ZirCAD Prime
Redefining all-ceramics
IPS e.max® ZirCAD Prime is redefining all-ceramics. The revolutionary material ensures exceptional quality and esthetics and covers all dental indications – ranging from single tooth crowns to 14-unit bridges – and it accommodates a wide array of processing techniques. IPS e.max ZirCAD Prime is the “One-Disc Solution”: It produces first-class results and simultaneously optimizes the efficiency and profitability of dental laboratories.

Gradient Technology (GT), which is used in the production of IPS e.max ZirCAD Prime, represents a new, unique type of manufacturing technique. In this step, the high-strength zirconium oxide raw material 3Y-TZP and the highly translucent zirconium oxide raw material 5Y-TZP are combined in a very special way.
IPS e.max® ZirCAD Prime
The fascinating all-ceramic material

Available in 16 A–D and 4 BL shades
Discs measuring 98.5 mm in diameter and 16 and 20 mm in thickness
The new, unique Gradient Technology (GT) is at the heart of IPS e.max ZirCAD Prime.

It involves three innovative processing steps which allow the two zirconium oxide raw materials 3Y-TZP and 5Y-TZP 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 zirconium oxide raw materials 3Y-TZP and 5Y-TZP to be optimally combined. This results in a uniform shrinkage behaviour, which ensures outstanding accuracy of fit.

![Incisal zone](image1)

*5Y-TZP*

Highly translucent conditioned zirconium oxide in the incisal zone

650 MPa

![Transition zone](image2)

*3Y-TZP*

Very strong conditioned zirconium oxide in the dentin zone

1200 MPa

1 Typical mean value of the biaxial flexural strength, R&D Ivoclar Vivadent AG, Schaan, Liechtenstein
Innovative filling technology

The state-of-the-art filling technology used in conjunction with the two zirconium oxide raw materials 3Y-TZP and 5Y-TZP is responsible for producing a continuous, seamless progression of the shade and translucency within the material. Consequently, the restorations made with these discs demonstrate high-end esthetics.

Top-quality manufacturing

In the processing step of Cold Isostatic Pressing (CIP), the discs are densely 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.

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

* Thickness of test specimens: 0.7 mm, R&D Ivoclar Vivadent AG, Schaan, Liechtenstein (2018)
High-end esthetics

The first-class esthetic appearance of IPS e.max ZirCAD Prime is characterized by a genuine continuous and seamless progression of shade and translucency and by optimized translucent properties. As a result, natural-looking restorations can be created without having to do any characterization work. These impressive outcomes are also due to the precise shading of the materials.

Continuous and seamless shade progression and optimized translucency
“IPS e.max ZirCAD Prime is simply great. The material combines esthetics with functionality in the most impressive way. It gives me virtually unlimited possibilities.”

M. Temperani
Italy
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 |

- **650 MPa** (5Y-TZP) flexural strength\(^1\) in the incisal zone – where a high level of translucency and high strength is desired
  - Continuous, seamless transition due to Gradient Technology (GT)

- **1200 MPa** (3Y-TZP) flexural strength\(^1\) in the dentin zone – where the most force is exerted on the bridge restoration and very high strength and natural-looking opacity is required

\[ > 5 \text{ MPa} \cdot m^{1/2} \]

\(^1\)Typical mean value of the biaxial flexural strength, R&D Ivoclar Vivadent AG, Schaan, Liechtenstein

\(^2\)Measurement of the fracture toughness according to the Vickers hardness test (dentin), R&D Ivoclar Vivadent AG, Schaan, Liechtenstein (2018)
All processing techniques

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

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

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

Intelligent disc design

The incisal and transition zones of the IPS e.max ZirCAD Prime discs are always the same height, regardless of the disc thickness. The height of the dentin zone, however, differs depending on the disc thickness. Full contour restorations and framework structures can be positioned as desired within the disc with the help of the CAM software. Consequently, reproducible esthetic results are achieved, independent of the disc thickness.

Economic sintering

Time-saving, flexible sintering programs heighten the efficiency of routine dental lab work. Restorations made of IPS e.max ZirCAD Prime are fired using high-speed sintering programs. Furthermore, all-in-one sintering programs in which different IPS e.max ZirCAD materials are sintered together can be used.

1 Typical mean value of the biaxial flexural strength, R&D Ivoclar Vivadent AG, Schaan, Liechtenstein
2 In the Programat® S1 1600
IPS e.max® ZirCAD Prime
The One-Disc Solution
One material that combines everything

As a “One-Disc Solution”, IPS e.max ZirCAD Prime meets the requirements of modern all-ceramic restorations. The result: satisfied customers, greater efficiency in everyday laboratory work and a reduced inventory.
IPS e.max ZirCAD Prime: The top-ranking product of the tried-and-tested IPS e.max portfolio
Outstanding interplay for impressive results

1 Simplified selection

The IPS e.max Shade Navigation App (SNA) assists you in finding the most suitable shade and translucency – for reliable and relaxed working.

2

The stains and glazes of the IPS Ivocolor® assortment enable you to customize all IPS ceramic materials.

• Simplified handling due to innovative paste formulation
• High gloss at a firing temperature of only 710 °C
• Fluorescence with IPS Ivocolor Glaze Fluo

4

Precision characterization

SpeedCEM® Plus is a self-adhesive, self-curing composite cement with optional light-curing properties. It offers the optimum combination of high performance and ease of use: ideal for zirconia restorations in combination with Ivoclean®, the universal cleaning paste.

Finding your way out of the cements maze: www.cementation-navigation.com

7 Appropriate cementation

Finding your way out of the cements maze: www.cementation-navigation.com
The Programat® S1 1600 unites impressive aesthetics and efficiency – for example, with the Speed sintering programs and the Programat Dosto Tray sintering table. The sintering programs are coordinated with IPS e.max ZirCAD.

Precise sintering

The Programat® S1 1600 unites impressive esthetics and efficiency – for example, with the Speed sintering programs and the Programat Dosto Tray sintering table. The sintering programs are coordinated with IPS e.max ZirCAD.

Perfect ceramic layers

IPS e.max Ceram is a versatile layering ceramic featuring intuitive modelling properties and excellent stability.

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