SHERPA news

MAGAZINE
06/2020

eduCARE
When this Villach hotel was extended, timber as a construction material dominated the entire design concept.

BEARS EVERY LOAD
Power Base – the column base of the future

SOUND INSULATION IN TIMBER CONSTRUCTION
Active and passive insulation from SHERPA

GENERATIONS OF CONSTRUCTION WITH TIMBER
An interview with Prof. Schickhofer

Welcome to the **World of SHERPA**

The leading technology in standardised timber connector systems

BENEFITS

- Security of an approved system
- Multi-functional in strength and application
- Standardised and simple calculation
- A high degree of pre-fabrication
- Quick assembly

Whether for use in furniture construction, interior fit-out, conservatories, balconies, stairways or structural timber construction: standardised SHERPA connectors enable construction companies everywhere to build impressive timber constructions. The connection concept comprises a few components that are combined in a single system

EDITORIAL

Building with timber means building responsibly.

Following years of growth and dynamic development, we now face a quite particular challenge. No one would have thought it possible that a little virus could change our lives overnight to an almost unprecedented extent. It is precisely these past few weeks that have shown us that we need to preserve nature and our environment if we are to secure a future worth living for mankind. One of the biggest challenges today and in the future is to handle our finite resources carefully and considerately. At SHERPA, we believe the use of timber offers one of the biggest opportunities for sustainable construction. Timber not only absorbs CO2 and offers many technical advantages, most importantly it is a recyclable product with probably the best ecological balance of any building material used.

Development, innovation and performance
SHERPA system solutions allow timber constructions to be built even more efficiently and cost-effectively. We work continuously on improving our assembly and production processes, and so play our part in the increased popularity and performance of timber constructions. With the SHERPA magazine, we want to give you an understanding of our visions, philosophies, but also of our partnership potential. Many thanks for your confidence in us.

Vinzenz Harrer
Managing Director of
SHERPA Connection Systems GmbH

SHERPA Connection Systems GmbH
Badl 31, A-8130 Frohnleiten

SHERPA-HOTLINE:
Service: +43 3127 41 983 - 0
Technical Support: +43 3127 41 983 - 311

office@sherpa-connector.com
www.sherpa-connector.com

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SUCESS STORY

eduCARE: Futuristic construction on Lake Ossiach

In 2019, the 4-star hotel in Treffen on Lake Ossiach was extended, upgraded, and given a modern facelift. When joining timber and metal, the contractors trusted SHERPA connectors.

In 2019, the 4-star hotel in Treffen on Lake Ossiach in Austria was extended, upgraded, and given a modern facelift. When joining timber and metal, the contractors put their faith in SHERPA connectors. Upgrading a hotel while keeping it open for business – words that would generally set alarm bells ringing for construction companies, architects and everyone else concerned. But in the case of the eduCARE hotel in Treffen on Lake Ossiach, the routine, many years of experience, and all the parties' enduring desire for innovation and passion for timber construction played to the strengths of the builders. Franz Roth as lead contractor, the architects Ronacher and the structural engineer Robert Bader, were responsible for ensuring that eduCARE was completed on schedule following an intensive planning phase and meticulous implementation. "Delivering different sections of the building where construction work was taking place simultaneously was also a particular challenge," says Franz Roth.

"The construction project as a whole was highly complex. Both the restaurant and the kitchen had to be extended, and

"WE SEIZED THE OPPORTUNITY TO GIVE THE WHOLE PLACE A COMPLETE FACELIFT IN TIMBER."

ARCH. DI ANDREA RONACHER,
ARCH. DI DR. HERWIG RONACHER

the wellness area upgraded, and a third new accommodation wing created," continues the architect Ronacher.

Connected to timber construction

When connecting the timber components, they also relied on SHERPA timber connectors: "Our company greatly values tradition as much as innovation – for me, SHERPA products are the perfect blend of these values," says Roth. During the implementation, the SHERPA connectors were partly pre-assembled in the factory, or installed on site using templates. "Both variants worked perfectly," explains Roth passionately. L-series connectors were used in the connecting corridor in the form of a sine wave, and in the façade with its timber slats construction.

