

ENERGY RECOVERY

Case Study: PCS Boards

PCS Boards are a Wigan-based manufacturer of high quality insulation materials that are in the construction of high end wet rooms and steam / sauna spaces.

Their manufacturing processes includes the need to dehumidify air to a high standard in order to maintain product quality and consistency.

They approached dehum for a solution to a unique problem.



What we did for them?

PCS had an existing installation with a competitors equipment which was inefficient and uneconomical. They called on dehum to address the running costs of the machine with the aim being to improve profitability and efficiency.

Firstly, dehum examined the dehumidification process and regeneration of the rotor in these machines, which results in a hot wet air stream being discharged to atmosphere. In a well-designed system, this can be up to 80°C and contains useful energy for simple recovery.

The application of a bespoke energy recovery system can easily recover 70% of the 'lost energy' and divert it to the inlet on the machine, leading directly to energy cost savings of 30% or more.

PCS has such a system installed on a large dehum unit and the figures speak for themselves. These are based on measured conditions of 67.50C discharged and a 14°C ambient:

- ✓ Potential energy lost to outside is 29.8kW
- ✓ Unique energy recovery system installed in the wet air ductwork
- ✓ Machine re-commissioned to account for added resistance
- ✓ Previous regeneration heater load 58.9kW
- ✓ Revised regeneration heater load 44.1kW
- ✓ Annual energy savings are calculated at £15,557 at 12p/kWh

Key Benefits

- ✓ High Efficiency
- ✓ No loss of rotor performance
- ✓ Rapid Capital Payback
- ✓ Ongoing annual savings



What Equipment Was Involved?

An industrial dehumidifier of the type that PCS utilise on their process, uses electricity to regenerate a rotor in the machine, where moisture is captured and has to be removed.

In order to make this process more efficient, dehum examined the production airflows and designed a system that captures lost energy from the exhaust. This energy is redirected back into the regeneration inlet, reducing the load on the heater.

Contact us on 01926 882624, through the website www.dehum.com or email to sales@dehum.com



Sorption Wheel Services Ltd,
Unit 24 Rigby Close,
Heathcote Industrial Estate,
Warwick, CV34 6TH