DR DENTAL RESOURCES

Keystone INDUSTRIES

DUAL LAMINATE TROUBLE SHOOT GUIDE

The dual laminate is an excellent thermal forming material. Unfortunately due to thermal index differential of 2 sides, along with thermal retraction it is a difficult material to fabricate. First suggestion is **make a duplicate model**, soft liner creates a very good hydrophilic seal and it is difficult to save the model after thermal forming a dual. The best way to fabricate a dual is to preheat vacuum machine until it becomes (**red hot**), put soft side towards heater, move frame unit directly beneath heater, heat on a Proform machine with a 600 watt heating element **1:15 to 1:30** minutes, **increase time factor on smaller capacity heating elements**. Amperage into building, service load, etc. can affect time criteria. When thermal forming if you burn soft layer (**turns a little brownish – green**), lower time factor by **5** second increments, if after thermal forming you do not get good adaptation increase in **5** second increments. The soft side has roughly a 100-degree higher thermal index point than hard side, note: **hard side will burn easier than soft side**. After you heat soft side **flip material** over ASAP-**heat hard side for 10-15 seconds** (bringing it up to temperature that was achieved when heating soft side). Turn on vacuum, lower frame and then either use the **Pressure Dome** to assist in forming procedure or use a wet paper towel to form around occlusion plane, lingual and buccal surface. Trim and polish using cutting and polishing tools like you would use for acrylic, (scotch brite wheels work very well for polishing & wheel saws and Econo Cutters for trimming).

The other thing that some users do when forming duals- is they cut 2 pieces of duct tape, put 1/4" on peripherals of laminate on both sides of laminate, fold over adhesive side and place over loop frame unit, (usually attached to soft side of laminate), then after soft side is heated you have a couple of external flanges to grab to assist in flipping process. I have never found this necessary but a little tip. If you continue to experience problems in fabrication of dual laminates call our technical service department.

If you are adding acrylic to a dual laminate you can do wax up-invest –boil out –clean surface area that are going to process acrylic over with monomer, then press pack, pour or inject acrylic on top. Another method is to do upper & lower model, mount into centric on plaster less articulator, establish stop, remove model and fabricate dual, trim, remove from model, reestablish centric, use monomer to clean occlusion surface. After dual has been cleaned with monomer mix a wet slurry of acrylic-(we recommend Proflex NFC Clear) then place on occlusion plane, press in opposing with stop established, rubber band articulator and process in Pressure or curing pot. Another way is to fabricate a dual laminate, clean occlusion surface with monomer, mix wet slurry (recommend Proflex NFC clear) bond onto occlusion surface, use a gritman knife to build a ramp replicating the anatomical plane or free hand occlusion by utilizing your opposing model, rubber band together and cure in a pressure pot.

A couple other tips-the dual comes in 2 sizes 2 or 3 mm thick, pick the thickness to match your inter occlusion space. Secondly the dual laminate is a thermal plastic that after heating for 20-30 seconds in 130 degree F water (hot tap water) it will become more flexible and will readapt to a degree. If you use Proflex NFC acrylic with the dual, this also flexes in hot water (130 degree F for 20 seconds)-so both acrylic & dual can be readapted to a degree. In addition, the NFC acrylic flexes more than conventional acrylic so it will not fracture under mastication forces as easily as conventional acrylic, and it is **optically clear-try it**.

Third suggestion if you are adding acrylic to occlusion plane over a dual, select proper thickness of dual laminate to be able to maximize acrylic overlay. Some times you may also want to drill all the way through dual and let acrylic flow into this orifice to create a solid stop vs. a thin layer of acrylic that will crack easily.

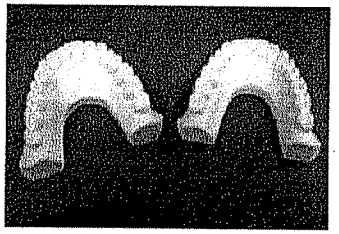
2pgs

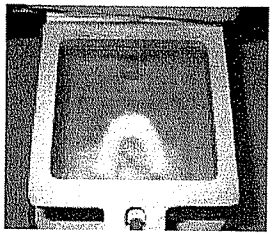
Pro-form

Dual Laminate
Hard-Soft Material

The "Quick" Vacuum Formed Bruxism Splint

Pro-form





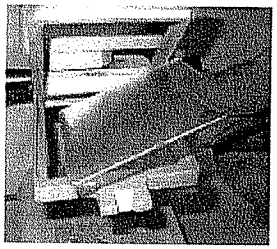
1) A duplicate model is recommended in event of likely breakage of master model.

