



Engineered Honeycomb
Solutions and Services

Aerospace

Honeycomb Core for Commercial
and Military Aircraft, Space and
Defense Applications



PLASCORE®

Plascore Honeycomb Core

For Commercial, Defense and Space Applications

Plascore is a global manufacturer in advanced honeycomb core. Plascore honeycomb core is used in a wide range of applications, wherever high strength-to-weight, dampening and dimensional accuracy are critical characteristics.

In commercial and defense aerospace industries, Plascore Aluminum, Nomex® and Kevlar® honeycomb meet manufacturers' specifications for use throughout structures, control surfaces and interior components. Plascore's breathable metallic core is ideal for satellite structures.

Our reputation and presence in the global aerospace industry is evident in lasting and dedicated relationships with numerous customers worldwide.

With value-added capabilities and modern manufacturing facilities in the US and Europe, Plascore supports aerospace engineering and assembly plants throughout the world.

Make your composite structures lighter, stiffer and stronger...
Build with Plascore.

Plascore Honeycomb Core is :

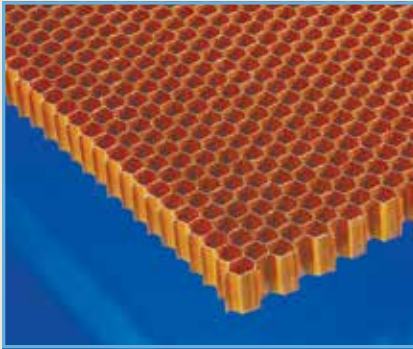
- High Strength
- Light Weight
- Flame Resistant
- Cost Effective
- Moisture & Corrosion Resistant
- Suitable for Custom/Machined Shapes





Full Line of Honeycomb Core

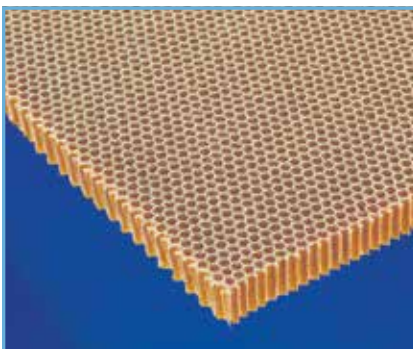
Cell Size, Density and Material to Aerospace Specifications



PN2 Aerospace Grade Meta-Aramid Fiber Honeycomb

PN2 aerospace grade aramid fiber honeycomb exhibits outstanding flammability properties. It is manufactured from meta-aramid paper and coated with a heat resistant phenolic resin.

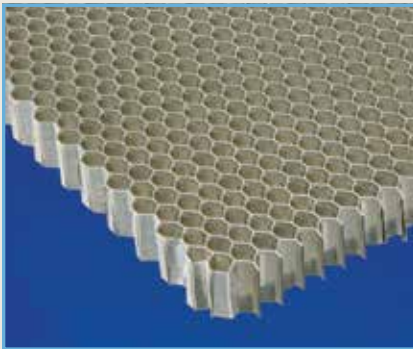
- High strength to weight ratio
- Fire resistant (self extinguishing)
- Corrosion resistant
- Excellent dielectric properties
- Thermally insulating
- High toughness
- Excellent creep and fatigue performance
- Good thermal stability
- Over expanded cell configuration suitable for forming simple curves
- Compatible with most adhesives used in sandwich composites



PK2 Aerospace Grade Para-Aramid Fiber Honeycomb

PK2 para-aramid fiber honeycomb is an extremely lightweight, high strength, non-metallic honeycomb manufactured with para-aramid fiber paper and coated with a heat resistant phenolic resin. This core material exhibits improved performance characteristics over meta-aramid in the areas of weight, strength, stiffness and fatigue.