Partner for heavy loads

The connectors are partially visible, and can bear loads of between 1,200 and 2,000 kg, taking into account all the safety parameters. "SHERPA is proud to be part of this innovative timber construction project. It was the perfect opportunity for our whole team to prove the great efficiency and performance of our SHERPA system across the planning and delivery phases," explains Vinzenz Harrer, Managing Director of SHERPA, with pride. The benefit of SHERPA products for this project came in the shape of systems thinking.

‹ eduCARE: timber as a construction material in its natural environment

› Nature: outside and in

SHERPA timber connectors were used across the entire facade construction. A total of 180 pairs of SHERPA L30 and L50 connectors with 8 x 100 mm zinc and nickel-plated special screws were used. >

This systems thinking is embedded in the connectors themselves – in the form of an operating principle that covers the entire spectrum of services. This also includes a high-quality system screw with a zinc-nickel plating for service class 2 according to EuroCode 5. Systems thinking is embodied across every phase of a project – from advice and supporting dimensioning through to delivery – benefiting customers in terms of security and transparency.

Closely connected

Right from the initial design concept by the architects Ronacher, the creation of a connecting gesture for all four buildings - a passageway in the form of a sine wave from the conference area to the new accommodation wing to the east - was central. This connection was evident throughout the entire project, and ensured the satisfaction of the clients and their guests. And they can all rest assured that the decision for timber as a construction material is a decision for the future.

"BOTH VARIANTS WORKED PERFECTLY."

FRANZ ROTH ON THE POSSIBLE USES OF SHERPA CONNECTORS

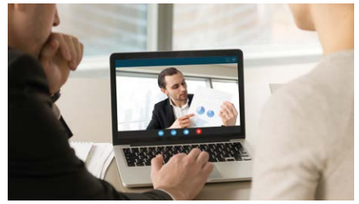
^ **Timber in the seminar room creates a natural learning environment**

SHERPA IN TIMES OF THE CORONA VIRUS

HOW WE ARE GOING ABOVE AND BEYOND IN THE CRISIS

HOW WE'RE REACHING OUT

In common with many other businesses, this new situation has forced us to focus more on further developing our internal and external communications. On average, the journey time to and from our customers and partners took between 1.5 and 2 hours. Even in these times where movements are restricted, meetings can take place provided safety measures are observed – it's just that now, and in the future, we will question the necessity of every journey. This will mean big savings of cost and time both for you and for us.

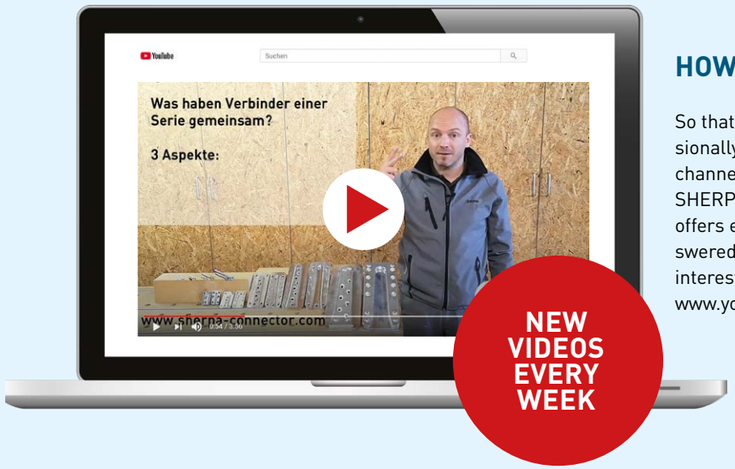


HOW TO REACH US ONLINE

What until recently was inconceivable, with COVID-19 has become a reality: the majority of our staff switched to working from home, and are conducting meetings and training sessions from there. Digital contact with our customers has also become the norm – we now advise prospects not just by telephone or email, but in video conferences as well.

