



## Phastite® for Pipe

Non-welded solution for high-pressure piping



ENGINEERING YOUR SUCCESS

# Phastite®:

a proven non-welded piping solution

A breakthrough technology for pressure piping

## Permanent leak-free piping connections in minutes

Phastite is an innovative pipe connection technology that provides non-welded, stainless steel piping connections quickly and safely. The intuitive and fast fabrication process delivers permanent pipe connections in minutes as opposed to the time-consuming steps required for welded piping connections.

Phastite meets the demands of pressure-cycling fluid power systems in energy and industrial applications. Larger threaded fittings generally underperform in high-pressure/cycling applications, making the welding of heavy-schedule pipes, fittings, and flanges common. Phastite closes the performance gap between threaded fittings and welded connections while providing the time and safety benefits of a mechanically attached fitting (MAF).



Phastite fittings are available in common SAE 4-bolt hydraulic flanges (SAE J518/ISO 6162) and Dual Seal (seal-sub) subsea flanges.

## Phastite connection technology

- Designed for hydraulic, water-based systems, lube/grease, and other media
- Used with standard ASTM A312/ISO 6708 schedule pipe sizes 3/4" to 2" (DN20 to DN50)
- Proven to perform in operating pressures up to 10,000 psi/70 MPa
- Rated at subsea depths of 15,000 ft/4600 m
- Fully compatible with Sch 40/STD through Sch XXS pipe
- Fully heat code traceable (HCT)
- Compliant with ASME B31.1 and B31.3 piping codes
- Tested to ASTM F1387 and multiple industry-specific performance tests
- Tested to DNV GL RP-A203 technical qualification (TQ)

# Phastite for pipe versus welding

Phastite eliminates the weld preparation and post-weld processes that drive overall welding time and costs such as fire watch, welded nondestructive evaluation (NDE), and chemical cleaning. Moreover, Phastite minimizes employee exposure to open flames, weld fumes, and hexavalent chromium.

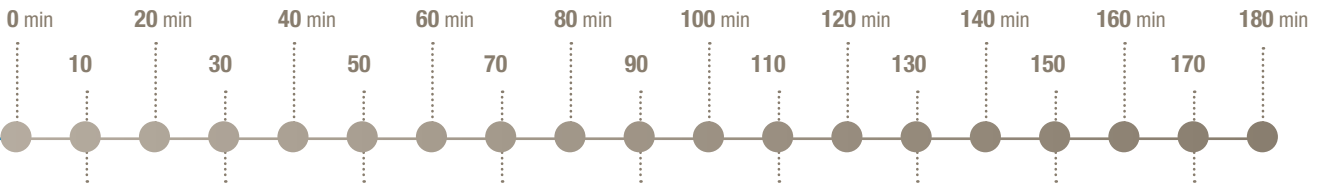
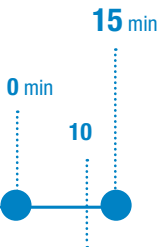
The benefits of Phastite connections are magnified with high-pressure piping systems that require time-consuming multi-pass welding.



## PHASTITE FOR PIPE connection

- Gauge and mark pipe
- Swage Phastite fitting using Phastool®
- Visually inspect connection
- Clean inside pipe
- Install and leak test

**Real-world time savings:**  
Permanent, installation-ready Phastite connections fabricated in **15 minutes** versus 180 minutes or longer for welded connections



## WELDED connection



### Weld preparation

- Review of welding procedure specification (WPS)
- Personal protective equipment/hot works/fire watch plan
- Environmental monitoring/Cr6 plan
- Welding consumables

### Welding

- Pipe and joint preparation
- Pre-heat and tack-up
- Welding
- Cool time
- Slag removal
- Grinding/cleaning
- Repeat (multi-pass) per WPS

### Post weld

*(not included in timeline)*

- Chemical pickle/passivate
- Rework as required
- Non-destructive examination (NDE)
- Tear down for pickle/passivate
- Re-install and leak test

