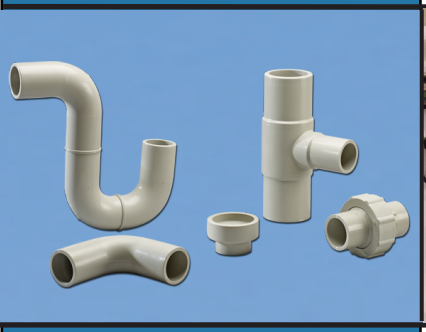
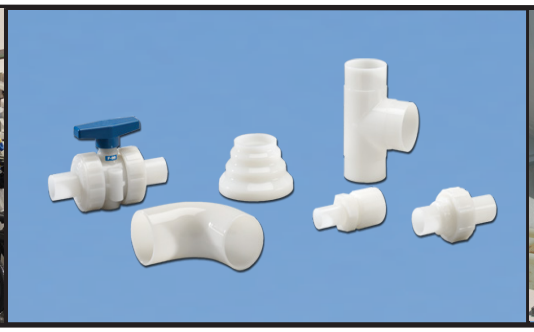
Proline®
Industrial
Piping Systems






Proline® • Super Proline® • Ultra Proline® • Chem Proline® • Welding Equipment

Another Corrosion Problem Solved.™

ASAHI/AMERICA®

www.asahi-america.com

Industrial Water and Chemical Transport Solutions

Asahi/America pioneered the market for thermoplastic valves in the United States and Latin America, during a time when there was no viable alternative to metal for piping systems.

Headquartered in Lawrence, Massachusetts (north of Boston) where we operate a 200,000 square foot manufacturing and warehouse facility, Asahi/America offers thermoplastic piping systems designed and engineered for demanding industrial applications. With our partner, AGRU of Austria, Asahi/America offers single wall piping systems in polyethylene, polypropylene, PVDF, and Halar® (ECTFE).

Asahi/America supports all of our products with a comprehensive selection of in-depth technical documents and product catalogs. To access any of Asahi/America's technical documentation, testing information, or product catalogs, visit the company's web site at www.asahi-america.com.

Proline® Industrial Piping Systems Overview

Asahi/America's Proline® thermoplastic piping systems offer many options for handling your specific industrial piping application. We provide Chem Proline® polyethylene (Advanced PE), Proline® polypropylene (PP), Super Proline® polyvinylidene fluoride (PVDF) and Ultra Proline® ethylene chlorotrifluoroethylene (ECTFE/Halar®) industrial piping systems and components.

Industrial piping systems feature a unique set of challenges compared to residential or commercial piping systems. Industrial requirements are more demanding due to the critical nature of the system. Chemical media, temperature and pressure all are vital factors when selecting an industrial piping system.

What makes up an industrial piping system?

An industrial piping system provides the owner a safe and reliable long-term solution for the chemical process requirements at the lowest possible cost of ownership.

Cost of Ownership:
Many factors should be considered when determining the ultimate cost of an industrial piping system.

- Material
- Installation
- System maintenance
- Potential costs as a result of system failure including fines, clean up, system down time
- Disposal of old failed system

Asahi/America's family of Proline® pipe have been installed in a wide array of industrial applications for over four decades.

Current installations include:

- Chemical Processing
- Petrochemical
- Mining
- Pulp and Paper
- Plating
- Pharmaceutical
- Food
- Semiconductor
- Municipal & Industrial Water
- Wastewater Treatment
- Aquariums
- Landfill Recovery
- Ultra Pure Water
- Theme Parks
- Cruise Ship Construction
- Solar Panel Manufacturing
- Ethanol Production
- Power Industry
- Railroad Yard Switching Systems

Asahi/America's installation procedures and system maintenance guidelines are designed for optimum system efficiency and cost management.

By minimizing the potential additional costs associated with installing the improper system or mismanaging the installed system, Asahi/America is ready to help keep your ultimate cost of ownership down.

ASAHI/AMERICA®

Industrial Piping System Overview

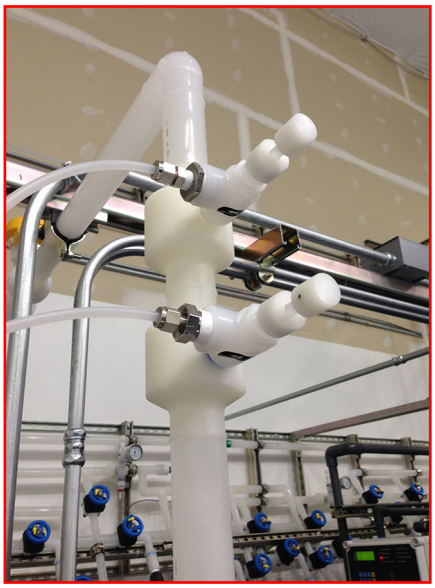
Asahi/America Proline® Engineered Piping System

Proline® piping systems are manufactured in Austria by AGRU. AGRU is recognized world-wide as a leading manufacturer of thermoplastic piping systems of PE, PP, PVDF, and ECTFE materials. The design that goes into every piping system comes from over 50 years of experience in thermoplastic molding and extruding technology. These piping systems adhere to DIN specifications.

agru
The Plastics Experts.

