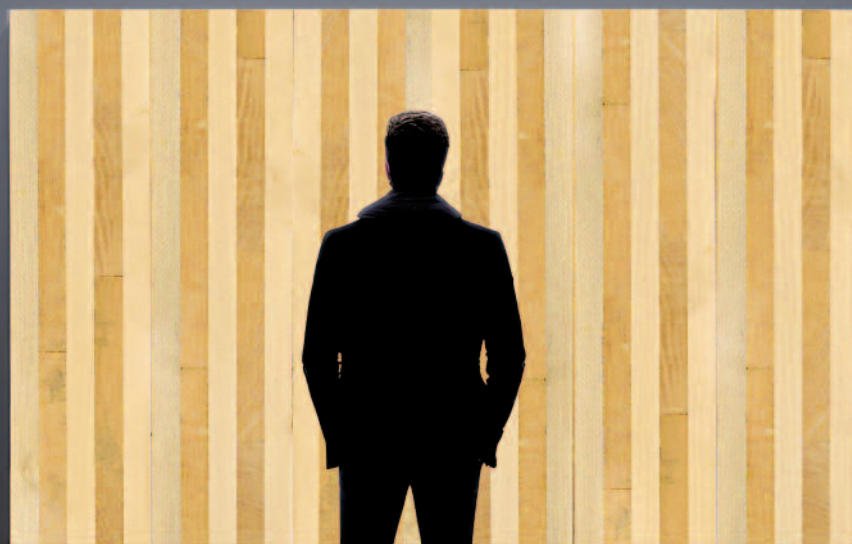


WHY BUILD WITH THE XLAM DOLOMITI SYSTEM?



WE PRODUCE, WE DESIGN, WE BUILD AND WE SUPPLY TO GUARANTEE YOU THE HIGHEST QUALITY AND PERFORMANCE

Xlam Dolomiti stands out as a cutting-edge company in the timber sector, specializing in the production and construction of buildings using cross-laminated timber (Xlam/CLT) technology.

With the Xlam Dolomiti system, the company expertly integrates the manufacturing of the panels with the design of advanced construction systems, ensuring a full-service package which ranges from the design of the materials to the finished structural realization.

Each project Xlam Dolomiti takes on is the result of a deep commitment to research and innovation, supported by a team of experts who combine their technical knowledge with a genuine passion for wood. Xlam Dolomiti's approach, which regulates the entire production and construction process, allows to transform any architectural concept into a tangible and durable reality, while offering customized solutions to meet the specific needs of our clients.



Above:
The Administrative Headquarters
in Castel Ivano (TN) - ITALY



On this page:
some production phases



On this page:
the production plant in Castelnovo
(TN) - ITALY

"Innovation isn't just about creating something new; it's about perfecting what already exists."

Leonardo da Vinci

RESEARCH AND DEVELOPMENT

The SU.PRE.MO project, a research initiative developed by Xlam Dolomiti, embodies a breakthrough in the use of alternative natural resources for the Xlam Dolomiti system.

Paulownia, a fast-growing tree species with low environmental cultivation impact, offers the ideal structural characteristics for outstanding timber constructions. Thanks to its lightness, Paulownia reduces the overall weight of structures, making transportation and processing easier without significantly compromising the mechanical properties such as bending and compression strength.

TECHNICAL INSIGHTS

Paulownia, chosen for the SU.PRE.MO project, is a lightweight durable wood that reaches industrial maturity in just 6–7 years, compared to the 40–60 years required by other species such as Spruce. Its density, reduced by 30–40%, makes load management and processing easier, offering an eco-friendly solution that reduces the weight of structures while ensuring adequate mechanical performance. This characteristic makes Paulownia a perfect resource for enhancing the performance of our system and reducing the environmental impact of construction.

Moreover, Paulownia has a higher CO₂ storage capacity compared to other wood species: each cubic metre of Paulownia can store up to **600 kg/m³ of CO₂**, actively contributing to the fight against climate change and making the Xlam Dolomiti system an even more sustainable solution for the construction industry of the future.

