



# *Reliance Orthodontic Products, Inc.*

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## **INDIRECT BONDING TECHNIQUE – CUSTOM BASE**

Custom Base indirect bonding is designed to give the clinician a *high degree of accuracy* when placing brackets with a minimum of excess flash. The brackets can be placed by hand or by using one of the available machines developed for accurate placement such as the Slot Machine from Creekmore Enterprises. The indirect procedure can be technique sensitive but by following the instructions, using the proper materials, paying strict attention to moisture control and avoiding contamination of the bracket bases, the bond strength will equal a direct bond with a saving of chairside time.

The custom base method is the preferred indirect procedure because it is the least technique sensitive and no paste “flash” has to be cleaned after the tray is removed.

### **A *taking impressions***

Take an accurate impression of the arch to be bonded. Polyvinyl siloxene is recommended instead of alginate. Pour up in stone; **DO NOT USE PLASTER**. If there is any doubt concerning accuracy, **RE-TAKE IMPRESSION!** Let models dry completely (several hours). Models must be dry before proceeding to step B.

### **B *preparing models***

Coat the surface (lingual or labial) to be bonded with 2 thin coats of a 50-50 mix of liquid foil separator and water 5 minutes a part. Allow separator to dry for a minimum of 6 hours. Overnight is ideal if this is possible.

### **C *preparing brackets***

**On metal brackets**, use acetone or pure alcohol and a brush to clean off the bracket bases and remove any oils or contaminants that may be present.

**On plastic base brackets**, apply one coat of **Reliance Plastic Appliance Conditioner** and let dry completely before applying the paste.

**On ceramic brackets**, DO NOT apply any cleaning agents or pre-conditioners.



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### **D** *seating brackets*

Using a small flat instrument such as an adhesive spatula, place a small amount of **Therma Cure™** on the back of the bracket. IMPORTANT-make sure the **Therma Cure™** paste is worked into the mesh on the back of the bracket. Place a small additional amount of **Therma Cure™** onto the bracket base and make sure the base is completely covered. Place the bracket into the desired position on the working model and press gently. Clean off any excess flash around the bracket base. Place all brackets in this manner. Caution should be taken not to leave a large gap between the bracket base and working model.

**Alternate:** You can also use **Phase II®** or **Light Bond™** paste to place brackets on the working model. **Phase II®** paste will work equally well in the application. However, the disadvantage is that you have to mix the A&B paste together and you are limited to a two minute working time. **Light Bond™** paste **MUST** be light cured and we recommend not only curing on the working model but also curing each pad with your curing light after the tray is removed from the working model to insure a complete cure of the paste. **Therma Cure™** is a single paste (no mixing) and has unlimited working time.

### **E** *curing custom base material*

At this point you will cure the paste and form the polymerized custom base.

**Therma Cure™** – Place your working models in a small counter top toaster oven set at 325°F for 15-20 minutes. This will cure the **Therma Cure™**.

**HINT:** Small toaster ovens sometimes do not maintain accurate temperatures. It is highly recommended that an oven thermometer be utilized (available at any grocery store for \$2.00-5.00) to insure accurate temperature settings. After curing for 15-20 minutes, remove models and let cool to room temperature. Due to uneven heat distribution in toaster ovens, cure only two models at one time.

**Phase II® Paste** – If **Phase II®** is used to place brackets, let self cure at room temperature for 10 minutes.

**Light Bond™** – If light cure paste is used to place brackets, be sure to cure at least 20 seconds from the incisal AND gingival brackets edges with a high intensity light. This longer cure time is required because the light will not reflect off the stone model.

**NOTE** – To block out any hooks apply wax or Mortite to the hooks before making the custom tray.



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### **E** *the transfer tray*

You can now process the material of your choice over the working model to create the transfer tray. When trimmed and completed, the transfer tray will cover the occlusal, lingual and labial portion of the dentition. There are two popular transfer tray materials that can be utilized:

1. A PVS two system tray that uses a soft, light body impression material wash around the brackets to include the base, tie wings and any exposed portion of the bracket. A second, heavy body putty is placed directly over the soft body material and coverage includes the lingual, labial and occlusal surfaces. This heavy body putty will constitute the bulk of the tray.
2. A 1mm Bioplast material sucked down on the cast first then a silicone spray separator or Pam<sup>®</sup> is applied to the top of the Bioplast in a light even coat. Next, a 1mm Splint Biocryl material is sucked down directly on top of the Bioplast to form a hard thin outer shell.

Any of these trays can be used successfully for indirect bonding and the choice is a matter of personal preference. For detailed instructions on how to process and make transfer trays, contact an orthodontic lab that specializes in indirect bonding for complete information.

Once the material has set, the tray is ready to be separated from the model. If you used the Biostar "suck down" method, there may be excess material that will need to be removed from the undercuts in the model. You will also want to generally trim away excess bulk from the trays to ease in tray separation from the model. Use a sharp knife or scissors for this. Immerse the tray in warm water for 30 minutes which will release the brackets and tray from the model. GENTLY remove the tray from the model by lightly prying at each bracket site to dislodge and separate the tray from the model. With compressed air, blow dry the tray to remove any water. Trim the tray to the final size and dimension needed. With acetone or pure alcohol and a brush, clean the backs of the brackets and let air dry. With an explorer, lightly scratch the surface of the custom base and remove any residual stone that may have remained. Take care not to gouge or remove any adhered base material. A sandblaster can also be used to LIGHTLY abrade the custom base surface. When using a sandblaster, use a very short quick blast, then clean with compressed air.



