



## Energy efficiency boosted at Tensar Manufacturing

Tensar Manufacturing, part of the worldwide Tensar Group, is a leading global provider of soil reinforcement and ground stabilisation solutions. They are reaping the rewards afforded by the recent installation of a magnetic fuel treatment system from Maxsys that has not only cut gas consumption by 5.78%, but has also improved boiler efficiency by 5.46%.

### The Challenge

Blackburn based Tensar International Ltd has been supplying ground stabilisation technology into the infrastructure, housing, commercial and industrial sectors since the 1970s. Tensar's technology helps civil engineering projects to be more cost effective and resource efficient as it reduces the amount of aggregate required.

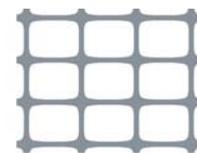
Tensar's products and solutions are based on an ethos of minimal waste and the company also adopts this ethos internally. Joe Crane, Chief Engineer at Tensar, explains: "As an ISO 14001 certified company and a long standing member of the LancsBEA Resource Efficiency Club, we are continually looking for ways to improve efficiency within our production process."

### The Solution

The Thomas Cochran steam raising boiler at the Tensar Blackburn site is rated at 3000 kg/hr and operates at 6.5 barg. Natural gas is processed as the primary fuel source by a 2836 kW Dunphy burner. The system runs 24 hours a day, seven days a week and is backed-up by a Wee Chieftain 3750 kg/hr rated boiler that is kept on hot standby.



After a consultation process, it was decided that a Maxsys Fuel System would be installed in order to reduce the gas consumption of the boiler. Maxsys Systems are a well established fuel treatment technology that improves combustion by applying a finely calibrated magnetic field directly to the fuel.



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## The Outcome

Beginning in late 2007, Tensar staff recorded a 30 week set of pre-installation data that included boiler house gas consumption, boiler house steam generation and individual boiler feed water. The same parameters were then re-measured for a six week period following the installation in June 2008 of the Fuel System to the Dunphy burner.

“Using the CUSUM data analysis technique we recorded an overall reduction in gas usage of 5.78%,” says Tensar’s Chief Engineer Joe Crane. “What’s more, this saving appeared immediately after fitting, hence bedding-in time was minimal and the figures look to be improving as time goes on.”

While this offers Tensar a considerable financial saving in an era of record high gas prices, boiler efficiency (steam-gas ratio) has also been seen to improve. The average ratio recorded in the pre-installation data set was 2.718 lb of steam generated per kWh of gas consumed. Post installation, this figure had increased to 2.867 lb/kWh, representing 5.46% more steam generated for the same amount of gas consumed (or less gas consumed for the same amount of steam produced).

“Maxsys fuel technology has been instrumental in driving down our gas consumption, increasing boiler efficiency and cutting our carbon emissions,” states Mr Crane. “We predict to save £10,000 per annum on fuel, which will ensure a speedy return on investment. We have also managed to eliminate 109 tonnes of carbon emissions from our overall carbon footprint.”



The introduction of the Fuel System is part of a wider company initiative that has seen all Tensar staff at the Blackburn facility given full energy awareness training in order to ensure the environmental impact of the company is kept to an absolute minimum.

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