Telio Lab
Telio CAD



Instructions for Use

ivoclar vivadent technical

CE 0123

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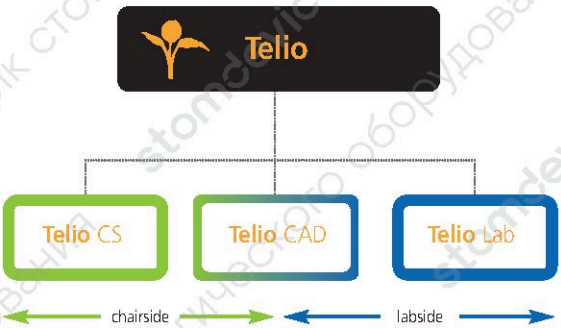
Telio –

The 3-in-1 solution for temporary restorations

Telio is a comprehensive, fully integrated product system for temporary restorations designed for dentists, CAD/CAM users and dental technicians.
All Telio materials are ideal for the manufacture of conventional and implant-borne temporaries. The materials are compatible with each other and their shades are optimally coordinated.

- **Telio** Lab
  For dental technicians: Resin for temporary crowns and bridges, including a light-curing composite for additional individualizations.
- **Telio** CAD
  For CAD/CAM users: Acrylate polymer blocks for the CAD/CAM manufacture of temporary crowns and bridges.
- **Telio** CS
  For dentists: Self-curing temporary C&B materials, including a desensitizer and cement.

All materials are out of one hand:
Telio is a system of compatible materials for temporary restorations



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Material

Telio Lab

Telio Lab is a PMMA-based two-component powder/liquid system for the cold poylmerization in A-D shades. It is used for the fabrication of temporary crowns and bridges.

Telio Lab exhibits excellent polishing properties and thus a resulting smooth surface.
Stains and/or layering materials can be used to apply final esthetic optimizations.
Relinings, add-ons, emergence profiles and occlusal build-ups can be carried out with Telio Lab (laboratory), Telio CS C&B (dental practice) or Telio Add-On / Flow in both areas.

Telio Lab can be used in conjunction with different processing techniques:

- Casting technique
- Injection technique
- Casting of temporary veneers for pre-ground artificial teeth

Flexural strength [MPa]	90 ± 10
Modulus of elasticity [MPa]	3000 ±100
Water absorption [µg/mm³]	26 ± 1
Water solubility [µg/mm³]	0.8 ± 0.5

Physical properties in accordance with ISO 10477
Source: Ivoclar Vivadent R&D, Schaan/Liechtenstein, 2009

Telio CAD

Telio CAD are cross-linked PMMA blocks for the fabrication of long-term temporaries by means of the CAD/CAM technique. As a result of the industrial polymerization process, the blocks feature a high material homogeneity. There is neither polymerization shrinkage nor an inhibited layer. Given the CAD/CAM fabrication, the temporary can be easily reproduced at all times. Stains and/or layering materials can be used to apply final esthetic optimizations.

Flexural strength [MPa]	130 ± 10
Modulus of elasticity [MPa]	3200 ± 300
Water absorption [µg/mm³]	<28
Water solubility [µg/mm³]	< 0.6

In accordance with ISO 10477
Source: Ivoclar Vivadent R&D, Schaan/Liechtenstein, 2009

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Uses

Telio Lab

Indications

- Temporary metal-free crowns and bridges with a maximum wear period of 12 months
- Temporary metal- or Vectris-supported crowns and bridges with a maximum wear period of 12 months
- Characterization, repair, supplements and relining of temporaries
- Cementation of Ivoclar Vivadent denture teeth to removable dentures (e.g. model cast dentures)
- Esthetic modification of denture teeth

Contraindications

- Direct intraoral use of unpolymerized material
- The material should not be used if a patient is known to be allergic to any of the ingredients of Telio Lab
- Patients with parafunctions, e.g. bruxism
- Long-span bridges without reinforcements for a wear period longer than 12 months
- Occlusal appliances to elevate the vertical dimensions

Telio CAD

Indications

- Temporary anterior and posterior crowns with a maximum wear period of 12 months
- Temporary anterior and posterior bridges with up to 2 pontics with a maximum wear period of 12 months
- Implant temporaries
- Shape templates for permanent restorations
- Therapeutic restorations to correct TMJ problems and occlusal adjustments

Contraindications

- Use for permanent restorations
- Bridge reconstructions with more than two pontics
- Use of an incompatible / non-authorized CAD/CAM system
- Patients with parafunctions, e.g. bruxism
- The material should not be used if a patient is known to be allergic to any of the ingredients of Telio CAD

Important processing restrictions

Failure to observe the following restrictions may compromise the results achieved with Telio Lab and/or Telio CAD:

- Failure to observe the general Telio Lab minimum layer thickness of 1.5 mm
- No evenly supporting framework design
- Long-span bridges without reinforcement
- Insufficient connector dimensions
- Lack of mechanical retentions on the veneering surface of the metal framework, (e.g. SR Micro, SR Macro Retention Beads from Ivoclar Vivadent)
- Staining/layering using materials that are not approved and/or recommended
- Milling the Telio CAD blocks in an no-compatible CAD/CAM system
- For the processing of Telio CAD with the inLab® MC-L and/or CEREC® MC-L System from Sirona, the CAD-Waxx Starter Kit (Sirona) with modified tank and reinforced filter system is required (available from dental dealers). In comparison with ceramic materials, a reduced quantity of Dentatec fluid per tank filling is required (milling additive) (see Ivoclar Vivadent abrasives overview).

Prevention of premature loss of retention:
Apart from a retentive preparation design, the reliable cementation of Telio CAD restorations using a temporary luting material (e.g. Telio CS Link) depends on the accuracy of fit, which is determined by the CAD/CAM system used.

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Composition

- **Telio Lab Cold Liquid / Telio Activator**
  Components: Methyl methacrylate, triethylene glycol dimethacrylate (TEGDMA), dimethacrylate and catalyst (<1%)
- **Telio Lab Dentin, Transpa Incisal, Neck and Intensive Powder**
  Components: Polymethyl methacrylate, catalyst, and pigments (<2% wt.)
- **Telio Lab Opaquer Powder**
  Components: Copolymer, aluminium oxide, barium sulphate and titanium dioxide, catalyst, and pigments (<2% wt.)
- **Telio Lab Opaquer Liquid**
  Components: Methyl methacrylate, catalyst (<1% wt.)
- **Telio CAD Blocks**
  Components: Polymethyl methacrylate (PMMA), pigments
- **Telio Lab LC Transpa Incisal**
  Components: Urethane dimethacrylate, dimethacrylate, copolymer and silicon dioxide (65% wt.)
- **Telio Stains**
  Components: Bis-GMA, urethane dimethacrylate, triethylene glycol dimethacrylate, fillers, stabilizers, initiators and pigments
- **Telio Lab LC Base**
  Components: Urethane dimethacrylate, dimethacrylate, copolymer and silicon dioxide (65% wt.)
- **Telio Add-On Flow**
  Components: Bis-GMA, urethane dimethacrylate, triethylene glycol dimethacrylate, fillers, initiators, stabilizers and pigments.
  Total content of inorganic fillers: 30% vol., filler particle size: 0.04–0.20 µm.
- **SR Composiv**
  Components: Dimethacrylate; silicon dioxide (16–17% wt.).
  Additional contents are catalysts, stabilizers and pigments (< 2.5% wt.)

