



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 :

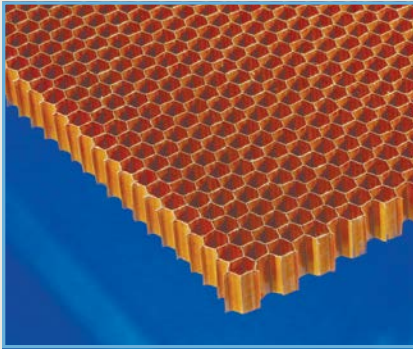
- High Strength
- Light Weight
- Flame Resistant
- Cost Effective
- Moisture & Corrosion Resistant
- Suitable for Custom/Machined Shapes





# Full Line of Honeycomb Core

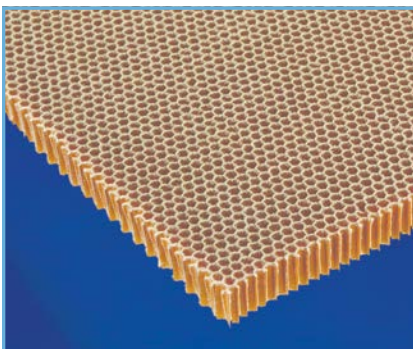
## Cell Size, Density and Material to Aerospace Specifications



### PN2 Aerospace Grade Aramid Fiber Honeycomb

PN2 aerospace grade aramid fiber honeycomb exhibits outstanding flammability properties. It is manufactured from DuPont Nomex® paper (or equivalent) and coated with a heat resistant phenolic resin.

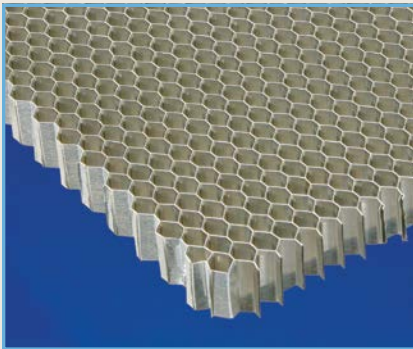
- High strength to weight ratio
- Fire resistant (self extinguishing)
- Corrosion resistant
- Excellent dielectric properties
- Thermally insulating
- High toughness
- Excellent creep and fatigue performance
- Good thermal stability
- Over expanded cell configuration suitable for forming simple curves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



### PK2 Kevlar® N636 Para-Aramid Fiber Honeycomb

PK2 Kevlar® N636 para-aramid fiber honeycomb is an extremely lightweight, high strength, non-metallic honeycomb manufactured with para-aramid fiber paper (DuPont Kevlar® N636 or equivalent) coated with a heat resistant phenolic resin. This core material exhibits improved performance characteristics over Nomex® in the areas of weight, strength, stiffness and fatigue.

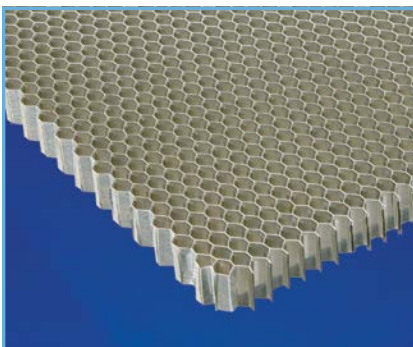
- Up to 40% higher properties than comparable density Nomex® honeycomb
- Improved shear strength and modulus
- Extremely high strength to weight ratio
- Excellent thermal and moisture stability
- Conforms to stringent smoke, toxicity and flammability standards



### PAMG-XR1 5052 Aluminum Honeycomb

PAMG-XR1 5052 aerospace grade aluminum honeycomb is a lightweight core material which offers superior strength over commercial grade aluminum honeycomb. PAMG-XR1 5052 honeycomb is made from 5052 aluminum alloy foil and meets all the requirements of AMS(MIL)-C-7438.

- High strength to weight ratio
- Elevated use temperatures
- High thermal conductivity
- Excellent moisture and corrosion resistance
- Flame resistant
- Fungi resistant



### PAMG-XR1 5056 Aluminum Honeycomb

PAMG-XR1 5056 aerospace grade aluminum honeycomb is a lightweight core material which offers superior strength over 5052 and commercial grade aluminum honeycomb. PAMG-XR1 5056 honeycomb is made from 5056 aluminum alloy foil and meets all the requirements of AMS(MIL)-C-7438.

