



SMART CLEAN™ FOR PULP AND PAPER

Steam savings should always come with boiler reliability

Simple answers are usually the best answers. This principle of simplicity is why Clyde Industries's SMART Clean™ system is the most reliable product on the market today, generating optimal steam savings for our customers. In an environment where steam is money and any downtime due to boiler pluggage or unreliable operation is unacceptable, SMART Clean™ stands out from other systems.

The SMART Clean™ approach utilizes proprietary technology that automatically monitors live feedback from the boiler and turns it into intelligent, real-time decisions. Using critical inputs such as flue gas pressure drop and our advanced Thermodynamic Model, SMART Clean™ eliminates human error, guesswork, and the need to rely on statistical models. This link to feedback results in cleaning being initiated exactly when and where it is needed, with only the precise amount of impact needed to do the job. This keeps the boiler passages clean, eliminates the unnecessary wear and tear on the boiler tubes, saves steam, downtime, and costly forced outages. Not only that, SMART Clean™ ensures improved cleaning device reliability with its advanced header resource management techniques and dynamic prioritization.

SMART Clean™ is simple to install as well. Besides being the only system that can integrate with advanced technologies like SMART RS sootblowers, it also integrates seamlessly with existing PLC and DCS controls systems. Unlike other third party applications that take control away from the plant DCS systems, SMART Clean™ provides the supervisory option that is self-contained, and provides real time sequence and flow advice to the existing mill's sootblower control system. SMART Clean™ interacts with existing DCS controls, providing continuous data and diagnostic screens. This unique design feature provides both unparalleled compatibility, as well as unmatched reliability.

Clyde Industries's dedicated Performance Monitoring team constantly receives feedback from scores of SMART Clean™ installations throughout the world. This invaluable data provides the foundation for ongoing innovations and improvements to SMART Clean™ that continue to ensure our premier reputation for efficiency and reliability.

Mill/Plant	Boiler	MCR	Reduction in Sootblowing Steam	Reduction in Sootblowing Cons[lb/hr]
WA, USA	RB1	808,000 lb/hr	6%	48,157 lb/hr
GA, USA	RB3	800,000 lb/hr	4%	30,320 lb/hr
AR, USA	RB2	764,000 lb/hr	4%	27,275 lb/hr
AL, USA	RB2	480,000 lb/hr	3%	14,880 lb/hr
SC, USA	RB1	380,000 lb/hr	4%	13,680 lb/hr
AR, USA	RB1	392,000 lb/hr	3%	13,446 lb/hr
NC, USA	RB7	450,000 lb/hr	3%	13,000 lb/hr
AL, USA	RB1	320,000 lb/hr	3%	8,096 lb/hr

SMART Clean™ is completely modular and therefore easy to upgrade. When a customer is ready to benefit from the latest SMART Clean™ improvements, they can expect a quick installation turn-around, during scheduled outages, regardless of whether they are implementing SMART Clean™ for the first time, or upgrading to the latest version.

Once SMART Clean™ is installed, customers see rapid payback for their investment. In a climate where capital investments are precious, it is good to know that SMART Clean™ pays for itself in six months on average. Clyde Industries works closely with customers to perform a current condition analysis and determine the payback timeframe prior to any commitment for purchase.

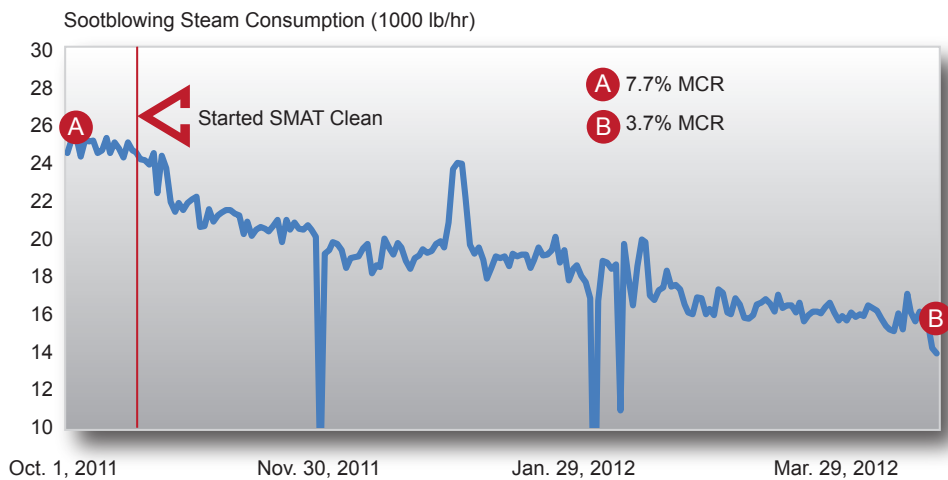
Customers with a fleet of plants receive the added benefit of fleet-wide consistency through the SMART Clean™ feedback. Information gained through monitoring all plants in a fleet ensures each plant operates at its peak performance level, which in turn delivers predictable margin increases for the stakeholders.

With SMART Clean™, plant managers and operators can dedicate their valuable time to other processes that need their attention, and leave the cleaning to SMART Clean™. Now it really is possible to install it, and forget it. Now that's simply worth the investment!

Benefits

- Pays for itself quickly (6-12 months average)
- Reduces steam consumption 40% or more
- Eliminates forced outages due to tube damage
- Improves preventative maintenance planning
- Complete integration, compatibility and control
- Creates fleet-wide consistency and optimization
- Delivers predictable profit margin increases
- Improves boiler efficiency and plant heat rate

Mill in Southeast



Typical steam consumption trend upon installation of SMART Clean™ system



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COMPANY WITH
 QUALITY SYSTEM
 CERTIFIED BY DNV GL
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