



HJ3 has a well-earned reputation among its global, Fortune 500 clients as a problem-solving partner that uses its industry agility and uncommon speed to provide solutions, fast. HJ3 carries its integrity, its grit and its relationship-first approach in its front pocket and never compromises when it comes to quality.

As the leading provider of high strength carbon fiber composite systems, HJ3 supports a Global Network of certified installers, operators and engineering firms with unmatched engineering, support and materials for even the most challenging composite installations.

Pipeline Repair Systems

HJ3's line of Pipeline Repair Systems are designed to address corrosion, erosion, dents, weld defects and metal loss common with pipeline operation. Tested in compliance with industry standards, HJ3 offers the best in class engineering, training and site support to ensure fast, safe installations every time.

Whether it's an ongoing project or an emergency spot repair, HJ3 can support your project with same day engineering, material shipments and training mobilization.

Common Applications

- Manufacture Defects
- Cracks
- Dents
- Corrosion
- Erosion
- Gouges
- Metal Loss

Benefits

- Unmatched strength per ply equals less layers, reduced cost and faster installations
- No post-cure required
- Conforms to tees, elbows and straights
- Wide range of temperature and chemical resistance
- NSF-61 certification for drinking water

 **+20-year**

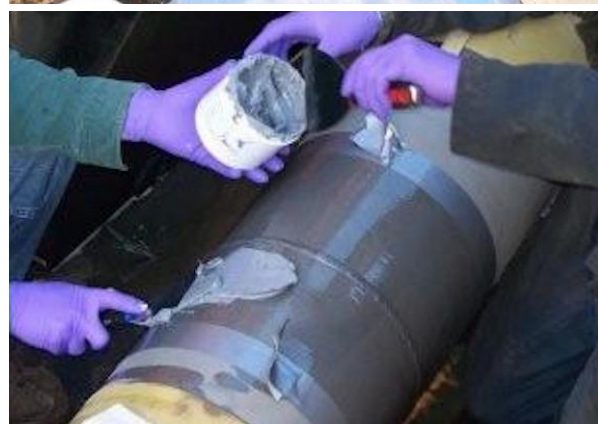
in-service history

 **+300 chemicals**

extensive durability testing

 **20,000 hours**

accelerated testing in acids, caustics, seawater, ultraviolet (UV) radiation and biologically active environments





Compliance

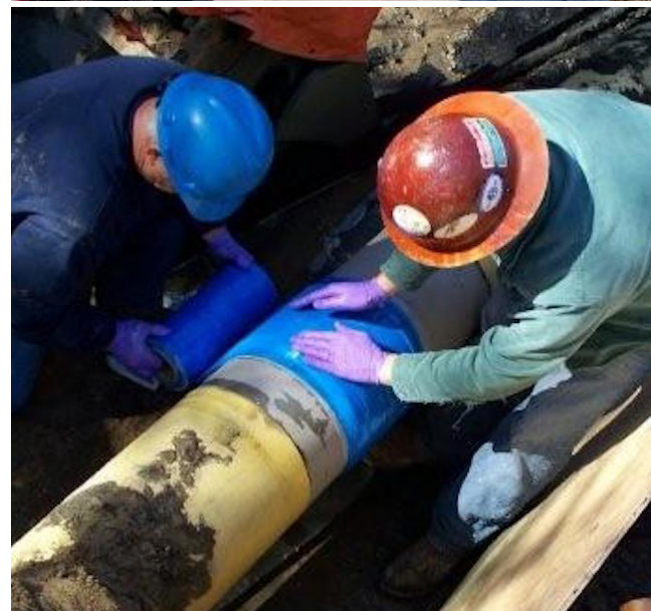
CarbonSeal™ is a high strength carbon fiber composite system designed in compliance with ASME PCC-2 Article 4.1, ASME B31 standards and ISO 24817. CarbonSeal™ can be applied to process piping systems and pipelines to restore integrity lost due to corrosion. CarbonSeal™ repairs are fully supported with structural calculations performed by licensed professional engineers who specialize in composite design.

Additional Protection

- 1 to 3 hour fire protection per UL-1709
- CarbonSeal™ can be designed to dissipate static electricity (ESD) for use in intrinsically safe environments

Technical Data

	CarbonSeal™
Fabric	Carbon
Ply Thickness	0.051-inches
Shore D Hardness	81
Max Installation Temp	200°F (93°C)
Max Operating Temp	196°F (91°C)
Min Operating Temp (after full cure)	-58°F (-50°C)
Shelf Life	2 years
Chemical Resistance	Excellent for pH 2.5 to 12.5



CARBON SEAL™



HJ3 Consignment Program

Working with HJ3 has never been easier. With a focus on Speed to Solution™, we developed an on-demand consignment program that has eliminated all challenges related to managing composite product inventory. No more costly shipments, expiration issues, or logistics and carrying costs associated with stocking composite repairs. HJ3's consignment program comes at zero cost to the owner operator or contractors. Materials are shipped at no cost to the customer and kept in an HJ3 consignment cabinet under lock and key. Inventory is managed by an HJ3 account manager and owned entirely by HJ3. Inventory levels are selected based on seasonal repair schedules and historicals.

How It Works

When a repair is needed, the customer simply provides a PO for the material quoted and pulls that inventory from the cabinet. **No shipping, no headache, no additional cost.**




On average, customers enrolled in this program have experienced:


 **100% decrease in shipping cost**


 **100% decrease in carrying cost**

 **100% decrease in wasted inventory**

 **Zero downtime/ excavation cost**
due to delayed material shipments

 **Zero downtime/ excavation cost**
due to expired materials

 **No QC issues**
associated with expired or damaged inventory

 **No headaches**
associated with inventory management



info@hj3.com // 877-303-0453 // hj3.com

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