

LEADING MATERIAL OFFERING AND APPLICATION RANGE



Straumann® CARES® CAD/CAM

CONTENT

<u>Leading material offering</u>	<u>2</u>
<u>Applications at a glance</u>	<u>5</u>
<u>Features & benefits – ceramics</u>	<u>6</u>
<u>Features & benefits – metals</u>	<u>8</u>
<u>Features & benefits – polymers</u>	<u>9</u>
<u>CADCAM workflow – ceramics</u>	<u>10</u>
<u>CADCAM workflow – metals</u>	<u>22</u>
<u>CADCAM workflow – polymers</u>	<u>26</u>
<u>Setting the die parameters</u>	<u>28</u>

LEADING MATERIAL OFFERING

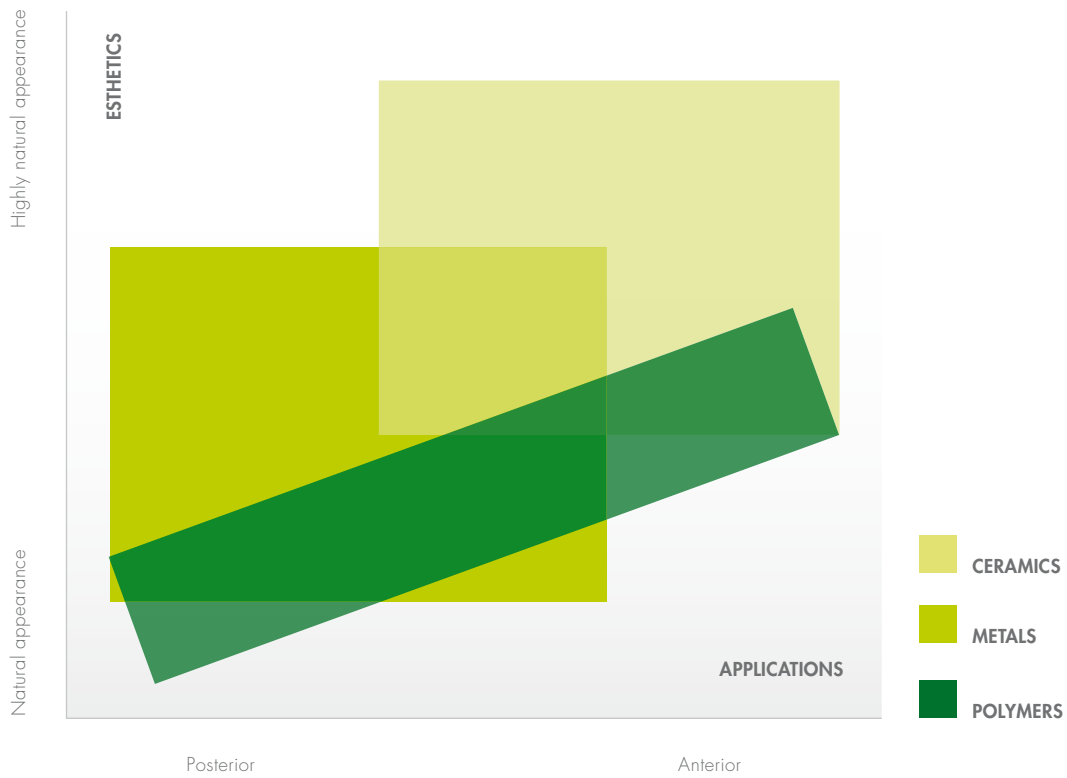
INTRODUCTION

Straumann® CARES® CAD/CAM offers you a unique portfolio of materials designed to provide patients and the restorative team with a broad range of treatment options.

Straumann® CARES® CAD/CAM continuously invests in state-of-the-art production centers and in the development of innovative new technologies. Our CAD/CAM solution maintains high-quality

standards due to its rigorous and certified quality management system. The excellent properties of all our CAD/CAM element offerings are designed for high reliability and predictability.

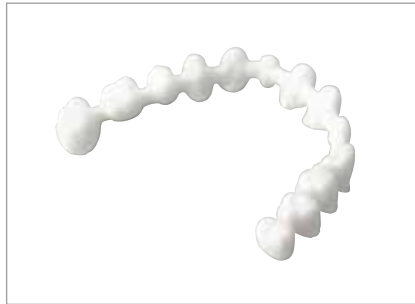
With our innovative and constantly evolving solution, combined with our extensive service and support program, you have an excellent foundation for successful prosthetic restorations.



