

PROPER CORNISH PHASES OUT R22 WITH ZERO CARBON AMMONIA GLACIER REFRIGERATION SYSTEM

Customer:	Proper Cornish
Equipment:	Glacier Spiral freezer
Refrigerant:	Ammonia
Capacity	278kW
Temperature	-40°C

Proper Cornish is the UK's leading handmade pasty manufacturer and supplier of food products including sausage rolls, pies, and the Cornish pasties where they get their name. The company was looking to replace an aging refrigeration system using R22 at their factory in Bodmin, Cornwall.

The handmade Cornish pasty makers were looking for a solution that would increase the amount of produce passing through their refrigeration processing site and secure the business operations for the long term with a brand new installation and the use of efficient, natural refrigerants.

The new system requirements included F-Gas compliance, high efficiency and minimal life cycle costs. Also, the existing food processing capacity of the freezing system was limited and it was critical that the new replacement unit could meet

the requirement for increased produce demand.

John Lane, Project Manager at Proper Cornish, said, "We recognised the need to upgrade our current refrigeration solution to comply with all relevant legislation on refrigerant phase outs and HFCs restrictions. It was crucial to us that the new system was able to accommodate the business' expansion plans and increase in demand for the next two decades. Star Refrigeration supplied an excellent solution that we feel meets all the criteria to secure an ultra-efficient operation with reduced energy and maintenance costs in the long-term."

In a competitive tender with other refrigeration contractors, Star's Glacier solution was proven to be 25% more efficient than the next best inline freezer alternative and provided a lower running cost per tonne of product.



Star's Glacier pack with condenser above

Instead of using R22, Star installed a complete refrigeration package, providing -40°C ammonia to a Starfrost spiral freezer with a cooling capacity of

278 KW to accommodate the increased throughput. With dual-purpose freeze/chill, the “all in one” package unit, containing an LPR unit, a condenser and a spiral freezer, was configured to be installed with minimal disruption to existing site operation.

There was no requirement for plant room as the compact footprint LPR cooling system was externally housed, adjacent to the spiral freezer with all pipe and electrical connections between the two pieces of equipment commissioned together to reduce installation time and costs.

For the food wholesaler, this unique approach represented a range of benefits. James Ward, Director of Sales – Food Market at Star Refrigeration, said, “Combining a spiral freezer and a low charge ammonia refrigeration plant into one complete package offered Proper Cornish access to the most efficient and competitively priced solution available in the market today.”

“The use of high quality industrial components will secure the business operation for another 25 years and also ensure that maintenance costs are kept to a minimum over the life of the system.”

“The Glacier features Star’s patented Reverse Cycle Defrost (RCD) system – currently the only

solution to offer this – defrosts in only 30 minutes, which allows maximum production time (20+ hours), and reduces the customer’s energy bill.”

“The system is safer to run than a traditional ammonia system since the low-pressure receiver allows a very low refrigerant charge, equivalent to only ¼ of the charge of a pump circulation system. It also provides an ultra efficient operation. The choice of the highly efficient, natural refrigerant ammonia will free Proper Cornish from future environmental legislation burdens.”

As with Star, Proper Cornish prides itself in creating long-lasting partnerships with its customers, for whom they have developed hundreds of products over the years. While it is the first time Star Refrigeration has had the opportunity to work with the food manufacturer, the success of the installation is expected to strengthen the new relationship, which will begin with a 12 month maintenance contract from Star’s local South West team.

In addition, to guarantee Proper Cornish receives an airtight solution, Star’s consultancy arm Star Technical Solutions carried out comprehensive DSEAR and WSE assessments to ensure the company meets legal and insurance requirements.

 STAR REFRIGERATION	 STAR TECHNICAL SOLUTIONS	 STAR M & E SOLUTIONS	 STAR LEARNING SOLUTIONS	 STARFROST FREEZING & CHILLING SYSTEMS
Thornliebank Ind Est Glasgow UK G46 8JW	Thornliebank Ind Est Glasgow UK G46 8JW	Wincanton Close Ascot Drive Derby DE24 8NB	Thornliebank Ind Est Glasgow UK G46 8JW	Craftsman’s Way Lowestoft Suffolk NR32 3LQ
T: +44 (0)141 638 7916 E: star@star-ref.co.uk W: www.star-ref.co.uk	T: +44 (0)141 638 7916 E: dblackhurst@star-ts.co.uk W: www.star-ts.co.uk	T: +44 (0)1332 861370 E: info@star-mesolutions.co.uk W: www.star-mesolutions.co.uk	T: +44 (0)141 638 7916 E: info@i-know.com W: www.i-know.com	T: +44 (0)1502 562206 E: info@star-frost.co.uk W: www.star-frost.co.uk