

# MIWE impulse

Editorial 3

Making in-store baking easier in every way:  
MIWE control systems ensure the best results  
for your baked goods and help you save too 4

MIWE winCAB:  
For a precise overview of your branches and bakehouse 12

More speed! The new MIWE SF-D:  
Even faster. And even easier to keep clean 16

No need to fear new regulations:  
(Process) secure baking refrigeration with new cooling medium 18

State of the art:  
Which baking station is the right one? 24

The refrigeration triathlete for bakeries:  
The new MIWE GVA e+automatic proofing unit  
is impressive on all fronts 32

Trade fair dates / Imprint 35



At regular intervals, we conduct surveys like the one in this issue of MIWE impulse to find out what customers and potential customers think of our products, where they see our special strengths and where they think we can improve.

We always receive a lot of feedback and often the responses are very detailed. This pleases us for two reasons. Firstly, we gain first-hand information that helps us to help you, our customers, by offering even better products and services that help you do better business.

In this way, our survey ultimately benefits you. And as always, an international aid organisation will benefit if you take the time to respond to us.

For every completed questionnaire we receive, we will donate five euro to Médecins sans Frontières. During the last customer survey, we raised 2,500 euro for a good cause. This time around, we would like to top this record.

If you would like to play a part in giving hope to those in dire need, please participate in our survey.

In the past, when we asked you about MIWE's special strengths, you always mentioned one attribute above all: our innovativeness.

We appreciate this response, especially because it motivates us to continue driving the industry forward with key innovations, as we've been doing for nearly a century.

We will continue to develop and market any product that helps us (and you) to make good baking more flexible, convenient, reliable and simply put, easier.

Even if this means we have to question entrenched ways of thinking and cherished ideas.

One example is the MIWE ideal e+ with MIWE variobake, the flue-gas oven with precisely balanced heat transfer capabilities, an oven that can even hold its own next to a tube coil oven or thermal oil baking oven. This is yet another example of how the limits of a system (in this case, a flue-gas circulator) can be expanded by combining modern technology, intelligent control logic and extensive expertise in backing technology.

You can find more examples of our unyielding innovativeness in this issue of MIWE impulse. And don't forget to complete the survey when you're finished reading.

We appreciate your participation!

Sabine Michaela Wenz



**Thermal oil? Flue gas?**

MIWE variobake raises the bar for old systems. To learn more, visit us at the südback trade show in Stuttgart.

We look forward to seeing you there.

*Making in-store  
baking easier  
in every way*







*How MIWE control systems can help you save resources and guarantee good baking results every day*

Nowadays, control systems are ubiquitous in our lives, whether we're using a television or microwave at home, or operating a copier or production machine in the workplace. They serve as translators between us (and our declared intentions) on the one hand and the electron-dominated world of devices on the other. We input commands, the device hopefully decodes them correctly and does what we want it to do. ▷



It's been a long time since the days when it took creativity and patience to program a VCR.

A lot has changed and improved since then, especially thanks to creative minds like Steve Jobs, who tirelessly questioned rigid conventions and soon revolutionized the way people around the world use technology – An amazing feat! But even with the most modern control systems, there are still two features that distinguish a good control system from a bad one: Firstly, what the control system does, meaning the range of useful functions that can be accessed with it. Secondly, the ability of the control system to provide access to these functions with the greatest possible ease. Both are important.

The best user interface is useless if the function you're looking for doesn't exist. And the best function is useless if you have to swipe through a labyrinth of menu options to find it.

For many years, MIWE control systems have been setting standards on both of these fronts.

Thanks to straightforward user logic and clear user interfaces, MIWE's computer control systems became a model for easy, intuitive control

systems, early on. We know this because our competitors are starting to imitate certain features of our systems, something we're proud to admit. In this article, instead of focusing on ergonomic advantages and streamlined user interfaces of our products, we're going to look at the other outstanding feature of MIWE control systems: All the functions that make baking easier, help you produce more reliable results and save on resources (from staff to energy). We hope this brief summary will help you come up with some of your own ideas.

### ■ *Autostart: Ready for baking, right on time*

Early in the morning, everything has to run like clockwork at a bakery. The morning selection has to be on display as soon as the shop opens. The more products on display, the better. This means that a lot of baking has to happen before the bakery opens. Bakers need to start baking as soon as they start their shift and shouldn't have to wait for the oven to preheat.

This is why MIWE in-store baking ovens come equipped with a convenient autostart feature.

This function lets you configure settings so that the oven is automatically switched on at a certain time of day. In our larger systems (MIWE aero, MIWE econo and MIWE condo), this function is enhanced with a very convenient feature: The user simply specifies the exact time at which the oven should be ready to start baking. The oven automatically calculates the necessary heating time and



**Not a second lost:**  
Thanks to the autostart function,  
the oven is ready to bake the  
minute you or your employees  
arrive in the morning.





switches on at just the right time for preheating.

In conjunction with the fully automated MIWE cleaning control feature, the MIWE aero and MIWE econo convection baking ovens feature yet another convenient function:

When the autostart mode calculates the lead time for baking, the duration of the cleaning process is automatically factored in.

This means that when the user arrives at the bakery early in the morning, the oven is immaculately clean and ready to bake. In addition, the residual heat from the cleaning process is used to start the heating process, resulting in added energy efficiency.

Speaking of the MIWE cleaning control, if you would like to learn more about this safe, cost-effective and with the food-safe cleaner also very environmentally friendly automated cleaning feature, see the article about the MIWE aero und MIWE econo convection baking ovens in this issue of MIWE impulse.

Because no two days are exactly the same at a bakery, the autostart function can be programmed for an entire week in advance. Each individual day can be customised. ▷



When you start work, the oven is not only perfectly preheated, it also looks like new: Busy elves (or the MIWE cleaning control, for those without wild imaginations) cleaned the oven spick and span overnight.

Even one-time exceptions from the rule (example: "This Thursday is a bank holiday") can be programmed. And if you happen to forget to program an exception, no problem: If the baking oven is not used in autostart mode within a certain predefined period (default period is 2 hours), it switches off automatically.

■ *Ready to bake? Yes!  
Energy wasted?  
No!*

In-store baking ovens are often not operated continuously. There are peak periods such as early in the morning when the entire product range must be baked before the store opens. The baking oven is then usually operating continuously for a large portion of the day. There may be idle periods later in the day, despite the most careful planning. For every operator, the question is how to deal with

these periods of downtime.

Do you keep the oven ready for baking, meaning fully preheated? This would allow you to immediately resume baking if necessary, but would use a lot of energy, possibly for several hours, despite good insulation and the fact that MIWE baking ovens are highly energy-efficient.

