IPS e.max® 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 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 colorant cases. Now, the laboratory can produce the highest-quality esthetic restorations using the most advanced technology and the industry’s most innovative materials. IPS e.max… all ceramic… all you need!

100% CUSTOMER SATISFACTION GUARANTEED!

For information on this or any other Ivoclar Vivadent product please call us toll free at 1-800-533-6825 in the U.S., 1-800-263-8182 in Canada. www.ivoclarvivadent.us

© 2006 Ivoclar Vivadent, Inc. IPS e.max is a registered trademark of Ivoclar Vivadent, Inc.

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 was often colorless in anterior but not in strength, recent innovations in ceramic technology have added multiple all-ceramic options in esthetics and strength. IPS e.max lab and IPS e.max CAD are optimized to achieve a balance between these requisites. As a result, IPS e.max is perfect for a wide range of cases even those illustrated—oral professionals to fabricate restorations and to create smiles with consistent vitality.

Simple Tooth 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.

ANTERIOR CROWN PREPARATION
Depth cuts of 0.6-mm to 0.8-mm

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

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

POSTERIOR CROWN PREPARATION
1.5-mm to 2.0-mm occlusal reduction

Rounded internal line angles

1.5-mm axial reduction

A flat-ended tapered diamond bur is utilized to establish a butt joint margin 1.0-mm reduction at gingival margin.

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.

POSTERIOR 3-UNIT BRIDGE PREPARATION
Rounded internal line angles

Anterior bridge preparation

Anterior 3-unit bridge preparation

Veneer preparation

Full view of a completed anterior crown preparation

All ceramic all you need

Esthetic Dental Solutions
Today and Tomorrow

Using today’s all-ceramic materials, clinicians have the ability to provide health, function, and esthetics for their patients. Whereas early metal-free restorations was often colorless in anterior but not in strength, recent innovations in ceramic technology have added multiple all-ceramic options in esthetics and strength. IPS e.max lab and IPS e.max CAD are optimized to achieve a balance between these requisites. As a result, IPS e.max is perfect for a wide range of cases even those illustrated—oral professionals to fabricate restorations and to create smiles with consistent vitality.

Simple Tooth 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.

ANTERIOR CROWN PREPARATION
Depth cuts of 0.6-mm to 0.8-mm

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

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

POSTERIOR CROWN PREPARATION
1.5-mm to 2.0-mm occlusal reduction

Rounded internal line angles

1.5-mm axial reduction

A flat-ended tapered diamond bur is utilized to establish a butt joint margin 1.0-mm reduction at gingival margin.

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.

POSTERIOR 3-UNIT BRIDGE PREPARATION
Rounded internal line angles

Anterior bridge preparation

Anterior 3-unit bridge preparation

Veneer preparation

Full view of a completed anterior crown preparation

All ceramic all you need

Esthetic Dental Solutions
Today and Tomorrow

Using today’s all-ceramic materials, clinicians have the ability to provide health, function, and esthetics for their patients. Whereas early metal-free restorations was often colorless in anterior but not in strength, recent innovations in ceramic technology have added multiple all-ceramic options in esthetics and strength. IPS e.max lab and IPS e.max CAD are optimized to achieve a balance between these requisites. As a result, IPS e.max is perfect for a wide range of cases even those illustrated—oral professionals to fabricate restorations and to create smiles with consistent vitality.

Simple Tooth 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.

ANTERIOR CROWN PREPARATION
Depth cuts of 0.6-mm to 0.8-mm

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

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

POSTERIOR CROWN PREPARATION
1.5-mm to 2.0-mm occlusal reduction

Rounded internal line angles

1.5-mm axial reduction

A flat-ended tapered diamond bur is utilized to establish a butt joint margin 1.0-mm reduction at gingival margin.

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.

POSTERIOR 3-UNIT BRIDGE PREPARATION
Rounded internal line angles

Anterior bridge preparation

Anterior 3-unit bridge preparation

Veneer preparation

Full view of a completed anterior crown preparation

All ceramic all you need

Esthetic Dental Solutions
Today and Tomorrow

Using today’s all-ceramic materials, clinicians have the ability to provide health, function, and esthetics for their patients. Whereas early metal-free restorations was often colorless in anterior but not in strength, recent innovations in ceramic technology have added multiple all-ceramic options in esthetics and strength. IPS e.max lab and IPS e.max CAD are optimized to achieve a balance between these requisites. As a result, IPS e.max is perfect for a wide range of cases even those illustrated—oral professionals to fabricate restorations and to create smiles with consistent vitality.
IPS e.max® 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 coloration cases. Now, the laboratory can produce the highest quality esthetic restorations using the most innovative materials in the industry in a single all-ceramic system.

