Classification of the fillings

Plastic

Rigid

Plastic fillings (they are soft when being placed into the cavity)

- The material is soft, it is cured (set) in the cavity: amalgam, composite, glassionomer, temporaries.

Rigid fillings - inlays

- The material is rigid when being placed into the cavity

Metal alloy, composite, ceramics.

Inlays made of the metal alloy (usually precious alloys)

- Rigid filling

- Manufactured in a dental lab

- Direct or indirect method

- Direct method rarely (class I. only)
- Indirect method (most cases)

Inlay

- Crown inlay

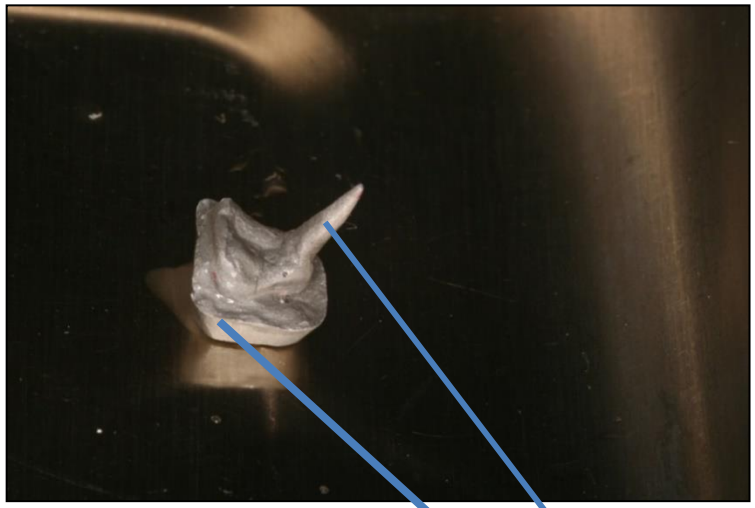
- a part of a clinical crown is replaced

- Root canal inlay

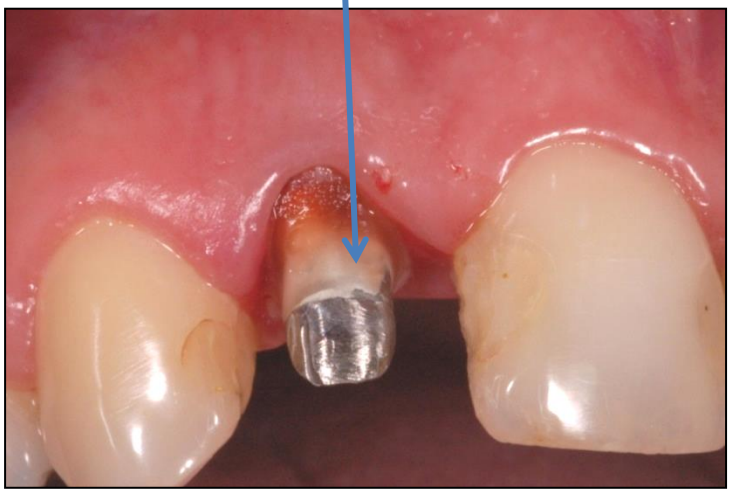
- The inlay is cemented into the root canal and replaces a crown (abutment tooth – stump, snag)

Root canal inlay – made of metal alloy (non precious)

This inlay has two parts: root post
core – coronal part.
The core restore the crown only to the shape
for later placement the prosthetic restoration e.g. ceramic crown.
These inlays will be discussed next semester



Post
Core



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General indications for crown inlays:

General indications for crown inlays:

Big lost of hard dental tissues – when the restoration of the form and function with amalgam or composite is not possible.

General contraindications

- High risk of dental caries (inlay is a special treatment, when higher tendency to dental caries prosthetic treatment is bettter)
- Small and shalow cavities
- Frontal area

