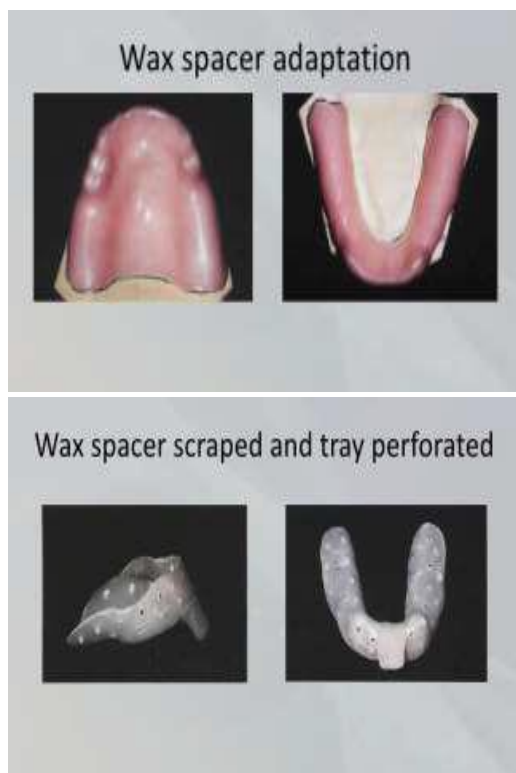


Final Impressions for Partial Denture

Custom trays should have two base plate wax spacer thicknesses over the remaining teeth and one thickness over edentulous ridges. Two thicknesses of base plate wax over the dentulous portion of the tray provide additional space for increased flexibility to help prevent tooth breakage during the separation of the impression from the model. The tray should be short of the vestibular depth in dentate areas remote from abutments or framework. Custom trays should be neat, rigid, and adequately extended.



Before making a final impression of the mouth preparations, make an alginate impression and pour it in quick setting plaster, and survey the resulting cast to ensure optimum preparations have been achieved. A small amount of alginate should be wiped into the rest seats and over guiding plane surfaces prior to seating the filled impression tray. The student may repeat this process several times if required, but should discuss additional preparations with their instructor before proceeding further. Final impressions cannot be made if there is any plaque or calculus on the teeth, since this will affect the fit of the framework. Therefore, it is essential to ensure proper oral hygiene and prophylaxis prior to the tooth preparation appointment. Failure to do so will result in an unacceptable master cast.



Sectional Impression Technique

Double Impression Technique

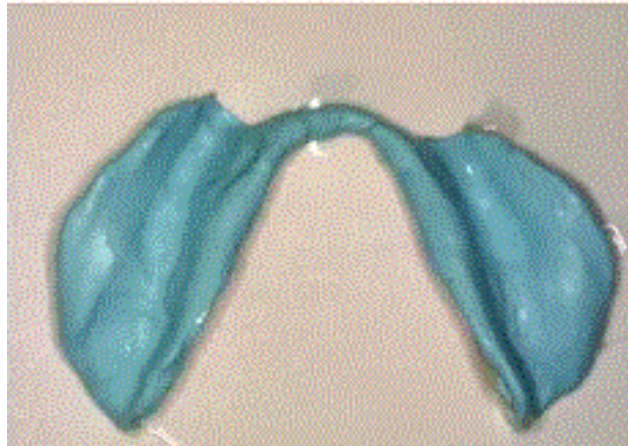
Teeth and soft tissues should be dried for final impressions and the trays should be loaded with light- or regular-bodied polysulfide material. Increased **filler** content of medium body material will cause less shrinkage of the material during polymerization, and the use of these **viscosities** will cause less displacement of soft tissues than high viscosity materials. The tray should **not be over-filled** since gross excess will distend the soft tissues, resulting in an inaccurate impression.

Procedure:

1. An individual resin tray is constructed with the self-curing acrylic resin on the edentulous ridges' areas of a preliminary cast. The tray is selectively relieved and covers the edentulous areas up to the border tissue attachment including the retromolar pads.
2. The individual tray is loaded with zinc oxide-eugenol impression paste and brought to position without any compression while the soft tissues are left in their passive state.

