



AMANNGIRRBACH

MATERIALS FOR CAD/CAM.

 **ceramill<sup>®</sup> material**







## CAD/CAM MATERIALS FOR THE HIGHEST DENTAL REQUIREMENTS.

The quality of restoration materials decisively influences the aesthetics and durability of restorations and thus significantly contributes to the wellbeing of the patient. The abundance of CAD/CAM materials available on the market today enables restorations to be fabricated with ever more specific materials optimized for the respective indication. With materials from the Ceramill material portfolio you work with the highest quality restoration materials. We combine materials developed and produced in-house at Amann Girrbach headquarters in Austria with materials of selected cooperation partners with which we expand and complete in our product portfolio for you in close collaboration. Discover the range of Ceramill materials for yourself and your patients!





## CERAMICS



Zolid FX Multilayer



Zolid FX White



Zolid Gen-X Multilayer

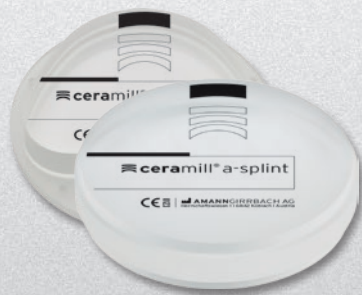


Zolid HT+ Preshades

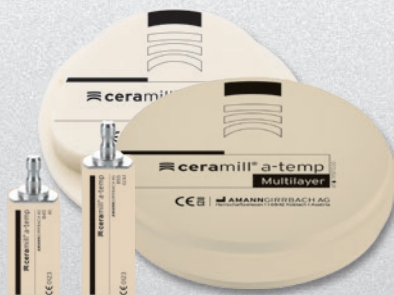


Zolid HT+ White

## POLYMERS/WAX



Ceramill A-Splint



Ceramill A-Temp  
Ceramill A-Temp Multilayer



Ceramill A-Cast



Ceramill PEEK Natural /  
Ceramill PEEK White



Ceramill M-Plast





ZI White

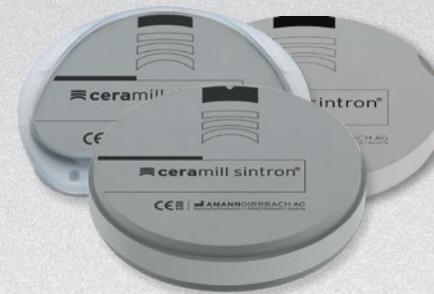


VITA SUPRINITY® PC

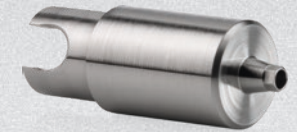


VITABLOCS®  
Mark II / TriLuxe Forte

## METALS



Ceramil Sintron



Ceramil TI-Forms  
Titanium abutment blanks



Ceramil Wax  
Ceramil Wax White



Ceramil D-Wax

## HYBRIDS

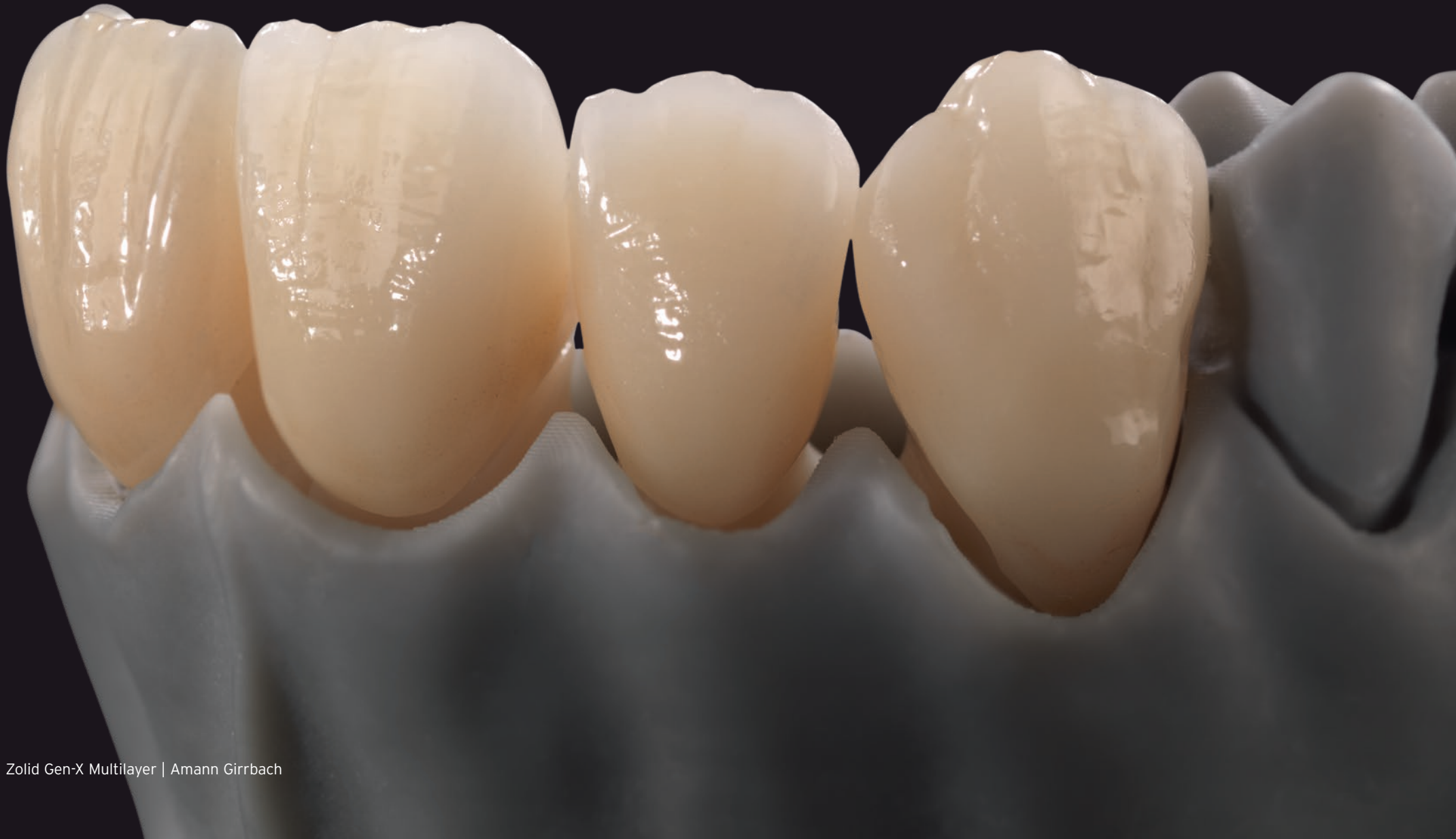


VITA ENAMIC®  
VITA ENAMIC® multiColor

## 3D PRINT RESINS









# CERAMICS



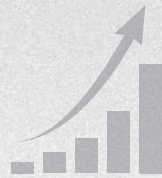
## VERSATILE, ECONOMIC, PROCESS RELIABLE.

Zirconia is the first choice for highly aesthetic restorations due to its versatile range of applications, biocompatibility and optical adaptability. With the Ceramill brand of zirconia blanks Amann Girrbach provides the right material for any fixed indication to fabricate restorations with long-term stability and natural aesthetics economically and efficiently.



### SHADE AND PROCESS RELIABILITY

Aesthetically and functionally perfect restorations. Amann Girrbach developed and produced zirconia blanks with the brand name Ceramill solely and exclusively with this intention. We examine our materials for absolute shade stability according to the VITA classical shade guide with extensive tests and meticulously coordinated these to all software and hardware components. We therefore guarantee the highest shade and process reliability for the entire fabrication procedure.



### EFFICIENCY AND ECONOMY

Economic, efficient processes are a cornerstone of our product and corporate philosophy. These are based on completely integrated system components, which make your working processes easy and efficient. Amann Girrbach provides its customers with a versatile and economic overall concept comprising zirconia blanks and coloring solutions with which you can meet all the requirements in terms of aesthetics and range of indications.

