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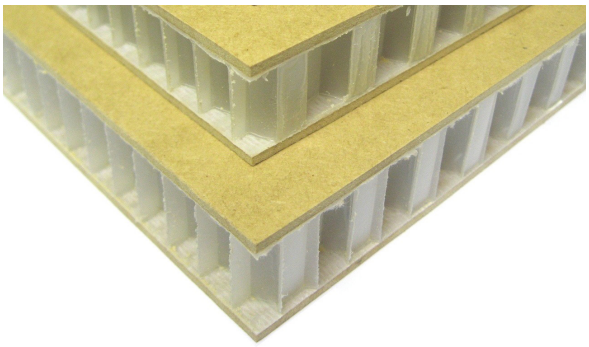
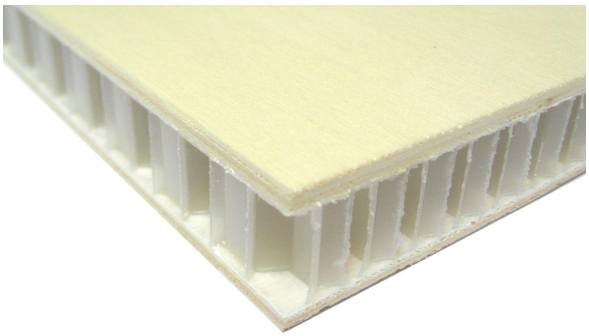
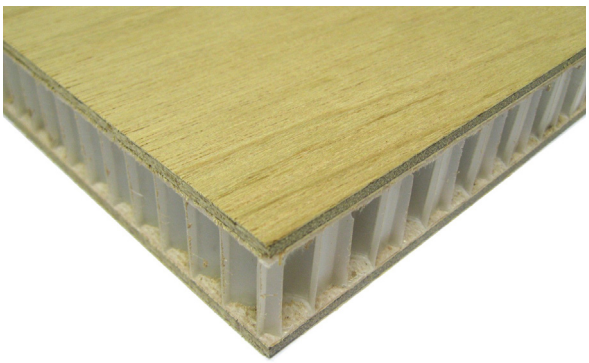
LIGHTWEIGHT WOOD PANEL MATERIALS WITH THERMOPLASTIC HONEYCOMB CORES







EconCore launches a range of ThermHex lightweight wood panel materials to meet the industry demand for wood panel solutions that use a reduced amount of natural resources. The lightweight panels reduce CO2 footprint during the panel production phase and reduce transport cost because of the low weight.

The growing demand for wood panels in furniture, building and construction industries has driven wood consumption to unsustainable levels. To conserve the world's forest we must use wood more efficient. Sandwich panel constructions minimize the use of material resources and help reduce carbon footprint.

EconCore combines a high performance, but lightweight PP honeycomb core, with wood layers. Using the patented ThermHex production process, EconCore is able to produce these sandwich panels in a very economical way, which opens up the possibility to use these panels in a wide range of cost sensitive markets.

Markets and Applications:

- Furniture *(e.g. shelves and cabinets for bath and kitchen)*
- Building and Construction *(e.g. separating walls and trade fair constructions)*
- Transportation *(e.g. floors and walls for trucks and trailers)*
- Packaging *(e.g. flight cases, cargo containers)*

Product availability: *EconCore offers 2 standard ThermHex wood panels.*

- MDF/HDF skins on a PP ThermHex core
- Plywood skins (BFU 100/WBP bonding) on a PP ThermHex core

These panels are available in 3 standard thicknesses:
18mm, 21 mm and 25 mm.
Standard sizes are 1220 mm x 2440 mm - open edge finish.
The standard thickness for the skin layers is 2-3 mm.
Please contact us if you are in need for different thicknesses or special sizes.

The smooth surface finish of the HDF-panels allows a decorative finishing layer, like for example veneer, PVC foil or CPL to be directly laminated onto these panels.

The water and boil proof plywood quality in combination with our thermoplastic honeycomb core enables these lightweight panels to withstand moisture and steam in bathrooms and kitchens as well as extreme weather conditions.

