

# Chilled is the new freshness

IT NEED NOT ALWAYS BE THE FREEZER, CONVENIENCE PRODUCTS CAN BE LOOKED AFTER JUST AS WELL ON CHILLER SHELVES. THEIR STORAGE LIFE IS NOT AS LONG AS PRODUCTS IN A FROZEN SLEEP, BUT THEY ARE POPULAR DUE TO THEIR IMAGE OF FRESHNESS



++ figure 1

A peep into the production of frozen pizzas at Wagner. Pizza is among the world's most popular ready meals

**+** Pizza is one of the world's most popular ready-made meals. Whether frozen or from the chiller cabinet – correct packaging plays a central role: it protects the product against drying out, microorganism attack and other adverse external effects. It can also carry all the relevant product information. In most countries frozen food can only be offered for sale if it is packaged.

## From aluminium baking tin to plastic film

The introduction of the frozen pizza opened up a wealth of new opportunities. The first frozen pizza in the pizza's history was offered on the American market in 1957. The first industrial production of frozen pizza in Europe was in the late nineteen-sixties. The usual type of packaging was a handy aluminium baking tin. Other manufacturers quickly followed, and the upward trend was rapid: 2,800 t of pizza was produced in Germany in 1973, 23,000 t in 1980 and 253,000 t last year. In parallel with this, it was necessary to develop an entirely novel production technology and consequently the first fully automated pizza manufacture emerged – from dough preparation and topping application to packaging. Nowadays, efficient multifunctional plants with distribution, filling and tray-loading systems take over the tasks of producing and packing this best seller.

## Space-saving packaging

Countless pizza varieties in all sizes now dominate the frozen food departments of supermarkets throughout the world.

The bofrost Dienstleistungs GmbH & Co. KG Company, Straelen, Germany, with 232 branches in twelve European countries, delivers frozen products directly to the households of around 4m customers and in the summer of 2010 introduced a new type of package for frozen pizzas. Since then, five of the company's new pizza varieties made in Italy have been marketed in plastic bags instead of welded into film with the usual outer carton. The bag holds two pizzas of each variety and is thus said to occupy less space – mainly in smaller households with correspondingly smaller fridge capacities. The frozen pizzas are manufactured using many original Italian ingredients: e.g. tomatoes from Emilia Romagna and olive oil from Tuscany. bofrost pizzas are pre-baked in wood-fired stone ovens in Meduno, Venice, and topped with selected ingredients by hand.

## Anti-fog film

The Swiss industrial bakery Jowa AG from Volketswil also focuses on freshness and consumer friendliness: the company supplies the Anna's Best range of Italian pizzas to the Migros trading company. The requirement was to pack the pizzas, which are topped by hand, so as to retain the combination of a crisp edge and light dough structure after baking. For this Jowa chose an anti-fog Cryovac BDF barrier shrink film. Cryovac BDF (Barrier Display Film) is a multi-layer polyolefin shrink film with high oxygen and aroma barrier properties. These films were developed to protect the packaging integrity of a broad range of perishable or long-life products.

++ Author: Annette von der Heide, Specialist Editor, Berlin, Germany



++ figure 2

© Bofrost



++ figure 3

© Sealed Air

++ figure 2  
bofrost eliminates the outer box – so more pizzas fit onto domestic freezer shelves

++ figure 3  
Anna's Best is a best seller: The anti-fog film gives a clear view of the product

The attractive visual appearance of the product through the transparent film was confirmed by sales: a couple of months after its introduction, the Anna's Best product range recorded an exceptional volume of sales. The topping, e.g. Italian cherry tomatoes or mozzarella balls, cannot slip out of place due to the closely clinging film. Heike Zimmermann, Communications Manager at Jowa, says, "We want to make a pizza that tastes just as good at home as it does in an Italian restaurant."

As well as the market success with Migros, Jowa also achieved internal benefits: It was able to save 55 t of packing film within one year after introducing the Cryovac Sealed Air system. The pizza range offers various sizes, e.g. the "Pizza Grande Fina" or the oval "Della Casa Lunga". The packaging solution can be operated on a line for a variety of pizza shapes and sizes with minimum retooling costs. It was also possible to extend shelf life due to the hermetic sealing and high barrier properties of the protective film. ▶