Expected Useful Life:

With DIN specifications, industrial piping systems made of thermoplastic materials like PE, PP, PVDF and ECTFE are designed and manufactured with an expected useful life of a minimum of 50 years. A Pro150 PP 150psi rated piping system with a built-in minimum safety factor will handle safe media (like water) at ambient temperature for a minimum of 50 years without failure at 180psi constant service. If the application is chemical service, an additional safety factor is considered, the pressure rating will be decreased and the life expectancy is usually less than 50 years.



Joining Integrity:

All Proline® piping systems use fusion welding technology. Fusion joining technologies are the most integrous thermoplastic joining methods available. Fusion is the only joining method that results in a 100 percent homogeneous bonding of the two molten surfaces. The joined surfaces become one without the introduction of any foreign material and result in a completely non-mechanical joint. Weld integrity is essential in providing a true industrial piping system because the weakest parts of all piping systems are the joints and connections. Of all the various methods of joining plastic pipe (threading, flanging, cementing, hot air welding or fusion), fusion is the only method that is non-mechanical and produces a joint as strong as the pipe itself. Fusion joining is the recommended joining method because it is both repeatable and reliable.

Pressure Rating:

All Proline® piping systems are pressure rated based on a standard dimensional ratio (SDR). SDR is the ratio between the OD of the pipe and the wall thickness (OD divided by WALL). As an example, Pro150 PP piping is an SDR 11 system. Every pipe, fitting and valve in the system in every size is made with an SDR of 11.

For PP, an SDR 11 equates to a 150psi system at ambient temperature (with a built-in safety factor). Using this SDR 11 throughout the size range means that, as you increase in pipe size, the wall thickness must also increase. This is what we call an engineered system. An engineer can confidently design a proper piping system to meet the requirements of the process for the desired life cycle.

ASAHI/AMERICA®

Materials

Asahi/America provides our customers thermoplastic piping systems in polyethylene, polypropylene, PVDF, and ECTFE (Halar®) materials. We publish an extensive chemical resistance guide to assist the user in selecting the proper piping system for the application, however, the guide cannot possibly cover every application.

Accordingly, if there is a new application for which we do not have prior experience, we will provide a free spool piece for trials in the actual service, or samples of our piping system materials for immersion testing. After the trial period is concluded, we will inspect and test the material provided back to us and issue a report on the suitability in the application. Over the years, this trial method has opened up numerous opportunities for our customers to find better piping system alternatives in handling their difficult and costly requirements.

Polyethylene (PE)

Polyethylene is one of the most common thermoplastic materials. In general, polyethylene's temperature range is 0°F (-18°C) to 140°F (60°C). Polyethylene is easy to install using thermoplastic welding techniques such as socket, butt or electrofusion. It can handle pH from 1 to 14 and is the most ductile and abrasion resistant thermoplastic material.

Polypropylene (PP)

Polypropylene (PP) is a member of the polyolefin family; PP is one of the lightest plastics known. It possesses excellent chemical resistance to many acids, alkalies and organic solvents. PP is one of the best materials to use for systems exposed to varying pH levels, as many plastics do not handle both acids and bases well. Its upper temperature limit is 212°F (100°C).

PVDF

Polyvinylidene fluoride (PVDF) is a high molecular weight fluorocarbon and has superior abrasion resistance, dielectric properties and mechanical strength. These characteristics are maintained over a temperature range of -40°F (-40°C) to 250°F (121°C) with a limited range extended to 302°F (178°C). PVDF is highly resistant to bromine and other halogens, most strong acids, aliphatics, alcohols and chlorinated solvents.

Halar® (ECTFE)

Ethylene chlorotrifluoroethylene (ECTFE) is commonly known by its trade name, Halar®. ECTFE is a 1:1 alternating copolymer of ethylene and CTFE (chlorotrifluoropethylene). It contains about 80 percent CTFE, one of the most chemically resistant building blocks that can be used to make a polymer. Additionally, ECTFE has good electrical properties and a broad temperature range from cryogenic to 300°F (150°C).

Proline® - Polypropylene (PP)

Certified to NSF/ANSI 61-G

NSF-61-G Approved

Proline® piping systems are made from the highest quality polypropylene resins. Proline® is suitable for a wide range of applications with a pH range from 1 to 14 and at temperatures over 140°F. Proline® copolymer resins exhibit better properties than homopolymer polypropylene. As such, Proline® is the best choice for process waste drains that typically see varying media and temperatures. Proline® uses fusion joining technology with socket, butt or electrofusion. Asahi/America offers a full range of molded fittings and fabricated specialty drainage fittings such as wyes, p-traps, laterals.

