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Strawboard - Environmental Specification

The production and use of Strawboard has a very positive environmental impact. Strawboard is BETTER THAN CARBON NEUTRAL

Straw

The straw used to manufacture Strawboard is a natural waste product from cereal (such as wheat) crop production. Straw is a natural, continuously renewable raw material. As the straw is available as a consequence of food production it is free of any environmental 'costs' – other than baling and transport. During growth, straw sequesters carbon, thereby helping to reduce greenhouse gas production. See figures for Global Warming Potential (GWP) in the table at the bottom of this sheet.

Process energy

The Compak System technology used to produce Strawboard has low energy usage. Unlike wood, cereal straw requires minimal drying prior to board production and the energy required for particle size reduction is very low.

Binder

The high performance MDI (urethane based) resin used to bind the straw particles is required at a level of only 3% - as compared with the 10% required for more conventional urea formaldehyde (UF) resin. Although the MDI resin is currently derived from petrochemical sources, it is anticipated that a bioderived binding system could be used when a suitable system becomes commercially available. The key advantages of MDI are that it produces very strong moisture resistant strawboards at a low addition level, and importantly MDI is entirely formaldehyde-free.

Transport

Strawboard is currently manufactured in China. This creates negative environmental impact due to shipping. However, it can be seen from the Life Cycle Analysis (LCA) summary table below that the carbon used in production and transport is offset by the carbon sequestered (lock-up) during crop production. Nevertheless, the strategy of the consortium involved with Strawboard production and marketing is to establish a UK production facility as soon as it is commercially viable.

Life Cycle Analysis (summary)

	Energy MJ/kg	GWP Co2 eqv/kg
Straw	0.000	-1.781
MDI Resin	3.009	0.169
Production	2.392	0.562
Transport	5.997	0.367
Packaging	2.683	0.066
Net balance	14.080	-0.618

The above figures demonstrate that more carbon is locked-up in Strawboard than is released through manufacturing and transport. Thus Strawboard is BETTER THAN CARBON NEUTRAL.