Side effects
Systemic side effects are not known to date. In individual cases allergic reactions to PMMA materials have been reported.
In rare cases, components of the Telio Lab materials may lead to sensitization. Telio Lab should not be used in such cases.

Storage instructions
- Store packages in use at room temperature (2–28 °C/35–82 °F).
- Protect the materials from direct sunlight.
- Observe the storage instructions and the date of expiration on the secondary packaging.
- Do not use the products after the indicated expiration date.
- Keep out of the reach of children!

Warning
- Telio Lab Cold Liquid, Telio Activator and Telio Lab Opaquer Liquid contain methyl methacrylate (MMA).
- Do not use in case of known allergy to methyl methacrylates.
- MMA is highly flammable and irritating (flash point: +10 °C/50 °F).
- Irritating to eyes, respiratory organs and skin.
- Do not inhale vapours.
- Keep away from sources of ignition. Do not smoke.
- Prevent contamination of sewage system.
- Take measures against electrostatic charge.
- Contact of the uncured Telio materials with the skin, mucous membrane or eyes must be avoided. Unpolymerized Telio CS materials may cause slight irritation and may lead to a sensitization against methacrylates.
  Customary medical gloves do not provide protection against the sensitizing effect of methacrylates.

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Conditioning of the Telio products for the adhesive bond

Basic material	Surface preparation	Bonding agent	Add-on material
Telio Lab **Telio CAD**	Blast the restorations with Type 100 Al_2O_3 at 1-2 bar (15-30 psi) pressure or grind	Telio Activator or Telio Lab Cold Liquid	Telio Lab
Telio Lab **Telio CAD**	Blast the restorations with Type 100 Al_2O_3 at 1-2 bar (15-30 psi) pressure or grind	Telio Activator or Telio Lab Cold Liquid and SR Composiv	Telio Stains Telio Lab LC Transpa Incisal Telio Add-On
Ivoclar Vivadent denture teeth *except Ivoclar Vivadent ceramic teeth	Blast the restorations with Type 100 Al_2O_3 at 1-2 bar (15-30 psi) pressure or grind	Telio Activator or Telio Lab Cold Liquid	Telio Lab
Alloys	Blast with Al_2O_3 according to the instructions of the manufacturer	SR Link	Telio Lab
Vectris	Blast with Type 100 Al_2O_3 at 1–2 bar (15–30 psi) pressure	Telio Activator or Telio Lab Cold Liquid and Vetris Wetting Liquid	Telio Lab

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CAD/CAM Partners

Telio CAD is processed by means of inhouse CAD/CAM systems or milling centers from our authorized partners. Please read the respective handbooks on the hard- and software of your CAD/CAM device before fabricating the restorations.

For questions regarding the different systems, please contact the respective cooperation partners.

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Nobel Biocare™

Nobel Biocare Holding AG
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8058 Zurich-Airport
Switzerland
www.nobelbiocare.com

For more information, please contact your Nobel Biocare representative.



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Clinical working steps, technical fabrication process

Working step		Ivoclar Vivadent Products
Preparation, shade determination, impression-taking		Optra Gate A–D shade guide Virtual
Fabrication process		
Temporary restoration Casting technique, injection technique, temporary veneers, metal-supported		Telio Lab
CAD/CAM		Telio CAD
Characterization		Telio Lab/ Telio Lab LC components
Polishing		Universal Polishing Paste
Preparing for cementation		Telio CS Desensitizer
Cementation		OptraGate Telio CS Link bluephase
Checking the articulation / occlusion		Astropol OptraPol

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Shade determination

Shade determination of the natural tooth

After tooth cleaning, the tooth shade of the non-prepared tooth and/or the adjacent teeth is determined with the help of a shade guide. Individual characteristics have to be considered when deter-mining the tooth shade. If a crown preparation is planned, for example, the cervical shade should also be determined.
In order to achieve the best possible true-to-nature results, shade determination should be carried out at daylight. Furthermore, the patient should not wear clothes of intensive colours and/or lipstick.



Fabricating the model

Fabricate a master model or a model with detachable segments according to the impression in the usual manner. Generally, a sealant for surface hardening should be applied once the preparation mar-gins are exposed.

The directions of the manufacturers of the different CAD/CAM systems regarding the plaster to be used must also be observed for the use of Telio CAD blocks.

Important for die preparation:

- Check the radius of the incisal/occlusal edge on the prepared dies (maxilla and mandible).
- The prepared incisal edge should be at least as thick as the dia-meter of the bur used in the cavity during the CAD/CAM process. If the incisal edge of the prepared die is more pointed and thinner than the diameter of the bur, the incisal edge has to be blocked out accordingly.
- Also observe the information provided by the manufacturer of the CAD/CAM system regarding the die geometry.

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Minimum material thicknesses / layer thicknesses

The design of the restoration is the key to a successful temporary restoration that also paves the way for the incorporation of the permanent restoration. The more attention is given to the design, the better the final results and the clinical success will turn out to be.

The following basic guidelines have to be observed:

- In large preparations and for veneered or partially veneered restorations, the excess available space must be compensated by the corresponding dimensions of the stable Telio Lab and/or Telio CAD component and not by the layering material.
- The transition to the layering material must not be located in the area of the functional contact points.
- With Telio CAD the design of the restoration generated by the software has to be individually adjusted in accordance with the clinical situation using the design tools. The build-up of missing areas that support and reinforce the shape and cusps of the restoration are constructed with the integrated design tools of the different types of software used.

Framework thickness	**Telio** Lab	**Telio** CAD
Minimum wall thicknesses		
occlusal	1.5 mm	1.5 mm
circular	0.8 mm	0.8 mm
Connector dimensions anterior bridges		
with 1 pontic	min. 12 mm²	min. 12 mm²
with 2 pontics	min. 12 mm²	min. 12 mm²
Connector dimensions posterior bridges		
with 1 pontic	min. 12 mm²	min. 12 mm²
with 2 pontics	min. 16 mm²	min. 16 mm²

Failure to observe the stipulated framework design criteria, minimum thicknesses and minimum connector dimensions may result in clinical failures, such as fracture of the restoration.

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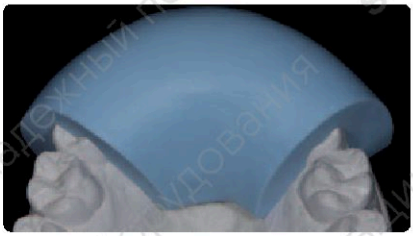


Designing the shape with a wax-up and silicone key

The tooth shape and function are designed with the help of a wax-up and secured with a silicone key.



Wax-up



Silicone key

Minimum material thicknesses / layer thicknesses

The restoration design is key to the success of a temporary restoration. The more attention given to the design, the better the final results and the clinical success will turn out to be.

The following basic guidelines have to be observed:
- Support the restoration with a framework (metal, Vectris) in long-span bridges or if space is limited.
- The minimum wall thickness of 1.5 mm occlusal and 0.8 mm circular must be observed at all times.
- The connector dimensions for anterior bridges with up to two pontics must be at least 12 mm²
- The connector dimensions for posterior bridges with one pontic must be at least 12 mm² and with up to two pontics at least 16 mm²

Important
Support the restoration with a framework (metal, Vectris) in long-span bridges or if space is limited.

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Preparing and isolating the model

- Remove the silicone key from the model once it is set and clean off any wax residue from the model.
- Block out undercuts and cuts between model segments.
- Immerse the model in water for 5 minutes. Then, apply two layers of Separating Fluid. Wait between the two layers until the surface is no longer shiny.

