

# IPS e.max<sup>®</sup>

INFORMATION FOR DENTISTS

IPS e.max<sup>®</sup> –  
one system for every indication



## IPS e.max® – one system for every indication

Dental patients of today are looking for more than just a healthy and functional restorative solution. Esthetics is playing an increasingly important role in their choice of dental restorations. As all-ceramics are both biocompatible and esthetic, these materials are rapidly growing in popularity.

IPS e.max® allows you to offer your patients exceptionally beautiful restorations which also demonstrate high mechanical strength.

You are bound to appreciate the wide range of possibilities that this innovative all-ceramic system will open up to you.



IPS e.max Ceram on IPS e.max CAD  
(Dr A. Kurbad / K. Reichel, Germany)



IPS e.max Ceram on IPS e.max Press  
(Dr U. Brodbeck, Switzerland / J. Seger, Ivoclar Vivadent, Liechtenstein)

## A sophisticated concept



IPS e.max total restoration (Prof. Dr D. Edelhoff / O. Brix, Germany)

IPS e.max is the sum of many good ideas. The system allows you to select the most suitable all-ceramic material, depending on the indication at hand and the required strength of the restoration.

Lithium disilicate (LS<sub>2</sub>) is used to fabricate restorations for single teeth in the anterior and posterior regions. The material exhibits exceptional esthetic properties.

The zirconium oxide ceramic IPS e.max ZirCAD is the material of choice for larger restorations, for example, posterior bridges that are exposed to high masticatory forces. Zirconium oxide ceramic is characterized by an outstanding strength.

The system comprises a single veneering ceramic, which offers decisive advantages in combination work. All IPS e.max restorations demonstrate the same wear properties and surface gloss – irrespective of the framework material used. Therefore, a consistently impressive esthetic appearance is achieved throughout the different parts of the restoration.

In addition, IPS e.max crowns and bridges can be placed using not only adhesive but also self-adhesive and conventional methods.

With the IPS e.max CAD-on technique the lithium disilicate (LS<sub>2</sub>) material can now be used on zirconium oxide frameworks for the fabrication of three- to four-unit bridges.

### The highlights

- Highly esthetic lithium disilicate (LS<sub>2</sub>) for single-tooth restorations – and with a zirconium oxide framework also for bridge restorations
- High-strength zirconium oxide for multi-unit bridges
- One layering ceramic for predictable shade results and consistent clinical behaviour – even in combination work
- Adhesive, self-adhesive and conventional cementation



## Lithium disilicate – esthetic and versatile



before



after  
Dr U. Brodbeck, Switzerland /  
J. Seger, Ivoclar Vivadent, Liechtenstein



before



after  
Dr S. Kina, Brazil / G. Ubassy, France

The lithium disilicate ceramic (LS<sub>2</sub>) of the IPS e.max system shows that esthetics and strength can be successfully combined. This is particularly true in single-tooth restorations, because this innovative ceramic produces esthetic results, while offering a flexural strength that is 2.5 times higher than that of other glass-ceramics.

IPS e.max lithium disilicate has many uses. Its indication spectrum ranges from thin veneers (0.3 mm) and minimally invasive inlays and onlays to partial crowns, full crowns and three-unit anterior bridges as well as implant superstructures. If the IPS e.max CAD-on technique is applied, LS<sub>2</sub> can also be used with a zirconium oxide framework for posterior bridges with up to four units.

Because of its high flexural strength of 360–400 MPa, restorations fabricated with this material can be cemented with different methods. Due to their natural-looking shades

and optimal light transmission, lithium disilicate restorations offer highly esthetic solutions. Depending on the needs of the patient, the restorations can be veneered with a highly esthetic material or they can be monolithically fabricated (i.e. to full contour) and then economically characterized.

Even if the tooth's core is dark in colour (e.g. discoloured preparations or titanium abutments), you no longer have to resort to zirconium oxide or metal-ceramic solutions. You can inform the dental laboratory about the colour that needs to be masked and the dental technician in charge will choose the IPS e.max lithium disilicate material with the required opacity to restore the natural esthetic appearance of the tooth.

### The highlights

- Lifelike shade behaviour for highly esthetic solutions
- Long-lasting restorations due to high strength
- Versatile use and wide range of indications
- Lifelike esthetic results – irrespective of the colour of the prepared tooth
- Adhesive, self-adhesive and conventional cementation, depending on the indication



## Zirconium oxide – high strength and high performance



IPS e.max Ceram on IPS e.max ZirCAD  
Prof. Dr D. Edelhoff/ O. Brix, Germany

You can depend on zirconium oxide in situations where high strength is required, for example, in long-span bridges.

Zirconium oxide is presently the strongest all-ceramic available for dental applications. It is additionally characterized by excellent biocompatibility and low heat conductivity. Because of its excellent final strength, IPS e.max ZirCAD also fulfills clinical requirements. For example, it stands up to the strong masticatory forces in the posterior region without difficulty. Zirconium-reinforced restorations are veneered with the IPS e.max Ceram layering ceramic. Alternatively, IPS e.max ZirPress can be pressed onto them. The IPS e.max CAD-on technique now also allows users to “veneer” zirconium frameworks with the IPS e.max CAD material. In this technique, the  $ZrO_2$  framework and the IPS e.max CAD veneering structure are joined by means of a fusion glass-ceramic.

