



Using Fibre Technology to enhance your Implant Treatment

Fibre strengthened composites and Implants—how technology can enhance your treatment protocol

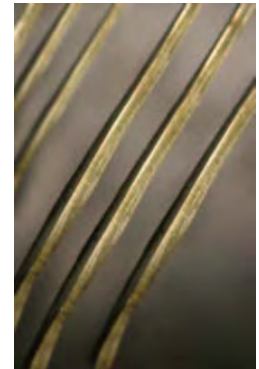
In 1990 Ladizesky published a paper describing the integration between fibres and dental resins. Goldberg and Burnstone achieved much stronger fibre frameworks (flexural strength values of up to 600 MPa) in 1992 when they embedded glass fibres in an acrylic resin monomer matrix. The major breakthrough in fibre strengthening of composite restorations came in 1994 when Vallittu embedded glass fibres in a polymer bis-GMA resin matrix (the very same matrix you will find in composite restorative material). He managed to obtain flexural strength values of up to 1350 MPa, the same values obtained by chrome cobalt denture alloy. Not only is it now possible to construct a fibre framework strong enough to withstand intra-oral forces, but it is also possible to bond these structures reliably to etched dentine and enamel, just as you would bond composite restorations, employing the same bonding materials and techniques.

For the Dental Implantologist this means that a fibre framework can be attached to teeth adjacent to a dental implant site with no preparation to these teeth at all. A composite tooth (or

teeth) can be built up on this sturdy framework, resulting in a fixed, strong, biocompatible, metal free and aesthetically pleasing pontic. It is also very cost-effective and such a prosthesis can be constructed either directly in the dental surgery or indirectly by a dental technician. There is no irritation of the gingiva surrounding the implant site during the healing process. The procedures are also completely reversible - you simply cut through the fibre framework and polish it smoothly employing the same procedures you would use in polishing any composite restoration. These new generation fibres are not woven or poly-ethylene, but glass, and can be polished as smooth as any composite. Fibre strengthened composite restorations add an important option in the provisional restorative phase, often the most difficult phase of the treatment.

Fibre strengthened composites can also be used in cases of delayed placing of implants because of monetary reasons, age of the patient, etc and in the construction of the final prosthesis: for instance strengthening overdentures and the manufacturing of implant-supported crowns or fixed partial dentures.

- Temporary Implant bridge
- What's new
- 'Make Over'
- Fibres and Implants
- Repair of a Directly Placed FRC Bridge



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IPN inside makes the difference



Temporization with everStick® C&B fibre strengthened composite

CASE REPORT

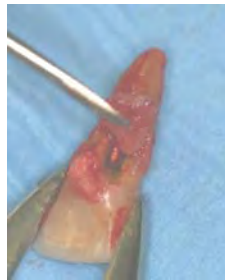
The 34 year old patient knocked out his upper left central incisor (11) when he was 18 years old. After RCT the tooth was replaced. Over time the tooth discoloured and a direct composite veneer was placed.



Pre-op

13 Years later the tooth became mobile and X-rays revealed massive internal resorption. The tooth was removed and an implant was placed.

Internal resorption



It was decided not to load the implant immediately but rather to manufacture a fibre strengthened direct bridge for the integration phase.

Placing the implant



After rubberdam isolation everStick® C&B fibres were bonded to the upper left central and on this sturdy cantilever structure a pontic was built with Z100™ composite.



Implant placed



Rubberdam isolation



Temporary bridge after 24 hours



Temporary bridge 10 days later

Eight months later the implant was fully integrated and a permanent implant-supported porcelain veneered to metal crown was placed.



everStick C&B fibre framework



Layering the composite



Healing abutment removed 8 months later



Temporary bridge immediate after placement



End result

'Simplicity is the ultimate sophistication' -
Leonardo da Vinci



What's new?



Separation after 3 minutes

TRIODENT V-Rings now available in South Africa through Stick Bond Dental

Fibres now available in smaller pack sizes!

We all know that the Rand has weakened substantially against the Euro over the last few months (>40%) and it unfortunately necessitated a price increase. The good news is that the fibres are now available in smaller pack sizes. This means that your layout costs are less, resulting in faster turnover of your money. everStick C&B and everStick Perio are now available in 5 cm, 12 cm and 24 cm pack sizes. Phone 028 271 5321 for prices.