Information

Rough surfaces or undercuts may be isolated or blocked out using the elastic isolating gel SR Ivocron®. Apply SR Ivocron Separator and allow to dry for approximately 5 minutes.

Powder/liquid mixing ratio

Volume mixing ratio	Weight mixing ratio	Mixing time	Dough time	Casting phase	Plastic phase	Polymerization in the pressure pot 2-6 bar/29-87 psi, 40-50°C/104–122°F
1 part polymer : 1 part monomer	1 g polymer : 0.83 g monomer	20 s	2 min	2 min	3 min	15 min

Processing time at 23 °C/73 °F approximately 8 minutes

Important

A higher room temperature shortens the processing time. The mixing ratio between the polymer and the monomer also influences the processing time. If the mixing ratio is correctly observed, a relatively flowable consistency is achieved.

- Pour the desired amount of Telio Lab Cold Liquid into a clear mixing beaker.
- Dispense the same amount of powder into a second mixing beaker.
- Subsequently, add the powder to the Cold Liquid and mix without creating air bubbles using a modelling spatula.
- Cover the beaker and allow a dough time of approximately 2 minutes.
- Pour the now well-flowable Telio Lab resin evenly into the silicone key.
- Once the resin has reached its plastic phase, it can be contoured using an instrument that has been wetted with monomer.



Mixing ratio 1:1

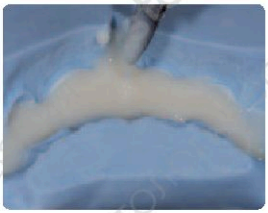


2 minutes dough time

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Fabricating temporaries in the casting technique

- Fill the silicone key with ready-mixed and well-flowable Telio Lab Dentin without causing any air bubbles.
- Apply Telio Lab Dentin on the isolated model without air bubbles.
- Place the silicone key on the model in the correct position.
- Once Telio Lab has reached its plastic phase, the material is polymerized under pressure in a water bath for 15 minutes at 2-6 bar / 29-87 psi and a temperature of 40-50 °C / 104-122 °F.



Even pouring



Application on the isolation model



Placing the silicone key

Polymerization in a water bath

(e.g. Ivomat® IP3)



Pressure (bar/psi)	Time (min)	Temperature (°C/°F)
2–6/29–87	15	40–50/104–122

Individualizing the incisal area using the cut-back technique

- After polymerization is completed and the restoration has been removed from the silicone key, the incisal area of the Telio Lab restoration is reduced by means of cross-cut burs.
- Check the reduction (cut-back) with the silicone key.
- Blast the surface with aluminium oxide at 2 bar / 29 psi pressure or roughen.
- Apply Telio Lab Cold Liquid (monomer) on the clean surface (reaction time min. 2 to max. 4 minutes).
- After that, condition the surface with SR Composiv in order to ensure a sound bond between the restoration and Telio Stains. The layer thickness of SR Composiv must be between 0.2 and 0.5 mm; the processing time is 3 minutes.
- The material is cured in a light-polymerization device (e.g. Spectramat).
- The incisal area is now individualized using Telio Stains.

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The respective light-curing Telio components are pre-polymerized to ensure that they stay in place and to be able to apply a further layer. However, final polymerization of the entire restoration is always required.

Polymerization device	Manufacturer	Pre-polymerization	Polymerization
Quick	Ivoclar Vivadent	40 s (SR Composiv 60 s)	—
Lumamat® 100 (Targis® Power Upgrade)	Ivoclar Vivadent	Exclusively use Quick for pre-polymerization.	11 min (program P 2)
Spectramat®	Ivoclar Vivadent	5 min (Telio Stains 2.5 min)	5 min



Checking the cut-back



Application of SR Composiv



Individualization using Telio Stains



Removal of the inhibition layer

- The inhibition layer is dabbed off using a sponge.
- Now the reduced and stained restoration is replaced in the silicone key and positioned on the wetted and isolated model.

Casting the Telio Lab Transpa Incisal materials

- Pour the desired amount of Telio Lab Cold Liquid into a clean mixing beaker.
- Dispense the same amount of powder into a second mixing beaker.
- Subsequently, add the powder to the Cold Liquid and mix without creating air bubbles using a modelling spatula, cover the beaker, and allow a dough time of approximately 2 minutes.
- Pour the now well-flowable Telio Lab resin evenly into the silicone key and polymerize.

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Finishing and polishing

Finishing

Use (fine) cross-cut tungsten carbide burs to finish Telio Lab restorations.

- Use cross-cut tungsten carbide burs for shape adjustments.
- Overheating of the material must be avoided.
- The restorations are tried in on the dies and carefully finished.
- Check proximal and occlusal contact points.
- Make sure that the minimum thicknesses are maintained even after the minor adjustments.



Removal of excess material

Polishing

Careful polishing is the prerequisite for an optimum esthetic result. Polishing reduces plaque acummulation and the resulting shade disturbances.

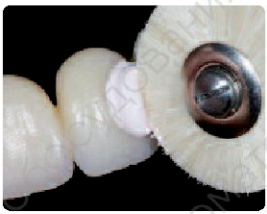
- Pay special attention to crown margins, interdental areas, occlusal surfaces and the basal rest area of pontics.
- Manual polishing of the restoration is carried out with rotary instruments and polishing paste.

Pre-polishing

- Smooth out the surface (convex areas) of the natural structures as well as the marginal ridges with rubber polishers and silicone polishing wheels so that they exhibit an extra lustre after high-gloss polishing.
- Pre-polishing is done with the handpiece / goat hair brushes and fine pumice / Universal Polishing Paste.

High-gloss polishing

- Polish the restoration to a high gloss using goat hair brushes, cotton or leather buffing wheels as well as the Universal Polishing Paste.
- Use low speed and limited pressure for high-gloss polishing. Adjust the pressure with the handpiece, not the polishing motor.
- In order to optimally polish the interdental areas and occlusal surfaces, we recommend modifying the goat hair brushes to become star-shaped so that only the desired areas can be polished due to the smaller size of the brush.
- Depending on the type of high gloss desired, leather buffing wheels can be used to achieve a high shine, while cotton buffs are used to achieve a lower degree of lustre.



Polishing with a goat hair brush



High-gloss polishing with a wool buffing wheel



Completed temporary restoration

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Fabricating temporaries in the injection technique (syringe)

This technique is particularly recommended for long-span restorations. The resin can be quickly and evenly applied into the doubling mould or the silicone with a customary syringe (available in pharmacies).

Wax-up and silicone doubling

Provide at least two sprues on the wax-up for long-span restorations (e.g. wax wire or 3-4 mm plexiglass pin).

Important
Thoroughly block out all areas between the wax-up and the model so that no doubling silicone may enter the area between the wax-up and the model. Block out cuts between model segments with wax.

- Double the model with the wax-up by means of a doubling mould. It is important that the entire wax-up is embedded in silicone.
- The wax-up is embedded in silicone. Remove the wax wires or plexiglass pin after setting.
- Transparent silicone is particularly useful since it enables better optical control during injection.

Model preparation and isolation

- Once the silicone has set, remove the model with the wax-up and clean off wax residue.
- Block out undercuts and cuts between model segments with wax.

Information
Rough surfaces or undercuts may be isolated or blocked out using the elastic isolating gel SR Ivocron Separator. Apply SR Ivocron Separator and allow to dry for approximately 5 minutes.

