

techno gramm

Edition 01/2019

Successfully
occupying
niches

Product Development

With customers to innovations in the door

Listen &
unite

**RADICAL
INNOVA-
TION**

A WAY OUT OF
THE WINDOW
CRISIS?

Listening and uniting

**Dear Readers,
Dear Friends
of MACO**

You are holding the new Technogramm in your hands. The last issue was quite a while ago. Why and what has happened since then?

We have driven several large and small innovations that are moving the industry. These were not created on the drawing board, but in contact with you, with customers who we listened to, analysed your needs and bringing them all together into suitable solutions. You can read the details of this in the cover story and on the other pages.

Listening and uniting are characteristics that run through this Technogramm and are the new management's focus. Since May we, Guido Felix and Mark Hamori, have been leading the MACO Group as a new dual leadership. We will continue our international orientation and innovation strategy while further developing our proximity to customers and markets. The focus on customer orientation is the guiding principle on which departments and processes at MACO will continue to orient themselves. The satisfaction of our customers with our products and services is our goal and guides us in our actions.

Listening and uniting has also influenced the Technogramm project. The original customer magazine was to become an international online magazine. However, during the

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and well-being.

concept and conversion phase, our customer survey showed that most of you still want to hold a magazine in your hands. So, we listened and decided to continue our Technogramm as a printed magazine.



Mark Hamori, Managing Director Sales and Marketing (left) and Guido Felix, Chairman of the Management Board MACO Group (right)

What's new? In A4 format, it is more manageable for international mailing. Technogramm will become an international magazine of the MACO Group with reports and information from all markets for all markets. The look is fresher, more modern and with these changes it not only reflects the new corporate design, but also the new self-image of the company. It covers trendsetters and partners for system solutions with a focus on their benefits in order to better solve tasks. With this magazine, we do not want to provide you with product news, but topics, trends and experiences from the countries – information about the value chain, which starts long before the product.

Stay tuned with us.

The MACO Group Management hope you enjoy reading it.

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WITH INNOVATIONS TO THE CUSTOMER OR WITH CUSTOMERS TO INNOVATION.

Rising material and labour costs, an increasingly international environment and massive cut-throat competition are leading to an ever-increasing pressure to differentiate. To counter this, solutions are required on the market that are specifically oriented to customers' needs, as no two doors are the same. You can read about what makes the difference, where the opportunities lie and how innovations are created here.

Innovation in the door?

The following examples of product developments show how solutions arise from customer needs and how they are improved by aligning with customer benefits. For example, sustained gasket compression over the entire door height for the perfect "seat" as a protection against door warping and its unimagined advantages for automatic and motorised locks. Or the optical enhancement of a faceplate that brought so many positive side effects during fabrication that it went from a special solution to a market standard. Corrosion protection cases for door locks that secured a large Accoya® wood order for a fabricator. And when the special development of a multi-point lock for steel doors becomes suitable for pieces, then market development becomes interesting.

Achieving innovations together with customers

Outcome Driven Innovation is a methodology that MACO systematically uses in product development. This approach is not just to develop a product, but rather to consider its function in order to be able to do a job. If the job is decoupled from the product, then there is scope for alternative product solutions that allow it to be implemented better and more efficiently. In all the case studies, this was achieved by listening and bringing needs together – that was the driver of these developments. This resulted in everyday innovations that not only deliver good arguments for customers, but also give fabricators a great competitive advantage.

Listening and uniting

Customers don't want to buy a drill or even to drill a hole in the wall. They want to hang a picture right away. "In focussing on the unresolved everyday problems of our customers, we create solutions instead of products, with which our customers can do their job better," says Robert Andexer, Head of the Door Business Unit of the MACO Group. Listening and uniting is the philosophy. And how well product developments ultimately work is seen when they achieve success on the market. Then, they also deserve the title "innovative". With 800,000 multi-point locks sold per year and an increase of 30% over the past five years, MACO has become one of Europe's leading manufacturers. ►



ODI

Outcome Driven Innovation

ODI delivers result oriented innovations

Outcome Driven Innovation is the established strategy of analysing customer needs to convert them directly into product benefits or services. The customer's need is here not the product itself, but the task that it has to solve.

„Jobs to be done“

CASE STUDY 1

DEALING WITH DOOR WARPING

It is often a small thing that deliver a big result and bring with it unimagined market successes. Such as the automatic gasket compression, which is ensured by three latches and significantly minimises door warping. The gasket compression is highly relevant for PVC and Aluminium doors. The reason for this is obvious.

3-latch technology for automatic gasket compression

Both materials struggle with the fact that they deform during large temperature fluctuations, but also through sunshine. The current trend towards dark door surfaces further increases this effect. The consequences are a greatly increased effort when opening the door up to blocking of the door lock. And because PVC and Aluminium composite doors represent the majority of the front door market, it is worth taking a closer look at the innovative MACO 3-latch solution, and especially its separate functions of gasket compression and locking.

When separation is something good

Conventional multi-point locks control the gasket compression and the locking together. However, it is better to switch the two functions separately from each other, one after the other. This means that three latches automatically extend and ensure the gasket compression before locking is done without any obstacles using three locking elements. Precisely in this functional separation of the two mechanisms lies the success for the perfect locking, which has enormous potential for automatic locks.

Very trendy

Automatic locks are becoming ever more sophisticated and affordable. They are already very widespread in Central European countries and have gradually become standard, while in other European countries they have considerable growth potential. The subdued demand is hard to understand as the ease of use for the end customer increases enormously with locks, where the locking bolt activates automatically and locks the door just by pulling – manual relocking is no longer required. And the additional price is hardly significant when fabricators purchase it. It seems that there is still a lot of potential to educate customers about the advantages of automatic locks, because it is not uncommon for automatic locking doors to be re-locked, even though this is no longer necessary.

A striker plate platform for all internationally common door solutions

All MACO's premium locks come with multi-function latches and hooks. This enables uniform milling positions as well as the use of a striker plate part platform for all internationally common locks. This results in less fabrication effort and less complexity in logistics.

CASE
STUDY 2CORROSION PROTECTION
FOR A HARD ASSIGNMENT

Photos: © Amvest

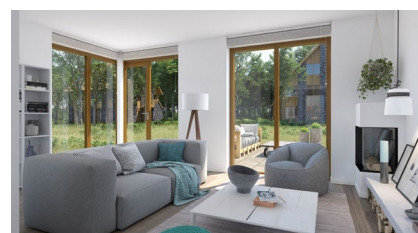
Another successful example of a “Job-to-be-done analysis” is the corrosion protection cases for door locks. They ensured that the TimmerSelect Doornenbal B.V joinery won a large project in the Netherlands. A unique urban district, the **DUIN**, is created directly on the IJmeer. It integrates 173 houses in the existing vegetation with trees and up to 10 meter high dunes. In this area, a weather resistant and robust wood is crucial for the lifetime of windows and doors.