Another alternative: Switch the oven off. In this case, no electricity would be wasted, but if you needed to resume baking, the oven would have to be heated back to the proper temperature for baking. This doesn't take very long with all MIWE baking ovens, especially convection baking ovens like the MIWE aero, thanks to its outstanding insulation and excellent heating rate. (Deck baking ovens like the MIWE condo take a little longer to preheat because of the large space that must be heated.) However, when the bakery is busy

**Setting new standards!**  
With eco mode by MIWE, you save energy and money. And protect the environment at the same time.





and you're running out of products, even the shortest waiting times can be frustrating. As you can see, both methods have their problems. Our engineers worked hard to find a solution before developing the MIWE eco mode, a far better alternative with different variants for specific scenarios. The basic concept is simple: Under certain circumstances, the baking oven switches to eco mode and lowers the baking chamber temperature to a certain temperature.

Variant 1 is ideal if you have frequent idle periods and need maximum energy efficiency. When baking is finished, the oven automatically switches directly to eco mode. As soon as the user starts the next baking program, the baking oven heats back up to the baking temperature stored in that program.

Variant 2 functions similarly, except that the baking oven does not switch to eco mode immediately after baking is finished. Instead, it switches to eco mode after a certain waiting period, which can be customised. These two variants are available with all control systems, but the next two are only available with the MIWE TC.

With variant 3, the user switches to eco mode manually, but can define the next baking program in advance, as well as the time at which the baking oven should be ready for baking. This is a perfect way to save energy and keep the oven ready for baking at the same time.

And finally there's variant 4, which is only available with the MIWE condo. With this variant, eco mode can be automatically switched on after a freely definable period (including



immediately) after baking is finished. While the baking oven is in eco mode, the user can already enter the next baking program and the time at which the oven should be ready for baking again.

By the way, you can also use the control system to manually define the temperature to which the MIWE baking oven is lowered in eco mode. By default, baking ovens will lower the temperature to 100 °C because our experience has shown that this temperature is the perfect compromise between short-term readiness for baking and minimised energy costs. After learning about all these impressive features of MIWE control systems, it won't surprise you to learn that you can fine-tune eco mode so that only the oven light remains on, giving customers the impression that the oven is warm.

**Perfectly baked. And very appetising to the eye. State-of-the-art control systems turn baking expertise into consistent results and guarantee reliable quality.**

#### ■ *User guidance: The choice is yours*

In our experience, different customers like to configure in-store



Backing in professional mode or easy mode: The MIWE TC touch screen control system gives you complete freedom. You can even display your current promotions to grab the attention of customers.

baking ovens in different ways. As a result, we give our customers a choice of settings for many functions instead of prescribing settings for them. Customers can then use basic parameters in the system settings, preferably defined by a system administrator with full user rights during the setup process, to specify which variant is used in individual cases.

Here's a more detailed example: On many occasions, you would like to, or may even need to, insert products but the baking oven isn't ready yet. Many systems on the market give you no options here: The baking program is locked and cannot be started. At that point the entire batch is usually wasted. For our developers, this didn't seem flexible enough.

As a result, all of our control systems allow users to choose between 4 different responses by the oven:

1. Inserting products is still permitted and no message appears (many users know exactly what they're doing when they want to insert products). 2. The baking oven displays an error message but allows you to add products once you have acknowledged the error.

Or: The baking oven remains locked, either without a message (3.) or with a message (4.). In addition, if you integrate your baking stations with MIWE winCAB and monitor them centrally, these operating scenarios can be easily tracked and even deliberately disabled (e.g., through additional training or by adjusting daily schedules).

#### ■ Automatic capacity regulation: MIWE flexbake

Our convection baking ovens with MIWE TC touch control system feature MIWE flexbake for intelligent automatic capacity regulation. Although we focus on this practical function elsewhere in this issue of MIWE impulse, this highlight in the field of MIWE control systems deserves special mentioning.

The basic idea of the MIWE flexbake concept is that the baking oven "learns" the ideal temperature pattern in the baking chamber once

for a certain product with a full load under ideal conditions. After this, the oven bakes precisely according to this learned temperature pattern in flexbake mode. This fine-tuning of the baking pattern is not only useful for partial loading. At a more general level, it is also extremely helpful for compensating for quality-related process fluctuations, for example when the baking chamber door is open for different lengths of time, when the temperature of dough pieces varies, or when the mains power supply fluctuates. If there are significant deviations from the ideal temperature pattern, MIWE flexbake automatically decides whether the baking time needs to be extended or reduced.

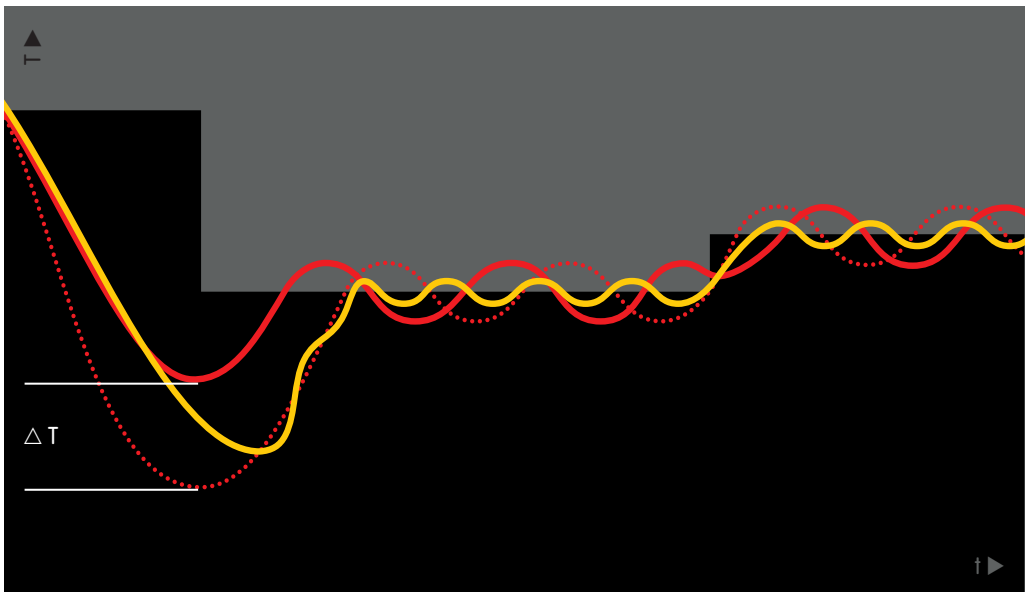
Apart from MIWE flexbake, which requires a correspondingly powerful control software, most of the other functions mentioned above are available in both of our control system environments for in-store baking, i.e. MIWE FP fixed program Control as well as the MIWE TC with a modern touch screen display.

There are plenty of good reasons why many customers, including former die-hard FP users, opt for the more modern MIWE TC: The graphical user interface has many more options (e.g., for displaying your individual advertising images or messages during idle periods). It is clearer and easier to use, especially because it gives you the freedom to choose between easy mode (for standard oven users) and professional mode (for master bakers), which are tailored to different user roles and tasks. It very probably accommodates also young employees who are used to this technology and expect a touch-sensitive control system as a matter of course and will therefore handle the MIWE TC intuitively right from the start. In any case, migrating from FP to TC is incredibly easy.

