

Vectris®

INSTRUCTIONS FOR USE



CE 0123

ivoclar
vivadent:
technical

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Vectris®

PRODUCT INFORMATION



Vectris®

Metal-free, tooth-coloured, translucent frameworks follow today's trend in dentistry and offer advanced aesthetic and functional properties. The fibre reinforced framework material Vectris is ideally suited for the fabrication of FRC frameworks (Fibre Reinforced Composite).

FRC technology emulates the principles of natural fibre bonds, which are capable of withstanding the extreme stresses that occur in natural surroundings. FRC materials consist of elastic fibres that are embedded in an organic matrix. This type of structure enables modern dental technology to manufacture FRC frameworks.

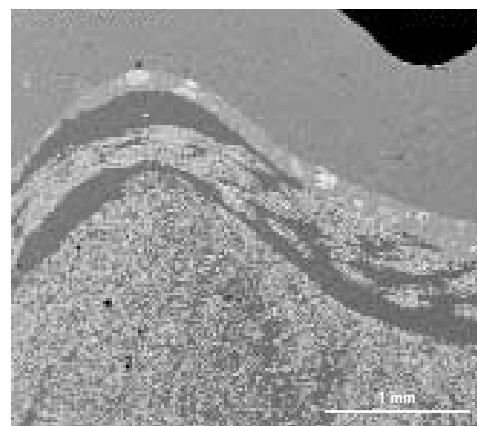
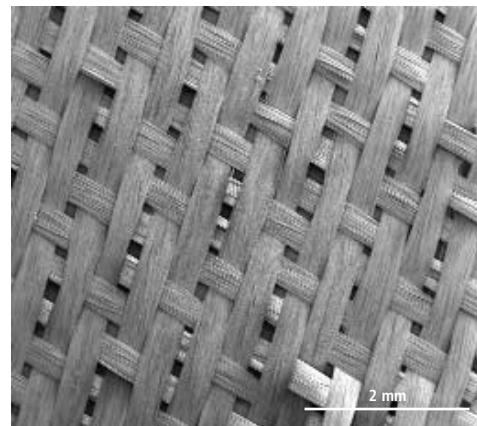
Since its introduction, Vectris has been accepted as an alternative to alloys, ceramics and zirconium oxide. Vectris has also proved suitable for reinforcing long-term temporaries. In addition, this innovative material enables dental practitioners to treat clinical cases, such as missing posterior teeth, with a tooth conserving solution, i.e. a Vectris-based inlay-retained bridge that is cemented in place using an adhesive cementation technique.

In response to the experience gathered over the past few years, the procedure for fabricating Vectris frameworks has been adjusted to allow for a functional framework design that closely resembles the accepted framework design used in the metal-ceramic technique.

Material

Vectris is a light-curing, translucent, tooth-coloured framework material. It is part of the category of fibre reinforced composites (FRC = Fibre Reinforced Composite).

Vectris consists of several layers of fibre wafers and uniaxially oriented fibre bundles embedded in an organic polymer matrix. This matrix assures a strong bond and homogeneously distributes the masticatory forces exerted on the veneering material throughout the framework.



We would like to thank Paolo Miceli from Italy for his valuable cooperation in developing the technique presented in these Instructions.

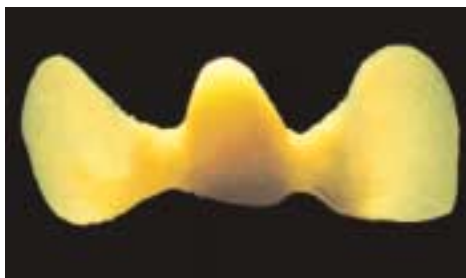
Physical properties

Vectris frameworks are characterized by an intimate stress-free fit and beneficial physical properties thanks to a special manufacturing process that combines the use of vacuum, pressure and light. The frameworks are automatically formed and polymerized in the VS1 framework former. Furthermore, a newly developed working technique – based on the Transil matrix material – facilitates the fabrication of cusp-supporting frameworks. The flexural strength of these frameworks is superior to that of previous FRC frameworks.

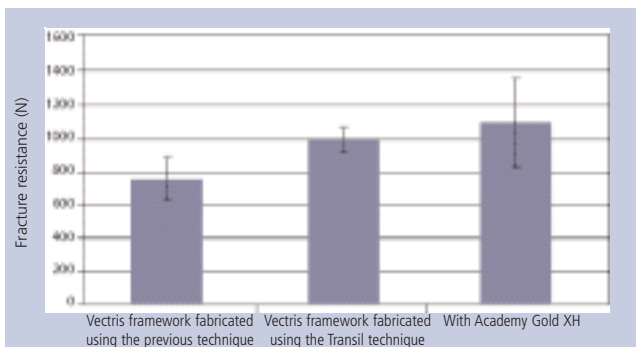


Aesthetic properties

The translucent, tooth-coloured fibre wafers permit the fabrication of highly aesthetic frameworks. Light can pass through the restoration without being blocked by opaque areas of the substructure. The advantage of the FRC framework is also apparent at the transition from the pink tissue colour to the white tooth colour. The grey margins typically associated with metal restorations are not present in Vectris-based reconstructions. The cervical area exhibits a lifelike aesthetic appearance.



Flexural strength of 3-unit posterior bridges using different framework materials and designs. All frameworks are veneered with SR Adoro.



Source: R&D, Ivoclar Vivadent AG, Schaan, 2003

PRODUCT SYSTEM

Compatibility with SR Adoro®



The metal-free Vectris frameworks can be veneered with SR Adoro. SR Adoro is a micro-filled, light/heat-curing veneering composite for fixed metal-supported and metal-free dental reconstructions. SR Adoro offers several advantages over glass-filled and hybrid composite materials as regards wear, polishability, handling, plaque resistance and surface finish. Furthermore, the formulation of SR Adoro assures a smooth, non-sticky consistency and endows the material with excellent modelling properties. SR Adoro demonstrates a high degree of translucency as the light refraction index of the matrix and microfiller are coordinated with each other. In addition, the foundation material of SR Adoro exhibits opalescent characteristics, which are equal to those of the natural tooth in every respect. These characteristics facilitate the fabrication of restorations that exhibit vibrant aesthetic properties. The SR Adoro Liner, which is adjusted to the Vectris framework material, establishes a strong bond with the conditioned Vectris fibres.



Compatibility with SR Ivocron®



SR Ivocron, a clinically proven, high-quality PMMA veneering material, is suitable for the veneering of metal-free long-term temporaries. By choosing the appropriate monomer, SR Ivocron can be processed in a cold-curing, heat-curing or pressure-heat curing technique. Consequently, the processing technique can be matched to the indication in question as well as to the technician's preferred working technique. SR Ivocron is available in Chromascop shades. The SR Ivocron system also includes specially coloured cervical materials and is therefore compatible with the SR Vivodent PE shade guide.

Compatibility with Ivoclar Vivadent apparatus

Vectris VS1 is a high performance, fully automated framework former that has been especially designed for the fabrication of metal-free crown and bridge frameworks. In the VS1, the frameworks are formed under pressure and then polymerized with light using a single program.



Compatibility with Ivoclar Vivadent cementation systems

Select one of the recommended cementation systems from the Ivoclar Vivadent range. An array of suitable composite resins are available for the adhesive cementation of metal-free restorations.



Adhesive cementation:

- Variolink II (CEM Kit Professional Set or CEM Kit Esthetic Cementation System)
- Multilink



Zirconium oxide temporary cements are suited for the cementation of long-term temporaries that are intended to remain in the oral cavity for a maximum duration of 12 months.

Indication

Adhesive cementation

- frameworks for anterior and posterior crowns
- frameworks for 3-unit anterior and posterior bridges in conjunction with Transil
- frameworks for 3-unit inlay-retained bridges in conjunction with Transil

Temporary cementation

Frameworks for long-term temporaries intended for a maximum duration of wear of 12 months.

Contraindication

- fabrication of bridge frameworks without using Transil
- fabrication of posterior Vectris frameworks without cusp support, if Transil is not used
- Vectris frameworks for bridges consisting of 4 or more units
- Vectris frameworks for inlay-retained bridges consisting of 4 or more units
- cantilever extension bridges
- more than 4 fixed, permanent Vectris units per quadrant
- rehabilitation of quadrants with Vectris frameworks without sufficient support by the remaining tooth structure
- conventional cementation of fixed Vectris restorations
- metal-free temporary restorations intended for a period of wear longer than 12 months
- patients with occlusal dysfunctions or parafunctions, such as bruxism, etc
- patients who practise insufficient oral hygiene
- inability to meet the manufacturer's preparation guidelines and recommended minimum layer thicknesses
- veneering of permanent Vectris-based restorations using composites that are not indicated for Vectris
- all uses not explicitly stated as indications by the manufacturer

QUESTIONS & ANSWERS

MODEL PREPARATION

What material should be used to prepare an impression that can be poured several times?

A silicone, polyether or similar material should be used for impression taking as these materials provide an optimum reproduction of detail. Additionally, the impressions taken with these materials can be poured several times.

Hydrocolloid and alginate materials are unsuitable and cannot be poured more than once.

What if the impression needs to be poured only once or if it has been damaged during the first pouring?

In this case, a duplicating impression (Double Take) is prepared with the help of the master model or a multi-section model. Then, the impression is poured with type IV stone.

Can the model be cut up into detachable segments before preparing the duplicating impression?

Ideally, the model is divided up into detachable segments after the duplicating impression has been prepared. Block out the cut lines with wax, if you have divided up the model first.

FRAMEWORK DESIGN

What is the minimum thickness for Vectris frameworks?

Single crowns and bridge abutments must exhibit a minimum framework thickness of at least 0.3 to 0.4 mm. The surfaces should not be ground after the vacuum-forming process has been completed.

What are the dimensions of the connector area in bridges and inlay-retained bridges?

The connector area between the bridge abutment and pontic should measure at least 3 x 3 mm in bridges and inlay-retained bridges.

What are the appropriate dimensions for the pontic/abutment contact area (occlusal and palatal/lingual) when the pontic is placed?

The pontic/abutment contact area should measure at least 3 x 3 mm and should be at least 0.3 mm thick. It is advisable to shape the pontic/abutment contact area in such a way that it supports the cusps. The pontic should reach at least 4 mm into the tooth for inlay-retained bridges.

What are the minimum dimensions of the inlay box for inlay-retained bridges?

The proximal aspect of the box should be no less than 3.5 mm and the occlusal depth no less than 2.5 mm. Observe the preparation guidelines.

SILICONE MATRIX

Can you wear latex gloves to process the matrix material?

Latex gloves inhibit the curing of Transil. Therefore, Transil should not come into direct or indirect contact with latex gloves. For the processing of Transil, use vinyl gloves.

Does Transil need to be used each and every time?

It is advisable to use Transil each time, as this material clearly improves the adaptation of the Vectris fibres to the model, provides a homogenous layer thickness and facilitates the working procedure. It is imperative to use Transil for the fabrication of bridges and inlay-retained bridges. The only cases that do not require the use of Transil are dies of posterior crowns with a flat occlusal preparation.

Can Transil be applied intraorally?

Transil must not be applied intraorally.

What characteristics should the exterior surface of the Transil matrix exhibit?

The exterior surface should be as smooth as possible so that it does not hinder the passage of light. Use the accompanying Vectris foil to smooth the exterior surface (prior to polymerization) or use a scalpel (after polymerization). Light becomes scattered on rough, uneven surfaces and, consequently, fails to penetrate the matrix effectively.

How thick should the Transil matrix be?

The matrix should be 3 to 6 mm thick. If it is thinner than that, it may become deformed. If the matrix is thicker, the Vectris material may not polymerize and cure properly.

Is it necessary to apply a Vectris foil if Transil is used?

It is imperative to apply a Vectris foil only if you do not use Transil. If you use Transil, you may employ the foil to smooth the exterior surface of the silicone matrix while it is still soft.

How long is the working time of Transil?

The working time is approximately 1 minute.

VACUUM-FORMING

What equipment is needed to process Vectris?

A Vectris VS1 framework former is required to process Vectris.

Can you cut slits into the Vectris Frame?

As Vectris Frame adapts very closely to the die because of the Transil matrix, it is not necessary to cut slits. In fact, cutting slits should be avoided, as the fibres would be severed in the process. This weakens the strength of the restoration.

What happens if the stipulated curing depths are not observed?

If the stipulated curing depths are not observed, the material may not be able to polymerize completely. Clinical failure may ensue.

Is it necessary to sandblast and condition the pontic before Vectris Frame is applied?

After the vacuum-forming process, any Vectris matrix material that has been squeezed downwards is carefully removed with an appropriate instrument. Then, the Vectris frame is directly applied on the inhibition layer of the pontic (avoid contamination). Next, the Transil matrix is placed on the die and the vacuum-forming process in the VS1 is started. The inhibition layer provides a bond to the Vectris Frame.

Do you ever sandblast and condition the pontic?

Only sandblast and condition the pontic if you have modified the pontic surfaces by grinding and removed the inhibition layer in the process.

CONDITIONING

What do I need to watch out for while carrying out the sandblasting (conditioning) process?

Use Al₂O₃ of a grit size of 80 to 100 microns (type 100) at a pressure of maximum 1 bar (14.5 psi).

How long is the reaction time of the wetting liquid?

Allow the liquid to react for 1 minute.

VENEERING

Can frameworks made of Vectris be veneered with composites that are not explicitly recommended by the manufacturer?

Fixed, adhesively cemented restorations made of Vectris must not be veneered with any other materials than those recommended by the manufacturer. Temporarily cemented long-term provisional restorations, which are intended to remain in the oral cavity for no longer than 12 months, may be veneered with other composites.