Ideal applications: pH range 1-14, Process Chemical and Waste, Caustic, Acids, Industrial Water

Supply Range

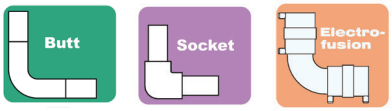
Pipe and Fitting

- 20mm - 1200mm (1/2" - 48") SDR 11, 150psi
- 110mm - 1400mm (4" - 55") SDR 33, 45psi

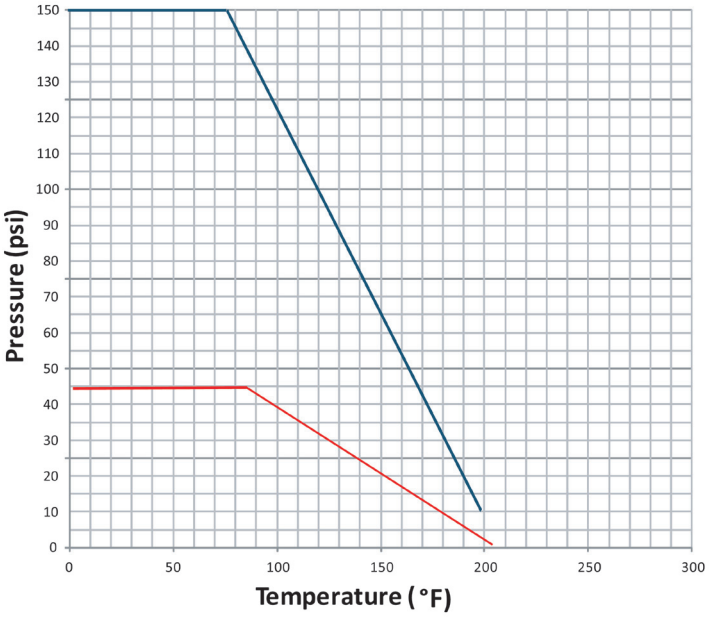
Valves

- Type-21 Ball Valves:
  20mm - 110mm (1/2" - 4")
- Type-57 Butterfly Valves:
  50mm - 1400mm (1-1/2" - 55")
- Type-14/15/G Diaphragm Valves:
  20mm - 200mm (1/2" - 10")
- Ball Check Valves:
  20mm - 110mm (1/2" - 4")
- Frank Series Regulating Valves:
  20mm - 110mm (1/2" - 4")

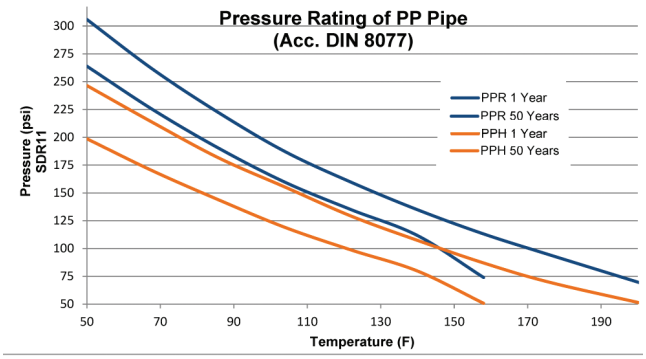
Welding Methods



Pressure Rating



Resins



All resins used for Proline® pipe are b nucleated (PP-beta) resin.

Asahi/America's Proline® PP utilizes the best materials throughout the entire size range. Proline SDR11 (Pro150) is produced using random copolymer resin (PPR) in sizes 20mm-500mm. SDR17 is also available in PPR as special order. Proline is also available using homopolymer resin (PPH) in SDR33 (Pro45), SDR17 (Pro90), and Vent Pipe. SDR17 in PPR, and SDR11 in PPH is available as special order. All molded fittings regardless of SDR use PPR resin. Fabricated fitting resin would match the resin of pipe used.

ASAHI/AMERICA®

Super Proline® - PVDF

Super Proline® piping systems are made from the highest quality suspension grade PVDF resin. Super Proline® is suitable for a wide range of applications with a pH range of 1 to 8 and temperatures up to 120°C. Super Proline® Type II PVDF resins produced by suspension exhibit better properties than Type I PVDF produced by the emulsion process. Super Proline® is the best choice for chemical process applications that typically see varying temperatures. Super Proline® uses fusion joining technology with socket or butt fusion.

