

techno gramm

Edition 02/2019

Growth
in the
Aluminium
Market

MINIMALISTIC
DESIGN OF THE
WINDOW

SKILLS
SHORTAGE

HELP FOR
SELF-HELP

Stability through combination

The sum of all parts makes the whole

Stability through combination

**Dear readers,
dear friends of MACO,**

We are sure you know this from your own experience – what seems beautiful or easy at the end, is usually hard work in advance and is based on meticulous planning. Building facades are also becoming easy and light, with ever larger glass surfaces and vanishingly slim frames, holding ever stronger weights. Energy efficiency must increase, and burglary protection must not suffer under any circumstances. What looks easy and beautiful for the end customer is a true feat of strength for the fabricator.

How to master this and where the trends are going is what we cover in this issue. This includes the increased use of aluminium, minimalistic design in window construction and its impact on the fabricator, accompanied by a shortage of skilled workers. To be able to combine these demands under one roof, it is not sufficient to simply put more load on the hardware. This requires thinking outside the box, planning between the various trades and the interplay of all components that are becoming ever more important in the construction. This feat of strength, driven by climate change, digitalisation and standards can only be stemmed in the window / door industry if we work together – stability created in combination.

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

We are taking on a lot of this effort for you to make your every-day life easier and increase added value. How that works in real life can be seen with our InfinityView on page 16 and also live on the Fensterbau Frontale trade-fair at booth 1/347. Our international MACO sales team looks forward to seeing you.

The MACOAcademy teaches how to meet the increasing market requirements and produce with legal certainty. It shows the importance of security along the product development chain and what it means for you as a fabricator. During the first Salzburg Safety Days at MACO, 120 participants saw the synergies of hardware, glass and bonding and learned what CE marking demands from a manufacturer. But such demands also need a solution – with the CE4ALL online planning tool, you can increase your performance and score points with your customer service.

The management of MACO Group wish you all a good start to the new year 2020.

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26 Modernisation of the Oberstdorf ski jump

Hardware installed at lofty heights



REFERENCE OBJECT



THE ALUMINIUM MARKET GROWTH. FROM WHERE IS THIS MOMENTUM?

PVC windows are considered economical and easy to maintain, timber windows underline the living atmosphere in your own four walls, and now aluminium is gaining momentum. This material is currently only selective with growth in special countries, but its presence and popularity are increasing. What makes aluminium so attractive that it is now included as a frame material in housing planning?



Alu is being driven by architecture

The trend towards large glass façades for light-flooded rooms requires alternatives to the PVC profile, which is reaching its limits. Malleable yet secure and stable are the features that make aluminium so popular for new, bold architectural projects. This design revolution in modern facade design with ever-larger glass fronts also includes windows and doors in the mix. For years now, they have been mutating from a simple hole filler in the building to a design object on the facade and a piece of furniture in the interior. Alu is on the rise not only in the design of facades, but also as a frame material for windows and doors.

More and more often seen – the connection of timber and aluminium, both also on the window. The best of both worlds – naturalness with protection.

When industrial design enters the living space

Stability is becoming increasingly important in maximising the glass surfaces of the building. This is where aluminium comes into play, as the material naturally brings with it a high degree of dimensional stability. This increasing influence coming from commercial construction (clear, bright, practical and sustainable to build), is also being well received in private residential construction. Due to its nature, aluminium is malleable and allows many constructions and special solutions. This is important for the trend for ever narrower to almost disappearing frames, but also for shape and colouring. It allows complete creative freedom and is a real chameleon in surface design.



Alu is a chameleon in surface design. Not only weatherproof, but design-savvy. Prefe shows how iridescent facades can be designed with aluminium. Depending on the natural light, the facade shimmers in a different light.

A chameleon in surface design

Surface design is being used in hybrid windows, which are increasingly subject to facade design. They connect different frame materials in one element. This is relevant when the customer wants to give the different materials on his windows and doors a uniform look. For example, to combine PVC frames or windows visually to the timber door or to cover aluminium windows with timber in the interior. Alu shells are a good option for this in two respects – thanks to their optical design options, they not only bring a uniform look into the materials, but also strengthen the construction and protect against the weather.



Photos: © Stemeseder

Durable and sustainable

Protection and longevity are important decision criteria as higher-quality products are on the rise and consumers are becoming more selective and demanding. They now pay attention not only to the purchase price, but also to the total cost of ownership in terms of sustainability – the total cost in the life cycle, including maintenance and care. The latter need to be kept as low as possible in today's working world. In addition, timeless design is always up-to-date and should last just as long.

Best eco-balance values

Aluminium is a highly-chosen material by architects as it is extremely robust, durable and maintenance-free. In terms of climate balance, architects are drivers in the use of sustainable materials. Aluminium requires a lot of energy during production, but it can be recycled without loss and almost infinitely – simply and cost-effectively. High-quality recycling plants create 100% recyclability with a quality that is not inferior to base aluminium and requires only five percent of the manufacturing energy. This carbon footprint is impressive.

Robust and secure

Despite its light weight, aluminium is extremely high-quality and solid, which really helps in terms of burglary protection. As an expert in burglary prevention, MACO can demonstrate either the RC 2 or PAS 24 certification for its large surface-area elements, depending on the profile.

Individual in thermals and adapts well to markets

Similar to how silk keeps cool in summer and warm in winter, the fabricator, who is often also the manufacturer in the aluminium segment, can adapt the aluminium profile to heat and/or cold, depending on customer requirements or climatic zone. This is done in Central Europe to protect against cold weather, and in Southern Europe and parts of Asia to protect against heat. They can vary the profile thickness and the design very flexibly and thus adapt to the desired thermal separation. Last but not least, the aluminium look is popular in warm countries due to its cool design to keep the heat outside both physically and psychologically – a cool look for a cool atmosphere.

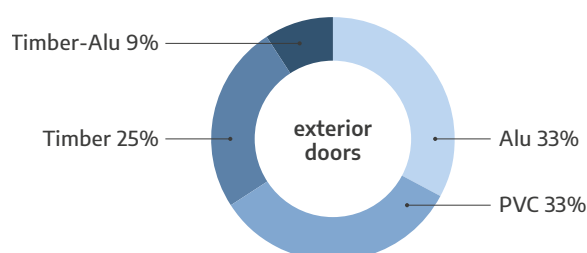
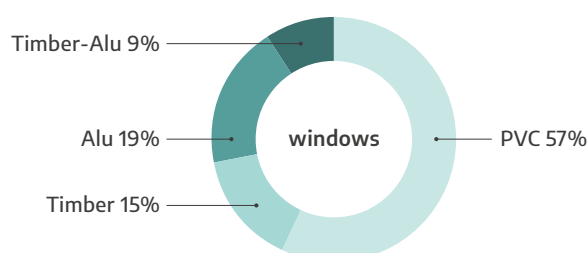
The construction boom and rising profits due to higher prices helped the window market to healthy growth after a long drought. Alu is slowly increasing its share and is becoming more and more the focus of developers. Growing aluminium markets for hardware, aside from Asia, include Spain, Italy and the UK, followed by the Czech Republic, Belgium and the Netherlands (IC Interconnection Consulting 2016). Interest is growing in the DACH countries, as in Russia, but implementation is still subdued.



