

The Omnia panel has been compared with other common composite products (Aluminium cored sandwich, a sandwich panel of steel sheets with PU foam core, GFRP skins with a polycarbonate core and plywood) for building box bodies to show you the environmental impact of our panel in comparison.

To compare the materials, the amount of energy used to produce the sides and bulkhead of a box van has been analysed (approximately 30 m² of panel in total).

Raw Material Production

Material	Energy* [MJ/kg]
Steel	50
Aluminium	110
Polypropylene	100
Glass fibre	60
PU foam	100

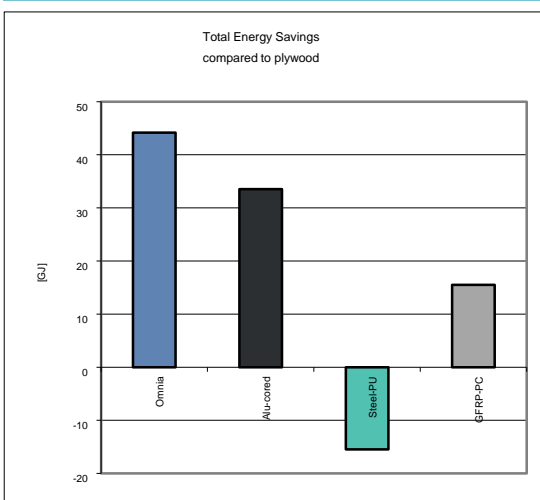
*According to our in-house information

For most plastics, the energy required to manufacture is similar and so it has been assumed that polyurethane takes the same amount of energy as polypropylene to produce. The Omnia panel contains about 1.2kg of glass fibre and 3.3 kg of PP.

Panel	Weight [kg/m ²]	Energy/m ² [MJ/m ²]	Total energy [GJ]
Omnia	4.5	405	12
Alu-cored	5.3	583	17
Steel-PU	12	650	19
GFRP-PC	7.3	700	21

Although the paint is not taken into account it is worth mentioning that the Omnia panel is painted with a water-based paint system, being only half as demanding on the environment as solvent based ones. The energy used to produce composite panels is calculated by the addition of the individual constituents. Due to a potentially good eco-profile of plywood, it is assumed that the production takes no energy from nature. For transport applications this is only part of the story; the weight savings gained from using composites actually saves fuel during the service life.

Panel	Weight Savings [kg/m ²]	Production Energy [GJ]	Fuel Savings [L]	Fuel Savings Energy [GJ]	Total Energy Savings [GJ]
Omnia	8	12	1440	56	44
Alu-cored	7.2	17	1296	51	34
Steel-PU	0.5	19	90	4	-15
GFRP-PC	5.2	21	936	37	16
Plywood	0	-	-	-	-



For cars and similar size vehicles (<3.5 tonnes) the reduction in fuel consumption is about 0.3 L/100km per 100 kg. For a service life of 200,000 km this results in the savings as indicated in the table.