Crown inlay

<u>Material</u>

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

Inlay

Advantages

- Better anatomic form
- Better polished

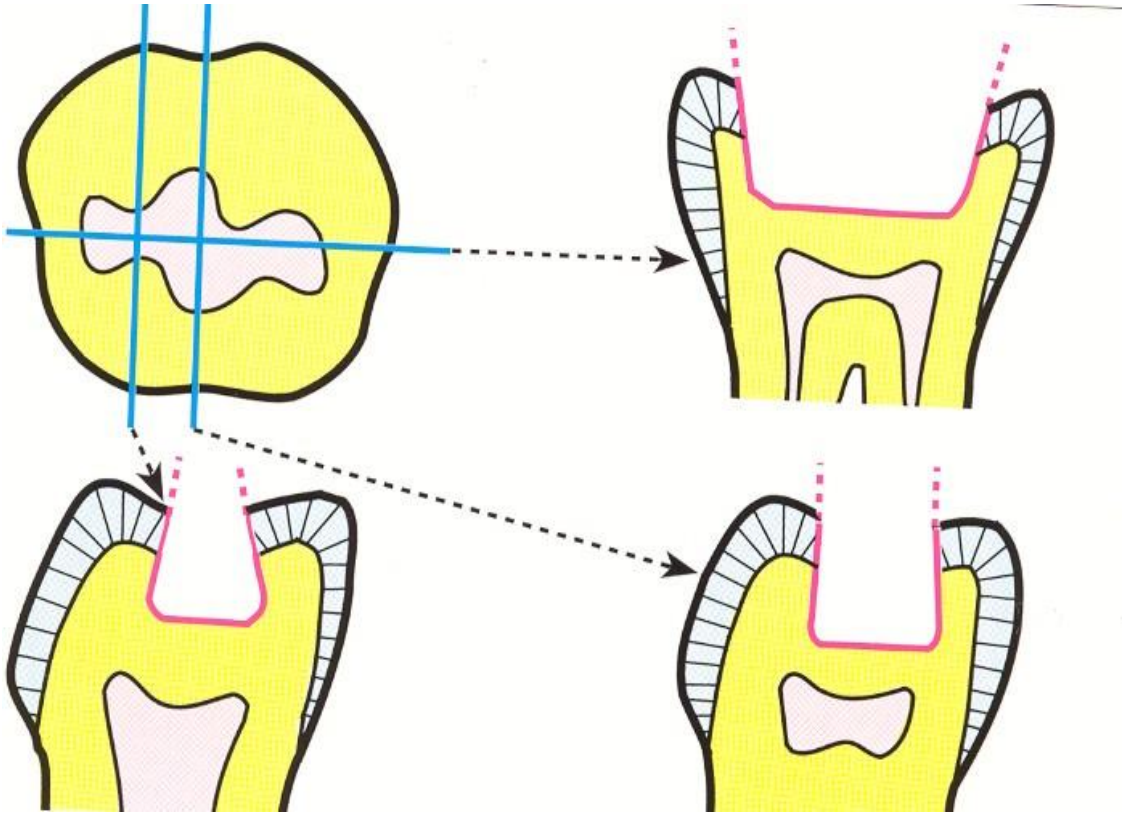
Inlay

<u>Disadvantages</u>

- The technology is not easy
- More time consuming
- Expensive
- Two appointments

Basic rules of preparation

- Box
- No undercuts
- Light divergence of the walls (facilitating shape). Angle of divergency 6 – 15°