The SU.PRE.MO project is endorsed by the Autonomous Province of Trento.

BENEFITS

- 1. Rapid Growth:** Paulownia matures in just 6–7 years, thus reducing wood supply times.
- 2. 30% Reduced Density:** facilitates processing, reduces structural loads, and naturally enhances the thermal insulation efficiency of structures.
- 3. CO₂ Storage:** up to **600 kg/m³** of wood, improving overall ecological performance.

ENVIRONMENTAL SUSTAINABILITY

Every tree planted is a promise for a greener tomorrow and with our Xlam Dolomiti system, this promise is kept. Where wood, the ultimate renewable material, is expertly processed to create buildings that respect and protect our environment.

Each Xlam/CLT panel reduces environmental impact by minimizing the use of polluting materials, such as concrete, and so promoting a sustainable construction cycle. Through the selection of certified wood and the responsible management of forests, Xlam Dolomiti transforms every project into a virtuous cycle that reduces emissions, eliminates the use of harmful materials, and strives to maintain the balance between humanity and nature. With our Xlam Dolomiti system, every building is much more than just a structure, they are a symbol of a common future where innovation and sustainability come together as one.



TECHNICAL INSIGHTS



The **Xlam Dolomiti system** significantly reduces CO2 emissions using wood from **PEFC-certified forests**, which ensure sustainable resource management. Each cubic metre of wood used can store up to **1,200 kg of CO2**, contributing to the significant reduction of the environmental impact of our buildings. Additionally, our system reduces the use of energy-intensive materials such as concrete and incorporates up to **90% recyclable materials**.

Thanks to the natural insulating properties of wood, the buildings made with our Xlam Dolomiti system offer higher energy efficiency, lower consumption, and enhanced living comfort.

Moreover, wood naturally regulates indoor humidity, maintaining an optimal comfort level that reduces the need for intensive climate-control systems.



BENEFITS

- 1. Reduction of CO2 Emissions:** the use of wood allows for a reduction in CO2 emissions of up to 30% compared to traditional materials, thus contributing to a more sustainable environment.
- 2. PEFC Certifications:** Xlam Dolomiti panels use PEFC-certified wood, ensuring responsible and sustainable forest management.
- 3. Recyclable Material:** thanks to its natural composition, the wood in our Xlam/CLT panels is up to 90% recyclable, promoting a sustainable life cycle and reducing its long-term environmental impact.

"Nature is not just a place to visit, it is your home."
Gary Snyder



*"It's not size that makes
a structure durable,
but its stability."*
Henry David Thoreau

STRUCTURAL SAFETY

True safety means knowing that what surrounds us will withstand any challenge and the certainty that the structure we call home has been designed to last over time and successfully face even the toughest tests.

With our Xlam Dolomiti system, safety is not just a feature but a promise. Thanks to its superb seismic resistance and structural stability, it also provides peace of mind to both clients and investors seeking secure buildings, even in highly seismic areas.



TECHNICAL INSIGHTS



Composition of our Xlam/CLT panels:
Structural plywood made of solid
wood boards arranged and bonded in
cross-layers to create walls, floors,
and roofs.

The Xlam Dolomiti system is recognized for its excellent resistance to seismic events.

Thanks to the cross-laminated configuration of solid wood, Xlam/CLT buildings can withstand significant seismic forces, far exceeding the requirements outlined by European regulations.

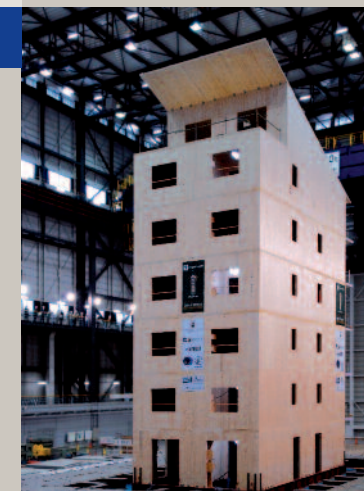
The ability of the metal connections used to dissipate energy during an earthquake is enhanced by the **lightness of the wood**, which reduces loads on foundation systems, allowing buildings to better adjust to ground movements.