Why not give it a try? ■

MIWE automatically and intelligently compensates for less-than-ideal baking conditions such as baking chamber doors that are left open too long, fluctuations in mains power or dough pieces with varying temperatures. And of course it prevents "Delta T", which results in excessive heating (and therefore excessive browning) of partial loads. Don't forget, this saves even more energy because unnecessary (harmful) heating phases are prevented.

.... Full load  
— Partial load  
— Partial load MIWE flexbake





# *Organisational talent*

*For a precise overview of your branches and bakehouse: MIWE winCAB*





In today's competitive environment, bakers have to use every resource available to ensure quality and stay organised. Tasks that require just a little extra time and effort for a small bakehouse or business with a few branches can become time-consuming chores that require long-distance travel for large production complexes with a geographically dispersed network of branches.

And as the number of users increases, so too does the general risk (and scope) of possible deviations from set standards.

In other words, it becomes much more difficult to maintain your quality standards across the board.

So what do you do if you want to maintain a reliable overview of many different branches? Or if you have a bakehouse, how do you reliably keep track of increasingly complex systems, monitor individual baking processes and log them for documentation purposes? And how do you analyse this important information to identify potential ways of improving quality and organisation at an early stage? ►



**Constant access to current and historical operational data as well as your custom analyses.**

MIWE customers have it easy here. For many years, they have been using a solution that is based on industry standards and therefore extremely future-proof. This solution allows customers to access and record all data from individual systems and make it available for comprehensive analyses. In terms of hardware, all MIWE baking stations, baking ovens and bakery refrigeration systems have long allowed for network connectivity, and many already come from the factory with a built-in network connection port. In today's modern bakehouses and branches, the necessary technical infrastructure is almost mandatory: A router with connection to a public network (e.g., DSL or wireless) from which the data connection to the central computer is established via a VPN.

The rest is taken care of by MIWE controllers in the systems and by a sort of control centre at the heart of the network: MIWE winCAB, a special software solution that can run on all standard Windows systems. This software, which can also be scheduled to start automatically at defined intervals, retrieves all

available operational data for a system, stores them in an organised fashion so that they can be used for a full range of targeted analyses. This gives you a factual basis and the necessary foundation for analyses and improvements based on quality or business metrics.

This data provides regular answers to variations of one key question: What actually happens, and where and when does it happen? Also: Is this right or could something be significantly improved? Are there inefficiencies and fluctuations, and if so, why? Operational data often deliver important information that can help explain mysterious quality problems: How was the baking oven operated? Was the door simply open too long? Was dough placed in the oven despite a warning message, before the oven displayed a message that it was ready for baking? Or, with respect to the choice of product range: Which baking program was run, when and how often? How are peak periods for products and volumes distributed across the day? Do our weekly and daily plans make sense in terms of the actual sales of this branch? Was capacity relatively even or were there occasional bottlenecks or slow periods? Could slow periods be used to boost sales of a certain product or snack during evening hours? Were cleaning processes performed correctly?

We're certain you can easily find many other questions that MIWE winCAB can answer for you. For this purpose, the software comes with a wide range of graphics for illustrating data such as capacity utilisation of systems or specific operating statuses. It can also record detailed tem-

perature patterns for you. For more advanced, customisable analyses, the data can then be exported and processed with any existing standard tools. For example, for all types of statistics, capacity utilisation profiles and trend displays can be displayed in numerical and/or graphical format.

Management can then use this information as a useful basis for decision-making.

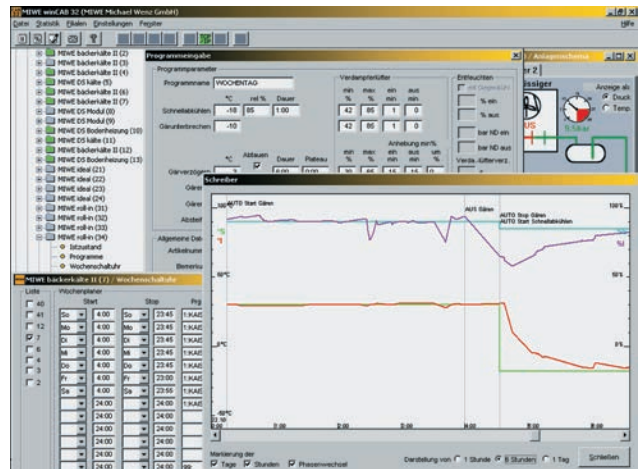
MIWE winCAB can do much more than just collect and present data. This software lets you display and change device parameters, from basic settings to the complete range of baking programs and, if necessary, control the entire system. For example, for bakery refrigeration systems in bakehouses, MIWE winCAB is often used for controlling and operating the whole system centrally (and remotely) based on a clear process template. This is an extremely useful backup option if there is a malfunction and no one is on site.

Speaking of baking programs, MIWE winCAB can also be used to manage, create or modify baking programs in all baking stations (or in selected groups only) from a central location. This makes rolling out a new product extremely easy, even for geographically dispersed branch networks.

In addition, MIWE winCAB always saves a backup copy of each baking program in the background.

As a result, it only takes a press of a button to find out whether a baking program has been changed in a certain station. And if a program was changed, it will also tell you how it was changed.

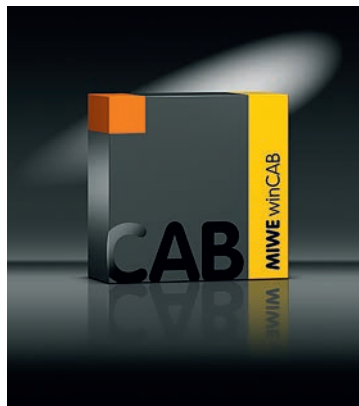
With MIWE winCAB, you can synchronise the time settings of your



baking stations from a central location. You can also change the week timer globally, at individual stations or in certain groups. Or, you can distribute entire packages with your own product images in an organised way. These images are then displayed on your TC control system to make operation as easy as possible (and to emphasise the unique qualities of your product).

Sounds like a miracle solution? Maybe, but we'd rather stick to the simple facts: It's a talented organiser that brings clarity to your organisation of branches and bakehouses, helping you make the right decisions. ■

**No matter where you happen to be, with MIWE winCAB, your bakehouse(s) and/or branch(es) are only a press of a button away. Around the clock.**



# *More speed!*



*The new  
MIWE SF-D:  
Even faster.  
And even easier  
to keep clean.*

Hygiene made simple:  
The fan column can  
be easily folded  
to the side.





**Whenever a bakery uses an aromatic long-process proofing method for large quantities of products, especially wheat buns and rolls, the MIWE SF-D is always the right choice. Thanks to uniform suctioning and almost no tendency to dry out, this system is ideal for all types of long-process methods or delayed proofing processes. As a result, it is especially useful for special processes such as MIWE smartproof™. This process uses the high capacity and cooling advantages of stackable trays to save energy and produce baked goods with outstanding character.**

The MIWE SF-D was recently upgraded with several new features. The most important improvement: Thanks to a newly designed air guidance system, cycle times have been reduced by about 30 %. This will speed up production significantly. All in all, the perfect choice when the goal is more throughput and efficiency.

