



## PAA-CORE™ 5052 Aluminum Honeycomb

June 2003  
English Units

### Description

---

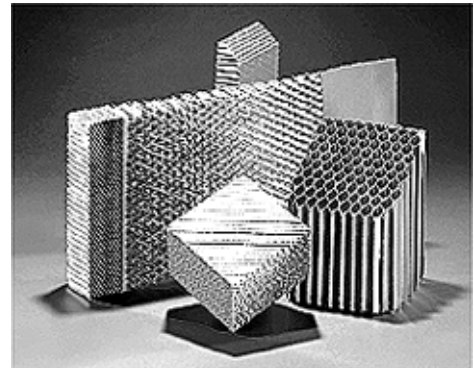
PAA-CORE 5052 aluminum honeycomb is the industry's highest-performing core material. Phosphoric acid anodized and coated with a proprietary primer, it outperforms all other core materials.

Decades of operational experience have shown that bond durability between core and face sheets is critical to long part life, and for this, PAA-CORE has no equal. Independent analysis confirms the environmental performance durability of PAA-CORE,

assuring a lower total life cost than with other core materials. PAA-CORE also has unsurpassed corrosion resistance, experiencing only minimal weight loss after 31 days in an acidified salt spray chamber, which simulates the harshest environmental conditions. PAA-CORE retained virtually all of its physical properties during this test.

PAA-CORE outperforms non-metallic core materials due to significantly higher strength-to-weight ratio and hot/wet strength. PAA-CORE offers designers higher performance with lower weight at less cost than non-metallic cores.

There is simply no equivalent to Alcore's PAA-CORE.



### Applications

---

- Aircraft control surfaces
- Longer service aircraft flooring
- Aircraft landing gear doors
- Extended service aircraft engine nacelles
- Marine and naval panels
- Advanced energy absorbers
- High performance composite structures
- Replacement for non-metallic core materials

### Features

---

- Unsurpassed corrosion resistance and bond durability
- Excellent strength-to-weight ratio
- Elevated temperature performance to 350° F/177° C
- Fire and fungus resistant
- Eliminates need for priming or pour-coat
- Easily machined and formed
- Resistant to hostile environments
- Exceeds MIL-C-7438 and many other aerospace specifications

## Availability

- Unexpanded blocks
- Unexpanded slices
- Expanded sheets
- Pieces cut to size

PAA-CORE 5052 aluminum honeycomb is available with cell perforations to facilitate venting. Custom dimensions, cell sizes, tolerances and mechanical properties are also available.

## How to Order

When ordering, please specify PAA-CORE 5052 using the following format:

Example: PAA - 5052 - 3.1 - 3/16 - N - E, where

Product	Alloy	Density	Cell Size	Perforated or Non-Perforated	Expanded or Unexpanded
PAA	5052	3.1	3/16	P or N	E or U

## Available Dimensions

	Standard		Maximum		Tolerance	
	inches	mm	inches	mm	inches	mm
Ribbon (L)	48	1219	100	2540	+2.0 / -0.0	+50.8 / -0.0
Transverse (W)	96	2438	144	3658	+4.0 / -0.0	+101.6 / -0.0
			35	889		
Thickness (T)	up to 4 inches (102mm) T				±0.005	±0.127
	over 4 inches (102mm) T				±0.062	±1.575
Density	see mechanical characteristics chart					±10%
Cell Size	see mechanical characteristics chart					±10%

Alcore gives no warranties, expressed, implied or statutory, or otherwise, as to the description, quality, fitness, capacity, or any other matter, of the properties described. The data given represents typical values to be expected. Through additional testing of each lot it is possible to verify that the product exceeds the tabulated values. It is recommended, however, that prospective users evaluate the materials to determine their suitability for the users' specific requirements. Values are given on the condition that the user assumes all risk and that responsibility for any loss or damage caused by or resulting from the use of such information is disclaimed by Alcore.

