TENDER FIBER

TENDER FIBER

SILANIZED GLASS FIBERS, IMPREGNATED WITH LIGHT CURING RESIN

TENDER FIBER ORTHO

STABLE, LONG-LASTING & COMFORTABLE
For orthodontic applications

TENDER FIBER DUE

EASY TO APPLY AND DURABLE
For periodontal splinting

TENDER FIBER QUATTRO

RESISTANT, AESTHETIC AND ECONOMIC
For prosthetic reinforcement, composite or acrylic inlay bridges and prosthesis with fiber on implants

GRUPPO MICERIUM

Characteristics & Benefits

Characteristics	Benefits
• Tender Fiber Technology: oral applications without metal	• Tissue preservation • Easy to repair • Usable with most acrylics and composites • No preparation of tooth surface. • Less office visits needed • No additional investment required
• Bundle of unidirectional single rods of glass fiber 14 µm	• Very strong resistance to acid and alkaline substances • Higher resistance of finished product perpendicularly to fiber direction
• Fibers impregnated in light curing resin	• Ready to be used, fast application, reduced cost of treatment; no risk of fraying, during application or over time
• Fibers not only impregnated but also silanized	• Stronger chemical connection between fibers
• Filler 0,012 µm	• Increase of physical properties
• Same fluorescent resin used for Enamel plus HFO and Enapost	• Better chemical reaction with luting and restoration materials and excellent aesthetics
• Special slight sticky property	• Better connection of fibers with composite and easier oral application due to better adhesion to tooth walls
• No MMA solvent nor PMMA polymer are used	• No drying out of resin: No decrease of physical properties due to rewetting
• Available in 3 diameters: Ortho (0,8mm.) Due (1,3mm) Quattro (1,7mm.)	• Multifunctional: orthodontic and periodontal splinting, prosthesis reinforcement

Information & Warnings

Composition:

Glass fiber a-methacryloxypropyltrimethoxysilane
(2(3)-hydroxy-3(2)-4(phenoxy)propyl)-bis(methacrylate) (Bis-GMA)
highly dispersed silicone dioxide: mean particle size 0.012 µm

Side-effects:

Unwanted side-effects as a result of this medical product are highly unlikely if the product is used and processed correctly. We are, however, unable to rule out all types of potential allergic reactions or local paraesthesia. Should you experience any unwanted side-effects - even in case of doubt – please contact us as soon as possible. Any serious incident relating to the device must be reported to the manufacturer (Micerium S.p.A.) and to the competent authority of the Member State in which the user and/or patient is established.

Problems of indication and contraindication:

If a patient suffers from a known hypersensitivity towards one of our components, the product must not be used. Any known antibody reactivity, or problems our medical products might have with other materials already found in the mouth must be thoroughly considered by the dentist before use. Uncured resin could cause skin allergy: User should use gloves.

Use and storage

Wash gloves with alcohol to remove contaminating powder. **Store the product in the refrigerator at 3°- 8°C and for an easier manipulation take it out just immediately before using it.** Avoid direct light incidence or sunlight. Do not use the product after the expiration date (see label). Medical device, for dental use only: Keep away from children. After use, close container with cover and keep it closed.

Disposal:

Disposal of the medical device must be carried out in accordance with local regulations. Contaminated packaging can be disposed of, after cleaning, in the separate collection of rubbish in accordance with the identification symbols, if applicable (97/129 EC).

Curing information:

It's necessary to use a light-curing unit with a spectrum of 350 – 500 nm. The required physical values can be obtained only if the curing unit has an optimum light output. For this reason we suggest a periodical check of the light intensity following the manufacturer's instructions. Following some example of light curing time.

LIGHT CURING UNIT		CURING TIME	
		INTERMEDIATE	FINAL
DENTIST HALOGEN	• 600 mW	30 sec.	90 sec.
LED UNIT	• 800 mW	20 sec.	60 sec.
	• >1000 mW	10 sec.	40 sec.
LABORATORY UNIT	• LaborluxL	90 sec.	9 min.
	• Lampada plusT	10 min.	30 min.