And although personal contact is very important for many, the new way of communication has won over people who would never have previously embraced it. They have become adept at making video calls or using other online communications tools, and even appreciate the added value they bring. Because ultimately, it became the only way to maintain any contact at all. Plus, it saves time and protects the environment by cutting down on car journeys.

So: you can now contact us via Skype, Teams, WhatsApp, Facebook or Zoom. We'd love to hear from you



HOW TO FIND US ON YOUTUBE

So that we can answer your frequently asked questions professionally at any time, we are gradually expanding our YouTube channel. It's a simple source of basic information about SHERPA products as well as news about developments. It offers existing customers quick assistance with their unanswered questions, and promises exciting input for those interested in the world of timber construction. Take a look: www.youtube.com/SHERPAConnector

Lunghammer, TU Graz

INTERVIEW

Timber: Now and in the future

Univ.-Prof. Dipl.-Ing. Dr. techn. Gerhard Schickhofer is head of the Institute of Timber Engineering and Timber Technology at TU Graz. Over recent decades, he has received several prestigious research awards. In this interview we talk to him – in writing and sadly not in person due to the coronavirus crisis – about past achievements and future challenges in the timber construction industry.

How do you see the timber construction industry developing in the years ahead?
Schickhofer: As far as I can judge, development in the timber construction industry was in great shape before the outbreak of the coronavirus crisis, and there was an upward trend towards the increased use of timber in construction. Right now, it's very hard to give a prognosis, and I don't think it would be a reliable forecast. But I think regional markets – following the motto: 'think global, act local' – could regain significance.

What problems do you think the timber construction industry is facing currently?
Schickhofer: If established markets - both geographically and in terms of content - dwindle, one option would be to devote more attention to the historically developed and traditional areas of application for timber, and to refocus on these. In addition to the industrial sector, the commercial, handcraft-oriented timber construction could regain importance. If you think about it, in Austria alone there is a building stock of around 350,000 units that is more than

100 years old. Renovating, redeveloping and reclaiming these buildings - especially the attics - could represent an unexpected field of activity.

You were heavily involved in the development of Cross-Laminated Timber (CLT). What are the key benefits of CLT and how has the demand for it developed?
Schickhofer: CLT is - like bar-shaped glued laminated timber (GLT, or glulam) - an extensively effective product made up of plank laminations, which complements the product portfolio for engineering timber construction. It made large-format and load-bearing surfaces a reality in timber construction. Recent years have seen double-digit growth rates and a global increase in interest in this product, and there are now around 80 production sites worldwide. Whether this trend will persist in the future will depend on whether and how quickly new markets can be found.

What changes do you expect on construction sites – including taking into account the ever-increasing degree of prefabrication?
Schickhofer: That of course depends on which buildings we are looking at. Where standardisation and modularisation are feasible, there will be a trend towards prefabrication thus the joining of prefabricated elements on the 'assembly site'. This trend is already evident in home, office, school and hotel buildings, for example.

"REGIONAL MARKETS COULD REGAIN SIGNIFICANCE."

GERHARD SCHICKHOFER
TU GRAZ

What connection techniques might be used on construction sites in the future?
Schickhofer: Connection technologies and systems will always be very important in timber construction. Which of these would ideally be used where depends on the overall demands on the structure on the one hand, and the question as to what stresses will act on a connection on the other hand. The so-called 'tripod' of connector technology – load-bearing capacity, stiffness, ductility – helps in deciding what choice to make. But we are also seeing an increase in the use of standardised system connectors.

What role might timber play against the background of increasingly complex demands on urban architecture?
Schickhofer: I would prefer not to talk about 'urban architecture' – with the emphasis on 'urban' – in the context of timber construction. The undeniable global urbanisation trend we are still seeing could also easily trigger a counter-trend. With the portfolio of timber products and the available connection technology, any architect with a passion for timber construction can implement their ideas in a timber structure – whether in a city or in the countryside.

What significant developments has the timber construction industry experienced in the last 10 to 15 years?
Schickhofer: Two developments have significantly influenced and shaped industrial timber construction. The technology of 'self-boring timber screws' and the widespread product 'cross-laminated timber'. It's also worth mentioning the product developments in the field of 'veneer-based engineered timber' from the hardwood species beech and birch, and the trend towards factory prefabrication combined with an increased use of system connectors, which I already talked about.

