Dexmet CORPORATION Lightning Strike Protection

Expanding Technology™

Dexmet Corporation is dedicated to providing our customers with quality products manufactured to meet their exact requirements and delivered on time. Our goal is to achieve total customer satisfaction through our continuos improvement initiatives.

For more than 60 years Dexmet Corporation has been providing our customers with expanded foils and polymers of exceptional quality. Our products , technical experience and superior customer service has made us the global leader in manufacturing expanded thin gauge, micro materials.

Visit us on the web
www.dexmet.com

Dexmet Corporation
is an ISO 9001:2008
Registered Company

60 Years

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Made in
The USA

Dexmet CORPORATION Lightning Strike Protection

Expanding Technology™

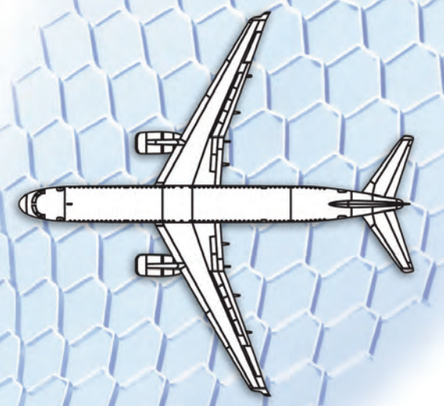
For Composite Aircraft, Wind Turbine Blades and Structures

MicroGrid® Technology

Expanded Copper and Aluminum material designed to protect composites against lightning strikes!

Composites & Dexmet Lightning Strike Protection

Aluminum has been the principle material used in aircraft and aerospace construction for the past 60 years. With the growing interest to construct more efficient aircraft, manufacturers are designing more components out of light-weight composite materials. Current composite structures include fuselage, wings, engine nacelles, flaps, wing tips and even rotary blades on helicopters and wind turbines. Composites, however, are poor conductors of electrical current. Without proper protection, they are susceptible to severe damage in the event of a lightning strike. When Dexmet expanded aluminum and copper MicroGrid® materials are incorporated into the surface of these composite structures, the lightning strike energy is dissipated over the surface of the component, which prevents damage to the composite material below.



Aircraft Uses:
Fuselage, Wings, Rudder, Vertical Stabilizers, Spoilers, Ailerons, Vanes, Flaps, Slats, Engine Nacelles, Belly Fairings & Winglets

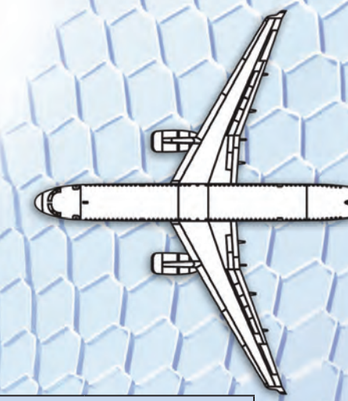
Additional Uses:
Helicopter - Rotary Blades & Radar Antennae
Wind Energy - Turbine Blades & Generator Nacelles
EMI/RFI Shielding, Exposed Composites Structures

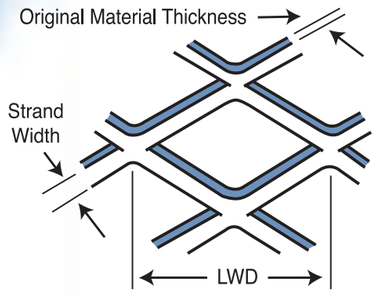
MicroGrid® Technology

MicroGrid® precision expanded metal foils from Dexmet are the materials of choice for lightning strike protection in composite aircraft structures. Dexmet is the exclusive expanded metal supplier for Airbus, Boeing, the principle supplier to Embraer, and preferred vendor to a majority of aircraft manufacturers around the world. Aircraft manufacturers are quickly realizing the benefits of using Dexmet's advanced expanded materials over the outdated technology of woven wire. MicroGrid's single unit structure is superior to woven material in that it won't unravel or have loose strands that become problematic during processing into a pre-preg material or when conducting a dry lay-up. The homogenous design also ensures uncompromised conductivity between strands when forming the material to a variety of shapes and contours and provides a smooth surface on the end product. MicroGrid's biggest advantage is Dexmet's ability to tightly control the manufacturing process to meet a specific weight, open area, and conductivity requirement. This allows Engineers the option of varying materials according to specific strike zones on the aircraft, minimizing the overall weight. Our common materials have the ability to withstand a Zone 1A strike of 200,000 amps.

