

## Cementation of 3M™ ESPE™ Lava™ Restorations.

Due to the strength of Lava™ Zirconia frameworks, adhesive cementation is not necessary. For Maryland and inlay bridges, see "Cementation of Maryland (adhesive) and Inlay bridges". Restorations can be placed in the mouth in a conventional way by using a glass ionomer cement or by using an adhesive or self-adhesive cement. Before cementation, thoroughly clean the restoration and sandblast the interior surfaces of the crowns with aluminum oxide  $\leq 50 \mu\text{m}$ . For detailed cementation please see always the appropriate Instructions for Use of the respective cements for detailed information.

### 1. Conventional Cementation

- Use a conventional glass ionomer cement, e.g., Ketac™ Cem, manufactured by 3M ESPE. The use of phosphate cements will not provide the desired esthetic results.

### 2. Cementation with RelyX™ Unicem Self-Adhesive Universal Resin Cement

- Thoroughly clean the Lava restoration, sandblast the interior surfaces of the crown with aluminum oxide  $\leq 50 \mu\text{m}$ . It is not necessary to pre-treat with Rocatec™ Bonding or to silanate it, if RelyX™ Unicem Cement is used.
- Please refer to the product's instructions for use when using RelyX™ Unicem Cement.

### 3. Adhesive Cementation

- Lava Zirconia frameworks cannot be etched or silanized with a silane coupling agent. For adhesive cementation with resin cements, the adhesive surfaces must be treated for 15 seconds with Rocatec™ Soft bonding treatment or CoJet™ Sand and silanized with ESPE™ Sil.
- If the restoration is to be tried in, it must be done before the treatment described above.
- See the instructions for use for Rocatec™ System or CoJet™ Sand for detailed information.
- Place the restoration in the mouth with a resin cement (e.g., RelyX™ ARC) as soon as possible after silanization.
- Please follow the Instructions for use of the respective resin cement.

## Cementation of Maryland (adhesive) and Inlay Bridges;

- Maryland bridges must be cemented adhesively.
- Cementation is only allowed with a cement clearly indicated for the cementation of these indications made of zirconia. The recommendations of the cement manufacturer need to be followed to ensure optimum bonding. Please consider that the zirconia part of the restoration needs to be pre-treated differently than the veneering part.
- Before cementation Lava restorations should be sandblasted ( $\leq 50 \mu\text{m}$  grain size) in order to increase the surface roughness.
- Especially for Maryland bridges the bonding should be mainly to enamel surfaces.
- Sufficient enamel surface are required for an optimal bonding. Some textbooks recommend to have a 1.5 to 2 times larger surface for bonding compared to the palatal or lingual surface of the pontic (W. Kullmann, 1990). Therefore, the abutment teeth should be characterized by low enamel abrasion.
- The working area needs to be free of contamination. The adhesive cementation has to be performed using a rubber dam isolation.
- Debonding of the Maryland / Inlay bridges and secondary caries are the most prominent failure reason for these indications. Unnoticed decementation of one of two retainers leads to plaque accumulation and possibly subsequent carious lesions and gingivitis.
- To prevent decementation additional retentive elements should be prepared.