The DERIX-Group

Your experts in glued laminated timber

TIMBER IN A NEW DIMENSION

DERIX

The DERIX Group

Timber is a building material unlike any other: Its life cycle assessment is phenomenal and, with its economic and ecological advantages, it's visionary. Using timber helps us to safeguard the future for ourselves and coming generations. As part of the woodworking industry, we are aware of this responsibility, and actively contribute to it. Now we would like to invite you to meet the DERIX-Group.

Our main field of business is structural engineering and the realisation of large timber constructions with glulam (glued laminated timber). In cooperation with our selected partners we undertake projects worldwide from conception to completion. It doesn't matter whether the projects are really challenging or rather conventional: Architects and engineers always appreciate our expertise and our problemsolving ability. With two production sites in Germany (Niederkrüchten and Westerkappeln), three further sales offices (Hamburg, Hermeskeil and Lierderholthuis in the Netherlands) as well as our distributors in the European Economic Area, we are established nationally and internationally.

The Derix Group is a modern and innovative family-owned company with more than 200 employees and we pride ourselves of being a leader in the timber industry.

Awards and certificates

- Green Electricity Certificate 2017
- Environmental Certificate Ecoprofit 2014
- German Timber Construction Award 2009, category components / concepts (recognition)
- Timber Construction Award 2006 North Rhine-Westphalia (recognition)
- Material Efficiency Award 2005 of the German Ministry for Economy and Technology
- Association of German Architects (BDA) Good Buildings Award 2001
- Timber Construction Award 2000 North Rhine-Westphalia

Production Site Westerkappeln

Production Site Niederkrüchten

Indoor-Playground
Rieste

Wood is atmospheric

Making a building cosy and warm depends on the materials used. In this respect wood has enormous benefits. This is why wood is very often implemented in gymnastics, leisure halls or assembly rooms.

Address
Bullermeck-Alfsee
Spielscheunen und Freizeitanlagen GmbH
Barlager Straße 11, 49597 Rieste

Constructor
Klabautermann Indoor-Spielpark GmbH & Co. KG
Bensersiel

Architects
Obben-Ihnken-Ofken, Esens

Calculations / Planning of Supporting Structure
Poppensieker & Derix GmbH & Co. KG
Westerkappeln

Technical Specifications
- Span length 40 m
- Area 2,600 m²
- Curved gabled roof girders with a span length of 40 m

I have built the small house and my Dad the big one.

Build the future
Ecology and sustainability

As climate change is one of the most important environmental topics nowadays, an effective management of energy use becomes more and more important. Thus, it is worth stating at this point that the decision to use timber is both responsible and economic for manufacturers as well as constructors.

Ecological assessment

Trees absorb CO_2 from the air, store it, and release oxygen. When a tree dies or is burnt, the same amount of CO_2 is released as it had absorbed during its lifetime. While the absorption and release of CO_2 is balanced in an unmanaged forest, sustainably managed forests significantly reduce the amount of CO_2 in the atmosphere. The CO_2 absorbed into the wood remains in the timber, and newly planted trees release more oxygen. Buildings made of timber act as long-term carbon stores. One cubic metre of timber used in construction absorbs a tonne of CO_2. Buildings made of timber therefore actively contribute to protecting the climate and are considered to be a prime example for sustainable building. All of the residual timber which is generated in production is energetically reused or further processed.

Saving of energy

More energy can be produced from the remnants of timber products than is required in order to produce timber products. This is the reason why it is justified to define timber as a plus-energy-product. Hence it follows that timber clearly outperforms any other comparable building material. To some extent this can be attributed to the fact that timber is a lightweight product with an extraordinary strength and stability. Further to that, the cellular structure of timber serves as a natural insulator by trapping air in its cell walls. Consequently, timber buildings need far less energy than steel and concrete buildings. As the moisture content in timber buildings is balanced naturally, the climate in timber buildings is also very healthy and comfortable. As a result from these advantages it seems logical that timber is more and more employed as a very attractive and energy-efficient building material.

Conservation of resources

Wood is an inexhaustibly renewable natural raw material with excellent possibilities for reuse. 90% of wood used in Europe comes from European forests, which grow in size year on year due to sustainable forestry and forest management. We use European wood almost exclusively, not least to keep the transport routes as short as possible. Due to its high reusability as a raw material or in terms of energy production, buildings made of timber always also remain a source of raw material. In a world with finite resources, a focus on sustainability in construction and responsibility regarding the choice of materials is more and more important and popular.