Ideal applications: 93-96% Sulfuric Acid, High Temperature Fluid Transfer, Acids

Supply Range

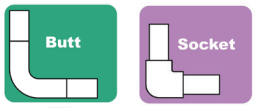
Pipe and Fitting

- 20mm - 315mm (1/2” - 12”) SDR 21, 230psi
- 90mm - 400mm (3” - 16”) SDR 33, 150psi

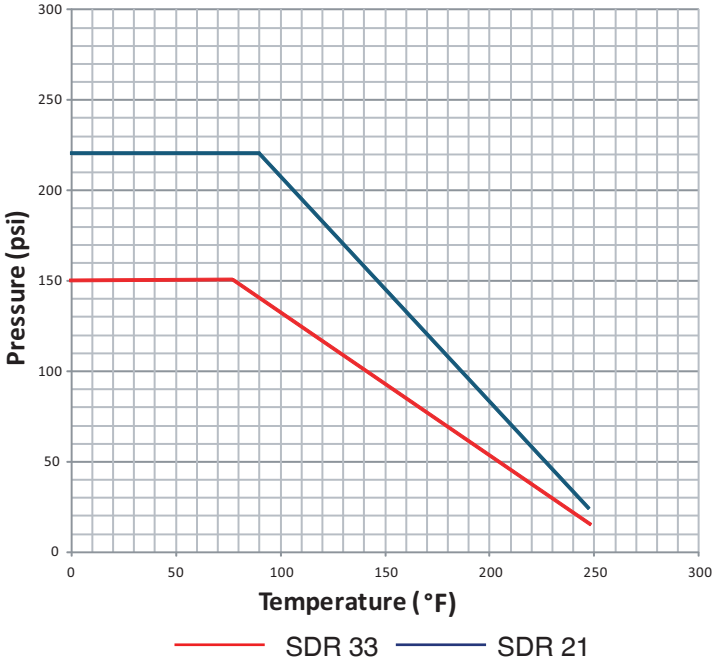
Valves

- Type-21 Ball Valves:
  20mm - 110mm (1/2” - 4”)
- Type-57 Butterfly Valves:
  50mm - 315mm (1-1/2” - 12”)
- Type-14 Diaphragm Valves:
  20mm - 110mm (1/2” - 4”)
- Ball Check Valves:
  20mm - 110mm (1/2” - 4”)
- Frank Series Regulating Valves:
  20mm - 75mm (1/2” - 2-1/2”)

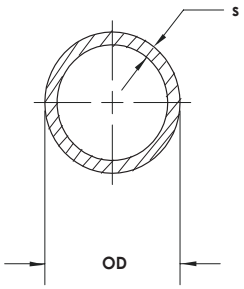
Welding Methods



Pressure Rating



SDR Advantage



$$SDR = \frac{OD}{s}$$

Standard dimensional ratio provides a consistent pressure rating across the entire size range. Super Proline® is offered in two thickness ratios: SDR 33 (150psi) and SDR 21 (230psi). Substantial cost savings can be realized by supplying SDR 33 material starting at Asahi’s industry-leading smallest diameter of 90mm. For systems requiring only 150psi, SDR 33 piping and fittings use 35 percent less material than SDR 21.

System components such as instruments and valves typically carry pressure rating less than 230psi and, therefore, savings can be immediately realized by engineering your system with equal pressure ratings.

ASAHI/AMERICA®

Ultra Proline® - Halar® (ECTFE)

Halar® (ECTFE) is a thermoplastic melt processable copolymer resin in the fluoropolymer family consisting of ethylene (E) and chlorotrifluoroethylene (CTFE). Because of its excellent chemical and temperature resistance, Halar® piping systems are highly versatile and suitable for the broadest range of applications. Halar® can handle a pH from 1 to 14. Halar® does particularly well where other alternatives like expensive metal materials (titanium, alloy 20, 316/304L SS) or lined steel are being used with limited results. Halar® is used for high concentrations of acids (sulfuric acid) and highly oxidative applications like sodium hypochlorite, chlorine gas, ozone, and chlorine dioxide with great success. It is also suitable for solvents and/or high pH applications at elevated temperatures.

Ideal applications: High Concentration Sulfuric Acid, pH 1-14, Bleach, Strong Oxidation Agents

Supply Range

Pipe and Fitting

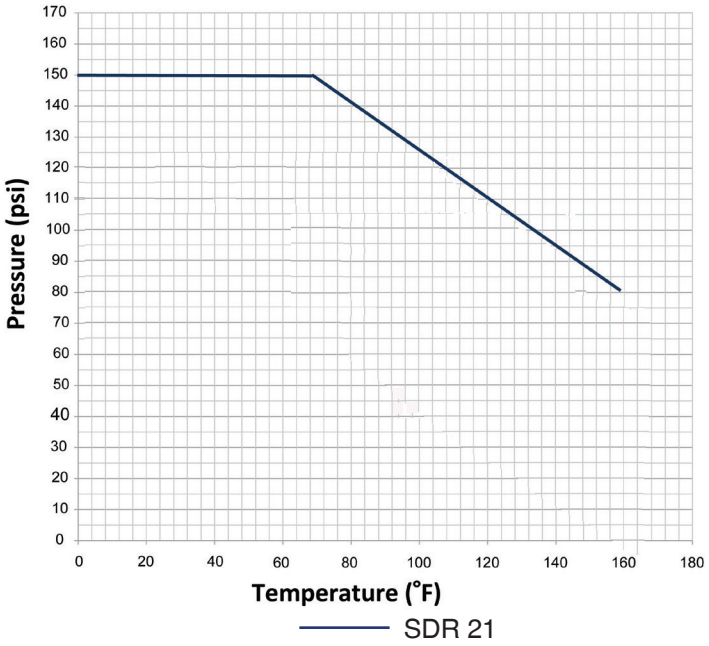
- 20mm - 110mm (1/2" - 4") SDR 21, 150psi

