

HM-53

Carbon Fiber Sheet for structural strengthening

Description

HM-53 is high strength, unidirectional carbon fiber fabric. Material is laminated using HM-180C3P epoxy to form a carbon fiber reinforced polymer(CFRP) used to strengthen structural concrete elements.

Where to Use

Load Increase

- Increased live loads
- Increased traffic volumes on bridges
- Installation of heavy machinery in industrial building
- Vibrating structures
- Changes of building utilization

Seismic Strengthening

- Column wrapping
- Masonry walls

Damage to Structural Parts

- Aging of construction materials
- Vehicle impact
- Fire
- Blast impact

Change in Structural Parts

- Removing of wall or columns
- Removal of slab section for openings

Design or Construction Defects

- Insufficient reinforcements
 - Insufficient structural depth
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Advantages

- Approved by GB50367-2013/GB50728-2011/GB50550-2010
 - Used for shear , confinement or flexural assembly
 - Flexible, can be wrapped around complex geometries
 - High Strength
 - Light Weight
 - Non-corrosive
 - Alkali Resistant
 - Low aesthetic impact
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Typical Data

Storage Conditions	Store dry at 40°-95°F (4°-35C°)	
Shelf Life	10 years	
Color	Black	
Primary Fiber Direction	0° (unidirectional)	
Areal Weight	HM-53	15.476 oz./sq.yd.(530g/m2)

Typical Fiber Properties

Dry Fiber Typical Properties		
Standard Value Of Tensile Strength	7.1 x 10 ⁵ psi(4900MPa)	
Tensile Elastic Modulus	34 x 10 ⁵ psi(235000MPa)	
Elongation	1.7%	

Laminate Fiber Typical Properties		
Standard Value Of Tensile Strength	5.51 x 10 ⁵ psi(3800MPa)	
Tensile Elastic Modulus	34 x 10 ⁵ psi(235000MPa)	
Elongation	1.7%	
With Concrete	Concrete Damaged: ≥ 2.5MPa	
Density	0.065lbs.in ³ (1.8g/cc)	
Nominal Fiber Thickness	HM-53	0.0114in.(0.295mm)