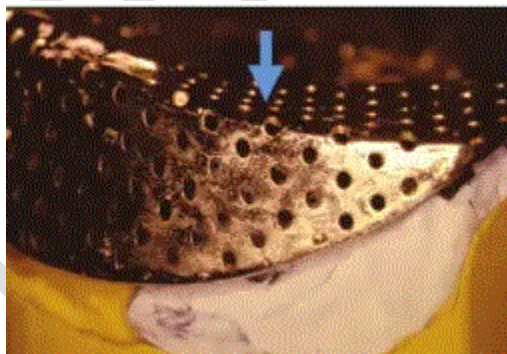


3. When the material sets, the tray is removed and the impression inspected. The excess material is trim-med away and teeth are freed from any residual impression paste. The tray is tested in the mouth for stability.



4. A metallic rim-lock perforated stock tray covering the whole arch is chosen. The mucostatic impression of the soft tissue areas, already taken, is inserted in the mouth.

5. While the metallic tray is being loaded with an alginate impression, this same material is used to fill the space between the soft tissue impression and the remaining teeth.



6. The loaded metallic tray is inserted into position over the teeth and the acrylic tray. The index fingers are positioned on the tray facing the edentulous areas, and a positive pressure is exerted upon the metallic tray until the alginate impression material sets, The completed impression is removed. The impression is finally poured with dental stone.

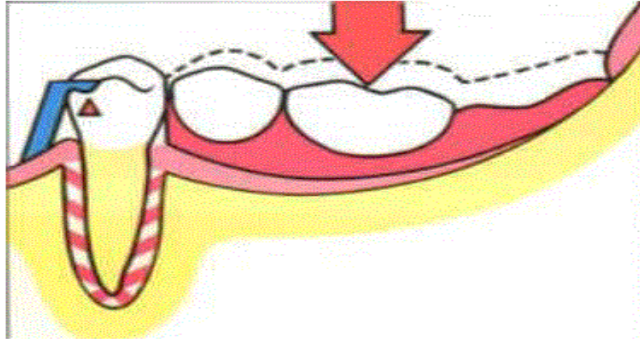


Altered cast technique (Corrected cast)

Definition: It is a cast made from a master cast in which the residual ridges have been recorded by means of a functional impression technique, this functional corrected impression is made for the purpose of recording the residual ridges in their functional form and recording the optimum length and width of the flanges of the denture base, the functional impression is usually made for distal extension base; whereas the master cast is adequate for most tooth supported edentulous areas. Free end saddle is liable to be

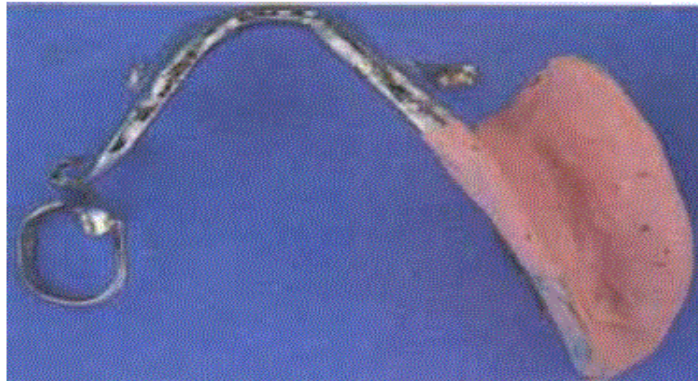
displaced under occlusal pressure (anteroposterior rocking around the abutment tooth which acts as a pivot), this is as a result of the displaceability of the mucosa.

All framework impressions should be made in a border molded custom tray. A custom tray is a tray made specifically for a cast made from a preliminary impression. It allows closer adaptation of the tray to the tissues so there is less soft tissue displacement. It reduces cost of the final impression by **decreasing the amount of impression materials needed** and it results in **greater accuracy of the impression because a more uniform thickness of materials**. The altered cast technique is employed to prevent this by making a compressive impression of the mucosa (impression made under controlled pressure) under conditions which mimic to functional loading, the distribution of the load from the denture to the residual ridge is thus improved and the denture is more stable.



Procedure:

1- Acrylic resin tray material is added to the framework of the RPD to form a base which covers the relevant edentulous area; it must be of sufficient thickness to be rigid. At the chair side the periphery of the base is inspected for under or overextension and adjusted accordingly, any undercuts in the impression surface are removed. This surface is dried and zinc oxide impression paste or medium viscosity silicone impression material is applied.



2- The framework is placed in the mouth and great care must be taken to ensure that it is seated on the teeth by pressure on the occlusal rests and indirect retainers only, no finger pressure is applied to the base area and the teeth are not occluded. Once the framework is fully seated, border molding is carried out.