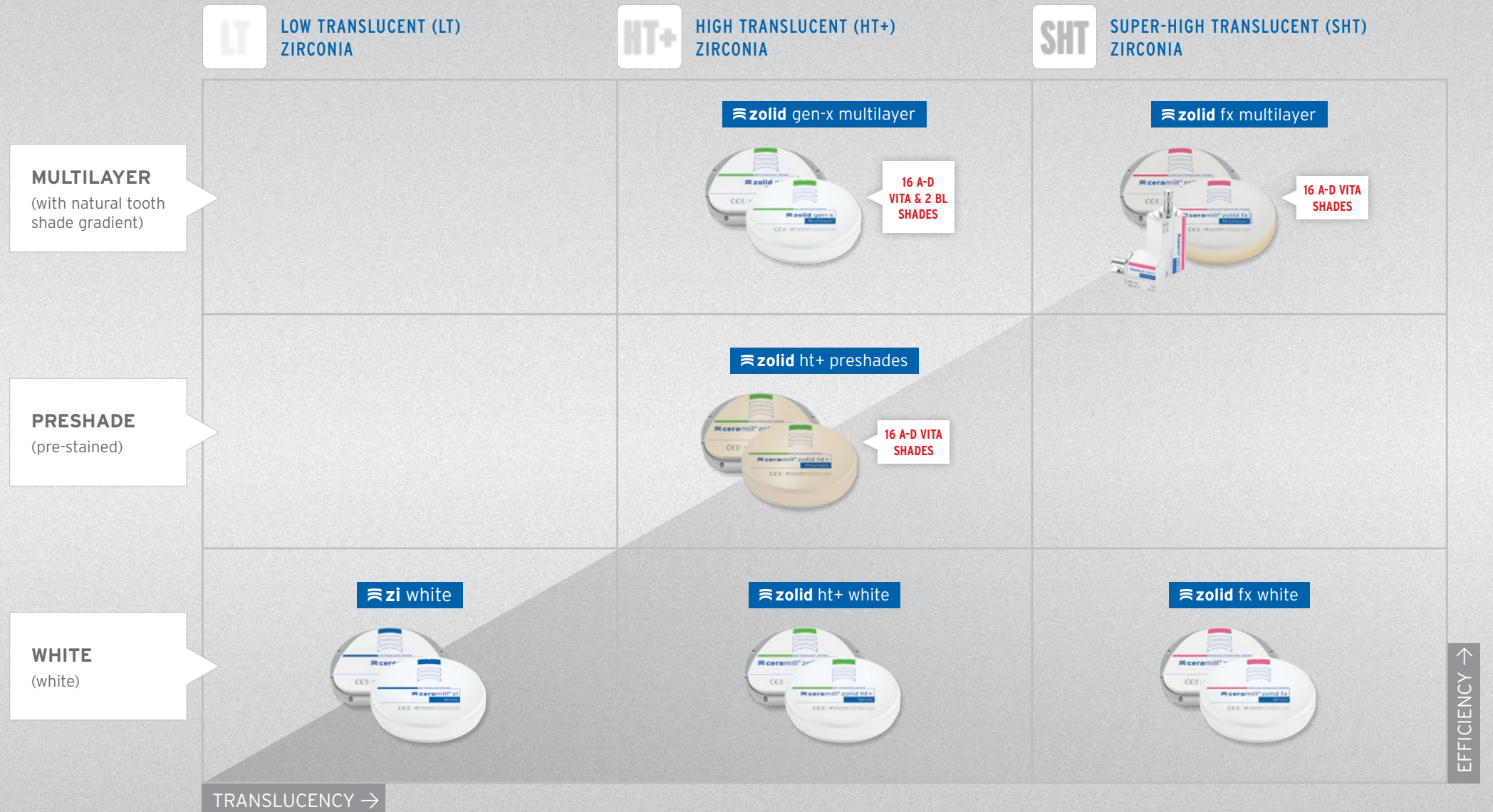


### QUALITY

Zircon oxide  $\neq$  zircon oxide. If the zirconia blanks on the market are assessed according to their chemical composition, hardly any differences are noticeable. However, the mechanical and optical characteristics are largely determined by the manufacturing process of the material - for us the decisive argument for in-house production of zirconia blanks. This allows us to guarantee a secure, quality manufacturing process and constantly high material quality.



ZIRCONIA FOR ALL REQUIREMENTS.









## ZIRCONIA MADE IN-HOUSE. MANUFACTURING OF ZOLID DNA BLANKS.

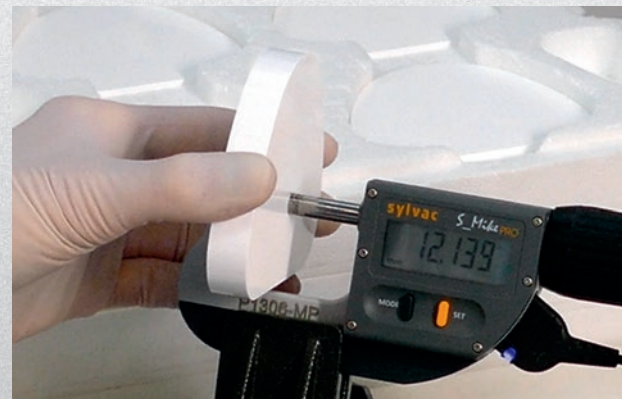
Zirconia ( $ZrO_2$ ) is extracted from zirconium silicate ( $ZrSiO_4$ ), which is prepared in a complex chemical process to a crystalline, white powder. The addition of organic binders allows the powder to be pressed into blanks, which obtain their processing properties by a downstream pre-sintering process. At our development and production location "Dentistry One" at the headquarters in Austria, we have state-of-the-art production plants at our disposal where we convert zirconia to blanks using defined and certified processes under the strictest test conditions. Each individual blank is subjected to extensive quality checking before approval for manual or mechanical processing by our end customers. In this way we can ensure permanently high material quality with excellent processing properties.



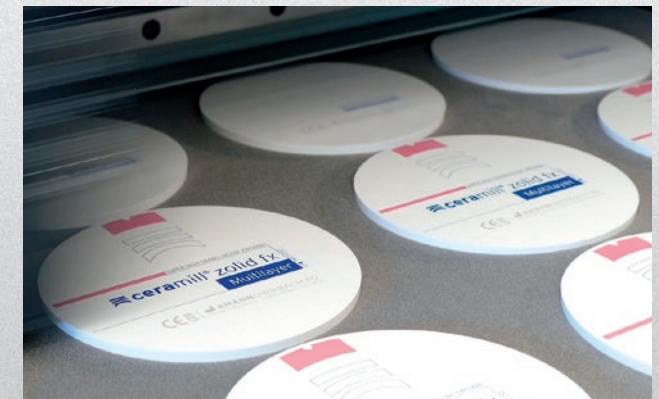
### IN-HOUSE PRODUCTION



### QUALITY



### VERSATILITY





## POLYCHROMATIC, SUPER-HIGH TRANSLUCENT ZIRCONIA

Zolid FX Multilayer is a polychromatic, super-high translucent zirconia with integrated shaded and translucency gradient. Smooth shade transitions simulate tooth enamel, dentine and cervical shades in a naturally fluent progression without disruptive shade edges. The tooth-like preshading allows efficient, economical processing without the staining procedure.

Restorations can be further customized after sintering to achieve more aesthetic results using stains and glazing porcelains.

### INDICATIONS

Fully anatomical crowns and bridges (max. 3 units extending to the molar region)

Veneers, inlays, onlays

More about Zolid FX Multilayer at [www.amangirrbach.com/downloads](http://www.amangirrbach.com/downloads)

- \_ Continuous shade and translucency gradient for smooth shade transitions without shade edges, and natural aesthetics**
- \_ High flexural strength in comparison with glass-ceramics enables fabrication of up to 3-unit bridges, including in the molar region**
- \_ Intelligent nesting concept guarantees accurate matching of the VITA shades and economic working in the lab**
- \_ Maximum efficiency by processing 9 different shades overnight thanks to Motion 2 multiple holders**

### TECHNICAL DATA

Flexural strength (3-point)	700 ± 150 MPa
Flexural strength (4-point)	600 ± 150 MPa
Modulus of elasticity	≥ 200 GPa
Coefficient of thermal expansion (CTE 25-500 °C)	10.1 ± 0.5 × 10 <sup>-6</sup> K <sup>-1</sup>
Chemical solubility	< 100 µg/cm <sup>2</sup>
Vickers hardness	1300 ± 200 HV10

### CHEMICAL COMPOSITION

	Mass percentage
ZrO <sub>2</sub> + HfO <sub>2</sub> + Y <sub>2</sub> O <sub>3</sub>	≥ 99
Y <sub>2</sub> O <sub>3</sub>	8.5-9.5
HfO <sub>2</sub>	≤ 5
Al <sub>2</sub> O <sub>3</sub>	≤ 0.5
other oxides	≤ 1





## PRE-STAINED, SUPER-HIGH TRANSLUCENT ZIRCONIA

Zolid FX Preshades are pre-stained, super-high translucent zirconia blanks for monolithic or anatomically reduced anterior restorations and up to 3-unit bridges in the molar region. The blanks, which are homogeneously stained throughout in an industrial process, can be sintered directly after milling. The blanks are available in different shade gradations and users benefit from increased shade stability and accelerated, economic fabrication of highly aesthetic restorations.

