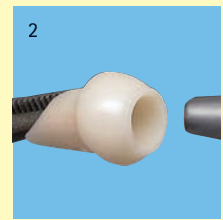


## Bonding protocol



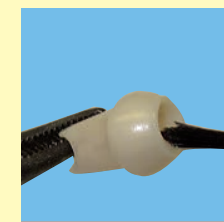
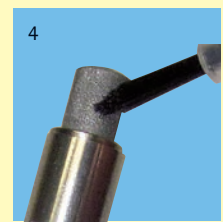
Apply protective varnish



Sandblast with 110 µm aluminium oxide



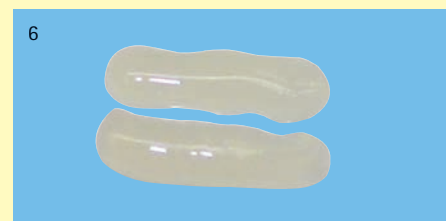
Use wax to seal the screw canal



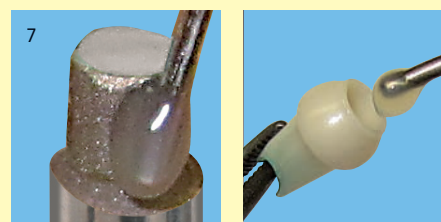
Condition with MKZ Primer or Silano-Pen



Apply FGP separating agent into the screw canal



Mix DTK-adhesive



Apply DTK-adhesive, place abutment on the adhesive base



Insert screw into the screw canal



Cure with light



Remove polymerized DTK-adhesive from the screw canal

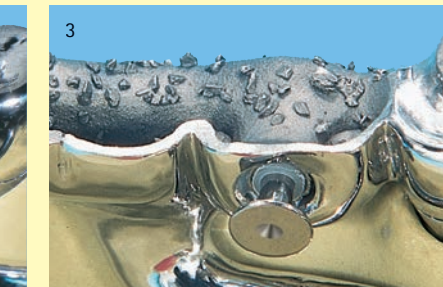


Remove residues of adhesive



Smoothen adhesive gap

## Bonding of attachments

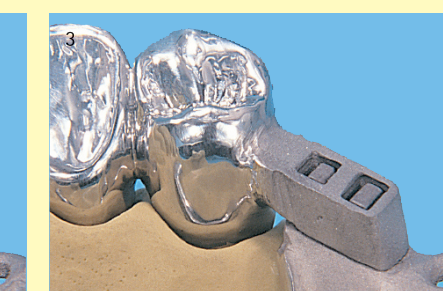
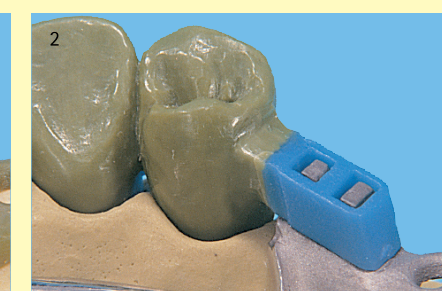
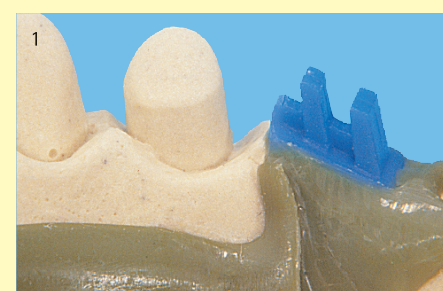


Sandblast metal parts with 110µm aluminium oxide (pressure: 3-4 bar). Use FGP separating agent for areas that are not bonded. Wet with MKZ Primer or use Silano-Pen.

Fill in (apply) DTK-adhesive and glue in the conditioned lock.

Functional check of the lock after bonding.

## Bonding of connectors



Attaching the double-T adhesive connector to the CoCr structure.

Attaching the double-T adhesive connector to the crowns.

Conditioned double-T adhesive connector ready for bonding with DTK-adhesive.



