Fisher Barton

Chemical, Oil & Gas

Engineered for Extreme Wear. Built for Performance.

Surface Engineering & Wear Solutions for Harsh Downhole and Topsides Environments

In the Chemical, Oil & Gas market, components are pushed to their limits. Abrasive particulates, corrosive chemistries, extreme pressures, and cyclic mechanical loads accelerate wear—and even minor degradation can trigger catastrophic failures, costly downtime, or environmental risk.

At Fisher Barton, we've spent over 50 years mastering material behavior to engineer components and coatings that thrive where conventional materials fail.

Our deep expertise in metallurgy, wear mechanisms, machining, thermal spray, and advanced surface engineering enables us to design, test, and deliver solutions that meet the Chemical, Oil & Gas industry's most demanding performance requirements.

Thermal Spray Coatings Designed for Extreme Wear Conditions

Our TST Engineered Coatings division provides industry leading thermal spray technologies—including plasma spray, HVOF, wire arc, flame spray, and cold spray—engineered to increase component life in erosive, corrosive, and high load environments.

Purpose Built to Combat the Industry's Toughest Wear Mechanisms

Oil & Gas components routinely encounter:

- Abrasive wear from sand and proppant flow
- Erosive wear from high velocity fluids
- Corrosive wear from sour gas, brines, and chemical injection
- Fretting and adhesive wear at high load or metal to metal interfaces
- Thermal and mechanical fatigue during pressure cycles and temperature swings

Our engineers analyze these mechanisms—often in combination—to select or develop the right coating, alloy, heat treatment, and deposition process for each application.

TST® G163 Iron-Based Coatings

Engineered Protection for Demanding Oil & Gas Environments
Oil and gas operations place extreme demands on equipment—abrasion, corrosion, heat, and continuous service can rapidly degrade critical components. TST® G163 iron-based coatings are engineered to extend component life and maintain performance in harsh upstream, midstream, and downstream environments.

Designed for applications where wear resistance and durability are essential, TST G163 provides a reliable surface solution for components exposed to aggressive operating conditions.

Performance Advantages: Engineered Coating Properties

- Porosity: <0.5%
- Hardness: up to 1500 Vickers (depending on material system)
- Adhesion: 10,000+ psi (ASTM C633)
- High density microstructures for erosion and corrosion resistance
- Custom chemistries tailored to application environment

Proprietary Technologies for Enhanced Bond Strength & Durability

We use advanced processes such as:

- **FluxFuse®** — Creates uniform, minimal distortion fusing of thermal spray coatings for superior bonding strength and wear performance.
- **FUSIONbond®** — A controlled atmosphere post coat heat treatment producing a metallurgical bond with extremely low porosity and high impact resistance.

In abrasive chemical and oil & gas environments, coating performance isn't defined by hardness or porosity alone. What matters is how long components last in real service — and how consistently that performance is delivered.

FUSIONbond® coatings are engineered to deliver exceptional wear life, outperforming conventional HVOF and laser-clad coatings using the same chemistry. In controlled testing, Fusion Bond™ achieved up to 7× longer wear life and routinely demonstrated 50–70% higher wear resistance compared to alternative processes

The advantage comes from precise heat-cycle control that promotes the formation of optimal hard-phase m crostructures — complex carbides that resist abrasion and erosion over extended service intervals. The result is a coating that maintains performance longer, reduces replacement frequency, and lowers total cost of ownership.

For operators and buyers focused on uptime, reliability, and lifecycle value, FUSIONbond® translates proven metallurgy into measurable cost savings..

Metallurgy Driven Material Solutions

Our in house metallurgical laboratory and Technology Center enable:

- Wear mechanism analysis
- Material selection and alloy development
- Heat treatment optimization
- Microstructure and failure analysis
- ASTM abrasion, erosion, and metal on metal wear testing

This metallurgical insight ensures every coating, substrate, and machined geometry is tuned for maximum life in chemically aggressive and mechanically severe Oil & Gas service environments.

Precision Machining for Critical Tolerances

Oil & Gas equipment requires tight tolerances, flawless sealing surfaces, and dimensional stability under load. Fisher Barton delivers:

- Close tolerance machining of steels, nickel alloys, bronzes, and specialty materials
- Complex geometries ready for coating
- Critical surface preparation to enhance coating adhesion
- Final machining of coated components, including grinding, lapping, and superfinishing
- These capabilities ensure every component performs predictably in high pressure, high load assemblies.

Applications Across the Chemical, Oil & Gas Sector

Our engineered coatings and machined components deliver proven performance in:

Downhole Tools

- Mud motors
- MWD/LWD housings
- Bearing mandrels
- Stabilizers and sleeves

Valves & Flow Control

- Plug valves
- Gate and seat components
- Chokes

Pumps & Drilling Equipment

- Frac pump components
- Wear rings
- Plungers and shafts

Wellhead & Completion Equipment

- Packers
- Seals & wear sleeves

Many of these components benefit directly from metallurgically bonded thermal spray coatings engineered specifically for combined wear + corrosion environments

Why Fisher Barton for Chemical, Oil & Gas

We Understand Wear—Down to Its Microstructure

Fisher Barton is a metallurgical innovation partner, not just a supplier. Our engineers specialize in understanding how materials fail—and how they can be engineered to last longer.

Decades of Industry Driven R&D

Our Technology Center continuously develops new coatings, materials, and thermal spray processes to address emerging challenges in the energy sector.

Proven in Harsh Environments

Our coatings are already used in Chemical, Oil & Gas applications where high wear, corrosion, and temperature fluctuation are constant.

Partner With Fisher Barton

From metallurgy and machining to advanced thermal spray and surface engineering, Fisher Barton delivers solutions that maximize uptime, reduce failure rates, and lower total cost of ownership in the Oil & Gas industry.

Fisher Barton

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