COMPOSITION

– Vectris Single

Dimethacrylate (48-50 wt%); glass fibres (44–46 wt%); silicon dioxide (5–6 wt%).
Additional ingredients: stabilizers, catalysts and pigments (<1 wt%)

– Vectris Pontic

Dimethacrylate (30–32 wt%); glass fibres (64–66 wt%); silicon dioxide (3–4 wt%).
Additional ingredients: stabilizers, catalysts and pigments (<1 wt%)

– Vectris Frame

Dimethacrylate (44-46 wt%); glass fibres (49–51 wt%); silicon dioxide (5–6 wt%).
Additional ingredients: stabilizers, catalysts and pigments (<1 wt%)

– Vectris Glue

Dimethacrylate (38–40 wt%); barium glass filler and silicon dioxide (59–61 wt%).
Additional ingredients: stabilizers, catalysts and pigments (< 1 wt%)

– Vectris Wetting Liquid

Silane in a water/alcohol solution

– SR Model Separator

Polyglycol, polyethylene glycol in a water/alcohol solution

– Transil

Vinyl polysiloxane, polymethylhydrogen siloxane, organic platinum complex and silicone dioxide

Warning

Vectris has been developed solely for use in dentistry. Prevent contact of the eyes and skin with uncured material (Vectris fibres). If the material comes into contact with the skin, rinse with copious amounts of water. Contact of the skin with uncured material may cause slight irritation and sensitization to methacrylate. Use suction equipment and a protective mask when grinding the material. Finishing the Vectris frameworks creates glass fibre dust, which may cause the skin to itch. Wearing suitable gloves is recommended. Thoroughly clean the skin that has come into contact with glass fibre dust. Many commercially available protective gloves do not provide effective protection against the sensitizing effect of methacrylates. Observe the danger signs and notes on the primary packaging and labels of the individual materials.

Interaction

Latex gloves have an adverse effect on the polymerization of polyvinyl siloxanes. For this reason, Transil must not come into direct or indirect contact with latex gloves. It is advisable to use vinyl gloves or to thoroughly wash and rinse the hands prior to using Transil.

General

Ignoring the stipulated contraindications or limitations on the use of the material (Questions & Answers) may result in the clinical failure of the restoration fabricated. Make sure to use original Ivoclar Vivadent materials and equipment when fabricating prosthetic reconstructions with Vectris.

Side effects

Side effects are not known to date. In rare cases, an allergic reaction may occur. Vectris must not be used if the patient is suspected or known to be allergic to any of the material's ingredients.

Storage


- Store unopened and opened packages of Vectris framework material at 18–25 °C (64–77 °F).
- Store opened Vectris packages in a place that is protected from light and use up the contents as soon as possible.
- Reseal Vectris Glue immediately after use (exposure to light may result in premature polymerization).
- Store Transil at 12–28 °C (54–82 °F).
- Observe the notes on the storage and dates of expiration of the individual packages.
- Do not use materials after the date of expiration.
- Keep out of the reach of children.

Note on the cleaning of Vectris restorations

Ultrasonic cleaning liquid is very aggressive. If used inappropriately, the topmost layer of the composite surface may dissolve. Do not use basic cleaning liquids that have a pH-value higher than 8.

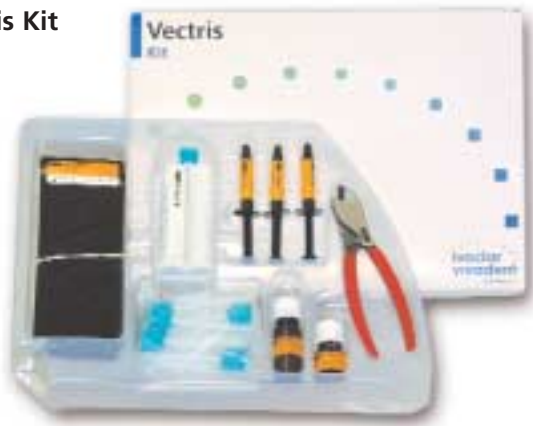
WORKING TIMES

Vectris materials are sensitive to light. The working time of the material depends on the layer thickness and the prevailing light conditions. The times listed below represent mean values at a light intensity of 3000 lux, which corresponds to the light encountered in a well-lit working space. Be aware of the maximum time limit when removing the Vectris framework materials from the packaging.

	Working time 
Vectris Single	2 minutes and 30 seconds
Vectris Pontic	3 minutes
Vectris Frame	2 minutes and 30 seconds
Vectris Glue	2 minutes and 30 seconds

DESCRIPTION OF ASSORTMENTS

Vectris Kit



Delivery form

Vectris Kit

- 4x4 Vectris Single
dimensions: diameter: 24 mm
- 2x2 Vectris Pontic
dimensions: length: 150 mm
- 4x4 Vectris Frame
dimensions: length: 40 mm; width: 25 mm
- 3x 2 ml Vectris Glue
- 1x 5 ml Vectris Wetting Liquid
- 1x 25 Vectris Foil
- 1x 10 ml Vectris Model Separator
- Vectris Pliers
- 2x 50 ml Transil Cartridge
- 12 Mixing Tips

Vectris Single



Vectris Single is suitable for fabricating frameworks for anterior and posterior crowns.

Vectris Pontic



Vectris Pontic is employed to create cusp-supporting pontics or to reinforce the cusps in single crowns. Vectris Pontic is characterized by high flexural strength. As the pontic is wrapped in foil, it can be easily measured out and cut to size. These strips, when cut, are fitted into the Transil matrix one by one.

Vectris Frame



Vectris Frame is wrapped around the cusp-supporting pontic and bridge abutments. This technique results in a bridge framework with having physical properties. The flexible structure of Vectris Frame evenly distributes the masticatory forces on the bridge and increases the torsional resistance.

Vectris Glue

Vectris Glue holds the Vectris material in place in the Transil matrix until the vacuum-forming process is carried out and serves as an additional aid to adaptation.



Vectris Wetting Liquid

The wetting liquid is applied to condition the fully completed surfaces of Vectris frameworks in order to achieve an effective bond to the following Vectris material and the SR Adoro Liner.



Vectris Model Separator

The Vectris Model Separator is suitable for separating working dies during the fabrication of metal-free restorations and adjoining stone surfaces during composite veneering.



Vectris Foil

The foil reduces the formation of an inhibited layer during the light-curing process and, consequently, enables the framework material to cure completely. The foil is only used for applications without Transil.



Vectris Pliers

These pliers are used to cut Vectris Pontic to size.



Transil

Transil is utilized to manufacture reproducible, cusp-supporting Vectris frameworks. This silicone enables users to design frameworks according to the classic metal-ceramic technique. Transil offers easy and fast handling properties. The disposable mixing tips are used to mix the two components to a homogeneous mixture. Cusp-supporting, anatomically designed Vectris frameworks provide increased strength and reduce the risk of delamination.



Dispenser

The dispenser is suitable for Ivoclar Vivadent materials that are mixed in a 1:1 ratio (e.g. Gingitech, Virtual, etc).



Vectris®

WORKING PROCEDURE



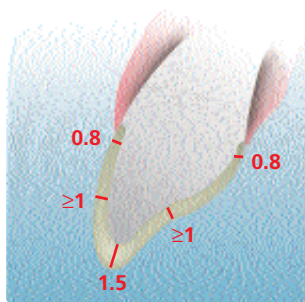
WORKING PROCEDURE

PREPARATION GUIDELINES AND MINIMUM REQUIREMENTS FOR VECTRIS FRAMEWORKS

As Vectris restorations are luted in place using an adhesive cementation method, a tooth-conserving preparation technique can be used.

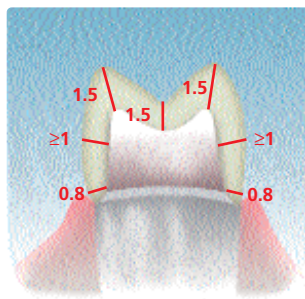
Anterior crowns and bridge abutments

Evenly reduce the anatomical shape and observe the stipulated minimum thickness. Prepare a 360° shoulder with rounded inner edges or a deep chamfer of at least 0.8 mm. For anterior crowns, the labial and/or palatal/lingual surfaces should be reduced by at least 1.0 mm. Reduce the incisal crown third by at least 1.5 mm. Prepare smooth, rounded transitions so that no internal line angles or edges are present.



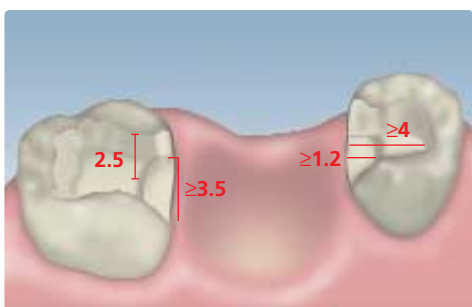
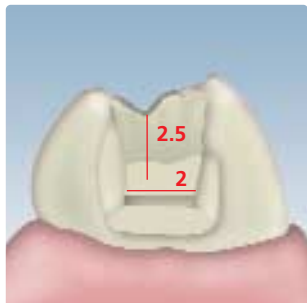
Posterior crowns and bridge abutments

Evenly reduce the anatomical shape and observe the stipulated minimum thickness. Prepare a 360° shoulder with rounded inner edges or a deep chamfer. For posterior crowns, reduce the labial and/or palatal/lingual surfaces by at least 1.0 mm. Reduce the occlusal crown third of posterior teeth by at least 1.5 mm. Prepare smooth, rounded transitions so that no internal line angles or edges are present.



Inlay-retained bridges

Provide a preparation depth of at least 2.5 mm and an isthmus width of at least 2 mm in the fissure area. The walls of the proximal box should be slightly flared. The bucco-lingual cavity width should be at least 3.5 mm in the proximal box. The proximocentral length should measure at least 4.0 mm, while the axial depth should be at least 1.2 mm. A defect- and tooth-oriented preparation method may be used to prepare the proximal shoulder. Ideally, a shoulder of at least 1.5 mm should be prepared. Round all internal angles to allow for an optimum fit. Do not locate preparation margins on surfaces involved in masticatory functions. Eliminate proximal contacts. Do not prepare slice-cut or feather edge margins.



Please refer to the SR Adoro Instructions for Use and the SR Adoro Clinical Guide for further information.

FRAMEWORK DESIGN

	Anterior crowns	Posterior crowns	Anterior bridges	Posterior bridges	Inlay-retained bridges
Duplicate die/model	✓*	✓*	✓	✓*	✓
Transil matrix	✓	✓*	✓	✓	✓
Framework thickness Vectris abutment	at least 0.3–0.4 mm	at least 0.3–0.4 mm	at least 0.3–0.4 mm	at least 0.3–0.4 mm	at least 0.3–0.4 mm
Joint face of the connector	–	–	at least 3 x 3 mm	at least 3 x 3 mm	at least 3 x 3 mm
Thickness of pontic/abutment contact layer	–	–	at least 0.3 mm	at least 0.3 mm	at least 0.3 mm
Length of the pontic/abutment contact layer	–	–	at least 3 mm	at least 3 mm	at least 3 mm
Long Pontic ribbon	–	–	1 x	1 x	1 x
Medium-sized Pontic ribbon	–	–	1 x	1 x	1 x
Short Pontic ribbon	–	✓*	2–3 x	3–5 x	3–5 x
Grit size of Al ₂ O ₃ jet medium	80–100 µm	80–100 µm	80–100 µm	80–100 µm	80–100 µm
Pressure	1 bar (14.5 psi)	1 bar (14.5 psi)	1 bar (14.5 psi)	1 bar (14.5 psi)	1 bar (14.5 psi)
Cleaning with air or steam	—	—	—	—	—
Minimum reaction time of the wetting liquid	1 min.	1 min.	1 min.	1 min.	1 min.

- ✓ indicated
- ✓* advisable
- contraindicated

The indicated numbers of Pontic strips are reference values and may differ depending on the situation in question.

It is essential to observe the following points when designing Vectris frameworks:

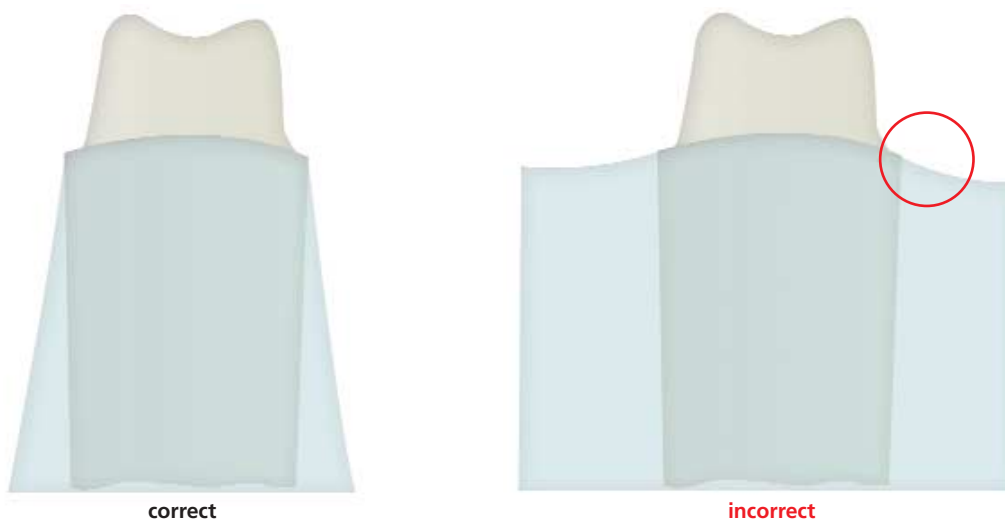
- 1. Designing the silicone matrix**
- 2. Designing the framework for single crowns**
 - 2.1 Anterior crowns
 - 2.2 Posterior crowns with a flat occlusal preparation
 - 2.3 Posterior crowns with a deep occlusal preparation
 - 2.4 Posterior crowns without supporting cusps
- 3. Designing the pontic**
 - 3.1 Pontic
 - 3.2 Joint face of the connector
 - 3.3 Pontic/abutment contact layer
- 4. Trimming the margins of Vectris frameworks**
- 5. Placing Vectris Pontic into the Transil matrix**

1. Designing the silicone matrix

If the silicone matrix (laboratory silicone and Transil) has been shaped correctly, the work required to finish the Vectris framework is reduced to a minimum.