Valves

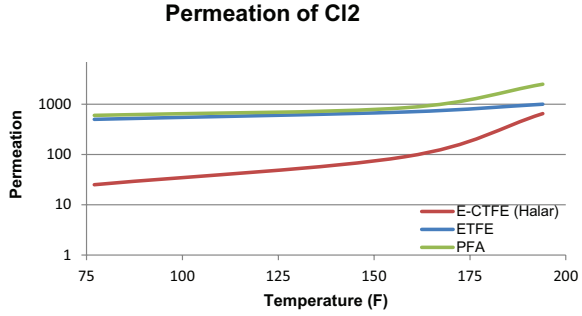
- Type-21 Ball Valves:
  20mm - 32mm (1/2" - 1")
- T-342 Diaphragm Valves:
  20mm - 63mm (1/2" - 2")
- Frank Series Regulating Valves:
  20mm - 63mm (1/2" - 2")

Welding Method

Pressure Rating



Resins



Ultra Proline® provides technical benefits as well as cost savings over traditional PFA systems and is less permeable than PFA.

Asahi/America's Ultra Proline® piping system is manufactured by AGRU of Austria from Solvay's Halar® resin (ECTFE).

ECTFE is one of the most chemically resistant plastics available.

Industrial Piping System

Chem Proline® by Asahi/America

NSF Certified to NSF/ANSI 61-G

NSF-61-G Approved

Pipe and Fittings
- 20mm - 315mm (1/2” - 12”) 150psi

Valves
- Type-21 Ball Valves: 20mm - 110mm (1/2” - 4”)
- Type-57 Butterfly Valves: 50mm - 315mm (1-1/2” - 12”)
- Type-14 Diaphragm Valves: 20mm - 250mm (1/2” - 10”)
- Ball Check Valves: 20mm - 110mm (1/2” - 4”)
- Regulator Valves, Relief Valves, Calibration Columns, Gauge Guards

Gas and Air Handling Piping Systems

Air-Pro® Compressed Air Piping

Pipe and Fittings
- 20mm - 110mm (1/2” - 4”) SDR 7.4, 230psi
- 160mm - 315mm (6” - 12”) SDR 11, 150psi

Valves
- Ball Valves: 20mm - 63mm (1/2” - 6”)

Welding
- Butt, socket, electrofusion

Pro-Vent® Duct System

Pipe and Fittings
- **PP** 63mm - 1200mm (2” - 48”)
- **PPs** 63mm - 1200mm (2” - 48”)
- **PPs-el** 90mm - 400mm (3” - 16”)
- **PE** 90mm - 1200mm (3” - 48”)
- **PVDF** 63mm - 400mm (2” - 16”)

Welding
- Hot air welding

ASAHI/AMERICA®

Welding Equipment Available for Purchase or Rent

Butt Fusion

Miniplast®
Most compact butt fusion tool available for 20mm - 110mm (1/2” - 4”) straight or mitered welds.

Maxiplast®
Butt fusion tool available for 110mm - 160mm (4” - 6”) straight or mitered welds 50mm-160mm (1-1/2” - 6”).

Shop 12
Bench-style butt fusion tool for 50mm - 315mm (1-1/2” - 12”) PP and PVDF welding.

Socket Fusion

Hand Held Socket 2
Socket fusion tool welds 20mm - 63mm (1/2” - 2”) pipe.

Bench Socket
Socket fusion welding of components from 20mm - 125mm (1/2” - 4-1/2”).

Electrofusion

Polymatic
Electrofusion tool for welding PP and HDPE couplings for Proline®.

Welding Equipment Selection Chart

Equipment	*Proline® PP*	*Chem Proline® Advanced PE*	*Super Proline® PVDF*	*Ultra Proline® ECTFE*	*Pro-Vent® PP*
Miniplast®	X	X	X	X*	
Maxiplast®	X	X	X	X*	
Halar® Shop 6	X	X	X	X	
Shop 12	X	X	X		X
Hand Held Socket 2	X	X	X		
Bench Socket	X	X	X		
Field 6	X	X	X	X*	
Field 10	X	X	X	X*	
Field 12	X	X	X		X
Field 14	X	X	X		X
Field 20	X	X	X		X
SP-S	X*	X*	X*	X	X
Polymatic	X	X			
Hot Air Welder					X

* Requires optional Halar® mirror heating element.

