

# CERAMAGE®

## INSTRUCTIONS FOR USE





Light-curing, tooth-like materials, such as micro-filled composites, have been extremely successful in clinical practice, becoming the standard due to their excellent properties and easy handling.

As a manufacturer of direct and indirect filling crown and bridge composite systems SHOFU set new standards for light-curing materials, because these materials fulfil the clinical demands of dentist, dental technician and patient in physical and aesthetic respect with optimal satisfaction.

The acquired knowledge and many years of experience led to the development of a new material, which combines the advantages of ceramics and composite – CERAMAGE.

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

Read the “Instructions for Use” carefully to ensure correct use of CERAMAGE. Keep the directions in a convenient place for easy reference.

### **The health of your patients is important to us.**

The health of your patients is important to us. For this reason, we work exclusively with selected materials and manufacture our products according to strict regulations and with great care. All materials and components are certified according to the ISO standards 9001/2 and bear the CE symbol. They are subject to constant quality controls for your safety. “The Best for Your Patients” has always been our motto and duty. We heavily invest every year in the improvement of our manufacturing techniques in order keep abreast of technological progress. We offer you a comprehensive selection of innovative and high-quality dental products – for the health of your patients.

We are committed to keep high quality standards and to do everything necessary to meet this goal within the company. At the same time, our company philosophy is:

**“Research is our best Product”.**

Our company slogan:

**“SHOFU Quality with every turn!”**

means permanent conformity and improvement of our customer related activities.

SHOFU Inc., Japan

## **Contents**

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<b>1. System components</b>	
1-1. Indications	4
1-2. Characteristics	4
1-3. Components and shades	4
1-4. Components	5
1-5. Shade Charts	7
1-6. Stains	7
1-7. Presentation	8
<b>2. Application</b>	
2-1. Layering diagram	10
2-2. Layering technique for jacket crowns	12
2-3. Layering technique for faced crowns	14
2-4. Layering technique for inlays and onlays	17
<b>3. Special applications</b>	
3-1. Application of Flowable Composite Resin	18
3-2. Application of Opaque Dentine	18
3-3. Application of Modelling Liquid	19
3-4. Application of Oxy-Barrier	19
<b>4. Contouring, finishing and polishing</b>	
4-1. Contouring	20
4-2. Finishing and polishing	20
4-3. High-lustre polishing	21
4-4. Finishing	21
4-5. Treating the bonding surfaces of the metal free restoration	21
4-6. Adjusting the contours and shade of finished restorations	22
<b>5. Technical data</b>	
5-1. Curing time	22
5-2. Depth of cure	23
5-3. Physical properties	24
5-4. Adhesive strength	24
<b>6. General information</b>	
6-1. Important information	25
6-2. Precautions	25
6-3. Hazard warnings	25
6-4. User information	26
6-5. Other information	26
6-6. Contra-Indications	26

# 1. System components



## 1-1. Indications

- Crown restorations, e.g. anterior and posterior jacket crowns, anterior and posterior faced crowns, inlays, onlays, laminate veneers, implant superstructures
- Indirect and direct repairs of crown restorations and defects in 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 M.L. Primer produces a strong bond to any type of metal, including precious alloys

## 1-3. Components and shades

Components	Shades
CERAMAGE Pre-Opaque (1 shade, 2 mL)	
CERAMAGE Opaque (27 shades, 2 mL)	A10, A20, A30, A3.50, A40, B10, B20, B30, B40, C10, C20, C30, C40, D20, D30, D40, root A0, R20, R30, R3.50, W20, W30, MO, BGO, GO, WO, GUM-O
CERAMAGE Composite Resin for Crowns and Bridges (79 shades, 2.6 mL)	
Cervical 8 shades	AC1, AC2, BC1, BC2, CC1, CC2, DC1, DC2
Opaque Dentine 20 shades	ODA1, ODA2, ODA3, ODA3.5, ODA4, ODB1, ODB2, ODB3, ODB4, ODC1, ODC2, ODC3, ODC4, ODD2, ODD3, ODD4, OD root A, ODR2, ODR3, ODR3.5
Body 24 shades	A1B, A2B, A3B, A3.5B, A4B, B1B, B2B, B3B, B4B, C1B, C2B, C3B, C4B, D2B, D3B, D4B, root AB, R2B, R3B, R3.5B, W0B, W1B, W2B, W3B
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 Dentine 1 shade	F-ODA3
Body 2 shades	F-A3B, F-root AB
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. Components

### M.L. Primer

- Metal primer for a stronger bond between the metal work and CERAMAGE Opaque
- Improved bond when applied to the surface of precious alloys, semi precious and non-precious alloys

### CERAMAGE PRE-OPAQUE

- Opaque for the first layer when fabricating a crown
- Highly flowable, flows easily even into small areas of retainers. Its increased depth of cure ensures full light-curing, producing a strong CERAMAGE Pre-Opaque bond.

