

# Evaluation of custom tray border extensions before final peripheral molding using two different materials

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## Introduction

Final Impression is a critical component of successful denture therapy. Providing retention for denture prosthesis is gained with many factors, one of them is atmospheric pressure which requires proper sealing of the denture border<sup>1</sup>. Border molding is established to determine the extensions of the denture, duplicate the size and contour of the vestibule, and to ensure a peripheral seal in the completed denture. Ensuring accurate extensions of the custom tray border to the depth of the vestibular sulcus with clearance of 2-3 mm is important before final peripheral molding.<sup>1,2</sup> Logan described a technique using disclosing wax to evaluate a patient's existing denture and in evaluation of the final border recording for any overextension before final impression making.<sup>3</sup> Namratha evaluated the extensions of the custom tray border using a mixture of wheat flour, water, and some drops of oil.<sup>4</sup> Presence of such mixture components in a dental clinic is unusual and not common. This article describes a proposed technique to verify the

extensions of a custom tray border using two different materials.

## Materials

- Polyvinyl siloxane heavy body impression materials, used directly (no need for activator) (Fig. 1).
- Modelling clay materials (Fig. 2).

## Procedure

The procedure is carried out using the following steps:

- Select either one stick of modelling clay or one scoop of heavy body silicon knead and roll it into a rope of the required length, 3-4 mm in diameter.
- Adapt it, in one piece, along the periphery of the custom tray (Fig. 3).
- Insert the tray into the patient's mouth and perform the usual functional movements in the same way as conventional border molding.
- Remove the tray and check for any exposed area (Fig. 4), if any, displace the material, reduce the border, re-adapt the material to the site and repeat the procedure.
- A periodontal probe can be used to measure the thickness of the material to provide a tray with 2-3mm of peripheral clearance.
- Upon achieving the desired thickness, remove the material and complete the final border recording.
- If heavy body silicone is used (Fig. 5), it can be used again for final border molding after mixing with catalyst.

## Distortion and Sagging

The normal appearance of the molded borders should be well-demarcated, continuous without any interruptions and relatively symmetrical. Any other appearance should be considered as distorted molding and the material should be reshaped, readapted and reinserted into the patient's mouth for new border molding.

Even though the silicone material used in this study is considered stable under storage conditions<sup>5</sup>, the removal of the material immediately after finishing the functional movements is preferred as the long-

time contact inside the patient's mouth may lead the material to sag over the borders of the tray.

### Advantages

Evaluating all borders simultaneously has two main advantages: first, the number of insertions of the tray is reduced to one, and second, avoids propagation of errors caused by a mistake in one by one section.

Other advantages can be listed as follows:

- Ready-made material (no activator needed).
- Easily handling and manipulation.
- Long lasting softness and moldability makes it easily kneaded and shaped.
- No mixing or setting time.
- Heavy body silicone is available in many dental clinics.
- Modelling clay is easily acquired and inexpensive.
- Non-toxic and safe.
- Materials do not adhere to hands, gloves, custom tray, or clothing.

### Disadvantages

- Care should be taken for the overall molding as over-pressure may lead to inaccurate evaluation.

### References

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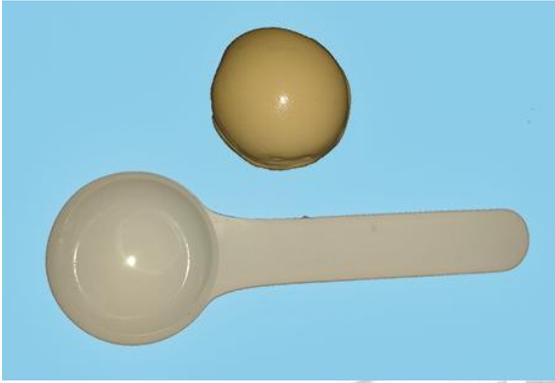


Fig. 1 Heavy body silicone



Fig. 2 Modelling clay



Fig. 3 Maxillary custom tray before border molding



Fig. 4 Maxillary custom tray after border molding using modelling clay

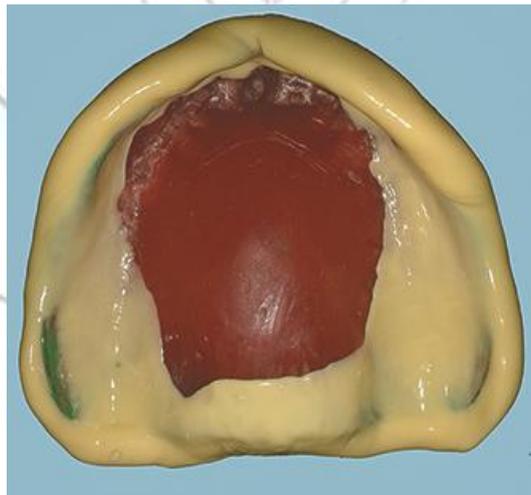


Fig. 5 Maxillary custom tray after border molding using heavy body silicone