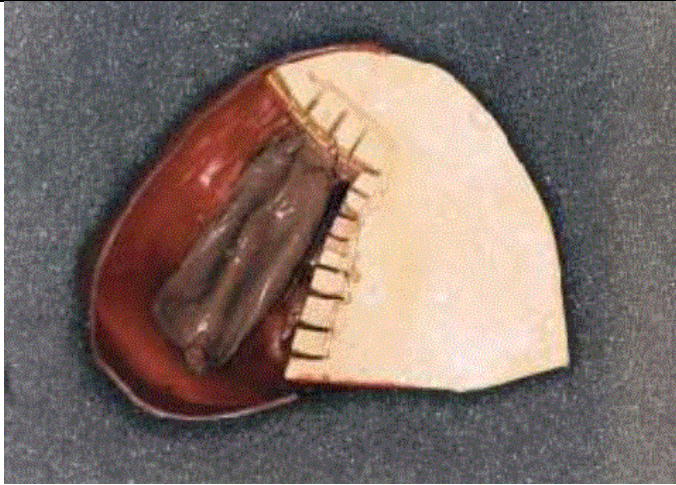
If pressure is applied here, the framework will fulcrum, and/or the tissue will compress so that when the impression is removed, the base will not touch the tissue at rest. Pressure should be applied evenly over the rest seats to ensure complete seating of the framework (e.g. mirror handle).



- 3-** Outline the master cast for removal of ridge areas by drawing a line approximately 1.5 -2 mm distal to the last abutment tooth and running from the outer edge of the cast crossing the ridge to a point approximately (5mm) lingual to the ridge.
- 4-** Remove the residual ridge areas from the master cast and putting the mechanical retentive means into the cast with a round spiral saw.



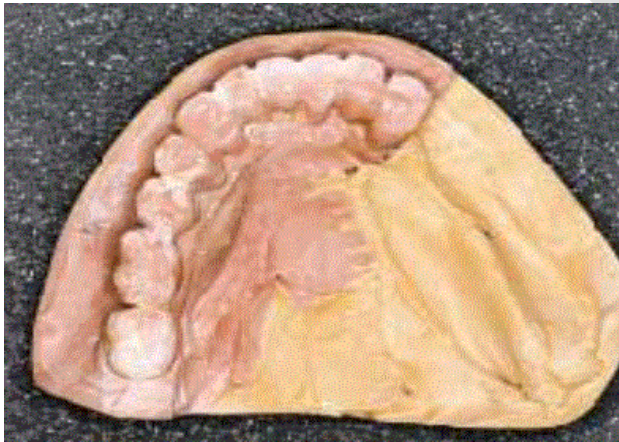
- 5-** Place the framework with its impression on the master cast and lute, it should be inspected to make certain that rests are completely seated, functional impression must not contact the cast, and this framework is securely luted to the cast using modeling plaster or sticky wax.
- 6-** A strip of boxing wax is adapted around the cast. A hot No.7 spatula is used to seal the wax to the cast.



7- A stone is poured into the boxed impression and allowed to remain for 5 minute to thoroughly wet the cast. A critical step for preventing the movement of the framework during boxing and pouring procedures.

8- Small amounts of stone are added at a time to flow into retention areas of the original cast to avoid entrapment of air.

9- When the stone is set, remove the boxing wax.



The principal problems: The problems associated with this functional procedure are: -

- Related to incorrect or incomplete seating of the framework in the mouth or on the cast.
- Such problems may occur when making the impression or boxing the impression and pouring the cast.
- Other problems may occur if the proper procedures are not followed when using plaster /pumice mixture.

Evaluating the Impression

Remove the impression, check for voids or over-extensions that might indicate improper seating. Have the impression inspected by an instructor. Send impression to the lab immediately for fabrication of a pink acrylic denture base. Include a prescription for processing of acrylic. The technician requires at least several days to process the base. The technician will section off the edentulous ridge portion of the cast corresponding to the altered cast impression, and replace this area by pouring stone into the altered cast impression.

Final impression should meet the following criteria: " No voids on any area where direct or indirect retainer will contact an abutment (rest seats) " No large voids under major connectors, minor connectors, infrabulge arms " No significant tears, material not separated from the tray " Peripheries well defined " Accurately records available supporting tissues " Allows for all elements of design " No significant areas where the border molding is not covered and the tissues have been displaced.

In the mandible, ensure the floor of the mouth and lingual frenum has been accurately recorded to allow for major connector placement.

All critical anatomy should be recorded:

Vestibular depths recorded accurately

Hamular notches (marked)

Vibrating line (marked)

Retromolar pads

Frenal attachments

Floor of mouth (measured)