- Up to 40% higher properties than comparable density meta-aramid honeycomb
- Improved shear strength and modulus
- Extremely high strength to weight ratio
- Excellent thermal and moisture stability
- Conforms to stringent smoke, toxicity and flammability standards

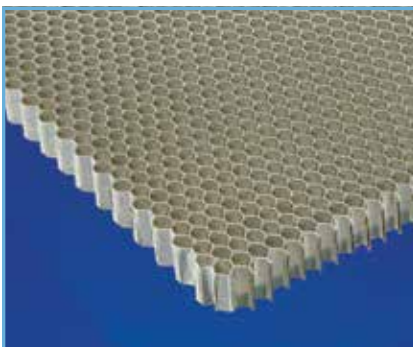


PAMG 5052 Aluminum Honeycomb

PAMG 5052 aerospace grade aluminum honeycomb is a lightweight core material which offers superior strength over commercial grade aluminum honeycomb.

PAMG 5052 honeycomb is made from 5052 aluminum alloy foil and meets all the requirements of AMS(MIL)-C-7438. PAMG 5052 honeycomb is available with Plascore's organo-metallic XR1 coating or phosphoric acid anodized PA3 coating.

- Available with XR1 or PA3 coating
- High strength to weight ratio
- Elevated use temperatures
- High thermal conductivity
- Excellent moisture and corrosion resistance
- Flame resistant
- Fungi resistant



PAMG 5056 Aluminum Honeycomb

PAMG 5056 aerospace grade aluminum honeycomb is a lightweight core material which offers superior strength over 5052 and commercial grade aluminum honeycomb. PAMG 5056 honeycomb is made from 5056 aluminum alloy foil and meets all the requirements of AMS(MIL)-C-7438. PAMG 5056 honeycomb is available with Plascore's organo-metallic XR1 coating or phosphoric acid anodized PA3 coating.

- Available with XR1 or PA3 coating
- High strength to weight ratio
- Elevated use temperatures
- High thermal conductivity
- Excellent moisture and corrosion resistance
- Flame resistant
- Fungi resistant



Mechanical Properties for Typical Aerospace Applications

A full product listing can be found at www.plascore.com

PN2 Mechanical Properties																		
PLASCORE® Honeycomb Designation	DENSITY		COMPRESSIVE (BARE) STRENGTH				PLATE SHEAR "L" DIRECTION						PLATE SHEAR "W" DIRECTION					
			TYP		MIN		STRENGTH		MODULUS		STRENGTH		MODULUS					
	lb/ft³	kg/m³	psi	MPa	psi	MPa	psi	MPa	psi	MPa	ksi	Gpa	psi	MPa	psi	MPa	ksi	Gpa
	PN2-1/8-1.8	1.8	29	107	0.74	70	0.48	94	0.65	85	0.59	5.6	0.04	48	0.33	36	0.25	2.2
PN2-1/8-3.0	3.0	48	326	2.25	180	1.24	206	1.42	162	1.12	7.9	0.05	101	0.70	85	0.59	4.0	0.03
PN2-1/8-4.0	4.0	64	645	4.45	330	2.28	261	1.80	225	1.55	9.7	0.07	134	0.93	112	0.77	5.5	0.04
PN2-3/16-3.0	3.0	48	418	2.88	180	1.24	176	1.21	135	0.93	6.2	0.04	99	0.68	67	0.46	4.6	0.03
PN2-3/16-3.0-OV	3.0	48	319	2.20	250	1.72	111	0.76	93	0.64	3.0	0.02	148	1.02	116	0.80	7.7	0.05

PK2 Typical Mechanical Properties													
PLASCORE® Honeycomb Designation	DENSITY		COMPRESSIVE (BARE) STRENGTH		PLATE SHEAR "L" DIRECTION				PLATE SHEAR "W" DIRECTION				
			STRENGTH		MODULUS		STRENGTH		MODULUS				
	lb/ft³	kg/m³	psi	MPa	psi	Mpa	ksi	Gpa	psi	Mpa	ksi	Gpa	
PK2-1/8-2.5	2.5	40.0	259	1.79	225	1.55	19.0	0.13	122	0.84	8.8	0.06	
PK2-1/8-3.0	3.0	48.1	446	3.07	278	1.92	18.2	0.13	167	1.15	10.6	0.07	