- Immerse the model in water for 5 minutes. Then, apply two layers of Separating Fluid. Wait between the two layers until the surface is no longer shiny.

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First injection (Dentin)

- The model is now replaced in the doubling mould.
- Pour the desired amount of Telio Lab Cold Liquid into a clean mixing beaker.
- Dispense the same amount of powder into a second mixing beaker.
- Subsequently, add the powder to the Cold Liquid and mix without creating air bubbles using a modelling spatula.
- Inject the now well-flowable Telio Lab resin evenly into one of the sprues using a customary syringe (pharmacy).



Filling the syringe with Telio Lab Dentin



1st Injection of Telio Dentin

Polymerization in a water bath

(z.B. Ivomat® IP3)



Pressure (bar/psi)	Time (min)	Temperature (°C/°F)
2–6/29–87	15	40–50/104–122

Information
In order to be able to re-use the syringe, we recommend removing the residual Telio Lab material from the syringe using an instrument while the material is still in its pastic phase.

Individualizing the incisal area using the cut-back technique

- After polymerization is completed and the restoration has been removed from the silicone key, the incisal area of the Telio Lab restoration is reduced by means of cross-cut burs.
- Check the reduction (cut-back) with the silicone key.
- Blast the surface with aluminium oxide at 2 bar/29 psi pressure or roughen.
- Apply Telio Lab Cold Liquid (monomer) on the clean surface and allow a reaction time of min. 2 to max. 4 minutes.
- After that, condition the surface with SR Composiv in order to ensure a sound bond between the restoration and Telio Stains. The layer thickness of SR Composiv must be between 0.2 and 0.5 mm. The material is cured in a light-polymerization device (e.g. Spectramat, see polymerization table).
- Subsequently, the incisal area is individualized/stained using Telio Stains.

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The respective light-curing Telio components are pre-polymerized to ensure that they stay in place and to be able to apply a further layer. However, final polymerization of the entire restoration is always required.

Polymerization device	Manufacturer	Pre-polymerization	Polymerization
Quick	Ivoclar Vivadent	40 s (SR Composiv 60 s)	—
Lumamat® 100 (Targis® Power Upgrade)	Ivoclar Vivadent	Exclusively use Quick for pre-polymerization.	11 min (program P 2)
Spectramat®	Ivoclar Vivadent	5 min (Telio Stains 2.5 min)	5 min



Checking the cut-back



Application of SR Composiv



Individualization using Telio Stains



Removal of the inhibition layer

– The inhibition layer is dabbed off using a sponge.
– Now the reduced and stained restoration is replaced in the silicone key and positioned on the previously wetted and isolated model.

Second injection (Telio Lab Transpa Incisal)

Same procedure used in the first injection

Polymerization in a water bath

(e.g. Ivomat® IP3)



Pressure (bar/psi)	Time (min)	Temperature (°C/°F)
2–6/29–87	15	40–50/104–122

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Finishing and polishing

Finishing

Use (fine) cross-cut tungsten carbide burs to finish Telio Lab restorations.

- Use cross-cut tungsten carbide burs for shape adjustments.
- Overheating of the material must be avoided.
- The restorations are tried in on the dies and carefully finished.
- Check proximal and occlusal contact points.
- Make sure that the minimum thicknesses are maintained even after the minor adjustments.



Removal of excess material

Polishing

Careful polishing is the prerequisite for an optimum esthetic result. Polishing reduces plaque acummulation and the resulting shade disturbances.

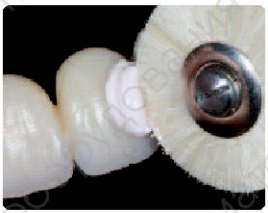
- Pay special attention to crown margins, interdental areas, occlusal surfaces and the basal rest area of pontics.
- Manual polishing of the restoration is carried out with rotary instruments and polishing paste.

Pre-polishing

- Smooth out the surface (convex areas) of the natural structures as well as the marginal ridges with rubber polishers and silicone polishing wheels so that they exhibit an extra lustre after high-gloss polishing.
- Pre-polishing is done with the handpiece/goat hair brushes and fine pumice / Universal Polishing Paste.

High-gloss polishing

- Polish the restoration to a high gloss using goat hair brushes, cotton or leather buffing wheels as well as the Universal Polishing Paste.
- Use low speed and limited pressure for high-gloss polishing. Adjust the pressure with the handpiece, not the polishing motor.
- In order to optimally polish the interdental areas and occlusal surfaces, we recommend modifying the goat hair brushes to become star-shaped so that only the desired areas can be polished due to the smaller size of the brush.
- Depending on the type of high gloss desired, leather buffing wheels can be used to achieve a high shine, while cotton buffs are used to achieve a lower degree of lustre.



Polishing with a goat hair brush



High-gloss polishing with a wool buffing wheel



Completed temporary restoration

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Fabricating a temporary veneer

(Preparing denture teeth by grinding)

For the fabrication of temporary veneers, denture teeth are gound in such a way that they fit over prepared teeth or abutments.

Minimum material thicknesses / layer thicknesses

- The minimum wall thickness of 1.5 mm occlusal and 0.8 mm circular must be observed at all times.
- The connector dimensions for anterior bridges with up to two pontics must be at least 12 mm².
- The connector dimensions for posterior bridges with one pontic must be at least 12 mm² and with up to two pontics at least 16 mm².

Important
Support the restoration with a framework (metal, Vectris) in long-span bridges or if space is limited.

Grinding and set-up

Grind the denture teeth with cross-cut burs and set them up in wax. Make sure to maintain as much substance as possible when grinding the teeth. Check the shape and function in the articulator.



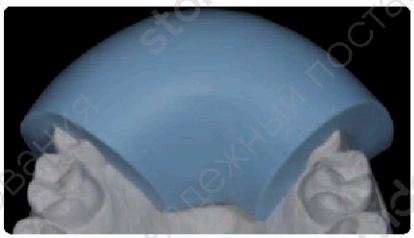
Preparing denture teeth by grinding



Set-up the teeth in wax and carefully contour the transition areas

Designing the silicone key

Prepare a silicone key of the situation as usual.



Silicone key on the set-up

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Preparing and isolating the model

- Remove the silicone key from the model once it is set and clean off any wax residue.
- Block out undercuts and cuts between model segments with wax.
- Immerse the model in water for 5 minutes. Then, apply two layers of Separating Fluid. Wait between the two layers until the surface is no longer shiny.

Preparing and conditioning of the ground denture teeth

- Roughen the surface using rough rotary diamonds or blast with type 100 aluminium oxide (2 bar/29 psi) if necessary.
- Place the roughened teeth in the silicone key and secure with a small amount of superglue.
- To condition the denture teeth, wet the roughened surfaces with Telio Lab Cold Liquid and allow a reaction time of min. 2 to max. 4 minutes.



Wetting with Telio Cold Liquid



Pouring Telio Dentin and placing the silicone key

Completion

- Apply Telio Lab Dentin on the isolated model without air bubbles.
- Pouring Telio Lab and placing the silicone key on the isolated model.
- Once Telio Lab has reached its plastic phase, the material is polymerized under pressure in a water bath for 15 minutes at 2-6 bar / 29-87 psi and a temperature of 40-50 °C / 104-122 °F.

Polymerization in a water bath

(e.g. Ivomat® IP3)



Pressure (bar/psi)	Time (min)	Temperature (°C/°F)
2–6/29–87	15	40–50/104–122

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Finishing and polishing

Finishing

Use (fine) cross-cut tungsten carbide burs to finish Telio Lab restorations.