CERAMICS



Zirconium dioxide abutment



zerion™



IPS e.max® CAD (MO/LT/HT)



IPS Empress® CAD (LT/HT/Multi)



VITA Mark II



VITA TriLuxe

METALS



Titanium abutment



coron®



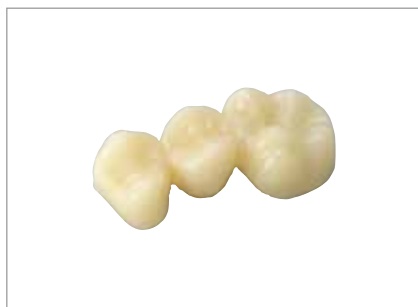
ticon®

* VITA Zahnfabrik H. Rauter GmbH & Co. KG, 2011

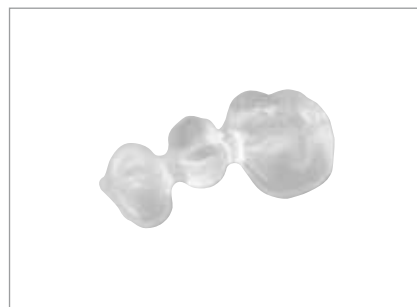
POLYMERS



Polyamide



polycon® ae



polycon® cast

MINIMAL INVESTMENT FOR A GLOBAL SOLUTION

Due to our industrial milling center concept, all types of materials can be processed (from polymers and metals up to ceramics), providing high versatility and giving you all the material options

you need to serve your clients. To learn more about the complete digital workflow, please contact your local Straumann® representative.

APPLICATIONS AT A GLANCE

Straumann® CARES® CAD/CAM offers you a broad array of materials with an extensive range of applications.

		APPLICATIONS ¹														
		Tooth-borne									Implant-borne					
		Single-tooth restorations					Bridges			Specials			Implant-borne			
		Coping	Partial crown	Crown	Veneer	Inlay/Onlay ³	Inlay/Maryland bridge	Bridge maximum unit ²	Maximum pontics in the anterior/posterior region	Primary crown	Retaining attachment Bar	Soft Tissue Level Bar	Soft Tissue Level Bridge	CAD/CAM Abutment		
MATERIALS ¹	CERAMICS	zerion™	●					●	14	4/3	●	●	●			
	Zirconium dioxide for Straumann® CARES® Abutments													●		
	IPS e.max® CAD restorations by Straumann® CAD/CAM	●	●	●	●	●										
	IPS Empress® CAD restorations by Straumann® CAD/CAM		●	●	●	●										
	VITA Mark II restorations by Straumann		●	●	●	●										
	VITA Triluxe restorations by Straumann		●	●	●	●										
	METALS	ticon®	●	●	●			●	14	4/3	●	●	●			
Titanium for Straumann® CARES® Abutments														●		
coron®	●	●	●		●			●	14	4/3	●	●	●		●	●
	POLYMERS	Polyamide	●						14	4/3						
polycon® ae	●	●	●		●			●	3							
polycon® cast	◆	◆	◆					◆	14	4/3	◆	◆	◆			

● Strongly recommended application ● Possible application ◆ Acrylic burn-out

¹ Application and material availability might differ from country to country ² Availability of maximum bridge unit might differ from country to country

³ Veneerable inlay/onlay for zerion™, ticon®, coron® and polycon® ae materials

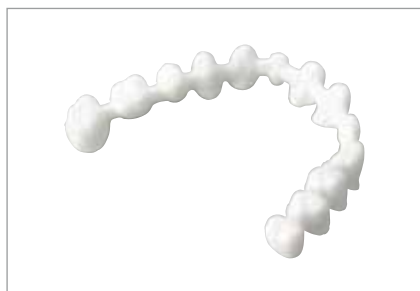
FEATURES & BENEFITS – CERAMICS

CERAMICS



Straumann® CARES® Abutment, ceramic (zirconium dioxide ceramic)

