

Prosthetics II.

Fixed dentures

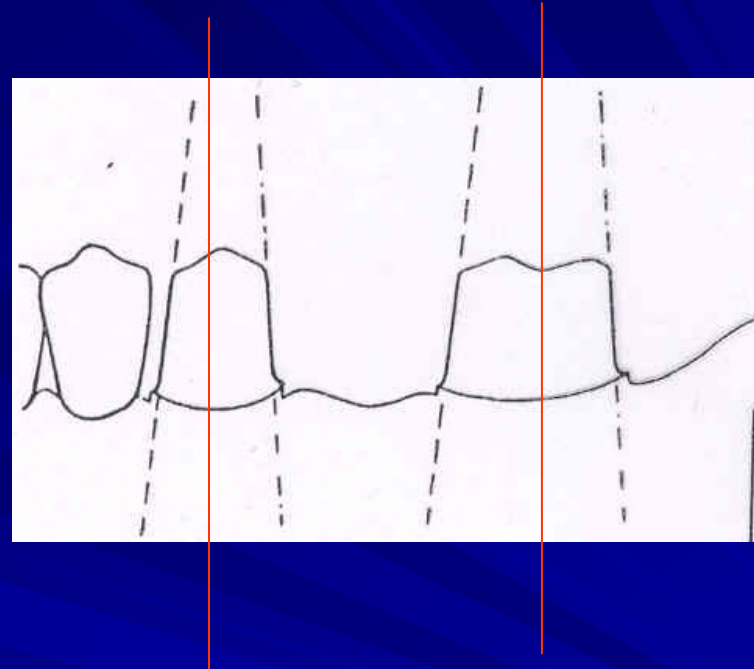
Bridges

■ Abutments

Full metal crown

Facet crown

Metallo-ceramic crown



The axis must be parallel

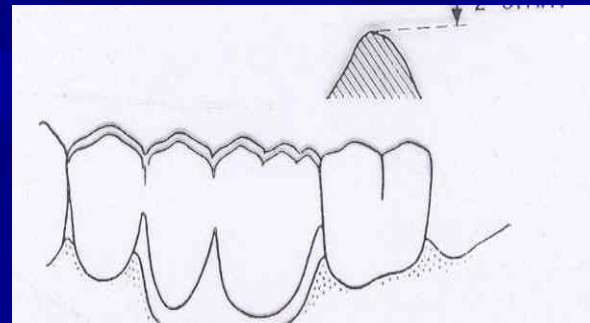
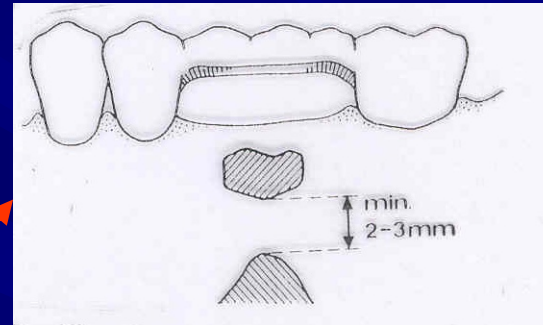
Bridges

■ Pontic

Full metal

Facet

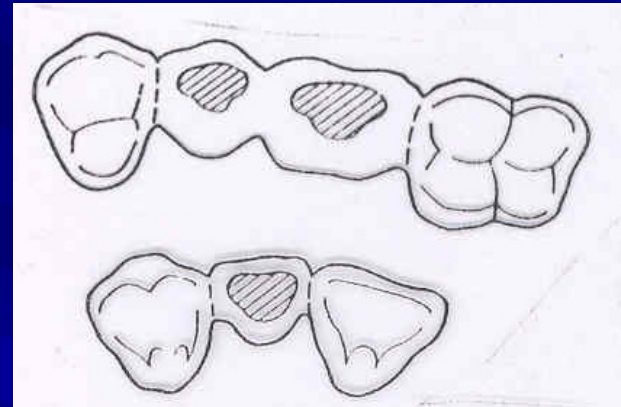
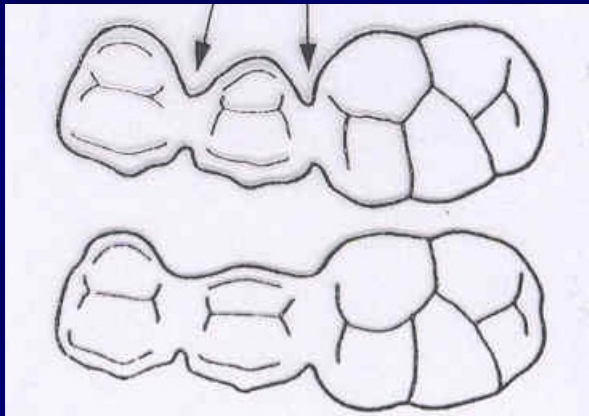
Metallo-ceramic

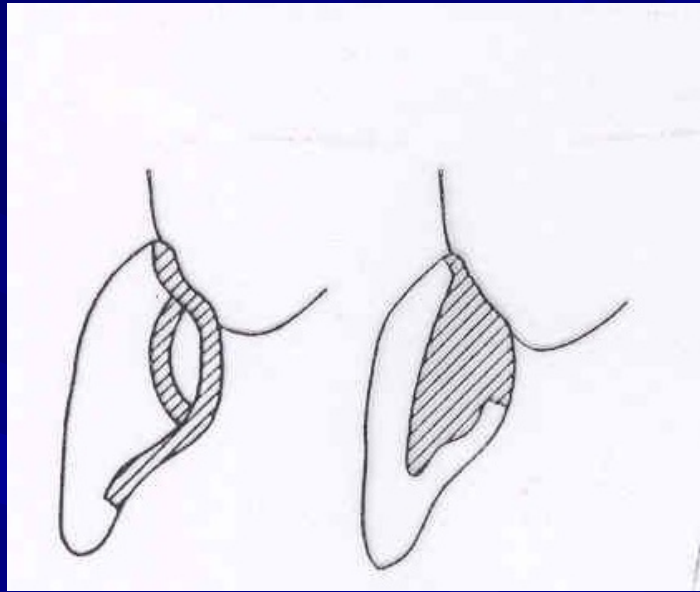
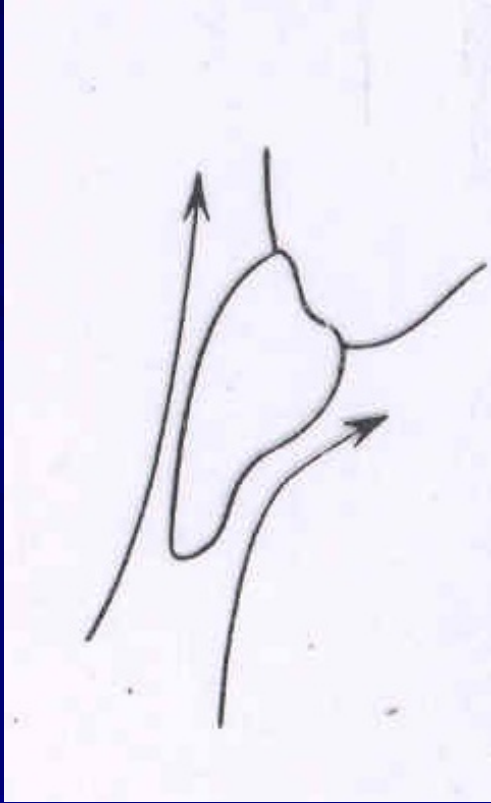


Self cleaning bridge (sanitary bridge)

Contact pontic

Reduction - the area that is in contact with gingiva $\frac{1}{3}$ of the occlusal size.
Occlusal reduction depends on the magnitude from 10 – 30% reduction.





Preparation

- Preparation grooves
- Occlusal reduction
- Vestibular reduction
- Oral reduction
- Proximal reduction
- Finishing and polishing

Manufacturing procedure 1.st phase in dental office

- Taking impression – elastomers
- Antagonal impression)alginate
- Occlusal impression – bite registration
(intermaxillary relationship)
- Provisional treatment

Manufacturing procedure

1.st phase in dental lab

- Plaster model– the dental arch is made of ultrahard gypsum, the base of a stone.
- The model is divided after application of guide pins
- The antagonal model of stone
- Mounting to the articulator (simulator)

Manufacturing procedure

1.st phase in dental lab

- The wax pattern of the metal framework is manufactured
- Casted (the method of lost wax)
- Adapted on the model

Manufacturing procedure 2.nd phase in dental office

- The framework is tried out
- The colour of veneering material is chosen

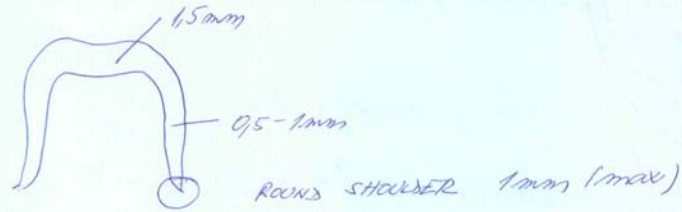
Manufacturing procedure 2.nd phase in dental lab

The veneering material is applied on the framework and polymerized or burnt out (ceramics).