Your dental technician can even fabricate a conventional inlay-retained bridge with all-ceramic materials according to minimally invasive principles. This type of restoration optimally combines the strength of IPS e.max ZirCAD frameworks with the esthetics and precision fit of pressed ceramics.



INN-Keramik, Austria

### The Straumann® Anatomic IPS e.max® Abutment

The new Straumann Anatomic IPS e.max Abutment has been specially developed for use with the Straumann Bone Level Implant (Regular CrossFit) and the components of the IPS e.max system. Therefore, your dental laboratory can fabricate an indirect IPS e.max restoration for the abutment, for example, using lithium disilicate. Alternatively, you may choose to have the abutment veneered or a ceramic material pressed directly onto it.

The Straumann Anatomic IPS e.max Abutment is a high-strength, anatomically shaped zirconium oxide abutment that exhibits exceptional fit. It is supplied in two shades: MO 0 and MO 1.

All your work will benefit from the smooth shade transition between the abutment and the crown, which further enhances the esthetics of your IPS e.max restorations.



The abutment is exclusively available from Straumann.

### The highlights

- High performance even in the posterior region thanks to unrivalled strength and high fracture toughness
- Excellent biocompatibility and low heat conductivity
- High-strength bridge restorations by combining  $ZrO_2$  and  $LS_2$



## IPS e.max® Ceram – vibrant and natural



IPS e.max Ceram on four different materials (from left to right):  
IPS e.max Press, IPS e.max ZirPress, IPS e.max ZirCAD, IPS e.max CAD  
(MDT T. Michel, Germany)

You will appreciate the benefits offered by the fact that the IPS e.max system features only one layering ceramic. You can choose a suitable framework material, for example, lithium disilicate ceramic or zirconium oxide, depending on the indication to be treated and the required strength. Your dental technician will veneer all the different IPS e.max frameworks with the highly esthetic IPS e.max Ceram layering ceramic to impart the restorations with individual character and natural-looking vibrancy.

Irrespective of the framework material you choose, IPS e.max Ceram allows you to smoothly integrate different types of restorations. Since all the IPS e.max restorations are veneered with the same ceramic material, they exhibit the same wear properties and surface gloss. The outcome is a uniform esthetic appearance.



IPS e.max restoration with gingival parts  
(MDT T. Michel, Germany)



*"The difficulties associated with restoring complex patient cases in a shade-matching, highly esthetic manner by means of different all-ceramic materials are a thing of the past with IPS e.max and IPS e.max Ceram. Thanks to only one layering ceramic with outstanding esthetic properties, optimum integration is possible, no matter which framework material is used. The clinical properties as regards polishing, surface gloss and wear behaviour are not only convincing to me as a dentist but also to patients. The choice between adhesive and conventional cementation for the different materials considerably facilitates routine dental procedures."*

Prof. Dr D. Edelhoff, Germany



IPS e.max Ceram on IPS e.max Press  
(Prof. Dr D. Edelhoff / O. Brix, Germany)

### The highlights

- One layering ceramic for lithium disilicate and zirconium oxide frameworks
- Predictable shade results and consistent clinical behaviour as regards wear and surface gloss, independent of the framework material
- Nano-fluorapatite for highly esthetic properties

## Cementation – flexible and proven



Cementation with Multilink Automix  
(Dr A. Kurbad / K. Reichel, Germany)



Cementation with Vivaglass CEM  
(Dr A. Kurbad / K. Reichel, Germany)

IPS e.max restorations are flexible with regard to their cementation requirements. Crowns and bridges can be cemented according to adhesive, self-adhesive and conventional methods. Inlays and veneers are cemented adhesively as usual.

Depending on the indication, you may choose between adhesive, self-adhesive and conventional materials from the Ivoclar Vivadent cementation assortment.

In general, lithium disilicate (LS<sub>2</sub>) is etched before it is placed. If a conventional cementation method is chosen, silanization is not required.



Cementation with Variolink Veneer  
(Dr S. Kina, Brazil / A. Bruguera, Spain)

### Variolink® II / Variolink® Veneer

The dual-curing, highly esthetic luting composite Variolink II has provided excellent clinical results for more than 10 years. For the cementation of veneers, the light-curing Variolink Veneer is used, which permits a brightening or darkening of the ceramic restoration with its special shade concept.

### Multilink® Automix

The universal, dual-curing luting composite offers a wide range of indications. Furthermore, it generates a very strong and lasting bond. Used together with the Primer A/B, Multilink Automix seals the dentin and establishes a good marginal seal.

### SpeedCEM®

The self-adhesive, dual-curing luting composite is even easier to use than a conventional cement. At the same time, it offers the additional advantages of a composite, such as higher bond strength and translucency, as well as lower water solubility.

### Vivaglass® CEM

The classical self-curing glass ionomer cement is suitable for the cementation of high-strength ceramic materials, such as IPS e.max, among others. It contains a particularly transparent glass filler for achieving esthetic results.



# e-max<sup>®</sup> IPS

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



These products form part of our All-Ceramics and Implant Esthetics competence areas. All the products of these areas are optimally coordinated with each other.

**Ivoclar Vivadent AG**  
Bendererstr. 2  
FL-9494 Schaan  
Principality of Liechtenstein  
Tel. +423 / 235 35 35  
Fax +423 / 235 33 60  
[www.ivoclarvivadent.com](http://www.ivoclarvivadent.com)



Descriptions and data constitute no warranty of attributes.  
Printed in Germany  
© Ivoclar Vivadent AG, Schaan/Liechtenstein  
627430/0112/e/W