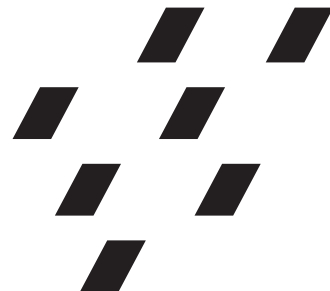


CERASMART™

The new leader in hybrid ceramic blocks

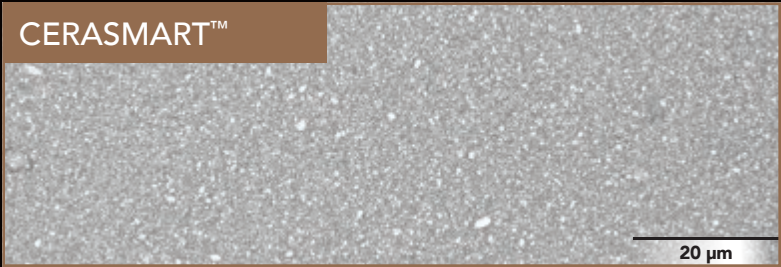


Introducing CERASMART™, a new force absorbing hybrid ceramic block

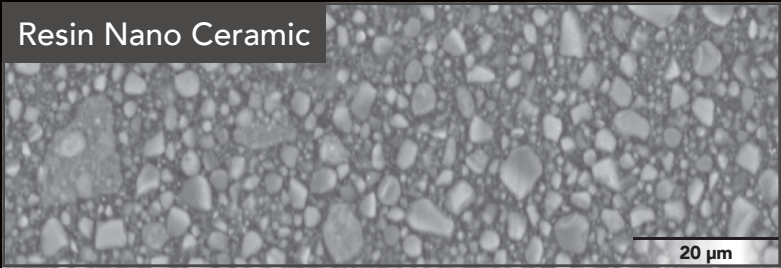
The genius behind GC's force absorbing hybrid ceramic is the development of a unique technology to manufacture a block with high density of ultrafine glass particles. Uniform dispersion (very short inter-particle distance) of individually silanated and bonded particles is key to delivering CERASMART's™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



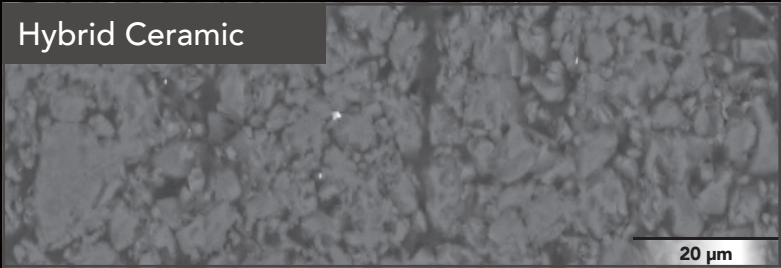
Dr Anthony Mak (Australia), Brad Grobler (New Zealand)



Contains high density of ultra fine homogeneously-dispersed fillers in a highly cross-linked resin matrix.



Typically contains nano ceramic particles embedded in a highly cross-linked resin matrix.



Typically contains a ceramic network strengthened by a polymer network.

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.



Milled CERASMART™



CERASMART™ after polishing



CERASMART™ finished with
OPTIGLAZE™ color

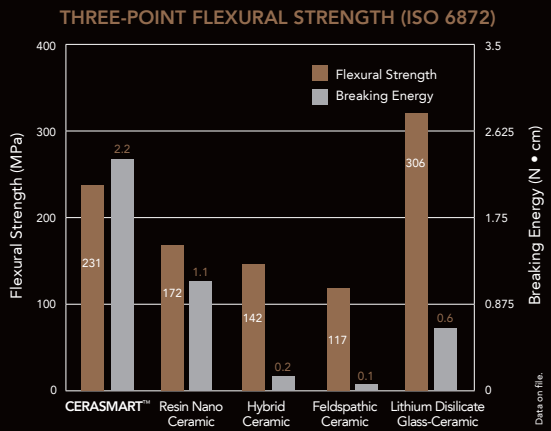


Dr Anthony Mak (Australia), Brad Grobler (New Zealand)

[†] Akiyama S, Akatsuka R, Sasaki K. Evaluation of Gloss-retention and Self-polishing Property of CAD/CAM Composite Block. J Dent Res 2015;94(Spec Issue A):3650.

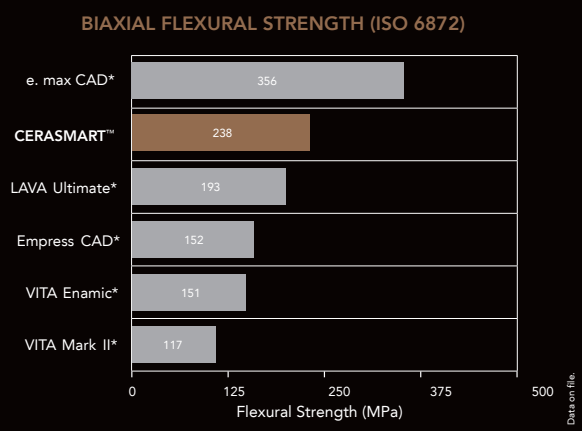
CERASMART™ provides high flexural strength

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.



