AN INTRODUCTION TO IMPRESSION MATERIALS

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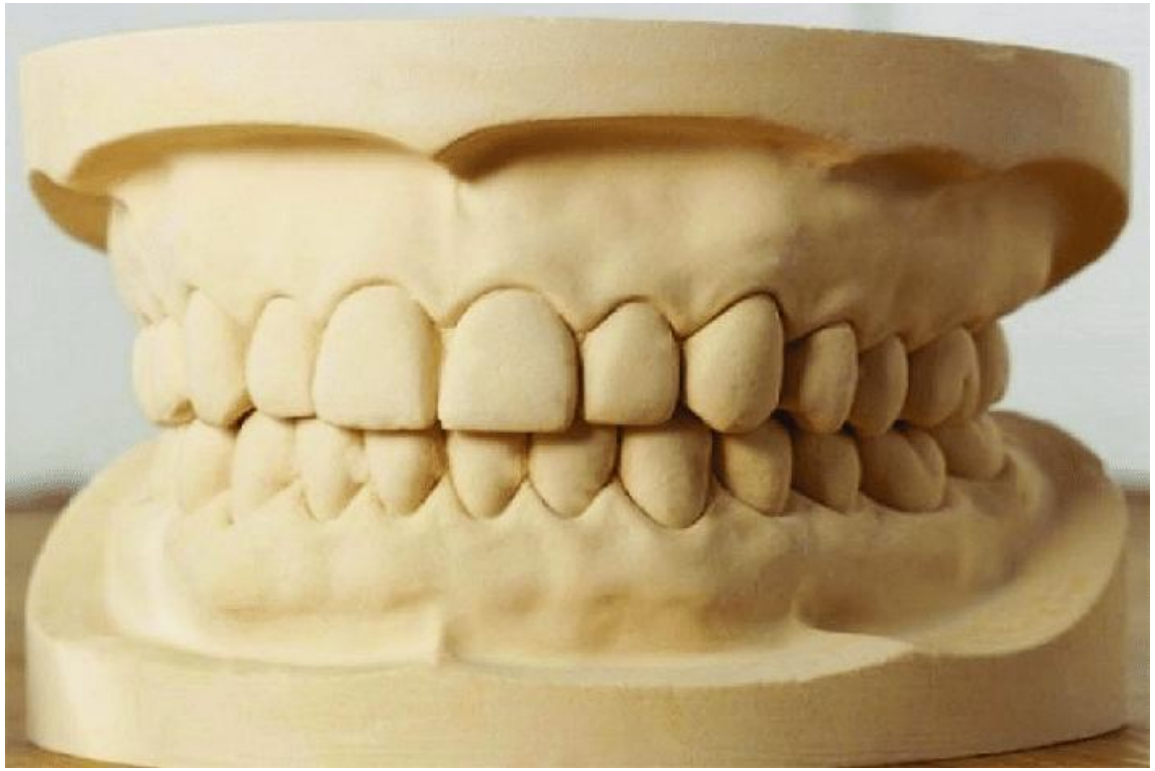
IMPRESSION

- An impression is defined as a negative likeness of the mouth. It is a negative imprint of the teeth and the surrounding oral tissues.

Why make an impression?

- Models provide a three-dimensional view of the oral structures, thus aiding in diagnosis and treatment planning.
- Many restorations or appliances are best constructed on casts. It may be inconvenient to both dentist and patient if these have to be made directly in the patient's mouth.
- Models can be used to educate the patient.
- They serve as treatment records.
- By using casts, technical work can be passed on to technicians, saving valuable clinical time.

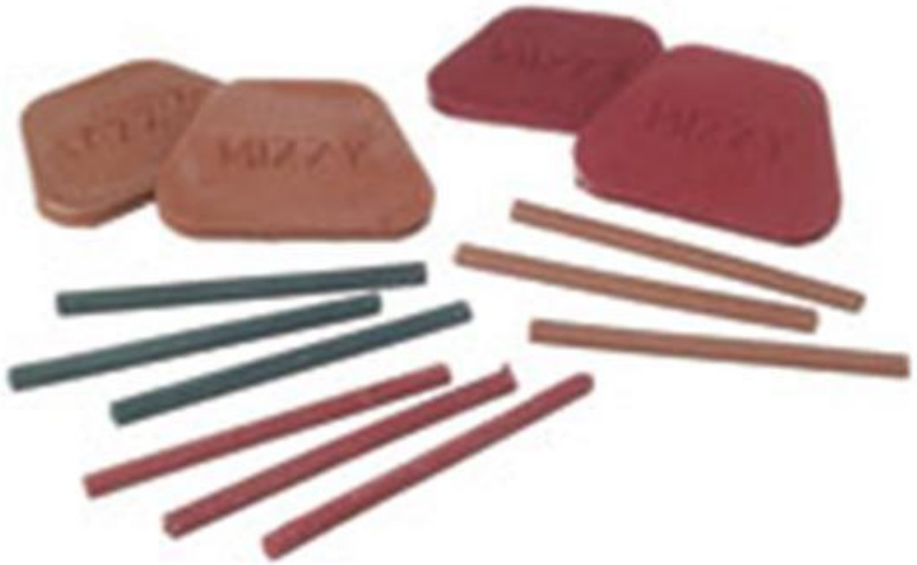
- A set of casts poured from an impression.



