

**IPS e.max<sup>®</sup>**  
IPS

Dental technicians

# IPS e.max<sup>®</sup> CAD – THE ORIGINAL



ivoclar  
vivadent<sup>®</sup>  
passion vision innovation

# The world's top-selling\* CAD/CAM glass-ceramic. The legendary "blue block".

The exceedingly popular lithium disilicate glass-ceramic IPS e.max® CAD is a highly reliable and versatile material for CAD/CAM applications in the dental laboratory. It is characterized by amazing esthetics, exceptional light-optical properties, high precision and outstanding stability.

## Your benefits

- Large indication spectrum unrivalled by any other CAD/CAM glass-ceramic
- Unique materials structure and high flexural strength (530 MPa\*\*) for maximum dependability
- Suitability for single tooth restorations, hybrid abutment restorations and 3-unit bridges\*\*\*
- Crowns of only 1 mm thickness (placed with the adhesive technique) for more possibilities in conservative dentistry
- Depending on the indication, cementation is possible with the adhesive, self-adhesive or conventional technique
- Large selection of shades and translucency levels (MO, LT, MT, HT) for excellent shade adjustment



\*Based on sales figures

\*\*Mean biaxial flexural strength R&D Ivoclar Vivadent, Schaan, Liechtenstein

\*\*\*Up to the 2<sup>nd</sup> premolar as the terminal abutment

# Reliable and dependable.

## Over 10 years IPS e.max<sup>®</sup>.

IPS e.max CAD is the product of more than a decade's worth of experience, profound expertise and exceptional innovation. We are driven by our passion to produce esthetic teeth and the pleasure of seeing happy and smiling patients. Various long-term studies confirm the safety and impressive reliability of the material. As a result, patients can rely on restorations that will last for many years.



Preoperative situation



After seating the restorations



11 years in situ

Dr Andreas Kurbad /  
Kurt Reichel, Germany

IPS e.max CAD is backed by sound clinical evidence. Therefore, you can fully rely on it to produce long-lasting, natural-looking restorations.

”

We've been using the IPS e.max system for a decade or more. This system allows us to work according to minimally invasive principles and achieve exceptionally esthetic results in most of the cases that we encounter. It is suitable for producing long-lasting, state-of-the-art digital tooth replacements and it enables us to implement our personal treatment strategies.

”



Dr Andreas Kurbad / Kurt Reichel, Germany

**97.9%**  
survival rate<sup>1</sup>

**10** years of  
clinical evidence

More than  
**100**  
million restorations<sup>2</sup>

**98%**  
customer satisfaction<sup>3</sup>

Strength of  
**530** MPa<sup>4</sup>

<sup>1</sup>IPS e.max Scientific Report Vol. 02/2001-2013

<sup>2</sup>IPS e.max System, based on sales figures

<sup>3</sup>Corporate Marketing Insight Ivoclar Vivadent, Schaan, Liechtenstein

<sup>4</sup>Mean biaxial flexural strength,  
R&D Ivoclar Vivadent AG, Liechtenstein

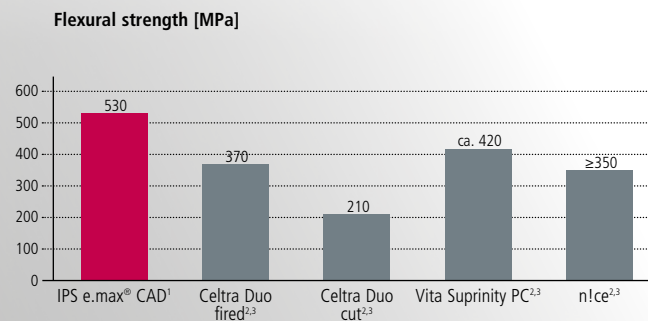
# 530 MPa<sup>1</sup> for maximum dependability. Minimally invasive restorations.

