Functionally Gradient Lithium Disilicate CAD/CAM Blocks

Amber® Mill DIRECT

EN

DIRECT

Genuine Single-Visit Solution

All Ceramic Materials for All-Ceramic Restorations

Pre-crystallized lithium disilicate
block for chairside restorations

HASS | Human-Aid System Supplier

We solve the challenges faced with indirect millable restoration materials

- Quick & Easy
- Durable
- Real-gradation

Achieve True Single-visit Indirect Restorations

Dr. Yao-Lin Tang, DDS, *Pacific Dental Center / USA*

"Amber Mill Direct has all the advantages of lithium disilicate ceramics. Its power, however, are the beautiful smooth margins without the need for firing – an invaluable CAD block every dentist should have in their office"

CDT.Cristian Petri *Oral Design Clinic / Romania*

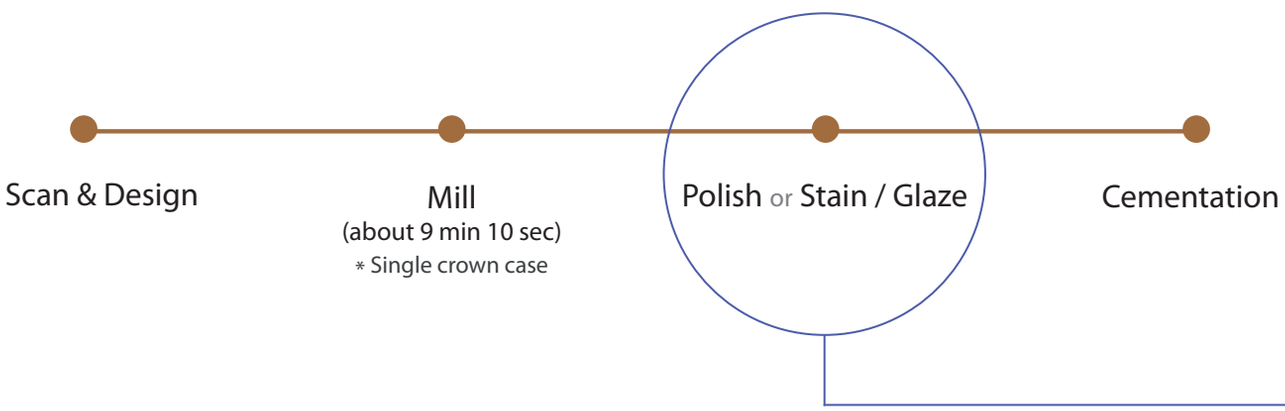
“No glaze, no stain, just MILL & POLISH, and the final restoration is ready. Anybody can do it, so don’t wait, go for it.”