- Full ceramic abutment designed for perfect esthetics
- Excellent material properties designed for high precision and reliability
- Maximum flexibility¹ in abutment design for high efficiency



zerion™ (zirconium dioxide ceramic)

- Broad range of applications for high flexibility
- High-stability frameworks designed for reliability²



IPS e.max® CAD restorations (MO/LT/HT) by Straumann® CAD/CAM (IPS e.max® CAD lithium-disilicate glass-ceramic manufactured by Ivoclar Vivadent AG)

- All-ceramic restorations for efficient esthetics
- Versatility for easy handling
- High-strength product designed for reliable restorations



IPS Empress® CAD restorations (LT/HT) by Straumann® CAD/CAM³ (IPS Empress® CAD leucite glass-ceramic manufactured by Ivoclar Vivadent AG)

- All-ceramic restorations for natural looking esthetics
- Simplicity for easy handling
- Well-established product designed for predictable restorations

¹ Within design specifications ² Up to 4 pontics in the anterior region & up to 3 pontics in the posterior region ³ Some products may require regulatory approvals and may not be available in all markets

CERAMICS



IPS Empress® CAD restorations (Multi) by Straumann® CAD/CAM³
(IPS Empress® CAD leucite glass-ceramic manufactured by Ivoclar Vivadent AG)

- All-ceramic restorations for outstanding esthetics
- Simplicity for easy handling
- Well-established product designed for predictable restorations



VITA Mark II restorations by Straumann³

(VITABLOCS® Mark II feldspar ceramic manufactured by VITA Zahnfabrik H. Rauter GmbH & Co. KG)

- Wide range of shades for natural looking esthetics
- Versatility for easy handling
- Well-established material designed for predictable results



VITA TriLuxe restorations by Straumann³

(VITABLOCS® TriLuxe feldspar ceramic manufactured by VITA Zahnfabrik H. Rauter GmbH & Co. KG)

- Reproduction of the tooth structure characteristic for outstanding esthetics
- Easy handling for high efficiency
- High-quality material designed for predictable results

* VITA Zahnfabrik H. Rauter GmbH & Co. KG, 2011

FEATURES & BENEFITS – METALS

METALS



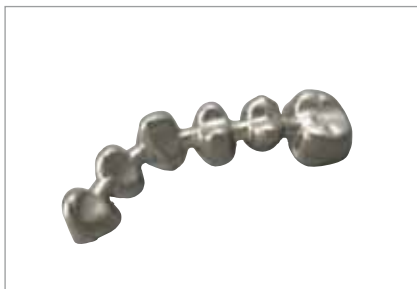
Straumann® CARES® Abutment, titanium

- Excellent material properties designed for high precision and reliability
- Maximum flexibility¹ in abutment design for high efficiency



ticon® (titanium)

- Veneering processing comparable to noble casting alloys for easy processing
- Material properties designed for high reliability and precision
- Ideal alternative to noble casting alloys



coron® (cobalt chromium alloy)

- Broad range of applications for high flexibility
- Veneering processing comparable to noble casting alloys for easy processing

¹ Within design specifications

FEATURES & BENEFITS – POLYMERS

POLYMERS



Polyamide

- Strong crown and bridge frameworks for temporary restorations
- Stable compound designed for high reliability



polycon® ae (PMMA-based acrylate resin)

- Specially suited for full-contoured temporary restorations for high efficiency
- Excellent compound stability for easy handling


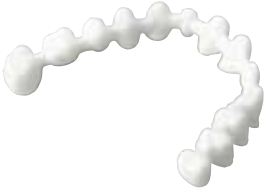



polycon® cast (filler-free acrylate burn-out resin)¹

- Specifically for conventional crown and bridge wax-up (can be burned out without residue)

¹ polycon® cast is not to be inserted into the patient's mouth to check the fit.
polycon® cast is not a medical device!

