



All-ceramic front tooth restorations.  
**P**erfect **V**eneer **P**reparations.

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**The traditional preparation:**

Up to now, traditional (veneer) crowns used to be standard practice when it came to restoring large front tooth defects.

**Advantages:**

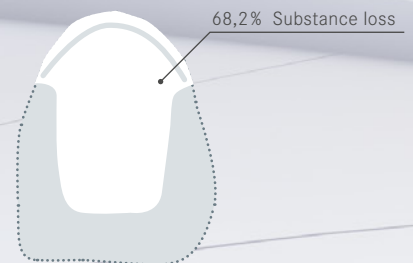
Traditional crowns are well-established, durable restorations and all dentists know them.

**Disadvantages:**

This type of preparation leads to a considerable loss of hard dental substance. This, in turn, triggers off a higher rate of biological complications, such as pulpitis and crown margins in close vicinity to the gingiva.



Traditional veneer preparation of a maxillary central incisor.



68.2 % substance loss during a traditional crown preparation\*.

\*) Source: Edelhoff D, Sorensen JA. Tooth structure removal associated with various preparation designs for anterior teeth. J Prosthet Dent 2002;87:503-509.

# Ceramic veneers. The minimally invasive alternative to full crowns.

## The minimally invasive preparation: Ceramic veneers in different extensions.

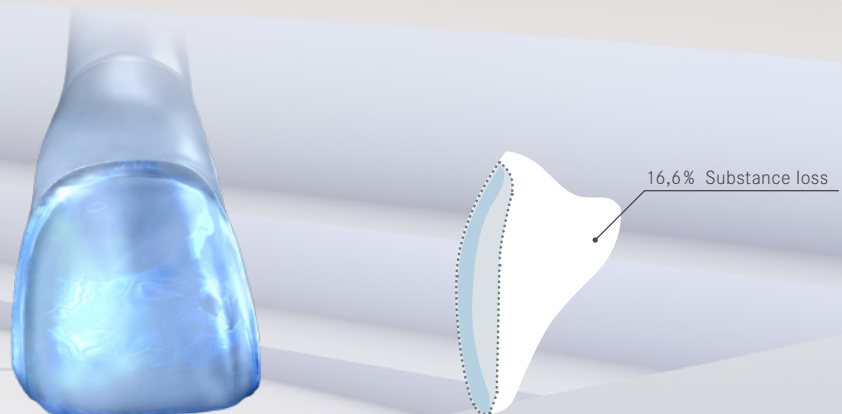
Ceramic veneers are now firmly established and scientifically recognized\* as a new, minimally invasive method of restoring dental defects in the front region.

## Advantages:

Clearly reduced loss of hard dental substance caused by the preparation – and consequently, less biological risks.

## Disadvantage:

Up to now, the preparation prior to placing veneers used to be technically challenging without special instruments.



Minimally invasive preparation of a maxillary central incisor prior to receipt of a ceramic veneer.

Depending on the extent of the restoration, the loss of substance incurred during the preparation for a ceramic veneer is reduced by half or even more, compared to crowns.

\* Joint statement issued by the Deutsche Gesellschaft für Zahnerhaltung (DGZ) and the Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde (DGZMK). Authors: M. Federlin, W. Geurtsen, B. Haller, G. Schmalz: "Zahnfarbene Restaurationen aus Keramik: Inlays, Teilkronen und Veneers". DZZ 62 (09) 2007

# Specially developed instruments. Safe preparations.

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Up to now, the restoration of extensive defects in anterior dentition used to require full crowns, usually porcelain fused to metal crowns. The development of new, high-strength tooth-coloured dental ceramics (monolithic lithium disilicate and other suitable ceramics), in combination with adhesive fixation methods, opens the way to new, minimally invasive types of restorations. These are all called “veneers”, but they differ in terms of shape and size to suit the defect to be restored. What they all have in common is that the required preparations cause fewer traumas during grinding and incorporation, thus reducing the risk of pulpitis. This is particularly important from a clinical aspect because pulpitis is one of the main risks associated with treatments involving full crowns.

In response to the high risk of pulpitis, the DGPro negotiated and issued a statement as early as 2004, recommending that in view of the risk of pulpitis, alternatives should be checked prior to crowning\*.

According to the German Patientenrechtegesetz\*\* BGB §630e (1), patients have to be informed about the risks and alternatives.

