

Tarmac Topblock saves £100,000 with Spirax Sarco heat recovery system

Tarmac Topblock is saving around £100,000 a year in energy costs thanks to a Spirax Sarco Engineered System that recovers heat from waste steam.

Tarmac Topblock's Alfreton factory manufactures products for the construction industry. Aerated concrete blocks are mixed and moulded, before curing for 12 hours in a bank of eight autoclaves fed by steam at 12 bar g. The steam is vented rapidly at the end of each cycle, drawing out any excess moisture from the blocks.

Instead of sending the vented steam to atmosphere as was previously done, the Spirax Sarco Engineered System now feeds the steam through a heat exchanger to pre-heat the site's boiler feed water. However, the supply of waste steam and the demand for hot water from the boiler do not always match, so the system also includes a storage tank that acts as a buffer between the heat exchanger and the boiler feed tank.

The ideal temperature of the boiler feed water is 94°C, which reduces the amount of energy the boiler uses to raise steam. "Heating the boiler feed water minimises the cost of making every 1,000 kg of steam," explains Tarmac Topblock's Engineering Manager Robin Stapleton. However, the temperature can't be raised beyond 94°C without risking cavitation in the boiler feed pump.

Cold water circulates repeatedly through the Spirax Sarco heat exchanger and storage tank, getting progressively hotter. It may be drawn off at any time to meet demand from the boiler, but if it reaches 94°C, excess waste steam is vented to prevent overheating. If the pre-heated water reaches the boiler feed tank at a lower temperature, Tarmac Topblock's system brings it up to 94°C by direct steam injection.

"Everything was vented before, so I think we'll see savings of £100,000 per year," says Mr. Stapleton. "And that's not even taking recent hikes in gas prices into account."

The complete engineered system was built off-site by Spirax Sarco and supplied skid-mounted. "Fitting it was a doddle because it all came built up. All we had to do was lift it over a wall using a crane and put legs on it," explains Mr. Stapleton. "The service from Spirax Sarco has been very good."



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