Today's patients demand aesthetic restorative outcomes that match or enhance their natural dentition. While this has traditionally been accomplished with all-ceramic or layered restorations, these ceramic options are less-than-ideal for many patients with worn dentition or signs of bruxism. The Zirlux® product portfolio comprises FC2 pre-shaded zirconia, a layered ceramic option that ST1 in pressable blocks in multiple sizes and can be used for a universal system that improves the efficiency of your dental laboratory.

**Engineered For Success**

Zirlux is a universal system, enabling efficient, predictable fabrication with multiple indications to support your requirements.

- Uniform component costs allow for predictable pricing across all systems.
- Zirlux Prosthetic Components enable clinicians and laboratory technicians to reduce treatment costs while maintaining the highest standards of quality.
- Zirlux analogs, abutments, screws, and related components are compatible with implants from the industry's leading manufacturers.

**Innovation At Work**

2019
Features of the Zirlux Portfolio

- **Flexibility**— Material selection according to technician preference—including zirconia, metal-based, and PMMA options

- **Durability**— Long-lasting crowns, bridges, and frameworks capable of withstanding the demands of the intraoral environment

- **Precision**— Marginal integrity achieved through the combination of the latest digital and conventional fabrication techniques

- **Performance**— Integrated solutions that help eliminate remakes and improve both efficiency and productivity for dental laboratories

Zirlux provides restorative teams with a viable zirconia material choice in cases with minimal room for occlusal reduction, fractured existing restorations, or bruxism cases that will be exposed to demanding occlusal forces.
The Zirlux product portfolio is built for performance not only as a metal-free anterior restorative but also as a durable alternative for posterior regions and their demanding functional requirements. Encompassing an expansive array of milling materials, Zirlux enables technician and dentist teams to deliver durable, lifelike restorations with consistency and predictability.

**Zirlux Sets the Pace**

- Zirconia crowns and bridges built to full contour or layered conventionally
- Biocompatible metal-based options for copings, bridge frameworks, and crowns
- PMMA materials for durable, aesthetic provisional restorations
- Zirconia and wax alternatives for production of implant components
- Inlays and onlays fabricated of zirconia

By using our Zirlux universal restorative system, you have access to a wide variety of digital technologies and expansive resources committed to the success of your dental laboratory. Zirlux gives technicians flexibility in their material choices, and Zahn Dental offers a wealth of experience and insight into the future of digital dentistry. Your partnership with Zahn Dental surrounds you with world-class professionals geared toward your success.
Zahn Dental knows this landscape is under constant change. Consequently, dental laboratories do not need just another product; they require a partner that can help navigate all the requirements of digital dentistry and today’s restorative material science.
We’ve Got You Covered

In selecting a restorative system for the dental laboratory, it’s important to balance material properties with the intangibles required to use them efficiently. Fortunately, CAD/CAM technology and today’s ceramics can be utilized in a digital workflow as a valuable extension of the ceramist’s hands, infusing precision manufacturing with artistry and creativity.

By choosing the Zirlux portfolio, laboratory owners benefit from Zahn Dental and its own contributions to digital dentistry. Zahn Dental sees the laboratory landscape not through the lens of a single product, but on a global scale. Our infrastructure means you have resources, training, and support from the outset, all distilled down into a plan that works for your dental laboratory.

Zahn Dental As Your Laboratory Partner

• **Vision**— Of the entire laboratory landscape
• **Resources**— Developed globally and implemented locally
• **Support**— Technical training that helps you excel
• **Proven**— Fundamentally sound material choices

“Predictability and performance are keys to the success of my dental laboratory. Zirlux provides both in a single zirconium system that satisfies our most challenging cases.”

— Dr. Lenny Marotta, Owner, CDT, MDT, PhD
Marotta Dental Studio, Farmingdale, NY

The inherent strength of Zirlux Zirconia restorations makes them well suited for posterior regions and in cases that will withstand high occlusal stress intraorally.
**Introducing the Zirlux Crew**

The expanding Zirlux portfolio covers virtually every indication required daily by today’s successful dental laboratory.