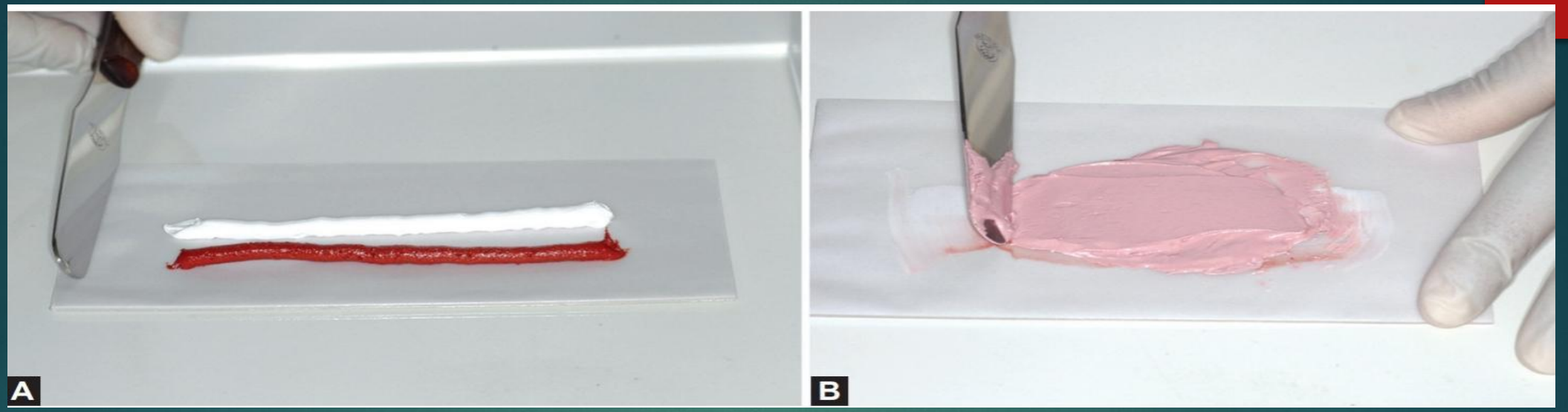
AVAILABILITY OF IMPRESSION MATERIALS

Impression materials are available in a variety of forms such as :-

- Cakes - (impression compound)
- Sticks (Greenstick compound)
- Powder- packs or jars (alginate)
- Putty form (light body material)
- Pastes (ZOE)