At the same time, the newly designed air guidance system ensures more even temperature and moisture

distribution across the entire tray stack. Since the entire air guidance system including the fans can now be easily folded away, cleaning the whole evaporator solution is also much faster.



Even more hygienic:  
No door handle to get in the way, nowhere for dirt to deposit. And the door still closes tightly.

We have also eliminated a non-essential feature: the door handle. Now there's less to get in your way, and the door closes tightly thanks to a magnetic lock.

Small features with a big effect. We love these innovations, and we think you will too. ■



Cycle times reduced by 30%:  
The air flow can be easily adjusted to the height of the trays.

# Bakery ref No need to fear

*How MIWE smart engineering ensures reliable bakery refrigeration processes, even with the new generation of refrigerants*

For many consumers, "oven-fresh taste" is what defines a good baked product. To meet this criterion, the product supposedly just needs to be warm. That perfect fresh-from-the-oven taste is achieved in a good baking oven, of course.

Today, baked goods fresh out of the oven are available almost everywhere, but the reason for this actually has to do with a much earlier stage in the production process:

**Bakery refrigeration.**

By allowing preprocessing and sales to take place at separate times and locations, refrigeration brought new flexibility to workflows and logistics concepts in today's baked goods industry.

So it should come as no surprise that refrigeration areas in bakeries have grown dramatically in recent years, sometimes taking up much more space than the baking area itself. ▸



# *Refrigeration: new regulations*



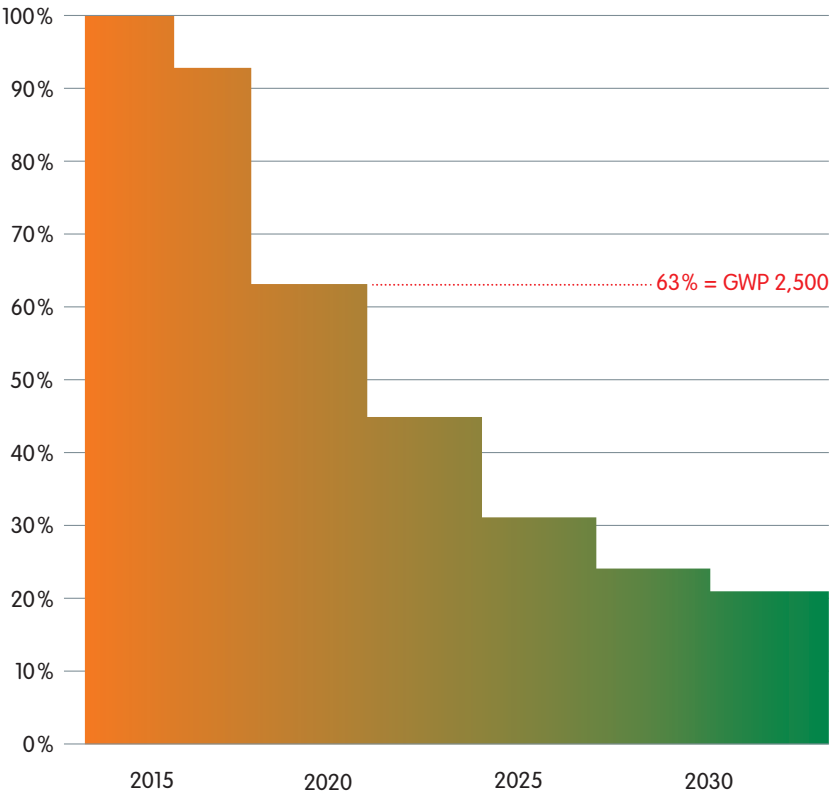
However, bakery refrigeration has done much more than simply help to separate processes. It plays a crucial role in controlling product quality, especially at bakeries that are not simply producing one product around the clock, but baking a large range of products in custom batches. For these bakeries, the quality of the individual product is in focus. As a result, bakery refrigeration is no longer primarily about expanding refrigeration space, but improving quality by using different refrigeration systems to meet specific needs.

Here's a simple example: Whereas only a few years ago, a bakery might have installed a refrigeration cell for 48 trolleys, today's quality-oriented bakers are opting for two cells for 24 trolleys a piece, or even three with 16 trolleys.

In this way, they gain the same amount of space but are twice or triple as flexible when it comes to optimising specific product features and in-house processes. But the need for increasingly differentiated system concepts for bakery refrigeration has been growing dramatically for another, very different reason: The synthetic refrigerants commonly used in industry, especially R404A, the most frequently used compound, have long been considered environmentally harmful, resulting in new environmental regulations.

The first new laws were passed in the late 1980s, when chloro-fluorocarbons (CFCs) were banned. CFCs had become known as ozone killers because they contained chlorinated and brominated hydrocarbons in CFCs that released

The EU's phase-down scenario for reducing fluorinated greenhouse gases.

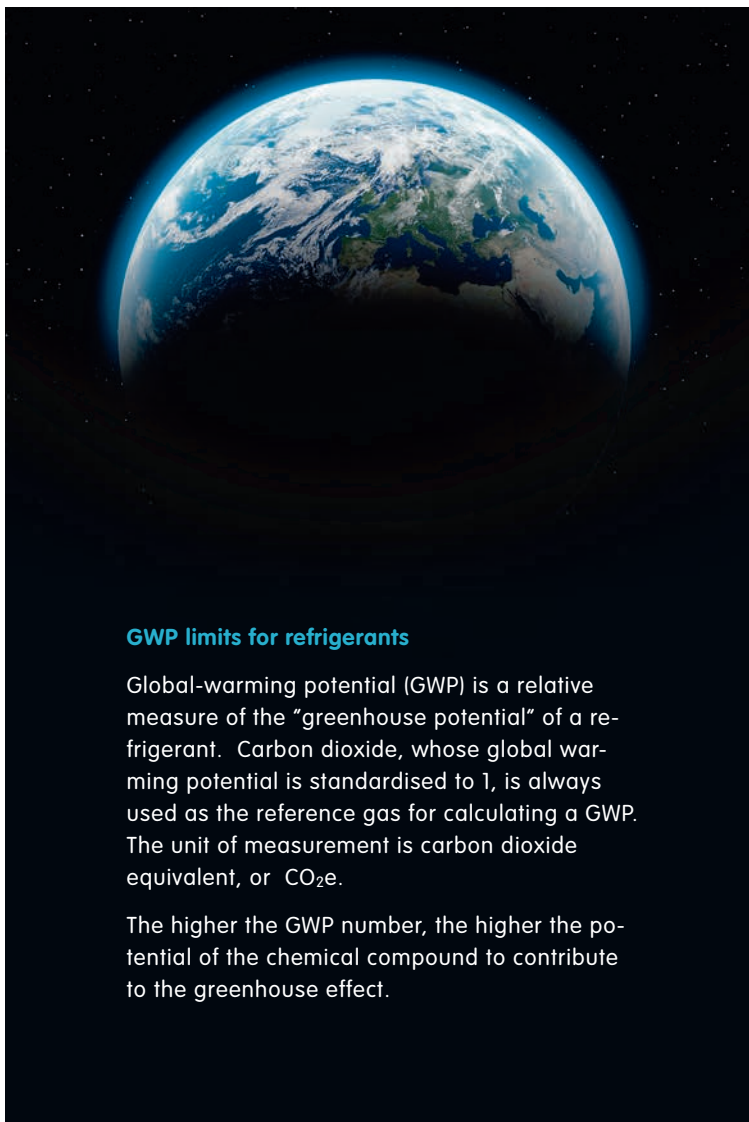




chlorine and bromine radicals when exposed to UV light in the upper atmosphere and were destroying the ozone layer ( $O_3$ ):  $O_3 + Cl \rightarrow O_2 + ClO$ .