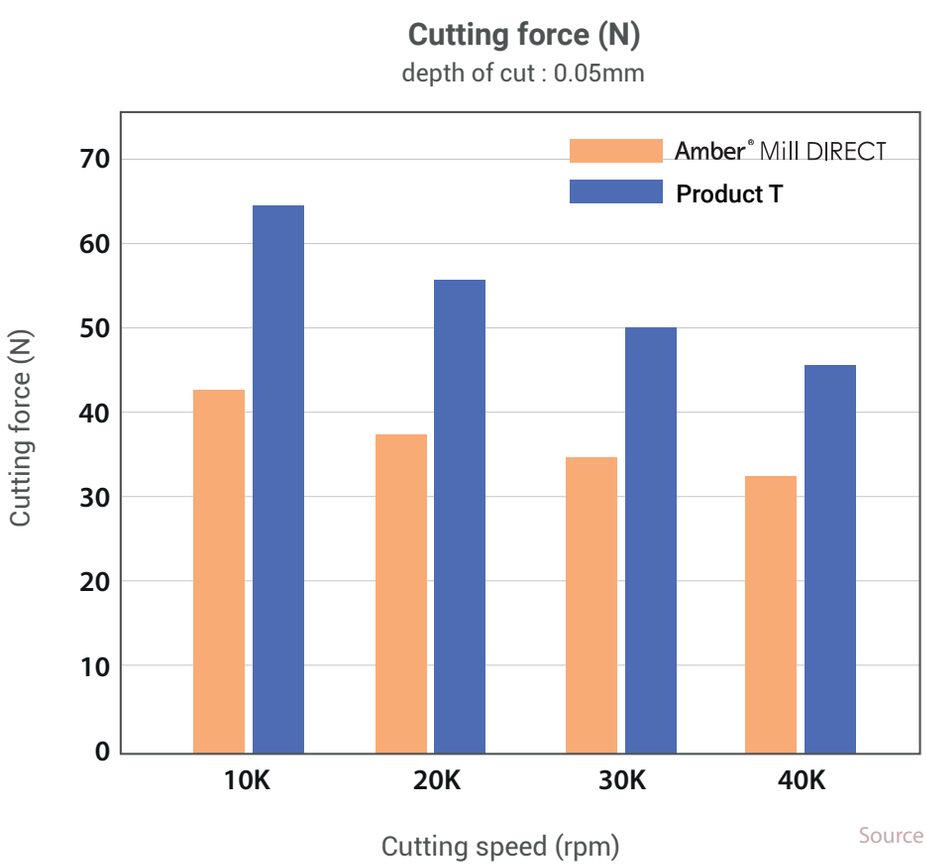
Quick & Easy

Pre-crystallization

Amber Mill Direct is a Lithium Disilicate-based millable glass ceramic block for dental restorations that usually requires no-crystallization.

Given the shortened fabrication time, one-day restorations are possible.

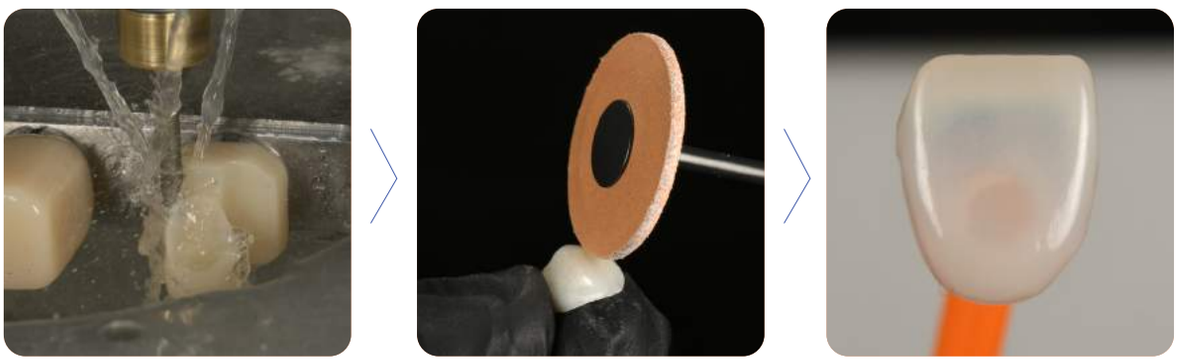




Source : HASS R&D, Korea

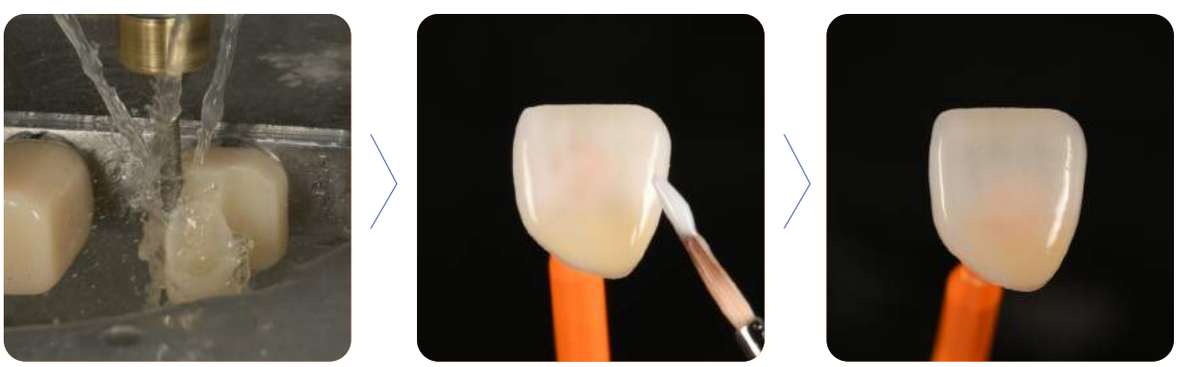
Option 1. Mill and polish

Save chair time! No crystallization required.
Just mill and polish. To expedite the in-office fabrication process, Amber Mill Direct does not require crystallization. After milling, you can polish and deliver the restoration directly to the patient. Achieve excellent aesthetic results with our graded translucency without any firing.