ORTHODONTIC APPLICATIONS

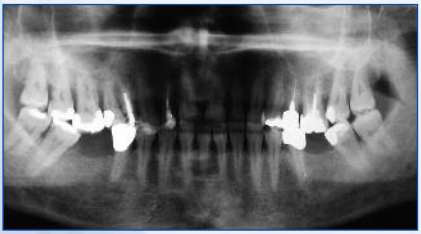
Clinical images courtesy of Dr. Eugenio Bolla

TENDER FIBER **ORTHO**

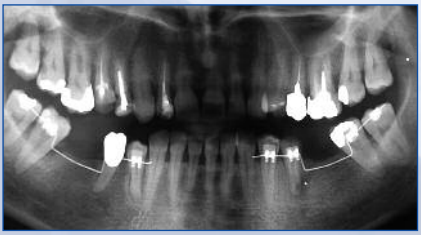
- Contents:1.600 glass fibers
- Diameter: 0,8 mm
- Length: 12 cm
- Fiber holder in silicone to be used for an easy application: measure, cut, apply, cure and check

NEW APPLICATION: AESTHETIC DENTAL ANCHORAGE

Anchorage in fiber on incisive anterior



Orthopanoramic before molar uprighting



Orthopanoramic to finish molar uprighting

INTENDED PURPOSE

The use as space-holders to protect tooth gaps and the use as orthodontic retainers to stabilize the tooth position after orthodontic treatments.

INTENDED USER

Dentist

BENEFITS

- Time saving / cost reduction
- Easy application
- One office visit without impression
- Similar elasticity to natural dentine
- Excellent adhesion to the tooth
- No fraying
- Excellent aesthetic, as invisible
- Ideal for long terms retentions and for patients allergic to metal
- Smooth, no irritating, easy cleaning
- No plaque infiltration

PATIENT TARGET GROUP AND MEDICAL CONDITION

Medical Device intended for patients who, being affected by malformations of the upper and lower jaw (mandible) and, in particular, by anomalies in the position of the teeth, have undergone orthodontic treatment, or by patients who have a loss or a removal, for iatrogenic or pathogenic reasons, of a tooth even in the deciduous. Patients who have been treated with devitalization of a tooth, and now need a dental restoration. Children 3-18 years (including deciduous teeth as space maintainer), adults 19-64 years, elderly 65- above, of any sex and condition.

INDICATIONS

orthodontic retainer and space maintainer

TRADITIONAL AND ALTERNATIVE APPLICATIONS

Clinical images courtesy of Dr. Eugenio Bolla

TRADITIONAL APPLICATION

Retainer: *it replaces the traditional retainer but it is fixed, comfortable and aesthetic.*

Space maintainer: *It is fixed and easier to place compared to a traditional maintainer.*

ALTERNATIVE APPLICATION

Glass fiber retainer in superiors: *aesthetic and comfortable. Check correct access to interproximal areas.*

Glass fiber retainer in inferiors: *finishing with rubber and diamond paste make easy oral hygiene (Case of Dr. Luca Pinoli).*

ORTHODONTIC CONTENTION

Clinical images courtesy of Dr. Eugenio Bolla

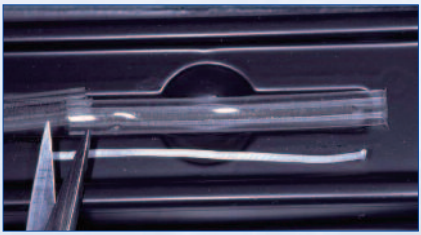
Remove wires and arches that could compromise the field isolation. Brackets don't interfere with rubber dam. Wash gloves with alcohol to remove contaminating powder.

Proceed with a teeth prophylaxis with a non-fluoride paste and apply the rubber dam placing the hooks distally to the group of teeth to be bonded.

