

# Hydraulic and Hydrophobic Impressions

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One of the most frustrating aspects of making final impressions for crowns and bridges involves the management of finish lines that extend subgingivally. The dentist must contend with many problems like relapsing gingival tissue which can obstruct the flow of impression material into the sulcus. This is most often managed by packing retraction cord which is time-consuming, difficult and often uncomfortable for the patient. The dentist must also contend with gingival hemorrhaging which may fill the sulcus with blood and interfere with the flow of impression material. This is most often managed with hemostatic agents which may require multiple applications and taste bad. Moreover, hemorrhaging may recur spontaneously or when the cord is removed. And hemostatic agents which contain sulfur inhibit the setting of vinylpolysiloxane impression materials. Then there is the problem of saliva which may flood the field if the assistant fails to maintain adequate suction and isolation. With some patients this may be very difficult, if not impossible. All in all, making final impressions of subgingival finish lines can be a challenge, even under the best of circumstances. We have developed an impression technique that eliminates the need for retraction of the gingival tissue, application of hemostatic agents, or the need for maintaining a dry field. We will illustrate this technique with a simple example of making a final impression of a mandibular first molar crown preparation with deep subgingival margins.

## CLINICAL TECHNIQUE

Prepare the tooth for a crown and place the margins subgingivally as dictated by the preoperative condition of the tooth or treatment plan (**Figure 1 and Figure 2**).



**Figure 1**



**Figure 2**

Select a dual arch impression tray that passively fits the quadrant. Insert the tray and have the patient close all the way down into MI (Maximum Intercuspation). A correctly sized tray will fit loosely and you should be able to wiggle the tray around without it binding against the teeth or arch. Have the patient practice biting all the way down into MI with the tray in place. Fill both sides of the tray with a vinylpolysiloxane bite registration material and insert to the proper position. Have the patient bite all the way down into MI. Examine the orientation of the cusps on the contralateral side to check if the patient has closed all the way down into MI. After the bite registration material has set, hold the tray and impression on the arch opposing the prepared tooth and have the patient open. Stabilize the tray and impression on the opposing arch.