Manufacturing procedure 3.rd phase in dental office

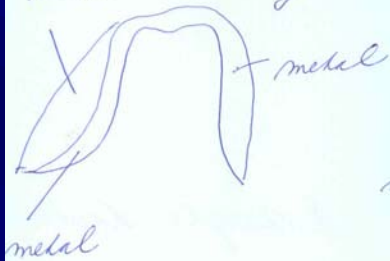
- The denture is tried out
- Cemented
- (zinkoxidphosphate cement, glasionomer or composite)

FULL METAL CROWN



FACET CROWN

Facet - veneering material



Reductions:
Occlusal: 1.5mm
Buccal: 0.5mm (max 1mm)
Mucibular 1.5mm
1.0-1.5mm for alloy
1.0-1.5mm for faces
(veneering) mat

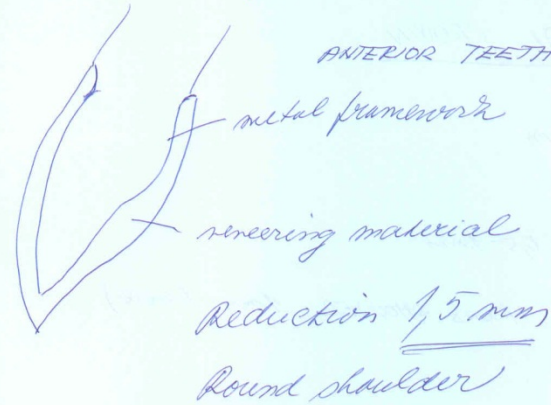
METAL CERAMIC CROWN



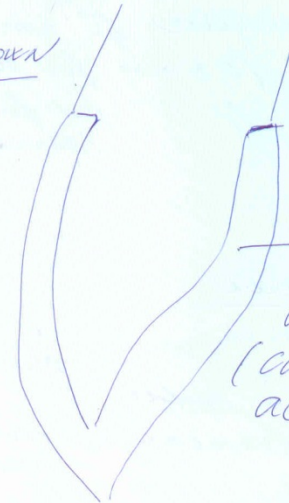
Reductions:
occlusal 2mm (min 1.5)
ocul } 1.5mm
ocul }
Round shoulder

METAL CERAMIC CROWN

ANTERIOR TEETH



JACKET CROWN



Rectangle shoulder
1.5mm reduction
incisal reduction 2mm

Fixed dentures

- Cemented (fixed) on/in pilots, abutment teeth.
- Inlays (inlays, onlays, overlays, partial crowns).
- Crowns
- Bridges

Inlays

- Rigid fillings
- Manufactured in a dental lab
- Direct or indirect method
 - Direct method rarely
 - Indirect method most common

Inlay

■ Crown inlay

- a part of a clinical crown is replaced

■ Root canal inlay

- The inlay is cemented into the root canal and replaces a crown (abutment tooth – stump, snag)

Crown inlay

Material

- *Composit*
- *Ceramics*
- *Metal Alloys*



Crown inlays

Indikations

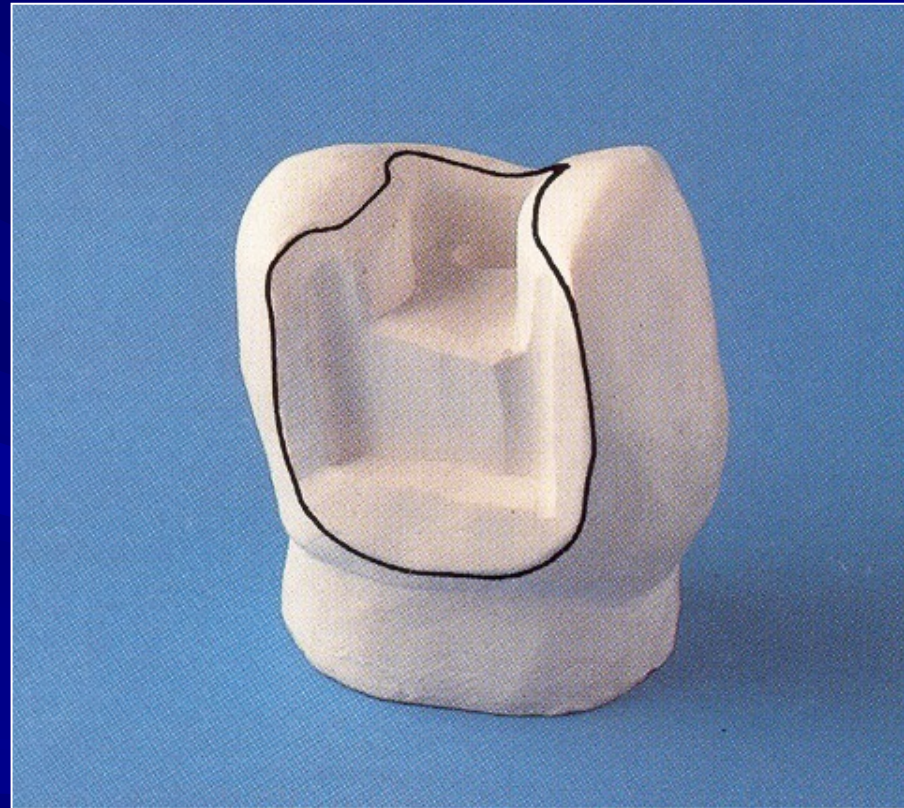
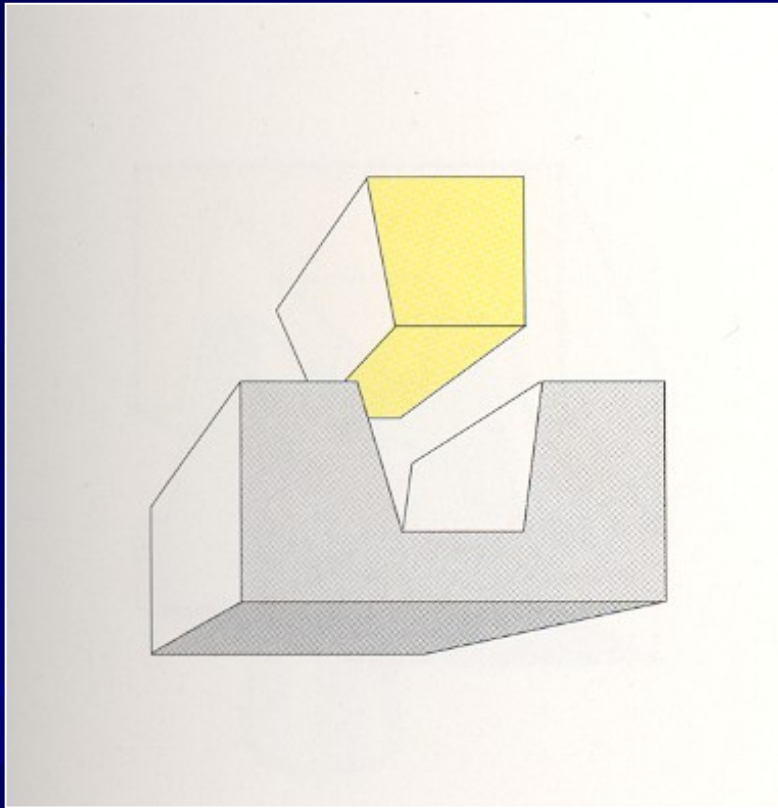
- A big lost of dental tissues
- Big interdental spaces
- Next to the crowns and bridges made of metal alloy

