

PermaWrap™



"The Next Generation Repair System" **Tested and Proven at the EXTREMES**

- *D.O.T./CSA/ASME PCC-2/ISO TS-24817 Compliant • No Shutdown*
- *No Hot Work • No Heavy Equipment • 30 Minute Installation*
- *"Smart Pig" Detectable • Diamond Lock Technology*



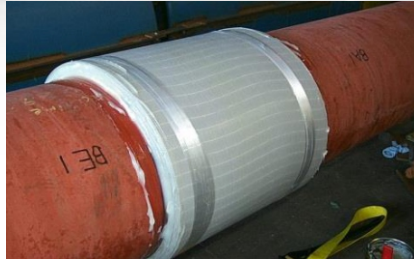
Composite Solutions for Piping and Structures
2701 State Highway 322 Longview, Texas 75603

AN ADVANCEMENT IN PIPE REPAIR

Defect – 6.5" x 6.5" x .300" Deep



Completed Installation



Pipe Body Failure @ 4,260 psi



PermaWrap™ Kit:

- ◆ PermaWrap™ Composite Sleeves – use a superior laminate construction with proven materials to form a high tensile strength rigid “magnetically detectable” fiberglass wrap for the PERMANENT structural reinforcement of external defects to 80% wall loss.
- ◆ Two-part proprietary Adhesive System used to bond the PermaWrap™ Sleeve to the pipe surface and to composite layers to form a monolithic structure.
- ◆ Two-part proprietary high compressive strength Putty used to fill all cavities and tented areas to ensure a “load-transfer” path from the pipe surface to the PermaWrap™ Sleeve.
- ◆ Installation Accessory Kit provides all items to properly apply the PermaWrap™ System with minimal additional tooling.
- ◆ The PermaWrap™ System Repairs 4" thru 60" Diameter Piping.
- ◆ The PermaWrap™ Kit comes in a standard widths of 12 but other built to widths - 6", 9", 15", 18" are available for custom runs"
- ◆ Manufactured under US Patent # 6,774,066

Repair:

- ◆ Corrosion Defects
- ◆ Blunt Dents and Gouges
- ◆ Vertical & Horizontal Piping
- ◆ Corrosion at Pipe Supports

Testing:

- ◆ Cyclic Fatigue to 120,000 Cycles
- ◆ Dent Fatigue to 305,000 Cycles
- ◆ Adhesive Bond Testing
- ◆ Tensile Strength Evaluations
- ◆ Compressive Strength Evaluations
- ◆ ASME PCC-2 / ISO TS-24817 Compliant

Material Properties:

Set Time	2 Hours @ 75°F-24°C
Max Operating Temperature	225 °F/107°C
Tensile Strength	90,000 psi
Tensile Modulus (psi)	5.0 msi
Flexural Strength (psi)	12,000 psi
Flexural Modulus (psi)	4 msi
% Elongation @ 77 °F – Composite	1%
% Elongation @ 77 °F – Adhesive	40%
% Elongation @ 77 °F – Putty	<1%
Lap Shear Strength @ 140 °F – Adhesive (psi)	1,082 psi
Compressive Strength @ 140 °F – Putty (psi)	8,772 psi
Hardness – Shore A Top Coat and Back fill	30-40

For more information visit us at: www.wrapmasterglobal.us or email us at: sales@wrapmaster.us

