

**INTRODUCING**

**IPS e.max®**

THE **NEXT**  
**GENERATION**  
OF ALL-CERAMICS

ZirCAD®  
**Prime**

**All ceramic,  
all you need.**

Information for the Laboratory

  
**ivoclar**  
**vivadent®**  
passion vision innovation

# A new era in all-ceramic technology

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IPS e.max® ZirCAD® Prime is the next generation of all ceramics. It is produced using **Gradient Technology (GT)**, a new, unique manufacturing process that uses special powder conditioning to combine 3Y and 5Y oxide-ceramics for the ultimate in strength and esthetics. Unlike multi layered materials on the market which can have visible layers of color, unique Gradient Technology offers a seamless progression of shade, translucency, and composition to provide premium esthetics combined with exceptional strength.

With a flexural strength of 1,200 MPa, IPS e.max ZirCAD Prime is suitable for any indication – from single crowns to 14-unit bridges. In combination with the Programat® S1 1600, a full tray of single crowns can be **sintered in only 2 hr. 26 min.**

Today's dental laboratory carries multiple brands of glass and zirconium oxide ceramic material, now IPS e.max ZirCAD Prime offers production and inventory efficiencies by providing a "One-Disc Solution," eliminating the need to carry multiple materials for esthetic vs high strength cases. It produces results that simultaneously optimize efficiency and profitability.



## Premium esthetics

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Comparable to glass-ceramics

## All indications

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From crowns to 14-unit bridges

## All processing techniques

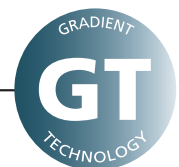
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Maximum possibilities: glazing, staining, cut-back, layering and infiltration technique

## Gradient Technology

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New, unique manufacturing process for the ultimate in strength and esthetics



**> 5 MPa · m<sup>1/2</sup>**  
fracture toughness<sup>2</sup>

**1200 MPa**  
flexural strength<sup>1</sup> (3Y-TZP)

<sup>1</sup> Typical mean value of the biaxial flexural strength (dentin), R&D Ivoclar Vivadent AG, Schaan, Liechtenstein

<sup>2</sup> Measurement of the fracture toughness according to the Vickers hardness test (dentin), R&D Ivoclar Vivadent AG, Schaan, Liechtenstein (2018)

# All indications

As a result of its high strength, IPS e.max® ZirCAD® Prime covers a wide array of indications – ranging from single tooth crowns to 14-unit bridges. Furthermore, the material can be applied in very thin layers on minimally prepared tooth structure.



Full contour crowns



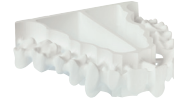
Full contour 3-unit bridges



Full contour 4-unit or multiple unit bridges with max. 2 pontics



Crown copings



3-unit or multiple unit bridge frameworks with max. 2 pontics

# All shades



Shades:  
16 A-D + 4 BL



Disc thickness:  
16mm and 20mm

# Premium esthetics

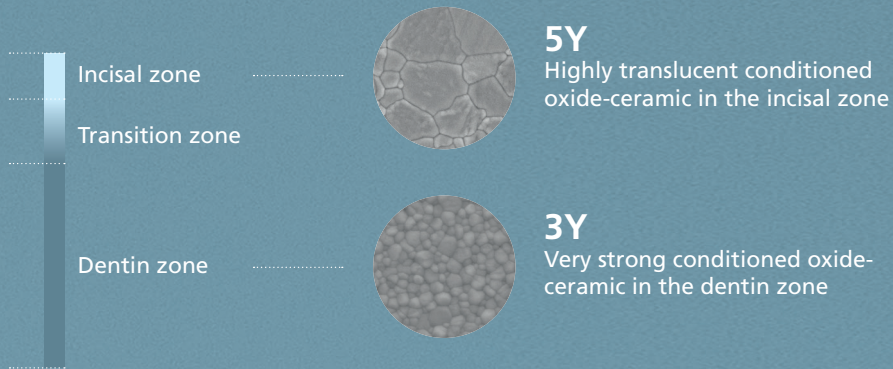
The premium **esthetic appearance** of IPS e.max® ZirCAD® Prime is defined by a seamless gradient of shade and **translucency**, resulting in natural looking restorations that can be created without having to do any characterization work.



# GT GRADIENT TECHNOLOGY

The new, unique Gradient Technology (GT) **manufacturing process** is at the heart of IPS e.max® ZirCAD® Prime.

It involves three innovative processing steps which allow the raw 3Y and 5Y oxide-ceramic materials to be combined in order to produce the exceptional properties of this revolutionary material.



## 1 Optimized conditioning

Ingenious powder conditioning adjusts the sintering kinetics and allows the raw 3Y and 5Y oxide-ceramic materials to be optimally combined. This results in a **uniform shrinkage** ensuring outstanding **accuracy of fit and no distortion**.



