



# HexWeb® HRH-49®

Honeycomb of KEVLAR® 49®

*Product Data*

## Description

HexWeb® HRH-49 is manufactured from KEVLAR® 49 fabric. A thermosetting adhesive is used for the node bonds and a 350°F cure modified epoxy resin is applied for initial and final impregnations. Due to the low resin content of HexWeb® HRH-49, core movement may occur during handling and part curing if proper restraining techniques are not employed.

## Features

- Lightweight
- Excellent thermal stability
- Very low coefficient of thermal expansion
- Good flatwise tensile strength
- Excellent dielectric properties

## Applications

HexWeb® HRH-49 has been developed by Hexcel for use as a sandwich core material in radomes and antennas. When used with KEVLAR® 49 or graphite facings, the HexWeb® HRH-49 sandwich has been considered to have good thermal stability when exposed to cyclic heat exposures such as encountered in space applications.

## Type Designation

Hexcel's honeycomb of KEVLAR® 49 is designated as follows:

Material – Cell Size – Density

Example: HexWeb® HRH-49 – 1/4 – 2.1

Where:

**HexWeb® HRH-49** – designates honeycomb type

**1/4** – is the cell size in inches

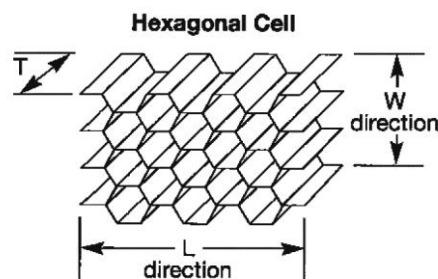
**2.1** – is the nominal density in pounds per cubic foot

## Dimensional Nomenclature

**T** = Thickness, or cell depth

**L** = Ribbon direction

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



Images for explanation only and do not represent actual appearance.



## Availability

HexWeb® HRH-49 is shipped as follows:

SHIPPING TERMS: FCA Hexcel, Casa Grande, AZ, USA (Incoterms 2010)

MATERIAL TITLE TRANSFER: Hexcel, Casa Grande, AZ, USA

Lead times will vary with the particular core type selected.

The information in this Data Sheet is subject to change without notice.

Contact your nearest Hexcel Sales Office for delivery information.

## Specifications

**General** – HexWeb® HRH-49 will be supplied in flat expanded sheets ready for bonding.

**Configuration** – The average cell size as measured across the flats (nodes) of cells will be  $\pm 10\%$  of the nominal. Cell determination will be made by measuring the length of 10 consecutive cell in 6 random locations and averaging the results. Double laps will be permitted as long as the core blankets are within density tolerance. Unbonded nodes will be permitted as long as the core blankets are within density tolerance. Unbonded nodes will be permitted to the extent that no opening larger than three times the nominal cell size is created and the minimum mechanical properties are obtainable.

**Density** – The acceptable tolerance on density will be  $\pm 10\%$ .

**Standard Dimensions** – HexWeb® HRH-49 is available in the following standard dimensions and tolerances:

	<b>L</b>	<b>W</b>	<b>T Min</b>
HRH-49	30 in. $\pm$ 2 in.	36 in. $\pm$ 2 in.	0.125 in.

Other L, W, and T dimensions may be available upon special request.

## Mechanical Properties of HexWeb® HRH-49 at Room Temperature

The table below lists the HexWeb® HRH-49 product line and mechanical properties when tested per AMS-STD-401 using 0.500 inch core thickness. The typical values represent the mean average of a relatively large number of test values obtained from many blocks of honeycomb. Minimum properties are guaranteed minimum values of honeycomb when tested at ambient conditions per AMS-STD-401.

Hexcel Honeycomb Designation Material-Cell-Density	Compressive			Plate Shear					
	Stabilized			L Direction			W Direction		
	Strength psi		Modulus ksi	Strength psi		Modulus ksi	Strength psi		Modulus ksi
	typ	min	typ	typ	min	typ	typ	min	typ
HRH-49 - 1/4 - 2.1	130	100	25	85	50	2.7	40	30	1.3



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**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.

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**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                              | ▪ Engineered Core                     |
| ▪ Reinforced Fabrics                        | ▪ HexTOOL® composite tooling material |
| ▪ Carbon, Glass, Aramid and Hybrid Prepregs | ▪ Structural Film Adhesives           |
| ▪ RTM Materials                             | ▪ Honeycomb Cores                     |

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>.