### INDICATIONS

Fully anatomical crowns and bridges (max. 3 units extending to the molar region)

Anatomically reduced crown and bridge frameworks (max. 3 units extending to the molar region)

Veneers, inlays, onlays

More about Zolid FX Preshades at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)

- \_ Super-high translucent, pre-stained zirconia for the highest demands of efficiency and aesthetics**
- \_ High flexural strength enables the fabrication of up to 3-unit bridges, including in the molar region**
- \_ Shade and process reliability by pre-stained blanks ensures easy, time-saving processing**

### TECHNICAL DATA

Flexural strength (3-point)	700 ± 150 MPa
Flexural strength (4-point)	600 ± 150 MPa
Modulus of elasticity	≥ 200 GPa
Coefficient of thermal expansion (CTE 25-500 °C)	10.1 ± 0.5 x 10 <sup>-6</sup> K <sup>-1</sup>
Chemical solubility	< 100 µg/cm <sup>2</sup>
Vickers hardness	1300 ± 200 HV10

### CHEMICAL COMPOSITION

	Mass percentage
ZrO <sub>2</sub> + HfO <sub>2</sub> + Y <sub>2</sub> O <sub>3</sub>	≥ 99
Y <sub>2</sub> O <sub>3</sub>	8.5-9.5
HfO <sub>2</sub>	≤ 5
Al <sub>2</sub> O <sub>3</sub>	≤ 0.5
other oxides	≤ 1





## POLYCHROMATIC, HIGH TRANSLUCENCY, MULTILAYER ZIRCONIA

The new Zolid Gen-X is a multilayer, highly translucent zirconia and is a true all-rounder in terms of „universal use“. Due to its high strength and natural translucency, this material can be used for virtually every indication.

Even the massive structures of implant-supported restorations with a gingival component appear completely natural. Zolid Gen-X is available in the 16 classic VITA tooth shades as well as two Bleach shades. This makes the fabrication of restorations easy and efficient for every laboratory.

### INDICATIONS

Fully anatomical crowns and 4-unit to multi-unit bridges

Anatomically reduced crowns and 4-unit to multi-unit bridge frameworks

Multi-unit, screw-retained restorations on titanium bases

More about Zolid Gen-X Multilayer at [www.amangirrbach.com/downloads](http://www.amangirrbach.com/downloads)

- \_Reduced complexity in everyday laboratory routines through multi-indication application possibilities**
- \_The flowing color and translucency gradient is a perfect imitation of nature**
- \_Due to the flexural strength of over 1,000 MPa, virtually all types of indications can be realized**
- \_The new features and all clinically proven benefits of Zolid HT+ are combined in a single material**

### TECHNICAL DATA

Flexural strength (3-point)	1000 ± 150 MPa
Flexural strength (4-point)	900 ± 150 MPa
Modulus of elasticity	≥ 200 GPa
Coefficient of thermal expansion (CTE 25-500 °C)	10.5 ± 0.5 x 10 <sup>-6</sup> K <sup>-1</sup>
Chemical solubility	< 100 µg/cm <sup>2</sup>
Vickers hardness	1300 ± 200 HV10

### CHEMICAL COMPOSITION

	Mass percentage
ZrO <sub>2</sub> + HfO <sub>2</sub> + Y <sub>2</sub> O <sub>3</sub>	≥ 99
Y <sub>2</sub> O <sub>3</sub>	6.0-7.0
HfO <sub>2</sub>	≤ 5
Al <sub>2</sub> O <sub>3</sub>	≤ 0.5
other oxides	≤ 1





## PRE-STAINED, HIGH TRANSLUCENT ZIRCONIA

Zolid HT+ Preshades are highly translucent, monochrome zirconium oxide blanks which combine the strength values of the Zolid predecessor with considerably increased translucency and the efficiency of pre-stained working materials.

Available in 16 VITA classical tooth shades, the processing of Zolid HT+ Preshades offers outstanding aesthetics, even for large implant-supported constructions. With its optimized technical milling capabilities, Zolid HT+ offers an even more convincing finer margin design together with excellent edge stability.

- \_ High level aesthetics with a natural look due to increased translucency**
- \_ High efficiency and maximum colour stability through pre-stained blanks**
- \_ A strength of 1,000 MPa enables a broad spectrum of indications**
- \_ Intelligent staining concept with Ceramill Stain & Glaze allows achieving 16 VITA shades with only 7 blanks**

### TECHNICAL DATA

Flexural strength (3-point)	1000 ± 150 MPa
Flexural strength (4-point)	900 ± 150 MPa
Modulus of elasticity	≥ 200 GPa
Coefficient of thermal expansion (CTE 25-500 °C)	10.4 ± 0.5 x 10 <sup>-6</sup> K <sup>-1</sup>
Chemical solubility	< 100 µg/cm <sup>2</sup>
Vickers hardness	1300 ± 200 HV10

### CHEMICAL COMPOSITION

	Mass percentage
ZrO <sub>2</sub> + HfO <sub>2</sub> + Y <sub>2</sub> O <sub>3</sub>	≥ 99
Y <sub>2</sub> O <sub>3</sub>	6.0-7.0
HfO <sub>2</sub>	≤ 5
Al <sub>2</sub> O <sub>3</sub>	≤ 0.5
other oxides	≤ 1

### INDICATIONS

Fully anatomical crowns and 4-unit to multi-unit bridges

Anatomically reduced crowns and 4-unit to multi-unit bridge frameworks

Multi-unit, screw-retained restorations on titanium bases

More about Zolid HT+ Preshades at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)





## HIGH TRANSLUCENT ZIRCONIA

Zolid HT+ is a highly translucent zirconium oxide which combines high mechanical characteristics with outstanding aesthetics. At over 1,100 MPa, its strength lies in the range of its predecessor Zolid, however, the light-optical properties were optimized considerably. Even large structures, such as implant-supported structures with a gingival component, radiate the vitality of natural tooth substance due to their high light permeability. With its extreme edge stability, Zolid HT+ allows delicate margin design when processed with CAD/CAM.

### INDICATIONS

Fully anatomical crowns and 4-unit to multi-unit bridges

Anatomically reduced crowns and 4-unit to multi-unit bridge frameworks

Multi-unit, screw-retained restorations on titanium bases

More about Zolid HT+ White at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)

- \_ Full indication spectrum through high flexural strength of 1,100 MPa
- \_ Top level aesthetics with natural look due to increased translucency
- \_ The design of even the finest margin adaptations is possible through optimal millability and high edge stability

### TECHNICAL DATA

Flexural strength (3-point)	1100 ± 150 MPa
Flexural strength (4-point)	1000 ± 150 MPa
Modulus of elasticity	≥ 200 GPa
Coefficient of thermal expansion (CTE 25-500 °C)	10.4 ± 0.5 x 10 <sup>-6</sup> K <sup>-1</sup>
Chemical solubility	< 100 µg/cm <sup>2</sup>
Vickers hardness	1300 ± 200 HV10

### CHEMICAL COMPOSITION

	Mass percentage
ZrO <sub>2</sub> + HfO <sub>2</sub> + Y <sub>2</sub> O <sub>3</sub>	≥ 99
Y <sub>2</sub> O <sub>3</sub>	6.7 - 7.2
HfO <sub>2</sub>	≤ 5
Al <sub>2</sub> O <sub>3</sub>	≤ 0.5
other oxides	≤ 1





## LOW TRANSLUCENT ZIRCONIA

ZI features high strength, rigidity and biocompatibility. Restorations fabricated from the pre-sintered zirconia blanks have a particularly high flexural strength of up to 1200MPa (3-point bending strength) and can be processed without any problems thanks to their optimum edge stability. With an opacity value of approx. 70 % ZI is ideal for indications in which discolored tooth preparations or metal frameworks must be masked, as well as for the fabrication of support structures for fixed and removable prosthetic restorations. ZI frameworks can be customized with the Ceramill Liquid coloring liquids using the immersion or brush technique.

- \_Optimum edge stability and millability
- \_Customizable using Ceramill Liquid coloring liquids
- \_High strength and rigidity

### TECHNICAL DATA

Flexural strength (3-point)	1200 ± 150 MPa
Flexural strength (4-point)	1000 ± 150 MPa
Modulus of elasticity	≥ 200 GPa
Coefficient of thermal expansion (CTE 25-500 °C)	10.4 ± 0.5 x 10 <sup>-6</sup> K <sup>-1</sup>
Chemical solubility	< 100 µg/cm <sup>2</sup>
Vickers hardness	1300 ± 200 HV10

### CHEMICAL COMPOSITION

	Mass percentage
ZrO <sub>2</sub> + HfO <sub>2</sub> + Y <sub>2</sub> O <sub>3</sub>	≥ 99
Y <sub>2</sub> O <sub>3</sub>	4.5 - 5.6
HfO <sub>2</sub>	≤ 5
Al <sub>2</sub> O <sub>3</sub>	≤ 0.5
other oxides	≤ 1

### INDICATIONS

Anatomically reduced crowns and 4-unit to multi-unit bridge frameworks

Custom abutments on titanium bases

Multi-unit, screw-retained restorations on titanium bases

More about ZI at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)





## ZIRCONIA-REINFORCED LITHIUM SILICATE CERAMIC

VITA SUPRINITY® PC is a zirconia-reinforced lithium silicate ceramic (ZLS)\* and the product of a new glass-ceramic material generation. It is characterized by a particularly fine-grain and homogeneous microstructure, which ensures an excellent material quality and therefore consistently high loading capacity and long-term reliability. In addition, the material has outstanding processing characteristics such as easy grinding and polishing properties. Integrated translucency, fluorescence and opalescence provide an optimal basis for impressively natural aesthetic restorations.