READYING A MATERIAL



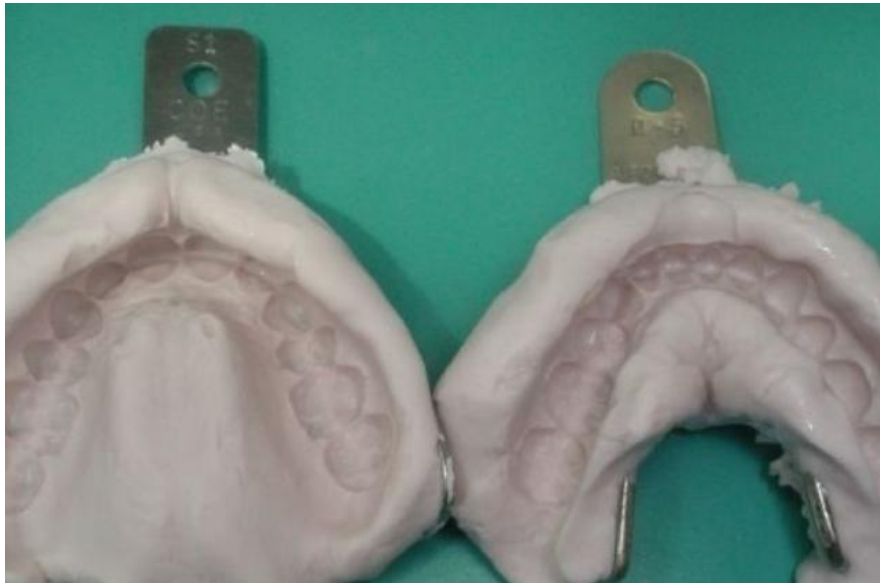
Types of impression

- Depending on arch

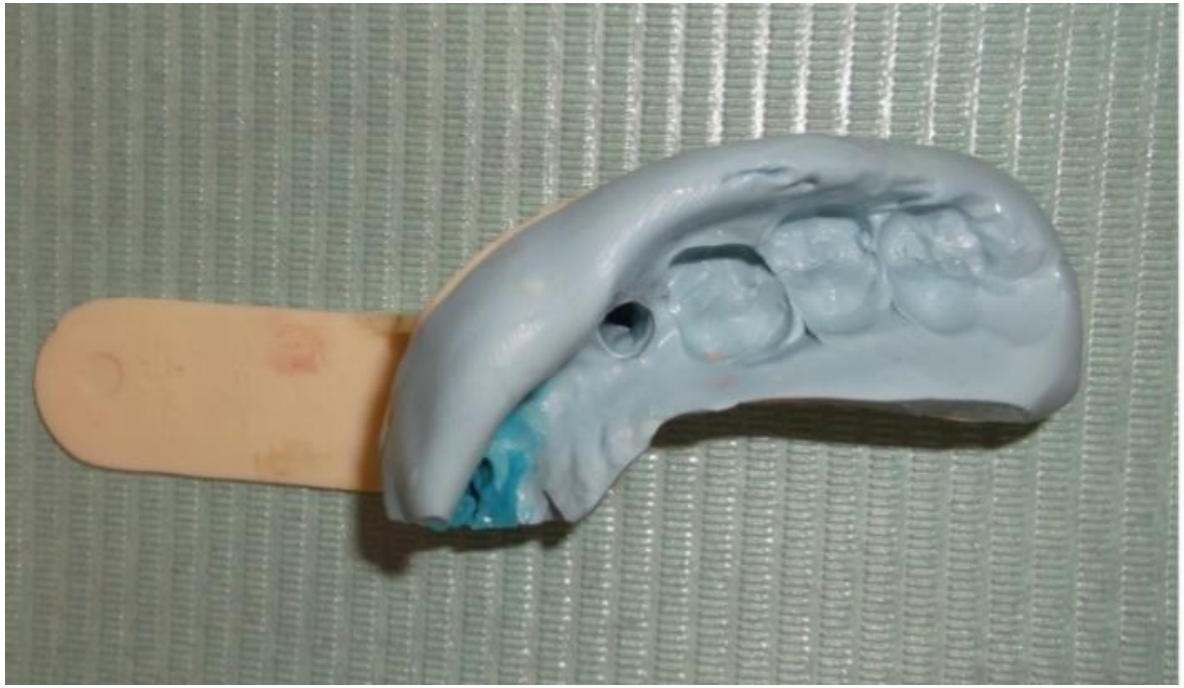
1. Upper or maxillary impression
2. Lower or mandibular impression

- Depending on when the impression is made

1. Primary impression
2. Secondary impression



- Sectional impression



IMPRESSION TRAYS

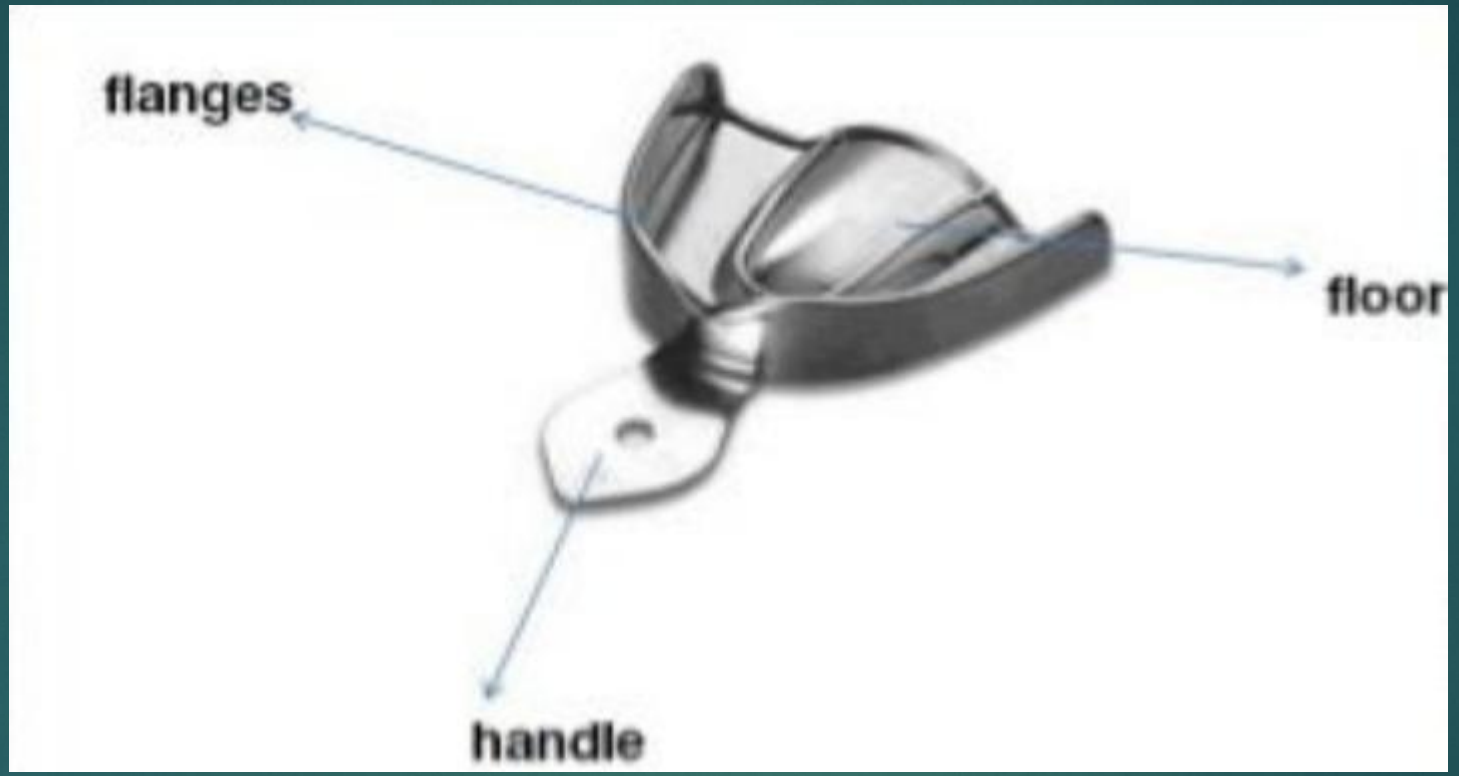
- A metallic or plastic container which houses the impression material in it and is used to make an impression

- The types of impression trays are :-

1. Stock trays
2. Custom trays

- They can also be classified as :-

1. Edentulous trays
2. Dentulous trays


flanges
floor
handle

CLASSIFICATION

There are several ways of classifying impression materials.