- Use cross-cut tungsten carbide burs for shape adjustments.
- Overheating of the material must be avoided.
- The restorations are tried in on the dies and carefully finished.
- Check proximal and occlusal contact points.
- Make sure that the minimum thicknesses are maintained even after the minor adjustments.



Removal of excess material

Polishing

Careful polishing is the prerequisite for an optimum esthetic result. Polishing reduces plaque acummulation and the resulting shade disturbances.

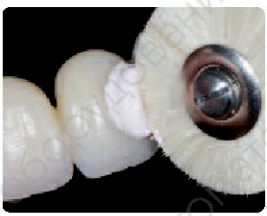
- Pay special attention to crown margins, interdental areas, occlusal surfaces and the basal rest area of pontics.
- Manual polishing of the restoration is carried out with rotary instruments and polishing paste.

Pre-polishing

- Smooth out the surface (convex areas) of the natural structures as well as the marginal ridges with rubber polishers and silicone polishing wheels so that they exhibit an extra lustre after high-gloss polishing.
- Pre-polishing is done with the handpiece / goat hair brushes and fine pumice / Universal Polishing Paste.

High-gloss polishing

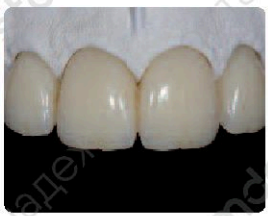
- Polish the restoration to a high gloss using goat hair brushes, cotton or leather buffing wheels as well as the Universal Polishing Paste.
- Use low speed and limited pressure for high-gloss polishing. Adjust the pressure with the handpiece, not the polishing motor.
- In order to optimally polish the interdental areas and occlusal surfaces, we recommend modifying the goat hair brushes to become star-shaped so that only the desired areas can be polished due to the smaller size of the brush.
- Depending on the type of high gloss desired, leather buffing wheels can be used to achieve a high shine, while cotton buffs are used to achieve a lower degree of lustre.



Polishing with a goat hair brush



High-gloss polishing with a wool buffing wheel



Completed temporary restoration

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Metal-supported temporary

With long-span bridges and limited space, it is required to reinforce the temporary restoration with a framework made of a dental alloy.

Fabricating the model

- Fabricate a master model or a model with detachable segments according to the impression in the usual manner.
- Once the model with detachable segments has been prepared, the preparation is exposed.
- For better control, the preparation margin is marked and sealed.
- A spacer is applied on the preparation as a spaceholder for the temporary luting cement (Telio CS Link).

Framework design

The framework design is the key to a succeful metal-supported temporary restoration. The following basic guidelines have to be observed:

- The wax-up framework reflects the reduced anatomical tooth shape (contouring supporting the tooth shape).
- The minimum wall thickness of 0.3–0.5 mm, depending on the alloy and the instructions of the manufacturer, must be observed at all times.
- Sufficient connector dimensions of the metal framework must also be observed.
- Use the silicone key to check the contouring.



Framework design for an anterior crown



Posterior tooth pontic



Molar crown

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Application of retention beads

In addition to the chemical bond with SR Link, a mechanical bond by means of rentention beads must be provided. The rentention beads are applied following functional and esthetic aspects. Once the sprues have been placed, apply the retention adhesive in a thin layer and allow a reaction time of approximately 20 seconds so that the solvent may evaporate and the retention beads do not sink into to it and provide sufficient surface for the mechanical retention.



SR Micro / Macro Retention Beads



Wax-up with rentention beads

Important
Mechanical retentions ensure the mechanical bond between the metal and the veneering resin and must be applied.

Sprueing and investing (do not use a debubblizer). Process the alloy according to the instructions of the manufacturer.

Surface finishing

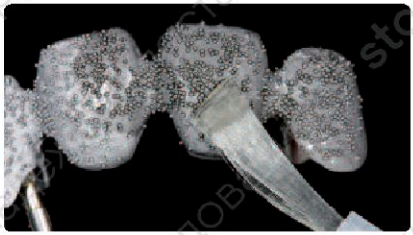
- Carefully divest the cast framework and blast with Al_2O_3 according to the instructions of the alloy manufacturer.
- Separate the sprues and finish the framework using cross-cut tungsten carbide burs.
- For esthetic reasons, the retention beads may be reduced by half (equator) so that sufficient retentive surface is still available.
- For an improved bond with the Telio Lab Opaquer, the metal surface is blasted with Al_2O_3, 100 µm at 2–4 bar/29–58 psi (observe the instructions of the alloy manufacturer).

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Metal bond

The for chemical metal bond, the use of SR Link is recommended.

– After blasing, remove blasting medium residue by tapping the framework against the work surface rather than by cleaning with steam or blasting with oily compressed air.
– Start with the application of SR Link immediately. Apply SR Link with a clean disposable brush and allow it to react for 3 minutes.



Applying SR Link

Important
Do not blast the framework with oily compressed air or steam when using SR Link! Do not touch the surface once it has been cleaned!

Telio Lab Opaquer

Mix Telio Lab Opaquer with Telio Lab Opaquer Liquid to a flowable consistency, cover it, and let the material rest for approximately 2-3 minutes. Subsequently, apply the material in an evenly covering layer on the surface using a brush. Telio Lab Opaquer requires a drying time of approximately 15 minutes.



Apply an even, covering layer on the bridge framework.

Important
Check setting with an instrument before continuing with the next working steps.

The final polymerization of the Telio Lab Opaquer is carried out together with Telio Lab Dentin.

The metal-supported temporary restoration may now be fabricated in the casting, injection or veneering technique:

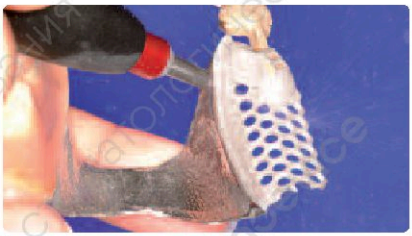
- Casting technique – see page 15
- Injection technique – see page 18
- Temporary veneer – see page 22

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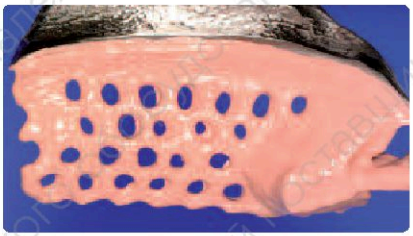
Masking of model cast retention grids with Telio Lab Opaquer

Surface conditioning with SR Link

- After finishing the model cast, carefully blast the retention grids with Type 100 Al_2O_3, at 2-4 bar / 29-58 psi (observe the instructions of the alloy manufacturer).
- Sandblasting cleans the surface and improves the mechanical bond.
- After blasting, remove blasting medium residue by tapping the framework against the work surface rather than by cleaning with steam or blasting with compressed air.
- Start with the application of SR Link immediately. Apply SR Link with a clean disposable brush and allow it to react for 3 minutes.



Blast with Type 100 Al_2O_3 at 2-4 bar / 29-58 psi pressure.



Covering the retention grids

Important
Do not blast the framework with compressed air or steam when using SR Link! Do not touch the surface once it has been cleaned!

Applying Telio Lab Opaquer

- Mix Telio Lab Opaquer with Telio Lab Opaquer Liquid to a flowable consistency, cover it, and let the material rest for approximately 2-3 minutes.
- After that, entirely cover the retention beads of the model cast restoration with Telio Opaquer.
- Telio Lab Opaquer requires a drying time of approximately 15 minutes.
- The final polymerization of the Telio Lab Opaquer is carried out together with the polymerization of the denture base resin.

