

Dimensional Changes of Maxillary Visible Light-Cured Denture Bases with Different Palatal Vault Shapes

Visible light-cured (VLC) denture base resins are gaining acceptance for a variety of prosthodontic uses. The manufacturer recommends that this material be hand-adapted to the cast. Because of the curing method, it cannot be kept under pressure when it is being cured. In addition, the fitting surface of denture base is cured away from its model.

This study was conducted to measure dimensional changes of maxillary complete denture bases made of Triad VLC resin in an anteroposterior and transverse directions, in addition to amount of warpage at the posterior palatal border. Denture bases were constructed on casts of different palatal vault shapes (medium, flat, and deep). Tool marker's microscope (its least reading is 0.01 mm) was used for measurements.

The data from this study indicated that:

1. All complete maxillary denture bases made of Triad VCL resin shrank both anteroposteriorly and transversely.
2. Denture bases constructed on casts having moderate height palate showed the smallest mean anteroposterior shrinkage.
3. Transverse dimensional contraction was the smallest for denture bases with flat vault.
4. In all groups, transverse dimensional changes were higher across tuberosities than on premolar areas.
5. Mean of warpage at the posterior palatal border was the greatest for denture bases with deep palatal vault.

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