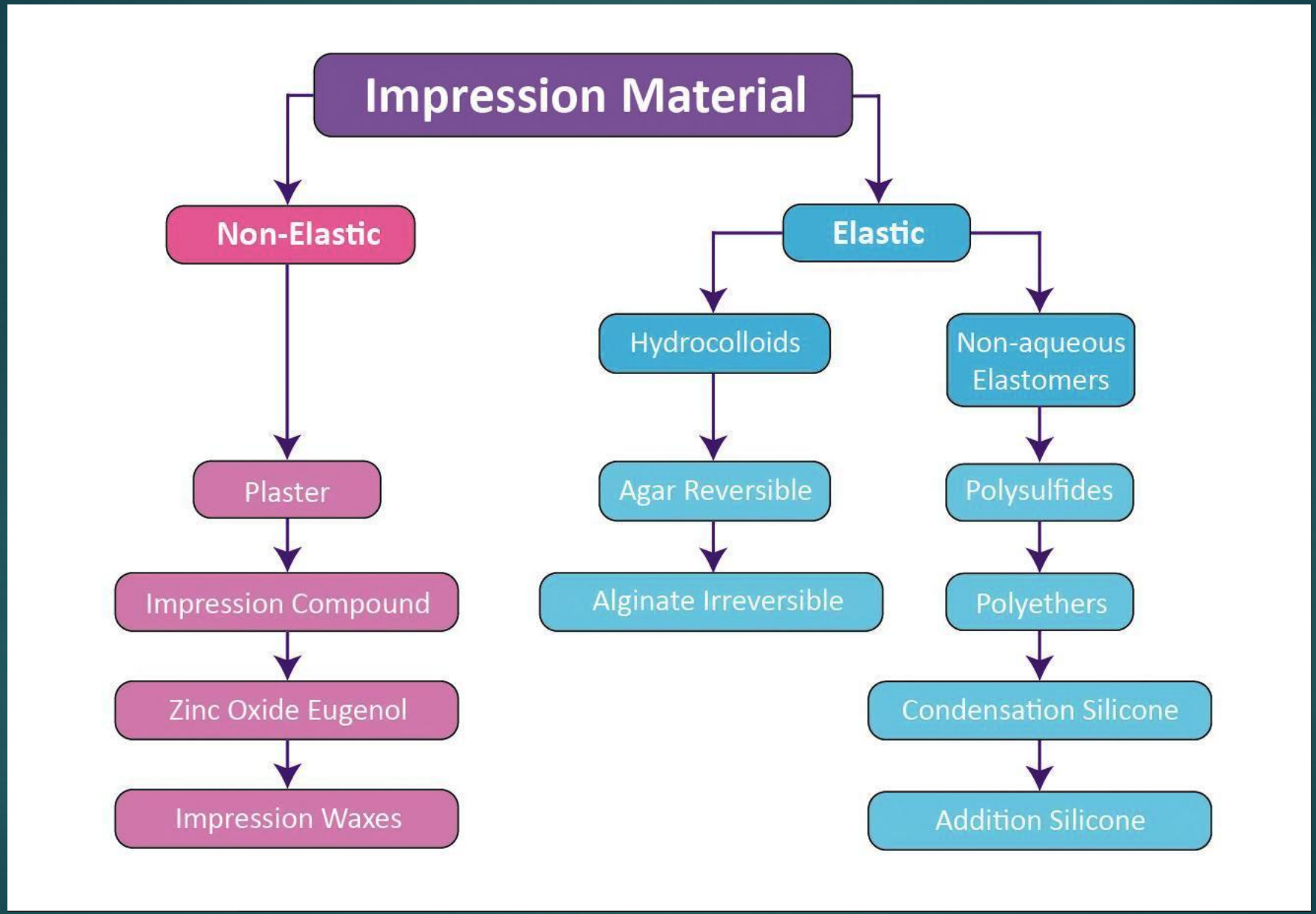
- 1. According to mode of setting and elasticity.
- 2. According to tissue displacement during impression procedure.
- 3. According to their uses in dentistry.

Mode of setting	*Rigid*	*Elastic*
Set by chemical reaction (irreversible or thermoset)	Impression plaster Zinc oxide eugenol	Alginate hydrocolloid Nonaqueous elastomers -e.g. polysulfide, silicone
Set by temperature change (reversible/ thermoplastic)	Compound, Waxes	Agar hydrocolloid

IRREVERSIBLE- cannot be brought back to its original state. Cannot be reused.

REVERSIBLE - can be brought back to its original state. Can be reused.

