

CORZAN™

INDUSTRIAL SYSTEMS

For Industrial Piping Systems in Pulp and Paper Mills



Lubrizonol

CORZAN™ The economical alternative to traditional

INDUSTRIAL SYSTEMS

In virtually every industry today, manufacturers are looking for more cost-effective operations. In the pulp and paper industry, this includes piping materials as well as methods to reduce costs while still meeting piping/processing requirements. The key objective is to find new or improved corrosion resistant materials for construction which reduce overall costs and maintenance, while providing long-term service.

This brochure is about one such way: the use of industrial piping systems made from Corzan® CPVC (chlorinated polyvinyl chloride) specialty thermoplastics. The most outstanding characteristic of industrial piping manufactured from Corzan CPVC is its corrosion resistance – a necessity in an industry in which harsh, highly corrosive chemicals are routinely used. But it is CPVC's excellent balance of qualities – not only chemical resistance, but excellent hydraulic capability, good abrasion resistance, and lower thermal conductivity, that produce both long service life and cost savings. Plus, CPVC piping is lightweight and easy to install. These savings can be documented from beginning to end: lower piping costs, lower installation costs, and lower retrofit and overall maintenance costs.

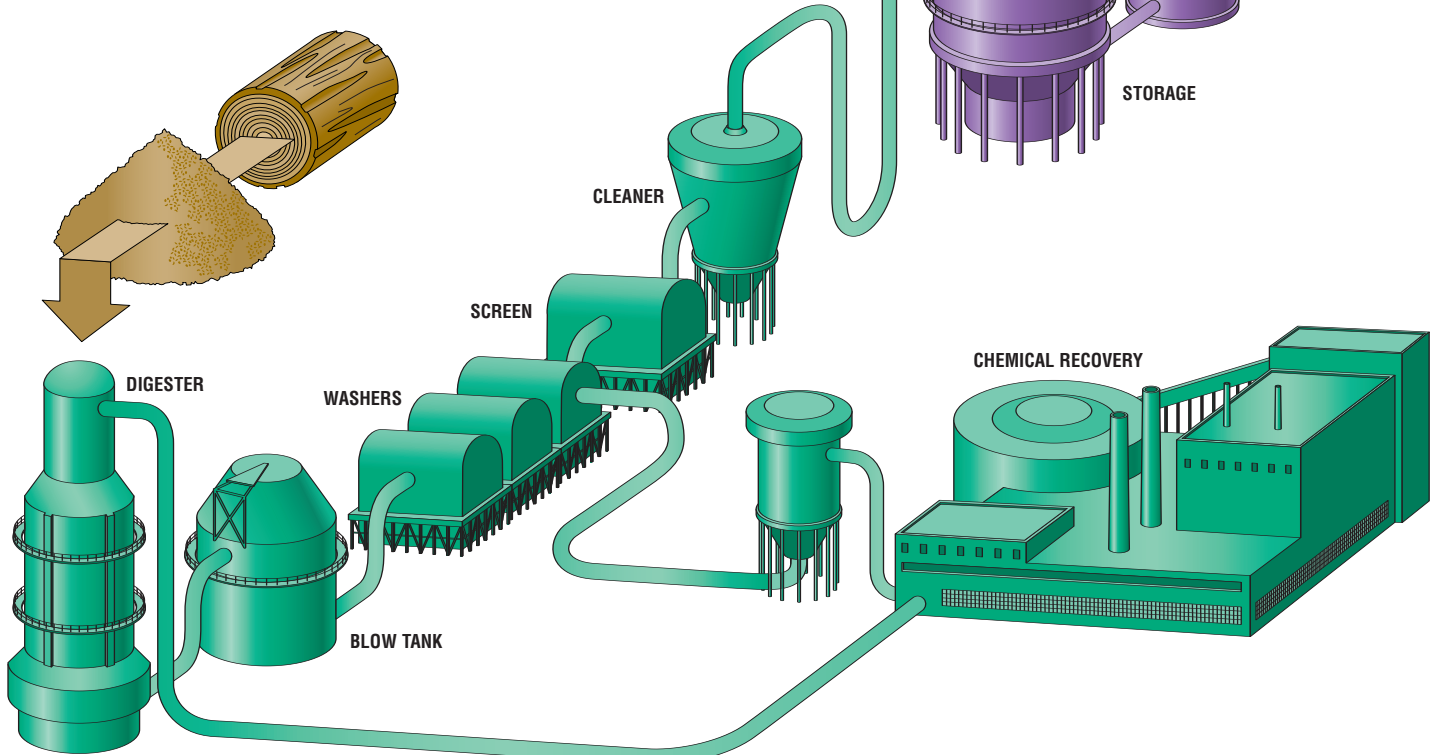
This combination of features makes CPVC industrial piping a preferred material for many pipe service applications within the pulp and paper process.