Partially halogenated hydrofluorocarbons (HFCs) are now primarily used in place of CFCs. Because of their chemical composition, they have absolutely no negative impact on the ozone layer. Still, they are by no means environmentally harmless. This is because halogenated hydrocarbons, just like carbon dioxide, contribute to the greenhouse effect. According to Wien's displacement law, shortwave radiation (sunlight) is reflected as longwave radiation when it hits the surface of the Earth. However, certain elements in the atmosphere (such as  $CO_2$  and HFCs) are impervious to this radiation. This "downward terrestrial radiation" then heats up our atmosphere like a greenhouse. In this context, carbon dioxide or non-fossil-based hydrocarbons are considered relatively harmless because they are part of natural cycles. But artificial, non-biodegradable halogenated hydrocarbons pose a serious long-term threat.

This has resulted in a new law that will have far-reaching effects for bakery refrigeration systems in the coming years: Enacted on 16 April 2014, EU Directive 517/2014 on fluorinated greenhouse gases replaces an older directive (no. 842) from 2006. The new law, which goes into effect on 1 January 2020, bans refrigeration systems that use HFC-based refrigerants with a GWP (global warming potential; see box) that exceeds 2,500 of  $CO_2$  equivalent. But this is not quite as simple as it sounds.

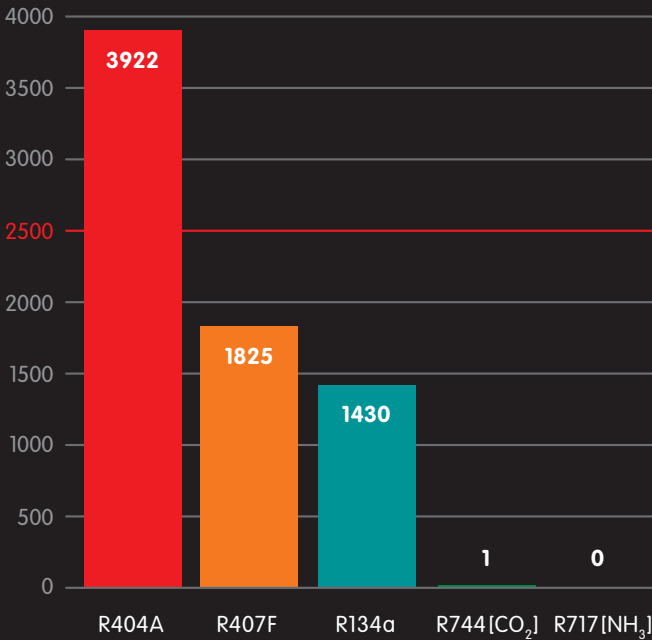


### GWP limits for refrigerants

Global-warming potential (GWP) is a relative measure of the "greenhouse potential" of a refrigerant. Carbon dioxide, whose global warming potential is standardised to 1, is always used as the reference gas for calculating a GWP. The unit of measurement is carbon dioxide equivalent, or  $CO_2e$ .

The higher the GWP number, the higher the potential of the chemical compound to contribute to the greenhouse effect.

Many conceivable alternatives are available. There are "natural" refrigerants, meaning those that occur in nature and have minimal to no harmful effect on the environment. These include ammonia or carbon dioxide. Other alternatives are synthetic refrigerants, which will continue to be permitted because their GWP value is lower than 2,500. In both cases, however, we cannot simply transfer existing concepts



Overview of GWP ratings of common refrigerants used in bakery refrigeration applications, including possible substitutes. The huge environmental advantages of substitute refrigerants cannot be dismissed.

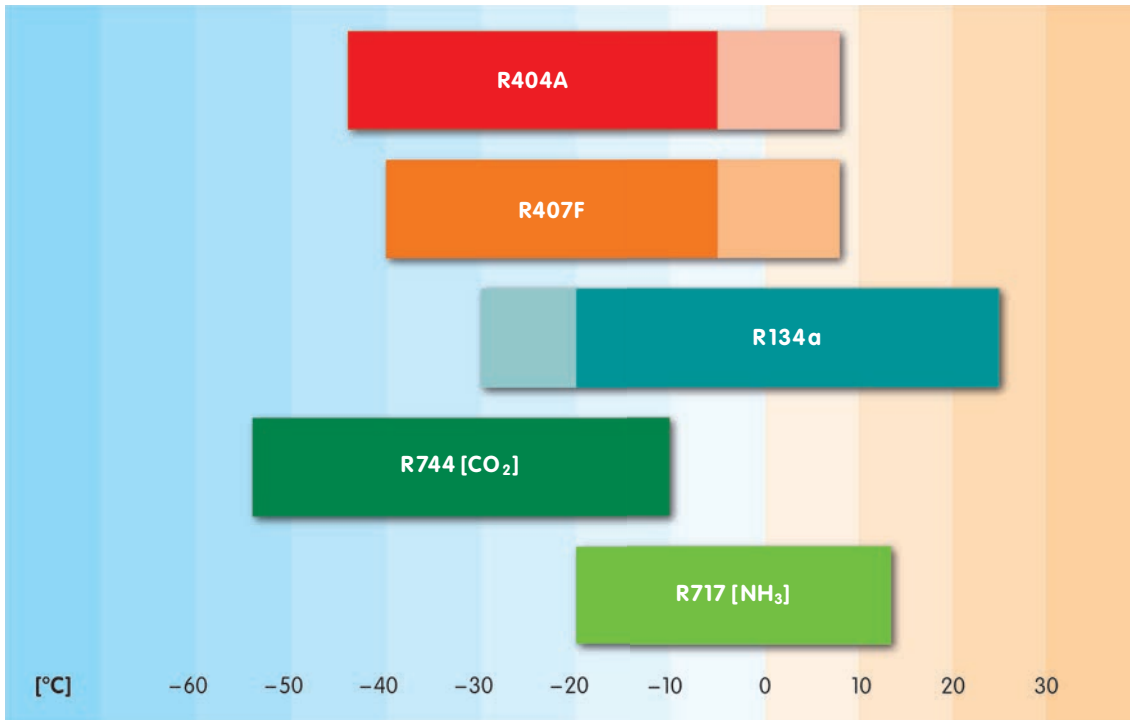
to a new refrigerant or develop crude solutions for the bakehouse, something an ambitious refrigeration specialist might have done in the past. There are two reasons for this.

