



# Esthetic

Dental Solutions

Today and Tomorrow

Presintered, yttrium-stabilized zirconium oxide

High-strength glass-ceramic

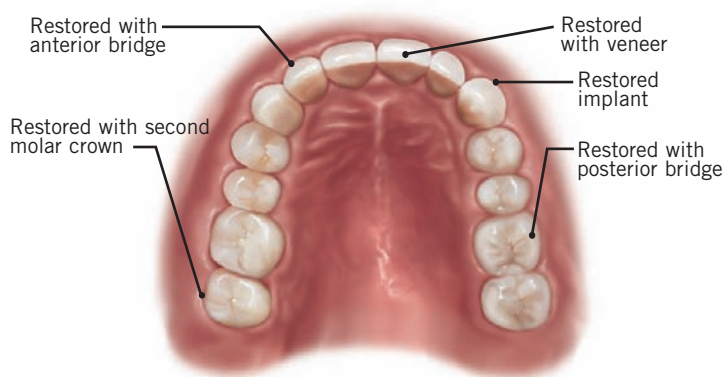
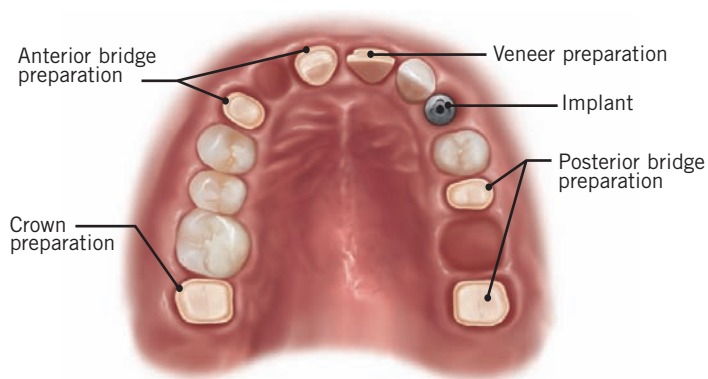
Press-to-zirconia fluorapatite ceramic

Fluorapatite layering ceramic

# The Evolution of Esthetic Restorations



Using today's all-ceramic materials, clinicians have the ability to provide health, function, and esthetics for their patients. Whereas early metal-free restorations surpassed metal-ceramic options in esthetics but not strength, recent innovations in ceramic technology have yielded multiple all-ceramic systems that are used in anterior and posterior regions to achieve a balance between these requisites. As a result, it has been difficult—particularly in challenging cases (see illustrations)—for dental professionals to fabricate restorations and to create lifelike smiles with consistent vitality.



Now, with IPS e.max, the clinician and dental technician can predictably restore even the most challenging cases using a single all-ceramic system. By writing just one laboratory prescription for IPS e.max, clinicians can be confident that they are providing patients with optimized function, esthetics, and strength.

# Clinical Performance: Optimizing Function, Strength, and Esthetics



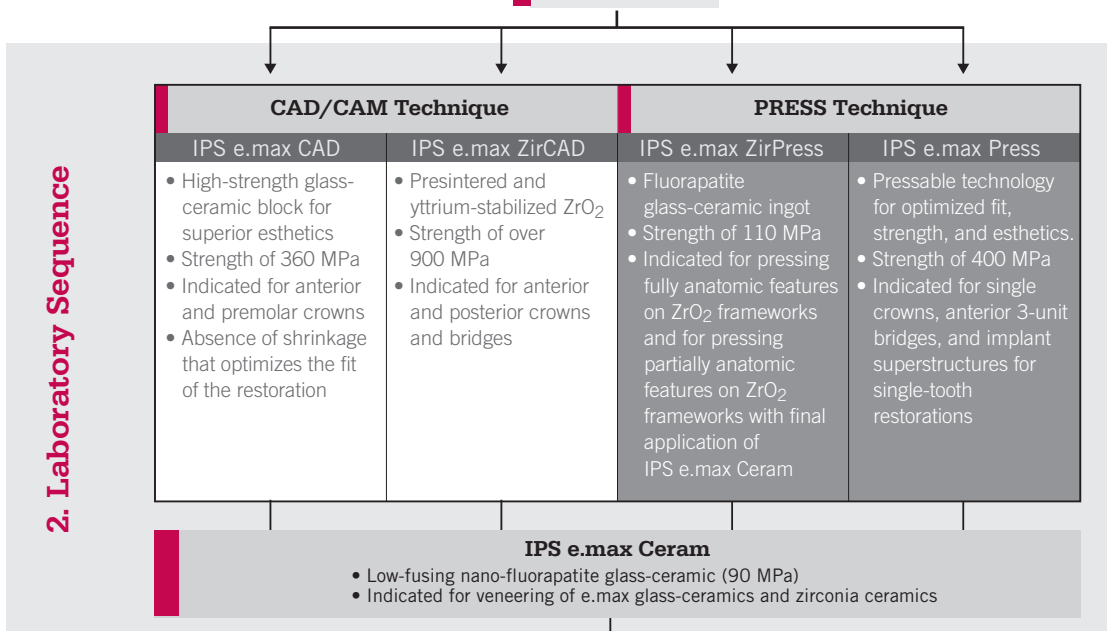
With zirconium oxide (IPS e.max ZirCAD) and high-strength glass-ceramic materials (IPS e.max CAD, IPS e.max Press) available, IPS e.max can address clinicians' need for strength for posterior restorations and patient's desire for outstanding esthetics on the anterior region. The simplicity of the single layering ceramic (IPS e.max Ceram and IPS e.max Zir Press) means that regardless of the substructure utilized, the dental laboratory will be able to deliver lifelike restorations with consistent vitality and esthetics.