Marcus Wallenberg Prize (MWP), www.mwp.org

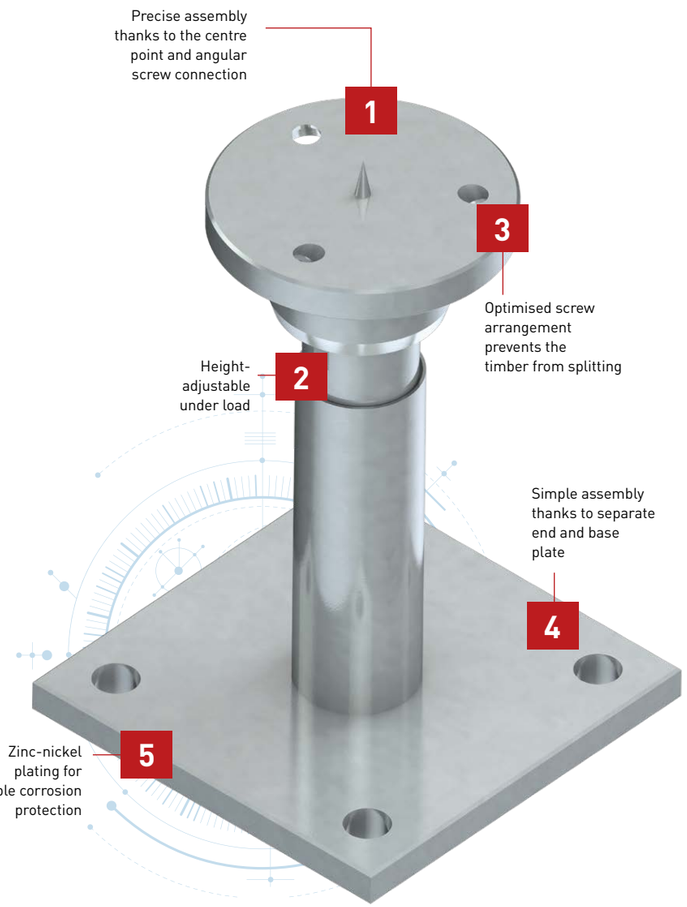
PRIZES AWARDED TO GERHARD SCHICKHOFER

1995 & 1997: Josef Umdasch Research Prize
1998: FFG Prize for the approval of CLT
2000: Holzbaupreis Steiermark (Timber Construction Prize Styria)
2002: 1st national CLT guideline
2019: Marcus-Wallenberg Prize for ground-breaking research

POWER BASE

Bears every load

It has for a long time no longer been enough for a column base simply to be stable. What sets the Power Base apart from other pillar supports.



Whether in the garden, for carports, hallways or interior timber constructions: master builders, civil technicians and engineers have long been working with column bases, counting on them as a connecting element between concrete and timber. They stabilise the supporting structure and prevent the bottom side of the timber from coming into contact with moisture. Increased weathering would cause it to lose its load-bearing capacity - a situation that needs to be avoided.

Optimal assembly
The Power Base has been in use as a column base since 2013, but it still holds some surprises in store compared to the previous version. The biggest benefit is the separate assembly of the end and base plate. This enables the plates to be secured to the timber and the respective substrate (generally concrete). They are then inserted into each other - a custom-made cone was made for this purpose - and fixed with a specially developed union nut. The height can also be adjusted, even under load, to set the optimal height of the assembly.

Optimal dimensioning
It takes experience and intuition to develop a product like this. Today, measurements are often carried out using 3D simulation. But in this case, the SHERPA developers deliberately decided against this in favour of an empirical approach. A prototype was first produced as the basis for further calculations, design and processing, using common sense and instinct. Following subsequent tests, appropriate improvements were made and the dimensioning was adjusted. This approach is highly valued by customers. They are grateful for this kind of development work, because the product reflects an understanding of the practical demands in the workshop and on the construction site.

