PRODUCT DATA SHEET

TENCATE ADVANCED COMPOSITES

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
- Corrosion resistant
- Easily machined and formed
- Low cost
- Perforated foil available
- 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

ALUMINIUM HONEYCOMB - AEROSPACE GRADE

Core Material

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/ft^3)
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 * 1220mm
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.

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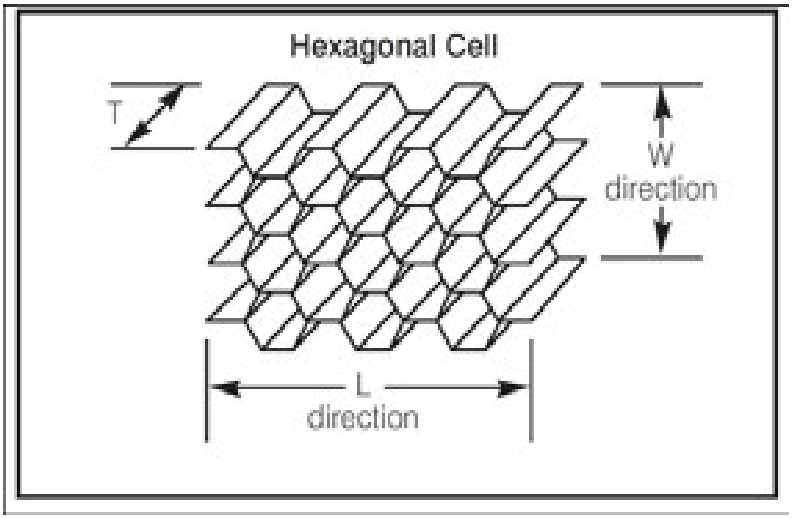
TENCATE ADVANCED COMPOSITES

ALUMINIUM HONEYCOMB - AEROSPACE GRADE
Core Material

Property	Compressive					Crush	Plate Shear					
	Bare		Stabilised				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-5.2-1/4-25N-5052	670	500	760	510	190	335	410	307	82	265	198	35
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.



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

ALUMINIUM HONEYCOMB - AEROSPACE GRADE
Core Material

FURTHER INFORMATION

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

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