LAST-A-FOAM®: ENDURING PERFORMANCE AT THE CORE

Where Great Ideas Take Shape

www.generalplastics.com
HIGH PERFORMANCE COMPOSITE CORE MATERIALS

Known for its long-lasting performance and consistent properties, General Plastics offers high-strength, low-weight LAST-A-FOAM® polyurethane foam products for diverse manufacturing processes. For over 75 years, our core materials have been used by aerospace and defense, automotive, marine and other composite-manufacturing companies as a high-performing alternative to traditional core materials such as thermoplastic foam, honeycomb, wood and metal. With extensive experience in the composites industry, General Plastics is adept in exacting the standards of OEMs and Tier 1/Tier 2 companies and rigorous quality assurance. Our rigid foams are available machined, cut in sheets or blocks or molded, and we offer fast turnaround and scalability to meet your production requirements and product specifications.

MECHANICAL AND THERMAL PROPERTIES

LAST-A-FOAM® core materials retain its strength, dimensional stability and chemical properties during production and throughout its lifetime. The foam’s closed-cell structure also makes the material highly resistant to water absorption, so it does not decay, rot, swell, warp or crack. These polyurethane cores, which offer excellent chemical resistance and are free of CFCs and VOCs, support fiberglass laminating and are flame-retardant. Our material has excellent bonding ability and is compatible with various types of adhesives.

LAST-A-FOAM® has high strength-to-weight ratio due to its cellular structure and cross-linked properties. It is available in a wide range of densities and strengths to satisfy diverse industry applications.

BENEFITS

- Strong, durable and dependable
- High strength-to-weight ratio
- Dimensionally stable and consistent
- Highly machinable
- Bonds well with composite skins
- Resistant to most chemicals and solvents
- Flame-retardant
- Chemically inert
- Low resin uptake resulting from fine closed-cell structure
- Ideal for fiber-reinforced, resin-infusion process
- Performs well as wood replacement
<table>
<thead>
<tr>
<th>LAST-A-FOAM®</th>
<th>Density (lbs/ft³)</th>
<th>Compressive Strength @ 75°F (psi)</th>
<th>Shear Strength (psi)</th>
<th>Tensile Strength (psi)</th>
<th>CTE (in/in-°F)</th>
<th>Tg (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF-2200</td>
<td>3 - 6</td>
<td>65 - 190</td>
<td>50 - 125</td>
<td>50 - 130</td>
<td>32 x 10⁻⁶</td>
<td>360</td>
</tr>
<tr>
<td>R-3300</td>
<td>12 - 25</td>
<td>400 - 1,750</td>
<td>380 - 1,100</td>
<td>430 - 1,500</td>
<td>32 x 10⁻⁶</td>
<td>250</td>
</tr>
<tr>
<td>FR-3700</td>
<td>3 - 40</td>
<td>45 - 4,500</td>
<td>40 - 2,000</td>
<td>75 - 2,750</td>
<td>35 x 10⁻⁶</td>
<td>280</td>
</tr>
<tr>
<td>FR-3800 FST</td>
<td>3 - 40</td>
<td>40 - 3,600</td>
<td>30 - 1,350</td>
<td>40 - 1,900</td>
<td>29 x 10⁻⁶</td>
<td>300</td>
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<tr>
<td>FR-6700</td>
<td>10 - 25</td>
<td>350 - 2,030</td>
<td>225 - 1,000</td>
<td>280 - 1,110</td>
<td>35 x 10⁻⁶</td>
<td>275</td>
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<tr>
<td>FR-7100</td>
<td>4 - 40</td>
<td>110 - 4,220</td>
<td>40 - 1,725</td>
<td>90 - 2,320</td>
<td>31 x 10⁻⁶</td>
<td>240</td>
</tr>
</tbody>
</table>

We offer materials that have excellent intumescent properties and meet a variety of industry flammability requirements. For instance, the FR-3800 FST complies with FAR 25.853 (d) OSU Heat Release Requirement of 65/65, FAA flame and smoke regulations, aircraft manufacturer toxicity requirements and the European Nation's REACH regulation. Many of our foams satisfy other industry flammability requirements such as UL-94. To learn more about our products’ specific flammability characteristics, please contact us or visit: www.generalplastics.com