<table>
<thead>
<tr>
<th>Pole Position</th>
<th>Principal Indications and Applications</th>
</tr>
</thead>
</table>
| Zirlux FC2                  | • Crowns and bridges in anterior and posterior regions  
                              • Inlays and onlays  
                              • Copings and frameworks |
| Pre-shaded zirconia discs and blocks | • 10 shade pastes, 6 modifier pastes, and a glaze for achieving predictable shade match to the 16 Vita A-D (and bleach) shades  
                              • Applied to Zirlux FC2 restorations |
| Zirlux FC2 Characterization Kit | • Full-contour, single-unit anterior and posterior crowns  
                              • Anterior bridges (3 pontics)  
                              • Posterior bridges (2 pontics) |
| Full-Contour Characterization kit | • Layering porcelain for all Y-TZP zirconia frameworks with a CTE of (10-11) x 10-6/°C  
                              • Single crowns  
                              • Multiple-unit bridges  
                              • Inlays, onlays, and veneers—pressed technique without a zirconia substructure |
| Zirlux ST1                  | • Multi-layered PMMA discs used for temporary restorations  
                              • Crowns and bridges, gingival contouring |
| Monochromatic zirconia discs | • Pre-colored PMMA material used for temporary restorations  
                              • Highly aesthetic provisional crowns and bridges available in 17 shades |
| Zirlux LC                   | • Wax scaffolding of dental implants via CAD/CAM technique  
                              • Crowns and bridges in the anterior and posterior region |
| Lower-firing feldspathic/leucite glass ceramic | • Copings and bridge frameworks  
                              • Precision-milling of partial denture frameworks also possible in certain CNC dental milling machines |
| Zirlux Temp Multi            | • Milling of titanium crowns, bridges, and bars  
                              • Dental implant applications |
| PMMA                        | • Adjustment, polishing, and refinement of Zirlux FC2 or other zirconia materials  
                              • High-performance diamond polishers and burs do not modify crystalline structure of Y-TZP ceramics |
| Zirlux Wax                  | • Dental implant applications  
                              • Implant restorative platforms |
| Milling wax                 | • Dental implant applications  
                              • Implant restorative platforms |
| Zirlux NP                   | • Non-precious CoCr block  
                              • Precision-milling of partial denture frameworks also possible in certain CNC dental milling machines |
| Zirlux Ti                   | • Zirlux Polishing Kit  
                              • Assembled polishing points, cups, and pastes  
                              • Adjustment, polishing, and refinement of Zirlux FC2 or other zirconia materials  
                              • High-performance diamond polishers and burs do not modify crystalline structure of Y-TZP ceramics  
                              • Dental implant applications  
                              • Implant restorative platforms  
                              • Zirlux Prosthetic Components  
                              • Titanium abutments, analogs, screws, etc.
It’s the Fuel for Your Success

Zirlux FC2

The flagship of the Zirlux product portfolio, Zirlux FC2 has applications in every all-ceramic indication. It’s available in pre-shaded zirconia discs or blocks of varying thicknesses for compatibility with the finest milling systems on the market.

- **High translucency** — Provides superior aesthetics
- **Shade matching** — Pre-shaded zirconia that can produce all 16 VITA* Classic shades and 3 bleach shades
- **Strength** — Monolithic zirconia has flexural strength in excess of 1,100 MPa
- **Consistency** — Simple Stain & Glaze Technique does not require dipping, coloring, or drying

One Universal Disc for Simple Shade Matching

Using the five pre-shaded Zirlux FC2 Zirconia disc shades, 10 shade pastes, and 6 modifiers it is possible to achieve any of the 16 Vita A-D shades as well as 3 bleach shades.

| Final Shade | A1 | A2 | A3 | A3.5 | A4 | B1 | B2 | B3 | B4 | C1 | C2 | C3 | C4 | D2 | D3 | D4 |
|-------------|----|----|----|------|----|----|----|----|----|----|----|----|----|----|----|
| Disc Shade  | U2 | U3 | U3 | U3   | U4 | U2 | U2 | U4 | U4 | U2 | U5 | U5 | U5 | U2 | U3 | U5 |

<table>
<thead>
<tr>
<th>Final Shade</th>
<th>SB</th>
<th>A00</th>
<th>B00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disc Shade</td>
<td>U1</td>
<td>U1</td>
<td>U1</td>
</tr>
</tbody>
</table>