CADCAM WORKFLOW – CERAMICS

PICTURES	MATERIAL	RESTORATION DESIGN
	<p>Straumann® CARES® Abutment, zirconium dioxide</p>	<p>CAD Design - Supported by Straumann® CARES® Visual software</p> <p>Wax-up Design - Supported by Straumann® CARES® Visual software</p>
	<p>zerion™</p>	<p>single unit - Minimum wall thickness: 0.4 mm</p> <p>OR</p> <p>multi unit - Minimum wall thickness: 0.5 mm - Connector minimum cross-section: 9 mm²</p>
	<p>IPS e.max® CAD for crowns and copings</p>	<p>single unit - Minimum wall thickness with staining processing technique: 1.0 mm gingiva, 1.5 mm circular for posterior crowns and 1.2 mm for anterior crowns, 1.3 mm occlusal for posterior crowns and 1.5 mm incisal for anterior crowns - Minimum wall thickness with layering processing technique for copings: 0.8 mm gingiva, circular and 1.0 mm for premolar occlusal - Minimum wall thickness with layering processing technique for cut-back crowns: 0.4 mm labial/occlusal is requested for the anterior region, 1.0 mm for the posterior region and 1.3 mm for molar</p>

CERAMICS

FURTHER PROCESSING

Do not grind or polish the abutment

FINISHING

layering

- The abutment can be directly layered with veneering ceramics suitable for a CTE value of $10 \times 10^{-6} \text{ K}^{-1}$
- Note: The screw head is covered with wax or gutta-percha and the screw channel is sealed off with a temporary veneering material (e.g. composite).
- For abutments with cemented crown or bridge, the screw opening is sealed off with wax or gutta-percha

SEATING

Screw-retained on Straumann® Bone Level and Soft Tissue Level implants – Tighten screw with 35 Ncm

Mechanical processing only if absolutely necessary – use water-cooled diamond tool, preferably $\geq 100 \mu\text{m}$

layering

- Veneering ceramics suitable for a CTE value of $10 \times 10^{-6} \text{ K}^{-1}$

- Adhesive cementation
- Conventional cementation

(High-speed) crystallization

layering

- Layering (IPS e.max® Ceram) followed by staining and glazing



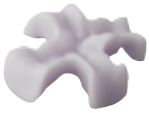
OR

full contoured

- Staining and glazing (IPS e.max® system)

- Adhesive cementation
- Self-adhesive cementation
- Conventional cementation

CADCAM WORKFLOW – CERAMICS

PICTURES	MATERIAL	RESTORATION DESIGN
	<p>IPS e.max® CAD for partial crowns</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness with staining processing technique: 1.0 mm in the gingiva third, 1.5 mm circular, cusp height, isthmus width and fissure depth - Minimum wall thickness with layering processing technique for cut-back partial crowns: 1.0 mm in the gingiva third, 1.5 mm circular, 1.3 mm cusp height and occlusal, 1.5 mm isthmus width, 1.3 mm fissure depth
	<p>IPS e.max® CAD for veneers</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness with staining processing technique: 0.6 mm minimum circular, 0.7 mm incisal - Minimum wall thickness with layering processing technique for cut-back veneers: 0.6 mm circular, 0.4 mm incisal
	<p>IPS e.max® CAD for inlays, onlays</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness: 1.0 mm for the isthmus width, the fissure depth and the cusp height (for onlays)

CERAMICS

FURTHER PROCESSING

(High-speed) crystallization

FINISHING

layering

- Layering (IPS e.max® Ceram) followed by staining and glazing

OR

full contoured

- Staining and glazing (IPS e.max® system)

SEATING

Adhesive cementation

(High-speed) crystallization

layering

- Layering (IPS e.max® Ceram) followed by staining and glazing

OR

full contoured

- Staining and glazing (IPS e.max® system)

Adhesive cementation




(High-speed) crystallization

full contoured

- Staining and glazing (IPS e.max® system)

Adhesive cementation

CADCAM WORKFLOW – CERAMICS

PICTURES	MATERIAL	RESTORATION DESIGN
	<p>IPS Empress® CAD for crowns</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness with staining processing technique: 2.0 mm incisal, 1.5 mm circular, 1.0 mm gingiva - Minimum wall thickness with layering processing technique for cut-back crowns: 0.5 mm incisal, 1.5 mm circular, 1.0 mm gingiva
	<p>IPS Empress® CAD for partial crowns</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness: 2.0 mm cusp height, 1.5 mm isthmus width and fissure depth, 1.5 mm circular, 1.0 mm gingiva
	<p>IPS Empress® CAD for veneers</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness with staining processing technique: 0.7 mm minimum circular and incisal for veneer, and 1.0 mm for incisal overlapped veneer, 0.6 mm gingiva - Minimum wall thickness with layering processing technique for cut-back veneers: 0.6 mm circular and gingiva, 0.5 mm incisal