Accoya wood and hardware

Woodworkers know that while the specially acid-treated Accoya wood is good for the stability and security of the door, the acid heavily affects the hardware. Especially in the first few months, Accoya® emits the most acid, causing the locks to corrode extremely and thus they often need to be replaced after just a few months.

Long-term corrosion protection testing

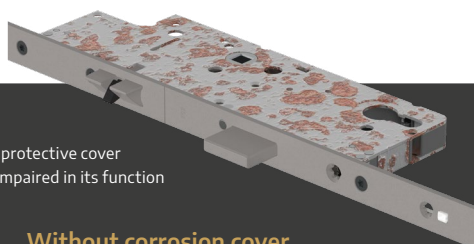
To solve this problem, MACO has been researching for several years and developing a quadruple protection for locks. TRICOAT coating for faceplates, connecting rods as well as lock elements and special corrosion protection covers according to VCI technology for the lock cases, which were tested in an 18-month long-term test. The TimmerSelect Doornenbal B.V. joinery used this solution along with its many years of experience in Accoya and its interaction with the hardware to win the race for the tender.



More information:
www.maco.eu/sites/assets/MacoDocs/758525/758525en.pdf

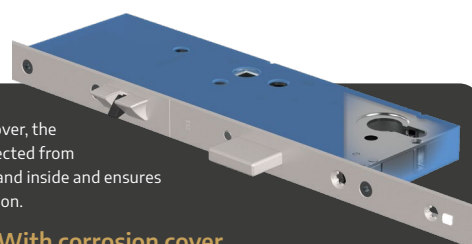
A small solution for large projects

“Thanks to the quadruple corrosion protection, we can reconcile the acidic material Accoya® with the longevity of the door hardware in the door leaf”, says Jan van Beek, Sales Manager at Doornenbal. “We have had very good experience with the MACO products. Thanks to their good product characteristics, we were able to win the DUIN project”. In 2020, this project will be completed in which lock cases with extra corrosion protection will be installed on the PROTECT door locks Z-TS and G-TS, as well as MULTI POWER Turn & Tilt hardware with TRICOAT coating. ►



The lock casing without protective cover is heavily corroded and impaired in its function after a short time.

Without corrosion cover



With protective cover, the lock casing is protected from corrosion outside and inside and ensures long-lasting function.

With corrosion cover

CASE STUDY 3

THE EVOLUTION OF THE FACEPLATE

MACO, together with customers, takes products to the next evolutionary stage. Not infrequently, solutions are created that awaken dormant needs in such a way that demand goes through the roof and they become global hits. With the development of the faceplate, a new market standard has been created in both appearance and workmanship.

From the customer advantages...

The trigger for the development of the top hat faceplate was the desire for a high-quality faceplate appearance even in PVC profiles with the 16 Eurogroove, and this without reducing the rebate gap. This was solved with a 16 mm faceplate for the Eurogroove with trapezoidal rebate leg.

... to the fabricator advantages

For fabricators, it soon became clear that it brings with it a lot of positive side effects beyond the premium optics. For example, time and cost saving assembly and rejects reduction, as it conceals inaccuracies in milling and prevents dirt deposits in the gap between faceplate and Eurogroove. In terms of security, it also pays off as it increases stability and the tests for burglary prevention are better.

Proven 60,000 times

The top hat faceplate is now used in 60,000 multi-point locks per year, and the trend is rising. For a small surcharge, it not only offers a high-value appearance to end customers, but also significantly reduces the effort involved in production. It is still unique to this day.

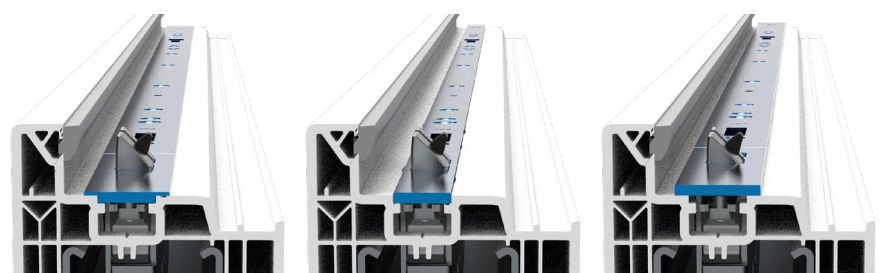
Top hat faceplate

16-mm-faceplate

24-mm-faceplate

The top hat faceplate: Best of both.

It conceals inaccurate milling, prevents dirt deposits in the gap between faceplate and Euro-groove, and increases rebate gap tolerance and security.



Inaccurate milling is visible

conceals inaccurate milling at the expense of the rebate gap

CASE
STUDY 4GASKET COMPRESSION
ON STEEL DOORS

When steel doors do not close correctly, because the seal does not prevent warping of the door, then it's time for a new solution. The Polish manufacturer Wiked addressed the problem to MACO, as together they have already implemented multipoint locking on aluminium doors.

The origin

The classic mortise lock on a steel door did not help the situation and the usual multi-point lock did not work properly, as the gasket compression cannot be adjusted in the case of classic steel door architraves.

Multi-point locking reinterpreted

For the solution, the faceplate had to be reinterpreted. First, a striker plate was developed which was riveted flush into the steel architrave and which made it possible to easily adjust the gasket compression. In the course of further development and in cooperation with Wiked, the door system was changed in such a way that a multi-point locking could be installed. This delivered adjustable gasket compression and flawless closing.

To one of the largest door manufacturers in Europe

"Thanks to this further development of multi-point locking for use on steel doors, we were able to significantly expand our market presence and we now produce around 70,000 front doors per year for the Polish market", says Marcin Wiśniewski, CEO of Wiked. "Thanks to PROTECT multi-point locking, we were able to simplify production, improve burglary prevention and increase sales in the shortest possible time. At the same time, we are already working with MACO on a multi-point locking solution for fire doors, with which we are opening up another new market segment". ●

70,000
DOORS
PER YEAR

70,000
CHANCES
TO RAISE
MARKET PRESENCE

NET- WORKING – MADE EASY



SENSORS

They monitor security, service intervals, energy consumption, etc. and collect information. Digital chips, window sensors, closure monitoring, switches, dimmers, temperature sensors, motion detectors, water sensors on a dishwasher etc. They pass on information to the actuators.

Connected windows and doors are still waiting in the wings, but they have extraordinary potential - such as monitoring, energy saving, access control and service intervals. Inspired by smartphones, app development, the rise of voice assistants and the increasing compatibility of products, the networking of windows and doors with the rest of the building has become unstoppable. So, you can either ignore it or look at it as an opportunity.

The networked world requires interactions that only work when everything is talking to each other. Because a smart home wouldn't be smart if a different app was needed to open the front door than to check if all the windows are closed.

The Technogramm editorial team tries to demystify this technology and shows which building blocks are important in a smart home, what you need to know and how fabrication can work - networking made easy. ►



DRIVER OF NETWORKING

The drivers behind this networking are requirements such as security, energy efficiency and home comfort, before things like standards and laws. From a technological point of view, the big future lies in voice recognition and voice control, as shown by Amazon's Alexa, Apple's Siri, Google's Assistant, Microsoft's Cortana and Samsung's Bixby. And the expansion of 5G as a fast, mobile broadband network has an impact on communication and service possibilities.



