



# **THERMHEX PP HONEYCOMB CORES**

THERMHEX POLYPROPYLENE HONEYCOMB CORES  
A NEW GENERATION OF THE APPROVED CORE MATERIAL

# THERMHEX PP HONEYCOMB CORES

THPP60-FN | THPP80-FN

ThermHex honeycomb core with polyester non-woven and PP closure film (THPP60-FN, THPP80-FN) for bonding and processing with thermoset resins.

ThermHex honeycomb core without standard surface finish FN but with extra bonding areas for the skin material.

## TECHNICAL DATA

### PRODUCT DESCRIPTION

Core material

Core thickness (mm)
Cell diameter (mm)
Cell wall density (kg/m <sup>3</sup> )
Total core density (kg/m <sup>3</sup> )
Weight per unit area (g/m <sup>2</sup> )

Compressive strength (MPa)*	(ASTM C365)
Compressive modulus (MPa)*	(ASTM C365)
Shear strength (CD, L / MD, W) (MPa)	(ASTM C273)
Shear modulus (CD, L / MD, W) (MPa)	(ASTM C273)
Temperature range (°C)	for processing and application
Thermal conductivity (W/(m*K))	
Surface finish	

Standard dimensions (MD, W x CD, L) (mm)

\*Data provided from testing. These are values of an exemplary configuration (thickness, cell diameter, density)

### THPP60-FN

Polypropylen (PP)

5	8	10	12	15	20	23	28
4	8	8	5	5	5	9.6	9.6
60	60	60	60	60	60	60	60
128	115	92	88	84	76	76	76
640	920	920	1056	1260	1520	1748	2128

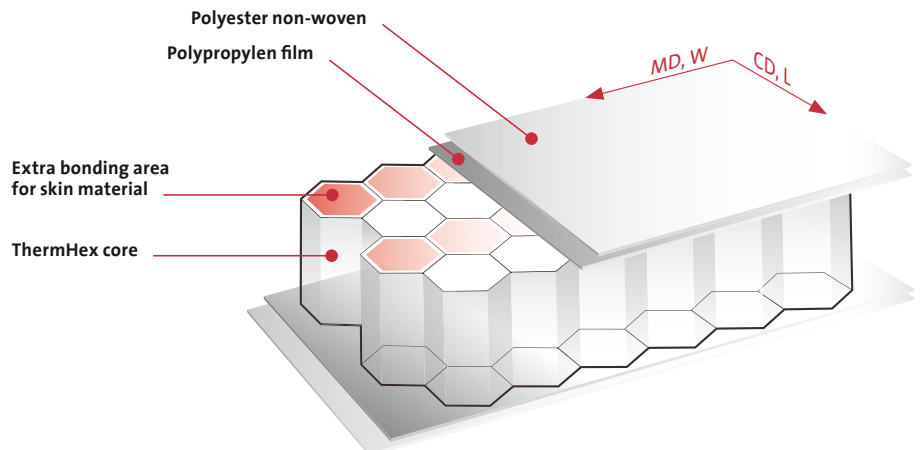
0.6
15
0.4 / 0.2
14.0 / 5.0
-30 to +80
short-term up to +140
0.060
50 µm Polypropylen film
40 g/m <sup>2</sup> Polyester non-woven
2500 x 1200

### THPP80-FN

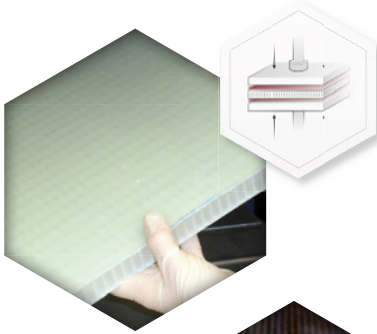
Polypropylen (PP)

3.5	5	6	8	10	12	15	20	23	28
3	4	4	8	8	5	5	5	9.6	9.6
90	80	80	80	80	80	80	80	80	80
167	148	123	144	117	110	109	99	99	99
585	740	740	1152	1170	1320	1635	1980	2277	2772

