Border Molding Technique
Preparing the Tray & Final Impressions
Border Molding Technique

**Instruments and materials:**

- Dental compound
- Kingsley scraper
- Slow speed handpiece
- Acrylic bur
- #7 wax spatula
- Indelible marking sticks
- Red handled knife
- Custom impression trays
- Alcohol torch
- Water bath
Custom Impression Tray Design:

✓ Well adapted to tissues with only slight wax blockout of undercuts to allow for consistent and repeatable seating.

✓ 2-3mm thickness.

✓ Border extensions should be 2-3mm short of the depth of the vestibule when the tissues are at rest.

✓ Handle design should not impinge on the vestibule nor distort the lips.

✓ Finger rests in the 1st molar and 2nd premolar region so the fingers do not distort the vestibule when border molding and making the mandibular master impression.
Area of support during molding procedures
Border Molding Technique

Adjust tray extension

- 2-3mm short of the depth of the vestibule
- Verify border extension intraorally and further adjust if necessary
Adjust any sharp areas prior to try-in.
Try impression tray in the patients mouth.
Adjust if it is over extended.
1.5-2.0 mm short of the vestibule for border molding
All frenum should be free of contacting the tray.
**Border Molding Technique**

**MAXILLARY ARCH**

- Check the labial flange extension
- Check frenum clearance
- Check extension along the buccal vestibule
Have a mental picture of the anatomical landmarks:

- Posterior palatal seal area
- Incisive papilla
- Buccal and labial vestibule
- Hamular notch
**Border Molding Technique**

**MAXILLARY ARCH**

**Posterior Palatal Extension**
- Identify the hamular notch
- Extend the tray 2 mm beyond the vibrating line

- Hamular notch
- Vibrating line
**Border Molding Technique**

**Recommended Sequence of Maxillary Border Molding**
Resistant Peripheral Areas

Border Molding Technique

A
Border Molding Technique
Resistant Peripheral Areas
• Heat the modeling compound over a flame
Border Molding Technique

- Slowly soften the very end of the compound
• **Dry** the tray, then add the compound to section “A”

① **Place initial compound**
Border Molding Technique

② Temper

③ Form
**Border Molding Technique**

4 Chill 5 Dry
**Border Molding Technique**

6. **Soften**

7. **Temper**
Posteriorly, the buccal flange is border molded by extending the cheek outward, downward, and inward. The patient is asked to open wide and move the mandible from side to side pucker, and smile.
Compound Sequence

1. Place material
2. Temper
3. Form to approximate tissue contour
4. Chill
5. Dry
6. Soften
7. Temper
8. Insert
Border Molding Technique

• The compound must be thoroughly cooled before you begin trimming, otherwise the compound will be easily distorted.

• Excess compound on the external surfaces is best removed with the **red handled knife** with a fresh, sharp scalpel blade.
**Border Molding Technique**

**TRIMMING THE COMPOUND**

- Use a red handled knife or a sharp #7 wax spatula to remove the compound that flowed into the inside of the tray.

- Carefully trim away the compound that has flowed into the inner surface of the tray. Failure to do so will result in an impression that displaces tissues inappropriately.
Area “A” is excessively thick. This is a common area of overextension. This area needs to be further remolded.

The compound is reheated with the alcohol torch, re-tempered in the water bath and further refined intraorally.
Area “A” has been refined. Now the denture extension in this area is thinner and flatter.
Border Molding Technique

Before

After

NOTE THE DIFFERENCE
Border Molding Technique

- Insert the tray with compound being careful to retract the cheek with a mouth mirror or your index finger.
- Area “B” is molded by instructing the patient to pucker and smile.
In the region of the buccal frenum, the cheek is elevated and then pulled outward, downward, and inward and moved backward and forward to simulate movement of the frenum.
The anterior area is molded by the following:

- Massage the upper lip with a lateral motion
- Instruct the patient to pucker and smile
- Check the flange thickness for proper lip support
- Elevate and extend the lip out, downward, and inward
The average denture border rarely exceeds a peripheral roll thickness of 4 mm. (usually is between 2 to 4 mm)
With the edge of your knife blade scrape away a thin layer of compound from the border molded periphery. This will create space for your impression material and avoid excessive tissue displacement.

