

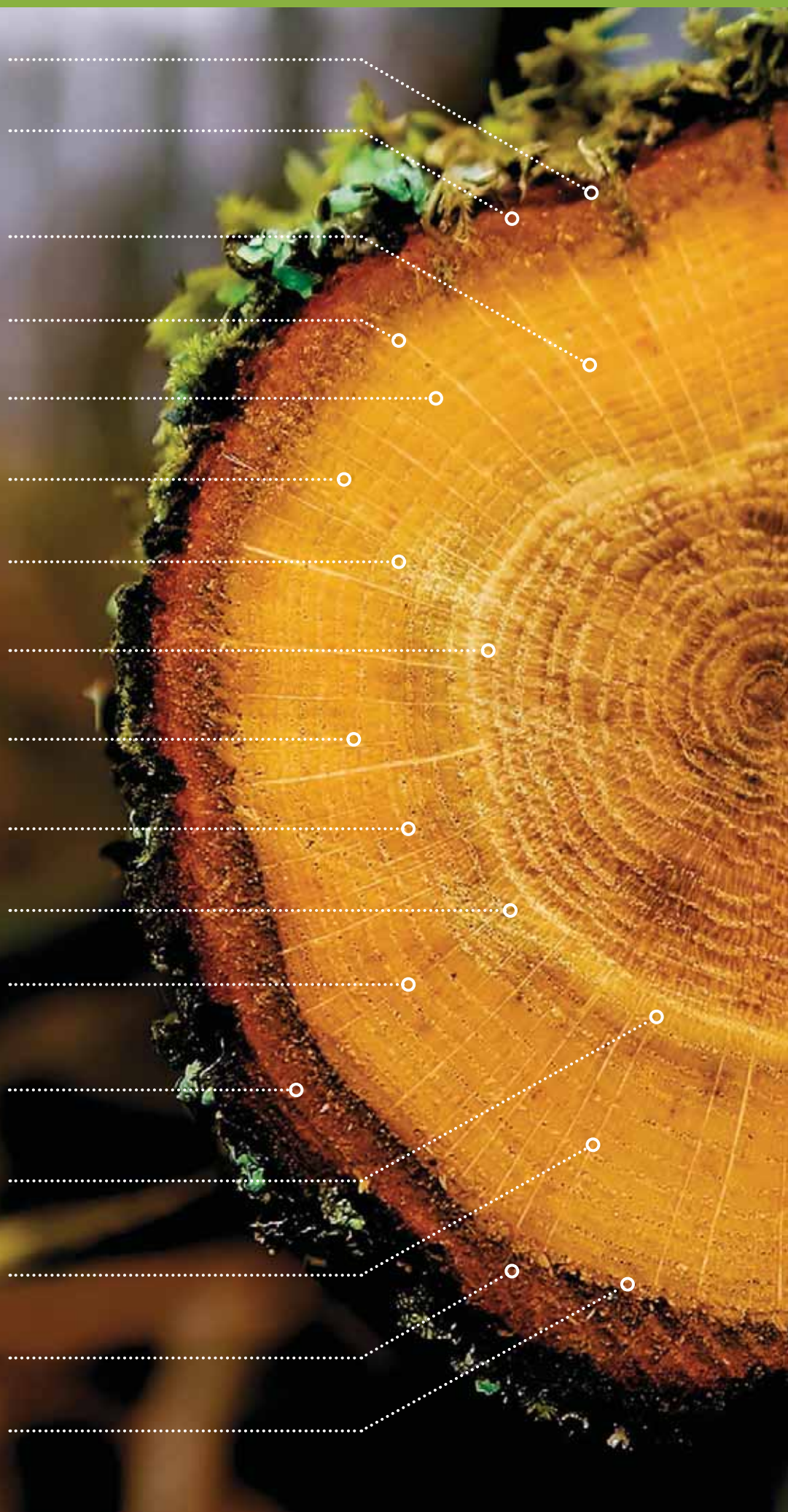
NUR-HOLZ

ROMBACH

The solid timber construction method
from the German Black Forest

WOOD AT ITS BEST

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THE COMPANY ROMBACH

Amid the nature park Middle Black Forest timber products are manufactured for housing and commercial construction. Our traditional business is setting the bar regarding timber construction from this location since over 80 years ago. Innovation, traditional craftsmanship and the utmost reliability make us one of the leading companies in timber construction.

