Quest™ Indirect Bonding System

A Component of the Reising Method™

Preparing the Model

1. Begin with a good quality impression. Raintree Essix PVS Impression Material or Cavex Alginate (Figs. 1 and 2) are both superior products.
2. Obviously all of the teeth must be intact for successful indirect bonding. Using the strongest possible stone reduces the risk of breaking teeth during model separation from the impression. Die stone such as Essix Die Stone or Fast Cast is recommended. (Figs. 3 and 4)

   Note: Keeping the model for record keeping is also an important reason for maintaining the model's integrity.
3. Pour the die stone immediately into an alginate impression. To ensure dimensional accuracy, do not let the alginate impression sit for more than 8 minutes. With PVS impressions, the impression must rest for 30 minutes before pouring the stone into the impression. Allow the stone to set according to directions. (Fig. 5)
4. Trim models to allow full access to buccal and lingual tooth surfaces. Remove narrow crevices that often form on the lingual posterior of lower models and upper buccal to the second molars. (Fig. 6)
5. Allow models to dry completely. Then, paint the buccal surfaces of the teeth (the anticipated bracket position) with FoilCote (Fig. 7). Apply to two or three teeth at a time with a 2" bond brush or a MicroBrush. Allow to dry. The objective is to create a surface to bond to.
6. Adhere brackets to model using Quest light-cure composite adhesive. (Fig. 8)
7. The model may now be stored in a dark box until it is convenient for the doctor to position the brackets.

Bracket Positioning

8. Position brackets using Quest height gauges to establish the best "line of placement" (see vertical bracket placement guide). This is critical to achieving ideal bracket positioning. Gauge angulation will effect vertical position; therefore, gauge angulation should approximately parallel bracket slot (torque) to establish accurate height. (Fig. 9)
9. Once the brackets are placed on the model, remove excess composite adhesive from around bracket bases. (Fig. 10)
10. Cure adhesive using a regular light cure unit: 1-2 seconds for metal brackets. < 1 second for ceramic brackets*

    ***For ceramic brackets:** Keep the curing light in motion and simply move across the arch at a moderate pace. The degree of cure will vary depending on the intensity of the light cure unit. (Fig. 11)

    Note: Use caution when curing ceramic brackets. Too much curing will cause excess adhesion to the stone and cause damage to your model.
11. Apply translucent Quest matrix material (Fig. 12) to occlusal side of brackets only. Be sure to coat the entire occlusal half with this material. Keep the dispensing tip in motion and slowly move across the entire arch in one stroke. (Fig. 13)
12. Apply purple/opaque matrix material to the gingival side of brackets. Be sure to inject into interproximal areas, cover the remaining exposed bracket surfaces entirely and fill all voids surrounding the bracket bases. (Fig. 14) The purpose of the colored inner tray material is to fill all the voids that would allow thick accumulations of adhesive to form on the teeth. Using the Quest delivery system, the excess is kept to a very thin layer. If it does get into the interproximal area, it can be easily removed with a scaler.
13. Trim the inner tray material of excess as needed with a scalpel. Removing excess from the second molar (or third molar) area is important to achieve the least possible tray thickness. (Fig. 16)

Continued

FIG. 1: ESSIX PVS IMPRESSION MATERIAL

FIG. 2: CAVEX ALGINATE

FIG. 3: ESSIX FAST CAST DIE STONE

FIG. 4: ESSIX DIE STONE

FIG. 5: POURING THE MODEL.

FIG. 6: FINISHED MODEL.

FIG. 7: APPLY FOILCOTE TO THE MODEL.

FIG. 8: ADHERING BRACKETS.

FIG. 9: USING HEIGHT GAUGE.

FIG. 10: CLEAN UP EXCESS ADHESIVE.

FIG. 11: CURE THE ADHESIVE.

FIG. 12: THE TRANSLUCENT QUEST MATRIX MATERIAL.

FIG. 13: PLACE THE TRANSLUCENT QUEST MATRIX MATERIAL.

FIG. 14: PLACING THE PURPLE MATRIX MATERIAL.

FIG. 15: PURPLE MATERIAL HAS FILLED THE VOIDS.

FIG. 16: TRIM THE EXCESS.

FIG. 17: PLACE THE MODEL ON THE VACUUM MACHINE.

FIG. 18: THERMOFORM THE PLASTIC OVER THE MODEL.

FIG. 19: VOIDS IN THE THERMOFORMED APPLIANCE.

FIG. 20: REPAIR ANY VOIDS IN THE THERMO-FORMED APPLIANCE.

FIG. 21: TRIM EXCESS TRAY MATERIAL.

FIG. 22: TRIM THE BUCCAL AND LINGUAL SIDES WITH AN ESSIX TRIMMING BUR.

FIG. 23: USING A SCALER, RELEASE THE BRACKETS FROM THE MODEL.

FIG. 24: REMOVE THE TRAY FROM THE MODEL

FIG. 25: SMOOTH THE ROUGH EDGES WITH AN ESSIX POLISHING BRUSH.

FIG. 26: MICROETCH.

FIG. 27: CLEANED BASES.

