

# LAST-A-FOAM® FR-4500 Tooling Board Series



## PRODUCT OVERVIEW

LAST-A-FOAM® high-density, rigid foam products are cost-effective, versatile, strong and durable. They are manufactured using our unique chemical formulas to be exceptionally uniform and consistent in all physical properties.

The FR-4500 is a grain-free, machineable tooling board for styling and design models, master models, masters for composite and layup tools, and for mold and foundry patterns. The material also serves as an excellent wood alternative for outdoor signage and display manufacturing. Available in densities from 10 to 50 lbs. per cubic foot.



*FR-4500 series are always flat, stable, and consistent in density. Call us at 866.825.1378 today for a quote!*

## FEATURES AND BENEFITS

- Special formulation creates shavings when material is machined, causing less dust
- Consistent and uniform
- Dimensionally stable
- No warp or bow in sheets
- Large sheets up to 48" x 96", thickness up to 22"
- Custom sizes available

## APPLICATIONS:

- Design prototypes
- Appearance or "sight" models
- Styling models
- Architectural models
- Master models
- Temporary models
- Trim, jigs, and fixtures
- Thermoforming tools
- Prototype foundry patterns
- Mold patterns
- Topographical maps
- Dimensional check-fixtures
- Molds for low-temperature casting (<200 °F)
- Prototype/low-volume
- Vacuum-forming tools
- CAD model proofs/CNC program proofs
- Tooling aids

## PHYSICAL PROPERTY DATA

|  | FR-4510               | FR-4515   | FR-4520   | FR-4530    | FR-4540                | FR-4550    | Test Method   |
|--|-----------------------|-----------|-----------|------------|------------------------|------------|---|
| Standard Sheet Size                                    | 48" x 96"             | 48" x 96" | 48" x 80" | 30" x 80"  | 24" x 60"<br>24" x 80" | 20" x 80"  | N/A   |
| Color  | Terracotta            | Neutral   | Tan       | Terracotta | Taupe                  | Grey-Green | Visual  |
| Density, lbs./ft <sup>3</sup> (kg/m <sup>3</sup> )     | 10 (106)              | 15 (240)  | 20 (320)  | 30 (480)   | 40 (640)               | 50 (800)   | ASTM D1622  |
| Shore D Hardness<br>75 °F                              | 15                    | 23        | 31        | 47         | 63                     | 79         | ASTM D2240  |
| Glass Transition<br>Temperature (T <sub>g</sub> ), °F  | 217 °F (103 °C)       |           |           |            |                        |            | ASTM E1545-05   |
| Coefficient of Thermal<br>Expansion (CTE),<br>in/in °F | 29 x 10 <sup>-6</sup> |           |           |            |                        |            | ASTM E831-06<br>(Modified temp<br>range) 75 to 200 °F |
| Flexural Strength, psi                                 | 375                   | 670       | 1335      | 2121       | 3909                   | 4804       | ASTM D790   |
| Compressive<br>Strength, psi                           | 304                   | 599       | 1236      | 2071       | 3616                   | 4514       | ASTM D1621  |
| Compressive<br>Modulus, psi                            | 9350                  | 16936     | 26603     | 41037      | 67604                  | 83381      | ASTM D1621  |
| Tensile Strength, psi                                  | 260                   | 425       | 882       | 1487       | 2467                   | 3102       | ASTM D-1623<br>Type A Specimens                       |
| Tumbling Friability<br>(% weight loss)                 | 5.10                  | 1.06      | 0.35      | 0.07       | 0.02                   | 0.01       | ASTM C421<br>(20 min. @ 60 rpm)                       |
| Fire Safety  | S/E                   | S/E       | S/E       | S/E        | S/E                    | S/E        | *Self-extinguishing<br>via test method<br>shown below |

\* Tested vertically on 1/2" thick specimen using 12-and 60-second ignition with a Bunsen burner

*This data is subject to revision and changes due to development of and changes to the material. The data is derived from tests and historical usage. The data is average data and should be treated as such. Calculations should be verified by actual tests. The data is furnished without liability for the company and does not constitute a warranty or representation in respect to the material or its use. The company reserves the right to release new data sheets in replacement.*



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TF (800) 806.6051 PH (253) 473-5000

4910 Burlington Way • Tacoma, Washington 98409

sales@generalplastics.com • www.generalplastics.com

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Rev. 8.27.15