Rolf Rombach is head of the family business in the third generation. With the pioneering invention of **NUR-HOLZ** wall, ceiling and roof panels he opens up new possibilities in housing and commercial construction.

Internationally successful

We were already able to fulfill the dreams of hundreds of satisfied **NUR-HOLZ** clients world wide. From one to multi-family houses over daycare centres up to hotels and commercial buildings. There are no limits in creativity, any design can be achieved.



REGIONAL AND NATURAL

Only the best timber is selected from the native forests for the **NUR-HOLZ** manufacturing process. Slowly grown spruce, fir and beech from sustainable timberland in the Black Forest are harvested outside of their growth period. In chosen sawmills this wood is processed to trimmed timber.

Gentle drying

After the trimming the timber is stored outside over months under a roof, protected from weather conditions, so it can lose tension to prevent it from breaking and twisting in later processes. Afterwards the timber is dried in a most modern and gentle procedure to an optimal degree of humidity for construction, ranging between 10-12%.

Entirely untreated

Due to this degree of quality and low humidity the timber is exceptionally durable and provides natural protection against vermin and fungi, without the need for a protective coating or chemical additions.

Renewable material

In contrast to all other construction materials wood is growing back constantly and does not have to be manufactured. Additional to that the growth of a tree does not produce any harmful substances or energy costs.



TRADITIONAL CRAFTSMANSHIP & MODERN MACHINES

In the **NUR-HOLZ** process highly trained timber construction specialists are responsible for the classification, sorting and layering of the individual tiers of timber in the later **NUR-HOLZ** panels.

Unique technology

The manufacturing of the up to 2.90 m x 8.60 m big wall, ceiling and roof panels is done with the newest CNC-machines. The solely for our purposes adapted machines are capable to create even complex forms mostly in an automated manufacturing process. The bolting, cutting and exact milling of the panels is done by laser control. The last step of production is the refinement of the surfaces through the grinding work.

As the leading timber framing company we can adapt the **NUR-HOLZ** panels for the combination with other components as well as cut different timbers that are required for your construction to make them accurately fitting.

Energy self-sufficient production

For us ecological construction starts with the environmentally friendly fabrication. No waste is generated during production – all wood scraps are used for our own closed energy cycle. The glue and chemical free processing of timber we are using is eliminating any chances for environmental and health hazards and is maximally energy efficient.



BUILDING WITH SOLID TIMBER

A future-proof material with intrinsic value

The solid timber building method, using wood and nothing else, has proven itself since thousands of years. There are solid timber buildings constructed several centuries ago still standing in the most climatically adverse regions of the world – build from a material that is permanently and sufficiently available.

The Black Forest construction culture is combining a long tradition with the solid timber construction method. Tradition and modernity joined: That is **NUR-HOLZ**.

The Black Forest farmers of the 17th century were living in solid, thatched timber houses – due to the robustness of the construction materials many of them are preserved till today (see image above).



Solid timber house with NUR-HOLZ panels in Italy

OUR NUR-HOLZ HOUSES

Convincing all along the line

NUR-HOLZ houses make for an exceedingly short construction time, little repair and maintenance expenses, a low energy consumption and a long life cycle of the building. All of that is achieved without any legacy of pollution and consistent intrinsic value. Based on that the **NUR-HOLZ** construction method offers a unique ecological and economical reliability for the future.

The solid **NUR-HOLZ** panels are serving as an energy storage, reducing the energy expenses up to the half compared to conventional construction methods. Solid timber is the ideal building material for decades, even centuries. At the end of the utilization phase, meaning after deconstruction, the material turns into a new resource through composting. **NUR-HOLZ** is an ecological valuable solid timber system, which is completely carbon-neutral. Two tons of CO₂ per cubic metre wood can be saved, creating a positive effect for environment and climate.



LIVING HEALTHY IN TIMBER HOUSES

NUR-HOLZ buildings „breathe “ and can be constructed and furnished without chemical influences. They are ideal for allergic people and all others that wish to live healthy.