### CERAMAGE OPAQUE

Opaque material for masking the metal and abutment teeth of jacket crowns. In addition to basic shades, we supply the following special shades:

- **MO (Margin Opaque)**  
Applied after Pre-Opaque in widths of 1 mm around the cervical margins for masking unwanted alloy
- **BGO (Blue-Gray Opaque; Incisal Opaque)**  
For transparent areas
- **GO (Gray Opaque)**  
For transparent areas and for adjusting the brightness of the Opaque
- **WO (White Opaque)**  
For adjusting the brightness of the Opaque
- **GUM-O (Gum Opaque)**  
For coloring and preparing the framework for GUM color

## CERAMAGE COMPOSITE

- **CERVICAL**  
For reproducing cervical shades
- **OPAQUE DENTINE**  
– Highly opacious dentine shade  
– For reproducing cervical shades and for thinly layered dentine areas
- **BODY**  
For reproducing dentine shades
- **INCISAL**  
For reproducing enamel shades
- **TRANSLUCENT**
  - **T (Translucent)**  
For reproducing translucent shades
  - **HVT (High-Value Translucent)**  
Translucent material with high brightness
  - **LVT (Low-Value Translucent)**  
Translucent material with low brightness

The translucency sequence is LVT > T > HVT
- **T-GLASS**  
Translucent material for reproducing maximum translucency
- **BG (Blue Glass)**  
Light blue T-Glass
- **GT (Gray Trans)**  
Gray translucent material
- **CT (Cervical Trans)**  
Translucent material for cervical areas
  - **CT-A**  
For A shade range (orange tone)
  - **CT-B**  
For B shade range (yellowish tone)
  - **CT-R**  
For R shade range (reddish tone)
- **GUM-T (Gingiva Translucent)**  
For translucent gingiva areas

## 1. System components

### ● CONCENTRATE SHADES

- **MI (Milky)**  
Opaque white paste  
For reproducing the milky characterisation in enamel
- **WE (White Enamel)**  
Slightly opaque white paste  
For the marginal ridges of molars and proximal areas of the anterior teeth
- **OC (Occlusal)**  
Slightly opaque white paste  
For the occlusal surfaces of molars, etc.

The opacity sequence is **MI > WE > OC**

- **AM (Amber)**  
For reproduction of translucent amber enamel effects
  - **AM-Y**  
Amber Yellow (yellowish)
  - **AM-R**  
Amber Red (reddish)
  - **AM-V**  
Amber Violet (violet range)
- **MY (Mamelon Yellow)**  
Opaque paste for reproducing mamelons (yellowish)
- **MP (Mamelon Pink)**  
Opaque paste for reproducing mamelons (pinkish)
- **GUM**  
For reproduction of gingival shades
  - **GUM-L**  
Gum Light (light color)
  - **GUM-D**  
Gum Dark (dark color)
  - **GUM-Or**  
Gum Orange (orange color)

### ● CERAMAGE FLOWABLE COMPOSITE RESIN

Flowable paste, flows into small areas. For restoring void caused by air bubbles, filling pontics and fine adjustments to the shade and contour  
It is also used for adjustment of gum color.

### ● CERAMAGE MODELLING LIQUID

Special modelling liquid for use when applying composite resin to crowns and bridges.  
For adjustments to the composite surface after light-curing and remodelling after contouring with abrasives.

