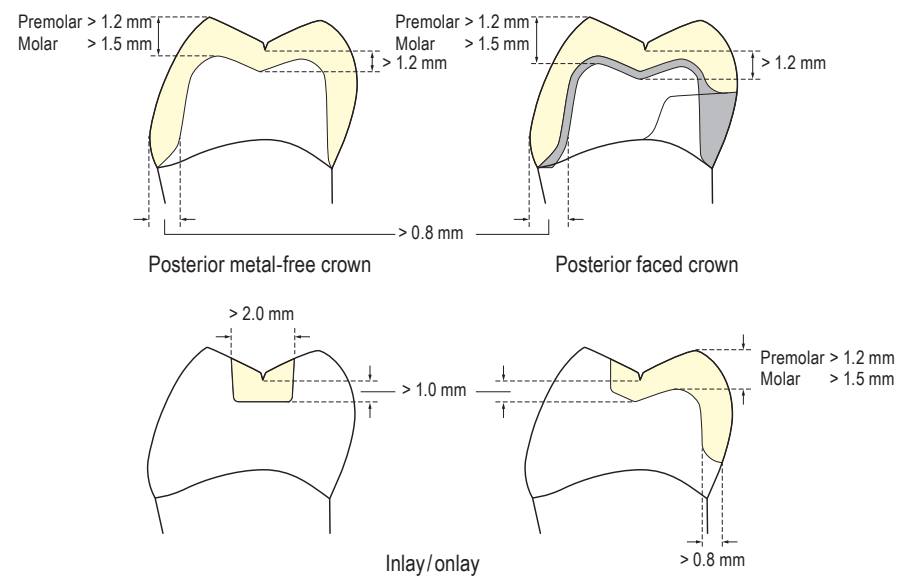
Anterior

	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	Labio-lingual area: round shoulder Approximal area: deep chamfer	The metal thickness should be > 0.3 mm. The labial margin should be contoured with a shoulder or rounded shoulder. The approximal and lingual areas should be contoured with a deep chamfer.



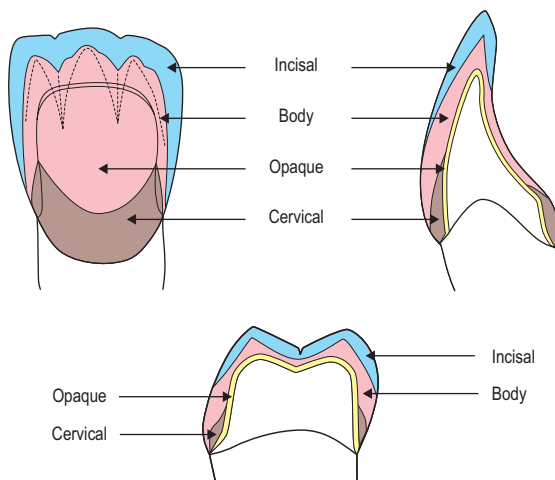
Posterior

	Metal-free crown	Faced crown	Inlay/onlay
Cervical	> 0.8 mm	> 0.8 mm	> 0.8 mm
Pits and 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	–	–	(not required)
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 margins should not be bevelled; besides, they should be located outside the antagonistic contacts. A box preparation should be used for the cavity. The internal line angles should be rounded.



2. Application

2-2. Layering technique for metal-free composite restorations



Note: The above illustration is a basic layering diagram. Use additional effect and/or incisal shades to customise your restorations.

1. Application of CERAMAGE Spacer and CERAMAGE Sep

Apply CERAMAGE Spacer to the working model. Do not apply to the margins. (CERAMAGE Spacer becomes transparent after drying.) Then apply CERAMAGE Sep to the margins etc. and dry.



Application of CERAMAGE Spacer



CERAMAGE Spacer after drying



Application of CERAMAGE Sep

Note: Shake the CERAMAGE Sep and the CERAMAGE Spacer bottle well until the sediment disappears before applying. Since Sep and Spacer contain volatile substances, replace the cap immediately after use. The contents may solidify if the cap is not replaced.