*VITA is a registered trademark of Vident.
Technical Data

Coefficient of Thermal Expansion (25–500°C) .................. 10.6 x 10^{-6}/°C
Flexural Strength (MPa) .................................................. 1,100
Vickers Hardness (HV10) ............................................... ≥1,250
Chemical Solubility (µg/cm²) ........................................... ≤1
Sintering Temperature (°C) .............................................. 1,500 ±25

Sintering Requirements— Zirlux FC2

Heating Rate 1: .............................................................. 10°C/m
Temperature 1: ............................................................ 700°C
Hold Time 1: ............................................................... 0:00
Heating Rate 2: ............................................................ 2-5°C/min
Temperature 2: ........................................................... 1500 °C
Hold Time 2: ............................................................... 2 hours
Cooling: ................................................................. Furnace/Natural Cool

Benefits of Zirlux FC2

Application of a simple stain and glaze technique for Zirlux FC2 promotes time-efficiency in your laboratory. This characterization process and CAD/CAM approach ensures ease of fabrication and shorter processing time. Once polished after chairside adjustments, Zirlux FC2 also has low wear of opposing dentition.

“It’s the versatility that’s important in my practice. We use Zirlux for posterior bridges, extensive reconstructions in the aesthetic zone, and implant restorations—selecting either monolithic or layered zirconia depending on case requirements.”

— Dr. Jonathan L. Ferencz
Diplomate, American Board of Prosthodontics
NYC Prosthodontics, New York, NY

It’s The Fuel For Your Success
First for a Reason

**Zirlux FC2 Full Contour Characterization Kit**

Using the five pre-shaded Zirlux FC2 zirconia shades and the 10 shade pastes, 6 modifier pastes, and glaze of the Zirlux FC2 Full Contour Characterization system, dental technicians can efficiently customize aesthetic restorations required by dentists and patients. This approach eliminates the need for dipping or the use of coloring liquids, thereby ensuring the efficiency of the fabrication process.

- Characterization of full-contour zirconia crowns, bridges, inlays, and onlays
- Shorter processing time using pre-shaded zirconia
- Greater predictability than techniques requiring zirconia coloring or dipping liquids
- No potential for “white spots” created by adjustment grinding
- Proper light transmission allows fabrication of aesthetic Zirlux restorations

**Technical Data**

- Coefficient of Thermal Expansion (25-500°C) .................. 10.6 x 10^{-6}/°C
- Flexural Strength (MPa) ................................................................. 1,100
- Vickers Hardness (HV10) ................................................................. ≥1,250
- Chemical Solubility (µg/cm²) ................................................................. ≤1
### Shade Coordination Chart

<table>
<thead>
<tr>
<th>Desired Shade</th>
<th>SB</th>
<th>A00</th>
<th>B00</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A3.5</th>
<th>A4</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC2 Disc</td>
<td>U1</td>
<td>U1</td>
<td>U1</td>
<td>U2</td>
<td>U3</td>
<td>U3</td>
<td>U5</td>
<td>U2</td>
<td>U2</td>
<td>U4</td>
<td>U4</td>
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<td>U5</td>
<td>U5</td>
<td>U5</td>
<td>U2</td>
<td>U3</td>
<td>U5</td>
<td></td>
</tr>
<tr>
<td>FC2 Shade Paste</td>
<td>SB/</td>
<td>SB/</td>
<td>B00</td>
<td>A1/</td>
<td>A1/</td>
<td>A2/</td>
<td>A3.5</td>
<td>A4</td>
<td>B1</td>
<td>B00/</td>
<td>B3</td>
<td>B4/</td>
<td>B00/</td>
<td>C3/</td>
<td>C3/</td>
<td>B00/</td>
<td>B00/</td>
<td>A1/D4+</td>
<td></td>
</tr>
</tbody>
</table>

### Characterization of Zirlux FC2 Restorations

The Zirlux FC2 shade pastes, Zirlux FC2 modifier pastes, and Zirlux FC2 glaze are recommended for characterizing Zirlux FC2 restorations. These tools enable you to achieve a polychromatic, lifelike appearance with ease and consistency.
Don’t Settle for Second

Zirlux ST1

These monochromatic Y-TZP discs serve as a valuable substructure for porcelain-fused ceramic fixed dental restorations, conveying both long-term stability and precision manufacturing.