Option 2. Mill and glaze

Aesthetically characterized restorations.
If your restoration requires more characterization, simply strain/glaze to achieve better aesthetic results.



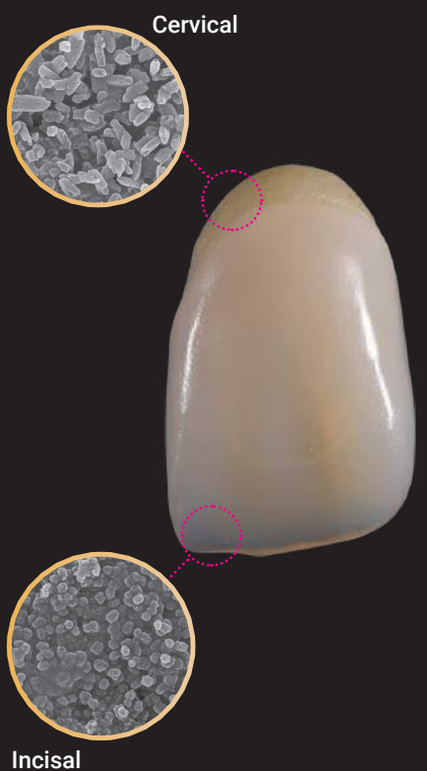
Option 3. Controllable transmission

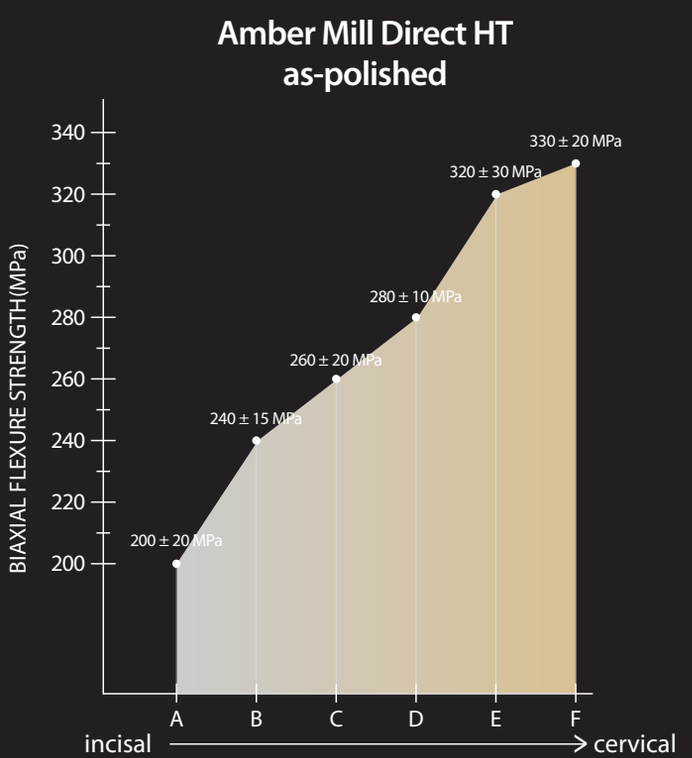
If you want to modify the value and opacity of the restorations, you can change from HT to LT by simply baking over 840°C

Durability

Microstructure

Amber Mill Direct produces restorations with different microstructures that generate different strengths in the cervical and incisal regions, thus, reducing wear of the antagonist teeth.

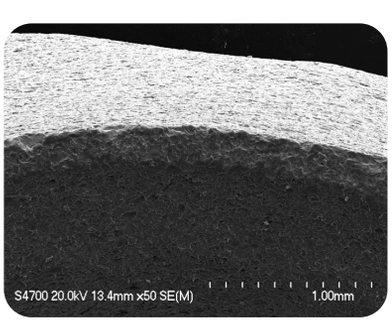




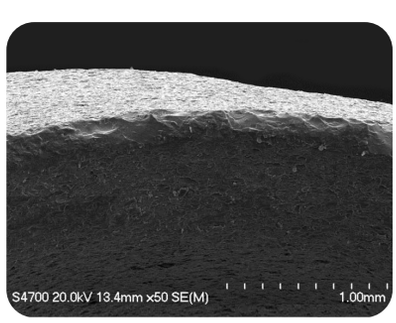
Source : HASS R&D, Korea

1. Edge stability

Achieve excellent marginal fit and cervical contour.



