DESCRIPTION
Toray's aluminum aerospace (AAA) grade honeycomb core is available in corrosion-resistant 5052 and 5056 alloys.

Designed predominately for use in sandwich structures to produce highly engineered structural components. In particular, the material offers the designer high strength-to-weight properties at relatively low cost, aluminum honeycomb is particularly suitable as a shear carrying core in adhesively bonded sandwich panel assemblies.

FEATURES
- High strength-to-weight ratio
- Corrosion resistant
- Easily machined and formed
- Low cost
- Perforated foil available
- Cut to customer thickness specification

TYPICAL APPLICATIONS
- Commercial aircraft flooring
- Space and satellite components
- Aircraft leading and trailing edges
- Helicopter rotor blades
- Fan casings

A wide variety of other applications have been found to exploit the unique properties of aluminum honeycomb such as:
- Automotive chassis construction
- Marine bulkhead joiner panels
- Energy absorption—crash barriers, impact protection
- Air or fluid flow control—wind tunnels, refrigeration display counters
- Acoustical absorbers
- RF shielding

PRODUCT DESIGNATION

<table>
<thead>
<tr>
<th>e.g.</th>
<th>AAA (a)</th>
<th>4.5 (b)</th>
<th>1/8 (c)</th>
<th>10 (d)</th>
<th>N (e)</th>
<th>5052 (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>AAA</td>
<td>Toray aluminum aerospace honeycomb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>4.5</td>
<td>Density (lb/ft³)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>1/8</td>
<td>Cell size in fractions of an inch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>10</td>
<td>Nominal foil thickness in ten thousands of an inch e.g., 0.001 in.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>N</td>
<td>Nonperforated foil</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>5052</td>
<td>Grade of aluminum alloy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

STANDARD DIMENSIONS AND TOLERANCES

- Nominal sheet length (W) = 2500 mm min. except * 2440 mm
- Nominal sheet width (L) = 1250 mm min. except * 1220 mm
- Sheet thickness as requested above 2 mm ± 0.125 mm
  - Note: High-density materials, e.g., 8.0lb/ft³ or higher, may not be available at thicknesses exceeding 20 mm. Core is expanded at customer’s own risk.
- Density as nominal ± 10%
- Cell size as nominal ± 10%

Other sheet sizes may be available upon request. Over expanded sheets are also available.
# PRODUCT DATA SHEET

## Aluminum Honeycomb
### Commercial Grade

**PRODUCT DATA SHEET**

### MECHANICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Compressive</th>
<th></th>
<th>Crush</th>
<th></th>
<th>Plate Shear</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bare</td>
<td>Stabilized</td>
<td>&quot;L Direction&quot;</td>
<td>&quot;W Direction&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strength (psi)</td>
<td>Strength (psi)</td>
<td>Strength (psi)</td>
<td>Strength (psi)</td>
<td>Strength (psi)</td>
</tr>
<tr>
<td>AAA-3.1-1/8-07N-5052</td>
<td>270</td>
<td>200</td>
<td>300</td>
<td>215</td>
<td>130</td>
</tr>
<tr>
<td>AAA-4.5-1/8-10N-5052</td>
<td>520</td>
<td>375</td>
<td>570</td>
<td>405</td>
<td>260</td>
</tr>
<tr>
<td>AAA-8.1-1/8-20N-5052</td>
<td>1400</td>
<td>1000</td>
<td>1560</td>
<td>1100</td>
<td>750</td>
</tr>
<tr>
<td>AAA-4.5-1/8-10N-5056</td>
<td>630</td>
<td>475</td>
<td>690</td>
<td>500</td>
<td>320</td>
</tr>
<tr>
<td>AAA-6.1-1/8-15N-5056</td>
<td>1120</td>
<td>760</td>
<td>1200</td>
<td>825</td>
<td>295</td>
</tr>
<tr>
<td>AAA-8.1-1/8-20N-5056**</td>
<td>1520</td>
<td>1200</td>
<td>1900</td>
<td>1300</td>
<td>435</td>
</tr>
</tbody>
</table>

**Higher performance values may be available on request**

These values are nominal and not absolute

Data collated from various core options.

---

**Hexagonal Cell**

T = Thickness or cell depth  L = Ribbon direction  W = Direction perpendicular to the ribbon direction

---

© Toray Advanced Composites 2019. All data given is based on representative samples of the materials in question. Since the method and circumstances under which these materials are processed and tested are key to their performance, and Toray Advanced Composites has no assurance of how its customers will use the material, the corporation cannot guarantee these properties. Toray®, (Toray) AmberTool®, (Toray) Cetex®, (Toray) MicroPly®, and all other related characters, logos, and trade names are claims and/or registered trademarks of Toray Industries Inc. and/or its subsidiary companies in one or more countries. Use of trademarks, trade names, and other IP rights of Toray Industries Inc. without prior written approval by such is strictly prohibited.

---

**Toray Advanced Composites**

Amber Drive, Langley Mill
Nottingham, NG16 4BE, UK

**www.toraytac.com**

explore@toraytac-europe.com (Europe/Middle East/Africa)

Revised 01/2020