

Case Study

R-407H



R-407H Retrofit Provides Energy Savings, Peace of Mind for Independent Grocer

Sometimes the best recognition is not to be noticed at all.

That was the case for a refrigeration system using Daikin's Creard R-407H refrigerant, installed at a 51,000 square foot Crops Fresh Marketplace grocery store in Downingtown, Pennsylvania.

The Crops Fresh Marketplace store is owned by the Cropper family, which can trace its history in the grocery business back to 1953. Like most grocery store operators, John Cropper and his son, Chad, want to procure and sell the finest, freshest products while providing great customer service. Conversely, they do not wish to become refrigerant experts. Therefore, when it came time to select a refrigeration system for their store, the Croppers left the decision up to their long-time partners, Perfectemp Refrigeration Service Inc. of Auburn, Pennsylvania.

"Perfectemp decided on the R-407H system, and we were so busy trying to get the store opened, I don't think we even discussed it," John Cropper said. Chad added, "I can tell you we have had absolutely no problems with the performance of the system. We don't even think about it."

R-407H allows grocery store owners to concentrate on their customers, without concerns about their refrigeration systems, providing the value of long-term peace of mind.

A new system takes shape

The Crops Fresh Marketplace in Downingtown represents a rebranding and relaunching of the Cropper family's store. In 2017, the Croppers made the decision to perform a complete floor to ceiling renovation. Everything, including the old R-22 refrigeration system, was removed.

Perfectemp specializes in renovations of existing equipment. For this store, Perfectemp put together a customized rack system with renovated Hussmann cases. This store required one



low-temperature and one medium-temperature rack, with a total charge for both racks of 2,200 lbs.. The cases had been used in R-22 and R-404A systems, and Perfectemp performed the required modifications to prepare the system for its new life as an R-407H system. The installation of the racks and cases took about four months.

Todd Buchanan, Vice President, Perfectemp Refrigeration Service, said two major factors played into the decision to select Daikin's Creard R-407H refrigerant: "It has a global-warming potential (GWP) below 1,500, and it costs less than other alternative refrigerants on the market."

"We have proven now for nearly a year that the R-407H system runs just as well as an R-407A or R-448A system, and the performance is very comparable to R-22," Buchanan said. "In addition, the R-407H has a GWP under 1,500 and is priced lower than R-448A, which is the only other product that is below that 1,500 GWP threshold."

Additionally, late in 2018 after six months of operation, Perfectemp tore down some of the system's compressors to check the heads for wear, and identified no wear problems with the Creard R-407H system.

A strong value for supermarkets

Tim Snyder, Refrigerants Business Director, Daikin America, notes that Creard R-407H has a strong value proposition for supermarket engineer teams to consider.

"For new construction, Creard R-407H provides a long-term solution for regulatory compliance, while providing high efficiency and low operating costs," Snyder said. "In California and the many

other states looking to adopt their own regulations, converting a system to Creard R-407H before 2022 allows equipment to be serviced with R-407H for decades.”

According to Snyder, there were three major factors that went into the selection of Creard R-407H.



The first feature was regulatory compliance. “With a GWP below 1,500, store owners won’t have concerns around regulatory compliance for at least the next couple of decades,” Snyder said.

The second feature was efficiency. “When we compare Creard R-407H to R-404A, 407H is double-digit percentages better in terms of efficiency,” Snyder stated. “Compared to R-448, R-449, and the other 407s blends, 407H is roughly 5% higher.”

The final factor is financial. “The balance of GWP compliance, performance and total system cost makes 407H a very attractive long-term solution for supermarket systems.”



Value into the future

The Creard R-407H system in the Crops Fresh Marketplace in Downingtown also continues to create value in day-to-day operation.

“According to the owner, his energy costs have decreased by 30% from what he budgeted, therefore he has saved one-third of his budget in just the first eight months,” said Snyder.

“Based on our experience with Daikin’s Creard R-407H, we would not hesitate to select it again for this store, or if we ever decide to open another store,” concluded Chad Cropper.

For more information on how Creard 407H, and the full portfolio of Daikin America refrigerants, can provide value with your HVAC/R needs, visit our website at www.daikin-america.com.