## Ceramic System Highlights

- High-strength material options
- One layering ceramic for outstanding esthetics
- Conventionally cementable
- Press and CAD/CAM fabrication options
- Ideal for combination cases

### 1. Clinical Sequence

- Tooth preparation
- Shade selection
- Impressions/Scan
- Provisionalization



### 3. Cementation Sequence

- Restoration try-in
- Cement selection and placement
- Finishing and polishing

# Clinical and Laboratory Protocol



The following clinical and laboratory sequence illustrates the esthetic restoration of two central incisors. The patient presented with two square-shaped, metal-ceramic restorations on teeth #8 and #9; the existing crowns were compromised by their discolored appearance. Following a detailed clinical examination and consultation with the patient, it was decided to replace the crowns with all-ceramic restorations (IPS e.max, Ivoclar Vivadent, Amherst, NY) that would provide strength and esthetics for the patient.

**Figure 1.** Preoperative facial view of the unesthetic restorations on teeth #8 and #9, demonstrating discoloration and a poor length-to-width ratio.



**Figure 2.** Palatal view of the incisors highlighting the extended metal-ceramic covering on the lingual aspect. Replacement of the alloy would also improve translucency.

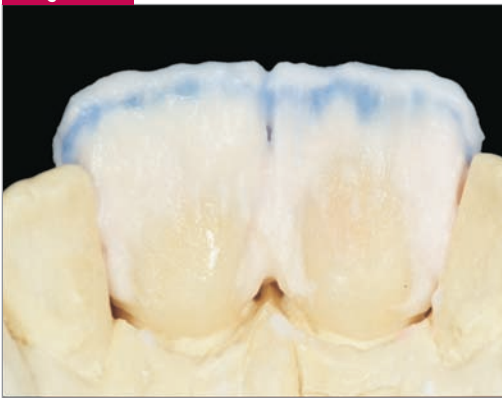


Figure 3



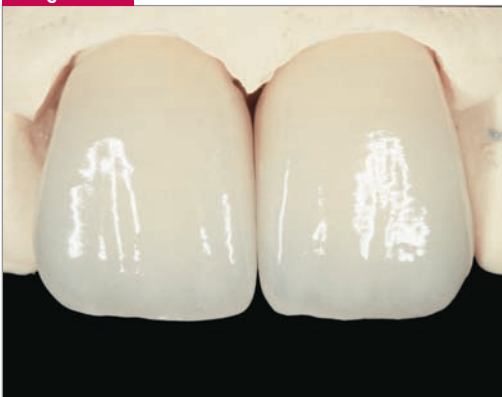
**Figure 3.** After milling, sintering, and try-in, the zirconium copings (ie, IPS e.max ZirCAD, Ivoclar Vivadent, Amherst, NY) are placed on the laboratory model for ceramic buildup.

Figure 4



**Figure 4.** Palatal view of the transition between the copings and ceramic layering following incisal buildup and the final application of different enamels and translucent powders.

