CHAPTER 7

FINISH LINES

DEFINITION

A FINISH LINE is the planned junction of different materials.[1] The FINISH LINE of an RPD is the junction of the plastic denture base with the metal of the framework.[2]

FUNCTIONS

An RPD finish line has two functions:

1. A finish line creates a definite limit to the plastic of the denture base. In this way the plastic ends in a bulk of material. Thin areas of plastic are weak, flexible, and subject to fracture.
2. Undercut finish lines provide mechanical retention for the plastic denture base (Fig. 7-1).
3. Finish lines provide a smooth transition from the plastic base to the RPD metal framework.

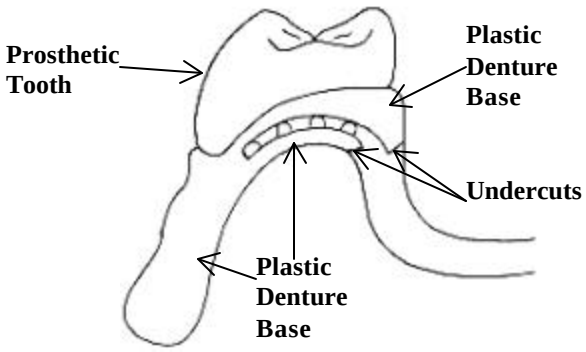

Fig. 7-1. An undercut finish line provides mechanical retention for the plastic of the denture base

INTERNAL AND EXTERNAL FINISH LINES

The INTERNAL FINISH LINE is located on the tissue surface of the RPD (Fig. 7-2). It is formed during the blockout and relief step of constructing the framework.

The EXTERNAL FINISH LINE is located on the polished surface of the RPD (Fig. 7-2). It is formed during the wax-up of the pattern for the framework on the refractory cast.

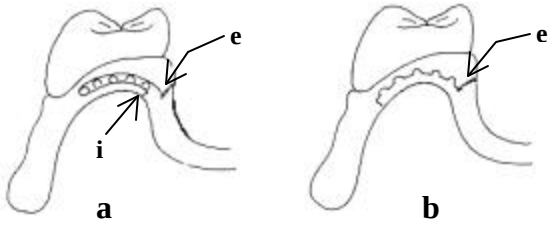

Fig. 7-2. Finish lines of a plastic (a) and metal (b) denture base, i) internal finish line, e) external finish line. Note in Figure 7-2a that the internal and external finish lines are staggered or offset by 1-2 mm to avoid having a thin, potentially weak area where the retentive mesh or lattice joins the major connector. Note also in Figure 7-2b that a metal base does not have an internal finish line.

The internal and external finish lines are staggered by 1-2 mm so that the metal will not be thin and weakened. The relationship of the internal and external finish lines is depicted in Figures 7-3 through 7-4.

LOCATION OF FINISH LINES

Internal finish lines should be located such that relining the tissue surfaces of the base will compensate for edentulous ridge resorption.

External finish lines should be located such that the polished surface of the base compensates for the missing alveolus

while not interfering with tongue movements during function.

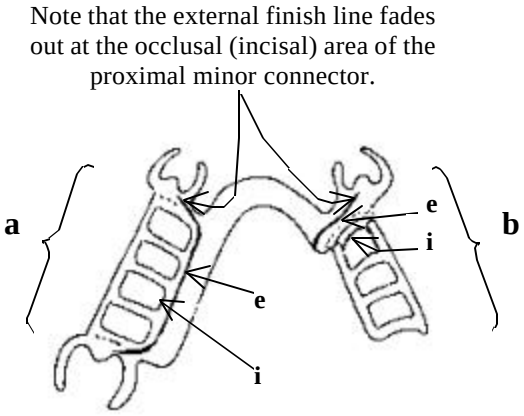

Fig. 7-3. Mandibular finish lines, (a) distal extension, (b) tooth supported, i) internal, e) external

FINISH LINE DESIGNS

The finish line design varies with the type of denture base (tooth supported or tooth-tissue supported) and whether the RPD is mandibular or maxillary.

