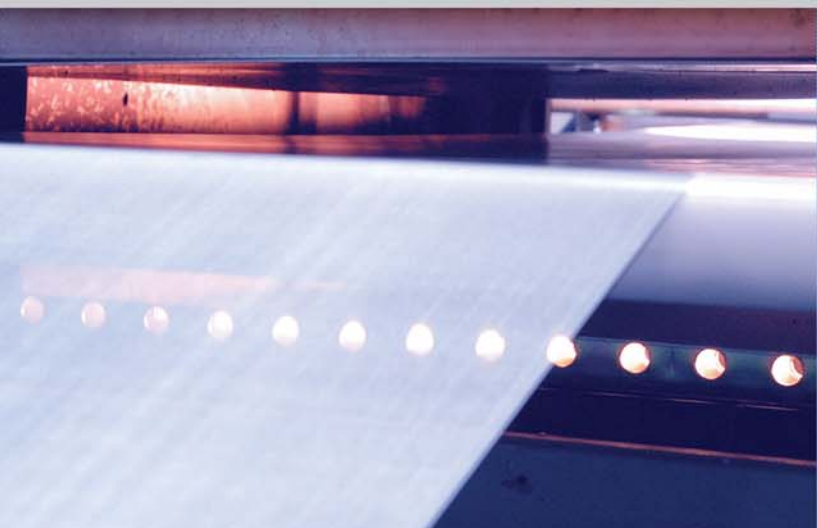


# STRIKEGRID™

CONTINUOUS EXPANDED ALUMINUM FOIL



# STRIKEGRID™

## CEAF



Lightning is a natural threat and must be addressed during the design and certification of aircraft. Protecting aluminum body aircraft from lightning strikes involves wicking away the electric charge through the conductive metal structure. With the increased use of composites in aircraft structures, especially the fuselage, new systems for dealing with lightning strikes are being introduced.

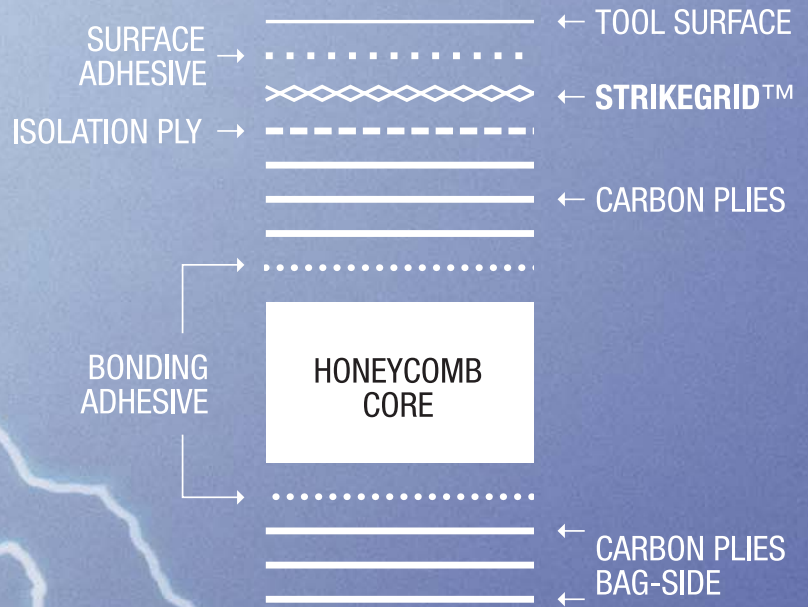
In response to this need, Alcore, part of the M.C. Gill Corporation Group of Companies, offers Strikegrid™ Continuous Expanded Aluminum Foil (CEAF), which is the industry's highest-performing lightning strike dissipation material. Phosphoric acid anodized and coated with a proprietary coating, it outperforms all other ductile materials.



Decades of operational experience have shown that bond durability between lightning strike materials and face sheets or surfacing materials is critical to long part life, and, for this, Strikegrid™ CEAF has no equal.

Independent analysis confirms the environmental performance durability of Strikegrid™ CEAF assuring a lower total life cost than with other lightning strike materials.

