All Ceramic Materials for All-Ceramic Restorations

EN

Nano-Lithium Disilicate
NLD
Nano-Lithium Disilicate

New Frontier of Lithium Disilicate-Based CAD/CAM Blocks & Disks

# Amber® Mill

www.hassbio.com

CE 2195 FDA RX Only

HASS | Human-Aid System Supplier

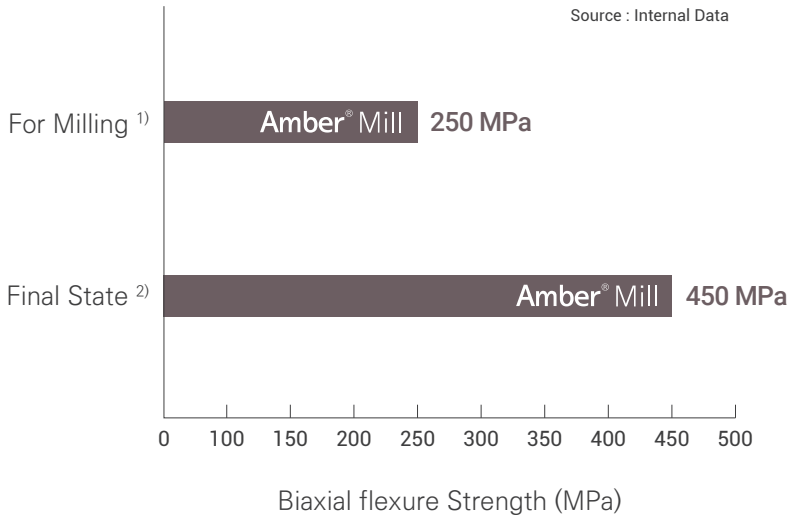
# Innovation Redefined

## Machinable lithium disilicate block for CAD/CAM system

Amber® Mill is the machinable dental glass-ceramic block made of lithium disilicate.
Its reinforced mechanical properties and aesthetic values with qualified machinability are greatly advantageous for patients and clinics.

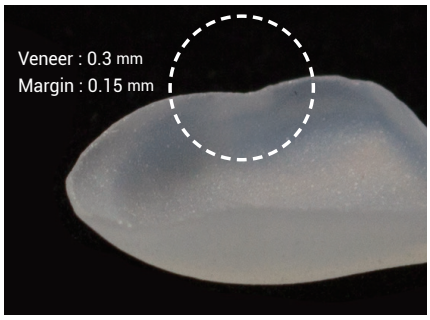

## Empowering Aesthetic Longevity

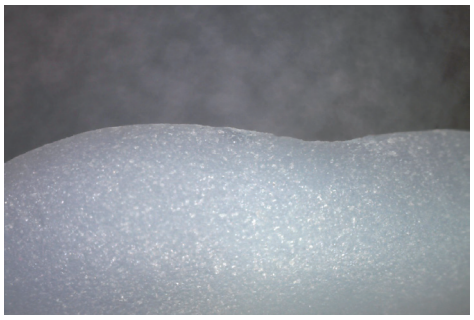
Denser and more crosslinked crystal structure of Amber® Mill results in superior physical properties. Biaxial flexure strength of Amber® Mill is 450 MPa after it is fully crystallized.



## Enhanced Edge Integrity

Outstanding machinability of Amber® Mill is evidently affirmative when checking the edges of the milled restorations. Highly stable edges with less chipping occurrence prove that Amber® Mill is optimized machinable lithium disilicate block for CAD/CAM system.