The NUR-HOLZ method is convincing through its many and varied benefits

The appealing smell, the warm and cosy atmosphere, and the ideal air humidity in the natural wooden surroundings are a source of life not just for body, mind and soul of allergic persons, but for everybody else who values a healthy living and working environment.

An open-pored and breathable wooden surface is catalysing smell and harmful substances. The keen odour of the essential oils, the typical smell of wood, is animating the inhabitant to breathe deeply.

The positive effects on the human organism are already scientifically proven. In studies of the Human Institute Graz it has been shown that a natural wooden environment is calming humans. This results in less stress hormones being released which has the effect that the heart is beating up to 8.500 times less a day and it is aiding towards a more restorative sleep.



This is improving our efficiency, creativity and zest for life.

Another aspect is the anti-bacterial effect of wood, which is improving general hygiene in the everyday life. According to current studies bacteria does not survive longer than 24 hours on dry wood surfaces, while they are rapidly breeding on synthetic surfaces.

These are the means by which the natural material wood is doing far more than increasing our wellbeing – wood is having impactful positive effects on our health.





ENERGY EFFICIENCY STORING HEAT, SAVING COSTS

In contrast to conventional construction methods or the modern lightweight construction **NUR-HOLZ** buildings are providing the highest heat storage capacity using the solid timber panels.

A long cool down time and a balanced indoor climate without major changes in room temperature are guaranteeing for low operational costs for heating and cooling at the same time.

A heater within a cold room with concrete or brick walls always has to heat up the stone first while timber walls and ceilings are reflecting the heat immediately. This provides a more comfortable feeling and is saving costs for heating.

The walls made from our **NUR-HOLZ** panels can be considerably thinner compared to usual construction elements and have the same or even better results regarding heat insulation. This way the passive house standard is already achievable with a wall thickness of only 35 centimeters.



No matter if as a plus energy house, passive house, energy efficient house or a low-energy house: **NUR-HOLZ** is providing the best thermal insulation – against the cold during winter and against the heat in the summer.

With our construction panels created completely from timber we are setting new economical standards. In comparison to other relatively short-lived thermal insulation systems **NUR-HOLZ** walls do not lose their insulation and protection capabilities in decades to come.



The NUR-HOLZ wall while being taken down from flame impingement at 1.000° Celsius



After one hour of flame impingement only slight burn-off at the surface



After flame impingement and before extinguishment only minor fire activity





FIRE SAFETY

WOOD PROTECTS FROM FIRE

If someone tries to light big solid wooden logs, whether with a lighter or with matches, they are more likely to have their fingers burnt than to burn the wood.

Solid NUR-HOLZ panels are showing an exceptional fire protection with a combustion rate of only 0.7 mm/min, even without using additional means of fire protection.

Compared to conventional construction methods the capability to resist fire is significantly higher. A common brick wall is absorbing the heat and transports it directly to the other side of the wall. A concrete wall under flame impingement at 1.000° Celsius has an increase in temperature, on the side not exposed to the flames, from 20° Celsius to 500° Celsius within only an hour. Wallpaper and drapery on the back side of the wall are catching on fire very quickly due to this heat.

In a fire safety test carried out in Japan NUR-HOLZ wall panels with a thickness of 20 cm have been flame impinged under 1.000° Celsius.

After a full hour the temperature on the back side of the wall only increased by 2° Celsius. NUR-HOLZ panels with a thickness of 30.5 cm are capable of resisting fire up to 140 minutes. The possibility to enter or escape the building without the danger of it collapsing is still ensured during this time period.

As a result of the burning process of the wood charcoal is produced, providing a natural insulation layer that prohibits it from additionally heating up. Due to this the timber stays stable and even charred timber baulks are capable of bearing a good amount of weight, while steel would have already lost all of its carrying capacity.

Common timber building methods are prohibited in Japan due to the high risk of earthquakes. NUR-HOLZ though was able to convince all across the board – be it earthquake protection or fire safety.

As you see there is no reason to be scared of fire, since our NUR-HOLZ panels are also safe and solid in case of fire.



NUR-HOLZ INFINITE POSSIBILITIES

With wood uncountable designs are possible. Characteristic rooms that emanate warmth and security. Lively and classy, antique or minimalistic. Or entirely natural – also in harmonically combination with other materials like clay or mineral plaster, floor tiles, wallpaper, drapery and much more. The wooden surfaces can be treated with different kinds of wax, glaze and leach to change the woods colour.