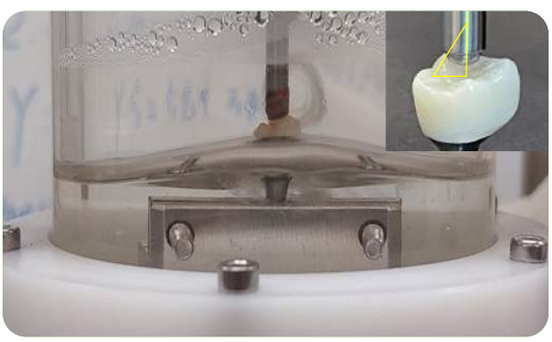
AmberMill Direct



Competitive product

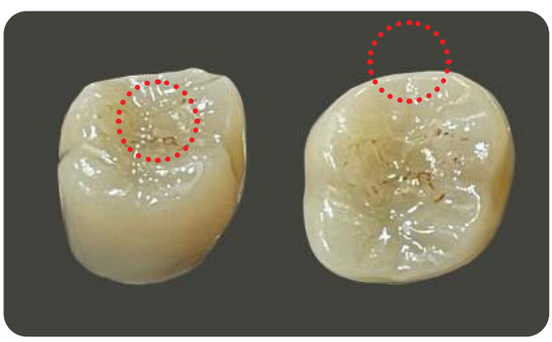
2. Fracture strength

Amber Mill Direct produces restorations with different microstructures that generate different strengths in the cervical and incisal regions, thus, reducing wear of the antagonist teeth.



Chewing simulator

*1,000,000 cycles / 1.5 Hz / 10kg force(in pH 7.2 Water) and thermal cycling at 5-55 °C for 30s each

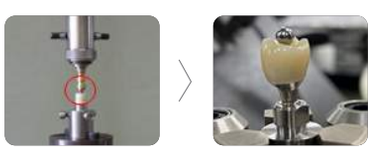


Test result from Chewing simulator proves superior wear-out resistance in occlusal region.