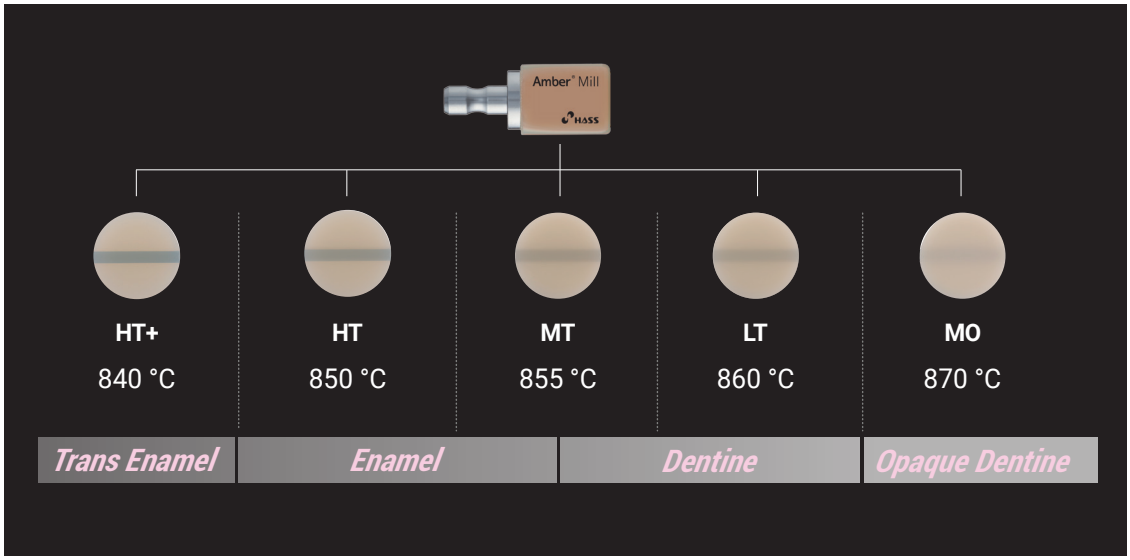


Amber® Mill

## Experience Lifelike Color Continuum

With a single Amber® Mill block, you can create restorations with a wide range of translucency levels.
Simply choose the desired shade and apply the translucency heat treatment at the appropriate temperature. This flexibility significantly enhances workflow efficiency and simplifies inventory management of CAD/CAM milling blocks.

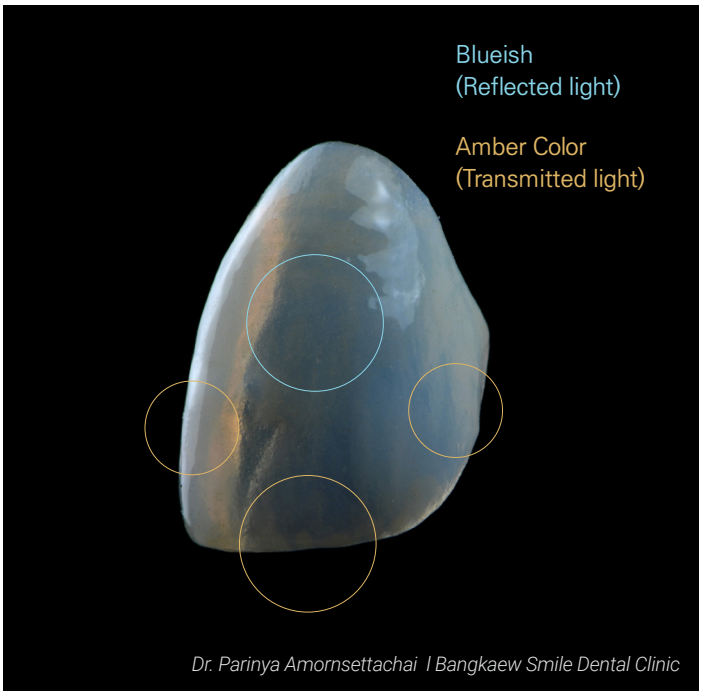


# Unleashing the Power of Nature's Beauty

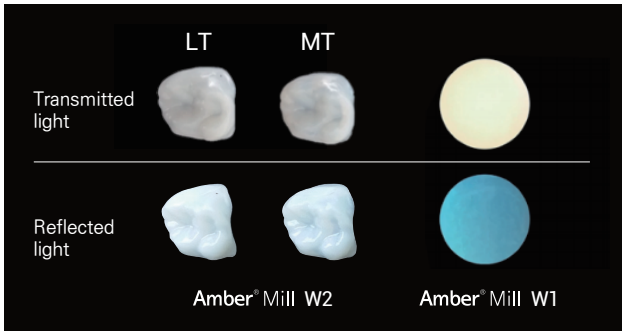
## Captivating Beauty: Natural Opalescence & Fluorescence Revealed

Amber® Mill delivers exceptional translucency and fluorescence, allowing restorations to achieve a natural shade gradient—from the cervical area to the incisal or occlusal surface—with glazing alone, eliminating the need for additional staining. This provides a significant esthetic advantage.

