



HRH[®]-78

Nomex[®] Commercial Grade Honeycomb

Product Data

Description

HRH-78 is manufactured from DuPont's type T-722 Nomex paper sheets. A thermosetting adhesive is used to bond these sheets at the nodes, and after expanding, the block is dipped in a phenolic resin. After curing the resin, slices are cut to the desired thickness. Using this process, a wide range of cell sizes, paper thicknesses, and densities can be produced. An OX-Core[®] configuration featuring enhanced formability is available upon request.

Features

- High Strength at Low Densities
- Small Cell Sizes at Low Densities
- Damage Resistant Under Normal Shop Use
- Formable
- Flame Resistant
- Good Bonding Surfaces
- Good Thermal and Electrical Insulator

Applications

HRH-78 was developed by Hexcel to offer most of the characteristics of HRH-10 for exclusive use in *non-aerospace* applications, such as pleasure boats, skis, surfboards, ground antennas, and navy joiner panels. Since the Nomex paper used in this core will not fully meet aerospace specifications, Hexcel is able to offer this core at a lower price.

Standard Dimensions

HRH-78 Nomex commercial grade honeycomb materials are available in the following standard dimensions.

| Product | L | W | T Max | T Min |
|------------------|----------|----------|-------|--------|
| HRH-78 materials | 48" ± 2" | 96" ± 6" | 34" | 0.060" |

Other L, W, and T dimensions are available upon request.

Thickness Tolerance

Tolerances on cut thickness are as follows:

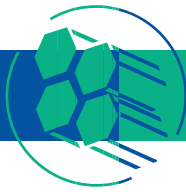
0.060" to 2.000" tolerance will be ± 0.006"

2.001" to 4.000" tolerance will be ± 0.010"

4.001" and over tolerance will be ± 0.125"

® Nomex is a registered trademark of E.I. DuPont de Nemours, Wilmington, Delaware.

® HRH, OX-Core, Hexcel, and the Hexcel logo are registered trademarks of Hexcel Corporation, Pleasanton, California.



Type Designation

HRH-78 honeycomb is designated as follows:

Material – Cell Size – Density

Example: HRH-78 – 1/4 – 3.0

Where:

HRH-78 – designates honeycomb type

1/4 – is the cell size in inches

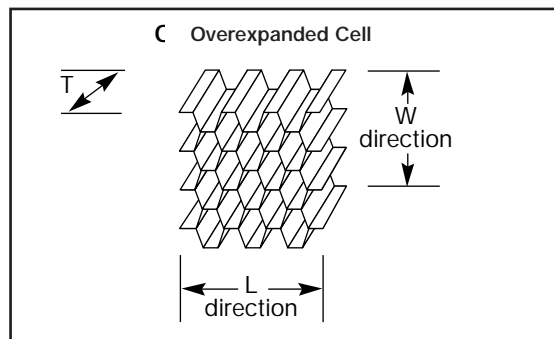
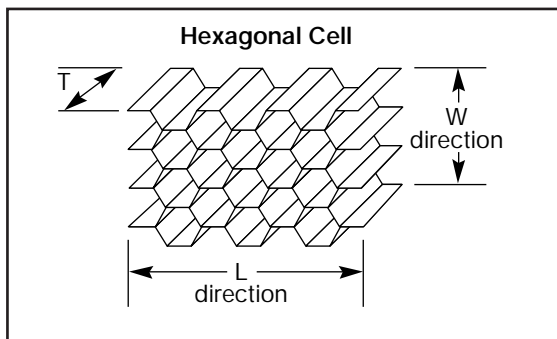
3.0 – is the nominal density in pounds per cubic foot

Dimensional Nomenclature

T = Thickness, or cell depth

L = Ribbon direction, or width

W = Long direction, or direction perpendicular to the ribbon



Availability

HRH-78 will be shipped F.O.B. Casa Grande, Arizona. Lead times will vary with particular core types selected. Contact the nearest Hexcel Sales Office for delivery information.

Specifications

General – HRH-78 will be supplied in flat expanded sheets ready for bonding. Sheets may be supplied as standard panels, cut to specific forms, machined or heat formed to contours as specified by the purchase order.

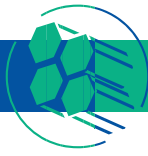
Configuration – The average cell size as measured across the parallel flats (nodes) of cells will be $\pm 10\%$ of the nominal. Cell determination will be made by measuring the length of 10 consecutive cells in 6 random locations and averaging the results. Double laps will be permitted as long as the core slices 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 will be $\pm 10\%$.

Mechanical Properties of HRH-78 at Room Temperature

| Hexcel Honeycomb Designation Material – Cell – Density | Compressive | | | Plate Shear | | | |
|---|--------------|--------------|-------------|--------------|-------------|--------------|-------------|
| | Bare | Stabilized | | L Direction | | W Direction | |
| | Strength psi | Strength psi | Modulus ksi | Strength psi | Modulus ksi | Strength psi | Modulus ksi |
| HRH-78 – 1/8 – 3.0 | typ | typ | typ | typ | typ | typ | typ |
| HRH-78 – 1/8 – 8.0 | 280 | 315 | 18.5p | 160 | 5.3p | 90 | 3.1p |
| HRH-78 – 3/16 – 3.0 | 1600 | 1750 | 60.0p | 470 | 15.0p | 250 | 7.8p |
| HRH-78 – 3/16 – 6.0 | 270 | 330 | 18.2p | 124 | 4.6p | 81 | 3.5p |
| HRH-78 – 1/4 – 3.0 | 1125 | 1200 | – | 450 | 13.0p | 235 | 5.5p |
| HRH-78 – 3/8 – 1.5 | 265 | 285 | 19.0p | 120 | 4.6p | 80 | 3.0p |
| | 85 | 95 | 6.0p | 60 | 2.5p | 33 | 1.5p |

p = Preliminary value obtained from limited testing.
Other cell sizes and densities are available upon request.



Important

Hexcel Corporation makes no warranty, whether expressed or implied, including warranties of merchantability or of fitness for a particular purpose. Under no circumstances shall Hexcel Corporation be liable for incidental, consequential, or other damages arising out of a claim from alleged negligence, breach of warranty, strict liability or any other theory, through the use or handling of this product or the inability to use the product. The sole liability of Hexcel Corporation for any claims arising out of the manufacture, use, or sale of its products shall be for the replacement of the quantity of this product which has proven to not substantially comply with this bulletin. Users should make their own assessment of the suitability of any product for the purposes required. The above supercedes any provision in your company's forms, letters, or other documents.

For technical assistance, applications and procedures, or further information, please contact:

**Administrative Office and
Customer Service Center**

5794 West Las Positas Blvd.
P.O. Box 8181
Pleasanton, CA 94588-8781
Tel (925) 847-9500
Fax (925) 734-9676

Hexcel Composites

Duxford, Cambridge CB2 4QD
United Kingdom
Tel 44 (0) 1223 833141
Fax 44 (0) 1223 838808

Sales Offices

2350 Airport Fwy., Suite 550
Bedford, TX 76022-6027
Tel (817) 315-3939
Fax (817) 571-8629

Sales Offices (continued)

101 East Ridge Drive, Suite 102
Danbury, CT 06810-4140
Tel (203) 798-8311
Fax (203) 798-8161

11410 Northeast 122nd Way, Suite 320
Kirkland, WA 98034-6927
Tel (425) 821-7411
Fax (425) 823-6437