What do an aluminium profile and silk have in common?

Physically nothing. Unlike aluminium, silk is not a good heat conductor. The lower the thermal conductivity of a material, the better the thermal insulation. However, the fabricator can individually design the aluminium profile and precisely thermally “equip” it, depending on the environmental requirements and climatic zone. This makes it a chameleon in all respects – in appearance as well as in thermal insulation.

Share of materials in windows
in Germany



Source: VFF, Heinze



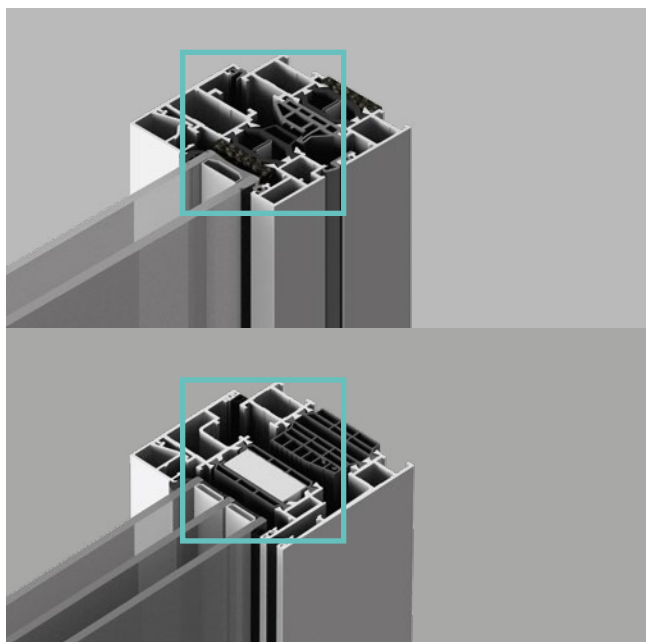
Alu growth in doors

Aluminium is more anchored in the door area than in windows, because security and stability are even more in focus. Due to these criteria, doors are considered to be of high quality, which brings interesting advantages for fabricators. Aluminium doors can be produced economically in terms of tool and machine use, are very valuable in their construction and can be sold at high-prices. In combination with selected components such as the 3-latch locks e.g. MACO Z-TF or A-TS against door warping, the production of aluminium doors is very lucrative.



Asia sales markets with growth in large surface-areas

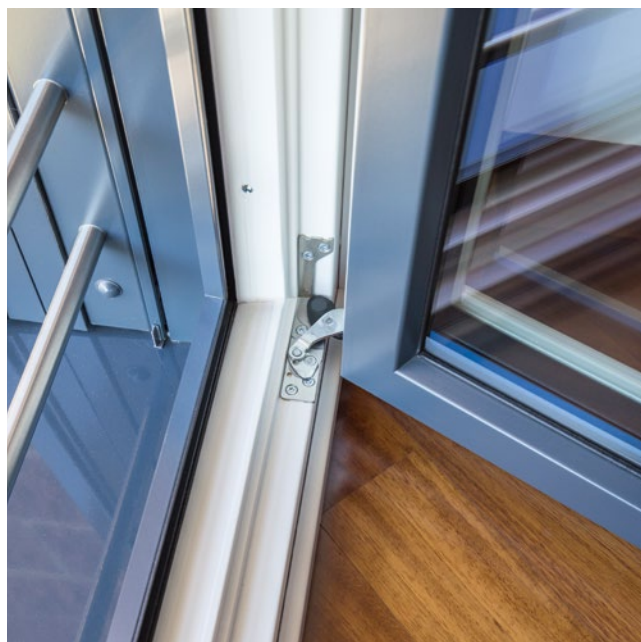
In Asia, Alu as a frame material is gaining strength due to its material advantage and its easy processing. “We are seeing a lot of demand, especially for lift and slide elements,” says Alexander Wesser, Head of the Large Surface-Area Business Segment at MACO. Wesser argues why this is the case: “Aluminium does not absorb moisture and forms a natural protective layer in the air, thus protecting itself from corrosion. This supports long-term closing comfort and durability in humid and warm climates. Another important aspect is the simple production, because many individual parts can be used modularly, and the ready-made hardware can be assembled in packages. It does not require a large machine park or special tools”. Although the production of aluminium windows and doors has a high manufacturing characteristic, low labour costs compensate for the higher time required. Fabricators need not worry as they can use the same MACO hardware for large-surface elements, regardless of the material. This is different for windows.



Photos: Aluk

Aluminium clamping groove on the sash versus 16 mm Eurogroove

Here, the classic aluminium groove, which is inserted into the window sash, contrasts with the 16 mm Eurogroove for PVC and timber, which is screwed together. This development is not least due to the completely different sales model in the aluminium segment. Aluminium hardware are used by the system houses or profile manufacturers together with the profiles. Now, something is changing as the material network grows. As Kris Dhont, Head of MACO's subsidiary in Belgium, reports, some fabricators are toying with adding aluminium to their production in addition to PVC and want to use the hardware used in turn and tilt windows in aluminium processing as well. For PVC fabricators, there would be a great opportunity to be able to produce two materials in a similar hardware fabrication. MACO offers solutions for the industry-standard 16 mm Eurogroove.



Concealed hardware instead of powder coating

A great simplification in the fabrication of aluminium windows is the use of concealed hardware which helps deliver a uniform appearance. These reduce the time and cost required for powder coating and for visible load-bearing parts and hinges. Powder-coating is eliminated when hardware sits behind the frame and sashes disappear. MACO offers every suitable solution with its MULTI-POWER series. ●

MINIMALISTIC DESIGN



OF THE WINDOW

—
A BLESSING OR
A CURSE?

Glass panes are getting bigger, frames are getting narrower and being fitted flush in the wall. Handles are disappearing inside and hardware behind the sash. What do elegance and minimalism in design mean for window construction? What supposedly looks easy often takes a lot of effort. Is that which is a blessing for customers a curse for the fabricators?



