Building up the perfect tooth with composite resins

The natural appearance of a tooth can be successfully re-constructed with a composite resin that is based on an integrated shade and layering system. Restorations of this kind blend in seamlessly with the natural dentition in accordance with biomimetic principles.

Selecting a material suitable for the task at hand is essential to a successful outcome. The shade range of IPS Empress Direct composite resin (Vivadent) comprises five dentine materials & five shades (high opacity) and five matching enamel shades (high translucency).

Stronger and more translucent shades are also available, some of which are opalescent, for designing the lateral enamel areas and incisal edges. This well-rounded range of shades and layering materials facilitates the creation of natural-looking restorations using composite resin.

The following article describes the fabrication of a composite resin restoration in an anterior tooth using IPS Empress Direct. The procedure is described chronologically, starting with shade selection and ending with the final design adjustments.

In this case, it was necessary to exaggerate the contours of this area when the composite was placed. This created ample scope for finishing the restoration. In all cases, the convex and concave areas had to be carefully finished, which is often difficult to accomplish in the first attempt.

The functional parameters were also considered in this process. This approach had been shown to be very effective in routine practice. If time resources are limited, for example, patients can be discharged with this type of preliminary solution. The final layering procedure takes place at a later stage. Before the patient leaves the practice, however, the surface of the build-up should be coated with a flowable product in order to give the patient a comfortable feeling in the mouth.

Customised shading

The restoration build-up was completed with different shades from the range of composite resin materials. Mamelon-like depressions were cut into the surface of the preliminary shaped restoration with a finishing (red) code, fine grit) using the cut-back technique (Figs. 6 & 8). The individual shade effects were created at these grooves at a later stage with the inlay...