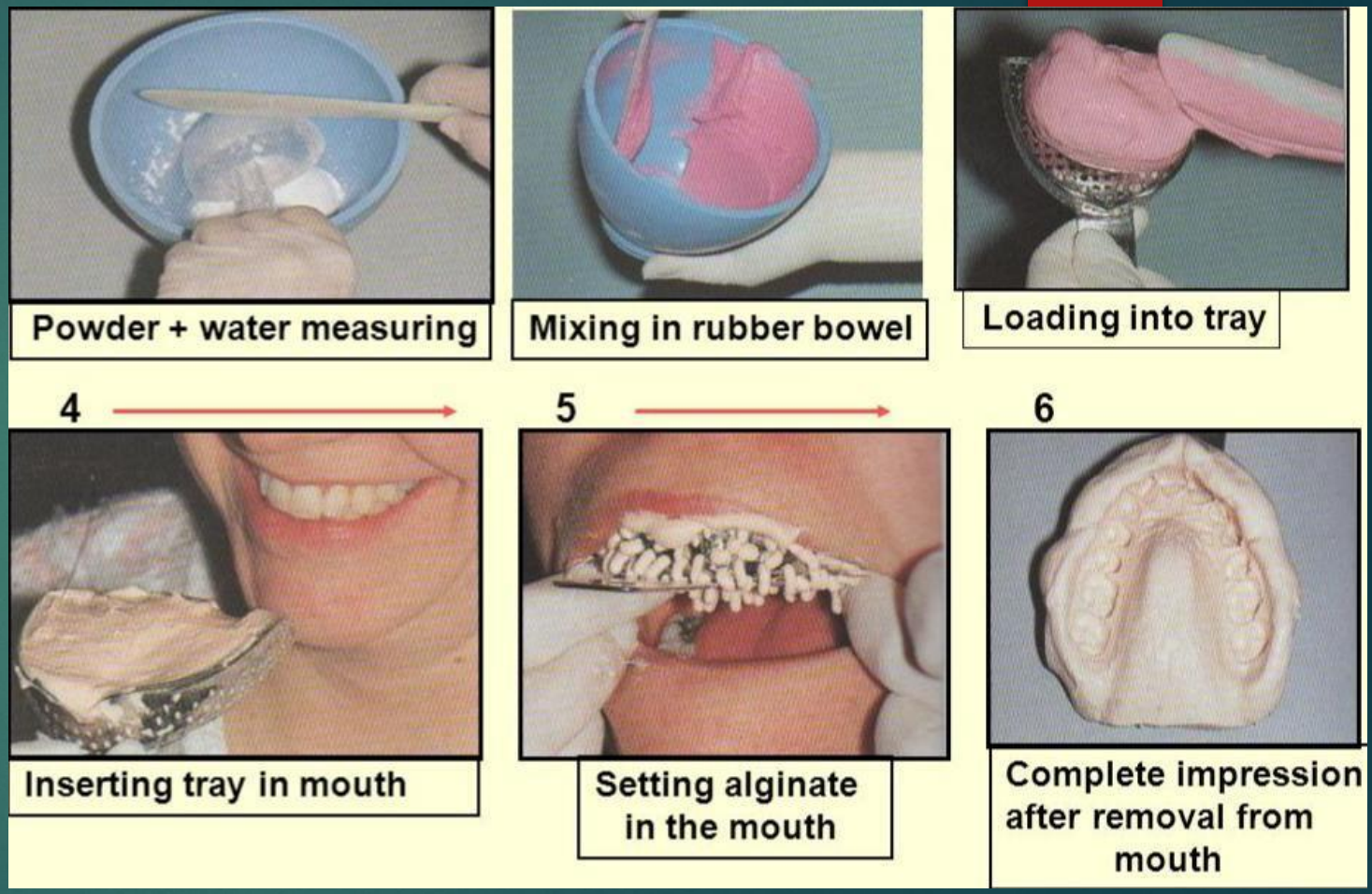
THERMOPLASTICS can melt under heat whereas **THERMOSET** remain solid under heat after curing


Impression Material
Non-Elastic
Plaster
Impression Compound
Zinc Oxide Eugenol
Impression Waxes
Elastic
Hydrocolloids
Agar Reversible
Alginate Irreversible
Non-aqueous Elastomers
Polysulfides
Polyethers
Condensation Silicone
Addition Silicone

- Depending on whether tissues are displaced while making impressions a material may be-

1. Mucostatic- produce minimal displacement of the tissue during impression, e.g. plaster, zinc oxide eugenol, low viscosity alginates, low viscosity elastomeric materials, etc.

2. Mucocompressive (Mucodisplacive) more viscous and displace the tissues while recording them, e.g. compound, high viscosity alginates, high viscosity elastomers, etc.



- **Impression materials used for complete denture prosthesis Impression plaster**

Impression compound and impression paste set to a hard rigid mass, and hence cannot be removed from undercuts without the impression being fractured or distorted. Therefore these materials are best suited for edentulous mouth.

- **Impression materials used for dentulous mouths**

On the other hand alginates and rubber base impressions are sufficiently elastic to be withdrawn from undercut areas. Such elastic impression materials are suitable for impressions for fabrication of removable and fixed partial denture prostheses, where the impressions of the ridge and teeth are required.