Crown inlays

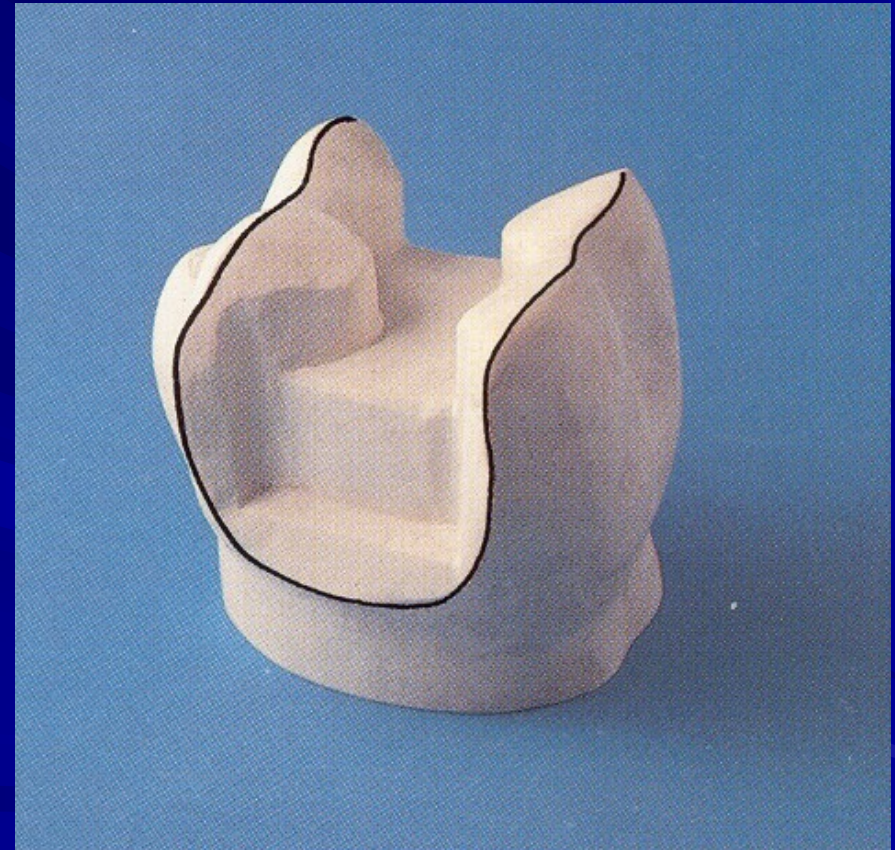
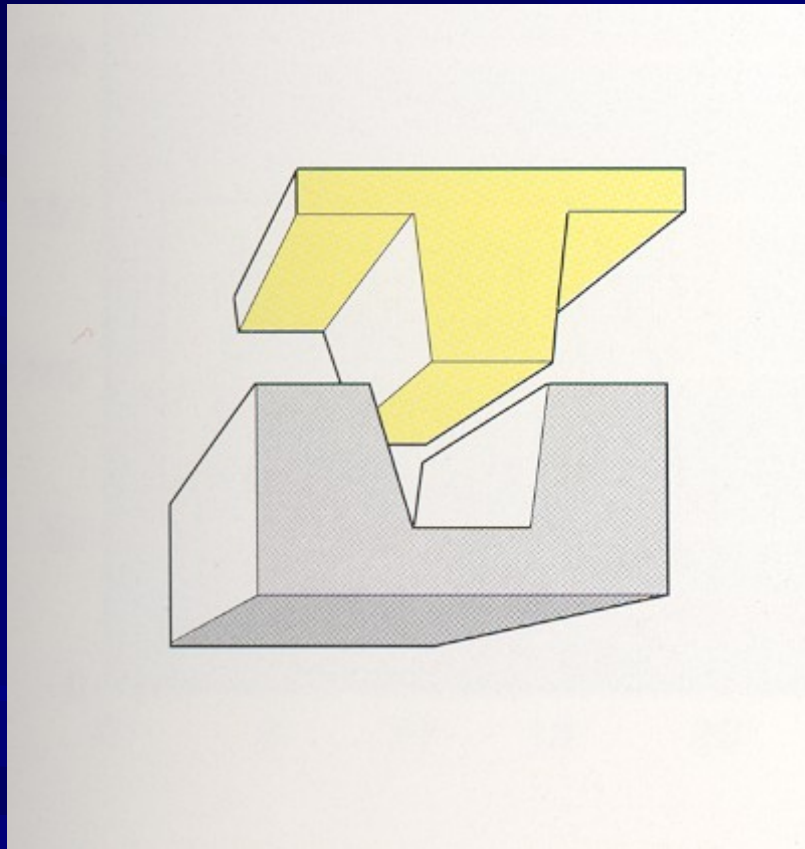
Contra - indication

1. *Too small - shallow (flat) cavities*
2. *High caries risk*
3. *Frontal area (metallic)*

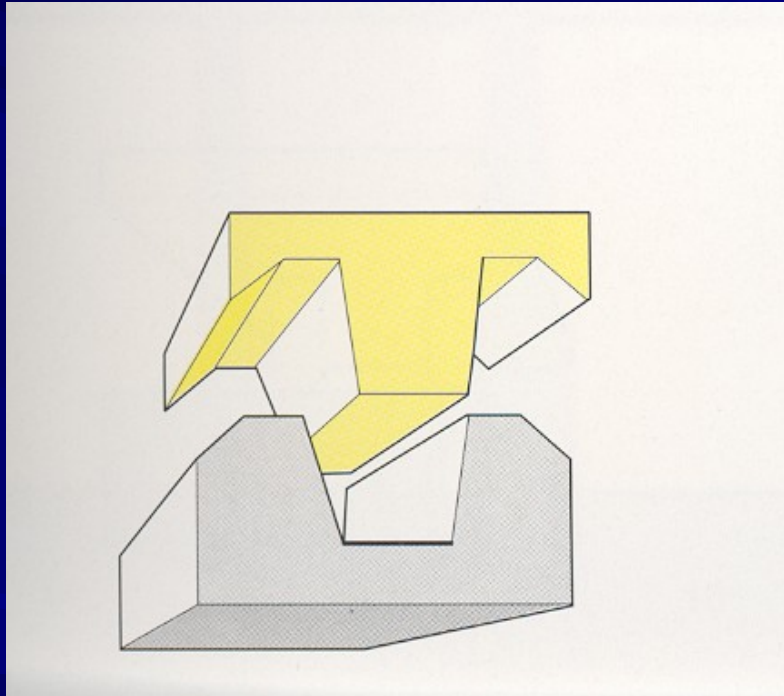
Inlay



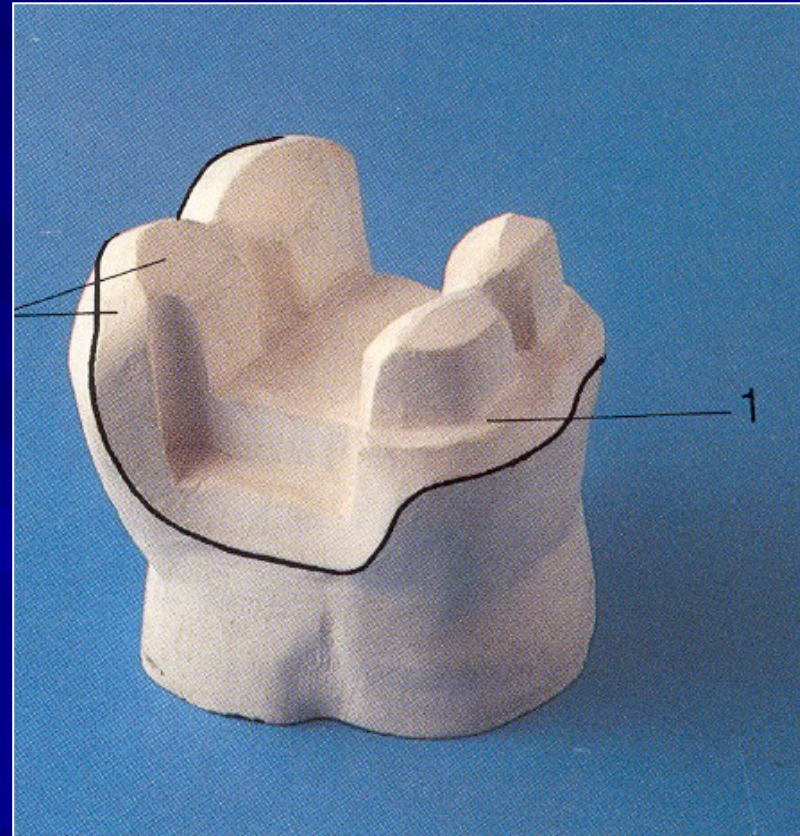
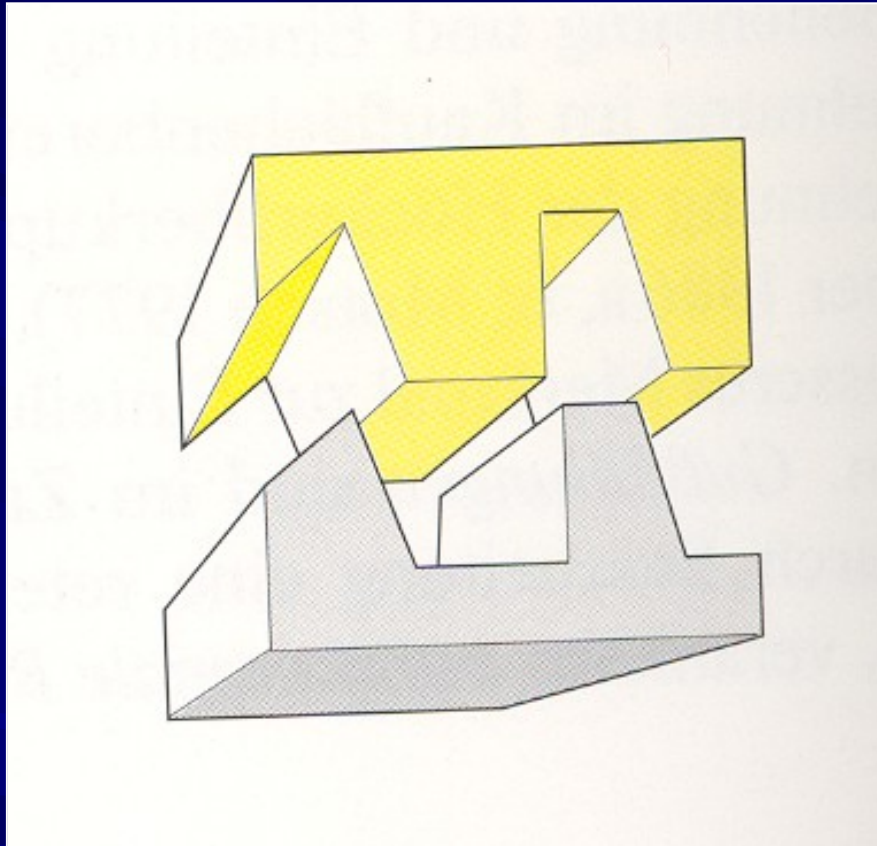
Onlay



