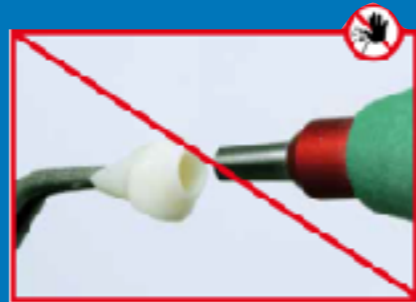
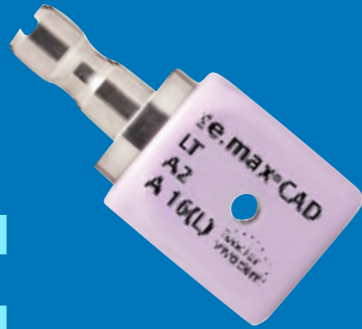


Ti-Bases Bonding Flowchart

All ceramics need to be mechanically roughened and chemically primed prior to proper resin bonding. These steps must be meticulously followed and deviations from these protocols will lead to premature failure of the restoration.

e.max CAD

1:



DO NOT air-particle abrade e.max CAD!

2:



Apply Monobond Etch & Prime for 60 seconds total (20 second scrub + 40 seconds reaction). Rinse off the bluish green color with water (NOT STEAM!) and allow it to dry.

Zirconia



DO air-particle abrade zirconia!
50 μ Aluminum Oxide @ 1-2 bar.

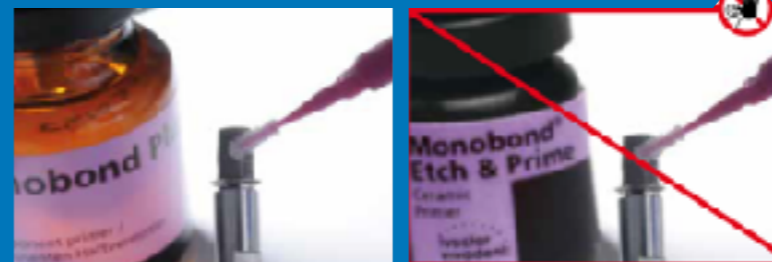


Steam clean and allow to dry.

3:



With an analog on the Ti-Base and teflon tape occluding the screw access, Air-particle abrade the Ti-Base lightly at 50 μ Aluminum Oxide @ 1-2 bar, then steam clean and allow to dry.



Apply Monobond Plus, and let it air dry\evaporate for \geq 60 seconds.
DO NOT RINSE!



Apply Monobond Plus, and let it air dry\evaporate for \geq 60 seconds. **DO NOT RINSE!**



Bond Ti-Base to ceramic (e.max CAD or Zirconia) with Multilink Hybrid Abutment HO.

Ti-Bases Bonding Flowchart

All ceramics need to be mechanically roughened and chemically primed prior to proper resin bonding. These steps must be meticulously followed and deviations from these protocols will lead to premature failure of the restoration.

1:



Vita Enamic (Resin-Ceramic Hybrid)



DO air-particle abrade e.max CAD!
50µ Aluminum Oxide @ 1-2 bar.



Telio CAD (PMMA)



DO air-particle abrade Telio CAD!
50µ Aluminum Oxide @ 1-2 bar.



Steam clean and allow to dry.

2:



Apply Monobond Etch & Prime for 60 seconds total (20 second scrub + 40 seconds reaction). Rinse off the bluish green color with water (NOT STEAM!) and allow it to dry.

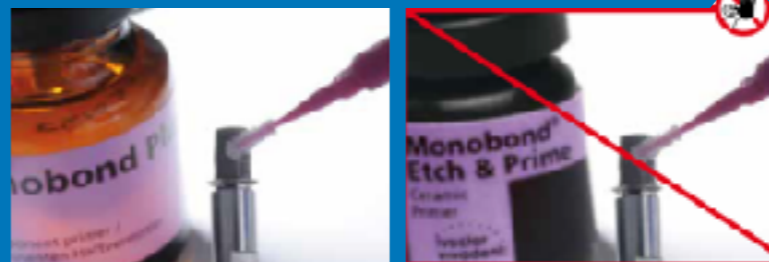


Apply SR Connect (and light cure). DO NOT RINSE!

3:



With an analog on the Ti-Base and teflon tape occluding the screw access, Air-particle abrade the Ti-Base lightly at 50µ Aluminum Oxide @ 1-2 bar, then steam clean and allow to dry.



Apply Monobond Plus, and let it air dry/evaporate for ≥ 60 seconds.
DO NOT RINSE!



Bond Ti-Base to ceramic (e.max CAD or Zirconia) with Multilink Hybrid Abutment HO.

