

Making Better Impressions A Troubleshooting Guide

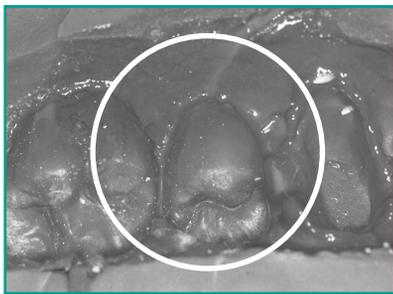
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Please Share This Valuable Information With All Doctors, Hygienists, and Assistants in the Office

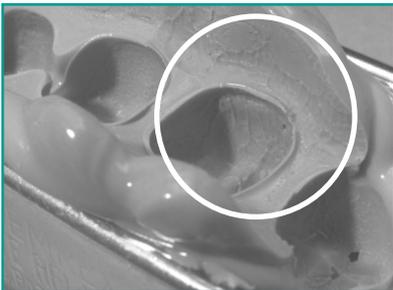
Surface Inhibition/ Slow Set

Visual Appearance: Impression not completely set. Tacky to the touch.

Result: Inadequate surface detail on stone reproductions, poor fitting crowns.



Contaminated wash material



Surface inhibition



Die stone with impression material residue

CAUSE

SOLUTION

For Vinyl Polysiloxane Materials

Sulfur in latex gloves or rubber dam inhibits the setting reaction of VPS, but does not affect polyether impression material.

Wear nitrile gloves or gloves proven not to inhibit set of VPS impression materials immediately prior to making final impression.

Touching prepared teeth or surrounding tissue with latex glove.

If contamination suspected, scrub affected area with diluted hydrogen peroxide.

Rolling retraction cord with latex gloved fingers.

Wear nitrile gloves or gloves proven not to inhibit set of VPS impression materials immediately prior to making final impression.

Exposure to residues from custom temporary materials.

Do not use impressions already used to fabricate the temporary restoration.

Fabricate the temporary crown or bridge after final impression has been made.

Exposure to air inhibited methacrylates (i.e., composites, adhesives).

Remove air inhibited layer on the exposed surface with an alcohol wipe before making final impression.

For Polyether Materials

Exposure to epinephrine or iron III sulphate (for polyether materials).

Select retraction cords or hemostatic agents not containing these chemicals when using polyether impressioning materials.

Retraction solutions not removed sufficiently.

Carefully remove the retraction solution with water spray.

3M™ ESPE™ Permadyne™ Garant™ 2:1 Impression Material stored at a too low temperature (<12°C, 54°F) and is damaged.

Store material at room temperature.

Impressions exposed to direct sunlight or stored at a temperature too high.

Store the impression at room temperature in a dark place.

Wetting agent too aggressive.

Clean polyether impressions with water and dry. Wetting agents are not necessary.

For VPS and PE Materials

Expired impression material.

Check expiration date of impression material.

Inadequate mix.

Ensure mixing instructions are followed, and materials have a streak-free appearance.

Bleed 50 mL cartridge before applying mix tip to ensure even dispensing.

Voids on Margin

Visual Appearance: Voids on margin or around prepared teeth.

Result: The fit and function of the final restoration may be compromised.



Poor retraction and syringing technique

CAUSE

Air incorporated in intraoral syringe or while filling impression tray.

Improper syringe technique.

Blood saliva contamination around prep.

Poor retraction around prep.

Retraction cord not left in place adequate amount of time so that no blood or saliva are present.

SOLUTION

Front load syringe by inserting mix tip directly into intraoral syringe and keep mix tip immersed in heavy body material while filling the tray.

Keep syringe tip immersed in wash material to avoid entrapping air.

Good retraction technique; rinse and dry prep area.

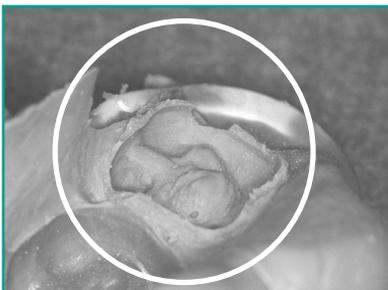
Good retraction technique; consider two-cord retraction to displace tissue and control fluids.

Good retraction technique; leave cord in sulcus until no blood or saliva are present before syringing the light body impression material. Consider two-cord retraction.

Tearing at the Margin

Visual Appearance: Tearing visible on the margin of the preparation.

Result: Short crown margins and/or open margins.



Marginal tear

CAUSE

Poor retraction technique.

