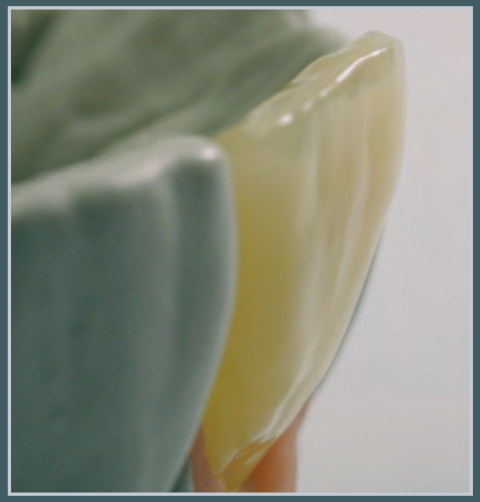
visio.lign

Veneering Technique

from the Setup to the Definitive Veneer



Instructions for Use

novo.lign A
novo.lign P
visio.link
combo.lign
crea.lign

bredent

Contents

Introduction and product description

visio.lign, the veneering system with guarantee for aesthetics. It comprises of multi-layer veneers, developed from natural teeth and a bonding system in perfectly matched shades. Additional tooth and gingiva materials complete the system.

Discover the wide indication range of visio.lign which will facilitate your daily work routines in the laboratory and support you during the fabrication of aesthetic restorations. There will be no limits to your creativity!

visio.lign

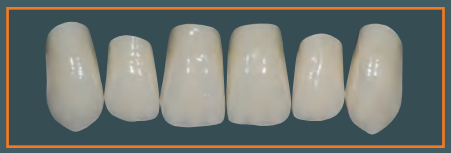
Veneering system with naturally layered veneers - novo.lign A (anteriors) and novo.lign P (posteriors) - in anatomical designs.

- shade stability, resistance to plaque and abrasion
- efficient, thanks to rational processing
- reliable shade results in the classic A-D shades with perfectly matched bonding via visio.link with combo.lign and crea.lign
- finishing, supplementing and individualizing using the nano-filled composite crea.lign
- neo.lign full denture tooth with identical shades and designs ideal for implant prosthetics and fixed/removable restorations

novo.lign A

S46

I47

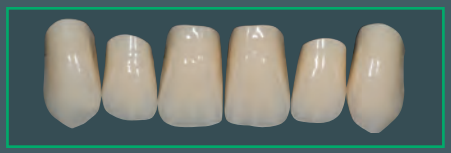


D38

neo.lign A

S46

I47

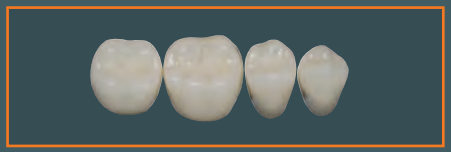


D38

novo.lign P

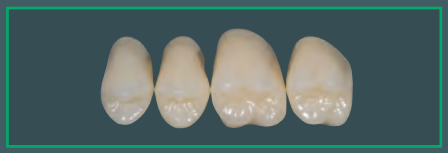
G3

G3

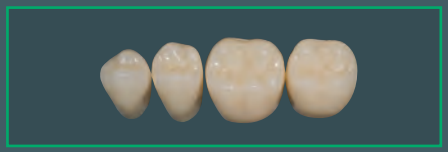


neo.lign P

G3



G3



The final shade of neo.lign A and P is obtained after bonding (luting) with combo.lign.

visio.link

combo.lign

crea.lign

System components

novo.lign A/P

Veneers made of high impact PMMA composite in anatomical designs for anterior and posterior veneers. Available in the classic A-D shades. Natural esthetics for all indications.

neo.lign A/P

Anatomical full denture teeth with identical shades and designs for implant and fixed/removable restorations made of high impact PMMA composite. The system-spanning occlusal design has been developed for all common occlusion concepts.

visio.link

PMMA **and** Composite Primer for bonding highly cross-linked novo.lign A and novo.lign P veneers and prefabricated teeth. For conditioning composites, denture base materials and the biocompatible, thermoplastic Bio XS material.

combo.lign

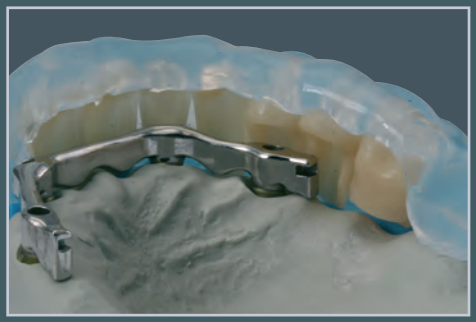
Dentine-colored adhesive composite (dual-hardening) for reliable bonding of novo.lign A and novo.lign P veneers in the classic A-D shades.

crea.lign

Nanofilled composite for individualizing, completing and finishing. For the free-layering technique and perfect red-white esthetics and for the fabrication of laboratory-made inlays, onlays and non-prep veneers.

