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Küba KVB natural | Küba DZ production

DAIRY GRÖBMING



The golden age for soft cheese has dawned. Within a single year, demand has doubled for noble mold cheese and Camembert from the Styrian Dairy Gröbming. This growth is primarily due to the ravenous appetite of Eastern Europeans for specialty cheeses from Austria.

In order to serve the boom with a matching upwards growth potential, the well established traditional dairy belonging to Ennstal Milch KG made a long-term investment and more than doubled its storage and curing room capacities.

For the refrigeration equipment, Plant Manager and Cheese Master Ernst Schachner deliberately chose Kelvion air coolers to provide reliable temperatures for the demanding maturation process. Furnished with stainless steel pipework and epoxy resin-coated fins, 26 natural convection special KVB brine air coolers (with stainless steel drip tray) ensure an ideal maturation climate in the aggressive ambient air conditions.

For cheese production, constant conditions and the controlled climate in the maturation cellar is absolutely decisive for the development of taste. Every cheese has its own particular requirements. The soft and mold cheese from Gröbming like it quite cool at about 5 °C. The constant air humidity around the whole cheese is about 80%. Maturing cheese also requires a quiet environment and a lot of rest. “The maturation process must be disturbed as little as possible by air

circulation or faulty flow,” says Engineer Gerald Hermanseder from Cofely Kältetechnik GmbH, who installed the evaporators without fans, instead employing natural convection. The building expansion began in March 2014. The two-floor addition accommodates two double-deck curing rooms with about 230 m2 ground area each.



Küba DZ production



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Kelvion



The trial run started in July. By mid-August, blue mold, red mold, double mold cheese and Camembert have been stored here. The curing rooms are filled to maximum operation levels in one step and then left to rest. There are regular control visits during the maturation process that could clearly be reduced by linking the automatic monitoring of the new cooling technology to the PLC plant, thus supporting the ideal room climate.

“If one must forego highly efficient axial fans with excessive air velocities for maturing cheese, then this deficit must be compensated by more cooling surface in order to guarantee the required cooling capacity,” notes Hermanseder. Each of the two new curing rooms is furnished with 13 KVB brine air coolers, which are installed serially on the right and left sides of the rooms like pearls on a string. Natural thermal flow forces the lower-density air in the middle of the room to move upwards, and propels additional air to the center. Heat is removed by the KVB. This secures a uniform temperature distribution. The theoretical air intake temperature at the KVB is $t_{Li}=+5\text{ }^{\circ}\text{C}$, and the outlet temperature is $t_{Ll}=-5.8\text{ }^{\circ}\text{C}$.

The cooling surface for each evaporator is 59.6 m^2 . The fins are coated with epoxy resin and defy most aggressively corrosive room conditions. Salts and ammonia play a role in fermentation for cheese maturation during the transformation of existing milk sugar/lactose, proteins and fats; thus the anti-corrosive requirements on the equipment are extremely high by necessity, and not only for reasons of hygiene. Stainless-steel tubes were therefore also used in the air coolers.

For safety reasons, two Küba DZB ceiling air coolers with double-sided air discharge were furthermore installed with stainless steel casings in every cold storage room. These units also meet the highest hygienic expectations. “They are switched on as needed in response to elevated air humidity, and when changed storage conditions call for climate regulation. One can remain flexible, also with regard to new products,” Hermanseder states.

Apart from the cooling capacity, the total handling of the cleaning process was above all decisive in choosing these units. According to Hermanseder, “the evaporators must be able to be thoroughly and

easily cleaned in order to prevent microbial growth in the process. The required specifications were ultimately decisive for the customer’s request for Kelvion evaporators. Kelvion satisfied the special material requirements and provided expert advice concerning the configuration.”

The existing refrigeration system had to be expanded in order to sufficiently operate the heat exchangers in the two curing rooms. In light of the positive results of the first trials, the two old curing rooms equipped with refrigeration technology from the 1970s may be renovated to the new state-of-the-art technology as the next step, especially since Plant Manager and Cheese Master Ernst Schachner will shortly go into retirement after 46 years of service. He is the master of good taste, knows his aging refrigeration technology in detail, and knows how to handle it. Under his direction the Gröbming Dairy has earned more than 50 international awards – usually gold medals.

THE FACTS:

Application: Cheese Production
Refrigerant: Brine
Customer: Dairy Gröbming
Venue: AUT | Gröbming
Products: Küba KVB natural
 Küba DZ production

Unit	Application	Reason Why	Variants
KVB natural	Curing Rooms	Natural convection all around the chilled good	Corrosion protection V4A: - Tubing - Drip tray
DZ production	Curing Rooms	Low silhouette design, optimal use of space	Corrosion protection



If you should have any questions regarding our products or references, please send your message to baierbrunn@kelvion.com