FIG. 28: COMPLETED TRAY, READY FOR INTRA-ORAL PROCEDURE.

Thermoforming the Tray

14. Thermoform 1mm/.040" Essix A+ Plastic material over the PVS encased model on a vacuum forming machine. (Figs. 17 and 18)
15. Occasionally, a void will remain around a bracket base following tray fabrication. Remember to inspect the tray and fill any voids with cotton, wax, or Wonderfill. This will prevent the excess adhesive from forming a mass under a tie wing. (Figs. 19 and 20)
16. Cut the excess rigid tray material from the model using Essix Universal Shears. (Fig. 21) Then trim the buccal side at the margin of the colored/opaque tray material and on the lingual side 3-5mm apical to the gingival margin using the Essix trimming bur. (Fig. 22)
17. Insert a scaler through the buccal/facial cut and through the rubbery tray material to access the brackets and break their bond to the model. (Fig. 23)
18. Be sure all bracket bonds are broken and then remove the tray from the model. (Fig. 24)
19. Complete the light curing of the composite adhesive on the bases and smooth the rough margins of the rigid tray material with an Essix Medium Grit Polishing Brush (Fig. 25). Also with the Essix Trimming bur, trim the rigid tray component to relieve buccal/facial undercuts (this will ease removal from the mouth after intra-oral procedures). Clean the bases of excess composite and stone using brief micro-abrasion with aluminum oxide. (Only a brief micro-abrasion is needed*.) (Figs. 26 and 27)

    **Disregard any composite remaining on the bracket bases. Its presence or absence is irrelevant, and will not affect bond success. Being able to disregard the condition of the remaining composite on the bracket bases adds to the ease of the procedure. Just be sure to remove any loose debris and stone from the bases and give a good "once over" with the micro-etcher.*

    Note: Use of a pure white, 90-micron particle aluminum oxide to clean the bracket bases is highly recommended over smaller particle sizes because it is faster and more aggressive. By increasing the amount of debris removed, you reduce the likelihood of bond failures due to base contamination.
20. Trays are ready for intra-oral procedures. (Fig. 28)

Intra-oral Procedure

21. It is best to prepare trays completely prior to patient isolation. Apply Light Bond™ primer to all bracket bases then apply Quest composite adhesive to each bracket base. (Fig. 29) The Quest adhesive dispenser is designed to aid in the application of precise quantities of adhesive.
22. Dr. Reising recommends coating half of the bracket base with adhesive and spreading it over the remaining base area with a primer moistened MicroBrush. This method prevents the application of too much adhesive. On molars, coat the entire bracket. A bit of excess is good in the posterior.
23. A good means of isolation is also vital. The new Quest™ dry field system is the best method currently available.

Continued

FIG. 29: APPLY LIGHT BOND PRIMER AND QUEST IDB ADHESIVE TO BRACKET BASES.

24. To aid in isolation of the upper second molars, trim a dry angle as needed to allow placement of the foil side against the buccal surface of the upper second molar. This keeps the wet cheek from lying against the enamel. Etching and tooth preparation can be done with the foil contacting the enamel. Then the tray can be easily placed between the foil side and the enamel. (Figs. 30 and 31)

25. It is vital to thoroughly remove any calcified or adherent accumulation from buccal surface of molars, especially upper second molars. Always prepare molar surfaces by abrading surface with a carbide finishing bur to absolutely ensure a clean enamel surface. The doctor should verify that all enamel surfaces to be bonded are completely free of adherent plaque and debris.

Note: Pumicing alone is inadequate and will lead to poor bond integrity.

26. Seat the tray immediately following enamel preparation and application of Light Bond primer to the enamel surfaces. Immediate seating reduces the chance of moisture contamination.

27. After seating the tray, apply gentle localized pressure to the tray just prior to exposure with lightcure unit. Start curing at the second molars (the most posterior tooth) and use a mouth mirror to gently apply pressure to the buccal while the light cure unit tip applies occlusally directed pressure to the tray. (Fig. 32)

28. It is best to always apply pressure immediately prior to light exposure to ensure complete seating of the brackets and expulsion of excess adhesive.

The excess that remains works to our advantage by:

- Coating the etched enamel with a thin protective layer of composite that will prevent decalcification.
- Ensuring that a continuous layer of adhesive exists between the bracket base and the tooth to create the perfect interface regardless of the differences in tooth anatomy via the indirect bonding method.

Note: Ensuring a continuous layer of adhesive is impossible to achieve with direct bonding techniques. The bracket must be moved and repositioned several times to achieve accurate positioning. These movements produce a "loss of contact area", as the composite is lost. It can't fill in all the voids where the 3D shape of the base deviates from the tooth anatomy.

29. Curing time depends upon the type of curing unit being used and the type of bracket. With the Optilux 501 unit, 30 seconds per metal bracket is sufficient. Use of a high-powered laser unit will radically reduce curing time. More time may be required with less powerful units. Less time is needed when using ceramic brackets. More time should be allowed for curing metal brackets against porcelain or metal crowns.

