



STANDARD I-WRAP SYSTEM

FAST FACTS	PHYSICAL PROPERTIES																																																																													
<ul style="list-style-type: none"> The I-Wrap system is a uniquely designed high performance Fiber Reinforced Polymer Composite that consists of a 100% solids, high build epoxy primer, a 100% solids epoxy wet out resin, and carbon fiber fabric. The primer provides excellent adhesion to a variety of substrates while allowing a sag free application at high film builds. The wet out resin is designed to thoroughly wet out the fiber forming a composite matrix with a very high flexural modulus. <p><u>Advantages</u></p> <ul style="list-style-type: none"> Rapid development of physical properties with ambient cure. No post cure required. High Tensile Modulus and Strength 100% Solvent-Free, Zero V.O.C. Low temperature cure down to 40°F (4°C). Fully trained application specialists Full contract support services, if required ISO 9001 Design and Manufacture certified 	<table> <tr> <td></td> <td><u>Primer</u></td> <td>-</td> <td><u>Wet Out</u></td> </tr> <tr> <td>Color</td> <td>Steel Blue</td> <td>-</td> <td>Clear</td> </tr> <tr> <td>Working Life – 68°F (20°C)</td> <td>30minutes</td> <td>-</td> <td>15minutes</td> </tr> <tr> <td>Dry Times – 68°F (20°C)</td> <td>5 Hours</td> <td>-</td> <td>4 Hours</td> </tr> <tr> <td>% Vol Solids (ASTM 2369)</td> <td>100</td> <td>-</td> <td>100</td> </tr> <tr> <td>Shore D Hardness (ASTM D2240)</td> <td>80</td> <td>-</td> <td>85</td> </tr> <tr> <td>Mix Ratio</td> <td colspan="3">Pre-measured</td> </tr> <tr> <td>Flash Point</td> <td colspan="3">> 200°F (93°C)</td> </tr> <tr> <td>Storage Life</td> <td colspan="3">Twelve months when stored in original sealed containers, between 50-77°F (10-25°C)</td> </tr> </table>		<u>Primer</u>	-	<u>Wet Out</u>	Color	Steel Blue	-	Clear	Working Life – 68°F (20°C)	30minutes	-	15minutes	Dry Times – 68°F (20°C)	5 Hours	-	4 Hours	% Vol Solids (ASTM 2369)	100	-	100	Shore D Hardness (ASTM D2240)	80	-	85	Mix Ratio	Pre-measured			Flash Point	> 200°F (93°C)			Storage Life	Twelve months when stored in original sealed containers, between 50-77°F (10-25°C)			<table> <tr> <td></td> <td>Composite (two ply)</td> <td><u>Bidirectional</u></td> <td><u>Unidirectional</u></td> </tr> <tr> <td>Tensile Strength (psi) (ASTM D3039)</td> <td></td> <td>55,200</td> <td>118,200</td> </tr> <tr> <td>Tensile Modulus (psi) (ASTM D3039)</td> <td></td> <td>5,970,000</td> <td>10,970,000</td> </tr> <tr> <td>% Elongation (ASTM D3039)</td> <td></td> <td>1.1</td> <td>1.2</td> </tr> <tr> <td>Flexural Strength (psi) (ASTM D790)</td> <td></td> <td>54,100</td> <td>74,100</td> </tr> <tr> <td>Flexural Modulus (psi) (ASTM D-790)</td> <td></td> <td>2,360,000</td> <td>4,360,000</td> </tr> <tr> <td>Adhesion to Steel (psi) (ASTM D4541)</td> <td></td> <td>>2,000</td> <td>>2,000</td> </tr> <tr> <td>Adhesion to Concrete (ASTM D4541)</td> <td>Concrete</td> <td>Concrete</td> <td>Concrete</td> </tr> <tr> <td></td> <td>Failure</td> <td>Failure</td> <td>Failure</td> </tr> <tr> <td>Operating Temperature (°F)</td> <td>Up to 200</td> <td>Up to 200</td> <td>Up to 200</td> </tr> </table>		Composite (two ply)	<u>Bidirectional</u>	<u>Unidirectional</u>	Tensile Strength (psi) (ASTM D3039)		55,200	118,200	Tensile Modulus (psi) (ASTM D3039)		5,970,000	10,970,000	% Elongation (ASTM D3039)		1.1	1.2	Flexural Strength (psi) (ASTM D790)		54,100	74,100	Flexural Modulus (psi) (ASTM D-790)		2,360,000	4,360,000	Adhesion to Steel (psi) (ASTM D4541)		>2,000	>2,000	Adhesion to Concrete (ASTM D4541)	Concrete	Concrete	Concrete		Failure	Failure	Failure	Operating Temperature (°F)	Up to 200	Up to 200	Up to 200
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<p>I-WRAP System</p> <p>The I-WRAP system is a performance driven product that provides a chemical and corrosion resistant structural repair for the interior or exterior of pipe. The I-WRAP system is backed by our engineering staff that services each application with assessment and technical support. The I-Wrap system offers a low cost, long term solution to the most challenging demands of the industry.</p>																																																																														
