STRUCTURAL WOOD SYSTEM WITHOUT METALLIC ELEMENTS

TECNOLOGÍA PATENTADA

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RESUMEN

Researchers from the Department of Civil Engineering at the University of Alicante have developed a new system to build wooden constructions in a fast, resistant and efficient way without the need to use metallic elements (steel), adhesives or concrete, thus increasing the useful life of the wood.

This system is modular and therefore reduces the assembly time of the house. As it is a standardised and automatable process, it is also possible to reduce manufacturing time and costs.

The system, which is protected by a patent application, has been developed on a laboratory scale and would therefore require further development for its market introduction. Companies in the wood construction sector interested in a possible commercial exploitation of the technology are sought.

VENTAJAS Y ASPECTOS INNOVADORES

ADVANTAGES OF THE TECHNOLOGY

The main advantages resulting from the application of this wood joint are the following:

- The joint is produced without the use of metal reinforcing elements (nails, screws, etc.), thus achieving high strength without affecting the useful life of the wood.
- A fast joint is achieved, which also reduces manufacturing time and eliminates the use of steel in wooden constructions, achieving a dry assembly of parts.
- Fast production due to the fact that the parts are based on an automated system that is capable of reducing manufacturing time and costs.
- Standardisation of parts. Parts can be standardised and manufactured in just a few minutes using a special machining cutter, which means shorter production time and greater control of the process from the start.
- Ease of transport, due to standardised parts, which means that large quantities of material can be transported in a way that saves fuel and postage. The packaging is flat.
- Easy joining of parts due to the mechanised system. Complex assembly tools are avoided and the labour and resources required to assemble the system are optimised. Assembly without the need for metal fittings.
- Sustainable. Wood is a material adapted to the 21st century. It reduces the carbon footprint of construction and is also a highly energy-efficient material.
- The system is modular, which means that the work on site is reduced thanks to the study and manufacture of the houses/buildings in the workshop. Therefore, labour time is reduced and on-site resources are optimised.

MAIN INNOVATIVE ASPECTS OF THE TECHNOLOGY

The main innovative aspect of the present invention lies in the fact that no metal elements, concrete or adhesives are required to join wooden parts, which by means of a composition are made into an industrialised architectural module.

The other major innovative aspect is the curved machining.

APLICACIONES DE LA OFERTA

The present invention corresponds to a wood joint that allows two pieces to be joined together in a simple, resistant way and without requiring metallic elements such as nails or screws that affect the life of the joint.

It allows the joining of wooden parts, preferably wooden beams and pillars and wooden crosspieces or joists between beams.

Therefore, this invention is of particular interest for the **construction of wooden structures** or other structures that make use of wood.

COLABORACIÓN BUSCADA

Companies interested in acquiring this technology for its exploitation are sought. Possible type of agreements:

- Patent licensing agreements.
- R&D projects for customised developments.
- Proof of concept projects.
- R&D projects to adapt the technology to the needs of the company.

Type of company sought:

- Manufacturers of wooden building materials.
- Manufacturers of ecological building materials.
- Wooden house builders.
- Companies with wood machining capabilities.