1.2
40
0.5 / 0.3
15.0 / 6.0
-30 to +80
short-term up to +140
0.065
50 µm Polypropylen film
40 g/m <sup>2</sup> Polyester non-woven
2500 x 1200

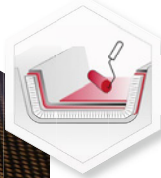
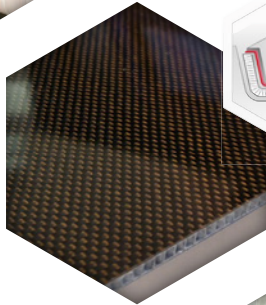


## HANDLING OF THERMHEX HONEYCOMB CORES



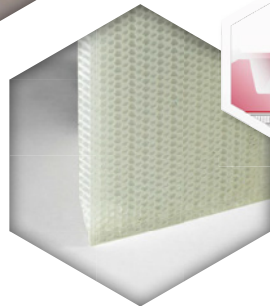
### Bonding of skin layer and honeycomb core

During bonding of ThermHex honeycomb core it is essential to use the right adhesive. The adhesive is significantly determined by the requirements of the sandwich compounds.



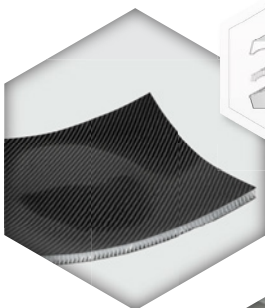
### Laminating the skin layer onto the honeycomb core

ThermHex honeycomb cores can be laminated with different methods for example hand lay-up with vacuum moulding. Typical types of resin include polyurethane, polyester, vinylester or epoxy.



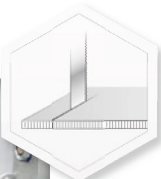
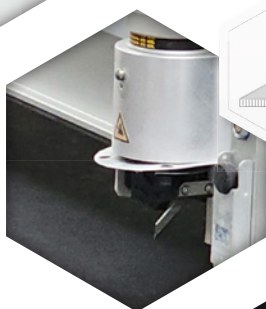
### Spray-up

For large components or lamination of ThermHex honeycomb cores the fiber resin spray-up suits well. During this process, the merging of the components (resin and reinforcing fiber) as well as the deposition are done with a fiber-resin diffuser.



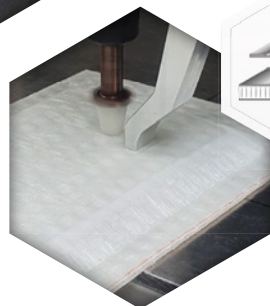
### Forming

Besides forming with heat it is also possible to form honeycomb cores of small thickness (e.g. 3.5–10 mm) at room temperature during curing of the skin layers with the help of pressure or vacuum.



### Cutting

The cutting of ThermHex honeycomb cores is carried out with conventional tools and methods such as band and circular saws, drawing, rotating and oscillating knives, waterjet and laser cutting, punching and others.



### Edge closure and load application

Depending on the kind of procedure, usage and pressure on the finished sheet different edge closures are possible. For load application points, it is recommended to work with inserts that connect the two skin layers, in order to achieve a higher load bearing capacity.

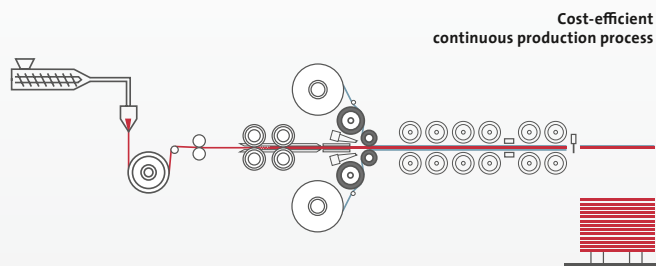
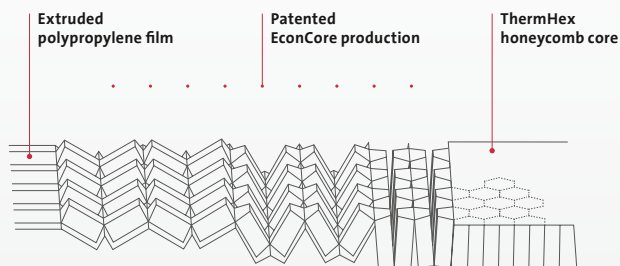
# THERMHEX PP HONEYCOMB CORES OFFER TO PRODUCERS OF SANDWICH ELEMENTS A NEW GENERATION OF THE APPROVED CORE MATERIAL