**APPLICATIONS**

**AIRCRAFT INTERIOR SANDWICH PANELS**
- Overhead storage bins
- Passenger cabin class dividers
- Galleys and lavatories
- Ceiling, wall and door panels
- Floor ramps
- First-class seating pods
- Seat backs and tray tables
- Edge closeouts

**MARINE/SUBSEA**
- Interior panels
- Mounting pads
- Heads and galleys
- Transoms
- Remotely operated vehicle (ROV) core material

**CORE FOR PANELS**
- Automotive load floor
- Container walls and floors

**ENERGY ABSORPTION**
- Head strike
- Glare shields
- Nuclear packaging
- Bumpers

**MEDICAL**
- X-Ray and diagnostic tables
- CT scanner beds
- Calibration materials
- Composite prostheses
- Artificial bone test media

**OTHERS**
- Radomes and antennas
- Insulated doors and windows

**FIBER-REINFORCED STRUCTURE**
- Wingtips and other aerospace structures
- Nonlinear shapes
- Hockey sticks and other sporting equipment
- RTM and VARTM manufactured parts
LAST-A-FOAM® RF-2200
This series provides an RF-transparent protective layer for radomes and antenna applications requiring optimal performance of insulation materials and extended processing capabilities. It is a high-performing, closed-cell polyurethane foam used in applications where low dielectric constant and low heat loss are necessary.

LAST-A-FOAM® R-3300
Machinable, hydrostatic pressure-resistant foams provide buoyancy for underwater flotation to depths of 1,200 ft, (uncoated foam) offering outstanding resistance to penetration by water and other liquids. They are also used in resin-transfer molding as a core material.

LAST-A-FOAM® FR-3700
This flame-retardant PU foam is tougher and less friable than the FR-6700 which enables cutting of crisp edges, making it well-suited to machining complex shapes for composite cores. It provides exceptional protection for hazardous cargo and payloads as an impact- and fire-insulation liner in transport or packaging containers. It also serves as human bone test media. FR-3700 meets BMS 8-133, DMS-1937 and FAR 25.853 (a) requirements & specifications.

LAST-A-FOAM® FR-3800 FST
Halogen-free and lightweight foam core which satisfies fire, smoke and toxicity (FST) requirements for aerospace cabin interiors. It complies with FAR 25.853 (d) OSU Heat Release Requirement of 65/65, FAA flame and smoke regulations, aircraft manufacturer toxicity requirements and the European Nation's REACH regulation. Used in conjunction with other materials, it contributes to both aesthetics and safety, while reducing cost.

LAST-A-FOAM® FR-6700
Flame-retardant, aerospace-grade rigid foam for aircraft composite core withstands process temperatures up to 275°F for short periods of time. It is specifically designed to satisfy requirements for multiple aerospace and military specifications, including BMS 8-133, DMS-1937 and FAR 25.853 (a). Excellent for models and design prototypes, vacuum-form dies and mold patterns and honeycomb edge closeout.

LAST-A-FOAM® FR-7100
Economical, uniform foam that is easily finished or painted for low-cost core applications, hand-carved models, prototypes, CNC-machined topographical maps, composite layup tools below 200°F and industrial patterns.

Tacoma, Washington-based General Plastics Manufacturing Company has been a leading innovator in the plastics industry for over 75 years. The company develops and manufactures rigid and flexible polyurethane foam products, which include its signature LAST-A-FOAM® brand series and build-to-print composite parts. Directly or through its network of distributors, General Plastics serves the aerospace and defense, nuclear transportation packaging, composite core, prototype and modeling, construction, dimensional sign-age, telecommunications, marine, and subsea industries.

General Plastics is certified to ISO 9001:2015/AS9100D and meets the rigorous demands of numerous leading quality systems, which include NOA-1, Mil-I-45208A, and Boeing Company D6-82479. Please visit www.generalplastics.com.

All General Plastics products are manufactured in the United States, and are free of CFCs and VOCs.