### Accessories

#### ● CERAMAGE OXY-BARRIER

Oxygen barrier material applied to the paste surface before final light-curing to prevent an inhibition layer

#### ● CERAMAGE SEP

Separating liquid for use between plaster and CERAMAGE. Used in fabricating jacket crowns inlays, onlays, and veneers

#### ● CERAMAGE SPACER

Spacer to allow space for cement. Used in fabricating jacket crowns, inlays, and onlays

## 1-5. Shade Charts

### 1. Basic Shade Composition

Shade	A1	A2	A3	A3.5	A4	B1	B2	B3	B4
Opaque	A10	A20	A30	A3.50	A40	B10	B20	B30	B40
Cervical	–	AC1		AC2		–	BC1		BC2
Opaque Dentine	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	C10	C20	C30	C40	D20	D30	D40
Cervical	–	CC1		CC2	DC1		DC2
Opaque Dentine	ODC1	ODC2	ODC3	ODC4	ODD2	ODD3	ODD4
Body	C1B	C2B	C3B	C4B	D2B	D3B	D4B
Incisal	58	59		60	59	60	59

### 2. Shade Composition of NCC shades

Shade	root A	R2	R3	R3.5
Opaque	root A0	R20	R30	R3.50
Opaque Dentine	OD root A	ODR2	ODR3	ODR3.5
Body	root AB	R2B	R3B	R3.5B
Incisal	60	58	59	

### 3. Shade Composition of Whitening shades

Shade	W0	W1	W2	W3
Opaque	W0		W20	W30
Body	W0B	W1B	W2B	W3B
Incisal	56			57

These supplementing colors form a meaningful extension of the "classical" color variants. Root A (intensive A) is more chromate intensive than the color A4. The red shift colors R2, R3, and R3.5 refer to the A-group and exhibit somewhat more reddish colors. Like that the color R3 is a light shift more reddish with same intensity.

## 1-6. Stains

For individual characterisation of CERAMAGE restorations the ready to use LITE ART are recommended. LITE ART light curing coloring pastes are designed to recreate the color 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 C&B composite.

## 1. System components



### 1-7. Presentation

#### CERAMAGE AB Set

- Pre-Opaque (1 shade/2 mL)
- Opaque (13 shades/2 mL): A10, A20, A30, A3.50, A40, B10, B20, B30, B40, MO, BGO, GO, WO
- Cervical (4 shades/2.6 mL): AC1, AC2, BC1, BC2
- Opaque Dentine (9 shades/2.6 mL): ODA1, ODA2, ODA3, ODA3.5, ODA4, ODB1, ODB2, ODB3, ODB4
- Body (9 shades/2.6 mL): A1B, A2B, A3B, A3.5B, A4B, B1B, B2B, B3B, B4B
- Incisal (4 shades/2.6 mL): 57, 58, 59, 60
- Translucent (9 shades/2.6 mL): T, HVT, LVT, T-Glass, BG, GT, CT-A, CT-B, CT-R
- Concentrate (6 shades/2.6 mL): MI, WE, OC, AM-Y, AM-R, AM-V
- Flowable Composite Resin (5 shades/2 mL): FODA3, F-A3B, F-root AB, F-59, F-T-Glass
- CERAMAGE Modelling Liquid (1 bottle/6 mL)
- M.L. Primer (1 bottle/5 mL)
- Directions for use

#### CERAMAGE CD Set

- Opaque (7 shades/2 mL): C10, C20, C30, C40, D20, D30, D40
- Cervical (4 shades/2.6 mL): CC1, CC2, DC1, DC2
- Opaque Dentine (7 shades/2.6 mL): ODC1, ODC2, ODC3, ODC4, ODD2, ODD3, ODD4
- Body (7 shades/2.6 mL): C1B, C2B, C3B, C4B, D2B, D3B, D4B
- Directions for use

#### CERAMAGE 8 Color Set

- Pre-Opaque (1 shade/2mL)
- Opaque (10 shades/2mL): A10, A20, A30, A3.50, A40, B20, B30, C30, BGO, MO
- Cervical (4 shades/2,6mL): AC1, AC2, BC1, CC1
- Opaque Dentin (8 shades/2,6mL): ODA1, ODA2, ODA3, ODA3,5, ODA4, ODB2, ODB3, ODC3
- Body (8 shades/2,6mL): A1B, A2B, A3B, A3,5B, A4B, B2B, B3B, C3B
- Incisal (3 shades/2,6mL): 58, 59, 60
- Translucent (4 shades/ 2,6mL): HVT, T, LVT, T-Glass
- Flowable Composite Resin (3 shades/ 2mL): F-59, F-A3B, F-rootAB
- CERAMAGE Modelling Liquid (1 bottle/6mL)
- M.L.Primer (1 bottle/5mL)
- Directions for use