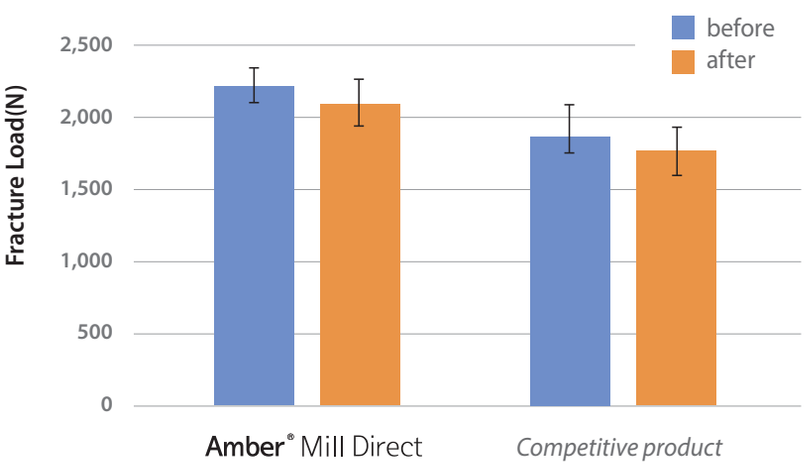
Fracture strength

before/after

Chewing simulator



Fracture Load

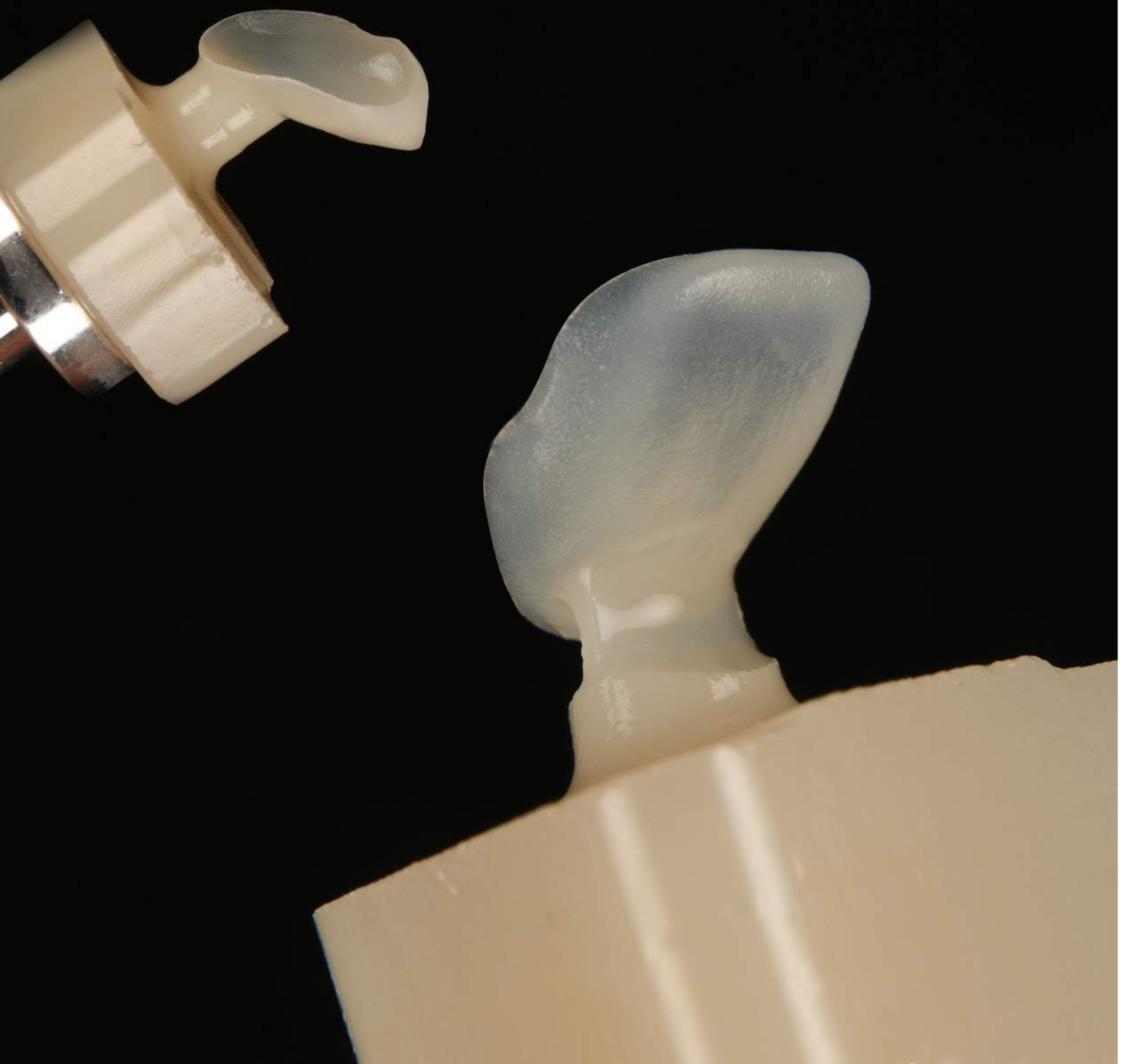


Source : HASS R&D, Korea

Real gradation

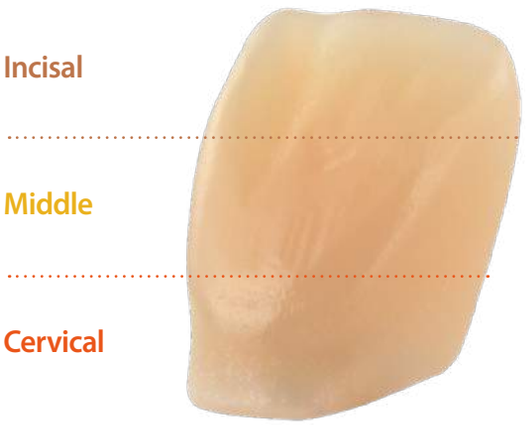
Graded translucency

Amber Mill Direct achieves natural translucency by applying a graded microstructure, from the cervical to incisal/occlusal regions, without additional characterization.



