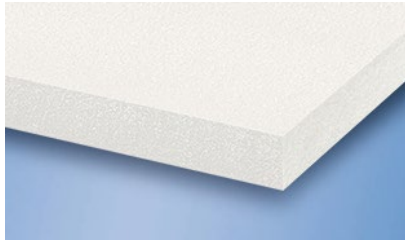


**Lowest Density with Fire Performance**

**DATA SHEET 12.2024 - Replaces 03.2023**

### DESCRIPTION



**AIREX® TegraCore™** is a closed-cell, ductile thermoplastic polymer foam that combines outstanding retardant properties at low flammability, smoke, toxicity and heat release rate, along with high temperature resistance and excellent lightweight properties.

Additionally, very low moisture and resin absorption, thermoformability, damage tolerance and chemical resistance bundle to high performance combination.

**AIREX® TegraCore™** is an exceptional thermal insulation foam or core material for use in lightweight composites applications that demand high fire retardant properties, for complex shapes in environmental demanding conditions.

### CHARACTERISTICS

- Low total cost fabrication
- Exceeds FAR 25.853 requirements: nearly zero smoke evolution, easily passes OSU heat release test
- Mechanically stable at temperatures up to 180 °C (355 °F)
- Very low moisture absorption
- Excellent hot-wet performance
- Exceptional impact resistance (non-brittle failure mode)
- Very good chemical resistance against aerospace fluids
- Dimensional stability in flight conditions
- Easy CNC routing and thermoforming to complex shapes
- Thermoplastic & thermoset composites compatible
- Good sound and thermal insulation

### APPLICATIONS

- **Aircraft and Aerospace:** Interiors, luggage bins, side walls, seat covers, galleys, monuments, edge fillers, trolleys, insulating panels
- **Defense:** Naval joiner work, radomes, antennas, ballistic spacers
- **Marine:** Fire retardant interiors, cladding
- **Railway:** Interiors, side skirts, roof panels
- **Industrial:** High temperature tooling, radomes, x-ray tables

### PROCESSING\*

- Adhesive bonding
- Thermoformable
- Pre-preg processing (up to 180 °C, 355 °F)
- Hot press molding
- Thermoplastic processable
- Automated tape laying (ATL/CTL)

\*For details refer to AIREX® Processing Guidelines.

[www.3Acorematerials.com](http://www.3Acorematerials.com)

Europe | Middle East | India | Africa  
 Airex AG  
 5643 Sins, Switzerland  
 T +41 41 789 66 00  
[corematerials@3AComposites.com](mailto:corematerials@3AComposites.com)

North America | South America  
 Baltek Inc.  
 High Point, NC 27261, USA  
 T +1 336 398 1900  
[corematerials.americas@3AComposites.com](mailto:corematerials.americas@3AComposites.com)

Asia | Australia | New Zealand  
 3A Composites (China) Ltd.  
 201201 Shanghai, China  
 T +86 21 585 86 006  
[corematerials.asia@3AComposites.com](mailto:corematerials.asia@3AComposites.com)

| <b>PRELIMINARY MECHANICAL PROPERTIES</b>        |                     |                      |                          |
|---|---------------------|----------------------|--------------------------|
| <b>Typical properties</b>                       |                     | <b>Unit (metric)</b> | <b>AIREX® TegraCore™</b> |
| Density   | ISO 845             | kg/m <sup>3</sup>    | 55                       |
| Compressive strength perpendicular to the plane | ISO 844             | N/mm <sup>2</sup>    | 0.65                     |
| Compressive modulus perpendicular to the plane  | ISO 844             | N/mm <sup>2</sup>    | 30                       |
| Tensile strength perpendicular to the plane     | ASTM C297           | N/mm <sup>2</sup>    | 1.1                      |
| Shear strength                                  | ISO 1922            | N/mm <sup>2</sup>    | 0.75                     |
| Shear modulus                                   | ISO 1922            | N/mm <sup>2</sup>    | 9.3                      |
| Shear elongation                                | ISO 1922            | %                    | 80                       |
| Impact strength                                 | DIN 53453           | kJ/m <sup>2</sup>    | 1.0                      |
| Thermal conductivity at room temperature        | ISO 8301            | W/m.K                | 0.038                    |
| Standard sheet                                  | Width <sup>1)</sup> | mm ± 5               | 520                      |
|   | Length              | mm ± 5               | 2500                     |
|   | Thickness           | mm ± 0.5             | 2 to 30                  |

