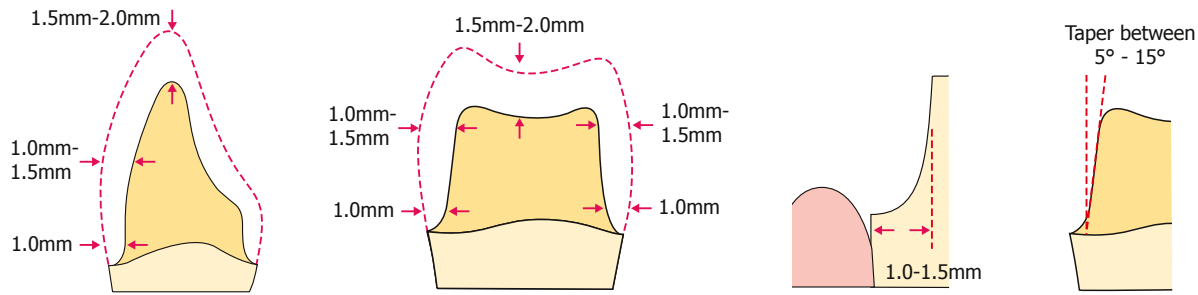
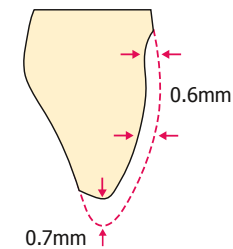


# Ideal Preparation for Full Ceramic Restorations

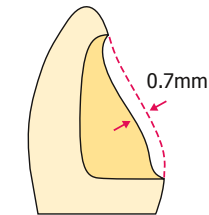


The ideal preparation should be smooth and have a chamfer or slight shoulder margin, with no sharp edges or irregular grooves. For best results, apply 1.5mm-2.0mm occlusal reduction, 1.0-1.5mm circumferential reduction and around 1.0mm reduction near the cervical region. Retentive elements, if required, should have a minimum radius of 0.5mm.



## Veneer

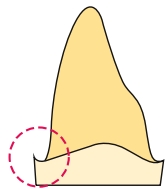
- $\geq 0.6\text{mm}$  labial and cervical reduction
- $\geq 0.7\text{mm}$  incisal reduction
- incisal preparation margins must avoid areas of static or dynamic contact
- [e.max] - thin veneer (0.3mm) is possible and requires little to no preparation
- [Procera] - for best results, allow an additional 0.2mm of reduction



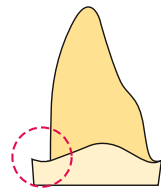
## Maryland Bridge

- 0.5 to 0.7mm lingual reduction
- preparation should be in enamel instead of dentine
- use of a retentive element is recommended - either a groove, a ridge or a pinhole
- retentive element must have a minimum radius of 0.5mm
- circular / island preparation of wings is not possible

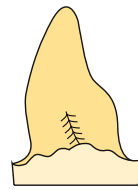
**NO!**



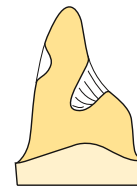
"J"-shaped margin



Square shoulder

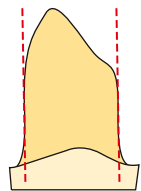


Rough margin

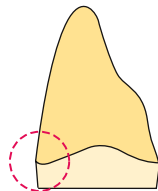


Irregular grooves

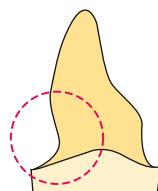
**Avoid**



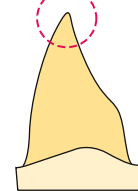
Parallel sides



Knife edge



Undercut



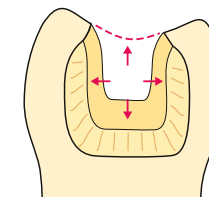
Sharp edge

A proper cement space cannot be milled - the coping will either be too tight or too loose

[Procera] - mildly knife edged margin is possible but will increase the risk of coping failure

[Circon / Lava] - either a thin line of zirconia will be visible at the margin; alternatively the emergence profile will have to be over-built