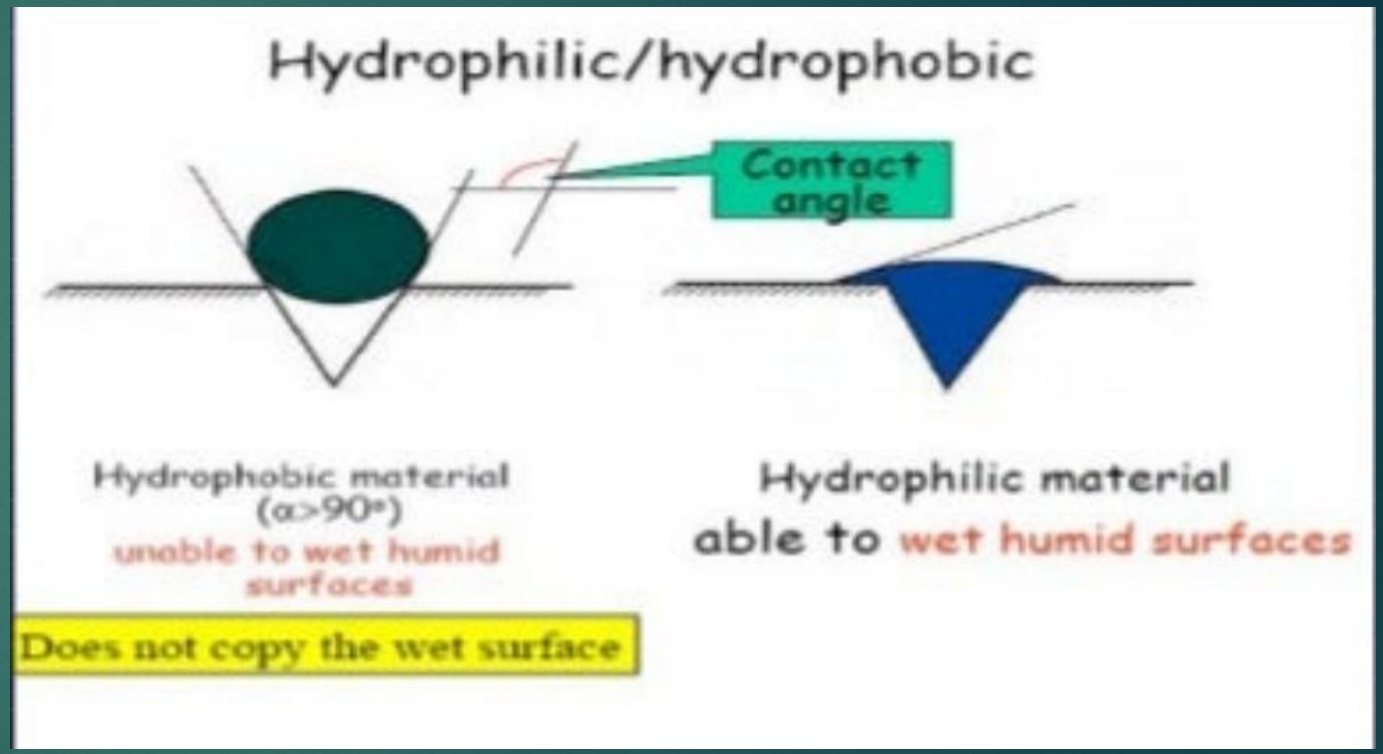
TERMINOLOGIES

- Mixing time (MT)- start of mixing to completion of mixing
- Working time (WT)- time available for manipulation of material in mouth (completion of mix – initial set)
- Setting time (ST)- time at which material is set and cannot be further manipulated