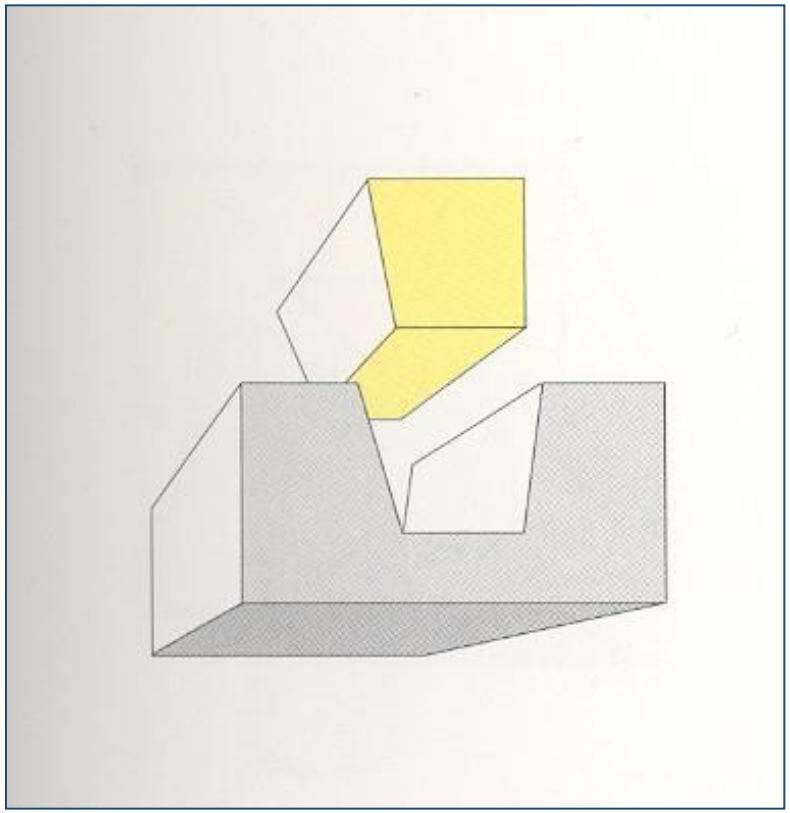
Box

No undercuts

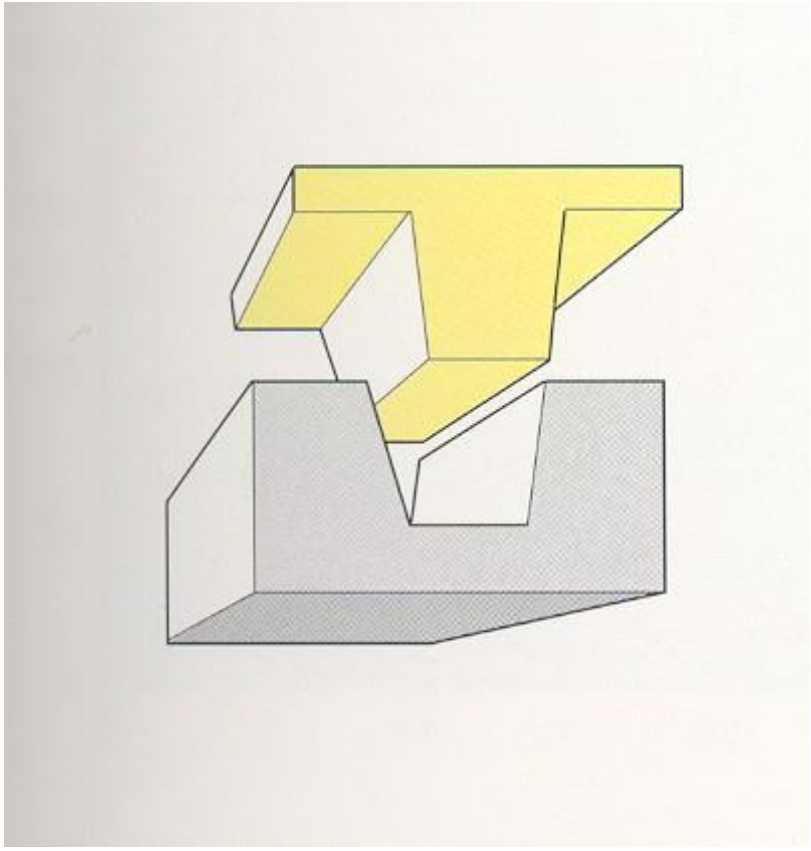
Simple box

Facilitating shape

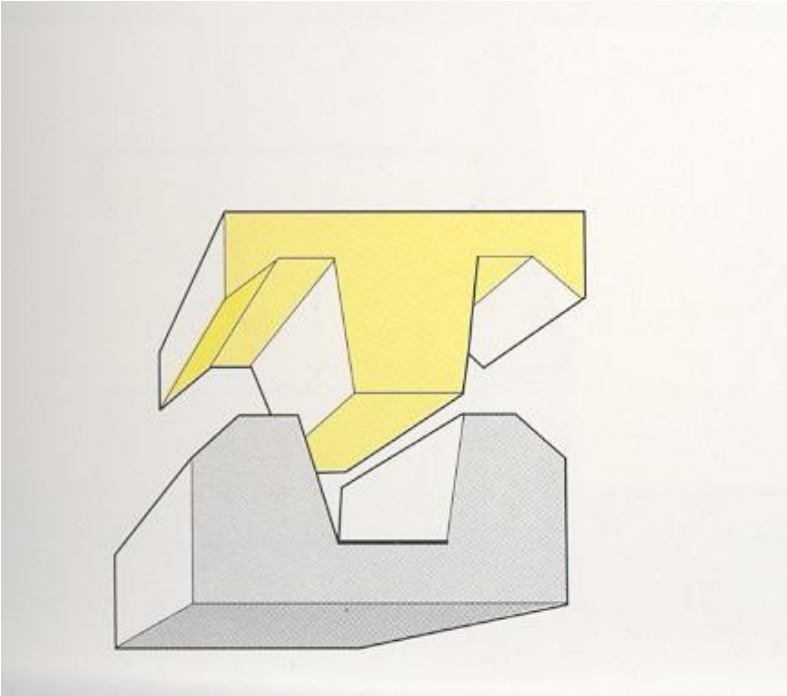
Classification of inlays
Inlay



Classification of inlays
Onlay



Classification of inlays
Overlay



Metal inlay: sequence of operations Direct method

Dental office

- Preparation
- Isolation of the cavity
- Modellation of heated casting wax
- Sprue pin – the thickest part,reservoir

Dental lab

- Investment
- Casting (method of lost wax)
-Finishing

Dental office

- Cementation

Direct method is used in very rare cases, in the first class acc.to Black only

Metal inlay: sequence of operations Indirect method

Taking of the impression

Model

Modellation of the casting wax,

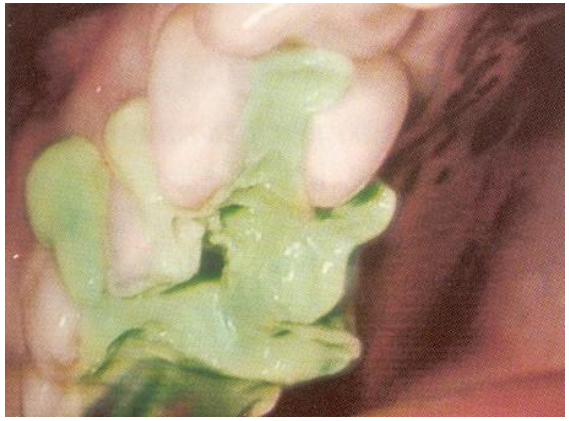
(special polymers)

