

## **Impression Making with the Strong-Massad Denplant Tray™**

Definitive impression making of the dentate, partially dentate, or edentulous patient with implants present, can be performed with the Denplant™ Tray. These trays are for one-time use only. They are designed specifically for use with multiple viscosity Polyvinyl Siloxane (PVS) materials.

The trays are available in three upper, and three lower sizes: Small, Medium, and Large. The trays are designed to be customized to the individual patient via a heat molding procedure. Simply heat the area to be adapted by quickly passing it through a flame until the resin just softens. **CAUTION: OVERHEATING WILL DISTORT THE TRAY AND MAY CAUSE BURN. DO NOT PLACE THE TRAY IN THE PATIENT'S MOUTH WHILE IN THE HEATED STATE.** Once the resin is soft, bend the area to the appropriate position. Now, cool with water to reharden. The tray can also be adjusted by heating with hot water (170°), and then being adjusted and cooled. The appropriately sized, properly adjusted tray should leave ample room for impression material around all surfaces of the teeth or impression copings to be impressed. The borders of the tray should not impinge on any adjacent soft tissue areas.

### **I. Impressioning Of The Fully Dentate Maxillary Arch:**

A) Size and adapt the tray as detailed above.

B) Establish occlusal / incisal stops:

- 1) Place a ribbon of heavy or rigid bodied polyvinyl siloxane impression material in the recess of the tray as well as in the palatal vault area.
- 2) Seat the tray in the patient's mouth, taking care to center the teeth within the tray.
- 3) Allow the material to set according to manufacturer's recommendations.
- 4) Remove, evaluate, and trim the impression. There should be a tissue stop on the palatal portion of the tray. There should also be stops formed by the occlusal/incisal surfaces of the teeth. The impression material should be trimmed until there are only occlusal/incisal stops (no impression of the axial surfaces).

The resultant stops provide: a) Adequate space for subsequent layers of impression material, b) A path of re-insertion for the operator, c) Positioning of the tray in the most centered position, and d) a tactile sense of position for the operator.

C) Border Molding Procedure Note: All bordering molding movements should be completed during the first one half of the PVS material set time. Continued functional movement after this time may result in distortion of the impression.

- 1) Apply PVS adhesive to the tray borders. Place a heavy or rigid viscosity PVS on the peripheral tray borders and generously along the post-palatal tray area.
- 2) Seat the tray in the patient's mouth. The stops placed in the previous step will provide the proper tray orientation.
- 3) Border mold as follows:
  - a) Grasp the filtrum close to the lip line and pull downward. This identifies the anterior frenum.
  - b) Have the patient pooch the lips outward with a sucking action, and then smile. This will form the anterior vestibular sulcus.
  - c) Using the forefinger and thumb, grasp the corner of the mouth and pull downward and forward. Repeat the procedure for the opposite side. This forms the buccal frenum and buccal vestibular sulcus.

- d) Have the patient drop the mandible downward by opening wide. This will delineate the post-zygomatic vestibular sulcus and hamular frenum.
- e) Occlude the patient's nostrils, and have the patient forcefully cough. This will cause the soft palate to migrate to its functional position, thereby forming an ideal post-palatal zone.

4) Remove the impression and evaluate and trim as indicated. Any areas in which the tray rubbed through the impression material should be trimmed 1 - 2 mm. to approximate the adjacent impression material. Any undercuts in the impression material should also be trimmed away. A slight amount of material (approximately 1 mm) should be trimmed from all border extensions to allow for venting of the wash material.

D) Final Wash Procedure

- 1) Apply PVS adhesive to the impression material along all borders. Place a light bodied impression material generously along all borders. Place an extra-light PVS in the central trough, and intra-orally directly to the teeth. This extra-light material increases detail, and allows for easy placement and removal of the impression from the mouth.
- 2) Seat the tray in the patient's mouth
- 3) Repeat all of the border molding steps previously outlined. Stabilize the tray during the last one half of PVS setting time.
- 4) Remove the tray, and evaluate the final impression.

## **II. Impressioning Of The Fully Dentate Mandibular Arch**

A) Select and modify the appropriate mandibular tray, as previously described.

