

PAMG-XR1 5056 Aluminum Honeycomb

PAMG-XR1 5056 Mechanical Properties										
PLASCORE® Honeycomb Designation			Bare Compressive				Plate Shear			
Cell Size	Foil Gauge	Nominal Density Pcf	Strength psi	Modulus KSI	Strength PSI	Modulus KSI	Strength PSI	Modulus KSI	Yield	W
18	2007	2.1	345	101	250	155	15	10	15	20
18	2011	4.5	630	185	425	255	70	38	10	38
18	2015	8.1	1050	295	660	390	102	51	10	51
316	2007	2.1	150	45	125	85	7	5	7	10
316	2011	3.1	240	71	255	155	45	20	10	20
316	2015	4.1	390	130	410	240	68	32	10	32
316	2007	5.1	610	210	585	340	98	46	10	46
14	2007	1.0	100	30	70	50	5	3	5	10
14	2011	2.3	205	65	170	105	10	6	5	15
14	2015	3.6	305	95	250	150	15	9	5	22
14	2007	4.3	360	110	300	180	17	10	5	27
14	2011	5.0	420	125	350	210	19	11	5	32
30	2007	1.0	35	10	30	20	1	0	10	10
30	2011	1.3	105	30	70	50	3	1	10	15
30	2015	2.3	205	60	170	105	6	3	10	20
30	2007	3.0	305	90	240	135	9	4	10	25

How to specify Plascore Honeycomb:

PAMG-XR1 5056 aluminum honeycomb is specified as follows:

Material - Density - Cell Size - Foil Thickness -

Where:

PAMG

XR1

- designates aluminum military grade
- designates XR1 corrosion coating

Description:

PAMG-XR1 5056 aerospace grade aluminum honeycomb is a lightweight core material which offers superior strength over 5052 and 3000 Series aluminum honeycomb. PAMG-XR1 5056 honeycomb is made from 5056 aluminum alloy foil and meets all the requirements of AMS C7438.

Applications:

PAMG-XR1 5056 honeycomb uses include aircraft floors, aircraft leading and trailing edges, missile wings, fan casings, fuel cells, fuselage components, helicopter rotor blades and navy bulkhead joiner panels. PAMG-XR1 5056 honeycomb is suitable for applications where materials conforming to AMS C7438 are required.

Features:

- Elevated use temperatures
- High thermal conductivity
- Flame resistant
- Excellent moisture and corrosion resistance
- Fungi resistant
- Low weight / High strength
- Long shelf life. The mechanical properties referenced are maintained for 15 years minimum if not exposed to moisture, weather or any normal hazard.

Availability:

PAMG-XR1 5056 honeycomb is available in four forms: unexpanded blocks, unexpanded slices, untrimmed expanded sheets and cut to size expanded sheets. It is also available with or without cell perforations to facilitate cell venting for certain applications.

Cell Sizes:	1/8" - 3/8"
Densities:	1.0 pcf - 12.0 pcf
Sheet "Ribbon" (L):	48" typical - 72" max
Sheet "Transverse" (W):	96" typical - 200" max
Sheet Thickness (T):	20"/34" max
Tolerances:	Length: + 6", - 0"
	Width: + 6", - 0"
	Thickness: ± .005" (under 4" thick) ± .062" (over 4" thick)
	Density: ± 10%
	Cell Size: ± 10%

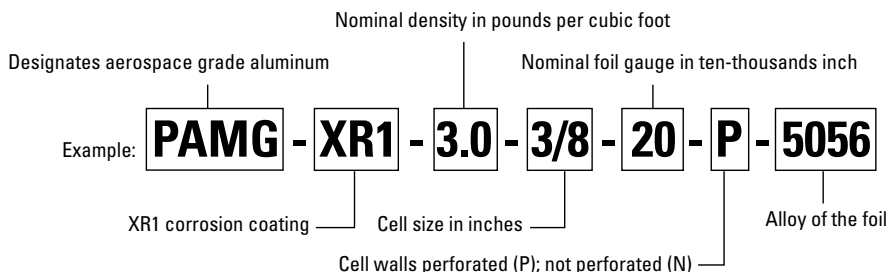
NOTE: Special dimensions, sizes, tolerances, CNC machining and die cut to size can be provided upon request.