\* This material class is a joint development of VITA Zahnfabrik, DeguDent GmbH and the Fraunhofer Institute for Silicate Research ISC.

- \_ Excellent material quality thanks to fine-grained, homogeneous microstructure**
- \_ Zirconia proportion ensures a constantly high loading capacity and long-term reliability**
- \_ Translucency, fluorescence and opalescence guarantee aesthetic results**

### TECHNICAL DATA

Flexural strength (3-point)	~ 420 MPa
Modulus of elasticity	~ 70 GPa
Coefficient of thermal expansion (CTE 25 - 500 °C)	~ 12.3 ± 0.5 x 10 <sup>-6</sup> K <sup>-1</sup>
Chemical solubility	~ 40 µg/cm <sup>2</sup>
Softening temperature	~ 800 °C
Hardness	~ 7000 MPa
Transformation temperature (TG)	~ 620 °C

### CHEMICAL COMPOSITION

	Mass percentage
SiO <sub>2</sub>	56 - 64
Li <sub>2</sub> O	15 - 21
ZrO <sub>2</sub>	8 - 12
P <sub>2</sub> O <sub>5</sub>	3 - 8
Al <sub>2</sub> O <sub>3</sub>	1 - 4
K <sub>2</sub> O	1 - 4
CeO <sub>2</sub>	0 - 4
Pigments	0 - 6

### INDICATIONS

Crowns, veneers, inlays, onlays and superstructures on implants





# VITA VITABLOCS® Mark II & TriLuxe forte

## FELDSPAR CERAMIC

### VITABLOCS® MARK II

The very fine structure of the Mark II and the industrial sinter process are the reasons for the good polishability and excellent enamel-like abrasion characteristics of restorations fabricated using VITABLOCS® Mark II. The material and processing technology advantages of feldspar ceramic, which have been verified by scientific studies, correlate with more than 9 million restorations that have now been fabricated to date using Mark II very fine-structure feldspar ceramic blocks.

### VITABLOCS® TRILUXE FORTE

VITABLOCS® TriLuxe forte is a VITABLOCS® generation with four levels of shade intensity based on the VITABLOCS® Mark II, which have been successfully proven a million times over in clinical use for more than 20 years. The shade transition from enamel to cervical area layer is even finer nuanced in 4 layers: enamel-dentine-intensive dentine-cervical layer, with a greater accentuation of the chroma in the cervical area. The very fine structured feldspar ceramic, which conserves the milling tools, is impressive on the one hand because of the antagonist-friendly abrasion properties that correspond to those of the natural tooth structure and on the other hand due to optimal light conductivity effects and white fluorescence. In combination with the cervically increasing fluorescence this also ensures a natural shade effect, even with thin layer thicknesses.

### TECHNICAL DATA

Flexural strength	154±15 MPa
Modulus of elasticity	45±0.5 GPa
Coefficient of thermal expansion (CTE 25 - 500 °C)	~9.4±0.1 x 10 <sup>-6</sup> K <sup>-1</sup>
Density	2.44±0.01g/cm <sup>3</sup>
Transformation zone	780 - 790 °C

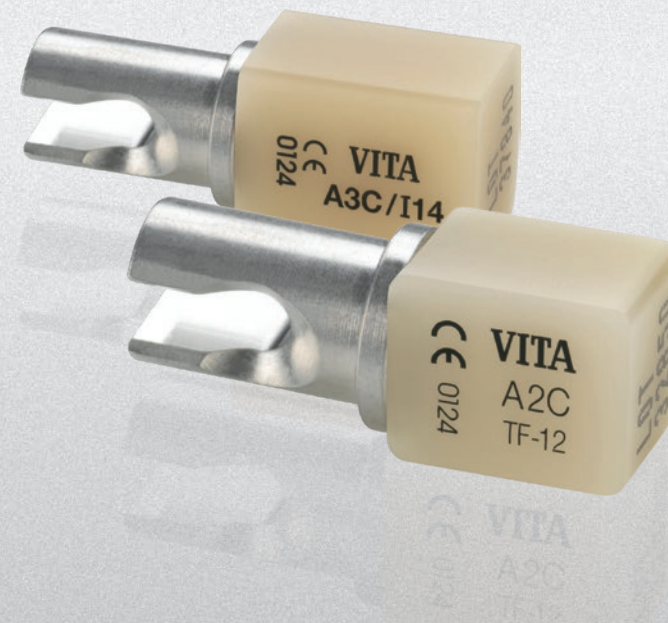
### CHEMICAL COMPOSITION

	Mass percentage
SiO <sub>2</sub>	56-64
Al <sub>2</sub> O <sub>3</sub>	20-23
Na <sub>2</sub> O	6-9
K <sub>2</sub> O	6-8
CaO	0.3-0.6
TiO <sub>2</sub>	0.0-0.1

### INDICATIONS

Crowns, inlays, onlays, veneers

- \_ Good polishability and excellent enamel-like abrasion properties**
- \_ No crystallization firing required**
- \_ Very good translucency characteristics and chameleon effect**



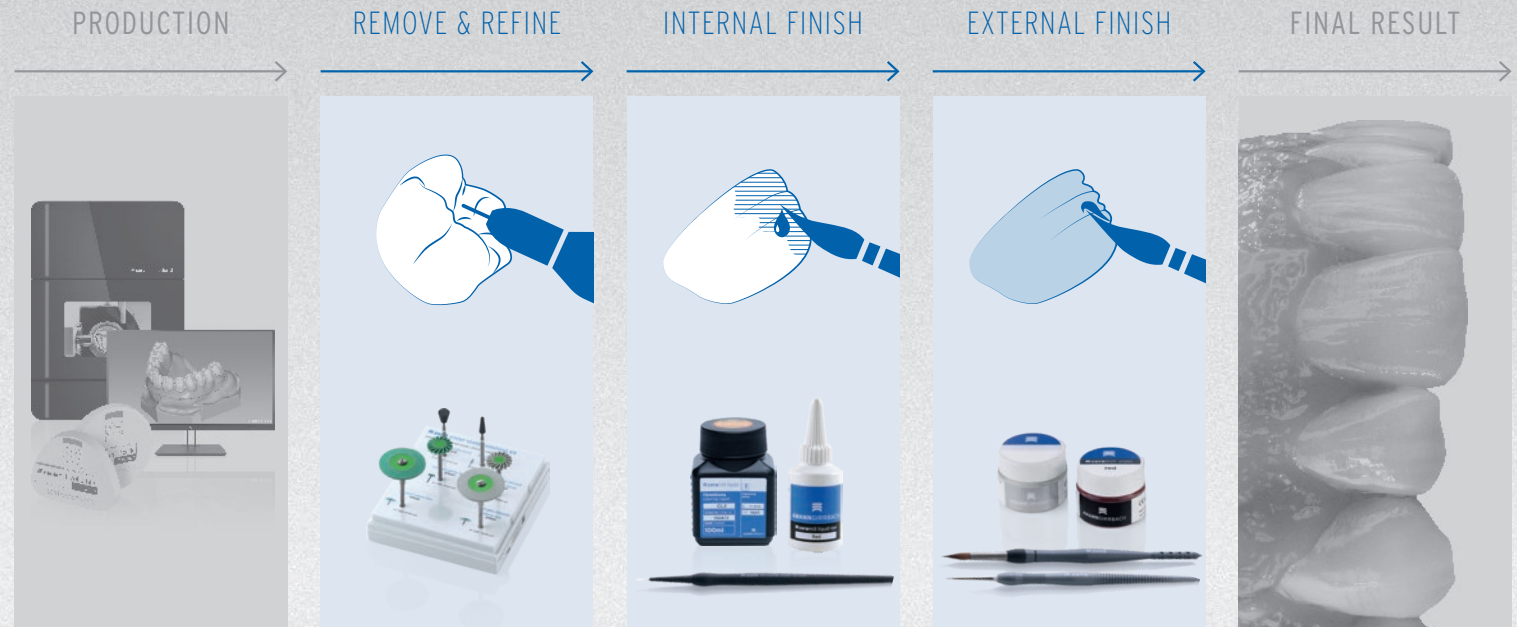






## AS ESTHETICS ARE NOT HAPPENSTANCE.

"Amann Girrbach Esthetic Management" makes the fabrication of highly esthetic restorations from zirconium oxide easier than ever before for users of the Zolid system. The focus is on simplifying and optimizing all work after milling the restoration. The clearly illustrated instructions for use and numerous video tutorials guide users through the process step by step. In addition, users have a wide range of courses and online webinars at their disposal. Add to this the new products and aids that make daily work with zirconium oxide considerably easier for the user.