Design and Installation

Installing any piping system properly requires preplanning. The installation is more than the welding of components. It requires the proper environment, material inventory, welding equipment, tools, and thorough training.

The selection of the type of welding method conducted on a single wall industrial piping project should be based on the following criteria:

- Material
- Chemical transported
- Sizes to be installed
- Welding location
- Type of installation
- Available expertise

A chemical system is a critical utility within a plant's operation. An unplanned shutdown can prove to be more costly than the piping construction itself. One bad weld can cause hours of repair and frustration, as well as significant lost revenue. For these reasons, it is critical to receive training at the time of the job start-up and use certified personnel throughout the course of a project.

Design and Installation Considerations

System Design and Installation

Choosing the right material is the first step in the process of designing a chemical piping system. The important factors involved in making the "best" choice include chemical compatibility, process requirements, temperature resistance, pressure rating, installation considerations, joining integrity and cost of ownership. Usually you have several options to choose from in deciding what material to use for your new industrial piping system. The factors to consider are primarily life expectancy and cost of ownership. If the life expectancy is the same for all the possible options, other factors like installation concerns and available welding methods are also determining factors.

Hanging any thermoplastic system is not that much different than hanging a metal system. Typically, the spacing between hangers is shorter due to the flexibility of plastic. In addition, the type of hanger is important. Consult Asahi/America's Engineering Design Guide for specifics.

Plastic pipe systems will expand and contract with changing temperature conditions. It is the rule and not the exception. The effect of thermal expansion must be considered and designed for in each and every thermoplastic pipe system. Thermal effects in plastic versus metal are quite dramatic. Consult Asahi/America's Engineering Design Guide for calculations and formulas needed to allow for thermal expansion.

An increase in temperature in a system will cause the pipe to expand. If the system is locked in position and not allowed to expand, stress in the system will increase. If the stress exceeds the allowable stress the system can tolerate, the piping will fatigue and eventually could fail.

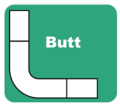
To compensate for thermal expansion, Asahi/America recommends using loops, offsets, and changes in direction. By using the pipe itself to relieve the stress, the integrity of the pipe system is maintained.

Asahi/America can also engineer the system as a restrained system, using dogbones to control the effects of expansion nd contraction within the allowable stresses of the pipe system.

Design and Installation

Welding Methods

There are three main joining methods used for Proline® piping systems: butt, socket and electrofusion. Often a system will employ more than one of these options in order to facilitate the installation the best way possible. Each method yields an integrous – full pressure rated – fusion joint as strong as the pipe itself. The times to make and cure the joints are shorter than other joining methods like solvent cementing PVC and CPVC pipes, welding, soldering or threading metal pipes, adhesive bonding FRP pipes or flaring/flanging lined steel pipes.



Butt Fusion

Butt fusion is where the ends of the pipes and/or fittings are butted together. This method always produces a minimum bead on both the inside and outside of the joint. In this method, couplings are not required to make pipe-to-pipe connections. Butt fusion is available in two formats: contact and non-contact (also known as infra-red or IR). The difference is that during contact the material touches the heater plate and in non-contact the material does not touch the heat source. Most industrial fluid handling applications use contact fusion. Butt fusion is available from 1/2” up to 60” size diameters.

The illustration to the right shows the contact butt fusion process.

The basic steps are as follows:

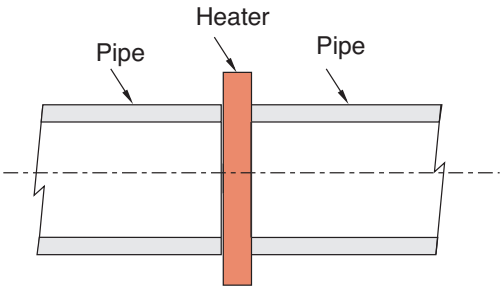
- Initial Melt: After planing the pipes, they are applied to the heater plate under an initial pressure until a melt is seen all the way around.

- Heat Soak: Once the initial melt is achieved, the pressure is lowered close to zero and the heat soak time is counted.

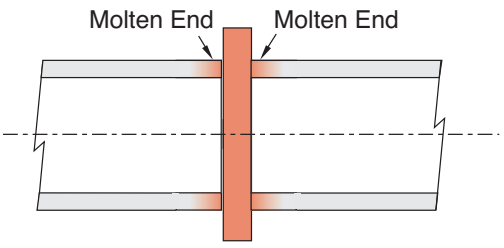
- Joining: After the heat soak time is up, the pipes are separated from the heater plate, the heater plate is removed and then (while the two surfaces are still molten), the pipes are joined together quickly and the welding pressure is applied.