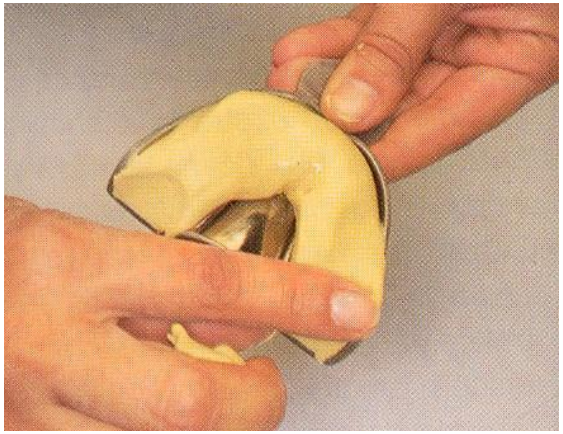
Sprue pin

Investment

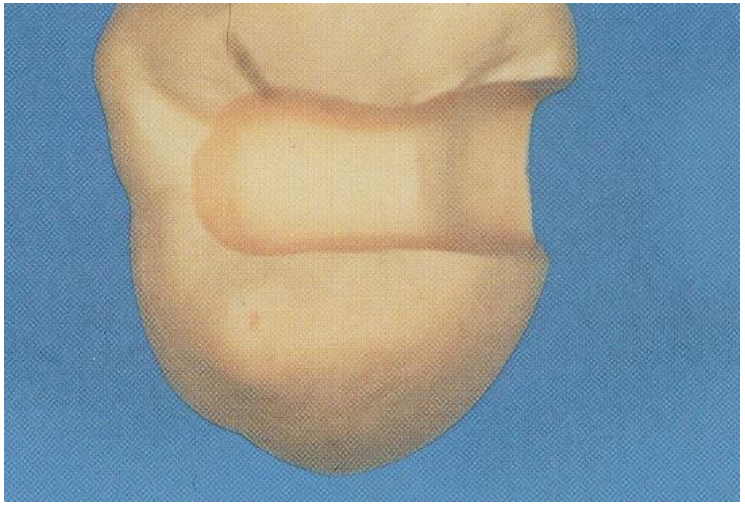
Lost wax method

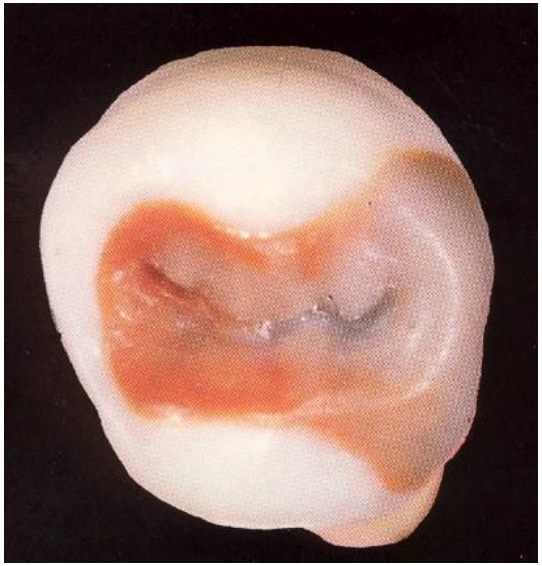
Taking impression using elastomeric materials – dual viscosity technique

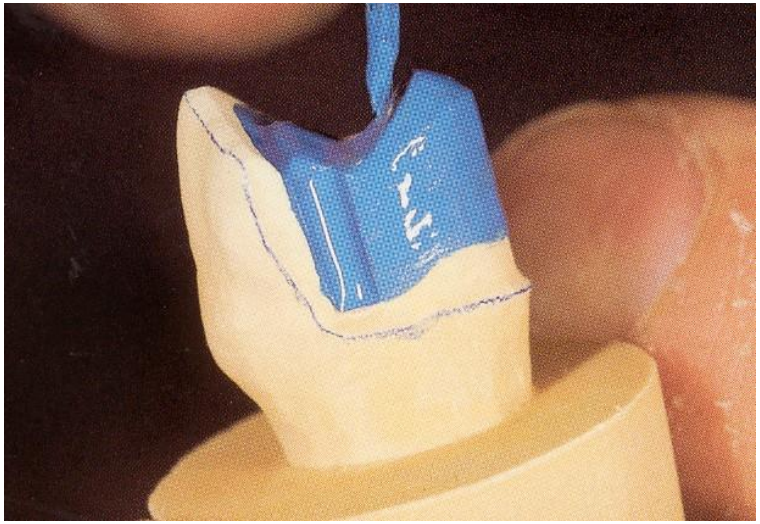




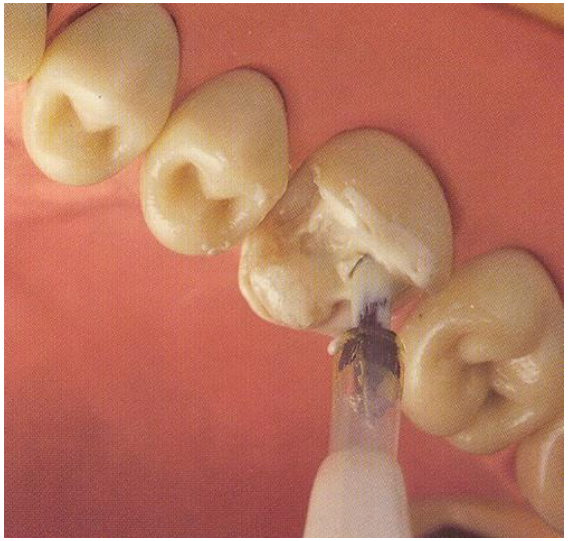
Antagonal impression and wax registration of the intermaxillary relationships are also taken