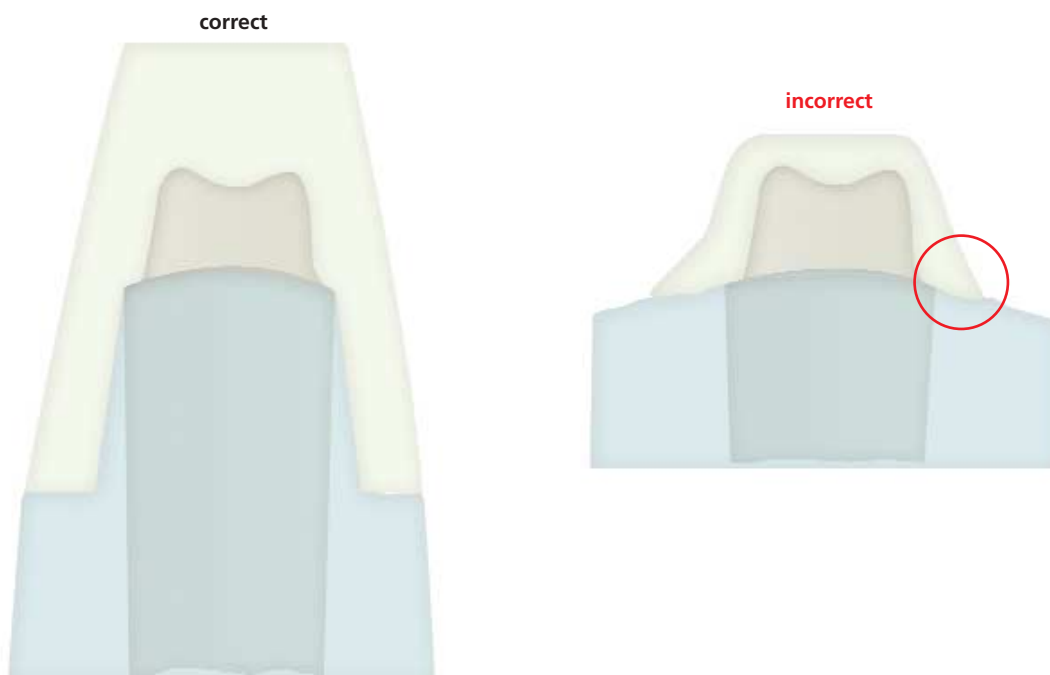
Single crowns without Transil

For single crowns, always adapt the laboratory silicone (Sil-Tech) to the die in a conical shape and adapt precisely to the preparation margin. This method ensures that the Vectris Single effectively adapts to the cervical area during the vacuum-forming process. If the silicone forms a shoulder, Vectris Single cannot adapt properly to the margin. The result is thick cervical margins. Such margins would need to be removed mechanically after the vacuum-forming process.



Single crowns with Transil

It is advisable to first apply a layer of laboratory silicone (Sil-Tech), form it into a conical shape and then cut a shoulder about 1 cm down from the preparation margin in order to support the following Transil matrix. If necessary, retention grooves may be cut into the silicone (Sil-Tech). Next, separate the laboratory silicone with a thin layer of Vaseline and apply Transil. The Transil matrix should be 3 to 6 mm thick to exhibit adequate stability.

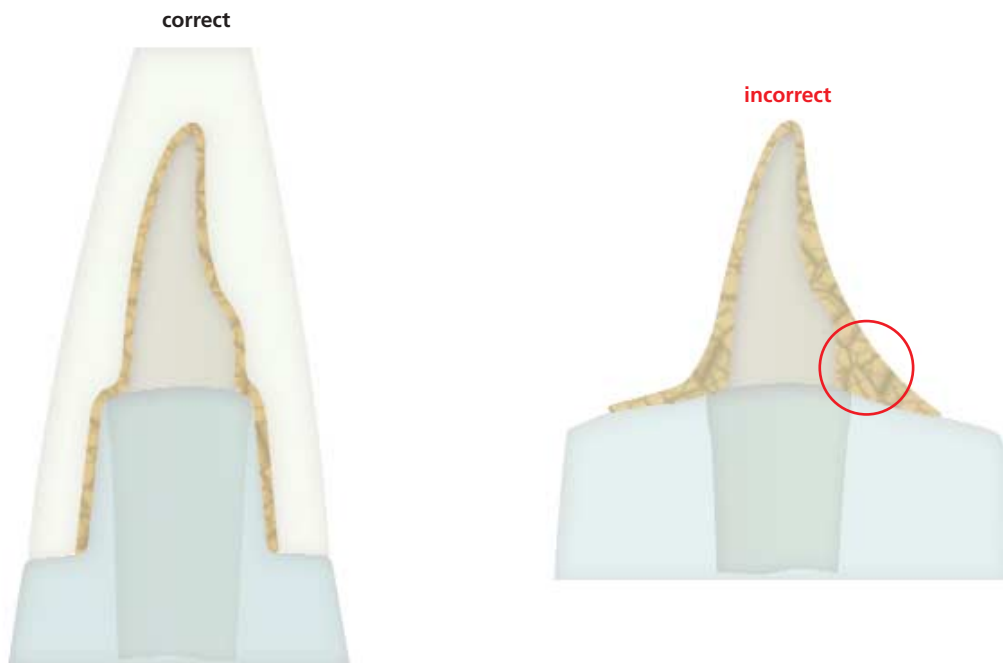


2. Designing the framework for single crowns

Whether Transil should be utilized to fabricate the framework for a single crown depends on the preparation. In principle, it is advisable to create a Transil matrix for every framework to facilitate the adaptation of the Vectris fibres to the die.

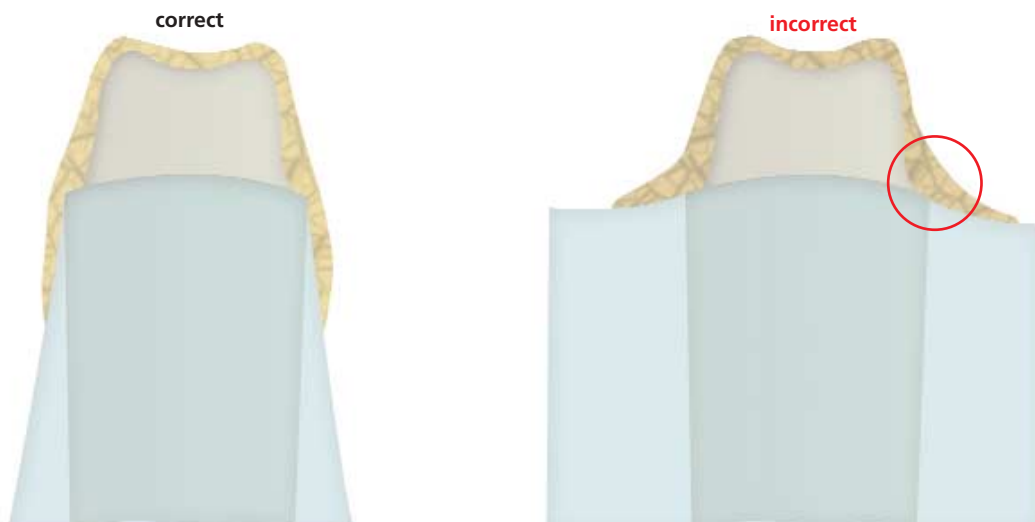
2.1 Anterior crowns

When the framework for an anterior crown is fabricated, it is advisable to use the Transil technique to facilitate the adaptation of Vectris Single to the die. The Transil technique helps to attain a consistent layer thickness on both the tooth surface and incisal edge of steep, sharply pointed anterior preparations in particular. Upon completion of the vacuum-forming process, merely trim the margins of the Transil matrix. Do not grind the surfaces.



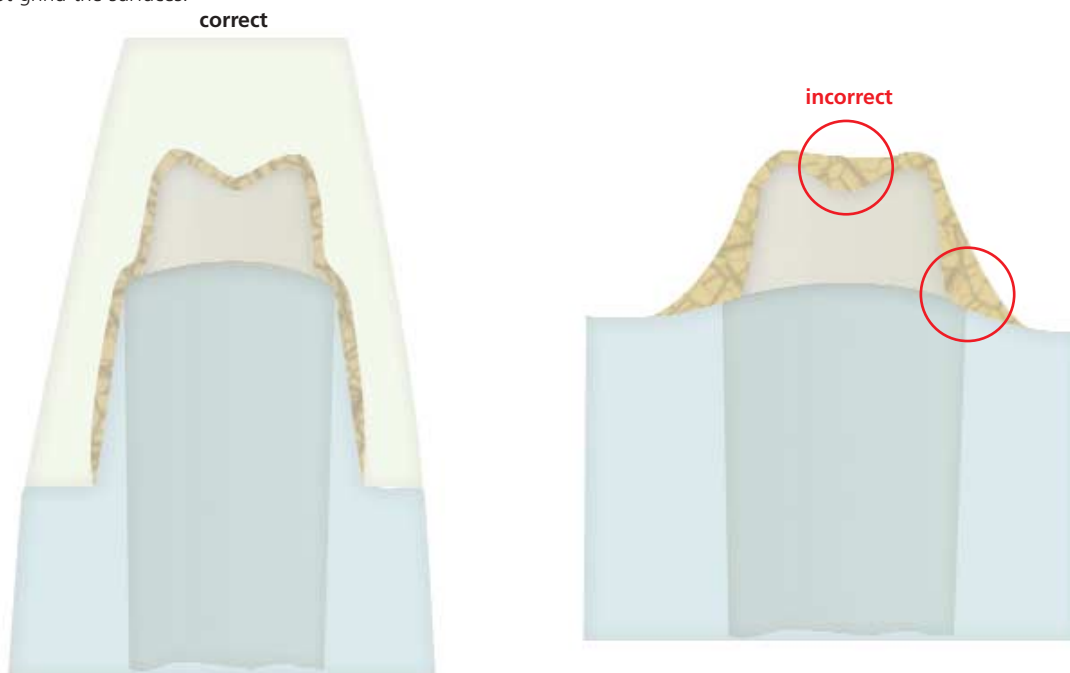
2.2 Posterior crowns with a flat occlusal preparation

If a flat occlusal preparation is present, it is not necessary to use Transil. With flat preparations, Vectris Single adequately adapts to the preparation margins during the vacuum-forming process and a consistent layer forms on the occlusal surface even without the use of Transil. Adapt the laboratory silicone as described above. After separating it with Vectris Model Separator, apply Vectris Glue and Vectris Single and then cover it with a Vectris foil. Start the vacuum-forming process in the Vectris VS1. Upon completion of the program, trim and taper the margins. Do not grind the surfaces.



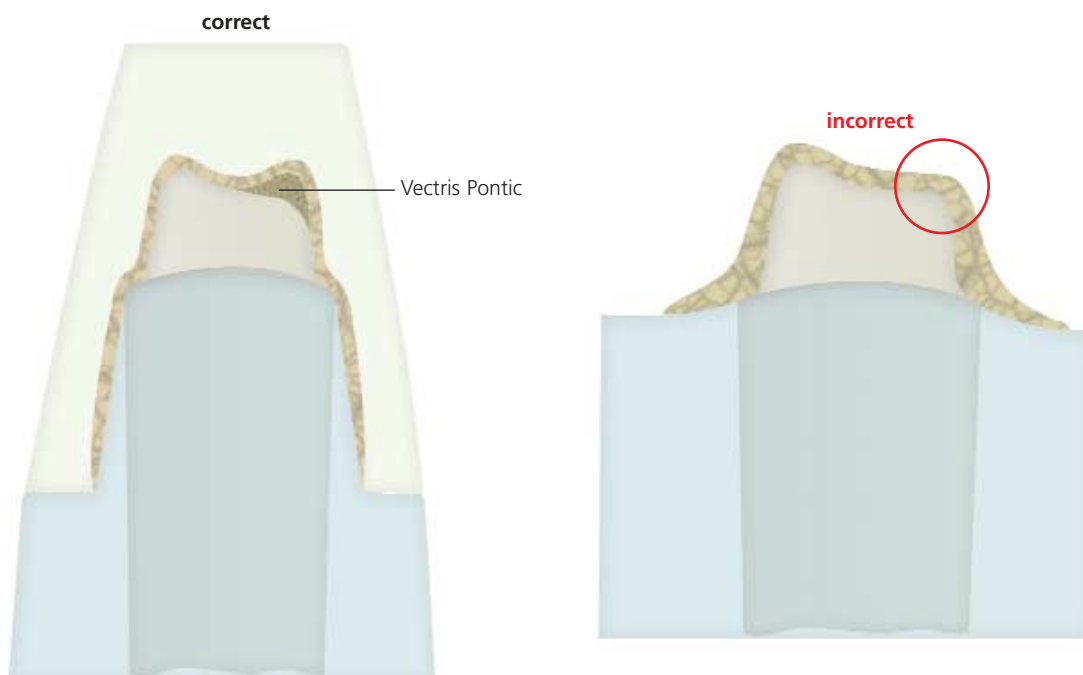
2.3 Posterior crowns with a deep occlusal preparation

It is imperative to use Transil if a deep occlusal preparation is present. The Transil technique ensures that the material consistently adapts to all surfaces of the die, including the occlusion. If Transil is not employed, the occlusal surface would become completely filled with Vectris matrix material and, consequently, would need to be reduced another time by grinding this material off. Upon completion of the vacuum-forming process, merely trim the margins of the Transil matrix. Do not grind the surfaces.



2.4 Posterior crowns without supporting cusps

It is imperative to use Transil if only limited remaining tooth structure is available (e.g. no cusp support). The missing tooth structure must be compensated by the framework and not by the veneering material. Contour the missing portions (e.g. cusp support) in wax in order to be able to apply the veneering material in a consistent layer thickness of approx. 1.5 mm at a later stage. Next, create a Transil matrix, fill up the missing portions with Vectris Pontic and vacuum-form in the Vectris unit. Then, apply Vectris Single and again vacuum-form in the Vectris unit to complete the framework. This method allows for the fabrication of shape- and cusp-supporting frameworks. Furthermore, the consistent thickness of the veneering material facilitates the creation of a harmonious shade effect and provides a maximum level of beauty and function.

