



TECHNICAL DATA

ArmaPET™ Shape 3D

ArmaPET Shape particle foam offers maximum design flexibility to produce lightweight rigid 3D foam parts using innovative fusion technology.

- // Zero-waste production: no milling or cutting needed
- // Foaming directly inside the mould
- // Integrated functions: built-in concept with skins and inserts possible
- // Superior production efficiency thanks to reduced complexity
- // Outstanding thermal stability

www.armacell-core-foams.com



 **armacell**[®]
ArmaPET™

MOULDABLE PARTICLE FOAM

ARMAPET SHAPE

Combines the **high mechanical** properties of structural foam core with the advantages of particle foams to offer **lightweight and strong** three-dimensional foam parts which are producible in nearly **any shape**.

ArmaPET Shape is the first fully recyclable mouldable particle foam entirely made of recycled plastics. This is our solution for a cost-effective production of ready-to-use 3D shaped structural foam parts.

ArmaPET Shape targets large volume applications in many industries, where lightweight yet strong 3D plastic parts are prerequisites for a successful product design. One example is the automotive industry, where ArmaPET Shape can be used to replace aluminium sheets for bodies, chassis or engine hoods, as well as structural add-on parts such as spoilers.

TEMPERATURE STABILITY

ArmaPET Shape allows for a wide range of processing temperatures up +180°C / +356°F and is ideally suited for fast curing processes at elevated temperatures. It is extremely tolerant to high-peak exothermic reactions and shows no degradation of material properties even in the case of hot spots.

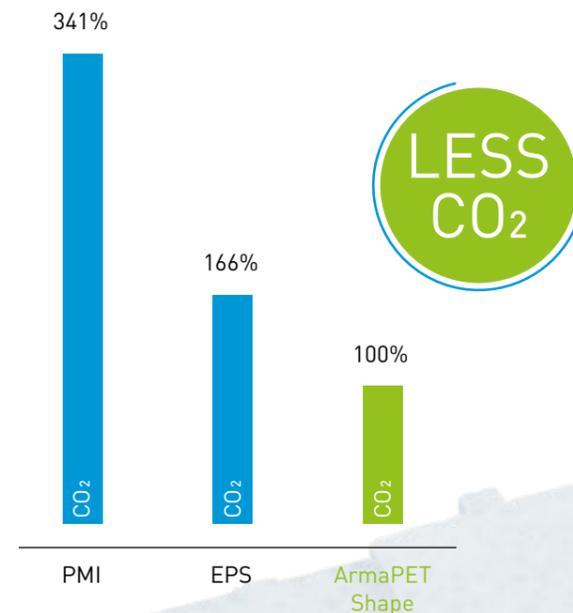
	EPS	EPP	ArmaPET Shape
25°C / 77°F			
140°C / 284°F			
160°C / 320°F			
180°C / 356°F (30 min)			

INSPIRED BY SUSTAINABLE THINKING

ArmaPET Shape is made by Armacell's unique and patented process technology, enabling the production of PET foam materials based on 100% recycled PET. Its positive eco-balance supports the industry's requirement for the design of more sustainable product solutions:

- // Based on 100% recycled plastics
- // No use of ozone-depleting CFCs or HCFCs
- // Fully recyclable after use

We convert post-consumer PET bottles into long-lifetime, high-value particle foams **with lowest CO₂ emissions:**