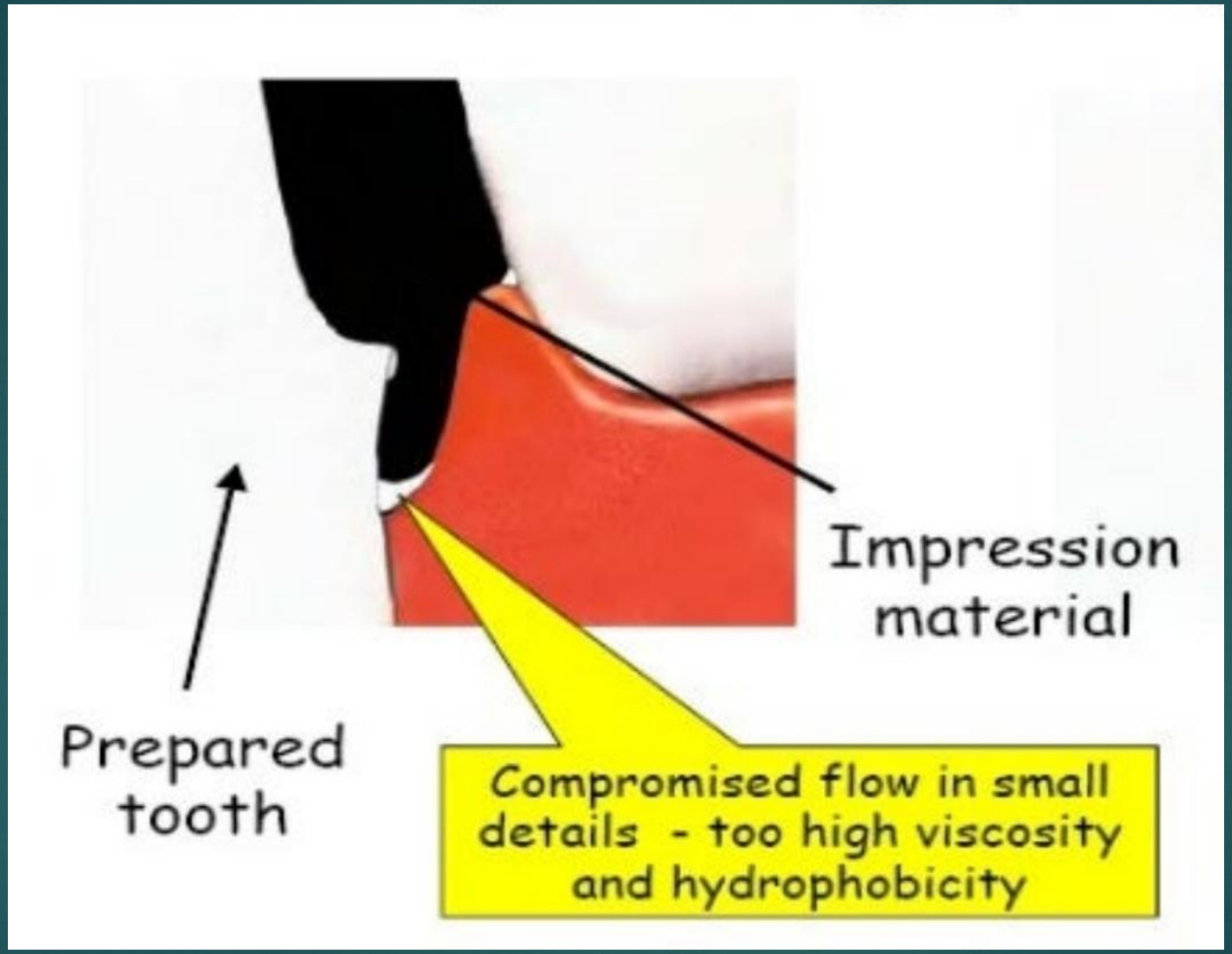
Requirements / Desirable properties

Factors affecting accuracy

- High flow to record the dental arch accurately
- The material should be able to wet and adapt to the oral tissues (hydrophillic)



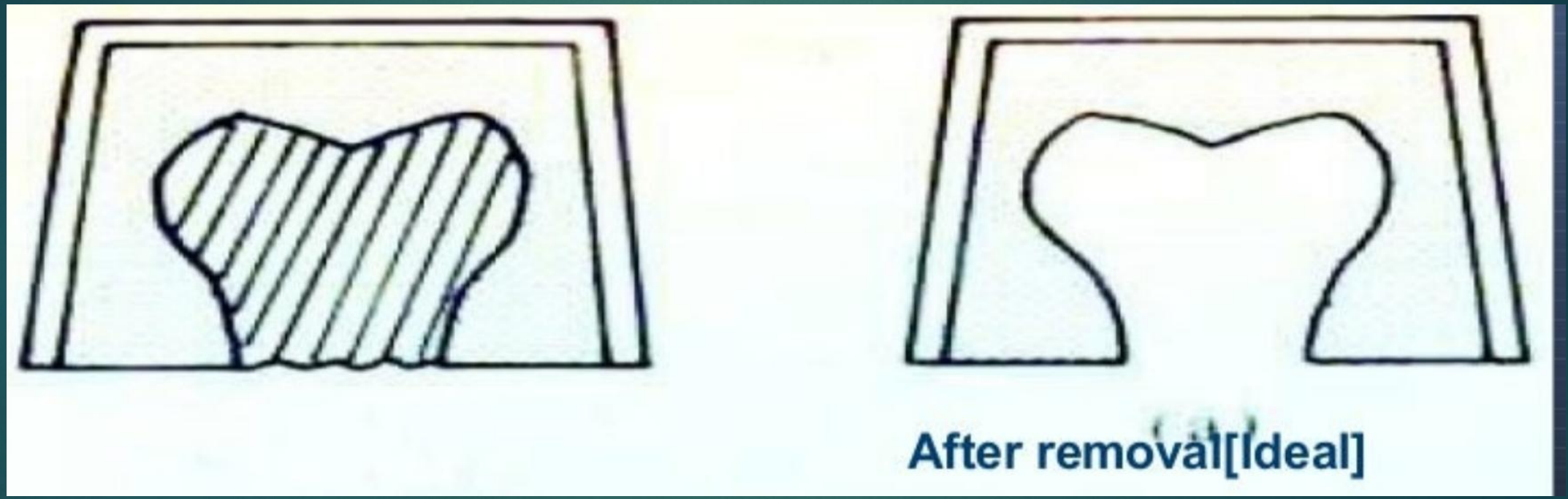
- The material should be of low viscosity


Impression material
Prepared tooth
Compromised flow in small details - too high viscosity and hydrophobicity

- Resistant to tearing or fracture upon removal from the patient mouth
- Retain accuracy outside patients mouth (dimensional stability)
- Easy disinfection without loss of accuracy
- Compatible with model or cast materials