CERAMICS

FURTHER PROCESSING

None

FINISHING

layering

- Layering followed by staining and glazing (IPS Empress® system)

OR

full contoured

- None
- OR Polishing
- OR Glazing (IPS Empress® system)
- OR Staining and glazing (IPS Empress® system)

SEATING

Adhesive cementation

None

full contoured

- None
- OR Polishing
- OR Glazing (IPS Empress® system)
- OR Staining and glazing (IPS Empress® system)

Adhesive cementation

None

layering

- Layering followed by staining and glazing (IPS Empress® system)




OR

full contoured

- None
- OR Polishing
- OR Glazing (IPS Empress® system)
- OR Staining and glazing (IPS Empress® system)

Adhesive cementation

CADCAM WORKFLOW – CERAMICS

PICTURES	MATERIAL	RESTORATION DESIGN
	<p>IPS Empress® CAD for inlays, onlays</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness: 1.5 mm for the isthmus width and the fissure depth, 2.0 mm for the cusp height (for onlays)
<p>*</p> 	<p>VITA Mark II for crowns</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness with staining processing technique: 2.0 mm incisal, 1.5 mm circular, 1.5 mm fissure depth for molar and premolar, 1.0 mm gingiva - Minimum wall thickness with layering processing technique for cut-back crowns: 1.0 mm incisal, 1.5 mm circular, 1.0 mm gingiva
<p>*</p> 	<p>VITA Mark II for partial crowns</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness: 2.0 mm cusp height, 1.5 mm isthmus width and fissure depth, 1.5 circular, 1.0 mm gingiva

CERAMICS

* VITA Zahnfabrik H. Rauter GmbH & Co. KG, 2011

FURTHER PROCESSING

FINISHING

SEATING

None

full contoured

- None
- OR Polishing
- OR Glazing (IPS Empress® system)
- OR Staining and glazing (IPS Empress® system)

Adhesive cementation

None

layering

- Layering followed by staining and glazing

OR

full contoured

- Polishing
- OR Glazing
- OR Staining and glazing

Adhesive cementation




None

full contoured

- Polishing
- OR Glazing
- OR Staining and glazing

Adhesive cementation

CADCAM WORKFLOW – CERAMICS

PICTURES	MATERIAL	RESTORATION DESIGN
<p>*</p> 	<p>VITA Mark II for veneers</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness with staining processing technique: 0.7 mm minimum circular and incisal for veneer, and 1.0 mm for incisal overlapped veneer, 0.6 mm gingiva - Minimum wall thickness with layering processing technique for cut-back veneers: 0.6 mm circular and gingiva, 0.5 mm incisal
<p>*</p> 	<p>VITA Mark II for inlays, onlays</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness: 1.5 mm for isthmus width and fissure depth, 2.0 mm for cusp height (for onlays)
<p>*</p> 	<p>VITA TriLuxe for crowns</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness with staining processing technique: 2.0 mm incisal, 1.5 mm circular, 1.5 mm fissure depth for molar and premolar, 1.0 mm gingiva - Minimum wall thickness with layering processing technique for cut-back crowns: 1.0 mm incisal, 1.5 mm circular, 1.0 mm gingiva

CERAMICS

* VITA Zahnfabrik H. Rauter GmbH & Co. KG, 2011

FURTHER PROCESSING

None

FINISHING

layering

- Layering followed by staining and glazing

OR

full contoured

- Polishing
- OR Glazing
- OR Staining and glazing

SEATING

Adhesive cementation

None

full contoured

- Polishing
- OR Glazing
- OR Staining and glazing

Adhesive cementation

None

layering

- Layering followed by staining and glazing




OR

full contoured

- Polishing
- OR Glazing
- OR Staining and glazing

Adhesive cementation

CADCAM WORKFLOW – CERAMICS

PICTURES	MATERIAL	RESTORATION DESIGN
<p>*</p> 	<p>VITA TriLuxe for partial crowns</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness: 2.0 mm cusp height, 1.5 mm isthmus width and fissure depth, 1.5 mm circular, 1.0 mm gingiva
<p>*</p> 	<p>VITA TriLuxe for veneers</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness with staining processing technique: 0.7 mm minimum circular and incisal for veneer, and 1.0 mm for incisal overlapped veneer, 0.6 mm gingiva - Minimum wall thickness with layering processing technique for cut-back veneers: 0.6 mm circular and gingiva, 0.5 mm incisal
<p>*</p> 	<p>VITA TriLuxe for inlays, onlays</p>	<p>single unit</p> <ul style="list-style-type: none"> - Minimum wall thickness: 1.5 mm for isthmus width and fissure depth, 2.0 mm for cusp height (for onlays)