The panels are available in thicknesses ranging **from 60 mm to over 300 mm**, enabling the structure to be tailored to the specific needs of the project, both in terms of insulation and strength.



BENEFITS

1. High resistance to significant seismic events.
2. Outstanding overall structural performance.



An experiment carried out on a
7-storey building constructed
in 2020 in Kobe, Japan.

FIRE RESISTANCE

The wood used in Xlam/CLT technology, although combustible, allows for the construction of buildings with excellent fire resistance performance.

Fire is one of the oldest elements, a symbol of strength and transformation; but in a building, its force must meet a secure barrier, a protection that safeguards what matters most. With our system, every structure is not just a home but a fortress of safety, designed to withstand flames thus providing peace of mind.

“

139min.

Test duration for 3-layer Xlam/CLT
Starting from 100 mm panel
+ 15mm Plasterboard slab F
REI120



BENEFITS

1. **Certified fire resistance**, giving additional safety to occupants.
2. **The charred layer acts as a shield**, slowing down combustion.



REGULATORY REFERENCES

UNI EN 1363-1:2012

ISO 834-1:1999

ISO 834-1:1999/Amd 1:2012



TECHNICAL INSIGHTS

Cross-laminated timber (Xlam/CLT) panels can achieve significant REI resistance values, which represent Resistance (R), Integrity (E), and Thermal Insulation (I) for an extended period during a fire. This means that the structure can maintain its integrity and limit the spread of flames for a well-defined and easily calculable period.

Solid wood develops a charred layer on the surface when exposed to fire, which acts as a natural barrier, slowing down combustion and protecting the inner layers. In contrast, other materials, such as steel, tend to deform quickly under intense heat.

Thickness and resistance time: Xlam/CLT panels with thicknesses greater than 100 mm provide higher resistance, extending fire protection capacity and ensuring more time for safe evacuations.

“True strength is the ability to withstand fire without getting burned.”
Seneca



"The strength of a building lies in its ability to resist time without losing its nature."
Frank Lloyd Wright

RESISTANCE TO WEATHERING

The durability of a building is not just a promise but a commitment to leaving a lasting mark over time.

With our Xlam Dolomiti system, each Xlam/CLT panel is designed to withstand the challenge of time, offering strength that reinforces itself over time. The wood used in our panels has a natural resistance to climatic variations, but its optimal performance largely depends on the care taken during the design and construction phases.

TECHNICAL INSIGHTS

Every stage of the Xlam/CLT panel production process follows strict quality standards to ensure the strength and reliability of the final product. Laboratory tests and periodic inspections guarantee that the panels comply with European regulations on durability and resistance.

Thanks to precise engineering, attention to construction details, and utmost care during installation, buildings made with the Xlam Dolomiti system **maintain their physical and mechanical properties** unchanged for decades.

Timber structures must be protected from the elements through carefully designed layering systems that prevent moisture buildup and interstitial condensation.

Structural elements and exterior wood cladding must be designed with specific precautions to **prevent water stagnation, preserve mechanical properties**, and protect the wooden surface from degradation.



Two recent projects by Xlam Dolomiti in Italy and Australia.

DURABILITY AND LONG-TERM STABILITY

Careful design and skilled installation, combined with regular maintenance, ensure that Xlam/CLT buildings have a lifespan comparable to traditional constructions.

In this way, timber structures effectively **withstand weather conditions and the passage of time**, providing an excellent balance between quality, comfort, and long-term investment.

