



SOLID FILM LUBRICATION

CAPABILITIES AND PROCESSES PERFORMED FOR THE AEROSPACE INDUSTRY

SOLID DRY FILM LUBRICANTS

Molybdenum, Graphite
Tungsten Compounds
(Organic & Inorganic)

COATINGS

Aluminum Coatings
Teflon (TFE) Coatings
Primer & Topcoats

ANODIZE

Aluminum
Chromic, Sulfuric and Hard
(Dyed and Non-Dyed)

Titanium
Ticermet "A"
Ticermet "B"

CONVERSION COATING

Aluminum
Chemical Film

Magnesium
Dow 7
Dow 9
Dow 19

Titanium
Phosphate Fluoride

PHOSPHATE COATING

Manganese

PASSIVATION

TESTING

Salt Spray Testing
High Humidity Testing
Copper Sulfate Testing
Coating Weight Testing

NON-DESTRUCTIVE TESTING

Conductivity Testing
Hardness Testing

SURFACE PREPARATION

Abrasive Blasting
Glass Bead
Wet Honing



SOLID FILM LUBRICATION

PROCESSES PERFORMED

Chemical Cleaning

Alkaline Cleaning
Solvent Cleaning
Titanium Cleaning
Ultrasonic

Conversion / Phosphate Coatings

AMS 2473
AMS 2475
AMS 2481
AMS 2486
MIL-DTL-16232
AMS-M-3171
TT-C-490

Chem Film

MIL-C-5541
MIL-DTL-5541
AMS-C-5541

Anodize

MIL-A-8625, Types I, II and III
AMS 2469
AMS 2470
AMS 2471
AMS 2472
AMS 2488 Ty II
AMS-M-45202

Dow 7, 9 Conversion Coatings

AMS-M-3171
AMS-2475

Surface Treatment / Passivation

ASTM-A-380
ASTM-A- 967
QQ-P-35 / AMS QQ-P-35,
Types II, VI, VII and VIII
MIL-DTL-5002
AMS 2700, Types I, II, VI and VIII

Aluminum Coating

MIL-C-85614

Salt Spray

ASTM-B-117

24 Hour High Humidity

AMS-STD-753, Method 101

Copper Sulfate

AMS-STD-753, Method 102



SOLID FILM LUBRICATION

PROCESSES PERFORMED

Painting & Dry Film Coatings

AMS 2515
AMS 7866
AMS-C-27725
AS 5272
DOD-L-85645 (DR-9)
DOD-P-15328
MIL-C-22750 / MIL-PRF-22750
MIL-C-46168 / MIL-DTL-53039
MIL-C-53039
MIL-C-81751
MIL-C-83286
MIL-C-8514
MIL-C-85285 / MIL-PRF-85285
MIL-C-85614
MIL-DTL-24441
MIL-DTL-53039
MIL-E-24635
MIL-F-14702
MIL-F-18264
MIL-F-7179 / MIL-STD-7179
MIL-L-23398
MIL-L-24478
MIL-L-45983
MIL-L-46010 / MIL-PRF-46010
MIL-L-46147 / MIL-PRF-46147
MIL-L-8937
MIL-PRF-81329
MIL-PRF-81352
MIL-M-7866 / AMS-M-7866
MIL-P-23377 / MIL-PRF-23377
MIL-P-53022
MIL-P-53030
MIL-P-85582 / MIL-PRF-85582
MIL-W-5044
TT-P-28, 645
TT-P-645
TT-P-1757



SOLID FILM LUBRICATION

BOEING APPROVALS

Seattle

BAC 5621
BAC 5625
BAC 5706
BAC5710
BAC5736
BAC 5748
BAC 5749
BAC 5750
BAC 5774
BAC 5775
BAC 5776
BAC 5777
BAC 5811 Type VIII
BAC 5840

BSS 7011
BSS 7600
BSS 7651

Boeing Mesa

EPB 4-230
EPB 4-232
EPB 17-119

HMS 16-1111
HMS 16-1278

HP4-1
HP4-2
HP4-7
HP4-8
HP4-23
HP4-28
HP4-49
HP4-57
HP4-75
HP4-79
HP4-98
HP4-99
HP4-100
HP4-107
HP4-120
HP4-121
HP4-124
HP6-19
HP6-35
HP8-4
HP8-5
HP9-1
HP9-10
HP9-12
HP9-24
HP9-25
HP9-106
HP10-7
HP14-30



SOLID FILM LUBRICATION

BOEING APPROVALS

Boeing Commercial (Long Beach)