APPLICATION RECOMMENDATIONS	SUBSTRATE PREPARATION																																																																													
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PERFORMANCE DATA		APPLICATION INSTRUCTIONS																																	
<p>CHEMICAL RESISTANCE ASTM D543 (30 day immersion)</p> <table border="0"> <tr><td>Water</td><td>No effect</td></tr> <tr><td>Sodium Hydroxide 5%</td><td>No effect</td></tr> <tr><td>Ammonium Hydroxide 5%</td><td>No effect</td></tr> <tr><td>Sodium Hypochlorite (bleach)</td><td>No effect</td></tr> <tr><td>Ferric Chloride 1%</td><td>No effect</td></tr> <tr><td>Sulfuric Acid 20%</td><td>No effect</td></tr> <tr><td>Nitric Acid 1%</td><td>No effect</td></tr> <tr><td>Detergent Solution</td><td>No effect</td></tr> <tr><td>Gasoline</td><td>No effect</td></tr> <tr><td>Toluene</td><td>No effect</td></tr> </table> <p>ADHESION ASTM D4541 (psi)</p> <table border="0"> <tr><td>Cold Rolled Steel</td><td>>2,000</td></tr> <tr><td>Hot Rolled Steel</td><td>>2,000</td></tr> <tr><td>Cast Iron</td><td>>2,000</td></tr> <tr><td>304 Stainless Steel</td><td>>2,000</td></tr> <tr><td>316 Stainless Steel</td><td>>2,000</td></tr> <tr><td>Concrete</td><td>Concrete Failure</td></tr> </table>		Water	No effect	Sodium Hydroxide 5%	No effect	Ammonium Hydroxide 5%	No effect	Sodium Hypochlorite (bleach)	No effect	Ferric Chloride 1%	No effect	Sulfuric Acid 20%	No effect	Nitric Acid 1%	No effect	Detergent Solution	No effect	Gasoline	No effect	Toluene	No effect	Cold Rolled Steel	>2,000	Hot Rolled Steel	>2,000	Cast Iron	>2,000	304 Stainless Steel	>2,000	316 Stainless Steel	>2,000	Concrete	Concrete Failure	<ul style="list-style-type: none"> • Prep substrate • Measure fabric around pipe to ensure proper length. • Mechanically mix together both primer components until uniform. • Apply primer to prepared substrate via brush or spreader. • Mix both Wet Out components for two minutes. • Apply Wet Out to fabric via spreader ensuring complete wet out of fabric. • Apply saturated fabric to wet primer ensuring a consistent, smooth wrap free of voids. • Allow system to completely cure. • If exposed to sunlight, top coat the wrap with a light stable top coat. 	
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		<p>The Standard I-Wrap System is not intended for applications with exposure to strong acids, organic acids, strong solvents (MEK, Acetone, Alcohol) or high temperatures (>200°F). To be applied by certified personnel only. See MSDS for additional safety information.</p>																																	
PERSONAL PROTECTION		KITS																																	
<p>INHALATION: Wear suitable respiratory cartridge mask in enclosed spaces. Work in well ventilated areas.</p> <p>EYES: Wear suitable goggles.</p> <p>SKIN: Wear protective clothing and gloves made of impervious material.</p> <p>STORAGE: Store away from direct sunlight and sources of heat. Store at 40° to 90°F (4° to 32°C). Avoid Freezing.</p>		<p>Kit Includes:</p> <ul style="list-style-type: none"> Two - Containers of Primer (A&B) Two - Containers of Wet Out (A&B) One - Carbon Fiber Fabric Two - Mixing Containers MSDS Installation Procedures 																																	
ORDER INFORMATION																																			
Part No. for standard kits consist of: Product Description Code - Kit Size - Pipe Style ex. SH-12-S																																			
Product Description Code	Kit Size		Pipe Style																																
IWSH – Standard I WrapWrap	4 – will wrap up to one 4” pipe	12 – will wrap up to one 12” pipe	S – Strait																																
IWHH – High Temp I WrapWrap	6 – will wrap up to one 6” pipe	16 – will wrap up to one 16” pipe	E – Elbow																																
IWAH – Acid Resistant I WrapWrap	8 – will wrap up to one 8” pipe	24 – will wrap up to one 24” pipe	T – Tee																																
	10 – will wrap up to one 10” pipe		SS – Spool																																
<p>*** NOTE: Custom kits can be designed for any line size, style or application. ***</p>																																			