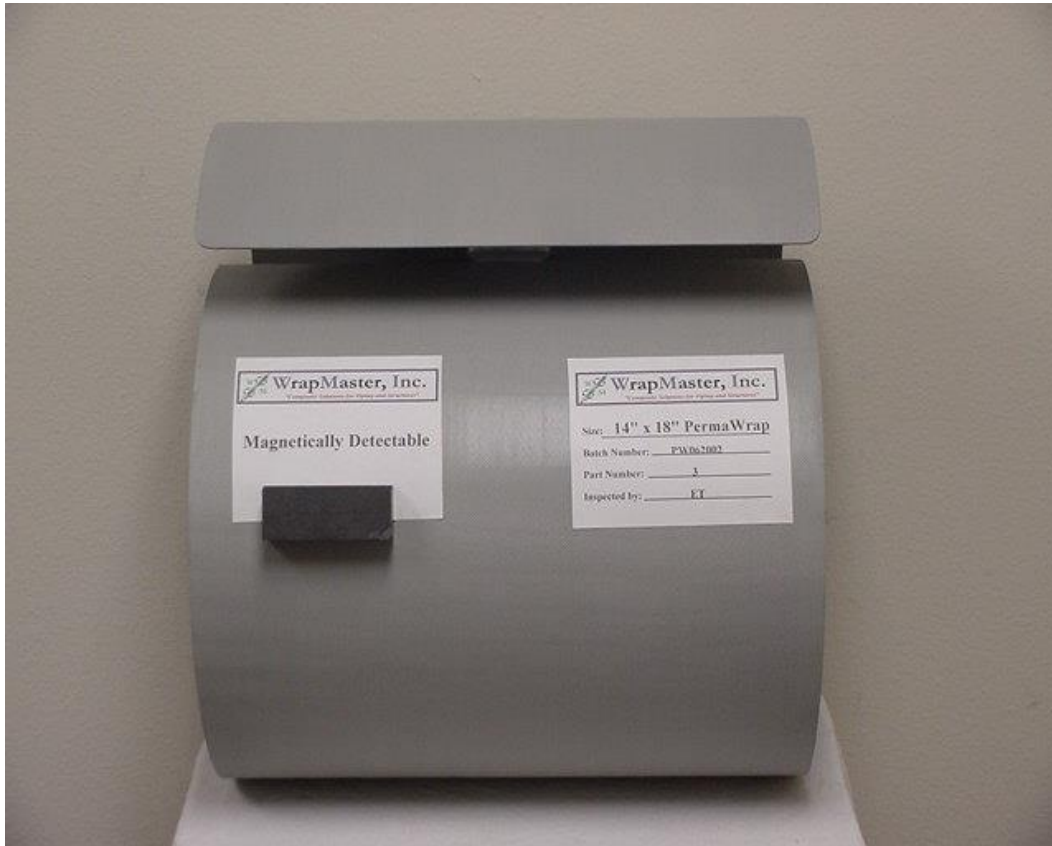


PermaWrap™



“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*



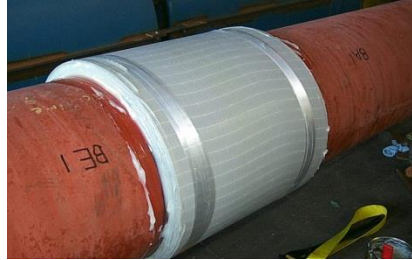
Composite Solutions for Piping and Structures
2701 State Highway 322 Longview, Texas 75603

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 five (5) standard widths - 6", 9", 12", 15" & 18".*
- ◆ *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:

<i>Set Time</i>	<i>2 Hours @ 75°F-24°C</i>
<i>Max Operating Temperature</i>	<i>225 °F/107°C</i>
<i>Tensile Strength</i>	<i>90,000 psi</i>
<i>Tensile Modulus (psi)</i>	<i>5.0 msi</i>
<i>Flexural Strength (psi)</i>	<i>12,000 psi</i>
<i>Flexural Modulus (psi)</i>	<i>4 msi</i>
<i>% Elongation @ 77 °F - Composite</i>	<i>1%</i>
<i>% Elongation @ 77 °F - Adhesive</i>	<i>40%</i>
<i>% Elongation @ 77 °F - Putty</i>	<i><1%</i>
<i>Lap Shear Strength @ 140 °F - Adhesive (psi)</i>	<i>1,082 psi</i>
<i>Compressive Strength @ 140 °F - Putty (psi)</i>	<i>8,772 psi</i>
<i>Hardness - Shore A@ Top Coat and Back fill</i>	<i>10-15</i>

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