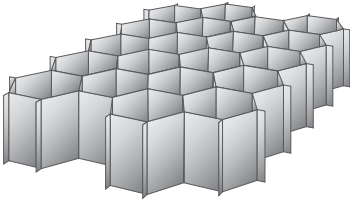


# PAMG-XR1 5052 Aluminum Honeycomb



## Description:

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

## Applications:

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PAMG-XR1 5052 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, energy absorption, air/light directionalization and EMI/RFI shielding. PAMG-XR1 5052 honeycomb is suitable for applications where materials conforming to AMS C7438 are required.

## Features:

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- 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:

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PAMG-XR1 5052 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)<br>± .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.

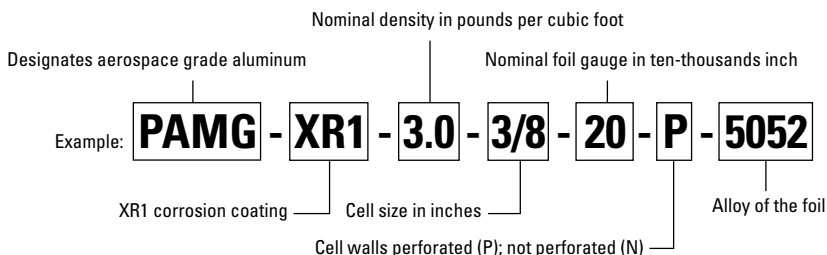
## Corrosion Resistance:

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

# PAMG-XR1 5052 aluminum honeycomb is specified as follows:

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



| <b>PAMG-XR1 5052 Mechanical Properties</b> |     |                    |                   |                           |       |         |       |                                    |       |         |      |                                   |      |                                    |      |         |      |                                   |      |
|--|-----|--------------------|-------------------|---------------------------|-------|---------|-------|------------------------------------|-------|---------|------|-----------------------------------|------|------------------------------------|------|---------|------|-----------------------------------|------|
| CELL SIZE                                  |     | NOMINAL DENSITY    |                   | BARE COMPRESSIVE STRENGTH |       |         |       | 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  | ksi                               | Gpa  |
| 1/8  | 3.2 | 3.1                | 50                | 310                       | 2.14  | 215     | 1.48  | 225                                | 1.55  | 155     | 1.07 | 50                                | 0.34 | 123                                | 0.85 | 90      | 0.62 | 26                                | 0.18 |
| 1/8  | 3.2 | 4.5                | 72                | 600                       | 4.14  | 405     | 2.79  | 372                                | 2.56  | 285     | 1.96 | 70                                | 0.48 | 229                                | 1.58 | 168     | 1.16 | 30                                | 0.21 |
| 1/8  | 3.2 | 6.1                | 98                | 935                       | 6.45  | 680     | 4.69  | 539                                | 3.72  | 455     | 3.14 | 117                               | 0.81 | 340                                | 2.34 | 272     | 1.88 | 45                                | 0.31 |
| 1/8  | 3.2 | 8.1                | 130               | 1445                      | 9.96  | 1100    | 7.58  | 800                                | 5.52  | 670     | 4.62 | 135                               | 0.93 | 445                                | 3.07 | 400     | 2.76 | 57                                | 0.39 |
| 1/8  | 3.2 | 10.0               | 160               | 1900                      | 13.10 | 1500    | 10.34 | 1000                               | 6.89  | 860     | 5.93 | 175                               | 1.21 | 455                                | 3.14 | 490     | 3.38 | 65                                | 0.45 |
| 1/8  | 3.2 | 12.0               | 192               | 2400                      | 16.55 | 1910    | 13.17 | 1920                               | 13.24 | 1250    | 8.62 | -                                 | -    | 1000                               | 6.89 | 750     | 5.17 | -                                 | -    |
| 3/16                                       | 4.8 | 2.0                | 32                | 187                       | 1.29  | 80      | 0.55  | 150                                | 1.03  | 80      | 0.55 | 34                                | 0.23 | 80                                 | 0.55 | 46      | 0.32 | 20                                | 0.14 |
| 3/16                                       | 4.8 | 3.1                | 50                | 346                       | 2.39  | 155     | 1.07  | 218                                | 1.50  | 155     | 1.07 | 51                                | 0.35 | 127                                | 0.88 | 90      | 0.62 | 27                                | 0.19 |
| 3/16                                       | 4.8 | 4.4                | 70                | 580                       | 4.00  | 280     | 1.93  | 320                                | 2.21  | 280     | 1.93 | 72                                | 0.50 | 240                                | 1.65 | 160     | 1.10 | 36                                | 0.25 |
| 3/16                                       | 4.8 | 5.7                | 91                | 854                       | 5.89  | 410     | 2.83  | 460                                | 3.17  | 410     | 2.83 | 109                               | 0.75 | 300                                | 2.07 | 244     | 1.68 | 46                                | 0.32 |
| 3/16                                       | 4.8 | 6.9                | 110               | 1065                      | 7.34  | 540     | 3.72  | 597                                | 4.12  | 540     | 3.72 | 115                               | 0.79 | 351                                | 2.42 | 328     | 2.26 | 50                                | 0.34 |
| 3/16                                       | 4.8 | 8.1                | 130               | 1550                      | 10.69 | 670     | 4.62  | 720                                | 4.96  | 670     | 4.62 | 152                               | 1.05 | 490                                | 3.38 | 400     | 2.76 | 60                                | 0.41 |
| 5/32                                       | 4.8 | 2.6                | 42                | 242                       | 1.67  | 120     | 0.83  | 150                                | 1.03  | 120     | 0.83 | 38                                | 0.26 | 100                                | 0.69 | 70      | 0.48 | 24                                | 0.17 |
| 5/32                                       | 4.8 | 3.8                | 61                | 436                       | 3.01  | 300     | 2.07  | 210                                | 1.45  | 215     | 1.48 | 58                                | 0.40 | 175                                | 1.21 | 125     | 0.86 | 32                                | 0.22 |
| 1/4  | 6.4 | 1.6                | 26                | 108                       | 0.74  | 70      | 0.48  | 88                                 | 0.61  | 60      | 0.41 | 24                                | 0.17 | 45                                 | 0.31 | 32      | 0.22 | 12                                | 0.08 |
| 1/4  | 6.4 | 2.3                | 37                | 218                       | 1.50  | 130     | 0.90  | 130                                | 0.90  | 100     | 0.69 | 32                                | 0.22 | 95                                 | 0.65 | 57      | 0.39 | 18                                | 0.12 |
| 1/4  | 6.4 | 3.4                | 54                | 364                       | 2.51  | 250     | 1.72  | 232                                | 1.60  | 180     | 1.24 | 54                                | 0.37 | 130                                | 0.90 | 105     | 0.72 | 26                                | 0.18 |
| 1/4  | 6.4 | 4.3                | 69                | 553                       | 3.81  | 370     | 2.55  | 307                                | 2.12  | 265     | 1.83 | 70                                | 0.48 | 179                                | 1.23 | 155     | 1.07 | 30                                | 0.21 |
| 1/4  | 6.4 | 5.2                | 83                | 650                       | 4.48  | 510     | 3.52  | 418                                | 2.88  | 360     | 2.48 | 86                                | 0.59 | 240                                | 1.65 | 200     | 1.38 | 46                                | 0.32 |
| 1/4  | 6.4 | 6.0                | 96                | 1000                      | 6.90  | 660     | 4.55  | 612                                | 4.22  | 445     | 3.07 | 91                                | 0.63 | 310                                | 2.14 | 265     | 1.83 | 57                                | 0.39 |
| 1/4  | 6.4 | 7.9                | 126               | 1350                      | 9.31  | 1050    | 7.24  | 745                                | 5.14  | 650     | 4.48 | -                                 | -    | 450                                | 3.10 | 390     | 2.69 | -                                 | -    |
| 3/8  | 9.6 | 1.0                | 16                | 52                        | 0.36  | 20      | 0.14  | 45                                 | 0.31  | 32      | 0.22 | 10                                | 0.07 | 30                                 | 0.21 | 20      | 0.14 | 7                                 | 0.05 |
| 3/8  | 9.6 | 2.3                | 37                | 197                       | 1.36  | 130     | 0.90  | 145                                | 1.00  | 100     | 0.69 | 30                                | 0.21 | 77                                 | 0.53 | 57      | 0.39 | 16                                | 0.11 |
| 3/8  | 9.6 | 3.0                | 48                | 314                       | 2.17  | 200     | 1.38  | 209                                | 1.44  | 145     | 1.00 | 44                                | 0.30 | 110                                | 0.76 | 85      | 0.59 | 24                                | 0.17 |
| 3/8  | 9.6 | 3.7                | 59                | 420                       | 2.90  | 290     | 2.00  | 245                                | 1.69  | 205     | 1.41 | 55                                | 0.38 | 125                                | 0.86 | 120     | 0.83 | 26                                | 0.18 |
| 3/8  | 9.6 | 4.2                | 67                | 582                       | 4.01  | 360     | 2.48  | 320                                | 2.21  | 255     | 1.76 | 70                                | 0.48 | 187                                | 1.29 | 150     | 1.03 | 35                                | 0.24 |
| 3/8  | 9.6 | 5.4                | 86                | 770                       | 5.31  | 540     | 3.72  | 439                                | 3.03  | 380     | 2.62 | -                                 | -    | 248                                | 1.71 | 228     | 1.57 | -                                 | -    |

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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### 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