IPS e.max CAD is characterized by its remarkable strength. The product has undergone continuous quality testing over a period of ten years. In these tests, it has shown a mean biaxial flexural strength of 530 MPa. This value by far surpasses the required standard of 100 MPa for crowns placed with the adhesive technique or 300 MPa for conventionally seated crowns.

The material's long-term success is based on the ideal combination of high strength and outstanding esthetics. As a result, it is now also indicated for other minimally invasive restorations, such as partial crowns, occlusal veneers and 1-mm crowns. This enables you to be more flexible in your uses of IPS e.max CAD and it allows you to save precious natural tooth structure at the same time.

IPS e.max CAD has enamel-like properties. Therefore, the material is used to produce long-lasting minimally invasive restorations that will restore the function, esthetics and biomechanics of teeth. In the cementation of these restorations, it is important to observe not only the proper preparation guidelines but also the adhesive bonding technique.

You too can depend on IPS e.max CAD, the world's most popular\* CAD/CAM glass-ceramic.



<sup>1</sup> Mean biaxial flexural strength over 10 years.  
R&D Ivoclar Vivadent, Schaan, Liechtenstein

<sup>2</sup> Information provided by the manufacturer

<sup>3</sup> These brands are not registered trademarks of Ivoclar Vivadent AG.

\*Based on sales figures



# Wide spectrum of indications.

## Minimum material thickness.

IPS e.max CAD has the largest indication spectrum of any other CAD/CAM glass-ceramic. You can manufacture your IPS e.max CAD restorations in your own laboratory or you can take advantage of the services offered by the CAD/CAM partner network of the authorized milling centres.

IPS e.max CAD can be milled in the following systems: PrograMill (Ivoclar Digital) and inLab® (Dentsply Sirona)



# Versatile solutions. Flexibility and individuality.

IPS e.max CAD is synonymous with individuality. Full-contour, monolithic restorations that feature clinically proven properties and high fracture toughness, are produced efficiently and effortlessly. The indication spectrum ranges from thin veneers to three-unit bridges\*. The restorations are customized by means of the staining or cut-back techniques. Crowns can be finished by simply giving them a quick polish.

Multi-unit bridges can be fashioned with zirconium oxide frameworks made of IPS e.max ZirCAD. IPS e.max CAD veneering structures are subsequently applied to the frameworks (Veneering Solutions technique\*\*). This method enables you to produce tooth and implant-supported dental bridges showing impressive overall strength and superb esthetics. The manual workload in the fabrication of long-span bridges is significantly reduced when the veneers and the framework are produced with the help of a convenient "multi-layer" software package and digital processing technology. A state-of-the-art fusion glass-ceramic is used to establish a homogenous bond between the two components.

IPS e.max lithium disilicate (LS<sub>2</sub>) has shown outstanding performance as a dental bridge material over the past ten years. Its success rate is comparable to that of metal-ceramics.

M. Kern et al. "Ten-year results of three-unit bridges made of monolithic lithium disilicate ceramic"; Journal of the American Dental Association; March 2012; 143(3):234-240.



\*Up to the 2<sup>nd</sup> premolar as the terminal abutment  
\*\*Depending on the CAD software used

# Abutment Solutions. Customized results.

The high biocompatibility of IPS e.max lithium disilicate ceramic has been proved in more than a decade of clinical use and by the results of several recognized testing institutes.

IPS e.max Scientific Report Vol. 02/2001-2013

IPS e.max CAD allows you to create customized and esthetic hybrid restorations for single teeth. Efficiency and flexibility are the hallmarks of this technique. The IPS e.max CAD A14 and A16 blocks feature a prefabricated connection which facilitates their extraoral bonding to a titanium bonding base (e.g. Sirona Ti-Base). The blocks designed for abutment solutions are supplied in several shades and the translucency levels of MO and LT. The following hybrid abutment restorations solutions are available:



1

## Hybrid abutment

The hybrid abutment is an individually CAD/CAM-fabricated lithium disilicate abutment, which is bonded to a titanium bonding base. The shape, emergence profile and esthetics of this type of abutment can be adjusted to suit the clinical situation in question. The abutment is extraorally bonded to the titanium base with Multilink® Hybrid Abutment. Then, it is screwed in place and permanently restored with an IPS e.max CAD crown. The fabrication of a customized hybrid abutment in the laboratory offers a fast and flexible approach.