BENEFITS

- Save time on the construction site thanks to the separately mountable end and base plates
- Detachable connection thanks to a specially manufactured cone closure
- Height-adjustable under load
- Zinc-nickel plating as corrosion protection for optimal protection against ageing and weathering
- Separate end and base plate
- Empirical development using our own test configuration

Optimal protection
The Power Base also promises unique corrosion-protection. All parts – including the special screws – are coated with a special zinc-nickel plating. This ensures a long service life in addition to the high load-bearing capacity.

Assembly: End plate visible

Assembly: End plate invisible

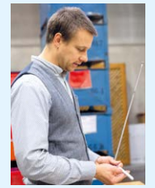
SHERPA Power Base

	Max. measurement value of the compression load-bearing capacity		
Height adjustment range	**95 kN**	**120–130 kN**	**140 kN**
M 90–130 mm		M 125 F	
L 150–200 mm		L 125 F	L 140 C
		L 130 C	
XL 200–300 mm	XL 95 F	XL 120 C	XL 140 C

SHERPA Power Base: a carefully considered concept

ETA-15/0540

Easy and secure assembly using SHERPA special screws



Tie in Timber
info@tiein-timber.ca
tiein-timber.ca

Vincent Remer is with Tie in Timber your contact in North America for SHERPA connectors

When did you come in touch with SHERPA for the first time?
I got to use the standardized hangers for the first time in 2004 as a timber framer in central Europe. The concept of prefabrication is almost as old as the trade itself. Preparing the parts, marking and assembling them on site has been a well established approach for several hundred years. SHERPA hangers are the further advancement of this tradition responding to the changing requirements of contemporary timber construction.

Looking back at your experiences in structural design, what convinces you about SHERPA?
he design process often is an iterative process where loads and load path have to be adapted considering changes in the design. SHERPA hangers offer consistency throughout all sizes. Edge distances for all hangers are equal and each series only uses one type of screw. With these conditions in mind a connection can quickly be adapted to any design changes. Basic principles such as using fully threaded screws to their best capacity by inclining them ensure efficiency and provide the comfort of a system that was designed understanding timber and its properties.

PRODUCT PRESENTATION

Shhh

Sound insulation in timber construction

Noise is a nuisance. During the day it gives us headaches, and at night it prevents us from sleeping. That in turn can lead to stress, hearing damage or high blood pressure. And because we increasingly live in urban areas with high levels of ambient noise, it is becoming more important to design buildings with sound insulation. For the sake of our nerves and health.

In sound insulation, we differentiate between airborne and structure-borne sound. In the first case, vibrations are transmitted via the air, for example by speech, music or traffic noise; in the case of structure-borne sound, the noise is the result of mechanical vibrations. This could be noise from installations or elevators in the building, for example. It also includes the noise of footsteps from neighbours above or next to us.

Better quality of life with the right bearing

Particularly in construction projects where commercial and office space meets residential units, carefully considered sound insulation is essential in promoting the quality of life of the residents and the performance of employees in the building in equal measure. Timber construction is far lighter than concrete construction, and therefore depends in many cases on dampening the vibrations between components. This dampening can be improved enormously by using the right bearing made from high-quality materials. SHERPA soundproofing bearings provide support in active and passive insulation, foundation decoupling or vibration protection.

"Professional sound insulation elements can hugely increase quality of life in timber buildings."
Anja Reisinger-Vorraber

Regufoam soundproofing bearings

Regufoam is a moisture-proof and rot-proof mixed cellular polyurethane foam that is produced in 12 different strength levels. These varying degrees of hardness are identified by colour. Together with the standard thicknesses of 12.5 and 25 mm, a wide range of bearing frequencies up to 8 Hertz can be achieved

Benefits:
- Fast delivery
- Time and cost-saving on the constructions site
- Optimised and cut to your specifications
- High degree of elasticity and long service life
- Static application area from 0.011 to 2.50 N/mm², dynamic application area up to 3.5 N/mm²
- Very low amplitude dependence
- Proven long-term behaviour and excellent durability

bi-trapez bearings

Bi-trapezoidal bearings insulate structure-borne sound and vibrations to a large degree. They consist of quality-controlled elastomer based on the synthetic rubber ethylene-propylene-diene copolymer (EPDM).

