

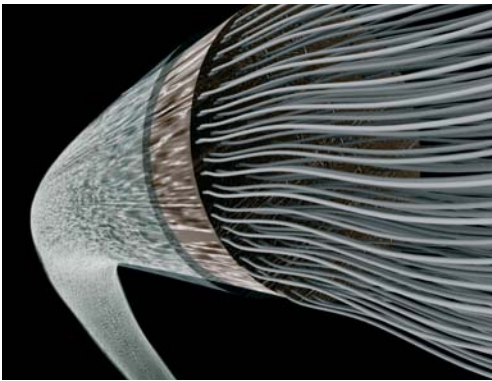
# Stick & everStick

## Laboratory Dentist

Guide to Stick Reinforced Constructions

*newdentaldimensions*

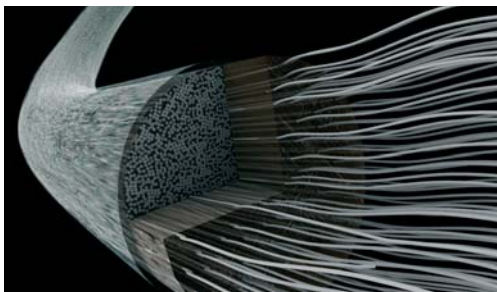
Stick, StickNET, everStick



Modern Dentistry Calls for

# Stick Fibre Reinforcements

- for minimally invasive dental care



This Guide introduces you to the advantages of laboratory-made Stick fibre reinforced restorations, prostheses and removable appliances.

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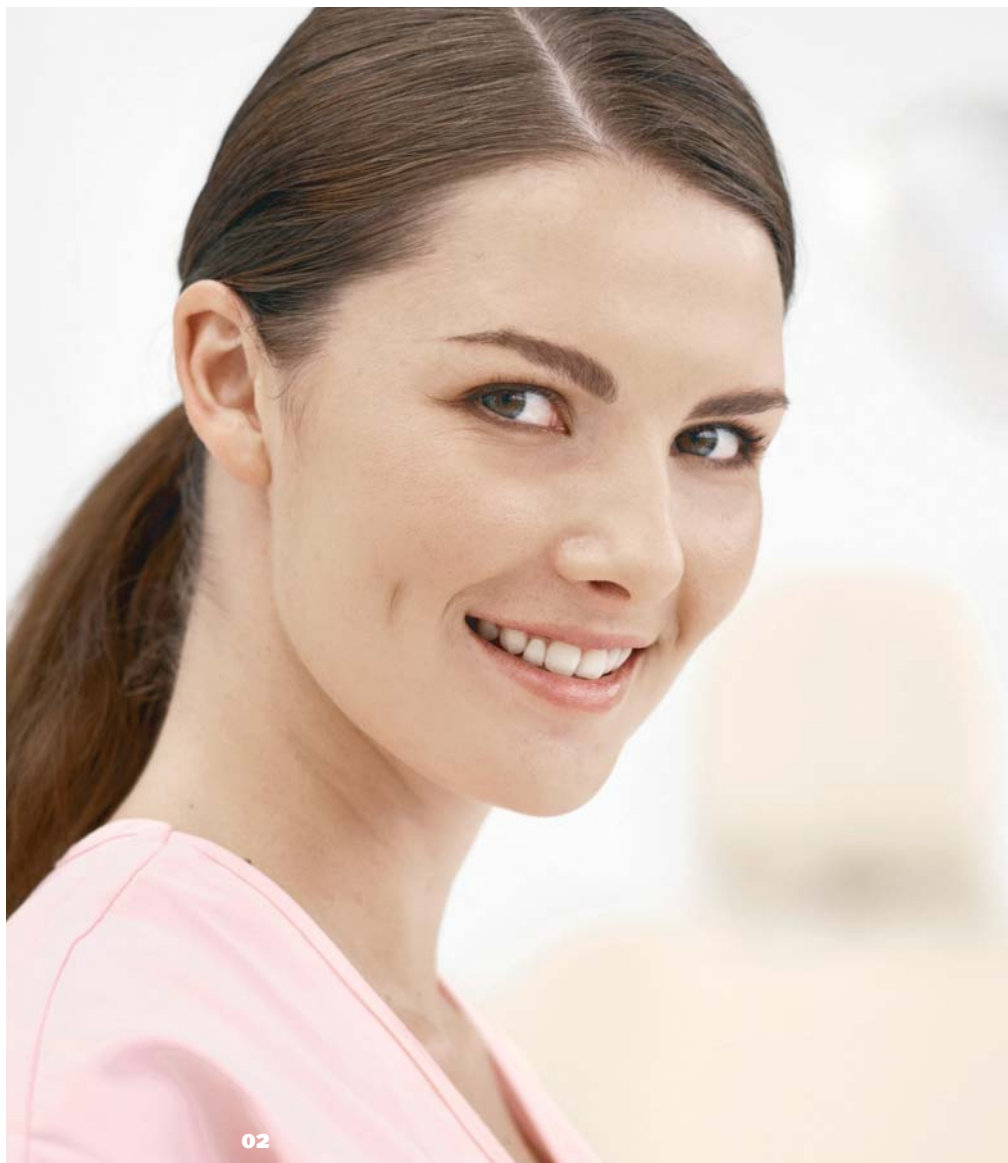
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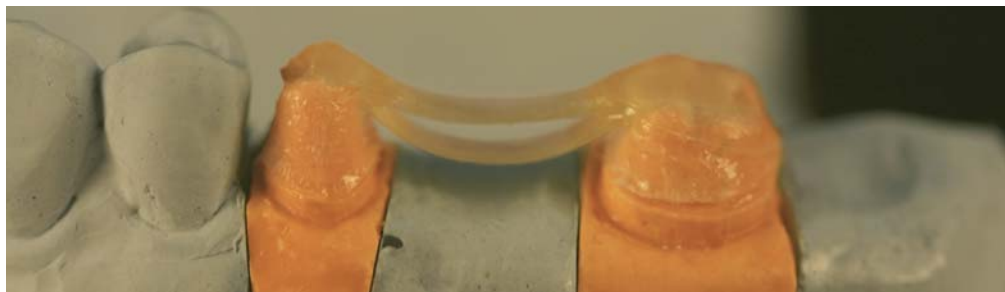
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Stick® fibres for laboratories:

**Stick®**  
**Stick®NET**  
**everStick®C&B**





## Benefit from your Laboratory's Expertise

### FOR THE ULTIMATE PATIENT SATISFACTION

Fibre Reinforced Composites (FRC) offer dentists an outstanding option for solving many different treatment needs - including those that have not been previously fulfilled due to the high cost or complexity of conventional treatment methods.

Stick fibre reinforcements provide a metal free alternative for strengthening most composite and acrylic laboratory processed constructions and appliances. With Stick reinforced restorations dentists can provide their patients with unparalleled aesthetics and comfort compared to the use of conventional prosthodontics.

### TRULY LONG-TERM DENTAL CARE

The use of fibre reinforced composites in dental care - for both young and old - never rules out other treatment options. As the mouth is a biological entity, where changes naturally take place over time, treatment methods should be reversible. This encourages minimally invasive treatment methods, where healthy tooth structure is saved for as long as clinically possible. Other treatment options still remain available should your patient ever need them in the future. Stick constructions provide your patients with truly long-term dental care.

### BENEFITS FOR THE PATIENT

For the patient, the strength and durability of Stick fibre reinforced constructions mean significant financial savings and less discomfort, while the need to repair constructions is minimised. This means less time-consuming visits to the dentist for adjusting and repairing the work.

### UNPARALLELED STRENGTH

According to long-term clinical and scientific research with the world's leading universities, Stick reinforced bridges are as strong - or even stronger - than traditional metal ceramic structures. Similarly, dentures reinforced with Stick fibre reinforced acrylics are shown to resist fracturing and breakages significantly better than when no reinforcements or other materials are used.

Hundreds of scientific articles have already been published on the use of fibre reinforced composites and Stick materials.

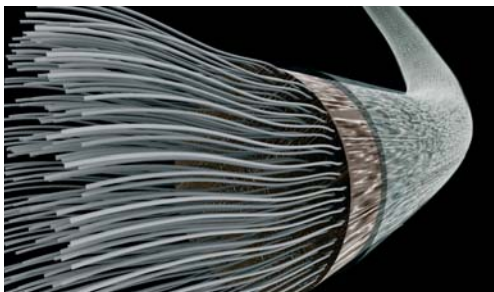
### EXCELLENT BOND STRENGTH

The bonding capability of Stick and everStick to composite resin, adhesive/composite cements and acrylic denture base materials has been shown to be excellent. The increase in bond strength is achieved by the unique Interpenetrating Polymer Network structure (IPN structure) within Stick polymer matrices.