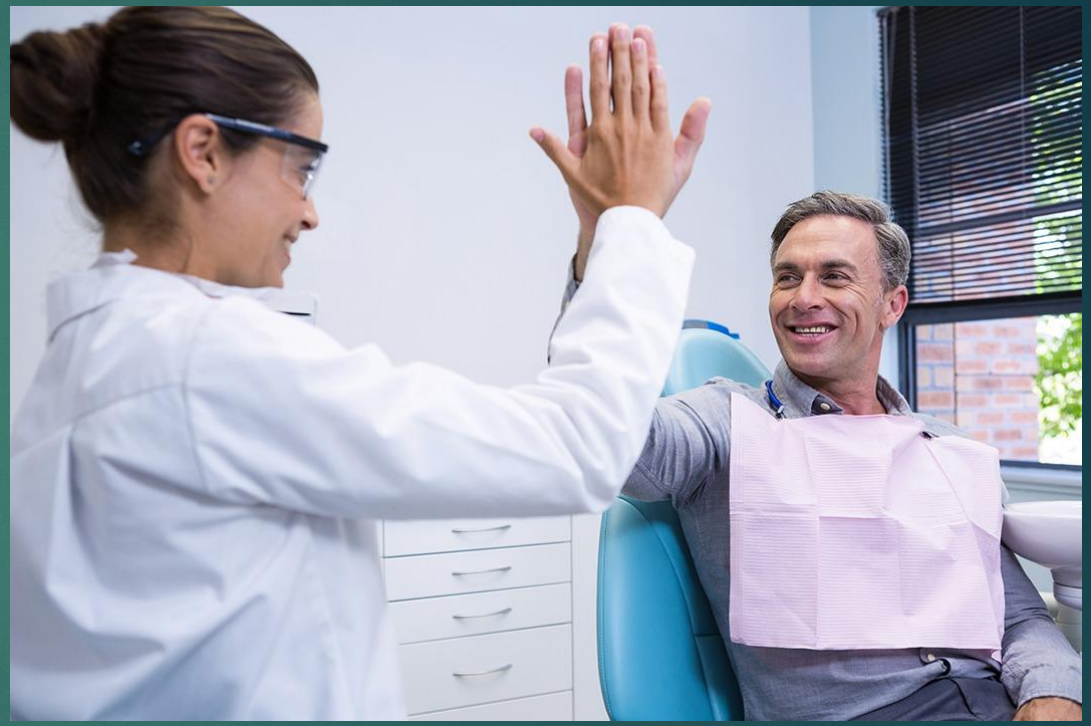
- Dimensionally accurate during setting for accurate recording of tissues. (No expansion or contraction)

- Flexible after setting to be removed from the mouth


After removal[Ideal]

Acceptability for the patient

- Non toxic, non irritant, tasteless and odourless
- Pleasant taste
- Reasonable setting time



- Good handling property
- Easy to mix and without extensive equipment
- Viscous enough to not flow out of the tray
- Adequate working time to load material into tray

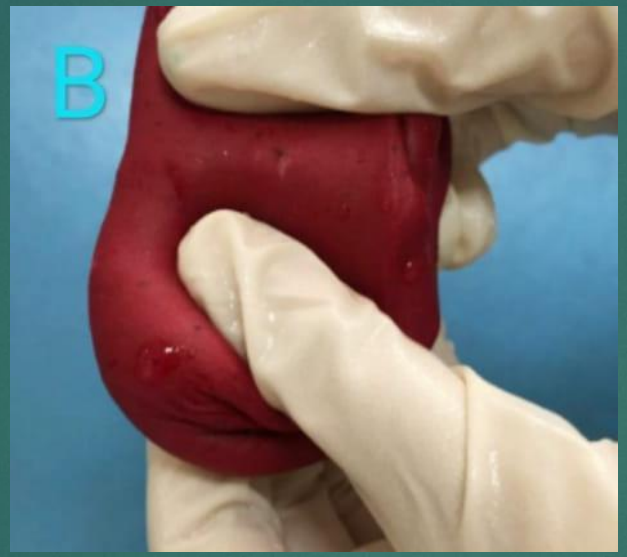
- Adequate shelf life

- Reasonable cost

NO IMPRESSION MATERIAL FULFILS ALL THESE REQUIREMENTS

MATERIAL SELECTION IS THE RESPONSIBILITY OF THE DENTIST ON A CASE BY CASE BASIS


DPI PINNACLE
FUNCTIONAL
IMPRESSION COMPOUND
FOR USE IN DENTISTRY
eminently suitable for preliminary impressions and snap impressions
5 CAKES (200 g. approx.)
PINNACLE
KEMCO
PRECISION
BRITISH MADE
IMPRESSION COMPOSITION
KEM-DENT
IMPRESSION COMPOSITION
GODIVA
KEMDENT
IMPRESSION COMPO


B


Water Measuring Cup
Alginate Powder & Scoop
Spatula
Mixing Bowl
Maxillary Tray
Mandibular Tray


NEW
Algitex
Alginate
impression material
750 g 50 Full impressions
FOR USE IN DENTISTRY
DUST FREE
REFILL BAG
After opening transfer
contents to container.
Keep in a cool dry place.
Manufactured by
The Bombay Burmah Trading Corporation, Ltd.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a. Mixing

b. Loading the lower or upper tray

c. Insertion while the material is still soft

d. Holding the tray in place.

e. Removal of the tray.

f. Wash the impression