# How It Works

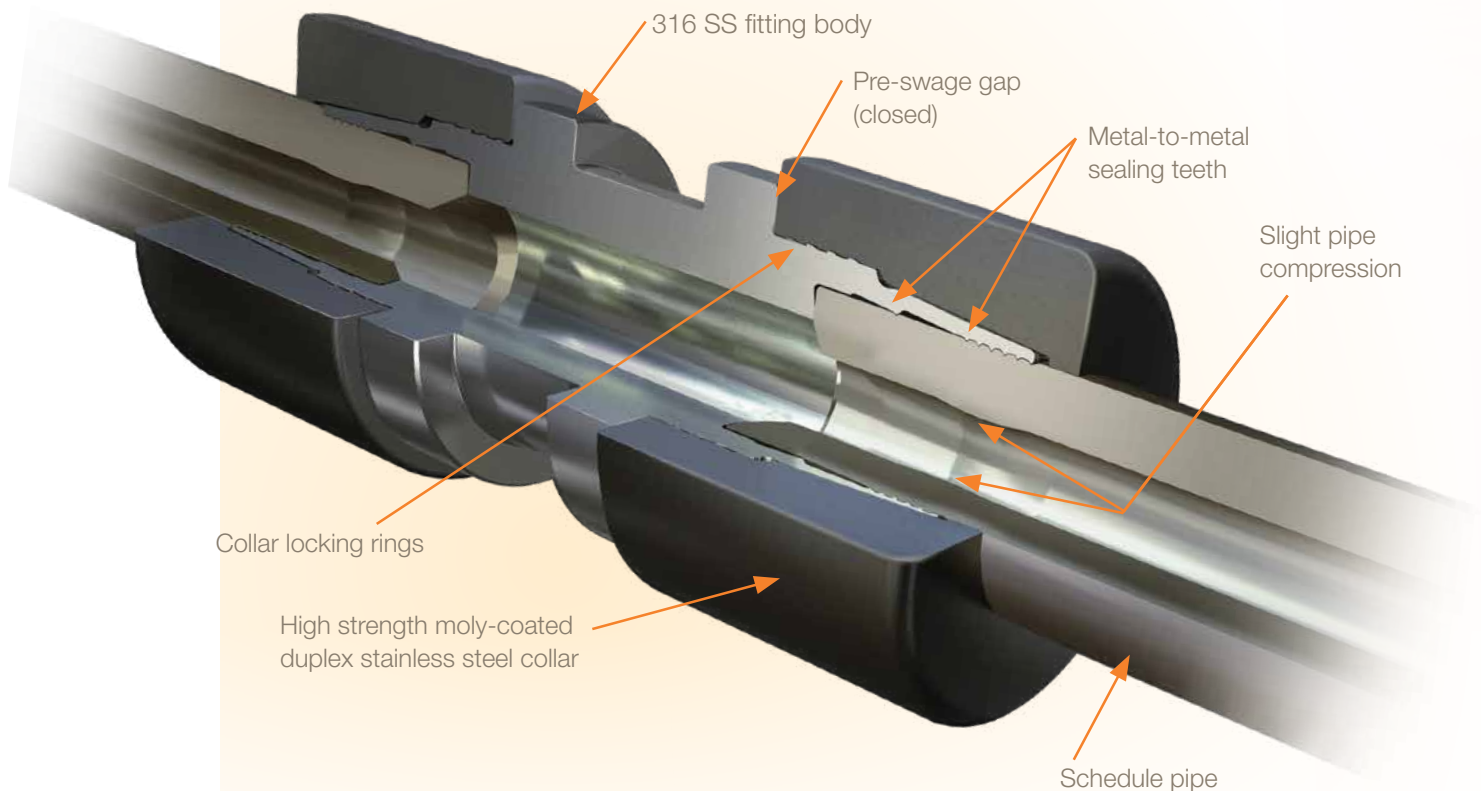
Phastite for pipe is a patented technology providing permanent connections to off-the-shelf pressure pipe. The robust design and permanent locking features assure leak-free performance in even the most demanding fluid and gas applications.

Phastite is a two-piece precision-machined fitting consisting of a 316 stainless-steel body and high strength duplex stainless steel collar. The fitting is delivered ready for fabrication with a pre-swage gap and dry film moly lubricated collar.

After a quick visual pipe inspection and gauging process, Phastite fittings are hydraulically swaged to the pipe. **The Phastite fitting with the swaging process is designed so that a weld-equivalent permanent connection is attained when the gap is fully closed.** The pipe sealing and retention features of Phastite are achieved through its unique design. As the Phastite collar is axially engaged to the fitting body, the radial sealing teeth progressively lock to the pipe. No seals or o-rings are used in this innovative metal-to-metal design.

A slight degree of pipe compression effectively provides a permanent loading to the connection, ensuring that the teeth securely hold and seal the pipe. Furthermore, collar locking rings ensure absolute connection integrity as the mating geometries between the fitting body and the collar are locked together. Once this collar is locked to the fitting body, it will not disengage—offering a stable weld-alternative connection in minutes.