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

100% CUSTOMER SATISFACTION GUARANTEED!

For information on this or any other Ivoclar Vivadent product please call us toll free at 1-800-533-6825 in the U.S., 1-800-263-8182 in Canada. www.ivoclarvivadent.us

© 2006 Ivoclar Vivadent, Inc. IPS e.max is a registered trademark of Ivoclar Vivadent, Inc.
Clinical Laboratory Protocol

1. Indirect Technique
   - Impressions/Scans
   - Provisional restoration
   - Retention impressions
   - Laboratory model

2. Direct Technique
   - Tooth preparation
   - Provisional restoration
   - Impression/Scan

3. Layering Options
   - Metal-ceramic restorations
   - Zirconia copings

Clinical and Laboratory Protocol

The following clinical and laboratory sequence illustrates the ceramic restoration of two central incisors. The patient presented with two square-shaped, metal-ceramic restorations on teeth #6 and #7. The existing crowns were compromised by the discolored ceramic. 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) was selected to provide strength and esthetics for the patient.

Ceramic System Highlights

- High-strength metal-ceramic
- Pressable crowns for outstanding esthetics
- Zirconia crowns for anterior and posterior restorations with consistent vitality and esthetics.
- IPS e.max Press (Ivoclar Vivadent, Amherst, NY) means that regardless of the substructure employed for press applications, the same pressable ceramic (IPS e.max Ceram and IPS e.max ZirCAD) can be utilized to optimize the fit and aesthetics on the anterior region. The simplicity of single-tooth pressable zirconia ceramics with high-strength for posterior restorations and patient's desire for high-strength materials, IPS e.max can address clinicians' need for predictably cementable materials for all-ceramic restorations with consistent vitality and esthetics.

Indications

- Single-tooth crowns
- Metal-ceramic and pressed ZrO2 frameworks with flexible framework design for length and superstructures

Benefits

- Self-etching, self-curing Multilink Primer that seals the dentin, provides good adhesion to enamel, as well as precious and nonprecious metals, providing immediate security.
- Enamel and porcelain functional primers that improve bonding to enamel, as well as enamel-like properties to improve the cement on enamel.
- IPS e.max ZirCAD system provides complete compatibilization in situations with limited light exposure, while allowing clinicians to improve the cement on metal.
- Au-base cement system provides complete compatability in situations with limited light exposure, while allowing clinicians to improve the cement on metal.
- Predictable cementation is critical to the success of a ceramic restoration, ensuring long-term retention, prevent microleakage, and improving esthetics. Multilink Automix (Ivoclar Vivadent, Amherst, NY) is placed on the temporary model for ceramic buildup.

Key Clinical Features

- Enhanced marginal sealing
- Improved microleakage and microstructure
- Absence of polymerization shrinkage
- Processable material
- Comparison of the ceramic buildup to the metal-ceramic crowns.

Effective Cementation

Predicates cementation to the success of a ceramic restoration, ensuring long-term retention, prevent microleakage, and improving esthetics. Multilink Automix (Ivoclar Vivadent, Amherst, NY) is placed on the temporary model for ceramic buildup.
Clinical Laboratory Protocol

Clinical and Laboratory Protocol

Clinical and Laboratory Protocol

Effective Cementation

Universal Adhesive Cement

With zirconium oxide (IPS e.max ZirCAD) and high-strength glass-ceramic materials (IPS e.max Press), available, the IPS e.max can address clinicians’ need for strength for cantilever restorations and patients desire for outstanding esthetics on the anterior region. The simplicity of the single-layering ceramic (IPS e.max Crown and IPS e.max Press) means that regardless of the substructure selected, the final laboratory will be able to deliver better restorations with consistent material and esthetics.

Absence of shrinkage optimizes the fit of these restorations. IPS e.max CAD, IPS e.max Press, IPS e.max ZirCAD, and IPS e.max Ceram are available and representable for use with all IPS e.max restorations.