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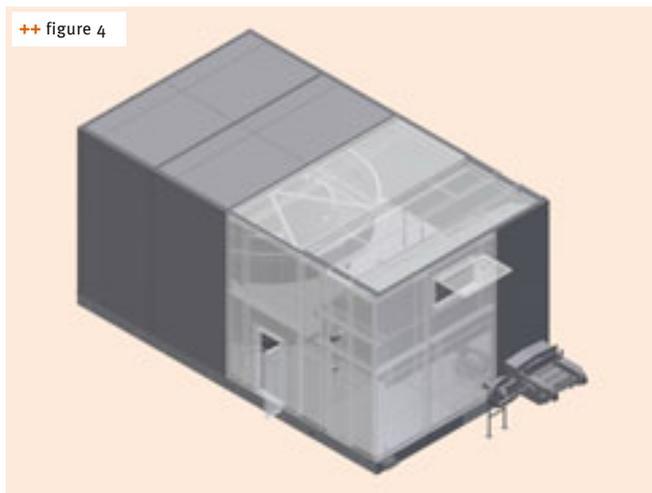


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++ figure 4

The GEA Maxi-Stack is a new and exceptionally space-saving spiral freezer for freezing capacities up to 3,500 kg/h



++ figure 5

Loosely rolling products such as pizza toppings are frozen with the Cryoline CW Series freezer

### Flexible freezing

For frozen pizzas, frozen toppings are spread onto the pizza. This also makes it easier for machines to weigh out the components and spread them onto the pizza. Tunnel freezers are used for this task, e.g. the Cryoline CW multipurpose cryogenic freezer presented at the Anuga FoodTec trade fair by the Linde AG Company, Munich, Germany. A vibration mechanism creates a wave-like movement over the whole belt width in the front part of the machine. This technology effectively prevents the refrigerated products from sticking together, which allows for high belt loading. The Cryoline CW is suitable for a large number of food technology applications: in IQF mode (Individually Quick Frozen), it freezes smaller, loosely rolling products such as prawns, pizza toppings and mushrooms. Simply switching off the vibration mechanism converts the multipurpose freezer to the standard tunnel mode, and it then, for example, can freeze products such as pizza bases.

Nitrogen or even carbon dioxide can be used as the cryogenic coolant medium. In both operating modes the coolant is fed from front to back on the co-current principle. In IQF mode, a combination of movement and simultaneous coolant injection ensures rapid product cooling in the front zone of the freezer. Complete freezing all through takes place on the tunnel freezer principle in the rear part of the equipment. This special technique allows for a fast freezing process in which the liquid remains enclosed during transport through the freezing zone.

### More freezing capacity with the same footprint

The GEA Refrigeration Technologies GmbH Company, with headquarters in Bochum, Germany, specialises in industrial refrigeration technology. Under the leadership of Dr. Hugo Blaum, President of GEA Refrigeration Technologies and responsible for innovation management in the GEA Group, the company offers products and solutions for the food industry, among others. Clients include, for example, the baked goods industry or confectionery manufacturers. GEA's products are used in almost all the phases of the production

cycle: after vegetable harvesting or in the slaughterhouse, for refrigeration in factories and in the storage or freezing of foods or semi-finished and table-ready meals as well as in supermarkets.

GEA Refrigeration Technologies plans to use a change of name to draw attention to the breadth of their product range of cooling and freezing solutions for the food industry, and to harmonise the product descriptions of spiral, tunnel and carton freezers. The ultra-hygienically designed low tension spiral freezers previously marketed under the name "Aero-freeze" will now be given the name GEA A-Tec.

GEA presented a new spiral freezer at the Anuga FoodTec trade fair, the GEA Maxi-Stack, whose convincing feature is high freezing capacity on a small footprint. The new freezer is available for freezing capacities up to 3,500 kg/h. Its compactness is made possible by the patented self-stacking GEA Q-belt conveyor belt; this eliminates the slide rails used in other (low tension) spiral freezers. Thus the GEA Maxi-Stack offers more belt surface area with identical external dimensions. The freezer is available with various numbers of decks; it exceeds conventionally designed self-stacking conveyor belts due to its robust construction. For example, the belts, each stacked one on top of another, intermesh over a larger area, which results in a stable combination. This design also has a beneficial effect on the durability of the conveyor belts. The other components are also designed for durability. The GEA Maxi-Stack also benefits from the latest features of GEA's series of freezer models, reflected, for example, in the modular, insulated, fully welded stainless steel base, welded stainless steel construction and optional stainless steel housing, also welded. These design characteristics enable efficient cleaning with a Clean-in-Place (CIP) system. GEA fabricates the evaporator itself from stainless steel tubes and aluminium lamellae 0.6 mm thick.

There is an optional snow removal system that allows for up to six days of operation between defrosting cycles. An optional Clean-in-Place system with a recycling circuit is also available, which cleans efficiently and is economical with water and cleaning agents due to the recycling circuit. +++



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