Weight and transport

In comparison to other materials, timber is an extremely light building material with a high load capacity which, with its low weight, results in only a fraction of transport costs. In direct comparison with timber, concrete with the same load capacity is 80% heavier and results in 80 % higher transport costs. With its low dead weight, timber reduces transport emissions and protects the climate.

Number of kilowatt hours which are needed to produce a cubic metre of building material.

Carbon Footprint

In comparison to other building materials, the production of timber requires the lowest energy expenditure.

Timber has the smallest carbon footprint and is therefore by far the most environmentally friendly building material.

Building material
and range of applications

Architects appreciate timber as a building material due to its special optical and tactile characteristics. They can realise extraordinary and complex forms cost-effectively in glued laminated timber constructions.

Production

Technically dried timber planks fitted together by finger joints to become long slats, and firmly glued together in layers, result in components which can be produced in virtually every shape and any size: glued laminated timber. It's easy to handle and allows a high level of prefabrication.

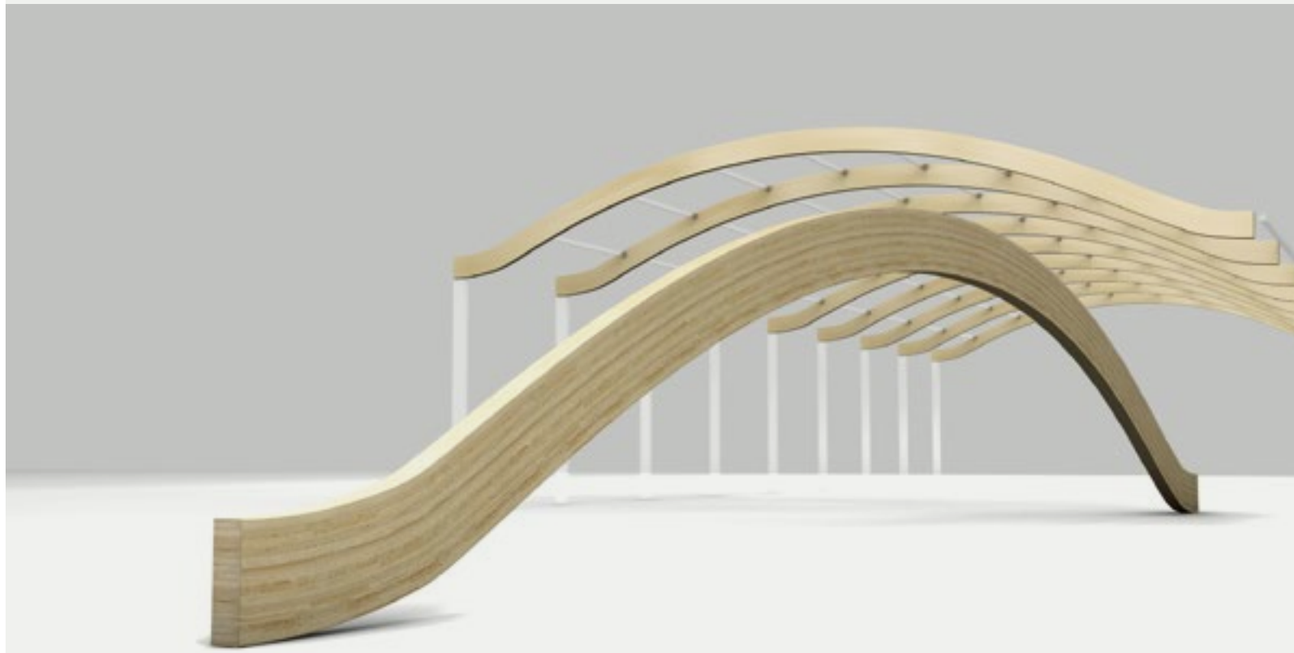
Cross glued laminated timber (X-LAM) is a timber product made of at least three laminated planks glued together cross-ways, which, as a supporting plank or panel element, combines the best characteristics of different materials.

Range of applications

Glued glued laminated timber can be used in almost any building conceivable. The reason for this, in addition to the ecological and economic advantages, is the tremendous fire-protection properties of the material. Ranges of up to 150 m are possible when cantilevered. The smooth surface structure impedes damaging sediments. The material's resistance against chemically aggressive atmospheres also furthers its range of applications.

X-LAM is a solid, very stable building material, at the same time, the prefabricated building components can be assembled quickly and easily on-site – regardless of whether that is on the roof, ceiling or wall.

The strengths of our group of companies lie in the production of halls, support structures and load-bearing panel components for industrial and commercial halls, shopping centres, warehouses, sports halls, residential and office buildings both in the private and public sector.



