
	Material and Process Specifications	Document Number 146-067-00	Revision 0
		Date 06/10/16	Page 1 of 7
Document Approved By:	Title Engineering Manager	Name W. Lemmon	Date Approved 06/10/16

1.0 Purpose


- 1.1 This document defines approved revision levels of Material and Process specifications used by Onboard Systems. This list is for supplier reference when performing processes or supplying raw materials. The approved revision levels apply when a specific revision level is not defined by purchase order or engineering drawing.
- 1.2 Also where relevant, newer superseded specifications are listed and considered acceptable substitutions or replacements for older, no-longer current specifications. Onboard Systems will accept certification for specifications listed as superseded when certification for a superseded specification was requested or called out on a drawing.

2.0 Process Specifications

Specification	Description	Approved Revisions
ASTM A380	Standard Practice for Cleaning, Descaling and Passivation of Stainless Steel	-99 or later
ASTM A435	Straight-Beam Ultrasonic Examination of Steel Plates	-90 or later
ASTM A967	Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts	-01 or later
ASTM E10	Standard Test Method for Brinell Hardness of Metallic Materials	-01 or later
ASTM E18	Standard Test Method for Rockwell Hardness of Metallic Materials	-05 or later
ASTM E74	Standard Practice of Calibration of Force-measuring Instruments	-02 or later
ASTM E1444	Standard Practice for Magnetic Particle Testing	-05 or later
ASTM E1417	Standard Practice for Liquid Penetrant Inspection	-05 or later
ASTM G85	Standard Practice for Modified Salt Spray Testing	-02 or later
AWS D17.1	Specification for Fusion Welding for Aerospace Applications	2001 or later
J-STD-001	Requirements for Soldered Electrical and Electronic Assemblies	E or later
MIL-A-8625	Anodic Coatings for Aluminum and Aluminum Alloys	F or later
MIL-C-5541 or MIL-DTL-5541	Aluminum Anti Corrosion Chemical Conversion Coating	E or later
MIL-C-81309 or MIL-PRF-81309	Corrosion Preventive Compound	F or later
MIL-DTL-81706	Chemical Conversion Materials for Coating Aluminum and Aluminum Alloys	B or later
MIL-DTL-83488	Aluminum Ion Vapor Deposit	D or later

	Material and Process Specifications	Document Number 146-067-00	Revision 0
		Date 06/10/16	Page 2 of 7
Document Approved By:	Title Engineering Manager	Name W. Lemmon	Date Approved 06/10/16


Specification	Description	Approved Revisions
MIL-H-6875 (superseded by SAE-AMS-H-6875, SAE-AMS 2759/1 and SAE-AMS 2759/3)	Heat treatment of steel, Process for	H or later
MIL-I-6868 (Superseded by ASTM E1444)	Inspection Process, Magnetic Particle	E or later
MIL-I-8950 (superseded by SAE-AMS-STD-2154)	Ultrasonic Inspection	B or later
MIL-S-13165 (Superseded by SAE-AMS-13165)	Shot Peening of Metal Parts	C or later
MIL-STD-130	Identification of US Military Property	L or later
MIL-STD-1537	Electrical Conductivity Test for Verification of Heat Treatment of Aluminum Alloys, Eddy Current Method	C or later
MIL-STD-1907	Inspection, Liquid Penetrant And Magnetic Particle, Soundness Requirements For Materials, Parts, And Weldments	A or later
MIL-STD-1949 (superseded by ASTM E1444)	Inspection, Magnetic Particle	A or later
MIL-STD-2219 (Superseded by AWS D17.1)	Fusion Welding for Aerospace Applications	A or later
MIL-I-6866 (superseded by ASTM E1417)	Penetrant Inspection	A or later
QQ-P-35 (Superseded by SAE-AMS-QQ-P-35)	Passivation Treatments For Corrosion-Resistant Steel	B or later
QQ-P-416 (Superseded by SAE-AMS-QQ-P-416)	Plating, Cadmium	F or later
SAE-AMS-QQ-P-35 [†]	Passivation Treatments for Corrosion Resistant Steel	A or later
SAE-AMS 2404 [†]	Plating, Electroless Nickel	F or later
SAE-AMS 2417 [†]	Plating, Zinc-Nickel Alloy	H or later
SAE-AMS 2430 [†]	Shot Peening	S or later

	Material and Process Specifications	Document Number 146-067-00	Revision 0
		Date 06/10/16	Page 3 of 7
Document Approved By:	Title Engineering Manager	Name W. Lemmon	Date Approved 06/10/16


