



HexWeb® Nonmetallic Flex-Core® Honeycomb

Product Data

Description

Hexcel manufactures two types of nonmetallic reinforced plastic HexWeb® Flex-Core®:

HexWeb® HRP – Fiberglass cloth reinforced with a high temperature phenolic resin. This product provides good retention of strength for temperatures up to 350°F.

HexWeb® HRH-10 – NOMEX® aramid paper reinforced with a high temperature phenolic resin. This product provides good retention of strength for temperatures up to 300°F.

Features

- Specifically designed for formability
- Retains mechanical properties in the curved condition
- Offers cost savings for curved panels

Applications

The HexWeb® Nonmetallic Flex-Core® cell configuration as opposed to the standard hexagonal cell honeycomb provides for exceptional formability into compound curvatures with reduced anticlastic curvature and controlled buckling of the cell walls. When formed into tight radii, HexWeb® Nonmetallic Flex-Core® provides higher shear strengths than comparable hexagonal cores of equivalent density. HexWeb® Nonmetallic Flex-Core® applications exist wherever extreme curvature dictates a flexible cell geometry, e.g., radomes, ducts, leading edges of wings and stabilizers.

Standard Dimensions

HexWeb® HRP and HexWeb® HRH-10 Flex-Core® are available in two standard panel sizes.

For HRP:

L	W	Block T, typ.	T Min.
42 in. ± 1 in.	48 in. ± 1 in.	11 in.	0.180 in.
42 in. ± 1 in.	72 in. ± 1 in.	11 in.	0.180 in.

For HRH-10:

L	W	Block T, typ.	T Min.
42 in. + 2 in. – 0 in.	48 in. + 2 in. – 0 in.	11 in.	0.180 in.
42 in. + 2 in. – 0 in.	72 in. + 2 in. – 0 in.	11 in.	0.180 in.

Special L, W, and T dimensions are available on request. One block minimum buy may apply.

Thickness Tolerance

Tolerances on cut thickness are as follows:

0.180 in. to 1.500 in. tolerance will be ± 0.006 in.

1.501 in. to 3.000 in. tolerance will be ± 0.010 in.

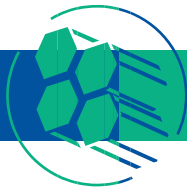
Tighter tolerances are available upon special request.

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Type Designation

HexWeb® Nonmetallic Flex-Core® is designated as follows:

Material – Cell Size – Density

Example: HRH-10 – F50 – 3.5

Where:

HRH-10 – refers to the type of material

F50 – refers to the cell size in cells per lineal foot
in the W direction

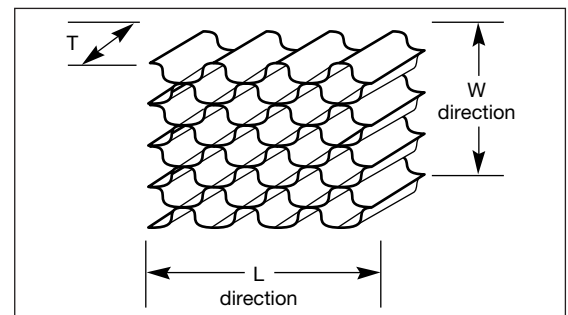
3.5 – refers to the density in pounds per cubic foot

Dimensional Nomenclature

T = Thickness, or cell depth

L = Ribbon direction, or width

W = Long direction, or direction perpendicular to the ribbon



Availability

HexWeb® Nonmetallic Flex-Core® will be shipped F.O.B. Casa Grande, Arizona. Contact the nearest Hexcel Sales Office for delivery information.

Mechanical Properties of HexWeb® Nonmetallic Flex-Core® at Room Temperature

Tested per MIL-STD-401B at 0.500 inch thickness.

Hexcel Honeycomb Designation Material – Cell – Density	Compressive				Plate Shear					
	Bare		Stabilized		L Direction			W Direction		
	Strength psi		Strength psi		Strength psi	Modulus ksi	Strength psi		Modulus ksi	
	typ	min	typ	min	typ	min	typ	typ	min	typ
HRP/F35 – 2.5	120	90	140	105	85	72	9.6	45	40	3.0
HRP/F35 – 3.5	320	245	400	300	200	140	15.0	105	75	10.0
HRP/F35 – 4.5	440	340	600	470	280	220	22.0	140	110	12.0
HRP/F50 – 3.5	315	225	395	255	170	130	16.0	90	65	8.0
HRP/F50 – 4.5	420	340	600	500	265	200	25.0	140	100	13.0
HRP/F50 – 5.5	700	540	800	680	440	330	40.0	235	180	18.0
HRH-10/F35 – 2.5	200	150	235	175	110	90	4.0	65	50	2.5
HRH-10/F35 – 3.5	410	320	430	330	220	170	6.0	120	90	3.7
HRH-10/F35 – 4.5	580	440	620	480	300	230	9.0	190	150	4.3
HRH-10/F50 – 3.5	380	300	400	310	175	130	5.5	100	75	3.6
HRH-10/F50 – 4.5	565	450	585	470	330	250	9.5	175	140	4.7
HRH-10/F50 – 5.0	670	520	690	540	380	300	10.0	215	170	5.2
HRH-10/F50 – 5.5	800	620	850	660	400	320	10.5	230	180	5.7

Bold print indicates readily available material.

Specifications

Density Tolerance – Standard tolerance is ± 10%. HRH-10 Flex-Core® meets the requirements of SAE specification AMS3713.



Important

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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
- 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>.