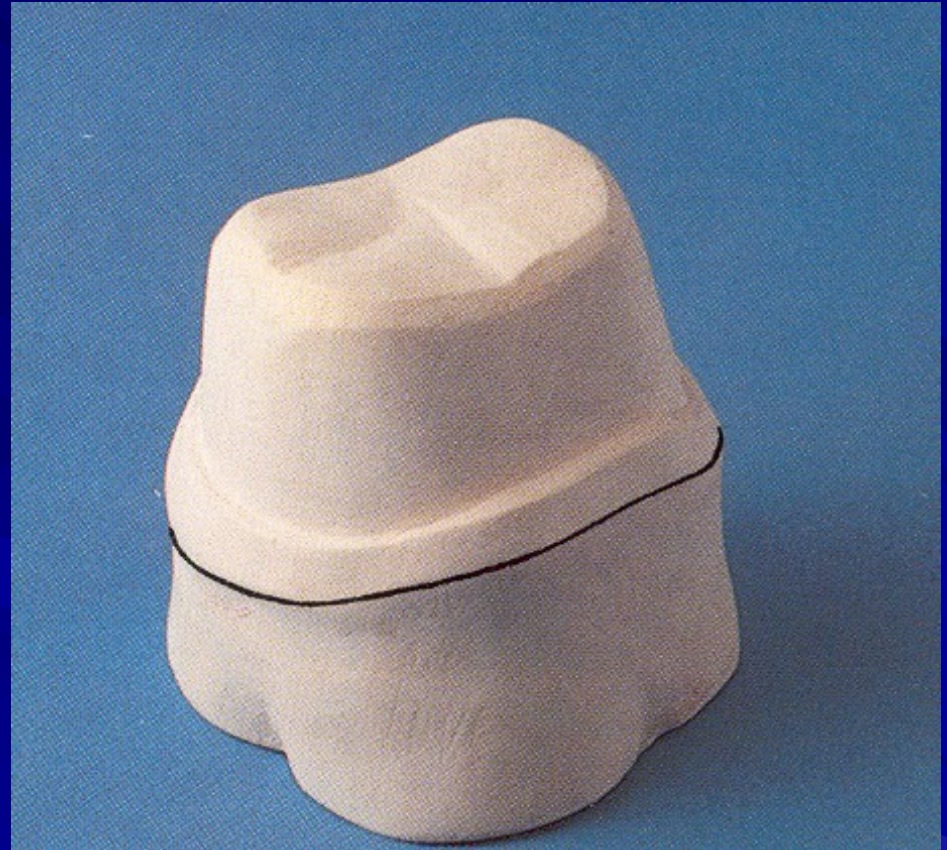
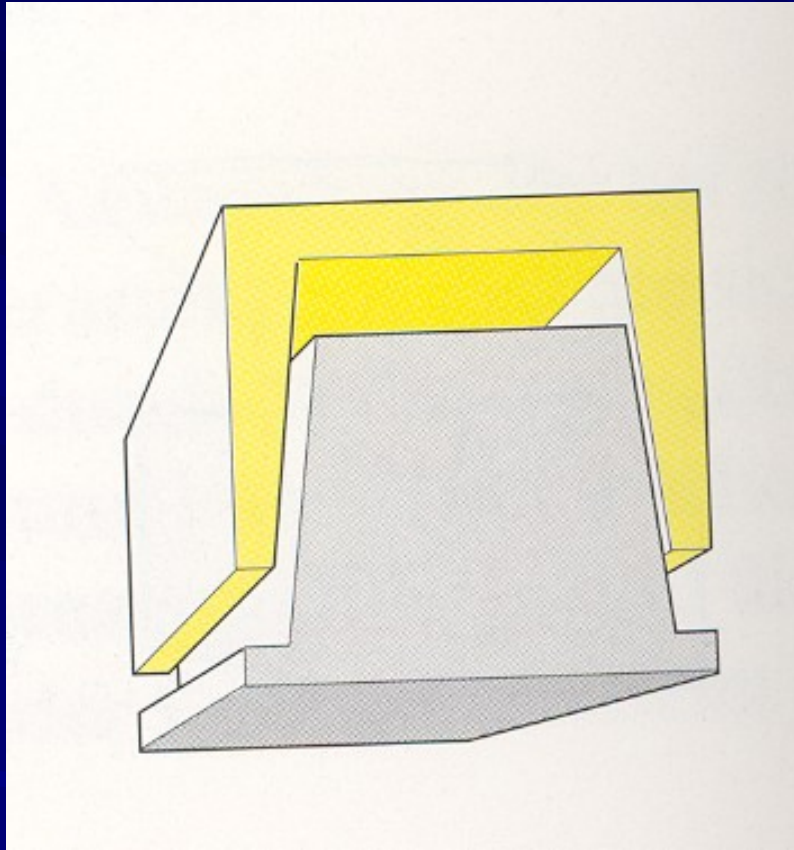
Overlay



