

Help with Common Lab Problems



We spent the time and money creating this page with the hope that the effort will resolve common lab problems and the dentist may not have to stop using a lab that is otherwise able to deliver the quality and price the dentist likes. We wish that all dentists could get perfect results from any lab while using any impression material. As we all know, that isn't even close to reality. Occasionally some dentists become frustrated with the work they receive from their lab.

There are occasions when the impression material is truly causing the problem OR the lab lacks the expertise to accomplish the dentist's goal(s). But often there's a plausible explanation for the failure and a viable solution – other than the ubiquitous “bad impression” or “incompetent lab”. If you've tried multiple impression materials and / or multiple labs and you're still experiencing frustration, there are a few considerations that could help remedy the problems.

The following “trouble-shooting” pages were supplied by 3M ESPE. These pages are not intended to place blame, but rather, they're posted with the intent that they'll eliminate a problem for the dentist. We hope that dentists will view these pages with an open, objective prospective and consider them in the spirit that they're offered.

Feel free to print these sheets and provide them to your staff or to your current lab.

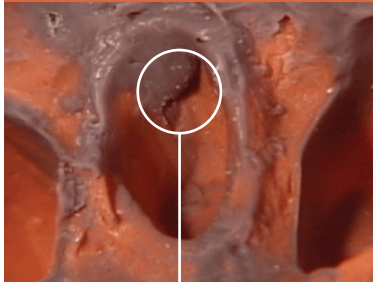


Photo #1 Ledges

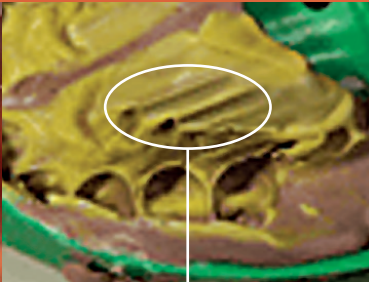
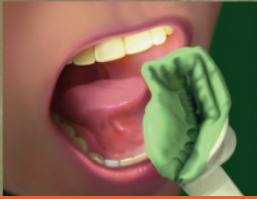


Photo #2 Drags

Tray Seating

Issue	Cause	Solution
<ul style="list-style-type: none"> ■ Ledges. (photo #1) 	<ul style="list-style-type: none"> ■ ■ Rapid tray seating. 	<ul style="list-style-type: none"> ■ ■ Position the tray before seating. Use a slow, steady, vertical seating motion to allow for blending of tray/wash materials.
<ul style="list-style-type: none"> ■ Drags. (photo #2) 	<ul style="list-style-type: none"> ■ Placing and seating the tray in the mouth in one motion. 	<ul style="list-style-type: none"> ■ Carefully position the tray before seating. Once positioned, seat the tray vertically.
<ul style="list-style-type: none"> ■ Delamination (poor blending and adhesion of wash to tray material). 	<ul style="list-style-type: none"> ■ Failure of the impression material to adapt to the teeth. 	<ul style="list-style-type: none"> ■ Seat the tray slowly.
<ul style="list-style-type: none"> ■ Slanted or wavy teeth. 	<ul style="list-style-type: none"> ■ ■ Teeth rebounding off the tray and sliding into position. 	<ul style="list-style-type: none"> ■ Avoid contact of teeth with tray.
<ul style="list-style-type: none"> ■ Rocking crown. 	<ul style="list-style-type: none"> ■ ■ Tray movement after seating. 	<ul style="list-style-type: none"> ■ ■ After tray seating, use passive pressure to immobilize the tray for the full recommended oral set time.
<ul style="list-style-type: none"> ■ Short crowns. 	<ul style="list-style-type: none"> ■ Teeth in contact with tray and/or not adequately relieving pre-set impression material. 	<ul style="list-style-type: none"> ■ Avoid contact of teeth with tray or pre-set tray material.

**For additional assistance contact the 3M ESPE Technical Hotline: 1-800-634-2249
In Canada, call 1-800-265-1800 x6229**



3M ESPE Impression Tips

BECAUSE FIRST IMPRESSIONS COUNT

Bite Registration

Issue

- Difficulty in establishing vertical and horizontal relationships of the dental arches to the mounted stone casts.
- Excessive occlusal adjustment.

Cause

- Bite registration not provided.
- Poor interocclusal record.

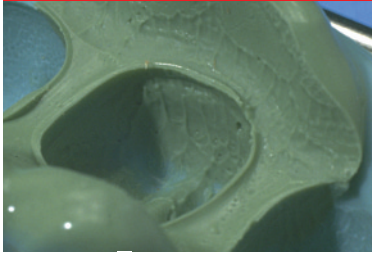
Solution

- Provide a rigid and dimensionally stable bite registration with each case.
- Properly trim a good bite registration material.
- Use dimensionally stable bite registration material.
- Ensure that the patient does not move during the procedure.

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3M ESPE Impression Tips

BECAUSE FIRST IMPRESSIONS COUNT



Surface Inhibition/Wash Slow Setting

**Photo #1 Surface Inhibition-
Simultaneous Medium/
Light Technique**

**Photo #2 Die Stone
with Impression
Material Residue**

Issue

- The surface of the impression material is not set, tacky to the touch, and visually resembles the surface of an orange peel (Photo #1).
- Unset impression material residue may be transferred from the impression to the die stone during model pouring (Photo #2).
- Wash slow setting.

Cause

- ■ Latex glove/rubber dam inhibition. Touching the prepared teeth or surrounding tissues, rolling retraction cord in gloved fingers, or the use of a rubber dam may transfer sulfur to critical areas of the impression; causing site specific inhibition.
- ■ Exposure to residues from custom temporary materials.
- ■ Exposure to air inhibited methacrylates (i.e., composites, adhesives, core build-up materials).
- Cartridge plugging.
- Product beyond its expiration date.
- Cause unknown.