2. Applying and light-curing Opaque

Apply Opaque with a brush, e.g. UNI BRUSH No. 4, and light-cure. Apply a thin layer of Opaque and repeat the procedure (applying Opaque and light-curing) 2 to 3 times to get the desired shade.



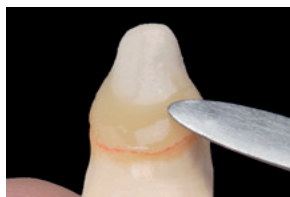
Application of Opaque

Note: After applying Opaque, immediately clean the UNI BRUSH No. 4 with alcohol. The brush should not be cleaned with self-curing resin liquid.

Opaque should not be precured. Be sure to observe the recommended curing times.

3. Application of light-cured Cervical paste

Apply Cervical paste from the cervical area to the centre of the crown and perform intermediate curing.



Application of Cervical paste

4. Application of Body and Incisal paste

Apply Body paste, adjust the contours and perform intermediate curing. Then apply Incisal to the enamel, adjust the contour and perform intermediate curing. If necessary, apply Oxy-Barrier to the surface before final light-curing (refer to "3-4. Application of Oxy-Barrier").



Application of Body paste



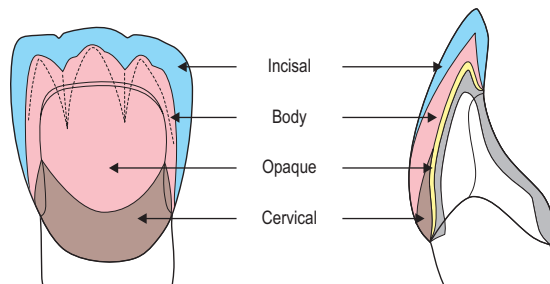
After applying Body paste



After applying Incisal paste

2. Application

2-3. Layering technique for faced crowns



Note: The above illustration is a basic layering diagram. Use additional effect and/or incisal shades to customise your restorations.

1. Preparations

- After making the working model, create the wax-up as usual and cut it back in the areas to be veneered.
- Adjust the metal framework after casting.
- After sandblasting with alumina, clean with steam cleaner or ultrasonic cleaner.



Metal framework after sandblasting with alumina

2. Application of SHOFU Universal Primer

Apply SHOFU Universal Primer to the surface of the metal framework with a small brush, leave it undisturbed for 10 seconds and allow it to dry naturally.

Note: Since SHOFU Universal Primer contains volatile substances, replace the cap tightly immediately after use. Dispensed liquid should be used immediately.

After applying SHOFU Universal Primer, clean the brush with alcohol. The brush should not be cleaned with self-curing resin liquid.

3. Applying and light-curing Pre-Opaque

If necessary, apply Pre-Opaque (SHOFU Universal Opaque) to the undercuts of the retention beads with UNI BRUSH No. 4 and light-cure. Be sure to apply Pre-Opaque in a uniform thin layer.



Applying and light-curing of Pre-Opaque



Uniform layer of Pre-Opaque after light-curing.

4. Application of light-cured Opaque

Apply Opaque (SHOFU Universal Opaque) with UNI BRUSH No. 4 to the cured Pre-Opaque layer and light-cure. Apply a thin layer of Opaque and repeat this procedure 2 to 3 times (apply Opaque and light-cure), until the metal colour of the framework no longer shows through.



Applying and light-curing of Opaque

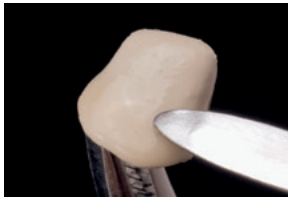


Uniform masking with SHOFU Universal Opaque

2. Application

5. Application of Cervical paste

Apply Cervical paste gradually from the cervical area to the centre of the crown and perform intermediate curing.