Partial crown



Crown



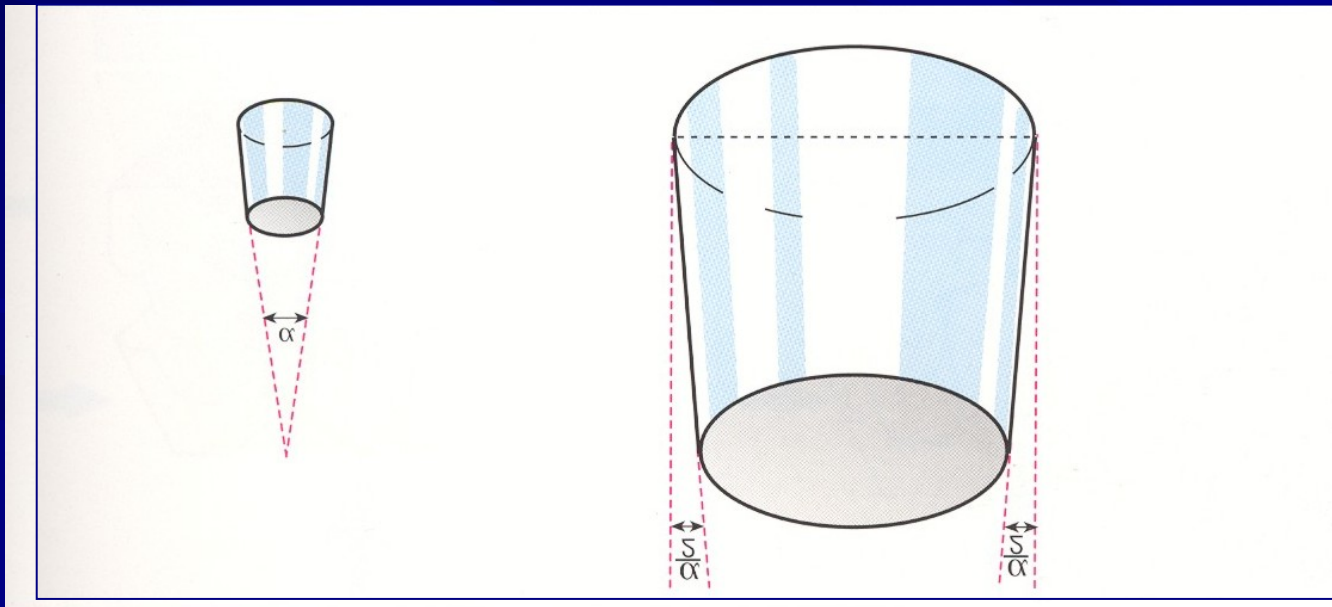
Retention of rigid fillings

Whitstand capability against axial forces:

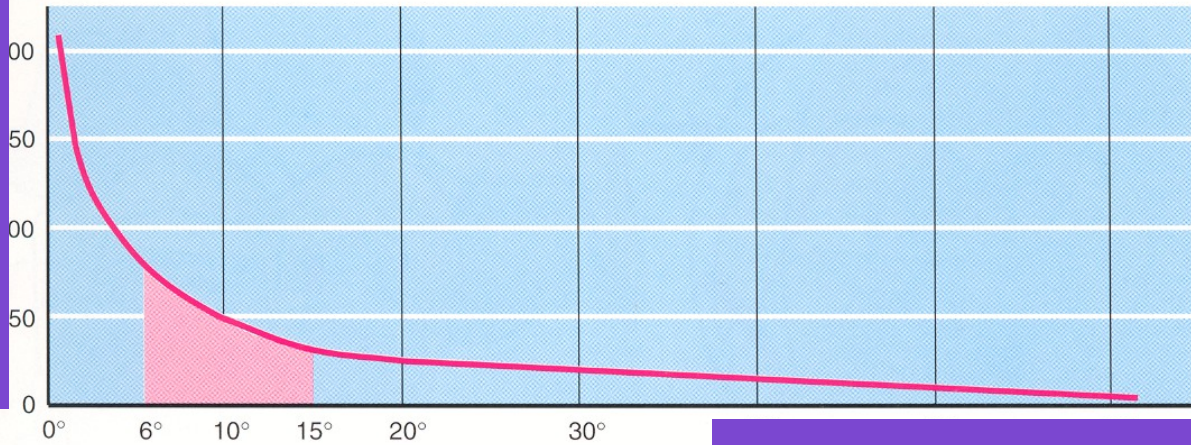
Geometry of the preparation

(facilitating shape)

Quality of the luting material

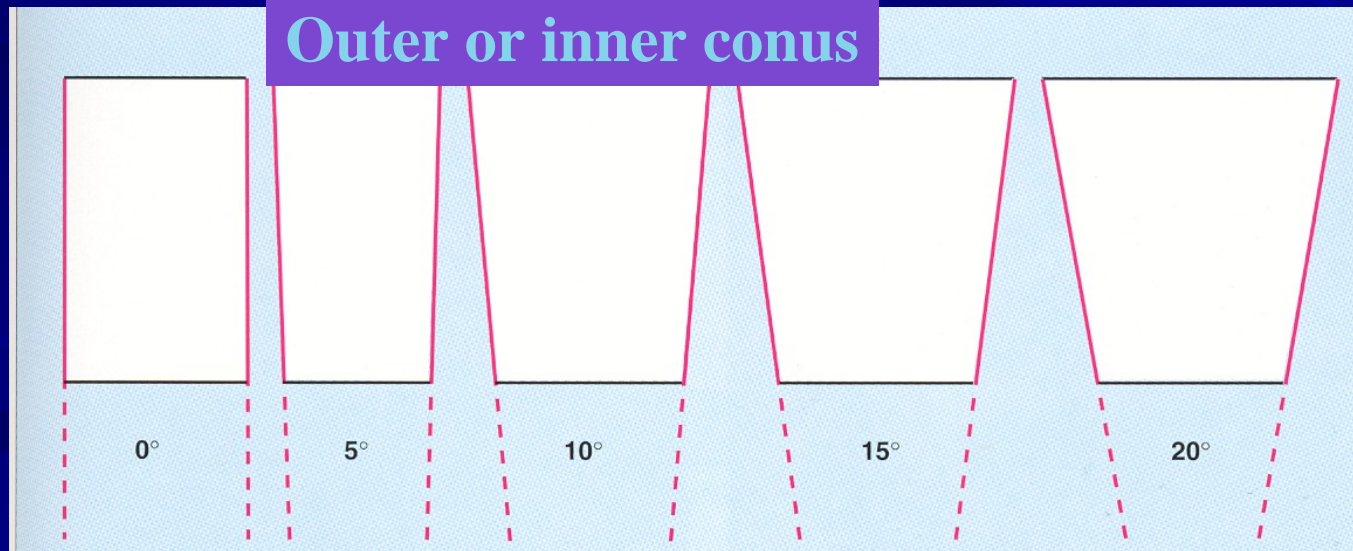


Retention g/mm²



Angle of the convergence

Outer or inner conus



Angle of convergence

- 0° - maximum
- 6° - very good
- 15° - acceptable
- 20° - insufficient

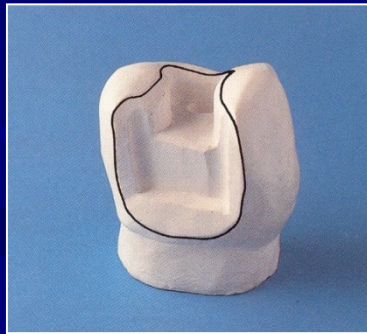
Optimum 6° - 15° .

Retaining area

- Surface of contact

Rigid filling

Inlay or crown (internal, outer, combined)



Stability of rigid fillings

Whitstand capability against horizontal forces

Angle of convergence

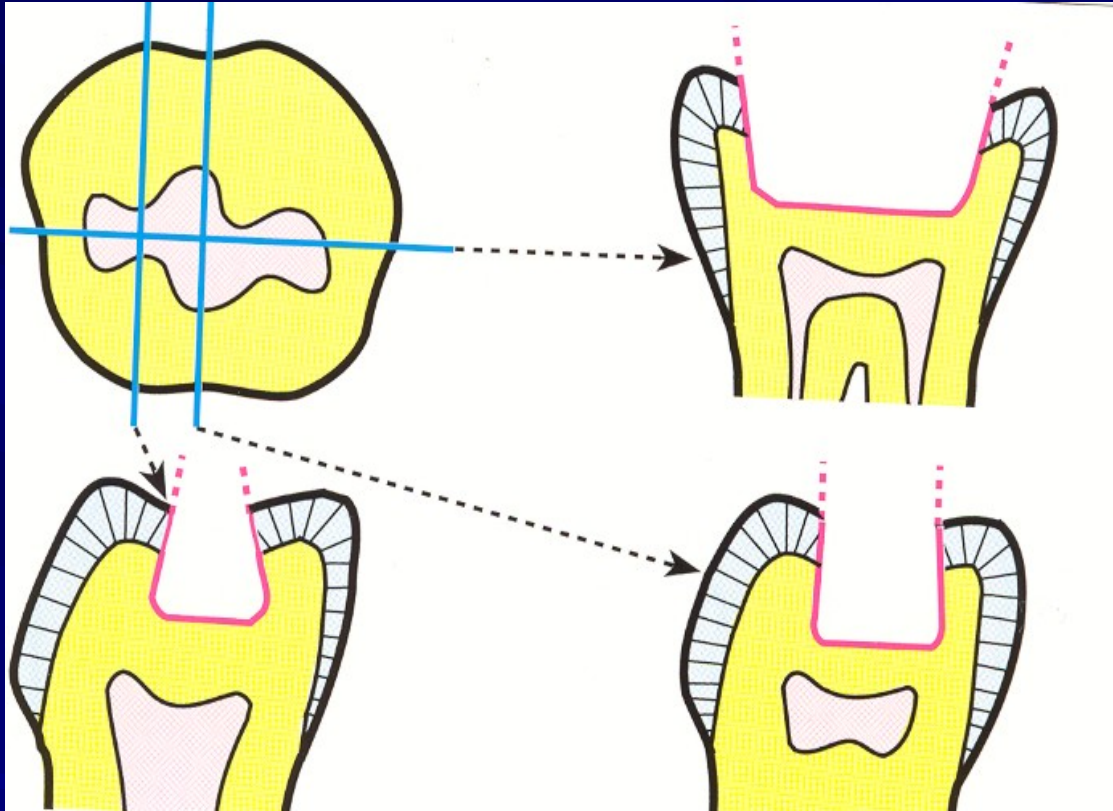
Axial length contact surface





Basic rules of cavity preparation

- Box
- No undercuts
- Light divergence of the walls (facilitating shape)



