



## HexWeb® Acousti-Core®

### Acoustical Absorption Honeycomb

## Product Data

### Description

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HexWeb® Acousti-Core® is manufactured from a variety of Hexcel's standard honeycomb products, with HexWeb® HRH-10 and aluminum among the most widely used. The honeycomb cells are uniformly filled with sound-absorbing fiberglass batting (0.6 pcf), which results in a minimal weight increase and unchanged mechanical properties.

### Features

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- Excellent acoustical absorption properties
- High structural strength
- Lightweight
- High resistance to heat transfer with nonmetallic core
- May be structurally tailored to fit many applications
- Low smoke emission

### Applications

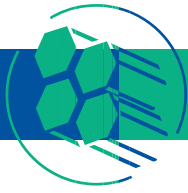
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HexWeb® Acousti-Core®, with perforated or porous skins, has been specifically developed for use in aircraft cabin interiors such as ceilings, partitions, overhead storage, and utility racks. It would work equally well in any similar application that requires sound absorption, light weight, and structural rigidity. Nonmetallic HexWeb® Acousti-Core®, in NBS smoke tests, greatly reduces smoke emission over bare unfilled core. Nonmetallic HexWeb® Acousti-Core® offers excellent environmental resistance and is particularly well suited to marine and other corrosive surroundings.

### Special Products/Custom Processing

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HexWeb® Acousti-Core® is also available with Hexabond® cell edge adhesive that eliminates the need for tape or paste adhesive in bonding flat sandwich panels. In addition, HexWeb® Acousti-Core® can be provided precut to specific L, W, and T dimensions. Individual dimension maximums will be regulated by the core type chosen.



## Type Designation

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HexWeb® Acousti-Core® is designated as follows:

Honeycomb Application – Core Material Designation

Example: Acousti-Core® – AL – 3/16 – 5052 – .001N – 3.1

Where:

**Acousti-Core** – indicates acoustical absorption honeycomb

**AL** – is aluminum honeycomb

**3/16** – is the cell size in inches

**5052** – is the alloy of the aluminum

**.001** – is the foil gauge

**N** – indicates the cell walls are not perforated (P indicates perforated, and is available on special order)

**3.1** – is the nominal density in pounds per cubic foot

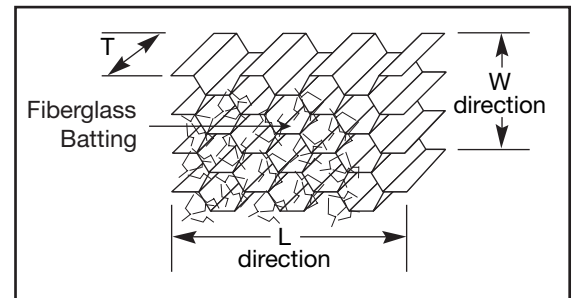
## Dimensional Nomenclature

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**T** = Thickness, or cell depth

**L** = Ribbon direction

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



## Availability

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HexWeb® Acousti-Core® will normally be shipped F.O.B. Casa Grande, Arizona, within 5 to 7 weeks from receipt of order.

Contact the nearest Hexcel Sales Office for delivery information.

**Specifications**

**General** – HexWeb® Acousti-Core® is supplied in flat expanded sheets free from foreign contaminants. The material is ready for bonding.

**Configuration** – The average cell size as measured in the W direction will be ± 10% of the nominal. Double laps and unbonded nodes may be permitted depending on specific customer requirements and/or specifications.

For core thicknesses greater than 1/2 inches, the fiberglass batting is typically retained within the honeycomb cells to withstand normal handling and fabrication procedures.

**Density** – The acceptable density tolerance for the honeycomb core alone will generally be ± 10%.

**Standard Dimensions** – A variety of standard honeycomb types, each with specific standard dimensions, may be used to fabricate HexWeb® Acousti-Core®. Standard Acousti-Core® dimensions will be those of the particular core type chosen. The minimum applicable cell size is 3/16 inches.

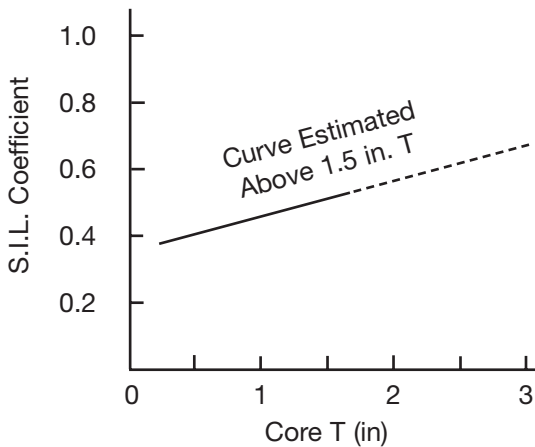
**Mechanical Properties** – The mechanical properties are determined by the particular honeycomb type used. Please refer to the Hexcel Data Sheets covering the specific core type involved for mechanical property information. Some cell size and densities of HexWeb® HRH-10 and HFT honeycomb recommended for use in acoustical applications are listed below.

HFT – 3/16 – 2.0	HRH-10 – 1/4 – 1.5	HRH-10-OX – 1/4 – 1.8
HFT – 3/16 – 3.0	HRH-10 – 1/4 – 2.0	HRH-10-OX – 1/4 – 3.0
	HRH-10 – 3/16 – 2.0	

**Smoke Emission** – Preliminary NBS smoke tests indicate that nonmetallic Acousti-Core® can reduce smoke emission by as much as 75% over unfilled bare core. Additional information is available upon request.

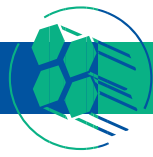
**Acoustical Performance**

Core Thickness vs. Noise Reduction Coefficients (S.I.L.)<sup>(1)</sup>



This curve is based on limited data and will be revised as additional test results become available.

(1) S.I.L. coefficients represent the average of the sound absorption coefficients at 1000, 2000, or 4000 cycles per second. An absorption coefficient of 1.0 would indicate 100% sound absorption. Perforated skin on one side used with Acousti-Core®.



## **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**

Hexcel is a leading worldwide supplier of composite materials to aerospace and other demanding industries. Our comprehensive product range includes:

- Carbon Fiber
- RTM Materials
- Honeycomb Cores
- Continuous Fiber Reinforced Thermoplastics
- Carbon, Glass, Aramid and Hybrid Prepregs
- 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>.