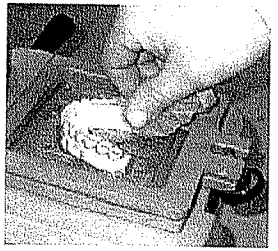
2) Limit vertical height of model from base to incisal - we recommend that you horse-shoe model by removing lingual area.

3) **Preheat** machine until heating element turns red hot - usually takes about 2-3 minutes.

4) Due to the difference between the thermal indexes of the 2 sides, it is necessary to heat the soft side **FIRST**. Place soft side toward heating element and heat for 1:30 to 2:00 minutes or until glaze is visible on the soft side. *Note:* Each machine may be different. If you burn the soft layer (turns brown), lower time factor in increments of 5 seconds until desired results are obtained.

Pro-form





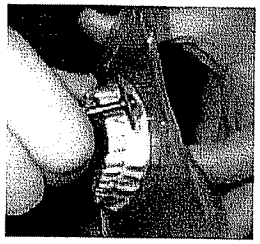
5) After soft side is heated, flip DUAL over and heat the hard side for 10 to 15 seconds. *Note:* Hard side of material scorches and bubbles easily.

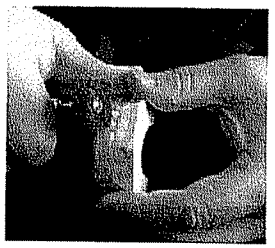
Tip: Buy some inexpensive cotton gloves - wet them thoroughly so you can flip material easily - you can also use them later to adapt dual onto model.

6) Lower heated material onto model. Activate vacuum motor. Use wet paper towel or wet cotton gloves with cold water and press DUAL onto model for improved adaptation.

7) The vacuum should remain on for about 1 minute for good adaptation. Allow 10 minutes for cooling or place in cold water.

Pro-form

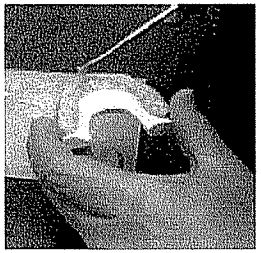




8) Trim laminate from model (we recommend the wheel saw or 1" econo cutter.)

9) For maxillary appliances, trim dual laminate in the horseshoe shape shown above.

10) Final finishing and polishing of the appliance may be accomplished by trimming the edges of the dual laminate with a pear shaped cross cut bur. To remove frayed edges use a Robinson bristle brush or DR scotch brite wheels. Final polish with lathe wheel, wet pumice or acrylic polish.



11) Acrylics can be added to the occusal surface to modify to a desired shape. Cold cured, press packed, poured, or injection acrylics can be added to dual. Simply make sure dual is cleaned with liquid monomer before adding acrylic. Proform recommends using a semi-flexible acrylic like Proflex NFC for build up.

Helpful Suggestions:

A) If using the dual as a base in a splint appliance, you may wax the desired shape onto the dual, invest, boil off the wax, and then process acrylic into lost wax area. We recommend using our Proflex flexible acrylic as it will flex more than conventional acrylic so it will not fracture under mastication.

B) Two duals can be used to make upper and lower fused splints for anti-snoring devices. Simply make an upper and lower dual, mount into centric on plasterless articulator, establish a stop, place a slurry of wet acrylic between upper and lower splints, rubber band articulator, and process in curing pot.

C) If you are going to add acrylic to occlusion plane of dual, you may want to drill all the way through the dual and let acrylic flow into this orifice. This will create a solid stop to help with potential cracks due to stress factors.

Pro-form

The Pro-Form "Dual Laminate" is a unique combination of two materials formed into a single laminated sheet especially designed for functional service in bruxism cases. The "Dual Laminate" is easily fabricated with a simple vacuum process.

The soft liner assures patient comfort, the hard surface assures long lasting wear.

Available in 3 popular sizes:

2mm or (0.080) thick Part #P140-002
3mm or (0.120) thick Part #P130-000
5mm or (0.200) thick Part #P130-002