Solstice

SOLSTICE® L40X (R-455A) REFRIGERANT POWERS COOLING AND FREEZING UNITS AT DUTCH ZOO

CASE STUDY





Across the European refrigeration industry, the use of HFO refrigerant solutions with GWP below 150 is on the rise. Recently, Netherlands-based refrigeration wholesaler ECR, a member of the global Beijer Ref Group, reviewed all the factors driving the uptake of using environmentally preferable refrigerants. They studied the performance of cooling and freezing systems equipped with Solstice(R) L40X (R-455A) at the restaurant of a local zoo.

Image courtesy of ECR.

BACKGROUND

Refrigeration specialists at ECR have noted multiple, recent developments around the uptake of HFO refrigerants with GWP<150 and how they are being implemented. These include:

- In April 2022, a revision was proposed to the F-gas Regulation that would accelerate the phase down of high GWP refrigerants before the 2030 deadline. Assuming that this scenario is retained by the European Parliament in 2023, this will further strengthen the rationale for using refrigerants with the lowest possible GWP in new systems, and in no case higher than 150.
- As some of the HFO solutions with GWP<150 are mildly flammable (A2L), there is a need to consider additional requirements regarding the maximum charge of refrigerant that can be used per circuit. These requirements are documented in the NEN-EN 378 standard; in the meantime, ECR and Solstice have published guidelines, checklists and a charge calculator which support contractors in implementing these requirements in practice.
- It's also important that the additional requirements originating in the European Pressure Equipment Directive (PED) be implemented correctly. Additional tools have been published to simplify this task, among others Solstice's risk assessment checklists.
- In the Netherlands, the "Module K" training and certification courses for technicians working with hydrocarbons has been replaced by "Module B", which encompasses work with all flammable refrigerants, including A2L variants such as R-32, R-1234yf and R-455A.



Image courtesy of ECR.

IMPLEMENTATION & ANALYSIS

ECR – together with Emerson and local installer Venmans Koeltechniek & Airconditioning – deployed new cooling and freezing equipment at Zie-Zoo, an animal park for autistic children in the Dutch village of Volkel, southeast of Uden.

To power the zoo's restaurant, an Emerson Copeland ZXMY-020 refrigeration unit with a cooling capacity of 3.7 kW was installed in the cold room and a ZXLY-030 unit with a cooling capacity of 3.0 kW was installed in the freezer room. Both systems were powered by Solstice L40X (R-455A), a GWP<150 refrigerant designed to serve as a long-term solution for low, medium and high temperature applications in new systems.

Solstice L40X (R-455A) was supplied to ECR by Climalife Dehon, and supported by Solstice, to facilitate the adoption of long-term, eco-efficient HFO solutions.

RESULTS

The deployment was monitored for several months by all parties. The conclusion? The refrigeration units and the Solstice refrigerant performed optimally and fully reliably. The contractor Venmans Koeltechniek & Airconditioning confirmed that their experience implementing Solstice L40X (R-455A) was straightforward when using the appropriate components and complying with the risk assessment rules.

The zoo's owners are pleased with the results and happy that the restaurant is now equipped to provide eco-efficient service to visitors long into the future.



Image courtesy of ECR.

For More Information Visit
https://www.solstice.com/us/en

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