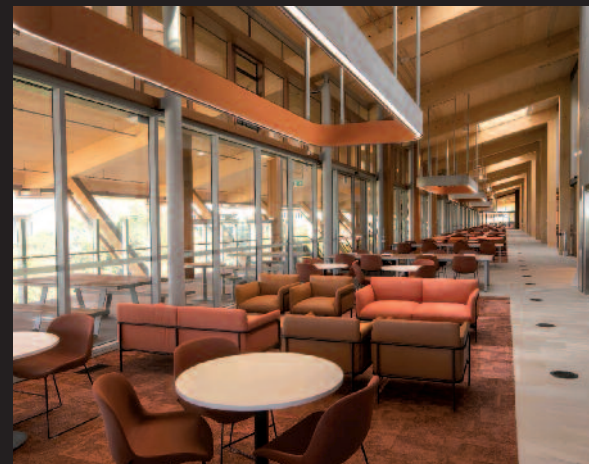


ENERGY EFFICIENCY

Energy embraces and protects. Living in a building constructed with the Xlam Dolomiti system means choosing natural thermal comfort that shields us from heat and cold while respecting the environment.

Xlam/CLT panels provide natural thermal insulation, keeping warmth inside during winter and coolness in summer.

Our system enables high energy performance, reducing costs and enhancing living comfort in every season.



TECHNICAL INSIGHTS



Advanced Thermal Insulation

Xlam/CLT panels, combined with other materials such as insulation, provide excellent thermal insulation performance, with a thermal transmittance (U-value) that can drop below $0.15 \text{ W/m}^2\text{K}$, ensuring a stable and comfortable indoor environment.

Energy Saving

Thanks to optimal insulation, the Xlam/CLT technology allows for a reduction in energy costs of up to 40% compared to traditional buildings. This leads to significant savings for occupants in the long run while also reducing its environmental impact.

Natural Climate Regulation

Wood has a high thermal capacity that helps regulate indoor temperatures throughout the year, minimizing the need for artificial climate control.

Comparative Data

Buildings constructed with Xlam/CLT reduce energy consumption by up to 50% compared to concrete and steel structures, thanks to the low thermal transmittance of wood.



BENEFITS

1. Low thermal transmittance, improving energy efficiency.
2. Reduction in energy costs of over 40%.

"It's not the amount of energy that matters, but how you use it."
Thomas Edison



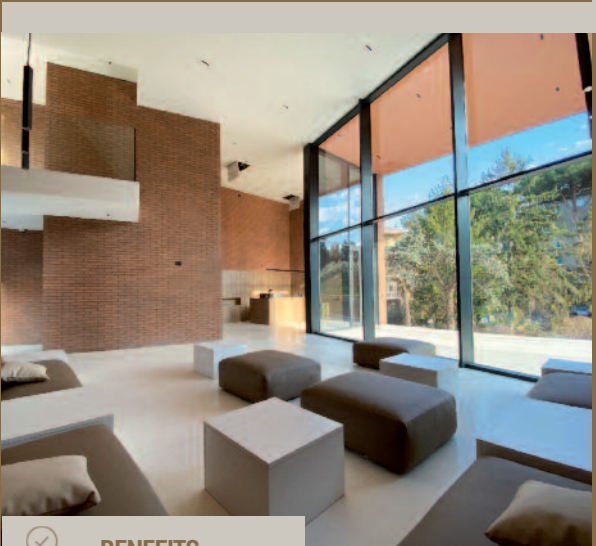
"Design never imitates; it simply replicates what nature has already created."
Aristotele

THERMAL COMFORT

True well-being means living in an environment that adapts to every season, where the cozy warmth of winter and the refreshing coolness of summer are a constant.

With the Xlam Dolomiti system, comfort is not just a feeling but a lasting reality, ensuring balance and tranquillity throughout the year.

TECHNICAL INSIGHTS



The thermal mass of our panels, due to its superior thermal inertia, helps maintain a stable indoor temperature by slowly releasing stored heat. This property naturally keeps interiors warmer in winter and cooler in summer, enhancing living comfort without any mechanical interventions.

