PROCESS & PIPELINE INTERVENTION
HOT TAPPING/LINE STOPPING

Integrated Industrial Solutions.
Seamless Implementation.

ENGINEERING • INSPECTION • SPECIALTY MECHANICAL

www.furmanite.com
For decades, we have been the pioneers and world leaders for process & pipeline intervention. We have developed new technologies, designed and manufactured equipment – we understand the challenges, standards, and expectations for pipeline intervention services and equipment, for each and every industry segment we serve. And most importantly, we know that our customers want to keep their assets online – with no unwanted shutdowns.

**COMPLETE AND PROVEN PROCESS AND PIPELINE INTERVENTION TECHNIQUES**

for On-shore, Offshore and Subsea Applications

**MAJOR SERVICES**

- **Hot Tapping**
  
  **CAPABILITIES:**
  
  Diameters from ⅜” – 120”
  
  Pressures up to 2800 psi (193 barg/19,305 kPa)
  
  Temperatures to 950°F (510°C)

- **Line Stopping**
  
  **CAPABILITIES:**
  
  Diameters from ⅜” – 93” are standard (projects have been done up to 102” and above)
  
  Pressures up to 1480 psi (102 barg/10,200 kPa)
  
  Temperatures to 950°F (510°C)

- **Line Freezing**
  
  **CAPABILITIES:**
  
  Diameters: ½” – 36” are standard, with custom sizes per project needs
  
  Pressures up to 3000 psi (207 barg/20,700 kPa)
  
  Temperatures to 140°F (60°C)

- **Engineering solutions**
- **Welding procedures for all applications**
- **Emergency, maintenance and new construction**
- **Services available 24 hours a day, 365 days a year**

**OEM**

- OEM fittings and repair clamps
- Manufacturer (OEM) of world-class equipment (IPSCO brands)
- Standard and custom designs, with specialty designs available upon request

**HOT TAPPING**

A specialist technique by which Furmanite IPSCO makes a connection to piping or vessels with the system in operation, under pressure. Our vast experience, highly-skilled work force, considerable inventory, and global reach combine to make Furmanite the go-to resource for pipeline modification and repair — under high pressure, large diameter or subsea.

**HOT TAP PROCEDURE — AN OVERVIEW**

1. Install fitting and valve on existing pipeline
2. Install hot tap machine
3. Perform hot tap through the open valve (special device retains the ‘coupon’ removed during the operation)
4. Cutter assembly retracted
5. Hot tap valve closed
6. Hot tap machine removed to allow connection to new pipe

**LINE STOPPING**

A specialist procedure that temporarily stops flow within an operating pipeline. Can be used to isolate piping systems for repair, alteration, or relocation — in conjunction with the use of bypass lines, product flow can be maintained so that production is uninterrupted while the section of pipe is repaired or the system is modified.

**LINE STOP PROCEDURE — AN OVERVIEW**

1. Install line stop fitting and hot tap pipe, line stop equipment is then installed on the temporary tapping valve and valve is opened
2. Line stop head enters the pipeline, temporary seal is achieved, pipeline flow stops
3. Repair, alteration or relocation is performed
4. Line stop head is removed, temporary valve is closed, line stop equipment is removed
5. Completion plug is installed
HOT TAPPING

Furmanite’s history in hot tapping goes back 60 years — our hot tap service group began as part of the first known organization (IPSCO) dedicated to providing hot taps as an engineered contractor service. We have more than five decades of experience working with pressurized systems, and have designed, developed, and pioneered an almost incalculable number of hot tapping and line stopping solutions for our customers. We are routinely thought of as the most reliable, efficient, and expert process and pipeline intervention service provider in the world.

AT THE READY
Furmanite has the ability to respond immediately, with broad expertise, almost anywhere worldwide. Our long history — and a storehouse of knowledge accumulated through the years — allows us to deal with nearly any circumstance we encounter in the field. Furmanite handles routine situations as well (or better) than most service providers — but our ability to react to the unexpected is what truly sets us apart.

Over decades, faced with countless unique and challenging applications, we have reached temperatures, pressures, and depths that other suppliers can only dream of.

Our customer list, spanning six continents, includes industries from petroleum refinery, petrochemical, nuclear and fossil fuel generation, mining, gas, and liquid transmission piping, to water lines, subsea, pharmaceutical, food and beverage, agricultural processing, and more.

- Furmanite has done hot taps on pipes as small as a half-inch and as large as 120 inches, on systems with pressures as high as 2,800 psi (193 barg/19,305 kPa), and at temperatures of up to 950°F.
- We have the equipment and experience to complete offshore work in subsea conditions as well as above the water line — Furmanite also has ROV experience.
- We design and build the world’s finest hot tapping equipment, drawing on decades of experience to engineer suitable solutions for nearly any situation.
- Furmanite owns and builds special equipment for the water/waste water works industry — light weight equipment designed to handle the PH levels of most waste systems.