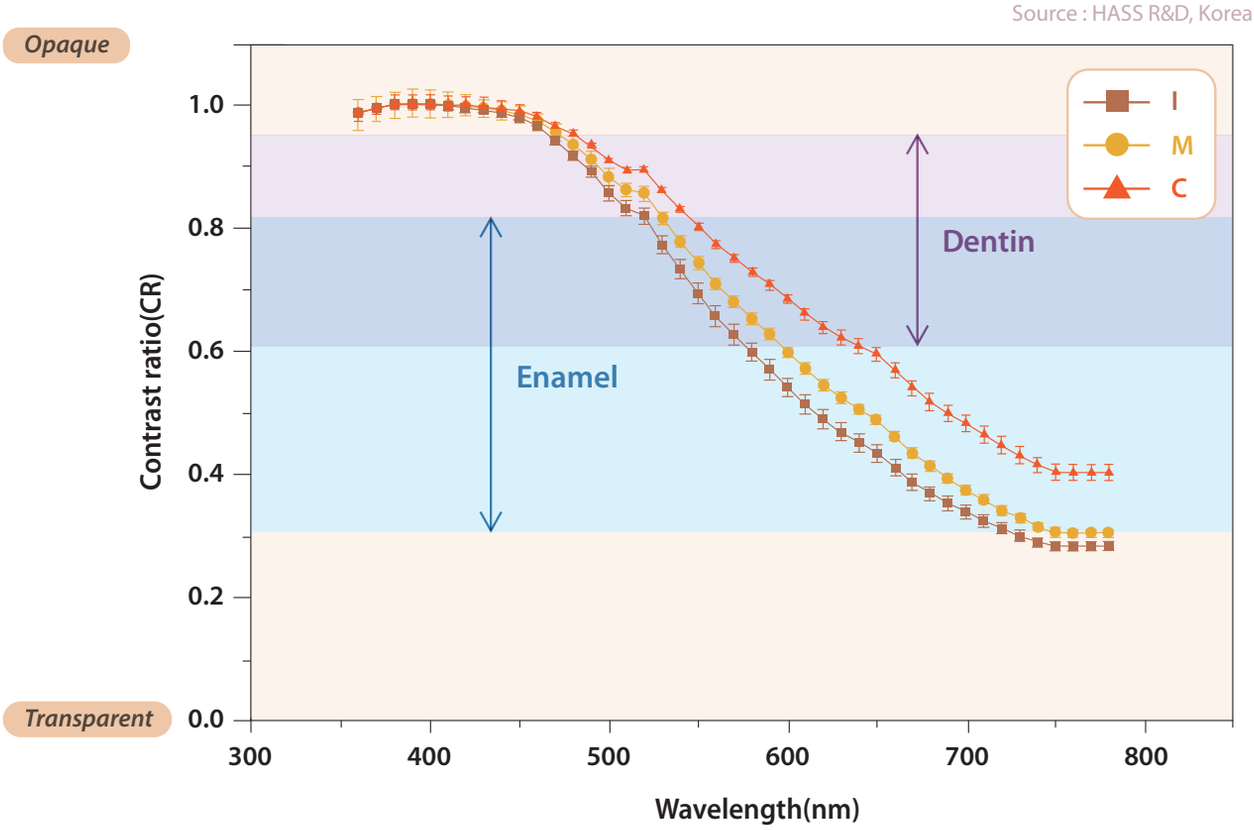
Result of contrast ratio test shows similar translucency in cervical and incisal part to natural teeth.

* Contrast ratio to natural teteth
  - **Enamel : 0.3~0.8 / 0.55~0.90**
  - **Dentin : 0.6~0.95**



Contrast Ratio (CR)

Source : HASS R&D, Korea

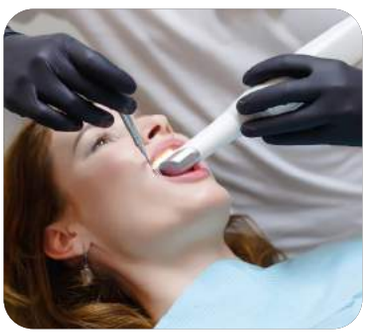


$$CR = \frac{Y_b}{Y_w}$$

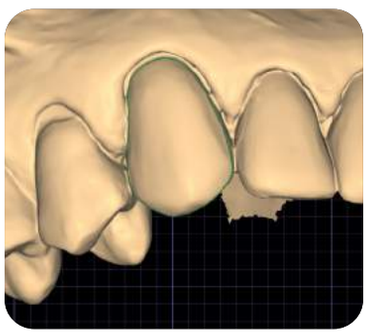
Y_b and Y_w is spectrum reflection ratio measured in black and white background. In CR, 0 means transparent and 1 means opaque.