- Cooling: The joint is left alone (under pressure) during the cooling time.

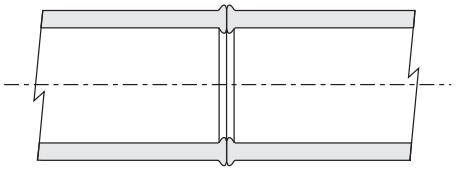
The process is complete and the joint can be immediately moved to prepare for the next joint.



Inital Melt



Heat Soak Time



Joining and Cooling

Design and Installation

Socket Fusion

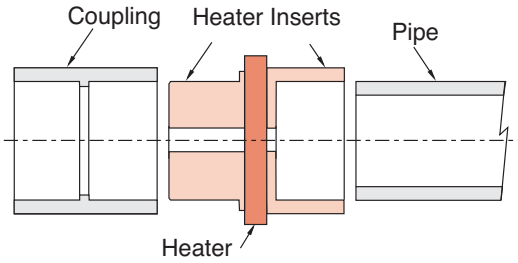
Socket fusion is where the inside socket of the fitting and the outside surface of the pipe are melted and the pipe is then inserted into the socket of the fitting. This method is available in size range from 1/2” up to 4”. Socket fusion tools are available in a hand-held version and a bench version. Hand-held socket fusion is usually used for smaller sizes like 1/2” – 1” while the bench tool can be used for all sizes.

The illustration to the right shows socket fusion steps:

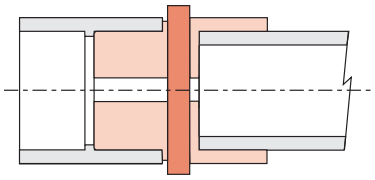
- Melting the Pipe and Fitting: After prepping the end of the pipe, insert the pipe and the fitting onto the heater bushings simultaneously and hold for the heating time.

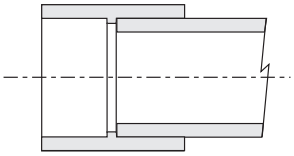
- Making the Joint: After the heating time, pull the pipe and fitting off the heater bushings and immediately insert the pipe into the socket of the fitting up to the socket depth.

- Cooling: After ensuring the pipe has been inserted properly, allow the new fitted joint to cool for the specified time before moving the joint.



Preparation of the Weld


Alignment and Preheat


Joining and Cooling

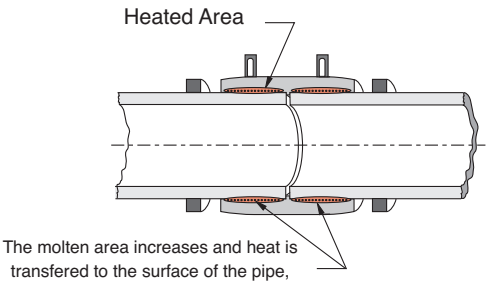
Electrofusion

Electrofusion utilizes couplings only. The electrofusion coupling is fitted with a metal electrically generated heating coil imbedded just under the surface of the inside wall of the fitting. There are two leads that come out of the OD of the fitting for connecting the wires to the fitting for fusion. Electrofusion is used more for convenience rather than as the primary joining method for an entire project. It is especially useful in making position joints over head in a rack where it is more difficult to use butt or socket fusion.

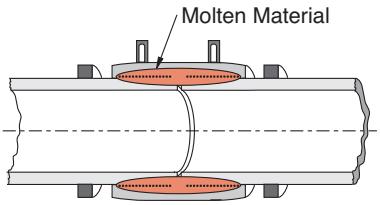
The illustration to the right shows the electrofusion process:

- Welding the Joint: After peeling the two pipes, insert both into the socket of the coupling up to the stop. Two leads are connected to the coupling from the heating unit. The joint is then fused.

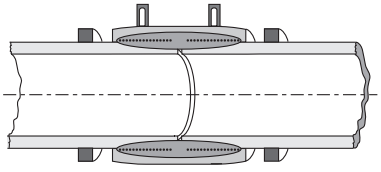
- Cooling: After fusion, the coupling should be allowed to cool for the prescribed curing time. After curing, the joint can be moved.



Initial Heating



Weld Forms


Completed Weld

Custom Fabrication

Asahi/America, Inc. provides fully customized assemblies, tanks and fittings to support the most demanding customer needs. Our thermoplastic experts can assist in up-front design or post-design manufacturing. From micro-machining to mega-assemblies, Asahi is there to help solve your corrosion problem.

