## **Designing ArgenZ HT+ 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** The distance from the margin line to the area affected by

Offset 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

be less than 0.2mm. The 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 HT+ 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

## ArgenZ HT+ Multilayer

### **Material Properties**

Strength
Flexural Bending Strength - ArgenZ HT+ Multilayer
> 1250 MPa mean value

Type II/Class 5

## Density

≥ 6.08 g/cm<sup>3</sup>

## Composition

Type/Class ISO 6872:2015

Thermal Expansion Coefficient 25-500°C = 10.3um/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

and Environmental Hazards
No immediate health, physical,
or environmental hazards are
anticipated.

## Eve Contact

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

# and throat pain. Ingestion

Skin Contact

itching.

Inhalation

Mechanical skin irritation:

Signs/symptoms may include

abrasion, redness, pain, and

During grinding, scraping, or

may occur, resulting in upper

symptoms may include cough,

sneezing, nasal discharge.

sanding, inhalation of particles

respiratory tract irritation. Signs/

headache, hoarseness, and nose

No health effects are expected.

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

**C€**2797

R₂ Only

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# **ArgenZ HT+ Multilayer**





(800) 255-5524

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## ArgenZ HT+ Multilayer (high translucent) Sintering ArgenZ Zirconia

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 HT+ (high translucent plus) zirconia can be used for the production of full contour and substructure restorations up to a full arch.

## **Handling ArgenZ HT+ 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.

## For Use in Canada

Health Canada restricts zirconia bridges to six units with a maximum of two pontics next to one another.

## **ArgenZ Technical Support**

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

	Cycle	cycle Material Recommended use		Time
Ī	Standard	All zirconia	Full tray / full oven	7.5 h
	Long	HT+ & Ultra ONLY	For large bridges and thick walled units	14 h
	Short	All zirconia**	Single standard size units, 10-12 units Single tray per sintering cycle	4.5 h
	Speed*	All zirconia**	Single standard size units, 5-7 units Single tray per sintering cycle	120 m
	Super Speed*	All zirconia**	Single standard size units, 3-5 units Single tray per sintering cycle	90 m

<sup>\*</sup>Speed sintering cycles may affect translucency and shade accuracy. Fast sintering can increase sensitivity to other factors such as the size, thickness of units, and number of units in the furnace.

For additional information about our short and speed cycles, reach out to your sales representative.

### Standard Cycle Total Time = **7.5 hours** For all zirconia material. Best results for standard units including ArgenZ ST Multilayer bridges. Full tray / full oven.

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

#### Long Cycle Total Time = **14 hours** For HT+ and Ultra ONLY, DO NOT run ArgenZ ST Multilaver or Anterior on this cycle. For large bridges and thick walled unite

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Stage	Program	Rate/Minute	Temperature	Time	
1	Heating Ramp	4°C	1510°C		
2	Hold Time/Heat Soak		1510°C	150 min.	
2	Cooling Domn	400	20000		

**NOTE:** Sintering cycles can be adjusted by +/- 20°C 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 HT+ Multilayer

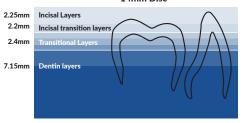
- Only use burs specifically designed for adjusting zirconia. Always ensure that zirconia is wet during the grinding process. A high-speed wet hand piece at low speed is recommended during the adjusting process in order to keep heat to a minimum.
- DO NOT grind on the basal grooves and tooth connections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

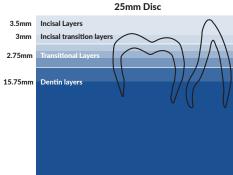
## **Disc Thickness Selection**

Argen has 7 sizes of multilaver zirconia for maximum flexibility. 12mm, 14mm, 16mm, 18mm, 20mm, 25mm, 30mm. 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 34 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.							
(mm)	12mm	14mm	16mm	18mm	20mm	25mm	30mm
Incisal Layers	2.25	2.25	2.75	2.75	3.5	3.5	3.75
Incisal Transitional Layers	2	2.2	2.5	2.5	3	3	3.5
Transitional Layers	2	2.4	2.5	2.5	2.5	2.75	2.75
Dentin Layters	5.75	7.15	8.25	10.25	11	15.75	20

### 14mm Disc





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<sup>\*\*</sup>Results may vary by material