

Crown and Bridge

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Finishing line of the preparation (F.L.):

It's the final margin that separates between the prepared and the unprepared tooth structure.

The f.l. should be smooth and continuous from one surface to the other, because it will interfere with seating of the crown if it's poorly done.

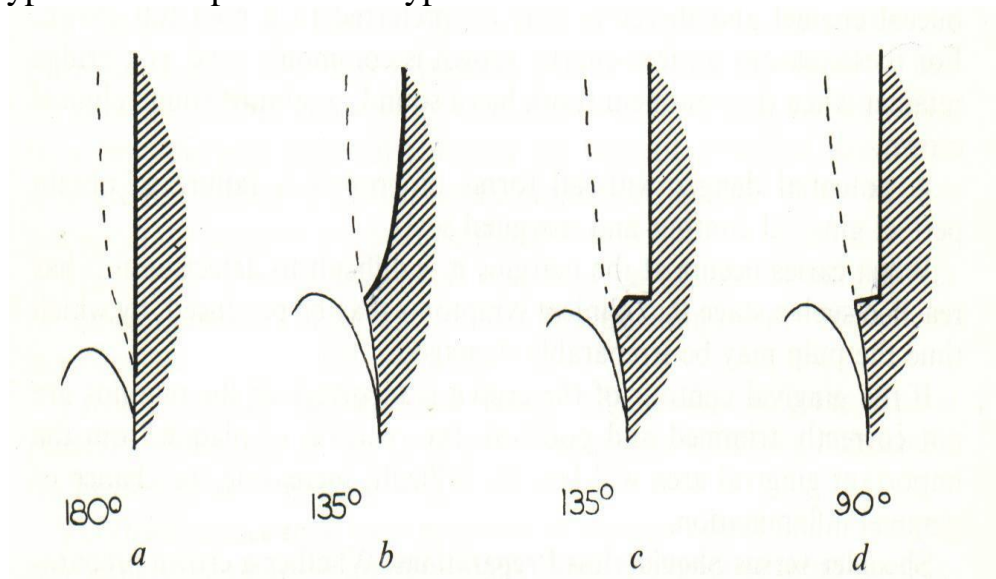


Types of finishing line (f.l.):

There are four types of margins that could be used:

- 1- Featheredge (or knife-edge) margin.
- 2- Chamfer f.l.
- 3- Shoulder f.l.
- 4- Bevel shoulder (modification of shoulder f.l.) by beveling the margin.

These different types of f.l. depend on the types of the crown to be used.



[1] Featheredge f.l. :

We use pointed end tapered fissure bur to provide this type of margin.

It's the most conservative type of f.l. because of least amount of tooth structure is removed. But the margin is weak.

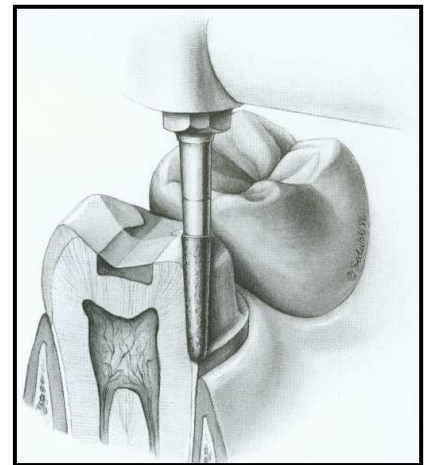
It's easy to prepare but difficult to be detected on the cast or tooth, the gold can be burnished to this margin.

The use of knife edge can result in overcontoured restorations when an attempt is made to obtain adequate bulk by adding to the external axial contours of the restoration. But some times it is necessary to use the knife edge. It may have to be used on the lingual surface of mandibular posterior teeth, on teeth with very convex axial surfaces and on the surface toward which a tooth may have tilted.

[2] Chamfer f.l.:

It is well-defined f.l. that has an adequate space in the cervical region so we can make the contour of the crown restoration within the contour of natural tooth.

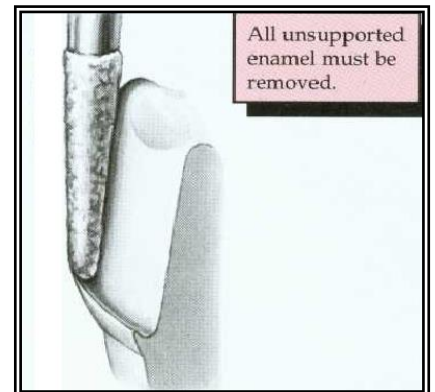
It can be cut with a tip of a round-end diamond, while the axial reduction is being done with the side of that instrument. The margin of the cast restoration that fits against it combines an acute edge with a nearby bulk of metal.



A chamfer should not be wider than half the bur used to form it. Otherwise, a lip of unsupported enamel will be left.