Etch for 45-60 sec. with phosphoric acid the surfaces to be bonded with fibers. Wash and dry.

Apply EnaBond bonding brushing with applicator, remove the excess. Light cure 20-30 sec. each tooth.

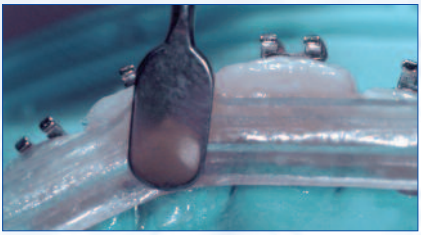
It's suggested to apply a thin layer of flow (especially in interproximal areas) before applying the fiber, ***without curing it.***



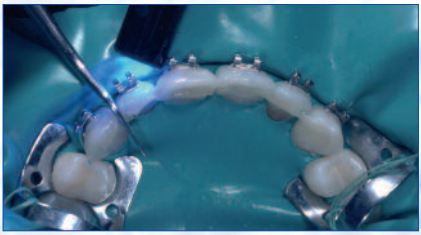
Measure the needed length and cut the fiber with the silicone like illustrated in the example. (Special scissors TFZ)

Instructions for use

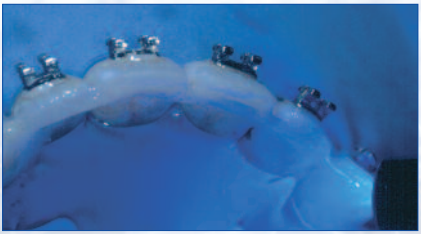
TENDER FIBER ORTHO



Apply the fiber on the teeth. It's possible to use the silicone containing the fiber pushing it directly on the teeth.



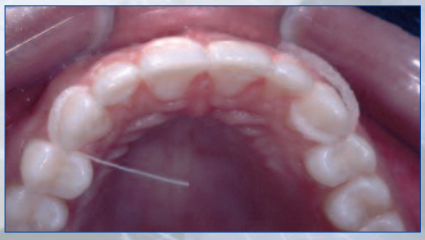
Light cure (see table page 3) first buccally through the interproximal spaces and then lingually (after removing the transparent silicone if used). Light cure for 10 sec. from the lingual side.



After curing completely the retainer, apply a thin layer of flow on the fiber. We suggest to apply very thin layer of flow and light cure it on each tooth for 20 sec. buccally and for 20 sec. lingually.

In case of lingual retainer place the fibers as closer as possible to the incisal edge. The entire fiber should be covered by composite in order to avoid risk of infiltration and for better aesthetic and patient comfort. Remove rubber dam.

Check protrusion, lateral and maximum intercuspidation movements, in areas where fibers have been applied. Finish and polish all surfaces with burs and rubbers or Enamel plus Shiny diamond pastes.



Check finally correct access to interproximal areas in order to allow a correct oral hygiene.

PERIODONTAL SPLINTING

Clinical images courtesy of Dr. Luca Pinoli

TENDER FIBER **DUE**

- Contents: 3.200 glass fibers
- Diameter: 1,3 mm
- Length: 12 cm

BENEFITS

- Easy application: measure, apply and light-cure
- One office visit
- Similar elasticity to natural dentine
- Excellent adhesion to the tooth
- Excellent aesthetic, as invisible
- Smooth, no irritating, easy cleaning

INTENDED USER

Dentist

INTENDED PURPOSE

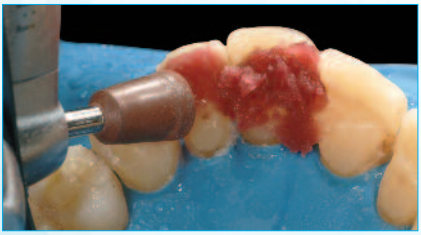
Production of periodontal splints to stabilize loose teeth.

PATIENT TARGET GROUP AND MEDICAL CONDITION

Medical Device intended for patients with periodontal problems. Children 6 - 18 years (permanent teeth only), adults 19-64 years, elderly 65 – above, of any sex and condition.

