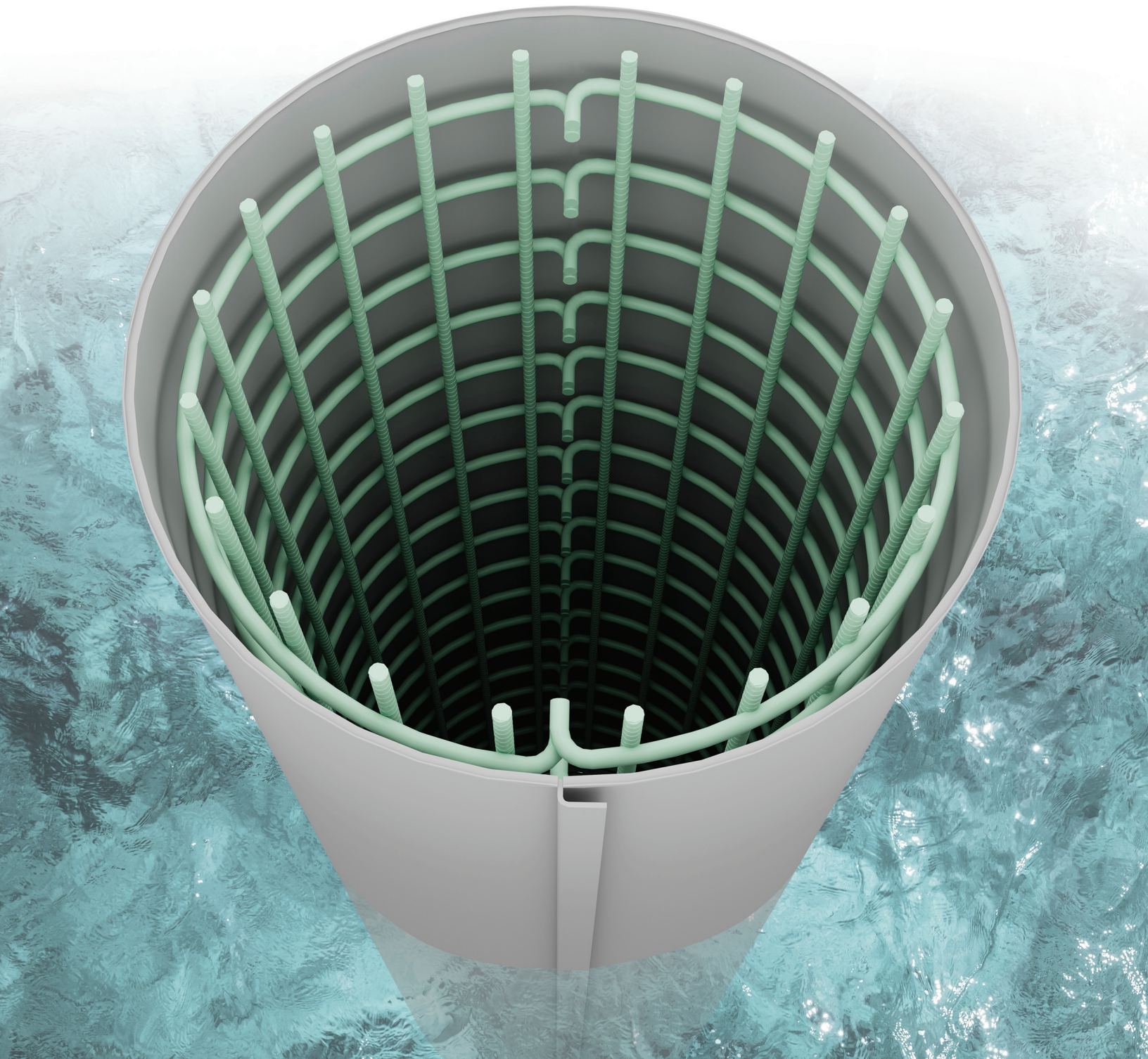
MST PILE REPAIR KIT

FOR PIERS, PILES, COLUMNS AND BEAMS



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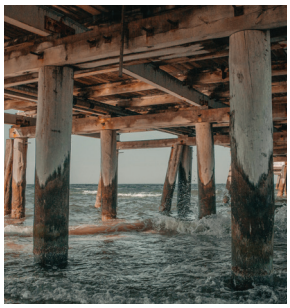
In marine situations, piles made of steel, concrete, and wood frequently sustain structural deterioration at the waterline. The lifetime of these structures is impacted by a variety of elements, including tidal, movement, river current, saltwater exposure, chemical intrusion, floating debris, marine borers, electrolysis, and general deterioration.

The MST Pile Repair Kit is a system that combines non-corroding fiberglass rebar inside a high strength fiberglass outer jacket with a pigmented resin surface coat to include ultraviolet inhibitors. When filled with concrete, the MST Pile Repair Kit provides protection to all pile materials including concrete, timber and steel piles. MST Rebar Inc. provides the necessary assessment, engineering and training for proper installation and quality control.

