

No more problems

Ever since Greller's Backhaus in Langenzenn has replaced the kneading troughs of its bread roll lines with UltraLow-Hygiene Technology, mold stains are a thing of the past.

Since the intensively used bread roll line of the bakery has been refitted with UltraLow-Hygiene Technology, there are no longer any hygiene problems.

The bakery founded in 1987 has become famous for its "Greller-Semmel" and now supplies it to many fairs and Christmas markets thanks to high flexibility in production. In the Nuremberg and Fürth area, it was

the first bakery to produce bread rolls through long-time dough methods and proofing interruption. "Our bread rolls are not particularly high in volume, but have a strong and malty taste. We were among the pioneers with qualities

like that in the 1990s" explained Armin Ziegler, Head of Production. Because quantities exploded in just a short amount of time, the bread roll line was always the focal point at the bakery as it had to work flawlessly at all times. "Even



Photo: BT/ Stefan Schütter 2017



[1] The spreading belts of the dividing system were not provided with a coating, because the dough pieces are only on them for a couple of seconds. [2] All 360 proofing troughs and 20 cutting means as well as the lower band of the long molding unit have been coated since early 2015, however. [3] As can be seen, the troughs in use on the line no longer suffer from mold stains. The troughs shown in the picture were cleaned with a brush two weeks ago.

though Bäko Franken is located right across the street and the way to the workshop is therefore quite short, our demands regarding engineering quality have always been high." The bakery is not compromising on quality either. That's why a proprietary HACCP concept was introduced in 2011. The bread

and bread roll lines were critical checkpoints from the outset. The measure to solve the hygiene problem envisioned in the concept was therefore to re-coat the troughs every six months. "We also tried troughs with anti-stick coating, but even that did not have any noticeable effect."

Improved hygiene

The bakery has been producing at the current location for 25 years and has constantly expanded it. For the last time in 2012. But there have always been problem with mold stains. "The reason for that is the high amount of humi-



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Photo: BT/ Stefan Schütter 2017



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Photo: BT/ Stefan Schütter 2017



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Photo: BT/ Stefan Schütter 2017

[4] The processing time through the proofing cabinet is almost one hour, which is why the troughs were provided with an antibacterial coating. [5] For the manufacturing of split rolls, a single flour duster directly behind the dividing system suffices. Kaiser rolls use an additional duster ahead of the embossing apparatus. [6] The hygiene coating is hygroscopic and can absorb a share of the moisture, which the dough pieces are giving off to the troughs. That is why they are not sticking.

dity during production. We actually performed measurements to confirm this", explained Ziegler. Though the production hall is fitted with roof hatches, these are always closed when it rains. Also, the ovens are not located in a separate room, but in the center of the baking room. "We're always battling a high degree of humidity in the air for this reason, even though we have installed additional ventilators and vents." When the Head of Production visited Switzerland with some of his employees for a training course, he talked to some colleagues who were already using UltraLow-Hygiene Technology. Ziegler then contacted manufacturer Fortuna on this issue and established contact with UltraLow-Hygiene Technology Bakery GmbH&Co KG. The company then coated ten troughs from the bread roll line with natural cotton and then lined it with its UltraLow-Hygiene Technology. This technology is based on an aqueous solution, which cures to form an extremely thin surface finish after application. It has been certified by accredited testing laboratories and is approved for direct contact with food products. Made entirely without nanoparticles and silver ions, it is antimicrobial to 99.9 percent, antibacterial as well as antiviral and effective for a long time, thanks to its active ingredients in the binder matrix. When the refitted troughs were shipped back to the bakery for testing, Ziegler was skeptical at first. "A lot of companies have promised me to have found the perfect solution for our trough problem. In the end, nothing worked." But after two to three months the Head of Production was convinced that the dough was less sticky in contact with the



[7] Photo: BT/ Stefan Schütter 2017



[8]

Photo: BT/ Stefan Schütter 2017

[7] The uncoated troughs (top) have been subject to mold stains over time. The newly coated troughs are immaculately clean and will remain so. [8] The dough trays on which the dough pieces are automatically placed by the line do not suffer from mold stains either.

ten testing troughs and less residue remained on the troughs as well. "This actually surprised me, because the structure of the coated troughs felt coarser than the old rags, which were very fine, almost silky."