CERAMICS

* VITA Zahnfabrik H. Rauter GmbH & Co. KG, 2011

FURTHER PROCESSING

FINISHING

SEATING

None

full contoured
- Polishing
- OR Glazing
- OR Staining and glazing

Adhesive cementation

None

layering
- Layering followed by staining and glazing

OR
full contoured
- Polishing
- OR Glazing
- OR Staining and glazing

Adhesive cementation

None

full contoured
- Polishing
- OR Glazing
- OR Staining and glazing

Adhesive cementation

CADCAM WORKFLOW – METALS

METALS

PICTURES



MATERIAL

Straumann® CARES® Abutment, titanium

RESTORATION DESIGN

CAD Design
- Supported by Straumann® CARES® Visual software

Wax-up Design
- Supported by Straumann® CARES® Visual software



ticon®

single unit
- Minimum wall thickness: 0.5 mm

OR

multi unit
- Minimum wall thickness: 0.6 mm
- Connector minimum cross-section: 5 mm²



coron® for conventional crowns and bridges

single unit
- Minimum wall thickness: 0.25 mm

OR

multi unit
- Minimum wall thickness: 0.25 mm
- Connector minimum cross-section: 5 mm²

FURTHER PROCESSING

Do not grind or polish the abutment

- If mechanical processing is necessary, use titanium carbide cutters; unidirectional grinding, moderate rotational speed and low grinding pressure are required;

- Welding is possible

If mechanical processing is necessary, use coarse and fine, sharp tungsten carbide cutters; unidirectional grinding, moderate rotational speed and low grinding pressure are required

FINISHING

layering

- The abutment cannot be directly layered
- Before cementing the crown or bridge, the screw opening is sealed off with wax or gutta-percha

layering

- Sandblast (Al_2O_3 , 110–150 μm , max. 2 bar) prior to layering
- Use bonding ceramics suitable for a CTE of $9.6 \times 10^{-6} \text{ K}^{-1}$

OR

full contoured

- Polishing with polishing compounds or polishing paste

layering

- Sandblast (Al_2O_3 , 50 μm , max. 2 bar) prior to layering
- Use bonding ceramics suitable for a CTE of $14.4 \times 10^{-6} \text{ K}^{-1}$, oxide firing is not necessary

OR

full contoured

- Polishing with polishing compounds or polishing paste

SEATING

Screw-retained on Straumann® Bone Level and Soft Tissue Level implants – Tighten screw with 35 Ncm

Conventional cementation

Conventional cementation

CADCAM WORKFLOW – METALS

METALS

PICTURES



MATERIAL

coron® for screw-retained
bridges

RESTORATION DESIGN

multi unit
- Design supported by Straumann® CARES® Visual software



coron® for screw-retained
bars

multi unit
- Design supported by Straumann® CARES® Visual software

FURTHER PROCESSING

- Do not grind or polish the interfaces of the bridge
- Protect the interfaces with a model analog during grinding

FINISHING

layering

- The bridge can be directly layered with veneering ceramics suitable for a CTE value of $14.4 \times 10^{-6} \text{ K}^{-1}$

OR

- Use acrylic veneering material
- Note: The screw head is covered with wax or gutta-percha and the screw channel is sealed off with a temporary veneering material (e.g. composite).