COMMUNICATION PROTOCOL

Communication between devices is done just like with language between broadcasters and receivers. This is based on the communication protocol. This can be a wired system such as KNX, LCN or HomeMatic or wireless technologies such as enOcean, ZigBee, Z-Wave as well as a Wi-Fi network or Bluetooth¹. The more open this technology is, the more devices from different manufacturers are involved and can talk to each other. In contrast, proprietary (self-contained) systems, are very limited, i.e. they integrate only selected products. This makes them incompatible and subsequently difficult to expand.

¹ Detailed information can be found in the Technogramm 3/16 P. 4-9.



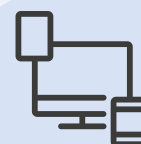
ACTUATORS

These are electrical switches that prompt door locks, e-hardware, drive motors, interior sirens, lights or hi-fi systems into action. Via the gateway and communication protocols, they receive information from the sensors and trigger an action, e.g. alarm messages, light control, blind and awning control, and heating control. Providers: Eltako, Afriso, Somfy, etc.



THE GATEWAY

This is a small “box” – the brain, also called the interface – of the smart home system. It builds its own network between the integrated components using a communication protocol, i.e. it receives the signals from the sensors and transmits them to the actuators.



COMMAND AND CONTROL

Control is done via Apps on the smartphone, and voice control is increasingly becoming the command provider for technical devices. Assistants like Alexa, Siri and Co make it possible with – “Reduce light by 30%, blinds up, awning out”...

COMPONENTS AT ONE GLANCE



If you can't defeat the enemy, then join with him

A window fitter does not have to become an electrician, but he should know the trends and developments in his industry in order to align his components and business areas with them. A concrete example is window contacts, also called window sensors, where the window contact is simply screwed into the frame and the assembly is finished. When it was still wired, the electrician made the connection on the construction site and there was a clear separation of trades. Today, the term "window contact" is increasingly being replaced by "radio sensor". The changed definition of this term already shows in which way this is going.

From a socket to radio technology

The technical development is based on radio technology, digitisation and subsequently voice control. But first, let's look closer at the example of the window contact or radio sensor. With a radio contact, the cable and the connection to the alarm system are not required. However, the fixing remains the same. The radio sensor is still simply screwed into the frame, but as a counterpart it needs the communication interface – the gateway

or home mini-server. This receives the radio signals and forwards them to the actuators such as the siren, lights, blinds control and much more. This makes it necessary to have a local home network, comprehensive smart home system or building automation

Open and compatible

And that's where the clever fabricator comes in. He can either get an electrician into the team or he relies on components that meet common radio standards and thus covers most of the market. enOcean is just such a cross-vendor standard for battery-free radio sensors. Smart home providers such as Homee, Eltako, Mediola, Afriso rely on this radio protocol, allowing systems to be expanded with additional components at any time. Industry leaders in the smart home business such as Somfy have already opened up their initially proprietary (self-contained) system solutions and are now integrating other wireless solutions such as enOcean, ZWAVE and ZigBee. They recognise that closed systems do not add value and they are not strong enough to make their isolated solutions a success. There are completely different factors in play here.

Voice control as a new command centre

When it comes to Google, Apple and Amazon, the uniform standard for smart home control seems to have been found. These internet giants have been re-searching how voice commands are being turned into digital commands for the smart home. For five years now, with Siri¹ and Alexa² voice as the control technology has been increasingly entering the residential sector and becoming the "door opener".

The driver that is Telecommunications (TC) and Radio Technology

The new drivers are internet service providers and the telecommunications industry. In France, "Free", with 23% market share, is at the forefront of high-speed networks, and 5G as a new, ultra-fast mobile phone standard will greatly support development. Since gateways are often integrated into in-house Wi-Fi or the way apps run over mobile networks, reliable network stability and high transmission speed is an absolute must have. 5G should transmit up to 10 Gigabits per second and is essential for real-time communication³ and not only for autonomous driving but will also have a major impact



A WINDOW FITTER WANTS TO OFFER HIS CUSTOMERS A HOLISTICALLY NETWORKED SOLUTION. WE MAKE THIS POSSIBLE THROUGH OUR STRATEGIC PARTNERSHIP WITH SOMFY. THE SOMFY TAHOMA BOX ALLOWS FOR INTEGRATION OF THE MTRONIC RADIO SENSOR, THE A-TS DOOR LOCK WITH COMFORT DRIVE, E-HARDWARE AND THE LIFT & SLIDE DRIVE. THIS IS OUR PROMISE FOR BENEFIT TO OUR CUSTOMERS – ONE APP FOR EVERYTHING! <<

STEFAN WAJAND
MACO PRODUCT MANAGER BUSINESS FIELD WINDOWS

on the mobile repair operations of local tradesmen⁴.

In addition to the electrical greats such as Busch-Jaeger, Gira, Jung, Legrand, telecom providers also offer their own smart home solutions with a home server (gateway), video cameras, light control, heating thermostats etc. Who will become the big player race in the smart home area has not yet been decided! But smart developments must be compatible. With this knowledge, MACO creates technical foundations for its products – whether for the radio sensor, Lift & Slide drive or the innovative door locking system that all make fabricators more efficient. These components can be integrated into any common smart home.

Cable or Radio Signal?

Cable technology, KNX is the most well-known European standard here, with a professional bus system was the original form of control. This controlled motorised products such as shutters or sliding doors via wiring inside the plaster and a wall switch. With wireless technology, this is now easy to do by remote control or smartphone. The bus system serves as a data line between the switchbox and the

individual rooms. This can be extended if desired with wireless sensors that can be connected via a gateway for KNX RF, EnOcean, ZigBee or any other radio standard.

Air and energy laws challenge windows

The connected window is also being pushed via standards and laws. As MACO France reports, the Elan Act has set for the Environmental Regulation (RE) 2020 as an indoor air quality target (IAQ). Here, sensor technology becomes the cornerstone of the system, which literally calls for integrated intelligence in the window for automatic and autonomous control. You can read where the future is heading for windows under “Radical Innovations” on pages 14-16. The MACO Academy, in the German speaking region, teaches which standards must be observed and how these should be considered in the planning. With its own software tool for CE marking and system testing, it is available with advice and assistance, see FIT4CE on pages 26-27.