With an expansive range of disc sizes available to support CAD/CAM fabrication, Zirlux ST1 enables you to manage virtually every all-ceramic indication required of today’s dental laboratory.

- High translucency and durability of a zirconia ceramic
- Effective for milling machines, laboratories, and milling centers
- Flexural strength capable of withstanding the most demanding occlusal forces

The fabrication process for monolithic Zirlux ST1 restorations promotes swift, effective turn-around in the laboratory.
Zirlux ST1 accommodates the milling requirements of today’s production dental laboratory.

Zirlux ST1 can be milled for full-contour crowns, bridges, frameworks, and inlays. Finished with water-based dipping solutions, Zirlux ST1 is an ideal choice for CAD/CAM dentistry and enables laboratory technicians to easily create personalized aesthetics for each case.

**Technical Data**

- Bending Strength (MPa) ................................................................. 900
- Sintering Density (g/cm³) ............................................................... 6.02
- Vicker’s Hardness (GPa) ................................................................. 12.0
- Average Grain Size (µm) ............................................................... 0.6
- Chemical Solubility (µg/cm²) ....................................................... <100
Finish Strong

Zirlux LC

When a low-firing feldspathic / leucite glass ceramic is needed for a zirconia framework, Zirlux LC provides a valuable option. This versatile ceramic features a full complement of layering ceramics and more than 10 shades of translucent, pressable pellets that gives laboratory artists control over the desired restorative outcome. Matching the shade of the adjacent dentition can be achieved through multiple techniques according to the technician’s procedure of choice.

- Efficient in pressed and traditional layering techniques
- Can be pressed without a zirconia substructure for inlays, onlays, and veneers
- Supports integration of natural effects (i.e., shade, opalescence, fluorescence) in both crowns and bridges

Technical Data

Coefficient of Thermal Expansion (25-500°C): .................................................. 9.7 ± 0.5
Flexural Strength (MPa): .......................................................... 130 pellet; 125 porcelain
Chemical Solubility (µg/cm²): .......................................................... 17-20
Zirlux Temp and Zirlux Temp Multi

Zirlux Temp and Zirlux Temp Multi are PMMA discs, ideal for the precise fabrication of temporary restorations. These PMMA restorations can be used for up to 12 months intraorally, providing a valuable aesthetic option for managing fit, function, and phonetics. Zirlux Temp is available in 17 shades and 4 disc sizes. Also produced in multiple sizes and thicknesses, Zirlux Temp Multi is a multi-layered PMMA choice for various milling machines, laboratories, and milling centers.

- Drive patient acceptance of a planned treatment outcome
- Enables rapid, efficient fabrication of provisional restorations
- Indications include crowns and bridges with a range of up to two connected intermediate links

Technical Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexural strength (MPa)</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Solubility (µg/mm³)</td>
<td>&lt;0.8</td>
</tr>
<tr>
<td>Water uptake (µg/mm³)</td>
<td>&lt;20</td>
</tr>
<tr>
<td>Modulus of elasticity (MPa)</td>
<td>2,200</td>
</tr>
<tr>
<td>Softening temperature (°C)</td>
<td>110 to 120</td>
</tr>
<tr>
<td>Density (°C)</td>
<td>1.18 ± 0.02</td>
</tr>
</tbody>
</table>

Chemical composition (% by weight)
Polymethylmethacrylate (PMMA) and ester-based cross-linked polymers........100
Test Your Metal

Zirlux Ti

Select Zirlux Ti, a titanium grade material available in 98.5mm discs (in 8 thicknesses), for precision-milling of titanium crowns, bridges, bars, and dental implant applications. Used with low-fusing ceramics, Zirlux Ti enables technicians to create aesthetic, precise restorations in the anterior and posterior.