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Telio CAD
CAD/CAM processing

The fabrication steps are described in the directions for use and user manuals of the different CAD/CAM systems. The instructions of the manufacturers must be followed.
Observe the stipulated minimum thicknesses and connector dimensions.

Important for the processing in Sirona milling devices
In comparison with ceramic materials, a reduced quantity of Dentatec fluid per tank filling is required. Please refer also to the Ivoclar Vivadent abrasives overview.
The CAD-Waxx Starter Kit from Sirona with a modified tank and reinforced filter system (from specialized dental dealers) is required for the processing in MC-L devices.

Prevention of premature loss of retention:
Apart from a retentive preparation design, the reliable cementation of Telio CAD restorations using a temporary luting material (e.g. Telio CS Link) depends on the accuracy of fit, which is determined by the CAD/CAM system used.

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Fully anatomical fabrication and final polishing

In this processing technique, the restoration is polished and incorporated immediately after milling in the CAD/CAM system. In the process, the surface lustre is achieved by manual polishing. This processing technique is very efficient and leads to an esthetic result quickly and easily.

After milling in the CAD/CAM device, the resoration is separated from its holder with a fine tungsten carbide bur or a diamond separating disk and fitted on the model.



Telio CAD restoration after milling

Note
Remove any possible white spots on the restoration that have developed during milling in the CAD/CAM device using a tungsten carbide bur.

Finishing

Use (fine) cross-cut tungsten carbide burs to finish Telio CAD blocks.



Telio CAD on the working model

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Observe the following procedure for finishing Telio CAD restorations:
- Use cross-cut tungsten carbide burs to smooth out the attachment point.
- Use cross-cut tungsten carbide burs for shape adjustments.
- Overheating of the material must be avoided.
- The restorations are tried in on the dies and carefully finished.
- Check proximal and occlusal contact points.
- Surface-grind the entire occlusal surface with a fine diamond to smooth out the surface structure created by the CAD/CAM procedure.
- Make sure that the minimum thicknesses are maintained even after the minor adjustments.
- Make sure to thoroughly clean the restoration before further processing and to remove any residue of the milling additive of the CAD/CAM milling unit. Residue of the milling additive remaining on the surface may result in bonding problems.
- Try in the restoration, if necessary.





Telio CAD restoration after finishing

Polishing

Careful polishing is the prerequisite for an optimum esthetic result. Polishing reduces plaque acummulation and the resulting shade disturbances. Pay special attention to crown margins, interdental areas, occlusal surfaces and the basal rest area of pontics.
Manual polishing of the restoration is carried out with rotary instruments and polishing paste.

In order to achieve a lifelike surface gloss, please observe the following procedure:
- Always pay attention to the contact points and margins during polishing!
- Use the corresponding speed and little pressure to avoid heat development.

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Pre-polishing

Smooth out the surface (convex areas) of the natural structures as well as the marginal ridges with rubber polishers and silicone polishing wheels so that they exhibit an extra lustre after high-gloss polishing. Pre-polishing is done with the handpiece/goat hair brushes and fine pumice/Universal Polishing Paste.



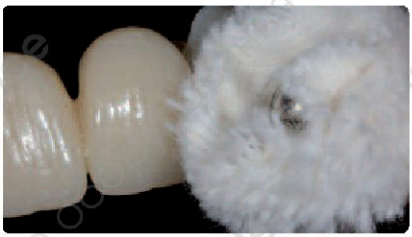


Polish the restoration using customary polishers, such as rubber polishers and silicone wheels.

High-gloss polishing

- Polish the restoration to a high gloss using goat hair brushes, cotton or leather buffing wheels as well as the Universal Polishing Paste.
- Use low speed and limited pressure for high-gloss polishing. Adjust the pressure with the handpiece, not the polishing motor.
- Modify the goat hair brush to become star-shaped in order to optimally polish the interdental areas and occlusal surfaces. Given the smaller size brush, only the desired areas are polished.
- Depending on the type of high gloss desired, leather buffing wheels can be used to achieve a high shine, while cotton buffs are used to achieve a lower degree of lustre.





Polishing of the restoration with Universal Polishing Paste, goat hair brushes and wool buffing wheels



After polishing with the cotton buffing wheel



Completed Telio CAD restoration on the working model

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Telio Lab / Telio CAD

Cut-back technique with Telio Lab LC (light-curing)

The light-curing Telio Lab LC materials are layered onto the incisal and occlusal area of the reduced milled Telio Lab and/or Telio CAD restorations. The limited application of layering material permits achieving highly esthetic restorations in an efficient manner.

The cut-back technique is not recommended for:
- Build-up of incisal edges in anterior teeth exposed to high protrusion stress
- Build-up of stress-bearing cusps in posterior teeth

Characterization with light-curing Telio Lab LC materials

Telio Lab LC materials include light-curing veneering materials in paste form as well as characterization stains.

The targeted grinding of the transition areas to the cut-back regions is the prerequisite for the smooth transition between Telio Lab / Telio CAD and the light-curing Telio Lab LC material.







- Always pay attention to the contact points and margins during polishing!
- As an alternative, the ground surface can be blasted with Al_2O_3, 100 µm at 1-2 bar /15-29 psi pressure.
- Thoroughly clean with the steam jet and dry with oil-free air
- Apply preferably a cold-curing MMA-based monomer (e.g.Telio Lab Cold Liquid, Telio Activator); the reaction time/dough time is min. 2 to max. 4 minutes.
- After that, condition the surface with SR Composiv in order to ensure a sound bond between the restoration and the layering materials. The layer thickness of SR Composiv must be between 0.2 and 0.5 mm. The material is cured in a light-polymerization device (see SR Composiv Instructions for Use).

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The respective light-curing Telio components are pre-polymerized to ensure that they stay in place and to be able to apply a further layer. However, final polymerization of the entire restoration is always required.

Polymerization device	Manufacturer	Pre-polymerization	Polymerization
Quick	Ivoclar Vivadent	40 s (SR Composiv 60 s)	—
Lumamat® 100 (Targis® Power Upgrade)	Ivoclar Vivadent	Exclusively use Quick for pre-polymerization.	11 min (program P 2)
Spectramat®	Ivoclar Vivadent	5 min (Telio Stains 2.5 min)	5 min

The polymerized SR Composiv supports the bond between Telio Lab / Telio CAD and the light-curing Telio Lab LC materials. The inhibition layer facilitates the application of the veneering materials.



Protect the inhibition layer from contamination





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Indirect application – e.g. interdental characterization

- Telio Stains are applied under the Telio Lab LC layers.
- Apply the Stains in very thin layers of max. 0.2 mm with a brush or other suitable instrument.
- After that, light-curing is carried out with a customary curing light for 40 seconds (see page 45).

- Telio Stains should have room temperature so that a smooth consistency is ensured.
- Do not expose Telio Stains to intensive light during application, since this shortens the processing time.

- Then the incisal edge is built up using the Telio Lab LC Transpa materials, and the anatomical shape is completed. Do not exceed the maximum layer thickness of 2 mm.









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Polymerization

- Remove the completely layered restoration from the model and supplement the contact points with Telio Lab LC Incisal materials, if required. Make sure that good adaptation in the marginal areas is achieved, i.e. at the transtion between Telio Lab / Talio CAD and the veneer.
- Coat the completely contoured veneer with a generous amount of SR Gel and polymerize.
- After polymerization, thoroughly remove the SR Gel under running water.






