



Bonded Lingual Retainer Fabrication Technique

Safety glasses should be worn for all lab procedures as well as gloves when working with chemicals and in patient mouth. Items featured in this technique are found at the end of the procedure.



Permanent retention is greatly enhanced using a flattened, dead soft wire. Intra-arch splinting with this thin ribbon arch prevents torque control problems that can occur using a round braided wire for these procedures. When bonded on the lingual of the upper incisors, a very thin rectangular wire can be adapted with little lower incisor interference.

The dead soft wire is easy to adapt and prevents inadvertent tooth movement associated with active force wires. *Bond-A-Braid®* or *Retainium®* is excellent for semi-permanent orthodontic splinting of the upper or lower incisors. It can be used to hold diastemas closed, maintain difficult extraction sites and solving various other toothsplinting.

Prepare Teeth for Direct or Indirect Methods



Prophy, then sandblast or roughen enamel, rinse & dry. Acid etch (065 004) enamel for 30 seconds. Rinse & dry thoroughly.



Apply one coat of Assure® Universal Bonding Resin (065 011) to each prepped tooth & lightly dry with air. For Indirect Method, also apply Assure to pads within transfer tray (that was prepared by lab) and lightly air dry.

Then go to **Direct** or **Indirect Bonding** method

For Direct Bond Method



- 1 Pre-adapt lingual retainer wire (*Bond a Braid®*/065 045 or *Retainium®*/065 050) using a snap impression model to ensure proper length and fit to anteriors. To increase adhesion, sandblast wire in bonded areas.



- 2 Place loops of dental floss in interproximals of central and laterals.



- 3 Insert adapted *Bond a Braid* or *Retainium* into dental floss loops and pull gently floss to hold wire against teeth for bonding. Be sure not to over pull floss resulting unwanted bends to wire. This may result in bonding an active, not passive wire.

Using *Flow-Tain®* (065 040), extrude a small amount of paste over the wire on each tooth. Use enough paste to cover wire and bond to enamel.



- 4 Using a small pledget, dip pledget into Assure and spread paste to smooth finish in a gingival to incisal motion. Lightly air dry.



- 5 Light cure paste on each tooth for 20 seconds for complete set.



- 6 Remove dental floss. Add Flow-Tain as needed to cover thin areas to increase bond strength and enhance wear resistance. Then remove any occlusal interference of pads with a bur.

For Indirect Bond Method



- 1 Using Flow-Tain, extrude a small amount of paste over the composite pads in tray.



- 2 Seat tray over anterior dentition, making sure not to contact lingual tooth surfaces until tray is fully seated. Sliding along linguals of teeth could wipe Flow-Tain from pads reducing bond strength and creating further cleanup around pad areas.



- 3 Light cure paste from incisal edge over each pad, through tray for 10 seconds. Carefully remove tray and light cure for an additional 10 seconds for complete set.



- 4 Add Flow-Tain as needed to cover thin areas to increase bond strength and enhance wear resistance. If needed, remove any occlusal interference of pads with a composite bur.

Lab Fabricated Transfer Tray (Indirect Method)



- 1 Adapt Retainium or Bond a Braid wire to crown contours along cervical 1/3rd heights.



- 2 Apply diluted separator (50% separator/50% water) to model.



- 3 Tack adapted wire to model at midline with Mortite. Make sure Mortite does not extend to crown surface where pads will be placed. Create Flow-Tain pads on each tooth around wire. Make 2 pads, then cure 1 minute to better stabilize wire to model. Create remainder of pads. Cure pads in ProCure 300 Light Oven (190 030) light cure oven for 1 minute.



- 4 Model with flat trimmed base is placed on platform and pressure is reduced to 1.5 2 bar (20 30psi). Form 2mm Mouthguard material (021-031) over model with bonded lingual retainer in place. Heat material 60 seconds with Biostar®/Ministar® machine.



- 5 Once formed & cool, cutout Mouthguard material to form tray using a hot lab knife (heat knife with flame). Tray extends 1 2 teeth beyond appliance framework and to the interdental papilla facially, while 1 2mm below the gingival margin on lingual surface. Do not remove formed tray from model yet.



- 6 Submerge model with cutout tray into room temperature water for 20 minutes. Carefully remodel tray from model.



- 7 If needed, further trim tray to desired size. Optional – finish trimmed tray edges with a coarse Dimo® Wheel (086 042). **DO NOT flex tray during trimming and finishing procedures.**

Place tray in ultra sonic with liquid dish soap/water solution for 15 minutes to clean.

Items featured in technique:

235-010 Astro Spec Safety Glasses (reg./blue)
235-062 N-Dex Non-latex Gloves (Med)
086-040 Flow Tain® tube
065-011 Assure® Universal Bonding Agent (6cc)
065-004 Liquid Etching Agent (9g)
065-045 Bond a Braid® 10/tube
065-050 Retainium® 10/tube
021-031 2mm Clear Mouthguard Material
190-030 Pro-Cure Light Oven
086-042 Dimo Pro Grinding Wheel (coarse)



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