- Corrosion-resistant material provides durability and distortion-free fabrication process
- Biocompatible fixed or removable metal-ceramic restorations
- Precision-manufactured with exacting fit

Technical Data

Hardness (HV 10) ........................................................... >300
Elongation (%)................................................................. >8
Tensile Strength (MPa) ................................................ >825
0.2% Yield Strength (MPa) ........................................ >760
Young’s Module (MPa) ............................................... ~106
Coefficient of Thermal Expansion (25°-500°C) ....... >8
Density (g/cm³) ............................................................ 4.4
Melting Range .......................................................... 1,600-1,800

The Zirlux portfolio supports your laboratory’s metal-ceramic requirements as well.
The nickel and beryllium-free, non-precious cobalt-based dental milling alloy, Zirlux NP is well tolerated intraorally due to its inherent biocompatibility. Minimal preparation is required for use, as Zirlux NP restorations are near-ready for veneering after production. Zirlux NP is available in 98mm discs from which dental laboratories can easily mill copings and frameworks for bridges.

- Excellent material properties
- Indicated for crowns and bridges in anterior and posterior regions
- Milled for fixed and removable restorations

**Technical Data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness (HV 10)</td>
<td>285</td>
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<tr>
<td>Elongation (%)</td>
<td>14.7</td>
</tr>
<tr>
<td>Tensile Strength (MPa)</td>
<td>525</td>
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<tr>
<td>0.2% Yield Strength (MPa)</td>
<td>375</td>
</tr>
<tr>
<td>Young's Module (MPa)</td>
<td>240</td>
</tr>
<tr>
<td>Corrosion resistance</td>
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<tr>
<td>Coefficient of Thermal Expansion (25°-500°C)</td>
<td>14.5</td>
</tr>
<tr>
<td>Density (g/cm³)</td>
<td>8.5</td>
</tr>
<tr>
<td>Melting Range</td>
<td>1,600-1,800</td>
</tr>
</tbody>
</table>

**Chemical Composition (% by weight)**

<table>
<thead>
<tr>
<th>Element</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co</td>
<td>61.6</td>
</tr>
<tr>
<td>Cr</td>
<td>27.8</td>
</tr>
<tr>
<td>W</td>
<td>8.5</td>
</tr>
<tr>
<td>Si</td>
<td>1.6</td>
</tr>
<tr>
<td>Mn</td>
<td>0.3</td>
</tr>
<tr>
<td>Fe</td>
<td>0.2</td>
</tr>
</tbody>
</table>
Zirlux Wax discs can be used to efficiently produce wax designs for crown and bridge frameworks—each with excellent marginal accuracy and fit. Since it burns without residue, Zirlux Wax is suitable for the preparation of molds for casting and ceramic molding processes. Using this material, dental technicians create patterns for full-contour cast or press-ceramic restorations and diagnostic waxups.

- Discs are 98.5mm in diameter, and with a thickness of 20mm
- Wax burns out without residue
- Supports casting and press fabrication techniques

**Technical Data**

- Color ................................................................. Blue, grey, or white
- Odor ................................................................................................Mild
- Dripping point (°C)............................................................... 117-129
- Viscosity at 140°C (mPas) ........................................................................ 650
- Flash point ..............................................................................approx. 500 °F
- Density at 23°C (g/cm³) ........................................................................... 0.93
- Solubility in water ........................................................................ Insoluble
Today's patients demand aesthetic restorative outcomes that match or enhance their natural dentition. While this has traditionally been accomplished with all-ceramic or layered restorations, these ceramic options are less-than-ideal for many patients who exhibit worn dentition or signs of bruxism.

The Zirlux® product portfolio comprises FC2 pre-shaded zirconia; the ST1 line encompasses blocks in multiple sizes and discs for the production laboratory. Inclusive of both layering ceramics and pressable options, Zirlux packs aesthetics, predictability, and performance into a universal system that improves the efficiency of your dental laboratory.

Zirlux Prosthetic Components

The Zirlux product portfolio also includes an extensive assortment of implant restorative components that includes titanium abutments, analogs, screws, and more. This comprehensive line features prosthetic connections compatible with most of the industry’s leading implant manufacturers, standardizing abutment designs and procedures—regardless of the system.

- Uniform component costs allow for predictable pricing across all systems.
- Zirlux Prosthetic Components enable clinicians and laboratory technicians to reduce treatment costs while maintaining the highest standards of quality.
- Zirlux analogs, abutments, screws, and related components are compatible with implants from the industry’s leading manufacturers.
YOU'RE ONLY AS GOOD AS YOUR CREW

1-800-496-9500
WWW.ZIRLUXCREW.COM