Pulp/Chemical Recovery Process

An integral part of the chemical pulping process is the recovery of chemical cooking liquors.

Equally important is the mill's ability to re-use these liquors as well as other process byproducts. Piping in this operation must have the ability to withstand a range of acids and bases at

elevated temperatures. Corzan industrial pipe has excellent chemical resistance to caustic soda, calcium carbonate and lime, which are used in the chemical recovery of kraft cooking liquors. In a possibly more demanding application CPVC piping is recommended for use in



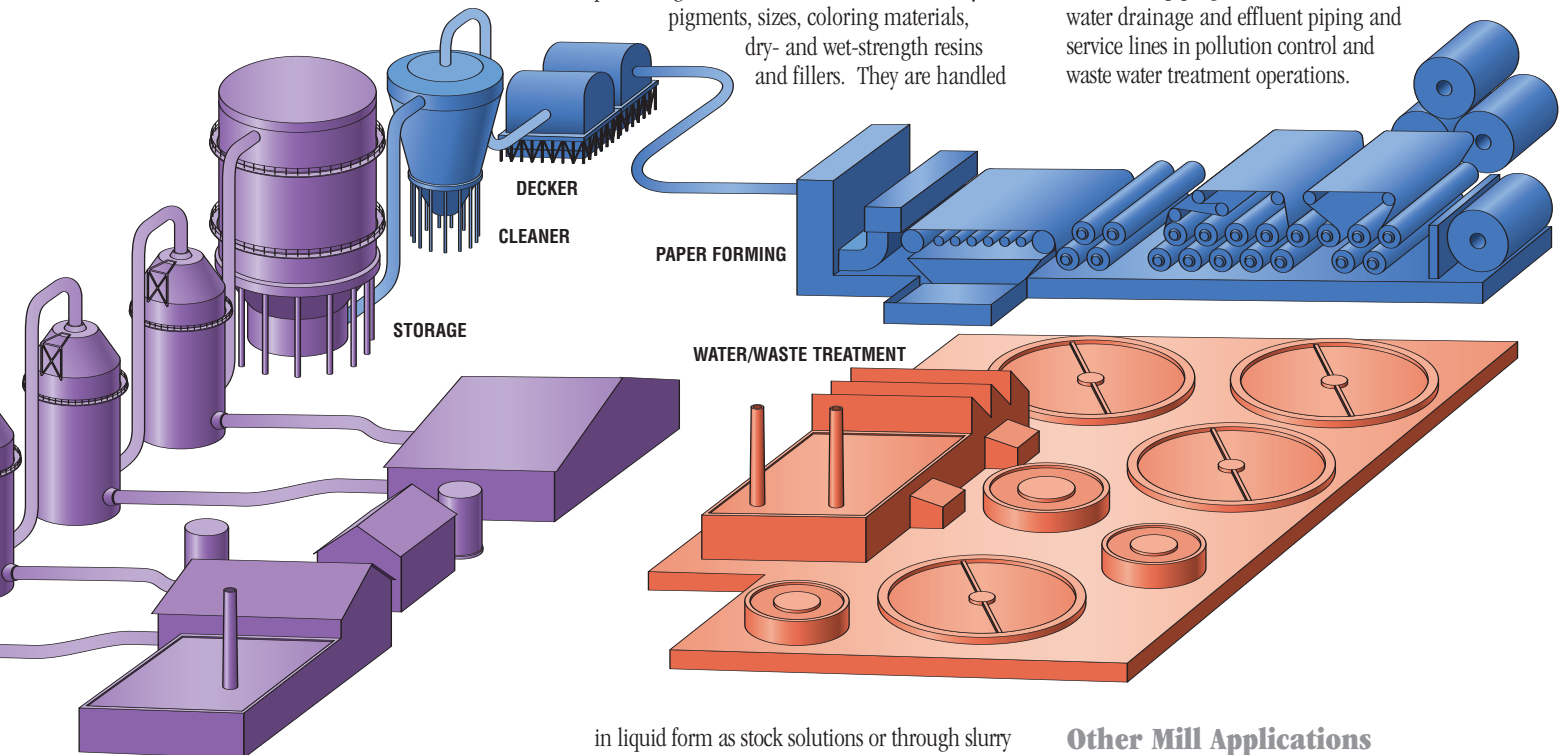
piping materials for pulp and paper applications.