Frameless windows as a design element

When designing windows, the desire for light and visibility dominates. Heat, sound and burglary protection become so-called 'hygiene' factors. The most important factor is to create the greatest possible view for a bigger horizon. This causes the boundaries between inside and outside to blur and windows to merge with doors. Many manufacturers refer to their full-height fixed elements and sliding doors as windows. Whatever the name, architectural beauty remains a common advantage through minimal design with seemingly invisible frames. A seamless view thus becomes the central design element of the living area.

Many models, many implementation possibilities

For this comfort, manufacturers offer variations on windows that make any height, slant and curvature possible. These include narrow frame widths, corner windows without frames, frameless sliding elements and floor-to-ceiling sliding doors in all designs, as well as curved and inwardly inclined sliding elements.

Many questions require answers

How do you implement these constructions in an energy-efficient, soundproof and driving rainproof manner as well as being burglary resistant? And what does the reduction of frames mean for their stability? What does this change in the design of frameless glass techniques mean with regard to manufacturing processes and components? ►

What are frameless windows based on?

The frames are not always completely gone. Many are reduced to 50 mm and are so slim that they are integrated into the windows. The frame profiles then disappear into the masonry and guide rails are sunk into the floor and ceiling. Ceiling and wall flush installation is the ultimate implementation style to transform entire walls into viewing surfaces. In addition to the light source, the glass increasingly becomes its own carrier and merges into the masonry. New characteristics and requirements therefore arise.

Glass becomes a carrier

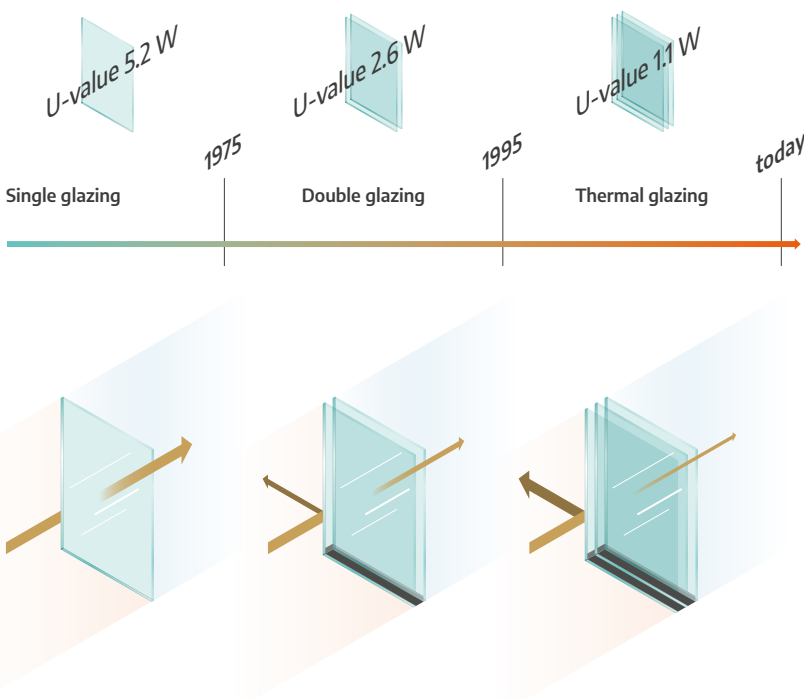
Today, the glass gives stability to the sash, whereas in the past the sash frame held the glass. And what was previously achieved by blocking the glazing is now shifting more and more towards bonding of the glass panes – a technique that stems from burglary prevention which is the development of laminated safety glass.

Glass technology for endurance

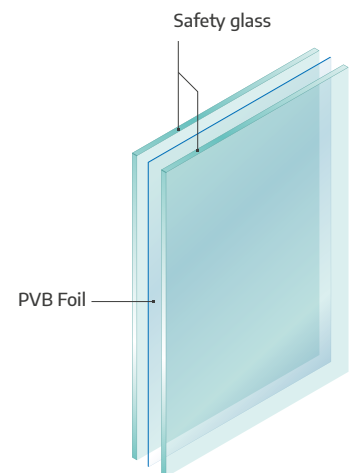
Nowadays, burglary prevention is no longer only the responsibility of the hardware industry, as the glass industry now has an equal share, too. It is currently experiencing its greatest change in the technological switch from triple and multiple glazing to laminated safety glass, vacuum and sun protection glazing. Laminated safety glass is an important component in burglary protection with its impact-retardant glazing, in which two or more panes are glued together with a foil. The importance of synergies and partnerships between trades in these system developments can ultimately be seen here.



Glass development over the years



Laminated safety glass with increased impact resistance





Change as an eternal constant

With the introduction of insulating¹ and thermal insulation glazing² profiles have become stronger over the years and the frames have widened. A similar development has also been applied to the hardware, which has had to withstand ever higher weight requirements due to triple glazing and has had to find new ways of carrying the load. The hardware did this, initially visibly, by being attached to the outside of the frame and sashes, before they could be integrated into the sash with the development of the fitting groove in the window rebate. Flush mounted hardware today carry up to 180 kg, MULTI MAMMUT even 220 kg for wooden systems. But with the increase in glass surfaces, materials are reaching their limits and this requires that all component suppliers work together to remedy the situation in favour of viable overall solutions. The glass industry is working on lighter alternatives such as double vacuum glazing to counteract size and weight while still reducing the U-value to 0.5 W/(m²k).

The challenge for fabricators

History teaches us that technological advances go hand in hand with requirements by legislators as drivers of developments. On the one hand, there is CE marking, which requires the fabricator to document and archive the relevant performance characteristics. On the other hand, legislative requirements for energy efficiency and security led to the heavy weights of the multi-pane or safety glazing used as standard today. These face a problem when paired with extruded plastic profiles, which increasingly should do without reinforcement. How does the material quality affect processes and assembly? One thing is certain, says Thomas Garbislander, Head of the Window Business Unit at MACO:



ANYONE WHO DEALS TODAY WITH PROFILES MUST KEEP AN EYE ON THE WINDOW OR DOOR SYSTEM AS A WHOLE IN ORDER TO BE ABLE TO BRING IT TOGETHER OPTIMALLY. THIS REQUIRES A HIGH LEVEL OF KNOWLEDGE IN COMPONENT AND TECHNOLOGY DEVELOPMENTS, WHICH ARE GETTING FASTER AND FASTER. <<



The EU directives on energy efficiency (currently valid directives 2012/27/EU)

... form the basis for national law such as the EnEV³. This calls for ever lower U-values to reduce CO₂ emissions⁴ for energy-efficient construction – in Austria it is currently 1.40 U_w according to ÖIB.

