LIABILITY FOR DEFECTS

All information provided herein is based on our current knowledge and experience. Due to the high number of variables that can influence the behavior of the delivered material, the processor is under his own responsibility for ensuring that the information is appropriate for the planned processes and applications. The information and explanations provided by ThermHex Waben GmbH do not release the processor from the necessity of carrying out his own assessments and tests. Information contained herein and explanations provided by ThermHex Waben GmbH do not replace the responsibility of the processor to carry out his own investigations and tests. ThermHex Waben GmbH does not accept any liability for defects due to the use of its products. The processor bears the full risk of loss or damage of the delivered item. ThermHex Waben GmbH cannot be held liable for any consequences resulting from the use of the information contained herein and explanations provided by ThermHex Waben GmbH in connection with this printed matter.

ThermHex Waben GmbH is not liable for defects due to the use of its products. The processor bears the full risk of loss or damage of the delivered item. ThermHex Waben GmbH cannot be held liable for any consequences resulting from the use of the information contained herein and explanations provided by ThermHex Waben GmbH in connection with this printed matter.

We reserve the right to adapt the product to satisfy technical progress and new developments. We would be pleased to help with any enquiries including those related to special application issues. If the application for which our products are used subject to statutory approval, the user is responsible for the procurement of such approval. Our recommendations do not release the user from the obligation of taking the possibility of impairing third-party rights into account and of clarifying these if necessary. Furthermore, we reserve the right to make changes and improvements without prior notice. You would be pleased to supply these on request.

ADVANTAGES

- Major cost reduction
- Significant weight saving
- High bending stiffness
- Energy absorbent
- Resistant to moisture, acids and bases
- Easy resource-friendly converting
- 100% recyclable

THERMHEX ORGANOSANDWICH LIGHTWEIGHT SANDWICH MATERIAL
THERMHEX POLYPROPYLENE HONEYCOMB CORE WITH GF SKIN
**THERMHEX ORGANO SANDWICH – THE NEW SANDWICH MATERIAL.**

The Organosandwich production is based on the patented ThermHex process. The process enables the continuous inline production of thermoplastic honeycomb cores in a fully automatic production line.

By using our lightweight Organosandwich weight savings of over 80% are possible compared to a monolithic construction. In comparison to a monolithic organosheet laminate, a sandwich of the same stiffness requires less number of layers, which means considerable cost savings when using the Organosandwich.

The Organosandwich consist of 0°/90° cross ply laminate skin layers made of continuous glass fiber reinforced polypropylene. The folded honeycomb core material consists of a polypropylene as well. This allows an optimal bonding between core and skin layers in the lamination process by thermoplastic welding. The sandwich can be pressed locally to a monolithic laminate which allows the thermoforming of multi-curved shell structures and the pressing of pressure stable monolithic joining surfaces in one step. The pressed areas offer the possibility of functional integration by means of injection molding. Hence, complex lightweight parts can be produced very cost-efficient in short cycle-times which is essential for many automotive applications.

**PHYSICAL PROPERTIES**

- **Bending stiffness** (CD, L – MD, W)
- **Compressive strength** (Z-direction)
- **Compressive modulus** (Z-direction)
- **Shear strength** (CD, L – MD, W)
- **Shear modulus** (CD, L – MD, W)
- **Temperature range for processing and application (°C)**
- **Thermal conductivity**
- **Fire resistance**
- **Chemical resistance**

**PROVISIONAL**

**PRODUCT DESCRIPTION**

- **6THPP120CP820**
  - Standard dimensions (CD, L x MD, W): 1.200 mm x 2.500 mm
  - Sandwich thickness: 6 mm
  - Skin layer thickness: 0.5 mm
  - Core thickness: 5 mm
  - Cell size: 4 mm
  - Weight per unit area: 2.400 – 2.460 g/m²
  - Sandwich density: 400 – 410 kg/m³
  - Core density: 120 – 130 kg/m³
  - Tolerances: MD (machine direction), W +10 / – 1 mm
  - Sandwich thickness: ±2 / ±1 mm
  - Squareness: ±0.3 mm
  - ±0.2°

- **12THPP120CP820**
  - Standard dimensions (CD, L x MD, W): 1.200 mm x 2.500 mm
  - Sandwich thickness: 12 mm
  - Skin layer thickness: 0.5 mm
  - Core thickness: 11 mm
  - Cell size: 5 mm
  - Weight per unit area: 3.120 – 3.240 g/m²
  - Sandwich density: 260 – 270 kg/m³
  - Core density: 120 – 130 kg/m³
  - Tolerances: MD (machine direction), W +2 / – 1 mm
  - Sandwich thickness: ±2 / ±1 mm
  - Squareness: ±0.3 mm
  - ±0.2°

- **Bending stiffness** (CD, L – MD, W)
  - 0.7 MPa – 0.4 MPa (691 PSI – 58 PSI)
  - 271 MPa – 6 MPa (3.945 PSI – 870 PSI)

- **Compressive strength** (Z-direction)
  - 2.0 MPa (290 PSI)
  - 45 MPa (6.800 PSI)

- **Compressive modulus** (Z-direction)
  - 25 MPa (3.580 PSI)
  - 45 MPa (6.800 PSI)

- **Shear strength** (CD, L – MD, W)
  - 0.7 MPa – 0.4 MPa (691 PSI – 58 PSI)
  - 271 MPa – 6 MPa (3.945 PSI – 870 PSI)

- **Shear modulus** (CD, L – MD, W)
  - 10 to +80
  - 30 to +80

- **Temperature range for processing and application (°C)**
  - Short term to +140
  - Short term to +140

- **Thermal conductivity**
  - 0.065 W / mK
  - 0.065 W / mK

- **Fire resistance**
  - Normally inflammable (building material class B2 DIN 4102-1, respectively D according to EU classification), higher grades of fire resistance can be obtained in sandwich elements when using specialized skin materials.

- **Chemical resistance**
  - Excellent resistance to water, most acids, bases and salt solutions.