Implant restoration fixed tension-free on SKY UVE abutments

Removable restoration on telescopic crowns with novo.lign A



Implant-supported bar with novo.lign veneers in the anterior region and neo.lign teeth in the posterior region

3-unit anterior bridge with novo.lign veneers

Combined restoration with novo.lign veneers

Anterior zirconium dioxide bridge veneered with visio.lign

Indications and application areas

Veneer-up

- Use of the veneers to support planning and transfer of the situation to the definitive restoration
- Selection of esthetic shade, shape and tooth position in line with the patients' wishes

Temporary restorations

- Laboratory-made temporaries based on impression and wax-up
- Veneer on SKYtemp (bredent medical) as immediate restoration after placement of the implant

Permanent veneering

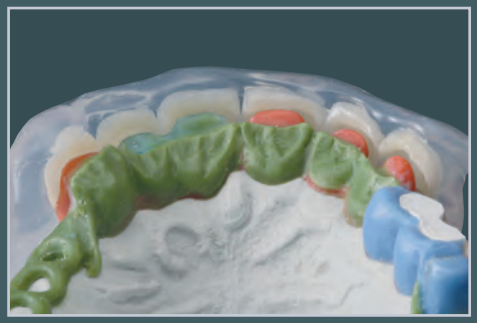
Composite veneering for fixed and removable restorations:

- Telescopic and conical crowns
- CoCr clasp restorations
- Crowns and bridges
- Attachment work
- Implant restorations
- Coverdenture technique

Teamwork - dentist and dental technicians satisfy the individual patient's requests.

selected tooth shade and design

The esthetic try-in supportsplanning and transferring and …



… is the basis for perfect modelling of the framework and ensures…

...individual restorations for patients.

Veneer-up

The novo.lign A and novo.lign P veneers support planning and the transfer and are used for the definitive veneer. The same veneers are used for the working steps starting with the set-up and the esthetic try-in, to orientation during waxing up the framework until the preparation of the definitive restoration.

Tooth shade, tooth size and tooth position as well as some esthetic aspects are already determined when selecting the right tooth from the assortment of different designs and shades.

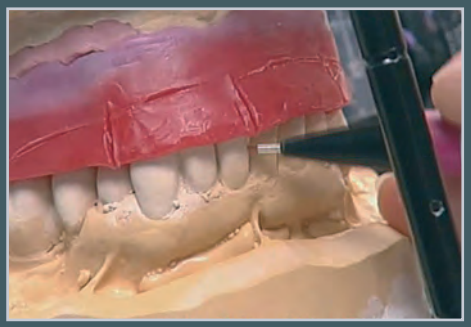
Dentist and dental technician are able to fulfill the individual wishes of their patients and involve them in the design process of their future restorations.

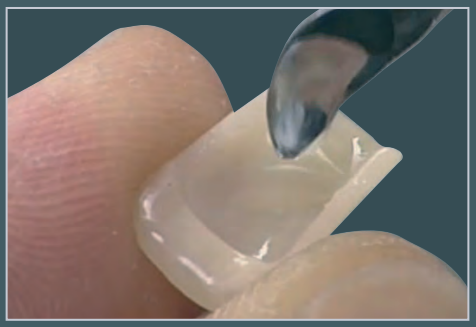
The prepared veneer-up is the basis for the esthetic appearance and the function. It supports dentists and dental technicians in their communication and preparation efforts for the entire prosthetic restoration. Wishes of patients are fulfilled and future corrections are avoided.

The central task is the check of the set-up of the teeth under esthetic, functional and phonetic aspects which can be carried out on the prepared stumps or after the fabrication of the primary crowns.