Identifying requirements for glass panes

The requirements for glass panes can be easily determined with planning tools such as MACO's CE4ALL – an important companion in performance creation and documentation. With it, the fabricator learns the local requirements for the building and can combine the element size with the requirements for thermal insulation and sound insulation values. Windows, especially with their increasing surfaces, are an important acoustic filter in the building facade and must meet the R_{w,res} values. These can be determined quickly and easily by entering the location's address. In addition, the thermal load from freak weather as well as any locally prevailing temperature fluctuations must be considered. ►

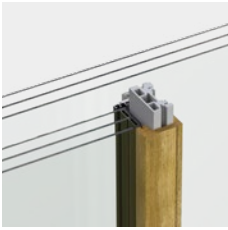


¹ Introduced in Germany from 1975

² Legally required from the mid-1990s in Germany

³ EnEV – Energy Saving Ordinance in Germany

⁴ Heat transfer coefficient (U-value) is measured in W/(m²k).



Stability created in combination

When the profile meets the glass, whose surfaces are getting bigger and heavier, a way out has to be found – especially for materials such as timber, which eventually reach their limit. MACO has therefore studied the load-bearing capacity of individual

materials in detail and has found the solution for stability in the GRP profile during development for its new InfinityView lift and slide element. A GRP core in combination with MACO hardware and glass bonding carries this large element with 10 m² glass surfaces on a five centimetre narrow frame.



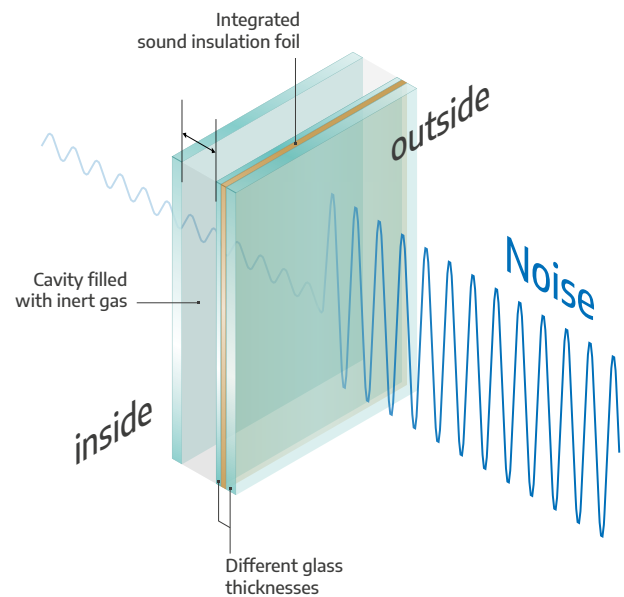
Thermal insulation and profiles

Size does not detract from the thermal insulation, because the larger the glass surface content, the better the thermal performance values of the entire element. In general, glass technology provides excellent U-values in comparison to the frame material.

With profiles such as GRP and its low heat conduction, these are again seen in a better light. The GRP profile used by MACO achieves the best values for the thermal separation of the inner and outer shell and avoids any thermal bridges – this makes the MACO InfinityView compatible for passive houses.

Improved sound insulation

When it comes to sound insulation, large window elements are equal to the classic ones, because sound is best held by a mass. Heavy weights, i.e. thick window glass, have an excellent effect on this. When installed professionally, frameless windows have an optimal construction joint, which also contributes significantly to the best sound insulation. There are six sound insulation classes, which are anchored in DIN 4109. These range from sound insulation Class 1 with a reduction of 25-29 dB up to sound insulation Class 6 with sound reduction by more than 50 dB.



Adhesive technology

Once the right glass has been determined, it is time to choose the right adhesive technology. Modern adhesive processes support floor-to-ceiling windows and ensure a permanent and secure connection between glass and window frames. Which adhesive and which application technology should be used and how should it be applied correctly? In recent years, the development here has been rapid, from chemistry to application and application technology. It's well worth looking at in detail.

So, it's important to check for the right adhesive

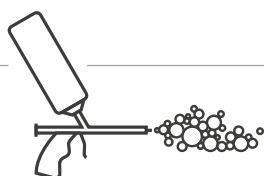
Gluing with silicone is state-of-the-art in metal facades, while in window construction this is known as "Structural Sealant Glazing". Its appropriate elasticity is important as it counteracts the risk of glass breakage. But there are many more adhesives that want to be adapted to the respective operating conditions - temperature fluctuations, UV radiation, humidity and composite materials. These decide whether silicone, hybrid adhesives, PU or acrylate is the right choice. ►

Glue is not just glue.

Each kind has its own advantages and areas of use.

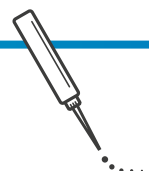


Make sure that adhesives are compatible in edges and liability as well as system-tested. Many adhesives are entering the market without approval.



PU adhesives

or also foam is the first choice when the highest adhesive strength is required. Due to its consistency, it foams up and ensures a firm hold in and around cavities. Excess adhesive can be easily sanded off after curing. However, it is not good with water and should therefore only be used inside or in water-protected areas.



Silicone adhesives

are the ideal partner for glass and window construction. They are flexible and elastic, making them resistant to heat fluctuations, humidity and water, and also aging. Due to their high resetting capacity, they are easy to use where a lot of movement is exercised, such as when opening and closing windows, e.g. for glass edge and rebate base bonding.



Acrylate adhesives

are the cheap water-based alternative for indoors where temperature and weather resistance do not place high demands, e.g. for glass retaining strip bonding.





Burglary security

In terms of burglary security, large glass elements are also at the forefront. By using laminated safety glass (see page 12) even frameless windows become stable and burglar-proof. In addition, alarm sensors can trigger alarms in the event of a broken glass. In the case of lift and slide elements, a closure monitoring can also be integrated, which is coupled to a commercially available smart home system and strengthens the mechanical safety with an electronic one.



THE MAIN COMPONENTS OF THE SASH FRAME ARE MADE TO MEASURE AND DELIVERED. THEY INCLUDE ALL MILLING AND DRILLING FOR THE HARDWARE PARTS. <<

HANSPETER PLATZER,
HEAD OF PRODUCT MANAGEMENT
BUSINESS UNIT LARGE SURFACES



Security with a system

Ensuring the security of window systems is often a difficult undertaking for fabricators, as it is very complex and expensive. Each system, scheme and different size must be specially tested. This is a prohibitive cost point for many fabricators on the expenditure side. In order to save customers this cost, MACO takes on the system checks. These cover a wide range of window versions from small to large and can then be taken over by the fabricator via a license. They can then manufacture their windows and doors without having to test every single element at a high price.