Walls, ceiling and floor made from timber offer countless possibilities for interior design and construction – just as common construction materials. However when you construct without the use of chemical plaster and colours the healthy atmosphere can be preserved and nature is part of your home.



NUR-HOLZ FUTURE-ORIENTED CLIENTS

NUR-HOLZ - Living and working, learning and life with solid timber

Future-oriented clients more and more often decide towards sustainable construction. **NUR-HOLZ** does not only offer guaranteed quality, but also enables the highest level of flexibility – for example with self-supporting ceiling panels and statically self-supporting outside walls. No matter if you want to construct a new building or augment or extend an existing one – there will not be a problem with **NUR-HOLZ**. Also multi-level residential and commercial buildings, schools, kindergartens, hotels, stores, restaurant and even churches, town halls or sport facilities can be realised with **NUR-HOLZ**.

There are not just ecological factors showing the advantages of getting solid timber into city centres and modern development areas. Also strong economical facts are proving the benefits of **NUR-HOLZ** solid timber panels: Distinctly lower wall thickness compared to common construction methods, which increase the valuable usable space. The increase in usable space counts up to 10 % and is either reducing one of the most important cost factors or increasing the usable room.

A pre-fabrication process unrelated to the seasons facilitates a faster construction of your house, is saving building and maintenance costs and is mitigating the risk of construction defects. With the lowered or non-existing energy demands you are lowering your operational costs.



SOUND INSULATION POSITIVE ROOM ATMOSPHERE

Wood has the most marvellous acoustic properties.

The most beautiful and invaluable music instruments are made from wood, with resonating bodies that turn sound waves into captivating tunes. On the other hand timber is used in concert and lecture halls for its pleasantly sound absorbing properties.

Also in the rooms of a **NUR-HOLZ** house made purely from solid timber there is almost no echo. The soft wooden surfaces absorb the acoustic waves and are additionally insulating exterior noise.

Especially within openly designed living and working environments this is a positive addition to the room atmosphere – this also being the case in schools, day-care centres and hotels

Even sound protection walls can be created with our **NUR-HOLZ** panels. Here is an example: A 30 cm wall is absorbing 63 dB.

Appropriate floor structure constructed on **NUR-HOLZ** ceiling panels are helping to effectively absorb low frequency footstep sounds.



THE NUR-HOLZ DOWEL A UNIQUE FASTENER

Old technology rediscovered

Our ancestors already knew how to create dowels from timber. We used this procedure to develop a new kind of wooden dowel.

The innovative and patent-registered construction method with the fully threaded locking dowel made from beech wood that we developed is providing unique safety for the layering of boards.

During the process of creating the **NUR-HOLZ** solid timber panels the board layers are arranged in crosswise and diagonal manner at the assembly table. Afterwards a blind hole is drilled into them and the threaded locking dowel is screwed in. The dowel is absorbing the humidity of the surrounding timber board layers and is swelling in its position, which connects it permanently with the surrounding timber.

The result of detailed testing is that one threaded ring of the threaded locking dowel made from solid beech timber by **NUR-HOLZ** has an extraction value of 100 kg.

NUR-HOLZ

WALL, CEILING & ROOF panels

The remarkable aspect of **NUR-HOLZ** elements is that the timber layers are not connected with glue or metal, but only with our timber dowel made from beech. The surface of the wall can be created with high visual quality, on request with different woods (for example the Swiss stone pine, matured timber, white fir), or with non-visual quality. The non-visual quality is suited best for further processing of the surface with for example clay plaster, floor tiles, wallpapers and many more. The timber dowels are not visible in the wooden surface, which is connected through tongue and groove.

The timber layers on the inside are made from carefully processed pinewood which is aligned in different directions (horizontal, vertical and diagonal).

These are screwed together without deformation or stretching and are serving the statics, insulation and fire protection.

The **NUR-HOLZ** elements are manufactured individually with varying thickness and carrying capacity, depending on their use as external or internal wall, as ceiling or roof panel.

Because of their high quality **NUR-HOLZ** elements are perfect for diffusion opened, single material construction methods.

The individual elements are pre-created and custom-fit, including windows, door openings and are prepared for electric installation.