2

## Hybrid abutment crown

A hybrid abutment crown combines the abutment and the crown in one. It is monolithically produced and then securely bonded to the titanium base with the help of Multilink Hybrid Abutment and subsequently screwed in place. The very tricky bonding procedure in the mouth and the removal of excess cement is eliminated. The screw channel is sealed with a resin composite material, e.g. Tetric EvoCeram®. As a result, the screw can be accessed at any time if necessary.

# CAD/CAM blocks at a glance.

## Precision-fit selection.

### The minimally invasive block

The HT blocks are supplied in 16 A-D shades and 4 Bleach BL shades. These high-translucency blocks that resemble natural enamel are ideally suitable for the fabrication of small restorations (e.g. inlays). Restorations made of HT blocks are characterized by their true-to-nature chameleon effect and the exceptional adaptation to the remaining tooth structure. They can be efficiently individualized using the staining technique. Even long-span bridges can be fabricated in combination with a zirconium oxide framework (Veneering Solutions technique\*).

- Thin veneers and occlusal veneers
- Veneers
- Inlays, onlays
- Partial crowns



IPS e.max® CAD HT

### The bright block

The MT blocks are available in the shades A1, A2, A3, B1, BL2, BL3 and BL4. These medium-translucency blocks are used in cases where a brighter look is needed than that imparted by HT blocks and more translucency than with LT blocks. Due to the ideal balance of brightness and translucency, MT blocks are ideally suitable for the fabrication of anterior restorations. Customization is achieved by means of the staining or cut-back technique.

- Thin veneers and occlusal veneers
- Veneers
- Partial crowns
- Crowns



IPS e.max® CAD MT

### The versatile block

The LT blocks are available in 16 A-D and 4 Bleach BL shades. Their low translucency – similar to that of natural dentin – renders these blocks suitable for creating large restorations (e.g. posterior crowns). The material exhibits true-to-nature brightness and chroma, which prevents the restoration from looking grey. The esthetic appearance of the restoration is maximized with the cut-back technique.

The abutment blocks with a prefabricated connection are used for the creation of hybrid abutments and hybrid abutment crowns

- Veneers
- Partial crowns
- Crowns
- Bridges
- Hybrid abutment crowns



IPS e.max® CAD LT

\*Depending on the CAD software used



The extensive IPS e.max CAD product portfolio comprises blocks in a suitable restoration shade to fulfill all your needs. You can choose to fabricate your restorations efficiently with the staining technique, individually with the cut-back method or highly esthetically with the layering technique – everything is possible with IPS e.max CAD. The blocks are available in four levels of translucency and as Impulse blocks. Depending on the degree of translucency and block size, you can choose between group, A-D and Bleach BL shades.

#### The classical block

The MO blocks are available in 5 group shades (MO 0, MO 1, MO 2, MO 3, MO 4). Given their opacity, these blocks are intended for the fabrication of substructures that are placed on vital or slightly discoloured prepared teeth. They form an excellent base for lifelike restorations that are completed with the layering technique.

The abutment blocks with a prefabricated connection are suitable for the creation of hybrid abutments.

- Frameworks on slightly discoloured preparations



IPS e.max® CAD MO

#### The opalescent block

Impulse blocks are available in two different levels of opalescence (Opal 1, Opal 2). They allow you to fashion restorations with striking opalescent properties. These blocks are primarily used to replace enamel tooth structure. They effectively imitate the natural-looking opalescent effect which is desired in anterior teeth.

As a result, they are ideal for fabricating thin veneers and veneers for light teeth.

