

## Hex-3R™ Composite Strengthening Systems

### Hex-3R Wrap 430™

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The Hex-3R Composite Strengthening Systems provide construction industry professionals with a viable alternative to traditional methods through the application of composite materials science. This carefully designed portfolio of high strength, high modulus, externally applied reinforcing elements represent a cost-effective and efficient alternative to strengthen or stiffen a structure without resorting to remove and replace methods or invasive internal rebuilding techniques.

Hex-3R Wrap 430 is a 13 oz/yd<sup>2</sup> E-glass unidirectional fabric. Material is field laminated using Hex-3R epoxy to form a glass fiber reinforced polymer used to strengthen structural elements.

#### **Where to Use**

- Loading increases
- Seismic strengthening
- Temporary strengthening
- Change in structural system
- Design or construction defects

#### **Advantages**

- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex shapes
- Lightweight
- Non-corrosive
- Acid resistant
- Low aesthetic impact
- Economical

#### **Packaging**

- Rolls: 12 or 24 in. x 150 linear feet

#### **E-glass Fiber Properties**

Tensile strength	330,000 psi
Tensile modulus	10.5 msi
Density	2.54 g/cc
Elongation	4.0 %

## Hex-3R™ Composite Strengthening Systems

### Hex-3R Wrap 430™

#### **Sikadur 330™ and Hex-3R Wrap 430 Laminate Properties**

Properties after standard cure followed by standard post cure (70-75°F – 5 days, 48 hours at 140°F)

Property	Average Value <sup>1</sup>		Design Value <sup>2</sup>		ASTM Test Method
	US Units	SI Units	US Units	SI Units	
	psi	MPa	psi	MPa	
Tensile Strength*	78,000	537	70,800	488	D3039
Tensile Modulus*	3,845,100	26,493	3,430,800	23,640	D3039
Tensile % Elongation *	2.21	2.21	1.79	1.79	D3039
140F - Tensile Strength	69,300	477	63,000	435	D3039
140F - Tensile Modulus	3,603,400	24,827	3,355,600	23,120	D3039
140F - % Elongation	2.01	2.01	1.8	1.8	D3039
Compressive Strength	0	0	0	0	D695
Compressive Modulus	0	0	0	0	D695
90 deg Tensile Strength	3,300	23	1,650	11	D3039
90 deg Tensile Modulus	1,026,000	7,069	788,400	5,433	D3039
90 deg %Tensile Elongation	0.32	0.32	0.2	0.2	D3039
Shear Strength+/-45 In Plane	0	0	0	0	D3518
Shear Modulus +/-45 In Plane	0	0	0	0	D3518
Ply Thickness (inch/mm)	0.02	0.508			

\* 24 sample coupons per test series; all other values based on 6 coupon test series

<sup>1</sup> Average value of test series – based on year 2000 testing program

<sup>2</sup> Average value minus 3 standard deviations calculated from the year 2000 testing program

