The new leader in hybrid ceramic blocks
Introducing CERASMART™, a new force absorbing hybrid ceramic block

The genius behind GC’s force absorbing hybrid ceramic is the development of a unique technology to manufacture a block with high density of ultrafine glass particles. Uniform dispersion (very short inter-particle distance) of individually silanated and bonded particles is key to delivering CERASMART’s™ exceptional strength, polish retention and wear resistance.

Dr Anthony Mak (Australia), Brad Grobler (New Zealand)
CERASMART™ is easy to finish and retains its beautiful high gloss over time

Due to the dynamic proprietary nano ceramic matrix, and its complete homogeneous nature, CERASMART™ is a true self-polishing material. Not only does it stay polished longer, but it is proven to gain lustre even after being roughened.† This unique hybrid ceramic is unsurpassed with its high gloss value, unique self-polishing capability, and its unmatched aesthetics.

CERASMART™ provides high flexural strength

CERASMART features the highest flexural strength in its category, and is superior to the classical feldspathic ceramic blocks. Most importantly, it also offers a high breaking energy to buffer masticatory pressure and sustain more challenging clinical situations.

CERASMART™ showed second higher strength, but the best breaking energy. That means CERASMART™ was a virtually fracture-proof material.

Balanced opalescence and fluorescence

Opalescence (Transmitted light)

Fluorescence (Black light)
CERASMART™ offers your patients strong, aesthetic and highly wear-resistant restorations

Perfect margins
CERASMART™ sharp margin adaptation and resistance to chipping ensures a long-lasting marginal seal.

High fracture toughness
CERASMART™ has a very high level of breaking energy.

Superior wear resistance
Independent research showed that CERASMART™ has very low wear loss under laboratory testing.*

Breaking energy‡

<table>
<thead>
<tr>
<th>Material</th>
<th>MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERASMART™ Resin Nano Ceramic</td>
<td>2.5</td>
</tr>
<tr>
<td>Hybrid Ceramic</td>
<td>1.0</td>
</tr>
<tr>
<td>Feldspathic Ceramic</td>
<td>0.5</td>
</tr>
<tr>
<td>Lithium Disilicate Glass-Ceramic</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Wear loss

<table>
<thead>
<tr>
<th>Material</th>
<th>Wear Height (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERASMART™</td>
<td>200</td>
</tr>
<tr>
<td>Hybrid Ceramic (VITA Enamic)**</td>
<td>250</td>
</tr>
<tr>
<td>Resin Nano Ceramic (LAVA Ultimate)**</td>
<td>300</td>
</tr>
</tbody>
</table>

‡Breaking energy is a measure of fracture toughness. R&D Dept. GC Corporation.

** Not trademarks of GC Corporation.
Finishing CERASMART™

Try in and finish...

1. Prepare
   Sandblast with 25-50µm alumina (0.2MPa).

2. Clean
   Clean with oil-free air syringe or ultrasonic cleaner. Clean further with alcohol.

3. Silanate
   Apply silane coupling agent, eg. CERAMIC PRIMER II and dry.

4. Characterise
   Dispense and brush apply OPTIGLAZE™ color in a thin layer. Do not air blow. MUST be cured with a light-curing device with a wavelength in the range of 400-430nm (NOT with traditional Blue LED).

...or characterise with OPTIGLAZE™ color
Bonding CERASMART™
Essential bonding steps for optimum results

1. Sandblast or 5% HFI etch
   Options for pretreating CERASMART™:
   A. Sandblast with 25-50µm alumina (0.2MPa);
   OR
   B. Treat with 5% HFI (hydrofluoric acid) for 60 seconds. Wash with water and dry.

2. Clean
   Clean with oil-free air syringe or ultrasonic cleaner and dry. Clean further with ethanol (alcohol) to remove oil residue.

3. Silane
   Apply silane coupling agent, eg. CERAMIC PRIMER II and dry. No bonding agent is required after the application of CERAMIC PRIMER II. For other ceramic primers, follow the manufacturer’s instructions.

Key elements for durable bonding to CERASMART™:
1. Surface roughness
2. A clean bonding surface
3. Applying CERAMIC PRIMER II

Bonding to CERASMART™ – effect of pre-treatment and thermocycling (TC)

When bonding G-CEM LinkAce resin cement to CERASMART™, similar bond strengths are achieved by either treating CERASMART™ with 5% Hydrofluoric acid for 60 sec. and CERAMIC PRIMER II or by sandblasting and applying CERAMIC PRIMER II.
Completing Cementation

4. Tooth preparation
Clean and treat the prepared tooth surface following the instructions of the manufacturer of the adhesive resin cement.

Retaining a wide band of enamel, which is etched for mechanical retention, is ideal for optimum adhesion.

5. Adhesive resin cementation
Follow the procedure described by the manufacturer of the adhesive resin cement.

6. Finish
Finish and polish the margins

**CERAMIC PRIMER II** features GC’s advanced silane and proven phosphoric acid ester monomer technologies in an innovative single bottle delivery, formulated for stability and durable adhesion. It has a 2 year shelf life and does not require refrigeration.

**CERAMIC PRIMER II** is designed to create a strong bond between all aesthetic indirect restorations and resin-based cements.
A smarter system for a smarter workflow

1. Shade Selection, HT or LT

2. Scanning and milling Cerasmart Blocks

3. Finishing and polishing DIAPOLISHER PASTE

4. Characterization OPTIGLAZE color

5. Pre-Treatment Ceramic Primer II

6. Cementation using traditional resin cement techniques

7. Maintenance and repair Ceramic Primer II G-ænial Universal Flo

A2 HT

A2 LT
CERASMAST™ preparation design and indications

Minimum thickness of the restoration
Wall thickness       >1.5 mm
Thickness at margins >1.0 mm
Pit and fissure areas >1.5 mm
Cusp areas       >1.5 mm

Margin preparation
Deep chamfer or rounded shoulder

Preparation angle
Prepare tooth with about 6° taper

Inlays and onlays
All internal edges and angles should be rounded
Avoid having margins in direct occlusal contact with the opposing tooth

Sizes, dimensions (mm) and indications

<table>
<thead>
<tr>
<th>Size</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size 12</td>
<td>15</td>
<td>12</td>
<td>10</td>
<td>More suited for inlays, onlays</td>
</tr>
<tr>
<td>Size 14</td>
<td>18</td>
<td>14</td>
<td>12</td>
<td>More adapted for individual crowns</td>
</tr>
<tr>
<td>Size 14L</td>
<td>18</td>
<td>14</td>
<td>14</td>
<td>More suited for larger restorations (endo-crowns, canines)</td>
</tr>
</tbody>
</table>
CERASMART™ clinical cases

BEFORE

AFTER
Dr G Koike, Japan, CERASMART™ A1 HT

BEFORE

AFTER
Dr R Rosenblatt, USA, CERASMART™ A2 LT
Product Range

CERASMART™
CERASMART™ for CEREC, refill of 5 blocks
Sizes 12, 14, 14L
HT shades (A1, A2, A3, A3.5, B1)
LT shades (A1, A2, A3, A3.5, B1)
Bleach shade (BL)

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