The first reason is that none of the refrigerants remaining on the market will offer the convenience of R404A, which boasts a wide range of uses and extremely easy handling. The remaining approved refrigerants vary too much in terms of effectiveness and useable temperature ranges. This is especially true of the natural refrigerants. Carbon dioxide (R-744, GWP 1) begins to weaken above  $-10^{\circ}\text{C}$  because of the high system pressures required. Ammonia (R-717, GWP 0) fails to perform properly in deep freezer applications below  $-20^{\circ}\text{C}$ , not to mention the fact that ammonia requires extra safety precautions when used as a refrigerant.

If a very wide temperature range (e.g.  $-40$  to  $+35^{\circ}\text{C}$ ) is required for process refrigeration applications, combined systems are an option. In this case, the most suitable refrigerant is used for each of the individual temperature layers. There is also no synthetic refrigerant that could easily replace today's R404A without redesigning the hardware. R407F, a synthetic three-component compound similar to R404A, but with a GWP of 1824 (still in permissible range), comes the closest to meeting this requirement. However, it would also require specific hardware design changes (e.g., pipeline systems or valves). In short: In the future, it will no longer be possible to design and implement high-performance bakery refrigeration systems with narrow expertise and conventional thinking.

One-size-fits-all refrigeration concepts have no future, especially when the goal is to increase product quality. Tailored, custom solutions are required when important product lines need that crucial extra ounce of quality, freshness and individuality.

This is why experienced baking refrigeration specialists like the engineers and planners at MIWE always start by focusing on a few basic questions: Which products and product ranges will be baked? Which processes will be used and at which intervals? What kind of final quality is expected? And how can the solutions be implemented in accordance with the company's space restrictions and safety requirements? Thanks to their extensive bakery experience and solid overview of all possible solutions, MIWE experts can usually offer several possible alternatives for



reaching your goal. They also analyse each alternative to clarify differences in investment costs and total cost of ownership as well as technology and process options.

We have mastered the art of designing combined refrigeration systems that are more than just energy-efficient. We are also experts in inte-

grated waste heat recovery. By choosing MIWE as your partner, you are investing in a high-performance, quality-focused and energy-efficient refrigeration system that already meets the compliance standards of today and tomorrow.

This gives you the freedom to focus on baking oven-fresh products. ■

R404A, today's most common refrigerant, can satisfactorily be replaced by combinations of R134a and R744 (CO<sub>2</sub>). With respect to environmental advantages and future safety a combination of R744 (CO<sub>2</sub>) and R717 (NH<sub>3</sub>) would be even better, but, due to the aggressiveness of NH<sub>3</sub>, this usually requires much larger investments in hardware.







# State of the art

**Convection baking ovens are at the heart of many in-store baking systems. When high quality is essential, bakeries often choose ovens with the MIWE logo. It's no wonder: MIWE invented "in-store sight-and-smell" baking in the late 1960s and thanks to thousands of hours of research, development, design, construction and service for baking stations, has an unrivalled wealth of experience with these systems. With the 2014 product range, we have enhanced many of the fine features of our flagship models MIWE aero and MIWE econo. An overview of the current system will help illustrate these enhancements.**



The first "sight and smell" baking ovens in the sixties (top right) and today's premium baking ovens such as the MIWE aero (two-circuit model shown above) are worlds apart in terms of function, design and usability.

At first glance, MIWE aero and MIWE econo appear to have many features in common. Both are convection baking ovens with 4, 6, 8 or 10 supports.

This means that each oven provides almost one to two and a half metres of baking area when 60 x 40 cm trays are used. If this is not enough, both models come in two-circuit versions. This significantly expands the baking area, and more importantly, boosts flexibility because different products can be baked at the same time.

If even more space and flexibility are needed, both baking ovens can also be arranged next to each other. And since both are made by MIWE, you probably won't be surprised to learn that both models are masters of their craft when it comes to ensuring simplicity of baking and outstanding results every time. So what are the differences between the two? How do you decide which one is right for you?

The answer is simple: It depends on a range of factors. For example, which range of products do you plan to bake? Which MIWE convenience levels will you use (see box)? Which options do you need for monitoring the quality of different products in order to meet the expectations of your customers?

And last but not least, how much do you want to highlight your artisanal skills and passion for baking by placing a premium baking station at the heart of your store

*Which baking station is right for my branch?*





The MIWE aero features a steam device with two high-performance aluminium cascades that covers all the bases. For those who don't need saturated steam, the steam spraying device of the MIWE econo (top right) is adequate.

concept? One significant difference between the two oven systems is the type of steam generation.

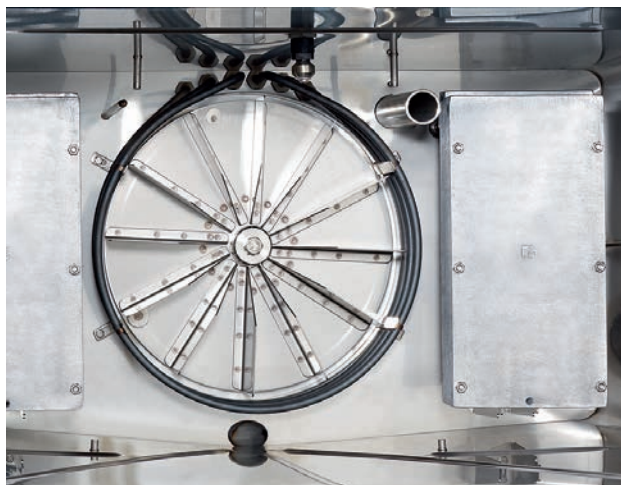
The MIWE aero features a high-performance cascading steam device at the rear of the baking chamber, which can be easily removed from the front for cleaning and maintenance purposes. Thanks to this feature, optimal shine and bloom are guaranteed every time (even with small frozen products, where steam is critical). Powerful reversing fans with four fan speeds and an intelligent propeller control evenly distribute hot air and steam to the farthest corners of the baking chamber, ensuring perfectly even baking results.

The steam quantity can be regulated via a water meter (instead of simply via a timer) and remains constant, even when the pressure fluctuates in the network of lines. Since steam should not only be evenly distributed in the baking chamber, but also removed as quickly as possible to ensure a crispy crust, the MIWE aero features a freely adjustable inlet and outlet flap for rapid de-steaming of the baking chamber.



The MIWE aero is the best choice if your combination of products and processes as well as your specific product quality needs require a powerful steam device and precise control of the steam quantity. We can also add an optional "gastro function" with a continuous steam infeed feature and a port for a core temperature sensor. This significantly expands the capabilities of the oven, especially for restaurant applications.

