



Properties of LFRM

Physical Properties

Property	Value
Density, g/cc	0.53
Sea Water Immersion (500 Days)	
Weight Gain, %	64
Dimensional Change, %	0.16
Glass Transition Temperature, T _g , °F	> 500

Mechanical Properties

Property	Value
Compression	
Strength, F _c , psi	3,169
Modulus, E _c , msi	0.17
Tension	
Strength, F _t , psi	756
Modulus, E _t , msi	0.38
Shear	
Strength, F _s , psi	740
Modulus, E _s , msi	0.15
Flexural	
Strength, F _b , psi	1,665
Modulus, E _b , msi	0.42
Fracture Toughness , K _{IC} , psi-in ^{1/2}	291

Fire and Toxicity Properties

LFRM meets MIL-STD 2031 (SH) requirements which defines Fire and Toxicity of composite materials for naval ship interior applications.

(a) Cone Calorimetry Test - ASTM 1354

Heat Flux, kW/m ²	Ignitability, s	Heat Release Rate, kW/m ²	
		Peak	Average
50	Null	31.0	13.0
75	Null	26.3	14.6

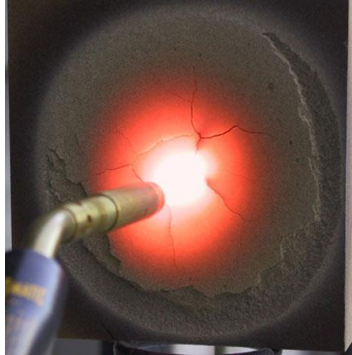
(b) Toxicity

is measured at @ 75 kW/m² Heat flux

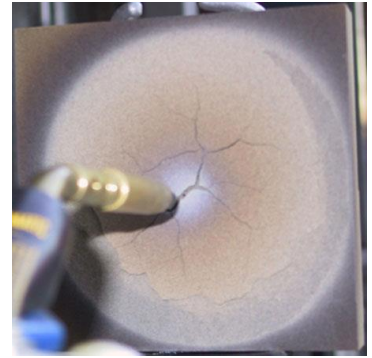
Gas	Yield, kg/kg
CO	0.37
CO ₂	0.81

(c) Burn Through Fire Test

No burn through in 30 minutes



30 Minutes Elapsed



After Test - Panel Front

Energy Absorption Properties The cellular nature of LFRM enables it to undergo large deformations in compression, thereby absorbing considerable amounts of energy. The energy absorption density is >12.2 MPa/unit volume.