

Klima-Therm installs first chiller with Turbocors running on HFOs

UK: Eighteen months on from announcing that it was to be the first company to use HFO1234ze with the highly efficient oil-less Turbocor compressor on one of its Turbomiser chillers, UK company Klima-Therm has achieved its wish with an installation at a department store in Milton Keynes.

Klima-Therm broke new ground last year with the installation of two reciprocating chillers running on HFO1234ze at a Waitrose store in South Bromley, near London. It was the first application of the new fourth generation low global warming refrigerants in a working supermarket.

Now the company is claiming another first: harnessing the world's first Turbocor compressors to run on HFOs in a commercial building. It announced plans for a trial installation last year, but put the project on hold pending completion of tests and an official green light from Danfoss Turbocor.

two of the new green HFO Turbomisers have just been installed in a department store in Milton Keynes, as part of the end user's ongoing trials of promising environmentally friendlier technology. The company has also received an order for a further installation of HFO Turbomiser machines for a major retail development in the South West of England

Tim Mitchell, Klima-Therm sales director, says: "The HFO Turbomiser is a very attractive combination. In its favour is the exceptional and proven energy performance of Turbomiser, which can cut energy use by up to 60%, coupled with the very low global warming potential of HFO1234ze.

The first HFO Turbomiser project involves the installation of two of the new green machines as part of a store refurbishment project. Each of the chillers is rated at 230kW, making a combined cooling capacity of 460kW at the site.

The HFO Turbomisers will supply all the cooling needs for the store, delivering comfort cooling via the store's chilled-water-based air conditioning system.

Tests carried out by manufacturer Geoclima at its new testing facility in Italy have demonstrated that the HFO Turbocor-based Turbomisers operate with an excellent full-load COP of around 4.

It is known that use of R1234ze results in a loss of cooling capacity of around 24% compared with R134a across various application conditions. However, according to Klima-Therm, mean power absorbed is around 27% less, giving an overall COP for the HFO actually better than R134a.

"The design of the new HFO Turbomiser compensates for the reduction in capacity, employing slightly larger heat exchanger surfaces and clever design and component lay-out," says Tim Mitchell. "The HFO Turbocor compressor employed, type TG310, is based upon the existing model TT350."

Klima-Therm says availability of the HFO-based Turbomiser has resulted in substantial enquiries from a wide range of end-users, and indicated a high level of interest in the new technology among retailers.

Tim Mitchell says: "Many people are looking with interest to see how arguably the 'world's greenest chiller on paper' performs in practice. If the results are as anticipated, we expect more end users to adopt it in the near future."