- Natural teeth covered by enamel exhibit characteristic translucency: they appear bluish under reflected light and amber under transmitted light.
- Amber® Mill is engineered to closely replicate the natural translucency of enamel.
- It also faithfully mimics the natural fluorescence of teeth, enhancing lifelike esthetics under various lighting conditions.



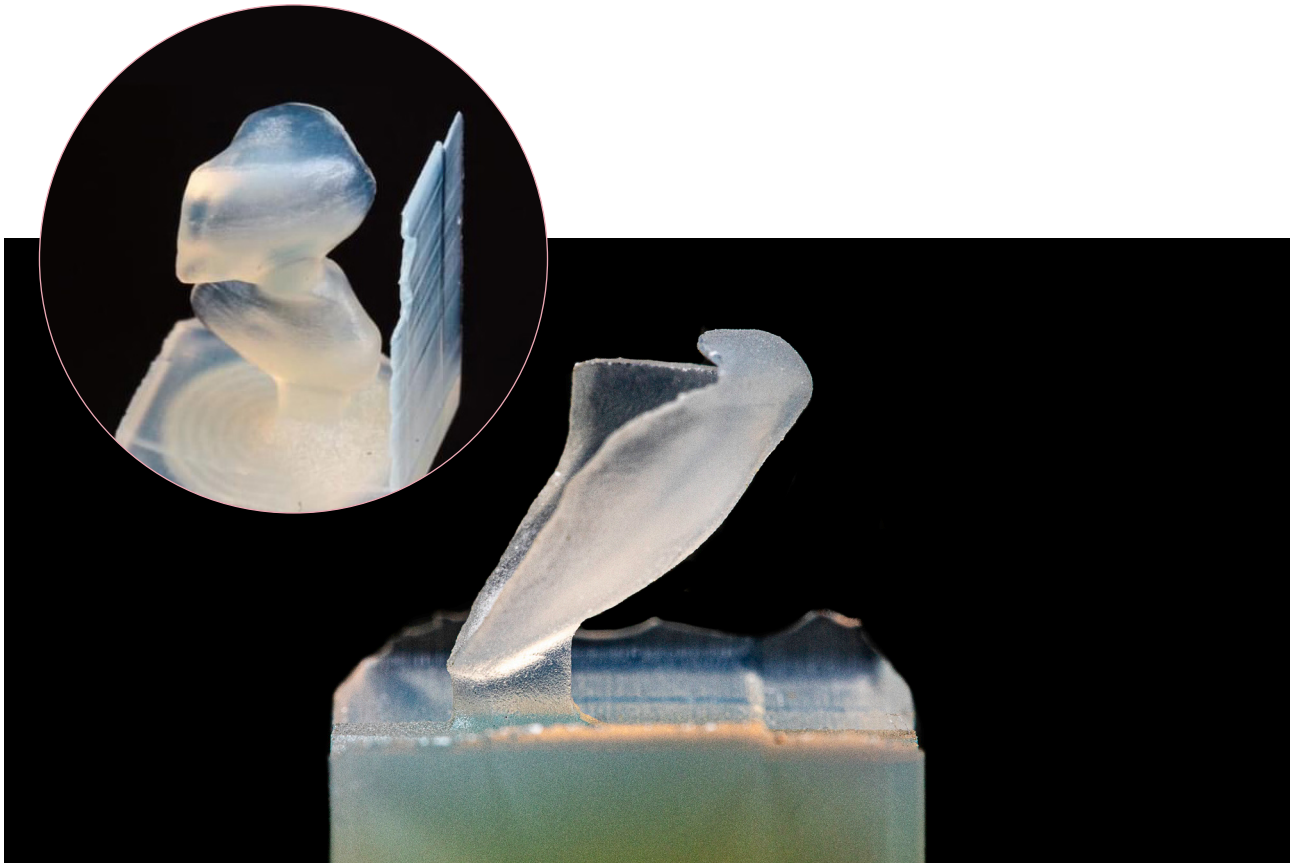

**Comparison of Opalescence**




**Excellent Fluorescence**

## Clinical Case Demonstrates Amber® Mill's Aesthetic Impact

Prostheses fabricated with Amber® Mill clearly stand out in quality.
Amber® Mill combines physical strength and esthetic excellence in perfect balance, resulting in final restorations that exhibit both high stability and natural appearance when placed in the mouth.



