Laboratory Project #2

Border Molding and Final Impressions

BORDER MOLDING

The purpose of border molding is to extend the custom tray to fit the patient to the depth of the vestibule in order to achieve an accurate impression. The impression must be extended to include frenum attachments and the depth of the vestibule so that the denture can be created to the vestibule and around the frenum. The final desired result is a continuous smooth border that extends the tray to the vestibule incorporating the patient’s frenum and functional movements by extending the lip and cheek while the tray with compound on it is seated in patient mouth. Extending the border molding material to the deepest portion of the vestibule allows us to achieve the best seal and retention.

Materials:
1. Custom tray
2. Torch
3. Compound wax
4. Hot water bath
5. Patient
In order to achieve the greatest accuracy, we recommend the following order when border molding. For the areas marked with the same number sequence, it is recommended to border mold one section then the other. The same number indicates that either side can be done first.

1. Fill the basin of the water bath with water, secure it closed by rotating the locks and set the water bath to 122°F.
2. Tray is tried in the patient’s mouth. Verify that custom tray is trimmed 2-3 mm short of the vestibule and is relieved around the frenum.

3. The compound stick is waved and rotated above the torch so that the terminal inch or so is softened. Avoid overheating the external layer of compound which will cause excessive bubbling. The goal is to achieve a softened bulk of compound that is adapted to the borders of the custom tray.
4. The softened end of the stick is placed onto one portion of the custom tray.
5. The tray with the addition of compound wax on it is placed in the water bath in order to temper the compound temperature and NOT burn the patient. NEVER PLACE HOT OR BUBBLING COMPOUND IN A PATIENT’S MOUTH! IT WILL BURN THEM!

6. The tray is seated in the patient’s mouth and that section is adapted to the vestibule and cheek by manipulation of the soft tissue. For the manikin adapt the material into the vestibule, trying not to extend to the land area.

7. After each section is border molded, it should be inspected for continuity. If there is a break in the continuity or a large void, it is reheated using the alcohol torch and re-
tempered in the water bath and replaced in the patient’s mouth. Any excess on the internal or intaglio surface of the custom tray should be trimmed with a sharp blade. Any large excesses on the external (that are onto the land area of this patient cast, for example) should also be trimmed. Keep in mind that the land area does not exist in a patient’s mouth; it is something we create in the cast.

8. The tray will be border molded in sections, so attention should be paid to blending the newly added compound to the existing compound sections. This can be accomplished by torching the junction between new and old compound. The flame of the Hanau alcohol torch is pushed forward by pressing the button and the torch is swiped across the area to be heated repeatedly until a uniform surface is achieved. Then it is dipped in the water bath to temper it. AGAIN, ALWAYS MAKE SURE THE COMPOUND IS NOT TOO HOT FOR THE PATIENT.
9. Repeat these steps until the tray has been border molded with compound all around. Make sure there is no excess on the internal surface of the tray.

Remember to temper in the water bath. A BURNT PATIENT IS NOT A HAPPY PATIENT!

Adapt the compound to the vestibule.
Trim the excess on the internal and external before applying more.

Note deficient areas and reapply compound in order to achieve a continuous roll into the vestibule. The patient is instructed to stick his tongue out when border molding the lingual of the anterior mandible.

When new compound is applied, it should be heated with the torch to blend the new addition and the old. Then TEMPER IN THE WATER BATH and insert in the patient’s mouth.
The maxilla is done in a similar fashion.
For the maxilla, extend to include the hamular notches. Border molding should occur where the posterior palatal seal will be, anterior to the vibrating line.
The final border molded trays should have a continuous roll of compound around the periphery without excess or voids.
The use of a border molded custom tray during final impression making greatly increases the accuracy of the final impression.

### Materials:

1. Light Body PVS
2. Border molded custom tray
3. Tongue blade
4. Patient

When making a final impression, care should be taken to obtain a consistent mass of PVS impression material without voids or air pockets. The tip of the PVS gun should be immersed in the PVS material and material should be expressed ahead of the movement of the tip. After loading the tray with the PVS, a tongue blade can be used to blend the material together and spread it to cover the border molding material.

The final result should be a continuous impression with no voids. It should extend to the depth of all vestibules, to the vibrating line in the maxilla, and to the retromylohyoid space and retromolar pad on the mandible. Ideally there is no show-through to the tray to indicate that undue pressure was not placed on any area.
## Border Molding and Final Impression Evaluation Form

### Criteria
1. The border molding material is rolled and captures the depth of the vestibule.
2. The borders are symmetrical.
3. Impression material is evenly distributed in the custom tray.
4. There are no significant voids.
5. There is no significant show-through of tray.
6. The impression material contacts the supporting tissues everywhere.

### Border Molding Evaluation Criteria

<table>
<thead>
<tr>
<th></th>
<th>Maxillary</th>
<th>Mandibular</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Border molding material is continuous without voids</td>
<td>Y</td>
</tr>
<tr>
<td>2</td>
<td>All border molding material removed from internal surfaces of tray</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>Border molding material captures frena and depth of vestibule</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Border molding properly trimmed on tray</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>Border molding grade for both max and mand trays</td>
<td>/ 5pts</td>
</tr>
</tbody>
</table>

### Final Impression Evaluation Criteria

<table>
<thead>
<tr>
<th></th>
<th>Maxillary</th>
<th>Mandibular</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Final maxillary and mandibular impressions centered in tray</td>
<td>Y</td>
</tr>
<tr>
<td>6</td>
<td>Final impression material (PVS) captures all anatomic landmarks including frena, vestibules, hamular notches, vibrating line, retromolar pads, and retromylohyoid space</td>
<td>Y</td>
</tr>
<tr>
<td>7</td>
<td>PVS has no voids or penetration of tray (show-through)</td>
<td>Y</td>
</tr>
<tr>
<td>8</td>
<td>Impression properly trimmed</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>Final impression grade for both max and mand trays</td>
<td>/ 5pts</td>
</tr>
</tbody>
</table>