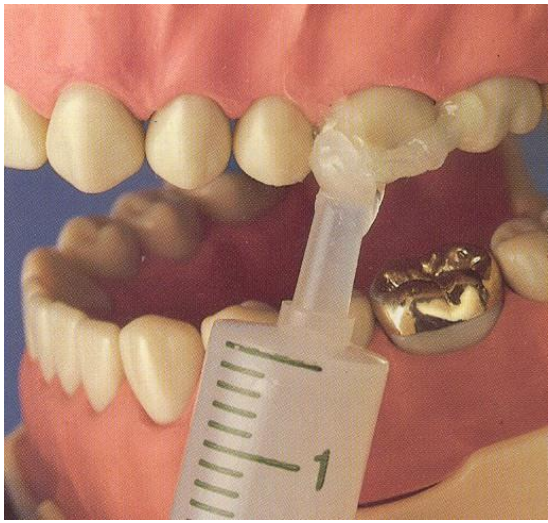


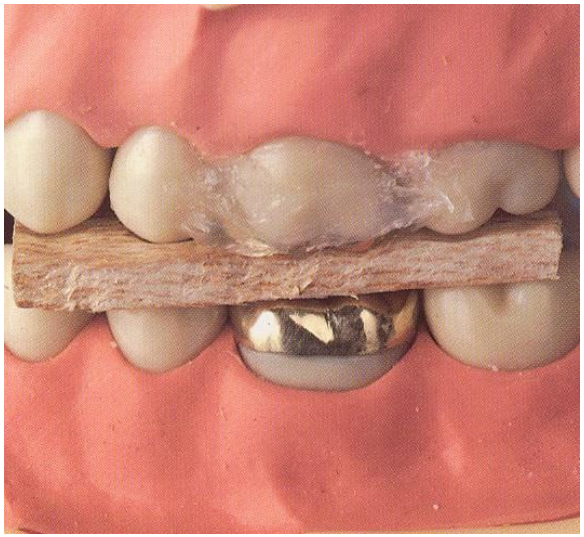


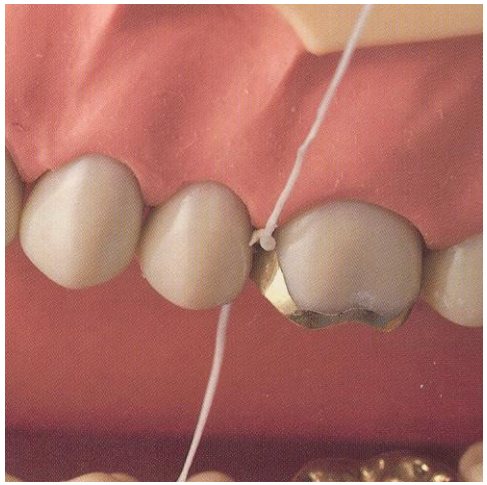


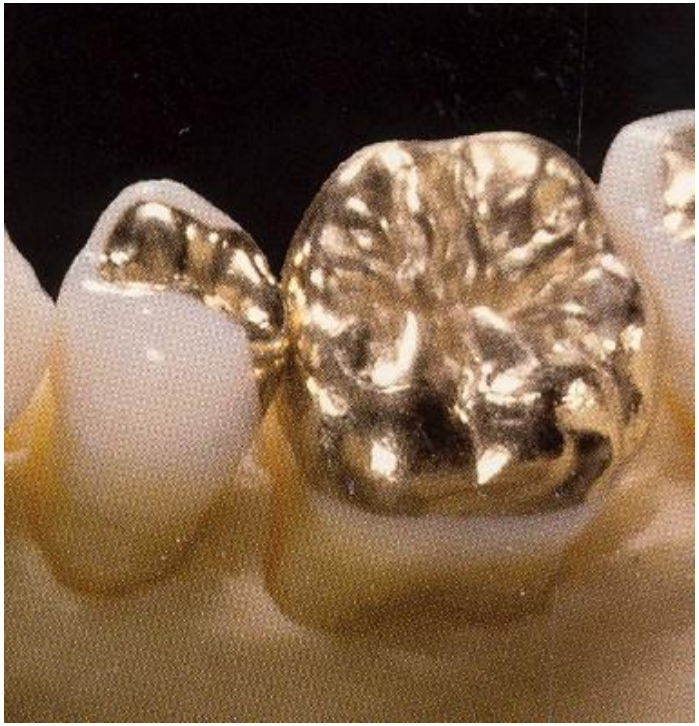

Cement
Spacer
Blue
CAUTION: FLAMMABLE
THIN WITH
DIE PREP SETTING
RETARDANT

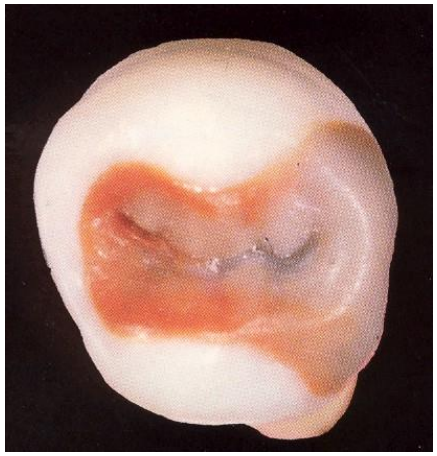












Cementation

- For inlays made of the metal alloy the zinkoxid cement is used.