Box

Undercuts

Simple box

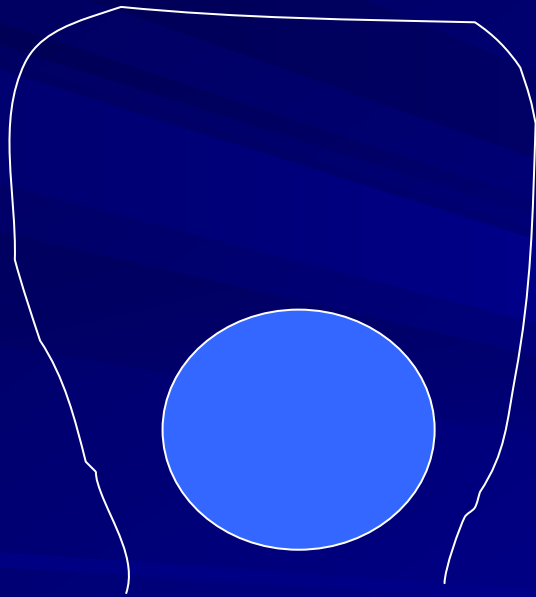
Facilitating form

Inlay of metal alloy

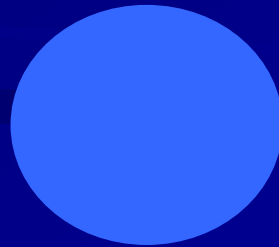
- Direct method
- Indirect method

Inlay of metal alloy

➤ Direct method



Direct modelling in the mouth
Special wax – casting wax,
(special polymers)
Sprue pin
Investment
Method of the lost wax



Inlay of metal alloy

Direct method

- Central cavities (class I., class V.)
- Root canal inlays

Inlay of metal alloy

Indirect method

Taking of the impression

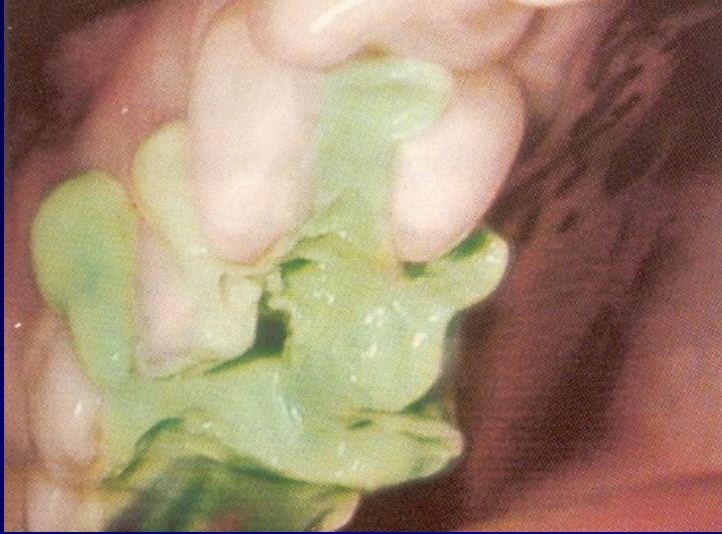
Model

Modellation of the casting wax,
(special polymers)

Sprue pin

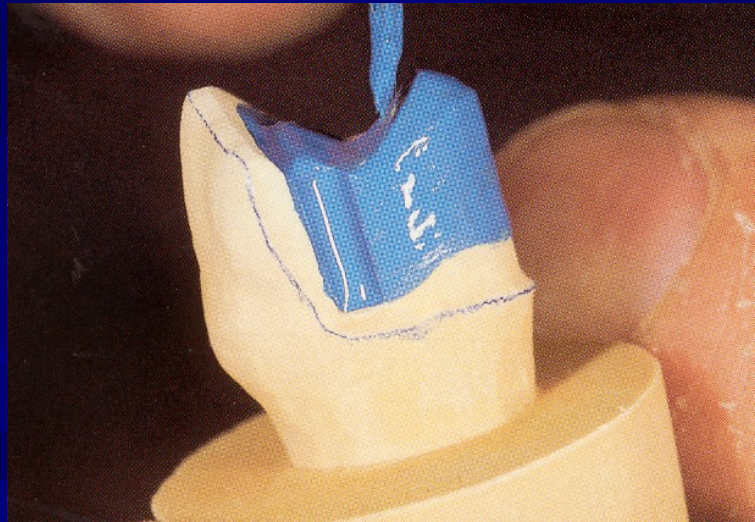
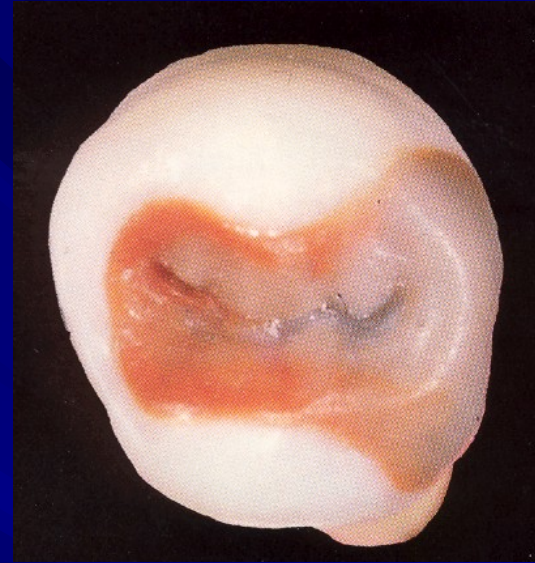
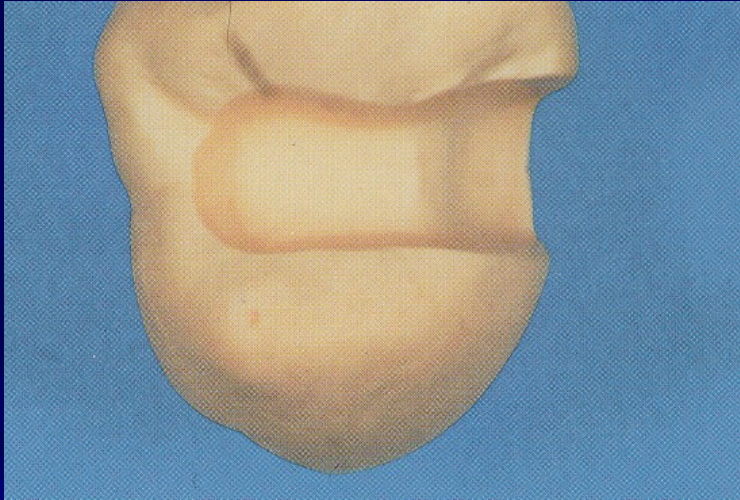
Investment