Depending on the extent of the preparation, we distinguish between:

- Purely labial veneers (“short-wrap design”)
- Veneers extending in an interproximal direction, preserving the contact point (“medium wrap design”)
- Extended veneers comprising the interproximal regions and the incisal edges (“long-wrap design”)
- 360° veneers that extend across the entire dental surface but are limited to the dental enamel (“full-wrap design”)
- Palato/incisal functional veneers, usually applied to canines.

A decisive factor for the durability of these restorations is that the preparation is carried out in the enamel\*\*\*. This is difficult to achieve with traditional preparation instruments.

## Indications

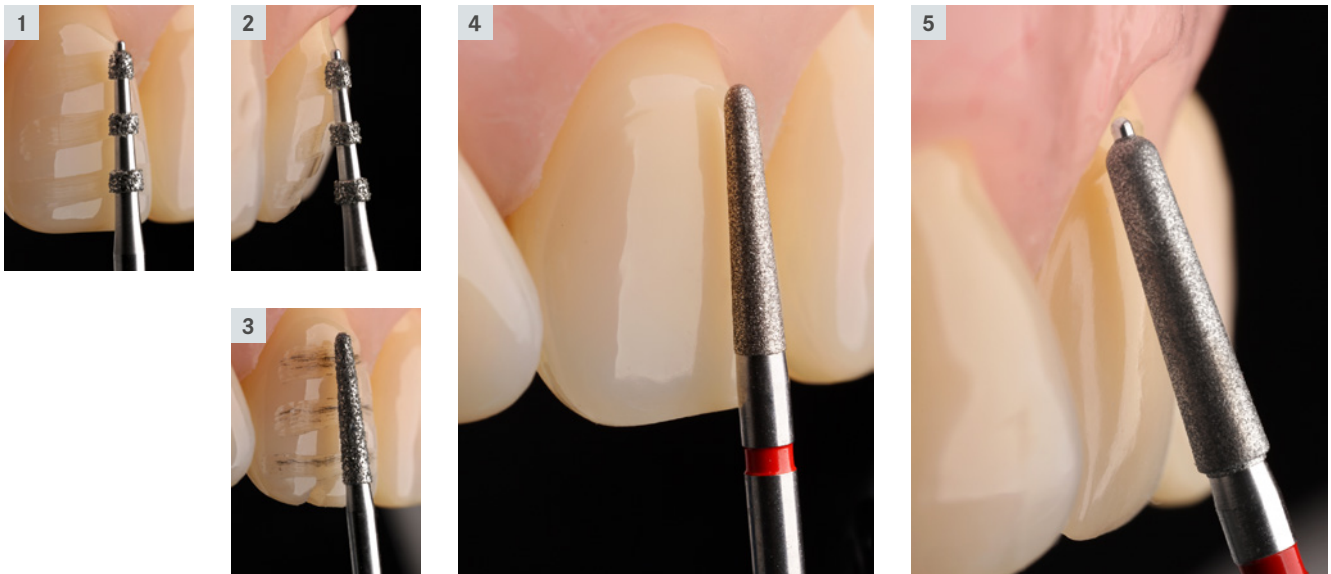
We have developed new abrasive instruments with special geometries to facilitate the procedure and to increase the safety, for

- treating carious teeth
- restoring front teeth damaged by tooth wear
- stabilizing teeth after endodontic treatments
- masking severely discoloured anteriors

\*) Scientific note issued by the Deutschen Gesellschaft für zahnärztliche Prothetik und Werkstoffkunde (DGZPW): Klinische Indikation von Kronen und Teilkronen (der geschädigte Zahn) (Clinical indication of crowns and partial crowns (the damaged tooth))

\*\*) Act to improve the rights of patients, Federal Law Gazette, year of issue 2013, Part I, no. 9, issued in Bonn on 25 February 2013

\*\*\*) Gürel G, Sesma N, Calamita MA, Coachman C, Morimoto S. Influence of enamel preservation on failure rates of porcelain laminate veneers. Int J Periodontics Restorative Dent. 2013;33(1):31-9.



### Pre-preparation depth marking

The durability of veneers largely depends on keeping the preparation within the dental enamel. It is, therefore, of decisive importance to limit the penetration depth accordingly. To this end, we have developed special depth markers with guide pin. Thanks to their geometry, these depth markers reliably limit the penetration depth [1] – even if the instrument is inadvertently applied at too steep an angle [2].

The suggestion\* to highlight the bottom of the preparation groove with a felt or marker pen proved useful [3]. Like this, the maximum permissible removal depth is clearly recognizable during the shaping preparation at a later point.

### Shaping preparation

Shaping [3] and finishing [4] are done with a tapered diamond abrasive. The tip of this instrument is rounded to an ellipsoid shape. The diameter of the instrument used depends on the size of the prepared tooth.