Corrosion Resistance:

The chromated XR1 coating offers excellent protection for honeycomb cores exposed to corrosive environments, meeting the requirements of AMS C7438, CL2.

PAMG-XR1 5056 honeycomb is specified as follows:

Trade Name - Corrosion Coating - Density - Cell Size - Foil Gauge - Perforation - Alloy



PAMG-XR1 5056 Mechanical Properties

CELL SIZE		NOMINAL DENSITY		COMPRESSIVE STRENGTH (Bare)				PLATE SHEAR STRENGTH "L" DIRECTION		PLATE SHEAR MODULUS "L" DIRECTION		PLATE SHEAR STRENGTH "W" DIRECTION		PLATE SHEAR MODULUS "W" DIRECTION					
				Typical		Minimum		Typical		Minimum		Typical		Typical		Minimum		Typical	
in	mm	lb/Ft ³	Kg/m ³	psi	Mpa	psi	Mpa	psi	Mpa	psi	Mpa	ksi	Gpa	psi	Mpa	psi	Mpa	ksi	Gpa
1/8	3.2	3.1	50	350	2.41	260	1.79	283	1.95	200	1.38	50	0.34	147	1.01	110	0.76	23	0.16
1/8	3.2	4.5	72	690	4.76	500	3.45	431	2.97	350	2.41	80	0.55	251	1.73	205	1.41	34	0.23
1/8	3.2	6.1	98	1150	7.93	825	5.69	737	5.08	525	3.62	120	0.83	403	2.78	305	2.10	50	0.34
1/8	3.2	8.1	130	1753	12.09	1300	8.96	880	6.07	740	5.10	160	1.10	530	3.65	440	3.03	60	0.41
3/16	4.8	2.0	32	198	1.37	120	0.83	154	1.06	105	0.72	34	0.23	95	0.65	50	0.34	17	0.12
3/16	4.8	3.1	50	400	2.76	260	1.79	277	1.91	200	1.38	50	0.34	157	1.08	110	0.76	26	0.18
3/16	4.8	4.4	70	675	4.65	490	3.38	401	2.76	340	2.34	85	0.59	237	1.63	198	1.37	37	0.26
3/16	4.8	5.7	91	1000	6.90	735	5.07	532	3.67	480	3.31	108	0.74	330	2.28	280	1.93	48	0.33
5/32	4.0	2.6	42	267	1.84	185	1.28	194	1.34	152	1.05	41	0.28	130	0.90	80	0.55	16	0.11
5/32	4.0	3.8	61	511	3.52	375	2.59	342	2.36	272	1.88	60	0.41	195	1.34	155	1.07	30	0.21
1/4	6.4	1.6	26	122	0.84	80	0.55	105	0.72	78	0.54	21	0.14	70	0.48	38	0.26	9.5	0.07
1/4	6.4	2.3	37	248	1.71	155	1.07	170	1.17	130	0.90	37	0.26	108	0.74	62	0.43	18	0.12
1/4	6.4	3.4	54	426	2.94	315	2.17	296	2.04	230	1.59	52	0.36	161	1.11	130	0.90	22	0.15
1/4	6.4	4.3	69	650	4.48	465	3.21	374	2.58	325	2.24	78	0.54	220	1.52	190	1.31	29	0.20
1/4	6.4	5.2	83	840	5.79	645	4.45	423	2.92	425	2.93	84	0.58	306	2.11	245	1.69	32	0.22
3/8	9.6	1.0	16	55	0.38	35	0.24	55	0.38	45	0.31	13	0.09	35	0.24	25	0.17	6.1	0.04
3/8	9.6	1.6	26	118	0.81	80	0.55	113	0.78	78	0.54	21	0.14	64	0.44	38	0.26	9.5	0.07
3/8	9.6	2.3	37	230	1.59	155	1.07	170	1.17	130	0.90	32	0.22	95	0.65	62	0.43	15	0.10
3/8	9.6	3.0	48	380	2.62	250	1.72	245	1.69	190	1.31	60	0.41	145	1.00	100	0.69	19	0.13

Tested at 0.625" T per AMS STD 401 at room temperature.

The above data is based on various sample sizes and is for reference only.

Additional densities and configurations available upon request.



Plascore, Inc., employs a quality management system that is Nadcap, AS9100, ISO 9001 and ISO 14001 certified.

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