Solution

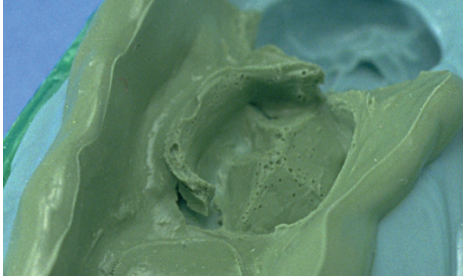
- Wear vinyl gloves, or latex gloves which are proven not to inhibit the set of VPS impression materials. If contamination is suspected, scrub affected area with dilute hydrogen peroxide immediately prior to making the final impression.
- ■ Fabricate the temporary crown or bridge after the final impression has been made.
- ■ Remove air inhibited layer on the exposed surface with an alcohol wipe before making the final impression.
- If a plug is present, remove with an explorer. Bleed cartridge and attach a new mix tip.
- Purchase refill.
- Replace via 3M ESPE Technical Hotline (1-800-634-2249).

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3M ESPE Impression Tips

BECAUSE FIRST IMPRESSIONS COUNT



Tearing/Rough Surfaces

Issue

- Rough occlusal and/or incisal surfaces and tearing visible on the margin of the preparation (Photo).
- Poor lamination between tray material and wash may also be evident.

Cause

- Poor retraction technique.
- ■ Surface inhibition.
- ■ Moisture present.
- ■ Material slow setting (reason unknown).
- ■ Wash partially set at tray seating.
- ■ Early mouth removal.

Solution

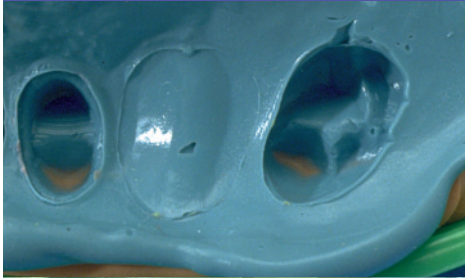
- Improve retraction, and where appropriate, consider the two cord retraction technique.
- ■ Control bleeding and avoid pools of water or saliva on occlusal surfaces.
- ■ Replace via 3M ESPE Technical Hotline (1-800-634-2249).
- ■ Closely follow recommendations for oral work time.
- ■ Set a timer to ensure that the impression remains in the mouth for the full recommended set time.

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3M ESPE Impression Tips

BECAUSE FIRST IMPRESSIONS COUNT



Voids

Issue

- Voids on the margin of a preparation compromise the fit and function of the final restoration (Photo).
- Voids on occlusal surfaces make articulation of stone models difficult.

Cause

- Syringe technique.
- Air incorporated when loading intraoral syringe.
- Moisture present either in the sulcus, or pooled on occlusal surfaces.

Solution

- Voids may be reduced by using a stirring motion while syringing, keeping the syringe tip immersed to avoid trapping air.
- Front load syringe by inserting mix tip directly into intraoral syringe and forcing the plunger backwards.
- Control bleeding, and when appropriate, consider the two cord retraction technique and/or hemostatic agents. Pools of water or saliva on occlusal surfaces should be avoided.



3M ESPE Impression Tips

BECAUSE FIRST IMPRESSIONS COUNT

Tight Fitting Crowns

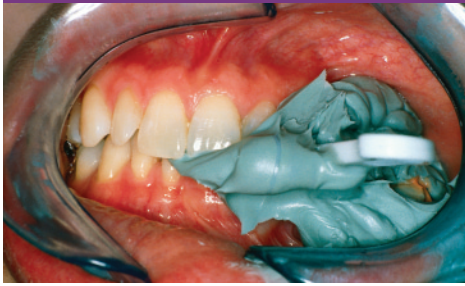
Issue	Cause	Solution
<ul style="list-style-type: none">■ Tight crowns	<ul style="list-style-type: none">■ Early mouth removal.■ Seating partially set impression material.■ Poor bond of material to tray.	<ul style="list-style-type: none">■ Closely follow product recommendation for oral setting time.■ Closely follow product recommendation for oral working time.■ Always use a VPS tray adhesive and allow to dry as per product instructions.
<ul style="list-style-type: none">■ Short crowns	<ul style="list-style-type: none">■ Insufficient tray support (weak or low tray walls).■ Teeth in contact with tray and/or not adequately relieving pre-set impression material.■ Insufficient die trimming.	<ul style="list-style-type: none">■ Use custom or inflexible (preferably metal) stock trays.■ Avoid contact of teeth with tray, or pre-set tray material.■ Consult with dental laboratory.

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3M ESPE Impression Tips

BECAUSE FIRST IMPRESSIONS COUNT



Double Bite Technique

Issue

- Short crown margins.
- Occlusal adjustment too high.
- Crowns too tight or too small.

Cause

- Teeth in contact with tray.
- Poor tissue retraction and/or moisture control.
- Early removal from mouth.
- Patient not in centric occlusion.
- Lack of tray support/weak tray/no walls.
- Early removal from mouth.

Solution

- Avoid contact of teeth with tray.
- Use double cord retraction technique.
- Follow recommended oral setting time.
- Try-in tray prior to making the impression.
- Establish repeatable orientation of the teeth.
- Identify contact areas or distinguishing features.
- Ensure that the crossbar does not interfere with achieving complete occlusion.
- Use rigid impression tray with walls.
- Follow recommended oral setting time.

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