*Dr. Lentes Cerámicos I Vitrio Lab*

# Freedom of Translucency

## Achieve Desired Translucency Levels with Amber® Mill's Recommended Heat-treatment

### DEKEMA Austromat 654 / 624i[1)]

| | HT+ | | | HT | | | MT | | | LT | | | MO | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dry | | | –:– | | | –:– | | | –:– | | | –:– | | | –:– |
| Close | | | 06:00 | | | 06:00 | | | 06:00 | | | 06:00 | | | 06:00 |
| Preheat °C | 430 | | 00:00 | 430 | | 00:00 | 430 | | 00:00 | 430 | | 00:00 | 430 | | 00:00 |
| Tem. 1/°C | 840 | 60/min | 15:00 | 850 | 60/min | 15:00 | 855 | 60/min | 15:00 | 860 | 60/min | 15:00 | 870 | 60/min | 15:00 |
| Tem. 2/°C | 690 | 60/min | –:– | 690 | 60/min | –:– | 690 | 60/min | –:– | 690 | 60/min | –:– | 690 | 60/min | –:– |
| Tem. 3/°C | ___ | ___/min | –:– | ___ | ___/min | –:– | ___ | ___/min | –:– | ___ | ___/min | –:– | ___ | ___/min | –:– |
| VAC (off/level/hold) | 840 | 100% | 15:00 | 850 | 100% | 15:00 | 855 | 100% | 15:00 | 860 | 100% | 15:00 | 870 | 100% | 15:00 |

* The firing chamber must not be opened during long term cooling.

1) Austromat 654 / 624i is a registered trademark of DEKEMA.

### IVOCLAR VIVADENT PROGRAMAT CS [2)]

| B ℃ | S min. | t↗ ℃/ min. | T ℃ | | H min. | VAC. 1/ VAC. 2 ℃ | | L ℃ | tL* |
|---|---|---|---|---|---|---|---|---|---|
| 430 | 6:00 | 60 | HT+ | 840 | 15:00 | HT+ | 550/840 | 690 | 0 |
| | | | HT | 850 | | HT | 550/850 | | |
| | | | MT | 855 | | MT | 550/855 | | |
| | | | LT | 860 | | LT | 550/860 | | |
| | | | MO | 870 | | MO | 550/870 | | |

* The firing chamber must not be opened during long term cooling.

2) PROGRAMAT CS is a registered trademark of IVOCLAR VIVADENT.

### VITA VACUMAT [3)]

| Predry ℃ | → min. | | ↗ min. | ↗ ℃ / min. | | T ℃ | | → min. | VAC min. | | ↘ ℃ * |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 430 | 6:00 | HT+ | 6:50 | 60 | HT+ | 840 | 15:00 | HT+ | 21:50 | 690 | |
| | | HT | 7:00 | | HT | 850 | | HT | 22:00 | | |
| | | MT | 7:05 | | MT | 855 | | MT | 22:05 | | |
| | | LT | 7:10 | | LT | 860 | | LT | 22:10 | | |
| | | MO | 7:20 | | MO | 870 | | MO | 22:20 | | |

* The firing chamber must not be opened during long term cooling.

3) VACUMAT is a registered trademark of VITA.

# Please Make Sure to Check the Furnace Before Using the Amber® Mill

The firing parameters provided in this document are reference example used to evaluate the performance of Amber® Mill. Actual results may vary depending on your clinical environment and the condition of your furnace. We strongly recommend verifying and optimizing the settings for each individual furnace prior to use.

NEW **1. When using the furnace for the first time or applying a new furnace:**
Each furnace has different heat distribution characteristics.
Pre-verification procedures are mandatory before applying the given firing parameters directly.
Please use a temperature verification tool such as a *Amber Mill Calibration Kit to confirm temperature accuracy inside the furnace.

**2. When using multiple furnaces at the same location:**
Even within the same location, temperature variations may occur between different furnaces. Please ensure separate verification and setup for each unit.

**3. Periodic calibration is recommended:**
To maintain consistent condition, perform periodic calibration and verification using tools such as *Amber Mill Calibration Kit.(heat emission characteristics of furnaces may change over time)
Recommended frequency: At least once every 6 months.

The firing schedule provided here is not an absolute standard applicable for any equipment or environment. Users should check and adjust the conditions to suit their own operating environment.