Thanks to the low thermal conductivity of wood, the Xlam Dolomiti system minimizes temperature fluctuations, providing a **constant sense of comfort** regardless of external conditions.

Finally, buildings constructed with Xlam/CLT technology require a **reduced use of heating and cooling systems**, decreasing energy consumption and promoting a more natural indoor environment.

BENEFITS

1. Thermal inertia of wood.
2. Greater indoor climate stability.
3. Reduced dependence on heating and cooling systems.

ACOUSTIC INSULATION

Undoubtedly, silence is one of the most valuable features of a home, a space where daily life can unfold without disturbances.

With our Xlam Dolomiti system every environment is also designed to provide acoustic comfort, keeping noise out and making tranquillity the focus of attention.



TECHNICAL INSIGHTS

Acoustic insulation is one of the key elements in ensuring maximum comfort in both residential and work environments.

In timber buildings, made with Xlam/CLT panels, this aspect is optimized through a combination of specific design and innovative materials.

Although wood naturally has a lower surface mass and rigidity compared to other traditional construction materials, wooden buildings can achieve excellent acoustic insulation performance through an integrated design approach and the use of specific techniques and materials, transforming wood into an ally of silence.

Smart Layering: the selection of specific layering systems and well-designed connection joints minimizes noise transmission.

Flawless Installation: precise installation is essential to achieving optimal acoustic performance.

Structural Decoupling: the insertion of resilient materials between wooden elements limits the propagation of vibrations.

Precision Sealing: the use of soundproofing foams, self-expanding tapes, and adhesives ensures the airtight sealing of gaps, preventing airborne sound transmission.

PROVEN PERFORMANCE

Certified laboratory tests confirm that our panels, when combined with appropriate cladding and decoupling systems, can achieve acoustic insulation levels comparable to or even exceeding those of traditional materials.

THE ADDED VALUE OF WOOD

Beyond its natural sound-absorbing properties, wood, enhanced by advanced design solutions, helps create comfortable, sustainable, and cutting-edge spaces. Xlam/CLT buildings not only meet modern living aesthetic and functional demands but also ensure a peaceful environment protected from noise.

Choosing wood means opting for superior living comfort and a more sustainable future. With the right solutions, acoustic insulation becomes a defining feature of timber buildings, enhancing the quality of life in every space.

"Silence is a luxury that is designed."
Anonymous

"Time is the best ally of efficiency."
Henry Ford

CONSTRUCTION SPEED

Every construction site has its own rhythm, and with our Xlam Dolomiti system, this rhythm is accelerated. For us, the building phase shouldn't be an endless wait but a fast and seamless process.

That's exactly how construction works with our system: a smooth, well-orchestrated operation where every panel fits perfectly into place, like a finely tuned instrument. The Xlam Dolomiti system enables rapid construction with optimized site management, reducing both time and operational costs. This is especially appealing to developers aiming to meet tight deadlines.

TECHNICAL INSIGHTS



Thanks to the advanced prefabrication of Xlam/CLT panels, construction time is **reduced by up to 50%** compared to traditional methods.



In the two images:
La Trobe University
Buondora Vic
(Australia 2022)

BENEFITS

1. **Up to 50% reduction in construction time.**
2. **Millimetric precision, thanks to CNC technology.**
3. **Speedy on-site assembly, with projects completed in just a few weeks.**
4. **EasyXSpeed system simplifies installation and reduces manual labour.**

Each element is cut with millimetric precision using CNC (Computer Numerical Control) technology, ensuring fast and accurate on-site assembly.

A complex project can be completed in just a few weeks, depending on its size and design.

The EasyXSpeed system by Xlam Dolomiti further simplifies installation, with pre-assembled panels optimized for rapid assembly. This technology **reduces the need for manual work** on-site, improves installation quality, and even minimizes the risk of errors.