Conversion of the bread roll line

The bakery then converted all 360 proofing troughs of its bread roll line as well as the 20 cutting means and the lower band of the long molding unit. "We left the pressing board unchanged, as the felt cover there is simply the best from a technological standpoint. Otherwise the dough pieces slide through too quickly when they're too dry or heavily floured." Coating the felt would not have been sensible also because it tends to wear quite quickly due to the heavy brushing against it. Instead, the pressing board is provided with a new felt cover every six months. The replacement of the troughs was performed quite efficiently. Fortuna provided the bakery with 100 troughs as backlog. This meant that 100 troughs could be re-coated at any time and then refitted into the line, so that there were no downtimes. Daily

cleaning of the line still includes the sweeping of the troughs. Once a month, they are intensively cleaned with a soft scrubbing brush. But ever since UltraLow-Hygiene Technology has been implemented, the troughs no longer have to be removed and washed twice a year. "A long time ago, cleaning was even more laborious. They used long prohibited chlorine bleach or 73 percent alcohol to kill off the mold and then thoroughly rinsed off the troughs with water. Prior to reinstallation, they had to make sure that they were 100 percent dry. But we wanted a simpler and, in the long run, less expensive solution for our hygiene concept and the coating solution has allowed us to achieve this goal." In January of 2017, the troughs had already been in service for two years. Since then, neither mold nor mold stains were found. Before that, the first signs of mold were showing roughly every six months, so that the troughs had to be re-coated equally as often.

Minimized use of flour

The bakery has been using low-dusting special flours as dusting flours and was thereby able to red-

uce the required quantities significantly. Since the coating solution is in use, the quantities have been reduced yet again. "When processing split rolls, we only require a single flour duster directly behind the dividing system. Only Kaiser rolls still require a second duster ahead of the embossing apparatus, so that the punches do not stick to the dough pieces." Thanks to the coating, the dough pieces don't stick to the troughs and cutting means anyway, as it is hygroscopic and can absorb the moisture given off by the dough pieces. As the lines at Greller only process bread rolls, it was possible to adapt the pore size of the coating exactly to the composition of the bread dough. "If we were using our line for pretzel dough as well, which tend to be sticky due to their low temperature in spite of their relative humidity, it would be possible to adapt the coating to that as well. But since we're only processing one type of dough on the line, no compromise is necessary." As the rags are only clipped into the troughs at the new Fortuna lines, it would even be possible to replace them quickly and without much hassle, if the line would have to be used for other products and it would be necessa-



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Photo: BT/ Stefan Schütter 2017

[9] For hygiene reasons, the trays for extended dough pieces are made of plastic. The placed foam pieces are replaced after 2-3 runs [10] An active UV sterilization allows the webs on proofing troughs to cure and become brittle over time. Thanks to the coating, this UV sterilization is no longer required, however.

ry to adapt the coating to these. Furthermore, the rags can simply be cleaned using cold water in a washing machine without any additives. But this has never been required at Greller since the conversion was performed.

No more mold stains

During an examination by the regulatory agency, Ziegler provided the official with some documentation on the coating solution. "He was astounded and rated positively that we were actively working on the mold stain problem. After all, he knows exactly where he has to look closely at a bakery." For hygiene reasons, the dough trays are, for example, provided with foam sheets and these are replaced after two to three runs. "However, the sheets often have to be aligned manually first. In addition, the salesperson must remove every sheet individually on the next day when she

turns the trays and moves the dough pieces to the plates. This is an additional working step. It's a pity that there is not yet any coating for proofing carriers, which would make such sheets redundant and simplify the process of keeping the trays clean." But Ziegler is quite happy with the coating. During the six years that he has been the Head of Production at Greller's Backhaus, mold stains were a long-standing problem. "I can now look at this in a more relaxed manner, also considering that working hygiene is becoming more and more important", he concludes. "We're also saving on cleaning costs thanks to UltraLow Hygiene Technology and were able to reduce the downtimes of our lines. For our boss, the five years of warranty that are provided were also an important aspect in favor of the coating, however."

Stefan Schütter



[10]

Photo: BT/ Stefan Schütter 2017

Exclusive cooperation



Photo: Fortuna AG 2017

Signing off on the cooperation (from left to right): Wolfgang Schröder, Bernhard Daum, Florian Stark, Thomas Resch, Thomas Schäfer, Rainer Wrobel, Mark Kneiphoff und Robert Prohaska.

After a meeting at Fortuna on December 20th 2016, the Chairman of Fortuna AG, Marc Kneiphoff, and UltraLow Hygiene Technology GmbH & Co.KG, represented by Sandro Heindl and Rainer Wrobel, officially announced that Fortuna AG will receive exclusive rights for the installation of no-mold proofing carriers with UltraLow Hygiene Technology as the exclusive manufacturer. In the future, small-sized pastry installations can be optionally fitted with this technology by Fortuna and already operational models can be retrofitted. Due to the projects already accomplished together in the past one and a half years, both companies are entering into this cooperation with sustained confidence. "We are providing a five year warranty on our antibacterial coating. At the well-known Bäckerei Ebner in Regensburg, our first major customer, it has now been in use for more than seven years and since then, there have been no more mold problems there", explained Rainer Wrobel, Manager of UltraLow Hygiene Technology Bakery GmbH&Co KG.



Photo: BT/ Stefan Schütter 2017

In order to be able to reach the troughs in the proofing cabinet more easily for replacement or cleaning, the line was fitted with a large "service hatch".



Photo: BT/ Stefan Schütter 2017

At a glance

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Established: 1987
 Head of Production: Armin Ziegler
 Employees: 275
 Building: 2.000 qm
 Own branches: 30
 Certificates (IFS, ISO etc.): none