Workflow

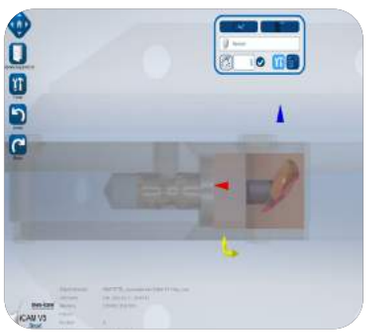
1. Scan



2. Design

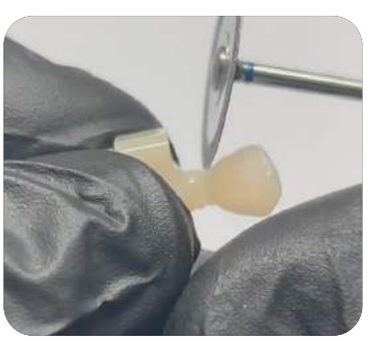


3. Nest



4. Mill

5. Remove Sprue



6. Polish or Stain / Glaze (optional)

7. Cement

#11, 12, 21, 22 veneers
Source : Dr Ana Petri / Oral Design Clinic

Product Q&A

Q As a functional gradient block, Amber Mill Direct has different trans and strength for each area; how can we distinguish the incisal/cervical area?

A The section where our product logo is marked on the block is the incisal area, which is more transparent, and the opposite side is the cervical area, which is more opaque. Take these points into consideration when you design your case.

Q How is the gradated effect of your block different from other existing lithium disilicate-based glass ceramics?

A Amber Mill Direct is uniquely designed to achieve the most natural gradation to resemble how a natural tooth gradates. We coined this unique feature as our GLD technology - Gradient lithium-disilicate technology.

Q Why does the Amber Mill Direct have a curved shape in the notch part of the holder?

A The curved shape allows the targeted area to be reached faster allowing for low bur consumption and faster milling.

Q Amber Mill Direct provides the option to change translucencies from HT to LT by co-firing. What is the heat treatment schedule to achieve LT?

A

Stand-by temperature B	Closing time S	Heating rate t_1	Firing temperature T_1	Holding Time H_1	Vacuum 1 V_{11} /V_{12}	Vacuum 2 V_{21} /V_{22}	Long-term cooling L	Cooling time t_1
400℃	3:00 min.	45℃	840℃	1:00 min.	450℃	840℃	690℃	-

Q What are the pretreatment conditions used for cementation?

A A silane for glass ceramics is applied after etching the case's inner surface for 20 seconds using 5% HF. After that, you can bond it using conventional self-adhesive res in cement.

Indications

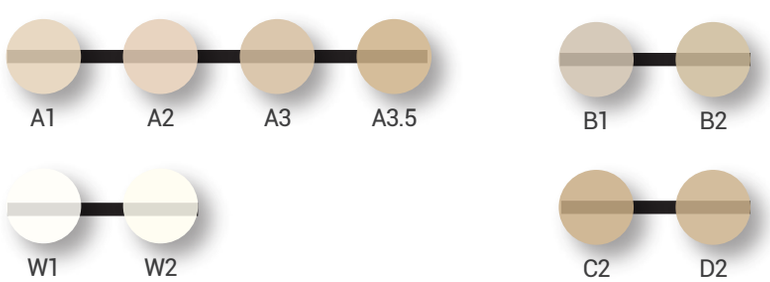
- Inlays
- Onlays
- Veneers
- Anterior Crowns
- Posterior Crowns

* Occlusal wall thickness ≥ 2.0 mm

Product Line-up

Size	Dimensions (mm)	pcs / Pack
C14 / HT	14 × 12 × 18	5 blocks

Available Shades



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