



Light-curing preimpregnated fibers
acrylic fiber reinforcement system

Instructions for Use



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For professional use only. Caution:
Federal (U.S.A.) Law restricts this device
to sale by or on the order of a dentist.

Description

FIBER FORCE® is a series of glass fiber pre-impregnated with light-curing methacrylate-resin (prepreg). FIBER FORCE® can be custom shaped and then polymerized by light curing. Designed for a dental office or a dental lab, easy-to-use FIBER FORCE® is incorporated into a removable denture to provide a solid and esthetic reinforcement. FIBER FORCE® is compatible with all types of methacrylate resins (self-cure, heat-cure, pressure-cure and microwaveable).

Indications

FIBER FORCE® is used for the structural reinforcement in the production or repair of removable dentures made from methacrylate resin. Different configurations and associated resins are available.

- FIBER FORCE® configurations are selected and used according to the application and space available.
- A corresponding pink resin is used in conjunction with the selected configuration(s).

Contraindications

Allergies to methacrylates
Side effects With the current state of knowledge, there are no known side effects.

Precautions

- Always wear gloves to avoid handling FIBER FORCE® with fingers: non-cured resin may irritate fingers and eyes.
- Sensitization from long-term exposure to the resin should not be ruled out as a possible hazard.
- Non-cured FIBER FORCE® should not come into contact with mucous tissues.
- Follow instructions in order to completely cure FIBER FORCE®.
- When cutting or grinding cured splints, wear protective glasses, masks, gloves, and use appropriate air evacuation: fiberglass particles may irritate skin. In case of irritation, discomfort may be relieved with mild soap and water (light rubbing).
- Once package is opened, FIBER FORCE® must be used quickly without exposure to light (sunlight as example): risk of premature curing.

Composition (% by weight)	preshaped fibers	resin in syringe
Glass fiber	45-55%	0%
Urethane dimethacrylate	30-40%	70%-85%
Triethylene glycol dimethacrylate	3-4%	8%-12%
Inorganic elements and pigments	4-5%	8%-12%
Catalysts/stabilizers	<1%	<1%

FIBER FORCE® Applications

A. Reinforcement of a methyl methacrylate removable denture: injection technique

- 1) It is necessary to anchor the FIBER FORCE® mesh to the plaster model so that the mesh will not move during the injection process. To accomplish this, make 2 small anchor holes in the center of the plaster model (2mm deep).
- 2) Apply a wax separator to the plaster model and the anchor holes. Allow to dry completely.
- 3) Heat and adapt a wax sheet (0.2mm – 0.6mm) to the model. Create 8 holes in the wax along the gingival crest and base of the model. These holes will be used to create cleats that are necessary for the proper spacing of the FIBER FORCE® mesh during the injection process.
- 4) Preventing exposure to light, overfill the 8 holes in the wax with FIBER FORCE® pink resin. Light Cure for 10 to 20 seconds to maintain stop integrity.
- 5) Preventing exposure to light, remove the FIBER FORCE® mesh from its blister package. Cut to approximate size with the protective film in place. Remove the protective film.
- 6) Place the FIBER FORCE® mesh over the wax on the model. Ensure that it is properly centered.
- 7) Place the model in the EZ VAC and adjust the height as indicated in the EZ VAC instructions. As per EZ VAC instructions, close the EZ VAC and use the vacuum pump to adapt the FIBER FORCE® mesh to the model.
- 8) Place the EZ VAC and model into a light curing unit and light cure FIBER FORCE®. Follow curing times listed below.
- 9) Remove the model from the EZ VAC. Remove the cured FIBER FORCE® mesh from the model and remove any remaining wax from the model and the mesh (boiling water/steam). Let dry completely.
- 10) Ensure that any spaces in the mesh are free of resin. If necessary, pierce openings with a hand tool.
- 11) As necessary, cut any unadapted parts of the mesh. For best esthetics, the mesh should be cut just before the intersection of the teeth – gingival margin. Use short, sturdy scissors. Set the mesh aside.
- 12) Pick up the model and apply a coat of wax separator using your usual technique. Let it dry completely.
- 13) Apply wax to the model using your usual technique. Place 2 injection sites next to the anchor holes. Continue flasking procedure as usual.
- 14) Before closing the flask, overfill in the anchor holes made at A1, with Pink FIBER FORCE® resin to ensure an excess.

- 15) Place the FIBER FORCE® mesh over the plaster model and in contact with the resin in the anchor holes; this must locally coat the mesh. As necessary add a few drops of resin over the mesh.
- 16) Light cure the FIBER FORCE® resin in a light curing unit, respecting the times indicated below. The mesh is now anchored to the plaster model.
- 17) Start the injection process with your usual methyl methacrylate resin, as per manufacturer's instructions.
- 18) Finish the denture as per your usual process. The FIBER FORCE® mesh must remain completely within the resin.

