



case study



case study 05

Green considerations take priority over first cost on Mixlance batch heater plant

By adding inverter speed control to the exhaust fans on two new 3 ton asphalt batch plants, the first of which is currently undergoing startup trials at Local Asphalt, Leeds (Cemex), Mixlance (Technical Services) Ltd of Measham will achieve substantial energy savings and reduce greenhouse gas emissions sufficiently to attract EU LIFE funding for the project. The plant is described as Europe's most technologically advanced batch heater plant. Delivering 80 tons of coated material per hour, the new plant design is more compact, is faster, quieter, cleaner and more economical than all previous plants.



Mixlance Plant at Leeds delivers asphalt at 80 tons an hour

The plant is described as Europe's most technologically advanced batch heater plant. Delivering up to 80 tons of asphalt per hour, the new plant design is more compact, is faster, quieter, cleaner and more economical than all previous plants.

On previous plants the exhaust fans would run continuously at full power although the process itself is not continuous. Now with inverter control of the fans, their speed can be reduced to match the needs of the process and at times of low

demand, turned right down. This not only provides substantial savings on fan energy, it significantly reduces the consumption of primary combustion gas fuel with attendant reductions in greenhouse gases.

Working with Halifax Fan, Mixlance has chosen 45kW Beaufort fans with backward inclined impellers for the exhaust fans. The exhaust gases contain a mix of particulates from the process and the impeller design offers the excellent self-

cleaning properties essential for this application. In addition, the fans are being supplied as extra heavy construction models for arduous operation. Handling gases at temperatures up to 200°C, each fan will be fitted with a cooling disc around the main shaft between the fan casing and the bearing unit to 'sink' excess heat from the casing to atmosphere to protect the bearing from excess heat build up.

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Application benefits

- Efficient self cleaning fan design
- 200°C duty specification
- Deep groove bearings for high end thrust
- Variable speed control for efficient operation
- 100,000 hour bearing life
- EU LIFE supported project



Halifax Beaufort 45kW exhaust fan.

'Deep-groove ball and roller bearings are employed to withstand the end thrust that is normally experienced with impellers fitted with back plates, as these units are.'

Bearing life in excess of 100,000 hours can be achieved with proper periodic maintenance and inspection.

By sizing the motor for 'closed damper' and 'low frequency start' controlled by the inverter, it has enabled a 45kW motor to be used in place of a motor nearly twice as large as on previous plants, largely offsetting the inverter cost.

According to Project Manager, Steve Pollard, "The adoption of inverter control will facilitate enormous savings in energy and fuel. Once in operation, we will

closely monitor energy consumption and report back to the EU who provided funding through their LIFE Project to encourage the prioritisation of efficient technology over initial build cost. Life-cost considerations also contributed to the selection of Halifax Fans. We have worked with them in the past and always found their plant highly reliable and their customer service invaluable."

Halifax Fan Limited

Mistral Works, Unit 11, Brookfoot Business Park, Elland Road, Brighouse, West Yorkshire, HD6 2SD, UK
T: +44 (0)1484 475123 F: +44 (0)1484 475122 E: sales@halifax-fan.co.uk

Halifax-Fan (Shenzhen) Co Ltd

1 & 2F, No. 4 Building, Creative Industrial Park, Shang Xia Wei, ShaJing, ShenZhen, GuangDong Province, China
Telephone No. 0086 755 8149 0059 Fax No. 0086 755 8149 0019

www.halifax-fan.co.uk

Produced by Kirk-MarCom Ltd e: eddie@kirk-marcom.com