FiBER FORCE CST®

Light-curing preimpregnated fibers
acrylic fiber reinforcement system

Instructions for Use

SYNCA

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

Indications

FiBER FORCE® CST® 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® CST® 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® CST® 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® CST® should not come into contact with mucous tissues.
- Follow instructions in order to completely cure FiBER FORCE® CST®.
- 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® CST® 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%

Production of a non-removable denture with FiBER FORCE CST®

1) Install the selected titanium temporary cylinders onto the final working model using the procedures recommended by the cylinder supplier. Ensure the cylinders are sandblasted using aluminum oxide before they are installed; 110 microns or Rokatec is recommended.

2) Apply silane onto the temporary cylinders following the procedures recommended by the silane supplier.

3) Apply one coat of light cure adhesive primer (not included) to the temporary cylinders, light curing each for cylinder for thirty (30 seconds) after application, or light curing all cylinders at once by placing the model into a light curing oven for between 30 and 90 seconds depending on the light curing oven being used.

4) **Support Pillars:** Place two glass fiber pillars into the model approximately 10mm distally each from the most distal implant position on both sides of the arch. These can be glued into position using the FiBER FORCE® CST® Flow Pink light cure composite after a small retention hole is drilled into the model using an appropriate drill. These pillars will permit tension to be maintained while the cable runs described below are being made.

5) **Cable Run #1 - Horizontal cable:** Begin with the FiBER FORCE® CST® (1:6) hybrid fiber rope. Apply a drop of FiBER FORCE® CST® Flow Pink resin on the lingual surface of the support pillar, place the rope on the lingual surface of the support pillar, 1-1.5mm above the crest of the ridge, secure the rope to the pillar by quickly and carefully spot tacking it with a hand held curing light. (it is recommended to leave a 8-10mm tail on the end of the rope), the (1:6) fiber rope is now wrapped around the distal /posterior aspect of the support pillar, and wrapped around to the buccal surface in a parallel position to the crest of the ridge. The fiber rope is laid across the buccal surface of the first implant, circle around the implant cylinder in a mesio-lingual direction completing with a full wrap around the first cylinder which places the (1:6) fiber rope in a stacked position over the buccal aspect of the initial fiber rope. Continue in this manner until all of the implant cylinders and the support pillar on the opposite side of the arch have been wrapped with one run of fiber rope maintain the slight tension of the fiber rope throughout the procedure. Ensure the first cable run is at a low position on the support pillars and implant cylinders 1-1.5mm.

6) **Cable Run #2 - Mid-horizontal cable:** Repeat the Cable #1 technique by wrapping the support pillar in a 180° turn to continue back around the arch, maintaining a lingual position of the (1:6) fiber rope. The (1:6) fiber rope is oriented against the lingual surface of the implant cylinder and wrapped around each cylinder in the same manner, until reaching the support pillar in which the procedure was started.

7) **Cable Run #3 - Upper-horizontal cable:** Wrap the support pillar with 180° turn, this time the (1:6) Fiber rope is brought to an approximate 45° from the support pillar back to the buccal surface of the implant cylinder. Wrap all the implant cylinders with the technique used in step 5. Wrap the last implant cylinder and again position the (1:6) rope at a 45° angle and tack the rope to the support pillar with a drop of flow resin and secure with the curing light. This horizontal structure can be considered as the "bridge" for the framework.

Note: *The three "runs" of horizontal (1:6) fiber rope are made in one continuous run, maintaining an equal tension of all three runs. The fiber rope may be compressed with a tweezers or similar instrument as the runs are being placed to minimize the physical space that the CST® framework will occupy.*

8) **Cable Run #4 - Vertical Stay or Stringer Installation:** The bridge framework is now going to be secured and reinforced by applying a "Stay" or "Stringer" technique. The FiBER FORCE® CST® (1:4) compressible hybrid fiber rope is tacked in place on the support pillar using the same technique to secure the (1:6) rope to the support pillar. This procedure will be executed in a vertical direction, begin by wrapping the (1:4) fiber rope around the distal aspect of the support pillar to a buccal position using a tweezers or similar instrument bring the end of the rope under the bottom horizontal strand of the framework to the lingual side, in a continuous motion bring the (1:4) rope up and over the top horizontal strand of framework. Once again from the buccal side wrap under to the lingual. This procedure is continued until the horizontal framework has been wrapped vertically from one support pillar to the other on the opposite side of the arch. Upon reaching the second support pillar the technique is repeated back to the starting point, again using a buccal start going under the bottom strand to the lingual, up and over crossing (making an X) the first run of vertical "Stringer". This "over/under", "out and back" run of Stingers does not need to wrap around the implant cylinders. It is important to maintain a cross-over (X) of the (1:4) fiber rope, and consistent tension as the horizontal framework is wrapped in this vertical direction.

Note: *the horizontal framework strands can be compressed together using extra tension if a reduced VDO is indicated.*

Attention: Starting the stay/stringer run from the buccal side and coming under the base cable structure to the lingual side, then back over the top of the base cable structure and continuing in that manner across the full length of the base structure is the key to correct placement of the stay/stringer fiber.

9) The working model is now placed into a light curing unit to polymerize the FiBER FORCE® CST® fiber cable implant framework. Curing time will vary depending on the power of the light curing unit-usually from two to six minutes. It is not possible to over-cure the FiBER FORCE® CST® fibers, so when in doubt extend the curing time.

10) Using a bur or disc the pillars are cut at the base of the model so that the framework can be removed. The portion of the pillars left in the framework can be removed or left in place at the discretion of the technician.

11) Once light cured, the CST® framework can be tried in-mouth to verify the passivity of fit. If a passive fit is not obtained the framework must be sectioned and the correct alignment re-established using usual protocols and the framework re-made.

12) Once the fit is confirmed the finished CST® framework is now ready to be incorporated into the set-up of the definitive appliance. Cured FiBER FORCE® CST® fibers can be boiled out with water or steam without causing any damage to the framework. Applying a thin layer of silane to the fibers after boil out is recommended.

13) The preferred processing technique can be used by the technician to complete fabrication of the appliance.

14) When light curing FiBER FORCE® CST® fibers, Flow composite, and Bond resin please note that any VLC (Visible light curing) or LED unit can be used.

Curing Times

Type of lamp	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.

54°F (12°C) 86°F (30°C)

FiBER FORCE® CST®
Store between 54°F and 86°F (12°C and 30°C),
in its original closed packaging.

Limitation of liability

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