#### CERAMAGE Gum Color Full Set

- Opaque (2 shades/2 mL): GUM-O, WO
- Gum (4 shades/2.6 mL): GUM-T, GUM-L, GUM-D, GUM-Or
- Flowable Composite Resin (4 shades/2 mL): F-GUM-Br, F-GUM-V, F-GUM-R, F-W
- Directions for use

#### Accessories

- CERAMAGE Oxy-Barrier (1 bottle/10 mL)
- CERAMAGE Sep (1 bottle/7 mL)
- CERAMAGE Spacer (1 bottle/7 mL)
- Uni Brush No.4 (1 handle/10 brush tips)
- DispoDish (10 dishes)
- Mixing Pad (50 sheets)
- Light Shield Cover (1 cover)
- Directions for use
- Color Table
- CERAMAGE Finishing & Polishing Kit
- DURA-POLISH (Pre polishing paste)
- DURA-POLISH DIA (High gloss polishing paste)

#### Individual products

- Pre-Opaque (1 shade/2mL)
- Opaque (27 shades/2 mL)
- Cervical (8 shades/2.6 mL)
- Opaque Dentine (20 shades/2.6 mL)
- Body (24 shades/2.6 mL)
- Incisal (6 shades/2.6 mL)
- Translucent (10 shades/2.6 mL)
- Concentrate (11 shades/2.6 mL)
- Flowable Composite Resin (12 shades/2 mL)
- CERAMAGE Modelling Liquid (1 bottle/6 mL)
- M.L. Primer (1 bottle/5 mL)
- CERAMAGE Oxy-Barrier (1 bottle/10 mL)
- CERAMAGE Sep (1 bottle/7 mL)
- CERAMAGE Spacer (1 bottle/7 mL)

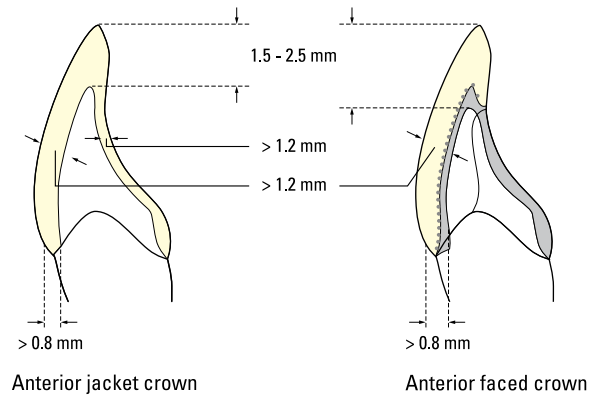
## 2. Application

### 2-1. Layering diagram

Guidelines for the minimum thickness of the abutment tooth

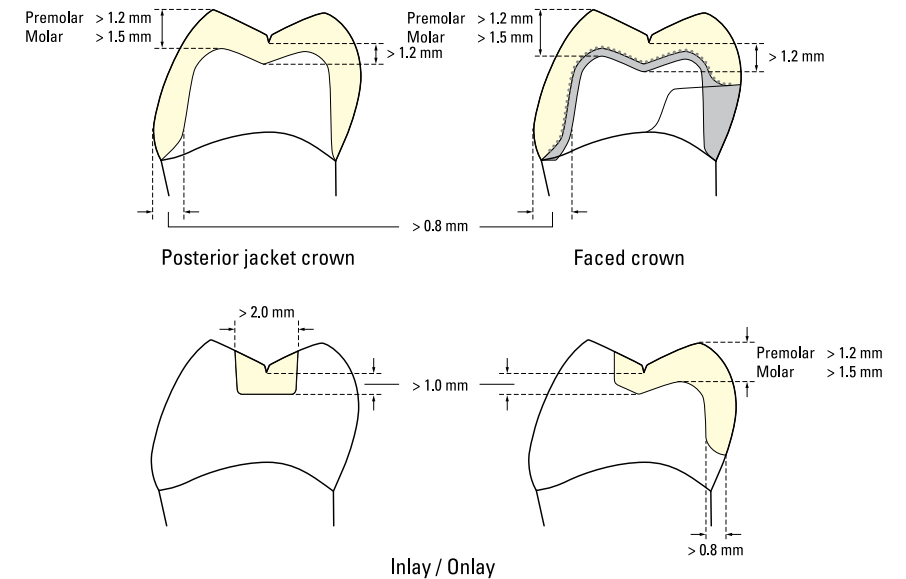
#### Anterior

	Jacket 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 Proximal area: 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.