Common MicroGrid® Materials

Below are charts of the most typically produced materials for lightning strike protection in composite aircraft structures for Zones 1, 2 and 3. Over rivet lines, lightning strike testing has determined that weights greater than 400 gsm are better at dissipating sparking from embedded rivets. In wind applications, the heavier configurations can be used to allow for repeated strikes. For these heavier materials, other alloys or metals, different thicknesses and pattern sizes please consult with our sales and engineering professionals for specific characteristics in regard to your particular application.





Aluminum Material Specifications

Dexmet Product Code	2AL8-075F	4AL8-080	4AL8-080F	5AL10-080
Weight - LBS/SF (±10%) -GMS/SM (±10%)	0.013 66.00	0.016 78.12	0.016 78.12	0.028 136.7
Original Metal Thickness (±10%)	0.002 inch 0.051 mm	0.004 inch 0.102 mm	0.004 inch 0.102 mm	0.005 inch 0.127 mm
LWD (±5%)	0.075 inch 1.905 mm	0.080 inch 2.032 mm	0.080 inch 2.032 mm	0.080 inch 2.032 mm
Overall Thickness (±.001 inch / ±.025 mm)	0.002 inch 0.051 mm	0.006 inch 0.152 mm	0.004 inch 0.102 mm	0.006 inch 0.152 mm
Open Area (±5%)	52%	71%	71%	60%
	Flattened	Leveled	Flattened	Leveled

Copper Material Specifications

Dexmet Product Code	2CU4-100A	2CU6-100A	3CU7-125A	3CU7-100A
Weight - LBS/SF (±10%) -GMS/SM (±10%)	0.015 73.3	0.022 107.4	0.029 141.6	0.040 195.3
Original Metal Thickness (±10%)	0.002 inch 0.051 mm	0.002 inch 0.051 mm	0.003 inch 0.076 mm	0.003 inch 0.076 mm
LWD (±5%)	0.100 inch 2.54 mm	0.100 inch 2.54 mm	0.125 inch 3.175 mm	0.100 inch 2.54 mm
Overall Thickness (±.001 inch / ±.025 mm)	0.004 inch 0.102 mm	0.005 inch 0.127 mm	0.005 inch 0.127 mm	0.005 inch 0.127 mm
Open Area (±5%)	84%	76%	79%	70%
	Annealed	Annealed	Annealed	Annealed

Flattened Copper Material Specifications

Dexmet Product Code	2CU4-100FA	2CU6-100FA	3CU7-125FA	3CU7-100FA
Weight - LBS/SF (±10%) -GMS/SM (±10%)	0.015 73.3	0.022 107.4	0.029 141.6	0.040 195.3
Original Metal Thickness (±10%)	0.002 inch 0.051 mm	0.002 inch 0.051 mm	0.003 inch 0.076 mm	0.003 inch 0.076 mm
LWD (±5%)	0.100 inch 2.54 mm	0.100 inch 2.54 mm	0.125 inch 3.175 mm	0.100 inch 2.54 mm
Overall Thickness (±.001 inch / ±.025 mm)	0.002 inch 0.051 mm	0.002 inch 0.051 mm	0.003 inch 0.076 mm	0.003 inch 0.076 mm
Open Area (±5%)	84%	76%	79%	70%
	Flattened/ Annealed	Flattened/ Annealed	Flattened/ Annealed	Flattened/ Annealed