Of course the MIWE econo is a master of steam control. However, it uses a steam spraying device that injects fine droplets of water into the fan air stream to ensure even distribution in the baking chamber. As a result, the econo is the perfect choice for convenience applications, where high-performance steam functions are usually not needed because of the type of products that are baked and the MIWE convenience levels used (usually MCS 4 and higher). If you need considerably more steam output with the MIWE econo, an optional steam optimisation feature can be added to give you more options for precisely controlling steam input and obtaining the necessary shine and bloom. ▷









### MIWE Convenience Levels (MCL)

We have classified the most common (in-store) baking processes and the differences between the individual methods according to six Convenience Levels (MCS). They are called convenience levels because from the sales perspective of the store, the methods differ mainly in their level of convenience, meaning the ease with which oven-fresh, hot baked goods can be produced in the store:

MCL 0 = traditionally baked (delivered); no in-store baking

MCL 1 = long-time dough process, MIWE smartproof™

MCL 2 = Unproofed frozen dough pieces

MCL 3 = Proofed, frozen dough pieces, baking of frozen small products

MCL 4 = semi-baked frozen dough pieces prebake

MCL 5 = baked to completion and frozen

► To learn more about MIWE Convenience Levels, request a copy of issue 17 of MIWE impulse, where you find comprehensive information about MCLs and how they affect in-store baking from a technological standpoint.

When it comes to hygiene, MIWE aero and MIWE econo are both at the top of their league. Both models come with a curved, easy-to-clean softline baking chamber with flat fronts, easily removable tray supports and the semi-automated MIWE easy clean system.

The latest version (3.0) of the optional MIWE cleaning control brings even more convenience and reliability to cleaning tasks. This automated cleaning function uses a single, biodegradable cleaner that can be easily added into a storage tank from the front. For different degrees of contamination, there are 2 cleaning stages. This helps save water and electricity.

With the auto-start function, you can schedule cleaning at night and save energy by using the residual heat from the cleaning process for heating the first baking process of the day.

As a result, the MIWE cleaning control offers unprecedented energy efficiency, making daily cleaning affordable and environmentally friendly thanks to the food-safe cleaner.

In terms of control systems, both oven systems come with a MIWE FP fixed program control, which can store up to 100 baking programs

An emphasis on hygiene and easy cleaning. Thanks to the softline baking chamber with its easily removable tray supports, easily refilled environmentally friendly cleaner and a flush control system with a glass display, dirt doesn't stand much of a chance with these baking ovens.





with 5 baking stages.

Twelve of these programs can be labelled with custom product images and started at the press of a button.

Only the MIWE aero is available with the MIWE TC touch control system, which features an easy-to-clean glass display and two separate user interfaces, easy and professional mode, which are specially designed for different user roles. This gives you access to the MIWE flexbake, the intelligent automated system for partial loading, a feature only available from MIWE.

Once the system has learned the temperature pattern for a full load, it bakes different loads according to the memorised pattern.

This makes it extremely easy for your employees to bake partial loads at certain times of the day or at the end of bakery hours.

When you are not baking, you can display your own ads or messages on the display of the MIWE TC. This option is unique to the MIWE TC, as it is the only control system with a screen. Convenience level 3, for baking proofed frozen dough pieces with a defrost phase and continuous steam and circulating air pulses, is available with the MIWE aero as well as the MIWE econo, provided the optional steam optimisation feature is used. ▷



Controlling process has never been easier. Above: The MIWE FP fixed program control with 100 baking programs. Below: The extremely dynamic MIWE TC with a glass display. Thanks to MIWE flexbake (see page 10), this control system also ensures optimal baking results with partial loading (left) while reducing energy consumption.



Want to save even more energy?  
The optimal triple thermal  
insulation glazing will help.  
It's also just as easy to clean...

Both oven systems and both control systems give you the wide range of useful features offered by our control systems (presented in more detail in a separate article in this issue of MIWE impulse) and the advantages of networked connectivity.

Examples include a pre-programmable night start-up function for the whole week, automatic defrosting or the energy-saving MIWE eco mode. Other options include the triple thermal insulation glazing or combinations with the MIWE condo deck oven. The MIWE backcombi combined system is available for both the MIWE aero and the MIWE econo. The ovens can also be combined with the new MIWE GS proofing cabinet, which has been thoroughly redesigned for optimal hygiene. Both ovens are also available with black fronts.

Too many choices? Not really. Both systems guarantee optimal baking results in their own way. The MIWE econo is ideal for all semi-baked products as well as Danish-style pastries, croissants, etc. This makes it perfect for convenience applications, especially prebake processes. It is extremely good value for money, winning over even the most discerning business owners. And thanks to its ease of use and process reliability, not to mention the evenness of its baking results, it guarantees satisfied customers all around.

Beyond these features, if your special mix of products and processes and quality expectations requires more steam performance and much finer control options, meaning if you want to focus on the finer details that separate premium baked products from mass-produced products, then the MIWE aero is for you.



... as the new proofing cabinet  
which has been optimised for better  
hygiene.

Thanks to its new design, the aero sends a clear message of high quality in any shop environment.

For the sake of completeness, we should remind you that you can always use the MIWE condo, a powerful deck baking oven with a stone slab, for sophisticated in-store-baking. For all other needs, you can use convection baking ovens such as the MIWE cube fresh food system or the compact, high-performance MIWE gusto. No matter what today's "sight and smell" baking looks like for you,



MIWE has a system that will make your business successful. ■



Want to transfer data from a USB flash drive? Super easy connectivity for networking?

MIWE baking stations can do it all – and they also look good in black.



# *The refrigeration triathlete for bakeries*



*The new MIWE GVA e+ automatic proofing unit is impressive on all fronts:  
Energy efficiency, system hygiene and the ability to deliver consistently excellent results*



**MIWE fully automatic proofing units are the all-rounders in the field of bakery refrigeration. They can handle any conceivable temperature or humidity pattern in any order, and in freely selectable time segments, whether for proofing, proofing retardation, fast cooling, proofing interruption or stiffening.**

**As a result, the ideal temperature pattern can be precisely followed and exactly reproduced for each product. It can even be programmed overnight so that you can start baking first thing in the morning.**

With its broad temperature range (from  $-20$  to  $+40^{\circ}\text{C}$ ) and adjustable relative humidity of up to 98 %, the MIWE GVA e+ is a master of more than just temperature control. It also features two characteristics that are highly sought-after in bak-