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### **E** *continued*

When completed, you will have the brackets set in the tray with the cured **Therma Cure™**, **Phase II®** or **Light Bond™** paste on the backs of the brackets, providing a custom base to the anatomy of each tooth.

Store the completed tray(s) in a zip lock bag to prevent contamination until ready to be used. Label the bag with the patients name.

### **G** *chairside bonding procedure using two part chemical sealant*

When the patient is seated, section the tray into quadrants. Keep track of upper/lower and left/right. YOU CANNOT TRIAL SEAT OR FIT THE TRAYS IN THE PATIENTS MOUTH BEFORE BONDING!!

Prep the patient as usual-prophy with **1st & Final®**, etch for 30 seconds, rinse, dry and isolate thoroughly using the **Access™ Cheek Retractor**.

Next, using a brush, paint a coat of **Reliance Plastic Appliance Conditioner** on the back of each bracket and let dry for at least one minute.

**Alternate:** If **Reliance Plastic Appliance Conditioner** is not available, **Assure® Universal Bonding Resin** or **Enhance™** can be used. Apply to bracket bases and lightly dry with air.

Next, using a brush, apply a moderate coat of **Custom I.Q.™** part A on the tooth and part B on the bracket bases (the A&B can be reversed-it makes no difference). IMMEDIATELY SEAT THE TRAY. If the two tray system is utilized, seat the soft tray first (the one with brackets) and then snap the hard outer shell over it. Be sure both trays are fully seated. Hold the tray in place by applying gentle pressure to the labial portion of the tray. Hold tray for one minute then let sit passively for 4 minutes. **Do not remove trays too soon - this is critical for proper curing & bonding success!**

**Alternate:** **Maximum Cure®** or **Maximum Cure® Filled Sealant** can be used in place of **Custom I.Q.™**. Mix and apply either **Maximum Cure®** or **Maximum Cure® Filled Sealant** to the etched tooth surface and bracket base and immediately seat the tray.



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**IMPORTANT:** You have 60 seconds working time with **Maximum Cure®** or **Maximum Cure® Filled Sealant**. This should be sufficient time when working in quadrants. It helps when two people mix two batches of **Maximum Cure®** simultaneously, one person to apply mixture to the tooth surface and another person to apply to the bracket base. After seating the tray, hold for 2 minutes and then let sit passively for 4 minutes. Note the “hold” time is slightly longer with **Maximum Cure®** than with **Custom I.Q.™**.

**IMPORTANT TIPS** - Whoever seats the tray should hold it in position. Do not seat the tray and switch operators!! Also, do not have patient bite on the tray or cotton rolls during the passive wait time. This can result in bond failures.

After four minutes has elapsed, gently remove the tray using a peeling motion from the gingival to the incisal on each tooth. This can be simplified by sectioning the tray interproximally or by cutting along the occlusal. Again, peel the tray from gingival to incisal. If a two tray system is used, remove the hard outer tray first.

### **G** *chairside bonding procedure using light cure flowable composite*

**NOTE:** Recently some clinicians will use a clear tray and cement the brackets in the mouth with **FlowTain™**, a flowable light cure composite paste in place of **Custom I.Q.™** or **Maximum Cure®**. The benefit is that this thin paste will fill voids between the custom pad and the enamel ensuring bond strength.

**IMPORTANT!** Light cure each bracket for 10 seconds through the hard tray from the incisal bracket edge. Not doing so may result in less bond strength. Remove the tray and cure 5 seconds from the incisal and 5 seconds from the gingival, mesial or distal bracket edge through the soft tray. This curing procedure must be followed because the light source is 2½ mm from the bracket base which will reduce its effectiveness.

### **MATERIALS NEEDED:**

#### **Reliance Products:**

- **Therma Cure™** Indirect Bonding Paste
  - **Alternate: Phase II®** A&B Paste or **Light Bond™** light cure paste
  
- **Custom I.Q.™** Indirect Bonding A&B Sealant
  - **Alternate: Maximum Cure®, Maximum Cure® Filled Sealant** or **FlowTain™** paste.
  
- **Reliance Plastic Appliance Conditioner**
  - **Alternate: Assure® Universal Bonding Resin**



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## **Impression Trays:**

### Silicone tray System:

Polyvinylsiloxene Light Body Silicone impression material (for bracket coverage)

Polyvinylsiloxene Heavy Body Putty

CutterSil Impression material is available through any local Dental supply dealer.

### Clear Double Tray System:

1.5mm Bioplast (soft tray)

1mm Splint Biocryl

## **Other Materials:**

- Liquid Foil Separator: Coe, Caulk and Great Lakes Orthodontics all offer fine liquid foil separators.
- Acetone available at any hardware store in the paint dept.
- 100% Pure Alcohol (do NOT use rubbing alcohol) available at any pharmacy.
- Mortite block out compound for hooks.
- Silicone spray or Pam<sup>®</sup>

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