ALUMINIUM HONEYCOMB - AEROSPACE GRADE
Core Material

TenCate’s aluminium aerospace (AAA) grade honeycomb core is available in corrosion resistant 5052 and 5056 alloys.

Aluminium Honeycomb - Aerospace Grade Features / Benefits

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

APPLICATIONS

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, particularly suitable as a shear carrying core in adhesively bonded sandwich panel assemblies.

Typical sandwich panel applications include:

- 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
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PRODUCT DESIGNATION

e.g. AAA 4.5 1/8 10 N 5052
     (a) (b) (c) (d) (e) (f)

  a. AAA = TenCate Aluminium Aerospace honeycomb
  b. 4.5 = Density in pounds per cubic foot (lb/ft³)
  c. 1/8 = Cell size in fractions of an inch
  d. 10 = Nominal foil thickness in ten thousands of an inch
  e. N = Non-perforated foil
  f. 5052 = Grade of aluminium alloy

PRODUCT RANGE

Standard products:
The following products are usually available as ex-stock items, other grades are available to order.

AAA-3.1-1/8-07N-5052
AAA-4.5-1/8-10N-5052/5056
AAA-5.2-1/4-25N-5052
AAA-6.1-1/8-15N-5056*
AAA-8.1-1/8-20N-5052/5056*

For our range of commercial grade aluminium honeycomb (AAC), 3003 grade foil, please refer to TenCate’s aluminium honeycomb – commercial grade product data sheet.

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 2mm ± 0.125 mm
Density as nominal ± 10%
Cell size as nominal ± 10%

Other sheet sizes may be available upon request.
Over expanded sheets are also available.
## ALUMINIUM HONEYCOMB - AEROSPACE GRADE

**Core Material**

<table>
<thead>
<tr>
<th>Property</th>
<th>Compressive</th>
<th>Crush</th>
<th>Plate Shear</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bare</td>
<td>Stabilised</td>
<td>L Direction</td>
</tr>
<tr>
<td></td>
<td>Strength (psi)</td>
<td>Strength (psi)</td>
<td>Modulus (ksi)</td>
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<tr>
<td>AAA-3.1-1/8-07N-5052</td>
<td>270</td>
<td>200</td>
<td>300</td>
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<tr>
<td>AAA-4.5-1/8-10N-5052</td>
<td>520</td>
<td>375</td>
<td>570</td>
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<tr>
<td>AAA-5.2-1/4-25N-5052</td>
<td>670</td>
<td>500</td>
<td>760</td>
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<td>AAA-8.1-1/8-20N-5052</td>
<td>1400</td>
<td>1000</td>
<td>1560</td>
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<td>1120</td>
<td>760</td>
<td>1200</td>
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<tr>
<td>AAA-8.1-1/8-20N-5056**</td>
<td>1520</td>
<td>1200</td>
<td>1900</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.**

**Notes:**
- T = Thickness, or cell depth
- L = Ribbon direction
- W = Direction perpendicular to the ribbon direction
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FURTHER INFORMATION

Please contact TenCate Advanced Composites, Langley Mill for additional information.

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 TenCate Advanced Composites has no assurance of how its customers will use the material, the corporation cannot guarantee these properties. TenCate, [TenCate] AmberTool® and all other related characters, logos and trade names are claims and/or registered trademarks of Koninklijke Ten Cate N.V. and/or its subsidiaries in one of more countries. Use of trademarks, trade names and other IP rights of TenCate without express written approval of TenCate is strictly prohibited.