It is thick, difficult to obtain and the gold margin is unburnishable, it is mainly used for:

- 1- Full Metal Crown (All the surfaces).
- 2- Lingual and proximal surfaces of full veneer crown, three quarter crown and post crown.



[3] Shoulder f.l. (Butt shoulder):

It is the finish line of choice for all-ceramic crown. The wide ledge provides resistance to occlusal forces and minimizes stresses that might lead to fracture of the porcelain.

It produces the space for healthy restoration contours and maximum esthetics. However, it does require the destruction of more tooth structure than any other

finish line. The sharp 90-degree internal line angle associated with the classic shoulder concentrates stress in the tooth and is conducive to coronal fracture.

Shoulder f.l. Is almost used with jacket (all around) since jacket is made either of porcelain or acrylic resin (brittle materials) that require enough thickness which is necessary to withstand the force of occlusion without fracture, also this thickness provides better shade of the material and so better esthetics to provider f.l. We use tapered fissure bur (diamond) with flat end.

[4] Bevel shoulder f.l.

By creating a bevel on the end margin of unprepared tooth structure, this is needed when we use a metal with facing material e.g. Metal- porcelain or metal-acrylic. The bevel provides a burnishable margin for the metal that may extend subgingivally. Bevels have been advocated as a means of diminishing marginal discrepancy.

It is utilized as the gingival finish line on the proximal box of inlays and onlays, and for the occlusal shoulder of onlays and mandibular three quarter crowns. This design can also be used for the facial finish line of metal-ceramic restorations where gingival esthetics are not critical. It can be used in those situations where a shoulder is already present, either because of destruction by caries or the presence of previous restorations

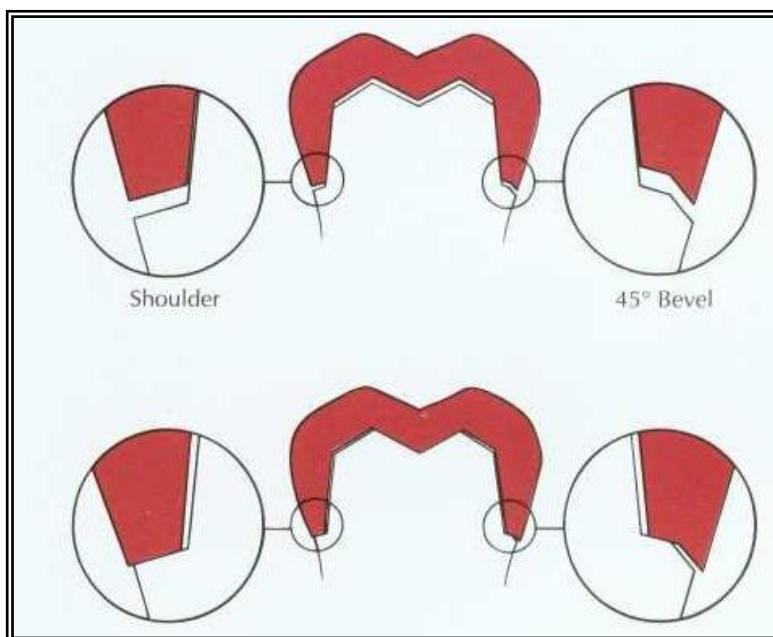
It is a good finish line for preparations with extremely short walls, since it facilitates axial walls that are nearly parallel.

The objective in beveling is threefold:

(1) to allow the cast metal margin to be bent or burnished against the prepared tooth structure; (2) to minimize the marginal discrepancy caused by a complete crown that fails to seat completely and (3) to protect the unprepared tooth structure from chipping (e.g., by removing unsupported enamel). NOTE: When access for burnishing is limited, there is little advantage in beveling.

The margin between prepared and unprepared tooth structure is very critical area, as any failure in our restoration might starts from this margin.

Bevel shoulder is used on the labial surface of full veneer crown and is recommended for extremely short walls.



Margin placement:

Finishing line can be placed either:

1- Subgingival:

Placing the margin below the gingival tissue for these reasons: -

- a-** For esthetic reason, the margin of a metal-ceramic crown is to be hidden behind the labiogingival crest.

- b-** To increase retention of short teeth

- c-** To place the margin on sound tooth structure, Dental caries, cervical erosion, or restorations extend subgingivally, and a crown-lengthening procedure is not indicated.

- d-** The proximal contact area extends to the gingival crest.

2- Supragingival:

Placing the margin above the gingival tissue for these reasons: -

- a-** It's self cleansable area.
 - b-** To provide good vision for the dentist during preparation.
 - c-** Easy to finished.
 - d-** Easy to take impression
 - e-** Less destructive
- 3- Placing the margin with in the level of the gingiva.**