INDICATIONS

- Periodontal splinting



Cleaning
Proceed with teeth prophylaxis.

Etching
Etch for 30 sec. with Ena Etch phosphoric acid the surfaces to be bonded with fibers. Wash and dry.

Bonding and fibers measure
Apply Ena Bond bonding by brushing with applicator, light cure. Apply a second coat and cure again.

Fiber preparation
Measure the needed length and cut the fiber with the silicone like illustrated in the example. (Special scissors TFZ)

Instructions for use

Flow application
It's possible to apply a thin layer of flow (especially in interproximal areas) before applying the fiber, without curing it.

Fiber application
Place the fiber on the teeth. It's possible to use the silicone containing the fiber pushing it directly on the teeth.

Light curing
Light cure (see page 3) first buccally through the teeth and then lingually (after removing the transparent silicone if used).

Composite application
Apply a thin layer of dentine on the fiber and in interproximal area and light cure.

Finishing and polishing
Remove excess, finish and polish.

Finished case
Vestibular view that shows an excellent aesthetics.

TENDER FIBER QUATTRO

TENDER FIBER **QUATTRO**

- Contents: 6.400 glass fibers
- Diameter: 1,7 mm.
- Length: 12 cm.

INTENDED PURPOSE

Reinforcement of composite or acrylic (temporary or definitive) bridges, total, partial and and implant composite or acrylic prostheses, orthodontic appliances.

PATIENT TARGET GROUP AND MEDICAL CONDITION

Medical Device intended for patients
- that have a missing tooth and 2 adjacent healthy teeth or 2 adjacent teeth with inlay preparation,
- that need to do a full arch or partial prosthesis on implants in acrylic or composite without the use of metal framework,
- that have teeth prepared for prostheses that require a provisional

Patients who have been treated with devitalization of a tooth, and now need a dental restoration. Children 6-18 years (permanent teeth only), adults 19- 64 years, elderly 65-above, of any sex and condition.

INDICATIONS

- Adhesive (Maryland) bridges
- Composite or acrylic inlay bridges
- Prosthesis on implants
- Temporary bridges
- Reinforcement of total and partial prosthesis and orthodontic appliances

PROSTHETIC REINFORCEMENT

INTENDED USER

Dentist and dental technician

BENEFITS

- Easy application: measure, apply and light-cure
- No fraying: it can be easy cut after curing
- Similar elasticity to natural dentine
- Excellent adhesion to the tooth thanks to adhesive technique
- Excellent aesthetic, as invisible
- Good patient satisfaction: smooth, no irritating, easy cleaning

Instructions for use

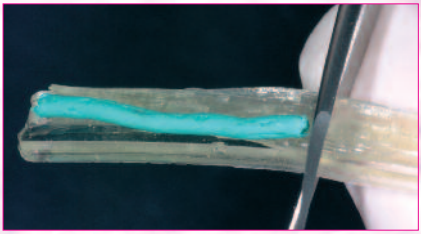
TENDER FIBER QUATTRO

ADHESIVE (MARYLAND) BRIDGES

In the case of transitional prosthesis or long temporary treatment, in individual cases it is possible to use Enamel plus HFO directly on composite resin impregnated glassfibers.

Clinical images courtesy of Mr. Daniele Rondoni

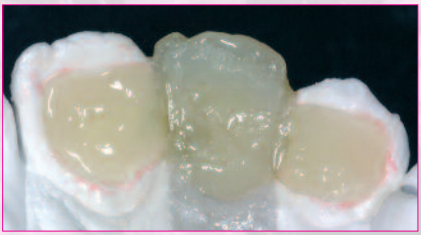
Fiber measure
Measure the needed length of fiber.



Fiber cut
Cut the fiber with the silicone if used for an easier application.

Fiber application
Isolate the plaster model using Temp Sep separator. Adapt the fibres with the silicone holder and fix using Enamel plus HFO Flow.