Fabricators can use MACO's InfinityView to build a fully tested element that meets the high security requirements up to RC 2 and the mandatory characteristics for the CE marking. For example, joint permeability, driving rain, wind load, load-bearing capacity of safety devices, sound and heat as well as hazardous substances. This delivers not only a cost saving, but also a time saving.



MACO InfinityView with GRP profile allows best views without losing stability. Pre-fabricated sash parts can be assembled easily, quickly and safely and achieve the best values in terms of thermal insulation, sound insulation and burglary prevention.

Due to the almost invisible frame, the large and seamless window panes are easy to clean. The glass itself is protected from weather influences and care is no longer really needed, as cleaning and painting of the window frames is no longer necessary.

Do frameless windows and doors have disadvantages?

If you like, these can be found in acquisition costs and glass exchange. As with the traditional windows, the costs are calculated according to the total surface area. This is less of an aspect during first purchase in the new building than with a glass breakage. Over the long term, they pay off in energy efficiency, low maintenance effort and a feel-good atmosphere.

Accessibility

Due to the disappearing frames, the floor threshold must also almost completely disappear. This is usually designed in a barrier-free way for new elements, in which the modern guide rails are inserted into the floor. Thus, frameless doors and windows offer a flush-mounted transition to the outside, which makes them stumble-free and ideal for wheelchair users as well as for the little barefooted ones.



Higher costs for glass replacement

In the case of glass replacement, the effort is correspondingly higher than with small windows, which are easier to remove from the frame. With frameless windows, the exchange requires a lot of effort in the case of broken glass and therefore becomes more expensive.

Help via system providers

At MACO, all the threads come together as system providers and the development partnerships promote the transfer of know-how that benefits the customers. This is reflected in complete solutions that look at the optimal nature of the profiles with their thermals and the developments in glass and adhesive technology. Last but not least, the product requirements are designed in a safety and design oriented and barrier-free manner. A modular system ensures flexible processing and easy assembly, as does the pre-picked hardware delivery. The sash profiles are prepared with all required milling and drilling. In addition, custom-made drive gears, adapted rollers or even the fully assembled threshold can be supplied on request. ●



The employee you searched for
is currently not available.

We are sorry for that.

SKILLS SHORTAGE: HELP FOR SELF-HELP

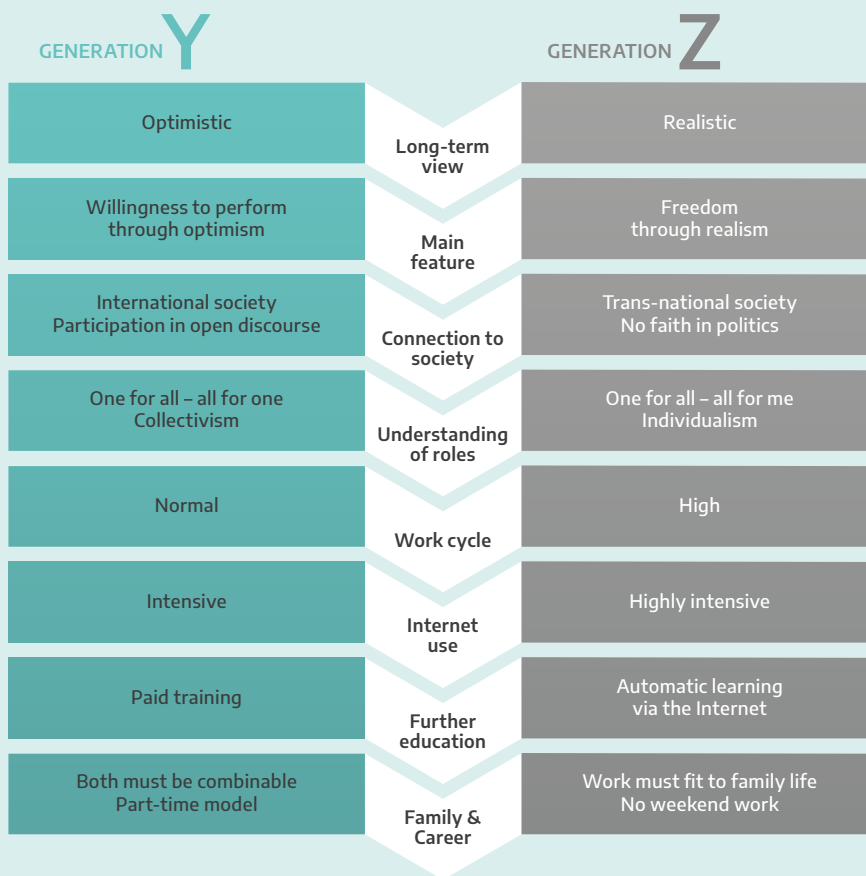
The reports of skill shortages are not only felt within the construction industry, as a problem shared is unfortunately not a problem halved. The skills gap in construction is present now and widening further, with implications for service and quality. How can companies resist this?

Problem: Ageing

First of all, we need to look at the cause of the problem in order to be able to draw possible solution scenarios. After all, the global workforce is beginning to age and thus is missing the large number of young workers who are coming through. Those who need craftsmen today, however, have to sing a song and practice patience. The effects are being felt now and will become ever stronger over the next ten years, as there will be even fewer skilled workers.

Digitalisation

The big issue in the debate is digitalisation. On the one hand, it creates new possibilities and automation in many processes. At the same time, however, the demands on personnel and production processes, which require workers to gain engineering and computer science, are increasing. The gap between unskilled and skilled workers is widening. New fields of activity are emerging which are changing the construction industry (as the parent of the window industry) at a rate at which training can hardly keep up. As shown by BIM¹ the goal of networked building planning is laudable, but the path to achieve this is quite rocky. The changeover to become part of the networked construction process and to trim the entire company IT to this end is being managed by some trades and countries faster than others. And the school systems with frontal education and zero tolerance for mistakes are unlikely to produce the creative, free-thinking young people which the economy now needs. As an opportunity, companies will do well to involve the new generation and take training into their own hands.