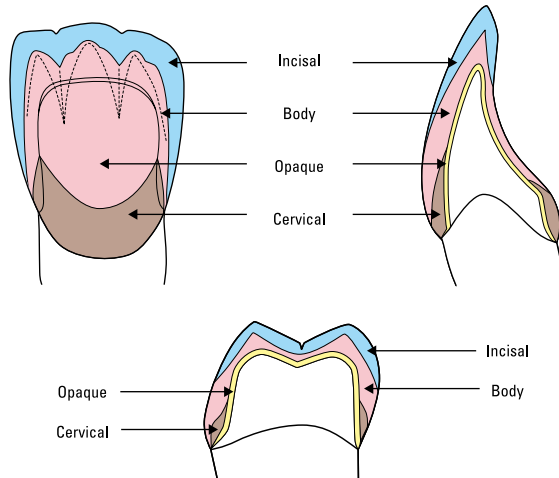
#### Posterior

	Jacket 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	—	—	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 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.



## 2. Application

### 2-2. Layering technique for jacket crowns



#### 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 bottle well until the sediment disappears before applying CERAMAGE Sep. Since the Spacer and Sep contain solvents, 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 (apply Opaque and light-cure) 2 to 3 times to get the correct shade.



Application of Opaque

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

Opaque should not be pre-cured. Light-cure for the prescribed time in a light-curing unit.

#### 3. Applying and light-curing Cervical

Apply Cervical paste from the cervical area to the centre of the crown and light-cure.



Application of Cervical

#### 4. Applying Body and Incisal

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



Applying Body



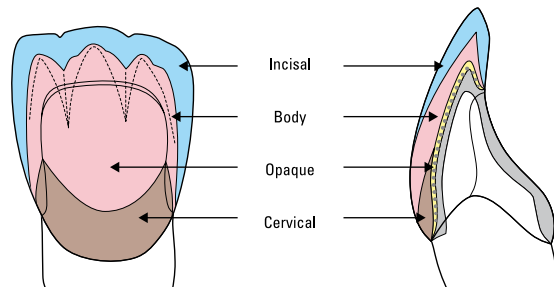
After applying Body



After applying Incisal

## 2. Application

### 2-3. Layering technique for faced crowns



#### 1. Pre-Treatments

- After fabricating the working model in the usual manner and waxing up, cut back the crown to be faced. Then add the retention using retention beads 150  $\mu\text{m}$ .
- Adjust the metal framework after casting.
- After sandblasting the surface to be faced with aluminium oxide, clean with a steam cleaner or ultrasonic cleaner.



Metal framework after sandblasting with aluminium oxide

#### 2. Applying M.L. Primer

Apply M.L. Primer to the surface of the metal framework where CERAMAGE is going to be applied with a small brush and dry for 10 seconds.

**Note:** Since M.L. Primer contains solvents, replace the cap tightly immediately after use. Dispensed liquid should be used immediately.

After applying M.L. Primer, clean the brush with ethanol. The brush should not be cleaned with self-curing resin liquid.

#### 3. Applying and light-curing Pre-Opaque

Apply Pre-Opaque to the undercuts of the retention beads with a Uni Brush No. 4 and light-cure. Ensure it flows completely into these areas.



Application and light-curing of Pre-Opaque



Apply completely to the undercut areas of the retention beads and light-cure

#### 4. 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 (apply Opaque and light-cure) 2 to 3 times to cover the framework.



Application of Opaque

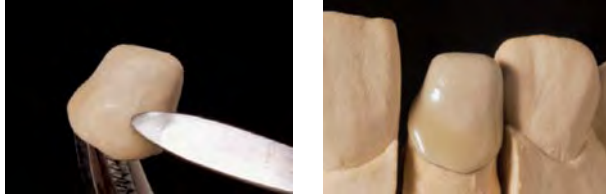




## 2. Application

### 5. Applying and light-curing Cervical

Apply Cervical paste gradually from the cervical area to the centre of the crown and light-cure



Build-up and polymerisation of Cervical

### 6. Applying Body and Incisal

Apply Body and adjust the contour. Then light-cure. For the enamel, contour and adjust the Incisal and light-cure. Apply CERAMAGE Oxy-Barrier to the surface of the paste before final light-cure if required.