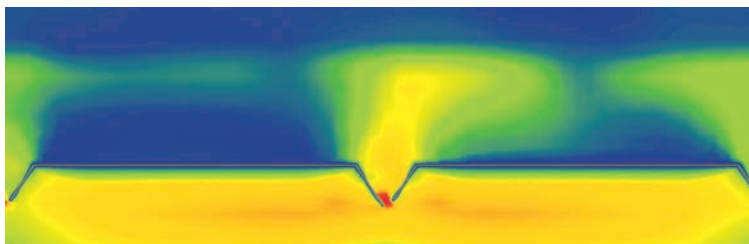
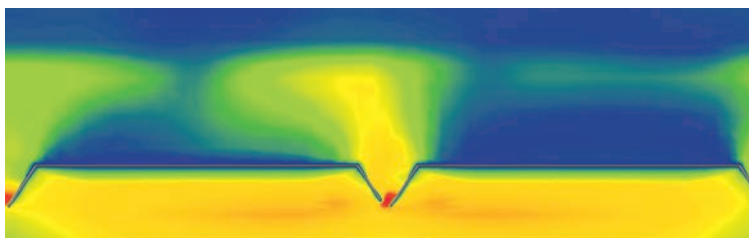
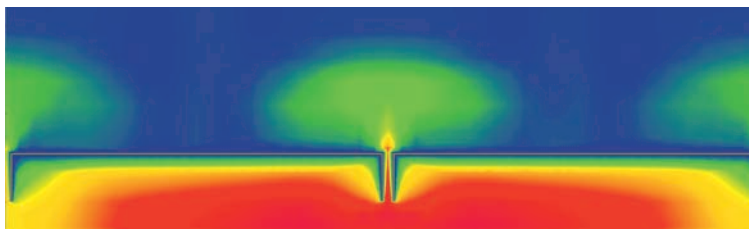
ery refrigeration: Hygiene and energy efficiency. Thanks to enhanced fans, injection electronics and lighting, not to mention the intelligent TC control system, MIWE GVA e+ is one of the most energy-efficient and intelligent automatic proofers on the market. We gave it the e+ seal of energy efficiency for a very good reason.

As for the hygienic features, the smallest details make the biggest difference, as is so often the case. These include the new seamless floor, which no longer requires a seal and forms a flush seal with the body wall. This makes it easy to clean, and there is nowhere for dirt to deposit. In developing the new pressure wall, our designers deliberately employed one-piece panels instead of dirt-prone multi-piece panels.

▷

Small feature with a big effect:  
Alternating air outlets (see photo below)  
ensure wider distribution of air.

A computer analysis of the horizontal section  
(right) illustrates it perfectly:  
Above, traditional outlets with high flow velocity  
in the pressure wall, but minimal distribution  
outside the wall.  
Below, much better flow in the chamber  
(alternating left/right).



Curved floor without unhygienic seal.



These panels contain no cavities whatsoever, and thanks to their slanted surfaces and special drill holes, they leave no place for dirt deposits or puddles to form.

As you would expect from MIWE, we also significantly enhanced the technology of our new model. A good automatic proofing unit

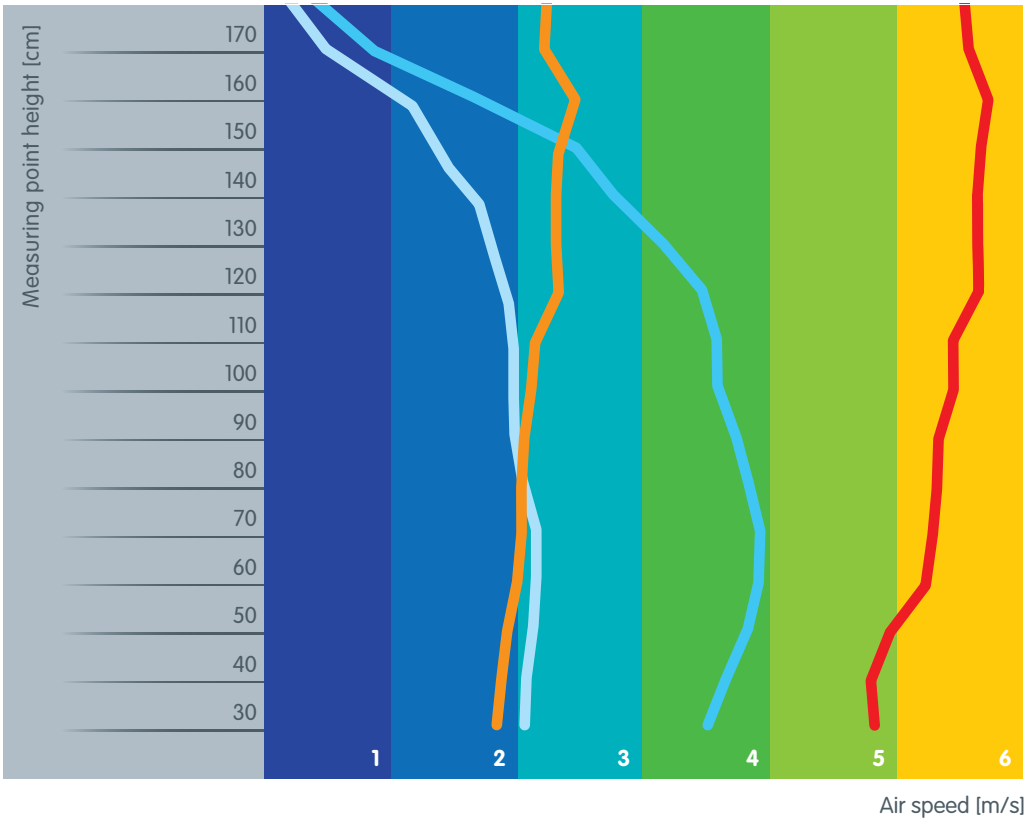
is measured by its ability to distribute temperature and moisture through-out the chamber in a gentle, even way. On this front, the pressure walls of the MIWE GVA e+ with their innovative MIWE V panels are far superior to traditional walls. The V-shaped edges and alternating recesses ensure more even, widespread inflow directly from the wall and along the entire height of the pressure panel. This ultimately ensures more even air flow throughout the entire climatic chamber.

As a result, you obtain even better baking results in addition to perfect hygiene and excellent energy efficiency.

A mix of three features that make baking easier for you (and just happens to sum up every MIWE innovation in a nutshell). ■

Air speed at air gap in relation to pressure wall height and fan speed:

- Old pressure wall, fan speed 100 %
- New pressure wall, fan speed 100 %
- Old pressure wall, fan speed 55 %
- New pressure wall, fan speed 55 %



## ■ *Fair dates*

- ▶ **POLAGRA**  
Poznan / Poland  
28.09. – 02.10.2014
- ▶ **südback**  
Stuttgart / Germany  
18. – 21.10.2014
- ▶ **WORLD FOOD Kasakhstan**  
Almaty / Kasakhstan  
05. – 07.11.2014
- ▶ **Alles für den Gast**  
Salzburg / Austria  
08. – 12.11.2014
- ▶ **Sigep**  
Rimini / Italy  
17. – 21.01.2015
- ▶ **SIRHA**  
Lyon / France  
24. – 28.01.2015
- ▶ **FBK**  
Bern / Switzerland  
25. – 29.01.2015
- ▶ **Internorga**  
Hamburg / Germany  
13. – 18.03.2015
- ▶ **iba**  
Munich / Germany  
12. – 17.09.2015

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