30. Remove the tray by first removing the clear thermoplastic rigid component, starting from the buccal of the second molars, leaving the inner rubbery portion in place. (Fig. 33) Then simply peel away the rubbery inner tray. (The inner tray is not strong enough to pull the brackets off.) (Fig. 34)

Assistants can be trained to perform bracket placement on models, (positioning should be checked by the doctor), tray fabrication, vacuum forming the rigid tray component, and tray preparation and separation. A well-trained assistant could also perform the bonding procedure, at the doctor's discretion.

FIG. 30: A DRY ANGLE

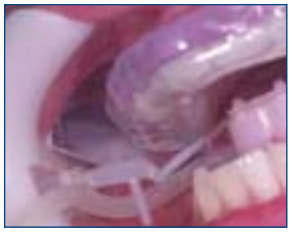

FIG.31: PLACEMENT OF THE DRY ANGLE.

FIG. 32: LIGHT CURE THE ADHESIVE.

FIG. 33: REMOVE THE PLASTIC TRAY.

FIG. 34: REMOVE THE RUBBERY INNER TRAY.

Quest™ Indirect Bonding & Dry Field Systems

Quest Indirect Bonding System Kit Includes:

- Dispenser for Matrix Materials
- Dispenser for Quest IDB Adhesive
- Clear Matrix Material – Heavy Body – 50ml
- 8 Large Mixing Tips for clear matrix
- Purple – Lighter Body Matrix Material – 50ml
- 8 Small Mixing Tips for purple material
- Quest Indirect Bonding Adhesive (12gm)
- Liquid Etch (9gm)
- Light Bond Primer (3cc)
- Bracket Height Gauge .018 4mm – 5.5mm (Blue)
- Bracket Height Gauge .018 2mm – 3.5mm (Gold)
- Bracket Height Gauge .018 4mm – 5.5mm (Blue)
- Bracket Height Gauge .018 2mm – 3.5mm (Gold)
- Cast Removing Instrument
- Essix Tweezer
- Adhesive Remover / Bracket Positioner
- Micro Brush Applicators (100)

DESCRIPTOR	ITEM NO.
Indirect Bonding Kit	IBKIT

Preparing The Model

DESCRIPTOR	ITEM NO.
Cavex Alginate	CA37
Essix Die Stone 5lb	16005
Essix Die Stone 25lb	16025
Essix Die Stone 50lb	16050
Essix Fast Cast 5lb	16505
Essix Fast Cast 45lb	16545
Foilcote Separating Liquid	20035
Micro Brush Applicators (100)	IB0500
Dispenser for IDB Adhesive	IB0200
Quest IDB Adhesive (12g)	IB0201

Bracket Positioning

DESCRIPTOR	ITEM NO.
Quest Height Gauges .018 4mm–5.5mm (blue)	IB0300B
Quest Height Gauges .018 2mm–3.5mm (gold)	IB0300G
Quest Height Gauges .021 4mm–5.5mm (blue)	IB0301B
Quest Height Gauges .021 2mm–3.5mm (gold)	IB0301G
Adhesive Remover/Bracket Positioner	IB0330
Radii Cordless Curing Light	J0826
Dispenser for Impression Material	IB0220
Clear Matrix Material – Heavy Body 50ml	IB0222
Mixing Tips for Clear Matrix (8)	IB0221L
Purple Matrix Material – Light Body 50ml	IB0223
Mixing Tips for Purple Matrix (8)	IB0221S
Scaler	IB0304
Essix Tweezers	82148B

Quest™ Dry Field System

DESCRIPTOR	ITEM NO.
• Quest Dry Field System Kit	IB0270
Replacement Items:	
• Tongue Shield	IB0275
• Suction Tube with end caps (10)	IB0276
• Suction Adapters – Low Volume (5)	IB0277L
• Suction Adapters – High Volume (5)	IB0277H

Thermoforming The Tray

DESCRIPTOR	ITEM NO.
• Essix Vacuum Machine 110V (U.S. version)	85000
• Essix Vacuum Machine 220V	85220
• Essix Vacuum Machine 220CE	85220-CE
• Essix Vacuum Maximizers Combo	85999
• Essix A+ Plastic .040/1mm Box 100 5" square	10045
• Essix A+ Plastic .040/1mm Box 100 125mm square	10040
• Essix A+ Plastic .040/1mm Box 100 125mm circle	11040
• Essix A+ Plastic .040/1mm Box 100 120mm circle	11041
• Essix Freeze Spray	22000
• Essix Universal Shears	18005
• Essix Trimming Bur	18901
• Essix Polishing Brushes (pk.12) Coarse	18981
• Essix Polishing Brushes (pk.12) Medium	18982
• Essix Polishing Brushes (pk.12) Fine	18983
• Essix Polishing Brushes (pk.12) Combo	1898C

Intra-Oral Procedure

DESCRIPTOR	ITEM NO.
• Light Bond Primer (3cc)	IB0215
• Posterior ARS Bur	699ST
• Anterior ARS Bur	55000
• Cordless Dremel with extra battery	DR007
• Adult Cheek Retractor	J0520A
• Pedo Cheek Retractor	J0520P
• Liquid Etch (9gm)	IB0210
• Quest IDB Adhesive (12gm)	IB0201