## The Inside Story

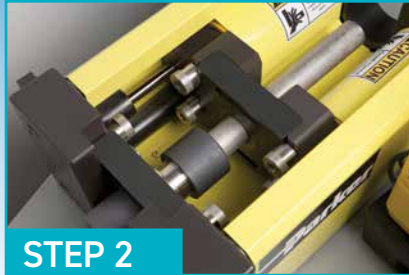


# Fast and easy assembly



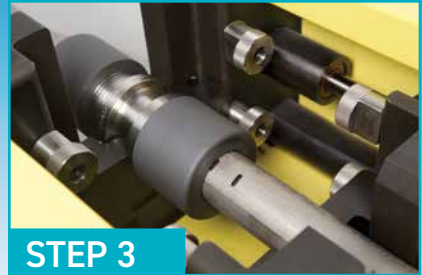
## STEP 1

Cut pipe squarely. Gauge pipe. Mark pre-insertion and post-insertion indicators on pipe.



## STEP 2

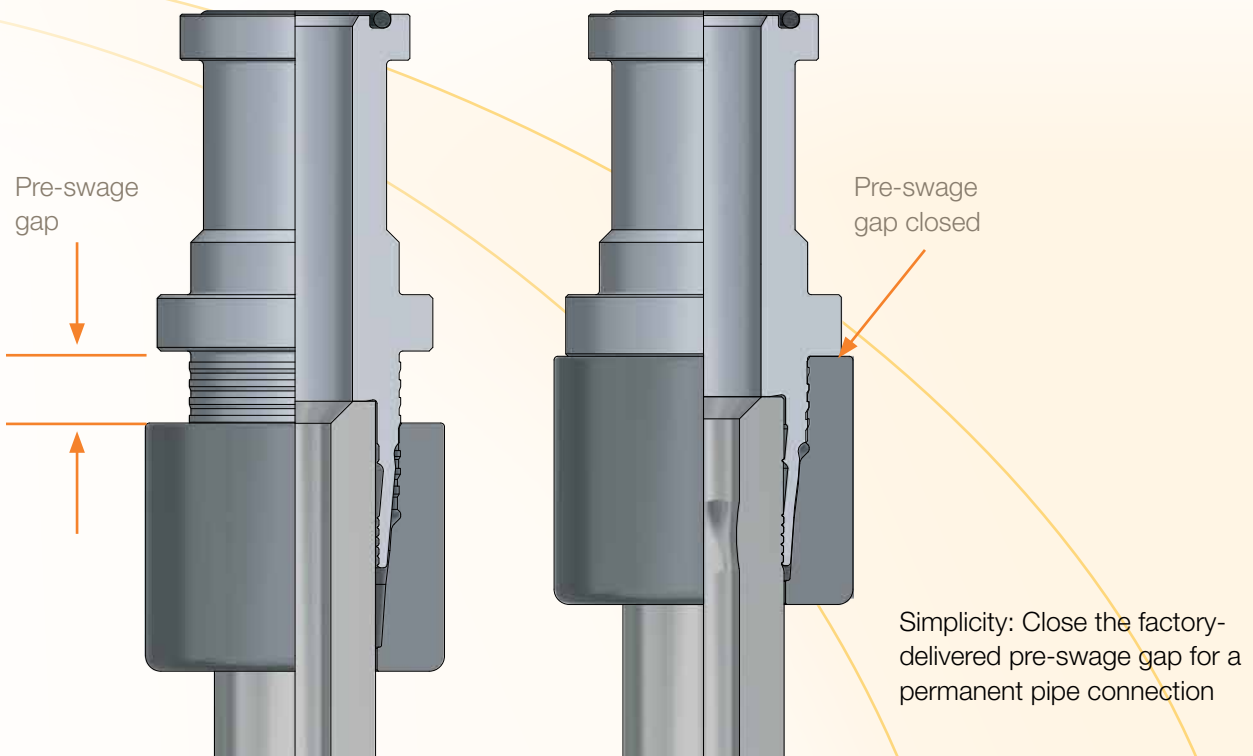
Select and load tooling, insert Phastite fitting and pipe into Phastool® machine. Actuate Phastool.



## STEP 3

Remove pipe/fitting assembly. Visually inspect pre/post insertion marks and pre-swage gap on finished connection.

Providing a permanent non-welded alternative to welding in only minutes!