User survey

How do you make the right decision about which scenarios are being merged

into a household? MACO's networking expert, Daniel Sinn, regularly attends seminars and events and has answers to these questions. He also refers to the IGT. Under www.igt-institut.de/ you can find the checklist from the Institute of Building Technology in Munich with valuable help for smart home user surveys for the end customer. There is not a single universal solution, but networking is feasible with the right partners. From local building protection to smart home solutions, whoever jumps on the bandwagon now stays in the race. ●

¹ Voice control from Apple

² Voice control from Amazon

³ Real-time communication is getting the significance it deserves – really instantaneous

⁴ Information: centrum-mobilfunk.de
30. May 2019, bundesnetzagentur.de

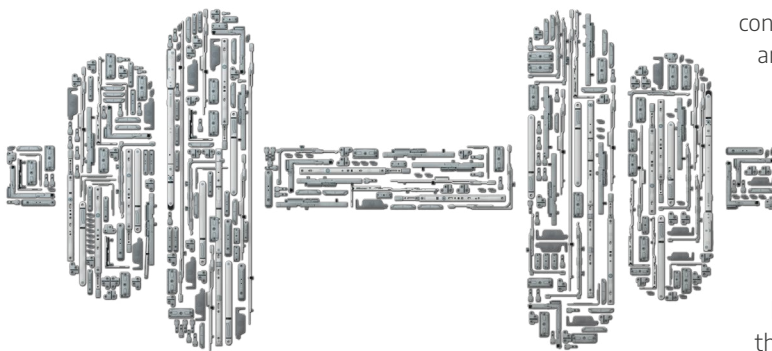


RADICAL INNOVATION

The window market has grown strongly in recent years and yet is at an impasse. Consolidation in the industry, overproduction in Central Europe, growth driven by price, technology at the limit, the window exhausted in its performance. Can a radical innovation be a way out?

Powerhouse Window

Windows are getting bigger and heavier, hardware carry weights up to 250 kg, although they are getting smaller and smaller and are best disappearing right into the profile. Windows shine with “dream features” such as burglary prevention, sound protection, storm resistance, driving rain resistance and are so airtight that you have to think about alternative ventilation concepts.



Powerhouse in performance:

Consisting of dozens of spare parts fittings make the window the hidden champions with unimagined stability and carrying capacity.

However, these optimisations are taking place under the perfection step, so the industry is in the “nanoscale”. The alternative to the Turn & Tilt hardware with its invention about 50 years ago can be found in the Lift & Slide element rather than in a new window technology.

A short resurgence or a rethinking?

Current studies,¹ can also not cover this, even if the window market has once again increased demand thanks to new construction in 2018. PVC leads, followed by timber/aluminium and then aluminium, even if the price increases. In 2017 for the first time in a long time, manufacturers of all components and frame materials made a pricing adjustment due to material cost surcharges. However, the con-

solidation in the market continues unabated and the window does not receive the appreciation and monetary consideration it would have deserved. Many components have approached the price value of a scoop of ice-cream. The window is, even though

it's a powerhouse in its performance and function, technically comparable to the sailing ship before it was replaced by steamships. The fight against steamships could not be won even by setting more and ever larger sails.

How did the story deal with innovation?

The shift towards modern shipping has taken more than 100 years and the end of the big sailing ships changed the entire shipping industry. Instead of wood, they were constructed of steel. With the expansion of trade routes and shipyards, new professions were created – stokers instead of sail builders, machine engineers and locksmiths instead of carpenters. The volume of cargo in the ports required workers to load and unload and distribute the goods. Digital photography, which was initially laughed at, has also taken hold after “only” 20 years of development work, replacing films, chemicals and the darkroom with its technological change.

¹ Branchenradar.com as well as <https://www.fenster-tueren-technik.de/aktuell/fensterfassade/detail/123310-fenstermarkt-in-deutschland-auch-2018-gewachsen/> from 19.3.2019



A WAY OUT OF THE IMPASSE?

In search of space and peace

The conventional window has reached its limits in the project requirements of the Swiss Building Office for the Environment. This is intended to expand housing in areas bordered by mountains. This raises the challenge of extending development to aircraft noise-flooded areas, around the airport due to a lack of space. The bizarre task now is to incorporate aircraft noise into daily life without it being disruptive.

When noise barriers are no longer enough

Since noise barriers are no longer sufficient in such a case, all that remains is to take action on buildings. Thus, window solutions are being researched that react via sensor-control to environmental influences and open and close via motor. The scenario is to automatically close windows when an aircraft approaches, until the noise level has dropped to a normal level.

Technology as a driver

The Bernese University of Applied Sciences in Biel is now taking care of the "Noise Emission Dilemma" and has brought MACO on board as a specialist, which is in the midst of researching functional and radically reduced hardware concepts. Together, work is being carried out on window mechanisms that reduce sound emissions and are so quiet that they do not exceed 33 decibels when opening and closing.² ►

Is radical innovation a way out of the window crisis?

Yes, it might be,

but radical innovation is rare. It arises when a technique is stuck or because things simply "go", that is when the next step is ripe. Just as sailing shipping no longer covered increasing trade routes at speed, the Turn & Tilt window has reached the limit of its creativity

² How loud is 33 db? In comparison: 30 dB is one's own breathing noise, 45 dB is room volume, 55 dB a normal conversation.



› Revolutionary window study: Three self-sufficient hardware modules open up new design and opening types and operating options, adapted to environmental influences

APPROACH

There was no system on the market that could come close to achieving these targets. The drive has to control too many individual hardware components around the window on current hardware, which is far too loud. In this way, MACO began to develop a mechatronic platform with a greatly reduced hardware quantity. Only three self-sufficient hardware modules are enough to open completely, tilt up or down, or open the window in parallel. These can be placed on the left and right at will, only the hinge side elements need to be fixed on one side. Just like with MACO's door study, this allows for unlimited design possibilities and complete freedom of design of the window. This drastic reduction in hardware takes production and logistics in window production to a whole new level – simple, faster, slimmer.

› Smart Motion – Using technology's benefits

The control can always be manually performed via integrated controls such as a wall switch on the window. But in search of space and peace in the wake of increasing urbanization, a self-sufficient window control is the solution. The time switch thus ensures energy-efficient ventilation, the sensors for automatic closing in case of rain or when an airplane or freight train is rushing by – and all this without having to stand up. And by connecting to smart home gateways, security checks can be controlled while on the go.

For all digitisation, the research approach is about the benefits and needs of people. This covers housing creation, psycho-social health through reduced environmental influences and building protection measures. ●

MACO IN A NEW GUISE

SUCCESSFUL RELAUNCH OF THE CORPORATE DESIGN

Habitats and worlds are changing, and the IoT (Internet of Things) is also becoming more and more complex. This calls for thinking and developing visions that are forward-looking in holistic systems and processes. The result is innovations and solutions that move the industry and can be used in a technically precise, creative, flexible and modular way. This renewal on the inside had to lead sooner or later to a change on the outside.

Hexagon, Flexigon, Gold, Mint ... are the protagonists of the new Corporate Design that MACO unveiled in March. Not only does it make our appearance shine in a new splendour, but it also underlines much more the journey that MACO has made in recent years. Tracking down customer needs, developing habitats together and conquering new terrain without forgetting its origins. And all of this is always comfort, design, safety or market-driven – and expandable in all directions. Now at the latest, the change from a hardware manufacturer to an innovation driver and solution provider is also visually accomplished.