### Traditional labial veneers (short wrap design)

The preparation prior to placing veneers is sophisticated precision work. To ensure durability of the ceramic veneer, this should ideally be 0.6 mm thick, but certainly no less than 0.3–0.4 mm. The enamel of maxillary incisors and canines is thinned down to a thickness of merely 0.4 mm in the cervical region, which is why the preparation prior to placing traditional labial veneers should be limited to this value. The observance of the required thickness is facilitated by the depth marker **868BP.314.020** and the special labial abrasive with guide pin **856P.314.018** as well as the finisher **8856P.314.018** with matching shape [5].

### Thin veneers

The enamel in the cervical region of incisors – both in the upper and lower jaw – is even thinner, which is why the preparation depth has to be limited to just 0.3 mm. The depth marker **868BP.314.018** makes sure that this is observed. The instrument is followed by a tapered diamond abrasive **868.314.012** with matching shape and an ellipsoid tip as well as a congruent diamond finisher **8868.314.012**. These instruments are particularly suitable for “small” anteriors and for the preparations prior to placing purely labial veneers as well as veneers extending in an interproximal and/or incisal direction.

There are special instruments and techniques for extending a preparation in maxillary central incisors and all canines in an interproximal and labial direction. These are described on the following page.



**868BP.314.020**  
Depth marker



**856P.314.018**  
Abrasive



**868BP.314.018**  
Depth marker



**868.314.012**  
Abrasive

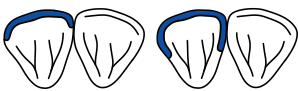
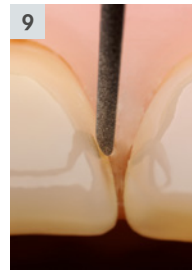
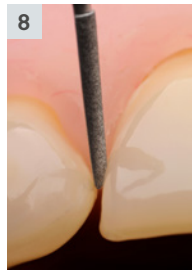


**8856P.314.018**  
Finisher



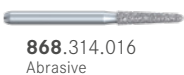
**8868.314.012**  
Finisher

\*) Kern M, Ahlers MO. Controlling the depth of ceramic veneer preparations by using a color marker in the depth grooves. J Prosthet Dent. 2015;114(6):862-4.



### Extended veneers (medium/long wrap design)

Discolorations, diastemata, enamel defects and previous root canal treatments all require the placement of extended veneers that extend from interproximal to incisal. The extension is done with a tapered diamond abrasive **868.314.016** rounded to an ellipsoidal shape and a diamond finisher **8868.314.016** of identical shape. The aesthetic appearance and the durability of the restoration profit from this, but the interproximal preparation is particularly challenging due to the close vicinity to the adjacent tooth [see 6].



**868.314.016**  
Abrasive



**8868.314.016**  
Finisher

\* Sieweke M, Salomon-Sieweke U, Zofel P, Stachniss V.: Longevity of oroincisor ceramic veneers on canines - a retrospective study. J Adhes Dent 2: 229-34 (2000)

\*\* Joint statement of the Deutschen Gesellschaft für Zahnerhaltung (DGZ) und der Deutschen Gesellschaft für Zahn-, Mund- und Kieferheilkunde (DGZMK) Autoren: M. Federlin, W. Geurtsen, B. Haller, G. Schmalz: "Zahnfarbene Restaurationen aus Keramik: Inlays, Teilkronen und Veneers". ("Tooth-colored ceramic restorations: inlays, partial crowns and veneers") DZZ 62 (09) 2007

In response to this, special sonic tips are available that perfectly complement the Perfect Veneer Preparations set. Their shape corresponds to that of the diamond abrasives [7] and coated on one side only to safely prevent injury to the neighbouring tooth [8] and to guarantee ideal interproximal geometries [9].



**SF8868L.016**  
left



**SF8868R.016**  
right

**These new sonic tips will be available as of summer 2019!**

**TIP:** If your practice has the necessary facilities, you can smooth the interproximal surfaces with the matching sonic tips coated on one side - without matrix!



### Palato-incisal functional veneers

Another condition for durable ceramic veneers is the absence of dysfunctional loads. If the canine guidance is lost due to tooth wear caused by erosion, attrition or abrasion, it might be necessary to rebuild the canine guidance. Instead of invasive crowns, palato-incisal functional veneers have now become a well-established\*, scientifically recognized option\*\*. The preparation prior to placing these veneers is done in two steps with two instruments: In a first step, the preparation takes place using an egg-shaped diamond abrasive **379.314.023** [10], followed by finishing with a diamond finisher **8379.314.023** of identical shape. During finishing, it has proved useful to create a preparation groove with the tip of the abrasive instrument in the thickest part of the enamel.



