

LOW FST (FIRE, SMOKE, TOXICITY)

The impressive mechanical properties of ESS syntactic materials provide strength and structural integrity at a significantly lower weight per volume than most traditional materials. In addition, exceptional thermal protection and resistance to water absorption make syntactic foam the ideal solution for many Marine, Defense, off-shore and mining applications.

FireShield - LFST is a low-density syntactic material specifically designed to meet the flame, smoke and toxicity requirements of the construction industry. Providing all the strength of traditional building materials at a fraction of the weight, FireShield - LFST installs quickly and easily reducing labor and material costs. In addition to being ideally suited for applications where adherence to fire safety codes are mandatory, FireShield-LFST provides the additional benefit of radio frequency wave transparency, for improved communication.



FIRE SHIELD LFST - 36P

FireShield - LFST is a low-density syntactic material specifically designed to meet the flame, smoke and toxicity requirements of Marine and infrastructure applications. Produced from the most advanced resin and hollow glass microspheres available, the mechanical properties of this flame retardant material make it the ideal solution for challenging engineering projects.

Industry Applications

FireShield - LFST is ideally suited for transportation, off-shore oil and military applications where adherence to fire safety codes are mandatory. FireShield - LFST provides the additional benefit of being water resistant and non-corrosive.

| Test Method | Density lb/ft ³ | Compressive | | Tensile | | Thermal Conductivity BTU/hr ft F |
|-------------|-------------------------------|-------------|-----------|-----------|-----------|-------------------------------------|
| | | Strength | Modulus | Strength | Modulus | |
| | | psi | ksi | psi | ksi | |
| ASTM D3575 | ASTM D3575 | ASTM D695 | ASTM D695 | ASTM D638 | ASTM D638 | ASTM D5930 |
| Test Result | 36 | 6,000 | 320 | 2,800 | 270 | 0.065 |

FIRE SHIELD LFST - 42E

FireShield - LFST is a low-density syntactic materials specifically designed to meet the flame, smoke and toxicity requirements of the construction industry. Produced from the most advanced resin and hollow glass microspheres available, this flame retardant material provides all the strength of traditional building materials at a fraction of the weight.

Industry Applications

FireShield - LFST is ideally suited for civil infrastructure applications where adherence to fire code safety codes are mandatory. As a light weight alternative to traditional building materials such as concrete or masonry, FireShield - LFST provides the additional benefit of radio frequency wave transparency.

| Test Method | Density lb/ft ³ | Compressive | | Tensile Strength psi | Thermal Conductivity BTU/hr ft F | Time to Ignition | Avg Heat Release @ 180 s | Heat of Combustion | Smoke Release Rates | Critical Heat Flux |
|------------------|-------------------------------|-------------|-----------|-------------------------|-------------------------------------|------------------|-----------------------------|--------------------|----------------------------|--------------------|
| | | Strength | Modulus | | | | | | | |
| | | psi | feet | | | | | | | |
| ASTM D3575 | ASTM D3575 | ASTM D695 | ASTM D695 | ASTM D638 | ASTM D5930 | ASTM E1354-10 | ASTM E1354-10 | ASTM E1354-10 | ASTM E1354-10 | ASTM E1354-10 |
| Spec Requirement | 35 min | 3,900 min | 179 min | 3,000 min | 0.0049 min | >5 sec | <360 Kw/m ² | <29 kJ/g | <0.245 m ² /sec | >18 |
| Result | 42 | 6,200 | 227 | 4,200 | 0.065 | 20 | 205 | 31 | .0334 | 15 |

TECHNICAL DATA SHEET: LFST-36P

| Property | Value | Units | Test Method |
|--|------------------|--|------------------|
| Color | Rust | | |
| Density | 36 (575) | lb/ft ³ (Kg/m ³) | ASTM D792 |
| Shore Hardness | 65 | D | ASTM D2240 |
| Uniaxial Compressive Strength | 5,750 (39.6) | Psi (MPa) | ASTM D1621 |
| Uniaxial Compressive Modulus | 460 (3.17) | Ksi (GPa) | ASTM D1621 |
| Uniaxial Compressive Strength (at 500* F) | 5,385 (37.1) | Psi (MPa) | ASTM D1621 |
| Uniaxial Compressive Modulus (at 500* F) | 359 (2.48) | Ksi (GPa) | ASTM D1621 |
| Flexural Strength | 1,960 (13.5) | Psi (MPa) | ASTM D790 |
| Flexural Modulus | 383 (2.64) | Ksi (GPa) | ASTM D790 |
| Coefficient of Thermal Expansion | 0.556 (14.82) | μin/in- °F (μm/m- °C) | ASTM E228 |
| Specific Heat | 0.228 (955) | BTU (th)/ °F (J/kg-°K) | ASTM E1269 |
| Thermal Conductivity | 0.082 (0.142) | BTU/hr-ft-°F (W/m – °K) | ISO/DIS 22007 |
| Surface Burning Characteristics Twenty Five Foot Tunnel Furnace | Class A | 0-25 Flame Spread 0-450 Smoke Developed | ASTM E84/(UL723) |
| Smoke and Gas Toxicity - Non-Flaming Mode | 2 | Ds (max) | ASTM E662 |
| Smoke and Gas Toxicity - Flaming Mode | 5 | Ds (max) | ASTM E662 |
| Cone Calorimeter Test - 50 kW/m ² Heat Flux | 338 | Time to Ignition (sec) | ASTM E1354 |
| Cone Calorimeter Test - 50 kW/m ² Heat Flux | 16.2 | Avg Heat of Combustion (MJ/kg) | ASTM E1354 |
| Surface Flammability Test | 0 | Flame Spread Factor (Fs) | ASTM E162 |
| Surface Flammability Test | 0 | Flame Spread Index (Is) | ASTM E162 |

SIZES: LFST-36P | LFST-42E
LFST-36P: 0.5x24x48", 1x24x48", 2x15x15", and Custom Cuts

LFST-42E:

Board sizes (inches): 1x24x60, 2x24x60, 3x24x60, 4x24x60

Sheet sizes (inches): 1x24x24, 1.5x24x 4, 2x24x24, 2.5x24x 4, 3x24x24, 3.5x24x24, 4x24x24, 6x24x24, and Custom Cuts

