Esterline
Engineered Materials

28065 Franklin Parkway / Valencia, CA 91355-4117 / ph 661-775-1100 / fax 661-775-1155

AEROBOND™

CORROSION RESISTANT SANDWICH GASKET

Description

AEROBOND™ antenna gaskets do not require special greases, corrosion inhibitors, or sealants of any kind and meet airline needs for a quick change, corrosion resistant, environmentally friendly gasket solution. Developed by Boeing, and manufactured by Kirkhill-TA under license, AEROBOND™ provides an electrically-conductive hermetic and fluid seal between the aircraft's skin and surface mounted antennas, instrumentation and other externally-mounted devices.

The readers of Aerospace Engineering Magazine selected AEROBOND™ as one of the 10 best products of 1999. AEROBOND™ is a trademark of Kirkhill-TA.

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Benefits

- Reduces labor time in the removal and replacement of surface mounted devices during heavy maintenance checks
- Eliminates lengthy and costly in-service delays for the replacement of surface mounted devices by eliminating all chemical surface treatments and sealants that require downtime for curing
- Prevents corrosion of the antenna/skin and instrument/skin interface as well as the attaching screws and nutplates by providing a hermetic seal
- Increases antenna performance by providing electrical continuity between the aircraft skin and antenna
- Eliminates p static buildup since it does not harden and erode like aerodynamic sealants
- Environmentally safe

Uses

AEROBOND™ gaskets are used to provide an electrically-conductive, aerodynamic and fluid seal between the aircraft skin and surface-mounted antennas and instruments, including:

- Both flush-mount and recessed installations
- Pressurized and non-pressurized areas

Boeing tested AEROBOND™ gaskets for paint adhesion and found them to be suitable for installation prior to painting operations. AEROBOND™ gaskets are also suitable for use in a variety of other applications that require fluid sealing or a corrosion-resistant grounding interface of less than 2.5 milliohms resistance.

Configurations

Kirkhill-TA produces AEROBOND™ gaskets for use with most commercial and military aircraft antennas, and Kirkhill-TA will design and produce gaskets to meet your unique requirements. Please contact your Kirkhill-TA sales representative for more information.

Antenna Performance

Boeing selected a marker beacon antenna as a worst case scenario for extensive AEROBOND™ performance testing because of its high “Q” sensitivity, which makes it sensitive to de-tuning. Boeing’s tests indicate that AEROBOND™ meets the performance specifications of the antenna manufacturer when installed on an active marker beacon antenna. AEROBOND™ also has an extensive and successful flight test and service history on a wide variety of antennas and aircraft types: Fleet operators report that AEROBOND™ increases antenna performance.

Environmental and Other Properties

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SPLASH RESISTANCE	Per DO-160C Section 11, Category F: MIL-H-5606, JP4, gasoline, MIL-G-5572, Skydrol (500B), Monsanto LD, MIL-E-9500, MIL-P-83800, CEE BEE 963, 5% saline, Jet A, MIL-L-23699, propylene glycol
SAND AND DUST RESISTANCE	Per DO-160C Section 12, Category D
CORROSION RESISTANCE	Per DO-160C Section 14, Category S; Salt fog test per MIL Std. 801D Method 509.2; Salt immersion test per MIL Std. 202
TEMPERATURE RANGE	-54°C to 177°C (-65°F to 350°F)
VIBRATION	Resistant to 14g
ALTITUDE	18,287 m (60,000 ft)
MATERIAL	Uncatalyzed fluorosilicone elastomer sandwiched between expanded aluminum mesh
DENSITY	1.33 g/cm^3 (.048 LB/in^3)
FASTENER TORQUE LOADING	Per antenna manufacturer's recommendation for the antenna – usually 1 to 3 N•m (10 to 25 in•lb)
WIND TUNNEL TEST	No migration of the fluorosilicone occurs in flight. Test performed at Mach 0.8 for 16 hours
ALTITUDE IMMERSION TEST	Passes dielectric test when tested in accordance with MIL Std. 1344A, Method 1004.1
PRESSURE TEST	Contains 207 kPa (30 psi) for 1 hour
THERMAL TEST	Withstands 177°C (350°F) for 500 hours
THERMAL SHOCK	Withstands half hour thermal cycles of -54°C to 177°C (-65°F to 350°F) for 80 cycles
LIGHTENING STRIKE	Withstands 200,000 amps
PAINT ADHESION	Aircraft skin can be painted once the antenna has been installed using the AEROBOND™ gasket with no adverse effect
ELECTRICAL RESISTANCE	Less than 2.5 milliohms
GALVANIC CORROSION	No sign of deterioration of mating surfaces when immersed in 5% saline solution at 25°C (77°F) with 28 volts DC at 100 milliamps applied for 500 hours using a copper anode