

Sintering ArgenZ ST Multilayer

Standard Cycle

Stage	Program	Rate/Minute	Temperature
1	Heating Ramp	10°C/Minute	900°C
2	Heating Ramp	7°C/Minute	1510°C
3	Heat Soak	120 Minutes	1510°C
4	Cooling Ramp	7°C/Minute	1000°C
5	Cooling Ramp	10°C/Minute	200°C

NOTE: Sintering cycles can be adjusted by +/- 20c and or +30 minutes of additional hold time. All sintering furnaces can vary, the volume of zirconia units and thickness and size of unit will affect the internal maturation temperature required to fully process the material. Please call Argen for guidance.

Adjusting ArgenZ ST Multilayer

- Only use burs specifically designed for adjusting zirconia. Always ensure that zirconia is wet during the grinding process. A high-speed wet hand piece at low speed is recommended during the adjusting process in order to keep heat to a minimum.
- DO NOT grind on the basal grooves and tooth connections after sintering.
- If possible, smooth rough or sharp edges.
- Do not sand blast.

Coloring ArgenZ ST Multilayer

For best results, use recommended ArgenZ Shading Liquids. ArgenZ ST Multilayer is compatible with all major dental zirconia coloring systems.

ArgenZ ST Multilayer

Material Properties

Strength

Flexural Bending Strength - ArgenZ ST Multilayer
> 850 MPa mean value

Density

≥ 6.00 g/cm³

Composition

ZrO ₂ + HfO ₂ + Y ₂ O ₃	>99 wt%
Y ₂ O ₃	8.5 - 10 wt%
HfO ₂	<5 wt%
Al ₂ O ₃	<0.1 wt%
Fe ₂ O ₃	<0.1 wt%

Type/Class

ISO 6872:2015

Type II/Class 4

Thermal Expansion Coefficient

25-500°C = 10.3µm/m-°C

HAZARDS IDENTIFICATION - EMERGENCY OVERVIEW

Specific Physical Form

Solid block or slab

Odor, Color, Grade

White odorless block

General Physical Form

Solid

Immediate Health, Physical, and Environmental Hazards

No immediate health, physical, or environmental hazards are anticipated.

Eye Contact

Mechanical eye irritation:
Signs/symptoms may include pain, redness, tearing, and corneal abrasion.

Skin Contact

Mechanical skin irritation:
Signs/symptoms may include abrasion, redness, pain, and itching.

Inhalation

During grinding, scraping, or sanding, inhalation of particles may occur, resulting in upper respiratory tract irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Ingestion

No health effects are expected.

Please refer to the complete MSDS sheet provided with your order.

CE2797

Rx Only

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ArgenZ ST Multilayer Instructions for Use



(800) 255-5524

Made in the USA

argen.com

ArgenZ ST Multilayer (super translucent)

dental zirconia is indicated for the production of full contour restorations. The following instructions provide general guidelines for handling, designing, milling, coloring, sintering and adjusting of ArgenZ material and should be followed very carefully to avoid any loss of aesthetics, fit, durability or overall quality.

Indications for Use

ArgenZ ST Multilayer blanks are intended to be used in the fabrication of inlays, crowns, copings, and fixed bridges (up to 3 units) using various CAD/CAM systems.

Handling ArgenZ ST Multilayer

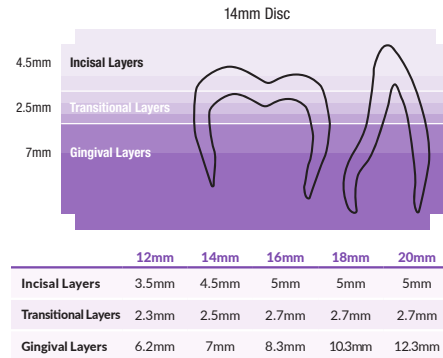
Inspect each shipment for damage and do not use damaged discs for the production of dental restorations. Store ArgenZ in a cool, dry, temperature-stable environment (between 5°C and 50°C) in the original packaging.

ArgenZ Technical Support

For further questions or technical support, please contact Argen's Technical Support staff at **(800) 255-5095**

Disc Thickness Selection

Argen has 5 sizes of multilayer zirconia for maximum flexibility. 12mm, 14mm, 16mm, 18mm, 20mm. Selecting an appropriately sized disc relative to the unit size is important to maximize esthetics. A unit does not need to fill the entire height of a disc but should be at least $\frac{3}{4}$ the height. Argen recommends nesting in the middle height to maximize shade distribution. Moving the unit up or down will increase or decrease the incisal and cervical shade intensity. All discs can accommodate multiple sized units and bridges.



Designing ArgenZ ST Multilayer

Noncompliance with these guidelines could result in an unfit or failed restoration.

DESIGN OPTION DESIGN GUIDANCE

- Drill Compensation** Drill compensation must be activated for all substructures milled from a solid structure.
- Cement Gap** The distance where the coping intersects the die at the margin area. Use this setting to control margin fit.
- Extra Cement Gap** The distance between the coping walls and the die. Use this setting to control internal fit.
- Distance to Margin Line** The distance from the margin outer line to the start of the interior wall of the coping.
- Smooth Distance** The distance from the margin line to the margin engagement point. Should be set at 0.2mm.
- Drill Radius** The drill radius should be the size of the smallest end mill used to mill the pattern.
- Drill Compensation Offset** The distance from the margin line to the area affected by drill compensation. Should be a minimum of 0.6mm.
- Margin Line Offset** The effective thickness of the margin line and should not be less than 0.2mm. Thinner margin lines will result in a higher failure rate.
- Offset Angle #1** The offset angle should not be less than 65°
- Extension Offset** The extension offset should not be less than 0.01mm
- Wall Thickness** A nominal wall thickness of 0.5mm will ensure a consistently quality product. Reducing this value could result in fractures or holes in the framework.
- Bridge Connectors** Recommended Anterior restorations: 9mm² minimum. Recommended Posterior restorations: 9mm² minimum.

Milling ArgenZ ST Multilayer

Pre-sintered (or "green") zirconia material has an inherent shrinkage rate associated with each production lot. This shrinkage rate, usually formatted as 1.XXXX, can be found on the side of the actual disc. This number **MUST** be input into the milling preparation software to ensure the accuracy of the eventual restoration.

When milling ArgenZ, always follow these general guidelines:

- Reference the mill's user manual to prevent overtightening of discs in fixture.
- Only use sharp end mills with diamond coating.
- Do not use any restoration that has chips and/or cracks. Remove the units from the disc using a handpiece with a diamond-coated burr.
- Smooth the support areas with a medium-grit rubber polishing wheel.
- Remove any residual zirconia dust with an art brush.
- If a wet mill is used make sure all the zirconia is completely dry before shading/sintering. Air dry for at least 30 minutes prior to sintering. Damp zirconia will crack if placed in the sintering oven.