

Carbon Handprint of Finnish Fibreboard Ltd's LION Boards™

Introduction

LCA (life cycle assessment) was made for Finnish Fibreboard Ltd's LION Boards™ product to find out environmental impacts the product has during its lifetime. Finnish Fibreboard also wanted to find out how much emission reduction the product can make during its lifecycle compared to the conventional particle boards, medium density fibreboards, and plywood. The LCA calculations for the Finnish Fibreboard's product have been third party verified. Multiple comparison products were found for LION Boards™. The comparison products would be used in similar way as Finnish Fibreboard's products. The comparison products include particle boards, fiberboards, and plywood from different manufacturers.

Life cycle impacts A1-A3 and D-module

LION Boards™ is compared with Ecoinvent 3.8 dataset for Particleboard production, uncoated, average glue mix as well as other average values of particle boards, medium-density fibreboards (MDF) and plywood. The values for comparison products other than Ecoinvent 3.8. dataset are average values of carbon footprints from multiple manufacturers. The value for particle board is average of three different manufacturers in Europe. The value for MDF is average of two international manufacturers. Finally, the value for plywood is average of two manufacturers in Europe.

It is notable, that the weight of 1m³ of LION Boards™ is 980 kg, which is higher than comparison products. The average weight of comparison products is 599 kg of 1m³. The Ecoinvent 3.8 dataset has a weight range from 250 to 1300 kg of 1m³. Ecoinvent 3.8 comparison products' carbon footprint does not include impacts from module D (benefits and loads).

Table 1 illustrates the carbon footprint of LION Boards™ in comparison to other products with the same way of use. The table shows that the LION Boards™ has smaller carbon footprint compared to other products during its life cycle.

Table 1. Carbon footprints of the compared products at life cycle stages A1-A3 and D

kgCO ₂ /m ³	A1-A3 + D
LION BoardsTM	-1771,1
Ecoinvent 3.8	-369,45
Particle board - Europe	-618
MDF - International	-524
Plywood - Europe	-888
Difference in footprint average	-1171
Minimum difference	-883
Maximum difference	-1402

Conclusion

This study shows that LION BoardsTM has significantly smaller environmental impact during its lifecycle compared to other products in this study with the same way of use.

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