

Bakery Treiber, Steinenbronn, Germany

Keeping a cool head at all times.

Bakery and pastry shop Treiber uses refrigeration technology for a variety of reasons. This guarantees high product quality, while energy efficiency and reliability also play a role – MIWE is the perfect partner.

In a bakery, the oven technology definitely plays a key role. "However, the refrigeration technology is now equally important," says master baker Winfried Hartwig. At Bäckerei Treiber, this is already evident in the size of the refrigeration area. However, it is also highlighted in the quality of the baked goods, which are primarily managed via refrigeration. Winfried Hartwig mentions "time to proof" as a keyword. Like in the oven area, Treiber relies on MIWE in the refrigeration area.

With the new production building in Steinenbronn, south of Stuttgart, Germany, the medium-sized craft company created space to further improve its high product quality and position the company ideally for the future. The two previous production locations for the bakery and pastry shop were combined at the new location.

Many tasks for refrigeration technology

Refrigeration technology has four responsibilities here: Refrigerating or deep freezing raw materials or finished products, such as in the snack sector, is typical. It is also typical that fine baked goods like Danish-style pastries are managed via deep freezing. They are produced in larger batches, and fed into a deep freezer via the flash freezer. If required, the dough pieces are then matured to oven readiness by the fully automatic proofing unit.

The large variety offered in this section is rather atypical in this context. Different products are produced here every 14 days, and as well as with the slices. "We want to offer our regular customers something different all the time, and make our range highly seasonal," explains master pastry chef Florian Schlink, the production manager responsible for the fine baking sector.

While the Danish-style pastries are still largely baked in the production area, other dough pieces are largely managed via the refrigeration system, and baked subsequently in the stores. "Both the pretzels and our regional "Filder" rolls are our main products," explains Winfried Hartwig. →



Master pastry chef Florian Schlink is responsible for the pastry area at Treiber. As in the bakery area, all refrigeration plants are designed as integrated systems.



The flash freezers are connected to a dedicated refrigeration machine, to provide the significant cooling output required quickly.

He also knows that customers judge a bakery based on the quality these baked goods. And the master baker is aware that a high level of baking expertise is required in addition to suitable refrigeration technology.

Treiber also uses this baking expertise for long-process proofing of baked goods. Winfried Hartwig: "We want baked goods like in the olden days. Craft baking is our top priority. Only if a machine can do it better do we consider using it." Any form of automation which adversely affects the quality would industrialise baking. Treiber in particular is aware that the products would then be compared based on prices and it would lose the price war.

In spite of this, they do not want to avoid all technology. For example, they use systems which weigh dough particularly gently. The refrigeration technology also plays a key role. Besides refrigerating raw materials and finished products, deep freezing dough pieces and deep freezing dough pieces for baking in stores, the refrigeration technology for the long-process proofing area is the most important, as well as the most demanding area of refrigeration technology. MIWE has functional solutions for all of these areas.

Winfried Hartwig looks right at one of the fully automatic proofing units (MIWE GVA) and adds: "Today, we can control things more precisely than has ever been possible before." He is referring to the proofing and maturing progress of the dough pieces. The MIWE TC system controller allows parameters to be set and adjusted so that any required proofing curve can be mapped. "We never have problems with skin forming on dough pieces." On the contrary, the dough



Everything that is baked in the rack ovens at Treiber is managed via the GVA beforehand. Quality takes time, time to mature.

pieces on all trays, whether on top or bottom in the wagon, are precisely matured.

Treiber's production hall houses more than one MIWE GVA. "Everything we bake in the rack ovens is managed via the automatic proofing unit," explains Winfried Hartwig. As examples, he mentions white rolls, pretzel rolls as well as bread loaves. The maturity curves are similar, always using time instead of extreme cold or heat.

Before feeding into the GVA, the dough pieces are briefly flash frozen to establish a uniform core temperature. It is max. -6° Celsius. They then mature slowly, for up to 12 hours. The maximum temperature is approx. 25° Celsius. Winfried Hartwig also explains that the dough pieces mature at 15° Celsius for most of the time, i.e. eight hours. He calls that the plateau time.

Pretzel line

The bakery's refrigeration block is ergonomically laid out at the edge of the production hall, with the longitudinal side facing the rack ovens. The special refrigeration technology for producing pretzels is located on one of the transverse sides. "Of course, pretzels are one of our A products," says Winfried Hartig, and knows how important top product quality is.

