



PAA-CORE™ 5056 Aluminum Honeycomb

June 2003
English Units

Description

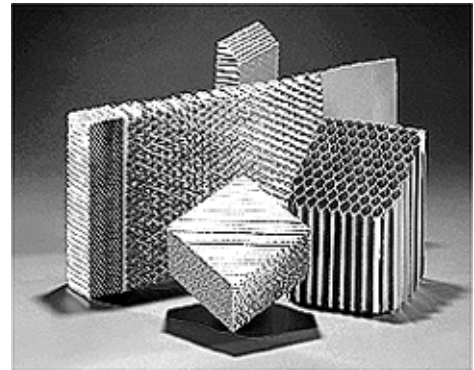
PAA-CORE 5056 aluminum honeycomb is the industry's highest-performing core material. Phosphoric acid anodized and coated with a proprietary primer, it outperforms all other core materials.

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 5056 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 5056 using the following format:

Example: PAA - 5056 - 3.1 - 3/16 - N - E, where

Product	Alloy	Density	Cell Size	Perforated or Non-Perforated	Expanded or Unexpanded
PAA	5056	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.

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Mechanical Characteristics (Typical Values - US units)

lbs/ft ³ - inches - inches	Stabilized Compressive Strength		Crush Strength	Shear Strength				Shear Modulus	
	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	355	230	180	255	170	160	110	32	16
4.5 - 1/8 - .0010	700	480	320	450	274	260	180	51	25
6.1 - 1/8 - .0015	1210	780	550	700	425	410	245	77	37
8.1 - 1/8 - .0020	1920	1350	850	960	590	575	340	112	50
10.0 - 1/8 - .0025	2200	1625	1200	1190	830	675	455	140	60
12.0 - 1/8 - .0030	3250	1950	1550	1725*	1430*	1025*	465*	160	75
2.6 - 5/32 - .0007	270	160	130	205	130	120	90	24	12
3.8 - 5/32 - .0010	510	350	230	340	230	200	175	41	20
5.3 - 5/32 - .0015	875	625	435	560	370	335	230	64	31
6.9 - 5/32 - .0020	1350	1040	660	775	525	440	300	91	42
2.0 - 3/16 - .0007	205	115	80	145	100	87	70	17	9
3.1 - 3/16 - .0010	420	230	180	270	170	155	110	32	16
4.4 - 3/16 - .0015	675	475	310	435	260	250	170	50	24
5.7 - 3/16 - .0020	1010	730	480	570	410	335	225	70	34
6.9 - 3/16 - .0025	1250	1025	660	765	525	450	300	91	42
8.1 - 3/16 - .0030	1625	1350	850	925	590	550	340	112	50
1.6 - 1/4 - .0007	115	80	60	92	70	62	40	13	6
2.3 - 1/4 - .0010	270	150	120	185	110	105	75	21	11
3.4 - 1/4 - .0015	490	300	190	300	190	180	125	35	18
4.3 - 1/4 - .0020	630	460	300	410	255	235	160	48	24
5.2 - 1/4 - .0025	830	625	380	500	360	310	195	62	30
6.0 - 1/4 - .0030	1000	775	525	640	415	375	240	75	36
7.9 - 1/4 - .0040	1580	1300	820	900	565	540	330	108	49
1.0 - 3/8 - .0007	62	40	35	56	40	37	35	7	3
1.6 - 3/8 - .0010	115	85	60	93	70	63	40	13	6
2.3 - 3/8 - .0015	230	150	120	175	110	100	75	21	11
3.0 - 3/8 - .0020	350	220	160	250	165	150	100	30	15
3.7 - 3/8 - .0025	450	325	220	325	225	190	130	40	20
4.2 - 3/8 - .0030	550	410	290	395	260	225	155	47	23
5.4 - 3/8 - .0040	850	650	450	565	390	325	200	66	32
6.5 - 3/8 - .0050	1135	950	600	710	460	420	300	83	40
2.6 - 1/2 - .0025	230	160	130	190	130	100	90	24	12
3.0 - 1/2 - .0030	315	220	160	240	165	125	100	30	15
6.0 - 1/2 - .0040	1000	770	525	640	415	375	240	75	36
3.1 - 1/8 - .0007	355	230	180	255	170	160	110	32	16
4.5 - 1/8 - .0010	700	480	320	450	274	260	180	51	25
6.1 - 1/8 - .0015	1210	780	550	700	425	410	245	77	37
8.1 - 1/8 - .0020	1920	1350	850	960	590	575	340	112	50
10.0 - 1/8 - .0025	2200	1625	1200	1190	830	675	455	140	60
12.0 - 1/8 - .0030	3250	1950	1550	1725*	1430*	1025*	465*	160	75

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

* Beam Shear