B. Reinforcement of a methyl methacrylate removable denture: press technique

- 1) Apply a wax separator to the plaster model. Allow to dry completely.
- 2) Heat and adapt a wax sheet (0.2mm – 0.6mm) to the model. Create 6 holes in the wax along the gingival crest and base of the model. These holes will be used to create cleats that are necessary for the proper spacing of the FIBER FORCE® mesh during the injection process.
- 3) Preventing exposure to light, overfill the 6 holes in the wax with FIBER FORCE® Pink resin. Light Cure for 10 to 20 seconds to maintain stop integrity.
- 4) Preventing exposure to light, remove the FIBER FORCE® mesh from its blister package. Cut to approximate size with the protective film in place. Remove the protective film.
- 5) Place the FIBER FORCE® mesh over the wax on the model. Ensure that it is properly centered.
- 6) Place the model in the EZ VAC and adjust the height as indicated in the EZ VAC instructions. As per EZ VAC instructions, close the EZ VAC and use the vacuum pump to adapt the FIBER FORCE® mesh to the model.
- 7) Place the EZ VAC and model into a light curing unit and light cure FIBER FORCE®. Follow curing times listed below.
- 8) Remove the model from the EZ VAC. Remove the cured FIBER FORCE® mesh from the model and remove any remaining wax from the model and the mesh (boiling water/steam). Let dry completely.
- 9) Pierce openings with a hand tool to ensure that any spaces in the mesh are free of resin.
- 10) As necessary, cut any unadapted parts of the mesh. For best esthetics, the mesh should be cut just before the intersection of the teeth – gingival margin. Use short, sturdy scissors. Set the mesh aside.
- 11) Pick up the model and apply a coat of wax separator. Let it dry completely.
- 12) Use your usual waxing and flasking procedure.
- 13) Before closing the flask, place the FIBER FORCE® mesh over the plaster model. Place your usual methyl methacrylate resin and press as per manufacturer's instructions.
- 14) Finish the denture as per your usual process. The FIBER FORCE® mesh must remain completely within the resin.

C. Repair and reinforcement of an existing removable dentures

- 1) Inspect the broken denture. If necessary, remove sharp edges.
- 2) Repair the denture following your usual procedure.
- 3) Create a groove along the inside arch of the denture at a 30° to 90° angle from the fracture, parallel to the teeth line (use a 1.5 to 2mm fissure bur).
- 4) Place FIBER FORCE® pink resin along the bottom of the groove.
- 5) Preventing exposure to light, remove a braid or UD fiber FIBER FORCE® from its blister pack, and use scissors to cut it to size while it is still in the protective film. Remove the protective film.
- 6) Place the braid or UD fiber along the base of the groove, ensuring that it is well incorporated into the resin. Several fibers can be incorporated to maximize reinforcement.
- 7) Completely fill the groove with FIBER FORCE® pink resin, ensuring that the fibers are completely covered. Overfill the groove.
- 8) Light cure the FIBER FORCE® resin in a light curing unit or by a handheld curing light. Ensure that curing times are respected (see below).
- 9) Finish and polish the denture using your usual technique. The FIBER FORCE® fibers must be completely covered by resin.

Note: Any self-cure methacrylate resin may be used instead of FIBER FORCE® resin. Place the braid or UD FIBER FORCE® fiber along the bottom of the groove. Polymerize it in a light-curing unit or using a hand-held curing light. Remove the hardened FIBER FORCE® and set aside. Apply the self-cure methacrylate resin along the bottom of the groove. Place the hardened FIBER FORCE® fiber into the groove. Cover the fiber with more self-cure methacrylate resin. Cure according to manufacturer's directions.

D. Reinforcing an extension of an existing partial denture

- 1) Create a groove along the inside arch of the denture, parallel to the teeth line, at the area proposed for the extension (use a 1.5 to 2mm fissure bur, 1 to 2mm deep).
- 2) Place FIBER FORCE® pink resin along the bottom of the groove.
- 3) Preventing exposure to light, remove a braid or UD FIBER FORCE® fiber from its blister package, and use scissors to cut it to size while it is still in the protective film. Remove the protective film.
- 4) Place the braid or UD fiber along the base of the groove, ensuring that it is well incorporated

- into the resin. Create a bow at the area where the extension will be made. This bow will solidify the area where the tooth will be added. Several fibers can be incorporated to maximize reinforcement.
- 5) Completely fill the groove with FIBER FORCE® pink resin, ensuring that the fibers are completely covered. Overfill the groove.
- 6) Light cure the FIBER FORCE® resin in a light curing unit or by a handheld curing light. Ensure that curing times are respected (see below).
- 7) Cover the bow with FIBER FORCE® resin; in the same operation, place and affix the tooth to the resin.
- 8) Light cure the FIBER FORCE® resin in a light curing unit or by a handheld curing light. Ensure that curing times are respected (see below).
- 9) Finish and polish the denture using your usual technique. The FIBER FORCE® fibers must be completely covered by resin.

