



# Water & Wastewater Treatment

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Water and wastewater treatment facilities around the world demand only the best piping systems to process and treat our precious water. That is why Specifiers trust the quality products from Spears® Manufacturing Company for water and wastewater treatment applications. With a complete selection of pipe, valves, fittings and specially-formulated chemically resistant cement and primer for use in these critical applications, Spears® products are the obvious choice. Spears® piping systems are used in all types of water treatment applications including:

## Applications

Water Treatment

Wastewater Treatment

Coagulation / Flocculation

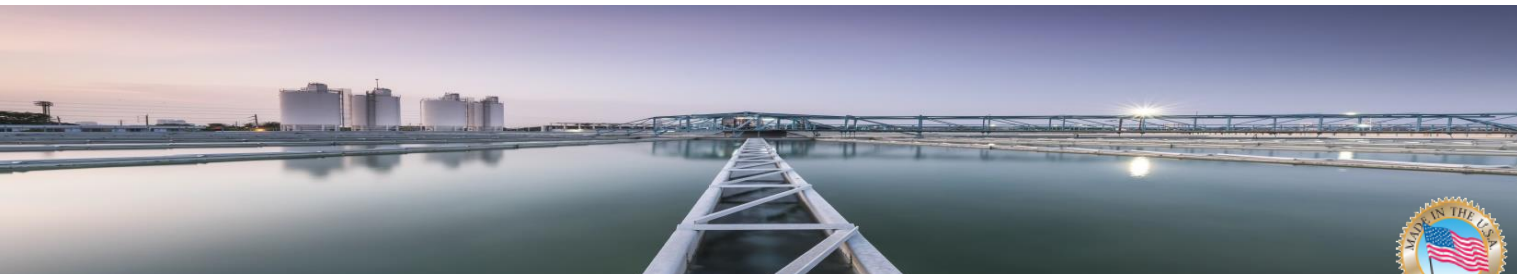
Ion Exchange

Membrane Filtration

Dosing

## Spears® Piping System Features

- **Eliminates Corrosion:** Spears® thermoplastic products are not susceptible to any type of corrosion including microbial and oxidative corrosion which can shorten the service life of metal piping. Also, thermoplastics are not affected by pH – the measure of the acidity or alkalinity of water. These outstanding features provide the user with the assurance of a long-lasting piping system capable of withstanding a wide range of chemicals in all stages of the water treatment process.
- **Reduced Installation Costs:** Spears® piping systems are installed using a chemical fusion process consisting of solvent cement and primer. This process eliminates the “hot work” created by welding or cumbersome joining of heat fusion machines and reduces installation costs by using simple plumbing tools. Patented Special Reinforced (SR) collars are also available on Spears® female threaded adapters and valves to prevent fractures from overtightening.
- **Exceed Regulatory Requirements:** U.S. EPA clean water standards are the most stringent standards in the world. Spears® products are listed for use in potable water applications by NSF International. With a focus on public health, Spears® also offers advanced, environmentally-friendly low VOC cements and primers.
- **Provides a Limited Lifetime Warranty:** Spears® provides a lifetime warranty from defects in workmanship and material to reassure our Customers that we stand behind our products for life. Spears® Manufacturing Company is proud to be the only thermoplastics manufacturer that offers this type of extended warranty.



## Water Treatment

Spears® piping systems have been utilized in water & wastewater treatment for many years due to their exceptional material characteristics and are now the preferred brand for water treatment applications. Spears® piping systems have a C-Factor of 150 providing the ultimate inside diameter pipe smoothness which enhances flow characteristics. Spears® PVC & CPVC piping systems also provide a wide range of resistance to chemicals and high temperatures normally encountered in water treatment applications.

## Flocculation

Flocculation is used to remove visible material from water, treat turbidity issues and promote the rapid settlement of unwanted colloidal particles which are then filtered out of the water. The chemical resistance of Spears® materials make our piping systems ideal for the coagulation / flocculation process.

## Membrane Filtration

Many forms of membrane filtration can be found in water and wastewater treatment processes including Reverse Osmosis, Ultrafiltration, Microfiltration and Nanofiltration. These filtration technologies aid in the removal of pathogens, bacteria, Giardia Cyst, Cryptosporidium and other potentially dangerous human viruses and bacteria.

Spears® piping systems offer the perfect solution for these filtration processes due to their exceptionally smooth interior pipe surfaces which do not promote biofilm growth. Spears® piping systems are available from 1/8" to 24" with an unmatched range of fitting configurations and control and throttling valves.

## Ion Exchange

Using resin bead technology, the ion exchange process exchanges unwanted ions for other more desirable ions. Calcium and magnesium, two examples of undesirable hard water minerals that scale the inside of metallic pipe are eliminated by the ion exchange process. Spears® piping systems do not promote scale buildup and are recommended for use with ion exchange systems.

## Dosing

The chemical dosing process is implemented to reduce bacteria and microorganisms using Biocides. Biocides include Chlorine, Chlorine Dioxide, Chloroisocyanurates, Sodium Hypochlorite and Ozone; very aggressive chemicals that can attack metal piping. Spears® piping systems are appropriate for use with most Biocides. Be sure to check appropriate chemical resistance information before use.



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