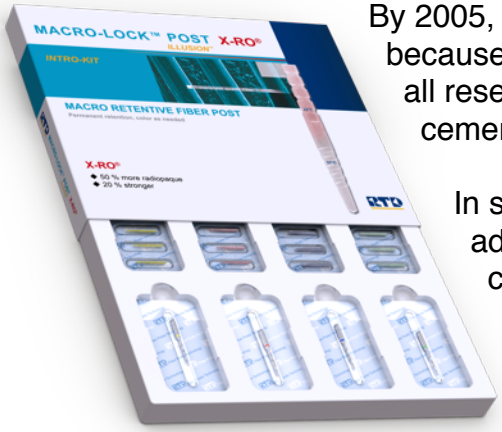
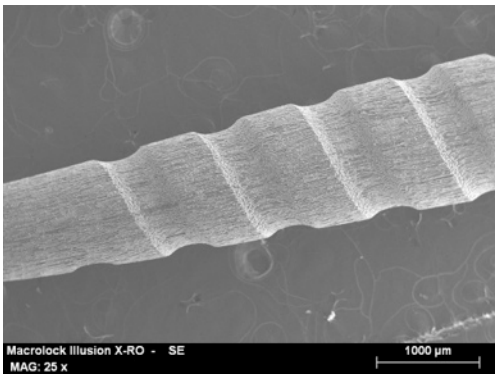
MACRO-LOCK DEVELOPMENT STORY
(see also: X-RO Development story)



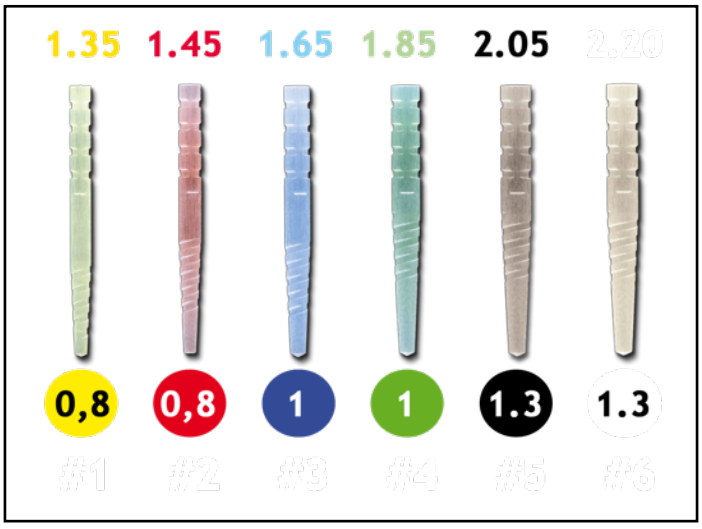
By 2005, the DT Light-Post was the most popular fiber post in the world, because of its Mechanical Properties and tapered anatomic shape. Most all research involved 4th and 5th generation adhesives and resin cements; current at that time.

In some parts of the world, dentistry was lacking in access to this adhesive technology, reliable curing lights and/or training, so the Macro-retentive style of post, reminiscent of prefabricated metal posts, remained the favorite among these dentists.



Research by Rovatti (2006) and Dallari (2008) with macro-retentive prototypes of the DT-style tapered shape, showed greater retention that their smoothe-surface counterparts. Later work by Baldissara (2009), and Ebert (2010) demonstrated that the **macro-**retentive post (Macro-Lock) offered better retention, even with more traditional cements (Glass Iomomers, RMGIs, self- etching and self - adhesive).

In 2009, RTD introduced the Macro-Lock Post, in 4 sizes. Two larger sizes were added in 2010. The Illusion color-on Command technology was also applied.



The post is designed with retentions in the coronal 5mm, which is parallel, and in 5mm of the tapered apical segment, but the post is at maximum thickness, and **without serrations** in the "neck" area. This is the segment where, when properly seated, most of the oblique stress is encountered, and maximum strength required.

After 24 years of experience creating fiber reinforced composites optimized for dentistry, RTD was uniquely qualified to create this new design.

However, the design is only the visible part of the story.

The special quartz fibers and new X-RO fibers are industrially coated, saturated with a proprietary, coupling agent- formulated for this application, to promote an exceptional bond between the tiny fibers and the epoxy resin matrix. The move from one fiber to the next generation was done without sacrificing Flexural Strength, (~1800 MPa) or Fatigue Resistance (>10 million cycles)