

cement

Used in dentistry as pulp protection: ▶

1-chemical ▶

2-electrical ▶

3-thermal ▶

4-pulp medication and mechanical protection ▶

Why used base and lining

- 1-insulation against temperature change and electrical stimuli ▶
- 2-mechanical protection provided by stress distributing . ▶
- 3-reduce the risk of microleakage ▶
- 4-cementation of cast or ceramic restorations ▶
- 5-pulp capping ▶
- 6- bacteriostatic ▶

Two groups of pulp protection materials are available

1- liners ▶

2-cement bases ▶

Liners : are material that are placed as thin coating or ▶
layer .

function

- 1- to provide barrier against chemical irritation ▶
.
- 2- reduce marginal leakage around filling ▶
materials (Amalgam) and post operative pain.
- 3- electrical insulation (treatment of galvanic ▶
shock).

Bases

Deep part of dentin should be covered by a base or a (sub-base) combination. The thickness of bases depend on physical properties ▶

Function: ▶

1- provide thermal insulation . ▶

2- mechanical protection by resist forces applied ▶
condensation of the restorative materials

3- barrier against chemical irritation . ▶

Zinc phosphate cement

Its hard and strong but irritating to the pulp , its powder –liquid system , **the powder** consist of zinc oxide , magnesium oxide , silicon dioxide. ▶

Liquid consist of ortho-phosphoric acid 40% with metallic salts and water . ▶

advantage

- 1- easy to manipulate ▶
- 2- high strength necessary for a base ▶
- 3- with stand mechanical trauma ▶
- 4- provide good protection against thermal ▶
shock.

Properties of ZPC

1- consistency : ▶

Luting agent ▶

Cement base ▶

2- viscosity :depend on time and temperature ▶

3- setting time : 2-8 mins at 37 C ▶

4- strength : depend on powder /liquid ratio ▶


5- solubility : greater resistance by increase P/L ratio ▶

6- Dimension stability: shrinkage reduce by increase P/L ratio ▶

Zinc oxide eugenol

Powder : zinc oxide with addition of white rosin to reduce the brittleness of the set cement and zinc acetate to improve the strength of the cement. ▶

Liquid : eugenol with olive oil as plasticizer ▶



The reaction is not exothermic...cooled mixing slab is not required. ▶

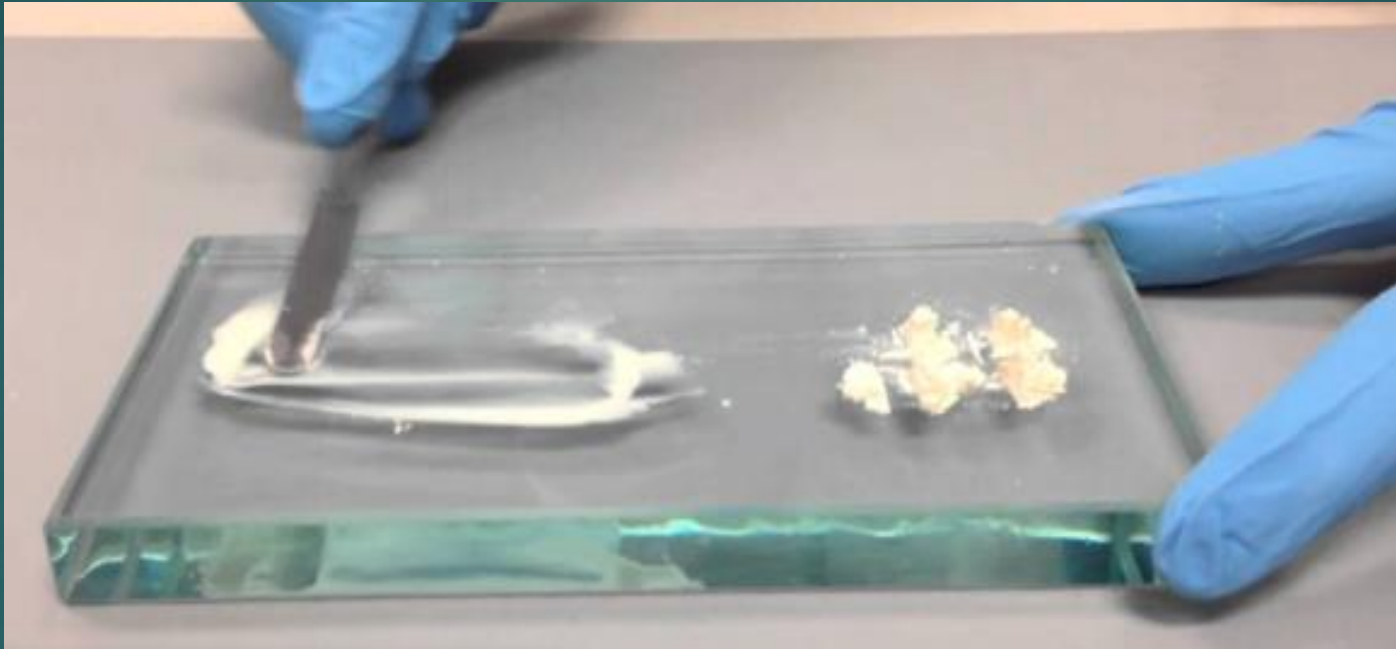
Not need incorporate the powder in small increments. ▶