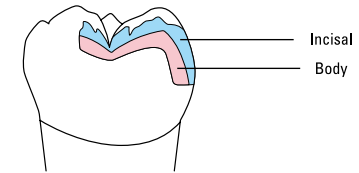


Applying Body

After applying Body

After applying Incisal

### 2-4. Layering technique for inlays and onlays



#### 1. Pre-Treatments

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

#### 2. Applying 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 margins



Application of CERAMAGE Sep

#### 3. Applying and light-curing Body and Incisal

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



Applying Body



Applying Incisal

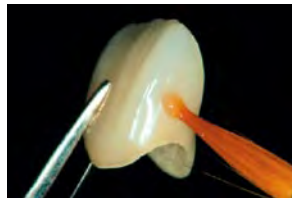
### 3. Special applications

#### 3-1. Application of Flowable Composite Resin

Flowable Composite Resin is more flowable than conventional crown and bridge composite resin. Use 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 ensures contouring without air bubbles and also restores void caused by air bubbles.



Application to mamelon areas



Filling in air bubble void

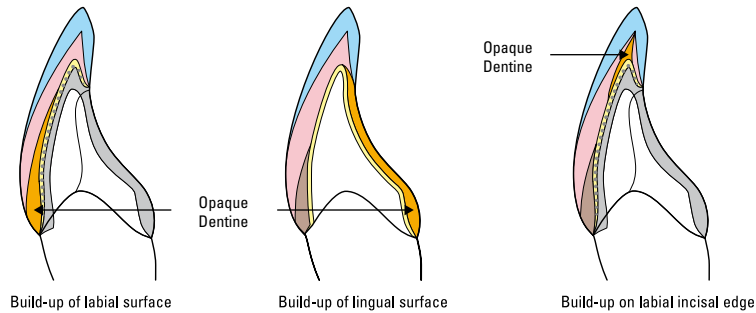


Application to floor of inlay

**Note:** Flowable Composite Resin is used for contouring and adjusting small areas. Do not apply to large areas.

#### 3-2. Application of Opaque Dentine

Opaque Dentine has the same shade as the Body paste, but is slightly more opaque. Use it to mask the reflection of Opaque when there is not enough space to apply Body paste to the lingual surface and around the cervical area.



Build-up of labial surface

Build-up of lingual surface

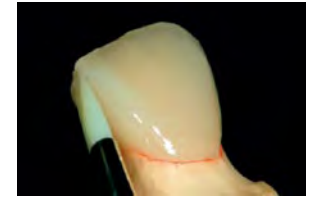
Build-up on labial incisal edge

#### 3-3. Application of Modelling Liquid

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

##### Additions after contouring

Where the surfaces to be bonded have been prepolished or after final polishing, roughen the surfaces, e.g. with a Dura-Green stone. Then apply a coat of Modelling Liquid to the surfaces to be bonded, add CERAMAGE and light-cure.



Applying Modelling Liquid



Additional build-up of CERAMAGE paste

#### 3-4. Application of Oxy-Barrier

CERAMAGE Oxy-Barrier is applied to avoid air contact before the final light-curing of CERAMAGE. Applying it to the surface of CERAMAGE composite prevents inhibiting layer forming on the surface during light-curing.

##### 1. Applying to the occlusal surface of the molar

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

##### 2. Applying to the margins

Applying Oxy-Barrier to thin margins facilitates contouring.

**Note:** If light-curing with CERAMAGE Oxy-Barrier, rinse it off with water before contouring.



Applying to the occlusal surface



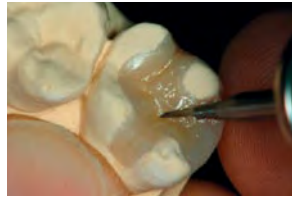
Applying to the margins

## 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, polymerized composite surfaces must be trimmed with matched rotary instruments. It is not advisable to use cutters or coarse diamond burs! The surface can be trimmed to achieve the desired texture and shine using the items in the CERAMAGE Finishing & Polishing Kit.

After light-curing, use a Robot Carbide Fissure Bur (SHOFU) for finishing the interproximal and occlusal contours and fissures. Then use Dura-Green stones for trimming and contouring the composite surface.