- Thin occlusal veneers
- Veneers



IPS e.max® CAD Impulse

# IPS e.max® Shade Navigation App (SNA)

## Intelligent shade recommendation

Selecting the correct block has never been easier. The IPS e.max Shade Navigation App (SNA) provides you with the appropriate solution in next to no time. Simply feed the app with the relevant factors that influence the tooth shade as well as the desired final colour, and the app will present the best possible solution.



# Creative freedom. Natural-looking colours.

Do you like to be creative? Is it important for you to produce exceptionally esthetic restorations? Would you like to have more creative freedom? The wide range of IPS e.max Ceram layering materials and the innovative IPS Ivocolor stains fulfill these requirements, allowing you to create highly attractive restorations.

## IPS e.max® Ceram

IPS e.max Ceram is a versatile layering ceramic featuring intuitive modelling properties and excellent stability. The IPS e.max Ceram Power materials impart restorations made of translucent materials with enhanced colour intensity and brightness.

## Your benefits

- Consistent layering scheme
- Harmonious shade adjustment
- Excellent firing behaviour

## IPS e.max® Ceram Selection

The Enamel and Effect materials of the IPS e.max Ceram Selection range complement the IPS e.max Ceram assortment. The materials are characterized by their brilliant colours and superb light-optical properties. They are the product of the ideas contributed by passionate and highly experienced dental technicians. A selection of twelve special powders helps you to recreate individual tooth characteristics and fabricate highly esthetic, natural-looking restorations.





### IPS Ivocolor

IPS Ivocolor is the ideal staining and glazing assortment for IPS e.max CAD and all other IPS ceramics. The selective colour compositions give you the freedom you need to effectively characterize your restorations. Finely ground glass, delicate shade nuances, a new gel structure for the pastes and coordinated liquids simplify handling and produce brilliant results. With the new glazes, colours remain unchanged during the firing process.

### Your benefits

- Universal staining and glazing assortment
- Simplified handling due to an innovative paste formulation
- High gloss at a firing temperature of only 710 °C



# PrograMill – developed for IPS e.max<sup>®</sup>. Precision manufacturing.



The state-of-the-art milling machines of the PrograMill range offer future-proof, open solutions for the economic production of dental restorations. The PrograMill machines fulfil the requirements of modern dental laboratory technology and are designed to mill innovative materials in coordinated processes. Therefore, they provide a suitable solution for virtually every type of situation. The machines combine impressive industrial properties with modern design and integrated workflows.

## Your benefits

- Short milling cycles
- 5-axis milling
- Outstanding surface quality and fit
- Universal applications – suitable for wet-milling and dry-grinding of dental materials\*
- Capability of milling a wide spectrum of materials

\*Dry-grinding is not possible with PrograMill One



# Well-equipped for the digital future.

**Choose the PrograMill machine that best suits your needs.**

## **Setting new standards**

The smart PrograMill One is the world's smallest 5-axis milling machine. It combines industrial production quality with high precision and modern design. In the innovative turn-milling technology (5XT), the workpiece rotates around the tool. Consequently, milling times are short and tool wear is low. The resulting restorations are characterized by outstanding surface quality and excellent fit.

## **Economical and precise**

The PrograMill machines PM3 and PM5 are suitable for wet-milling and dry-grinding of restorative materials. They are capable of milling a wide range of materials and they accommodate a large spectrum of indications. The precision 5-axis manufacturing process is complemented by a fully automatic materials management system and a tool changer for 12 different tools. This ensures independent and constant manufacturing.

## **Powerful and dynamic**

The high-performance PrograMill PM7 is capable of milling a large number of materials in a wet or dry state and it accommodates a wide range of indications. This powerful and efficient machine produces fast, precision-fit manufacturing results. A materials changer for up to eight different materials and a tool changer for up to 20 tools ensure independent and consistent manufacturing.