# When uptime is everything

Phastite for pipe delivers unparalleled fabrication speed

A typical heavy-schedule pipe weld requires several hours to complete; and as pipe size and schedule increase, man-hours for welding dramatically grow.

## Significant welding labor savings

In contrast, Phastite connections are fabricated in minutes regardless of size or schedule, radically

improving throughput. In fact, a high-pressure welding project typically requiring several weeks to commission may be reduced to several days and require less manpower using Phastite.

Phastite fittings deliver consistency to the scheduling and commissioning process as one machine and fitting series is used across all available sizes and schedules.



Phastite fittings are compatible with Pipe Schedules 40 to Schedule XXS

## Phastite offers more than just welding time savings:



### A quick visual inspection process

- No weld inspection/NDE



### Fast commissioning of piping

- No weld-induced corrosion
- No weld-induced particulate contamination
- Piping spools are immediately ready for installation and service
- No tear-down and reinstall
- No external pickle/passivate



### Flameless/weld-free system

- Reduced EHS/PPE provisions
- No airborne chromium exposure
- Reduced fire watch time/labor
- No environmental monitoring



### Improved labor flexibility and consistent fabrication rates

Simplify the pipe connection process with Phastite

## The confidence of rigorously tested and proven technology

Fluid power systems in the oil and gas industry carry stringent performance requirements and are subjected to demanding acceptance criteria by stakeholders. Parker partnered with DNV GL to qualify Phastite for the rigorous demands of topside/marine and subsea fluid power systems.

Virtually every industrial and oil & gas performance requirement has been considered in the development and testing of Phastite. It meets or exceeds SAE/ ISO performance requirements for mechanically attached fittings and maintains both a fluid and gas-tight seal while being subjected to an exhaustive battery of application-specific tests. In short, Phastite has been tested and proven well beyond traditional mechanically attached fitting testing protocols, including tests for sub-sea hyperbaric/collapse resistance, numerous corrosion tests, and fire test.

**LEARN MORE:**

Contact your Parker distributor or visit [www.parker.com/tfd](http://www.parker.com/tfd).

## Phastite for Pipe completed and passed the following performance tests per DNVGL-RP-A203:



- Hydrostatic leak and burst to ASTM F1387
- Vibration to ASTM F1387/MIL-STD-167
- Cyclic endurance (Impulse test) to ASTM F1387 / ISO19879
- Subsea simulated hyperbaric API 5C3 (modified)
- Torsion and tension to ASTM F1387
- Bending moment
- Fire test
- Hydrogen induced stress cracking (HISC)
- Stress corrosion cracking to ASTM F1387 (modified)
- Corrosion testing (general and crevice)



Make faster pipe connections using a tested and proven technology:  
**Phastite from Parker.**

# Parker Fluid Connectors Group

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**Your complete source** for quality tube fittings, hose & hose fittings, brass & composite fittings, quick-disconnect couplings, valves and assembly tools, locally available from a worldwide network of authorized distributors.

**Fittings:**

Available in inch and metric sizes covering SAE, BSP, DIN, GAZ, JIS and ISO thread configurations, manufactured from steel, stainless steel, brass, aluminum, nylon and thermoplastic.

**Hose, Tubing and Bundles:**

Available in a wide variety of sizes and materials including rubber, wire-reinforced, thermoplastic, hybrid and custom compounds.

**Worldwide Availability:**

Parker operates Fluid Connectors manufacturing locations and sales offices throughout North America, South America, Europe and Asia-Pacific.

**For information**, call toll free...

**1-800-C-PARKER**  
**(1-800-272-7537)**

### North American Divisions

**Fluid System Connectors Division**

Otsego, MI  
phone 269 694 9411  
fax 269 694 4614

**Hose Products Division**

Wickliffe, OH  
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fax 440 943 3129

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fax 419 878 7001  
fax 419 878 7420  
(FCG Kit Operations)

**Canada**

**Milton, ONT**

phone 905 693 3000  
fax 905 876 1958  
(Contact Milton for other Service Center locations.)

**Mexico**

**Toluca, MEX**

phone (52) 722 2754 200  
fax (52) 722 2722 168

Parker Hannifin Corporation

**Tube Fittings Division**

3885 Gateway Blvd.  
Columbus, OH 43228  
phone 614 279 7070  
fax 614 279 7868

e-mail [TFDmailbox@Parker.com](mailto:TFDmailbox@Parker.com)

[www.parker.com/tfd](http://www.parker.com/tfd)