Ceramic System Highlights

• Indications
• High-strength material options
• Fluorapatite glass-ceramic (90 MPa)
• Ideal for combination cases
• Liquid layers for outstanding esthetics
• One layering ceramic for outstanding esthetics
• Mineral opacity and incisal buildup

IPS e.max >>

Automix is a self-etching, adhesive resin cement that is recommended for use with all IPS e.max restorations. Automix is a dual-cure cement system that provides complete polymerization in situations with limited light access, while allowing clinicians to personalize the cement on the chairside.

High, immediate bond strengths to restorations made of glass-ceramic, zirconia, and metal-ceramic restorations. Automix is characterized by its broad spectrum of indications, excellent physical properties, and its time-saving dual-cure reaction. Key features provided by Automix Universal Adhesive Cement include the following:

• High, immediate bond strengths to restorations made of glass ceramic, zirconia, and metal-ceramic restorations. Automix is characterized by its broad spectrum of indications, excellent physical properties, and its time-saving dual-cure reaction. Key features provided by Automix Universal Adhesive Cement include the following:

• High, immediate bond strengths to restorations made of glass ceramic, zirconia, and metal-ceramic restorations. Automix is characterized by its broad spectrum of indications, excellent physical properties, and its time-saving dual-cure reaction. Key features provided by Automix Universal Adhesive Cement include the following:

• Glass-ceramic materials (IPS e.max CAD, IPS e.max Press) are available for use with all IPS e.max restorations.

• IPS e.max ZirCAD and high-strength glass-ceramic materials (IPS e.max Press) available, the IPS e.max can address clinicians’ need for strength for cantilever restorations and patients desire for outstanding esthetics on the anterior region. The simplicity of the single-layering ceramic (IPS e.max Crown and IPS e.max Press) means that regardless of the substructure selected, the final laboratory will be able to deliver better restorations with consistent material and esthetics.

• IPS e.max overdentures (IPS e.max Press) exhibit natural light transmission, a significant improvement from the metal-ceramic crowns.

• Fluorapatite glass-ceramic (90 MPa) is ideal for combination cases.

• IPS e.max 3-unit bridges present the advantages of ZrO2 superstructures for progressive fabrication method with the industry’s most innovative ceramic materials.

• IPS e.max Ceram and IPS e.max Press are available and representable for use with all IPS e.max restorations.

• IPS e.max 3-unit bridges present the advantages of ZrO2 superstructures for progressive fabrication method with the industry’s most innovative ceramic materials.

• IPS e.max Ceram and IPS e.max Press are available and representable for use with all IPS e.max restorations.

• IPS e.max 3-unit bridges present the advantages of ZrO2 superstructures for progressive fabrication method with the industry’s most innovative ceramic materials.

• IPS e.max Ceram and IPS e.max Press are available and representable for use with all IPS e.max restorations.

• IPS e.max 3-unit bridges present the advantages of ZrO2 superstructures for progressive fabrication method with the industry’s most innovative ceramic materials.
Clinical and Laboratory Protocol

The following clinical and laboratory sequence illustrates the ceramic restoration of two central incisors. This process involved with two square-shaped, metal-ceramic restorations on teeth 84 and 86. The existing crowns were compromised by the discolored appearance. Following a detailed clinical examination and consultation with the patient, it was decided to replace the crowns with all-cerreic restorations.

IPS e.max, Ivoclar Vivadent, Amherst, NY, was selected to provide strength and aesthetics for the patient.

1. Preparation

- Prepare the teeth for restoration.

2. Trial restoration

- Fabricate a wax-up of the restored teeth.

3. Cementation

- Apply cement to the restoration.

4. Final adjustment

- Adjust the restoration to ensure proper fit and aesthetics.

Clinical and laboratory images courtesy of Dr. Daniel Edelhoff and Mr. Oliver Brix.

Clinical and Laboratory Protocol

With lithium disilicate (IPS e.max ZirCAD) and high-strength glass-ceramic materials (IPS e.max Press), available, the IPS e.max can address clinical need for strength or cosmetic restorations and patients desire for outstanding esthetics on the anterior region. The simplicity of the single-layering ceramic (IPS e.max Ceramic and IPS e.max Zir) means that regardless of the substructure utilized, the final restoration will be able to deliver desired esthetics with consistent safety and reliability.