Light curing
Light curing (see page 3).



Composite stratification on glass fibers
Stratify and complete the morphology using Enamel plus HFO Tender system.

Finishing and Polishing
After polishing and removing the element from the model, sandblast the inside parts of the fibre veneers.

COMPOSITE OR ACRYLIC INLAY BRIDGES

In case of one missing element with two adjacent teeth with existing preparations, it's possible to build-up a fiber reinforced bridge on inlays-onlays.

Clinical images courtesy of Mr. Daniele Rondoni

Preparation and model casting
Prepare the inlays, take the impression and cast the model. Prepare a diagnostic wax-up for creating stents for dimension control.

Fiber diagnostic wax-up
Carve the wax-up until obtaining a framework to be realized with fibers TenderQuattro.

Tender Flask
Position the framework wax-up on the flask base with a 95 shore silicone (TEMPSILIC PUTTY).

Impression in transparent silicone
Take an impression into the cover of the flask with transparent silicone (TEMPSILIC CLEAR) in order to press the composite core reinforced by fibers.

Modellation of TenderQuattro fibers
Apply the fiber on the silicone on the Flask base, giving a upside-down saddle shape.

Light-curing
Push the transparent silicone contained in the box on the fibers, in order to let them adhere to the model and light cure them (see page 3).

Instructions for use

TENDER FIBER QUATTRO

Flow composite application
Fill up with fibers the missing element and add some flow composite.

Pressing of fiber core
Fill up the remaining part of the mold with composite dentine and close the Flask. Light cure for 5 min 30 sec.

Polymerized fiber
Put the fiber on the model and finish it before starting stratification.

Tender
Apply Enamel plus Tender body.

Dentine, opalescents and characterizations
Apply HFO dentine and eventually also opalescents and characterizations.

Enamel application, finishing and polishing
Build-up the Generic Enamel; cure, finish and polish.

LUTING

Remove the temporary appliance and clean the cavity. Try-in the appliance carefully and proceed with eventual corrections. Post-cure in an oven like LAMPADAPLUST for 9 min. Apply the rubber dam. Clean the surface of the preparation with alcohol and sandblast it. Etch the cavity and apply two coat of bonding, Ena Bond, without curing it. Sandblast the internal part of the composite appliance and clean it with alcohol; apply the bonding without curing it. Apply a small amount of Enamel plus HFO, Opalescent White or a light dentine (UD1, UD2 or UD3) in the internal side of the appliance to be luted, place it on the tooth and condense it mechanically or manually. Remove composite excess and cure for at least 80 seconds from each side of the tooth. Check the occlusion, finish and polish with Enamel plus Shiny system, using burs, strips and diamond pastes.

Note: in case of inlay thickness over 2 mm use a dual luting composite ENACEM (see instructions).

PROSTHESIS WITH FIBER ON IMPLANTS

Fibers can be used for implants reinforced prosthesis, with excellent aesthetics thanks to the composite build-up, but as a low cost solution. *Clinical images courtesy of Dr. Tiziano Testori*

Application of fibers on abutment
Apply fiber in direct contact to gum wax-up and fix it on the abutments.

Curing
Light cure the fiber (see page 3) after checking perfect fitting.

Wax-up
Prepare a wax-up in order to create a stent in transparent silicone for pressing composite in the Tender Flask.

Composite curing
Cure the dentine; do the enamel cuts, apply opalescents and characterizations and press the enamel.

Final curing
(see page 3)

Polishing

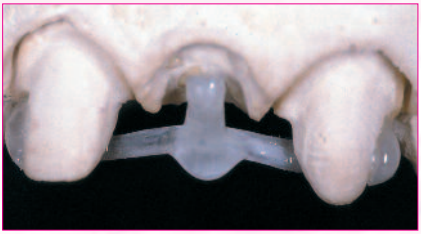
Instructions for use

TENDER FIBER QUATTRO

TEMPORARY BRIDGES

The choice of a temporary prosthesis in resin, or reinforced by an aesthetic structure in fiber, allows a long term treatment and is ideal for intermediate elements of large size.

