HydraTech Marine HydraWrap®

Structural Composite Repair System for Marine Applications

The HydraWrap system is a performance driven product that provides a chemical and corrosion resistant structural repair. The HydraWrap system is backed by our engineering staff that services each application with assessment and technical support. It offers a low cost, long term solution to the most challenging demands of the industry.

PRODUCT DESCRIPTION

- HydraWrap is Carbon Fiber Reinforced Polymer (CFRP) repair system engineered to restore or enhance the structural integrity of pipe and infrastructure.
- Each HydraWrap product is a uniquely designed high performance system 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 tensile and flexural properties.
- Utilizes the proven HydraWrap technology to provide rapid repair system for offshore use.
- The Marine HydraWrap system is the only FRP repair system that is ABS Design Approved.
- Marine kits are designed to include the required materials, tools, and instructions for the repair of standard pipe sizes and shapes and ensure ease of installation.
- Kits are available with our standard high performance epoxies, acid resistant epoxies and our high-temp epoxies; depending on the application.

Advantages
- Rapid development of physical properties with ambient cure. No post cure required.
- No hot work / welding required
- Chemical and Corrosion Resistant Structural Repair
- High Tensile / Flexural Modulus and Strength
- 100% Solvent-Free, Zero V.O.C.
- Low temperature cure down to 40ºF (4ºC)
- Restores Maximum Allowable Operating Pressure (MAOP)
- Installed by fully trained application specialists
- Full contract support services available
- Conforms to all shapes and sizes
- Suitable for Pipe and Bulkhead repairs

PHYSICAL PROPERTIES

	Primer	Wet-Out
Working Life – 68ºF (20ºC)	20 minutes	20 minutes
Dry Times – 68ºF (20ºC)	4 Hours	4 Hours
% Vol Solids (ASTM 2369)	100	100
Shore D Hardness (ASTM D2240)	80	85
Mix Ratio	Pre-measured 1:1	
Flash Point	> 200ºF (93ºC)	
Storage Life	Twelve months when stored in original sealed containers, between 50-77ºF (10-25ºC)	

PERFORMANCE DATA

See the individual Tech Data Sheet for each of the HydraWrap Systems for specific Performance Data.

KIT INFORMATION

Marine HydraWrap Kit is designed to include the required materials, tools and instructions for the repair of standard pipe sizes and shapes and ensure the ease of installation. Materials

The Universal HydraWrap Kit is intended to provide the necessary materials to repair a variety of pipe sizes, fittings and configurations in an emergency or rapid response application. The Universal Kit provides various widths of carbon fiber fabrics along with the tools and consumables utilized in the application.

Please reference the pressure rating data of standard kits for determining the number of carbon fiber layers or contact HydraTech Engineered Products, LLC for assistance on specific applications in which coverage or pressure rating is in question.

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APPLICATION RECOMMENDATIONS

Minimum Application Temp	40⁰F (4.4ºC)
Maximum Relative Humidity	85%
Substrate Temperature	5⁰F (3ºC) above dew point
Thinning	Do not thin
Cleaning Fluid	Universal Equipment Cleaner

To aid application at low temperatures, both components should be warmed to 60-68⁰F (15.5-20ºC) prior to mixing.

SUBSTRATE PREPARATION

Substrate preparation dictates the adhesion performance of any coatings system. A properly prepped surface will ensure maximum life and performance of the system.

Concrete:	NACE No.6*	/	SSPC-SP 13*
Steel:	NACE No.2*	/	SSPC-SP 10*
	NACE No.3	/	SSPC-SP 6
	NACE No.5	/	SSPC-SP 12

*indicates recommended method

NOTE

The HydraTech Standard HydraWrap System is not intended for applications with exposure to strong acids, organic acids, strong solvents (MEK, Acetone, Alcohol) or high temperatures (>200⁰F). To be applied by certified personnel only. See MSDS for safety information.

INSTALLATION PROCEDURE

- Prep substrate according to NACE / SSPC spec.
- 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 or impregnator 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.

For details regarding application refer to the HydraWrap Installation Procedure

COVERAGE

	UNIT SIZE	COVERAGE
PRIMER	Pt	**4.5** sqft
	Qt	**9** sqft
	Hg	**23.5** sqft
WET-OUT	Pt	**4** sqft of fabric
	Qt	**8** sqft of fabric

Primer coverage based on 32mil film build.
Wet-Out coverage based on 99.36gg/sqft of 300C fabric.

ORDER INFORMATION

Part No. for standard kits consist of: **System Code – Pipe Size – Pipe Style**

ex. **SH-12-W** **(Standard HydraWrap for 12" Weld Repair)**

SYSTEM CODE		PIPE SIZE		PIPE STYLE	
SH = Standard	**2 =** will wrap up to one 2" pipe		**14** = will wrap up to one 14" pipe	**W** = Weld	
A = Acid	**4 =** will wrap up to one 4" pipe		**16** = will wrap up to one 16" pipe	**E** = Elbow	
M = Mid-Temperature	**6 =** will wrap up to one 6" pipe		**20** = will wrap up to one 20" pipe	**T** = Tee	
H = High Temperature	**10** = will wrap up to one 10" pipe		**22** = will wrap up to one 22" pipe	**SS** = Spiral	
SS = SubSea	**12** = will wrap up to one 12" pipe		**24** = will wrap up to one 24" pipe	**U** = Universal	

*** **NOTE:** Custom kits are available to accommodate nearly any installation. ***

Add an **M** for the Marine Kit Option. Marine Kits includes tools for mixing and applying the HydraWrap System. ex. SH-12-W-M