Specification	Description	Approved Revisions
SAE-AMS 2460 [†]	Plating, Chromium	A or later
SAE-AMS 2658 [†]	Hardness and Conductivity Inspection of Wrought Aluminum Alloy	C or later
SAE AMS 2700 [†]	Passivation of Corrosion Resistant Steels	E or later
SAE-AMS 2770 [†]	Heat Treatment of Wrought Aluminum Alloy Parts	J or later
SAE-AMS 2759/1 [†]	Heat Treatment of Carbon and Low-Alloy Steel Parts	E or later
SAE-AMS 2759/3 [†]	Heat Treatment Precipitation-Hardening Corrosion-Resistant and Maraging Steel Parts	E or later
SAE-AMS-C-26074 [†]	Coatings, Electroless Nickel Requirements for	D or later
SAE-AMS-H-6875 [†]	Heat Treatment of Steel Raw Materials	A or later
SAE-AMS-QQ-C-320 [†]	Chromium Plating	B or later
SAE-AMS-QQ-P-416 [†]	Cadmium Plating	C or later
SAE-AMS-STD-2154 [†]	Ultrasonic Inspection	A or later

2.1 Material Specifications


Specification	Description	Approved Revision
ASTM A108	Steel Bars, Carbon and Alloy, Cold-Finished	-13 or later
ASTM A213	Seamless Ferritic and Austenitic Alloy-Steel Tube	-15 or later
ASTM A269	Seamless and Welded Austenitic Stainless Steel Tubing	-15 or later
ASTM A322	Steel Bars, Alloy, Standard Grades	-13 or later
ASTM A331 (superseded by ASTM A108)	A8620 Steel Bar	-95 or later
ASTM A582	Free-Machining Stainless Steel Bars	-12 or later
ASTM A682 (superseded by A684)	Steel, Strip, High-Carbon, Cold-Rolled	-15 or later
ASTM B36	Brass Plate, Sheet, Strip, and Rolled Bar	-13 or later
ASTM-B124M	Aluminum Nickel Bronze (bars, rods, shapes, tubes, forging) drawn and stress relieved of temper annealed	-16 or later

	Material and Process Specifications	Document Number 146-067-00	Revision 0
		Date 06/10/16	Page 4 of 7
Document Approved By:	Title Engineering Manager	Name W. Lemmon	Date Approved 06/10/16


Specification	Description	Approved Revision
ASTM-B150/B	Aluminum Nickel Bronze (bars, rods, shapes, tubes, forging) drawn and stress relieved of temper annealed	-12 or later
ASTM-B169/B B169M	Aluminum Nickel Bronze (bars, rods, shapes, tubes, forging) drawn and stress relieved of temper annealed	-05 or later
ASTM B209	Aluminum and Aluminum-Alloy Sheet and Plate	-14 or later
ASTM B210	Aluminum and Aluminum-Alloy Drawn Seamless Tubes	-12 or later
ASTM B221	Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes	-14 or later
ASTM B283	Aluminum Nickel Bronze (bars, rods, shapes, tubes, forging) drawn and stress relieved of temper annealed	-14 or later
ASTM B505	Copper Alloy Continuous Castings	-14 or later
MIL-DTL-27500 (Superseded by NEMA-WC27500)	Cable, Power, Electrical and Cable Special Purpose	F or later
MIL-G-23827 (Superseded by MIL-PRF-23827)	Grease, Aircraft and Instrument, Gear and Actuator Screw	C or later
MIL-I-46852 (Superseded by A-A-59163)	Insulation Tape, Self Adhering	C or later
MIL-P-23377, MIL-PRF-23377	Primer Coatings: Epoxy, High Solids	J or later
MIL-P-8585 (Superseded by TT-P-1757)	Primer Coating, Zinc Chromate	A or later
MIL-PRF-23827	Grease, Aircraft and Instrument, Gear and Actuator Screw	C or later
MIL-S-5626 (superseded by SAE-AMS 6382 and SAE-AMS 6349)	4140 Alloy Steel, Bars, Rods, and Forging Stock	C or later

	Material and Process Specifications	Document Number 146-067-00	Revision 0
		Date 06/10/16	Page 5 of 7
Document Approved By:	Title Engineering Manager	Name W. Lemmon	Date Approved 06/10/16

