

FIRST BAKERY VACUUM COOLING DEMONSTRATION CENTRE BY **WEBER COOLING** IS LOCATED AT BAKKER WILTINK



Hans Juursema

WEBER COOLING IS ONE OF THE LEADING PRODUCERS OF VACUUM COOLERS AND SUPPLIER OF FULL COLD CHAIN SOLUTIONS FOR VEGETABLES, FLOWERS AND OTHER FRESH PRODUCE. OVER THE LAST FEW YEARS, THE BAKERY SECTOR HAS BECOME ONE OF THE MAIN FOCUSES OF ATTENTION FOR WEBER COOLING. THE FIRST SYSTEM THAT WAS SPECIFICALLY DEVELOPED FOR THE BAKERY SECTOR IS LOCATED AT BAKKER WILTINK (BAKERY WILTINK)

IN DOETINCHEM (NL), WHICH RECENTLY OPENED A DEMO BAKERY WITH VACUUM COOLER. WE VISITED INDUSTRIAL BAKER KAREL WILTINK AND MET HANS JUURSEMA (WEBER COOLING) AND EXPERIENCED VACUUM BAKING SPECIALIST THEO VAN HOOFF, RESPONSIBLE FOR MANAGING THE PROJECT.



Vacuum cooling isn't new in the bakery industry. In fact, there were already parties that dared to venture to implement the technology in the production process during the sixties. At the time, the world was not yet ready for implementing this technology. However, it was embroidered on. With the industry's current possibilities, vacuum cooling is easier applied in production processes of different industries, such as the bakery sector. Weber Cooling has mastered the technique and has developed affordable solutions for the bakery sector. The first system was installed almost two years ago at Bakker Wiltink and was optimized on the spot.

VISION

Bakker Wiltink is a very progressive bakery. There's always people looking for novelties and innovations in the production process, to simplify the process or improve the quality of the final product. This is how Wiltink came in contact with vacuum cooling and its possibilities. "We have a nice assortment of gluten-free products, but we believed that the way we were working at the time was not sufficient to realise optimal and consistent quality. We were looking for a party that could deliver a decent machine for a good price and the lack of a proven track record with bakery solutions, was no insurmountable problem for us. We did extensive testing with one of Weber Cooling's demo coolers, so we were already convinced that they would be able to get the job done. We took a calculated risk", says Karel Wiltink.

DEVELOPMENT

"We have all the knowledge regarding vacuum cooling in-house, but we didn't have a working solution for the bakery sector yet", confirms Hans Juursema. "When bakker Wiltink asked us to develop a vacuum cooling solution, we immediately started gaining knowledge on the art of baking". Since we lacked knowledge about the production process of bread, we asked Theo van Hoof (vacuum baking specialist) to help us optimize our vacuum cooling technology for use in bakeries. We were already successful in our other sectors such as leafy vegetables and were interested in entering the bread sector, but meeting Bakker Wiltink accelerated this process.

Hans mainly speaks about the opportunities for Weber Cooling in the bakery sector. "Because of the very high purchase prices that were asked by existing providers, the market for bread vacuum cooling was very limited. Thanks to the completely different production scale and our way of modular construction, we can offer a completely different price level, and with that reach a much larger target audience. We deliver systems that do not just stand out in terms of price, but also in technology and efficiency. Our vacuum coolers only need a modest amount of electrical energy, which can be (fully) compensated by the shorter baking time that can be realized! The loaves can be taken out of the oven twenty to thirty percent sooner, after which the final

'baking process' and the cooling take place simultaneously in the vacuum cooler, which takes an average of three to six minutes to cool the products down. This way you achieve both cost and production benefits, not to mention the benefits for your product quality and shelf life."

THE PROCESS

It sounds very simple, but what are the actual advantages of vacuum cooling? Theo van Hoof briefly explains the technique: "Baked bakery goods are very wet and the steam to be formed during baking plays an important role in the heat transfer, cooking of starch and proteins and in the formation of the distinctive crust. Because of the large heat capacity, steam also plays an important role in cooling. Water in the bakery products goes through a phase change from liquid to gas. This phase change needs energy, which is found in the form of heat. In the case of vacuum cooling, the baked goods are placed in the vacuum chamber immediately after baking. In steamed bread, steam is sufficiently present and therefore also very suitable for cooling effec-



tively with vacuum. The baked product is evenly cooled by vacuuming, from the core to the outside. Steam has the natural effect of always pulling to a colder point and under vacuum the core of the product is colder than the environment and thus also pulls to the core of it product. By lowering the pressure, the boiling point of water also lowers and steam continues to develop which can pull back to the colder core of the product. In the gelatinization of starch in bakery products (cooking), steam plays a crucial role and during the vacuum process of bakery products steam will be available for a longer duration, so that a deeper and more maximal gelatinization can be achieved which gives a longer tenderness of texture."

DEMO-ROOM

After developing a vacuum cooling system for Bakker Wiltink, the constant quality of the gluten-free products increased, the baking time decreased and saving of raw materials realized. "We have become convinced of vacuum cooling. So much so, that we have a demonstration room where a special demo vacuum cooler from Weber Cooling has been put into use for product development to take place. We have also done this ourselves, to increase our knowledge and improve.



A vacuum cooler isn't plug and play. A lot of expertise, testing and time is needed to achieve optimal end results. We can realize that in our demonstration room. We are however, a supporter of the principle: who can share can also multiply. That is to say that we do not want to keep this technique for ourselves, so in good consultation, we have given Weber Cooling permission to also use this demonstration space for their customers", says Karel Wiltink. Hans adds: "This ensures that we can show potential customers how vacuum cooling works in practice, with their own products. This way we can convince them of the high level of quality and knowledge we deliver. It requires a lot of testing and adjusting to eventually achieve the perfect result when you start switching to vacuum cooling, but it brings you so much added value. Your product get more volume, are more tender and have a longer shelf life. To top it all off, you save energy and therefore costs. We keep vacuum cooling affordable to our customers, which enabled us to deliver new systems to customers almost monthly all over the world."

UPSCALING

Karel Wiltink is very pleased with the collaboration with Weber Cooling. "We started with a small vacuum cooler and when we increased the gluten-free bakery last year, we decided to invest in a larger vacuum cooler from Weber Cooling. We would not have done that if we were not satisfied with its predecessors the results. The only point of interest that Weber Cooling should be more alert to is their aftersales, but that is one point that Weber Cooling also started working on in 2018 by expanding its support department.

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