



## Visual structural grading tool and a mechanical structural grading tool

### Introduction

For the first time, structural grading tools have been developed for beech wood of Spanish origin. This will allow beech timber to be used for structural products: beams, pillars, glued laminated timber, etc.

Specifically, a structural visual grading and a mechanical grading have been developed. The structural visual grading consists of a wood industry operator who, on the basis of visual observation criteria of each piece of wood, can declare a resistance class.

On the other hand, mechanical grading consists of the determination of a strength class with the use of a grading machine, which, based on the density of the wood and the natural vibration frequency of the piece, is able to determine the strength class.

Finally, the results obtained in the reports will be submitted to the European committee for approval so that it can be used by the industry.

### Lessons learned

During the process, it has been found that beech wood obtains better resistance classes than the Spanish conifers approved for use in structures within the UNE 56544 Standard. Specifically, resistance classes ranging from D45 to D24 were obtained.

It was also found that the structural visual classification, according to the Spanish standard UNE 56546, obtained 75 % of wood suitable for use in structures, which allows to expand the customer market.

In the process, a modification of the UNE 56546 standard has also been proposed, for the improvement of yields, with this modification, higher graded wood yields are obtained (84 % of MEF wood corresponding to a CR D35). On the other hand, modification 2 establishes a high percentage of high structural quality wood (44% of MEF A class), with an added value corresponding to CR D45, to which we must add 40 % of CR D35 and 16 % of rejected wood.

The information presented in this factsheet was developed by the FOREST4EU partner, drawing on the innovations and knowledge generated by the indicated operational group with their explicit authorization.

### Further information

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

José Luis Villanueva, Project coordinator, Cesefor, e-mail: [joseluis.villanueva@cesefor.com](mailto:joseluis.villanueva@cesefor.com)



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