

CASE STUDY



FORMING, SIZING AND STRAIGHTENING ERW TUBE FORMING PROJECT

CHALLENGES

A large ERW Tube & Pipe producer desired to lower their operating costs in order to maintain their competitive position in the industry. As part of their program, the producer was interested in:

- » Reducing number of suppliers
- » Improving quality
- » Increasing output
- » Transferring Process Fluid Management to one supplier thereby allowing their personnel to concentrate on producing pipe

The company they chose to provide all their process fluids was Quaker Chemical.

THE SOLUTION

- » Introducing a full line of Quaker products the manufacturer achieved an estimated yearly savings in excess of \$500,000
- » The customer introduced Quaker to five of their other mills throughout the United States

Quaker's products, engineering, and services provided improvements in process efficiencies and quality lowered operating costs in the following areas:

SIZING AND FORMING COOLANTS

QUAKERCOOL® 2855 - Installed on all ERW lines. Customer obtained immediate cost saving and process improvements:

- » Greatly reduced bacteria, mold and fungi
- » Provided greater fine settling
- » Eliminated smoke, oil misting and compatibility issues
- » Exceptional cleanliness and detergency
- » Improved finish and appearance
- » Improved employee health and safety
- » Greater sump life
- » Longer saw blade life
- » Greatly reduced residues on machines and rolls
- » Cleaner pipes - smut reduction
- » Lower operating cost - a minimum of 15% savings

ROLL AND TRANSFER BEARING GREASE

QUAKER DYNACHEM™ LC EP 2 - Replaced the current greases with the following benefits:

- » Excellent resistance to water wash-out
- » Superior rust and corrosion protection
- » Outstanding protection at high temperatures (dropping point 550°F+)
- » Good shock-loading protection (Timken OK)
- » Excellent EP protection for heavy loading

GEARBOX LUBRICATION

QUAKER PROTECH EP-680 - Replaced the current oil-based gearbox lubricant causing premature failures of gears. Upon inspection, Quaker noted the gears were varnished and had accumulated carbon deposits. This was caused by excess heat. Oil was running at 200°F, which is much greater than the manufacturers recommended 140°F. The severe oxidation caused increased viscosity, sludge, varnishing and an increase in acidity leading to gear failure. **QUAKER PROTECH EP-680** worked extremely well in the high temperature application. It provided higher oxidation stability and gave outstanding wear protection.

CLEANING

QUAKERCLEAN® LFE - Replaced the current cleaner with the following advantages:

- » Used concentration is 1% to 5% - low applied cost
- » Quickly penetrated soil for complete removal with no redeposit of residues
- » Will not foam in high-pressure spray applications
- » No waste treatment issues

CORROSION INHIBITOR

FERROCOTE® 364 BFT1 - Applied to the pipe surface, where a hard coating was not required, just prior to bundling on all lines. This is a solvent dispersed barium free corrosion preventive, formulated to provide indoor protection on ferrous and non-ferrous surfaces with the following

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benefits:

- » A single product to protect many metals, simplifies operations and reduces inventory costs
- » Rapid displacement of moisture reduces initiation of corrosion. Passes MIL-C-16173 requirements
- » Neutralized the effect of acid residues from fingerprints, passes MIL-C-15074 requirements
- » Compatible with most final corrosion preventives and bearing oils and greases. No need to remove, reduced processing costs (cleaning)
- » Quaker designed application system to coat pipes

COATING

QUAKERCOAT® 155 - Black water-based, air-curing, permanent protective coating intended for use as a long-term outdoor corrosion inhibitor. QUAKERCOAT® 155 exhibits a rapid dry, high gloss black finish. It replaced the current hard coating for their sprinkler pipe. Customer obtained immediate cost saving and process improvements:

- » Reduced coatings consumption - excellent transfer efficiencies
- » Maintained consistent operation - less downtime
- » Rapid drying in all mill conditions (1-2 secs tack free time versus 3-5 mins for the current coating)
- » Six months minimum outdoor storage without corrosion problems
- » Consistent quality of coating appearance and application rates
- » Extremely early water resistance when compared to current coating. Will not wash off, thereby assuring that the coating is in place
- » Reduced VOC emissions, which allowed complete compliance with local regulations
- » Improved cosmetic appearance of coated pipes. Saved over \$100,000 in re-coat cost
- » Decreased or eliminated hazardous waste from runs and sags of coatings falling off of coated pipe or application equipment. Reduced cleanup and disposal cost compared to present coating. Saved over \$85,000

SERVICE

Customer received immediate benefit from Quaker's outstanding service:

- » Provided automatic coolant concentration control
- » Provided detailed plans to improve filtration and product performance
- » Monitored the operations and provided technical assistance to assure continuous operation
- » Provided weekly service, monitoring and analysis of performance
- » Worked with mill personnel to ensure continuous operations at peak efficiency
- » Performed on-site technical tests to ensure maximum performance of fluid processes
- » Prepared reports, recorded and analyzed processes, collected usage data, and proposed cost savings initiative
- » Provided appropriate utilization of Quaker resources when needed to assist in resolving technical issues

THE EXPERTISE

Quaker is a worldwide developer, producer and marketer of custom formulated Tube & Pipe process chemicals and coatings. From first coil to final cut, Quaker is capable of providing process chemicals for all operations in ERW and Seamless mills, and delivers the in-depth process expertise to help maximize your productivity.

Quaker's product line includes hydraulic lubricants, high-temperature greases, cleaners, forming & sizing coolants, drawing & forming compounds, sawing lubricants, hydrotesting compounds, corrosion preventives and a complete line of high-value coatings (including solvent, water-based and UV coatings).