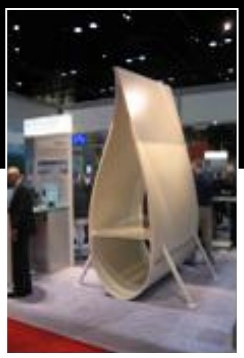
S-1 HM™ Roving

For Your Demanding Wind Energy Turbine Blade Applications



AGY, the leading global supplier of high performance glass fibers, introduces S-1 HM™ high performance roving to meet the demanding requirements of the wind energy market.

S-1 HM™ High Performance Roving Features & Benefits

- The highest tensile modulus glass fiber available in the world – 90 GPa
- Proprietary glass formulation designed to maximize performance properties while allowing for high volume, economical manufacture
- S-1 HM™ performance vs. typical E-glass:
    - 20% higher tensile modulus – longer blades with no weight increase, or weight reduction at same length
    - 50% higher tensile strength – higher loadings
    - 10x higher fatigue – improved reliability and lower total cost of ownership
- Sizing chemistries for both epoxy or polyester resins
- Direct roving product form tailored for conversion to unidirectional fabrics and prepregs and multi-axial fabrics
- Boron free – environmentally friendly

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S-1 HM™ High Performance Roving Properties					
	ASTM	Units	**AGY S-1 HM™ Glass**	Competitive R-glass Products	E-glass
Glass Strand Properties					
Tensile Strength	D2343	MPa	**3070**	2700	2000
Tensile Modulus	D2343	GPa	**90**	83	73
UD Laminate Properties (60% FVF)					
Tensile Strength	D3039	MPa	**1504**	1150	814
Tensile Modulus	D3039	GPa	**52**	47	43
Compressive Strength	D3410	MPa	**807**	720	531
Compressive Modulus	D3410	GPa	**51**	46	42
Flexural Strength	D790	MPa	**1367**	1260	1200

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