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, paying strict attention to moisture control, using the proper materials and avoiding contamination of the bracket bases, the results will equal a direct bond in strength 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. Pour up in stone; DO NOT USE PLASTER. If there is *any* doubt concerning accuracy, RE-TAKE IMPRESSION! Let models dry completely-models must be dry before proceeding to step B.

B *preparing models*

Coat the surface (lingual or labial) to be bonded with a 50-50 mix of liquid foil separator and water. 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 Conditioner** and let dry approximately 1-2 minutes 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 **Reliance 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 **Reliance 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 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 material (either the Phase II paste or the Therma Cure) and form the "custom base".

Therma Cure – Place your working models in a small counter top toaster oven set at 325° Fahrenheit 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.

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

Light Bond – If Light Bond 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 stone.

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

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F *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 oclussal, lingual and labial portion of the dentition. There are three popular transfer tray materials that can be utilized:

1. A silicone 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 oclussal surfaces. This heavy body putty will constitute the bulk of the tray.
2. A clear 1.5mm Bioplast from Great Lakes Orthodontics that is used on the Biostar or similar "suck down" type of machine is used to provide the complete tray on one operation.
3. A 1.5mm Bioplast material sucked down on the cast first (as in above), then a silicone spray separator 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 or a "suck down" method, there may be excess material that will need to be removed from the undercuts in the impression. You will also want to generally trim away needless bulk from the trays to ease in tray separation from the model. Use a sharp knife or scissors for this. Next GENTLY remove the tray from the model by *lightly* prying at each bracket site to *gently* 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 (wipe) the backs of the brackets and let air dry. With an explorer, *lightly* score the surface of the custom base and remove any residual plaster that may have remained. Take care not to gouge or remove any adhered base material. A MicroEtcher can also be used to LIGHTLY abrade the custom base surface. When using a MicroEtcher, use a very short quick blast.

F *continued*

When completed, you will have the brackets set in the tray with the cured Therma Cure or Phase II paste on the backs of the brackets, providing your custom base.

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*

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 **Reliance First & Final**, etch for 30-45 seconds (on normal adult dentition), rinse and dry and isolate thoroughly using the **Access Cheek Retractor**.

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

Alternate: If Plastic Conditioner is not available**, Reliance Assure Universal Bonding Resin** can be used. Apply to bracket bases following Assures normal instructions.

Next, using **Reliance Custom I.Q.** and a brush, paint a coat of part "A" on the tooth surface. Paint a coat of part "B" on the bracket base (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. From the oclussal, place firm pressure to make sure the tray is fully seated. Hold the tray in place by applying firm but gentle pressure to the labial portion of the tray. Hold tray for one minute then let sit passively for 4 minutes. **Do not short cut time - 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. After the **Reliance Plastic Conditioner** or **Assure** is applied (see above), 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 sealant. This should be sufficient time when working in quadrants. It helps when two people mix two batches of Maximum Cure at once; one person to apply 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 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 oclussal. Again, peel the tray from gingival to incisal. If a two tray system is used, remove the hard outer tray first.

NOTE: Recently some clinicians will use a clear tray and cement the brackets in the mouth with **FlowTain**, a flowable light cure composite. The benefit is that this thin paste will fill voids between the custom pad and the enamel ensuring bond strength. The drawbacks are having to cure each bracket through the clear tray for 20 seconds per tooth and the problem of flash around the periphery of the bracket base.

MATERIALS NEEDED:

Reliance Products:

- Therma Cure Indirect Bonding Paste
  - **Alternate**: Phase II A&B Paste, Light Bond Light Cure Paste

- Custom I.Q. Indirect Bonding A&B Sealant
  - **Alternate**: Maximum Cure, Maximum Cure Filled A&B Sealant or FlowTain paste.

- Plastic Bracket Conditioner
  - **Alternate**: Assure Universal Bonding Resin

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Impression Trays:

Silicone tray System:

CutterSil Light Body Silicone impression material (for bracket coverage)
CutterSil Putty Plus (constitutes the “bulk” of the tray)
CutterSil Impression material is available through any local Dental supply dealer.

Single tray System:

(created on “thermal suck down” machine such as the Biostar)
1.5mm Bioplast from Great Lakes Orthodontics

Double tray System:

(as above but with a second hard outer shell)
1.5mm Bioplast sucked down
1mm Splint Biocryl is processed over the Bioplast as a hard outer shell.

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.
- Pure Alcohol (do NOT use rubbing alcohol) available at any pharmacy.