Figure 5



**Figure 5.** After morphological buildup, baking, and texturing, the ceramics were glaze-fired with a self-glazing material. The result has no extended shine.

Figure 6



**Figure 6.** The completed e.max restorations (Ivoclar Vivadent, Amherst, NY) exhibited natural light transmission, a significant improvement from the metal-ceramic crowns.

Figure 7



**Figure 7.** Occlusal view following placement of the all-ceramic restorations demonstrating improved esthetic appearance over the previous metal-ceramic restorations.

Figure 8



**Figure 8.** Postoperative facial view of the restored central incisors showing improved esthetics, natural light transmission, and integration within the gingival margin.

# Effective Cementation



Predictable cementation is critical to the success of a ceramic restoration, ensuring long-term retention, preventing microleakage, and improving esthetics. Multilink Automix is a self-etching, adhesive resin cement that is recommended for use with all IPS e.max restorations.

## Universal Adhesive Cement

Multilink is characterized by its broad spectrum of indications, excellent physical properties, and its time-saving direct application. Key features provided by Multilink Automix include the following:

- High, immediate bond strengths to restorations made of glass-ceramic, zirconia, as well as precious and nonprecious metals, providing immediate security.
- Self-etching, self-curing Multilink Primer that seals the dentin, provides good marginal adaptation, enhances bond strength, and minimizes postoperative sensitivity.
- Dual-cure cement system provides complete polymerization in situations with limited light access, while allowing clinicians to polymerize the cement on demand in situations where light penetration can be achieved.
- Automix delivery provides a consistent mix and saves time by allowing the cement to be applied directly to the restoration.
- Availability in three shades (ie, Transparent, Yellow, and Opaque White) to satisfy the esthetic requirements of today's patients.

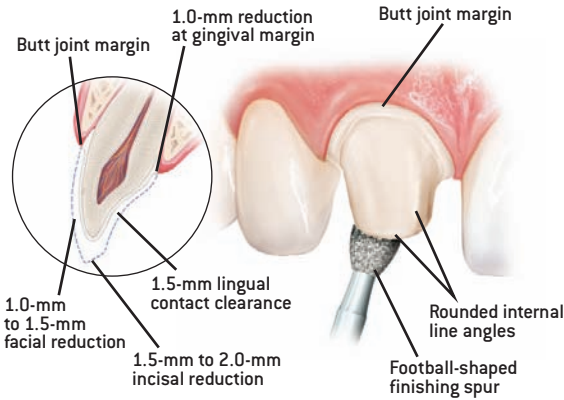
### Guidelines for Material Selection for All-Ceramic Restorations

IPS e.max >>	CAD	ZirCAD	Press
<b>Indications</b>	<ul style="list-style-type: none"> <li>• Anterior crown substructures</li> <li>• Premolar crown substructures</li> <li>• Implant superstructures for single-tooth restorations</li> </ul>	<ul style="list-style-type: none"> <li>• Anterior crown substructures</li> <li>• Posterior crown substructures</li> <li>• Anterior 3- and 4-unit bridges</li> <li>• Posterior 3- and 4-unit bridges</li> <li>• Inlay-retained bridges</li> </ul>	<ul style="list-style-type: none"> <li>• Anterior crown substructures</li> <li>• Posterior crown substructures</li> <li>• Anterior 3-unit bridges</li> <li>• Implant superstructures for single-tooth restorations</li> </ul>
<b>e.max Ceramic Layering Options</b>	Ceram	ZirPress and/or Ceram	Ceram
<b>Cementation Protocol</b>	Conventional or adhesive cementation	Conventional or adhesive cementation	Conventional or adhesive cementation
<b>Key Clinical Benefits</b>	Absence of shrinkage optimizes the fit of these restorations	Optimized fit of pressable ceramics with strength of zirconium oxide	Wide range of shades and opacities for masking substructures

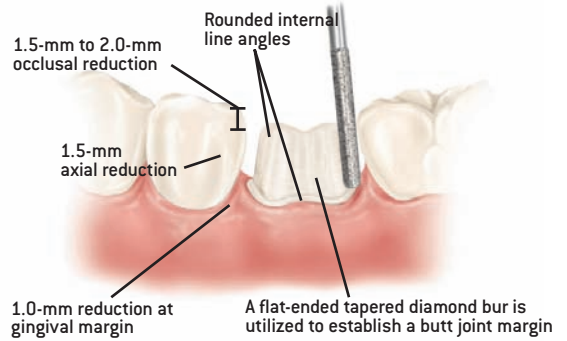
Now, dental laboratories can produce the highest quality esthetic restorations using the most progressive fabrication methods with the industry's most innovative ceramic materials.