The innovative ThermHex technology for the continuous production of PP honeycomb cores supports the production of highly cost-efficient sandwich structures. Different to traditional production processes, the patented EconCore process allows for a production of PP honeycomb sheets in theoretically endless length. The

low consumption of raw materials helps to save on resources and to reduce the CO<sub>2</sub>-footprint.

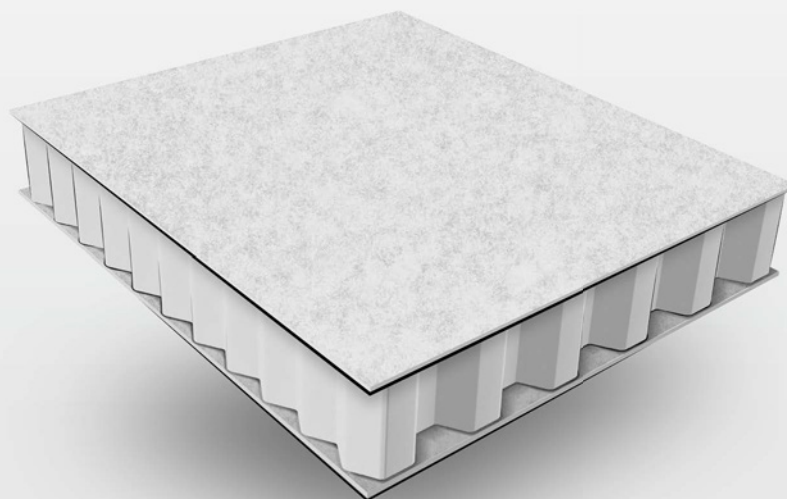
ThermHex honeycomb cores are finished with a polypropylene barrier film. This film avoids the resins to ingress into the open cells during converting and in this way assures stable mechanical properties in

the finished part. At the same time, the quantity of resin needed for processing is reduced to a minimum. The second standard surface layer finish is a PET non-woven material, which enables an easy bonding of various types of skin materials with all common adhesives.



## YOUR THERMHEX ADVANTAGES THROUGH CONTINUOUS IN-LINE PROCESSING

- MAJOR COST REDUCTION
- SIGNIFICANT WEIGHT SAVING
- HIGH BENDING STIFFNESS
- ENERGY ABSORBENT
- RESISTANT TO MOISTURE, ACIDS AND BASES
- EASY RESOURCE-FRIENDLY CONVERTING
- 100% RECYCLABLE



### THERMHEX WABEN GMBH

Merseburger Str. 235  
D-06130 Halle (Saale)  
Germany

Tel.: +49 345 131627-0  
Fax: +49 345 131627-19  
Email: info@thermhex.com  
Web: www.thermhex.com



#### LIABILITY FOR DEFECTS

All information provided herein is based on our current knowledge and experience. Due to the high number of possible influences during processing and application, the information does not release the processor from the necessity of carrying out his own investigations and tests. Information contained herein and explanations provided by ThermHex Waben GmbH in connection with this printed matter does not represent acceptance of a guarantee. Guarantee statements require special explicit written declarations on behalf of ThermHex Waben GmbH to be effective. The constitutions stated in this datasheet determine the properties of the delivery item extensively and conclusively. Application suggestions do not establish assurance of suitability for the recommended application.

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 is 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 impairments to third-party rights into account and of clarifying these if necessary. Furthermore we refer to our General Terms and Conditions, especially with regard to any possible liability for defects. If you are not in possession of our General Terms and Conditions we would be pleased to supply these on request.