- It is mixed into the creamy consistency

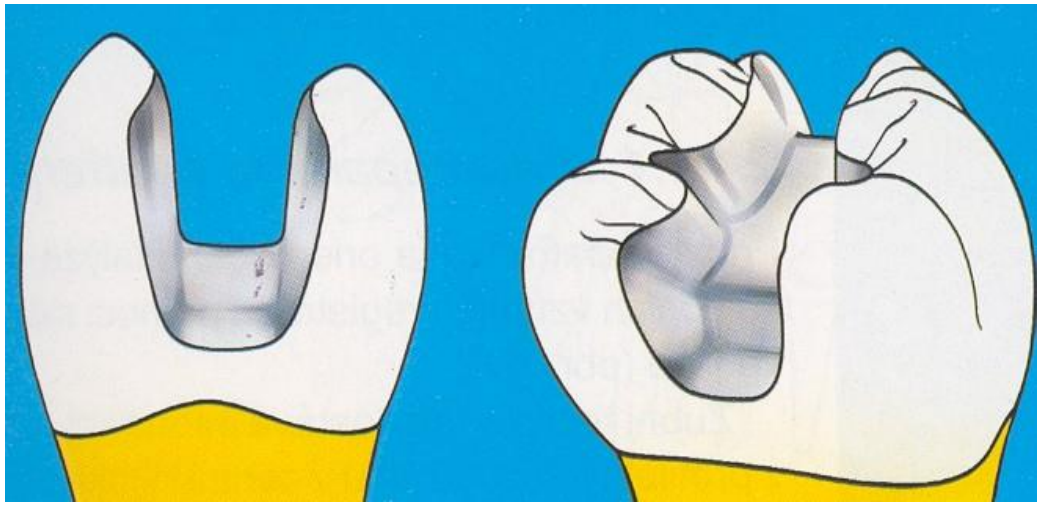
Non metallic inlays

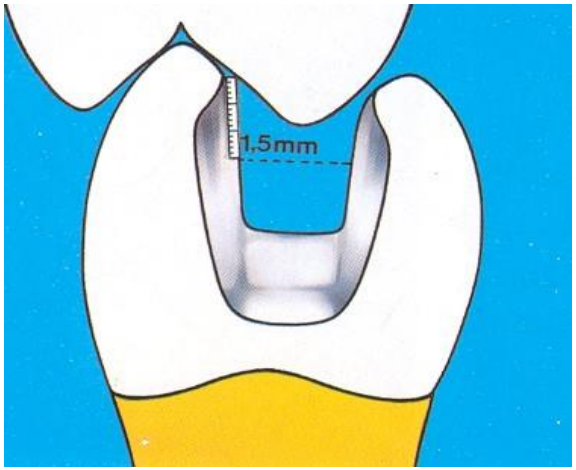
- Composite
- Ceramics

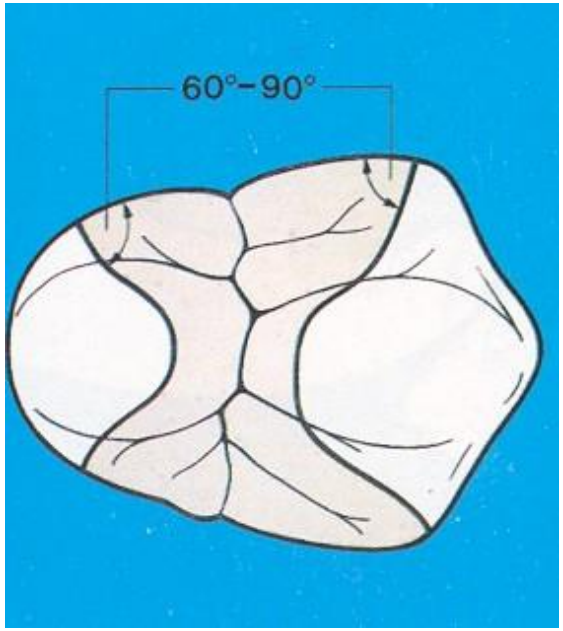
Preparation

- Box
- No undercuts
- Facilitating shape – divergence of the walls appr. 6°
- No bevel
- Thickness of the material 1,5 – 2 mm