PrograMill One



PrograMill PM3/PM5/PM7

# Programat® furnaces. Dependable partners. Precise fabrication.

The Programat® furnaces are matched to the Ivoclar Vivadent materials. They are characterized by exceptional innovation, high quality and decades of uninterrupted success. The current furnace platform includes the popular furnaces Programat P310, Programat P510 and Programat P710.

## Programat P510 – your benefits

- Integrated infrared technology for quick, high-quality firing results
- Controlled pre-drying and closing process to reduce cracks and fractures in the ceramic
- Colour touch screen and optical status display
- QTK2 muffle technology with SiC bottom reflector
- Increased efficiency and cost-effectiveness

The firing and press results of the Programat furnaces are bound to impress you.



# A strong combination.

## Modern cementation materials.

When they place restorations, dentists can choose between adhesive, self-adhesive or conventional cementation methods, whichever technique best suits the indication being treated. The Cementation Navigation System (CNS) supports dentists in the selection of the most suitable cementation material and shows the possibilities offered by the cementation materials provided by Ivoclar Vivadent.

IPS e.max CAD restorations need to be etched before they are placed. The restorations are subsequently polished to a high gloss with a diamond polishing system (e.g. OptraFine®).



[www.cementation-navigation.com](http://www.cementation-navigation.com)



Dr Federico Brunner /  
Petr Mysicka, UK

### Popular cementation materials

#### Monobond Etch & Prime®

The innovative single component ceramic primer etches and silanates glass-ceramic surfaces in one step. As a result, hydrofluoric acid etching is unnecessary.

#### Variolink® Esthetic

The light and dual-curing luting composite combines unparalleled esthetics with user-friendly handling. The Effect shade system allows restorations to be lightened or darkened in stages.

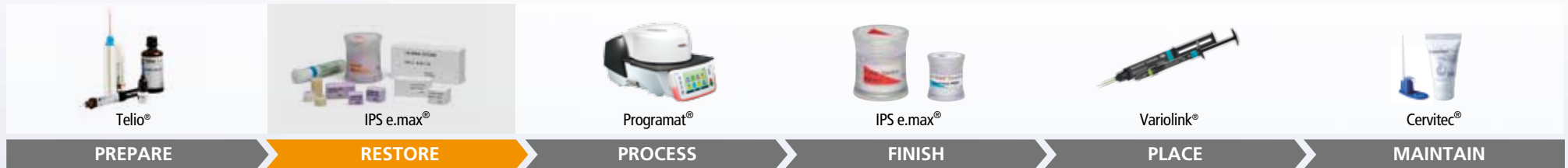
#### Multilink® Automix

In combination with the universal bonding agent Monobond® Plus, this universal luting system is suitable for the placement of indirect restorations made of silicate and oxide ceramics, metal and metal-ceramics as well as composite resins. The effectiveness of the product has been proven in numerous, in some cases, long-term clinical studies. For example, the survival rate in terms of restoration adhesion has been shown to be 99 %\*.

\*Source: Multilink Automix Scientific Report, Vol. 01/2012

## Fixed Prosthetics

IPS e.max® forms a part of the “Fixed Prosthetics” product category. The products of this category cover the procedure involved in the fabrication of fixed prosthetic restorations – from temporization to restoration care. The products are optimally coordinated with each other and enable successful processing and application.



THESE ARE FURTHER PRODUCTS OF THIS CATEGORY:

### Programat®

Press and ceramic furnaces for demanding requirements



Packed with proven technology and advanced innovations

- Outstanding press and firing results
- Ideally coordinated with the ceramic materials of Ivoclar Vivadent
- Easy operation

### Variolink® Esthetic

The esthetic luting composite



The luting composite for exceptional esthetics and user-friendly processing

- Balanced and concise Effect shade system
- Excellent shade stability due to amine-free composition
- Easy, controlled excess removal

Would you like to know more about the products of the “Fixed Prosthetics” category?

Simply get in touch with your contact person at Ivoclar Vivadent or visit [www.ivoclarvivadent.com](http://www.ivoclarvivadent.com) for more information.

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