

FIBRWRAP®

Worldwide Specialized Contractors

Pipelines & Liquid Storage Structures

The application of the Tyfo® FIBRWRAP® System in Pipelines and Liquid Storage Structures (Treatment Plants, Medium to large diameter Concrete and Steel Pipes, Reservoirs, Storage Tanks and other facilities)



FIBRWRAP CONSTRUCTION EUROPE Ltd.

Strengthening Structures | Protecting Lives Worldwide



FIBRWRAP®

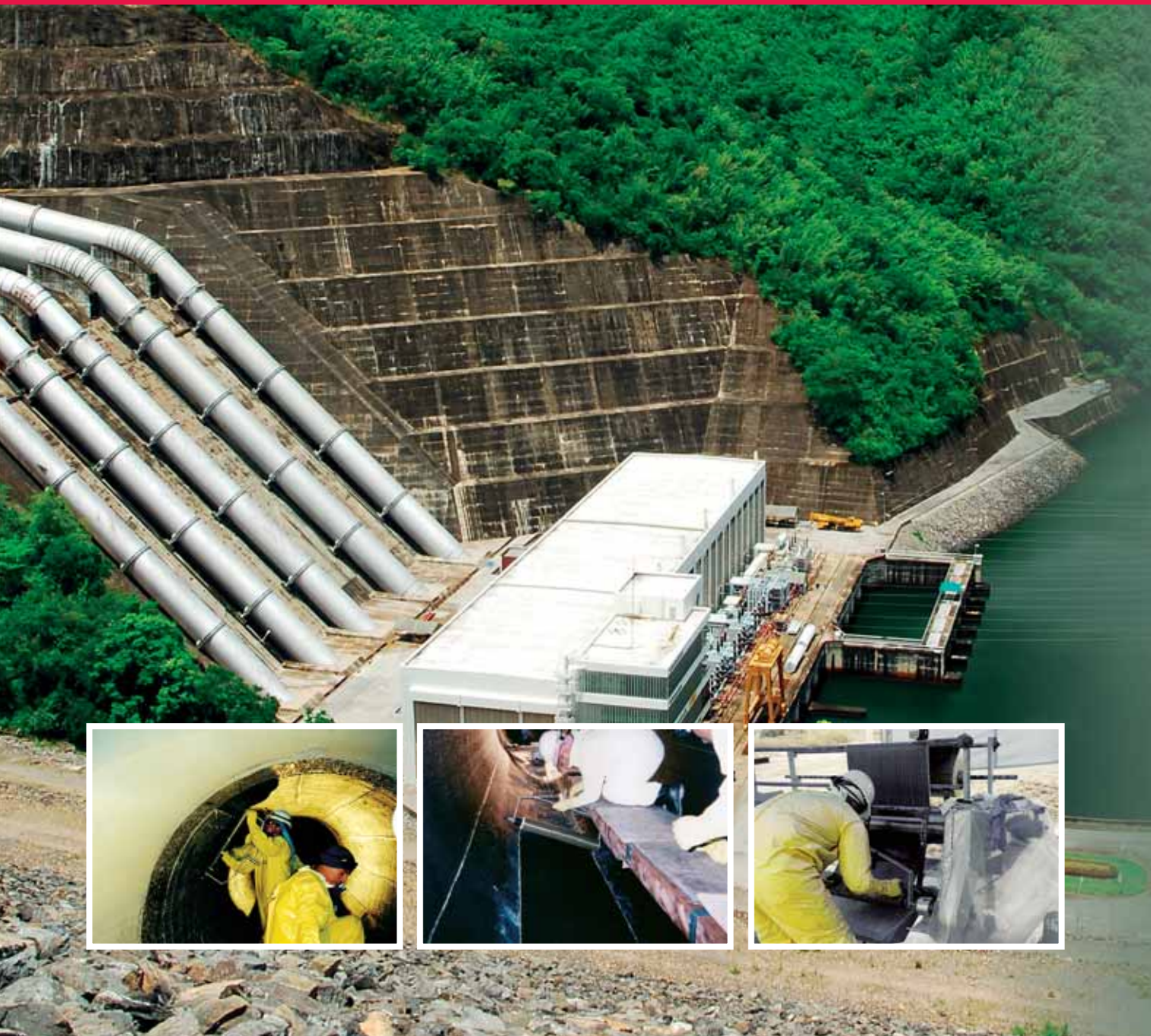
Worldwide Specialized Contractors

Pipeline networks and liquid storage facilities are a basic part of a country's infrastructure and they are in constant need of maintenance in order to ensure a safe and cost effective operational status.

Pipes transporting drinking water, as well as sewage, oil and gas pipes transport liquids first to treatment plants and finally to the end users. They need to always be in good condition in order to satisfy the increased demands of the modern living.

Decades of continuous service of large diameter pipes (concrete, steel and ductile iron), either buried or above ground, have led to deterioration that threatens the structural integrity of these networks.