Example NUR-HOLZ panel

Inner board layers with tongue and groove joint. High and non-visual quality possible, as well as different kinds of wood.

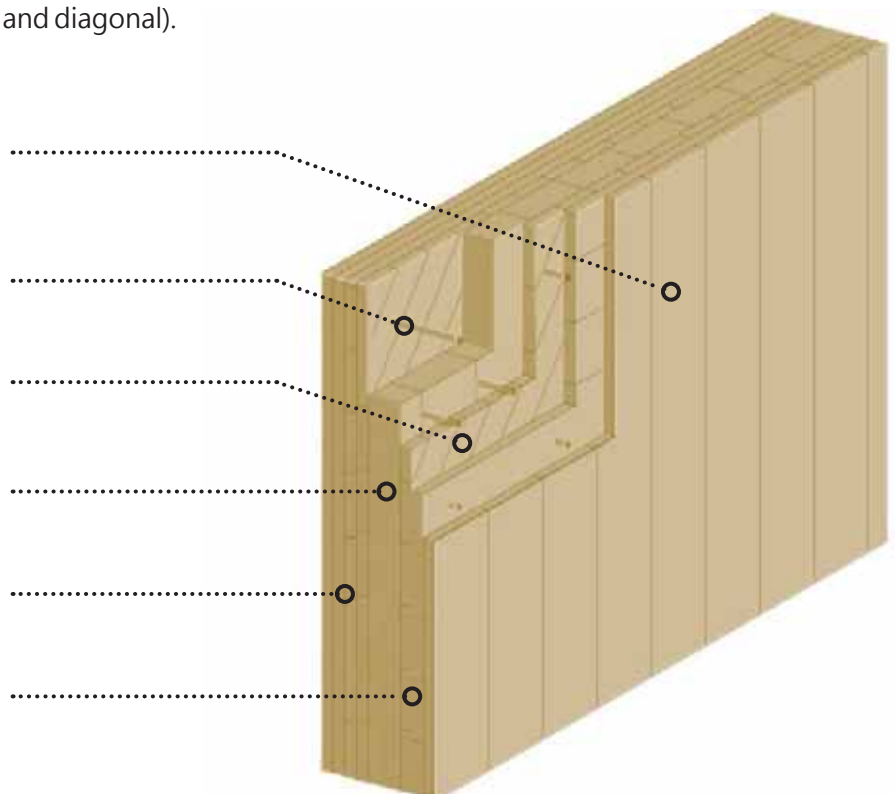
Beech timber dowels connect the board layers. They are not visible from the outside.

Stiffening board layer 45 degree statics, insulation and fire protection.

6 to 8 cm thick vertical board layer. Load-bearing core.

Diagonally stiffening board layer statics, insulation and fire protection.

Horizontally stiffening board layer statics, insulation and fire protection.





NUR-HOLZ FOR ALL ARCHITECTURAL REQUIREMENTS

NUR-HOLZ is offering internal and external walls with a thickness ranging between 12.5 cm to 35.0 cm, as well as ceiling and roof panels between 17.9 cm and 20.8 cm and a span of up to 6.0 m. The ceiling panel is also often used as a floor.

The specifically for the **NUR-HOLZ** panels designed connections for walls and ceiling are providing an airtight cover for the solid timber shell and ensure an easy and safe construction.

All needed connections are automatically calculated according to your planning.

You can find further technical details like data regarding fire safety, weight, static and many more in the **NUR-HOLZ planning brochure**, which we will gladly provide to you on request.





TIMBER HAS STRUCTURAL STRENGTH

Trees are withstanding wind, weather and even storms. This is why timber is the perfect material for construction. It is lightweight, flexible, highly durable, has outstanding qualities regarding insulation and a high fire resistance as well as a low conductivity for heat and cold.

NUR-HOLZ walls are self-supporting and a lot more stable than other timber constructions without glue, due to their unique bolting.

Because of the interlocking screwed connection not only the core layers are bearing the weight of the construction, but also the connected vertical board layers are supporting it..

The board layers that are arranged crosswise and diagonal are additionally making the **NUR-HOLZ** panels torsion-resistant – but they still stay flexible enough to provide maximal earthquake protection.

You find additional information regarding the construction physics in the **NUR-HOLZ** planning brochure.