Finishing Options, other dimensions and closer tolerances upon request

<sup>1)</sup> Other formats per request

| <b>Fire performance</b> | <b>Standard</b>    | <b>AIREX® TegraCore™</b>  |
|-------------------------|--------------------|---|
| <b>Aircraft</b>         | FAR 25.853/ABD0031 | Flammability  |
|                         | FAR 25.853/ABD0031 | Smoke density   |
|                         | ABD0031            | Toxicity  |
|                         | FAR 25.853/ABD0031 | OSU Heat release  |
|                         | FAR 25.853/ABD0031 | OSU Heat release rate   |
| <b>Rail</b>             | CEN TS 45545-2     | HL3 <sup>2)</sup><br>Final certification depending on sandwich design |
|                         | UL94V<br>UL94HB    | passed<br>passed  |

<sup>2)</sup> all thicknesses

The data provided gives approximate values for the nominal density.

The information contained herein is believed to be correct and to correspond to the latest state of scientific and technical knowledge. However, no warranty is made, either expressed or implied, regarding its accuracy or the results to be obtained from the use of such information. No statement is intended or should be construed as a recommendation to infringe any existing patent.

| <b>PRELIMINARY MECHANICAL PROPERTIES</b>        |                     |                        |                          |
|---|---------------------|------------------------|--------------------------|
| <b>Typical properties</b>                       |                     | <b>Unit (imperial)</b> | <b>AIREX® TegraCore™</b> |
| Density   | ISO 845             | lb/ft³                 | 3.4                      |
| Compressive strength perpendicular to the plane | ISO 844             | psi                    | 94                       |
| Compressive modulus perpendicular to the plane  | ISO 844             | psi                    | 4'350                    |
| Tensile strength perpendicular to the plane     | ASTM C297           | psi                    | 160                      |
| Shear strength                                  | ISO 1922            | psi                    | 110                      |
| Shear modulus                                   | ISO 1922            | psi                    | 1'300                    |
| Shear elongation                                | ISO 1922            | %                      | 80                       |
| Impact strength                                 | DIN 53453           | Ft.lb/in²              | 0.47                     |
| Thermal conductivity at room temperature        | ISO 8301            | BTU/ft.hr. °F          | 0.021                    |
| Standard sheet                                  | Width <sup>1)</sup> | in ± 0.2               | 20.4                     |
|   | Length              | in ± 0.2               | 98.4                     |
|   | Thickness           | in ± 0.02              | 0.07 to 1.2              |

Finishing Options, other dimensions and closer tolerances upon request

<sup>1)</sup>Other formats per request

| <b>Fire performance</b> | <b>Standard</b>    | <b>AIREX® TegraCore™</b>  |
|-------------------------|--------------------|---|
| <b>Aircraft</b>         | FAR 25.853/ABD0031 | Flammability  |
|                         | FAR 25.853/ABD0031 | Smoke density   |
|                         | ABD0031            | Toxicity  |
|                         | FAR 25.853/ABD0031 | Heat release  |
| <b>Rail</b>             | CEN TS 45545-2     | HL3 <sup>2)</sup><br>Final certification depending on sandwich design |
|                         | UL94V              | passed  |
| <b>Transportation</b>   | UL94V              | passed  |
|                         | UL94HB             | passed  |

<sup>2)</sup> all thicknesses

The data provided gives approximate values for the nominal density.

The information contained herein is believed to be correct and to correspond to the latest state of scientific and technical knowledge. However, no warranty is made, either expressed or implied, regarding its accuracy or the results to be obtained from the use of such information. No statement is intended or should be construed as a recommendation to infringe any existing patent.