

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 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: 9mm ² minimum. Recommended Posterior restorations: 9mm ² 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

Density

≥ 6.08 g/cm³

Composition

ZrO ₂ + HfO ₂ + Y ₂ O ₃	>99 wt%
Y ₂ O ₃	6.1-8.2 wt%
HfO ₂	<5 wt%
Al ₂ O ₃	<0.2 wt%

Type/Class

Type II/Class 5

ISO 6872:2015

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

The Argen Corporation
5855 Oberlin Drive
San Diego, CA 92121-4718 USA

EC REP MDSS, Schiffgraben 41
D-30174 Hannover, Germany

L03803 · Ver. 2 10/20

ArgenZ HT+ Multilayer

Instructions for Use



(800) 255-5524

Made in the USA

argen.com

ArgenZ HT+ Multilayer (high 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 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**

Sintering ArgenZ Zirconia

Cycle	Material	Recommended use	Time
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

*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.

**Results may vary by material

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 Multilayer or Anterior on this cycle. For large bridges and thick walled units.

Stage	Program	Rate/Minute	Temperature	Time
1	Heating Ramp	4°C	1510°C	
2	Hold Time/Heat Soak		1510°C	150 min.
3	Cooling Ramp	4°C	200°C	

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 multilayer 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 ¾ 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 Layers	5.75	7.15	8.25	10.25	11	15.75	20

