



# NOVA STEEL, INC.

Phone 219.397.5000 Fax 219.398.4379 [www.novasteelinc.com](http://www.novasteelinc.com)

## NOMEX® HONEYCOMB CELL PANELS

PRODUCT DATA SHEET

PLEASE CALL WITH INTEREST

Honeycomb structures are used extensively in aircraft construction to save weight. Honeycomb core made with fireproof Nomex® is coated with a phenolic resin to increase strength properties. (Nomex® is the registered brand name of a flame retardant material by DuPont.) Nomex honeycomb core has high strength-to-weight and rigidity-to-weight ratios, high thermal tolerance, excellent corrosion resistance, and conforms to rigid smoke toxicity and flammability standards.



### Applications for Nomex® honeycomb core include:

- Interior aircraft panels including flooring, sidewalls, ceilings, galleys and lavatories.
- Exterior aircraft panels including trailing and leading edges, flaps, ailerons, access panels, and doors.
- Ship and boat panels such as those dividing berthing areas and staterooms.
- Pleasure and racing boat hulls.
- Ceilings, walls, and floors of portable structures.

### Features

- Thermal tolerance to 325°F
- Densities range from 1.5 to 12 pcf
- High wet strength and corrosion resistance
- Conforms to rigid smoke toxicity and flammability standards
- Good fatigue and impact resistance

### Availability

Thickness: .080" up to 36"  
Length: Any up to 144"  
Width: Up to 60"

### Construction

Resin: Phenolic  
Reinforcement: Aramid paper (Nomex®)

### Standard

Thickness: Up to 2.0" +/- 0.006"  
2.01" to 4.00" +0.010"/-0"  
> 4.00" +0.060"/-0"  
Full block (34") +1.000"/-0



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## Tolerances

Length: +4"/-0" or as specified by customer  
Width: +2"/-0" or as specified by customer

## Specifications

- Qualified to FMS 1030
- Qualified to Boeing BMS 8-124 CI IV
- Qualified to McDonnell Douglas DMS 1974 GR A
- Qualified to Lockheed STM 28-105
- Qualified to Lockheed LCM 28-1041
- Qualified to Lockheed C28-105
- Qualified to Lockheed Georgia STM 28-105 [1/8 - 1.8 (1.5) and 1/8 - 3.0 (2)]
- Qualified to Northrop Grumman GC101
- Qualified to Vought 10425.1957
- Qualified to Cessna CMNP083, Ty II, CI 4, Gr 1.8, 3.0, 6.0
- Qualified to AMS 3711, Aerospace Material Standards
- Qualified to Naval Sea Systems Command Drawing No. 803-5959189
- GPR Sandwich Construction Bulkheads for Surface Ships
- Qualified to Bell Helicopter (Textron) 299-947-103
- Qualified to Raytheon/Beech - BS 23732
- Qualified to AIM Aviation AIM-M-1013, AIM 11-01-001
- Meets the requirements of AMS-C-91986
- Meets the requirements of Rockwell LB0130-022

### **Properties of Non-Metallic Honeycomb Based on .500" thick slice unless stated otherwise. Typical average property values**

PROPERTY	TEST METHOD	UNIT (Eng./Metric)	1/8 CELL (+/-10%)		
Nominal Density			1.8 PCF	3.0 PCF	4.0 PCF
Bare Compression	ASTM D1621	PSI (N/mm <sup>2</sup> )	95 (0.655)	327 (2.25)	609 (4.20)
Stabilized Compression	ASTM C365	PSI (N/mm <sup>2</sup> )	132 (0.91)	317 (2.19)	624 (4.30)
Shear - L Direction Ultimate Load Modulus	ASTM C273	PSI (N/mm <sup>2</sup> ) PSI (N/mm <sup>2</sup> )	102 (0.703) 4,371 (30.1)	178 (1.23) 8,408 (57.9)	367 (2.23) 10,200 (70.3)
Shear - W Direction Ultimate Load Modulus	ASTM C273	PSI (N/mm <sup>2</sup> ) PSI (N/mm <sup>2</sup> )	48 (0.331) 2,010 (13.9)	100 (0.689) 3,823 (26.4)	226 (1.558) 7,100 (49.0)
Water Migration	BMS 8-124	Number of continuous cells	3.23	1.43	1.26
Flammability - 60 Second Vertical Self Extinguishing Time Burn Length Drip Extinguishing Time	BSS 7230	Second Inch (mm) Second	0.1 1 (25) 0	1.6 1.9 (48) 0	1.1 2.7 (69) 0



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PROPERTY	TEST METHOD	UNIT (Eng./Metric)	1/8 CELL (+/-10%)		3/16 CELL (+/-10%)
Nominal Density			8.0 PCF	9.0 PCF	6.0 PCF
Cell Size	BMS 8-124	In (mm)	0.134 (3.4)	0.135 (3.4)	0.196 (5)
Bare Compression	ASTM D1621	PSI (N/mm <sup>2</sup> )	2,011 (13.86)	2,145 (14.79)	994 (6.85)
Stabilized Compression	ASTM C365	PSI (N/mm <sup>2</sup> )	2,173 (14.98)	2,456 (16.93)	1,120 (7.72)
Shear - L Direction Ultimate Load Modulus	ASTM C273	PSI (N/mm <sup>2</sup> )	573 (3.951)	526 (3.627)	590 (4.068)
		PSI (N/mm <sup>2</sup> )	17,100 (117.9)	19,418 (133.9)	17,000 (117.2)
Shear - W Direction Ultimate Load Modulus	ASTM C273	PSI (N/mm <sup>2</sup> )	441 (3.041)	345 (2.379)	388 (2.675)
		PSI (N/mm <sup>2</sup> )	12,800 (88.3)	11,996 (82.7)	9,900 (68.3)
Water Migration	BMS 8-124	Number of continuous cells	1.00	1.47	1.08
Flammability - 60 Second Vertical Self Extinguishing Time Burn Length Drip Extinguishing Time	BSS 7230	Second	1.3	0.1	1.9
		Inch (mm)	2.9 (74)	0.5 (13)	1.6 (41)
		Second	0	0	0