



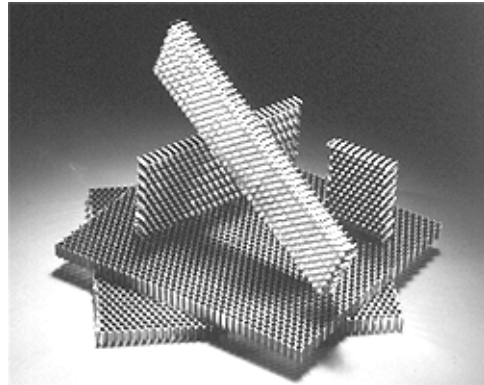
DURA-CORE™ II 5052 Aluminum Honeycomb

June 2003
Metric

Description

DURA-CORE II 5052 aluminum honeycomb provides the aerospace and commercial markets with a high degree of flexibility in solving lightweight structural design challenges.

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 MIL-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 excellent mechanical strength and excellent corrosion resistance at a good value, DURA-CORE II 5052 is the best all-around structural core material.

Applications

- Aircraft control surfaces, flooring
- Energy absorbers
- Aircraft engine nacelles
- RF and EMI shielding
- Advanced sporting equipment
- Space & satellite components
- Air and light directionalization
- Other high-performance applications

Features

- Excellent strength-to-weight ratio
- 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 MIL-C-7438 and many other aerospace specifications

Availability

- Unexpanded blocks
- Unexpanded slices
- Expanded sheets
- Pieces cut to size

DURA-CORE II 5052 aluminum honeycomb is available with cell perforations to facilitate venting. Custom dimensions, cell sizes, tolerances and mechanical properties are also available.

How to Order

When ordering, please specify DURA-CORE II 5052 using the following format:

Example: DUR - 5052 - 3.1 - 3/16 - N - E, where

Product	Alloy	Density	Cell Size	Perforated or Non-Perforated	Expanded or Unexpanded
DUR	5052	3.1	3/16	P or N	E or U

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%	

Alcore gives no warranties, expressed, implied or statutory, or otherwise, as to the description, quality, fitness, capacity, or any other matter, of the properties described. The data given represents typical values to be expected. Through additional testing of each lot it is possible to verify that the product exceeds the tabulated values. It is recommended, however, that prospective users evaluate the materials to determine their suitability for the users' specific requirements. Values are given on the condition that the user assumes all risk and that responsibility for any loss or damage caused by or resulting from the use of such information is disclaimed by Alcore.

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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	2.10	1.38	1.00	1.48	1.00	0.91	0.62	221	110
4.5 - 1/8 - .0010	4.00	2.62	1.86	2.38	1.65	1.55	1.03	352	172
6.1 - 1/8 - .0015	7.10	4.55	3.10	3.90	2.76	2.38	1.52	531	255
8.1 - 1/8 - .0020	10.86	7.41	5.24	5.58	3.96	3.72	2.14	772	345
10.0 - 1/8 - .0025	12.93	8.96	7.38	7.41	5.58	4.21	2.86	965	414
12.0 - 1/8 - .0030	20.13	10.69	9.65	13.48*	8.96*	6.55*	3.03*	1103	517
2.6 - 5/32 - .0007	1.69	1.03	0.72	1.17	0.76	0.70	0.55	165	83
3.8 - 5/32 - .0010	2.86	1.93	1.45	1.90	1.38	1.16	0.97	283	138
5.3 - 5/32 - .0015	5.03	3.45	2.34	2.93	2.34	1.90	1.38	441	214
6.9 - 5/32 - .0020	7.86	5.38	3.93	4.10	3.45	2.62	1.90	627	290
8.4 - 5/32 - .0025	11.14	7.93	5.52	5.31	4.07	3.31	2.28	800	352
2.0 - 3/16 - .0007	1.24	0.69	0.48	0.84	0.55	0.49	0.45	117	62
3.1 - 3/16 - .0010	2.34	1.38	1.00	1.48	1.00	0.88	0.62	221	110
4.4 - 3/16 - .0015	3.83	2.59	1.86	2.31	1.62	1.52	1.00	345	165
5.7 - 3/16 - .0020	6.00	4.14	2.83	3.21	2.62	2.10	1.38	483	234
6.9 - 3/16 - .0025	8.17	5.38	3.93	4.14	3.45	2.62	1.90	627	290
8.1 - 3/16 - .0030	11.96	7.41	5.24	5.07	3.96	3.38	2.14	772	345
1.6 - 1/4 - .0007	0.70	0.48	0.34	0.61	0.41	0.35	0.24	90	41
2.3 - 1/4 - .0010	1.48	0.86	0.59	1.00	0.62	0.61	0.48	145	76
3.4 - 1/4 - .0015	2.59	1.62	1.10	1.62	1.10	1.00	0.69	241	124
4.3 - 1/4 - .0020	3.76	2.52	1.72	2.24	1.62	1.41	0.97	331	165
5.2 - 1/4 - .0025	5.31	3.45	2.28	2.86	2.28	1.86	1.10	427	214
6.0 - 1/4 - .0030	7.65	4.48	2.96	3.69	2.69	2.41	1.45	517	248
7.9 - 1/4 - .0040	10.38	7.07	4.96	4.90	3.79	3.10	2.07	745	338
1.0 - 3/8 - .0007	0.39	0.17	0.17	0.32	0.21	0.21	0.21	48	21
1.6 - 3/8 - .0010	0.68	0.48	0.34	0.61	0.41	0.35	0.24	90	41
2.3 - 3/8 - .0015	1.41	0.86	0.59	0.97	0.62	0.57	0.48	145	76
3.0 - 3/8 - .0020	2.17	1.31	0.93	1.41	0.97	0.88	0.59	207	103
3.7 - 3/8 - .0025	2.86	1.83	1.38	1.76	1.31	1.14	0.72	276	138
4.2 - 3/8 - .0030	3.90	2.34	1.65	2.17	1.59	1.41	0.90	324	159
5.4 - 3/8 - .0040	5.58	3.72	2.48	3.00	2.45	1.97	1.24	455	221
6.5 - 3/8 - .0050	7.00	5.17	3.52	3.83	3.03	2.48	1.83	572	276
2.6 - 1/2 - .0025	1.38	1.03	0.72	1.03	0.76	0.61	0.55	165	83
3.0 - 1/2 - .0030	1.72	1.31	0.93	1.24	0.97	0.73	0.59	207	103
4.0 - 1/2 - .0040	2.76	2.21	1.52	2.00	1.52	1.17	0.83	303	152
0.8 - 3/4 - .0010	0.16	0.14	0.10	0.17	0.17	0.13	0.17	34	14
1.8 - 3/4 - .0025	0.69	0.62	0.41	0.62	0.48	0.34	0.28	103	48
2.1 - 3/4 - .0030	0.90	0.72	0.52	0.72	0.59	0.41	0.52	124	62
3.0 - 3/4 - .0040	1.72	1.31	0.93	1.24	0.97	0.72	0.59	207	103
4.2 - 3/4 - .0060	3.10	2.34	1.65	2.21	1.59	1.31	0.90	324	159

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

* Beam Shear