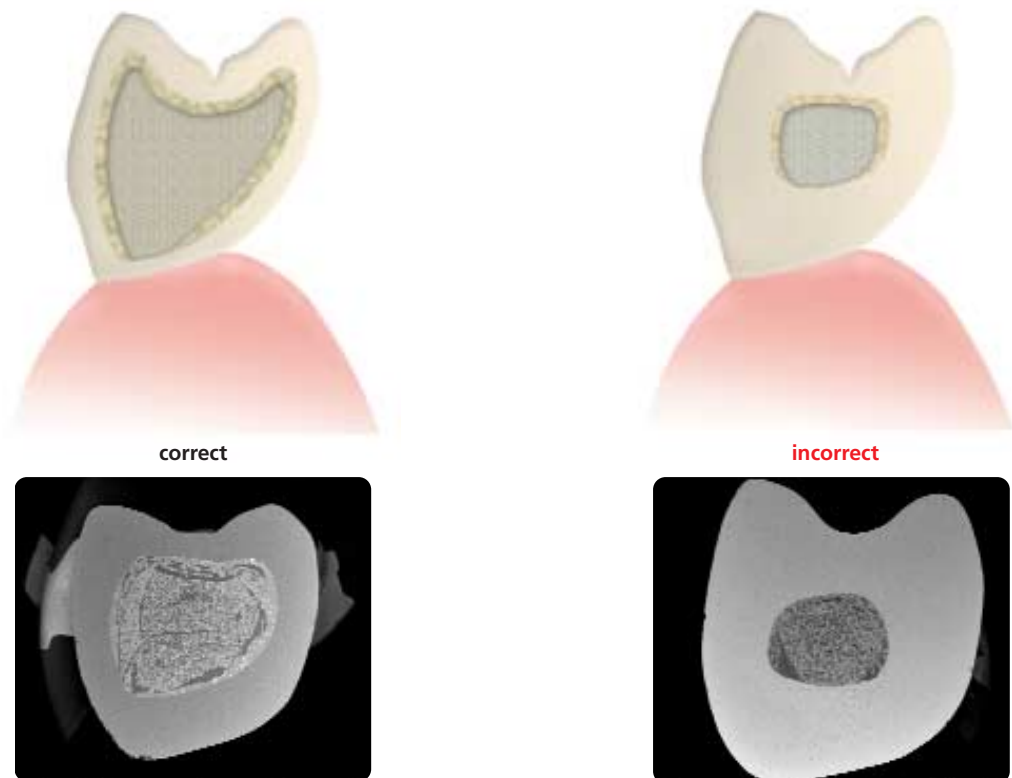


3. Designing the pontic

The pontic, connector and pontic/abutment contact surface are first contoured in wax and/or resin (Light Tray) and then a silicone matrix is fabricated.

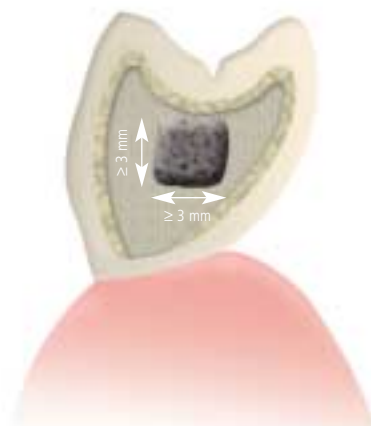
3.1 Pontic

Pontics are designed taking aesthetic and functional aspects as well as oral hygiene into consideration. The pontic must not be larger than 10 mm in width and height to ensure that the material cures to an adequate depth. As a rule, the pontic should be designed in such a way that it supports the cusps to ensure that the masticatory forces are evenly distributed throughout the framework and to provide adequate support of the veneering material. Furthermore, cusp-supporting pontics reduce the risk of delamination.



3.2 Joint face of the connector

The design of the interdental connector between the pontic and the bridge abutment has a considerable effect on the stability and long-term clinical success of the restoration after it has been adhesively cemented in place. The dimension of the interdental connector should measure at least 3 x 3 mm, i.e. the surface of the connector should be at least 9 mm².



3.3 Pontic/abutment contact layer

The pontic/abutment contact layer has a significant effect on the stability and torsional resistance of the bridgework. The contact layer is designed according to the space available. For full coverage bridges, the contact layer should measure at least 3 x 3 mm and be 0.3 mm thick. If enough space is available, it is advisable to contour a cusp-supporting pontic/abutment contact layer in wax in order to attain a consistent layer thickness of approx. 1.5 mm in the veneering material. For inlay-retained bridges, the pontic/abutment contact layer should be at least 0.3 mm thick and 4 mm long.

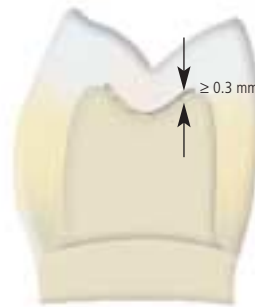
Ideal space available

Limited space available

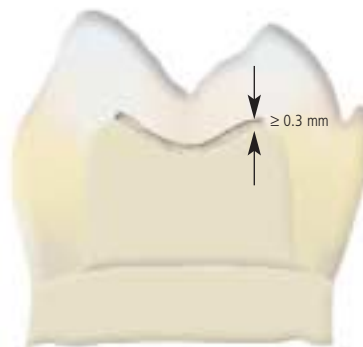
Pontic/abutment contact area on anterior teeth



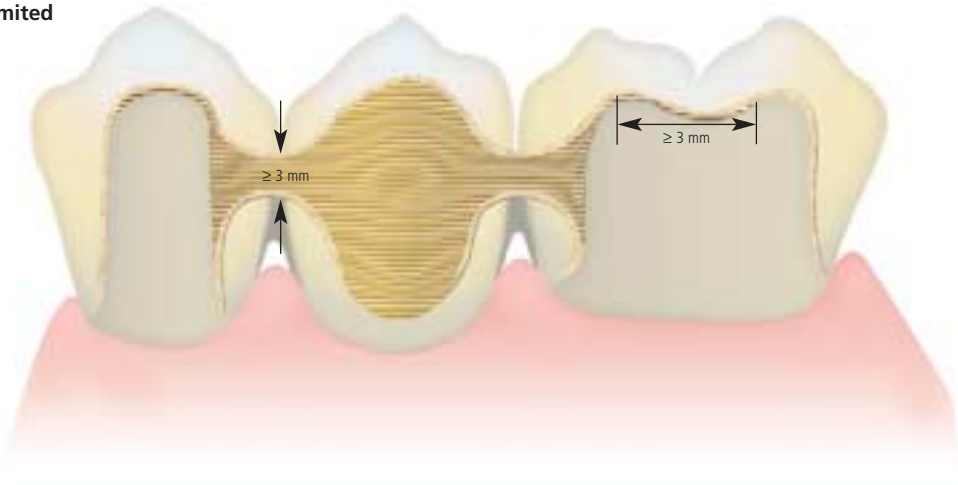
Pontic/abutment contact area on premolars



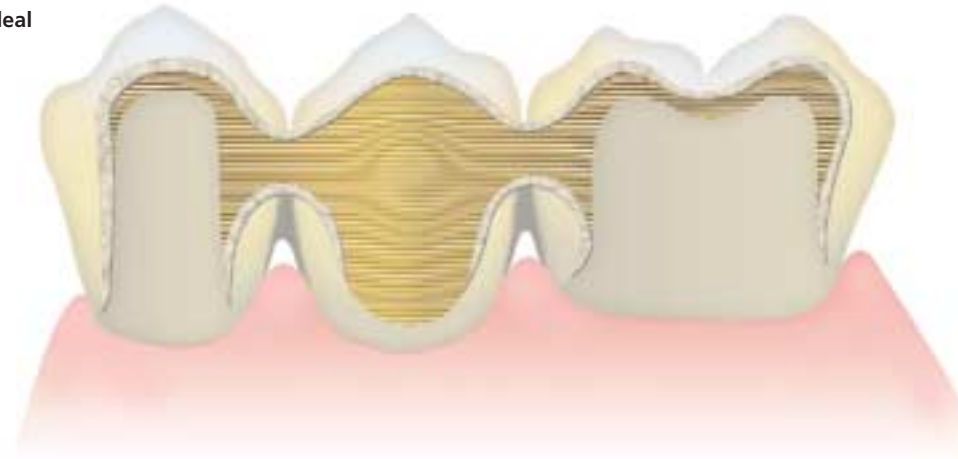
Pontic/abutment contact area on molars



Bridge design if limited space is available

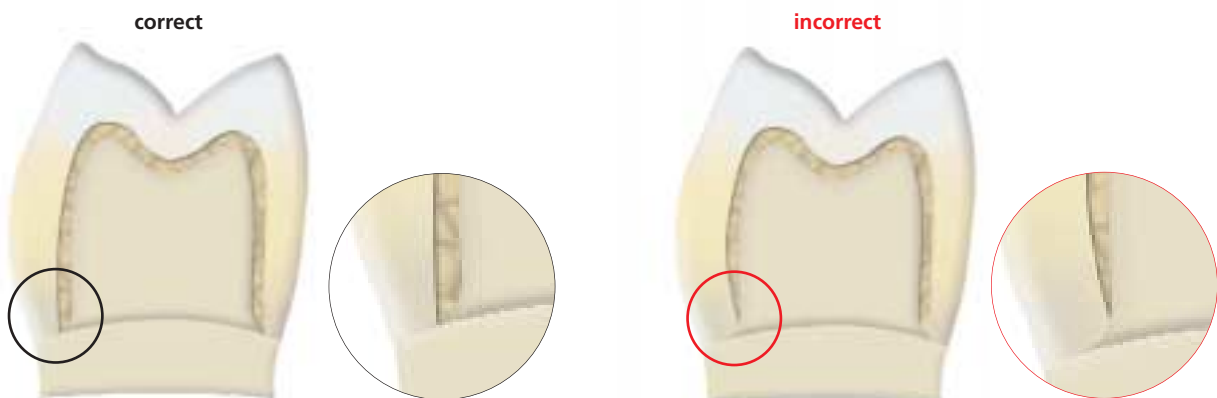


Bridge design if ideal space is available



4. Trimming the margins of Vectris frameworks

After completing the vacuum-forming process, trim the margins of the Vectris restoration by 0.5 mm to the inner edge of the chamfer or shoulder preparation. Make sure that the framework continues to be supported by the die after trimming the margins.



5. Placing Vectris Pontic into the Transil matrix

The Transil matrix is filled with Vectris Pontic material according to the schematic below. Basically the schematic applies to all pontics. It may be necessary to trim the length of the individual Vectris Pontic strips to match the dimensions of the pontic in question. Vectris Pontic strips in three different lengths are placed to fill the pontic:

- short Vectris Pontic strips are used for creating cusp tips, occlusal surfaces and the base surface of the pontics
- medium-size Vectris Pontic strips are used for the portion between bridge abutments
- long Vectris Pontic ropes are used for connecting the bridge abutments and establishing the pontic/abutment contact surfaces

The long Vectris Pontic strip is the most important part as it endows the pontic and the resultant bridgework with its actual strength. Always employ a long Vectris Pontic strip to connect the two bridge abutments. Use a medium-size Vectris Pontic strip to establish a connector area of 3 x 3 mm between the bridge abutments. It is advisable to place the Vectris Pontic strips in the following order:

1. Slightly moisten the cavity of the Transil matrix with Vectris Glue
2. ● Insert short Vectris Pontic strips to create a cusp-supporting structure (if necessary, place short strips on the bridge abutments as well)
3. ● Place a long Vectris Pontic strip to connect the bridge abutments
4. ● Insert a medium-size Vectris Pontic strip to establish a connector area of 3 x 3 mm between the bridge abutments
5. ● Place short Pontic strips and contour the base surface of the pontic



CEMENTATION

Adhesive cementation of metal-free restorations results in a tight bond between the restoration and prepared tooth. Such a bond enhances the fracture resistance of the restoration. The translucent shade of the adhesive and the virtually invisible margins promote the aesthetic appearance of the restoration. The following materials are suitable for the adhesive cementation method:

- Variolink II (CEM Kit Professional Set or CEM Kit Esthetic Cementation System)
- Multilink



Temporary cementation

Zinc oxide containing temporary cements are suitable for metal-free long-term temporaries that are intended to remain in the oral cavity for a maximum duration of 12 months.

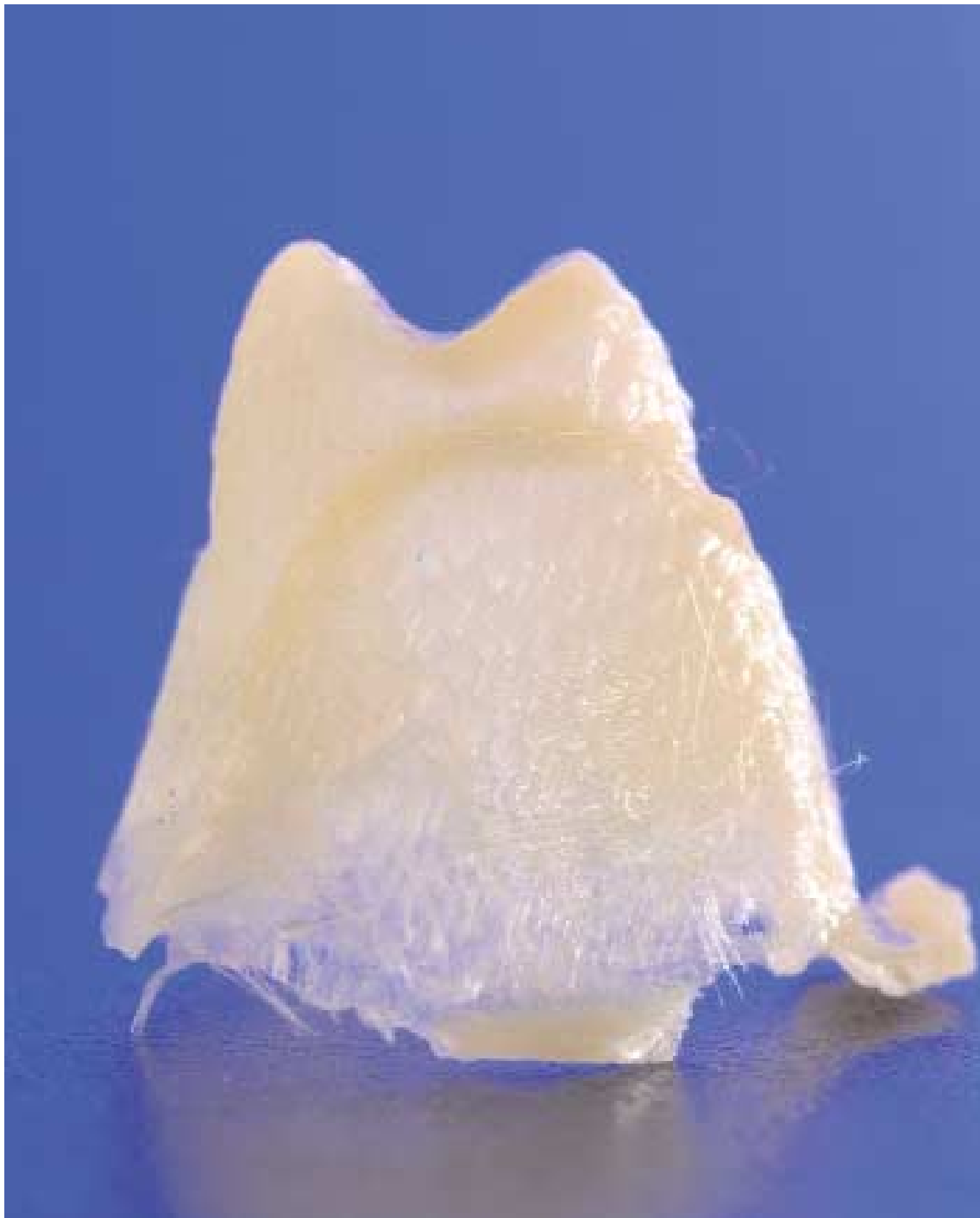
Preparing the restoration for cementation

The contact surfaces of the restoration are roughened with type 100 Al₂O₃ at 1 bar (14.5 psi) pressure in the laboratory to promote chemical bonding with the luting composite. Following the try-in and subsequent cleaning, the contact surfaces are again roughened using a 25 µm finishing diamond. This step is carried out immediately before adhesive cementation. Finally the surfaces are silanized (e.g. with Monobond S) to enable a chemical bond.