Build-up and light-curing of Cervical paste



Finally polymerise

6. Application of Body and Incisal paste

Apply Body paste, adjust the contours and perform intermediate curing. Then apply Incisal to the enamel, adjust the contour and perform intermediate curing. If necessary, apply Oxy-Barrier to the surface before final light-curing.



Application of Body paste

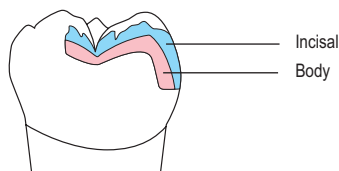


After applying Body paste



After applying Incisal paste

2-4. Layering technique for inlays and onlays



1. Preparations

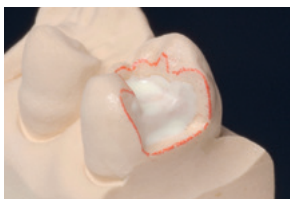
- Fabricate the working model in the usual manner and block out or relieve the cavity if required.

2. Application of CERAMAGE Spacer and CERAMAGE Sep

Apply CERAMAGE Spacer as required to the working model, e.g. cavity floor corners. Do not apply to the margins. Then apply CERAMAGE Sep to the inner surfaces and around the cavity and dry



Applying and drying CERAMAGE Spacer



Do not apply to the margins.



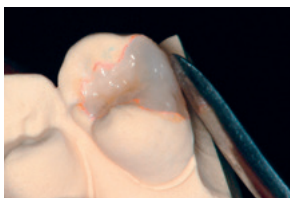
Application of CERAMAGE Sep

3. Application of Body and Incisal paste

Apply Body and Incisal paste, adjust the contours and polymerise. After adjusting the contours, apply Oxy-Barrier – **especially to the occlusal surface** – and polymerise.



Application of Body paste



Application of Incisal paste

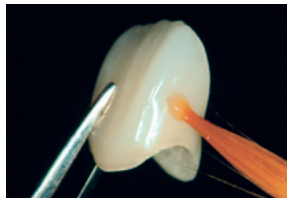
3. Special applications

3-1. Application of Flowable Composite Resin

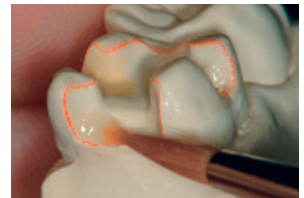
Flowable Composite Resin is more flowable than conventional composite resins. Use it in areas where it is difficult to apply composite resin to crowns and bridges, e.g. the inner surfaces of bridge pontics, inlay cavities and mamelon areas. Flowable Composite Resin allows contouring without air bubbles. In addition, bubbles caused by air pockets can be repaired.



Application to mamelon areas



Repairing air bubbles

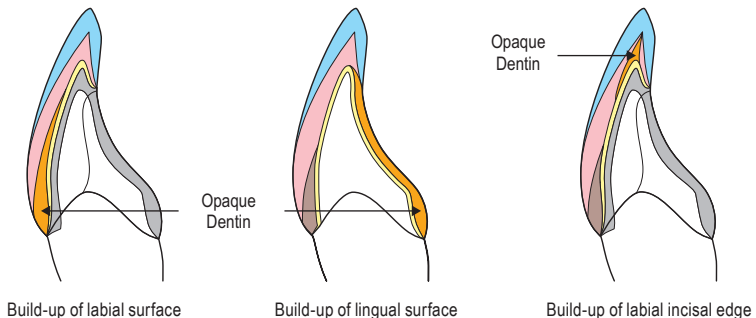


Application to cavity floor of inlay

Note: Flowable Composite Resin is used for contouring and adjusting small areas. Do not use for modelling larger areas. Alternatively the use of CERAMAGE UP is recommended for additional contouring corrections.

3-2. Application of Opaque Dentin

Opaque Dentin has the same shade as the Body paste, but is slightly more opaque. It is recommended if the layer thicknesses are so low that masking the opaque with the Body pastes in the lingual and cervical areas would not be sufficient.



