Optimal refrigeration of Herta sausages

Line of Business:	Industrial Refrigeration
Application:	Food Cooling, Meat Product Cooling
Country / City:	Germany / Herten
Fluid:	NH_3
Product:	Ceiling unit cooler ADHN, Ceiling unit cooler GHS

From hearty ham, poultry and salami specialties through finely smoked sausage to delicious snacks for in between, the meat and sausage products from Herta GmbH, a Nestlé Germany GmbH company, are made to the most modern hygienic and safety standards. Because of the Europe-wide demand, Herta meanwhile have eight production locations in Germany, France and Italy. The main production plant is where the company was founded, in Herten, Germany. Here, Herta produce boiled ham and sausages for boiling to traditional recipes for end-consumers and industrial customers. For quality storage, the production has for years used Güntner units, both in the high-rise store and short-term store, and for deep-freezing.

At the heart of the meat and sausage production at the Herta plant in Herten, Westphalia, stands the high-rise store, which is accessible from all sides. In a total of five refrigeration cells, each with a capacity of 3,300 cubic me-

tres, Herta store both uncut sausage in the skin and ready-packed, cut sausage. The uncut sausages, for instance, like the “ham bars” that Herta produce, have to set here for four days before they can be further processed. The goods in the plastic-box palettes are therefore put in the refrigeration cells, and later removed for further processing, fully automatically by storage and retrieval units. The optimal storage conditions are maintained by eight Güntner dual discharge NH_3 evaporators (stainless steel/ al.) of the type S-ADHN 046C/37. The evaporators, which are mounted close to the ceiling, ensure a constant room temperature of 0 °C, and thus reliably ensure that the quality of the meat and sausage specialties is preserved. Each of these units, with a power of 22 kW and an air-throw of 2 x 14 metres, produces an air-flow volume of up to 12,600 cu. metres per hour.

High efficiency – effective hot-gas defrosting

“With a total storage volume of 16,500 cubic metres in the high-rise store alone, the significantly higher efficiency of ammonia as opposed to brine does of course have economic advantages,” explains the technical manager of the Herta plant, engineer Burkhard Granna. In addition, the hot gas generated during the warming of the ammonia can be used for economical defrosting of the evaporators. Herta also use four dual discharge NH_3 evaporators (stainless steel/ al.) of type S-ADHN 046C/37 in the short-term store adjacent to the sliced-sausage production area. The 670 m^3 refrigerated room is reserved for finished products, which are stored for one day at -2 °C, and then sliced and packed under the strictest of hygienic conditions. The ready-packed sliced sausage is removed pallett-wise by forklift, and stored in the high-rise store at 0 °C until delivery to the grocery trade. In both the high-rise and short-term stores, Herta use only units with stainless-steel housings and stainless-steel double drip trays. Burkhard Granna explains, “We have come to take stainless-steel versions for granted, because they conform to our high standards of hygiene, and have a longer lifetime into the bargain.”

“Quality, freshness and good taste”

... is the maxim by which Herta GmbH have drawn up the production guidelines for their meat and sausage specialties since the founding of the company over a hundred years ago. Starting with incoming goods, through all stages of manufacturing to packaging, storage and delivery, all processes are subject to careful inspection. Today, certification according to DIN EN ISO 9001 (quality assurance) and DIN EN ISO 14001 (environmental management) confirm the high, international quality standards of the Herta products.

Deep freezing for top-end industrial goods

While the Güntner Type ADHN evaporators have been responsible for optimal storage conditions in the high-rise and short-term stores since autumn 2000, the deep-freeze storage has had three Güntner NH_3 evaporators (galvanized steel) of type SGHS in operation for around 10 years. In the deep freeze cells, which have a capacity of around 5,800 m^3, Herta store diced industrial goods, such as diced ham. "Today, we are the leading supplier of products for the foodmanufacturing industry in Europe," Burkhard Granna emphasises. Herta’s high standards of quality are met in this storage area with a constant refrigeration temperature of -27 °C.

High performance and long life

Herta’s decision for the Güntner evaporators was not made on the basis of good experience with Güntner alone. According to technology manager Granna, the good price-performance ratio, compared with competitors, was also a deciding factor. “Because of the high quality requirements at Herta, high performance coupled with long lifetime is an important selection

criterion for new components," Granna says. "Güntner is quite definitely today's standard, both at Herta and with the majority of our reputable suppliers."

Optimum storage temperatures for meat and sausages

- For storage of several days' duration, a constant temperature of 0 °C offers optimum preservation of quality. This is the lowest possible storage temperature at which the goods do not freeze. The advantage is that the cell structure, and with it the appetising appearance and good taste of the goods, are completely preserved.
- For short-term storage (approx. 24 hours), for example before ham products are sliced, a constant ambient temperature of -2 °C is advisable. The brevity of the storage ensures that the goods do not freeze, and can be processed very well afterwards.
- The hygienic regulations for meat prescribe a minimum temperature of –18 °C for the deep freezing of meat and sausages. However, lower temperatures of around –27 °C have the advantage that the deep-freezing process has significantly less effect on the structure of the meat, and thus ensure top quality.

Source: Engelbert Adam, Dipl.-Ing., Quality Management,
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