Why go with Furmanite IPSCO Process & Pipeline Intervention services?
- Industry-leading field safety performance
- Backing of a publicly-traded company, with a global presence and knowledge base
- 80+ years of proven experience in solving unique problems and managing large projects
- Quick response, with more than 85 locations on 6 continents
- Diverse and flexible solutions for proactive repair, maintenance, and turnaround support
- Experienced, field-proven, cross-trained technicians
- OEM equipment and patented technology

“WE WORK BEST UNDER PRESSURE.”
LINE STOPPING

We have been performing line stopping services for longer than anyone else in the industry. Knowledge gained over the years gives us the expertise to deal with almost any application, using pivoting or folding heads, FloStop, FloStops — or any number of other pieces of equipment or techniques required to solve a specific situation.

In fact, Furmanite currently holds the world record for a line stop with the highest combination of temperature and pressure, successfully completing an isolation at 950°F (510°C) and 950 psi (65 barg/6550 kPa).

We have over 40 years of experience providing subsea line stops for the offshore industry, including taps and line stops at depths of more than 1,000 feet of water. We can point to benchmarks such as a double 36”, ANSI 900#, hot taps in 500 feet of saltwater, and engineering to accommodate ROV hot tap operations. And offshore projects have been successfully completed over the last 40 years in the North Sea, the Arabian Gulf, the Red Sea and the Gulf of Mexico — without a single spill or release.

The folding head line stop system, using a reduced branch fitting, is a cost-effective method of line stopping. The equipment is lighter, easier to transport to site, and requires less workspace around the pipe. Used in the water/wastewater, transmission, oil, gas and petrochemical industries, sizes range from 8” to 72” with pressures up to 145 psi (10 barg).

Furmanite IPSCO’s Sure-stop sealing is a well-proven cylinder-wedge stopper method used by many customers due to its positive mechanical seal. Previously limited to smaller diameters, this method is now available for larger sizes, on pipes from 14” to 46”.

The positive mechanical seal provides two distinct advantages:

• Sealing on the machine edge eliminates potential problems from erosion and corrosion, internal pipe build-up, or out-of-roundness
• The mechanically wedged seal allows new sections of pipe to be pressure tested between stoppers.

HTP stops provide positive sealing for high temperature and pressure pipe systems.

A metal-to-metal seal at the pipe face eliminates problems from erosion and corrosion, internal pipe build-up, or out-of-roundness — creating a ‘black and bleed’ system so that modifications or valve replacement can be undertaken downstream. Since the sealing surface is metal-to-metal, the line stop can be left in place longer than elastomer seals allow.

HTP stops are effective at temperatures up to 370°C (700°F) and pressure ratings up to 1480 psi (102 barg).

LINE FREEZING

Sometimes, standard line stop procedures are not an option, such as with FDA-controlled lines that carry food or beverage ingredients where contamination is an issue. In such cases Furmanite can offer line-freezing services.

For line freezing, we use a mechanical bolt-on jacket, which is installed onto an existing piping system. Liquid nitrogen is introduced into the jacket to freeze the existing liquid in the pipe, creating a freeze plug. This allows maintenance to be performed or the addition of new equipment downstream.

This technique can be used successfully with pipes that have no flow or air, and contain a liquid that can be frozen, such as water. In appropriate circumstances, line freezing is a safe, reliable, and highly cost-effective method of temporary pipe isolation.

OEM

Furmanite operates the largest and most diverse inventory of pipeline intervention equipment in the industry. We are an Original Equipment Manufacturer (OEM) of proprietary hot tap and line stop equipment, machines, plugging heads and fittings — backed by a long, distinguished history of expertise in high-pressure and high-temperature applications. We offer solutions for line stops on out-of-round pipe, and specialized designs for unique equipment and fittings.

The IPSCO 1524 — one of the world’s largest hot tapping machines, and capable of tapping holes in pipe up to 420” in diameter — was designed and built by Furmanite. One of the only companies in the world providing field service with our own line of OEM equipment, we also offer that same equipment for client purchase.

BENEFITS INCLUDE:

• No need to drain down systems — cuts losses of expensive liquids like treated water or systems inhibitors
• No need to arrange transfer or storage of possibly toxic or corrosive fluids
• Hazardous materials need not be handled, and safety is improved when working on lines containing contaminated or volatile liquids.
• Maintenance can often be done without interruption to continuous process systems

CAPABILITIES INCLUDE:

• Pivoting Head
• Folding Head
• Sure Stop
• Mid Temp Line Stops
• HTP (High Temperature and Pressure)
• FloStop
• EZ Valve Insertion Assembly
A GLOBAL TEAM OF EXPERTS
AT THE READY
Engineering • Inspection • Specialty Mechanical

THE ORANGE CODE

THIS IS WHO WE ARE. These are the values and behaviors which form the basis for our culture and are the keys to achieving our mission, our vision, our strategies and the success of every Furmanite team member.

- Safety Above All Else
- Integrity and Ethical Conduct
- Customer Responsiveness
- Perfect Service and Products
- Global Teamwork and Collaboration
- Leadership
- Innovation and Differentiation
- Continuous Improvement and Growth
- Urgency, Passion and Commitment
- Professional and Positive