The areas of the periphery overlying the frenae should be relieved more aggressively.
**Purpose of the Vent Hole**

1) To permit proper seating of the loaded master impression tray while making the final impression.
2) To relieve the pressure over the incisive papilla and the rugae.
3) To prevent entrapment of air bubbles in the impression.

**Caution:** Do not drill the palatal relief hole(s) in the maxillary tray until the borders have been molded and peripheral seal demonstrated.
Have a mental picture of the mandibular anatomical landmarks

- Retromolar pad
- Retromylohyoid space
- Buccal shelf
- Vestibules
**BORDER MOLDING TECHNIQUE**

**Try in the tray**
The extension should be 2-3 mm short of the frenum and the depth of the vestibules.
a) Outline the retromolar pad with an indelible pencil stick.
b) Check to ensure that the tray properly extends onto the pad and does not impinge upon the masseter groove.

Checking mandibular tray border extension is more difficult to achieve on the lingual flange where direct observation of the relationship is blocked by the tongue.
Note the difference in the denture extensions

Our objective is to maximize the extensions of the new denture.
SEQUENCE OF MANDIBULAR BORDER MOLDING

Border Molding Technique
Border Molding Technique

Dry the tray. Slowly heat the compound and apply to area “A” on one side of the tray.

Diagram showing areas A, B, C, D, and E.
Always temper the compound in the water bath for a few seconds before placing the heated compound in the mouth. The water bath should be set at 130° when using green compound.
BORDER MOLDING TECHNIQUE

Seat the tray evenly. Define the tray extension by molding the lateral border “A” by massaging the cheek and having the patient pucker and smile.

The cheek is lifted outward, upward, inward, backward, and forward to activate movement of the frenum.
Remove tray from the mouth and **chill the compound**.
*Trim the excess* compound that has flowed onto the tissue surface or the external surfaces using a **red handled knife**.
Section “A” on one side is complete. This defines the proper tray extension for this area.
**Border Molding Technique**

Add compound to area “B” (masseter groove region and the posterior border associated with the retromolar pad).

Temper, carefully rotate the tray into the mouth, and ask the patient to close while holding the tray in position, resisting the closure with your forefingers on the finger rests.
Border Molding Technique

Posteriorly, the cheek is pulled buccally to ensure that it is not trapped under the tray, and then the cheek is moved upward and inward.
The effect of the masseter muscle on the border of the impression is recorded by asking the patient to exert a closing force while the dentist exerts a downward pressure on the tray.
Area “A” and area “B” have been completed and trimmed. Avoid displacing the tissues associated with the retromolar pad.
Apply compound to area “C”. Temper, insert and gently massage the lower lip. Simulate muscular activity by **slightly** lifting the lower lip outward, upward, and inward.
The anterior lingual flange is molded by asking the patient to protrude the tongue and then to push the tongue against the front part of the palate.

Protruding the tongue determines the length of the lingual flange of the tray in this region, whereas pushing the tongue against the anterior part of the palate causes the base of the tongue to spread out and develop the thickness of the anterior part of the flange.

Add compound to area “D”.

Border Molding Technique
Border Molding Technique

You can also instruct the patient to push their tongue against your thumb placed in the lower incisor area.

Proper extension into area “D” will create seal for the mandibular denture in selected patients with favorable tongue position and floor of mouth posture.
Add compound to area “E”.

Temper, insert and mold area “E” by instructing the patient to push their tongue against your thumb placed in the lower incisor area and to swallow. It may take several applications to properly define the length and contour of the denture border in this area.
Inspect the border molding carefully to ensure that the extensions are well defined. The borders should be smooth and rounded.

Note the varying thickness of the lingual flange. The thinnest border extends into the retromylohyoid space.
Scrape a thin layer from the compound border to provide space for the impression material.
Border Molding Technique

Next Task - Impressions