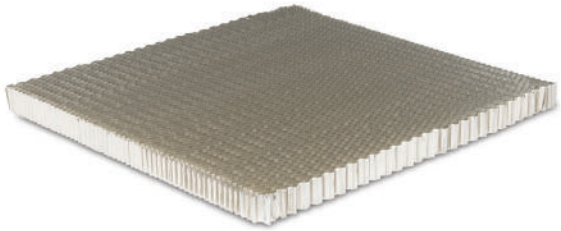
THE GILL CORPORATION - MARYLAND

PRODUCT DATA SHEET

DURA-CORE® II 5056 Aluminum Honeycomb

DESCRIPTION

For those designers demanding maximum mechanical strength with excellent corrosion resistance, DURA-CORE® II 5056 aluminum honeycomb is the lightweight material of choice.



Prior to bonding, the foil is cleaned and treated using a proprietary chemical conversion coating. The resulting honeycomb exhibits excellent corrosion resistance in hostile environments, especially salt fog. Typical weight loss after 30 days in salt fog (using ASTM B-117) is 15 mg/ft² (161.4 mg/m²), while AMS-C-7438 allows up to 125 mg/ft² (1345.0 mg/m²).

We produce a broad range of cell sizes and densities, assuring that the correct product will be available for your application. When combined with our ability to custom-manufacture specific core types, plus our Special Processing capabilities, we can ship you drop-in core details in any shape, size, density or contour that you need.

For lightweight applications requiring maximum mechanical strength and excellent corrosion resistance at a good value, DURA-CORE® II 5056 is the best all-around structural core material.

APPLICATIONS

- Aircraft control surfaces
- Energy absorbers
- Aircraft engine nacelles
- Space applications
- Advanced sporting equipment
- Satellite components
- Other high performance applications requiring maximum strength-to-weight ratio

FEATURES

- Maximum mechanical strength
- Corrosion resistant
- Elevated temperature performance to 350°F/177°C
- Fire and fungus resistant
- Broad range of cell sizes
- Easily machined and formed
- Resistant to hostile environments
- Complies with AMS-C-7438 and many other aerospace specifications

AVAILABILITY

- Unexpanded blocks
- Unexpanded slices
- Expanded sheets
- Pieces cut to size
- DURA-CORE® II 5056 aluminum honeycomb is available with cell perforations to facilitate venting
- Custom dimensions, cell sizes, tolerances and mechanical properties are also available

Lakeside Business Park, 1502 Quarry Drive, Edgewood, Maryland 21040 USA
410-676-7100

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AVAILABLE DIMENSIONS

	Standard		Maximum		Tolerance	
	inches	mm	inches	mm	inches	mm
Ribbon (L)	48	1219	100	2540	+2.0 / -0.0	+50.8 / -0.0
Transverse (W)	96	2438	144	3658	+4.0 / -0.0	+101.6 / -0.0
Thickness (T)			35	889		
	up to 4 inches (102mm) T				±0.005	±0.127
	over 4 inches (102mm) T				±0.062	±1.575
Density	see mechanical characteristics chart				±10%	
Cell Size	see mechanical characteristics chart				±10%	

HOW TO ORDER

When ordering, please specify DURA-CORE® II 5056 using the following format:
Example: DUR - 5056 - 3.1 - 3/16 - N - E, where

Product	Alloy	Density	Cell Size	Perforated or Non-Perforated	Expanded or Unexpanded
DUR	5056	3.1	3/16	P or N	E or U

HEALTH PRECAUTIONS

This product is safe to use and apply when recommended precautions are followed. Before using this product, read and understand the Safety Data Sheet (SDS), which provides information on health, physical and environmental hazards, handling precautions and first aid recommendations. A SDS is available at www.thegillcorp.com/products/msds/html.

For industrial use only. Keep away from children. Additional information can be found at: www.thegillcorp.com. For sales and ordering information call 1-626-443-6094.