Benefits:
- Simple processing
- Allows the absorption of high loads
- Parabolic load distribution
- Static range of application (optimum) from 2.5 to 15 N/mm²
- High vibration and structure-borne sound insulation values and high fatigue strength

Like SHERPA and win

Bag yourself one of three top quality Deuter hiking rucksacks worth 100 euros for your next trip out into the great outdoors.

Here's what you need to do:
> Find us on Facebook under SHERPA Connector
> Click on 'Like' and don't miss out on any of the latest news and videos from SHERPA
> Like the competition post

The closing date is 31 August 2020.

www.facebook.com/SHERPAConnector

This competition has no connection with Facebook and is in no way sponsored, endorsed or organised by Facebook.

Symbolfoto

2 mill.

Our customers have already installed two million sets of SHERPA connectors worldwide. That means more than two million experiences and new ideas for innovations.

COMPANY

We are SHERPA

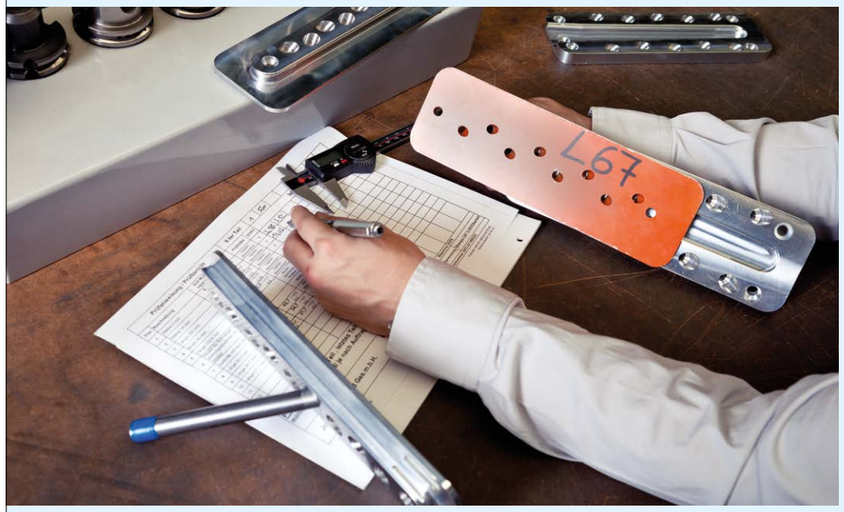
Timber construction is economical and functional, but above all environmentally and climate friendly.
It will not only be CO_2 emissions that occupy us in the future, but also ecological and economic cycles. Used sensibly, timber creates a cosy feeling and a good ambient climate, saves energy, and becomes a part of nature once more after use. SHERPA supports planners, technicians and craftsmen in the sensible use of timber and thus also makes a major contribution to a liveable future for our society. The development of our SHERPA technology has redefined system connections in timber construction, and paved the way for efficient construction using timber. Many valued partners collaborated on the development. A special thanks goes to the team around Prof. Gerhard Schickhofer (TU Graz) and DI Manfred Augustin of the HBF ('Holzbauforschung' timber research institute).

Vinzenz Harrer
Managing Director

RANGE

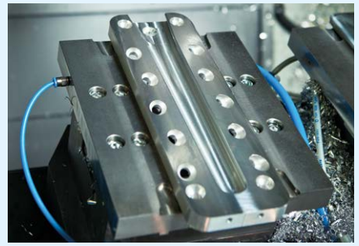
The strengths of our technology lie in the systematic connection of timber construction components. This is why we have specialised in connecting main and secondary beams, joining large-area panel materials (CLT) and connecting foundations with secure load-bearing capacity.

SHERPA's specialist field is connecting corners and edges.