Determining the suitable design for the physiognomy and the residual teeth

The position of the anterior veneers is marked

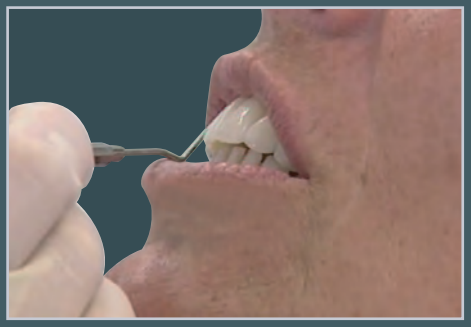




The veneers are fixed using tooth-colored wax, for example beauty setup

Based on bite registration, the anterior and posterior veneers are completed for the esthetic try-in

Completed esthetic set-up



Try-in, check and correction if required

Esthetic try-in

A vacuum formed splint is used as a carrier of the esthetic try-in. Just like in the visio.lign film „The Movie“, the base of bite registration can be used for the set-up of the esthetic try-in.

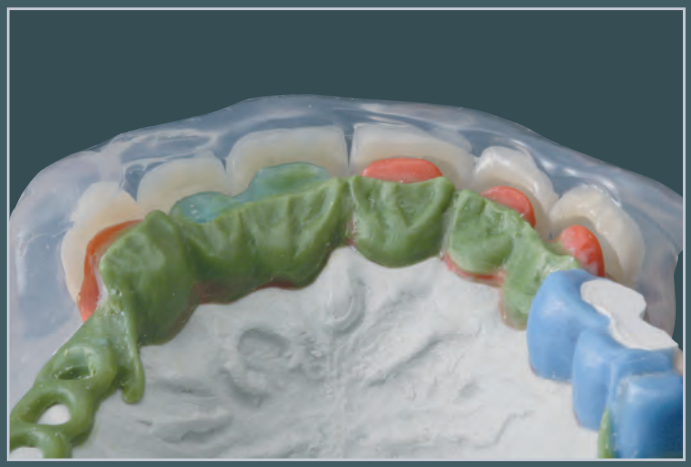
The cervical margin of the novo.lign anterior and posterior veneers is ground to adapt their length and preparation border to the space available.

Adequate space for the framework design must be ensured before fixing the veneers. To create a perfect shade, a joint of 0.2 mm is required.

The veneers are set up on the base using tooth-colored wax and the wax-up is completed.

During try-in of the restoration, bite position, tooth shape, tooth position, tooth shade and phonetics are checked and if necessary, corrections are performed.

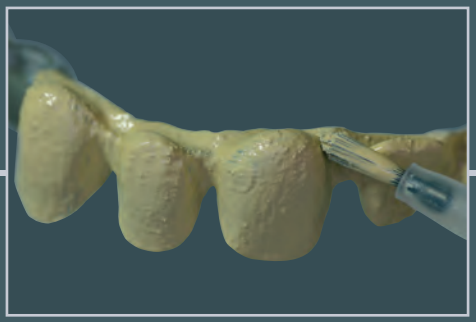
A silicone key is used to fix the set-up. The veneers are removed from the base of the esthetic restoration and placed into the silicone key. Then the space available for the secondary structure is checked.



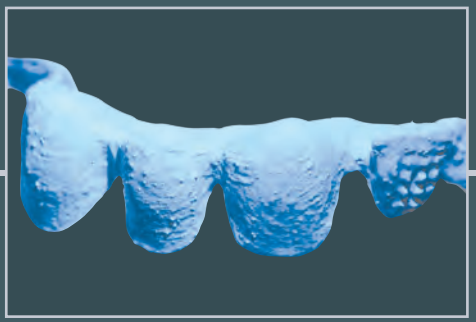
Veneers support planning and the transfer of the wax-up of the framework. Phonetic and esthetic aspects are the basis for the optimization of the wax-up.

Cast secondary structure

Conditioning with metal primer



Applying opaque material



Polymerizing opaque material

Framework design and conditioning

The set-up obtained from the esthetic try-in facilitates framework design considerably. Retentions can be perfectly placed onto the veneering surface of the framework to save space and ensure the function. A slender design of the wax-up is required for the metal framework to meet the requirements of phonetics and esthetics. Dimensions of 0.2 - 0.3 mm for the application of the opaque material and the adhesive joint must be adhered to.

After casting, finishing, fitting and polishing, the position of the veneer in the key in front of the framework is checked and necessary corrections are performed.

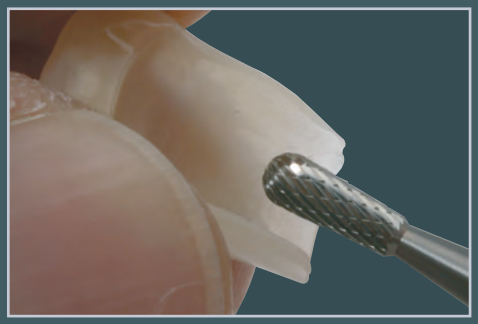
Use Al_2O_3 (110 - 125 µm) to sandblast the framework at a pressure of 2.5 to 3.5 bars. Then the metal surface is conditioned with the Silano-Pen or metal primer. The instructions of the respective manufacturer must be observed!