Arched beam made of glued laminated timber

X-LAM (Cross Laminated Timber)

Elephant Park
at Cologne Zoo

Wood is high-tech

With laminated timber, even bearing structures with a high complexity and outstanding architectural value are possible to produce cost effectively. This high-bearing structural material in combination with the implementation of modern CAD-, CAM- and CNC-techniques leads to unique possibilities in design and structure. Nevertheless, erection is done smoothly and fits perfectly.

Address
Cologneer Zoo
Riehler Straße 173, 50735 Cologne

Constructor
Zoologischer Garten, Cologne

Architects
Oxen + Römer + Partner, Hürth

Calculations / Planning of Supporting Structure
Ingenieurbüro für Holzbau Stefan Schlechter, Albstadt

Technical Specifications

- Roof area 3,100 m²
- 7 columns bear the shield construction with a diameter of 20 – 25 m
- High precision and accuracy by CNC-processing
- Enormous bearing pressure of roof-construction

The wooden roof construction of our new elephant park is really impressive. And thanks to the natural building material, it has been possible to create a habitat for our elephants that comes as close to a natural habitat as possible. The atmosphere here is so peaceful and relaxed and the elephants feel so comfortable, that we were able to celebrate the birth of an elephant baby recently. Who could wish for more?

Complex constructions and straight components

Technically challenging hall and roof constructions are our forte. We also produce straight glued laminated timber of an excellent quality in small batch sizes on commission and attached individually according to your requirements.

Wide-ranging possibilities

Support structures made of glued laminated timber often have imposing dimensions and extraordinary shapes. When stretched over vast expanses, the law of gravity doesn't seem to apply. The support structure can be individually adapted using different static and construction systems according to the usage requirements. When construction with glued laminated timber first started, the support structures had spans of up to 45m, nowadays spans of 150m are no obstacle. The architecture and structural planning are hardly limited by the versatile and easily mouldable material of wood. The high level of prefabrication guarantees a quick construction period. Wooden halls are cost-effective and almost maintenance-free.

Precision work

Every order is different, a different cross-section is required for every commission. If it must happen quickly, our express programme for straight glued laminated timber is the right choice. We deliver all cross-sections of up to 1m in height and 18m in length just-in-time for free. You receive construction sets ready for installation, which we manufacture for you extremely cost-effectively at our express facilities with integrated CNC-controlled assembly system.

Carrying components XXL

The natural building material of wood is the first choice when high demands are placed on a pleasant and comfortable room atmosphere.

X-LAM is cross laminated timber which, as a supporting plank or panel element, combines the best characteristics of different materials. X-LAM is a solid, very stable building material, at the same time the prefabricated building components can be assembled quickly and easily on-site – regardless of whether that is on the roof, ceiling or wall. Cross glued laminated timber consists of at least three rectangular layers made of sawn timber glued together. The innovative building material replaces brickwork and concrete, as well as filigree ceilings, and completes timber frame constructional elements.

The high level of prefabrication ensures short building and assembly times, this makes solid building components very economical. Low heat conductivity and high protection from the heat in summer guarantee the highest level of home comfort and saves energy.

Airport
Cork Airport

Naturally Wood

A lot of buildings nowadays seem to be very impersonal and clinical because of their focussing on technical processes and economical requirements. Wood is able to balance this atmosphere.

Address
Cork Airport
Cork, Ireland

Constructor
AerRianta, Shannon Airport, Co. Clare, Ireland

Architects
Jacobs Engineering, Dublin

Calculations / Planning of Supporting Structure
W.u.J. Derix GmbH & Co., Niederkrüchten

Technical Specifications
- Area ~15.000 m²
- Max. Span length ~45,00 m
- Fire Resistance F30b

I'm proud to work at Cork Airport. With all the airplanes, the technology and the people here at the airport I feel connected to the rest of the world. Nonetheless, I really like to live in Ireland because it keeps me grounded. The people in Ireland love nature, so this new terminal with timber as a natural building material is really appropriate.

Technology
and Machines

It is our objective to explore and enhance the potential of laminated timber as a building material. According to our philosophy high-tech equipment as well as innovative technology are the key elements to achieve this goal.