More about Esthetic Management at: <https://www.amanngirrbach.com/esthetic-management>

**\_A systematic solution, which, thanks to the consistent expansion of the Amann Girrbach precision chain, creates a significantly more convenient fabrication process for Zolid restorations**

**\_Highly esthetic and reproducible results thanks to detailed guidelines and numerous video tutorials ensure satisfied dentists and patients**

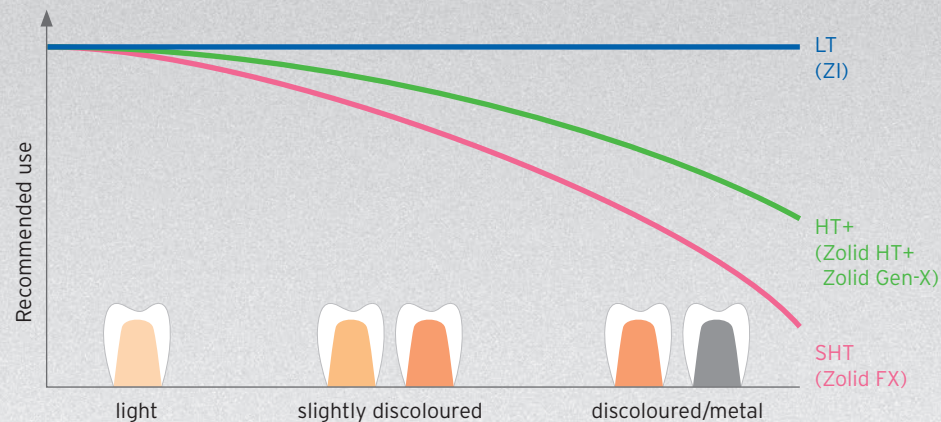
**\_Maximum efficiency and safety thanks to the broad spectrum of aids for optimum processing of restorations made of Zolid zirconium oxide**






## ESTHETIC MANAGEMENT AND PROCESSING

The optimum zirconia for an indication is based on different factors. Esthetic requirements, size of the restoration or shade of the prepared tooth thus decisively affect selection of the material. The more precisely the shade of the prepared tooth, material and indication are matched to one another the more predictable and esthetically accurate restorations can be fabricated.

## RECOMMENDATION FOR USE OF AMANN GIRRIBACH ZIRCONIA IN TERMS OF STUMP SHADE AND DEGREE OF TRANSLUCENCY



Prepared tooth shade	Translucency	Product	Processing				Indication								
			Brush/Immersion technique (Liquid)	Staining technique	Cut-back technique	Layering technique	Veneer	Inlay	Onlay	Anterior and posterior crowns	3-unit bridge (incl. molar region)	Multi-unit bridge	Hybrid abutment	Hybrid abutment-crown	
Light 	<b>SHT</b>	Zolid FX Multilayer		○	○		○	○	○	○	○			○	
		Zolid FX White	○	○	○	○	○	○	○	○	○			○	
Light - slightly discoloured 	<b>HT</b>	Zolid Gen-X		○	○	○				○	○	○	○	○	
		Zolid HT+ Preshade		○	○	○				○	○	○	○	○	
		Zolid HT+ White	○	○	○	○				○	○	○	○	○	
Light - discoloured/metal 	<b>LT</b>	ZI White	○			○				○	○	○	○	○	



## TECHNISCHE DATEN

### FLEXURAL STRENGTH

3-point bending strength [MPa] DIN EN ISO 6872.  
The higher the flexural strength of zirconia (ZrO<sub>2</sub>),  
the better the stability under masticatory loading.

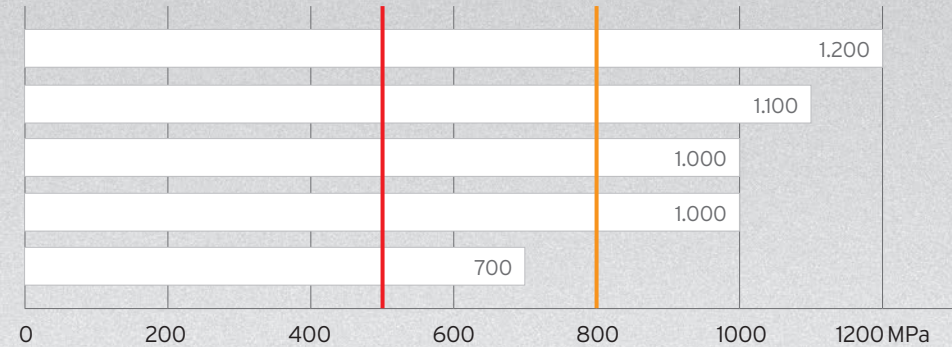
- Class 5 > 800 MPa according to DIN EN ISO 6872\*
- Class 4 > 500 MPa according to DIN EN ISO 6872\*\*

Source: Amann Girrbach R&D

\* Minimum requirement for the fabrication of 4-unit  
to multi-unit bridges;

\*\* Minimum requirement for the fabrication of 3-unit bridges

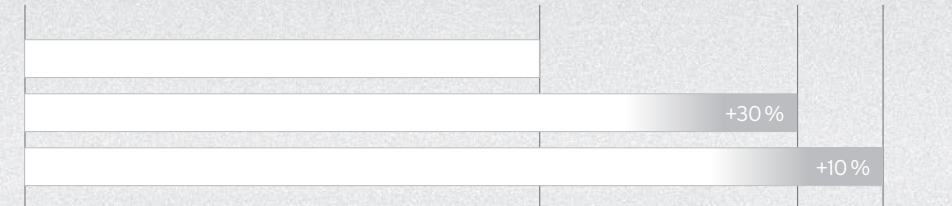
- zi
- zolid ht+ white
- zolid gen-x
- zolid ht+ preshades
- zolid fx



### TRANSLUCENCY

The higher the translucency the more permeable  
the material is to light (translucent).

- zi
- zolid ht+
- zolid fx



Transluzenz

### AGEING RESISTANCE

4-point bending strength [MPa] DIN EN ISO 6872.  
Consistent strength values (Weibull module) after  
simulated mechanical ageing (1.2 million cycles, 100N).  
Amann Girrbach zirconia exhibits no signs of ageing.

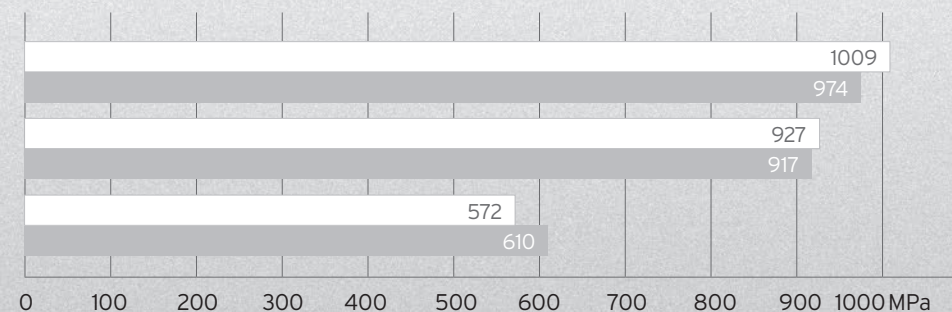
- Before mechanical ageing
- After mechanical ageing

Results / Source:

\* LMU (Ludwig Maximilian University) Munich, Germany;

\*\* Amann Girrbach R&D

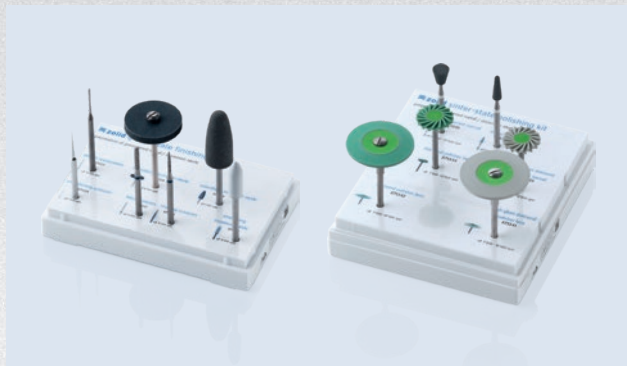
- zi\*
- zolid ht+\*\*
- zolid fx\*\*





## PERFECTLY TAILORED AIDS FOR EVERY LABORATORY

The choice of the right aids is crucial for success. Amann Girrbach offers a diversified range of aids, from brushes and ceramic mixing palettes to useful accessories for the firing process, which guarantee attractive results all round with certainty. All details and products at: [www.amanngirrbach.com/esthetic-management](http://www.amanngirrbach.com/esthetic-management)



Zolid Green State Finishing Kit, Zolid Sinter State Polishing Kit



Zirconia Stain Brush liquid brush



Revolution Brush Kit ceramic brush



Honeycomb Firing Tray



PegFix refractory paste



CAD Artistry Mixing Palette



## BECAUSE GOOD ESTHETICS IS NO COINCIDENCE.

A product is only complete if one knows how to use it correctly. For this reason, Amann Girrbach offers a comprehensive information and training offer as well as all aids for the use of Ceramill zirconia, to ensure that esthetics are not simply a matter of chance. The combined expertise is found on the homepage in the Esthetic Management media library: [www.amanngirrbach.com/de/esthetic-management/know-how](http://www.amanngirrbach.com/de/esthetic-management/know-how)



### APPLICATION GUIDE

Based on practical applications, the Application Guide gives a step-by-step explanation of the process for fabrication of restorations in the typical indication range for the Zolid DNA blanks and takes one through the correct processing of Zolid zirconia in a didactically well prepared manner.