Industry is in need for innovative solutions that will provide structural strengthening, upgrade of internal pressure capacity and significant extension of the service life of these structures with time and cost effective technologies and with the added bonus of minimum disturbance of their every day operations during the repair work.





Structural retrofit with TFS® of Denver Water.
The best option for a completely trenchless renewal of this magnitude.



Rehabilitation & Strengthening of over 100 linear feet of six 72" diam. PCCP of PPL Montana



Strengthening and Rehabilitation of pipe of the power plant Dominion Energy

Fibrwrap uses the **Tyfo® FIBRWRAP® System (TFS®)** for the repair, strengthening and retrofit of corrosion damaged and distressed large diameter PCCP, RCCP, and steel pressure pipelines used in municipal, industrial and other facilities.

Fibrwrap is the frontrunner in trenchless technology for the structural repair of main pipeline networks and is capable of performing any rehabilitation work for repairs of liquid storage structures. Also it can provide design-build solutions tailored-made to satisfy the requirements of the client.

Fibrwrap's fully developed system can be applied internally or externally to a pipe and for a wide range of issues, such as structural degradation, corrosion, structural upgrade, internal pressure, relining and emergency repair. Also our system complies with the most demanding environmental codes and is capable to withstand chemical and aggressive environmental exposures.

TFS® Solutions:

- Increase of available hoop strength (increase internal pressure capacity)
- Damage/Leak remediation and prevention
- Protection from corrosion and rectification of the strength losses (due to corrosion)
- Increase of bending strength
- Increase of compression strength due to external loading
- Seismic Upgrades
- Update of pressure and flow
- Emergency repairs



TFS® Applications:

- Structural repair (internal or external) of pipeline networks of medium to large diameter from reinforced concrete, steel and ductile iron
- Repair and strengthening of liquid storage structures (walls and slabs of a tank)
- Relineing of existing pipelines
- Joint and transition zone waterproofing and protection of pipes exposed to wear and corrosion and sulfide attack.

The Tyfo® FIBRWRAP® System (TFS®) may be used to strengthen pipes to accommodate increased internal pressure, flexural loads, traffic and soil loads. In particular, the System can be designed to reinforce PCCP segments that have significant loss of prestressed areas due to corrosion damage. The TFS® may be bonded to either the outside or the inside of the pipe.



Installation of a large diameter steel
Injection Pipe, Yorktown.



Emergency Rehabilitation and Repair of reinforced
concrete pipeline section of **Water Supply (EYATH)**,
Thessaloniki, Greece



Emergency Repair of 48" PCCP RWR
(re-circulating water return line) of **Arcelor
Mittal Dofasco**, Canada.

TFS® Features:

- The TFS® is based on trenchless technology that provides full structural repair
- Thoroughly tested at independent laboratories
- Cost -effective
- Extends the service life of existing structures
- Significantly lowers the corrosion rate by confining existing members
- Can prevent the onset of corrosion when applied to new structural elements
- Can be used on circular, square, rectangular, hexagonal, flared and alternative shaped cross sections with negligible shape and size modifications
- Specialty scaffolding is designed to span the spool length to allow access to the entire pipe face. People and material access is through existing manholes
- Provides a National Sanitation Foundation (NSF) listing for usage in potable water environments.
- The TFS® is a patented (US patent # 5,931,198) process that has been successfully utilized worldwide to rehabilitate pipelines



Advantages - Benefits:

- Trenchless technology
- Design, application and monitoring of the project from day one
- Cost and time effective proposals and applications
- Minimum disturbance to the everyday activities of the client
- Ability to repair pipelines externally without interrupting their operation
- Environmentally friendly solutions



Tyfo[®] FIBRWRAP[®] System (TFS[®])

Since its establishment in 1988, Fyfe Co LLC, through a vigorous research and development program, has managed to produce the **Tyfo[®] FIBRWRAP[®] System (TFS[®])**.

The **TFS[®]** has been reviewed and approved by more independent authorities than any other composite system.

Carbon, glass or aramid reinforcing fibers are combined with high quality resins to produce a multitude of high performance FRP strengthening systems, which - in turn - provide design engineers with a wide range of options to meet the individual needs of a project.

The success is proven by the fact that the **TFS[®]** is a reliable composite strengthening system with more approvals, demonstrations and proven installations than any other competitive system in the industry.

The **TFS[®]** includes a carbon fiber solution that meets the International Building Code[®] (IBC[®]) requirements.



Network

Fibrwrap Construction Europe Territory

www.ThinkBAG.eu



FIBRWRAP CONSTRUCTION EUROPE •

An ever-expanding network beyond Europe

Working with FIBRWRAP Construction Europe Ltd. is equivalent to entering the largest family of companies worldwide, dealing with any kind of structural rehabilitation need. With offices across the globe, Fibrwrap is an international business with a local twist strengthening and protecting people, properties and assets everywhere.



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