

ISODAMP C-3000 SERIES DAMPING FOAMS

ISODAMP C-3000-25ALPSA composites are ideally suited for lightweight control of fuselage skin turbulent boundary layer excitation. C-3000 Series foams are formulated with peak damping ranges that match typical aircraft flight mission temperature profiles.

Aircraft Cabin	Recommended Fuselage Skin Damping Product
Pressurized	C-3201-25ALPSA
Non-Pressurized (Fixed Wing)	C-3202-25ALPSA
Non-Pressurized (Helicopter)	C-3002-25ALPSA

Extensional damping applications similar to those used in aircraft are found in yachts and recreational and construction vehicles.

Other Applications

ISODAMP C-3000 foams are also applied

as athletic padding and other shock absorption applications where high thickness efficiency is required from a shock absorbing foam.

E-A-R ISODAMP C-3000 Series foams are primary building blocks of the unique E-A-R ISODAMP MDL (multi-damping layer) composites. MDL composites provide broad temperature range damping in weight-sensitive applications where maximum energy control is required. MDL composites are used in the aircraft and aerospace industries as well as in other high-performance vehicle applications (reference MDS-50). These composites provide weight-efficient control of high-intensity acoustical and mechanical energy in areas such as crossover ducts, surfaces in close proximity to prop planes or in engine-mounting areas.

Specification

Energy absorbing and damping foams shall be E-A-R ISODAMP C-3000 Series foams and composites as manufactured by E-A-R

Division, Cabot Corporation, Indianapolis, Indiana.

ISODAMP C-3000 Formulation Availability				
C-3201	C-3202	C-3002	C-3001	Description
		C-3002-12		0.12" thick
C-3201-25	C-3202-25	C-3002-25	C-3001-25	0.25" thick
C-3201-25ALPSA	C-3202-25ALPSA	C-3002-25ALPSA		0.25" thick with ALPSA ¹
C-3201-50	C-3202-50	C-3002-50	C-3001-50	0.50" thick
C-3201-50PSA	C-3202-50PSA	C-3002-50PSA	C-3001-50PSA	0.50" thick with PSA ²

¹5 mil aluminum constraining layer and pressure-sensitive adhesive

²Pressure-sensitive adhesive

Physical Properties

Property	Test Method	C-3201	C-3202	C-3002	C-3001
Hardness	ASTM D2240 Shore 00 Durometer	16	23	28	36
Density	ASTM D1667	6.5 lb./ft. ³	6.5 lb./ft. ³	7.0 lb./ft. ³	12 lb./ft. ³
Tensile Strength	ASTM D3574	38 psi	47 psi	56 psi	110 psi
Elongation	ASTM D3574	120%	160%	120%	170%
Tear Strength	ASTM D3574 0.5 in Samples	2.4 lb.	3.2 lb.	1.6 lb.	2.2 lb.
Compression Set	ASTM D1565 Method B 24-hr. Recovery	16%	16%	26%	18%
Rebound	ASTM D2632 Bashore Resiliency	31%	19%	11%	8%
Compression Resistance	ASTM D1667 Loaded at 25% Compression	1.5 psi	2.2 psi	2.5 psi	4.5 psi
Thermal Conductivity	ASTM C177 BTU in./hr. ft. ² °F	.24	.25	.23	.25
Water Absorption	ASTM D1667	—	—	0.11 lb./ft. ²	0.04 lb./ft. ²
Moisture Resistance	C-3000-25ALPSA Product on 40 Mil Aluminum 2 Cycles of 1 hr. @ -30°C Followed by 1hr. @ 25°C	No Weight Gain	No Weight Gain	—	—
Adhesive Strength with E-A-R #500 PSA	Shear Adhesion to Aluminum after 14 Days at 75°F and 60% RH	Exceeds Foam Strength	Exceeds Foam Strength	Exceeds Foam Strength	Exceeds Foam Strength
	Shear, Peel Adhesion to Aluminum after 7 Days 160°F and 100% RH	Exceeds Foam Strength	Exceeds Foam Strength	Exceeds Foam Strength	Exceeds Foam Strength