Please refer to the SR Adoro Clinical Guide for further information on appropriate cementation techniques.

Vectris®

SINGLE CROWNS



SINGLE CROWNS

VECTRIS SINGLE CROWNS

Starting situation

Fabricate a master model or a model with detachable segments on the basis of the impression in the usual manner. Expose and mark the preparation margin. It is advisable to apply a sealer to harden the surface and to protect the stone die. The application of the sealer must not cause any changes in the dimension of the stone die. Subsequently, a spacer can be applied, depending on the customary working method.



Fabricate a model with detachable segments.



Mark the preparation margins...



...and apply a sealer to harden the surface.



Completed working die.

Tip:

It is advisable to pour a duplicate die to carry out the vacuum-forming process, as the sharply pointed incisal edges may cause delamination of the stone die.

Working method for different preparations

The following instructions describe the procedure for a flat occlusal preparation (Version A) and a deep occlusal preparation (Version B).

Version A

Flat occlusal preparation



Version B

Deep occlusal preparation



Fabricating the silicone matrix

Silicone matrix made of laboratory silicone (Sil-Tech)

Remove the individual dies from the model. Carefully cover the die with laboratory silicone and adapt the material exactly to the preparation margin. Prepare a shoulder approx. 1 cm down from the preparation margin to facilitate the repositioning of the Transil matrix.



Fit the laboratory silicone to the die in a conical shape.



Fit the laboratory silicone to the die in a conical shape and prepare a shoulder approx. 1 cm down from the preparation margin.

Silicone matrix made of Transil

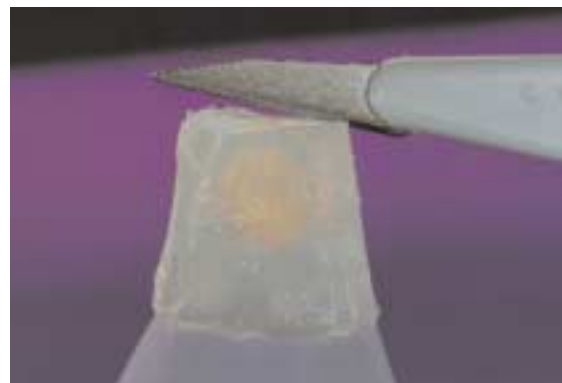
If a deep occlusal preparation (**Version B**) is present, prepare a second matrix using **Transil** (transparent silicone). Separate the laboratory silicone with a thin coat of Vaseline to prevent the two silicone materials from sticking to each other. Insert the Transil cartridge into the dispenser, mount a new mixing tip and apply Transil to the die in a single step. Transil should be applied in a layer thickness of approx. 3 to 6 mm to obtain sufficient stability. The setting reaction may be accelerated by using a hot air dryer. After the material has set, smooth out the exterior surface to enhance the passage of light. Subsequently, remove the Transil matrix from the die.

Tip:

Smooth out the exterior surface with a Vectris foil while the material is still soft. Mark the laboratory silicone and Transil with a waterproof pen to obtain an exact repositioning of the matrices.



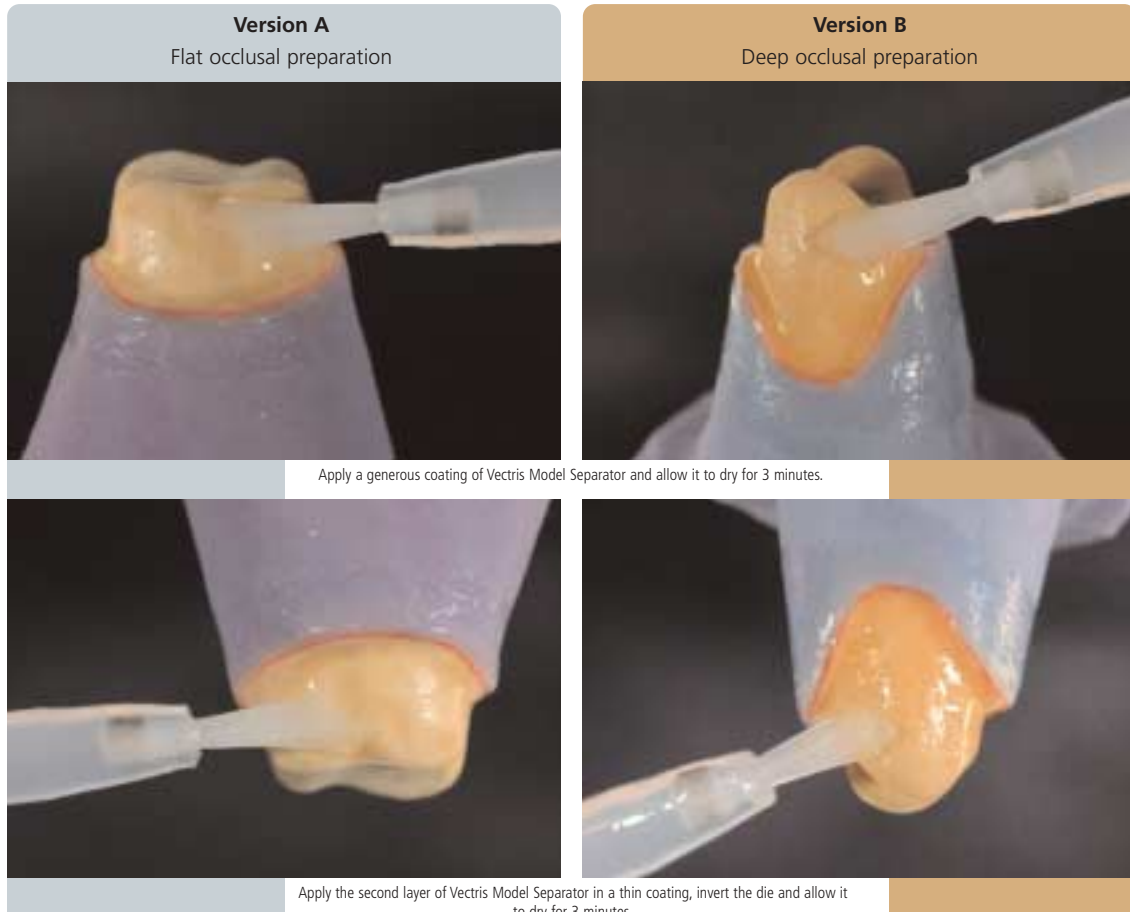
Apply a thin coat of Vaseline to the laboratory silicone and then apply Transil.



Smooth out the exterior surface of the Transil matrix with a scalpel.

Sealing the dies

Vectris Model Separator is applied in two coats. Apply the first layer slightly more generously than the second one and make sure to fully cover all areas of the die. Watch out for sharp edges in particular. Allow the first layer to react for 3 minutes. Subsequently, apply the second layer of Vectris Model Separator in a thin coating, invert the die and allow to dry for 3 minutes.



Preparing the die for the vacuum-forming process

Before removing the Vectris Single from the packaging, adjust the height of the model carrier in the vacuum former so that the distance between the model and the upper rim of the container is 2 to max. 3 cm. If necessary, further adjust the height by means of the spacer rings. Finally, check the position of the membrane.

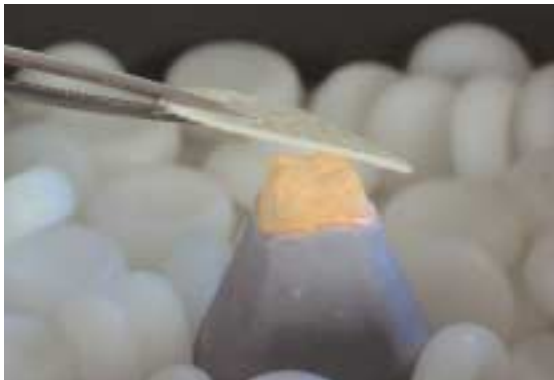


Vacuum-forming the Vectris Single – Version A

Application of Vectris in the **Vectris VS1** framework former: Position the die in the framework former, apply a small amount of Vectris Glue to the die to keep Vectris Single in place while it is on the die. Remove the Vectris Single from the light-protected package, place Vectris Single on the die using tweezers and lightly press it into place. Next, cover the Vectris Single with a Vectris foil to reduce the inhibited layer. Then, close the Vectris VS1 unit and start Program 1 to commence the vacuum-forming and polymerization process. The program takes 10 minutes to complete.



Position the die in the Vectris VS1 unit; apply a small amount of Vectris Glue to the die.



Remove the Vectris Single from the light-protected package; place it on the die with tweezers and lightly press it into place.



Cover with Vectris foil; start Program 1 for the vacuum-forming and polymerization process.

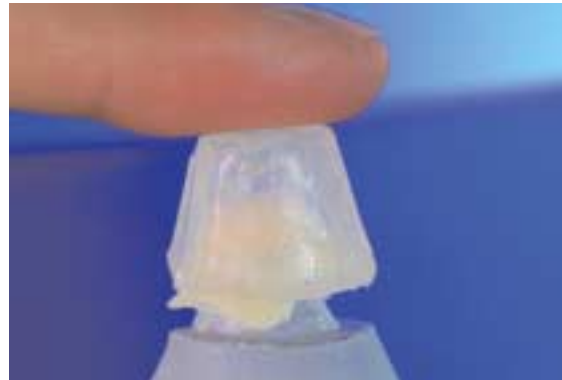


Vacuum-forming the Vectris Single – Version B

Application of Vectris outside the **Vectris VS1** framework former: Remove the Vectris Single from the light-protected package and place it on the die with tweezers. Place the Transil matrix on the Vectris Single in the correct position, push it downwards and mount the die on the model carrier of the Vectris VS1.



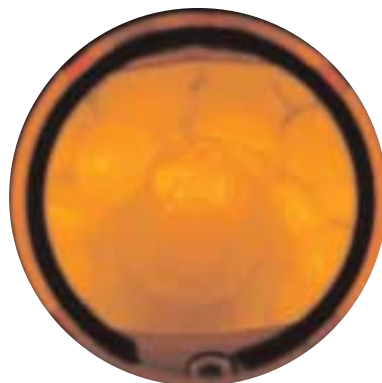
Remove the Vectris Single from the light-protected package and place it on the sealed die.



Place the Transil matrix over the Vectris Single and press it downwards.

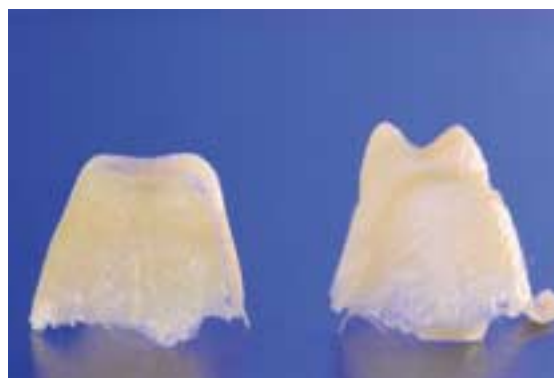
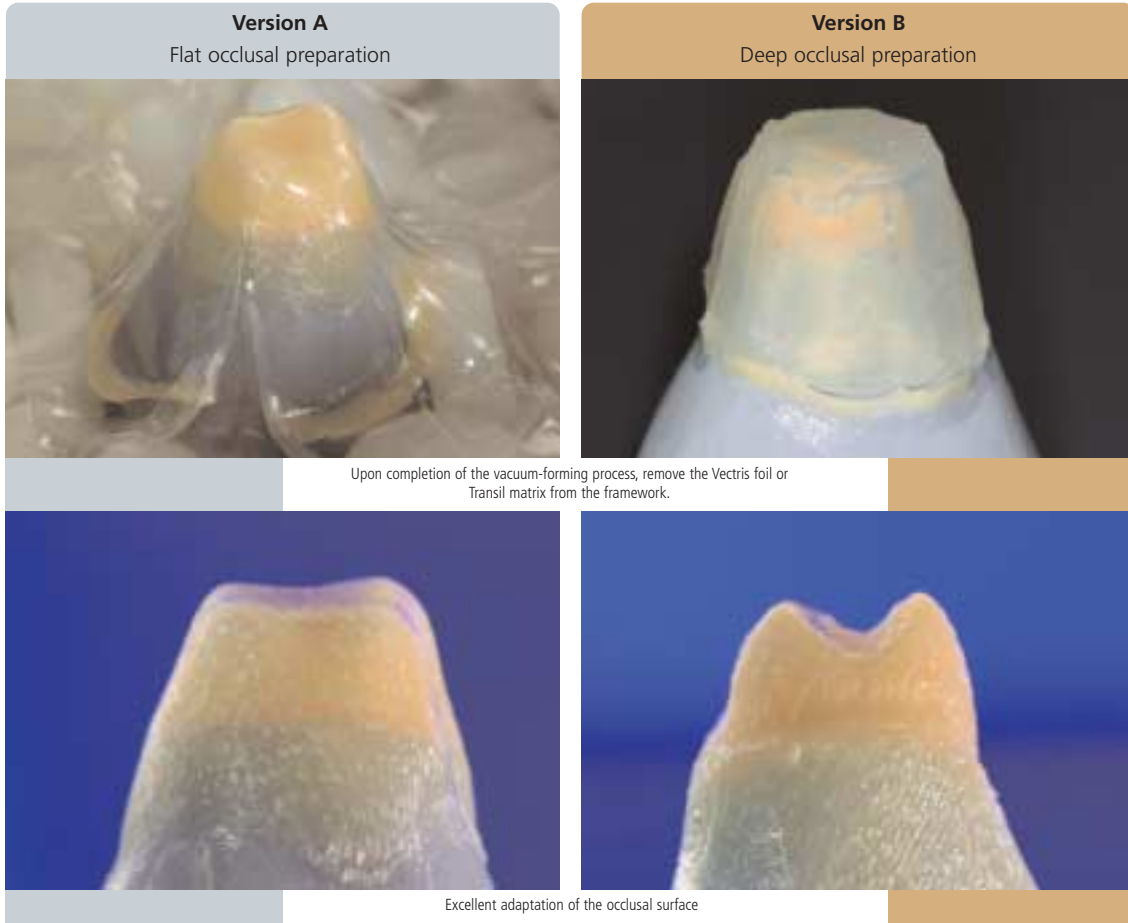


Position the die with the Transil matrix in the VS1. Start the vacuum-forming and polymerization process. The program takes 10 minutes to complete.