Setting time around 8 mins . ▶



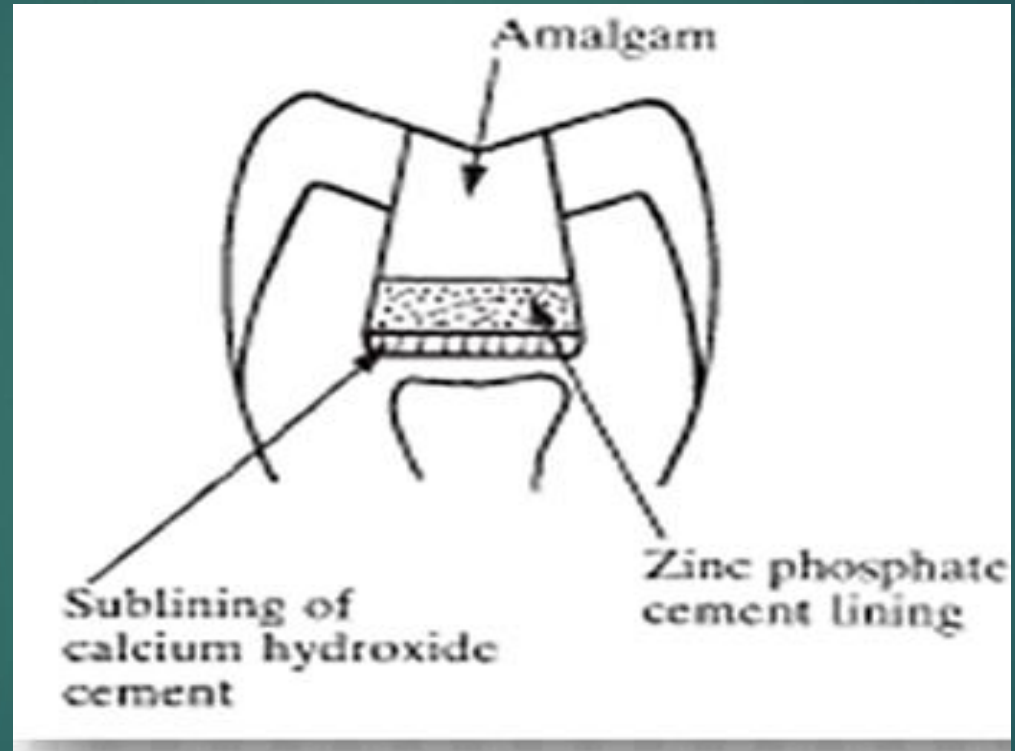
4. The powder is added in small increments.



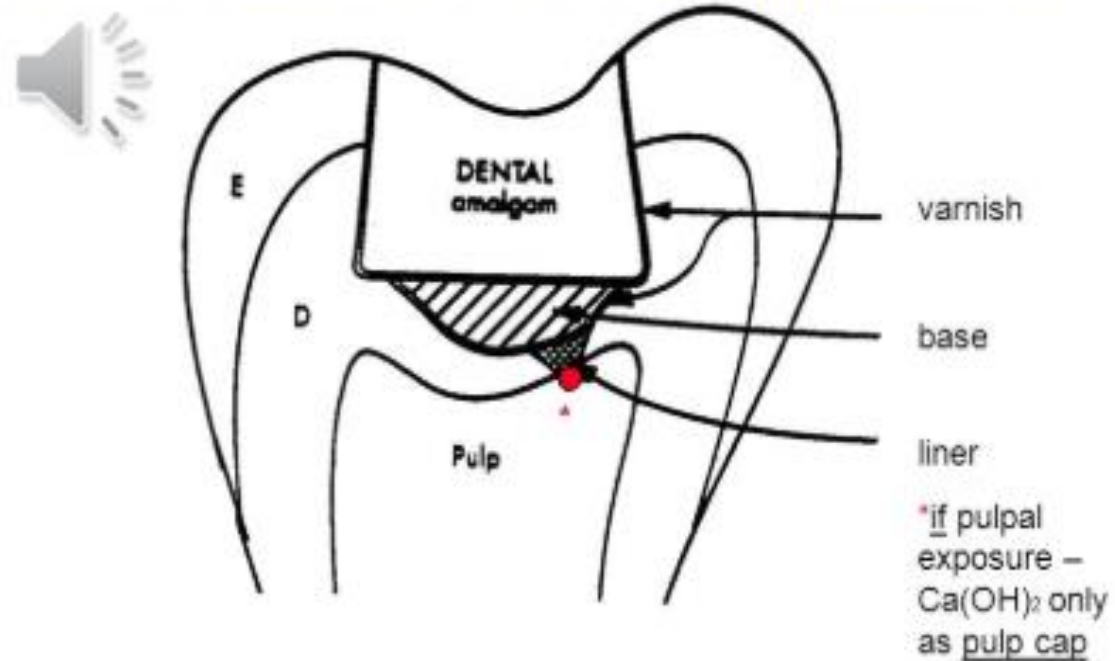




Liner and base



Varnish, Liner, & Base Application





Thank you ▶