HASS
Bio America Inc.

Achieve **True 1-hour Single Visits** with Lithium Disilicate Restorations

Amber® Mill Direct

SPEED / DURABILITY / REAL GRADATION

Pre-cyrstallized lithium disilicate block that achieves excellent restorations without the need for an oven.

True Single-Visit Results

We solve the challenges faced with indirect millable restoration materials

YAO-LIN TANG, DDS
AestheticLab

"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"

CHRITIAN PETRI, CDT
Oral Design Clinic

"No glaze, no stain, just MILL & POLISH, and the final restoration is ready. Anybody can do it, so don't wait, get started today."

- Speed
- Durability
- Real Gradation

Speed

All you need is 1 hour! From the time the patient sits to the time that you deliver your restoration, Amber Mill Direct speeds up your workflow.

Scan & Design

Mill
(about 9 min 10 sec)
* Single crown case

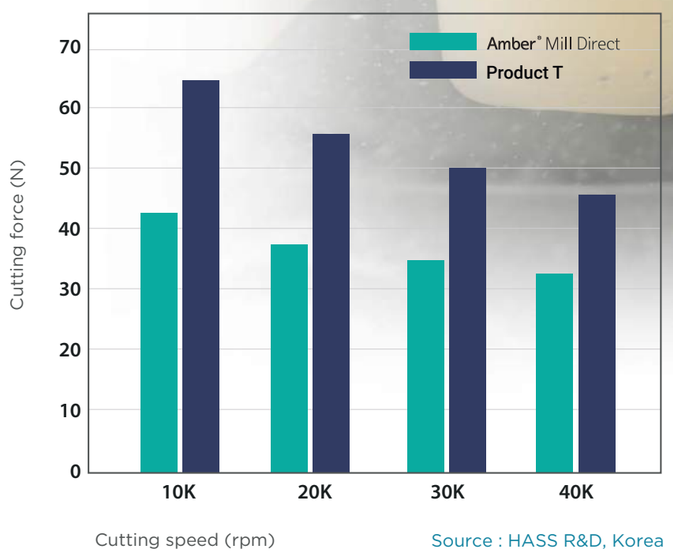
Polish or
Stain / Glaze

Cementation

PRE-CRYSTALLIZED

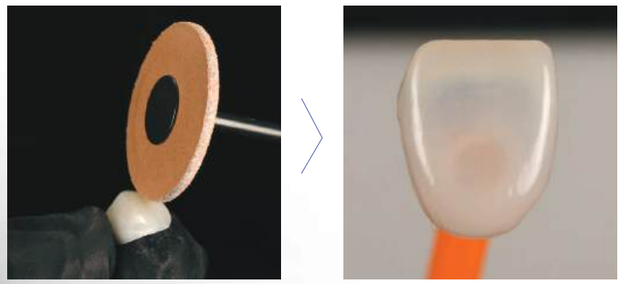
Amber Mill Direct is a Lithium Disilicate-based millable glass ceramic block that requires no-crystallization, therefore, no oven. Given the shortened fabrication time, one-hour restorations are possible.

Cutting force (N)
depth of cut : 0.05mm



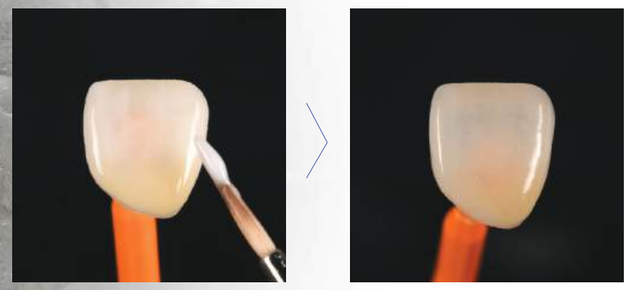
Source : HASS R&D, Korea

Amber Mill Direct provides you with the following options:



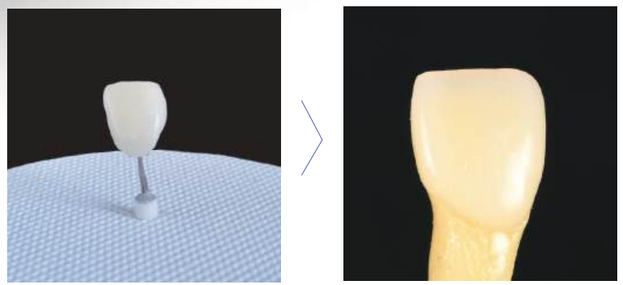
Polish

After milling, just polish and deliver the restoration directly to the patient. Achieve excellent aesthetic results with our gradated translucency without any firing.



Stain / Glaze

If your restoration requires more characterization, simply stain / glaze it to achieve better aesthetic results.



