

Sustainable cooling solutions: Italian Retailer Unicomm Saves Energy and Costs with Frigoveneta Refrigeration Units

CATEGORY:

Commercial Refrigeration

THE CONTEXT:

With the EU F-Gas Regulation, HFCs with a high Global Warming Potential (GWP) are increasingly under pressure and in some applications such as stationary refrigeration equipment they have been banned since 2020. In collaboration with the consultancy company Alfa Projekt, Frigoveneta SPA installed new HFO-based refrigeration units at four new Famila and Mega brand stores owned by the Unicomm srl group. The new, long-term solution is based on the use of ultra-low-GWP refrigerant Solstice® ze (R-1234ze).

SUSTAINABLE COOLING SOLUTION:

- The system consists of a R-1234ze chiller that supplies the necessary refrigeration power to cool down a glycol-water mixture circulated to the medium-temperature cabinets.
- The charge of HFO R-1234ze used for the stores is around 80 kg.
- Total heat recovery system for heating and sanitary hot water.
- The low-temperature unit uses CO₂ and cascades from the medium-temperature system, and is therefore in a subcritical cycle.



BENEFITS:

- Compliant with the long-term requirements of the F-Gas regulation: The refrigerant Solstice ze has a GWP of less than 1 and is not categorized as Greenhouse Gas (GHG), similar to refrigerants like R-744 (CO₂) or R-290 (propane).
- Low probability of leakage because the refrigerant is contained in the medium-temperature chiller.
- No high pressures in the store: the pressure in the medium-temperature system is around 2 bar
- The costs for heating the store are reduced thanks to the total heat recovery system installed by Frigoveneta SPA, which recovers heat from the food refrigeration. The recovered heat is also used for sanitary hot water production for the store.
- Frigoveneta SPA adjusted all the heating/air conditioning systems (e.g. heat pump, air handler, fan coil units, air heaters etc.) to provide optimal energy efficiency, and placed all lighting and power under the control of a single management system.

TOPIC:

- Energy Efficiency
- Synergies with Heating
- Heat Recovery
- Refrigerants

GENERAL INFORMATION

NAME OF THE COMPANY: Honeywell

The Honeywell logo, consisting of the word 'Honeywell' in a bold, red, sans-serif font.

CONTACT PERSON:

Lee Hermitage
Sebastien Casterman

HYPERLINK TO LEARN MORE ABOUT THE SUSTAINABLE COOLING SOLUTION:

https://www.honeywell-refrigerants.com/europe/?document=solstice-ze-r-1234ze_frigoveneta-infographic_en&download=1