Key advantages:

- Lightweight
- High stiffness
- Improved moisture and water resistance
- Improved thermal insulation properties
- Excellent surface finish

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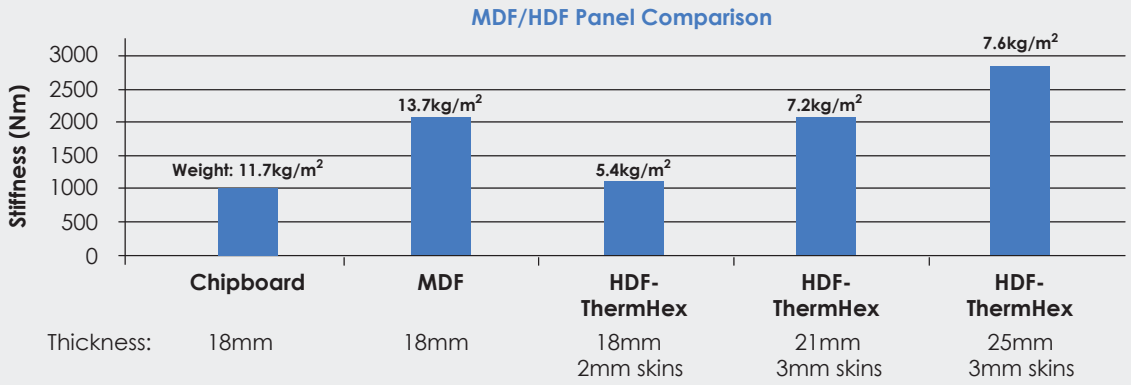
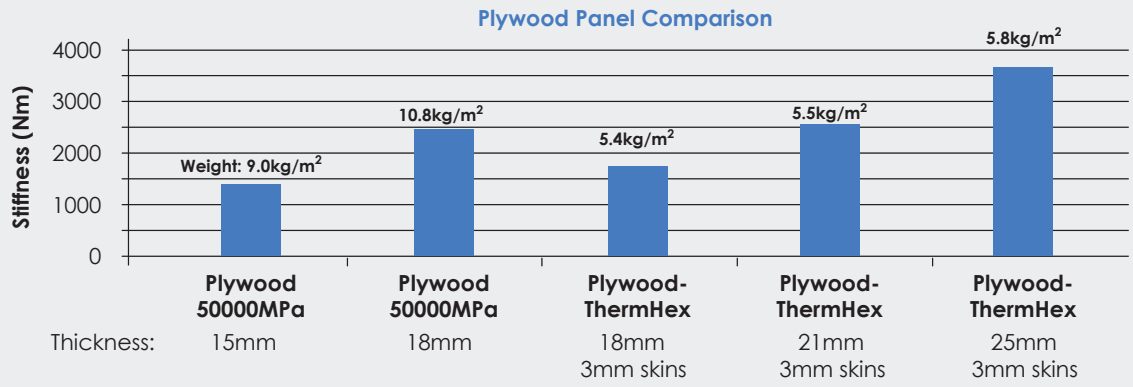
Flexural performance of ThermHex honeycomb sandwich panels is evaluated by means of a three point bending test at 900 mm span length. Bending stiffness of the lightweight boards at different thickness is compared to that of typical wood-based materials. As there is some anisotropy in the wood materials, all the panels are tested in the optimal direction in regard to the layup of plies.

The weight saving potential of the lightweight ThermHex boards is demonstrated below.



HDF faced honeycomb core is a very attractive substitute for traditional materials in the woodworking industry. When referenced to a 18 mm thick chipboard, the 2 mm HDF faced ThermHex honeycomb shows similar bending stiffness at less than half the weight. The flexural performance of a solid MDF board, is met by a 21 mm thick HDF-ThermHex panel again at approx. 50 % weight savings. Thanks to the efficient honeycomb spacer, only a small increase of weight (0.4 kg/m²) is noted when the ThermHex panel's thickness is increased from 21 mm to 25 mm while the stiffness increases by 40% !!



When compared to a mid range density solid plywood as shown in the chart above, the 18 mm ThermHex honeycomb panel with 3 mm plywood skins shows up to 50% weight savings while a high level of flexural performance is obtained. Bending stiffness of the Plywood-ThermHex board is doubled when the panel thickness increases from 18 mm to 25 mm, although the weight increase for the lightweight board in minimal. Especially at this thickness level the bending stiffness efficiency of the ThermHex honeycomb panel is far above the ground when contrasted with that of solid plywood.

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