### OUTSTANDING TECHNICAL PROPERTIES

Stick products are bondable to most resins and acrylics alike, even after final curing. This means you can make reliable surface retained restorations and repairs if necessary. This property clearly separates Stick and everStick products from all other materials.

IPN makes it possible to prepare reliable laboratory-manufactured surface retained restorations with Stick materials - this is not possible with any other FRC material.



## Stick Reinforced Crowns and Bridges

### REPLACING MISSING TEETH

Laboratory-made Stick bridges are an easy, reliable and aesthetic way to replace missing teeth.

With the unique patented IPN feature, found only in Stick fibres, it is possible to make minimal invasive, reliable surface-retained laboratory made bridges that do not debond. It has been shown that they can also be used in long-term solutions.

The latest studies show that bridges made of Stick fibres can be made at least as strong - or even stronger - than traditional porcelain-fused-to metal (PFM) bridges.\* Therefore Stick fibres are suitable for every indication where there is a need to replace missing teeth.

### TEMPORARY TO LONG-TERM SOLUTIONS

The reversibility of surface-retained laboratory-made Stick bridges make them a perfect choice when there is a need for transitional bridges, for example before implantology, during the healing period of implantology or after trauma. Often a laboratory-made Stick bridge is the best solution for young and elderly patients or when other options are contraindicated.

### FULL COVER CROWN TO SURFACE-RETAINED BRIDGES

Unlike traditional PFM bridges or full-ceramic bridges, Stick bridges do not require extensive tooth preparation. Using Stick fibres enables the use of different retainer types – even in the same bridge – and allows for minimally invasive preparation techniques, where healthy tooth structure is saved as much as possible. For example, it is possible to create space for the retainer by removing old fillings or to make completely surface-retained restorations. Surface-retained, inlay, onlay and full cover crown retainers can be used. All these retainer types can be used in the same bridge according to the clinical situation to create a hybrid bridge.

### ANTERIOR AND POSTERIOR APPLICATIONS

Laboratory-made Stick and everStick bridges can be used in both anterior and posterior areas. According to research data and clinical experience, the bridge frame structure can be optimized for both situations in order to achieve the strongest possible construction. As the latest research shows, these constructions can be even stronger than traditional PFM bridges.

\* **Scott R. Dyer: Fiber-reinforced composite fixed partial denture design.** Mechanical properties of the composite and load bearing capacity. Annales Universitatis Turkuensis, Ser.D Tom. 651, ISBN 951-29-2845-0, ISSN 0355-9483. Painsalama Oy, Turku, 2005.



1. Problem: A missing tooth
2. Solution:  
Surface-retained Stick bridge
3. Clinical situation after 7 years.



1.



2.



- 1. Stick surface-retained bridge
- 2. Stick inlay bridge
- 3. Stick hybrid bridge
- 4. Stick implant-supported bridge
- 5. Crowns
- 6. Post and core crown

3.



4.





## Laboratory-made

# Stick Reinforced Crown and Bridge Constructions

### WIDE RANGE OF INDICATIONS:

- **Bridges** • Temporary, transitional and long-term • Surface-retained • Inlay, onlay and full cover crown
- **Hybrid bridges** • **Implant-supported bridges** • **Posts and cores** • **Crowns** • **Veneers**

# Cementing Laboratory-Made Fibre Reinforced Restorations

### 1. PREPARE THE RESTORATION:

- Check that the fibres on the bonding surfaces of the frame are not covered with composite.
- Check that the construction fits properly.
- Roughen the attachment surfaces slightly with a carborundum stone.
- Rinse and blow-dry.
- Dissolve the roughened surfaces with resin for 5 minutes (protected from light) to activate the IPN bonding.
- Prior to cementation carefully blow the excess resin away and light cure a couple of seconds before cementing.
- Check that there is not a thick layer of resin left to ensure proper fitting of the restoration.

### 2. PREPARE THE TEETH:

- Remove the temporary protection.
- Clean, etch and bond the tooth surfaces according to the cement manufacturer's instructions.

### 3. CEMENTATION:

- Apply the cement.
- Cement the restoration (with dual cure or chemical cure luting cement).
- Remove the excess cement.
- Apply oxygen inhibiting gel on the margins.
- Light cure (dual cure luting cement)
- Check the occlusion and finish.



