

BONDING TO PORCELAIN: 2015

Over the years there have been several improvements to porcelain crowns and veneers resulting in better esthetics and strength. Unfortunately for the orthodontist these ingredient changes have made achieving adequate bond strength more technique sensitive. In addition after debonding it is imperative for the clinician to be able to restore a shine to the porcelain surface. Currently here are the two recommended techniques to achieve maximum bond strength to porcelain.

1. Micro abrade (sandblast) the porcelain surface with 50 micron particle size alumina oxide. Rinse and dry.
2. Apply 1 THIN coat of porcelain conditioner (silane), wait 30 seconds and lightly dry with compressed air. **WARNING:** Single bottle porcelain conditioner will start to deteriorate the moment it is used the first time. The older it is the weaker it becomes. However, if kept refrigerated it will maintain its potency for a full 2 years. **Apply 1 thin coat only...too much silane will weaken the bond.**
3. Apply 1 coat of Assure Plus, lightly dry with air, light cure for 5 seconds. Why light cure the Assure Plus? You could skip the light cure step and cure when applying the bracket with a light cure adhesive paste, but the light will not reflect off or penetrate porcelain like it does enamel. By light curing the Assure Plus separately you insure a strong bond to the porcelain.
4. Apply bracket with paste and light cure or allow chemical cure paste to set. **WARNING:** If using a light cure paste double your normal curing time to account for the light not reflecting off or penetrating the porcelain like enamel.

If unable to micro abrade (sandblast) porcelain then follow these steps:

1. Roughen the porcelain with a fine diamond.
2. Apply Porc Etch barrier gel to the gingival margin to protect the gingiva. Apply Porc Etch to the porcelain surface, allow to remain for 4 minutes. Wipe off and carefully rinse into suction.
3. Apply 1 thin coat of porcelain conditioner, wait 30 seconds and lightly dry with compressed air.
4. Apply 1 coat of Assure or Assure Plus, dry and light cure 5 seconds (optional)
5. Apply bracket with paste and light cure or allow chemical cure paste to set.

HOW TO RESTORE THE SHINE TO PORCELAIN:

Remove bracket and polish off residual composite with a Renew finishing point. With a rubber cup and Restore diamond polishing paste put a high luster shine on the surface.

HAVE YOU EVER HAD DIFFICULTY REMOVING AN ALIGNER TRAY AFTER LIGHT CURING AN ALIGNER ATTACHMENT?

When light curing the composite to form an attachment on the enamel be sure the light director is not in contact with the aligner as many light directors will heat up and melt the plastic to the composite. If your composite of choice sticks to the inside of the tray and melting the plastic is not the cause, before placing the composite in the aligner dimple apply a thin coat of Pam nonstick spray and dry.

THE AGE OF ZIRCONIA CROWNS IS HERE! OKAY, HOW DO WE BOND TO THEM?

1. Prophyl, rinse and dry the surface.
2. Apply 1 coat of Assure Plus, lightly dry with compressed air and light cure for 5 seconds.
3. Apply bracket with paste and light cure or allow chemical cure paste to set.

* If additional strength is required in the posterior, for example, sandblast the zirconia surface rather than roughening with a bur.

Is it porcelain or zirconia? How do you know? One test you can perform to determine if the surface is porcelain or zirconia is to place a dot of Porc Etch on the surface, wait 30 seconds, wipe off and rinse into suction. If the surface turns dull it is porcelain, if it remains shiny it is zirconia. However, the best means is to contact the referring dentist.

WHAT IS THE BEST WAY TO APPLY A BANDED APPLIANCE TO A STAINLESS STEEL CROWN?

1. Micro abrade or roughen the stainless steel crown.
2. Apply 1 coat of Assure or Assure Plus on the buccal and lingual of the crown and light cure 5 seconds.
3. Place Band Lok dual cure paste which adheres chemically to metal to the inside of the band. Place band on crown, clean flash and light cure for 10 seconds from occlusal around periphery of the band. Band Lok will continue to chemically cure to completion. Wait 5 minutes and activate appliance.

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