The new Corporate Design (CD) underlines the new dynamic, the breath of fresh air that is making inroads and is a clear statement of a constant progress in innovation. Together, we create Technology in Motion. Here you get an idea of what the new CD looks like and for what purposes it can be used. Join us on a journey to a trade-fair booth, folding displays, roll-ups, brochures or advertising materials. ●

The "flexigons"¹ as recurring style element – They turn up in a large and small scale again and again and set exciting accents.



¹ Flexible implementation of the MACO hexagon



MACO UK has shown how fresh, flexible and innovative the design is – the CD premiere at the FITShow booth in Birmingham.

See the MKV solution, the new standard in security on the UK window:

www.maco.eu/sites/assets/MacoDocs/757809/757809.pdf



P A N I D

FOR MORE
WELL-BEING



IF YOU DON'T SPEND SOME TIME ON YOUR
HEALTH EVERY DAY, YOU'LL HAVE TO SACRIFICE
A LOT OF TIME FOR DISEASE ONE DAY.

SEBASTIAN KNEIPP



GRAMMA

Today, on average, we spend up to 90% indoors, where most rooms are poorly lit and often polluted. The influence of room design for health and well-being is therefore becoming more and more important. The role that light and oxygen play as a motor for the brain are determined not least by large surface elements.

Room design for the “Indoor Generation”

The trend towards large surfaces in the design of buildings stems from the pursuit of solutions for healthy living. MACO colleagues in Russia observed how important the health aspects of fresh air and daylight are in room design. There, the demand for large surface elements in timber is increasing for a healthy indoor climate, as sedentary activities are increasing where leisure and exercise in the fresh air are decreasing. And that's not just limited to Russia. Digitisation makes us more desk bound and shapes the indoor generation that sits all day. Whether that's in the car, on the bus or

on the train on the way to work, in the gym, and at home on the smartphone. There is no longer much time for exercise in the fresh air.

Mediterranean living for all latitudes

It is thus all the more understandable that large sliding doors are making their way into architecture and not only in one's own home. Even in large residential properties and in educational and health institutions, more and more walls give way to large sliding elements. They flood small living spaces with light and make rooms look visually larger – not only in new buildings, but also in old building renovations. In this way, generous ►

living comfort can also be realised in confined spaces, for all lovers of the Mediterranean, light living.

What artificial light can't do

Daylight plays the crucial role, because it influences the complex hormonal interplay and finally on well-being – or not. Natural light with its change of clouds and sun, the course of light and the dynamics spread throughout the day activates and harmonises with our natural rhythm. It's far ahead of artificial light.

Light therapy sliding door

In other words, for our inner clock to tick properly, it needs daylight as well as the alternation between day and night. Everyone has probably already observed the positive influence of a bright day on one's mood. Sunlight has been shown to promote vitamin D formation, which is as essential for blood calcium levels and bone building as it is for the formation of happiness hormones. One of these is Serotonin, which provides more vigour as soon as the days get longer and brighter again. In the dark season, the influence of Melatonin, which is produced exclusively at night and promotes sleep, dominates. While also the lack of daylight can lead to sleep disturbances and even to depression. Is it then a surprise that large surface elements serve as light therapy?

Bringing the outside inside

Creating open spaces that connect the inside with the outside and extend the living space beyond its real boundary is achieved with fixed glazing in narrow frames only 80 mm wide. Warmth, cold and noise remain where they belong – indoors or outdoors. Floor-to-ceiling glass surfaces create a new, unlimited sense of space that places maximum demands on increasing sash weights and sizes. These are handled by the muscle-men of hardware, which can carry up to 400 kg by intelligent hardware combinations. For two to six sashed sliding doors, there are nine opening schemata to choose from – asymmetrical, cross-corner or with a motor.

Soft factors determine the purchasing decision

The differences in these technical product details are valuable processing knowledge, which is included in the consultation depending on the building object, customer presentation and budget size. The end customer is thus well advised, but for him many more soft factors count for the mind, which reconcile body, mind and soul. The reasoning for a purchasing decision therefore lies in the living space consultation. This includes criteria such as light and material for indoor climate, colour and design concepts, comfortable operation, accessibility and long-standing functionality. This turns the salesman into a living space consultant.

When freedom of design exceeds customer wishes

From the Basic to Standard to the Premium solution – the possibilities with RAIL systems solutions to configure a Lift & Slide door are much greater than the customer's wishes. If concealed fittings, minimal frames and frameless fixed-glazing convince fabricators, then the fit accuracy, economical manufacturing conditions and system logic of MACO's modular design do all the more. Behind the multi-faceted components is always the entire system.

Panorama in the modular system

But whether in timber, aluminium or PVC – the variety can be controlled if all materials can be realised, by a modular system with well-thought-out hardware, into countless sliding door variants. In timber alone, more than 4,000 combinations are available to the end customer, depending on the budget requirements, comfort levels and security requirements. This leaves nothing to be desired when the product components are combined with the customer's requirements to form one individual system.

A healthy basis – price performance

Modern components expand the possibilities in the construction of sliding doors with a lot of comfort for almost any budget size. Comfort is already standard in the Basic solution which creates valuable square metres, especially with narrowly calculated budgets, and replaces balcony doors that open into the room and block living space. This is joy to the ears in times of urbanisation and housing shortages. Especially in apartments, it is a sought-after solution to create a panorama with a sliding door.



Did you know
that on a bright sunny day
outside there is a light intensity
of just over 100,000 Lux?
In the shade you still measure
a tenth of it, while on a grey
winter day there are only
3,500 Lux – and an average
room lighting usually has no
more than 500 Lux.

More demands, more opportunities

In sophisticated spaces, the scale upwards is open and can be supplemented at will. Secured sliding doors offer RC 2 security and shine with well thought-out details such as the steel hook drive gear, which firmly anchors the hooks into the frame closures with the sash's own weight when closing. That holds up! When the door is open, the hooks retract into the sash and are hidden from view. With essential additional components such as the hinge security provision, the security can be further increased.

Supporting climate goals

Anyone who takes climate targets to heart will have to admit that renovating every single building from an energy perspective is just as important as cars that are supposed to reduce their carbon emissions. Three quarters of the buildings in Europe are not energy efficient and are responsible for 40% of the energy loss. This brings the focus of attention onto value-enhancing aspects such as sustainable, qualitative construction, future suitability and energy efficiency. There is a lot to do here and the efforts of each individual all add towards success. This lies in subtleties, such as in the even higher energy efficiency in threshold construction due to the GFK thresholds. Also, in perfectly matched gaskets such as the PVC gasket track for optimal sealing and thermal insulation of the Lift & Slide elements.