Ceramic System Highlights

- High strength and esthetics
- Ideal for dental laboratories for outstanding esthetics
- Perfectly matched monolithic and hybrid systems
- Low-fusing glass-ceramic materials (IPS e.max CAD, IPS e.max Press)
- Presintered material options
- High-strength material options
- Ideal for combination cases
- Press and CAD/CAM fabrication options
- Conventionally cementable
- Strenuous for optimized fit, strength for posterior restorations and patient’s desire for superior restorations with consistent vitality and esthetics.

Universal Adhesive Cement

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

- High, immediate bonds to restorations made of glass ceramic, zirconia, as well as previous and restorative metals, providing immediate security.
- Single-step, self-curing Multilink Primer that seals the dentin, provides good marginal adaptation, enhances bond strength, and minimizes post-operative sensitivity.
- One-step, two liquid system provides complete polymerization in situations with limited light flux, while also allowing clinicians to modify the cement on the chair side, without risk of premature polymerization.
- Multilink cement delivery provides a consistent mix and saves time by allowing the cement to be applied directly to the restoration.
- Availability in three shades (Clear, Transparent, Yellow, and Orange) White to satisfy the aesthetic requirements of different patients.

Guidelines for Materials Selection for All-Ceramic Restoration

<table>
<thead>
<tr>
<th>IPS e.max Press</th>
<th>IPS e.max Zirpress</th>
<th>IPS e.max ZirCAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlays</td>
<td>Inlay-retained</td>
<td>Inlay-retained</td>
</tr>
<tr>
<td>Onlays</td>
<td>Onlay-retained</td>
<td>Onlay-retained</td>
</tr>
<tr>
<td>Superstructures</td>
<td>Superstructures</td>
<td>Superstructures</td>
</tr>
<tr>
<td>Single crowns</td>
<td>Single crowns</td>
<td>Single crowns</td>
</tr>
<tr>
<td>Bridge</td>
<td>Bridge</td>
<td>Bridge</td>
</tr>
<tr>
<td>1 unit bridge</td>
<td>1 unit bridge</td>
<td>1 unit bridge</td>
</tr>
<tr>
<td>2 unit bridges</td>
<td>2 unit bridges</td>
<td>2 unit bridges</td>
</tr>
<tr>
<td>3 unit bridges</td>
<td>3 unit bridges</td>
<td>3 unit bridges</td>
</tr>
<tr>
<td>4 unit bridges</td>
<td>4 unit bridges</td>
<td>4 unit bridges</td>
</tr>
<tr>
<td>5 unit bridges</td>
<td>5 unit bridges</td>
<td>5 unit bridges</td>
</tr>
<tr>
<td>6 unit bridges</td>
<td>6 unit bridges</td>
<td>6 unit bridges</td>
</tr>
</tbody>
</table>

Effective Cementation

Predictable cementation is critical to the success of a ceramic restoration, ensuring long-term retention, prevent- ing microleakage, and maintaining esthetics. Multilink Automix from Ivoclar Vivadent is a one-step cement that can be connected for use with all IPS e.max restorations.
Clinical and Laboratory Protocol

1. Clinical Sequence

- Tooth prep
- Impressions/Scannings
- Shade selection
- Try in
- Seatings
- Polishing

2. Laboratory Sequence

- IPS e.max Ceramic
- IPS e.max Press
- IPS e.max ZirPress
- IPS e.max ZirCAD

- Universal Adhesive Cement
- Effective Cementation

Ceramic System Highlights

- IPS e.max Ceramic: Excellent esthetics, natural light transmission, and integration within the gingival margin.
- IPS e.max Press: Excellent esthetics on the anterior region. The simplicity of the single-layering ceramic (IPS e.max Ceram and IPS e.max Press) means that regardless of the substrate, the restorations will be able to obtain similar esthetics with consistent vitality and esthetics.
- IPS e.max ZirPress: Low-fusing zirconium oxide (IPS e.max ZirCAD) and high-strength yttrium-stabilized ZrO2 utilized ZrO2 and IPS e.max Ceram to provide strength and esthetics for the patient.

The following clinical and laboratory sequence illustrates the fabrication of the incisive crown in this case. The case was prepared with two square-shaped, mature-end restorations on teeth 64 and 65 (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.