Apply opaque material and polymerize in accordance with the instructions for use; if required apply several thin layers until the metal substructure is completely covered.

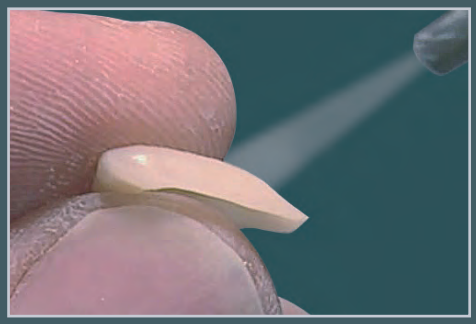
When using tooth-colored framework materials, such as Bio XS (thermopress 400), visio.link is used for conditioning. Silano-Pen is used for conditioning zirconium dioxide frameworks and the bonding agent is applied subsequently.

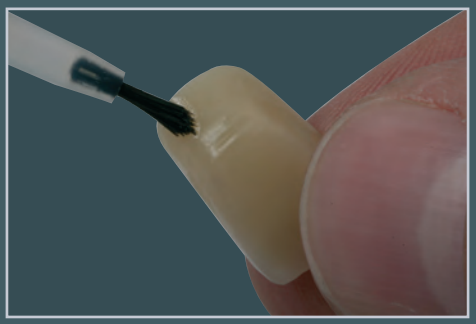
The use of retention beads results in improved mechanical bonding and ensures the durability of the restoration.

Grind the veneer at an obtuse angle



Sandblast the inside of the veneers across the border area





Apply visio.link thinly to the inner side of the veneer beyond the margins

visio.link application areas: PMMA-, composite primer and bonder. UV-curing

Polymerize visio.link with UV light

The silky-mat luster allows to verify conditioning.

Do not apply visio.link too thickly and not twice

Conditioning the veneers

These processing steps are referred to several times within these instructions for use; they must be completed correspondingly.

- sandblast **novo.lign** veneers with Al2O3 (110 µm) at a pressure of 2.5 – 3.5 bars or roughen the surface using a tungsten carbide bur (enlarge the surface).
- apply **visio.link** primer and polymerize in the Uni XS unit / Heraeus Kulzer for 90 sec or in the UV light-curing unit (e.g. Polylux) for 4 min.

Note:
Polymerization is completed when the **visio.link** primer has dried after exposure to UV light, i.e. the sticky coat/layer has been removed. **Required wavelength range: 370 - 400 nm. LED devices without UVA rays are not suitable.**

Refer to the instructions of the manufacturer on the exchange intervals for the light-curing units; these intervals must be adhered to.

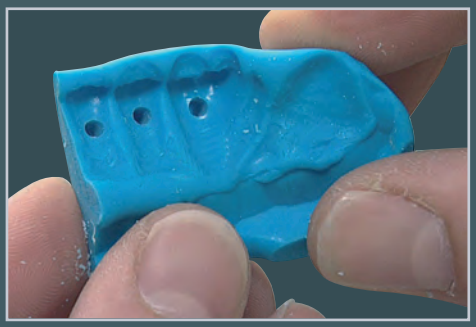
When bonding, it must be ensured that all surfaces which are to be bonded using resin/composite later on, need to be sandblasted and conditioned with visio.link.

It is recommended to apply visio.link slightly beyond the sandblasted surface. visio.link is removed from the surfaces which have not been sandblasted when finishing the restoration.

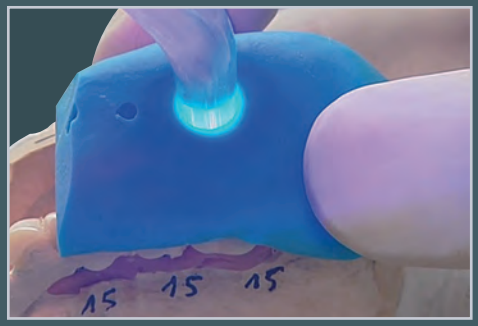
Note:
Bonding can only be achieved by sandblasting or roughening and by the subsequent application of visio.link and polymerization in the light-curing unit.