Strikegrid™ CEAF has unsurpassed corrosion resistance, retaining virtually all of its physical properties after being subjected to a salt spray test. This material is also being used for RFI shielding applications.

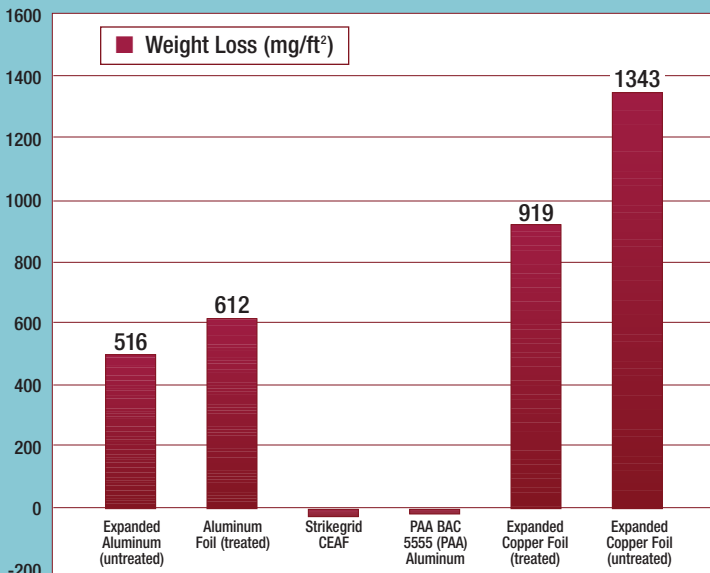


## IMAGES OF AIRPLANE STRUCK BY LIGHTNING



Courtesy: Department of Electrical Engineering, Osaka University, Japan

Typical Weight Loss – PAA Treated Aluminum Performance Versus Other Materials Tested in Accordance with ASTM B-117



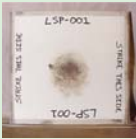





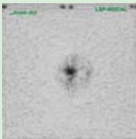
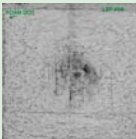
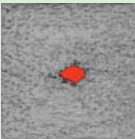
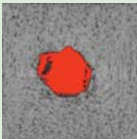
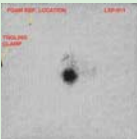
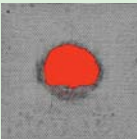
## Applications

- Aircraft control surfaces
- Exposed composite surfaces
- Composite fuselage and aircraft engine nacelles
- Marine and naval panels
- High-performance composite structures
- Replacement for all other lightning strike materials
- Wind turbine blades

## Features

- Unsurpassed corrosion resistance and bond durability
- Available in continuous rolls
- Elevated temperature performance to 350° F/177° C
- Fire and fungus resistant
- Eliminates need for priming
- Resistant to hostile environments
- Able to withstand lightning strikes of up to 200k Amps
- Prevents surface microcracking
- Very adaptable with ply cutting equipment when combined with surfacing films

## Lightning Strike Test Results

Lightning Protection:	SG-4	016 Copper	016 Phos Bronze	None	SG-4	None
Isolation Layer:	S-2 Glass	None	None	None	S-2 Glass	None
Honeycomb:	KOREX	KOREX	KOREX	KOREX	Fiberglass	Fiberglass
Test Panel Photo						
TTU (NDI) Inspection						
NDI Damage Assessment	2" dia. mesh only	11" dia. <b>Damage thru 2 ply layers</b>	9" dia. thru hole	12" dia. thru hole	3" dia. mesh only	10" thru hole



## Strikegrid™ CEAF Product Information

Product Designation	SG-2	SG-4
Grade	013	016
Aluminum Alloy	1145	1145
Width (inches)	24"	24" to 36"
Width (mm)	610	610 to 915
Weight (psf)	0.013	0.016
Weight (gsm)	63	78
Overall Thickness (inches)	0.002	0.004
Overall Thickness (mm)	0.050	0.100