The respective light-curing Telio components are pre-polymerized to ensure that they stay in place and to be able to apply a further layer. However, final polymerization of the entire restoration is always required.

Polymerization device	Manufacturer	Pre-polymerization	Polymerization
Quick	Ivoclar Vivadent	40 s (SR Composiv 60 s)	—
Lumamat® 100 (Targis® Power Upgrade)	Ivoclar Vivadent	Exclusively use Quick for pre-polymerization.	11 min (program P 2)
Spectramat®	Ivoclar Vivadent	5 min (Telio Stains 2.5 min)	5 min

Note
Observe the curing depths of the materials. Depending on the layering technique, more or less air is trapped in the veneering material. This may lead to porosity and, in extreme cases, slightly influence the shade. In order to prevent this situation, the restoration can be compressed in the Ivomat for 2 minutes at 6 bar/87 psi (without heat and without water) immediately after contouring. Poylmerization with light is carried out immediately after that.

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Polishing

Careful polishing is the prerequisite for an optimum esthetic result. Polishing reduces plaque acummulation and the resulting shade disturbances. Pay special attention to crown margins, interdental areas, occlusal surfaces and the basal rest area of pontics. Manual polishing of the restoration is carried out with rotary instruments and polishing paste.

In order to achieve a lifelike surface gloss, please observe the following procedure:
- Smooth out attachment points with suitable grinding instruments. Do not use rough-grained diamonds, burs or similar instruments, since they are unsuitable to achieve a fine surface.
- Always pay attention to the contact points and margins during polishing!
- Use the corresponding speed and little pressure to avoid heat development.

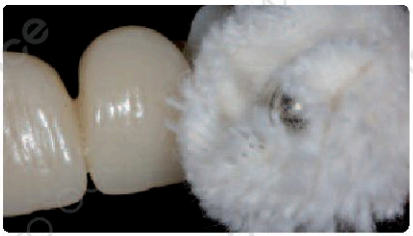
Prepolishing

- Smooth out the surface (convex areas) of the natural structures as well as the marginal ridges with rubber polishers and silicone polishing wheels so that they exhibit an extra lustre after high-gloss polishing.
- Pre-polishing is done with the handpiece / goat hair brushes and fine pumice / Universal Polishing Paste.

High-gloss polishing

- Polish the restoration to a high gloss using goat hair brushes, cotton or leather buffing wheels as well as the Universal Polishing Paste.
- Use low speed and limited pressure. Adjust the pressure with the handpiece, not the polishing motor.
- Modify the goat hair brush to become star-shaped in order to optimally polish the interdental areas and occlusal surfaces. Given the smaller size brush, only the desired areas are polished.
- Depending on the type of high gloss desired, leather buffing wheels can be used to achieve a higher lustre.





Polishing of the restoration with Universal Polishing Paste, goat hair brushes and wool buffing wheels





Telio CAD restoration completed with Telio Lab LC materials on the working model.

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Cut-back technique with Telio Lab (cold-curing)

Characterization with cold-curing Telio Lab materials

Telio Lab is a two-component powder/liquid system for the cold poylmerization.

The targeted grinding and/or the reduction of the transition areas is the prerequisite for the smooth transition between Telio CAD and the cold-curing Telio Lab material.







- Additionally/alternatively, the ground surface can be blasted with Al_2O_3 at 1-2 bar /15-29 psi pressure.
- Thoroughly clean with the steam jet and dry with oil-free air.
- Apply Telio Lab Cold Liquid on the cleaned surface; the reaction time is min. 2 to max. 4 minutes. The application of the Telio Lab material is started immediately after the dough time of 4 minutes.

Alternative

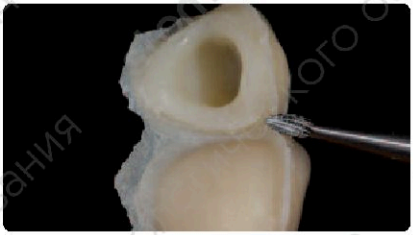
Use of a silicone key

If the Telio CAD framework is manually reduced by grinding, a silicone key can be fabricated beforehand. Pour the desired amount of Telio Lab Cold Liquid into a clear mixing beaker after the cut-back and conditioning. Add the same quantity of Telio Lab Transpa Incisal, mix with a modelling spatula, cover it and let the material rest for approximately 2 minutes. Pour the now well-flowable Telio Lab evenly into the silicone key. Then, place the filled silicone key on the Telio CAD restoration.
Once the resin has reached its plastic phase, it can be contoured using an instrument that has been wetted with monomer. After that, pressure polymerization is conducted (15 minutes at 40-50 °C/ 104-122 °F at 2-6 bar/29-58 psi pressure in the pressure pot e.g. Ivomat).

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Finishing and polishing

Finishing and polishing are carried out with instruments suitable for PMMA finishing, such as burs, rubber polishers, goat hair brushes and cotton buffing wheels.



Removal of excess material



Pre-polishing using goat hair brushes and pumice

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Polishing

Careful polishing is the prerequisite for an optimum esthetic result. Polishing reduces plaque acummulation and the resulting shade disturbances. Pay special attention to crown margins, interdental areas, occlusal surfaces and the basal rest area of pontics. Manual polishing of the restoration is carried out with rotary instruments and polishing paste.

In order to achieve a lifelike surface gloss, please observe the following procedure:
- Smooth out attachment points with suitable grinding instruments. Do not use rough-grained diamonds, burs or similar instruments, since they are unsuitable to achieve a fine surface.
- Always pay attention to the contact points and margins during polishing!
- Use the corresponding speed and little pressure to avoid heat development.

Pre-polishing
- Smooth out the surface (convex areas) of the natural structures, as well as the marginal ridges with rubber polishers and silicone polishing wheels so that they exhibit an extra lustre after high-gloss polishing.
- Pre-polishing is done with the handpiece / goat hair brushes and fine pumice / Universal Polishing Paste.

High-gloss polishing
- Polish the restoration to a high gloss using goat hair brushes, cotton or leather buffing wheels as well as the Universal Polishing Paste.
- Use low speed and limited pressure. Adjust the pressure with the handpiece, not the polishing motor. Modify the goat hair brush to become star-shaped in order to optimally polish the interdental areas and occlusal surfaces. Given the smaller size brush, only the desired areas are polished.
- Depending on the type of high gloss desired, leather buffing wheels can be used to achieve a higher lustre.



Polishing of the restoration with Universal Polishing Paste and goat hair brushes



Completed Telio CAD restoration characterized with Telio Lab on the working model

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Repairs and add-ons of Telio Lab / Telio CAD restorations

Repairs of Telio Lab / Telio CAD in the laboratory

Telio Lab and Telio CAD can be supplemented/repaired with Telio Lab.

In case of fractured restorations, proceed as follows:
- Precisely fix fractured parts of the restorations and connect with bonding wax or adhesive.
- Fabricate a model and a silicone key
- Roughen the fracture surface with a rotary diamond or blast it with Type 100 Al_2O_3 at 2 bar /29 psi pressure.
- Wet the roughened fracture area with Telio Lab Cold Liquid or Telio Activator and let it react for min. 2 to max. 4 minutes.
- Isolate and water the repair model.
- Correctly fix the fractured pieces using the silicone key on the model.
- Pour the flowable Telio Lab resin.
- Pressure polymerization (water bath 40–50 °C/104–122 °F, pressure 2–6 bar/29–87 psi, 15 min).
- Finishing and polishing.