Apply combo. lign to the conditioned inner side of the veneer

If opaque material for matrices is used, holes are drilled into the matrix

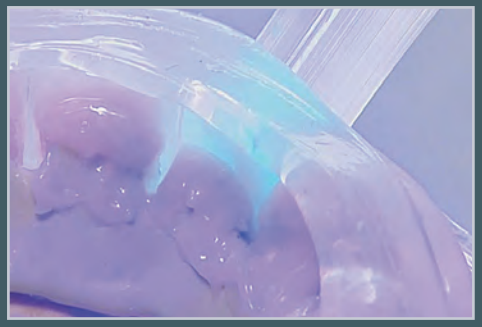


Excess material obtained by pressing on the matrix does not need to be discarded. It can be used to prepare a bonding layer to the crea.lign finishing material



combo.lign is hardened selectively and the veneer is fixed. The matrix can be removed.

From the labial side, the veneers are fixed by the transparent visio.sil matrix material.
The matrix is removed for fi nal hardening (polymerization)



In the cervical and approximal areas, combo.lign which is still paste-like, is removed with an instrument

Luting

combo.lign is applied to the veneer in a way to wet the entire conditioned surface and to achieve maximum adhesion. Luting can be carried out in the following way:

- During manual luting, affix the veneer to the framework, carefully remove excess material and then polymerize with the light-curing unit, for example bre.Lux Power Unit (desktop unit) - 180 seconds.
- Radiation with a suitable light-curing unit (e.g. bre.Lux N (hand lamp)) for approx. 10 sec are sufficient for fixation. If an opaque silicone is used, a hole of 2-3 m in the matrix (key) is prepared to fix the veneers. Final polymerization is carried out in the bre.Lux Power unit or another suitable light-curing unit, see list of units.
- If luting is to be completed in a single step, it is recommended to use visio.sil as a transparent material. Fixation is carried out using the hand lamp bre.Lux LED N or another suitable light-curing unit.

combo.lign

- is a dual-hardening composite. It hardens chemically and by exposure to light. Subsequent polymerization is required to reach the final hardness.Required wavelength range: 370-500 nm.
- is suitable for composite joints or adhesive layers of 40 µm to 2 mm. Bonding results, see page 24.
- The processing time span is approx. 5-6 min (at 20° C). Recommended polymerization in the Uni XS unit / Heraeus Kulzer or in the bre.Lux Power unit 180 sec. or other units with a wavelength range of 370-500 nm.

After bonding, crea.lign is applied approximally

crea.lign is use for contouring in the palatal...

...and the cervical areas

Individual contouring also in the red-white area

Layer application of crea.lign with intermediate polymerization for ensuing final polymerization. A handlamp can be used for intermediate polymerization or fixation of the layers.

crea.lign Gum and Modifier allow individual contouring in the red-white area

Finishing and individualizing

It is recommended to use the microfilled and elastic composite crea. lign for shaping the approximal and cervical areas, which ensures homogeneous color transitions and lasting resistance to plaque and discoloration.

crea.lign is used for final shaping and the definitive design. The material can be applied directly from the syringe or using a brush. The use of **crea-lign Modelling Liquid** facilitates the application with the brush and optimizes contouring of the interproximal spaces.

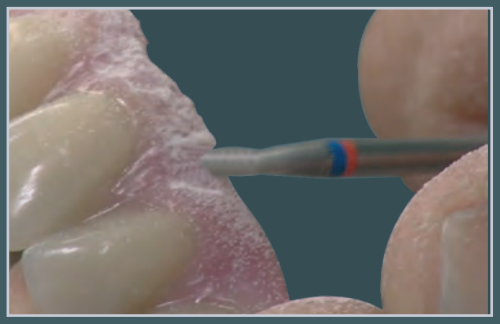
Bonding of the individual layers is ensured by the „smear layer" (inhibition layer). If this layer is missing, conditioning must be carried out with visio.link. This applies also to the transitions to the veneer if they have not yet been conditioned.

The inhibition layer can be removed with isopropanol, which avoids penetration into the surface and hence causes discoloration.

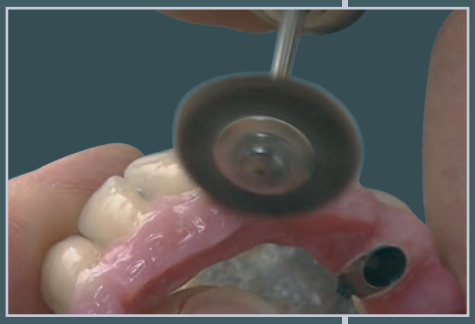
All **crea.lign** shades can be mixed with one another. Varios incisal, neck, dentine and gingiva materials are available for individualizing.