TECHNICAL PRECISION & INNOVATION

Every detail, every design line is executed with absolute precision. The Xlam/CLT system, optimized by Xlam Dolomiti, ensures millimetric accuracy thanks to the use of advanced CNC machinery.

With the **EasyXSpeed** system, both designers and builders benefit from a prefabricated kit that simplifies installation, reduces construction time, and enhances overall efficiency.



TECHNICAL INSIGHTS

EASY X SPEED
FOR BUILDING FASTER

The **CNC technology** used by Xlam Dolomiti ensures **millimetric precision** in the production of prefabricated panels, minimizing errors, and reducing the need for on-site corrections.

The **EasyXSpeed** system involves the design and pre-assembly of all components in the factory, allowing for immediate installation on-site.

This approach not only **reduces construction time** but also enhances the **overall quality** of the project, ensuring **precision and reliability** at every stage of the process.



BENEFITS

1. **Millimetric precision** guaranteed by CNC technology.
2. **EasyXSpeed** system reduces procurement and installation time, improving construction efficiency.
3. **Pre-assembled components** ready for immediate installation, minimizing on-site errors.



*"Progress is not only measured by new ideas,
but also by the precision of execution."*
Leonardo da Vinci



"The only constant in life is change."
Eracito

DESIGN FLEXIBILITY

Each and every architectural project is unique, just like the vision of those who envisioned it. With the Xlam Dolomiti system, design flexibility becomes a fertile ground for innovation.

Wood, with its natural adaptability, opens the door to diverse forms, sizes, and styles, allowing each designer to create fully customized solutions.



TECHNICAL INSIGHTS

Our **system** adapts to a wide range of building types, from **single-family homes** to **multi-storey buildings**.

The modularity of the panels allows for the creation of **complex architectural configurations**, tailoring the project to the client's specific needs. Additionally, the system can be combined with materials such as **steel and glass**, enabling **hybrid solutions** that expand creative possibilities.

Its **on-site adaptability** allows for modifications even during construction, without compromising structural stability.



BENEFITS

1. **High versatility for projects of all scales**, from residential buildings to multi-storey structures and also large commercial spaces.
2. **Easy integration with other materials**, such as steel and glass.
3. **Flexible design with the possibility of modifications** during construction.

Above:
Wooden Arches
HAS-Festival Park,
(Qatar 2024)

WE PRODUCE THE XLAM DOLOMITI SYSTEM

XLAM DOLOMITI IS PART OF THE PATERNO GROUP, A SOLID INDUSTRY LEADER

Since its foundation, Xlam Dolomiti has chosen the most optimal and challenging path and has equipped itself with the best technology and production facility to manufacture its own Xlam/CLT panels in-house.

Our approach has been to industrialize the product according to new standards, creating an innovative, high-performance panel with exceptional characteristics.

