

### Class III Tooth Preparation for Amalgam Restoration

It is a restoration in the proximal surface of the anterior teeth without involving incisal edge.

Since amalgam is not esthetic restoration, it is not indicated for proximal surface of incisors and mesial surface of canines. It is indicated in the distal surface of maxillary and mandibular canines especially, if:

1. Caries do not undermine distal slopes of canines.
2. Labial axial angle is intact.
3. Even after removal of caries, sufficient tooth structure is present.
4. Restoration will not be directly loaded with occlusal forces.

#### Initial Tooth Preparation

1. Outline form includes only proximal surface. Shape of preparation is like a box with round corners.
2. A punch cut is made using no. 2 round bur on distolingual or mesiolingual marginal ridge (Fig. 1). Preliminary shaping of preparation is completed with inverted cone bur with long axis of bur keeping perpendicular to the lingual surface of the tooth (Fig. 2).
3. Outline form is completed when facial, gingival and lingual walls are formed.
4. Lingual wall should meet axial wall at obtuse angle.
5. Depth of bur (axial wall depth) should be 0.2 -0.5 mm into the dentin (Fig. 3).
6. Cavosurface angle should be about 90° at all margins.

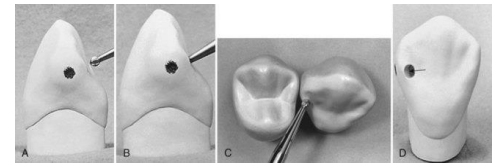


Figure 1: Entry of lesion is made through lingual side with the help of round bur

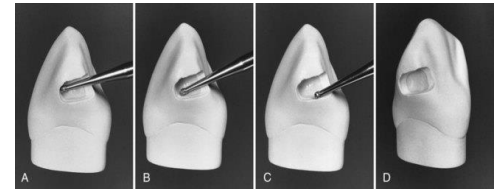


Figure 2: preparing of the box- like form.

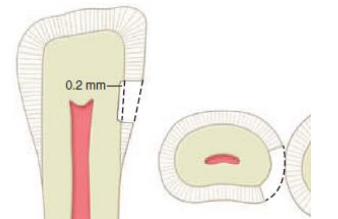


Figure 3: Ideal initial axial wall preparation depth (0.2mm into dentin..)

#### Final Tooth Preparation

1. Removal of any remaining infected dentin is done using a slow speed round bur or/and spoon excavator.
2. Pulp protection is done using base or liner.
3. Secondary resistance form is achieved by butt joint, rounded internal angles and sufficient bulk of amalgam (minimal 1mm thickness).
4. Retention form is obtained by placing retention groove (0.2mm depth; Fig. 4) with a small round bur in the axiofaciogingival point angle, incisal coves (small groove; Fig. 5), box-like preparation form, and lingual dovetail.

*The gingival retention groove* is prepared by placing a no.14 round bur (rotating at low speed) in the axio-facio-gingival point angle, It is positioned in the dentin to maintain 0.2 mm of dentin between the groove and the DEJ, the rotating bur is moved lingually along the axio-gingival line angle

5. Lingual dovetail (Fig. 6) is required for large preparations. It is prepared after completion of proximal portion because otherwise tooth structure needed for isthmus between proximal portion and dovetail might be removed when the proximal outline form is prepared. Axial depth of dovetail should be 1mm.



**Fig4:** Preparing the gingival retention form. A, Position of No. 14 round bur in axio-facio-gingival point angle. B, advancing the bur lingually to prepare the groove along the axio-gingival line angle. C, Completed gingival retention groove.



**Fig5:** Preparing the incisal retention cove.



**Fig. 6:** Cl III with dovetail

6. Finishing of external walls is done to remove all unsupported enamel and to make cavosurface angle 90°. For rounding of junctions between different retentive grooves, angle former or GMT can be used.

## Reference:

Textbook of operative dentistry. Nisha Garg and Amit Garg. (2015).