

PRODUCT DATA SHEET

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 RANGE

Standard products:
The following products are usually available as ex-stock items. Additional grades can be sourced upon request, subject to minimum order quantities and extended lead times.

- ▶ AAA-4.5-1/8-10N-5052/5056
- ▶ AAA-6.1-1/8-15N-5056*
- ▶ AAA-8.1-1/8-20N-5052/5056*

For our range of commercial grade aluminum honeycomb (AAC), 3003 grade foil, please refer to Toray's aluminum honeycomb—commercial grade product data sheet.

PRODUCT DESIGNATION

e.g.	AAA (a)	4.5 (b)	1/8 (c)	10 (d)	N (e)	5052 (f)
a. AAA	Toray aluminum aerospace honeycomb					
b. 4.5	Density (lb/ft ³)					
c. 1/8	Cell size in fractions of an inch					
d. 10	Nominal foil thickness in ten thousands of an inch e.g., 0.001 in.					
e. N	Nonperforated foil					
f. 5052	Grade of aluminum alloy					

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.



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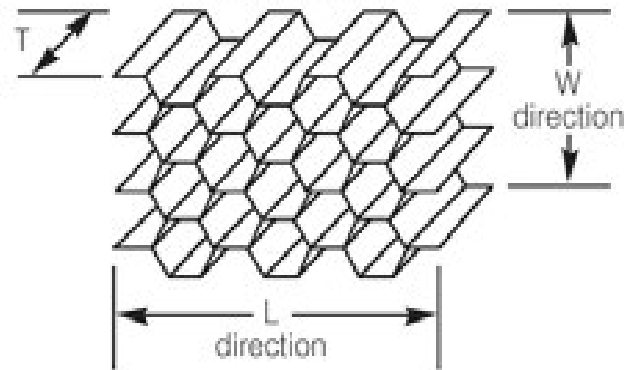
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MECHANICAL PROPERTIES

Property	Compressive					Crush	Plate Shear					
	Bare		Stabilized				"L Direction"			"W Direction"		
	Strength (psi)		Strength (psi)		Modulus (ksi)	Strength (psi)	Strength (psi)		Modulus (ksi)	Strength (psi)		Modulus (ksi)
	Typical	Min.	Typical	Min.	Typical	Typical	Typical	Min.	Typical	Typical	Min.	Typical
AAA-3.1-1/8-07N-5052	270	200	300	215	75	130	210	155	45	130	90	72
AAA-4.5-1/8-10N-5052	520	375	570	405	150	260	340	255	70	220	165	31
AAA-8.1-1/8-20N-5052	1400	1000	1560	1100	350	750	725	543	135	455	341	54
AAA-4.5-1/8-10N-5056	630	475	690	500	185	320	440	350	70	255	205	28
AAA-6.1-1/8-15N-5056	1120	760	1200	825	295	535	690	525	102	400	305	38
AAA-8.1-1/8-20N-5056**	1520	1200	1900	1300	435	810	900	740	143	520	440	51

**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