

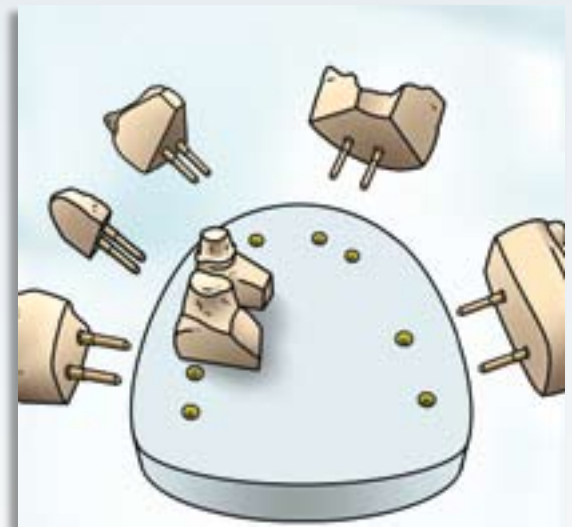
Model Preparation at the Lab.

Model Preparation

A precise model preparation is vital for quality and fit of the restoration. To ensure that all data can be collected, the saw cut model for the scanning process is made of a light-coloured, unvarnished gypsum laboratory stone (Class IV) with a dull surface.

All stumps, the alveolar ridge and all other segments need to be removable and need to have a defined seat in the base. For optimal analysis of the situation in the scanned area the maximum height of the model, measured from the bottom of the base to the incisal edge, should not exceed approx. 40 mm.

A magnet split cast system available from SAM (Order 526) is recommended. However, in principle, all systems are feasible, provided that they meet the general requirements. A bite registration in the form of a simple silicon or polyether key serves as an aid in placing the bridge elements.



Segmented model: The scanner digitises the stumps, alveolar ridge, bite registration, and adjacent teeth (optional). They can be visualized on the screen according to the individual needs

Design Choices for Labs and Dentists.

Framework Coloring

3M ESPE Lava™ Restorations offer the option of coloring the framework in one of seven different shades based on the Vita®* Classic shade guide (plus one shade, i.e. uncoloured).

Wall Thickness and connector design

You can determine the thickness of the framework wall to fit your needs. The minimum wall thickness is 0.5 mm for bridges and posterior crowns and 0.3 mm for anterior crowns. The minimum connector cross section highly depends on the bridge position and the amount of pontics.

For special indication, please contact your laboratory or milling center.

Cement Gap

The size of the cement gap can be adjusted using standard values or individually. For certain parts of the framework, for example the top half of a coping, the cement gap may be increased. The cement gap is adjusted by the CAD specialist at the milling centre in accordance with the customer and based on each individual situation.

Optimal Framework Design

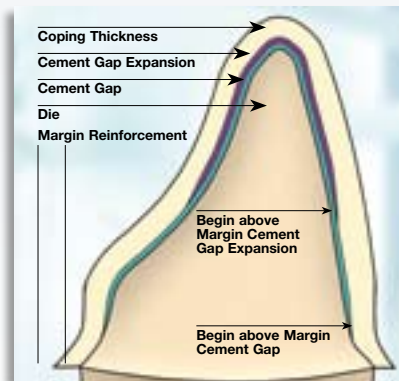
It is important to optimally support the veneering porcelain. The framework should be designed to leave an even thickness of no more than two millimeters. This can be accomplished by using the digital wax knife. Moreover in addition, it is also possible to directly scan your designed wax up.

In addition to the parameters above, you may discuss other design ideas with your milling/design centre.

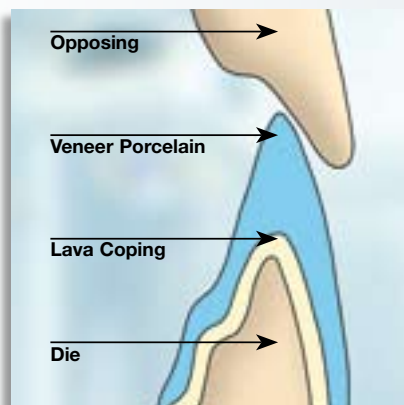
Minimum Connector Cross Section

	Anterior	Posterior
3-unit bridges	7 mm ²	9 mm ²
4-unit bridges	7 mm ²	9/12/9 mm ²

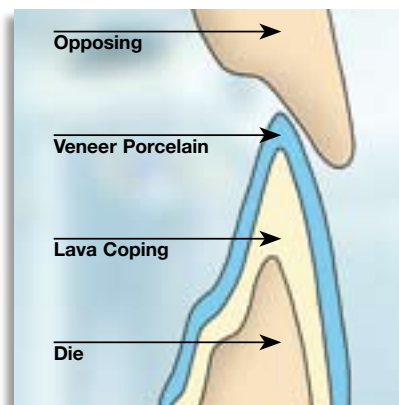
	Wall thickness	Connector
Maryland bridges	0,5 mm	7 mm ²
In-/Onlay bridges	0,5 mm	9 mm ²



Tangential preparation: Steep tangential preparations may result in extremely thin tapered margins. In principle, this type of preparation is possible, but caution is advised



Inadequate porcelain support



Optimal framework design with the digital wax knife

*Registered trademark of Vita Zahnfabrik H. Rauter GmbH & Co. KG, Bad Säckingen, Germany.

Finishing of Lava™ Restorations.

Treatment of Ceramic Materials

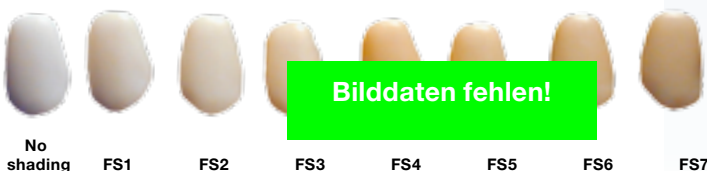
When working on the surface of a ceramic restoration, defects can be introduced and may affect the strength of the restoration. Although zirconium oxide is very forgiving for these kinds of defects, it is nevertheless important, to keep this in mind. This is critical in the areas of the restoration, which may be under tension during application. The use of water during finishing is always recommended. Sandblasting should not be used for surfaces, which will be veneered. It can be used for surfaces, which are cemented, using a grain size $\leq 50\mu\text{m}$ and 2 bar pressure.

Removal of Marginal Reinforcement and Undesired Contacts

Standard contact sprays or colour are suitable markers for the zirconium oxide framework. Diamond instruments with a particle size of $\leq 30\mu\text{m}$ (colour code: red) are ideal for removing marginal reinforcement and undesired contacts. The use of a turbine and water is recommended. Marginal reinforcement should be removed under magnification to create a precise margin.

Esthetic Advantages of Colored Framework

The esthetics of the colored framework eliminates the need for a fired porcelain shoulder (butt margin). Since an esthetic appearance can be created by using effect and glaze materials, a narrow collar may be left on the coping. A perfectly aesthetic appearance can be achieved by using effect and glaze materials with no additional layers. Lava™ frameworks can be shaded in seven different colors (FS1 – FS7).



Interdental Separation of a Veneered Bridge

A natural look of the interdental area of bridges is achieved by using diamond separation cutters. The framework should not be cut since sharp notches in the interdental area may affect the durability of the restoration. If the framework is inadvertently damaged during separation, the area has to be polished. Rubber polishing disks with diamonds (polishing system for ceramics from Komet No. 4330, series grey) are suitable for this purpose. For better access to the notch, the diamond disk may be sharpened with a conditioning stone.



Trimming of the coping



Interdental separation with a separation disk