R&D Dept. GC Corporation

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



*Not trademarks of GC Corporation

R&D Dept. GC Corporation

The flexural strength of ceramics are often evaluated by a biaxial flexure test. According to this test, CERASMART™ showed higher than any other material besides e. max CAD

Balanced opalescence and fluorescence

Opalescence (Transmitted light)



CERASMART™ Resin Nano Ceramic Hybrid Ceramic

Fluorescence (Black light)



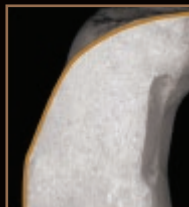
CERASMART™ Resin Nano Ceramic Hybrid Ceramic

*R&D Dept. GC Corporation

CERASMART™ offers your patients strong, aesthetic and highly wear-resistant restorations

Perfect margins

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



CERASMART™



Feldspathic Ceramic

Lithium Disilicate
Glass-Ceramic

Hybrid Ceramic

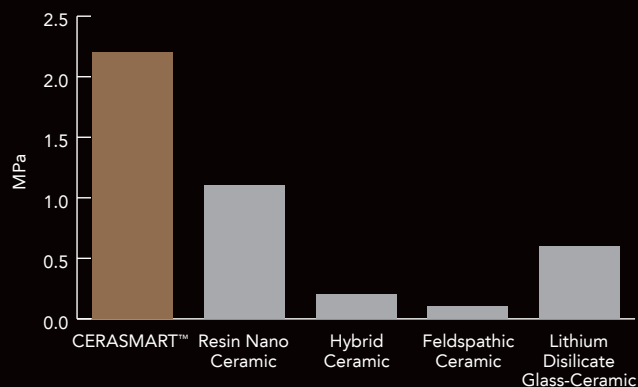


Resin Nano Ceramic

High fracture toughness

CERASMART™ has a very high level of breaking energy.

Breaking energy[†]

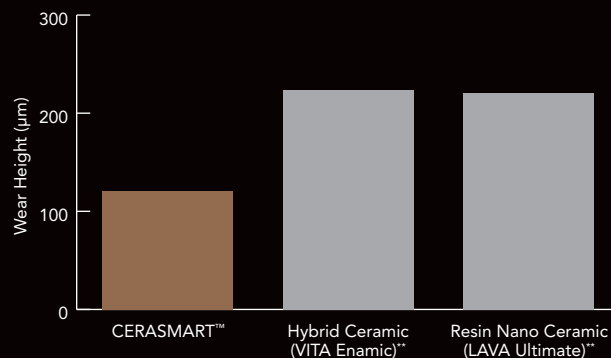


[†]Breaking energy is a measure of fracture toughness. R&D Dept. GC Corporation.

Superior wear resistance

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

Wear loss



* Pande R et al. In Vitro Abrasion Wear of Nano and Hybrid Ceramic CAD/CAM Materials. J Dent Res 2015; 94(Spec Issue A):3529.

**Not trademarks of GC Corporation.

Finishing CERASMART™

Try in and finish...



Remove the sprue of the restoration.



Try-in the restoration and check the occlusion.



Finish and polish using medium and fine silicone points.



Final polish using diamond polishing paste, eg. DIAPOLISHER PASTE.

...or characterise with OPTIGLAZE™ color

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).

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

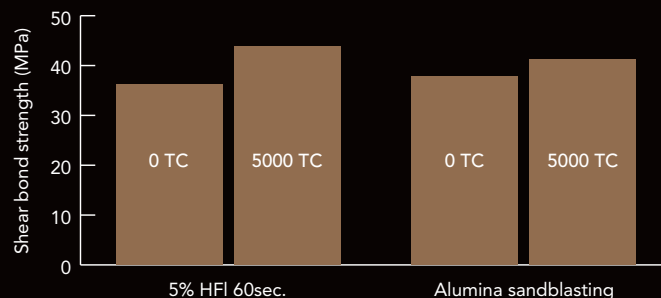


Apply silane coupling agent, eg. CERAMIC PRIMER II and dry. No bonding agent is required after the application of CERAMIC PRIMER II. For other ceramic primers, follow the manufacturer's instructions.

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.

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.