black liquor spent acid lines. Tall oil byproduct production calls for similar spent acid handling and transfer of dilute sulfuric acid solutions which are currently handled by Corzan industrial piping. Chemical recovery systems for sulfite pulp also utilize sodium base systems which demonstrate

Stock Preparation/ Paper Making Operations

Before papermaking or sheet forming, several stock additives are added to the pulp either to improve the properties of the paper or facilitate processing. These additions include a variety of pigments, sizes, coloring materials, dry- and wet-strength resins and fillers. They are handled

Corrosion resistant CPVC industrial piping systems have been used for water distribution for more than 40 years and are recommended for most plant water supply and distribution lines. Other Corzan CPVC applications include waste water piping and drains, white water service, water drainage and effluent piping and service lines in pollution control and waste water treatment operations.



good chemical compatibility with this piping system. Additionally, the pipe's abrasion-resistant properties can provide selected use for effluent handling and slurry lines.

Bleach Plant Operations

Bleach plant piping systems are exposed to the most corrosive environment within the pulp and paper process with such chemicals as chlorine dioxide and hydrogen peroxide used in multiple stages in the bleaching process. These solutions can affect service life of carbon steel and stainless steel piping materials. Corzan piping has demonstrated excellent service in bleach plant process lines and has provided such service even when exposed to several corrosive acidic and caustic solutions found in bleach preparation and process operations. Corzan piping has been used to handle sodium hydroxide, sodium chlorate, sodium chloride, hydrochloric and sulfuric acids. It can service chlorine dioxide, sulfuric acid, and hydrogen peroxide piping requirements where metallic materials exhibit internal and external corrosion problems.

in liquid form as stock solutions or through slurry lines. Chemical and abrasion resistance are important considerations in the selection of piping materials in the operation. CPVC is chemically inert to most stock additives and papermaking chemicals. These include rosin, starches, titanium dioxide, and various waxes. Corzan industrial piping has been used successfully in the handling of titanium dioxide. Also, extensive handling of fresh and white water during the papermaking process makes Corzan piping systems a good alternative to metal pipe.

Water Handling and Distribution

The pulp and paper industry is one of the largest users of water. As a result, the distribution and recovery of water is an integral operation in paper production. Pipe corrosion problems caused by aggressive water will affect the required efficient handling of these fluids.

Other Mill Applications

The outstanding balance of physical properties offered by materials manufactured from Corzan CPVC compounds makes it suitable for other uses in the pulp and paper mill. CPVC packing media are utilized in bleach plant and lime kiln wet scrubber systems. Dual laminate piping and vessel construction utilizing Corzan CPVC and/or sheet as the exposed corrosion resistant barrier in a process system offers multiple benefits by creating a product with excellent chemical and abrasion resistance as well as superior strength with the addition of fiberglass on the exterior of the pipe or vessel. Other CPVC specialty molded and fabricated



fluid handling products in current use in chemical process industries include valves, pumps, and basket strainers.



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