



**Creed Foodservice Ltd.
Installation by SK
Refrigeration Heating
and Cooling Ltd. with
Opteon™ XL40 (R-454A)**



Introduction

We believe this project is the **first** and **largest** low temperature (-21°C) A2L application in the UK.

Utilising 135kg of Low GWP (Global Warming Potential) refrigerant Opteon™ XL40 (R-454A).

Let's find out why this proved to be the ideal answer to the customers' requirements.

The Client

"Creed Foodservice is a family-run founding member of the Country Range Group of independent wholesalers, delivering quality multi-temperature catering products to chefs and caterers since 1972. We have strategically located multi-temperature distribution centres in Gloucestershire, Derbyshire and Buckinghamshire offering national coverage across the UK.

Creed is renowned for service excellence and supporting its customers in achieving their food strategies and commercial objectives, this has positioned Creed as the UK's 'go-to' delivered wholesale partner across the care, education, destination leisure, and hospitality sectors."

Project Brief

The existing refrigeration equipment supplying the freezer room was installed approximately 18 years ago and consisted of an indoor pack running 6 Copeland compressors 2 of which had reached end of life and were also obsolete.

Creed Foodservice took this opportunity to look for a new energy efficient, environmentally friendly, and future proof alternative to replace this pack.

SK Refrigeration Heating and Cooling Ltd have a successful track record of A2L installations into large commercial storage facilities and were asked to provide a solution.

Client Consideration and Concerns

There are many well know and traditional options open to this market, but a Low GWP A2L refrigerant proved to be an ideal solution for this application when considering traditional options:

CapEx	Significantly Lower Compared to CO ₂ or Ammonia Installations
OpEx	Significantly Lower Compared to CO ₂ or Ammonia Installations
Direct Emissions	Compared to Legacy A1 Refrigerants
Indirect Emissions	Compared to CO ₂ - typically 20 to 30% - savings on power consumption
System tightness	Compared to CO ₂ - concerns about full charge loss in high ambient temperatures
System Architecture	Familiar to any technician used to working on a traditional system
Produce Security	Redundancy built into multiple systems compared to CO ₂ installations
Regulation	A2L's covered by F-Gas Regulation with associated checks on leakage and tightness
Circular Economy	Refrigerant Recyclable and Reclaimable in line with Environmental Requirements

Conclusion being that Opteon™ XL40 offered substantial advantages for this project over the competition.

Application

- Creed Ashville - Freezer Room
- 25m length x 20m Wide x 5m High (2500m³)
- Room Temp -21°C
- Product Load 162.5 Tonnes
- Entering -17°C
- Leaving -21°C
- Cooling 24hours
- Total Duty 69kW

Legacy Plant

- Freezer room equipment installed c. 2006
- Parasense Copeland scroll Pack system (6)
- Copeland Compressors ZF40K4E-TWD-551 with liquid injection (6)
- Refrigerant R-404A (retrofitted to R-449A)
- Refrigerant Charge 120 kgs.
- Remote condenser
- Evaporator Searle KME140-6L (6)

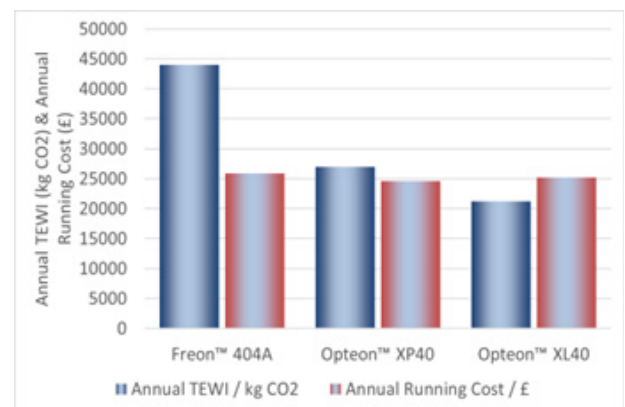
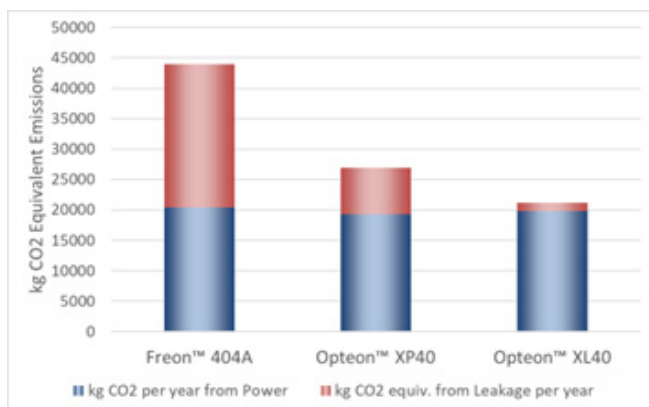


New Installation

- Independent systems to allow for redundancy (3)
- Custom built outdoor condensing units /Hubbard 4MU2-25 (3)
- Two evaporators per system - Kelvion MSC-4403-6BE-FX28-1
- 45kg Refrigerant R-454A per system



Comparisons



TEWI = Total Equivalent Warming Impact

Opteon™ XL40 provides:

94% reduction in direct emissions compared to R-404A
81% reduction in direct emissions compared to R-449A

Opteon™ XL40 delivers:

A Low GWP solution that is both future proof and reliable in terms of produce security and quality.

Lower running costs when compared to alternative technologies such as CO₂.

Matt Dolphin Technical Director of SK Refrigeration Heating and Cooling explained:

“Client had an old centralised low temperature pack system which was end of life running on 150kgs of R-404A; they wanted a freezer system that was future proof and energy efficient.

It was our first A2L Freezer installation carried out by SK and known size in the UK.

As the first large Low Temperature installation in the UK we expected some teething problems but are pleased to say that not only has this installation been running perfectly for over 12 months without any failures or faults, it proves A2L installations in this market are safe, secure, and straight forward to carry out with the correct training”.



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