Contact MST Rebar Inc. for information on how the MST Pile Repair Kit can assist with the protection and preservation of Underwater piles, bridge piles, columns, poles and beams.

Concrete



Timber

Steel

Assessment

MST Rebar Inc. will complete a thorough assessment of the project and ensure appropriate studies for a suitable solution for your application.

Engineering

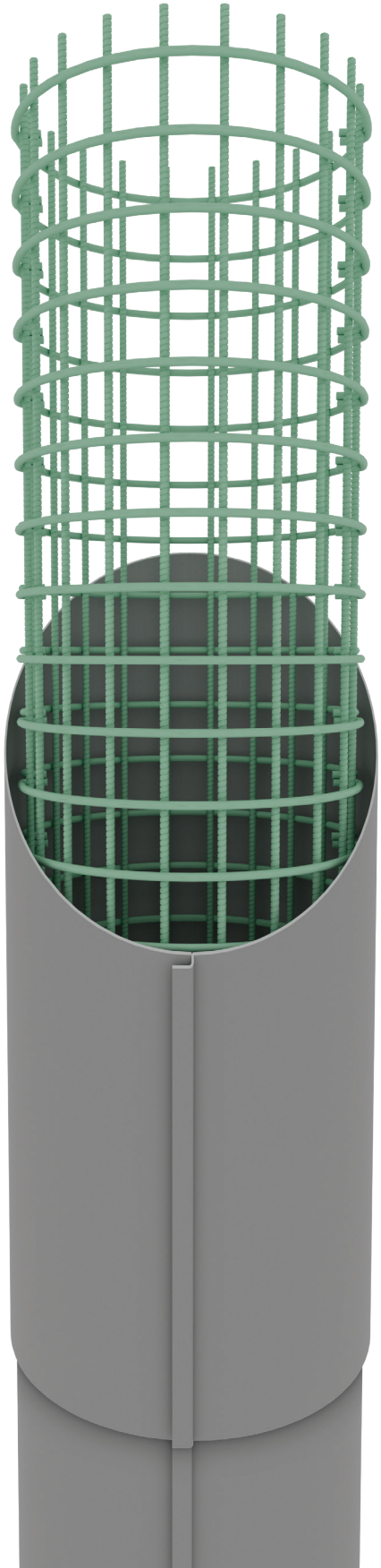
The team of engineers at MST Rebar Inc. will provide site-specific drawings unique to your project requirements.

Manufacturing

The MST Pile Repair Kit fiberglass rebar and protective shell are custom manufactured for your specific project needs.

Training/Support

Along with all the components for the rehabilitation, MST Rebar Inc. provides all the proper installation procedures and instructions to ensure a successful and completed project.



MST Bar - Fiberglass Rebar

MST-BAR is a Glass Fiber Reinforced Polymer (GFRP) Rebar. It is the only GFRP Rebar that is an integrally ribbed maximum strength rebar. Steel Rebar oxidizes in concrete which creates rust cancers. The oxidation process causes the rebar to expand which results in the cover concrete to spall, leading to failure. Fiberglass is less susceptible to biofouling.

Unlike steel which reacts and degrades when exposed to high alkali pH levels, MST Rebar remains intact with nearly no change in tensile strength. Tests show MST Rebar fiberglass rods maintained 90% residual tensile strength after being exposed to 12.7 pH levels at 60° Celsius for 120 days.

Light Weight
75% lighter compared to steel rods

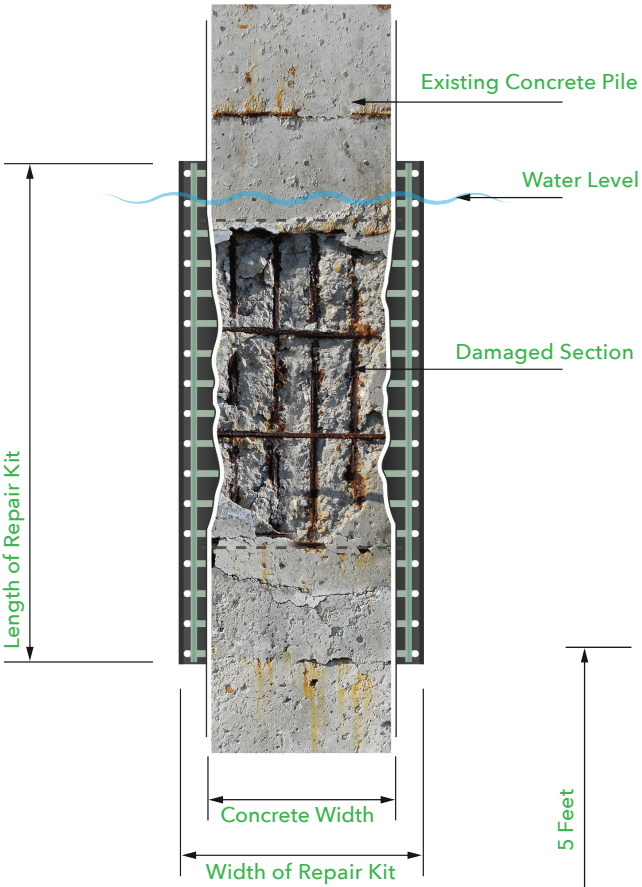
Stronger
3X stronger compared to steel rods