Build-up of labial surface

Build-up of lingual surface

Build-up of labial incisal edge

3-3. Application of Modelling Liquid

CERAMAGE Modelling Liquid is used when applying composite. In addition it can be applied to the surface after prepolymerisation or after contouring as a wetting agent to facilitate adding further material

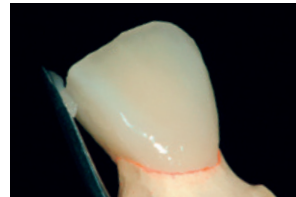
Note: Modelling Liquid must not be used in combination with Flowable Composite or CERAMAGE UP!

Addition of material after finishing and polishing

When material needs to be added to prepolished or polished surfaces, first mechanically roughen these surfaces, e.g. with a Dura-Green stone or by sandblasting with 50-100 µm alumina (Al_2O_3) at a pressure of 1-2 bar. Use a clean brush or oil-free compressed air to remove the dust produced. Then carefully clean the surfaces. Apply a thin layer of Modelling Liquid to the bonding surface. Add CERAMAGE paste and light-cure.



Application of Modelling Liquid



Adding of CERAMAGE paste

3-4. Application of Oxy-Barrier

Oxy-Barrier is applied to avoid air contact with CERAMAGE before final polymerisation. Applying it to the surface of the CERAMAGE composite prevents the formation of an oxygen-inhibited layer on the surface during light-curing.

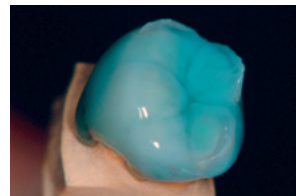
1. Applying to the occlusal surface of the molar

Applying a layer of Oxy-Barrier to occlusal surfaces and fissures of molars ensures a good polymerisation of the composite surface, assisting subsequent contouring and polishing.

2. Applying to the margins

Applying Oxy-Barrier to thin margins facilitates contouring.

Note: After completing the final polymerisation procedure, remove Oxy-Barrier gel completely from the restoration using running water and / or a steam cleaner.



Applying to the occlusal surface



Applying to the margins

3. Special applications

3-5. Addition of material to cured CERAMAGE

Polymerised and/or polished CERAMAGE surfaces must be roughened mechanically with diamond burs, Dura-Green stones or by sandblasting with 50-100 µm alumina (Al_2O_3) at a pressure of 1-2 bar before further masses are applied. Remove any dust with a brush or oil-free compressed air. Then apply a thin layer of Modelling Liquid to the surface and add CERAMAGE paste.

When adding CERAMAGE UP, there is no need to apply Modelling Liquid or any other bonding agent.

Note: Cleaning with water or steam cleaner must be avoided in order to get sufficient bonding of the supplement CERAMAGE layer. Apply modelling liquid or coupling agent (CRB) before adding material.

3-6. Addition of material to fully cured and polished CERAMAGE after 24 hours with CRB

24 hours after final curing and/or polishing, Ceraresin Bond (CRB) silane coupling agent needs to be applied before adding material.

CERAMAGE surfaces must first be roughened mechanically with diamond burs, Dura-Green stones or by sandblasting with 50-100 µm alumina (Al_2O_3) at a pressure of 1-2 bar. Remove any dust with a brush or oil-free compressed air. Using a brush, apply a layer of Ceraresin Bond (CRB) I to the entire surface and leave it undisturbed for 10 seconds. Next, apply a layer of CRB II to the entire surface and light-cure it for 3 minutes with Solidilite V or 90 seconds with Solidilite LED. Then add CERAMAGE or CERAMAGE UP to the pretreated surface.

4. Contouring, finishing and polishing

4-1. Contouring

Due to its high ceramic filler content, CERAMAGE composite is extremely abrasion-resistant and exhibits outstanding physical properties. Therefore, polymerised composite surfaces must be trimmed with matched rotary instruments. It is not advisable to use cutters or coarse diamond burs!

After light-curing, use a triangular fissure bur for finishing approximal areas, occlusal contours and fissures. Then use Dura-Green stones for trimming and contouring the composite surface.