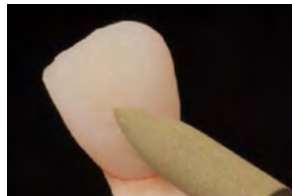
Contour with a Robot Carbide Fissure Bur



Contour with a Dura-Green stone

### 4-2. Finishing and polishing

After contouring, use CompoMaster Coarse for finishing, then DURA-POLISH for polishing the anterior and labial surface detail and the occlusal surface of the molars.



Finish with a CompoMaster Coarse diamond impregnated silicone point



Polish with DURA-POLISH Al<sub>2</sub>O<sub>3</sub> polishing paste

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

### 4-3. High-lustre polishing

After polishing, use CompoMaster for high-lustre polishing and DURA-POLISH DIA for increased surface gloss.



High-lustre polish with CompoMaster



Use DURA-POLISH DIA, diamond polishing paste for increased surface gloss

**Note:** For a high-lustre polish apply DURA-POLISH DIA with a brush and then polish with a felt wheel.

### 4-4. Finishing



Anterior jacket crown



Inlay on molar



Anterior faced crown



Metal faced crown on molar

### 4-5. Treating the bonding surface of the metal free restoration

When cementing a CERAMAGE restoration to an abutment tooth, sandblast the bonding surface of the restoration using approx. 0.1 – 0.2 MPa (approx. 1 – 2 bar) air pressure before fitting the restoration in the mouth. When sandblasting, take care not to chip the margins.

## 4. Contouring, finishing and polishing

### 4-6. Adjusting the contours and shade of finished restorations – Modelling Liquid

Final cured and polished surfaces must be roughened mechanically (e.g. sandblast with aluminium oxide) before further pastes are applied. Moisten the dry, clean surface with Modelling Liquid. Depending on the required correction, composite is now applied and light-cured according to the curing chart.

## 5. Technical data

### 5-1. Curing time

Light-Cure	Solidilite V	Solidilite EX	Heraflash UNI-XS Dentacolor XS (Kulzer)
Pre-Opaque	1 min	1 min	1,5 min
Opaque	3 min	3 min	3 min
Composite (pre-light-cure)	1 min	1 min	1,5 min
Flowable composite (pre-light-cure)	1 min	1 min	1,5 min
Pontic	3 min	3 min	3 min
Final	3 min	5 min	3 min

Light-Cure	ECLIPSE junior (Dentsply)	Liculite (de Trey) Polylux HDS 400 (Dreve)	Labolight LV II Labolight LV III (GC)
Pre-Opaque	1 min	3 min	2 min
Opaque	3 min	5 min	3 min
Composite (pre-light-cure)	1 min	3 min	2 min
Flowable composite (pre-light-cure)	1 min	3 min	2 min
Pontic	3 min	5 min	3 min
Final	3 min	10 min	5 min

**Note:** CERAMAGE composites can be light cured in all light curing units recommended by SHOFU. The types of unit and light cure times are shown in the curing-chart. In order to guarantee a perfect light-curing of the CERAMAGE materials, take care that the work to be cured is placed at optimal position to the ray of light-curing. Please consider the corresponding manufacturer's instructions when operating the light curing devices.



### 5-2. Depth of cure

System	Shade	Curing Time (Solidilite V)	Depth of Cure (mm)
Pre-Opaque		1 min	1.6
Opaque	A10	3 min	0.24
	A30	3 min	0.21
	A40	3 min	0.20
Cervical	AC1	1 – 3 min	1.3 – 1.8
	AC2	1 – 3 min	1.0 – 1.4
Opaque Dentine	ODA	1 – 3 min	1.8 – 2.5
	ODA3	1 – 3 min	1.5 – 2.1
	ODA4	1 – 3 min	1.2 – 1.6
Body	A1B	1 – 3 min	2.5 – 3.4
	A3B	1 – 3 min	1.8 – 2.6
	A4B	1 – 3 min	1.8 – 2.5
Incisal	56	1 – 3 min	4.2 – 6.8
	59	1 – 3 min	4.0 – 5.8
	61	1 – 3 min	3.8 – 5.5
Translucent	T	1 – 3 min	5.5 – 8.6
	T-Glass	1 – 3 min	6.2 – 9.6
Concentrate	MI	1 – 3 min	2.4 – 3.4
	OC	1 – 3 min	3.7 – 6.3
	AM-Y	1 – 3 min	3.2 – 4.6
	MY	1 – 3 min	1.6 – 2.4
	GUM-D	1 – 3 min	1.4 – 2.0
Opaque Dentine	F-ODA3	1 – 3 min	1.6 – 2.2
Body	F-A3B	1 – 3 min	2.0 – 2.7
Incisal	F-59	1 – 3 min	4.3 – 6.1
Translucent	F-T-Glass	1 – 3 min	6.6 – 10.4
Concentrate	F-GUM-Br	1 – 3 min	1.8 – 2.5