NUR-HOLZ MONTAGE CONSTRUCTED IN NO TIME

The assembly of a **NUR-HOLZ** building is done by an experienced construction service provider from our network of partners. The requirement is a prepared foundation with a base plate, optionally with or without a basement. The construction of a **NUR-HOLZ** shell for a one-family house is normally done within one week.

To ensure a quick and safe assembly of the custom-fit wall, ceiling and roof panels all necessary connection means as well as detailed easy-to-understand assembly diagrams are included.

The **NUR-HOLZ** panels are already fitted with window and door cuttings according to the preliminary planning and can be additionally fitted with installation shafts, so the further construction can move on quickly.

Our partners are offering different additions on request, like all windows, doors, wires etc. already installed. This goes as far as having the full building ready to use, including interior fittings



Deutsches Institut für Bautechnik
Zentralstelle für Baugutachten und Bauprüfung
Bautechnisches Institut
Vier vom Ring und der Lärchen
gemeinsam getragene Arbeit des
Bautechnischen Instituts

Struktur- und Versuchs-
institut für Holz (IVH) der
Karlsruhe Institute of Technology
an der Universität
Karlsruhe (KIT)

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Karlsruhe (KIT)

Europäische Technische Zulassung ETA-11/0338

Handelsbezeichnung
Trade name
NUR-HOLZ Vollholzelemente
Mit "Vollholzscreiben" aus Buche verbundene Elemente
NUR-HOLZ Vollholzelemente
Elements joined with "wooden screws" made of beech

Zulassungsinhaber
Holder of approval
Rombach Bauholz + Abbund GmbH
Hörsbühl 7
77764 Oberharmersbach
DEUTSCHLAND

Zulassungsgegenstand
and Verwendungsgebiet
Element type and use
in respective product
Plattenförmiges Vollholzelement - Bauteil aus mit Dübeln verbundenen
Holzteilen zur Verwendung als tragendes Bauteil in Gebäuden
Solid wood slab element - element of dowel joined timber boards to be
used as a structural element in buildings

Geltungsbereich
Validity
vom
from
bis
to
17. Oktober 2011
17. Oktober 2016

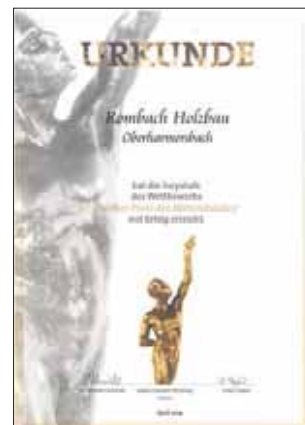
Hersteller
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Diese Zulassung umfasst
This Approval contains
10 Seiten einschließlich 7 Anhänge
10 pages including 7 annexes



Europäische Organisation für Technische Zulassungen
European Organisation for Technical Approvals

ETA-11/0338



CERTIFIED AND AWARD WINNING

NUR-HOLZ was tested by the German Institute for Structural Engineering and received the European Technical Approval ETA-11/0338.

The independent experts from the KIT, the steel and lightweight construction research institute for steel, timber and stone of the university Karlsruhe, are testing our NUR-HOLZ panels regularly. This authorises us to bear the CE sign with the number: 0769-CPD-6057.

The approval and notification of the PEFC-Certificate, granted by the HW-Zert GmbH, Holz+Wald Zertifizierungsgesellschaft mbH, is guaranteeing that the timber we use come from sustainably managed forests.

In addition to this our product NUR-HOLZ already won numerous awards and prices.



TEST LIVING IN NUR-HOLZ

NUR-HOLZ was allowed to construct the guest house for Landgasthaus Kreuz in Biberach-Prinzbach with **NUR-HOLZ** panels. Here you have the possibility to experience NUR-HOLZ while spending the night at the prime location Black Forest.

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Germany
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www.kreuz-prinzbach.de

OUR DISTRIBUTION PARTNERS

The **NUR-HOLZ** system is only distributed via our **NUR-HOLZ** partners. You can find the listed partners on our homepage under **NUR-HOLZ** distribution partner.

We want to sincerely thank our **NUR-HOLZ** partners for providing the pictures in this **NUR-HOLZ** prospect.



NUR-HOLZ

ROMBACH

A product of the company

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