

A blue-tinted photograph of an industrial facility with a complex network of pipes, walkways, and structural steel. The image is used as a background for the top half of the page.

STRONGBACK® TAPE

PRODUCT DATA SHEET

The StrongBack Composite Systems basically consist of just two (2) components, the GS epoxy load transfer/coating agent and the StrongBack Tape. The epoxy coating is applied over the damaged or corroded pipe surface. StrongBack tape is then wrapped over the epoxy, either circumferentially over itself or in a helical pattern if the repair length is extensive, curved or oddly shaped, to the predetermined number of plies. This combination of products transfers the hoop stresses from the damaged pipeline to the composite StrongBack sleeve.

Due to the StrongBack tape's preset malleability it is excellent for reinforcing elbows, bends and other odd shaped segments. The StrongBack Composite Systems can also be applied underwater by divers and in most cases without requiring an underwater habitat.

As a self-contained, resin-impregnated, water-activated wet lay-up wrapping system, the StrongBack can be a permanent, high strength alternative to metal Sleeves, welding and other mechanical repairs. Installation can be completed in minutes and without requiring any special tools. A high post-cure strength is achieved by the material's inherent strength, physical characteristics and a complete fit-up integrity and conformity between the reinforcing wrap and the pipe.

Extensive creep testing has indicated that the long term (25 year) load carrying capacity of the StrongBack tape is in excess of 50% of its static strength. Even at elevated temperatures the indicated load carrying capacity exceeds 45% of its initial room temperature strength.

The StrongBack Composite Systems conform to the latest DOT regulations for pipelines. The repair, which can be considered as permanent and the coating of the pipeline is achieved in just one procedure. All the materials can be shipped "Non-Regulated" by USDOT, IATA, and IMO.

The design (numbers of plies) and precise material requirements of the StrongBack Composite System can be determined from the StrongBack SleeveCalc® mini-CD. A minimum of eight (8) plies are required for all reinforcement systems on pipes of 10" (254 mm) O.D. or less and a minimum often (10) plies for all reinforcement systems on pipes over 10" (254 mm) O.D.

RECOMMENDED USES

STRONGBACK PIPE REINFORCEMENT SYSTEMS

Used in partnership with the load transfer, undercoat, the GS-561 epoxy, to restore full strength to damaged or corroded sections of pipelines, plies, etc.

PIPE REMEDIATION

Proven as an effective long term or temporary substitute on pipe with significant wall loss.

ABRASION PREVENTION

Applied to risers, J tubes and in splash zones, pipe saddles, pull throughs.

ANTICORROSIVE COATING

Provides effective corrosion prevention barrier, particularly in high temperature situations in the atmosphere, buried or underwater.

DIELECTRIC INSULATION

Is nonconductive up to 16,000 volts.

STRUCTURAL REPAIR

For patching, leak sealing, etc., above and below water, pipe hangers, braces, clamps, railings, fences, etc.



APPLICATION NOTES

SURFACE PREPARATION

Remove loose contaminants, sediment, corrosion particles, living organisms, etc., by air/abrasive blasting, high pressure water jetting with or without abrasive, where permitted hand held power tools, such as needle guns or grinders. Wire brush, file or sand paper can provide adequate surface roughness in some situations.

APPLICATION

Generally, apply the load transfer GS-561 epoxy coating over the damaged or corroded pipe surface. The StrongBack tape is then wrapped over the epoxy, either circumferentially over itself or in a helical pattern. Complete application instructions provided during StrongBack's Certification Course for Application Technician.

MECHANICAL PROPERTIES

TENSILE STRENGTH	61,220 psi	ASTM-D-3039 Modified
FLEXURAL STRENGTH	53,100 psi	ASTM-D-790
COMPRESSION STRENGTH	32,800 psi	ASTM-D-695
INTERLAMINAR SHEAR	4,500 psi	ASTM-D-2344
GLASS TRANSITION TEMP	122°C (252°F)	ASTM-E-831
TEMPERATURE CYCLE	16 layers cycled 24°C (75°F)–232°C (450°F) with no delamination	

TECHNICAL SPECIFICATIONS

CURE TIME	30–60 minutes	
SHORE D HARDNESS	80	
HEAT RESISTANCE	260°C (500°F)	
MAX. INSTALLATION TEMP	177°C (350°F)	
DIELECTRIC STRENGTH	Nonconductive when cured (16,000 volts)	
TRANSPORTATION	Non-regulated/nonhazardous–Freight Class NOI–Item 4600 Class 60	

CHEMICAL IMMERSION TESTS

ASTM-D-543 (30 day immersion period)

Acetone	Pass
Diesel Fuel	Pass
Ethyl Alcohol	Pass
Gasoline	Pass
MEK	Pass
Toluene	Pass
30% HCL	Pass

WE URGE YOU TO READ THE MATERIAL DATA SHEET; (MSDS), BEFORE USING AND TO CALL NIXUS INTERNATIONAL AS NECESSARY FOR ADVICE OR INFORMATION BEFORE ANY ACTUAL OR CONTEMPLATED APPLICATION.

SAFETY

Read and understand the Material Safety Data Sheet (MSDS) before use.

WARRANTY DISCLAIMER

The technical data given herein has been compiled for your help and guidance and is based upon the StrongBack Corporation's experience and knowledge. However, as we have no control over the use to which this information is put, no warranty, express or implied is intended or given. We assume no responsibility whatsoever for coverage, performance or damages, including injuries resulting from use of this information or of products recommended herein.