Technology

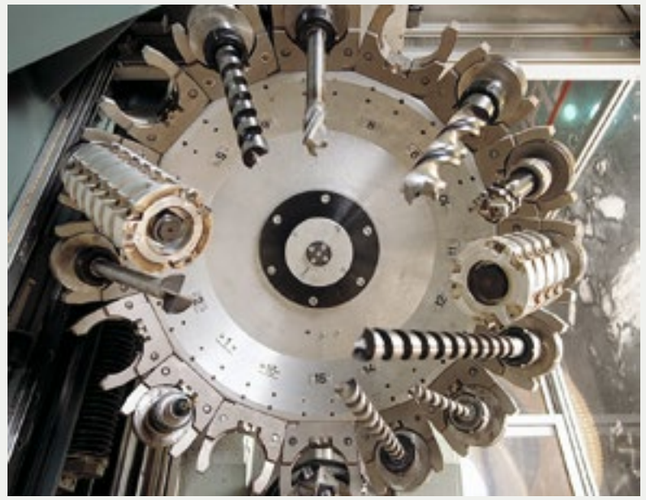
As it is our aim to manufacture a high-quality end-product, the source material we use is a crucial factor. This is why we use a highly-developed sorting machine that helps us to evaluate automatically each individual lamella by x-raying, bending and scanning. With the help of this special technology, we are able to sort and evaluate the material according to its optical and mechanical characteristics. This procedure enables us to adjust the source material according to the different statical demands of the beam required. Our storage system is organised using full automation, this allows the raw material to be processed effectively and accurately. In order to facilitate and improve handling of the material, a bar code is put on each individual structural member. Hence it follows that each single peace of wood can be tracked on its way from raw material until it becomes a finishedproduct. Our modern CNC-units allow us to process structural elements up to a length of 75 m and a width of 6 m, accurate to the millimetre and with high precision and repetitious accuracy. The CAD-programme transfers the relevant data directly and state of the art laser technology ensures the exact adjustment of each individual work piece. Further to that, an automatic steering device with five axis facilitates a three-dimensional processing of the work piece.

Teamwork

Thanks to ultra modern technology and equipment we are able to optimise the inherent material properties of laminated timber. In close cooperation with our suppliers we always strive to improve the production process so that it is possible to embrace the increasing requirements of today's building industry and further enhance the potential of laminated timber as a building material. Our highly motivated experts are excellently prepared to handle each new challenge and are able to guarantee that the production process goes off smoothly.

As a modern manufacturer we believe that high tech equipment and innovative technology are absolutely necessary in order to perform effectively in the business world of today. But the human being with his or her needs, requirements and talents will always be the centre of our attention.

Tool kit, CNC processing machine



Quality
and Quality Control

We have committed ourselves to supply excellent quality. Hence it follows that our own quality standards are very high.

Documentation

It goes without saying that complete knowledge about the flow of materials is very important. Of course this refers not only to the supply of raw material, but applies also to the delivery of the manufactured material to our customers. In this regard we would like to emphasise that 100 % of the raw material we receive comes from sustainable forestry in Europe which are in surplus production, stable and well-managed. 95 % of the timber we receive are PEFC-certified. Right after the raw material arrives in our manufacturing plant, it is visually screened by our experienced employees. Then it is evaluated automatically so that any irregularities can be identified immediately corresponding to the supplier. Thus, quality evaluation is an integral part of our material planning process. As an authorised manufacturer of laminated timber we have respective certificates that demonstrate that our manufacturing process strictly adheres to the national standards and the European norms and regulations which have been established in the industry. All glues and adhesives used in our manufacturing process have been approved and certified by an independent institute for material testing. It has been approved and acknowledged that our glues and adhesives serve as a protection against moisture, changes in temperature, and most acids and bases.

Inspections

In order to optimise our quality management, we make sure that the end-product is tested by random inspection regularly. Further to that, the gluing of the finger-joints is tested on a daily basis and we also check the quality of the lamination very closely. Our customers can rely on the fact that they receive excellent quality. In Germany, manufacturers of laminated timber have to be able to demonstrate responsible manufacturing processes. So twice a year there are unannounced inspections by an independent certification institute. On the occasion of these unannounced inspections the manufacturing process and the record keeping procedures are inspected, the material is tested and samples are taken and submitted to the Federal Institute for Material Testing.

Licenses and Certificates

- Certificate of constancy of performance according to EN 14080:2013 (KIT Karlsruhe)
- Certificate of compliance of the in-house production control according to EN 14081-1:2005+A1:2011 (HFM Munich)
- Declaration of performance in accordance with EN 14080:2013-09
- Certification of glued composite component fabrication from laminated timber and cross laminated timber according to German industry standard (DIN) 1052-10:2012 (HFM Munich)
- Certificate B regarding gluing load-bearing timber construction components according to DIN 1052-10:2012 (MPA Stuttgart)
- Certificate D regarding gluing load-bearing timber construction components according to DIN 1052-10:2012 (MPA Stuttgart)
- Supervision symbol laminated timber (Council of Timber Technology)
- ETA-11 / 0189 (German Institute for Construction Technology (DIBt) Berlin)
- PEFC certificate (production sites Niederkrüchten and Westerkappeln)

PEFC/04-31-1102
Förderung nachhaltiger
Waldwirtschaft

House
in Delden

Timber is sustainably good

Construction elements made of solid timber support energy efficient building concepts.