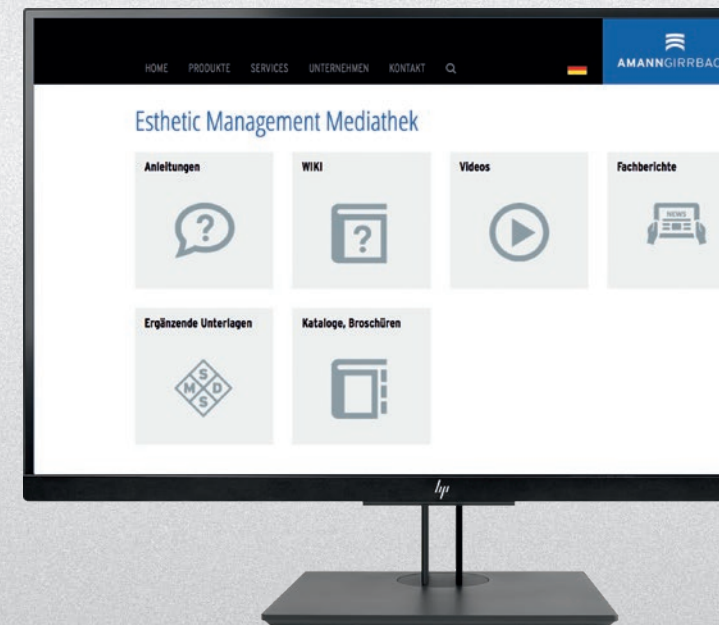
### VIDEO TUTORIAL

The individual sequences of the video tutorials take the user "hands on" through the customising process for selected indications. Besides preparing zirconia restorations, the emphasis is on individualization with liquids, stains and veneering materials.



### COURSES

Perfect esthetics and precise processing of the material are the focus of our courses. With a view to the requirements in dental practice, theoretical background knowledge is combined with tips on the correct management of Zolid DNA Generation blanks. Next to traditional hands-on courses, users can also simply participate in webinars via their PC. This saves time and creates new options in the field of training and further education.









# METALS

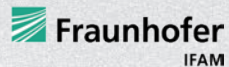






## CoCr-SINTERMETALL

Ceramill Sintron revolutionizes CNC-based dry processing of non-precious metal restorations using desktop milling machines in-house in the laboratory. The wax-like texture of Ceramill Sintron allows the material to be dry milled effortlessly. During the subsequent sintering process under shielding gas atmosphere the frameworks achieve their final material properties - a CoCr unit with very homogeneous material structure. Any conventional CrCo framework porcelain can then be used for veneering. Ceramill Sintron was developed in collaboration with the Fraunhofer IFAM Dresden, Germany. Due to the outstanding test results and feedback, the process and material quality are validated at the highest level and guarantee maximum safety for the user and the patients.



- \_Effortless dry milling and minimum cutter wear thanks to wax-like texture**
- \_Comfortable handling due to easy reworking and finishing of the milled framework in the green state**
- \_Maximum process reliability thanks to homogeneous, distortion-free frameworks**
- \_Excellent strength values, bonding strength and biocompatibility**

### TECHNICAL DATA

Elongation at rupture	30 %
Proof stress (Rp 0.2 %)	450 MPa
Modulus of elasticity	200 GPa
Coefficient of thermal expansion (CTE 25-500 °C)	14.5 x 10 <sup>-6</sup> K <sup>-1</sup>
Vickers hardness	270 HV10
Tensile strength (Rm)	900 MPa

### CHEMICAL COMPOSITION

	Mass percentage
Cobalt (Co)	66
Chrome (Cr)	28
Molybdenum (Mo)	5
Organic binder (for blanks in blank condition)	1-2
Further elements (Mn, Si, Fe)	<1
Further elements (C)	<0.1

The alloy does not contain nickel, beryllium, gallium or cadmium according to DIN EN ISO 22674.



### INDICATIONS

Telescope and conical crowns

Custom abutments on titanium bases

Multi-unit, screw-retained restorations on titanium bases

Anatomically reduced and fully anatomical crown and bridge frameworks in the anterior and posterior region

More about Ceramill Sintron at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)





## DRY MILL COCR - EASY AS WAX

Ceramill Sintron enables CNC-based dry milling of non-precious restorations using bench-top milling machines inhouse in the laboratory. For a long time it was not possible to fabricate CoCr restorations on “small” laboratory milling machines because of the material hardness. The material can be effortlessly dry milled thanks to the “wax-like” texture of Ceramill Sintron. During the subsequent sintering process in a shielding gas atmosphere, the frameworks achieve their final material properties - a CoCr unit with a very homogeneous structure. Any conventional CoCr framework porcelain can then be used for veneering.



- \_Wax-like texture for minimum cutter wear and effortless milling in the dry mode**
- \_Easy handling thanks to easy reworking and finishing of milled restorations in the green state**
- \_Maximum process reliability thanks to homogeneous, distortion-free framework**
- \_Excellent strength values, bonding strength and biocompatibility**



Ceramill Sintron crown milled and sintered in Ceramill HD quality



Ceramill Sintron blanks



## INTELLIGENT SHIELDING GAS SINTERING FOR CERAMILL SINTRON

Ceramill Argothem 2 is a high-temperature furnace, which was specially developed for sintering Ceramill Sintron restorations and has been optimally coordinated to the system components of the Ceramill CAD/CAM system. This is because only perfect adaptation of sinter metal, processing in the CAD/CAM system and temperature conditioning in the sinter furnace ensures constantly high material quality - particularly if it concerns the mechanical properties and structure of the finished restoration. Easy to operate at the press of a button, the Ceramill Argothem 2 controls the sinter program of the milled CoCr units and guarantees predictable and distortion-free results without contraction cavities. The "core" of the system, the removable sinter chamber Ceramill Argovent 2, ensures minimal consumption of argon gas and homogeneous sintering of the restorations. The compact furnace with minimum space requirements is used as a benchtop model and cools actively after sintering.

- \_ Constantly high sinter quality thanks to the specially developed sinter program**
- \_ Integrated compressed-air and shielding gas monitoring ensure maximum process reliability and minimum shielding gas consumption**
- \_ Sintering at the press of a button - easy to operate using touch-screen technology with sinter-progress and time-remaining display**
- \_ Capacity per sinter cycle: up to 40 units**





## TITAN

The Ceramill TI-Forms process stands for the processing of titanium abutment blanks with pre-fabricated connection geometries, from which individual one-piece titanium abutments can be fabricated in-house. The blanks available for a wide range of commonly available implant systems are endowed with an outstanding surface quality by the technique and the Ceramill TI-Forms process of „rotary milling“ and are characterized by high biocompatibility due to the proven Ti6Al4V (medical grade 5, ASTM 136) material.

- \_High biocompatibility based on the proven material Ti6Al4V (medical grade 5, ASTM 136)**
- \_Titanium abutment blanks available for all commonly used implant systems**
- \_Reliable and precise due to industrially prefabricated implant connection geometries**
- \_High saving in time and costs as well as lower tool wear thanks to the rotational milling technique**

## TECHNICAL DATA

Average linear CTE	9.3 x 10 <sup>-6</sup> K
Thermal conductivity at 20 °C	7.1 W/mK
Density	4.43 g/cm <sup>3</sup>
Tensile strength (Rm)	860 N/mm <sup>2</sup>

## CHEMICAL COMPOSITION

	Mass percentage
Aluminium (Al)	5.5 - 6.75
Vanadium (V)	3.5 - 4.5
Iron (Fe)	max. 0.3
Oxygen (O)	max. 0.2
Carbon (C)	max. 0.08
Nitrogen (N)	max. 0.05
Hydrogen (H)	max. 0.015
Titanium (Ti)	rest

## INDICATIONS

## Customised, one-piece titanium abutments

More information about the Ceramill TI-Forms process as well as the portfolio can be found in our implant prosthetics catalogs at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)





# POLYMERS | WAX







## SPLINT-ACRYLIC

The transparent PMMA blanks Ceramill A-Splint used for fabricating therapeutic splints can be easily and reproducibly milled. Available in three heights and as a Class 2a medical device, Ceramill A-Splint is suitable for long-term use of up to 3 years. The industrially prefabricated splint material provides high oral comfort and also impresses due to its neutral taste and odour. The high surface quality reduces discoloration and plaque accumulation to a minimum..