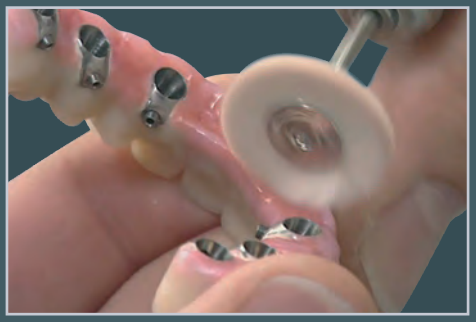
Note:
After modelling and intermediate polymerization, final polymerization must be carried out for at least 6 minutes in the Uni XS / Heraeus Kulzer or the bre.Lux Power unit.

Finishing with a tungsten carbide bur



Prepolishing of crea.lign



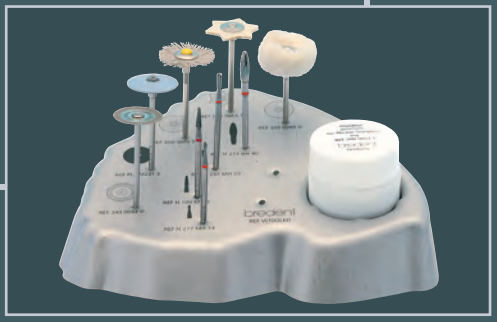


Prepolishing with a goat-hair brush and Acrypol or pumice

crea.lign Modelling Liquid reduces the inhibition layer and serves as a modifier (with regard to viscosity and modulus of elasticity) (e.g. PMMA)

Modelling Liquid for reducing the inhibition layer and enhanced applying and modelling of crea.lign

visio.lign Toolkit



Finishing and completing

When applying the material, the layer thickness of **crea.lign** should not exceed 1 mm (without intermediate polymerization). To ensure maximum bond strength of veneers with a thickness of more than 2 mm, **combo.lign** is applied from the basal direction.

We recommend tungsten carbide burs for finishing and grinding. Diamond-coated rotary tools cause irreversible roughness on the surfaces and are not recommended.

A soft goat-hair brush with pumice or Acrypol must be used for the first polishing process. The speed should not be above 3000 rpm (handpiece).

Use Abraso-Starglanz and a soft cotton or leather buff for final polishing. The speed should not be above 5000 rpm (handpiece).

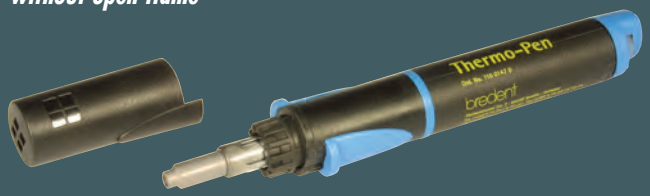
The inhibition layer can be removed with isopropanol to avoid penetration into the surface. Inhition layer residues may cause discoloration.

The elimination of oxygen, for example with gel, **crea.lign** Modelling Liquid or final polymerization in the visio.Beta unit reduces or avoids the formation of an inhibition layer.

Note:
To achieve long-term resistance to plaque, the addition composite needs to be polymerized completely and polished subsequently.

visio.lign Toolkit – ideal for finishing and polishing
REF VLTOOLKIT

Thermo-Pen.
Hot air device with piezo technology without open flame



...produces the required temperature of 250° C on the inner side of the veneer

In the thermoplastic condition the veneer is expanded using a conical tool.

before

after

Thermoplastic forming

novo.lign veneers consist of highly abrasion-resistant, high-impact PMMA and
are suitable for thermoplastic forming.

The required forming temperature is approx. 250 °C and should be supplied uniformly across and somewhat beyond the entire forming area.