As the vast majority of the pretzels are always baked fresh in the branch outlets, they have to be proofed, lye-dipped and deep-frozen before delivery. That is why the production line for pretzels ends in the refrigeration area. After the pretzels have been processed, they are proofed in a MIWE GVA.

“While moisture is important for proofing, we need dough pieces with a slight skin in the end,” explains master baker Hartwig. MIWE wouldn’t be MIWE if it didn’t have a solution for this: a dehumidifier in the GVA, which is used at the end of the maturing process.

Finally, the pretzel dough pieces can be lye-dipped and deep frozen. A flash freezer right in the pretzel production area is used for this purpose. This flash freezer and the flash freezer in the bakery area are connected to a dedicated condenser (refrigeration machine). This has the advantage that very high refrigeration outputs can be made available very quickly, as they have a different temperature profile to the other refrigeration plants. The surface of the goods inserted ices over immediately, preventing the goods drying out. This is an advantage for both dough pieces and baked products, by the way.

The other refrigeration plants rely on integrated systems. This is what the technology which combines multiple refrigeration cells via a single system is called. That has advantages, particularly in terms of energy efficiency: The systems run more uniformly, as separation of the systems into a deep freeze system and a normal cooling system means that exactly the amount of refrigeration required is provided. The precisely metered refrigeration output is also achieved by using frequency inverters and mechanical output regulation.

Heat recovery

“Nowadays, energy and saving energy is always impor-



MIWE climatic chambers are available for proofing. They allow the temperature to be maintained precisely – even in hot summers – guaranteeing reproducible quality.

tant,” states Florian Schlink. As in the baking area, the entire system in his area of responsibility, the pastry and snack department, is structured via integrated systems. Electronic injection valves and LED lighting in all rooms of the refrigeration plants help to save more energy. In spite of this, the systems still need energy. “We can re-use at least some of it,” adds Schlink.

Refrigeration systems do not actually produce cold air. Instead, they withdraw warmth from the space they are designed for. That results in cooling. The heat is generally dissipated outwards into the ambient air. A pity, as heat is needed again in many areas of the bakery.

That is why MIWE designed eco:recover. It is a system for recovering heat from refrigeration machines. The heat →



A dedicated cooling area was designed for the production of the pretzel dough pieces. They are delivered to the branch outlets proofed, lye-dipped and deep-frozen.



Danish-style pastries, like nut pastries in this case, are produced in batches and stored in deep freezers.

recovered there can be used for any purpose. "We use it for the frost protection heating in the deep freeze area," explains Florian Schlink. In spite of optimal insulation, the deep-freeze cells still transfer cooling to the surroundings.

In the components that touch the ground, foundations and the floor surface, the soil beneath it absorbs the cold and the ground freezes. That can cause significant building damage. This is avoided with the MIWE eco:ground frost protection heating system. Glycol flows through its pipes. If necessary, it is heated via the waste heat from the refrigeration plants and ensures that the floor doesn't freeze without a lot of additional energy.

As with the ovens, the two production managers can also view and control the data from the refrigeration plants from the PC. But not only Winfried Hartwig and Florian Schlink see this data, MIWE also sees the data and thus the refrigeration plants around the clock, 24 hours a day, seven days a week, 365 days a year.

"Of course, that also gives us security," say the two production managers on the future-proof MIWE remote service

concept. It is more than remote monitoring in the classic sense. MIWE's experts are not only alerted when errors occur. They can detect possible errors at an early stage based on a variety of parameters and output curves, and take countermeasures via remote monitoring in some cases. That guarantees operational reliability and reduces the maintenance costs in the long term - just typically MIWE.

A brief overview of Bakery Treiber

Owners: Evelyn und Wolfgang Treiber,
as well as Katharina Fischer, geb. Treiber
Gottlieb-Daimler-Str.2, 71144 Steinenbronn

Branch outlets:	29
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Employees:

Production:	85
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Sales:	ca. 400
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Shipping department/logistics:	18
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Administration:	8
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Sample prices:

Regional „Filder“ rolls	0,40 Euro
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Spelt rolls	1,00 Euro
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House bread 2,000 g	6,50 Euro
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Special breads 750 g	between 3,00 and 4,00 Euro
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Danish-style pastries	from 1,35 Euro
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