Ti-Base and E.max Bonding Instructions from Ivoclar

	IPS e.max CAD ceramic structure (LS ₂)		Ti base
Blasting	–		According to the instructions of the manufacturer
Conditioning	Option 1	Option 2	
Etching	Bonding area to the base with IPS® Ceramic Etching Gel for 20 s	Agitate Monobond Etch & Prime® for 20 seconds into the bonding surface to the Ti base and allow it to react for another 40 seconds.	–
Silanizing	The bonding area with Monobond® Plus for 60 s		The bonding area with Monobond® Plus for 60 s
Adhesive cementation	Multilink® Hybrid Abutment		
Covering the cementation joint	Glycerine gel, e.g. Liquid Strip		
Curing	7 minutes auto-polymerization		
Polishing the cementation joint	Conventional polishers for ceramic/composite resin		

Zirconia and Ti-Base Bonding Instructions from Sirona

10 Glue the directly screw-retained crown onto the titanium base

Prior to gluing, check to make sure that the crown can be easily placed on the titanium base. No gap should be visible between the restoration and the attachment surface of the titanium base.

CAUTION

Observe the manufacturer's instructions for handling the titanium base.

The contact surfaces of the titanium base to the implant should not be sand-blasted or otherwise processed.

The diameter of the titanium base should not be reduced (e.g. by grinding). Shortening the titanium base is not recommended.

The surfaces of the titanium base intended for gluing to the zirconium oxide ceramics have to be sand-blasted and cleaned.

Surfaces of the zirconium oxide ceramics and the titanium base to be glued must be free of dust and grease.

1. Sand-blast the gluing surfaces of the zirconium oxide ceramics and the titanium base with 50 µm aluminum oxide and up to 2.0 bar. (The screw channel of the zirconium oxide ceramics is also an adhesive surface and must be treated accordingly with the sandblasting technique.)
2. Clean the adhesive surfaces with alcohol or steam. For easier handling during the gluing process, it is recommended that the titanium base be screwed into a lab implant or a polishing tool.
3. Cover the hex head of the abutment screw with wax.

NOTICE

Use "PANAVIA™ F 2.0" (www.kuraray-dental.de) extraoral as the adhesive for connecting the titanium base and the zirconium oxide ceramics.

4. Apply Alloy Primer (from Kuraray Noritake Dental Inc.) onto the TiBase adhesive surface in accordance with the manufacturer's instructions.
5. Mix the glue according to the manufacturer's instructions and apply it to the titanium base.
6. Press on the customized zirconium oxide ceramics as far as it will go. Make sure it latches into the rotation and position stops.
7. Remove excess glue immediately.
8. Apply the Airblocker ("Oxygard") to the junction where the ceramic and titanium surfaces meet and to the screw funnel for final hardening.
9. Remove residue with a rubber polisher after hardening.

Telio CAD Bonding Instructions from Ivoclar

Telio® CAD Abutment Solutions

Cementation of the titanium bonding base/ Telio® CAD structure

Careful preparation of the bonding surfaces is a prerequisite for optimum adhesive cementation of the Telio CAD structure to the titanium bonding base. The following paragraphs outline the required procedures.

Required materials:

- SR Connect
- Monobond® Plus
- Multilink® Hybrid Abutment HO 0
- Liquid Strip



	Telio CAD structure	Titanium bonding base
Blasting	–	Observe manufacturer's instructions.
Conditioning	Apply SR Connect on the bonding surface to the titanium bonding base, allow to react for 30 s and polymerize for 40 s with a curing light (e.g. Bluephase® Style).	–
Preparation for cementation	–	Wet bonding surface with Monobond Plus for 60 s.
Cementation	Multilink® Hybrid Abutment HO 0	
Covering the cementation joint	Liquid Strip	
Curing	Auto-polymerization: 7 min	
Polishing the cementation joint	Customary polishers for resin materials and polishing paste	

Ti-Base Bonding Instructions from Ivoclar

Preparing the titanium bonding base

The following procedure should be observed when preparing the titanium bonding base for the cementation with the Telio CAD structure:

- Prepare the titanium bonding base according to the instructions of the manufacturer.
- Clean the titanium bonding base in an ultrasonic bath or with the steam jet and then dry with blown air.
- Screw the titanium bonding base onto a model analog.
- Place the Telio CAD structure on the titanium bonding base and mark the relative position of the components with a waterproof pen. This facilitates locating the correct position when the parts are assembled at a later stage.
- Do not blast or modify the emergence profile of the titanium bonding base in any way.
- **If the manufacturer recommends that the bonding surface of the titanium bonding base is blasted, the following procedure should be observed:**
 - Protect the emergence profile and the screw channel, e.g. by means of a silicone (Virtual® Extra Light Body Fast Set).
 - Carefully blast the bonding area according to the instructions of the manufacturer.
 - Remove silicone.
 - Clean the titanium bonding base in an ultrasonic bath or with the steam jet.
 - After the bonding surface has been cleaned, it must not be contaminated under any circumstances as this would impair the bond.
- **Note:** Aggressive blasting negatively affects the anti-rotation lock. Blasting with max. 50 µm Al₂O₃ at 1–2 bar (15–29 psi) pressure is recommended.
- Apply Monobond Plus on the cleaned bonding surface and allow it to react for 60 s. After the reaction time, dry the remaining residue with water and oil-free air.
- Seal the screw channel with a foam pellet or wax. The bonding surface must not be contaminated in the process.