DPS 1.05
DPS 1.05-1
DPS 1.05-2
DPS 1.05-3
DPS 1.05-5
DPS 1.05-7
DPS 1.05-8
DPS 1.22
DPS 1.37
DPS 3.177
DPS 3.178
DPS 3.307
DPS 3.317
DPS 4.50-1
DPS 4.50-3
DPS 4.50-4
DPS 4.50-36
DPS4.50-62
DPS 4.50-66
DPS 4.50-131
DPS 4.50-138
DPS 4.50-139
DPS 4.50-144
DPS 4.50-175
DPS 4.752
DPS 9.05
DPS 9.07
DPS 9.29
DPS 9.30
DPS 9.45
DPS 9.301
DPS 11.01
DPS 11.01-3
DPS 11.04
DPS 11.05

Boeing St. Louis

PS 12010
PS 12024
PS 12030
PS 12040
PS 12050
PS 13001
PS 13201
PS 13208
PS 13209
PS 13300
PS 13318
PS 13375
PS 13630
PS 13646
PS 18021
PS 20001
PS 21203
PS 21207
PS 21313
PS 23023

Military Specifications

MIL-S-5002
MIL-L-46010
MIL-C-5541 / MIL-DTL-5541
MIL-A-8625 Types I, II, and III
AMS-A-8625 Types I, II, and III
ASTM-B 117

Boeing Space

AA0112-034



SOLID FILM LUBRICATION

LOCKHEED APPROVALS

Fort Worth

AMS-2486 Titanium Conversion Coating

FPS-1004 Fuel Tank Coating

FPS-3006 Solid Film Lubricant Solvent Base, M390

FPS 3006 Solid Film Lubricants Water Base, Everlube 9002

LMA-PC009 Hardness or Conductivity Testing

MIL-A-8625, Type 1 and 1B, II, III Anodize

MIL-C-27725/AMS-C-27725 Fuel Tank Coating

MIL-L-46010 Solid Film Lubricant / MIL-PRF-46010

MIL-DTL-5541 Chem Film, AMS-C-5541, Type I, Class A and Class 3

MIL-F-18264 Prime & Paint

NDTS-1500 / 1502 Conductivity Testing

Lockheed Martin Space Systems (Denver)

MIL-F-18264	Finishes, Organic and Weapons
5-75149	Coating Application
0-75343	Coating Application
5-75052	CTG System Epoxy Polyamide Primer Topcoat
0-06169	Coating Poly High Solids
5-04098	Primer Epoxy Zinc Rich
0-74068	Application of MIL-P-85582 / MIL-PRF-85582
MIL-F-7179 / MIL-STD-7179	Paint
MIL-P-23377 / MIL-PRF-23377	Epoxy Primer

MIL-C-5541 / MIL-DTL-5541 Chem Conversion for Aluminum



SOLID FILM LUBRICATION

LOCKHEED APPROVALS

MIL-A-8625

MIL-A-8625
MIL-A-8625
MIL-A-8625
5-75148
AMS 2471
AMS 2469
AMS 2472
AMS 2470

Anodic Coatings for Aluminum

Type I Anodize Chromic
Type II Anodize Sulfuric
Type III Anodize Hardcoat
Anodic Coatings for Aluminum
Type II Anodize
Type III Anodize – Hardcoat
Anodize Sulfuric
Type I Anodize – Chromic

AMS 2486

Conversion Coating for Titanium

AMS 2700

5-75059
5-75059
AMS-QQ-P-35
AMS-QQ-P-35
AMS-QQ-P-35
AMS-QQ-P-35
AMS 2700
AMS 2700
AMS 2700

Passivation of Corrosion Resistant STE

Passivation – Nitric Acid – Type A Ambient
Passivation – Nitric Acid – Type B
Type II Passivation
Passivation – Corrosion Res. Canx See AMS 2700
Type VI Passivation Nitric Acid Low Tem
Type VIII Passivation Nitric Acid
Type 2 Medium Temperature Nitric Acid with SO
Type 6 Low Temperature Nitric Acid
Type 8 Medium Temperature, High Nitric Acid

AS 5272

0-75045
0-73567
5-73810
MIL-L-8937
MIL-L-46010
STP-4D005
STP 40010
STP 40013
STP 40017

Lubricant, Solid Film Heat Cured, corrosive

Solid Film Lubricant, Impinged
Solid Film Lubricant, Air Drying
Lube, Solid Film, Extreme Environment
Lube, Solid Film
Lube, Solid Film H/C Ty I & II- CANX AS 5272 I, II
Dry Film Lubricant, Application of
Lubricants
Solid Film Lubricant, Air Cured
Greases, Solid Film Lubricants, and Fluorocar