# Simple Tooth Preparation

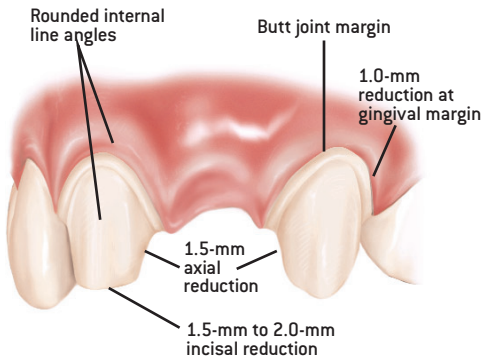
## ANTERIOR CROWN PREPARATION



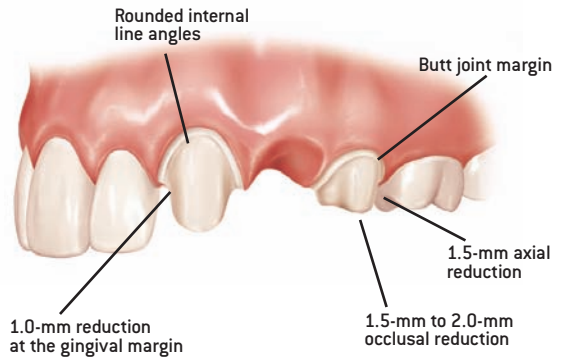
## POSTERIOR CROWN PREPARATION



## ANTERIOR 3-UNIT BRIDGE PREPARATION



## POSTERIOR 3-UNIT BRIDGE PREPARATION

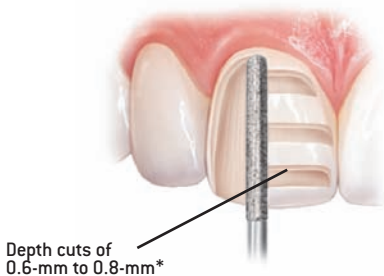


When layered or pressed ceramic margins are preferred in conjunction with a zirconia framework, enhanced gingival esthetics can be achieved with a definitive 90 degree shoulder preparation.

## VENEER PREPARATION

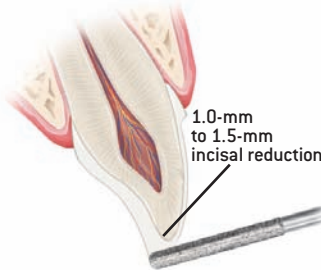
### UNIFORM FACIAL PREPARATION

A medium grit, round-ended, diamond bur is used to remove a uniform thickness of facial enamel by joining the depth-cut grooves.



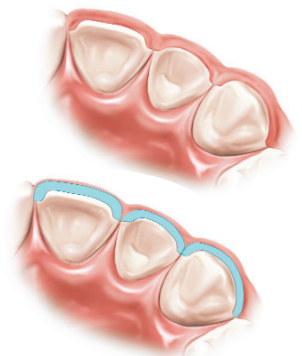
### INCISAL PREPARATION

The diamond bur is angled to bevel back the incisal edge.



### CHAMFER MARGINS

Correct preparation of the chamfer margins interproximally allows the appropriate bulk of porcelain.



100% CUSTOMER SATISFACTION  
**GUARANTEED!**

# IPS e.max<sup>®</sup>

IPS e.max<sup>®</sup>

**all** ceramic  
**all** you need

**IPS e.max<sup>®</sup>** delivers the ultimate in metal free esthetics and strength utilizing both Pressable and CAD/CAM technologies.

Designed with versatility and simplicity in mind, IPS e.max lets you select from multiple framework materials including Zirconium Oxide, giving you the **versatility** you want while always veneering with the same ceramic giving you the **simplicity** you need. IPS e.max provides

outstanding esthetics, high strength, and predictable shade matching even with difficult combination cases. Now, the laboratory can produce the highest quality esthetic restorations using the most progressive fabrication methods with the industry's most innovative materials.

***IPS e.max... all ceramic... all you need!***

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