



TIRES & MECHANICAL RUBBER GOODS



BENEFITS

- ▶ \$250,000 in annual savings from increased capacity
- ▶ Reduced curing time, overall cycle time, and boiler load
- ▶ Fuel savings of an additional \$82,000/year from original estimate
- ▶ Decrease of \$18,500/year in electricity, chemical and water usage costs

GEM® Traps Retrofitted for Off-Road Tyre Manufacturing Facility

The company is a world leader in the design, manufacturing, and distribution of off-road tires, wheels and rubber tracks. It operates manufacturing plants in Asia, Europe, USA, and Canada, and has won several awards for energy, quality, and cleaner production.

Thermal Energy International conducted a survey of the mechanical traps in the facility and informed management that 9% had failed partially open, 4% had failed closed, and 3% had failed open. The traps that had failed open or partially open were passing large quantities of live steam because the mechanisms had jammed in the open position or the internals had worn away. The traps that had failed closed were either jammed shut or the strainer / trap internal was plugged. The result was a lack of heat output, and consequently, greater cold spots during the curing process in addition to corrosion problems and water hammer in the pipes. Calculations showed that over 8,600 tonnes of steam were being wasted each year because of failing and inherently inefficient mechanical traps.

After the installation of GEM Traps, the site's Process Engineer noted a reduction in curing time, which in turn decreased overall cycle time, and thereby increased their capacity. He calculated that it would equate to roughly \$250,000 in annual savings. Decreasing the curing time also reduces the load on boilers and lowers fuel consumption. The Process Engineer estimated the fuel savings to be \$82,000 per year – a figure that was not considered in the original project.

"We were also able to remove an air purge. This reduces the load on our air compressors resulting in electricity savings, allows us to use less oxygen scavenger chemical, and provides a reduction in water usage. This results in an additional \$18,500/year savings. There will also be maintenance savings from the reduced usage of the compressors."

- Process Engineer