- 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](http://www.plascore.com)

PN2 Mechanical Properties																		
PLASCORE® Honeycomb Designation	DENSITY		COMPRESSIVE (BARE) STRENGTH				PLATE SHEAR "L" DIRECTION						PLATE SHEAR "W" DIRECTION					
			STRENGTH		MODULUS		STRENGTH			MODULUS								
	TYP	MIN	TYP	MIN	TYP	MIN	TYP	MIN	TYP	MIN	TYP	MIN	TYP	MIN				
	lb/ft <sup>3</sup>	kg/m <sup>3</sup>	psi	MPa	psi	MPa	psi	MPa	psi	MPa	ksi	Gpa	psi	MPa	psi	MPa	ksi	Gpa
PN2-1/8-1.8	1.8	29	85	0.59	74	0.51	75	0.52	60	0.41	3.8	0.026	45	0.31	32	0.22	1.7	0.012
PN2-1/8-3.0	3.0	48	290	2.00	200	1.38	205	1.41	140	0.97	6.7	0.046	105	0.72	74	0.51	3.5	0.024
PN2-1/8-4.0	4.0	64	515	3.55	350	2.41	275	1.90	215	1.48	8.6	0.059	150	1.04	108	0.74	4.7	0.032
PN2-3/16-3.0	3.0	48	300	2.07	200	1.38	185	1.28	140	0.97	6.1	0.042	110	0.76	67	0.46	4.1	0.028
PN2-3/16-3.0-OV	3.0	48	280	1.93	250	1.72	115	0.79	75	0.52	3.3	0.023	135	0.93	75	0.52	6.6	0.045

PK2 Typical Mechanical Properties													
PLASCORE® Honeycomb Designation	DENSITY		COMPRESSIVE (BARE) STRENGTH		PLATE SHEAR "L" DIRECTION				PLATE SHEAR "W" DIRECTION				
					STRENGTH		MODULUS		STRENGTH		MODULUS		
	lb/ft <sup>3</sup>	kg/m <sup>3</sup>	psi	MPa	psi	Mpa	ksi	Gpa	psi	Mpa	ksi	Gpa	
PK2-1/8-2.5	2.5	40.0	225	1.55	190	1.31	15.0	0.104	115	0.79	8.1	0.056	
PK2-1/8-3.0	3.0	48.1	315	2.17	235	1.62	15.6	0.107	140	0.97	9.0	0.062	

PAMG-XR1 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	270	75	210	130	45	22		
1/8	.001	4.5	520	150	340	220	70	31		
3/16	.002	5.7	770	220	460	300	90	38		
1/4	.0015	3.4	320	90	235	150	50	24		
1/4	.002	4.3	480	140	320	210	66	29		

PAMG-XR1 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	340	97	250	155	45	20		
1/8	.001	4.5	630	185	425	255	70	38		
1/8	.0015	6.1	1000	295	640	370	102	38		
3/16	.0007	2.0	155	45	140	85	27	13		
3/16	.001	3.1	340	97	255	155	45	20		

# 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 ft<sup>2</sup> 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

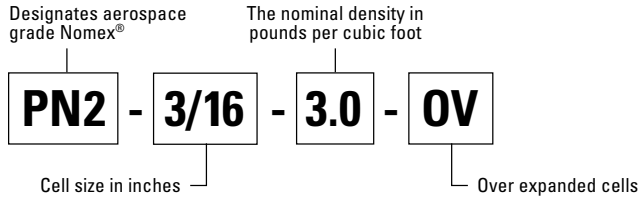
## **Aramid Fiber Honeycomb Core**

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

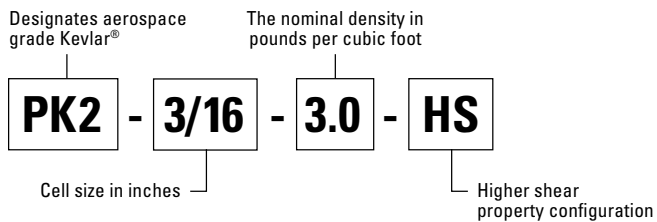


## Honeycomb core is specified as follows:

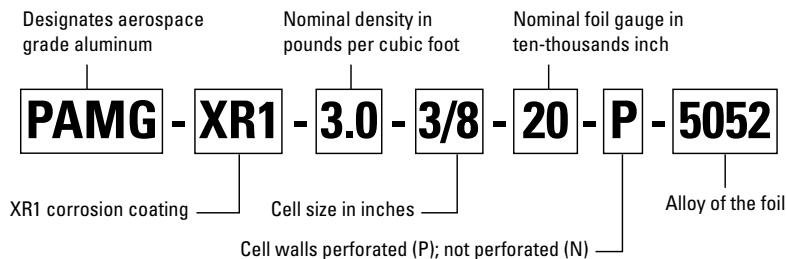
### Trade Name - Cell Size - Density - Cell Configuration



### Trade Name - Cell Size - Density - Cell Configuration



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



#### Corporate Headquarters

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Plascore, Inc., employs a quality management system that is AS/EN/JISQ 9100, ISO 9001:2008 and ISO 14001:2004 certified.

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