E. Reinforcing a temporary bridge

- 1) Complete a temporary bridge using your usual method. Create a 1 to 2mm deep groove along the length of the occlusal surface (1,5 to 2mm fissure bur).
- 2) Place a light cure flowable composite resin or dual-cure "Bisacryl" resin along the bottom of the groove.
- 3) Preventing exposure to light, remove a 2mm braid white FIBER FORCE® fiber from its blister pack, and use scissors to cut it to size while it is still in the protective film. Remove the protective film.
- 4) Place the braided fiber along the base of the groove; ensure that it is well incorporated into the resin. Several fibers can be incorporated to maximize reinforcement.
- 5) Completely fill the groove with light cure flowable composite resin or dual-cure "Bisacryl", ensuring that the fibers are completely covered. Overfill the groove.
- 6) Light cure the FIBER FORCE® and the resin in a light curing unit or by a handheld curing light. Ensure that curing times are respected (see below).
- 7) Finish and polish the temporary bridge using your usual technique. The FIBER FORCE® fibers must be completely covered by resin.

Note: Any self-cure methacrylate acrylic may be used instead of FIBER FORCE® resin. Place the braided FIBER FORCE® fiber along the bottom of the groove. Polymerize it in a light-curing unit or using a hand-held curing light. Remove the hardened FIBER FORCE® and set aside. Apply the self-cure methacrylate acrylic along the bottom of the groove. Place the hardened FIBER FORCE® fiber into the groove. Cover the fiber with more self-cure methacrylate acrylic. Cure according to manufacturer's directions.

F. Reinforcing a diagnostic wax up

- 1) Apply a wax separator to the plaster model and allow it to dry completely.
- 2) Preventing exposure to light, remove a white braid FIBER FORCE® from its blister package, and use scissors to cut it to size while it is still in the protective film. Remove the protective film.
- 3) On a plaster model, wrap the braid around the middle of the bridge abutments, crossing the fibers between abutments.
- 4) Light cure the FIBER FORCE® resin in a light curing unit or by a handheld curing light. Ensure that curing times are respected (see below).
- 5) Create the diagnostic wax up using your traditional method, while incorporating the FIBER FORCE® fibers.

G. Fabricating fiber reinforced long-span temporary bridge

- 1) After try-in, place the wax trial bridge on the place model and make a silicone matrix as per your usual method. Set aside.
- 2) Preventing exposure to light, remove a white braided FIBER FORCE® from its blister package, and use scissors to cut it to size while it is still in the protective film. Remove the protective film.
- 3) On the plaster model, wrap the braided fiber around the middle of the bridge abutments, crossing the fibers between abutments. The fibers should be tight between the abutments.
- 4) Place a drop of light cure flowable composite resin on each cross. The resin should coat the junction between the 2 fibers.
- 5) Light cure the composite resin in a light curing unit or by a handheld curing light. Ensure that curing times are respected (see below).
- 6) While incorporating the FIBER FORCE® reinforcement, create the temporary bridge using the silicone matrix and your usual methacrylate resins for temporary bridges. Follow your usual method and cure as per manufacturer's instructions.
- 7) Finish and polish the temporary bridge using your usual technique. The FIBER FORCE® fibers must be completely covered by resin.

H. Intra-oral use to support natural teeth: lingual, periodontic and traumatic splinting

- 1) Examine the patient's inner and outer arches and make an outline of the intended splint area.

- Create a "blueprint" (using wax or other substance) to determine the length of splint required; set aside.
- 2) Clean all dental surfaces.
- 3) Position the dental dam and dry the dental surfaces.
- 4) Etch the dental surfaces with phosphoric acid, including proximal surfaces.
- 5) Rinse liberally, then dry. Surfaces should be dull and appear whitish.
- 6) Apply a dental adhesive to dental surfaces, including proximal surfaces; light cure the adhesive according to manufacturer's instructions.
- 7) Apply a very thin layer of flowable composite to the prepared surfaces.
- 8) Protecting it from bright light, remove FIBER FORCE® from its blister pack, and promptly cut through the protective film to the desired length (as per the blueprint designed in step 1) with scissors. Remove protective film
- 9) Apply FIBER FORCE® and progressively light cure sections, while protecting the unplaced areas from light exposure. The splint can be applied with a hand tool or by using a transparent celluloid strip. Follow the curing times indicated below for each section (curing light at less than 2mm from splint).
- 10) Apply a layer of flowable composite, completely covering the splint. Light cure according to manufacturer's directions. If necessary, fill in any mesial-distal gaps with composite and light cure again.
- 11) Polish.
- 12) Remove clamps and rubber dam. Control occlusal conditions.

Curing Times

Type of lampe	LED 5W light	Halogen, 1100mW/cm²	Halogen, 550mW/cm²	Xenon strobe light, 250mW/cm²	Neon, 6800mW/cm²	Mercury Vapor (Arc)
Required time	30 seconds	40 seconds	2 minutes	4 minutes	10 minutes	20 minutes

Note

Product reserved exclusively for dental usage. Keep out of the reach of children.

- Single use product.
 - Avoid exposure to light.
 - See the instructions.
 - Can cause skin allergies
- Store between 54°F and 86°F (12°C and 30°C), in its original closed packaging.

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