PRAXAIR
SURFACE TECHNOLOGIES

Aviation

Coating Applications for Airframe Systems







Auxiliary Systems

Landing Gear Systems

Propulsion Structures

Wing Components & Hydraulic Systems

Auxiliary Systems

Part Name	Coated Area	Typical Coating Type	Typical Mating Surface	Typical Objective of Coating
Auxiliary Power Unit Components	Various geometries	Cobalt alloy LCO-22; chrome carbide LC-1C	–	High-temperature oxidation resistance, abradability, carbon seal compatibility
Bleed Air Valves	Inside diameters	Tribaloy* LDT-400C, LPT-400, LT-91; chrome carbide LC-1C, LC-1H	–	High-temperature sliding wear resistance, material compatibility
Environmental Control Unit Components	Various geometries	Chrome carbide LC-1C	–	Carbon seal compatibility
Starter Components	Contact area	Tungsten carbide LW-1N40	–	Sliding wear resistance

Landing Gear Systems

Part Name	Coated Area	Typical Coating Type	Typical Mating Surface	Typical Objective of Coating
Landing Gear Door Mechanisms	Brackets, hooks, piston rods	Tungsten carbide LW-1N40A, SDG 2040GA	–	Wear resistance, corrosion resistance
Landing Gear Retract Systems	Actuation components, including piston rods, piston ends	Tungsten carbide LW-1N40A, SDG 2040GA, SDG 2057A, LW-103F, LW-90	–	Wear resistance, lubricity, material compatibility
Landing Gear Structural Components	Inner cylinder piston, pins, bolts, bearings, bushings	Tungsten carbide LW-1N40A, SDG 2040GA, SDG 2057A, LW-103F, LW-90	–	Wear resistance, corrosion resistance, fatigue strength, material compatibility
Nose Landing Gear	Steering components, sleeves, plates, actuators	Tungsten carbide LW-1N40A, SDG 2040GA, SDG 2057A, LW-90, LW-103F	–	Wear resistance, corrosion resistance, fatigue strength, material compatibility
Axles	O.D./I.D.	SermeTel® 725 Al-ceramic coating	Atmosphere, splash from runway	Corrosion resistance
Wheel & Brake Systems	Sleeves, pistons, pins	Tungsten carbide LW-1N40A, LW-90, LW-103, LW-95; thermal barrier LZ-8	–	Impact fretting wear resistance, heat flow reduction
Torque Tubes	O.D. and I.D.–external surfaces	SermeTel® 984/985 and 2F-1 Al-ceramic coatings; silicone paint	Atmosphere, splash from runway	Corrosion resistance
Torque Pins	O.D.	Tungsten carbide LW-103F, SDG 2057A	Steel	Wear resistance
Torque Pins	Non-contact areas	SermeTel® 984/985 Al-ceramic coatings	Atmosphere, splash from runway	Corrosion resistance
Pistons	O.D.	SermeTel® 984/985 Al-ceramic coatings	–	Corrosion resistance
Pins	All external surfaces	SermeTel® 984/985 Al-ceramic coatings	–	Corrosion resistance
Shock Strut Assembly	O.D./I.D.	SermeTel® 249/273 air dry	Atmosphere, splash from runway	Corrosion resistance