## 5. Technical data

### 5-3. Physical properties

	CERAMAGE Composite for crown + bridge	CERAMAGE Flowable Composite Resin	SOLIDEX Crown and bridge composite	Test Method
Vickers Hardness (MPa)	726	392	422	Based on ISO 10477 standard
Flexural Strength (MPa)	146	132	75	
Flexural Modulus (GPa)	10.7	6.0	5.7	
Compressive Strength (MPa)	354	303	314	
Diametral Tensile Strength (MPa)	62	58	48	Based on SHOFU test method
Polymerisation Shrinkage (Vol.%)	2.5	3.3	2.5	
Toothbrush Abrasion (%)	0.43	0.74	0.39	
Enamel Abrasion of the Antagonist (µm)	3.2	2.5	4.8	
Working Time (minutes)	>30	25	>30	
Fluorescent 2000 lx				

### 5-4. Adhesives strength

Tensile Bond strength (MPa) to gold- and silver-palladium-alloy – after 2000 thermal cycles

CERAMAGE	SOLIDEX	Test Method
11.9	10.2	Based on SHOFU test method

## 6. General Information

### 6-1. Important information

- CERAMAGE is intended solely for use in dental treatment.
- CERAMAGE should only be used by a qualified dental professional.
- Do not use after the expiry date printed on the packaging and labels.
- Keep the material away from an open flame, store at room temperature (1 – 30 °C / 34 – 86 °F).
- Use the material in a well-ventilated room.
- To avoid any adverse effects from the dust when polishing light-cured material, use a bench extractor, anti-dust face mask and protective glasses that comply with approved standards. Do not inhale the dust.

### 6-2. Precautions

- Operators who develop a rash, eczema, reddening, ulcers, swelling, itchiness, numbness, etc. when using the material should discontinue use and consult a doctor.
- Avoid contact with the skin and eyes. On contact with the eyes, rinse immediately with plenty of water and consult an eye specialist.
- Operators in frequent contact with natural rubber are considered to be at a higher risk of developing an allergy to natural rubber and should, therefore, use CERAMAGE Spacer carefully.

### 6-3. Hazard warnings

- Pre-Opagues, Opagues contain 2 HEMA
- M.L. Primer contains acetone
- CERAMAGE Sep contains ethanol

## 6. General Information

### 6-4. User information

- Always replace the cap after use. Ensure the cap is screwed on tightly before storing the product. Use separate brushes for Pre-Opaque and Opaque. After application, clean the brush with ethanol.
- Do not apply the material under direct light, e.g. sunlight or artificial laboratory lamps, as this may accelerate light-curing of the paste.
- To avoid air bubbles when mixing and material degradation, never mix this composite resin with other crown and bridge composite resins. Do not mix this composite resin with other materials.
- Do not apply surface, lustering or glazing agent to the surface of restorations fabricated with this material.
- Cover the material with the Light Shield Cover when it is kept on the DispoDish or mixing pad.
- Flowable Composite Resin is intended for use in small areas, e.g. restoring void caused by air bubbles, fine adjustment of the shape, etc. Do not use it for the full build-up of the restoration or the surface of a crown or bridge.
- Before use, shake the bottle of CERAMAGE Sep and apply after the sediment disperses.
- Replace the cap immediately after applying the CERAMAGE Spacer or the contents may solidify.
- The light-curing times (exposure times) given are for the "Solidilite V & EX" light-curing unit. If a different light-curing unit is used, adhere to the manufacturer's instructions for use to ensure the material is light-cured properly.

### 6-5. Other information


- The surface of the fitted restoration may become stained or plaque may adhere to it depending on the diet and oral hygiene of the patient. Ensure that patients practice good oral hygiene on a daily basis.

### 6-6. Contra-Indications

- Bruxism
- Malocclusions
- Occlusion with interferences
- No occlusal contacts at metal composite margins

CE 0120



 **Manufacturer**

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