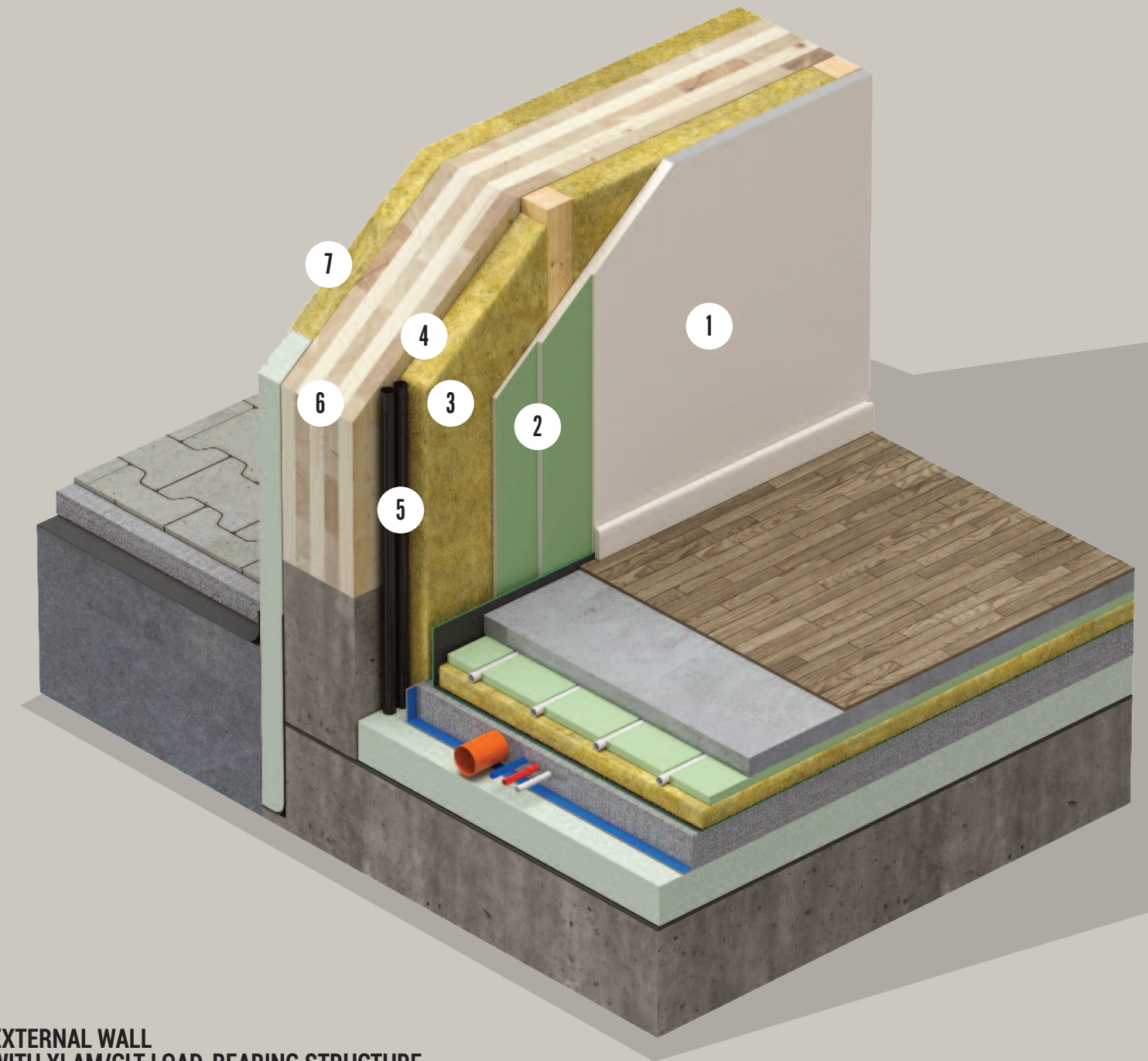


The Xlam/CLT production process is complex and strictly regulated. Through **continuous monitoring** at every stage, we ensure a **high-quality product** that meets the highest construction standards for your final building. Additionally, every panel is customized to fit a specific project and its client's needs.

Manufactured entirely in-house, our Xlam/CLT panels are made from selected Spruce timber, **bonded in cross-laminated layers using formaldehyde-free adhesives**. Each panel is cut, perforated, and shaped to accommodate pre-designed openings for doors, windows, and other structural elements.

Both the manufacturing process and our panels undergo **constant quality checks** to ensure safe, **efficient production**, and mechanical uniformity across all panels.

And **testing even continues on-site**, where acoustic performance, air tightness, and thermographic measurements are conducted to validate energy efficiency and overall comfort levels.



EXTERNAL WALL
WITH XLAM/CLT LOAD-BEARING STRUCTURE

- 1
INTERNAL
FINISHING
- 2
PLASTERBOARD
- 3
LOW-DENSITY
INSULATION
- 4
FURRING
WALL
- 5
SERVICE
CAVITY
- 6
XLAM/CLT
BEARING WALL
- 7
THERMAL INSULATION
WITH EXTERNAL FINISHING



xlamdolomiti.it

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