Premium – the best of all

Those who love natural materials rely on timber. In the premium segment, big freedom begins with PANORAMA. MACO supports with its perfect timber systems, where the comfort of product details merge with design and let every ambitious fabricator meet the highest demands of modern architecture. Components such as the concealed drive gear and the threshold construction with fixed glazing, which not only perfectly provides top thermal properties, but also in combination with flat roller tracks and 5 mm low threshold tread boards, make all the difference. Narrow gasket tracks deliver the biggest vista with the greatest energy efficiency possible. They are inserted

on the sliding sash in such a space-saving way that it not only allows for lots of light in the transit area, but also shines with excellent thermal properties.

Sustainable into the future


Due to the large glass surfaces and the ever higher sash weights, the motorised opening of these behemoths at the touch of a button is gladly welcomed. However, this operational luxury does not come at the expense of the design. Thanks to its compact dimensions, the drive sits in only 86 mm of frame thickness in the upper outer frame, while all other frame sides as well as the threshold construction are not affected. This makes the design unique. This concealed drive is thus sustainable and barrier-free for easy operation for big and small, and a purchase for the future. It makes opening a breeze and can be integrated into building security with an interface for smart home connectivity. This allows you to open and close it while on the go and have an overview of whether unauthorised people are playing with it. ●



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AND TOMORROW WE
WILL EXPAND ON THIS... «

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LARGE SURFACES BUSINESS SEGMENT


MORE INFORMATION IN THE
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TECHNOLOGY IN MOTION

Your Lift & Slide

MACO SOLUTIONS FOR YOUR **TIMBER LIFT & SLIDING DOORS**



maco.eu

Infinite opening widths create a panorama – for that special ambience and good indoor climate. Details can be found in the brochure Lift & Slide world in timber.

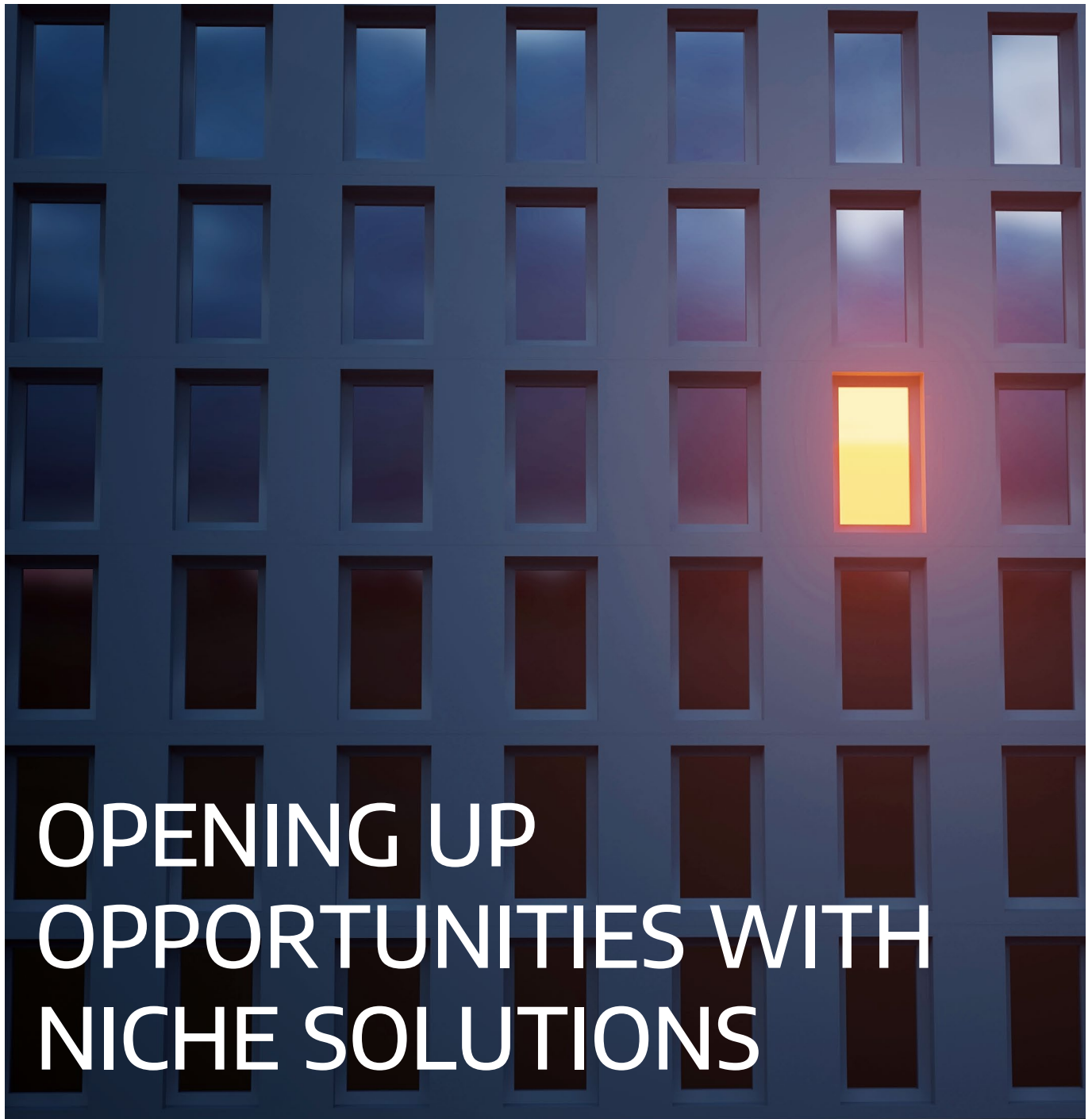


Photo: (Stock.com/Mike_Kiev

OPENING UP OPPORTUNITIES WITH NICHE SOLUTIONS

The quality among manufacturers is generally the same and there is always someone who offers it cheaper. How can it still be possible to lift yourself up from the anonymity of the masses and to differentiate yourself in the technically mature window market and in interchangeability of PVC profiles?

Good news – You don't have to be a window giant for that. But it takes strategy and unique selling points that make products and performance distinguishable from the rest. This can be the outstanding quality, a technical quality, the formal language or perhaps the service. So, there are plenty of possibilities, you can read about three strategies on the following pages. The Italian

window manufacturer Erco converts to new design spheres (case study 1), Hebo revolutionises Dutch window construction (case study 2) and Walter Fensterbau offers outstanding service (case study 3). In short, these three have found their niches. But they all have one thing in common, their exact positioning, knowledge of the market and the passion for what they do.

CASE STUDY 1: ERCO, ITALY

When windows become architectural elements

When Italians transfer the elegance of their fashion into window and door manufacture, it results in a Red Dot Design Award. The Italian company Erco Finestre was awarded this coveted design prize, for windows that are not just windows, but true pieces of furniture. The “Dry System” collection therefore denotes more of a designer label than a window series.



Color and shape adapted to interior design

© Erco

Design revolutionises the window

Claudia Giordani and her husband Antonio Corengia, who are at the helm of Erco, brought Giuseppe Bavuso on board for the new window and casement door collection. This architect and designer combines the rigour of minimalist and elegant style with his extensive technical expertise, and intelligently uses technological and innovative materials – all aligned with the technical strength of Erco. Superfluous embellishments give way in favour of an ideal slimming down for large light surfaces.