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Product Data Sheet

Mechanical Characteristics (Typical Values - US units)									
	Stabilized Compressive Strength		Crush Strength	Shear Strength				Shear Modulus	
lbs/ft³ - inches - inches	psi		psi	psi				ksi	
				L		W		L	W
	75° F	350° F	75° F	75° F	350° F	75° F	350° F	75° F	
3.1 - 1/8 - .0007	355	230	180	255	170	160	170	32	16
4.5 - 1/8 - .0010	700	480	320	450	274	260	274	51	25
6.1 - 1/8 - .0015	1210	780	550	700	425	410	425	77	37
8.1 - 1/8 - .0020	1920	1350	850	960	590	575	590	112	50
10.0 - 1/8 - .0025	2200	1625	1200	1190	830	675	830	140	60
12.0 - 1/8 - .0030	3250	1950	1550	1725*	1430*	1025*	1430*	160	75
2.6 - 5/32 - .0007	270	160	130	205	130	120	130	24	12
3.8 - 5/32 - .0010	510	350	230	340	230	200	230	41	20
5.3 - 5/32 - .0015	875	625	435	560	370	335	370	64	31
6.9 - 5/32 - .0020	1350	1040	660	775	525	440	525	91	42
2.0 - 3/16 - .0007	205	115	80	145	100	87	100	17	9
3.1 - 3/16 - .0010	420	230	180	270	170	155	170	32	16
4.4 - 3/16 - .0015	675	475	310	435	260	250	260	50	24
5.7 - 3/16 - .0020	1010	730	480	570	410	335	410	70	34
6.9 - 3/16 - .0025	1250	1025	660	765	525	450	525	91	42
1.6 - 1/4 - .0007	115	80	60	92	70	62	70	13	6
2.3 - 1/4 - .0010	270	150	120	185	110	105	110	21	11
3.4 - 1/4 - .0015	490	300	190	300	190	180	190	35	18
4.3 - 1/4 - .0020	630	460	300	410	255	235	25	48	24
5.2 - 1/4 - .0025	830	625	380	500	360	310	360	62	30
6.0 - 1/4 - .0030	1000	775	525	640	415	375	415	75	36
7.9 - 1/4 - .0040	1580	1300	820	900	565	540	565	108	49
2.3 - 3/8 - .0015	230	150	120	175	110	100	110	21	11
3.0 - 3/8 - .0020	350	220	160	250	165	150	165	30	15
3.7 - 3/8 - .0025	450	325	220	325	225	190	225	40	20
4.2 - 3/8 - .0030	550	410	290	395	260	225	260	47	23
5.4 - 3/8 - .0040	850	650	450	565	390	325	390	66	32

For minimum values, please see AMS-C-7438.

* Beam Shear

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Mechanical Characteristics (Typical Values - SI/metric units)									
	Stabilized Compressive Strength		Crush Strength	Shear Strength				Shear Modulus	
lbs/ft³ - inches - inches	MPa		MPa	MPa				MPa	
				L		W		L	W
	23° C	177° C	23° C	23° C	177° C	23° C	177° C	23° C	
3.1 - 1/8 - .0007	2.45	1.59	1.24	1.76	1.17	1.10	1.17	221	110
4.5 - 1/8 - .0010	4.83	3.31	2.21	3.10	1.89	1.79	1.89	352	172
6.1 - 1/8 - .0015	8.34	5.38	3.79	4.83	2.93	2.83	2.93	531	255
8.1 - 1/8 - .0020	13.24	9.31	5.86	6.62	4.07	3.96	4.07	772	345
10.0 - 1/8 - .0025	15.17	11.20	8.27	8.20	5.72	4.65	5.72	965	414
12.0 - 1/8 - .0030	22.41	13.44	10.69	11.89*	9.86*	7.07*	9.86*	1103	517
2.6 - 5/32 - .0007	1.86	1.10	0.90	1.41	0.90	0.83	0.90	165	83
3.8 - 5/32 - .0010	3.52	2.41	1.59	2.34	1.59	1.38	1.59	283	138
5.3 - 5/32 - .0015	6.03	4.31	3.00	3.86	2.55	2.31	2.55	441	214
6.9 - 5/32 - .0020	9.31	7.17	4.55	5.34	3.62	3.03	3.62	627	290
2.0 - 3/16 - .0007	1.41	0.79	0.55	1.00	0.69	0.60	0.69	117	62
3.1 - 3/16 - .0010	2.90	1.59	1.24	1.86	1.17	1.07	1.17	221	110
4.4 - 3/16 - .0015	4.65	3.28	2.14	3.00	1.79	1.72	1.79	345	165
5.7 - 3/16 - .0020	6.96	5.03	3.31	3.93	2.83	2.31	2.83	483	234
6.9 - 3/16 - .0025	8.62	7.07	4.55	5.27	3.62	3.10	3.62	627	290
1.6 - 1/4 - .0007	0.79	0.55	0.41	0.63	0.48	0.43	0.48	90	41
2.3 - 1/4 - .0010	1.86	1.03	0.83	1.28	0.76	0.72	0.76	145	76
3.4 - 1/4 - .0015	3.38	2.07	1.31	2.07	1.31	1.24	1.31	241	124
4.3 - 1/4 - .0020	4.34	3.17	2.07	2.83	1.76	1.62	1.76	331	165
5.2 - 1/4 - .0025	5.72	4.31	2.62	3.45	2.48	2.14	2.48	427	207
6.0 - 1/4 - .0030	6.89	5.34	3.62	4.41	2.86	2.59	2.86	517	248
7.9 - 1/4 - .0040	10.89	8.96	5.65	6.21	3.90	3.72	3.90	745	338
2.3 - 3/8 - .0015	1.59	1.03	0.83	1.21	0.76	0.69	0.76	145	76
3.0 - 3/8 - .0020	2.41	1.52	1.10	1.72	1.14	1.03	1.14	207	103
3.7 - 3/8 - .0025	3.10	2.24	1.52	2.24	1.55	1.31	1.55	276	138
4.2 - 3/8 - .0030	3.79	2.83	2.00	2.72	1.79	1.55	1.79	324	159
5.4 - 3/8 - .0040	5.86	4.48	3.10	3.90	2.69	2.24	2.69	455	221

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