

Instructions for use of HT-plus block

Chemical composition

Components	HT-plus
ZrO ₂ +HfO ₂ +Y ₂ O ₃	≥99%
Y ₂ O ₃	4.5%-6.0%
Al ₂ O ₃	<0.25%
Other Oxides	<0.15

Physical characteristics

Properties	HT-plus
Density before sintering (g.cm ⁻³)	3.10-3.20
Density after sintering (g.cm ⁻³)	6.08-6.10
CTE(25-500°C)(K ⁻¹)	10.5
Flexural strength after sintering(Mpa)	1350
Accelerated aging surface monoclinic phase content	<15%
Light transmittance	37%
Chemical solubility after sintering(μ g.cm ⁻²)	<100
Cytotoxicity	0 Level
Radioactivity(Bq.g ⁻¹)	<0.1
Sintering temperature(°C)	1500-1550

Instructions for use

Bloomden HT-plus (high-plus translucent) can be used for coping crown and framework. The following instructions provide general guidelines for designing, milling, coloring, sintering, porcelaining and glazing and should be followed very carefully to avoid any loss of aesthetics, fit, durability or overall quality.

Designing Bloomden HT-plus

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	This 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 is 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 0.5mm.
Margin line Offset	The effective thickness of the margin line and should not be less than 0.16mm. 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 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: 6mm ² minimum. Recommended Posterior restorations: 9mm ² minimum.

Milling Bloomden HT-plus

Pre-sintered zirconia material has an inherent shrinkage rate associated with each production. This number of shrinkage rate must be input into the milling preparation software to ensure the accuracy of the eventual restoration.

When milling Bloomden HT-plus, always follow these general guidelines:

- Only use sharp end mills with carbide or diamond coating.
- Do not use any restoration that has chips 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 sintering. Air dry for at least 15 minutes prior to sintering. Damp zirconia will crack if placed in the sintering oven.

Coloring Bloomden HT-plus

Bloomden HT-plus is compatible with Bloomden HT-plus 16 shades coloring liquid.

Sintering Bloomden HT-plus

Temperature rising	Temperature	Time span	Total time
<u>°C/min</u>	<u>°C</u>	<u>hour</u>	<u>hour</u>
0	20		0
10	900	1.5	1.5
0	900	0.5	2
3.75	1530	2.8	4.8
0	1530	2	6.8
5.25	900	2	8.6

Sintering temperature of Bloomden HT-plus is from 1500°C to 1550°C, you should make sure peak temperature at this range.

Porcelaining and glazing Bloomden HT-plus

When applying porcelain, the abutment tooth should be designed to anatomic form to meet the requirement of even porcelain distribution. Make joint layer according to the requirement of porcelain manufacture. When designing basal structure, avoid bite edge to exert direct force on the teeth edge.

Finished

The production of restoration is completed.