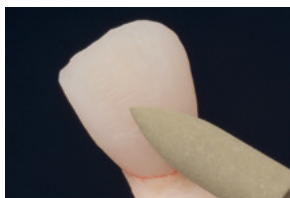
Finishing with a triangular fissure bur



Contouring with Dura-Green stones

4-2. Finishing and polishing

After contouring, use CompoMaster Coarse for finishing, then Dura-Polish for polishing the anterior and labial surface details and the occlusal surface of the molars.



Finishing with a CompoMaster Coarse diamond impregnated silicone polisher



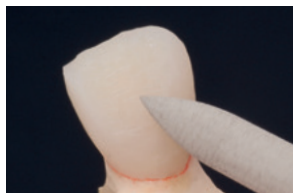
Polishing with Dura-Polish alumina polishing paste

Note: Overheating must be avoided during finishing and polishing!
Caffeine and nicotine can cause discolorations on poorly polished surfaces.

4. Contouring, finishing and polishing

4-3. Super-polishing

After polishing, use CompoMaster for super-polishing and Dura-Polish DIA for increased surface gloss.



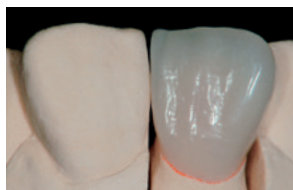
Super-polishing with CompoMaster



Use Dura-Polish DIA diamond polishing paste for optimising the surface gloss

Note: For super-polishing, load a brush or a felt wheel with Dura-Polish DIA and polish using light pressure.

4-4. Finishing



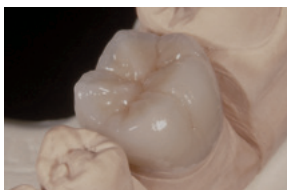
Anterior metal free crown



Inlay on molar



Anterior faced crown



Anterior metal free crown

4-5. Preparing of metal free restorations for cementation

In order to achieve an excellent bond, the cementation side of the CERAMAGE restoration should be carefully sandblasted with 50-100 μm alumina (Al_2O_3) at a pressure of 1-2 bar. Immediately before the adhesive cementation the surface needs to be silanised to enable a chemical bond.

4-6. Contour and colour correction after finishing – Modelling Liquid

Final cured and polished surfaces must be roughened mechanically (e.g. sandblasted with alumina) before adding material. Moisten the dry, cleanses surface with Modelling Liquid. Depending on the required correction, composite is now applied and light-cured according to the curing chart.

5. Specifications

5-1. Light-curing chart

	Solidilite V	Solidilite LED
Pre-Opaque	1 min	0.5 min
Opaque	3 min	1.5 min
Composite (prepolymerisation)	1 min	0.5 min
Flowable Composite Resin (prepolymerisation)	1 min	0.5 min
Pontic	3 min	1.5 min
Final polymerisation	3 min	1.5 min

	XS / UniXS, Heraflash, HiLite power 3D	Eclipse Junior
Pre-Opaque	1 min	1 min
Opaque	3 min	3 min
Composite (prepolymerisation)	1.5 min	1 min
Flowable Composite Resin (prepolymerisation)	1.5 min	1 min
Pontic	3 min	3 min
Final polymerisation	3 min	3 min

Note: CERAMAGE composites can be light-cured in all light-curing units recommended by SHOFU.
For the corresponding unit types and curing times, please refer to the light-curing chart above.
In order to assure a sufficient light-curing of the CERAMAGE materials, it is necessary to align the objects optimally to the light sources. Please also refer to the operating instructions of the unit manufacturer.