PAMG 5052 Typical Mechanical Properties									
PLASCORE® HONEYCOMB DESIGNATION			COMPRESSIVE (BARE)		PLATE SHEAR "W" DIRECTION				
CELL SIZE (IN)	FOIL GAUGE (IN)	NOMINAL DENSITY (PCF)	STRENGTH (PSI)	MODULUS (KSI)	STRENGTH (PSI)		MODULUS (KSI)		
					"L"	"W"	"L"	"W"	
1/8	.0007	3.1	310	75	225	123	50	26	
1/8	.001	4.5	600	150	372	229	70	30	
3/16	.002	5.7	854	220	460	300	109	46	
1/4	.0015	3.4	634	90	232	130	54	26	
1/4	.002	4.3	553	140	307	179	70	30	

PAMG 5056 Typical Mechanical Properties									
PLASCORE® HONEYCOMB DESIGNATION			COMPRESSIVE (BARE)		PLATE SHEAR "W" DIRECTION				
CELL SIZE (IN)	FOIL GAUGE (IN)	NOMINAL DENSITY (PCF)	STRENGTH (PSI)	MODULUS (KSI)	STRENGTH (PSI)		MODULUS (KSI)		
					"L"	"W"	"L"	"W"	
1/8	.0007	3.1	350	97	283	147	50	23	
1/8	.001	4.5	690	185	431	251	80	34	
1/8	.0015	6.1	1150	295	737	403	120	50	
3/16	.0007	2.0	198	45	154	95	34	17	
3/16	.001	3.1	400	97	277	157	50	26	

Fabrication & Technical Support



Manufacturing Competencies

Lean manufacturing principles are employed throughout manufacturing, administration, and validation to reduce lead times while assuring optimum quality.

Plascore capabilities include adhesive development, precision cutting, slotting, chamfering, expanding, and automated assembly. Tight tolerances and unique profiles are achieved through engineering expertise.



Quality Assurance – AS9100 Certified

Plascore is AS9100 registered and has a range of testing capabilities. Our on-site validation lab is experienced in providing timely and accurate first article submissions to aerospace customers.

Mechanical testing confirms cell size, density, compression and shear values are within specification. Certification documents are included upon request for validation and tracking purposes.



Machined Core

Plascore has the in-house capabilities to deliver custom parts to print with the highest level of accountability and quality.

With the addition of a 40,000 ft² building, we can offer 5-axis CNC machining, roll forming, heat forming, splicing, cut to size, high density cores, and more according to your specific honeycomb needs.



Energy Absorption Products

Plascore offers lightweight energy absorbing honeycomb products built to specification. Aluminum honeycomb is an ideal energy absorber for aerospace applications where weight and envelope constraints are critical.

Global Aerospace Presence



Plascore Supports Numerous Customers According to Aerospace Industry Specifications

Aluminum Honeycomb Core

- AAR
- AIDC
- Airbus
- Alliance Space Systems
- Applied Aerospace
- ATK Space Systems
- Bell Helicopter
- Bombardier
- Boeing Satellite Systems
- Kaman Aerospace
- SpaceX
- Teklam
- UTC Aerospace Systems
- Zodiac

Aramid Fiber Honeycomb Core

- AAR
- Airbus
- B/E Aerospace
- Bell Helicopter
- Boeing Helicopter
- Bombardier
- Embraer
- FACC AG
- General Atomics Aeronautical
- Gulfstream
- McDonnell Douglas
- Northrop Grumman
- Thales Alenia
- Zodiac



Honeycomb core is specified as follows:

Trade Name - Cell Size - Density - Cell Configuration

Designates aerospace grade Nomex®

The nominal density in pounds per cubic foot

PN2 - 3/16 - 3.0 - OV

Cell size in inches

Over expanded cells

Trade Name - Cell Size - Density - Cell Configuration

Designates aerospace grade Kevlar®

The nominal density in pounds per cubic foot

PK2 - 3/16 - 3.0 - HS

Cell size in inches

Higher shear property configuration

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

Designates aerospace grade aluminum

Nominal density in pounds per cubic foot

Nominal foil gauge in ten-thousands inch

PAMG - XR1 - 3.0 - 3/8 - 20 - P - 5052

XR1 for XR1 corrosion coating

Cell size in inches

Alloy of the foil

PA3 for phosphoric acid anodized coating

Cell walls perforated (P); not perforated (N)



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