SOLID FILM LUBRICATION

NORTHROP APPROVALS

Northrop TRW

PR 1-1-1

PR 2-3 -1, -2, -3

PR2-9-1

PR2-17 -01, -02

PR2-22-1, 4, 5
 15, 17 Types 1, 2, and 3
 21, 22, 23, 24, 25, 26,
 35, 37,
 50, 55

PR2-27 -3, -33

PR5-33 13

PR6-15

PR6-19 -1, -2

PR6-21 -1, -2, -3, -4

PR6-26 superseded by PR6-21

PR6-28 -1, -4

AMS 2488

AMS-M-3171

AMS 2700

AMS 2486

MIL-A-8625

MIL-C-5541

MIL-DTL-5541

MIL-DTL-16232

MIL-L-46010

MIL-M-3171

MIL-PRF-46010

QQ-P-35

Northrop Aerospace

AMS 2700

ASTM A967

F-101

F-116

FP-79

GSS 10300

L-6

MIL-A-8625

MIL-DTL-5541

MIL-PRF-46010

R-299



SOLID FILM LUBRICATION

HAMILTON SUNSTRAND APPROVALS

AMS 2470	Anodize, Chromic Acid
AMS 2471	Anodize, Sulfuric Acid, Type II
AMS 2473	Chemical Treatment of Aluminum
AMS 2476	Anodize, Magnesium
AMS 2481	Phosphate, Manganese Type M
AMS 2700	Passivation of Corrosion Resistant Steel
AMS-A-8625	Anodic Coatings for Aluminum (All Types)
AMS-C-5541	Chemical Film, Aluminum
AMS-M-3171	Magnesium Conversion Coating
AMS-QQ-P-35	Passivation Treatments of Cres Alloys
ASTM A380	Passivation
ASTM A380/PN 14.10/qq-p-35	Passivation
CCT LB 619	Dry Film Lubricant
CM34.52-01	Dry Film Lubricant
CM34.52.02	Dry Film Lubricant
CM34.52-03	Dry Film Lubricant
CM34.52-04	Dry Film Lubricant
CM34.52-05	Dry Film Lubricant
CM34.52-06	Dry Film Lubricant
CPS1000-01	Anodizing Aluminum Alloys
CPS1000 Type II, Class 1A	Anodizing, Aluminum Alloys
CPS1000-01 Type II, Class 1A & 1D	Anodizing, Aluminum Alloys
CPS1000 Type I/IB, Class 1D	Anodizing, Aluminum Alloys
CPS1000-01 Type I/IB, Class 1A & 1D	Anodizing, Aluminum Alloys
CP14.06-01	Anodize
CP14.06-01-02	Anodize, Chromic Acid, Type I
CP14.06-01-03	Anodize, Chromic Acid, Type I
CP14.06-01-04	Anodize, Chromic Acid, Type I
CP14.06-01-07	Anodize, Chromic Acid, Type I
CP14.06-01-08	Anodize, Chromic Acid, Type I
CP14.06-01-10	Anodize, Chromic Acid, Type I
CP14.06-01-11	Anodize, Chromic Acid, Type I
CP14.06-01-12	Anodize, Chromic Acid, Type I
CP14.06-01-13	Anodize, Chromic Acid, Type I
CP14.06-01-15	Anodize, Chromic Acid, Type I
CP14.08-01	Phosphate Coating
CP14.10	Passivation
CP14.10-01	Passivation
CP14.10-01-01	Passivation
CP14.10-01-02	Passivation
CP14.10-01-03	Passivation



SOLID FILM LUBRICATION

HAMILTON SUNSTRAND APPROVALS

CP14.10-02	Passivation
CP14.10-02-01	Passivation
CP14.10-03	Passivation
CP14.10-06	Passivation
CP14.10-07	Passivation
CP14.10-10	Passivation
CP14.10-12	Passivation
CP14.10-13	Passivation
CP14.10-14	Passivation
CP14.10-15	Passivation
CP14.10-17	Passivation
CP14.10-18	Passivation
CP14.12	Aluminum Chem Film
CP14.12-02	Chemical Film, Aluminum
CP14.12-03	Chemical Film, Aluminum
CP14.12-04	Chemical Film, Aluminum
CP14.12-08	Chemical Film, Aluminum
CP14.12-09	Chemical Film, Aluminum
CP14.12-10	Chemical Film, Aluminum
CP14.12-12	Chemical Film for Aluminum
CP14.12-13	Chemical Film, Aluminum
CP14.16-03	Dry Film Lubricant
CP14.16-03-01	Dry Film Lubricant
CP14.16-03-03	Dry Film Lubricant
CP14.16-03-06	Dry Film Lubricant
CP14.16-06-01	Dry Film Lubricant
DEF STAN 03-26	Anodize
DOD-P-16232	Phosphate, Manganese Type M
MIL-A-8625	Anodize
MIL-A-8625 TY 1	Anodic Coating
MIL-A-8625 TY 1 CL 1	Black Anodize
MIL-A-8625 TY 2	Anodic Coating
MIL-A-8625 TY 2 (SD)	Anodic Coating
MIL-A-8625 TY 2 CL 1	Anodic Coating
MIL-A-8625 TY 3	Hard Coat Anodize
MIL-A-8625 T1C1/PN14.06-01	Anodize, Chromic Acid, Type I
MIL-C-5541	Chemical Film, Aluminum
MIL-C-5541 CL3/PN14.12	Chemical Film, Aluminum
MIL-DTL-16232 TY M	
MIL-DTL-5541	
MIL-L-23398	Dry Film Lubricant
MIL-L-25504	Dry Film Lubricant