Do not miss this lecture by Dr Klaas Visser!

**FROM COMPOSHITS TO COMPOSITES—
PRACTICAL TIPS TO CREATE WORLD-CLASS
RESTORATIONS IN YOUR PRACTICE.**

Topics include: layering made easy, tips on shade selection, understanding colour, strengthening large composites, choosing a composite, post-operative sensitivity and many more!

Details on dates and venues will be available soon



Training Events Calendar October-December 2006

October

- 9 Hands-on Training Durban
- 10 Hands-on Training Durban
- 11 Lecture Empangeni (SADA Northern Natal)
- 12 Hands-on Training Durban
- 14 Lecture DENTASA Pretoria
- 14 Hands-on Training DENTASA Pretoria
- 16 Lecture Direct Dental Rondebosch
- 19 Lecture Pinelands Cape Town
- 21 SADA Western Cape
- 23 Hands-on Training Johannesburg
- 24 Hands-on Training Johannesburg
- 25 Hands-on Training Springs
- 26 Lecture Johannesburg
- 28 Lecture Botswana

November

- 8 Hands-on Training Cape Town
- 10 Hands-on Training Cape Town
- 11 Hands-on Training Cape Town
- 17 NOMADS Johannesburg

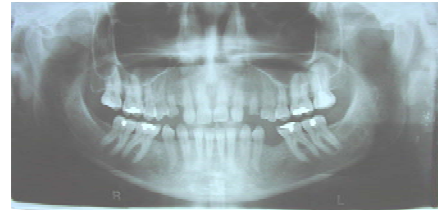
December

- 19 Hands-on Training Kleinmond

PLEASE DIARISE THE DATES NOW. Reminders will be sent out approximately 3-4 weeks prior to the lecture/training hands-on course.

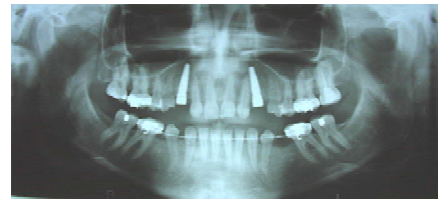


An Interesting Clinical Case: Semi-Permanent Fibre Reinforced Bridge



Pre-op: clinical photo's and panoramic radiograph

The patient visited the surgery 'to have her smile fixed'. On examination it was found that she had several congenitally absent teeth and a multi-disciplined treatment approach was decided on. The fractured and retained primary teeth were removed and implants were placed in the maxilla while orthodontic treatment was undertaken in the mandible, to reposition the teeth and create space for a permanent prosthesis.



Panoramic radiograph after placement of implants.

'Patients expect instant and aesthetic solutions even for very complex dental problems'

Veneer preparations were done on the anterior maxillary teeth. A semi-permanent cantilever bridge was manufactured using the indirect technique. Care was taken using enough fibres to maximize the strength of the bridge.



Veneers prepared

Laboratory phase



End result



Repair of a direct bridge

This elderly patient lost his upper central incisor when the root of his post-crown fractured. After atraumatic removal of the root, rubberdam was placed and a direct bridge was manufactured. 13 Months later the patient complained that the bridge was not feeling 'solid' anymore. On examination it was found that there was a fracture in the composite inter-proximal between the pontic and the supporting lateral retainer.

'Quality is not an act. It is a habit' - Aristotle



Original pre-op



Rubberdam placed after extraction

A shallow trench was prepared on the buccal side of the bridge and additional fibres were added. The end result was quite pleasing and the bridge is now 38 months old, lasting well.



Trench prepared (a), additional fibres placed in trench and secured with flowable composite as luting cement (b)



Comments, suggestions, contributions: please contact the editor, Dr Klaas Visser.

In retrospect it is clear that the rubberdam was not sealing properly and that some contamination took place during the manufacturing of the bridge. Although these procedures are very technique-sensitive, repairs are easy, quick and cost-effective.

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**THE MORE
FIBERS YOU
HAVE, THE
MORE
STRENGTH
YOU HAVE**



End result after repair with extra fibres

We are also on the web!
www.stickbond.com