Alcore  
Lakeside Business Park  
1502 Quarry Drive  
Edgewood, MD 21040 USA  
Tel: +1 (410) 676-7100  
Fax: +1 (410) 676-7200  
Email: [sales@alcore.com](mailto:sales@alcore.com)  
[www.alcore.com](http://www.alcore.com)  
[www.mcgillcorp.com](http://www.mcgillcorp.com)

Alcore Brigantine  
Route de l'Aviation  
64600 Anglet France  
Tel: +33 (0)5 59 41 25 25  
Fax: +33 (0)5 59 41 25 00  
Email: [sales@alcorebrigantine.fr](mailto:sales@alcorebrigantine.fr)  
[www.mcgillcorp.com/alcore\\_brigantine](http://www.mcgillcorp.com/alcore_brigantine)



Mechanical Characteristics (Typical Values - US units)									
	Stabilized Compressive Strength		Crush Strength	Shear Strength				Shear Modulus	
lbs/ft <sup>3</sup> - inches - inches	psi		psi	psi				ksi	
				L		W		L	W
	75° F	350° F	75° F	75° F	350° F	75° F	350° F	75° F	
3.1 - 1/8 - .0007	305	200	145	215	145	132	90	32	16
4.5 - 1/8 - .0010	580	380	270	345	240	225	150	51	25
6.1 - 1/8 - .0015	1030	660	450	565	400	345	220	77	37
8.1 - 1/8 - .0020	1575	1075	760	810	575	540	310	112	50
10.0 - 1/8 - .0025	1875	1300	1070	1075	810	610	415	140	60
12.0 - 1/8 - .0030	2920	1550	1400	1955*	1300*	950*	440	160	75
2.6 - 5/32 - .0007	245	150	105	170	110	102	80	24	12
3.8 - 5/32 - .0010	415	280	210	275	200	168	140	41	20
5.3 - 5/32 - .0015	730	500	340	425	340	275	200	64	31
6.9 - 5/32 - .0020	1140	780	570	595	500	380	275	91	42
8.4 - 5/32 - .0025	1615	1150	800	770	590	480	330	116	51
2.0 - 3/16 - .0007	180	100	70	122	80	71	65	17	9
3.1 - 3/16 - .0010	340	200	145	215	145	128	90	32	16
4.4 - 3/16 - .0015	555	375	270	335	235	220	145	50	24
5.7 - 3/16 - .0020	870	600	410	465	380	305	200	70	34
6.9 - 3/16 - .0025	1185	780	570	600	500	380	275	91	42
8.1 - 3/16 - .0030	1735	1075	760	735	575	490	310	112	50
1.6 - 1/4 - .0007	102	70	50	88	60	51	35	13	6
2.3 - 1/4 - .0010	215	125	85	145	90	88	70	21	11
3.4 - 1/4 - .0015	375	235	160	235	160	145	100	35	18
4.3 - 1/4 - .0020	545	365	250	325	235	205	140	48	24
5.2 - 1/4 - .0025	770	500	330	415	330	270	160	62	31
6.0 - 1/4 - .0030	1110	650	430	535	390	350	210	75	36
7.9 - 1/4 - .0040	1505	1025	720	710	550	450	300	108	49
1.0 - 3/8 - .0007	56	25	25	46	30	31	30	7	3
1.6 - 3/8 - .0010	98	70	50	88	60	51	35	13	6
2.3 - 3/8 - .0015	205	125	85	140	90	82	70	21	11
3.0 - 3/8 - .0020	315	190	135	205	140	128	85	30	15
3.7 - 3/8 - .0025	415	265	200	255	190	165	105	40	20
4.2 - 3/8 - .0030	565	340	240	315	230	205	130	47	23
5.4 - 3/8 - .0040	810	540	360	435	355	285	180	66	32
6.5 - 3/8 - .0050	1015	750	510	555	440	360	265	83	40
2.6 - 1/2 - .0025	200	150	105	150	110	88	80	24	12
3.0 - 1/2 - .0030	250	190	135	180	140	106	85	30	15
4.0 - 1/2 - .0040	400	320	220	290	220	170	120	44	22
0.8 - 3/4 - .0010	23	20	15	25	25	19	25	5	2
1.8 - 3/4 - .0025	100	90	60	90	70	50	40	15	7
2.1 - 3/4 - .0030	131	105	75	105	85	60	75	18	9
3.0 - 3/4 - .0040	250	190	135	180	140	105	85	30	15
4.2 - 3/4 - .0060	450	340	240	320	230	190	130	47	23

For minimum values, please see MIL-C-7438.

\* Beam Shear

