



## **Engineered Composite Repairs**

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## Installed for Integrity, Controlled for Compliance

Cost-effective maintenance of the integrity of pressurized equipment is a basic requirement for operators and a growing challenge as infrastructure ages. Engineered composite repairs have proven a key tool in achieving this objective and TEAM remains at the heart of the development and standardization of this technology. Having taken the solution mainstream, TEAM remains at the forefront of the development and standardization of this technology. We lead the industry in bringing reliability and traceability to repairs, controlling each step of the delivery process to give full confidence in the solutions supplied and to clearly support this with verifiable documentation.

### Industry Leading Experience – Translating Standards into Standard Practice

The standards ASME PCC-2 and ISO 24817 set out the requirements for engineered composite repairs. Providing repairs that comply with these requirements enables the operator, supplier and regulator to have confidence in the solution provided. However, the detailed requirements need expert assessment and understanding to be implemented as intended. Playing an integral role in writing and developing both ASME and ISO standards since their inception, we have built our process to do just this. Our in-house controls provide an auditable approach allowing us to demonstrate compliance of repairs installed with the governing standards while allowing you to continue to operate safely. We manage the entire process of supplying the repair so that you only have one point of contact. Our expertise means you get the repair you need.

### Our Experience

- Pressures up to 345bar (5000psi)
- Temperatures from -180°C to 260°C (-292°F to 500°F)
- Large-diameter pipe, tanks and vessels
- Continuous lengths of over 150m (500')
- Water lines
- Oil lines
- Flare lines
- Gas lines
- Chemical systems
- Tanks and vessels
- Gas and liquid pipelines
- Structural repairs
- Offshore and onshore
- Deck repairs

### Solutions Offering

- + Inspection
- + Fitness for service assessment
- + Repairs using clamps and enclosures
- + Composite repair
- + Pipeline sleeves, hot taps and bypasses



### Industry-leading Expertise – Driving Development

We are committed to further developing the understanding of repairs. We invest in testing and development projects both in-house and in joint industry projects. Recent work has included looking at how installation pressure affects repair design and performance, performance on large-scale geometries such as tees and elbows, verification of non-destructive testing methods, determining significance of defects and investigating how the repairs can work to reinforce cracks in pipelines.

### Industry-leading Resources – Delivering to Your Requirements

TEAM's global engineered composite repair resources are unmatched. We have developed standardized technician competence programs that demonstrate the teams deployed to sites are dependable, conscientious experts. We have the resources to handle jobs of all sizes, and we can remain local to support on your day-to-day emergencies.

### Industry-leading Capabilities – The Advantage of TEAM work

Our engineering teams can assess composite repair requirements and they can also provide insight and guidance on their suitability; we can help point you toward the best solution possible. In some situations, this has led to composites being used in combination with leak sealing services. Where detailed assessment is required, we have the expertise to provide Fitness for Service (FFS) assessments and develop unique solutions to help with through-life inspection of composite repairs once they are in service. With an unparalleled depth and breadth of solutions, we believe you will appreciate the benefit that comes from partnering with TEAM.

### TEAM – Doing Things the Right Way

**The right solution** – our wide range of services means we will propose the right technical solution to maximize equipment performance

**The right technicians** – our competence scheme means we train every one of our people to be dependable, conscientious experts

**The right company** – with a full suite of asset integrity solutions in-house, think of TEAM as your valued reliability partner

**The right service** – we have the expertise, size, skills and controls to minimize downtime and keep your systems running reliably and safely

### Why TEAM?

- + Single supplier for asset integrity management solutions worldwide
- + Company-wide commitment to safety
- + Trained and certified expert technicians
- + Complete range of maintenance and repair services
- + Engineering, manufacturing and technical support
- + World-class quality processes and systems

### ASME PCC-2 Articles 4.1 and 4.2, ISO 24817

Governing standards setting requirements for engineered repairs



#### Repair System Qualification

- Testing verified for each repair system used through an internal review
- Independent verification from Lloyd's Register and ABS



#### Design Control

- Calculations completed and verified in-house



#### Installer Training and Competence

- All installers trained and experience tracked centrally
- Field observation reports used to track experience



#### Installation Control

- Repair and site conditions checked and recorded, assuring conditions are within allowed limits
- Records retained for future reference

**TEAM experts are available 24 hours a day, 7 days a week, 365 days a year.**

Find your local contact at [TeamInc.com](http://TeamInc.com).





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