*** Amber Mill Calibration Kit**


- Calibration strip_HT/LT (2 ea)
- Test strip (6 ea)
- MCK (2 ea)
- Metal pin (1 ea)

## Precautions before use

**When re-firing**

- Do not exceed a maximum temperature of 885°C during any heat treatment process (including re-firing).
- If you want to change the light intensity, use the schedule for the desired light intensity. However, it is possible to lower the light intensity, but not to raise it.
  Ex: HT (850°C) → MO (870°C) is possible / MO (870°C) → HT (850°C) is not possible
- Use Amber Mill VCK* to measure the actual furnace temperature during the crystallization process. Based on the measurement results, adjust the maximum temperature of the crystallization schedule accordingly.

**During build-up**

- Amber® Mill has high compatibility with veneering powders and can be used with $LS_2$ veneering powders with a CTE of $10 \times 10^{-6}$ /°C or less. Additionally, it is compatible with some zirconia veneering powders when the sintering temperature does not exceed 850°C.

Refer to Amber Mill's translucency, which is similar to natural teeth.

| | |
|---|---|
| HT+: Transparent Enamel translucency | LT: Dentin translucency |
| HT: Enamel translucency | MO: Opaque Dentin translucency |
| MT: Medium translucency (between HT and LT) | |

Crystallization firing must be performed under vacuum.

## Product Q&A

**Q** What is translucency heat treatment?

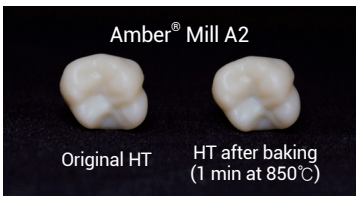
**A** Amber® Mill blocks consist of fine crystals embedded in a glass matrix when milled. Through translucency heat treatment, the crystal size and density increase, enhancing both toughness and mechanical strength. Additionally, this process allows for the adjustment of translucency levels.

Factors for the translucency heat-treatment


**Q** Does translucency change during multiple bakings of veneering powder?

**A** The translucency of Amber® Mill is influenced by both the heat treatment temperature and the holding time. Even if the temperature during veneering exceeds that of the translucency heat treatment, the short holding time—typically around 1 minute—means that it has little to no effect on translucency.

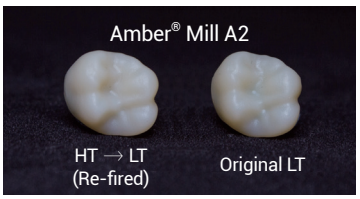
Stable translucency after baking of veneering




**Q** Can translucency be further adjusted through re-heat treatment?

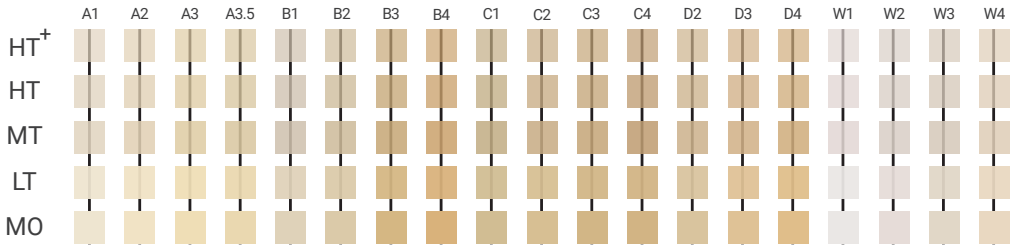
**A** Yes. If a completed restoration has higher translucency than desired, it can be reduced through an additional heat treatment. For instance, to lower the translucency of an HT crown to that of an LT crown, apply the LT translucency heat treatment conditions—including a 15-minute holding time—resulting in a translucency level equivalent to LT.

Re-firing of Amber® Mill blocks (HT → LT)



## Available Shades

Reproduce 5 different opacities with 1 block




* Available shades (**disk type**): A1, A2, A3, A3.5, B1, B2, W1, W2, C2, D2

** The light transmission rates shown above are examples based on Amber Mill Blocks with* **a thickness of 0.9 mm to 1.5 mm.**

## Product Line-up

| Amber® Mill | | Dimensions (mm) | pcs / Pack |
|---|---|---|---|
|  | C12 | 10 x 12 x 15 | 5 blocks |
| | C14 | 12 x 14 x 18 | |
| | C32 | 14 x 14 x 32 | 3 blocks |
| | C40 | 15 x 15 x 38 | |
|  | H9812 | Ø98 x 12T | 1 disk |