B) Establish occlusal / incisal stops:

- 1) Place a ribbon of heavy or rigid bodied polyvinyl siloxane impression material in the recess of the tray.
- 2) Seat the tray in the patient's mouth, taking care to center the teeth within the tray.
- 3) Allow the material to set according to manufacturer's recommendations.
- 4) Remove, evaluate, and trim the impression. There should be stops formed by the occlusal/ incisal surfaces of the teeth. The impression material should be trimmed until there are only occlusal/incisal stops (no impression of the axial surfaces).

As with the maxillary impression, the resultant stops provide: a) Adequate space for subsequent layers of impression material, b) A path of re-insertion for the operator, c) Positioning of the tray in the most centered position, and d) a tactile sense of position for the operator.

C) Border-Molding Procedure Note: All bordering molding movements should be completed during the first one half of the PVS material set time. Continued functional movement after this time may result in distortion of the impression.

- 1) Apply PVS adhesive to the tray borders. Place a heavy or rigid viscosity PVS on all of the peripheral tray borders
- 2) Seat the tray in the patient's mouth. The stops placed in the previous step will provide the proper tray orientation.
- 3) Border mold as follows:
  - a) Have the patient extend the tip of the tongue straight out and forward, then side to side, and then back as if touching the roof of the mouth. This will eliminate an over-extension on the lingual border, thereby creating the mylohyoid zone.
  - b) Grasp the lower lip at the mid line and pull upward. This delineates the anterior frenum and vestibular sulcus.

- c) Using two fingers on the tray's finger supports and the thumb on the patient's chin to stabilize the impression in the mouth, have the patient pucker out and suck, and then smile. This produces the anterior and buccal vestibular sulcus.
  - d) Grasp the corner of the mouth with the thumb and index finger of one hand, while securing the tray with the fingers of the other hand, and pull upward and forward. Perform this action on both sides of the mouth in succession. This forms the buccal frenum and the external oblique vestibular sulcus.
  - e) Secure the impression until set and then remove.
- 4) Analyze the impression for detail. If the tray rubs through the impression material along the peripheral borders, adjust by reducing the tray border approximately one to two millimeters before the final wash impression is made. Any undercuts in the impression material should also be trimmed away. A slight amount of material (approximately 1 mm) should be trimmed from all flange extensions to allow for venting of the wash material.

#### D) Final Wash Procedure

- 1) Apply PVS adhesive to the impression material along all borders. Place a light bodied impression material generously along all borders. Place an extra-light PVS in the central trough, and intra-orally directly to the teeth. This extra-light material increases detail, and allows for easy placement and removal of the impression from the mouth.
- 2) Seat the tray in the patient's mouth
- 3) Repeat all of the border molding steps previously outlined. Stabilize the tray during the last one half of PVS setting time.
- 4) Remove the tray, and evaluate the final impression.

### **III. Partially Dentate Arches**

The Impression Technique for Partially Dentate Patients, both on the Maxillary and Mandibular Arches, is the same as for the dentate patient, with the following modifications:

- A) During stop placement, a mound of rigid-bodied PVS material is placed in the portion of the tray that will impress the edentulous areas, in a sufficient amount to record tissue stops. This allows for tray stability and tactile sense in the areas where no teeth are present.
- B) When the final wash is performed, the edentulous areas can be impressed with a light-bodied PVS material, and the extra-light material used only in the dentate areas.

### **III. Arches With Implant Impression Copings**

In cases where implants are a consideration, either in an otherwise edentulous or partially dentate arch, the following modifications to the technique are required:

- A) For stop placement, the implant impression copings are treated as teeth, with a ribbon of rigid PVS material being used to record stops.
- B) During stop placement, a mound of rigid-bodied PVS material is placed in the portion of the tray that will impress the edentulous areas, in a sufficient amount to record tissue stops. This allows for tray stability and tactile sense in the areas where no teeth are present.
- C) During the final wash, a medium viscosity PVS material should be used to impress the implant copings. This material provides adequate detail, while also having enough rigidity to prevent movement of the copings within the final impression.
- D) If the impression copings remain in the mouth when the final impression is removed, they should be carefully replaced into the impression, making sure that they are properly positioned.

**For more information about removable prosthodontic procedures, refer to Dr. Massad's DVD release, "Predictable Complete Dentures: The Platinum Series", as well as to his course offerings.**