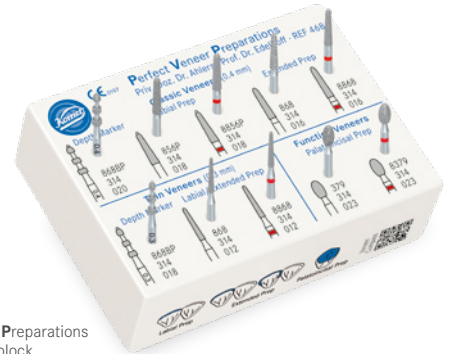
**379.314.023**  
Abrasive



**8379.314.023**  
Finisher



**Set 4686ST**  
Perfect Veneer Preparations  
in a sterilizable stainless steel  
bur block



**Set 4686**  
Perfect Veneer Preparations  
in a plastic bur block

**Perfect Veneer Preparations**

**Classic Veneers (0.4 mm)**

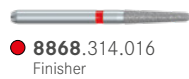
Depth marking



Labial preparation



Erweiterte Präparation

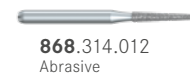


**Thin Veneers (0.3 mm)**

Depth marking

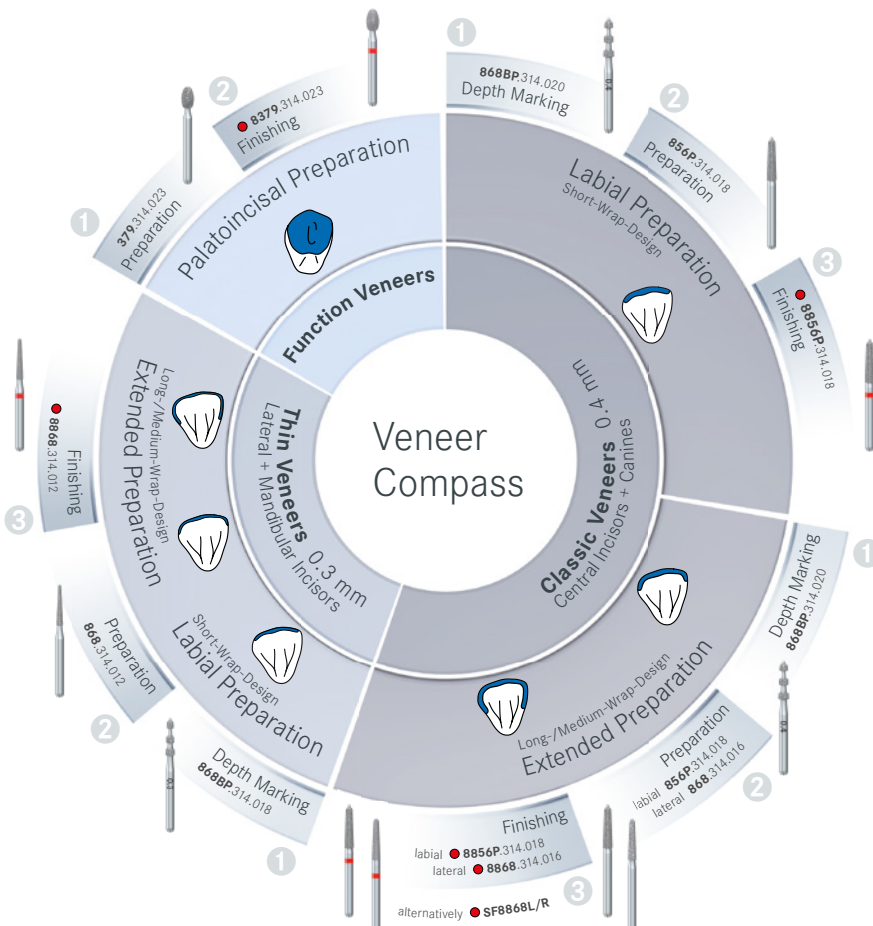
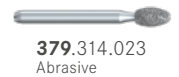


Labial/  
Extended preparation



**Function Veneers**

Palato-incisal preparation



**Matching accessories:** For **occlusal veneers** (occlusion onlay), we recommend the occlusion onlay set 4665/ST.

**TIP:** Visit our theme world **"All-ceramic restorations & CAD/CAM"** with further information on the subject.



Scan it!

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