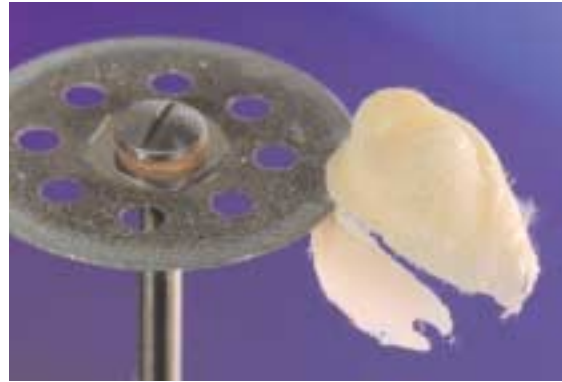
Removing the framework from the die

After completion of the vacuum-forming process, first remove the Vectris foil or Transil matrix from the framework and then carefully remove the framework from the die while it is still warm. If the restoration is removed at a later stage, it is advisable to warm up the stone die by means of water vapor. The framework exhibits an even layer thickness after it has been removed from the die.



Finishing

Remove large areas of excess material with a separating disk and then trim the remaining excess material with cross-cut tungsten carbide burs. It is advisable to use a slow rotational speed and light pressure. **The thickness of the walls, which is 0.3 to 0.4 mm after the vacuum-forming process, must not be reduced by grinding.** Trim the margins by approx. 0.5 mm to the inner edge of the chamfer or shoulder preparation. Make sure that the framework continues to be supported by the die after having trimmed the margins.



Remove large pieces of excess material with a separating disk.



Trim the margins by approx. 0.5 mm using a tungsten carbide bur.

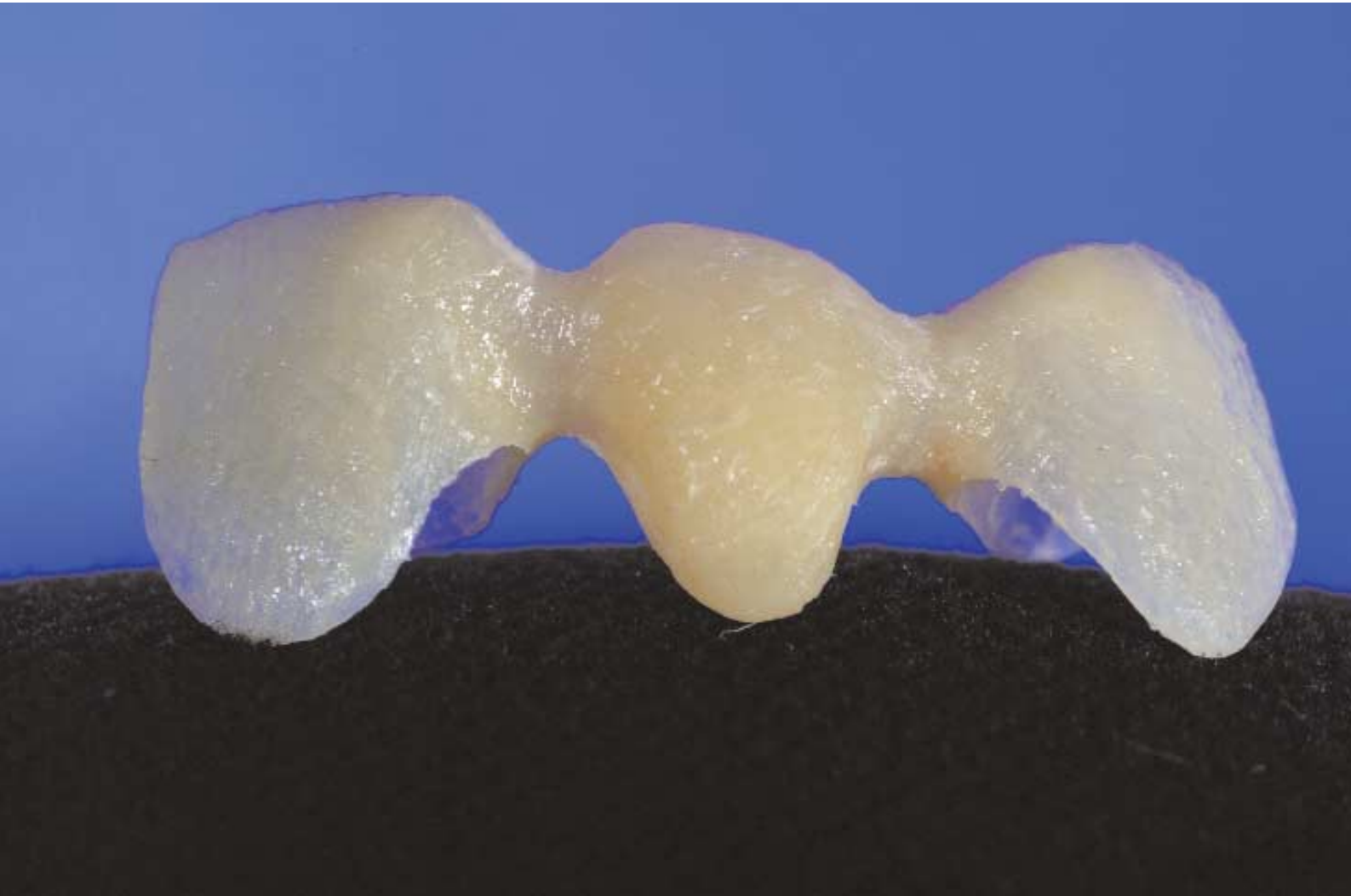
The result



The SR Adoro Instructions for Use provide detailed information on the conditioning and veneering of Vectris frameworks.

Vectris®

3-UNIT ANTERIOR BRIDGES



3-UNIT ANTERIOR BRIDGES

3-UNIT ANTERIOR BRIDGES

The following pages provide instructions on how to fabricate the framework of a 3-unit Vectris bridge (full crown bridge) for the anterior region. For posterior bridges, the Vectris material is placed in the Transil matrix in a similar technique as for 3-unit inlay-retained bridges. Further information that is relevant to the fabrication of posterior bridges can be found on page 20 onwards.

Starting situation

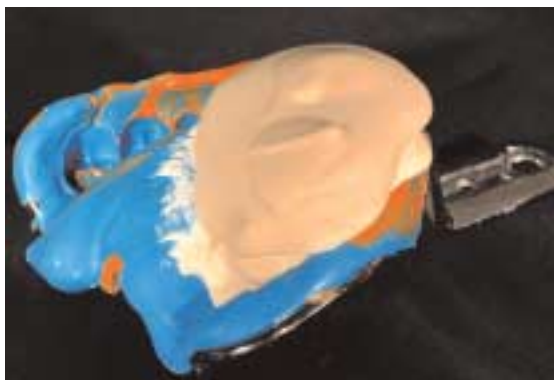
Fabricate a master model or a model with detachable segments on the basis of the impression in the usual manner. Expose and mark the preparation margin. It is advisable to apply a sealer to harden the surface and to protect the stone die from abrasion. The application of the sealer must not cause any changes in the dimension of the stone die. Subsequently, a spacer can be applied, if this is the customary method of working.



Fabricate a model with detachable segments and apply a sealer.

Fabricating the duplicate model for the vacuum-forming process

Bridge constructions for the anterior region in particular often involve sharply pointed incisal edges. As these edges are prone to delamination during the vacuum-forming process, a duplicate model has to be prepared. The master model is utilized to contour the pontic (including the pontic/abutment contact layer), to check the fit of the restoration and to veneer the framework. Pour the original impression a second time and create a small duplicate model for the vacuum-forming process. Make sure to eliminate undercut areas to facilitate the subsequent application of the Transil matrix.



Fabricate a duplicate model from the original impression and eliminate undercut areas.

- A silicone, polyether or similar material should be used for impression taking as these materials provide an optimum reproduction of detail. Additionally, the impressions taken with these materials can be poured several times.
- Hydrocolloid and alginate materials are unsuitable and, besides, cannot be poured more than once.

Contouring the pontic

First, seal the dies with a wax/stone or resin/stone separator. Form the pontic on the master model in a shape- and cusp-supporting manner similar to the metal-ceramic technique, using wax or composite (Light Tray). This step helps to obtain a homogeneous layer thickness in the following veneering material. The palatal or lingual abutment/pontic contact layers should exhibit the following dimensions:

- surface: at least 3 x 3 mm
- thickness: at least 0.3 mm
- joint face of the connector: at least 3 x 3 mm

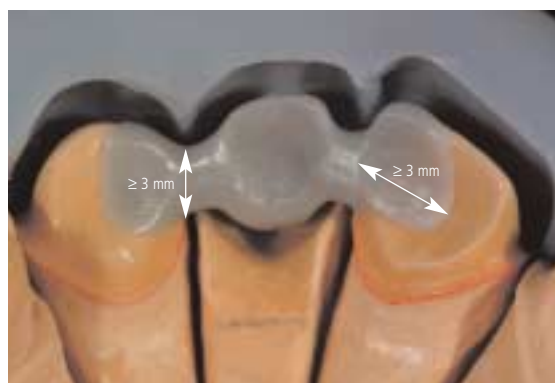
It is advisable to contour the pontic insert in a shape- and cusp-supporting design, depending on the space available. Check the pattern in the articulator and adjust as necessary. If a full wax-up has been prepared, the wax rim may be used for checking purposes.

Tip:

The pontic can be contoured using a tray material (Light Tray) and adjusted by grinding after completion of the polymerization process.



Contour the pontic on the master model.



Check as to whether the minimum requirements are met by means of the wax rim.



Conduct a final check in the articulator.

Transferring the pontic to the duplicate model

Transfer the fully contoured pontic to the duplicate model and use a small amount of wax to hold it in place. Block out the basal surface of the pontic using laboratory silicone (Sil-Tech) in order to ensure that the following Transil matrix can be removed easily. It is important to block out this area since it will determine the way in which the Vectris Frame wraps around the Vectris Pontic. The portion of the basal surface that is in contact with the laboratory silicone should not be too wide. The following instructions should be observed when transferring the pontic to the duplicate model:

1. Reduce the basal surface of the duplicate model and prepare retention.
2. Transfer the pontic to the duplicate model and hold it in place with a small amount of wax.
3. Block out the reduced basal surface using laboratory silicone (Sil-Tech).
4. Reduce the blocked out area by means of a scalpel or bur.



Reduce the basal surface of the duplicate model and transfer the pontic to the model.



Block out the basal reduction with laboratory silicone and then reduce the blocked out area.



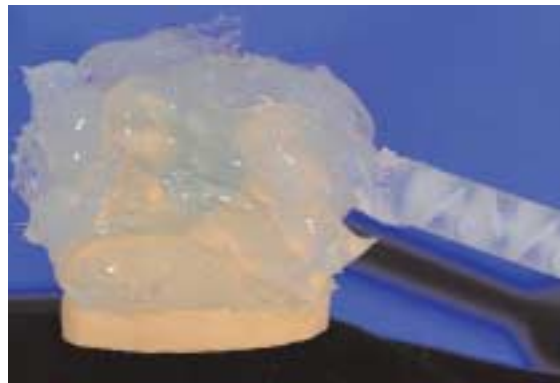
Pontic on the duplicate model after completion of the transfer process.

Fabricating the Transil matrix

Separate the laboratory silicone with a thin coat of Vaseline to prevent the two silicone materials from sticking to each other. Insert the Transil cartridge into the dispenser, mount a fresh mixing tip and apply Transil to the die and pontic in a single step. Transil should be applied in a layer thickness of approx. 3 to 6 mm to obtain sufficient stability. The setting reaction may be accelerated by using a hot air dryer. After the material has set, smooth out the exterior surface and form it into a conical shape to enhance the passage of light. Subsequently, remove the Transil matrix from the die.

Tip:

A Vectris foil may be used to smooth out the exterior surface while it is still soft.



Apply a thin coating of Vaseline to the laboratory silicone and then apply Transil.



Smooth out the exterior surface of the Transil matrix and form it into a conical shape.

Tip:

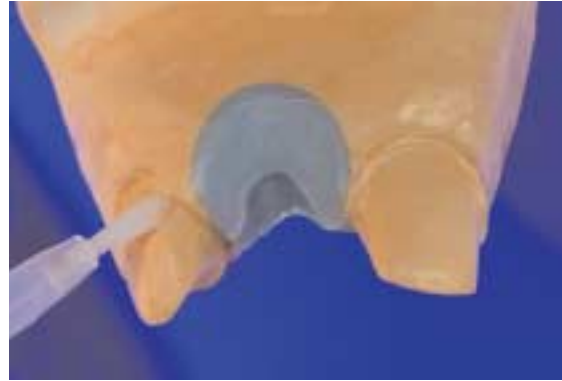
In order to facilitate the flowing off of Vectris matrix material, small spillways may be cut into the palatal and labial portions of the laboratory silicone after the Transil matrix has been removed.

Sealing the dies

After having removed the matrix and cleaned the duplicate model, apply two layers of Vectris Model Separator. Apply the first layer slightly more generously than the second one and make sure to fully cover all areas of the die. Watch out for sharp edges in particular. Allow the first layer to react for 3 minutes. Subsequently, apply the second layer of Vectris Model Separator in a thin coating, invert the model and allow it to dry for another 3 minutes.



Apply a generous coat of Vectris Model Separator and allow to dry for approx. 3 minutes.



Apply the second layer of Vectris Model Separator in a thin coating and allow to dry for 3 minutes upside down.

