



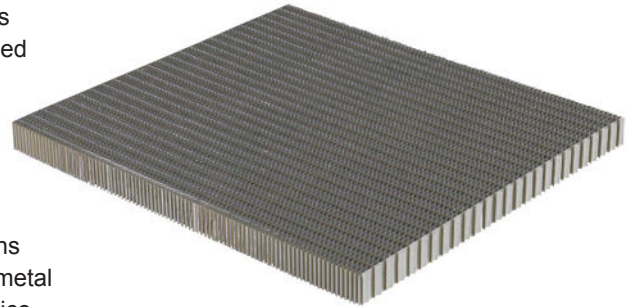
PRODUCT DATA SHEET

Higr[®] Corrugated Aluminum Honeycomb

DESCRIPTION

HIGRID[®] high strength corrugated aluminum honeycomb offers an ideal solution for fastener inserts and edge reinforcements in honeycomb structures. It also excels as a high impact energy absorber. Produced by bonding together corrugated sheets of aluminum foil, much higher densities are possible than with conventional expanded honeycomb.

In sandwich structures where localized strength and stiffness are required, HIGRID[®] outperforms alternative materials. Easier to use than microballoon epoxy potting compounds, it is also stronger and more reliable with no possibility of bubbles or voids. If damaged, HIGRID[®] will deform instead of exhibiting epoxy's brittle behavior. HIGRID[®] is also lighter and less expensive than aluminum extrusions and machined aluminum details, without any of the fit-up problems between these metal parts and the surrounding core. Before installation, simply wrap the plug in core-splice adhesive and insert it into the low density core. After bonding, it is ready to accept fasteners. For fastener inserts, edge reinforcements and high impact energy absorbers, HIGRID[®] is the answer.



APPLICATIONS

- Fastener inserts
- Edge reinforcements
- Lateral edge closeouts of control surfaces
- Reinforcement around actuator attachments
- High load energy absorbers
- Edge framing for load carrying
- Localized strength and densification
- Any application requiring very high mechanical strength

FEATURES

- Much stronger than epoxy-filled honeycomb
- Higher strength-to-weight than metal inserts
- Excellent shear strength between skin and core
- Pre-cut to size, easy installation
- Reliable, no air bubbles or voids
- Tight tolerance eliminates fit-up problems
- Benign failure mode
- No irritants or evolving gases

AVAILABILITY

- Blocks
- Flat sheets
- Fabricated shapes

HIGRID[®] corrugated aluminum honeycomb is produced in 5052 alloy, with either our DURA-CORE[®] II modified conversion coating or our PAA-CORE[®] phosphoric acid anodized protection. Custom dimensions, cell sizes, tolerances and mechanical properties are available.

HOW TO ORDER

When ordering, please specify HIGRID[®] using the following format:
Example: HIGRID - PAA - 22.1 - 1/8, where

Product	Coating	Density	Cell Size
HIGRID [®]	DUR or PAA	22.1	1/8



AVAILABLE DIMENSIONS

	Standard	Maximum	Tolerance
Ribbon (L) inch (mm)	96 (2,438)	96 (2,438)	+1.0 / -0.0 (+25.4 / -0.0)
Transverse (W) inch (mm)	12 (305)	24 (610)	±1.0 (±25.4)
Thickness (T) inch (mm)	16 (406)	16 (406)	
	up to 4 inches (102 mm) T		±0.005 (±0.127)
	over to 4 inches (102 mm) T		±0.062 (±1.575)
Density	see mechanical characteristics chart		±15%
Cell Size	see mechanical characteristics chart		±15%

MECHANICAL CHARACTERISTICS

(HIGRID® Typical values at 75° F - US units)

Density lbs/ft ³	Cell Size inches	Crush Strength psi	Compressive Strength psi				Beam Shear Strength psi			
			Bare		Stabilized		L		W	
			Typical	Minimum	Typical	Minimum	Typical	Minimum	Typical	Minimum
16.0	3/16	2200	3200	2500	3300	2600	1800	1440	900	740
22.1	1/8	3800	5600	4500	5700	4600	3200	2500	2300	1500
22.1	3/32*	3400	5000	4000	5100	4100	2800	2210	1400	1100
25.0	3/32*	3800	5600	4500	5700	4600	3000	2500	1600	1250
35.0	1/16*	5800	8000	6400	8500	6500	4900	3700	2200	1500
55.0	3/64*	10000	12500	10000	15800	11000	6600	4900	2450	1950

(HIGRID® Typical values at 23° C - Si/metric units)

Density lbs/ft ³	Cell Size inches	Crush Strength MPa	Compressive Strength MPa				Beam Shear Strength MPa			
			Bare		Stabilized		L		W	
			Typical	Minimum	Typical	Minimum	Typical	Minimum	Typical	Minimum
16.0	3/16	15.2	22.1	17.2	22.8	17.9	12.4	9.9	6.2	5.1
22.1	1/8	26.2	38.6	31.0	39.3	31.7	22.1	17.2	15.9	10.3
22.1	3/32*	23.4	34.5	27.6	35.2	28.3	19.3	15.2	9.7	7.6
25.0	3/32*	26.2	38.6	31.0	39.3	31.7	20.7	17.2	11.0	8.6
35.0	1/16*	40.0	55.2	44.1	58.6	44.8	33.8	25.5	15.2	10.3
55.0	3/64*	69.0	86.2	69.0	108.9	75.8	45.5	33.8	16.9	13.4

* For bisected cell configurations, Cell Size refers to the size of a half-hexagon.

ROLL-FORMING GRADES

If your operation calls for roll-forming HIGRID®, The Gill Corporation has optimized these following grades for enhanced roll-formability:

- 22.1 - 3/32
- 25.0 - 3/32
- 55.0 - 3/64

Should you need roll-formed HIGRID® but cannot or choose not to roll-form it yourself, please ask us about The Gill Corporation Precision Processing. Besides roll-forming to your requirements, we can also pot, stabilize, rout, heat form, planform, chamfer, saw, bond, 3- and 5-axis machine and more. If you need this in a hurry, we also offer The Gill Corporation Precision Express, where your custom-machined core details can be on their way to you within 48 hours of your order. Please contact your Gill Corporation customer service representative for more information.

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All recommendations, statements, values and technical data herein are based on tests The Gill Corporation believes to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. Users shall rely on their own information and tests to determine suitability of the product for the intended use and assume all risks and liability resulting from their use of the product. The Gill Corporation's sole responsibility shall be to replace that portion of the product that proves to be defective. The Gill Corporation will not be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements not contained in a written agreement signed by an officer of The Gill Corporation shall not be binding upon The Gill Corporation. Gillfab® is a registered trademark of The Gill Corporation.