



# HexWeb® CR III Micro-Cell™

**Corrosion Resistant  
Aluminum Honeycomb**

## *Product Data*

### **Description**

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The HexWeb® CR III coating has been developed to offer superior protection for aluminum honeycomb exposed to corrosive environments. The HexWeb® CR III system offers a clear protective film that interacts with the aluminum surface forming a stable, tightly adherent bond. The coating is primarily an organo-metallic polymer type which differs from the normal conversion type corrosion protective coatings.

Hexcel expanded honeycomb is manufactured by bonding together sheets of aluminum foil, then expanding to form a cellular honeycomb configuration. Resulting panels have sharp, clean cell walls, are essentially burr free, and is suitable for high-quality core-to-facing bond.

Hexcel HexWeb® CR III Micro-Cell™ aluminum is available in 1/16 inch cell sizes. Micro-Cell aluminum honeycomb is available in either 5052 or 5056 alloy with Hexcel HexWeb® corrosion resistant coating.

### **Features**

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- Aerospace structural grade honeycomb
- Very high surface area to volume ratio
- Excellent corrosion resistance
- Available in 5052 and 5056 Alloys
- High strength and rigidity to weight ratio

### **Applications**

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HexWeb® CR III Micro-Cell™ aluminum honeycomb minimizes the area required to obtain laminar flow in air directional applications.

The small cell size ideally suits Micro-Cell™ honeycomb to mass transfer and heat exchanger systems where very high interface area to volume ratios are required. Surface area to volume ratio is approximately 768 ft<sup>2</sup>/ft<sup>3</sup> for the 1/16 inch cell size.

Micro-Cell™ aluminum honeycomb offers important qualities to applications involving structural panels, where minimized dimpling and distortion of the facings are critical, or where greater skin-to-core peel strengths are required.

### **Available Forms and Sizes**

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Hexcel can supply Micro-Cell™ aluminum honeycomb in a variety of forms including:

- cylindrical disks
- pieces cut to specified size
- sheets of specified thickness
- blocks

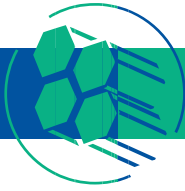
Maximum block size for Micro-Cell™ aluminum honeycomb is 42 in L, 60 in W, 25 in T.

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## Type Designation

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Hexcel HexWeb® CR III Micro-Cell™ aluminum honeycomb is designated as follows:

Materials - Cell Size - Alloy - Foil Thickness - Density

Example: **CR III - 1/6 - 5052 - .001 - 9.5**

Where:

**CR III** - designates corrosion resistant aluminum honeycomb type

**1/16** - is the cell size in fractions of an inch

**5052** - aluminum alloy used

**.001** - is the nominal foil thickness in inches

**9.5** - is the nominal density in pounds per cubic foot

5052 and 5056 are supplied in the H-39 temper.

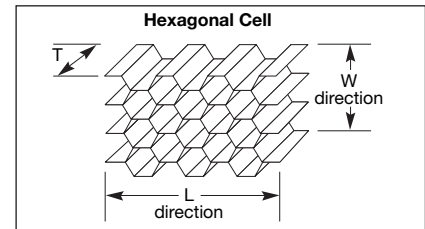
## Dimensional Nomenclature

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**T** = Thickness, or cell depth

**L** = Ribbon direction, or width

**W** = Transverse direction, or direction perpendicular to the ribbon



## Availability

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HexWeb® Micro-Cell™ honeycomb is available in sheet sizes and thickness tailored to meet customer needs. Lead time varies with honeycomb type and quantity ordered. Contact your nearest Hexcel Sales Office or Hexcel Customer Service for price and delivery information.

**Mechanical Properties**

The following preliminary mechanical properties are based on testing honeycomb per MIL-STD-401 at 0.50 inch thickness:

Hexcel Honeycomb Designation  Cell Size - Alloy - Foil Gauge	Nominal Density  pcf	Compressive					Plate Shear					
		Bare		Stabilized			L Direction			W Direction		
		Strength psi		Strength psi	Mod ksi		Strength psi	Mod ksi		Strength psi	Mod ksi	
		typ	min	typ	min	typ	typ	min	typ	min	typ	
1/16 - 5052 - .0007*	6.5	950	740	1000	780	275	580	440	90.0p	350	270	40.0
1/16 - 5052 - .001*	92	1500	1170	1550	1200	420	850	860	150.0x	520	400	53.0
1/6 - 5052 - .0015	12.4	2430	1900	2650	2000	650	1150	900	210.0x	715	560	65.0
1/16 - 5056 - .001*	9.2	1700p	1300p	1800p	1400p	500p	980p	780p	155.0p	600p	460p	50.0

p = preliminary. Preliminary values are obtained from testing one or two blocks of honeycomb type and often only one or two specimens for each point or condition tested.

x = predicted. Predicted values indicated that no mechanical tests have been performed.

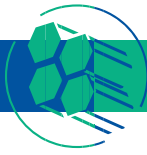
typ = typical. Typical values specify that the value shown is typical or average from the tests obtained.

min = minimum.

\* Minimum block purchase may be required.

**Density Tolerance**

The standard density tolerance from the nominal is +/-10%.



## **Important**

Hexcel Corporation believes, in good faith, that the technical data and other information provided herein is materially accurate as of the date this document is prepared. Hexcel reserves the right to modify such information at any time. The performance values in this data sheet are considered representative but do not and should not constitute specification minima. The only obligations of Hexcel, including warranties, if any, will be set forth in a contract signed by Hexcel or in Hexcel's then current standard Terms and Conditions of Sale as set forth on the back of Hexcel's Order Acknowledgement.

## **For more information**

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- Carbon Fiber
- RTM Materials
- Honeycomb Cores
- Continuous Fiber Reinforced Thermoplastics
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- Structural Film Adhesives
- Honeycomb Sandwich Panels
- Special Process Honeycombs
- Reinforced Fabrics

For US quotes, orders and product information call toll-free 1-800-688-7734. For other worldwide sales office telephone numbers and a full address list please click here: <http://www.hexcel.com/contact/salesoffices>.