MANDIBULAR TOOTH-TISSUE SUPPORTED FINISH LINE

The mandibular tooth-tissue supported finish line is the most frequently used design. With this design the external finish line begins at the occlusal (incisal) of the proximal minor connector and angles away from the tooth about 15 degrees as it descends (Fig. 7-3). It terminates at the inferior border of the major connector. The internal finish line parallels the external and ends 2-3 mm superior to the inferior border of the major connector.

MANDIBULAR TOOTH SUPPORTED FINISH LINE

The external finish line of a mandibular tooth supported base begins at the occlusal (incisal) of the proximal minor connector, passes cervically parallel to the long axis of the tooth to a point 4-5 mm inferior to the ridge crest where it turns and passes parallel to the ridge to join the finish line of the other abutment tooth (Fig. 7-3). The internal finish line parallels the external finish line and is 1-2 mm superior to it (closer to crest of the residual ridge).

MAXILLARY TOOTH SUPPORTED FINISH LINE

The maxillary tooth supported finish lines are similar to the mandibular tooth supported finish lines (Fig 7-4). When viewed from the occlusal the maxillary tooth supported finish lines will be at least 2 mm more medial to a line connecting the lingual surfaces of the abutment teeth.[3]

MAXILLARY TOOTH-TISSUE SUPPORTED FINISH LINE

There are two designs of maxillary tooth-tissue supported finish lines:

Design I

In Design I the external finish line begins at the occlusal (incisal) of the proximal minor connector, passes cervically parallel to the long axis of the tooth to a point 4-5 mm superior to the ridge crest where it turns and passes parallel to the ridge to its termination at the posterior edge of the major connector in the hamular notch-vibrating line area (Fig. 7-4). The internal finish line parallels the external finish line and is 1-2 mm closer to the ridge crest. The internal finish line terminates 2-3 mm short of the posterior edge of the major connector allowing ease of adjustability.

Design II

In Design II the external finish line begins at the occlusal (incisal) of the proximal minor connector, passes cervically parallel to the long axis of the tooth to a point 4-5 mm

inferior to the ridge crest where it turns and traverses the palate at a right angle to the midpalatal suture, eventually joining the external finish line on the opposite side of the arch (Fig. 7-4). The external finish line may cross the palate distal to the abutment teeth to move the metal-plastic junction further to the posterior where it will be less noticeable to the tongue. The internal finish line parallels the external finish line and is 1-2 mm further distally.

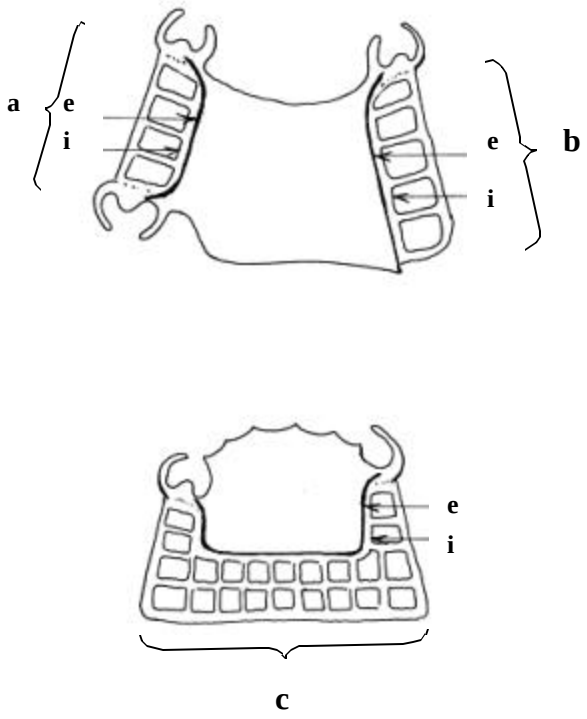

Fig. 7-4. Maxillary finish lines, (a) tooth supported, (b) tooth-tissue supported Design I, (c) tooth-tissue supported Design II, I) internal, e) external

REFERENCES

1. The glossary of Prosthodontic terms. 6th ed. St. Louis, 1994, C V Mosby.

2. Sowter J B. Dental laboratory technology. Chapel Hill: University of North Carolina, 1968:148.

3. Henderson D.: Major connectors for removable partial dentures: design and function. J. Prosthet Dent, 1973;30-532-48.