Specification	Description	Approved Revision
MIL-S-6758 (Superseded by SAE-AMS-S-6758)	Steel, Chrome-Molybdenum (4130) Bars And Reforging Stock (Aircraft Quality)	B or later
MIL-S-81733, MIL-PRF-81733	Sealing and Coating Compound	D or later
MIL-T-6736	Tubing, Chrome-Molybdenum 4130 Steel	C or later
MIL-W-83420 (Superseded by MIL-DTL-83420)	Wire Rope, Flexible, for Aircraft Control, General Specification for	M or later
MIL-W-87161 (Superseded by MIL-DTL-87161)	Wire Strand, Nonflexible for Aircraft Application	E or later
NEMA-WC27500	Standard for Aerospace and Industrial Electrical Cable.	2015 or later
SAE-AMS-QQ-A-200/8 [†]	6061-T6, 6061-T6511 Aluminum Alloy, Extruded Bar and Rod	A or later
SAE-AMS-QQ-A-200/11 [†]	7075-T7351 Aluminum Alloy, Extruded bar, rod, and shapes	A or later
SAE-AMS-QQ-A-225/8 [†]	6061-T6 Aluminum Alloy, Rolled Bar and Rod	B or later
SAE-AMS-QQ-A-225/9 [†]	7075-T7351 Aluminum, Rolled Bar and Rod	A or later
SAE-AMS-QQ-A-250/8 [†]	5052-H32 Aluminum Alloy, Sheet and Plate	C or later
SAE-AMS-QQ-A-250/11 [†]	6061-T6, Aluminum Alloy, Sheet and Plate	A or later
SAE-AMS-QQ A-250/12 [†]	7075-T7351 Aluminum Alloy, Sheet and Plate	A or later
SAE-AMS-QQ A-250/24 [†]	7075-T7351 Aluminum Alloy, Sheet and Plate	B or later
SAE-AMS 4016 [†]	5052-H32 Aluminum Alloy, Sheet and Plate	M or later
SAE-AMS 4025 [†]	6061-T651 Aluminum Alloy, Sheet and Plate	M or later
SAE-AMS 4026 [†]	6061-T6 Aluminum Alloy, sheet and plate	M or later
SAE-AMS 4027 [†]	6061-T6 Aluminum Alloy, sheet and plate	M or later
SAE-AMS 4044 [†]	7075-T7351 Aluminum (bare sheet and plate)	M or later
SAE-AMS 4049 [†]	7075-T7351 Aluminum (bar and rod, rolled or cold finished)	L or later

	Material and Process Specifications	Document Number 146-067-00	Revision 0
		Date 06/10/16	Page 6 of 7
Document Approved By:	Title Engineering Manager	Name W. Lemmon	Date Approved 06/10/16

Specification	Description	Approved Revision
SAE-AMS 4078 [†]	7075-T73, 7075-T7351 Aluminum (bare sheet and plate)	J or later
SAE-AMS 4122 [†]	7075-T6, 7075-T651 Aluminum (bar and rod, rolled or cold finished)	L or later
SAE-AMS 4124 [†]	7075-T73, 7075-T7351 Aluminum (bar and rod, rolled or cold finished)	E or later
SAE-AMS 4173 [†]	6061-T6511 Aluminum Alloy, Extrusions	F or later
SAE-AMS 4597 [†]	Copper-Nickel-Tin Alloy, Bars and Rods	A or later
SAE-AMS 4640 [†]	Aluminum Nickel Bronze (bars, rods, shapes, tubes, forging) drawn and stress relieved of temper annealed	H or later
SAE-AMS 4880 [†]	Aluminum Nickel Bronze (bars, rods, shapes, tubes, forging) drawn and stress relieved of temper annealed	D or later
SAE-AMS 5518 [†]	Steel, Corrosion Resistant, Sheet and Strip 18Cr - 8Ni Cold Rolled	L or later
SAE-AMS 5629 [†]	PH13-8Mo Stainless Steel	G or later
SAE-AMS 5643 [†]	17-4 PH Stainless Steel (bar, forging, ring, and extrusion)	T or later
SAE-AMS 5659 [†]	15-5 PH Stainless Steel (bar, forging, ring, and extrusion)	P or later
SAE-AMS 5862 [†]	15-5 PH Stainless Steel (sheet, strip, and plate)	K or later
SAE-AMS 6345 [†]	4130 Alloy Steel	C or later
SAE-AMS 6346 [†]	4130 Alloy Steel	B or later
SAE-AMS 6348 [†]	4130 Alloy Steel	D or later
SAE-AMS 6349 [†]	4140 Alloy Steel	D or later
SAE-AMS 6350 [†]	4130 Alloy Steel	M or later
SAE-AMS 6351 [†]	4130 Alloy Steel	J or later
SAE-AMS 6370 [†]	4130 Alloy Steel	N or later
SAE-AMS 6382 [†]	4140 Alloy Steel	N or later
SAE-AMS 6414 [†]	4340 Alloy Steel, Consumable Electrode Melted (bar, forging, and tubing)	L or later
SAE-AMS 6415 [†]	4340 Steel, Air Melted (bar, forging, and tubing)	T or later

	Material and Process Specifications	Document Number 146-067-00	Revision 0
		Date 06/10/16	Page 7 of 7
Document Approved By:	Title Engineering Manager	Name W. Lemmon	Date Approved 06/10/16

Specification	Description	Approved Revision
SAE-AMS 6528 [†]	4130 Alloy Steel	C or later
SAE-J230	Stainless Steel, SAE 30302, Spring Wire and Springs	1994 or later

[†] These specifications are often denoted without the SAE prefix, especially on engineering drawings (for example, AMS 5862 is considered an equivalent reference to SAE-AMS 5862).