## Indications

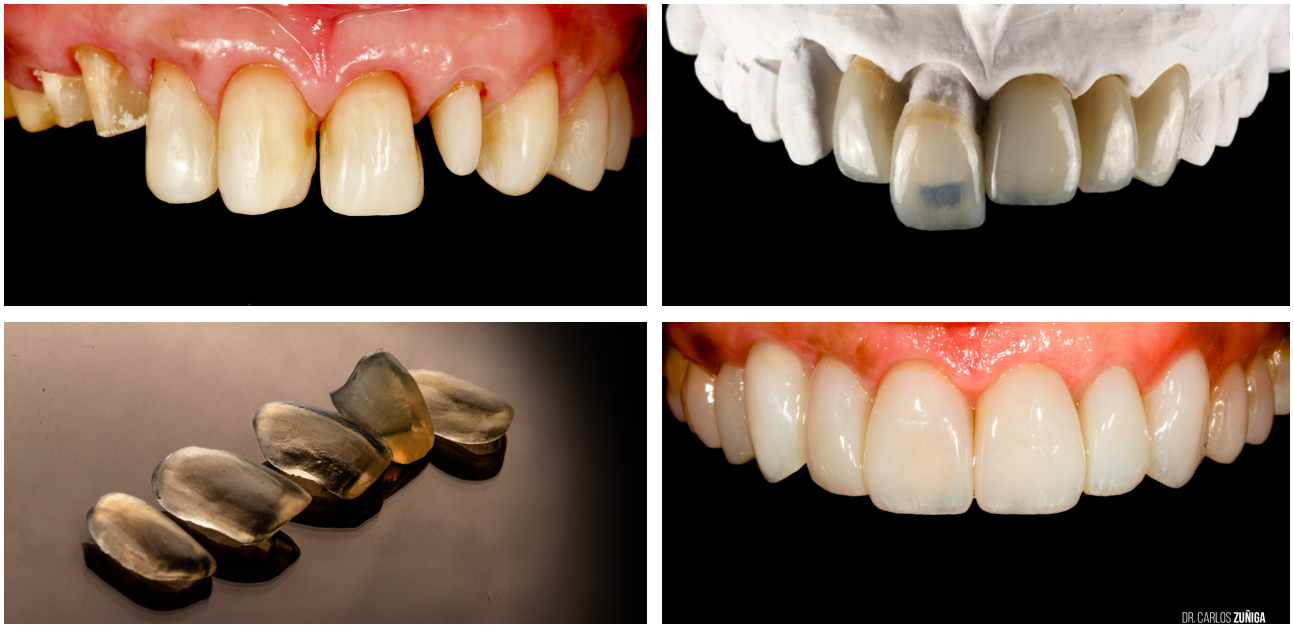
- Inlays
- Onlays
- Veneers
- Anterior Single Crowns
- Posterior Single Crowns
- 3-Unit Bridge
  *up to the second Premolar

## Contraindications

- Very deep subgingival preparations
- Maryland bridges
- Patients with severely reduced residual dentition
- Bruxism
- Cantilever bridges

## Case 1

| | |
|---|---|
| **Dentist** | Dr. Carlos Zuniga |
| **Restoration** | #22, #21, #11, #13 Veneers & #12 Single crown |