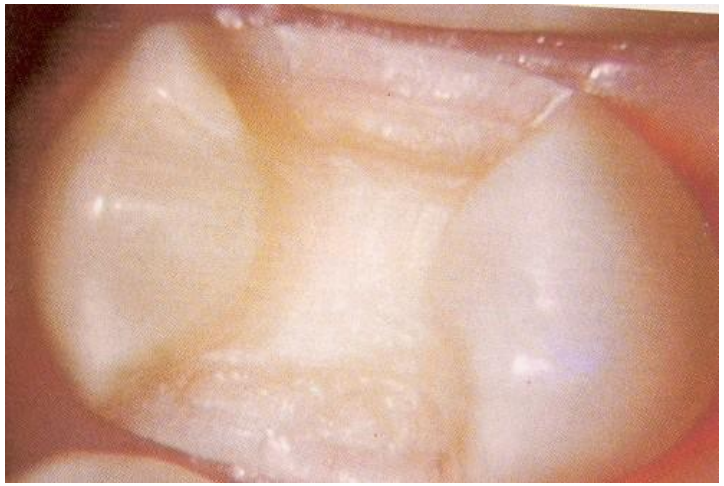
Cavity for inlay made of composite or ceramics

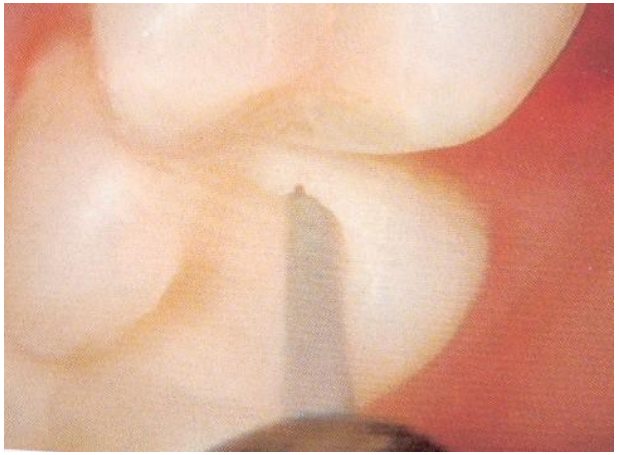






Preparation
Tapered diamonds are used



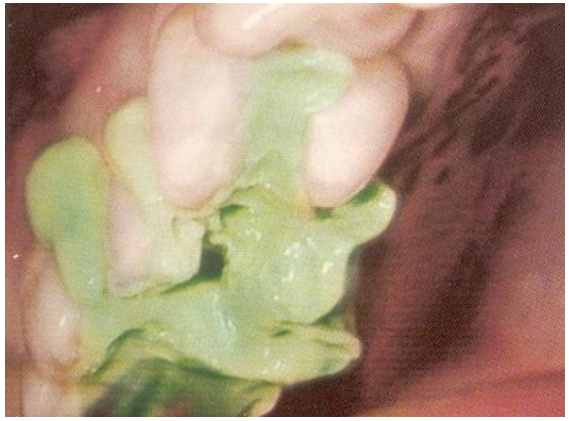


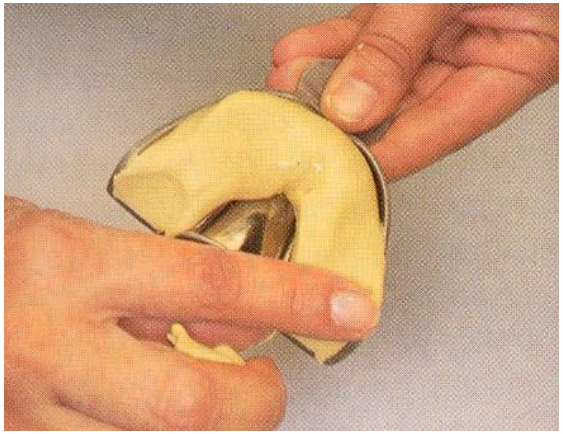
Indirect method

Indirect method – with impression (see above)

CAD CAM - the cavity is scanned on the model or in oral cavity.

Taking impression using elastomeric materials – dual viscosity technique





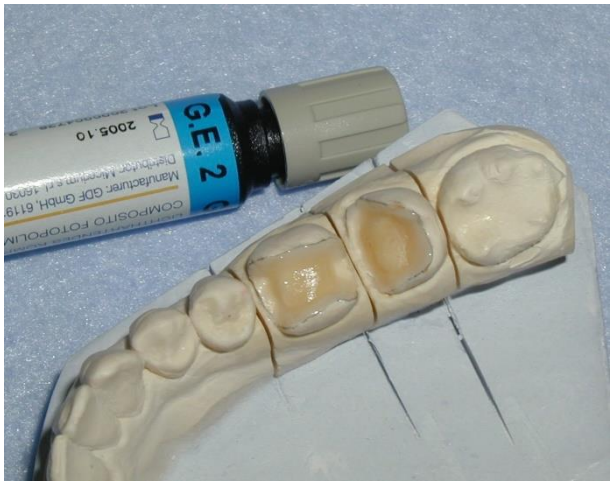
Antagonal impression and wax registration of the intermaxillary relationships are also taken

