

A study of the differences between the 8 mm and 6.3 mm fractions of sieved recovered wood

GALITEKIN Zeynep, IRLE Mark, LEBRETON Flore

École Supérieure du Bois, Nantes
galitekinzeynep@outlook.com

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Context and objectives

The continuous increase in MDF (Medium Density Fibreboard) production capacity on a global scale brings the annual total to 100 million m³ (FAOSTAT 2024). As a consequence, it is estimated that about 55 million m³ of MDF waste is generated every year as a result of MDF production in previous years. This situation has made it even more important to study the types of products included in the recovered wood collections. This study is a part of the EcoReFibre project, which is a European project launched in May 2022.

Recovered wood is chipped improve the storage and transport efficiency of recovered wood (Irle et al 2023). It is possible that the different wood products present will respond to chipping differently, i.e. plywood might produce bigger chips than particleboard. The aim of this study is, therefore, to compare the ratios of wood product types in the 8 mm and 6.3 mm fractions of recovered wood samples collected from various regions of France and Germany. This is important because the EcoReFibre study has based its result only on the 8 mm fraction, which is the largest fraction; could it be that different proportions of wood products are observed in the 6.3 mm fraction?

Material and methods

The samples collected “class B”, i.e. non-hazardous and suitable for recycling to particleboard. The samples were sieved using 8 mm, 6.3 mm and 4 mm mesh sieves. The particles held on an 8 mm (65.1 kg) and 6.3 mm (2.9 kg) sieve were then manually separated into 5 fractions: pure fibreboards, coated fibreboards, other panels (POP = plywood, OSB and particleboard), solid wood and non-wood.

Fig. 2 shows quite clearly why the 8 mm fraction has been used because it consists of many fewer particles and so it is easier to sort into the 5 fractions described above.



Fig. 1 : Five fractions



Fig. 2 :150g in the sample with a size of 6.3 mm (left) and 8 mm (right)

Results and discussion

Although there appears to be a slight difference in the proportion of fibreboard in the two fractions, the difference is actually statistically insignificant. Consequently, there is no benefit to the EcoReFibre project to analyse both the 8 and 6.3 mm fractions.

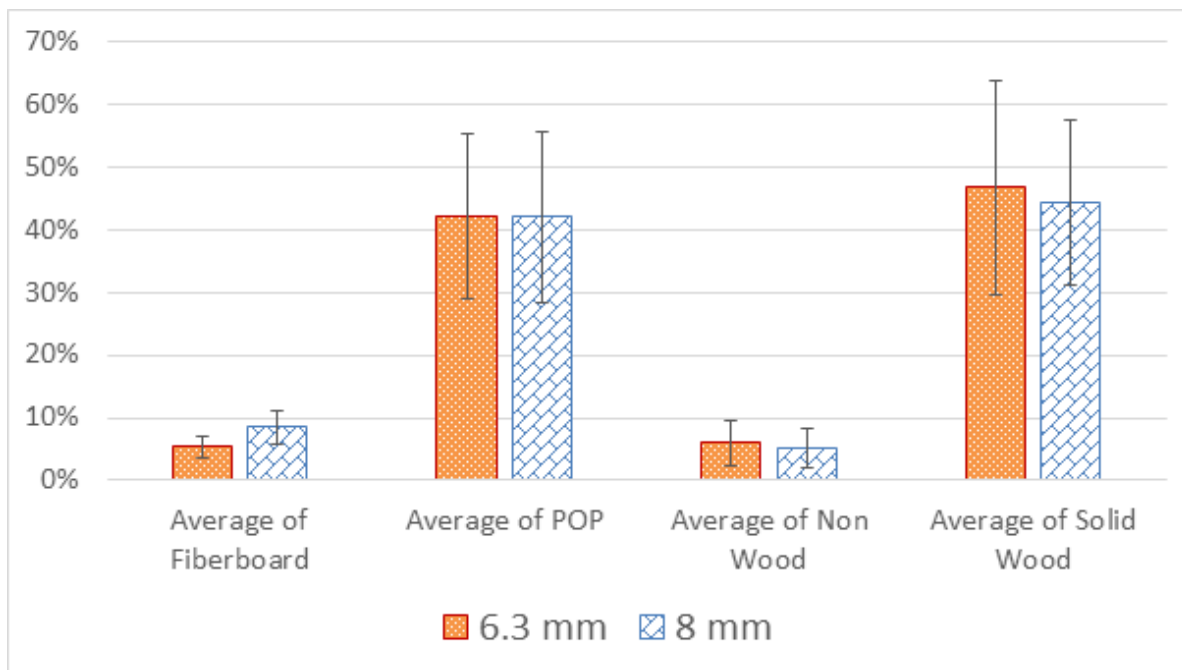


Fig. 3. Comparison between the 6.3 and 8 mm fractions of sieved Class B recovered wood.

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