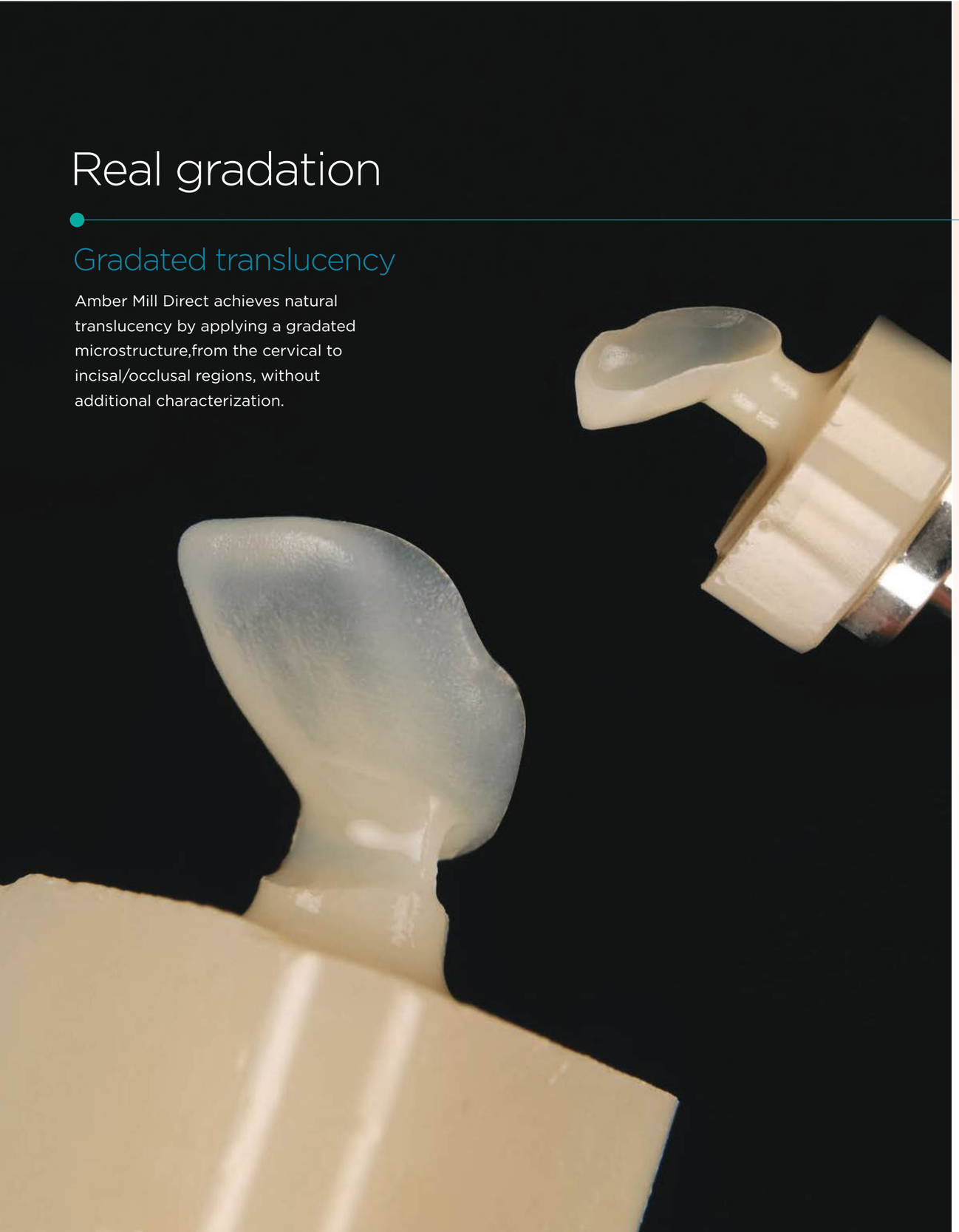
Modify Opacity

Simply bake at over 840 °C to modify the value and opacity of the restorations from HT to LT.

Real gradation

Gradated translucency

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



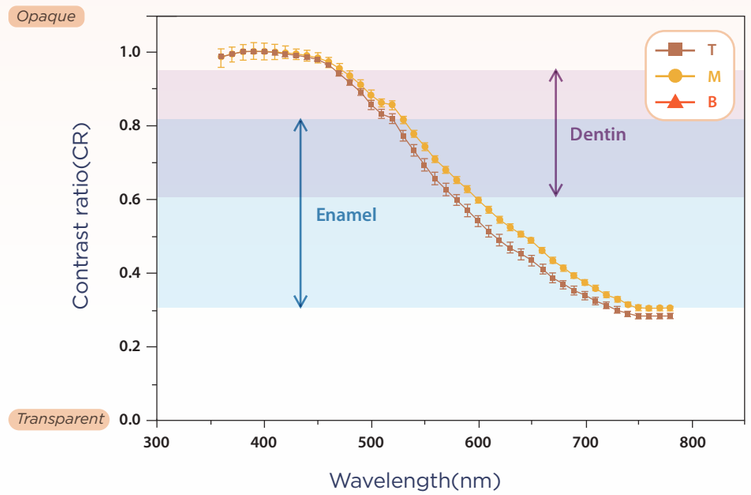
Real gradation

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

*Contrast ration to natural teeth
· Enamel : 0.3~0.8 / 0.55~0.90
· Dentin : 0.6~0.95

Contrast Ratio (CR)

Source : HASS R&D, Korea



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

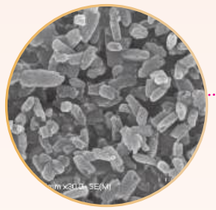
Yb and Yw is spectrum reflection ratio measured in black and white background.
In CR, 0 means transparence and 1 means opaque.