- \_Process reliability and massive time savings due to digital fabrication process**
- \_Industrially manufactured, homogeneous splint material guarantees optimum wearing comfort due to neutral taste and odor**
- \_Acrylic for long-term use with a wearing period of up to three years**

### TECHNICAL DATA

Flexural strength (3-point)	>100 MPa
Density	1.19 g/cm <sup>3</sup>
Vickers hardness	24 HVO.2
Water absorption	< 25 µg/mm <sup>3</sup>
Chemical solubility	< 0.7 µg/mm <sup>3</sup>
Residual monomer content	< 1 %

### CHEMICAL COMPOSITION

PMMA (polymethyl methacrylate)

### INDICATIONS

Splints for therapeutic care in correcting jaw joint problems and the chewing plane

Assessment of the fit to the plaster model / mouth prior to final restoration

More about Ceramill A-Splint at [www.amanggirrbach.com/downloads](http://www.amanggirrbach.com/downloads)





## TEMPORARY ACRYLIC

Ceramill A-Temp, an easy to process acrylic, is suitable for long-term temporary restorations. Ceramill A-Temp is available as a monochromatic blank and as a "multilayer" with shade gradient from dentine to incisal. A-D shades of A-Temp blanks coordinated with Zolid DNA Generation ensure high-end aesthetics and reliable, familiar processes. Conventional cutters and trimmers as well as polishing pastes can be used for preparation and polishing. A-Temp temporary restorations can be fabricated fully anatomically and can also be veneered with conventional crown and bridge resins. They are suitable for checking the fit and functionality of the actual restoration before it is finished, whereby the tooth-coloured material increases the acceptance of the try-in.

- \_Highest esthetics due to perfectly matched VITA A-D shades for the Zolid DNA Generation**
- \_Acrylic for long-term temporary restorations with a wearing period of up to three years**
- \_The new block shape as a solution for smaller restorations and to lower stock costs**

### TECHNICAL DATA

Flexural strength (3-point)	135 MPa
Density	1.19 g/cm <sup>3</sup>
Vickers hardness	24 HVO.2
Water uptake	< 25 µg/mm <sup>3</sup>
Chemical solubility	< 0.6 µg/mm <sup>3</sup>
Residual monomer content	< 1%

### CHEMICAL COMPOSITION

PMMA (polymethyl methacrylate)  
Colouring pigments

### INDICATIONS

Temporary anterior and posterior crowns

Temporary anterior and posterior bridges with a maximum of two connected intermediate units

Assessment of the fit to the plaster model / mouth prior to final restoration

More about Ceramill A-Temp at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)





## TRANSPARENT ACRYLIC

Ceramill A-Cast is a transparent acrylic for processing using CAD/CAM technology. Ceramill A-Cast is suitable for processing with casting and pressing techniques. Through residue-free combustion, Ceramill A-Cast ensures reproducible and efficient CAD/CAM fabrication of crowns and bridges, which are subsequently cast or pressed in the conventional way.

- \_ Simple and reproducible CAD/CAM fabrication
- \_ Contamination-free casting results due to residue-free combustion
- \_ Industrially prefabricated material (free of air pockets and pores)

### TECHNICAL DATA

Flexural strength (3-point)	>100 MPa
Density	1.19 g/cm <sup>3</sup>
Vickers hardness	24 HV0.2

### CHEMICAL COMPOSITION

PMMA (polymethyl methacrylate)

### INDICATIONS

Fabrication of lost molds for the casting/pressing technique

More about Ceramill A-Cast at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)









## PEEK POLYMER

Ceramill PEEK is a high-performance polymer for the digital fabrication of removable and fixed restorations such as crowns, bridges, secondary and telescope restorations, attachment restorations or screw-retained, implant-supported superstructures. Specially developed for the CAD/CAM technique, the material is based on a high-performance PEEK polymer with proven biocompatibility, which ensures its long-term use. PEEK sets a new standard in high-performance materials for dental restorations with more than ten years of proven experience and successful use with human implants. Ceramill PEEK is available in the shades "Natural" (beige) and "White" (cream white).

- \_ High resistance to wear, abrasion and corrosion**
- \_ Bone-like modulus of elasticity for high strength with simultaneous flexibility**
- \_ A combination of strength and low weight ensures pleasant oral comfort**
- \_ Metal-free and biocompatible - ideal for patients with a metal allergy**

### TECHNICAL DATA

Flexural strength	170 MPa
Flexural modulus	4 GPa
Solubility	insoluble
Melting point	343°C
Self-ignition temperature	595°C

### CHEMICAL COMPOSITION

Polyetheretherketone

### INDICATIONS

[Crowns and bridges \(max. 3-unit\)](#)

[Secondary and telescope restorations](#)

[Attachment restorations](#)

[Screw-retained, implant-supported superstructures](#)

More about Ceramill PEEK at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)





## MODEL RESIN

Ceramill M-Plast is a polyurethane model resin for digital fabrication of precision models. The material can be extremely easily dry milled and its high fracture resistance and shape and abrasion stability are also impressive features. After processing, a precise model is created with a flawless, detailed surface, which retains its dimensions even with steam cleaning.

- \_ High dimensional stability without water absorption
- \_ Excellent edge stability and millability
- \_ Very low tool wear

### TECHNICAL DATA

Flexural strength	61 MPa
Shore D hardness	80
Compressive strength	46 MPa
Temperature stability	59 °C
Density	1.00 g/cm <sup>3</sup>

### CHEMICAL COMPOSITION

Polyurethane

## INDICATIONS

### Models

More about Ceramill M-Plast at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)





## MILLING WAX

Ceramill Wax milling wax can be processed user-friendly and reproducibly. The easy handling properties of the material are impressive: no smearing or melting of the material or clogging of the cutter. This creates accurately fitting final results, which facilitate the subsequent casting and press procedures. Ceramill Wax burns out without residue during the preheating process.

Amann Girrbach supplies Ceramill Wax in two colours. Users can choose between white and grey.

## INDICATIONS

Frameworks for the casting and press technique

More about Ceramill Wax at [www.amanngirrbach.com/downloads](http://www.amanngirrbach.com/downloads)

- \_Easy, reproducible CAD/CAM-controlled fabrication of wax patterns facilitate the casting and press techniques**
- \_Virtually no cutter wear or clogging of the cutter by wax**
- \_Burnout without residue ensures perfect casting results**

## TECHNICAL DATA

Dripping point	100-120°C
Flash point	>220°C
Density at 23°C	0.92-0.96g/cm <sup>3</sup>
Viscosity at 120°C	>120 MPa
Shade	grey and white

## CHEMICAL COMPOSITION

Polyethylene wax









## FULL-DENTURE PROSTHETICS WAX

Ceramill D-Wax is a wax blank for the fabrication of full denture bases using Ceramill CAD/CAM technology. The proven Class 1 quality sheet wax, used as standard for full dentures, is available for a wide range of full dentures in an enlarged blank shape. The gingiva-colored staining of the blank provides for a very realistic, patient-friendly aesthetic try-in.

- \_ Proven quality setting-up wax for full denture bases using Ceramill CAD/CAM**
- \_ Gingiva-coloured staining for realistic, patient-friendly try-ins**
- \_ Enlarged blank shape covers virtually 100% of all full dentures**

### TECHNICAL DATA

Solidification point	84 °C
Flash point	>140 °C
Viscosity at 120 °C	>50 mPas

### CHEMICAL COMPOSITION

Natural waxes
Hydrocarbon waxes
Dyestuffs

### INDICATIONS

**Partial and full denture bases**

More about Ceramill D-Wax at [www.amangirrbach.com/downloads](http://www.amangirrbach.com/downloads)









# HYBRIDS







## HYBRID CERAMIC

VITA ENAMIC® hybrid ceramic blocks are characterized by a dual network structure, which combines the positive properties of composite and ceramic. With this material the dominating ceramic network is reinforced by a polymer network with both networks fully integrated. Analogous to the Ceramill material range VITA ENAMIC® blanks have been optimally incorporated in the Ceramill CAD/CAM system workflow. VITA ENAMIC® is available in five 3D Master shades and two levels of translucency. VITA ENAMIC® multi-color for Ceramill are CAD/CAM blanks which feature an integrated, finely nuanced colour gradient from the neck to the edge. The blank with AG holder is available in five common VITA shades.