Source illustration:
Generation Z.
<https://www.lecturio.de/magazin/generation-z/>

Generation Z demands

The Generation Z², also called Digital Natives, is used to a different understanding of work and learning and will reshape the world of work. They no longer know classic media, because for them all media is now digital. Their library is the World Wide Web while their knowledge management replaces learning – knowing where to retrieve something just when you need it. What does further education look like? The new educational channels are called YouTube, social media, blogs or online forums and other knowledge platforms. It is open all over the world and so is its working attitude – self-taught, purpose-driven, individualistic, filtering out attractive projects from an oversupply, realistic and fast-paced. And crucially, this generation does not see career as a pure money-maker, but as a meaningful one – as long as it suits to family and leisure time. If companies recognise this digital, new practice-oriented learning, they can quickly motivate young and unskilled workers. This industry has more than ever the ability to offer diverse and exciting career opportunities, as especially through digitalisation it is becoming increasingly sexy and construction is no longer construction as we have known it so far.

The link between skills shortages and poor working conditions

The link between skill shortages and poor working conditions exists in many sectors. It is often physically demanding work with a lack of pay and weather-based or seasonal overtime that makes jobs unattractive. The latter have an additional impact on childcare periods and restrict women in particular from taking up full-time jobs. ►

¹ Building Information Modelling is the networked planning, execution and management of buildings with the help of software

² Born after 1998

CONSTRUCTION BOOM DIGITALISATION SPECIALISATION SKILLED TRAINING GENERATION Z SKILLED WORKER SHORTAGE APPRENTICESHIPS CAREER-CHANGERS



THAT EMPLOYEES OF THE UP-COMING GENERATIONS WILL BIND TO A COMPANY FOR THEIR WHOLE LIFE BECOMES EVER LESS LIKELY. BUT TO SUPPORT THEM IN ALL LIFE SITUATIONS IS APPRECIATED AND BRINGS ALL PARTIES BENEFITS AND HELPS TO STRENGTHEN BONDS. <<

**CLAUDIA KOPP,
HEAD OF HUMAN RESOURCES,
MACO GROUP**

Focus on childcare

In the case of declining large family structures, the infrastructure must be taken into account when it comes to childcare. However, only large companies can compensate their employees for that which the state does not provide – full-day care or kindergartens. And what is still taken on in the first years of life via the all-day daycare is often missing in the primary school years, as there is insufficient or a lack of afternoon care. For small businesses, other models have to be found in order to employ their staff in a family-friendly manner. Such as organising shift models, holiday periods in the home office or private childcare amongst colleagues, as the French do if they cannot get day-care. Here, creative solutions are required.

Help for self-help

The tip is not to rely on politics, but to help people to help themselves. This was the result of the Technogramm survey in the countries in which the MACO Group is represented. Our research has shown that visionary, creative companies have fewer staffing problems and skills shortages than traditional ones. They do the training themselves, network closely with interest and professional associations, schools, technical colleges and universities, and strive to strengthen their employer brand by anchoring themselves in the minds of young people at an early age.

Open for new ways

These digital natives will challenge companies because they are not receptive to the classic top-down management style and do not think in hierarchies. What they don't get in information, they pull from the Internet. This in turn promotes flat hierarchies, which are a must for young employees, because responsibility lies, in their eyes, in the task itself and in the team, not in the individual person who wears the hat. Whoever makes use of this as an employer and facilitates new ways, will win.

Self-driven training

Education is and remains the key to success. Whether it's skilled training, managerial training or apprenticeship training, a healthy mix is important for management as well as for young talent and recruiting. In its current employment outlook for 2019, the OECD assesses further training, alongside labour protection and social protection, as essential aspects and says that strengthening adult education is crucial to assist adult workers to successfully navigate through changing markets.³

Expertise creates bonds

A bonus in the window and hardware industry is the specialist knowledge with which employees build up know-how, and which bonds through its specialisation and generates appreciation that stays.

Location, Location, Location

The location has always been regarded as an important factor for well-run businesses in tourism as well as in real estate. However, some hotels, as well as Oknoplast in Poland and KTM in Mattighofen near Salzburg, have proved that there can also be full occupancy rates outside of built-up locations with good concepts, for both guests and employees. An attractive location is helpful, but not a guarantee for numerous job applications. There are other factors which are required, more than just good infrastructure. Especially since due to the shortage of skilled workers, the trend is that it is not applicants who ask for the job, but rather examine what the employer can offer them.

Employer Branding

The strength of the employer brand is an indispensable measure in this recruitment competition. A positive customer experience does not simply start with the product, but with the overall perception of the company behind it. Companies that are present at the point of sale with a logo and corporate design in their external appearance and who leave a noticeable impression are clearly at an advantage. In addition, reviews in job portals, such as kununu.com or best recruiters as well as a professional appearance in job advertisements are helpful. High fluctuations are noticeable here. Young people especially, who are on the go across all channels, quickly get a picture from the depths of the internet and critically examine where employers appear, and how contemporary and clever they appear. And good products need good, innovative marketing. Simple brochures are no longer enough. Product experiences are increasingly being cross-media fed via video messages. YouTube or augmented reality are also used in order to make the customer's benefits more tangible. Image and subject videos ensure identification with the company and strengthen the brand – the appearance makes all the difference.

Accompanying employees in all life situations

It is less likely that employees of future generations will be tied to a single company for their lifetime. But supporting them in all life situations is an appreciation that brings something for all involved and strengthens the bonds between them. Claudia Kopp, Head of HR at MACO: "For us, this includes caring for relatives, support when not being able to work due to illness, the possibility of temporary reduction in working hours and volunteer work in clubs and associations. But also, the participation of employees in rosters, short-term holiday planning, taking management positions in part-time, short core times and home office are examples that employees greatly appreciate." Finally, satisfied employees are the best brand ambassadors to reinforce the image to the outside world – both positively and negatively.

A clean image for Apprenticeships

The answer to the skills crisis is the creation of apprenticeships. In Austria, after many years of academisation, politics is cleaning up the image of apprenticeships with "career through apprenticeship" and slowly making it acceptable again. Today, this dual education, combining practice in the company with the theory of a vocational school, is very well received with more and more 15-year-olds choosing to do so instead of going on to a higher school. MACO alone currently has 110 apprentices in training. For those who want, they can even do the apprenticeship with A-Levels⁴ which MACO offers in-house. This training path is becoming

more and more accepted and opens doors for further studies later on. The permeable educational landscape with its many training paths is increasingly appreciated and has led to a rethink, from which the economy benefits. As colleagues in the UK market have reported, apprenticeships there have doubled since 2008/2009, as has the number of apprentices. But, as in most Central European countries, demographic change has reduced the number of apprentices, and they alone cannot fill the skills gap.