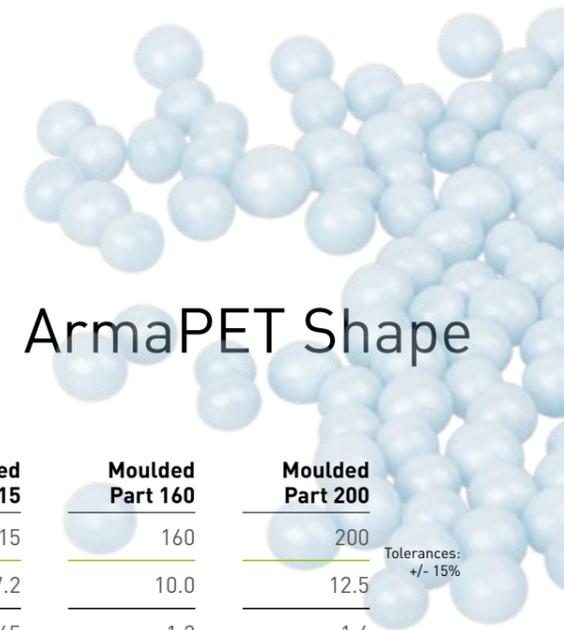
Technical Data

(Moulded part reference values)

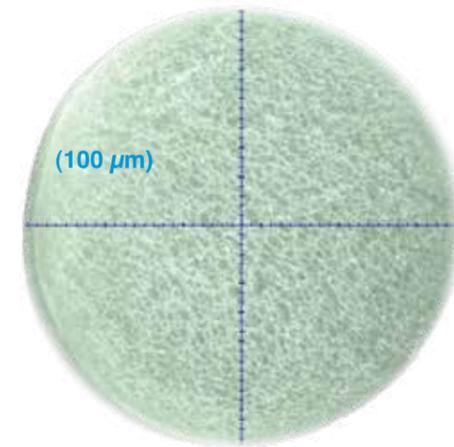
			Moulded Part 90	Moulded Part 115	Moulded Part 160	Moulded Part 200
Density Moulded Part	ISO 845	kg/m ³	90	115	160	200
		lb/ft ³	5.6	7.2	10.0	12.5
Compression Strength (25% deformation)	ISO 844	MPa	0.45	0.65	1.2	1.6
		psi	65	95	175	230
		MPa	7	10	16	22
Compression Modulus	ISO 1922	psi	1,015	1,450	2,320	3,190
		MPa	70	100	160	220
Thermal Conductivity	at 23 °C	W/(m·K)	0.034	0.035	0.042	0.043
	at 73.4 °F	BTU.in/FT ² .hr.°F	0.236	0.243	0.291	0.298
Cell Diameter		µm	< 500	< 500	< 500	< 500

Tolerances: +/- 15%

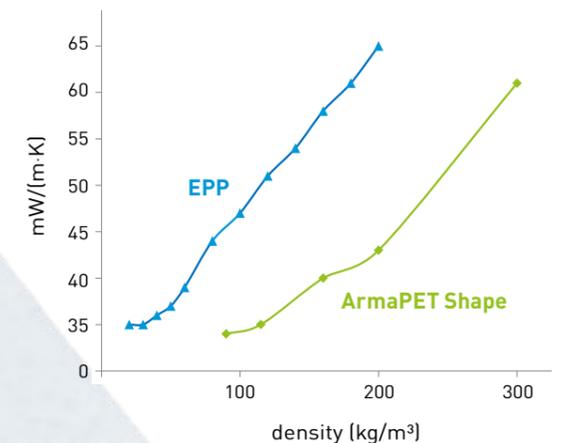
ArmaPET Shape



MICROCELLULAR CLOSED CELL STRUCTURE



Water or liquid ingress is prevented by the closed cell structure, which ensures that the excellent mechanical properties remain unchanged over time. In addition, ArmaPET Shape moulded foam parts exhibit **excellent insulation properties:**



Thermal Conductivity at 23°C

The fine, smooth surface structure of ArmaPET Shape moulded foam parts provides an excellent bond to facing layers and limits resin uptake without additional treatment or the need for extra layers. It is compatible with any commercial resin system and thermoset material.

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ABOUT ARMACELL

As the inventors of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal, acoustic and mechanical solutions that create sustainable value for its customers. Armacell's products significantly contribute to global energy efficiency making a difference around the world every day. With 3,135 employees and 24 production plants in 16 countries, the company operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for high-tech and lightweight applications and next generation aerogel blanket technology.

For more company information, please visit:
www.armacell.com

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