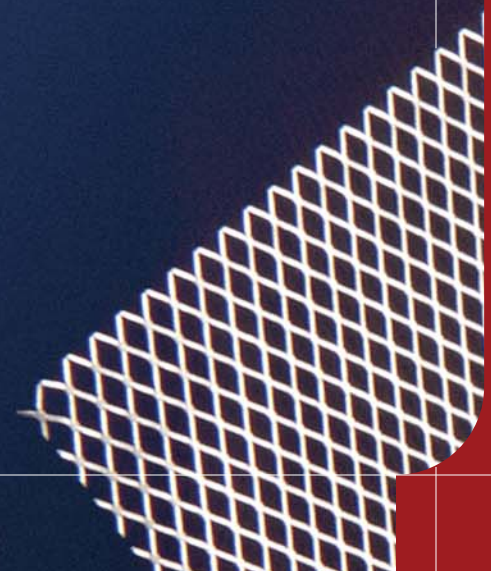
Roll Width	Length (linear ft)	Area (square foot)	Length (m)	Area (square meter)
24" (610mm)	250 to 1250	500 to 2500	76.2 to 381	46.5 to 232
36" (915mm)	167 to 833	500 to 2500	51 to 254	46.5 to 232

### Qualifications

- Meets BMS8-336, Rev. B proposed requirements
- Other qualifications pending

### Availability

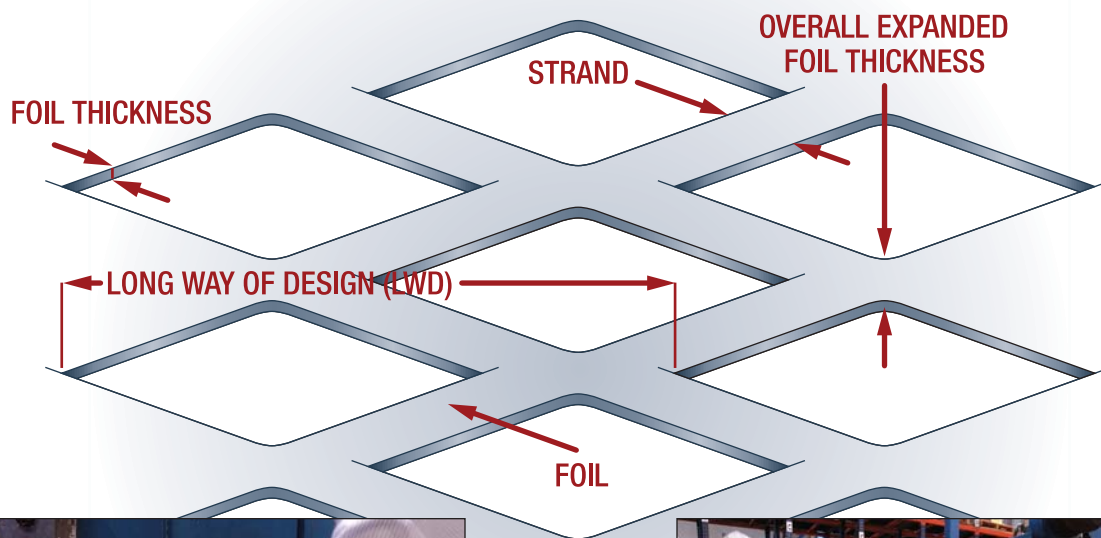
Strikegrid™ CEAF is available in continuous rolls.



# Shocking Facts about Lightning:

- Lightning travels through the air at 90 thousand miles per second – nearly half the speed of light.
- An average lightning stroke is 6-8 miles long
- Florida has more thunderstorms than any other state in the U.S. – about 90 a year.
- It is estimated that, on average, each airplane in the U.S. commercial fleet is struck a little more than once per year.
- On the ground, only 1% of all lightning deaths occur indoors.
- Lightning provides more energy than all the electric generators combined in the U.S.
- Lightning starts half of all the fires in America's national forests.
- At least 100 Americans are killed by lightning each year.
- Lightning bolts are channels of electric energy about two inches across. They may be as short as 200 feet or as long as 20 miles.
- Three-fourths of a lightning bolt's energy is used up in heat – but enough remains to deliver a full 125 million volts of electricity.
- Golfer Lee Trevino has been struck by lightning twice.

## STRIKEGRID™ CEAF SCHEMATIC





## **Alcore**

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