SEATING



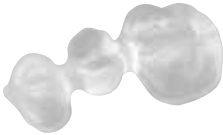
Screw-retained on Straumann® Soft Tissue Level implant – Tighten screw with 35 Ncm

- Do not grind or polish the interfaces of the bar
- Protect the interfaces with a model analog during grinding

The bar is delivered polished

Screw-retained on Straumann® Soft Tissue Level implant – Tighten screw with 35 Ncm

CADCAM WORKFLOW – POLYMERS

PICTURES	MATERIAL	RESTORATION DESIGN
	<p>Polyamide</p>	<p>single unit - Minimum wall thickness: 0.5 mm</p> <p>OR</p> <p>multi unit - Minimum wall thickness: 0.6 mm - Connector minimum cross-section: 9 mm²</p>
	<p>polycon[®] ae</p>	<p>single unit - Minimum wall thickness: 0.5 mm</p> <p>OR</p> <p>multi unit (up to 3 units) - Minimum wall thickness: 0.5 mm - Connector minimum cross-section: 9 mm²</p>
	<p>polycon[®] cast</p>	<p>single unit - Minimum wall thickness: 0.25 mm</p> <p>OR</p> <p>multi unit - Minimum wall thickness: 0.3 mm</p>

FURTHER PROCESSING

If mechanical processing is necessary, use carbide tools and a maximum rotational speed of 20 000 rpm

FINISHING

layering

- Polyamide frameworks must be layered before being placed into the patient's mouth; and sandblast (Al_2O_3 , 110–150 μm , max. 2 bar) prior to layering

SEATING

Cement for temporary restorations

If mechanical processing is necessary, adjust the framework with tungsten carbide cutters for plastics and a maximum rotational speed of 20 000 rpm

layering

- Abrade the surface with suitable agents (coarse small grinding stones or diamonds) prior to layering (PMMA-based materials to be used preferably, composites are also possible)

OR

full contoured

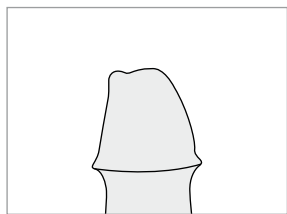
Cement for temporary restorations

If mechanical processing is necessary adjust the framework with tungsten carbide cutters for plastics and a maximum rotational speed of 20 000 rpm

- Wax up the desired restoration

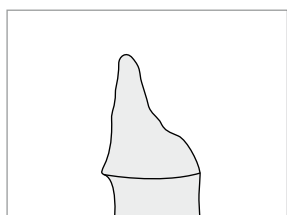
Not applicable

SETTING THE DIE PARAMETERS



Normal preparation

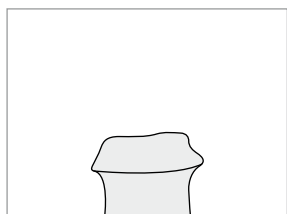
- No parameter adjustments necessary



Sharp incisal edge

- Increase **Correction of milling radius** to allow for the sharp edge

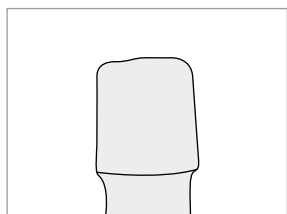
by approx. 10–20 %



Flat preparation, very conical preparation

- Increase **Beginning of spacer above PL** (up to max. 2/3 of die height) to achieve more friction
- Reduce **Cement gap** for a tighter fit

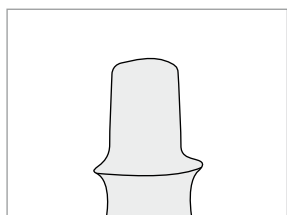
by approx. 0.01 mm



Preparation with parallel walls without shoulder

- Increase **Cement gap** to achieve a looser fit

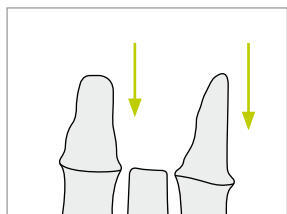
by approx. 0.01–0.02 mm



Preparation with parallel walls and shoulder

- Reduce **Beginning of spacer above PL** until the colored zones inside the copings decrease
- Increase **Cement gap** to achieve a looser fit

by approx. 0.01 mm



Parallel walls on bridges

- In bridge situations there may be opposing parallel walls with colored areas inside the copings
- Reduce **Beginning of spacer above PL** until the colored zones inside the copings decrease
- Increase **Cement gap** to achieve a looser fit

by approx. 0.01 mm

The information above applies to all materials and is provided to optimize the individual fit. We generally advise you to use default settings or to make only minor adjustments.

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