Support

- Staff engineers for design analysis
- Industry leading turnaround time
- Onsite start up and product training

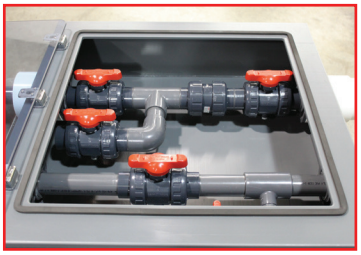
Services

- Prefabrication in spool pieces
- Precision plastics machining
- Design and development

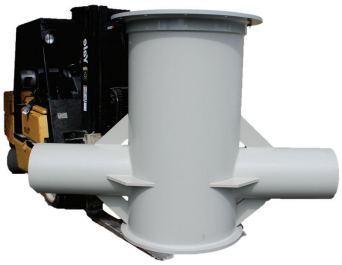
Specialty Products

Fabricated Fittings and Spools

Skids



Valve Enclosures



Buried Manway

Commercial Piping Systems

Asahitec™

PP-RCT Plumbing and HVAC Piping Systems

PP-RCT is the latest advancement in polypropylene polymers and has a wide range of benefits for commercial plumbing systems. It has a more complex crystalline structure that provides greater pressure resistance at higher temperatures than conventional PP materials. When utilized in a piping system, these enhanced mechanical properties make it suitable for higher temperature applications such as boiler and hot water systems. They also create lighter and thinner piping while maintaining the necessary system pressure ratings. PP-RCT can also be extruded in a multilayer pipe with an inner Fibercore™ layer. This core reduces the impact of thermal expansion on the piping system.

Asahi/America offers a full range of PP-RCT commercial plumbing products. Climatec™ piping provides unmatched durability for HVAC distribution piping. Watertec™ piping is the ideal solution for hot and cold potable water systems. All fittings are made from PP-RCT resin and are available in socket fusion from 20mm – 125mm (1/2” – 4-1/2”) and molded butt fusion from 160mm – 630mm (6” – 24”). We offer a complete range of adapter fittings for metal and PEX plumbing constructed of lead-free brass.The piping systems are offered with our leading quality Asahi valves and welding equipment. Our PP-RCT pipe and fittings are NSF 14-pw certified for potable water applications.

Size Range	Socket fusion 20mm - 125mm (1/2” - 4-1/2”) Molded butt fusion 160mm-630mm (6” - 24”)
Valves	Compact Ball Valve: 20mm - 63mm (1/2” - 2”) Materials: PP-RCT Type-21 Ball Valve: 20mm - 110mm (1/2” - 4”) Materials: PP/EPDM body with PP-RCT end connectors Type-57 Butterfly Valve: 50 - 500mm (1-1/2” - 16”) Materials: PP/EPDM Type-14 True Union Diaphragm Valve: 20mm - 63mm (1/2” - 2”) Materials: PP/EPDM
Welding	Butt, socket, electrofusion

ASAHI/AMERICA®

Double Containment Piping Systems

Poly-Flo®

- **Standard Sizes:** 1” x 1-1/2” (32mm x 50mm), 2” x 3” (63mm x 90mm) and 4” x 6” (110mm x 160mm)
- **Materials:** Proline® PP-R, Chem Proline® Advanced PE

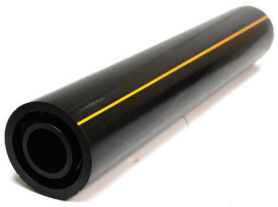
- **Welding:** Simultaneous butt fusion

Chem Prolok® by Asahi/America

NSF Certified to NSF/ANSI 61-G

NSF-61-G Approved

- **Standard Sizes:** 1” x 3” through 12” x 16”
- **Materials:** Advanced PE x PE100, Advanced PE x Advanced PE
- **Welding:** Simultaneous butt fusion



Duo-Pro®

- **Standard Sizes:** 1” x 3” through 24” x 32”
- **Materials:** Proline® PP-R, Super Proline® PVDF, Ultra Proline® ECTFE

- **Welding:** Simultaneous or staggered butt fusion

Pro-Lock®

- **Standard Sizes:** 1/2” x 2” through 4” x 8”
- **Materials:** PVC, CPVC Clear PVC also available

- **Welding:** Simultaneous and staggered solvent cement joint

Leak Detection Systems

For underground pressure systems of hazardous chemicals.

Options: Continuous sensing cable, low point sensors, or a combination of components, cable and probes.

PAL-AT™: A continuous leak detection cable system that can also incorporate low point probes.

Liquid Watch™: A flexible, modular low point system based on inline probes.

Fluid-Lok®

- **Standard Sizes:** 1” x 3” though 24” x 32”
- **Materials:** PE 4710

- **Welding:** Simultaneous butt fusion

ASAHI/AMERICA®

Another Corrosion Problem Solved.™

Tel: 800-343-3618; 781-321-5409
Direct Sales: East (800) 232-7244
Central (800) 442-7244
West (800) 282-7244

Fax: 800-787-6861
www.asahi-america.com
asahi@asahi-america.com