Clinical images courtesy of Mr. Daniele Rondoni



Molding of fiber reinforcement
Apply the fiber lingual as incisal as possible, eventually with another longitudinal fiber at the level of the missing elements (see page 3).

Construction of the dentine core
Form a paste with the Enamel plus Temp resin of the required colour. While in its plastic phase apply to the model and also into the vestibular mask that is to be inserted into the model later.

Dentine curing
Cure the resin (Enamel plus Temp at 40°C 4 bar for 3 min.) and remove the stent.

Incisal cuts
Make incisal cuts for opalescent and intensive bodies.

Opalescence and characterizations
Apply opalescents and intensives with Enamel plus Temp light curing liquid. Light cure.

Application enamel, finishing and polishing
Pour the Enamel in the stents; cure, finish and polish.

TENDER FIBER ZERO Polyethylene Fibers

ORTHODONTIC APPLIANCES AND REMOVABLE PROSTHESIS

Description and intended purpose

Economic Polyethylene Fibers improve physical properties of acrylic removable orthodontic, temporary and prosthodontic appliances. Suitable also for dentures and orthodontic appliances repair. Tender Zero Fibers are made with high molecular weight polyethylene and are surface treated to achieve bonding capability that increases resin adhesion.

Patient target group and medical condition *Medical Device intended for patients that suffer of edentulism and need to do a full arch or partial prosthesis, or orthodontic appliance; that have teeth prepared for prostheses that require a short time provisional; that need to repair an acrylic prosthesis or orthodontic appliance. Children 6-18 years (permanent teeth only), adults 19- 64 years, elderly 65- above, of any sex and condition.*

Intended User *Dentist and dental technician*

Indications *Orthodontic treatment with removable appliances, short time temporaries (less than 1 month) for prosthodontic, dentures or partials.*

Instructions for use. *Tender Zero Fibers increase the strength of acrylic by more than twice their normal figure, reducing risk of fracture (Tensile strength of acrylic only 20,3, with Tender Zero Fibers 44,2); they consist of one single 17 meters cable of polyethylene fibers. Fibers should be cut to desired length.*

Orthodontic and removable prosthodontic appliances. *Saturate the fibres with monomer and then imbed them in a mixture of powder and liquid in aluminium foil; fit it in already prepared cavity below the acrylic teeth: after curing remove reinforcement from aluminium: place the cured reinforcement in the prepared area by relining it with self curing resin and complete the prosthesis.*

Temporary bridges. *Preparare a stent on a diagnostic wax-up. Saturate fibers with monomer and position them on the model dies or on implant abutments. Loose end of fibers may be tied in pontic areas to increase strength. Free ends could be stabilized to a pin and anchored in the model with cianoacrylate. Pour the resin by using the stent.*

Ref.	Description	
ATF11	TENDER FIBER ORTHO Glass Fiber for orthodontic treatments Length 12 cm. - ø 0,8 mm. (1.600 fibers)	1 pc.
TF21	TENDER FIBER DUE Glass Fiber for periodontal splinting Length 12 cm. - ø 1,3 mm. (3.200 fibers)	1 pc.
TF41	TENDER FIBER QUATTRO Glass Fiber acrylic & composite prosthesis reinforcement Length 12 cm. - ø 1,7 mm. (6.400 fibers)	1 pc.
TF01	TENDER FIBER ZERO Polyethylene Fiber economic, not impregnated for reinforcement of orthodontic, temporary & removable acrylic prosthesis	17 meters

GRUPPO MICERIUM

Micerium S.p.A.
Via G. Marconi, 83 - 16036 Avegno (GE) Italy
Tel. 0185 7887 880 • e-mail: hfo@micerium.it • www.micerium.com

CE 0123

File: XTENDERFIBERGB v2.3_2022-03