## 2 Innovative filling technology

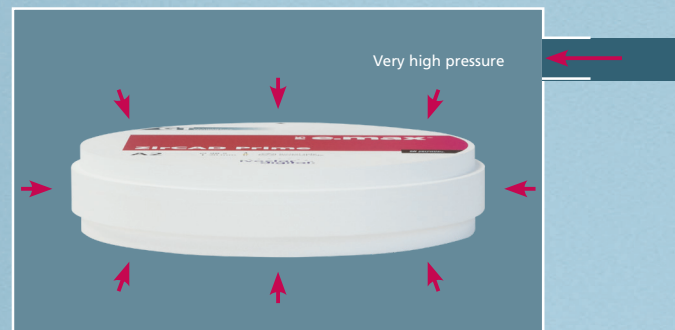
State of the art filling technology allows for IPS e.max® ZirCAD® Prime to offer a true material progression from dentin to enamel. Unlike multi layered materials on the market which can have visible layers of color, **GT offers a seamless progression of shade and translucency** to provide premium esthetics combined with exceptional strength.



Continuous, seamless progression:  
IPS e.max ZirCAD Prime\*

## 3 Top-quality manufacturing

Unlike traditional ceramic materials which utilize one type of manufacturing process, IPS e.max ZirCAD Prime is created through multiple processing steps. One of which, is Cold Isostatic Pressing (CIP). In this step, the discs are densely and uniformly compacted from all sides simultaneously. This **improves the microstructure** of the material and **optimizes its translucent properties**. Furthermore, it allows the material to be **sintered at shorter intervals**.



Cold Isostatic Pressing (CIP)

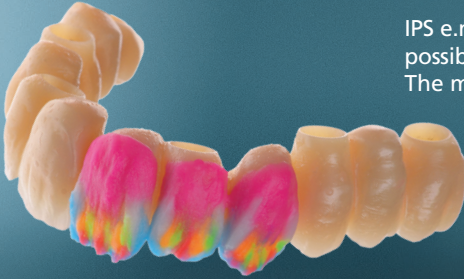
GT is the key to high-end esthetics, outstanding accuracy of fit and efficient processing.

# Outstanding interplay for **impressive results**

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## All processing techniques

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IPS e.max ZirCAD® Prime® offers maximum flexibility and possibilities in manufacturing ceramic restorations. The material accommodates the following techniques:

- Glazing technique
- Staining technique
- Cut-back technique
- Layering technique
- Infiltration technique

IPS e.max ZirCAD Prime is compatible with the IPS e.max system

## Easy cementation

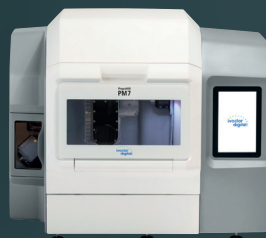
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IPS e.max ZirCAD Prime restorations can be cemented adhesively, self-adhesively, or conventionally. SpeedCEM® Plus is a self-adhesive, self-curing composite cement with optional light-curing properties and is ideal when cases allow for. It offers the optimum combination of high performance and ease of use ideal for oxide-ceramic restorations

## Automated milling

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IPS e.max ZirCAD Prime can be efficiently and rapidly milled in the PrograMill® PM7 to achieve high precision results. The discs are automatically managed using RFID technology.

## Intelligent disc design

The incisal and transition zones of the IPS e.max® ZirCAD® Prime discs are always the same height, regardless of the discs thickness. The height of the dentin zone differs depending on the disc thickness. Restorations can therefore be positioned in the disc depending on the desired level of strength and translucency desired from dentin to enamel.

Incisal zone	3 mm	
Transition zone	4 mm	
Variable dentin zone	9 mm	

## Fast sintering



The Programat S1 1600 unites impressive esthetics and efficiency; with the speed sintering program a full tray of single IPS e.max® ZirCAD® Prime crowns can be **sintered in only 2 hr. 26 min.** Additional all in one speed sintering programs are also available.

## Simplified characterization



IPS e.max ZirCAD Prime can easily be finished utilizing the wide variety of characterization materials available from Ivoclar Vivadent, no matter what processing technique you choose. From IPS e.max ceram for versatile layering and IPS e.max ZirCAD LT coloring liquids for infiltrating, to Ivocolor for stain and glazing, the entire IPS e.max system is coordinated.

## All shades



IPS e.max ZirCAD Prime discs measuring 98.5 mm in diameter are available in 16 A-D and 4 Bleach shades and in 16 and 20 mm disc thicknesses.

IPS **e.max**<sup>®</sup>

ZirCAD<sup>®</sup>  
**Prime**

THE **NEXT GENERATION** OF ALL-CERAMICS

All ceramic,  
all you need.

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