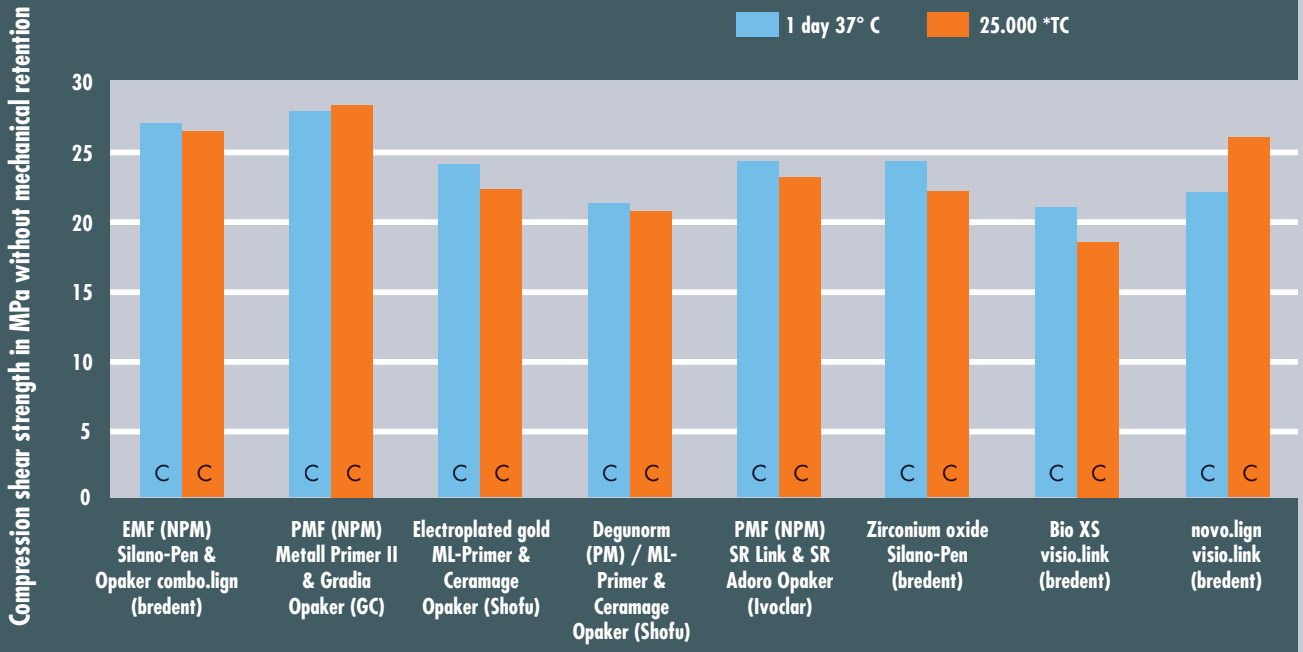
Transblock is used to protect regions not to be formed.

Use: Set the Thermo-Pen to level 4 and heat for approx. 10-15 sec while keeping a distance of approx. 1 cm to the veneer. The inner side of the veneer should be heated.

Use a round tool or primary element to obtain the desired width or size of the veneer.

Note:
Do not use an open flame to heat the veneers and make sure that the temperature will not exceed 280 °C!
Improper handling will affect the product characteristics.

Bonding test - combo.lign
Result of bonding tests of the University of Jena 2004-2008



Framework materials / Bonding (composite) system

C = Cohesion fracture
*Thermocycling 5° C / 55° C

Metal-composite bonding systems:

Metal-composite bonding systems:
After testing the compression shear strength, the following bonding systems have been released for use (polymerization in the Uni XS unit):

Precious metal (PM):
Silano-Pen or MKZ-Primer (bredent) with Gradia Opaker combo.lign, Metall Primer II (GC) with Gradia Opaker, Rocatec (ESPE) with Gradia Opaker, M.L. Primer and Ceramage Opaker (Shofu).

Precious metal-free (PMF) or non-precious metal (NPM):
Silano-Pen or MKZ-Primer (bredent) with Gradia Opaker combo.lign, Metall Primer II (GC) with Gradia Opaker, Rocatec (ESPE) with Gradia Opaker, SR Link + SR Adoro Opaker (Ivoclar Vivadent).

Electroplated gold:
M.L. Primer and Ceramage Opaker (Shofu), Metall Primer II (GC) with Gradia Opaker.

Metal-free framework materials:
After testing the compression shear strength, the following bonding systems have been released:

- Silano-Pen oder MKZ-Primer (bredent) on zirconium oxide
- visio.link Primer on Bio XS (thermopress 400, bredent)
- Veneering of CAD/CAM manufactured frameworks made from PMMA or composite as long-term temporaries

Polymerization units and polymerization times

Polymerization times for visio.link, combo.lign and crea.lign

visio.link requires a wavelength of 370 to 400 nm, units without UVA light are not suitable

combo.lign requires a wavelength of 370 to 500 nm, pure UVA units (such as Polylux) are not suitable

crea.lign requires a wavelength of 370 to 500 nm, pure UVA units (such as Polylux) are not suitable