Address
Delden, Netherlands

Constructor
The Schipper-Douwes family

Architects
Schipperdouwes architectuur bna

Assembly
Aannemersbedrijf Schipper b.v.

Calculations / Planning of Supporting Structure
Pieters Bouwtechniek Utrecht BV

Technical Specifications
- 70 m³ X-LAM wall, roof and ceiling elements made from cross laminated timber
- 730 m² X-LAM panel surface

What do I like most here? That I have a big room just for myself. My best friend has a treehouse in the garden but we have a whole house made of wood.

Biomarkt
Viersen

Address
Freiheitsstraße 194, 41747 Viersen

Constructor
Schmitz Ingenieurgesellschaft mbH, Viersen

Architects
W. u. J. Derix GmbH & Co.

Calculations / Planning of Supporting Structure
NR Ingenieurgesellschaft holztragwerke mbH

Technical Specifications
- Area: approx. 550 m²
- Walls: 511m² cross laminated timber elements
- Support structure: double tapered beams as single span beams

Our customers are quality-conscious and place a lot of value on the fact that our products are produced in harmony with nature and the environment. We make no compromises. So, it is only to be expected that our organic market has been constructed in glued laminated timber.

Ice sports centre
Leeuwarden

Wood creates a healthy room atmosphere

Roof structures made of wood not only offer reliable bearing capacity – they also have a positive effect on wellbeing. The natural material of wood demonstrably improves health in the home.

Address
Fryslânplein 1
8914 BZ Leeuwarden, Netherlands

Constructor
Gemeinde Leeuwarden

Architects
Coöperatie GEAR Leeuwarden (gear.nu, Achterbosch Zantman architecten Leeuwarden, TWA Architecten Burdaard)

Main contractor
Bouwcombinatie Elfstedenhal – Bouwgroep Dijkstra Draisma Bolsward / Dokkum (bgdd.nl) und Jorritsma Bouw Almere (jorritsmabouw.nl)

Technical Specifications
- Area 18,330 m²
- 62 finger-jointed arches made of glued laminated timber
- Span approx. 18 m

I live for speed ice skating. I have even been to the German championships and train up to five times a week. This modern hall with its huge roof and many wooden beams is simply fantastic. I'm happy every time I skate my first lap.

Scope of Delivery

Structural Laminated Timber and Straight Laminated Timber

Structural systems
Constructive building components with all dimensions between:
- 8, 10 ... 30 cm wide
- Up to 260 cm high
- Up to 65 m long
- Double tapered beams with a straight bottom chord
- Double tapered beams with hoisted bottom chord
- Three-joint frame systems
- Arched beams
- Multi-span beams
- Fish beams
- Purlin systems
- Supports

Express Programme
Straight components with all dimensions between:
- 6 and 30 cm wide
- 10 and 100 cm high
- 2.5 to 24 m long
- As well as special dimensions or shorter lengths

Circular columns
- In excellent wood qualities
- With a smoothed surface
- Diameter between 10 and 48 cm
- Length up to 12 m
- Strength class GL24 in accordance with DIN EN 14080:2013-09

Roofs, ceilings and walls

Cross laminated timber / X-LAM
Solid supporting construction components for roofs, ceilings and walls
- Up to 17.80 m long
- Width: up to 3.50 m
- Strength: 60 mm to 400 mm

Glued laminated timber ceiling elements
Can be used as roof, ceiling and wall elements, with these profiles:
- Blunt
- Longitudinal fold
- Double groove / tongue
- Triple groove / tongue
- Groove for separate tongue
- Longitudinal fold with double or triple groove / tongue
- Strength 6-30 cm
- Width 12-100 cm
- Standard length up to 18 m
- GL24 in accordance with DIN EN 14080:2013-09
- 40 mm slats

Wood-concrete combined systems
- Ceiling systems for ceilings between storeys in residential, commercial and industrial buildings (plate, beam and variety ceilings)
- Bridge beams
- Roof and wall constructions

For further information and technical details please refer to our free download material which is available on our website:
www.derix.de

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