**Assortment DTK-adhesive**  
1 base paste  
1 catalyst paste  
1 mixing block  
1 spatula  
10 application cannulas  
REF 540 0010 6

Accessories:

Patrrix 90° A



Matrix 90° A



Duplicating matrix 90° A



Patrrix 90° B



Matrix 90° B



Duplicating matrix 90° B



**Assortment Double-T adhesive connector dtk 90°**  
3 patrices A  
3 patrices B  
6 matrices A  
6 matrices B  
3 duplicating matrices A  
3 duplicating matrices B  
REF 430 0347 0



**Assortment DTK-adhesive - Abutment**  
1 base paste  
1 catalyst paste  
1 mixing block  
1 spatula  
10 application cannulas  
1 FGP separating agent  
1 MKZ Primer  
2 fixation screws  
REF 540 0117 5



**MKZ Primer**  
REF MKZ02004



**FGP separating agent**  
REF 540 0102 7

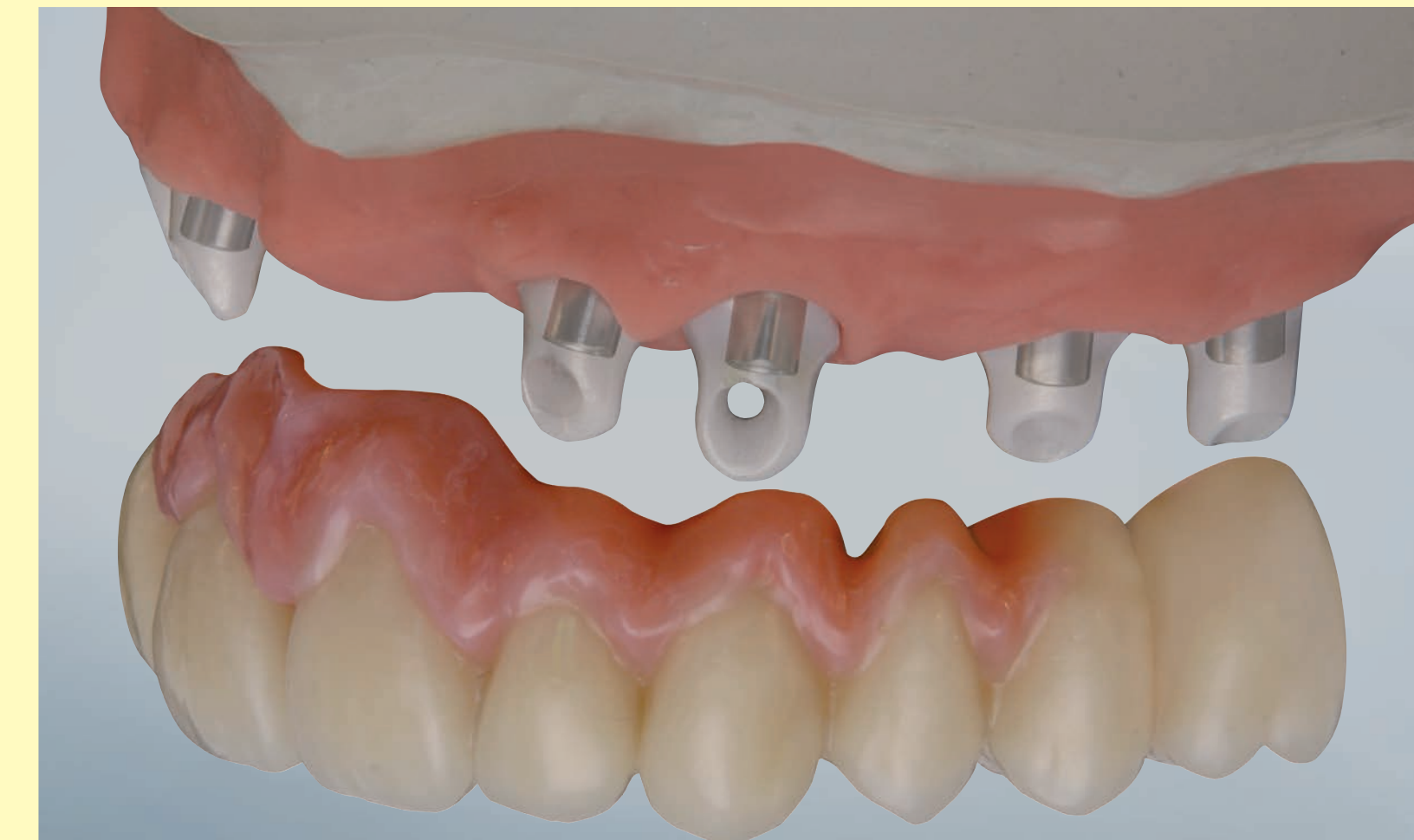


**Fixation screws**  
M 1.4, 2 pieces  
REF 360 0103 0



**Assortment Silano-Pen**  
REF 320 0047 0

## DTK-adhesive



## Bonding of individual abutments



## DTK-adhesive

DTK-adhesive is a two-component composite adhesive which is either self-curing or is cured with light to ensure curing of areas with inadequate penetration of light. DTK-adhesive can be processed at room temperature to bond metal or zirconium dioxide restorations. Adhesive bonding of metal (CoCr, NPM,

precious-metal free alloys, titanium) or zirconium dioxide is achieved without mechanical retentions by using MKZ Primer or Silano-Pen. Moreover, DTK-adhesive is used for bonding metal attachments or connection parts (double-T adhesive connectors) for the combination technique.



## Bonding of individual zirconium abutment



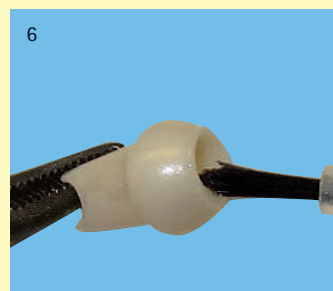
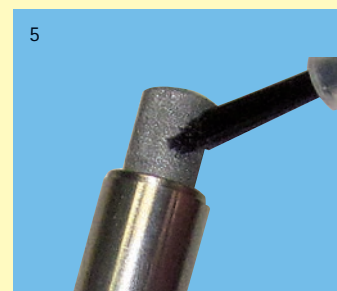
The adhesive titanium base is fixed in the model analog. FGP separating agent - a varnish which provides protection and serves as an indicator when the polished rim is accidentally damaged during sandblasting - is applied to the rim (transition towards the implant interface).