Undercuts and sharp edges are undesirable and need to be blocked out during production



## Inlay / Onlay

e.max

- $\geq 1.5\text{mm}$  preparation depth
- $\geq 1.5\text{mm}$  isthmus width
- $6^\circ$  sidewall taper
- proximal box should have diverging walls
- [inlay bridge] - contraindicated

Lava

- 2mm-4mm preparation depth
- $\geq 2\text{mm}$  isthmus width
- $2^\circ$ - $3^\circ$  sidewall taper
- proximal box should have diverging walls
- [inlay bridge] - must have sufficient space on the proximal for a  $9\text{mm}^2$  connector

# Characteristics of Full Ceramic Restorations<sup>1</sup>

	<b>e.max Press</b>	<b>Cercon</b>	<b>Procera (Alumina)</b>	<b>Procera (Zirconia)</b>	<b>Lava<sup>2</sup></b>	<b>Calypso<sup>3</sup></b>
Application	Where translucency is paramount	Economical metal free restorations	Excellent aesthetics for anterior restorations	For large restorations up to full arch	Ultimate balance between strength and aesthetics	Great aesthetics at an even greater price
Material	Lithium disilicate (pressable glass ceramic)	Zirconia	Alumina	Zirconia	Zirconia	Zirconia
Strength	400 MPa	1200 MPa	700 MPa	1200 MPa	1200 MPa	1200 MPa
Supplier	Ivoclar Vivadent (Liechtenstein)	DeguDent (Germany)	NobelBiocare (Sweden)	NobelBiocare (Sweden)	3M ESPE (Germany)	Quality suppliers from Germany and Switzerland
Production	In-house at Modern	In-house at Modern	Framework produced by NobelBiocare	Framework produced by NobelBiocare	In-house at Modern	In-house at Modern
Translucency	Highest (multiple levels available)	Moderate	High	Above average	Above average	Above average
Thickness	1.2mm - 1.5mm	≥0.5mm + porcelain	0.6mm + porcelain	0.4 to 0.7mm + porcelain	0.4 to 0.7mm + porcelain	0.4 to 0.7mm + porcelain
Framework Shades	20+ shades	White or ivory	Ivory	4 shades	8 shades	8 shades
Veneering Porcelain	Can be cut-back and veneered with e.max Ceram	Shofu Vintage Zr	DeguDent AllCeram	Shofu Vintage Zr	Shofu Vintage Zr	Shofu Vintage Zr
Crown and Bridge	Single crown 3-unit bridge within pre-molar to pre-molar region	Single crown Bridge up to 47mm in length (typically 6 units)	Single crown Anterior bridge only (max. 4 units)	Single crown Bridge up to full arch Total bridge design must fit in a disc of Ø60x20mm	Single crown Bridge up to 48mm in length (typically 6 units)	Single crown Bridge up to 6 units, 7-8 units maybe possible depending on design
Number of Pontics	1 only, no cantilever	4 (anterior) or 3 (posterior) 1 cantilever pontic	2 max., no cantilever	4 (anterior) or 3 (posterior) 1 cantilever pontic	4 (anterior) or 3 (posterior) 1 cantilever pontic	4 (anterior) or 3 (posterior) 1 cantilever pontic
Veneer	HT ingots or Empress Esthetics Thin veneer (0.3mm) possible	N/A	0.25mm + porcelain	N/A	N/A	0.4mm + porcelain
Maryland Bridge	No	N/A	N/A	N/A	Yes	Yes
Inlay / Onlay	Yes (recommended)	N/A	N/A	N/A	Yes (inlay bridge possible)	Yes (inlay bridge possible)
Cementation	Composite cement recommended	Glass ionomer or composite cement	Glass ionomer or composite cement	Glass ionomer or composite cement	Glass ionomer or composite cement	Glass ionomer or composite cement

<sup>1</sup> Physical properties according to data provided by respective suppliers. Characteristics are for reference only and subject to change without notice.

<sup>2</sup> Available only to dentists in Hong Kong and Macau or via Modern Dental Laboratory USA.

<sup>3</sup> Not available in Hong Kong and Macau.