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

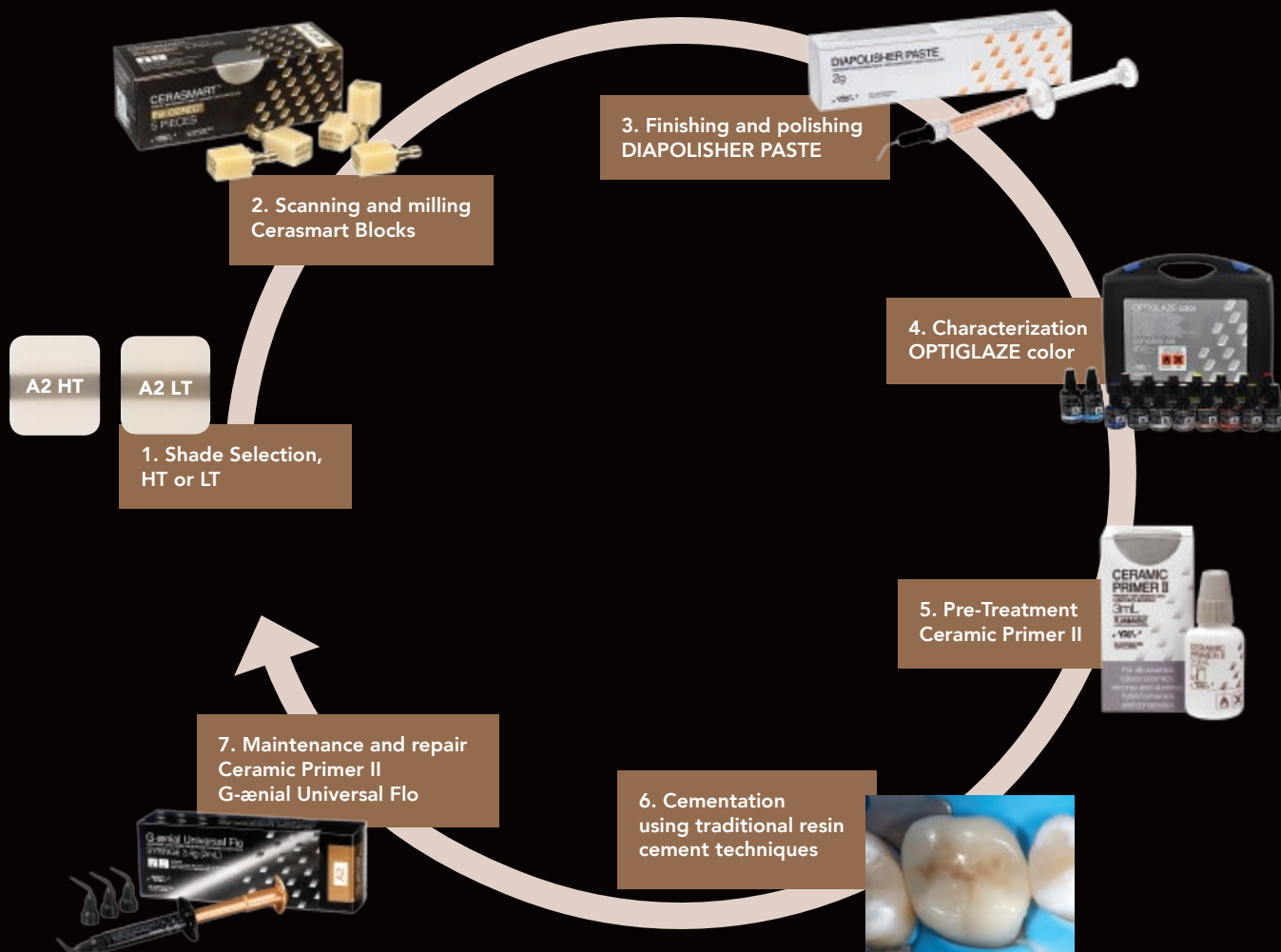
Follow the procedure described by the manufacturer of the adhesive resin cement.



6. Finish

Finish and polish the margins

A smarter system for a smarter workflow



CERASMART™ 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

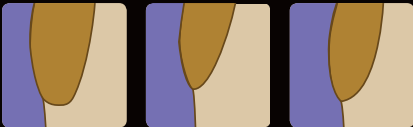
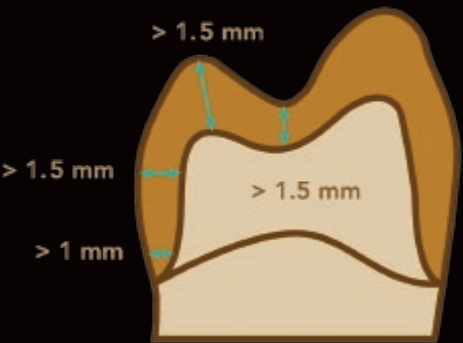
Preparation angle

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

Size	Length	Width	Height	Indications
Size 12	15	12	10	More suited for inlays, onlays
Size 14	18	14	12	More adapted for individual crowns
Size 14L	18	14	14	More suited for larger restorations (endo-crowns, canines)

CERASMART™ clinical cases



Dr G Koike, Japan, CERASMART™ A1 HT



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)



CERAMIC PRIMER II

3ml bottle



OPTIGLAZE™ color

Complete set



DIAPOLISHER PASTE

2g syringe



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