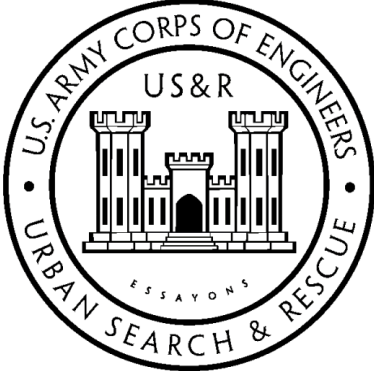


The US Army Corps of Engineers and FEMA's Urban Search and Rescue Program have singled out PileMedic™ as *the only system* for fast repair of columns and piles that are damaged in a disaster such as hurricane, earthquake, terrorism, etc. The detailed instructions for how to install PileMedic™ carbon laminates are shown on pages 4-4 and 4-5 of the 7th edition of the Field Operations Guide (FOG) shown below.

U.S. Army Corps of Engineers
Urban Search and Rescue Program

Urban Search & Rescue
Structures Specialist

FIELD OPERATIONS GUIDE



7th Edition, 3rd Printing
 June 2013

US&R STRUCTURES SPECIALIST FOG
REPAIRS, FAQ, and GLOSSARY

NON-CONTACT FIBER WRAPS

Repair/Retrofit Method: Grout Filled Fiber Plastic Shell

Grout Filled FRP Shell: used as a high strength, grout filled form around damaged members. Used for: column confinement; column reinforcing; member stabilization; & component strengthening.

Manufacturers:
 Quake Wrap
 www.pilemedic.com
 (520)791-7000

Applications
 This grout filled, custom formed FRP Wrap can be applied to damaged steel, concrete or wood members, spalled concrete regions to maintain residual strength or increase strength.

Considerations/Limitations
 Competent Professional Engineer is required for use.
 Manufacturer input is essential for application and use.
 FRP cylindrical shell can be fabricated, in-place, to any reasonable size. Wrap is available in 4ft wide rolls.
 Must have access to all sides of damaged structure.

Application Procedure
 Determine the required diameter and height of the shell.
 Cut a strip of the wrap material to be the desired height, and about 7 times the desired diameter (allows for a double wrap plus 8"(150 mm) overlap.
 Use a trowel to apply the special 2-part, paste, epoxy to the outer 60% length of the wrap, prior to installation. (note that a similar system using water activated epoxy bands is under development)
 Form the wrap into a cylindrical shell around the damaged structure as a double wrap plus about 8".
 Temporarily hold the cylinder's shape using nylon ratchet straps in at least two locations within its height. The cylinder may touch the damaged structure at the corners, but it is better if there is at least 1/2" clearance.
 Mix and place high-strength, non-shrink cementations grout. Pressure of the grout will tighten the wrap layers. Depending on grout, cure time could be 4hrs or more.

4-4

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Installation Sequence:

1. Trowel on 2-part epoxy.
2. Initially place FRP cylindrical shell.
3. Adjust the shell so the 2 layers are in contact.
4. Place ratchet straps to temporarily hold the shell's shape.
5. Mix and pour the non-shrink grout, and use small vibrator or rod to consolidate.

4-5

The above document is available online at the library in www.disasterengineer.org or here <http://tinyurl.com/pilemedic>