Wagner Frozen Foods: The pizza baker and IceDry®

A delicious challenge

Foodstuffs are perishable goods, whether they're raw, baked or frozen. If the surrounding climate is not appropriate they become sticky, lumpy, mouldy or discoloured. Quality suffers, leading to lost production, stoppages or spoilt products.

Fortunately it's possible to control conditions throughout the conveying, freezing and storage. This guarantees consistent quality, and provides considerable cost savings and increased productivity. The key is to control the humidity of the surrounding atmosphere. Wagner's deep frozen stone-baked pizzas, piccolinis and American-style pizzas use Munters IceDry® systems, to substantially reduce ice and frost forming during processing and storage.

Within IceDry® is a Munters sorption dehumidifier specially developed for low humidity and temperature levels. The moist air is dehumidified until the dew point of the dry air is below the dew point temperature of product and various parts of the plant, so condensation does not occur.

Wagner use Munters IceDry® on both their spiral freezers and refrigeration plant to optimise productivity. Wagner operate a 3-shift round-the-clock operation, and ater shaping and baking, the pizza is then quick frozen for storage. The product is placed on a multi-level conveyor that feeds into a spiral freezer and is quick frozen by cold air blowing through the conveyor belts at -40ºC. The deep-frozen pizzas are then removed from the freezer, packaged and stored.

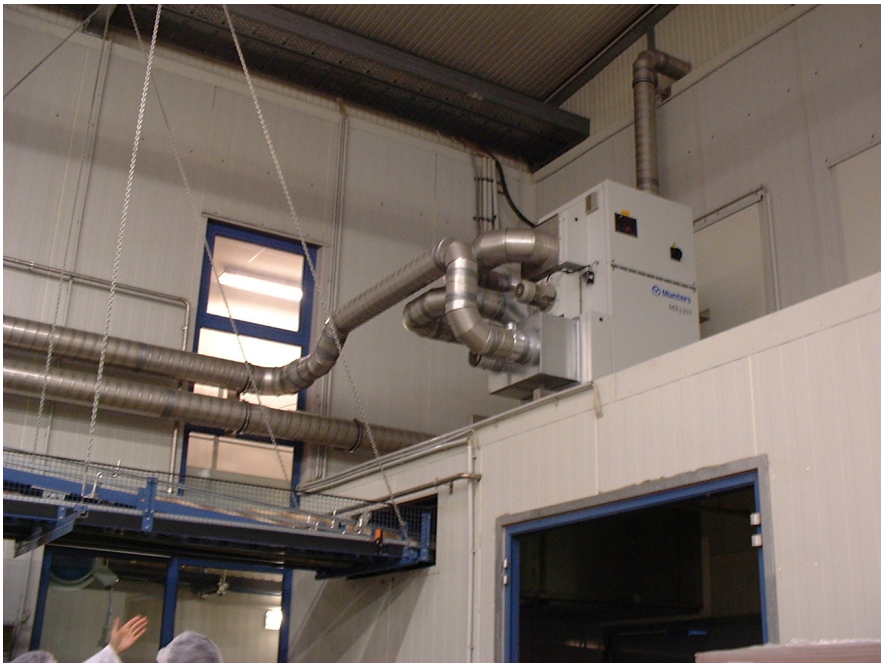
The quick frozen process means rapid throughput and is a smooth operation, because whatever the conditions, the IceDry® system adapts to them.

Prevent frost in freezing

- Increase production capacity
- Prevent ice on conveyors
- Fewer stoppages due to defrost and cleaning
- Improved temperature control
- Reduced investment to increase freezer capacity
- Payback less than one year

Munters

The Humidity Expert



Within the spiral freezer, the product itself brings humidity, and due to the wide difference in temperature and pressure between the ambient air and that in the freezer, warm, moist air streams into the -40ºC freezer through the openings, through which the product is fed. The result is frosting and icing up of the conveyor belts and refrigeration components, causing frequent interruptions to defrost and clean the plant.

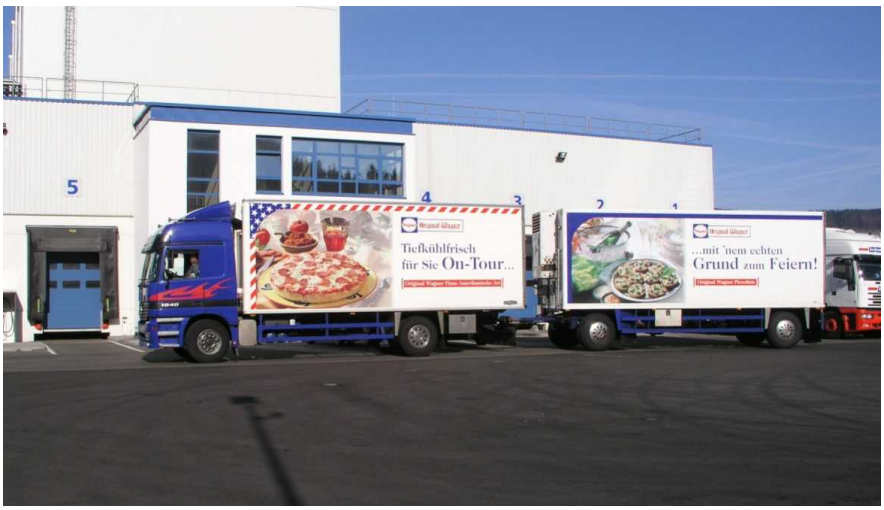
Munters provided a reliable solution, as the moist air is extracted at the openings where the product enters the freezer and is passed through the IceDry® system, where it is dehumidified to below the dew point temperature of the spiral freezer. The now dry air is then fed back into the freezer.

The dry air produced by Munters IceDry® system considerably extends production times between stoppages for defrosting. This increases production throughput and makes savings along the entire product line, a major advantage in a round-the-clock full load production process. Since the spacing on the conveyor belts remains constant, consistent quick freezing is guaranteed. The cost-benefit ratio is improved and as a result, profitability.

Atmospheric conditions are optimised in the refrigeration plant too. The entire cold storage depot is kept at a temperature of -24ºC. Only the separate loading area is at a temperature of -8ºC. When the loading doors are opened, the outside air leads to an increase in humidity. If the doors to the anteroom, which is kept at a temperature of -24ºC, are then opened, the great temperature and pressure difference causes additional warm, moist air from the loading area to flow into the anteroom.

Installing a Munters IceDry® system meant the dew point lies below the prevailing temperature, which considerably reduces the formation of ice and frosting on the air-cooler. This prevents mechanical moving parts of the vertical conveyor belt from slowing down or becoming completely blocked. Icing up of the refrigeration components, including the evaporator and condensation tray, is also reduced. Were this not the case, valuable energy and time would be expended on defrosting.

The IceDry® system ensures that the dew point lies below the prevailing temperature. The system draws moist air directly from the surrounding atmosphere and dehumidifies it to a dew point below the surface temperature of the coldest parts. The dry air is fed back into the anteroom, combating the formation of ice and frosting. All in all, this saves costly energy and time, ensuring Wagner's high product quality and minimises the risk of accidents. The recipe for dry air is not a secret, why not look on www.munters.com/food for a wealth of case studies - it's worth the visit.



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