SOLID FILM LUBRICATION

HAMILTON SUNSTRAND APPROVALS

MIL-L-45983	Dry Film Lubricant
MIL-L-46010	Dry Film Lubricant
MIL-L-81329	Dry Film Lubricant
MIL-L-8937	Dry Film Lubricant
MIL-M-3171 Type 3	Magnesium Conversion Coating
MIL-M-45202	Anodize, Magnesium
MIL-P-16232	Phosphate, Manganese Type M
MIL-PRF-46010	
MIL-S-5002	Passivation
MS34.52-01	Dry Film Lubricant
MS34.52-03	Dry Film Lubricant
MS34.52-04	Dry Film Lubricant
MS34.52-05	Dry Film Lubricant
MS34.52-06	Dry Film Lubricant
PN14.06-01	Anodize, Type I / Type II
PN14.08-01	Phosphate, Manganese Type M
PN14.10	Passivation
PN14.12	Chemical Film, Aluminum
PN14.16-03	Dry Film Lubricant
PS 102-1	Anodize
PS 102-1 (Dowty Only)	Anodize, Chromic Acid, Type I (Dowty Only)
PS 102-2	Anodize
PS 102-2 (Dowty Only)	Anodize, Sulfuric Acid, Type II (Dowty Only)
PS 102-4	Anodize
PS 102-4 (Dowty Ony)	Anodize, Sulfuric Acid, Type II (Dowty Only)
PS 103	Magnesium Conversion Coating
PS 103 (Dowty Ony)	Magnesium Conversion Coating (Dowty Only)
PS 104	Anodize
PS 108	Phosphate Coating
PS 114	Aluminum Chem Film
PS 114 (Dowty Only)	Chemical Film Aluminum (Dowty Only)
PS 124	Passivation
PS 124 (Dowty Only)	Passivation (Dowty Only)
P131	Anodize, Sulfuric Acid, Type II
P2	Anodize, Sulfuric Acid, Type II
P277	Dry Film Lubricant
P40	Anodize, Chromic Acid, Type I
P44	Passivation
P73	Anodize, Chromic Acid, Type I
P76	Phosphate, Manganese Type M
P87	Anodize, Hardcoat, Type III
QQ-P-35	Passivation
Sandstrom 9A	Dry Film Lubricant



SOLID FILM LUBRICATION

AEROJET (PRATT & WHITNEY) /
ROCKETDYNE APPROVALS

RA0110-018
RA0110-047
RA0112-003
RA1112-005
RA1612-009

MD HELICOPTERS APPROVALS

MDP4-100
MDP4-107
MDP4-124
MDP4-2
MDP4-57
MDP4-79
MDP4-8
Q 02B

MOOG APPROVALS

ASTM 967
ASTM A967
DOD-L-85645
MIL-A-8625
MIL-DTL-16232
MIL-L-46010
MIL-PRF-23377
MIL-PRF-46010
MIL-PRF-85582
SBC00
SQR-1
SQR-2



SOLID FILM LUBRICATION

PARKER AEROSPACE APPROVALS

MIL-A-8625 TYPE I
MIL-A-8625 TYPE IB
MIL-A-8625 TYPE II
MIL-A-8625 TYPE IIB
MIL-A-8625 TYPE III

MIL-DTL-5541 TYPE I

AMS 2700 TYPE 2
AMS 2700 TYPE 6
AMS 2700 TYPE 8

AMS-QQ-P-35 TYPE II
AMS-QQ-P-35 TYPE VI
AMS-QQ-P-35 TYPE VIII

MIL-PRF-18264

ASTM B117 TESTING METHOD

SIKORSKY GLOBAL APPROVALS

SHP 4-2 Anodizing of Aluminum
SHP 4-7A Manganese Phosphate Coating
SHP 4-8 Passivation of CR Steel
SHP 4-57 Chemical Films for Aluminum Alloys
SHP 4-79 Hard Anodize of Aluminum