Career changers and unskilled workers

Without the training of unskilled workers or the recruitment of foreign workers, it will no longer work. But here we need companies that are well positioned with employees who have time and interest – unskilled colleagues have to be taken by the hand for quite a while and helped along. Depending on their origin, the language barrier can also be an issue. As with apprenticeship training, it is necessary to plant before harvesting. Investing in good employees requires willingness on both sides, from both employers and employees. Companies need to invest in human resources as their capital and this can be worthwhile and is usually profitable. ●

³ https://read.oecd-ilibrary.org/employment/oecd-employment-outlook-2019_9ee00155-en#page22

⁴ Abitur or completion of a general higher school before studying

Skilled professionals |



EXCITING INSIGHTS

SALZBURG SECURITY DAYS



On 21st and 22nd November 2019, the MACO Research and Innovation Centre in Salzburg was the platform for the first Salzburg Security Days. Together with Sika Deutschland GmbH, a specialist in glass bonding, these two days were all about security on windows and doors. 120 participants from five countries met for this industry discussion.



Mark Hamori, Managing Director of Sales & Marketing MACO Group, opens the first Salzburg Security Days.

It was a premier and also a complete success from the start. “How security can be enhanced by the synergy of hardware and bonding, and how the technologies are developing here was very interesting,” was the opinion of many window and door manufacturers. “And the possible alternatives to standard window production revealed new perspectives for the fabrication process,” said some of the participants. This was the successful supporting programme that demonstrated security along the entire value chain and made it really tangible.

Using synergies

In his welcome speech, Mark Hamori, MACO Managing Director of Sales & Marketing, explained the goal and message of the Salzburg Security Days. Just like Frank Holzäpfel, Managing Director of Sika Deutschland GmbH, as co-organiser iterated, it is the pooling of competencies and close contact with the customer that is at the top of the list. “What we as a manufacturer present today is created by a good cooperation with system partners and is enriched with the product experiences of our customers. Through this exchange, we are always close to the market and can translate the needs of our customers into product and service benefits,” said Hamori.

Security begins before production

Security starts with the question of which properties windows and doors have to fulfill. These regulate standards and laws, CE marking and the wishes of the clients. But how do all the details and components work together? What matters and where does the journey go? How does hardware work on large glass surfaces and what does the bonding in this three-way constellation do? The choice of the right components must always be seen in conjunction with other forces. Quality is created by the perfect interplay of all those involved and all materials. This is where MACO’s systems idea and the synergies of the individual

trades come into play. In concrete terms, this means that product quality needs the right applications and application technologies plus services. These include standards training and RC testing for burglary prevention, and all this under license to facilitate manufacturing without having to test each individual element.

5 presentations and 8 workshops

The participants expected a varied, informative program. For the window and door manufacturers, the product information combined with the live demonstrations in the workshops on the second day was very informative. This helped examine the entire product creation process from the planning and production of new technologies as possible alternatives to standard window production, and on to the fabricators’ product liability. “The Security Days have opened up completely new perspectives for us,” many visitors said.

More than burglary prevention

Security on windows and doors is usually associated with burglary protection. On this topic, Sepp Moosreiner from the Bavarian State Criminal Police Office presented the current numbers of burglary statistics as well as burglary methods and pointed out that electronic protection can only be a supplement to solid mechanical security.



from left to right:
Klaus Auersberg (MACO), Andreas Dirksen
(Sika Deutschland GmbH), Mark Hamori (MACO) and
Frank Holzäpfel (Sika Deutschland GmbH)

Legal/Security for the manufacturer

Klaus Auersberg, Head of the MACO Academy, reports that security is important not only for the product, but also for the fabricator, who as a manufacturer assumes the full liability risk for the finished product. In his opening presentation "Performance securely explained", he sensitised the participants to what the CE marking demands of them and what possibilities there are to go through it simply and securely from a legal perspective.

Secure through CE marking

"At the MACOAcademy, we offer a CE planning tool that allows customers to be legally on the secure side and become more powerful," said Auersberg. CE4ALL makes it easy to navigate the process through the individual work steps, taking into account the building location and the terrain category for the calculation of heat and sound insulation values. With these tools, the fabricator can not only simplify their manufacturing processes and tailor them according to the buildings, but also increase the quality of their customer service. It is also important to provide declarations of performance, documentation and archiving of the data for proof over ten years.

Preventing disputes

Rudolf Exel explained why planning and documentation are so important from his point of view as an assessor. In the event of a dispute, the manufacturer must have fully secured all their evidence, and this over a period of ten years. Then it helps if they can prove why they used what and when. The assessor advises – "Use the legal framework, but do not leave it."



The show act by metal magician
Lucca Lucian amazed the 120 guests.



In order to create elements within their technical feasibility and not to exceed the physical limits, CE4ALL uses industry-wide system tests and evidence which give the fabricator planning and legal certainty.

Security on the test bench

Heinz Pfefferkorn, Managing Director of gbdLab, explained what is important in element testing and took with him the first mobile test truck in Europe to MACO for the practical day. The Bau Dornbirn Group now checks elements directly on-site at the manufacturer. At the MACO Test Centre, Günther Aichinger, MACO's expert on burglary prevention, explained where burglars prefer to attempt a break-in on a window. The participants were first able to try a standard window, after which a freshly bonded RC-2 window was put to the test. While the first one was quickly open, the RC-2 window held. The hardware and the bonded glass strip did not give way, the "burglar" had to ultimately attack the glass, which

broke and crashed into the interior with a lot of noise.

A tour of the MACO headquarters in Salzburg and a cosy evening over the roofs of Salzburg with a sensational display by a mental magician rounded off the two-day event. ●



Günther Aichinger, expert in burglary resistance at MACO and pioneer of the Salzburg Security Days.

MACO ON FRONTAL(E) COURSE

BRING INNOVATIONS ON TRACK

Creating Innovation is the motto with which MACO will present at the 2020 Fensterbau Frontale and thus will build on its success from 2018. Visit us in Hall 1/347 and see how some innovations become trends and what else is possible.

Creating Innovation

A robot at Frontale 2018 showed how windows can be used and operated by new self-sufficient hardware modules. In 2020, you will see the next development stage of the Window of the Future. Experience Creating Innovation right up close. This means responding to customer requirements and jointly implementing system solutions that take product developments to the next level which are ready for the market as soon as the market is ready for them. Then, innovations set trends.

Innovations become trends

What was shown at Frontale 2018 under the working title ConceptView, as a product study of internal development, is now ready for the market – the InfinityView lift and slide element. With its infinite viewing surface, it's in line with the trend of large glass surfaces which replace the house facade and flood the living area with light.

What do customers get from it?