Surface inhibition.

Slow -setting material.

Early removal from mouth.

SOLUTION

Improve retraction and where appropriate, use two-cord technique.

For VPS, avoid contamination from sulphur or methacrylate. For Polyether, avoid epinephrine or iron III sulphate because setting time could be compromised.

Follow manufacturer's setting time recommendation.

Check expiration date of material.

Follow manufacturer's setting time recommendation.

CAUSE

Exceeding the working time of the impression material.

SOLUTION

Follow manufacturer's working time specifications.

Contamination of preset heavy-body material in two-step technique.

Ensure VPS impression material does not come into contact with latex gloves.

Ensure impression material does not come into contact with methacrylate residue from acrylic temporary materials.

Delamination

Visual Appearance:

Heavy body and light body materials not blending, or adhering together.

Result: Indirect restoration will not seat properly.



Poor bond between heavy body/light body materials

CAUSE

Blood/saliva contamination around prep.

SOLUTION

Rinse and dry prep area just prior to making impression.

Inadequate retraction of sulcus around prep.

Good retraction technique with proper moisture control and proper tissue retraction.

Exceeding the working time of the impression material.

Follow manufacturer's working time specifications.

Lack of Impression Detail

Visual Appearance:

Muted detail reproduction and inadequate margins.

Result: Crowns may be too tight or small and extensive occlusal adjustments may be required.



Inadequate retraction

Inadequate Capture of Margins

Visual Appearance: Incomplete margin. **Result:** Short crown margins and/or open margins.



Void caused by syringe technique



Air bubble on margin

CAUSE

Inadequate coverage of marginal area with light-body impression material.

Fluids such as blood or saliva present within the sulcus.

Keep syringe tip immersed while syringing.

Tearing of margin.

Exceeding the working time of the material.

SOLUTION

Good retraction technique.

Maintain a clean and dry field.

Gently stir while syringing.

Good retraction technique.

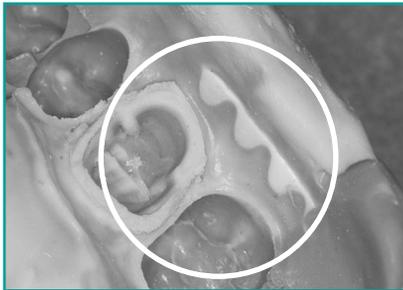
Check manufacturer's instructions for working and setting times.

Follow the manufacturer's working time specification.

Improper Tray Seating

Visual Appearance: Burn-through of light-body impression material. Impression tray exposed.

Result: Crowns are too tight, too small, or rock when seated; Tight-fitting crowns.



Contact with impression tray

CAUSE

Prepared teeth contacting the sides or bottom of impression tray.

Tooth contact with the preset tray material when using the two-step technique.

Tray seated too quickly or forcefully.

Tray movement or rocking during the impression.

Weaker plastic trays can allow deflection of the tray, which may rebound upon removal.

SOLUTION

Avoid contact of teeth with any surface of the tray.

Test various tray sizes to ensure proper size.

Relieve the heavy-body impression material to ensure a 2–3mm space.

Slowly position tray into patient's mouth.

Use passive pressure to immobilize the tray for the recommended set time.

Use a stiffer, more rigid stock tray.

Poor Bond of Impression Material to the Tray

Visual Appearance: Impression pulling away from the sides/bottom of tray.

Result: Crown(s) may not seat fully, or require excessive occlusal adjustment.



Separation of material from tray

CAUSE

No tray adhesive used.

Incompatible tray adhesive used.

Inadequate drying time for tray adhesive.

SOLUTION

Use appropriate tray adhesive.

Use appropriate tray adhesive.

Follow manufacturer's instructions for application and drying time.

Inadequate Mix

Visual Appearance: Nonhomogeneous mix.

Result: Slow-setting impression material.



“Streaky” inadequate mix

CAUSE

Improper ratio of catalyst to base.

Mix tip not attached correctly.

Air in the 50 mL cartridge.

SOLUTION

Bleed cartridge prior to attaching mix tip.

Use manufacturer’s recommended mix tip.

Bleed cartridge to ensure equal catalyst/
base expulsion.

Facial–Lingual Pulls

Visual Appearance: V-shaped void, trough-like.

Result: Failure to capture complete and accurate dentition.



Lingual pulls

CAUSE

Improper tray seating.

Improper syringe technique.

Too little material.

SOLUTION

Seat tray slowly.

Follow manufacturer’s working time.

Use proper syringe technique.

Use more material.

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