Method of the lost wax



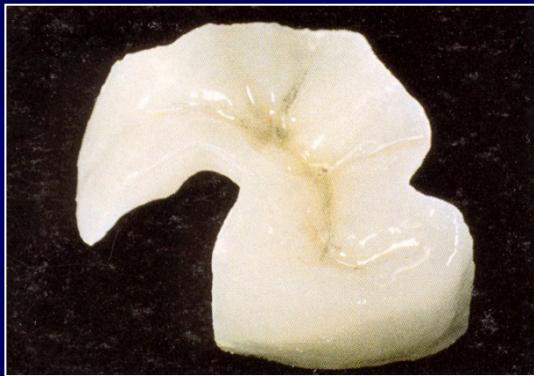








Aesthetic inlays – composite materials, ceramics



Special procedure



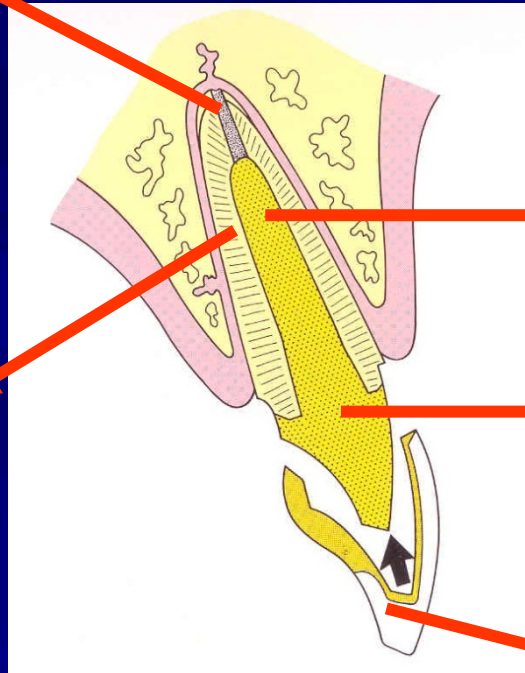
Indirect method always





Root canal inlay

Root canal filling



Root

Root post

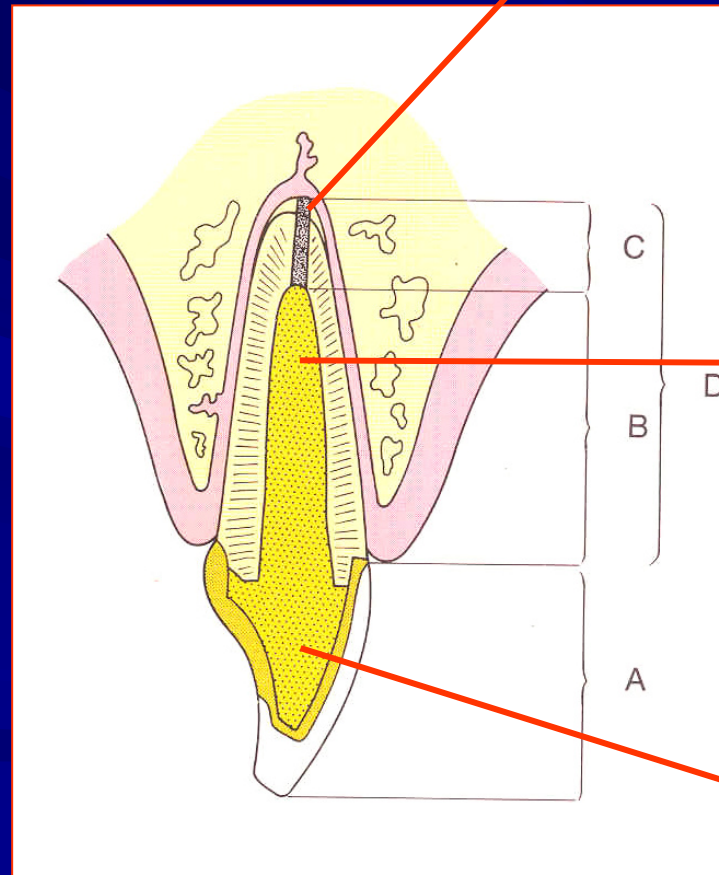
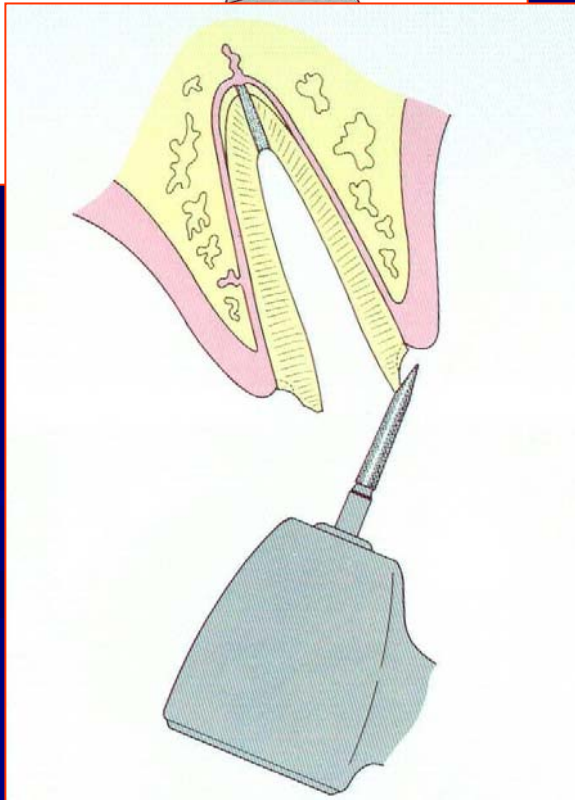
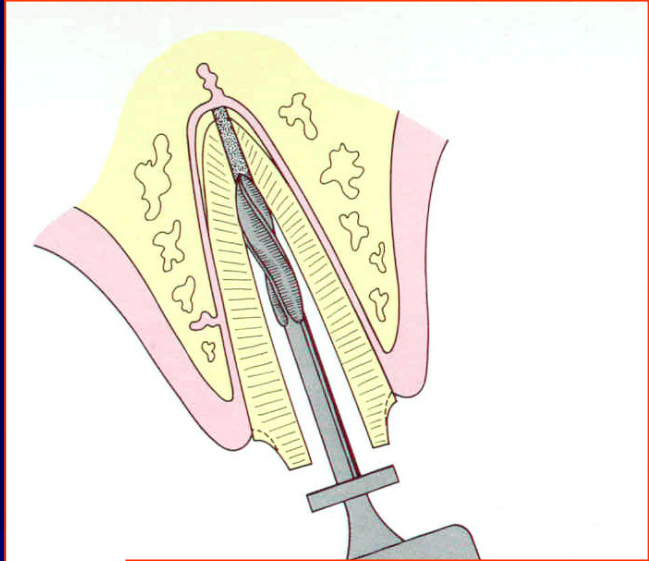
Stump, snag

Crown

Gates, Peeso - Largo,



Preparation



4mm at least

2/3 of the
root canal length

1/4 of the total length

Direct method

Isolation

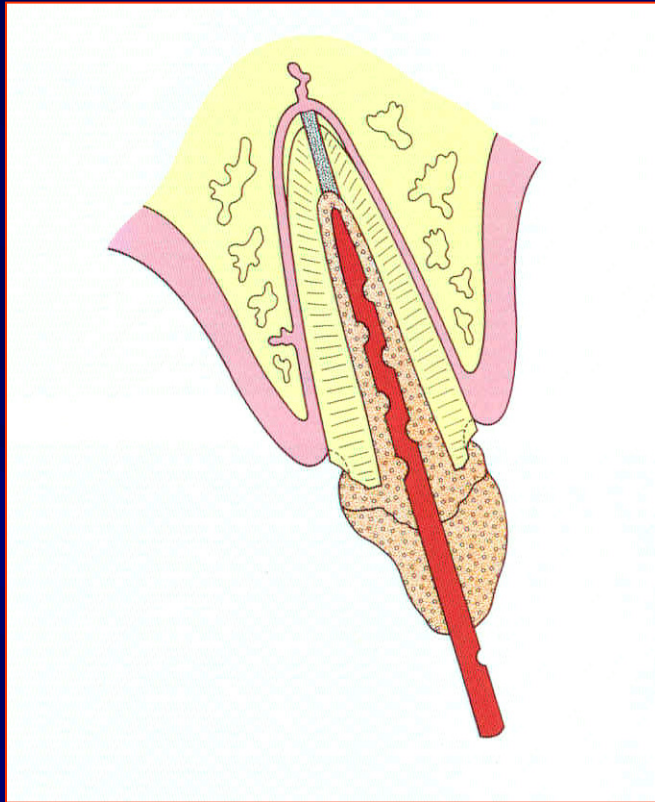
Modellation – casting wax,
heated, flowing

Sprue pin

Investment

Method of the lost wax

(burntout in the special oven)



Indirect method

Impression

Model

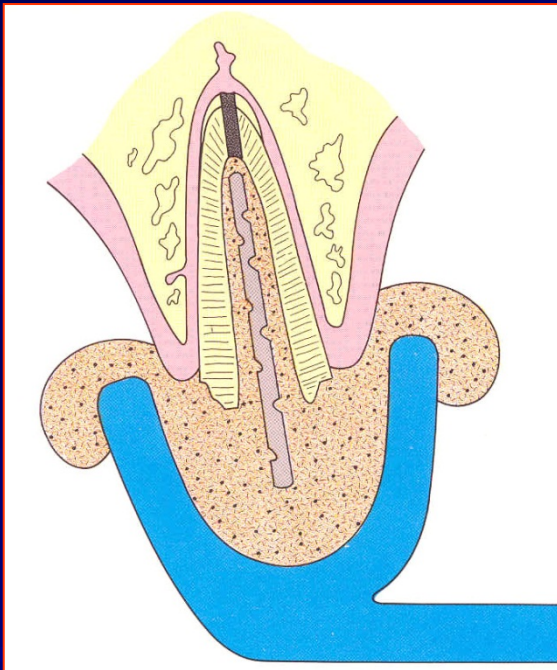
Modelling – casting wax,
heated, flowing