Preparing the dies for the vacuum-forming process

Before removing the Vectris Single from the packaging, adjust the height of the model carrier in the vacuum former so that the distance between the die and the upper rim of the container is 2 to max. 3 cm. If necessary, the height may be further adjusted with the help of the spacer rings. Finally, check the position of the membrane.

Placing Vectris Pontic into the Transil matrix and vacuum-forming the pontic

Slightly moisten the Transil matrix with Vectris Glue to facilitate the adaptation of the Vectris Pontic strips. Remove the Vectris Pontic from the light-protected package, cut it to the desired length, remove it from the foil and place it into the Transil matrix using tweezers. Observe the schematic below when filling in the individual Vectris strips. Place the Transil matrix on the duplicate model in the correct position, push it into place and mount the model on the model carrier of the Vectris VS1. Start Program 1 to commence the vacuum-forming and polymerization process. The program takes 10 minutes to complete.



Schematic of the order in which the individual Vectris strips have to be placed.



Moisten the Transil matrix with Vectris Glue.



First, place a short Vectris strip...



...then insert a long Vectris strip for the pontic/abutment inserts...



...and complete with medium-sized and short strips; place the pontic on the duplicate model.



The vacuum forming and polymerization process takes 10 minutes with Program 1.

Vacuum-forming the Vectris Frame

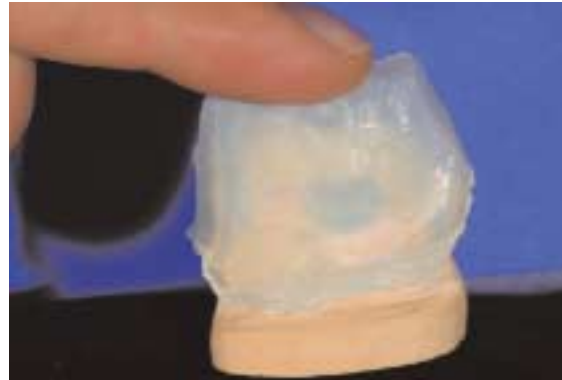
Remove only the Transil matrix; leave the pontic on the duplicate model. Remove any Vectris matrix material that has been squeezed downwards, using an appropriate instrument. If the pontic inadvertently comes off along with the Transil matrix, carefully remove it from the matrix and reposition it on the duplicate model. Do not grind or contaminate the pontic.



Important:

If it is impossible to avoid modifications involving grinding, then sandblast the entire pontic surface with type 100 Al₂O₃ at 1 bar (14.5 psi) pressure. After sandblasting, remove residue by tapping it off and not by cleaning the surfaces with steam or an air gun. If necessary, a clean disposable brush may be used for this purpose. Apply Vectris wetting liquid immediately after having removed the residue. Use a disposable brush to apply the liquid and allow it to react for 60 seconds. Disperse excess material with oil-free compressed air and replace the pontic on the duplicate model.

Subsequently, remove the Vectris Frame from the light-protected package and place it on the Vectris Pontic. **Do not cut slits into the Vectris Frame.** Place the Transil matrix over the duplicate model, push it into place and position the model at the centre of the container in the framework former. Start Program 1 to commence the vacuum-forming and polymerization process. The program takes 10 minutes to complete.



Place the Vectris Frame on the pontic, place the Transil matrix over the model and press it into place.



The vacuum-forming process results in optimum shape and adaptation of the Vectris Frame.

Removing the framework from the die

Upon completion of the vacuum forming process, remove the Transil matrix and lift the framework from the die. If the framework cannot be readily removed, warm up the framework and the duplicate model by means of a steam jet and then try again. Remove excess material using a separating disk while the framework is still on the model. Subsequently, carefully remove the framework from the die.



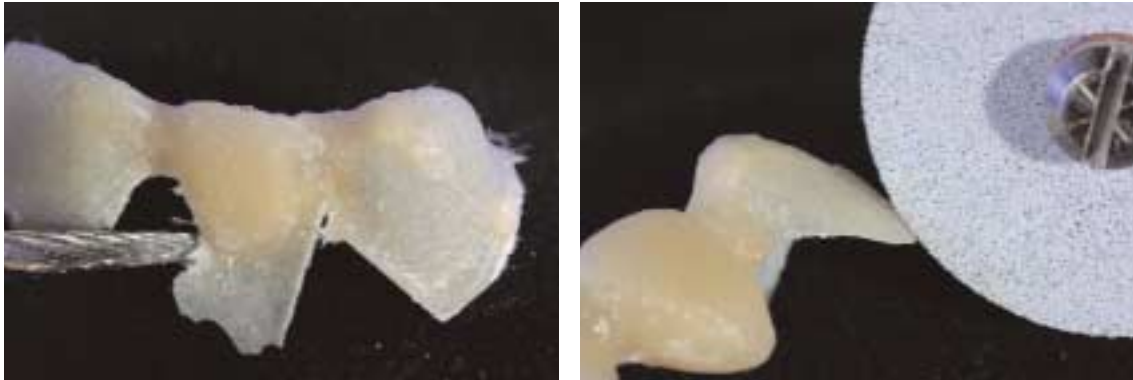
Remove excess material while the framework is still on the model...



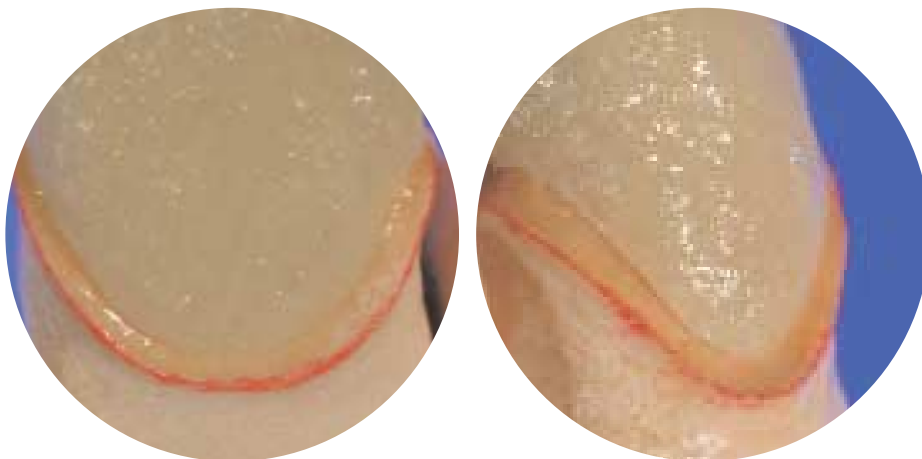
...and carefully remove the framework from the die, using an appropriate instrument.

Finishing

Remove excess material in the marginal areas with cross-cut tungsten carbide burs. It is advisable to use a slow rotational speed and light pressure. **The thickness of the walls, which is 0.3 to 0.4 mm after the vacuum forming process, must not be reduced by grinding.** Trim the marginal areas by approx. 0.5 mm to the inner edge of the chamfer or shoulder preparation. Make sure that the framework continues to be supported by the die after trimming the margins.

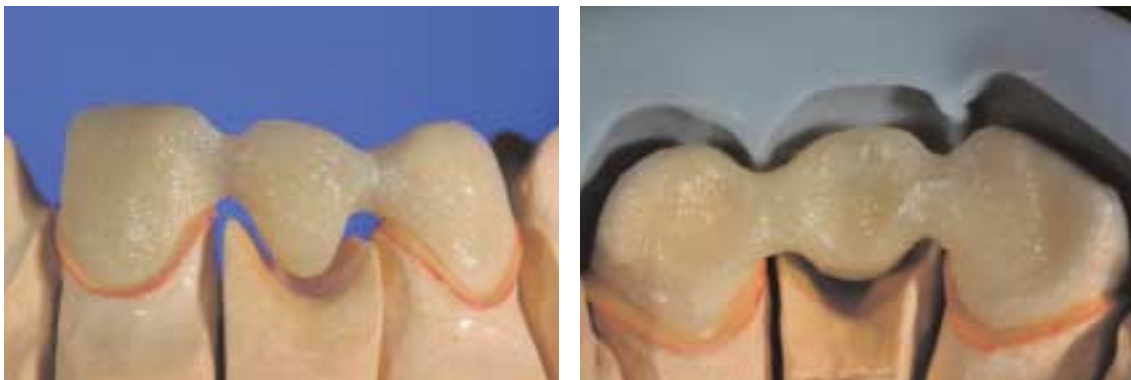


Remove excess with tungsten carbide burs; thin out the margins...



...and trim by approx. 0.5 mm to the inner edge of the chamfer or shoulder preparation.

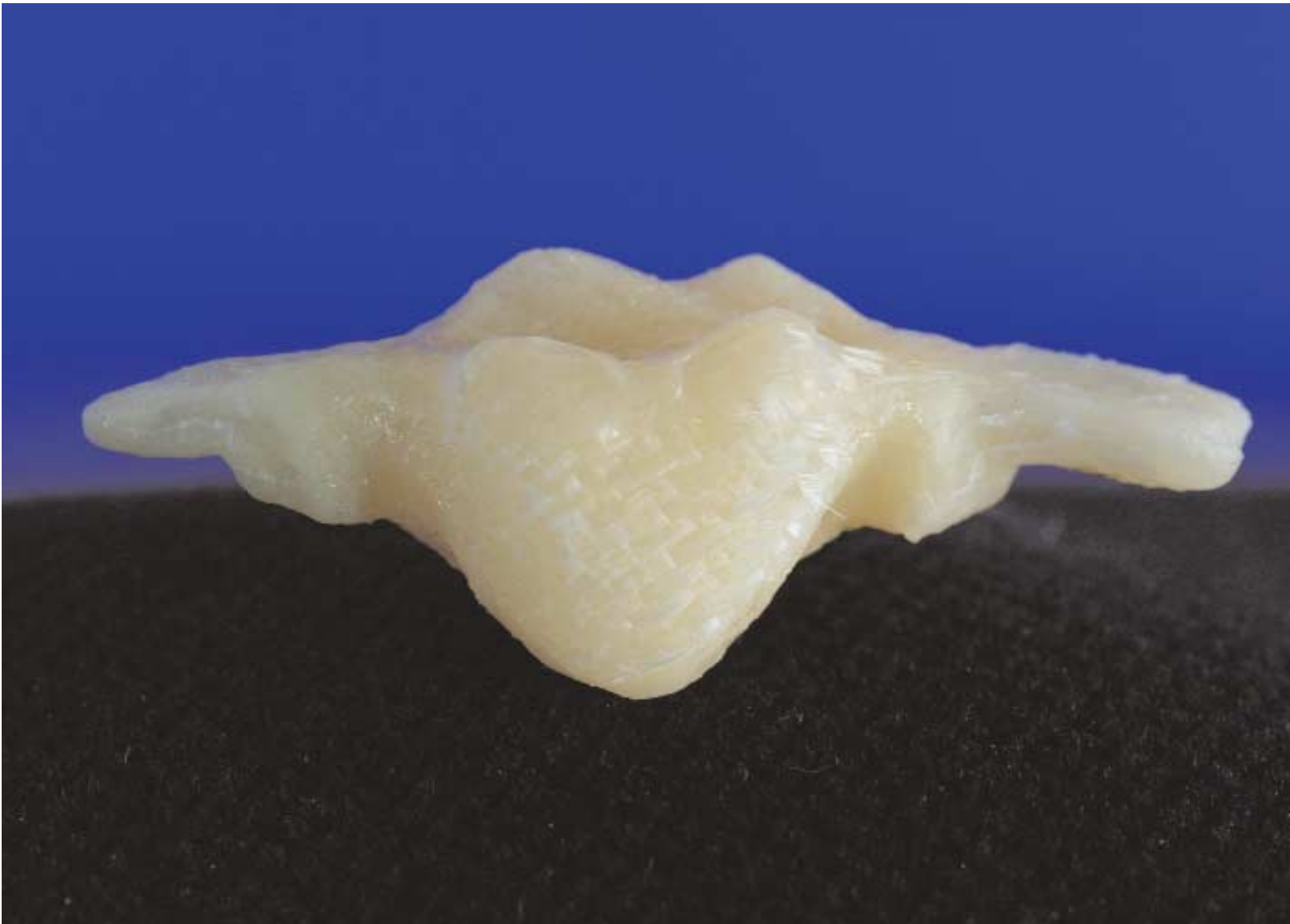
The result



The SR Adoro Instructions for Use provide detailed information on the conditioning and veneering of 3-unit anterior bridges made of Vectris.

Vectris®

3-UNIT INLAY-RETAINED BRIDGES



3-UNIT INLAY-RETAINED BRIDGES

Starting situation

Fabricate a master model or a model with detachable segments on the basis of the impression in the usual manner. Expose and mark the preparation margin. It is advisable to apply a sealer to harden the surface and to protect the stone die from abrasion. The application of the sealer must not cause any changes in the dimension of the stone die. Subsequently, a spacer can be applied, if this is the customary method of working.

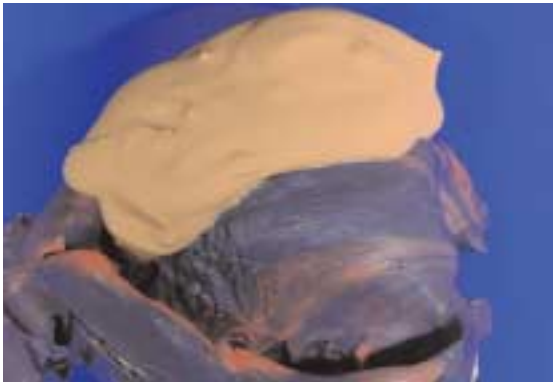


Fabricate a working model.

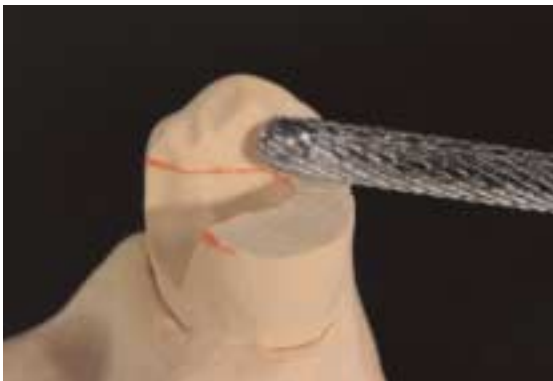
Fabricating the duplicate model for the vacuum forming process

For inlay-retained bridges, the abutment teeth are cut to obtain an appropriate cavity for the abutment/pontic contact surface. Consequently, a duplicate model has to be prepared. The master model is utilized to contour the pontic (including the pontic/abutment contact layer), to check the fit of the restoration and to veneer the framework. Pour the original impression a second time and create a small duplicate model for the vacuum-forming process. Make sure to eliminate undercut areas to facilitate the subsequent application of the Transil matrix.