- \_ Enormous loading capacity due to absorption of the masticatory forces**
- \_ High reliability and integrated crack-stop function**
- \_ Excellent edge stability**
- \_ The multicolor blank also excels by virtue of natural shade effects due to its integrated shade gradient**

### TECHNICAL DATA

Flexural strength	150-160 MPa
Fracture toughness	1.5 MPa√m
Modulus of elasticity	30 GPa
Hardness	2.5 GPa
Weibull module	20

### CHEMICAL COMPOSITION

	Mass percentage
SiO <sub>2</sub>	58-63
Al <sub>2</sub> O <sub>3</sub>	20-23
Na <sub>2</sub> O	9-11
K <sub>2</sub> O	4-6
B <sub>2</sub> O <sub>3</sub>	0.5-2
CaO	<1
ZrO <sub>2</sub>	<1

### INDICATIONS

Crowns, inlays, onlays, veneers and crowns on implants









# 3D PRINT RESINS



## 3D PRINT MATERIAL

The large selection of printable materials and the associated broad spectrum of dental indications ensure maximum flexibility and economical use of the NextDent 5100 for Ceramill in everyday laboratory work. The existing validated NextDent materials are being integrated step by step in the NextDent 5100 for the Ceramill workflow and thus create the necessary reliability in the printing process.

**INTEGRATED**

### NextDent for Ceramill Model 2.0 3D print material for models



- \_Simple and fast fabrication of dental models
- \_Perfect fit of the restorations due to highest precision
- \_High level of detail and surface quality

PROPERTY	REQUIREMENT	RESULT	ISO STANDARD
Flexural modulus	≥ 1500MPa	1980	ISA 178
Hardness shoreD	≥ 80 ShoreD	84	ISO 178

Colors: peach, white, gray, ochre

**INTEGRATED**

### NextDent for Ceramill Cast 3D print material for casting / pressing technique



- \_High stability of the printed structures
- \_Burns out residue-free for optimum results

PROPERTY	REQUIREMENT	RESULT	ISO STANDARD
Flexural modulus	≥ 1500MPa	1980	ISA 178
Hardness shoreD	≥ 80 ShoreD	84	ISO 178

Colors: Violet

**INTEGRATED**

### NextDent for Ceramill C&B MFH 3D print material for temporary crowns and bridges



- \_High strength and wear resistance
- \_Natural esthetics due to different colors and coordinated translucency

PROPERTY	REQUIREMENT	RESULT	ISO STANDARD
Flexural strength	≥ 50MPa	107	ISA 10477
Sorption	≤ 60 µg/mm³	54	ISO 10477
Solubility	≤ 12.5 µg/mm³	5.9	ISO 10477
Biocompatibility	according to ISO Standard	comply	ISO 109993-1

Colors: BL, N1, N1.5, N2, N2.5, N3 and T1

**VALIDATED**

### NextDent for Ceramill Denture 3D+ 3D print material for denture bases



- \_Significantly lower shrinkage than standard PMMA materials for best fit results
- \_Available in different colors for individual results

PROPERTY	REQUIREMENT	RESULT	ISO STANDARD
Ultimate flexural strength	≥ 65MPa	84	ISA 20795-1
Sorption	≤ 32 µg/mm³	28	ISO 20795-1
Solubility	≤ 1.6 µg/mm³	0.1	ISO 20795-1
Residual monomer	≤ 2.2% (w/w)	<0.1	ISO 20795-1
Biocompatibility	according to ISO Standard	comply	ISO 20795-1

Colors: Dark pink, light pink, pink opaque, red pink and translucent pink.

**VALIDATED**

### NextDent for Ceramill Try-In 3D print material for try-in prosthetics



- \_Best choice for checking digitally designed prosthetic bases with individually designed tooth setups
- \_Biocompatible MD Class I material

PROPERTY	REQUIREMENT	RESULT	ISO STANDARD
Flexural modulus	≥ 1500MPa	2043	ISO 20795-1
Biocompatibility	according to ISO Standard	comply	ISO 20795-1

Colors: T10, T11 and T12



**VALIDATED**

**NextDent for Ceramill SG (Surgical Guide)  
3D print material for drilling templates**



- \_ Easy insertion of the drilling sleeves due to highest precision
- \_ Can be sterilized with standardized autoclaving protocols
- \_ Biocompatible MD Class I material

PROPERTY	REQUIREMENT	RESULT	ISO STANDARD
Ultimate flexural strength	≥ 50 MPa	85	ISA 20795-1
Flexural modulus	≥ 1500 MPa	2118	ISO 20795-1
Residual monomer	≤ 2.2 % (w/w)	<0.1	ISO 20795-1
Biocompatibility	according to ISO Standard	comply	ISO 10993-1

Color: orange translucent

**VALIDATED**

**NextDent for Ceramill Tray  
3D print material for individual trays**



- \_ Quality impressions with high precision in next to no time
- \_ Compatible with all types of impression materials
- \_ Biocompatible MD Class I material

PROPERTY	REQUIREMENT	RESULT	ISO STANDARD
Ultimate flexural strength	≥ 50 MPa	81	ISA 20795-1
Flexural modulus	≥ 1500 MPa	2015	ISO 20795-1
Residual monomer	≤ 2.2 % (w/w)	<0.1	ISO 20795-1
Biocompatibility	according to ISO Standard	comply	ISO 10993-1

Colors: blue, pink

**VALIDATED**

**NextDent for Ceramill Ortho IBT  
3D print material for orthodontic transfer splints**



- \_ Easy positioning and application of orthodontic brackets due to precise and flexible splint material
- \_ Biocompatible MD Class I material

PROPERTY	REQUIREMENT	RESULT	ISO STANDARD
Shore A hardness	75-90	85	ISO 101392
Elongation at break	10-20 %	17	ISO 527-1 ISO 527-2
Biocompatibility	according to ISO Standard	comply	ISO 10993-1

Color: transparent

**VALIDATED**

**NextDent for Ceramill Ortho Rigid  
3D print material for splints**



- \_ Fast fabrication of precisely fitting splints
- \_ Biocompatible MD Class I material

PROPERTY	REQUIREMENT	RESULT	ISO STANDARD
Ultimate flexural strength	≥ 50 MPa	78	ISA 20795-2
Sorption	≤ 32 µg/mm <sup>3</sup>	0.8	ISO 20795-2
Solubility	≤ 5.0 µg/mm <sup>3</sup>	0.8	ISO 20795-2
Residual monomer	≤ 5.0 % (w/w)	<0.1	ISO 20795-2
Biocompatibility	according to ISO Standard	comply	ISO 10993-1

Color: blue transparent

**VALIDATED**

**NextDent for Ceramill Gingiva Mask  
3D print material for gingival masks**

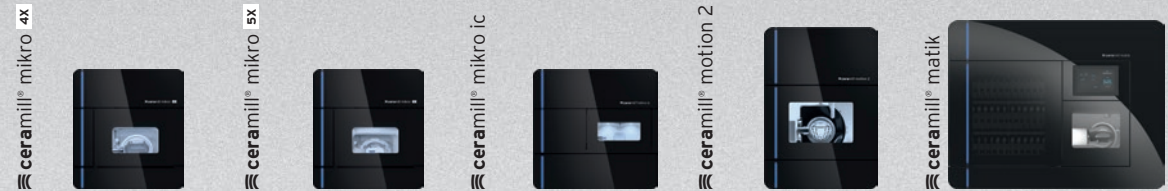


- \_ Easy fabrication of flexible parts such as gingival masks
- \_ Best results in combination with Model 2.0

PROPERTY	REQUIREMENT	RESULT	ISO STANDARD
Shore A hardness	60-75	1980	ISO 10139-2
Elongation at break	40-60 %	53	ISO 527-1 ISO 527-2

Color: pink





MATERIAL	MATERIAL TYPE	PROCESSING WET/DRY	Dry	Dry	Wet	Dry Wet	Dry Wet
Ceramill Sintron	CoCr sinter metal	~	○	○		○	○
Zirconia	Zirconia	~*	○	○	○*	○	○
Ceramill Wax	Milling wax	~	○	○		○	○
Ceramill A-Cast	Acrylic, transparent	~	○	○		○	○
Ceramill A-Temp	Acrylic, PMMA	~	○	○	○	○	○
Ceramill A-Splint	Acrylic splints, PMMA	~		○		○	○
Ceramill M-Plast	Model resin	~		○		○	○
Ceramill PEEK	Polymer resin	~	○	○		○	○
Ceramill D-Wax	Denture wax	~				○	○
Ceramill D-Set	Denture teeth	~				○	○
Ceramill TI-Forms	Titanium	~			○	○	○
VITA SUPRINITY® PC	Lithium silicate ceramic	~			○	○	○
VITA ENAMIC®	Hybrid ceramic	~			○	○	○
VITABLOCS® Mark II / TriLux forte	Fine-structure feldspar ceramic	~			○	○	○
IPS e.max CAD, Ivoclar Vivadent	Lithium disilicate ceramic	~			○	○	○

\* coming soon



## ORDER INFORMATION



Please refer to our catalog for all ordering information/article numbers, which you can download from our website [www.amanngirrbach.com](http://www.amanngirrbach.com).













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