The adhesive base (pressure: 3-4 bar) and the zirconium abutment (pressure: max. 2 bar) are sandblasted with 110µm aluminium oxide. Do not clean the abutment and the adhesive base with steam, do not blow dry with oil-containing compressed air and do not touch the sandblasted surface. If the protective varnish of the adhesive base is undamaged, the primer is applied subsequently. If the protective varnish is damaged, high gloss must be achieved again.



The screw canal of the adhesive base is sealed with wax.



A disposable brush is used to apply MKZ Primer to the sandblasted adhesive base and the adhesive surface of the individual abutment. Alternatively, conditioning can be carried out using Silano-Pen.



The adhesive base is screwed on a model analog and the zirconium abutment is placed on the adhesive base. As a result, the separating agent will not penetrate into the area to be bonded (fig. 7) when separating the screw canal with FGP separating agent (fig. 8).



Equal quantities of the components A and B of the dual-curing DTK-adhesive are added onto a mixing block and mixed. Make sure to avoid the formation of bubbles during the mixing process.



The mixed DTK-adhesive is applied to the adhesive base and into the abutment; afterwards the abutment is placed on the adhesive base. The abutment is bonded onto the model analog to improve light-curing. The processing time is approx. 2 - 3 minutes at room temperature. Self-curing is completed after 7 minutes at room temperature.



A screw is placed in the DTK-adhesive that is still soft (diameter is smaller than the screw canal) and the adhesive is cured with a hand-held curing lamp. Subsequent polymerization in the light-curing unit: 180 seconds. LED lamps are suitable.