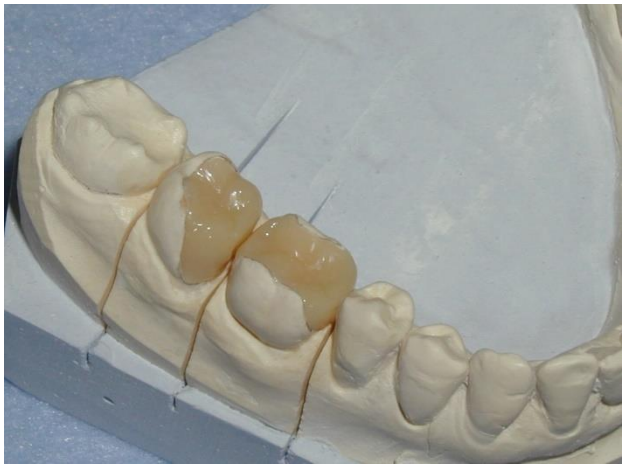
Methods of fabrication

Fabrication of these restorations is varioue because of many various materials and technologies.

These technologies will not be discussed.

Fabrication of the composite inlays





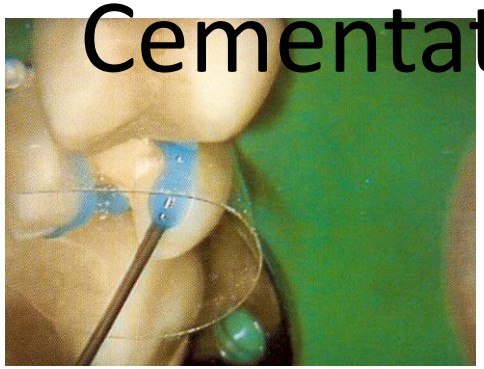
Cementation

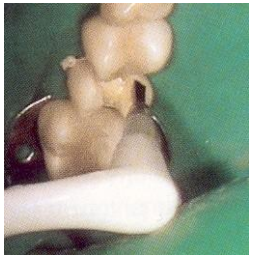
- Adhesive materials – composite cements
- Special materials requiring acid etching, priming and bonding
- Chemically or dual curing low viscosity materials

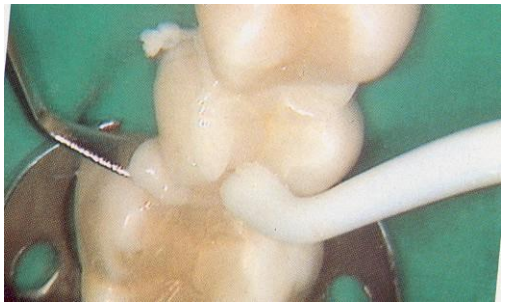
Cementation

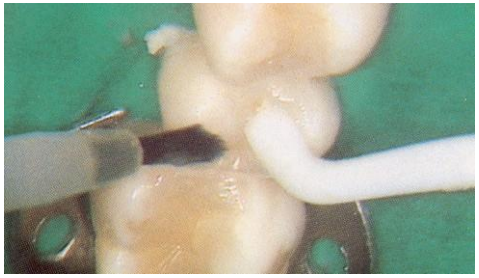
- Acid etching
- Washing
- Priming
- Bonding
- Application of the cement
- Curing (during curing the border is covered with glycerin in order to avoid the inhibition layer – this is a superficial part of composite cement that is not completely cured due to oxygen in air)
- Access removimng
- Polishing

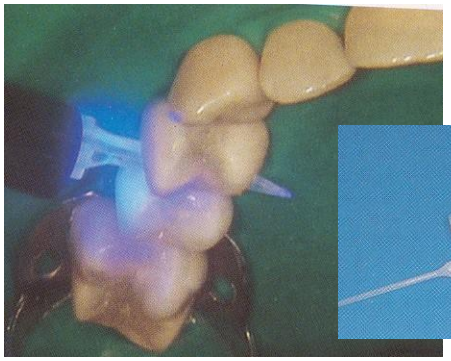
Cementation using composite cements

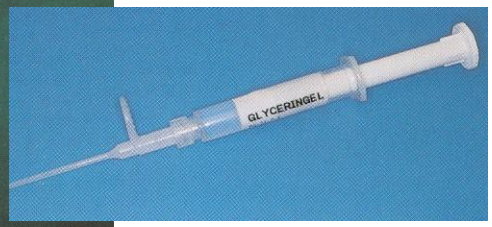


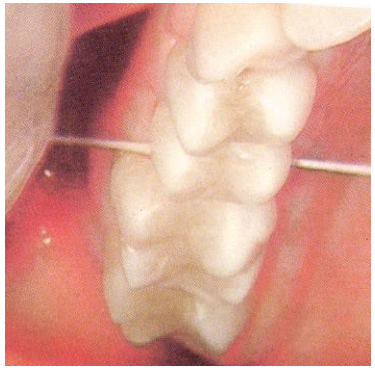












Inlays on the model and in oral cavity