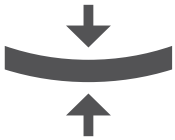
Non-Corrosive
Exposure to salt water, coastal winds or road salt with no effect

Green Solution
Manufacturing of MST GFRP uses a smaller carbon footprint than steel

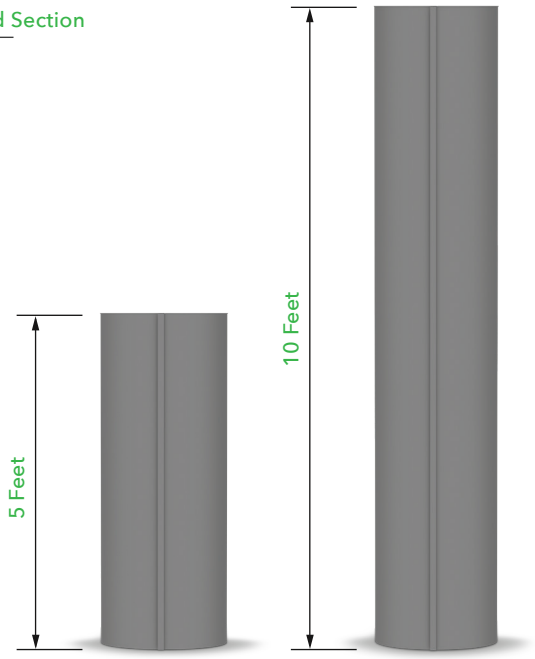
No Diver Needed
Kits clip together around the column and stack vertically without a diver being needed

Economical Solution
Rehabilitate instead of replacing your existing structure





1⁄8" - 3⁄8"
Shell Thickness



* Custom lengths available

10" - 100"
Diameter

With diameters from 10" up to 5', there is a repair kit for any job.

Compliance and Certifications

S807/S806 D7957 440.11-22

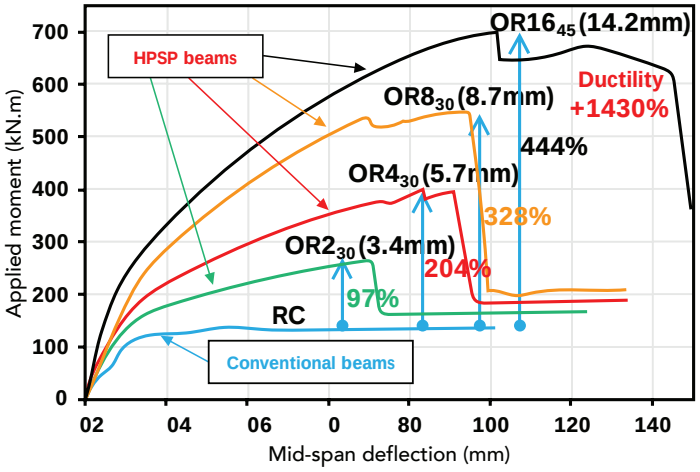
HPSH Inc. & MST Rebar Inc. partnered to optimize the design and manufacturing process of high performance structural elements, which include: beams, columns, piers, utility pole concrete foundations, poles, and other custom products.

HPSH is a manufacturer of high-performance products using patented technology. In addition to the design and manufacturing of structural products, HPSH has a strong R&D vision to remain at the cutting edge of technology and to develop high-quality products that meet the needs of the construction industry. These innovative, high-end structures are composed of a reinforced concrete cast inside a outer fiber-reinforced polymer (FRP) tube. The outer tube made of composite materials provides the concrete with a confinement that increases its resistance to compression and prevents it from cracking prematurely.

Advantages of HPSH Structures

- Lighter, stronger and more durable structures
- The optimal and environmentally friendly solution for several applications
- Much less CO2 footprint
- Elimination of the operations of fabricating the formworks and installing/removing the temporary formworks
- Steel reinforcement (stirrups) and associated costs (shaping and placement) are eliminated
- Concrete and steel reinforcement are protected from any aggressive environment
- Help save lives in seismic regions and in areas susceptible to explosions
- Possible use of recycled material in concrete due to increased strength
- Despite the benefit of much longer durability and service life (2 to 3 times longer than conventional structures), HPSH products are competitive at the initial cost level

Flexural test setup



HPSH flexural performance versus conventional beams (Fully filled)

U.S. Patent No: 9,637,923 Canadian Patent (CA 2,928,252)

www.structures-hpsh.com

www.mstrebar.com

MST Rebar Inc.
200A Hanlan Road,
Toronto, ON, Canada L4L 3R7
Phone: 416-740-0377
Toll Free: 1-855-740-0377