



LVL (Laminated Veneer Lumber) of *Fagus sylvatica*.

Introduction

A new LVL product has been developed and tested using beech veneer from Spain. This product did not exist before and it is hoped that with its development, the beech wood value chain can be revalued.

LVL is a product that consists of the successive stacking of thin layers of wood, veneers, obtained by unrolling. Obtaining the material in this way has the following implications:

- Beech veneers used for the manufacture of LVL. The raw material for the manufacture of this product is high quality logs. Large diameters, straight, with little taper and knots in order to obtain an adequate yield, volume and quality during unrolling. For this reason, it is to be expected that the manufacture of structural products with peeled veneer will offer superior properties to sawn timber of the same species.
- Bending tests have been carried out on small dimension and structural size specimens, as well as tensile tests perpendicular to the fiber. The results of the tests are satisfactory and encouraging, achieving good mechanical properties that indicate that the raw material is suitable for the production of this product. Comparing the properties of LVL tested in bending with those of sawn timber from the same source, the results have been improved in both bending strength and stiffness.

Lessons learned

It has been observed that the bending strength of LVL is higher than that of the tested sawn timber sample. This is consistent with the fact that engineered wood products, such as LVL, improve the properties of sawn timber due to the better use of the material and the reduction of singularities in the structural elements. If we now analyse the results of the bending tests performed on small specimens, we can see, as expected, that these samples are stronger and stiffer than those of structural size. In particular, the ratio between strengths is 1.67, and in the overall modulus of elasticity 1.43. This can be explained by the lower amount of singularities that small-sized wood has compared to structural-sized wood. On the other hand, the pressing process with the hot plate press, used to produce the panels from which the small dimension specimens were obtained, has a higher degree of control than that carried out with the large press used to produce the structural size beams. The latter may also influence the better results obtained with the small specimens. Finally, with regard to the results of the tensile tests perpendicular to the fibre, it can be commented that the characteristic strength value obtained of 0.94 MPa is higher than that indicated for all hardwood D strength classes in the EN338 standard, which corresponds to 0.6 MPa.

For further information contact

José Luis Villanueva, Project coordinator, Cesefor, e-mail: joseluis.villanueva@cesefor.com

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Further information

<https://gofagus.es/gofagus/>



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