

AGRIBOARD PRODUCT ANALYSIS

BECK

INTRODUCTION

This product analysis is defined as **cradle-to-gate**, from the production of raw materials to the delivery of component parts at Agriboard's manufacturing facility. Using data from the National Renewable Energy Laboratory's Life-Cycle Inventory database (*NREL LCI*), the major components (>10%) are measured for **embodied energy**, **embodied water**, and **carbon footprint**. Please note that screws and nails are not included in the calculations, as well as the manufacturing of the adhesives; however, transportation for adhesives is included. In this life-cycle assessment (*LCA*) method, these items would be used for any competing installations, and, therefore, do not need to be included. Information for borate was undetermined.

RESULTS

AGRIBOARD		AGRIBOARD	
Thickness	4-3/8"	Thickness	7-7/8"
Panel Size	24x9	Panel Size	24x9
Embodied Energy (GJ)	58.82	Embodied Energy (GJ)	90.26
Embodied Water (L)	19702.01	Embodied Water (L)	39404.01
CO₂ Emitted (metric tons)	-0.42	CO₂ Emitted (metric tons)	-0.87

EMBODIED ENERGY

The embodied energy is a measurement of the amount of energy required to produce the product(s) in the analysis time frame. The result between 58 and 90 GJ is fairly high, particularly due to the use of natural gas in the production of oriented strand board (*OSB*).

Comparison: The embodied energy of one cubic meter of plywood is **9.44 GJ**.

EMBODIED WATER

The embodied water, similar to embodied energy, is a measurement of the amount of water required to produce the product(s) in the analysis time frame.

Comparison: An Olympic-size swimming pool holds **2.5 million liters** of water.

CARBON FOOTPRINT

The carbon footprint is a measurement of the amount of carbon dioxide emitted during the production of the product(s) in the analysis time frame. The particular result in this case is surprising because it is negative. The growth of wheat (and the *unattributed* removal of waste from disposal) counteracts the requirements for transport to the manufacturing facility.

Comparison: A car emits approximately **5.91 metric tons** of CO₂ at 15 mpg and 10,000 miles per year.