Manufacturer	Product name	Wavelength in nm *	Polymerizations time - visio.link	Polymerization time - combo.lign	Polymerization time - crea.lign
bredent	bre.Lux Power Unit	370 - 500	90 s	180 s	6 min
Dentsply /	Triat, Triat 2000	400 - 500	3 min	6 min	10 min
Degudent	Eclipse	k.A.	60 s	180 s	6 min
Heraeus Kulzer	Dentacolor XS, Uni XS	320 - 520	90 s	180 s	6 min
	Heraflash	320 - 520	90 s	180 s	6 min
GC	GC Laboligth LV-III	380 - 490	2 min	5 min	10 min
Ivoclar Vivadent	Targes Power furnace	400 - 580	4 min	180 s	8 min
	Lumanat 100	400 - 580	4 min	180 s	6 min
Schütz Dental	Spektra 2000	310 - 500	2 min	180 s	6 min
Shofu Dental	Solitilite EX	400 - 550	90 s	180 s	6 min
Kuraray Dental	CS 110	k.A.	2 min	5 min	8 min
Hager & Werken	Speed Labolight	320 - 550	90 s	180 s	8 min
3M ESPE	Visio BETA (new P1 - P4)	400 - 500	> 4 min (P2)	7 min (P2)	15 min (P1)
	Visio BETA (old U0 - U3)**	400 - 500	7 min (U1, U3)	15 min (U0)	15 min (U0)

* manufacturer's data

** new set of lamps is recommended

Important!

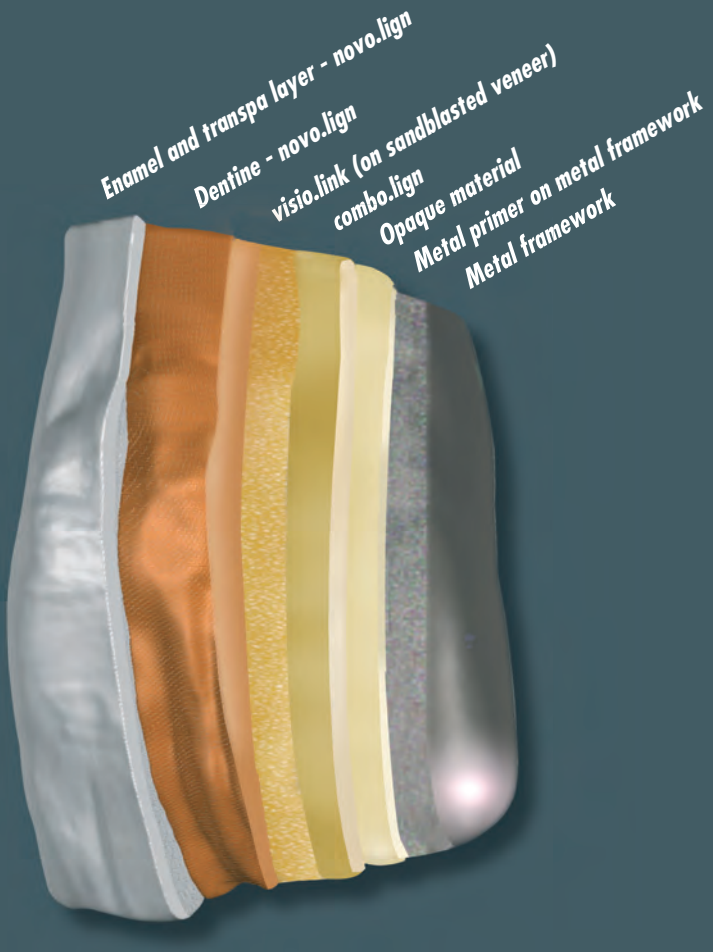
Adhere to the instructions for use of the respective product. The data provided are reference values and based on units in perfect condition. Lamps/light sources need to be checked in accordance with the manufacturer's instructions and replaced if necessary; see the following self-testing:

Note:

Polymerization of **visio.link** has been completed when the visio. link primer is **dry** after exposure to UV light, i.e. the sticky layer is removed.

Although **combo.lign** is a dual-curing material, polymerizing with light is required to achieve utmost bonding strength. To check whether a unit provides the required wavelength range, cure **combo.lign** for approx. 10 sec. to see if the surface has hardened. A layer with a thickness of 2 mm (test plate) should have cured from both sides after 90 to 120 sec.

crea.lign should be checked with the GUM pink shade; full curing of a test plate (thickness of 1 mm) should be achieved after 3 min. or at least within half of the polymerization time given.



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