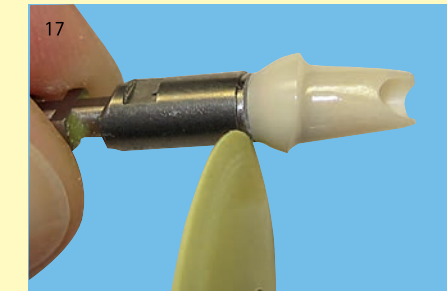
The hardened adhesive is removed from the screw canal using the polymerized screw. If the adhesive can not be removed using this method, the screw can be turned out and the adhesive is removed from the screw canal using a rotary instrument.



Hardened DTK-adhesive can be easily removed from surfaces that are not conditioned and polished to high luster. Varnish in the screw canal can be removed by steam cleaning (steam jet).



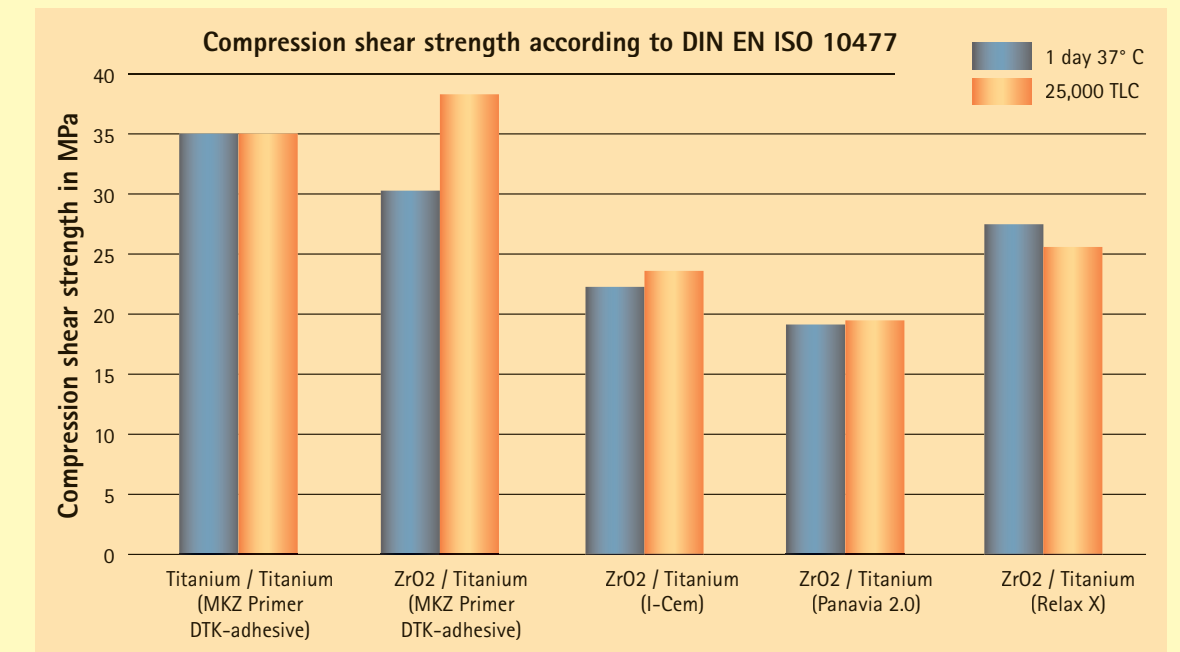
The bonded abutment placed on the master model for control purposes.



The adhesive gap is smoothed using a rubber polisher.

## Bonding results - DTK-adhesive with MKZ Primer

DTK-adhesive achieves full bond strength both after light-curing and self-curing (at room temperature). Hence it is perfectly suitable for indirect use of opaque materials. Even after artificial ageing, bond strength values remain on an excellent level.



Research report of the clinic of Friedrich-Schiller University of Jena, 2011/2012.