Effective Cementation

Predictable cementation is critical to the success of a ceramic restoration, ensuring long-term retention, prevent- ing degeneration, and firm seating. Multilink Universal Adhesive Cement (3M ESPE) is recommended for use with all IPS e.max restorations. Its innovative bonding technology provides excellent bond strength due to its high-molar volume adhesive, while the high-strength glass ceramic (IPS e.max) utilized in this case ensures long-term retention.

Indications

- Single-tooth substructures
- Multi-unit bridges
- Inlays-retained substructures
- Posterior 3- and 4-unit bridges

Benefits

- Excellent esthetics
- Excellent marginal fit
- Excellent long-term retention

Guidelines for Material Selection for All-Ceramic Restorations

IPS e.max ZirCAD

- Recommended for use with all IPS e.max restorations.
- Provides strength and esthetics for the patient.
- Ideal for combination cases requiring wear resistance and esthetics.
- Conventional or self-curing cement can be used to apply cement directly to the restoration.
- Autopolymerization allows for use in situations where light penetration can be achieved.
- Designed for use in situations where light access is limited, while allowing clinicians to polymerize the cement on marginal adaptation, enhances bond strength, and minimizes postoperative sensitivity.

IPS e.max Press

- Ideal for combination cases requiring wear resistance and esthetics.
- Conventional or self-curing cement can be used to apply cement directly to the restoration.
- Autopolymerization allows for use in situations where light penetration can be achieved.
- Designed for use in situations where light access is limited, while allowing clinicians to polymerize the cement on marginal adaptation, enhances bond strength, and minimizes postoperative sensitivity.

IPS e.max ZirCAD

- Recommended for use with all IPS e.max restorations.
- Provides strength and esthetics for the patient.
- Ideal for combination cases requiring wear resistance and esthetics.
- Conventional or self-curing cement can be used to apply cement directly to the restoration.
- Autopolymerization allows for use in situations where light penetration can be achieved.
- Designed for use in situations where light access is limited, while allowing clinicians to polymerize the cement on marginal adaptation, enhances bond strength, and minimizes postoperative sensitivity.

IPS e.max Press

- Ideal for combination cases requiring wear resistance and esthetics.
- Conventional or self-curing cement can be used to apply cement directly to the restoration.
- Autopolymerization allows for use in situations where light penetration can be achieved.
- Designed for use in situations where light access is limited, while allowing clinicians to polymerize the cement on marginal adaptation, enhances bond strength, and minimizes postoperative sensitivity.

IPS e.max ZirCAD

- Recommended for use with all IPS e.max restorations.
- Provides strength and esthetics for the patient.
- Ideal for combination cases requiring wear resistance and esthetics.
- Conventional or self-curing cement can be used to apply cement directly to the restoration.
- Autopolymerization allows for use in situations where light penetration can be achieved.
- Designed for use in situations where light access is limited, while allowing clinicians to polymerize the cement on marginal adaptation, enhances bond strength, and minimizes postoperative sensitivity.

IPS e.max Press

- Ideal for combination cases requiring wear resistance and esthetics.
- Conventional or self-curing cement can be used to apply cement directly to the restoration.
- Autopolymerization allows for use in situations where light penetration can be achieved.
- Designed for use in situations where light access is limited, while allowing clinicians to polymerize the cement on marginal adaptation, enhances bond strength, and minimizes postoperative sensitivity.
IPS e.max® 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 coloration cases. Now, the laboratory can produce the highest-quality esthetic restorations using the most innovative materials making it easier than ever 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 beautiful smiles with consistent vitality.

The Evolution of Esthetic Restorations

Now, with IPS e.max, the clinician and dental technician can predictably restore even the most challenging cases using a single all-ceramic system. As adding just one laboratory procedure to IPS e.max, clinicians can be confident that they are providing patients with health, function, and esthetics.
IPS e.max® 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 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 combinatorial cases. Now, the laboratory can produce the highest quality esthetic restorations using the most innovative materials—unique in development and widespread adoption. IPS e.max… all ceramic… all you need!

100% CUSTOMER SATISFACTION GUARANTEED!

For information on this or any other Ivoclar Vivadent product please call us toll free at 1-800-533-6825 in the U.S., 1-800-263-8182 in Canada. www.ivoclarvivadent.us

© 2006 Ivoclar Vivadent, Inc. IPS e.max is a registered trademark of Ivoclar Vivadent, Inc.