5. Specifications

5-2. Depth of cure (based on SHOFU test method)

Material	Shade	Curing time Solidilite V (sec)	Depth of cure (mm)
Pre-Opaque	–	60	1.6
Opaque	A10	180	0.24
	A30	180	0.21
	A40	180	0.20
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
	61	60-180	3.8 - 5.5
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
Opaque Dentin	F-ODA3	60-180	1.6 - 2.2
Body	F-A3B	60-180	2.0 - 2.7
Incisal	F-59	60-180	4.3 - 6.1
Translucent	F-T-Glass	60-180	6.6 - 10.4
Concentrate	F-GUM-Br	60-180	1.8 - 2.5

5-3. Physical properties

	CERAMAGE Composite for crowns and bridges	CERAMAGE Flowable Composite Resin	Test method
Vickers hardness (MPa)	726	392	based on ISO 10477 standard
Flexural strength (MPa)	146	132	
Flexural modulus (GPa)	10.7	6.0	
Compressive strength (MPa)	354	303	based on SHOFU test method
Indirect tensile strength (MPa)	62	58	
Polymerisation shrinkage (Vol. %)	2.5	3.3	
Toothbrush abrasion (%)	0.43	0.74	
Enamel abrasion of the antagonist (µm)	3.2	2.5	
Working time (min) fluorescence 2.000 lx	> 30	25	

5-4. Bond strength to metal (semi-precious alloy)

CERAMAGE	Test method
28.0 MPa	based on SHOFU test method

6. General notes

6-1. Important information

- Use CERAMAGE exclusively for the indications recommended in this document.
- CERAMAGE is intended for use by dental professionals only.
- Do not use after expiry date (see package and labels).
- Keep away from open flame or heat and store at room temperature (1-30 °C / 34-86 °F).
- Use only in well-ventilated areas.
- During the contouring, finishing and polishing of this product, the use of safety glasses is recommended.
- During the contouring, finishing and polishing of this product, the use of a local dust extractor is needed to avoid the inhalation of grinding dust.

6-2. Precautions

- If an allergic reaction occurs, e.g. skin eruption or inflammation, immediately discontinue the use of this product and seek medical advice.
- Avoid contact of this product with skin and eyes. In case of eye contact, immediately flush the eye with plenty of water and seek medical advice.
- Users who frequently handle natural rubber latex are at increased risk of developing a natural rubber latex allergy. So CERAMAGE Spacer should be used cautiously.

6-3. Information on use

- Replace the product container cap after use. Make sure that the cap is tightly replaced before storing this product. Use separate brushes for Pre-Opaque (SHOFU Universal Opaque) and Opaque (SHOFU Universal Opaque). After application, clean the brush with alcohol or ethanol.
- Do not expose this product to direct light, e.g. sunlight or operatory light, during handling, because this may accelerate the polymerisation of the paste.
- Do not mix this composite with other veneering composites to avoid air inclusions during mixing and degradation processes. Do not mix the paste with other materials, either.
- Do not apply surface lustering or glazing agents to restorations made of CERAMAGE.
- Protect this product from ambient light with the light shield cover when dispensed onto a mixing dish or pad for an extended period of time.
- Flowable Composite Resin is designed for use in fine structures, e.g. filling voids caused by air inclusions or fine-adjusting restoration shapes. It should not be used to build up complete restorations or crown and bridge surfaces.
- Shake the CERAMAGE Sep bottle until the sediment disappears before using the liquid.
- Tightly replace the cap of the CERAMAGE Spacer bottle immediately after use, because otherwise the contents may solidify.
- The curing times indicated apply to the Solidilite V and Solidilite LED light-curing units. When using a different unit, please observe the manufacturer's recommendations to ensure complete curing of the material.

6-4. Other information

- Staining or plaque accumulation may occur on the restoration surface after placement, depending on your patient's dietary habits and oral hygiene. Instruct your patient on daily oral hygiene practices.

6-5. Contraindications

- Bruxism
- Malocclusion
- Occlusion with premature contacts
- No occlusal contact at resin-metal junction



Manufacturer
SHOFU INC.

11 Kamitakamatsu-cho,
Fukuine, Higashiyama-ku,
Kyoto 605-0983, Japan



SHOFU DENTAL GmbH

An der Pönt 70, 40885 Ratingen, Germany

www.shofu.de