Sprue pin

Investment

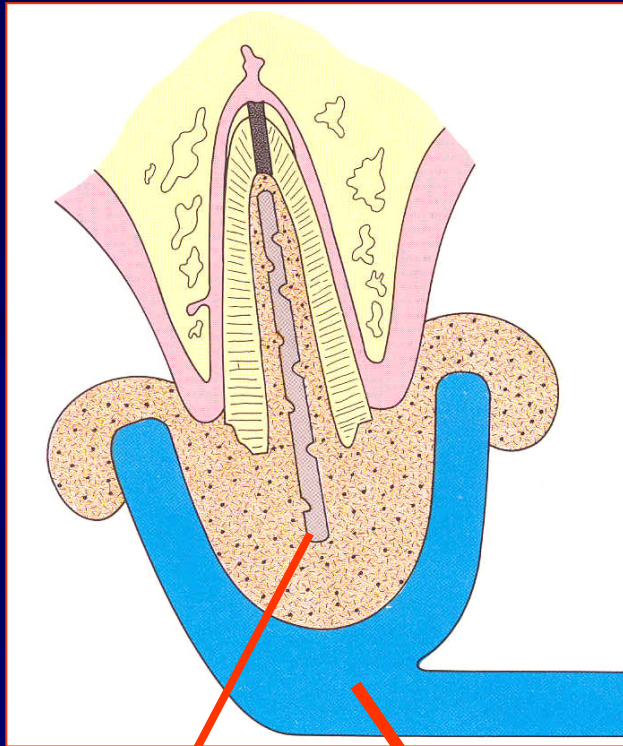
Method of the lost wax

(burntout in the special oven)



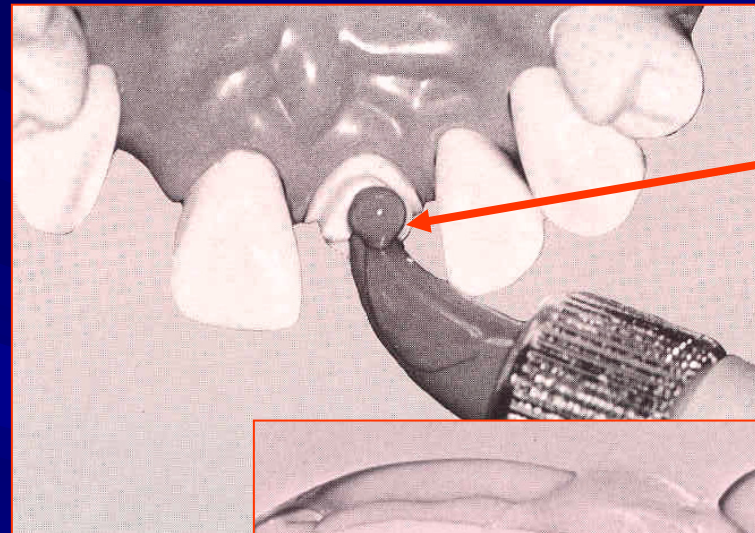
Indirect method

Impression

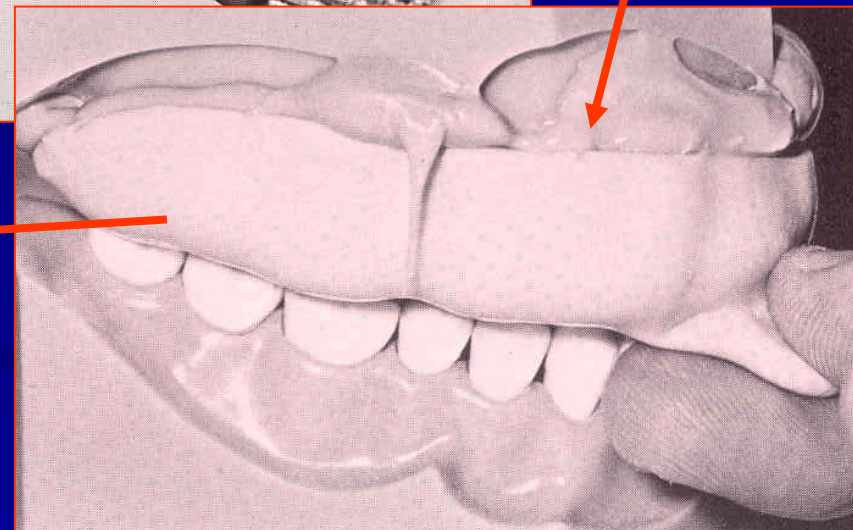


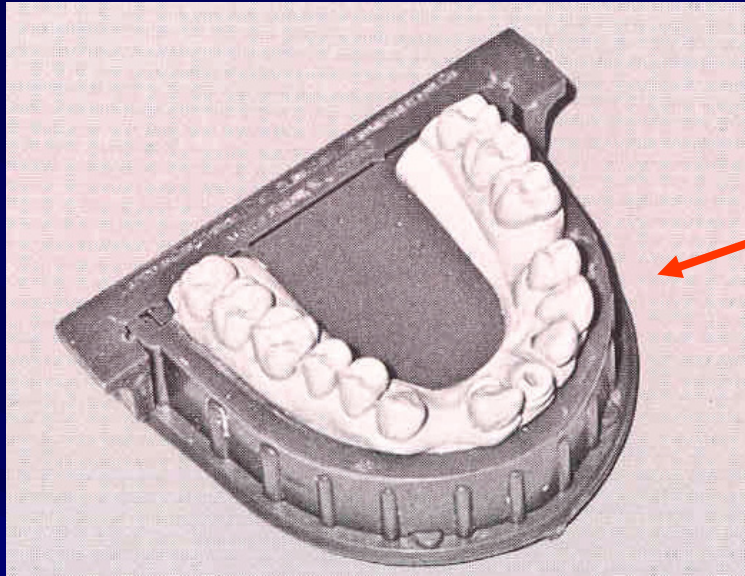
Wire

Impression tray



Impression material

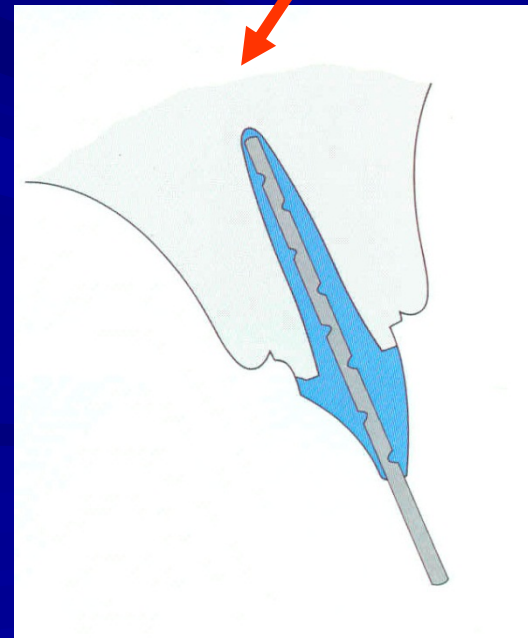
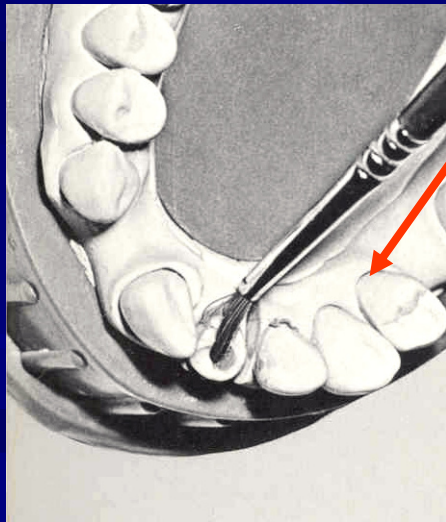




Model

Insulation

Modellation



Indirect method

Impression

Model

Modelling – casting wax,
heated, flowing

Sprue pin

Investment

Method of the lost wax

(burntout in the special oven)

