



**econcore**  
economic core technologies

## **HIGH PERFORMANCE THERMOPLASTIC HONEYCOMB TECHNOLOGY**

NEW MATERIALS FOR DEMANDING APPLICATIONS



## HIGH PERFORMANCE THERMOPLASTIC HONEYCOMB TECHNOLOGY



High-end applications have been favoring thermoset composite materials over a long period of time. The world is changing though, and the industry is asking for alternative thermoplastic solutions in order to benefit from easy, cost-efficient and short-cycle processing as well as recyclability. Without compromising the market needs, including weight reduction and fire-safety in first place, EconCore is presenting its latest development - High Performance Thermoplastic honeycomb technology.

The applications for HPT honeycombs are broad ranged and primarily lay within aircraft and railway interior components. With the proven honeycomb structure, the mechanical performance is superior to that of FST / FR grades of foam cores offered in the market. Next to the possibility of combining the core with thermoset composite skins for conventional processing methods, the thermoplastic honeycombs are often laminated with thermoplastic face sheets, building essentially mono-material, all-thermoplastic sandwich structures. These can be thermo-formed into final parts in an energy, time and cost-efficient single-step process, dramatically changing production environment in contrast to the costly and labor-intensive conventional processing methods dedicated to thermoset composites.

EconCore's technology has been widely proven in a range of different applications already. Our honeycomb sandwich panels are being used in automotive, broader range of applications in ground and sea transportation, building and logistics.

HPT honeycombs build on the intrinsic benefits of lightweight honeycomb structures, now with higher heat stability and excellent fire resistance. The thermoplastic polymers used for HPT honeycomb's production are Fire-Smoke-Toxicity qualified grades, including, amongst other options, polycarbonates, PPS and PEI. With so-based sandwich structures, the "pass" criteria can be obtained with regards to both, railway's EN45545 standard and aviation's FAR25.853 norm.



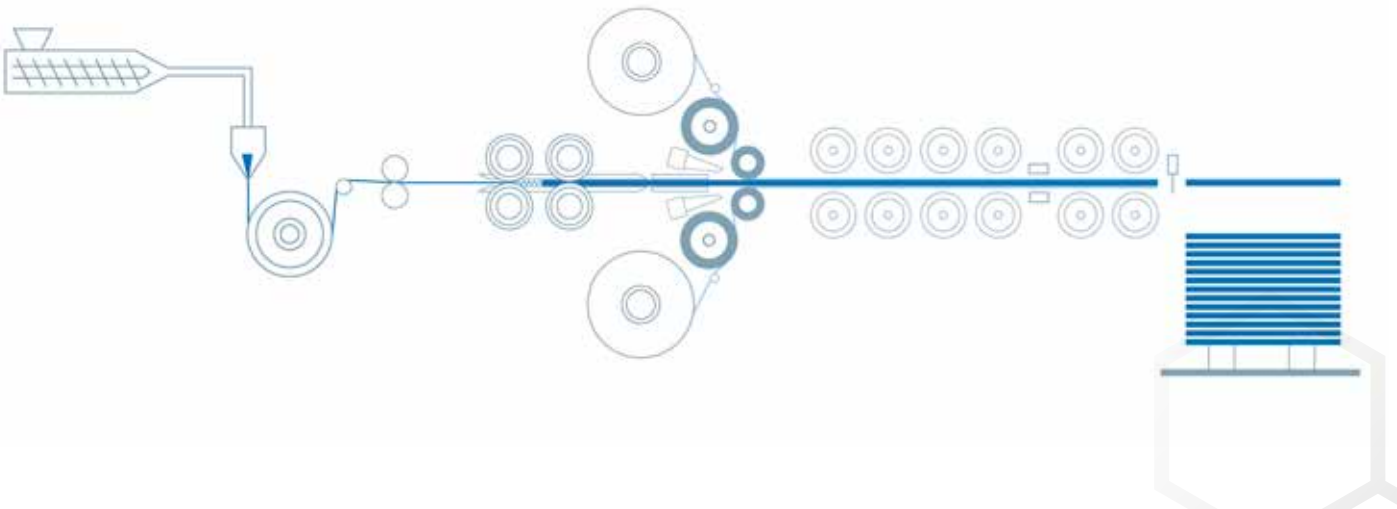
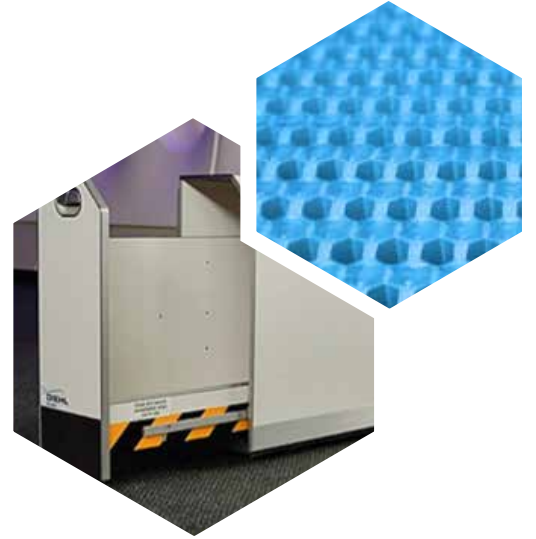
### Key advantages:

- Cost reduction thru EconCore's continuous production technology
- The choice of mono-material thermoplastic sandwich structures, eco-aspects
- High performance to weight ratio
- The option of in-line integration of skin lamination
- Short-cycle processing thru thermoforming
- Enhanced acoustics

## ECONCORE'S PATENTED TECHNOLOGY

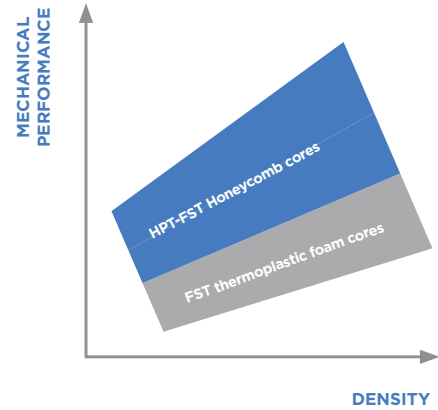
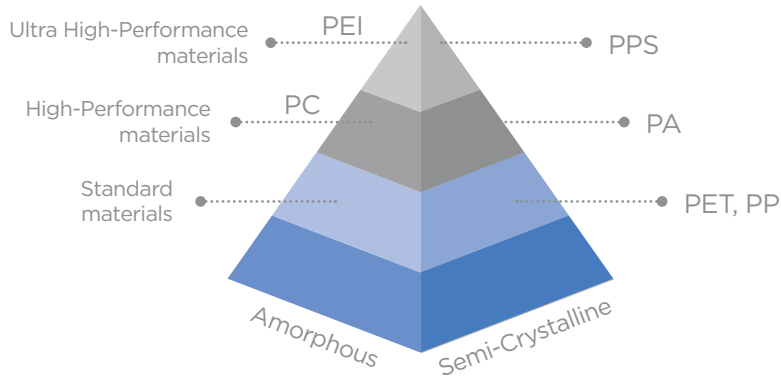
The technology developed by EconCore, and used by number of licensees around the world, allows for energy-efficient, high-speed and fully continuous production of thermoplastic honeycombs. The thermoplastic resin is extruded and directly thermoformed and converted into the hexagonal structure. The process may end at this point, delivering high performance honeycomb core.

However, the unique benefit of the continuous production method is most often used to a full extent: the composite skins are in-line laminated onto the honeycomb core as it is produced. Moreover, post-processing steps, including surface finishing or part thermoforming, can be further integrated within the continuous process. This results in an optimal efficiency and maximal cost reduction with regards to the process as well as the finished sandwich panels and parts.



### EconCore offers both:

- Thermoplastic honeycomb cores for on-site processing
- Technology for inline integrated production of honeycomb sandwich panels and parts



Honeycomb Material Type	FST Performance	Mechanical Performance	Cost	Applications
PA family	⊖	⊖ / ⊕	⊕	High heat automotive, photovoltaics, other high heat
PC FST	⊕	⊕	⊕	Mass transportation, railway / aircraft interiors
PPS / PEI	⊕ ⊕	⊕ ⊕	⊖	Mass transportation, aircraft interiors

## BENEFITS

-  Cost reduction through continuous production technology
-  High performance superior to FST/FR grades of foam cores
-  Heat resistance
-  Eco-friendly, minimal environmental impact
-  Weight reduction, increased fuel efficiency
-  Enhanced acoustics
-  Based on Fire-Smoke-Toxicity Qualified Materials
-  Thermoformability

## KEY MARKETS



For more information please contact:

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