Fiber Anchorage for Brackets, Hooks, or Tubes

Fiber Orthodontic Bracket Technique

Measure the appropriate length of Fiber using dental floss or metal wire. The use of powder free gloves is recommended. Open the foil pouch and slide out the silicone sleeve containing the fiber bundle. Place the measuring wire on the sleeve, and cut the desired length of fiber bundle and silicone packing sleeve with sharp scissors. Protect the cut fiber bundle from exposure to light, e.g. under a light shield. After cutting a length of fiber bundle, replace the remainder into the foil pouch. The packages should be kept in a refrigerator (2-8ºC / 35-46°F) when not in use.

The whole length of the anchorage unit must be bonded to the teeth. Clean the area to be bonded on the teeth with pumice and water. Air-dry the teeth surfaces after cleaning. Instead of using pumice and water, you can sandblast each tooth with a microetcher for 5 seconds, in order to increase the bond strength. After microetching, rinse with water and air-dry the bonding surfaces on the teeth

Etch the bonding surfaces of the teeth with ortho-phosphoric acid. The etched area should be large enough for the full length of the fiber bundle and overlying composite. Interproximal spaces should be etched too. The etching time should be sufficiently long (approx. 45-60 seconds). After etching, rinse and dry the tooth surfaces. Keep the area dry before applying adhesive resin.

Light curing according to the bonding agent manufacturer's directions. Place transparent wedges into the interproximal spaces to maintain good access for cleaning. Apply bonding agent (sealant) over the whole area the anchorage unit will be bonded to. Do not spot bond the fiber bundle as you would with a metal wire; make sure that the fiber bundle is bonded along its whole length. Light cure according to the bonding agent manufacturer's directions.

Apply a continuous, thin layer of flowable composite onto the surfaces of the teeth in the intended areas of the anchorage unit. In order to maintain good space for cleaning, do not fill the whole interproximal area with composite material. Do not light cure the composite layer at this point. The flowable composite layer should also cover the fiber bundle in the interproximal spaces, which should be shaped to facilitate good oral hygiene.

Remove the fiber bundle from the groove with tweezers. Place one end of the fiber bundle into the flowable composite and press to place with a hand instrument or using the special silicone packaging. Light cure this end for 5-10 seconds, but protect the rest of the fiber bundle from the curing light with a wide instrument like a Stepper tool. Continue curing the rest of the fiber bundle either a tooth at a time by pressing it down with a hand instrument, or by attaching the remainder of the fiber bundle by pressing it down with the silicone instrument. Light cure for only 5-10 seconds on each tooth at this point. Try to keep the fiber bundle round. Make it flat and wider only under the tubes (or brackets or hooks) to assure a large enough bonding area. Keep the interproximal areas open.

After the whole fiber bundle has been positioned and initially cured, cover it with a thin layer of composite and make sure it is totally enclosed. Light cure for 40 seconds on each tooth. Leave an opening at the embrasure for good hygiene, but be careful not to cut the transparent fiber bundle when finishing and polishing the composite.

Brackets, tubes or hooks must be bonded to the anchorage unit either as a separate procedure or at the same time as the whole anchorage is light cured (see above). After final polymerization and finishing the FRC anchorage unit can be used for performing the desired tooth movements.

For more information, contact Preat at 1-800-232-7732 or visit preat.com