InfinityView demonstrates that large window elements with narrow frames are not only reserved for metalworkers. With the right choice of components, they can also be realised for customers in the timber segment. In this case, innovation means keeping an eye on the customer's needs and offering new business opportunities with new approaches. Only then is innovation an innovation – if the market accepts it. ●

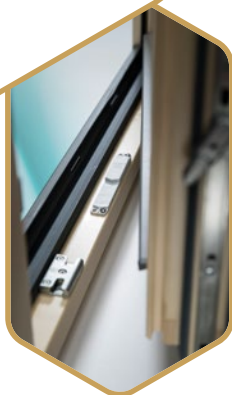


The MACO stand at the Fensterbau Frontale 2018

CREATING INNOVATION

Focus on customer benefits: The MACOAcademy

Developing products is one thing. But to accompany them with service and support is another. This support starts well before production and namely, during the planning. The new MACOAcademy uses the CE4ALL online platform to show what customers should pay attention to within their product life cycle. In addition, there are data services such as the online technical catalogue or MACO WinPlus for easy connection to your window construction software. Learn more about production based on licenses or system testing in MACO's own test centre.



Everything around the window

Get exciting insights into how far the development of mechanical hardware is and how it can be supplemented with electronic hardware solutions. Also in focus is accessibility and numerous further developments in the material worlds.

Large, larger: When visions become reality

What was presented as a study in 2018 is now well underway. InfinityView will have its global market launch for Frontale 2020. On this revolutionary lift and slide element you can see what developments have been made in the last two years and how these create the perfect synergy. A slim frame design with the highest stability and best thermals all bundled into one element. But there will also be new products in materials, schemes as well as in parallel sliding and slide and tilt hardware.



MACOLab

Visions do not always become reality. But those who do not try to leave the familiar paths will never find innovative paths. Let us look to the future together. You can see what currently moves the industry in the MACOLab. You can also see details during your visit to our stand. The international MACO team looks forward to meeting you.



Doors open to new possibilities

Experience the revolutionary new door locking system, which allows completely new design possibilities in terms of shape and workmanship on the door. In addition, MACO completes its PROTECT lock portfolio with automatic and motorised locks. This delivers a fine, well-rounded product range that, with just a few components, quickly and easily enables many door scenarios.



The Heini-Klopfer ski jump in Oberstdorf, Germany, is one of only five flying ski jumps in the world. To support the new FIS¹ regulations and to remain competitive and attractive as a tourism factor, a modernisation of the hill was necessary. You can read here about how much influence a window maker can have during the planning.

WINDOWS FOR AIRY HEIGHTS

MODERNISATION OF THE OBERSTDORF SKI JUMP

When cleaning affects the window construction

From Hamburg to Hawaii, it is not uncommon to clean tall glass buildings such as the Elb Philharmonie or skyscrapers from the outside by means of a window cleaner in a climbing harness. If you believe the Hamburg travel guides, “Elphies” facade cleaning, as the new landmark at the port of Hamburg is affectionately called, costs 112,000 Euros a year. The Ski Club Oberstdorf, as the operator of the flying ski-jump hill, did not want this kind of effort. They did not want any abseiling and thus demanded simple window cleaning from the inside, which ruled out a full glazing of the head of the jump hill.

Ski Jump hill peak as eagle’s nest

Nevertheless, the facade was to be designed with large windows, which could be installed without scaffolding at a height of 72 metres. This was a real challenge on the rough terrain, which is as unreachable as an eagle’s nest.

In addition, the ski jump hill peak should visually resemble an eagle’s nest – as the home of the German ski eagles, who carry the eagle on their coat of arms. These criteria for the modernisation of the ski jump hill were so demanding that no company participated in the initial tender.

The window maker helps the planner

The owner of the hill then had to search for solutions for a new tender together with the architect and asked the local window company Holzverarbeitung Bietsch for advice. Together they drew up feasible constructions which were adapted to local conditions, and a new Pan-European call for tenders was made. The second tender brought some applicants, but they could not keep up with Bietsch, who ultimately received the order.

© Eren Karaman



© Holzverarbeitung Bietsch. The MULTI-MATIC hardware with the double-rooted pivot post and pivot bearing is the optimal partner for the weight and climatic conditions in the eagle's nest.



High demands for the windows and design

How do you make large glass surfaces that are supposed to resemble an eagle's nest? This certainly demands creativity, which the architect solved with white struts on the glass surfaces. This best symbolises the eagle's nest and, despite its height, give the design a "patina" that is visible far beyond the region. "Many modules and cutting angles had to be manufactured," says Franz-Josef Bietsch. "In addition, there were the suspensions, which had to be stable for transport by belt on the crane. These had to be tested very well in order to be able to pull the large elements up into the air without any damage."

Assembly at airy heights

It was certainly not just the price that ensured the tender was awarded to a local fabricator. Local knowledge was the decisive advantage with this project in terms of glass construction. A maximum height difference of 200 metres from the production site to the installation site has a positive effect on the glass quality. This is because the glass is blown with gas and prepared exactly for the installation height during production. Then, it was necessary to perform the difficult manoeuvre of assembling the windows at such airy heights. For this purpose, a mobile crane was rented, which could be installed on the hill. The windows were pulled up by cable onto the facade and fitted to the head of the hill.

Window conversion

Ventilation was not a requirement, but the windows had to be able to be opened for cleaning purposes, as already mentioned. And since the room in the starting tower is unheated, the windows were triple glazed. For this size and the heavy weight up to 160 kg, as well as the climatic constellation at this height, the Bietsch company used MACO's MULTI-MATIC hardware with the double-rooted pivot post and pivot bearings. This hardware configuration is perfect for heavy timber windows in triple or quadruple glazing. Due to the sealing lip on the double-rooted pivot post body, there is no gap in the seal at the rebated scissor stay support arm, which reduces the formation of condensation. The end result fills all those involved with pride and makes the flying ski-jump hill the new landmark in the region and in the world of flying ski-jump fans. ●

¹ Fédération Internationale de Ski, based in Switzerland, enacted rules for behaviour on ski slopes and when ski jumping



Compared to ski jumps, flying ski jumps are particularly large ski jumps for jumps over 200 metres.

A hill is measured in HS (Hill Size), which is the distance between the start platform and the point of the jumping slope, where the slope is still at 32 degrees.

Oberstdorf has a HS of 235 metres. The construction point (K-point) of a jump hill is the point of the hill at which the slope becomes flatter.

Start platform height	3.33 m
Total start tower height	72 m (highest point above terrain)
Approach angle	39 degrees
Approach length	122.5 m incl. start platform
Number of steps	58
K-point	200.0 m
HS	235 m



TECHNOLOGY IN MOTION



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