PRODUCTION

Our customers build structures some of which need to remain efficient and stable for generations. So we don't take any risks, and make our products safe. We use very high-quality base materials, and also ensure sufficient flexibility in the geometry.



Support

Whether via email, phone call or video conference – for SHERPA users there's always a direct line to our experienced support team of designers and implementers.

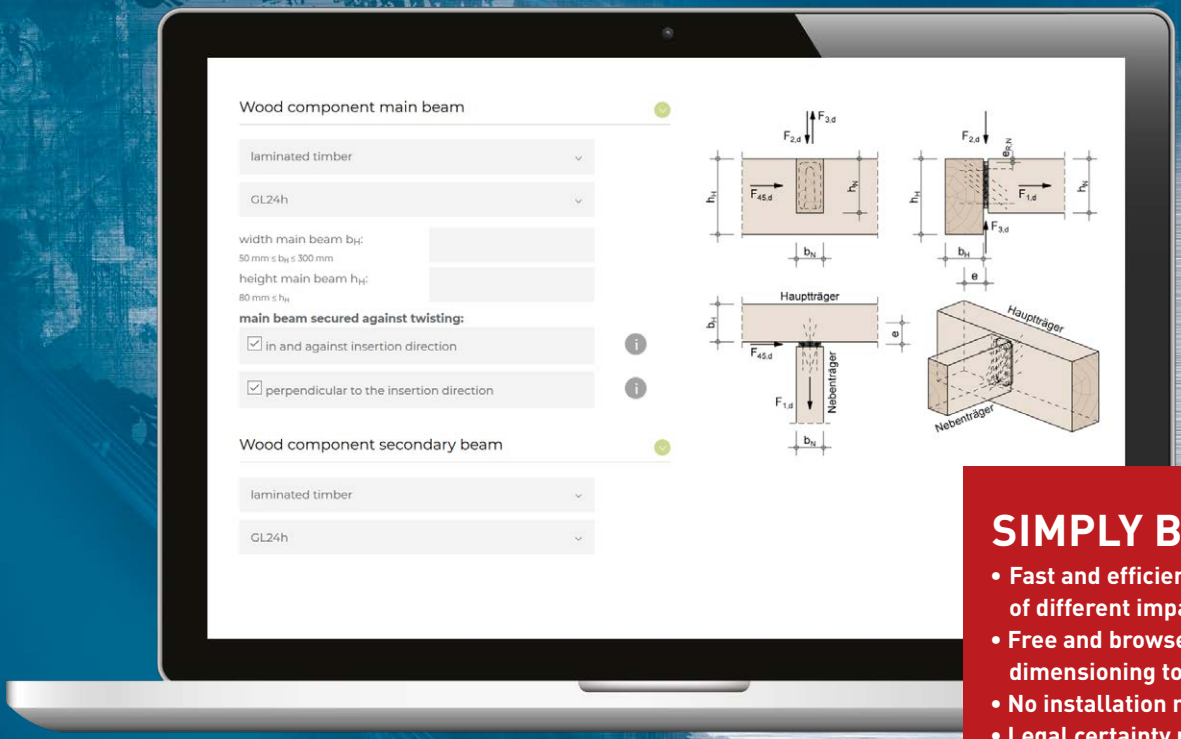
DI (FH)
Josef Kowal

Anja Reisinger-Vorraber

80

per cent export share in over 30 countries. You'll find SHERPA wherever timber is used in construction. Although the focus is still on the DACH region where timber construction is a tradition, there are now constructions even in Hawaii built with SHERPA system connectors.

The perfect tool
for professionals



SIMPLY BRILLIANT

- **Fast and efficient consideration of different impacts**
- **Free and browser-based online dimensioning tool**
- **No installation required**
- **Legal certainty provided by ETA and standard**

You will find the dimensioning tool at:
www.sherpa-connector.com

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SHERPA Connection Systems GmbH
Badl 31, A-8130 Frohnleiten

SHERPA-HOTLINE:
Service: +43 3127 41 983 - 0
Techical Support: +43 3127 41 983 - 311

office@sherpa-connector.com
www.sherpa-connector.com