

# 3M

## RTM Core

Technical Data

November, 2011

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### Product Description

3M™ RTM Core is a relatively soft, flexible and compressible polyethylene (PE) foam covered with a reinforcing fiber layer on each side, designed for resin transfer molding (RTM). The core's three elements are stitched together by glass fiber bridging strands which pass through them obliquely and form triangulations in the mechanical sense. Typical reinforcing materials used are woven and non-woven glass, carbon or aramid fiber fabrics, although additional reinforcements are available as custom. RTM Core allows for rapid infusion of resin without the use of resin transfer media at a very affordable cost. Compared to unstitched sandwich panels, stitched panels exhibit significantly increased stiffness and ultimate stress under bending, as well as much greater resistance to core shear and flat-wise compression. The percentage of gain depends on the structural parameters (angle and step size) of the stitched sandwiches. Thus for the high stitch density (step of 12.5 mm) performance improvements can reach 250% for bending rigidity and 1,000% for shear failure stress.

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### Product Highlights

- Allows variable sandwich thickness range of 5 to 40 mm.
- Conforms to compound shapes and local section or thickness changes
- Can be cut with a scissors or knife.
- Used in the vacuum infusion process, specifically matched molds (Light RTM process).
- Product is approved by:



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### Application Ideas

- Transportation Industry – fenders, truck and bus roofs, trailer bodies
- Marine – hulls, decks, hatches and other small parts
- Industrial – cases, coverings, wind turbine nacelles

## Typical Physical Properties

**Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.**

Foam	PE 35 Kg		PE 35 Kg	
Triangulation Angle	45°		60°	
Reinforcements on each side	Taffeta 880g		Taffeta 880g	
Step of Triangulations (mm)	25 mm	1"	25 mm	1"
<b>Shear Strength</b> (ASTM 273-61)				
Max Strain	0.82 Mpa	119 psi	0.64 Mpa	93 psi
GXZ Modulus	18.7 Mpa	2,712 psi	15.2 Mpa	2,204 psi
<b>Compressive Strength</b> (ASTM C 365)				
Max Strain	1.36 Mpa	197 psi	1.53 Mpa	222 psi
EZ Modulus	59.9 Mpa	8,688 psi	113.9 Mpa	16,520 psi

## Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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**ISO 9001:2008**

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