Propulsion Structures

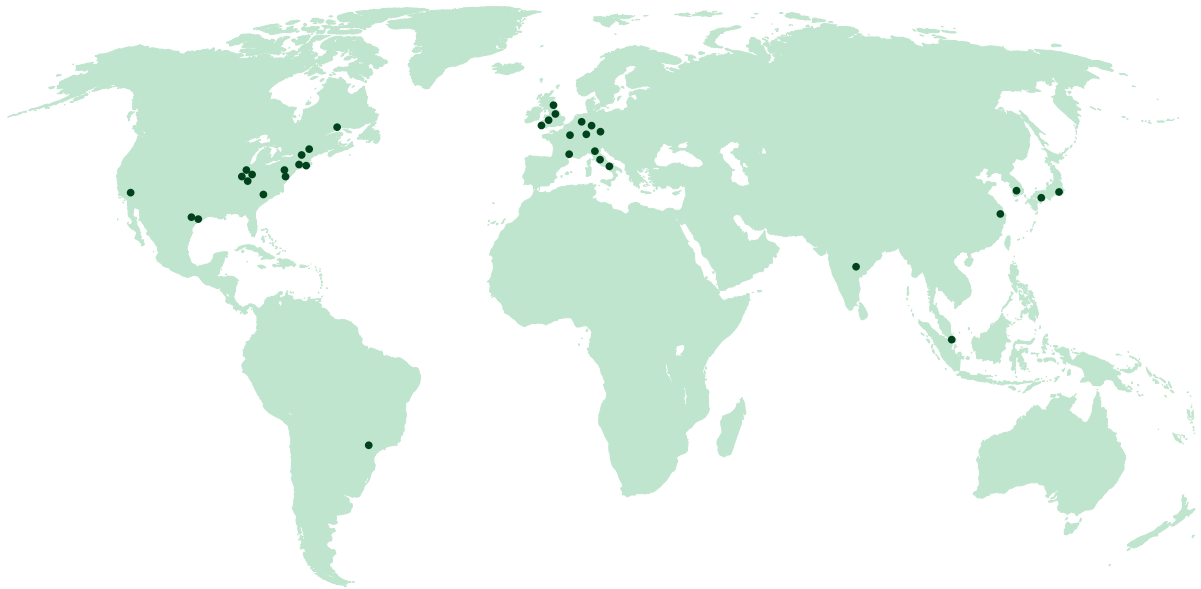
Part Name	Coated Area	Typical Coating Type	Typical Mating Surface	Typical Objective of Coating
Exhaust Nozzle Components	Bearings, bolts, pins, ducts, tracks, various fittings	Tungsten carbide LW-1N40, LW-11B, LW-103; chrome carbide LC-1C	–	High-frequency vibration wear, corrosion resistance
Lipskins	O.D. and I.D.–external surfaces	SermeTel® 984 Al-ceramic coating, ShorCoat® hybrid coating system	Atmosphere, rain, deicing heat & solutions	Corrosion resistance, rain erosion resistance
Engine Nacelles	O.D. and I.D.–external surfaces	SermeTel® 984 Al-ceramic coating, ShorCoat® hybrid coating system	Atmosphere, deicing solutions	Corrosion resistance
Pylon Duct	O.D. and I.D.–external surfaces	SermeTel® 1273M/1279 PPS resin primer-sealer	Hot Skydrol hydraulic fluids	Corrosion resistance
Propeller Systems	Crossheads, inner hub, blades	Tungsten carbide LW-1N40, LW-11B, LOXPlate	–	Sliding, fretting, erosive wear resistance
Rub Strips	Sheet metal flats	Tungsten carbide LW-1N40, LW-11B	–	Sliding, fretting wear resistance

Wing Components & Hydraulic Systems

Part Name	Coated Area	Typical Coating Type	Typical Mating Surface	Typical Objective of Coating
Constant Speed Drive & Integrated Drive Generator Components	Various annular surfaces	Tungsten carbide LW-1N30, LW-1N40; chrome carbide LC-1C	–	Sliding wear resistance, carbon seal compatibility
Flap Support Pins	Outside diameters & underside of head	Tungsten carbide LW-1N40, LW-90; copper-nickel-indium LCN-1, LCN-2	–	Sliding wear resistance, vibration wear resistance
Flap Actuators	Non-contact surfaces	SermeTel® 984/985 Al-ceramic coating, SermeTel® 984/1140 hybrid coating system	Atmosphere, condensed moisture	Corrosion resistance
Sliders	Non-contact surfaces	SermeTel® 984/985 Al-ceramic coating, SermeTel® 984/1140 hybrid coating system	Atmosphere, condensed moisture	Corrosion resistance
Flight Control Actuation Systems	Piston rods, piston heads, cylinder I.D.	Tungsten carbide, LW-1N40, SDG 2040GA, SDG 2057A, LW-103F, SDG 2005; Tribaloy* SDG 2400, LPT 400; chrome oxide LC-4	–	Wear resistance, fatigue behavior, material compatibility, leakage reduction
Fuel Pump Components	Various geometries	Tungsten carbide LW-1N30, LW-1N40; aluminum oxide LA-2	–	Abrasive, erosive wear resistance
Roller Bearings	Bearing surface	Tungsten carbide LW-1N40, LW-90	–	Rolling, fretting wear resistance
Slat & Flap Tracks	Bearing surfaces of track	Tungsten carbide LW-1N40, LW-90, LW-102B	–	Rolling, fretting wear resistance
Leading Edge Wing Slats	External surfaces	ShorCoat® hybrid coating system	Atmosphere, rain, deicing heat & solutions	Corrosion resistance, rain erosion resistance
Wing Pivot & Trunnion Bearings	Spherical O.D. and I.D.	Chrome oxide LC-4; tungsten carbide LW-1N40, LW-90	–	Wear resistance, material compatibility, lubricity
Struts	External surfaces	SermeTel® W Al-ceramic coating	Atmosphere, condensed moisture	Corrosion resistance

Aviation

2,500 people, more than 30 facilities and 13 countries



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Praxair Surface Technologies maintains additional coating and administrative facilities not listed above.

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