



1. Current situation

Titanium dental implants have reached a phase of maturity in the „Product Life Cycle“ over the past ten years. However the commonly used three construction types of dental implant prostheses, metal structure covered with acrylic materials, porcelain fused to metal and full zirconia restorations, are still less-than-ideal solutions. The reason for this is that tried-and-tested material principles, based on natural teeth prostheses, have been applied for the radically different clinical context of osseointegrated dental implants. The SIEWERT BRIDGE addresses this issue utilizing smart new innovative dental materials like Yunyi PEEK.

2. Indication

The baseline of the SIEWERT BRIDGE are implants provided with multi-unit abutments. Nowadays this is a widely accepted standard in dentistry and all manufacturers of implants offer this platform. The multi-unit abutments are available in different heights and different angulations (0°, 17° and 30°) to level out the width of the gingiva and the angulation of the implants.



3. Construction principles of this two layer CAD/CAM bridge



The first level is a Yunyi PEEK framework with the abutment coping and the SIEWERT SCREW SUPPORT milled as a part of the framework. Due to this important detail there is no need to glue titanium chimneys into the Yunyi PEEK framework. Therefore the SIEWERT BRIDGE has more freedom in design and also more space is available. Decementation and allergies due to the cement composition are no longer an issue.

Even rehabilitations with increased vertical dimensions are lightweight due to the Yunyi PEEK framework.

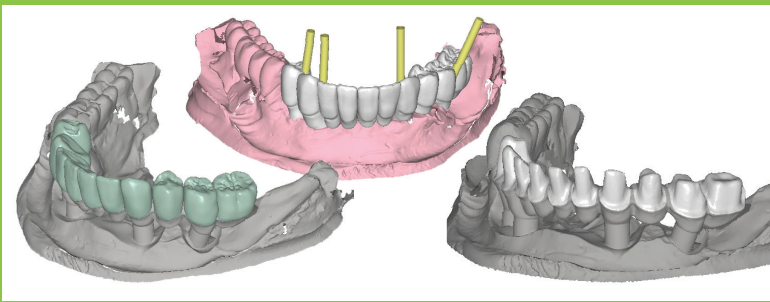


The second level is the veneering with thin single ceramic crowns cemented on the occlusal part of the Yunyi PEEK framework. It is absolutely impossible that the ceramic single crowns fall off.

The SIEWERT BRIDGE is flexible!



4. Advantages



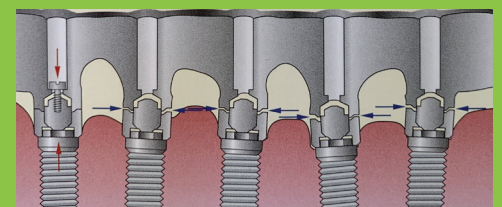
4a. Dental Laboratory

The work flow is simple and fully digital. There is no manual skill or work time necessary, except the easy cementation of the single ceramic crowns as their precise position is determined by shape. If desired pink aesthetics in form of an ultra thin layer of gingiva colored composite are easily applied.

Every dental laboratory worldwide using CAD/CAM can instantly fabricate the SIEWERT BRIDGE without extra costs. Although each bridge is 100% individual, the fabrication process is 100% industrial and therefore more reliable than conventional prosthetics. The special designed multi-unit SIEWERT SCREW (one set of screws for the lab process and for the fixation of the scan bodies and one set of especially hardened screws for the patient) is delivered with the Yunyi PEEK disc or separately. The crucial SIEWERT BRIDGE STL file and the corresponding scan bodies, especially designed for the CAD, are available with the SIEWERT BRIDGE starter kit.

4b. Dentist

The dentists approach is the same as in the usual process but more satisfying. The passive fit or with other words, the precise fit, is supposed to be one of the most vital requirements regarding maintenance of osseointegration and screw fractures etc. The scientific literature reveals that the complete passive fit still remains a tricky goal both for the dental laboratory and the prosthodontist. Not so with the SIEWERT BRIDGE which neutralizes minor inaccuracies and thus guarantees passive fit due to the bone like elasticity of the entire bridge. This is not only the case on the model but also in the patients mouth.



Rübeling+Klar, Spark Erosion, Sheffield-Test



Minor errors, often impossible to avoid, are compensated and may not harm the implants or the bridge. The precisely milled chimney where the SIEWERT SCREW is housed, provides the dentist a secure, simple and clean procedure to screw and unscrew the bridge easily. The chimney is closed with teflon and composite, fast and nearly invisible, due to the metal free ceramic crowns in the occlusion.



Due to the SIEWERT BRIDGE design, a lot of the common problems of implant supported screw retained bridges are eliminated – for example the decementation of the titanium chimney or corrosion. In the highly improbable case of a fracture in one of the single crowns or if the patient has an accident and one or more ceramic crowns are damaged, it is easy to mill the fractured crowns again, retrieve the damaged crown from the SIEWERT BRIDGE framework and cement the new crown. The procedure is pretty much the same as on a natural tooth in the oral cavity. It is far more difficult or even impossible to repair one of the traditionally used bridge types mentioned in section 1.

The SIEWERT BRIDGE STL and the SIEWERT SCREW do allow an immediate loading approach of the implants with a provisional PMMA bridge. Additionally the work flow for manufacturing the PMMA SIEWERT BRIDGE is already part of the definite bridge.

4c. Patient

There are many reasons why the SIEWERT BRIDGE is so well accepted by the patient. It is highly esthetic due to the ultra translucent ceramic crowns. It is extremely lightweight. The chewing experience is natural and not harsh compared to the conventional ceramic occlusion. It is more affordable compared to traditional high end solutions. Yuni PEEK is highly inert and does not change its characteristics after a prolonged period in the patients mouth. The surface is highly polishable and smooth. It is biocompatible, metal free and does not contain any fillers or pigments.

5. Clinical evidence

Bridges constructed following the SIEWERT BRIDGE principles during the last five years turned out to be a reliable solution concerning the following items:

- No screw loosening or screw fracture
- No chipping in the ceramic interface
- Stable cervical bone around the implants
- No fractures in any part of the Yuni PEEK framework
- No changes due to abrasion in the occlusion
- High patient satisfaction due to the shock absorbing properties of the Yuni PEEK
- Guaranteed passive fit upon the multi-unit abutments in the patients mouth

The SIEWERT BRIDGE Protocol

In case of an all-on-4(6) type rehabilitation with immediate loading.