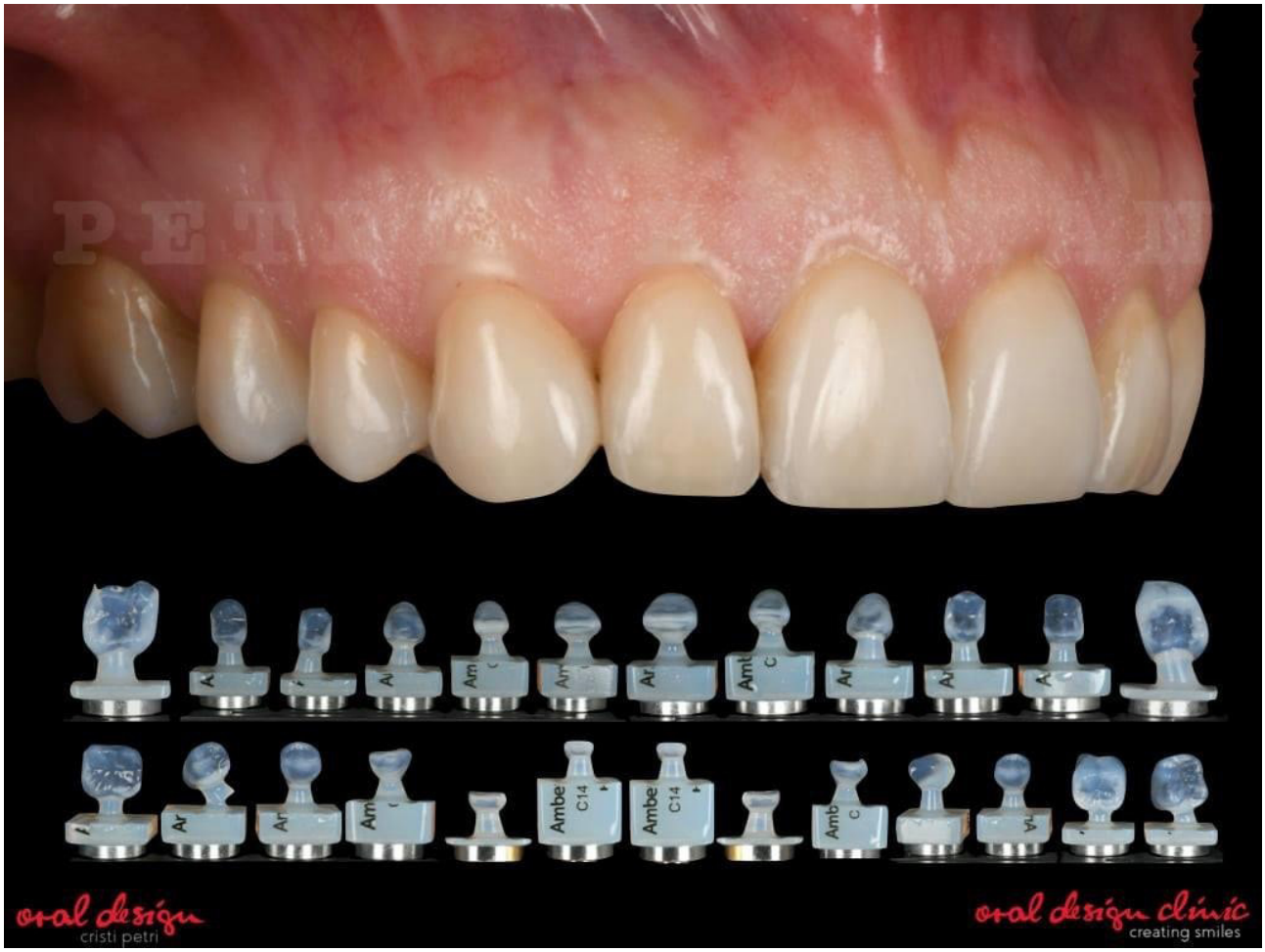



## Case 2

| **Dental Technician** |
|---|
| DT Crisian Petri |
| **Restoration** |
| #12 Veneer |

# Case 3

| | |
|---|---|
| **Dental Technician** | DT Crisian Petri |
| **Restoration** | Full-mouth restoration with veneers and crowns |



## Product Usage Guidelines

1. Follow the User Manual
   - Amber® Mill products must be used in accordance with the user manual provided with the product.
   - HASS shall not be liable for any results arising from improper use or operation under inappropriate equipment conditions.

2. Pre-use Environment and Equipment Inspection
   - Prior to use, verify that this product is suitable for your facility's environment and equipment.
   - Prior to use, perform temperature verification and optimization of each furnace.
   - Use a Calibration Kit or similar tool to measure temperature and perform calibration procedures as necessary.

3. Possibility of Performance Deviations
   - Amber® Mill performance may vary depending on furnace or environmental conditions.
   - HASS shall not be liable for any damages or quality degradation resulting therefrom.

4. Scope of Liability
   - Within the limits permitted by law, HASS shall not be liable for indirect damages, business losses, third-party claims for compensation or other damages exceeding the product price.
   - Liability for damages arising from negligence shall be limited to the amount of damages actually incurred by the customer, provided that such damages are not intentional or grossly negligent.
   - Claims for compensation for damages related to negligence shall only be valid if intentional or gross negligence is proven.

5. Firing Conditions
   - Firing conditions listed in this document are examples for reference only.
   - Firing conditions suitable for the actual usage environment must be reviewed and set separately by the user.

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