

# 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	Strength PSI	Modulus KSI
18	2007	2.1	345	101	250	155	15	10	45	20
18	2011	4.5	630	185	425	255	70	38	102	38
18	2015	8.1	1050	295	660	390	102	51	143	51
316	2007	2.1	155	45	125	85	7	5	27	13
316	2011	3.1	240	91	255	155	45	20	45	20
316	2015	4.1	345	130	330	210	65	35	65	35
316	2007	5.1	450	170	450	270	90	45	90	45
14	2007	1.0	100	30	70	50	5	3	15	7
14	2011	2.0	200	60	140	100	10	6	30	15
14	2015	3.0	300	90	210	150	15	9	45	22
14	2007	4.0	400	120	280	200	20	12	60	30
14	2011	5.0	500	150	350	250	25	15	75	37
30	2007	1.0	100	30	70	50	5	3	15	7
30	2011	2.0	200	60	140	100	10	6	30	15
30	2015	3.0	300	90	210	150	15	9	45	22

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.

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

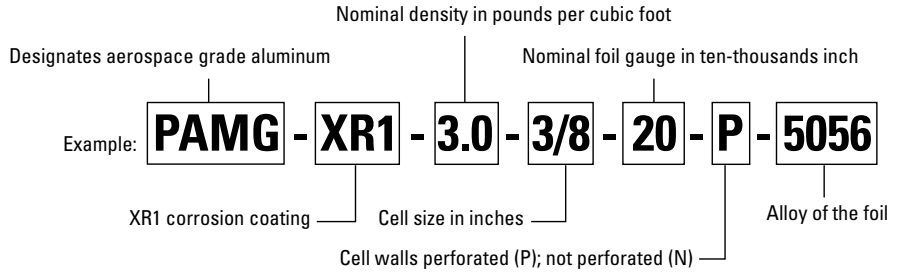
**NOTE:** Special dimensions, sizes, tolerances, CNC machining and die cut to size can be provided upon request.

## 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 <sup>3</sup>	Kg/m <sup>3</sup>	psi	Mpa	psi	Mpa	psi	Mpa	psi	Mpa	ksi	Gpa	psi	Mpa	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.



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### Corporate Headquarters

**Plascore Incorporated**  
 615 N. Fairview St.  
 Zeeland, MI 49464-0170  
 Phone (616) 772-1220  
 Toll Free (800) 630-9257  
 Fax (616) 772-1289  
 Email sales@plascore.com  
 Web www.plascore.com

### Europe

**Plascore GmbH&CoKG**  
 Feldborn 6  
 D-55444 Waldlaubersheim  
 Germany  
 Phone +49(0) 6707-9143 0  
 Fax +49(0) 6707-9143 40  
 Email sales.europe@plascore.com  
 Web www.plascore.de