The procedure is the same for relines and add-ons.

Add-ons and relines with Telio Lab LC Base / Telio Add-On Flow

Relines and supplements of Telio Lab and Telio CAD can be carried out using Telio Lab LC Base and Telio Add-On Flow.

The following steps have to be observed:
- Roughen the desired area of the Telio Lab / Telio CAD restoration with a rotary diamond or blast it with Type 100 Al_2O_3 at 2 bar/29 psi pressure.
- Wet the roughened area with Telio Lab Cold Liquid or Telio Activator and let it react for min. 2 to max. 4 minutes.
- Apply SR Composiv and polymerize with light.
- Apply Telio Lab LC Base and/or Telio Add-On Flow and polymerize with light.
- Finishing and polishing.

The following Telio components are available for intraoral repairs and relinings in the dental office:
- Telio CS C&B
- Telio Add-On Flow

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Possibilities for cementation

All Telio restorations are temporarily incorporated. We recommend conventional eugenol-free temporary cements, such as Telio CS Link.
For long-term temporaries (wear period of more than 4 weeks) regular check-ups are required in order to recement the restoration, if required.

Prevention of premature loss of retention:
Apart from a retentive preparation design, the reliable cementation of Telio CAD restorations using a temporary luting material (e.g. Telio CS Link) depends on the accuracy of fit, which is determined by the CAD/CAM system used.

Preparing for cementation

Telio Lab
Metal-supported - metal-free

Telio CAD
Blast the inner aspects of the restoration with Type 100 Al_2O_3 at 1 bar/29 psi pressure or roughen with a rough diamond bur.
Subsequently, incorporate the restoration with eugenol-free temporary cement (e.g. Telio CS Link).

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Frequently Asked Questions

What are the special characteristics of Telio Lab?

- The shades and material technology of Telio Lab are coordinated with those of Telio CAD and Telio CS.
- Telio Lab is exclusively processed in the cold technique.
- Telio Lab can be processed in the injection technique (modified flowable phase).

Are the Telio Lab components compatible with other PMMA resin components?

No.
The individual components of Telio Lab have been selected in such a way that they result in ideal processing, shade and material properties. Cross-over application of other PMMA resins and Telio Lab components lead to changing processing properties as well as sub-optimal shade and material properties.

Can Telio Lab be used as veneering material for metal-supported long-term temporaries?

Yes. However, the following processing guidelines have to be observed:

- The metal framework must be given a reduced anatomical shape and provided with mechanical retentions.
- Blast the metal surface with Al_2O_3, grain size 100 µm, at 2-4 bar/29-58 psi pressure. Then tap off blasting medium residue on the surface. Do not use the steam jet or compressed air.
- Start with the application of SR Link immediately. Apply SR Link with a clean disposable brush and allow it to react for 3 minutes.
- Mix Telio Lab Opaquer with Telio Lab Opaquer Liquid to a flowable consistency, cover it, and let the material rest for approximately 2–3 minutes. Subsequently, cover the entire framework or model cast components with opaquer.
- Check setting with an instrument before continuing with the next working steps.
- In general, the minimum layer thickness of Telio Lab is 1.5 mm!

Can Telio Lab be directly applied in the oral cavity of the patient?

Direct intraoral contact with non-polymerized material is contraindicated.

Can Telio Lab be characterized with light-curing stains?

Yes, but only if the stains are covered with another material afterwards.
If the stains are on the surface, they will be removed during polishing. Blast the surface with pure Al_2O_3, grain size 100 µm and 2 bar/29 psi pressure, and clean. Apply Telio Lab Cold Liquid by means of a brush and let it react for min. 2 to max. 4 minutes.
Now, apply SR Composiv on the conditioned surface. Observe a layer thickness of min. 0.2 - max. 0.5 mm. The processing time is approximately 3 minutes. Subsequently, polymerize with light in the Spectramat for 4 minutes or the Lumamat 100 for 11 minutes (P2). If other devices are used, observe the instructions of the manufacturer.

Can Telio Lab and Telio CAD be layered over and/or characterized with light-curing materials?

- Telio Lab and Telio CAD can only be layered over with light-curing veneering materials. Telio Lab LC Transpa material in conjunction with SR Composiv as a bonding agent between the PMMA resin and the composite veneering material is suitable for the esthetic individualization of the incisal third in anterior restorations.
- Occlusal veneers in molars are contraindicated. The layer thickness should not exceed 1.5 mm.

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What type of restorations can be fabricated with Telio Lab?

- Temporary application:
  Crowns and bridges (metal-free / metal-supported)
- Permanent application:
  Supplements to artificial teeth in removable dentures

Can Telio Lab Incisal be used for the individualization of the incisal area of a Telio CAD restoration?

Yes. However, the following processing guidelines have to be observed:

- Blast the ground surface with pure Al_2O_3, grain size 100 µm and 2 bar/29 psi pressure, and clean. Apply Telio Lab Cold Liquid by means of a brush and let it react for min. 2 to max. 4 minutes before starting the application of Telio Lab Incisal materials.
- The Telio Lab Incisal materials can be applied by means of the silicone key technique or free layering technique.
- The overall layer thickness of the restoration should not be less than 1.5 mm.

Must SR Gel always be used?

For the tempering of Telio Lab LC Transpa and Telio Lab LC Base, SR Gel must always be used. If this is not done, the inhibited layer will be too thick, which may lead to clinical failure.

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Polymerization times

Telio Lab LC Transpa Incisal / Telio Lab LC Base
Telio Stains / Telio Add-On Flow/ SR Composiv

The respective light-curing Telio components are pre-polymerized to ensure that they stay in place and to be able to apply a further layer. However, final polymerization of the entire restoration is always required.

Polymerization device	Manufacturer	Pre-polymerization	Polymerization
Quick	Ivoclar Vivadent	40 s (SR Composiv 60 s)	—
Lumamat® 100 (Targis® Power Upgrade)	Ivoclar Vivadent	Exclusively use Quick for pre-polymerization.	11 min (program P 2)
Spectramat®	Ivoclar Vivadent	5 min (Telio Stains 2.5 min)	5 min
Visio Beta[1]	3M ESPE	7 min, of which 10 s vacuum (program depends on type of device)	15 min wtih vacuum (program depends on type of device)
UniXS[1]	Heraeus Kulzer	90 s	2x 180 s
Solidilite EX[1]	Shofu	1 min	5 min

[1] Not a registered trademark of Ivoclar Vivadent AG, Liechtenstein

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Shade	BL3	A1	A2	A3	A3.5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Opaquer	OP0	OP1	OP1	OP2	OP2	OP2	OP1	OP1	OP3	OP3	OP1	OP3	OP3	OP3	OP2	OP2	OP3
Dentin	BL3	A1	A2	A3	A3.5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Transpa Incisal	TI1	TI2	TI2	TI3	TI3	TI3	TI2	TI2	TI2	TI2	TI2	TI2	TI3	TI3	TI2	TI2	TI2
Neck	*D B1	N1	N1	N2	N2	N4	N1	N1	N3	N3	N1	N4	N4	N4	N2	N2	N3
Intensive	white							orange				brown					
Gingiva	Telio Lab Opaquer: Gingiva							Telio Lab: Gingiva									

* Use Dentin B1 as neck

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