

## TECHNICAL DATA SHEET

## 3D|CORE™ XPS FOAM

### General Description

The 3D|CORE™ XPS is a polystyrene foam which is suitable for ultra-lightweight construction applications. The honeycomb structure provides more flexibility and is easy to handle. The core is applicable with all known Epoxy and PU resin systems.

### Properties

- Closed-cell foam (no water absorption, no re-expansion, no outgassing)
- Ultra-light foam
- Long-term thermal stability up to 70°C
- Processing temperature up to 40°C
- Easy processing with all known Epoxy and PU resin systems
- Not applicable with Styrene
- Homogenous connection of all components
- Excellent surface adhesion (connection between the surfaces and core)
- Highly consistent material properties
- Excellent thermal insulation
- Integrated flow mesh

### Application

- **Ship and boat building:** hull, deck, interior
- **Industrial components:** sport equipment, furniture
- **Architecture and Construction:** roofs, walls, panels
- **Motorsport:** spoiler, bonnet, side elements
- **Sports & Leisure:** Canoes, Surfboard

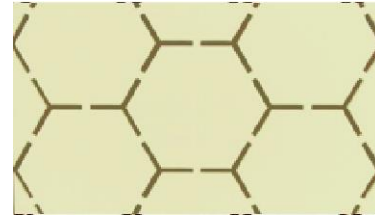
### Processing

- Hand lay-up
- Vacuum Infusion

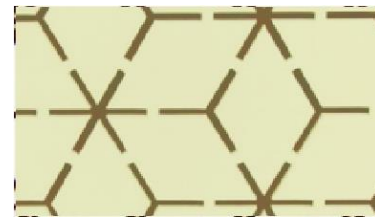
- Vacuum Assisted Light-RTM
- Bonding

### Structure Pattern

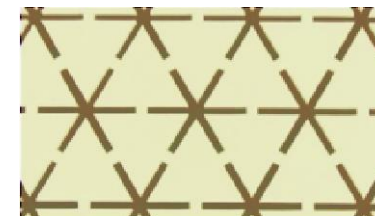
HX: Hexagon



RB: Rhombus



DT: Delta



### Resin uptake (Vacuum Infusion)

**Structure HX:** 40g/m<sup>2</sup>/mm

**Structure RB:** 71g/m<sup>2</sup>/mm

**Structure DT:** 107g/m<sup>2</sup>/mm

The resin uptake depends on the process as well. Please only use this formula as an indication value.

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Foam Type			XPS	XPS	XPS	
Structure Pattern			HX	RB	DT	
Density		Kg/m <sup>3</sup>	Basic Foam <sup>(1)</sup>	45	45	45
Shear Modulus	ASTM C 273	MPa	Basic Foam <sup>(1)</sup>	15	15	15
			3D CORE™ Hybrid <sup>(2)</sup>	36.57	43.71	73.62
Shear Strength	ASTM C 273	MPa	Basic Foam <sup>(1)</sup>	0.43	0.43	0.43
			3D CORE™ Hybrid <sup>(2)</sup>	1.07	1.19	1.45
Compression Modulus	ISO 844:2014	MPa	Basic Foam <sup>(1)</sup>	30	30	30
			3D CORE™ Hybrid <sup>(2)</sup>	141.17	218.58	269.45
Compression Strength	ISO 844:2014	MPa	Basic Foam <sup>(1)</sup>	0.7	0.7	0.7
			3D CORE™ Hybrid <sup>(2)</sup>	5.07	6.51	7.17
Thermal Conductivity	At 23 °C	W/mK	Basic Foam <sup>(1)</sup>	0.07	0.07	0.07
Max. Processing Temperature		°C		40		
Measurement Standard Sheets	Width	mm ± 5		405	405	405
	Length	mm ± 5		1015	1015	1015
	Thickness	mm ± 0.3		3 - 29	3 - 29	3 - 29

## Remark:

(1): The values above are the actual values of the suppliers of the precursor material. We cannot give a guarantee for the quality of the values and the related measurements. 3D|CORE primarily evaluates the properties of processing of the individual foam system knowing that the quality of the foam core is essential for the quality of the composite. The size of cavities and the properties have a major influence of the final part. Please regard that every part requires its own calculation of strength and component testing.

(2): The values above are based on measurements on specimen of sandwich panels made by 3D|CORE. These panels were produced with an Epoxy system and Vacuum Injection technology. These values can differ depending on the manufacturing process. Please use the above values only as an indication for your analysis and please provide your own measurements. Specimen thickness of 20mm. Hybrid means foam core and structure filled with epoxy resin.

(3): Tolerances +/-7 kg/m<sup>3</sup>

## Disclaimer of Liability

This data is offered solely as a guide in the selection of a reinforcement. The information contained in this publication is based on actual laboratory data and field test experience. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume any liability arising out of its use or performance. The user, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before committing to production. It is important for the user to determine the properties of its own commercial compounds when using this or any other reinforcement. Because of numerous factors affecting results, we make no warranty of any kind, express or implied, including those of merchantability and fitness for a particular purpose. Statements in this data sheet shall not be construed as representations of warranties or as inducements to infringe any patent or violate any law, safety code or insurance regulation.

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