



PAA-CORE™ 5052 Aluminum Honeycomb

June 2003
Metric

Description

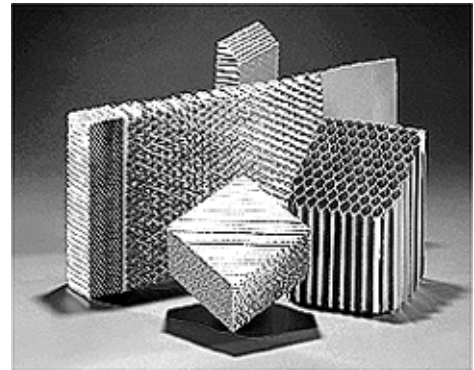
PAA-CORE 5052 aluminum honeycomb is the industry's highest-performing core material. Phosphoric acid anodized and coated with a proprietary primer, it outperforms all other core materials.

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.

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Mechanical Characteristics (Typical Values - SI/metric units)									
	Stabilized Compressive Strength		Crush Strength	Shear Strength				Shear Modulus	
lbs/ft ³ - inches - inches	MPa		MPa	MPa				MPa	
				L		W		L	W
	23°C	177°C	23°C	23°C	177°C	23°C	177°C	23°C	
3.1 - 1/8 - .0007	2.10	1.38	1.00	1.48	1.00	0.91	0.62	221	110
4.5 - 1/8 - .0010	4.00	2.62	1.86	2.38	1.65	1.55	1.03	352	172
6.1 - 1/8 - .0015	7.10	4.55	3.10	3.90	2.76	2.38	1.52	531	255
8.1 - 1/8 - .0020	10.86	7.41	5.24	5.58	3.96	3.72	2.14	772	345
10.0 - 1/8 - .0025	12.93	8.96	7.38	7.41	5.58	4.21	2.86	965	414
12.0 - 1/8 - .0030	20.13	10.69	9.65	13.48*	8.96*	6.55*	3.03*	1103	517
2.6 - 5/32 - .0007	1.69	1.03	0.72	1.17	0.76	0.70	0.55	165	83
3.8 - 5/32 - .0010	2.86	1.93	1.45	1.90	1.38	1.16	0.97	283	138
5.3 - 5/32 - .0015	5.03	3.45	2.34	2.93	2.34	1.90	1.38	441	214
6.9 - 5/32 - .0020	7.86	5.38	3.93	4.10	3.45	2.62	1.90	627	290
8.4 - 5/32 - .0025	11.14	7.93	5.52	5.31	4.07	3.31	2.28	800	352
2.0 - 3/16 - .0007	1.24	0.69	0.48	0.84	0.55	0.49	0.45	117	62
3.1 - 3/16 - .0010	2.34	1.38	1.00	1.48	1.00	0.88	0.62	221	110
4.4 - 3/16 - .0015	3.83	2.59	1.86	2.31	1.62	1.52	1.00	345	165
5.7 - 3/16 - .0020	6.00	4.14	2.83	3.21	2.62	2.10	1.38	483	234
6.9 - 3/16 - .0025	8.17	5.38	3.93	4.14	3.45	2.62	1.90	627	290
8.1 - 3/16 - .0030	11.96	7.41	5.24	5.07	3.96	3.38	2.14	772	345
1.6 - 1/4 - .0007	0.70	0.48	0.34	0.61	0.41	0.35	0.24	90	41
2.3 - 1/4 - .0010	1.48	0.86	0.59	1.00	0.62	0.61	0.48	145	76
3.4 - 1/4 - .0015	2.59	1.62	1.10	1.62	1.10	1.00	0.69	241	124
4.3 - 1/4 - .0020	3.76	2.52	1.72	2.24	1.62	1.41	0.97	331	165
5.2 - 1/4 - .0025	5.31	3.45	2.28	2.86	2.28	1.86	1.10	427	214
6.0 - 1/4 - .0030	7.65	4.48	2.96	3.69	2.69	2.41	1.45	517	248
7.9 - 1/4 - .0040	10.38	7.07	4.96	4.90	3.79	3.10	2.07	745	338
1.0 - 3/8 - .0007	0.39	0.17	0.17	0.32	0.21	0.21	0.21	48	21
1.6 - 3/8 - .0010	0.68	0.48	0.34	0.61	0.41	0.35	0.24	90	41
2.3 - 3/8 - .0015	1.41	0.86	0.59	0.97	0.62	0.57	0.48	145	76
3.0 - 3/8 - .0020	2.17	1.31	0.93	1.41	0.97	0.88	0.59	207	103
3.7 - 3/8 - .0025	2.86	1.83	1.38	1.76	1.31	1.14	0.72	276	138
4.2 - 3/8 - .0030	3.90	2.34	1.65	2.17	1.59	1.41	0.90	324	159
5.4 - 3/8 - .0040	5.58	3.72	2.48	3.00	2.45	1.97	1.24	455	221
6.5 - 3/8 - .0050	7.00	5.17	3.52	3.83	3.03	2.48	1.83	572	276
2.6 - 1/2 - .0025	1.38	1.03	0.72	1.03	0.76	0.61	0.55	165	83
3.0 - 1/2 - .0030	1.72	1.31	0.93	1.24	0.97	0.73	0.59	207	103
4.0 - 1/2 - .0040	2.76	2.21	1.52	2.00	1.52	1.17	0.83	303	152
0.8 - 3/4 - .0010	0.16	0.14	0.10	0.17	0.17	0.13	0.17	34	14
1.8 - 3/4 - .0025	0.69	0.62	0.41	0.62	0.48	0.34	0.28	103	48
2.1 - 3/4 - .0030	0.90	0.72	0.52	0.72	0.59	0.41	0.52	124	62
3.0 - 3/4 - .0040	1.72	1.31	0.93	1.24	0.97	0.72	0.59	207	103
4.2 - 3/4 - .0060	3.10	2.34	1.65	2.21	1.59	1.31	0.90	324	159

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

* Beam Shear