In addition, reduce the cusps of the abutment teeth in such a way that the height of the cavity measures at least 0.5 mm to enable the Vectris fibres to adapt to the cavity effectively. The height may be marked with a pencil to facilitate the following reduction.



Fabricate a duplicate model from the original impression and eliminate undercut areas.



Mark the height of the cavity and reduce the cusps.



Completed duplicate model for the vacuum-forming process

- A silicone, polyether or similar material should be used for impression taking as these materials provide an optimum reproduction of detail. Additionally, the impressions taken with these materials can be poured several times.
- Hydrocolloid and alginate materials are unsuitable and cannot be poured more than once.

Contouring the pontic

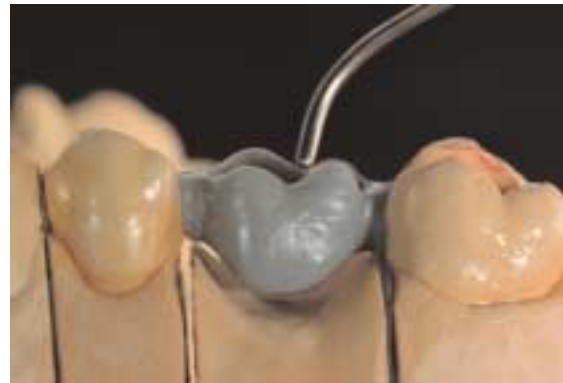
First, seal the dies with a wax/stone or resin/stone separator. Contour the pontic on the master model in a cusp-supporting manner similar to the metal-ceramic technique, using wax or composite (Light Tray). This step helps to obtain a homogeneous layer thickness in the following veneering material. The occlusal abutment/pontic contact area in the cavity should exhibit the following dimensions:

- cover the entire surface of the cavity
- length of the abutment/pontic area in the cavity: at least 4 mm
- thickness of the contact layer: at least 0.3 mm
- joint face of the connector: at least 3 x 3 mm

Check the pattern in the articulator and adjust as necessary. If a full wax-up has been prepared, the wax rims may be used for checking purposes.

Tip:

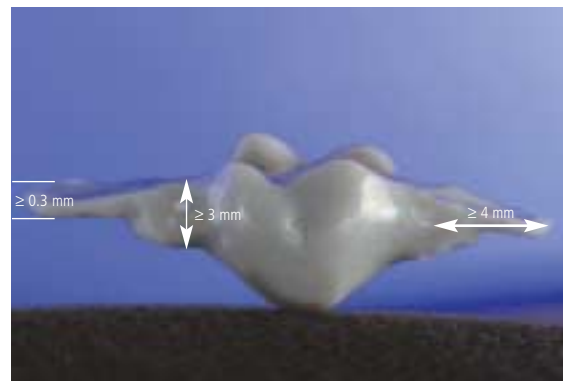
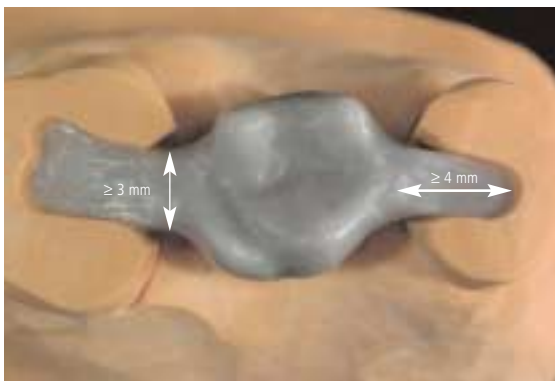
The pontic can be contoured using a tray material (Light Tray) and adjusted by grinding after completion of the polymerization process.



Contour the pontic on the master model.



Check the pattern in the articulator.



Conduct a final check of the duplicate model and check the dimensions of the pontic.

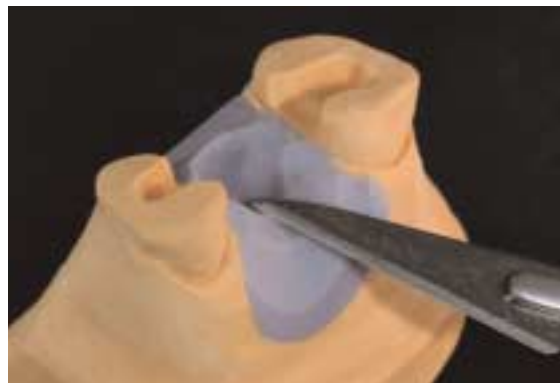
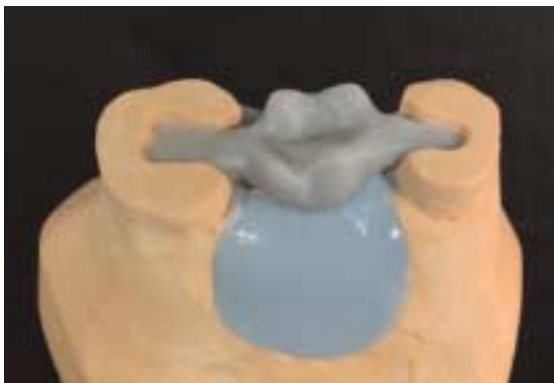
Transferring the pontic to the duplicate model

Transfer the fully contoured pontic to the duplicate model and use a small amount of wax to hold it in place. Block out the basal surface of the pontic using laboratory silicone (Sil-Tech) in order to ensure that the following Transil matrix can be removed effortlessly. It is important to block out this area because this determines the way in which the Vectris Frame is wrapped around the Vectris Pontic. The portion of the basal surface that is in contact with the laboratory silicone should not be too wide. It is advisable to follow the following instructions to transfer the pontic to the duplicate model:

1. Reduce the basal surface of the duplicate model and prepare retention
2. Transfer the pontic to the duplicate model and use a small amount of wax to hold it in place
3. Block out the reduced basal surface using laboratory silicone (Sil-Tech)
4. Reduce the blocked out area by means of a scalpel or bur



Reduce the basal surface of the duplicate model and transfer the pontic to the model.



Block out the reduced basal surface with laboratory silicone and then reduce the blocked out area.



The basal surface should not be too wide.



Pontic on the duplicate model after completion of the transfer process.

Fabricating the Transil matrix

Separate the laboratory silicone with a thin coat of Vaseline to prevent the two silicone materials from sticking to each other. Insert the Transil cartridge into the dispenser, mount a new mixing tip and apply Transil to the die and pontic in a single step. Transil should be applied in a layer thickness of approx. 3 to 6 mm to obtain sufficient stability. The setting reaction may be accelerated by using a hot air dryer. After the material has set, smooth out the exterior surface and form it into a conical shape to enhance the passage of light. Subsequently, remove the Transil matrix from the die.

Tip:

A Vectris foil may be used to smooth out the outer surfaces while the matrix material is still soft.



Apply a thin coating of Vaseline to the laboratory silicone and then apply Transil.



Smooth out the exterior surface of the Transil matrix and form it into a conical shape.

Tip:

In order to facilitate the flowing off of the Vectris matrix material, small spillways may be cut into the palatal and labial portions of the laboratory silicone after the Transil matrix has been removed.

Sealing the dies

After having removed the matrix and cleaned the duplicate model, apply Vectris Model Separator in two coats. Apply the first layer slightly more generously than the second one and make sure to fully cover all areas of the die. Watch out for sharp edges in particular. Allow the first layer to react for 3 minutes. Subsequently, apply the second layer of Vectris Model Separator in a thin coating, invert the model and allow it to dry for another 3 minutes.



Apply a generous coat of Vectris Model Separator and allow it to dry for approx. 3 minutes.



Apply the second layer of Vectris Model Separator in a thin coating and allow it to dry for another 3 minutes upside down.

Preparing the model for the vacuum-forming process

Before removing the Vectris Pontic from the packaging, adjust the height of the model carrier of the vacuum former so that the distance to the upper rim of the container is 2 to max. 3 cm. If necessary, the height may be further adjusted with the help of the spacer rings. Finally, check the position of the membrane.

Placing Vectris Pontic into the Transil matrix and vacuum-forming the pontic

Slightly moisten the Transil matrix with Vectris Glue to facilitate the adaptation of the Vectris Pontic strips. Remove the Vectris Pontic from the light-protected package, cut it to the desired length, remove it from the foil and place it into the Transil matrix using tweezers. Insert the individual strips as indicated in the schematic below. Then, place the Transil matrix on the duplicate model in the correct position, press it into place and mount the model on the model carrier of the Vectris VS1 framework former. Start Program 1 to commence the vacuum-forming and polymerization process. The program takes 10 minutes to complete.



Schematic of the order in which the individual Vectris strips have to be placed.



Moisten the Transil matrix with Vectris Glue.



First, place a short Vectris strip on each cusp ...



...then place a long Vectris strip to establish the pontic/abutment contact surface...



...and a medium-sized Vectris for the area between the bridge abutments.



Complete the buccal and palatal areas...



... and contour the base surface using short Vectris strips. Then place the pontic on the duplicate model.



The vacuum forming and polymerization process takes 10 minutes with Program 1.

Vacuum-forming the Vectris Frame

Remove the Transil matrix but leave the pontic on the duplicate model. Remove any Vectris matrix material that has been squeezed downwards, using an appropriate instrument. If the pontic inadvertently comes off along with the Transil matrix, carefully remove it from the matrix and reposition it on the duplicate model. Do not grind the pontic and avoid contaminating it.



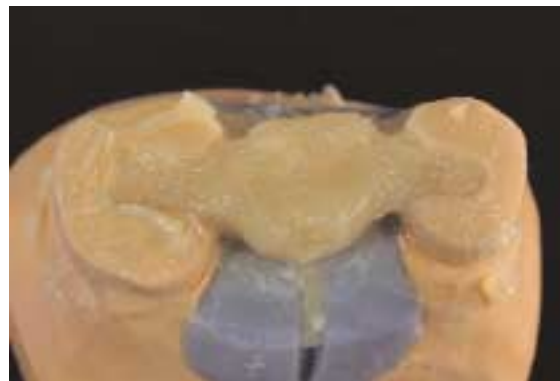
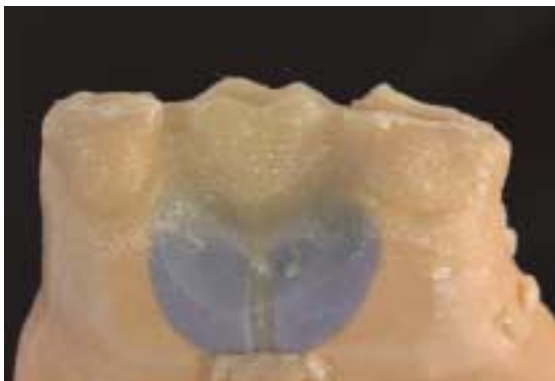
Important:

If it is impossible to avoid modifications involving grinding, then sandblast the entire pontic surface with type 100 Al₂O₃ at 1 bar (14.5 psi) pressure. After sandblasting, remove residue by tapping it off and not by cleaning the surfaces with steam or an air gun. If necessary, a clean disposable brush may be used for this purpose. Apply Vectris wetting liquid immediately after having removed the residue. Use a disposable brush to apply the liquid and allow it to react for 60 seconds. Disperse excess material with oil-free compressed air and replace the pontic on the duplicate model.

Subsequently, remove the Vectris Frame from the light-protected package and place it on the Vectris Pontic. **Do not cut slits into the Vectris Frame.** Place the Transil matrix over the duplicate model, push it into place and position the model at the centre of the container in the framework former. Start Program 1 to commence the vacuum forming and polymerization process. The program takes 10 minutes to complete.



Place the Vectris Frame on the pontic; place the Transil matrix over the model and press it into place.



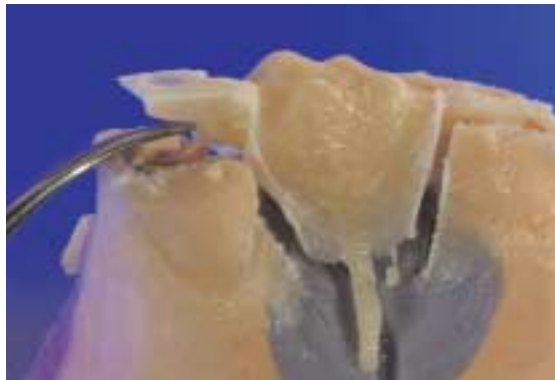
The vacuum-forming process results in an optimum shape and adaptation of the Vectris Frame.

Removing the framework from the die

Upon completion of the vacuum forming process, remove the Transil matrix and lift the framework from the die. If the framework cannot be readily removed, warm up the framework and the duplicate model by means of a steam jet and then try again. Remove excess material using a separating disk while the framework is still on the model. Subsequently, carefully remove the framework off the die.



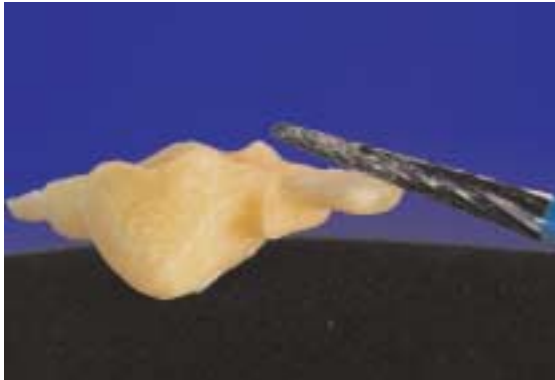
Remove excess material while the framework is still on the model...



...and carefully remove the framework off the die, using an appropriate instrument.

Finishing

Remove excess material in the marginal areas with cross-cut tungsten carbide burs. It is advisable to use a slow rotational speed and light pressure. **The thickness of the walls, which is 0.3 to 0.4 mm after the vacuum forming process, must not be reduced by grinding.** The pontic/abutment contact layer should cover the entire surface of the cavity.



Remove excess with tungsten carbide burs and fit the restoration into the preparation.

The result



The SR Adoro Instructions for Use provide detailed information on the conditioning and veneering of 3-unit inlay-retained bridges made of Vectris.

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Date information prepared: 01/2004

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579628/0104/0.5/e/BVD



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