## Stick Reinforced Dentures

### REINFORCING AND REPAIRING DENTURES

Stick fibres are the best materials to reinforce and repair all types of dentures.

With the unique patented IPN feature found only in Stick Tech's fibres it is possible to get a reliable bond between fibres and denture base acrylic. Consequently the load bearing capacity of the reinforcement can be really utilized. No debonding between the reinforcement and denture base acrylic occurs, unlike with traditional reinforcement methods (metal). It has been shown that dentures reinforced with Stick Tech's fibres can be used for many years without any damage to the denture.

The latest studies show that denture base acrylics reinforced with Stick fibres are stronger than with other reinforcement fibres, and more than 100 times stronger than plain denture base acrylic.\* Therefore Stick and everStick fibres are suitable for every indication where there is a need to replace missing teeth with removable dentures.

### NEW DENTURE OR REPAIR

The IPN feature found in Stick, StickNET and everStick fibres make them the perfect choice with heat-polymerized and autopolymerized denture base polymers, processed using injection moulded or conventional methods. Both new dentures or repairs of old broken dentures can be reinforced with Stick Tech fibres. All new dentures without proper reinforcement, tend to break a few years after

manufacturing. When incorporating Stick reinforcement within a new denture the additional cost is only similar to the cost of one repair of a broken new denture.

When an unreinforced broken denture is repaired it is easy to reinforce it with Stick, StickNET or everStick C&B and no additional visit at the repair stage or additional repair later is needed. Reinforcing, relining and adding new teeth to the denture can be performed at the same time.

A denture with Stick fibre reinforcement is as aesthetic as a denture without fibres because of the transparent colour of the fibres.

### PARTIAL TO FULL DENTURES

Stick fibre reinforcements are suitable for both partial and full dentures. Just choose the best type of Stick fibre for the appropriate area and any type of denture base acrylic can be reinforced. When thin areas or clasp tags in the dentures are reinforced, thin StickNET is recommended to bring toughness to the structure. When more space is available, unidirectional Stick fibres are the best solution for reinforcing the denture.

### MANDIBULARY TO MAXILLARY DENTURES

There is no difference if Stick fibres are used in mandibulary or maxillary dentures. Stick Tech's fibres can be used to make both types of dentures resist fractures in midline, margin or in other areas of the denture.

\* Katja Narva: Fibre-reinforced denture base polymer. Clinical performance and Mechanical Properties. Annales Universitatis Turkuensis, Ser.D.Tom.630, ISBN 951-29-2762-4. Painosalama Oy, Turku, 2004.

**1.**



1. Broken maxillary partial denture
2. Solution: StickNET reinforcement
3. Maxillary partial denture repaired with StickNET



**2.**



**3.**



**1a.**



**1b.**



**2a.**



**2b.**



**1a.** Waxed new mandibular partial denture.

**1b.** Stick reinforced new mandibular partial denture.

**2a.** Maxillary denture with a midline fracture.

(Half of the new, unreinforced dentures tend to break within three years.)

**2b.** Stick reinforced maxillary denture.





Laboratory-made

## Stick Reinforced Dentures

### WIDE RANGE OF INDICATIONS

New dentures and repairs

1. Full dentures
2. Partial dentures
3. Implant-supported dentures
4. Clasp-tag areas
5. Orthodontic removable devices

## Prescribing Laboratory-made Fibre Reinforced Dentures and Restorations is easy:

1. Take the impressions
2. Order the restoration / prosthesis with Stick, StickNET or everStickC&B fibres
3. With dentures:  
Check the occlusion of the finished work.  
With fibre-reinforced restorations:  
Cement the finished restoration.



The laboratory will include a certified sticker indicating that original Stick fibres have been used in the prosthesis / restoration to guarantee the optimum outcome and durability of your work.



## The Unique IPN

The high bond strength of Stick, StickNET and everStick fibre reinforced composites is due to their unique Interpenetrating Polymer Network (IPN) structure.

Clinically this means that the surface of the fibre structure can be reactivated in order for it to bond reliably, when cementing laboratory-manufactured restorations to teeth, cementing root canal posts, layering composite on a fibre structure or repairing fibre reinforced restorations.

This unique IPN structure enables the production of minimally invasive, reliable laboratory-manufactured surface-retained restorations.



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