» IT IS TIME TO THINK OF WINDOWS AS AN INTEGRAL PART OF THE FURNITURE AND DESIGN THEM AS SUCH.

CLAUDIA GIORDANI



© Erco

“We are convinced that it is time to design the window as an integral part of the furniture. That is why we are no longer talking about PVC, but instead we are talking about a plastic core that goes beyond material and design. The Red Dot Award is a great confirmation for us. This is a dream that we have realised through more than 60 years of experience in the industry, more than 30 years of cooperation with MAICO¹ and the intuition of the architect Bavuso, with whom we have been working for some time”, says Claudia Giordani.

Red Dot Design Award

“Dry” was selected by an international jury of 40 experts from all over the world as Product Design 2019 from over 5,500 participants. Assessment criteria were the ability to innovate, functionality, sustainability and formal quality. The clear and elegant design, the synergy of aesthetics and technology, which shows how research and innovation can take products that are generally considered standard to a new level were all convincing.

What is the USP?

It is the unique and versatile collection with exclusive shapes, its synergy of technology, utility and design. “Dry” combines functionality with security and excellent materials, differing between interior and exterior, and adapted to architectural desires. The refined composition of an artificial resin core, combined with aluminium contours on the outside and wood surfaces on the inside, make DRY a real piece of furniture.

The love is in the detail

The window core (1) is made of resin, which is protected on the outside with lacquered or oxidized aluminium profiles (2). This achieves maximum thermal and sound insulation. 1.5 mm wide steel reinforcements in the side frame (3) provide even more stability and the interior profiles (4) include a palette of real wood or lacquered surfaces with exclusive technology – thermal-treated, grey or bleached Oak or Walnut. The exterior profiles are made of anodised or lacquered aluminium, which can be adapted to architectural or customer requirements thanks to the single aluminium profiles of 5 cm and 9 cm with aluminium interior profiles.



Security complements design

Each element can be custom-made. However, there are some basic rules for security – each window is equipped with 60 mm multi-chamber glass, brass handle and MACO hardware for burglary prevention. And in addition to mechanical security, the connection to the home alarm system or smart home system is considered as a precaution. ►

¹ MAICO is the Italian branch of the MACO Group in St. Leonhard near Bolzano

CASE STUDY 2: HEBO, NETHERLANDS

Pre-fabricated windows for the luxury segment

Hebo started in residential construction before the idea arose to enable pre-fabricated houses using a wooden frame construction. Since 1980, this Dutch family-owned company has specialised in pre-fabricated window/door frame structures. The philosophy of “pre-fabrication” has persevered to this day.

Creative and individual despite pre-fabrication

Meanwhile, the success is based on the production of highly insulated pre-fabricated windows and doors made of timber and PVC, which set no boundaries in their execution of creativity and harmonise with the combination of materials and design. The pre-fabricated windows and doors, which are installed on construction sites along with the frame as one piece, are loved on the market – and not without reason. In fact, it reduces the installation time and accelerates the construction time of a house by a substantial amount.

Pre-fabrication delivers benefits in construction

The pre-fabricated designs enable quick assembly and smooth construction connection, and the complete painting of frames, windows and doors ensures that the construction project is windproof and waterproof much faster. This makes the elements less dependent on weather conditions.

Highly insulated frame structures for passive houses

The need for energy-neutral construction is increasing and will be standardised in the Netherlands from 1st January 2020. If passive houses with their high total isolation value are as airtight as possible, then the frames must also be airtight². This special thermal concept lowers energy costs and supports the trend towards passive house construction.

Luxury through 100% manufacturing

Luxury does not always have to be reflected in a high price but stands here for

added value and service. These wooden or PVC windows of any shape and size can be selected with corresponding hardware, shutters, blinds and insect screens. With this service, the company sets itself out as a full-service provider in the luxury segment.

Composite construction on the rise

What is created in two state-of-the-art productions on timber and PVC is assembled on the doors. PVC frames can be fitted with wood grain on the outside. This innovative finishing technology ensures that PVC frames hardly differ from those made of wood. In this way, different materials can be brought together in one look and combine the best of both worlds.

² Branchenradar.com, only in German language



Excursion into Dutch construction

What is so special about it, you wonder in other countries?

While in most countries windows and doors come last in the construction phase to fill wall holes, in the Netherlands houses are built around the windows and doors. The window installation happens there quite piecemeal, that is, the delivery of elements takes place in various stages and at first, only base painted as standard. Glazing and the final painting are only added on the construction site. In the second stage of the build-

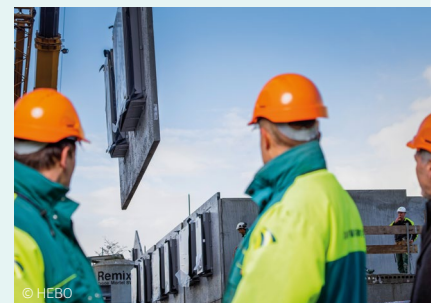
ing, the element is painted and glazed, and the final painting takes place on the construction site. Hebo, on the other hand, offers the final stage of fully glazed, painted and final-painted in one go, and thus positions itself as a full-range supplier from the very beginning. With this complete package, this window and door manufacturer offers unrivalled service in the Dutch market.



The ready-to-use frame is placed, the insulation is attached, and the outer brick wall is built around the frame. This allows the frame to be connected airtight during installation and sealed particularly well.



Alternatively, the finished wooden frame structures are delivered directly to concrete factories for installation in the window frames. In the concrete factory, the interior wall is fitted with the window frames. The window frames blend perfectly into the interior wall and reduce the construction time.



The finished window construction can also be used quickly on interior concrete walls. The better the window/doors are pre-assembled for the corresponding construction the less structural damage may occur.

CASE STUDY 3: WALTER FENSTERBAU, GERMANY

360° – an all-round concept

325 years of Walter Fensterbau in Augsburg – this anniversary prompted us to look behind the facade and explore the mystery behind the family business' success through the centuries.

Quality Made in Germany

"If you want to assert yourself as a supplier on the German market in the future, you have to be positioned accordingly. We rely on high-quality and regionally produced windows, front doors and Lift & Slide elements with the seal "Quality Made in Germany". This includes the need for the products of partners and suppliers to be of high quality and to meet European quality standards", states owner and Managing Director Markus Walter.

State-of-the-art production processes

In addition, there are efficient and lean production processes, from the sourcing of the materials to the delivery of the finished windows and doors. Walter has optimised and digitised their product flows and processes for this purpose. A new PVC window production facility is able to produce 200 windows a day, with a 20-minute turnaround time for a standard window. This makes the Augsburg entrepreneur a powerful force for orders from the commercial property sector as well as for special requirements, with which they stand out from other manufacturers. The company has developed an excellent reputation through custom-made products in the timber and timber/aluminium sector, for example in the preservation of listed buildings, but also for individual customer requests.