Durability

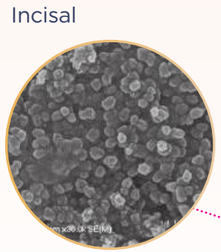
Microstructure

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.

Cervical



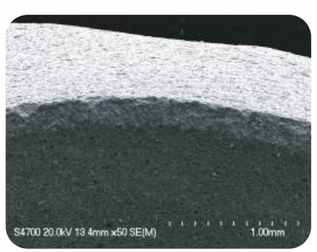
Incisal

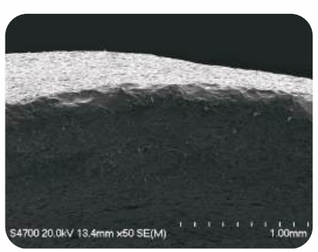


Edge stability

Achieve excellent marginal fit and cervical contour.

AmberMill Direct

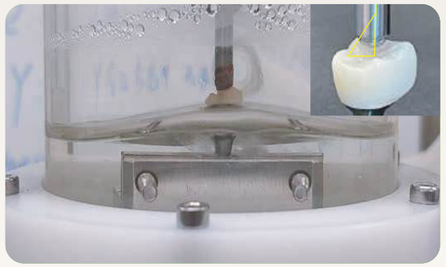




Competitive product

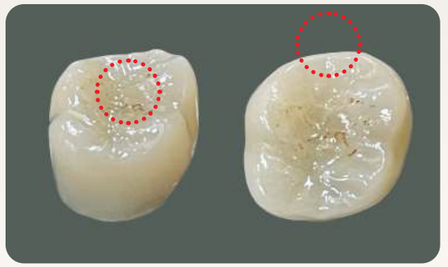
Fracture strength

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

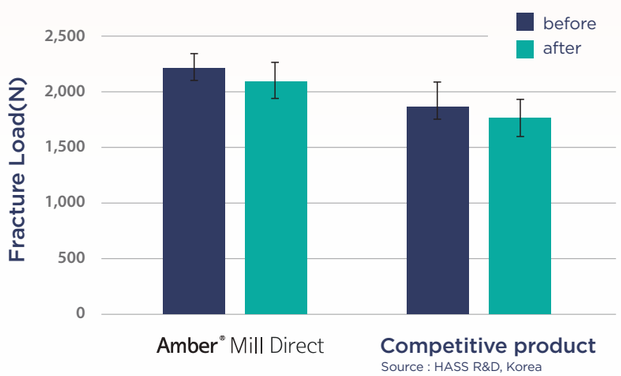
*1,000,000 cycles / 1.5 Hz / 10kg force (in pH 7.2 Water) and thermal cycling at 5-55 °C for 30s each



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

Fracture strength before/after Chewing simulator

Fracture Load

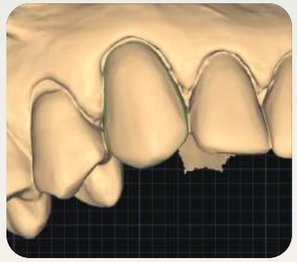


Source : HASS R&D, Korea

Workflow

1. Scan

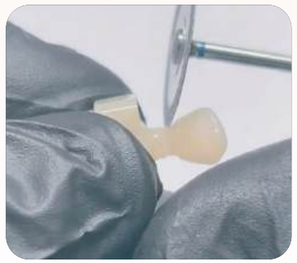
2. Design



3. Nest

4. Mill

5. Sprue Removal



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?

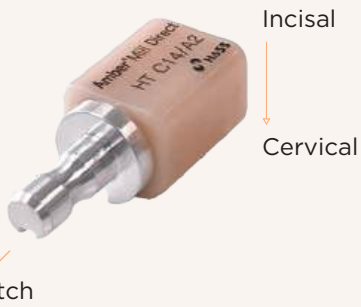
A

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°C	3:00 min.	45°C	840°C	1:00 min.	450°C	840°C	690°C	-

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 resin cement.

Amber® Mill Direct



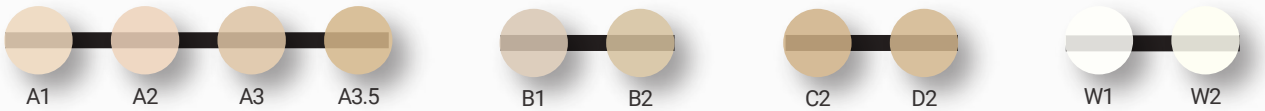
INDICATIONS

- 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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