Only those who know history, can shape the future.

Walter is curious, always interested and gathers a team around him, who combine the best of solid craftsmanship up to digitisation. Together, a digital strategy is being developed. For example, one concept is a chip integrated into the window profile. This not only connects the element to window and object-related data, but in the best case, depicts the entire product lifecycle from develop-



© Walter Fensterbau

ment to window owner. The data is read via an App on one's own smartphone and can be used for service purposes by the window user as well as by installers, dealers or architects. This concept is still in its early stages but will play a central role in the company's entire digital strategy in the future.

Care begins after sale

Walter invests particularly in after-sales service, which he has recognised as an essential customer loyalty tool. It is an

important criteria for end customers when making a purchasing decision and has been shown to distinguish the Augsburg manufacturer above other suppliers. Long-standing, well-trained and motivated employees are employed in customer service and maintenance. At the end of the day, it's several factors that all come together and make up this all-round thing – 360°. ●



**REDUCE LIABILITY RISK,
INCREASE PERFORMANCE**

FIT4CE

SIMPLE CE-MARKING

With the CE mark, a manufacturer confirms that its product complies with the EU regulations. For the manufacturer, it is, in a sense, a life insurance if he takes the CE mark seriously and properly documents the manufacturing process. After all, those who bring products into the free market of goods assume the full liability risk for their properties. In the absence of labelling, this sometimes means the economic end for some companies.



CE stands for
Conformité Européenne:
In accordance with EU
directives.

The basis of the CE mark
is the BauPVo (Construction
Products Regulation),
EU 305/2011.

The EN14351-1 is a harmonised
standard. Performance properties
for windows and doors.



Why CE marking?

Product characteristics, performance classes, tests and evidence should be comparable within Europe. The CE registration requirement has been in force for windows and doors since 2010. Now Switzerland is also following suit, where there is no CE mark, but from 1st November 2019, the Construction Products Legislation calls for a declaration of performance. Whether a product meets the requirements and how the production is controlled is sealed by the CE mark and the relevant performance declarations. What does this mean in practice?

Manufacturers have full liability risk

Each manufacturer, or rather “market provider” of products, must document its individual manufacturing steps accurately. This is done under their own responsibility in the course of the factory’s production control. The so-called FPC begins with the purchasing and the testing of the “raw materials”. Many trades meet under a window manufacturer – glass, profile, hardware, frame materials, gaskets, adhesives etc. Every single one must be harmless and seamlessly processed into a 100% perfect overall



CE – the Original



China Export

system. Manufacturers are obliged to set up a system that fully documents the production process, inspections and audits, evaluations and the implementation of the results.

Safely working with factory production control

In order to play it safe, the fabricator should constantly keep an eye on its processes in order to sustainably improve customer satisfaction, but also to reduce its error rate and thus costs. Because if he doesn’t do it, the end customer will (during acceptance of the product or performance) and that can lead to an argument at worst, with assessors being involved. Then, the factory’s own production control becomes an important chain of circumstantial evidence in front of the court.

Performance evidence serves as circumstantial evidence

If there are declarations of performance that include the individual production steps and material composition, such as documenting timber moisture measurements, the assessor can build on this chain of circumstantial evidence. That's when the factory's own production control takes full effect enabling the right documents to be available at the right time. Exact documentation that makes the manufacturing process traceable can save companies in the event of a dispute.

When the carpenter becomes a planner

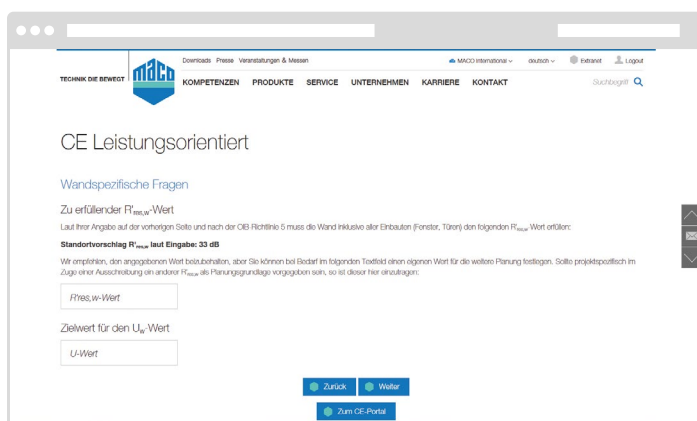
Rarely does a carpenter produce a product for stock and deliver to retailers. In most cases, it is his own responsibility to handle orders and deliver them directly to the construction site. From that moment on, it is his responsibility to familiarise himself with the specific circumstances of the construction project and to meet the resulting technical requirements. He becomes a planner for the end customer – to architects and construction planners, he has a warning and notice requirement.



Photo: ProstoSvet/stock.adobe.com

»
CE4ALL MAKES MANUFACTURERS SAFE AND MORE POWERFUL. THE ALL-ROUND HASSLE-FREE PACKAGE INCLUDES EVERY TOOL NEEDED FOR THE ENTIRE PRODUCT LIFECYCLE WITH CONFIGURATION, PLANNING, PERFORMANCE STATEMENT AND ARCHIVING. «

KLAUS AUERSBERG,
HEAD OF MACO ACADEMY



Performance easily explained. The Online configurator helps to plan legally safe and to advise professionally.

With CE always within the standard

Each country has its local regulations and standards, where the requirements change frequently. With the right guide and online tool as a guide, the fabricator plays it safe. They always stay up-to-date and go in a standardised and time-saving way much easier through the standards and documentation jungle.

Powerful and well advised

MACO's CE4ALL platform helps with this and covers more than just material and colour requirements, glazing in favour of energy saving, burglary prevention, or a certain U value that secures government funding. This self-explanatory planning tool takes into account the building location and height, along with the terrain category and calculates exactly for this location the wind load, sound and thermal insulation as well as the required glass structure in the online configurator. This is essential not just because of the ever-increasing wind speeds and their impact on windows.

Attention for the aware consumer

Media reports about so many construction sites and free access to planning data

such as on lärminfo.at turn citizens into aware consumers. The manufacturer is therefore even more challenged to stay one step ahead of the customer and to create trust through expert advice and credibility.

Single and system checks

For this purpose, MACO accesses an industry-wide base of tests on timber and timber/aluminium elements. CE4ALL includes an industry-unique variety of evidence and prototype tests, combined with a dynamic planning tool. This allows for elements to be calculated with millimetre precision and the necessary testing documents to be produced. In addition, should CE-relevant tests and calculations be necessary, the Salzburg test centre tests for gap and driving rain sealing accuracy. In addition, Uw value calculations can also be performed for individual cut geometries.

CE4ALL goes DACH²

In the German-speaking world, CE4ALL is the tailor-made solution for simple CE marking. For other countries, MACO offers a variety of individual licenses. Our team will be happy to advise you and create a tailor-made package for your company. For more information, visit www.ce4all.eu³

² Germany, Austria and Switzerland

³ Only in German language available yet.



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