

## GA-ASI Special Process List

Nadcap Commodity	Nadcap Checklist	Special Process Category	Spec Number	Code	Reference European Specs	Spec Name	Comments
Chemical Processing (Checklists: AC7108 + AC7108/4 +)	AC7108/8	Anodize	MIL-PRF-8625	1	BSI BS EN 2284 - Sulfuric Anodize BSI BS ISO 10074 - Hard Anodize	Anodic Coatings for Aluminum and Aluminum Alloys - Sulfuric Anodize	
			AMS2488	1		Anodic Treatment - Titanium and Titanium Alloys Solutin pH 13 or Higher	
			AMS2482	1		Hard Anodic Coating on Aluminum Alloys Polytetrafluoroethylene (PTFE) Impregnated	
			MIL-A-63576	1		Aluminum Oxide Coatings, Lubricative, for Aluminum and Aluminum Alloys	
	AC7108/3	Metal Bond Surface Prep	ASTM D3933	2		Standard Guide for Preparation of Aluminum Surfaces for Structural Adhesive Bonding (Phosphoric Acid Anodizing)	
	AC7108/11	Conversion Coating	MIL-DTL-5541	1		Chemical Conversion Coatings on Aluminum and Aluminum Alloys	
			MIL-DTL-13924	1		Coating, Oxide, Black, for Ferrous Metals	
			TT-C-490	1		Chemical Conversion Coatings and Pretreatments for Metallic Substrates	
	AC7108/12	Chemical Cleaning Passivation	ASTM B600	1		Standard Guide for Descaling and Cleaning Titanium and Titanium Alloy Surfaces	
			ASTM A967	1		Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts	
			ASTM A380	1		Standard Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment and Systems	GE Engine Tube Drawings
			AMS2700	1		Passivation of Corrosion Resistant Steels	
			ASTM B912	1		Passivation of Stainless Steep Alloys through Electropolishing	
	AC7108/9	ElectroPlating	AMS2460	1		Plating, Chromium	
			AMS-QQ-C-320	1		Chromium Plating (Electrodeposited)	
			AMS2403	1		Plating, Nickel General Purpose	
			AMS-QQ-N-290	1		Nickel Plating (Electrodeposited)	
			AMS2418	1		Plating, Copper	
			ASTM B545	1		Standard Specification for Electrodeposited Coatings of Tin	
			MIL-T-10727	1		Tin Plating: Electrodeposited or Hot-Dipped, for Ferrous and Nonferrous Metals	
			MIL-G-45204	1		Gold Plating, Electrodeposited	
			ASTM B700	1		Standard Specification for Electrodeposited Coatings of Silver	
			AMS-QQ-S-365	1		Silver Plating, Electrodeposited, General Requirements	
			ASTM B633	1		Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel	
			AMS-QQ-Z-325	1		Zinc Coating, Electrodeposited	
			ASTM F1941	1		Standard Specification for Electrodeposited Coatings on Mechanical Fasteners	
			AMS2417	1		Plating, Zinc-Nickel Alloy	
			AMS2461	1		Plating, Zinc-Nickel Alloy (12 to 16% Ni)	
			AMS-QQ-P-416	1		Plating, Cadmium (Electrodeposited)	
			AMS-P-81728	1		Plating, Tin Lead (Electrodeposited)	
			MIL-P-81728	1		Plating, Tin Lead (Electrodeposited)	
	AC7108/10	Electroless Plating	AMS2404	1		Plating, Electroless Nickel	
			AMS-C-26074	1		Electroless Nickel Coatings	
	AC7108/1	Paint	MIL-DTL-18264	1		Finishes, Organic, Weapons Systems, Application and Control of	
			MIL-PRF-22750	1		Coating: Epoxy, High-Solids	
			MIL-PRF-23377	1		Primer Coatings: Epoxy, High-Solids	
			MIL-PRF-85285	1		Top Coat, Aircraft and Support Equipment	
			MIL-PRF-85582	1		Performance Specification: Primer Coatings: Epoxy, Waterborne	
			UBC90992	2		Fairing, Primer and Topcoat Application	
			UBC90990	2		Application of Polyurethane Rain Erosion Coating	
			GPS10002	2		Application, Primer, Epoxy	
			GPS10003	2		Application, Polyurethane Coating	
			MIL-PRF-46010	1		Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting (S-1738)	
	AC7108/7	IVD Aluminum	MIL-DTL-83488	1		Coating, Aluminum, High Purity (Ion Vapor Deposition (IVD))	
			AMS2427	1		Aluminum Coating Ion Vapor Deposition	
Heat Treatment (Checklists: AC7102 + AC7102/5 + AC7102/8 +)	AC7102/2	Heat Treat	AMS2770	1		Heat Treatment of Wrought Aluminum Alloy Parts	
			AMS2771	1		Heat Treatment of Aluminum Alloy Castings	
			AMS2774	1		Heat Treatment of Nickel Alloy and Cobalt Alloy Parts	
			AMS2759	1		Heat Treatment Precipitation-Hardening Corrosion-Resistant, Maraging, and Secondary Hardening Steel Parts	
			AMS-H-6875	1		Heat Treatment of Steel Raw Materials	
			AMS2769	1		Heat Treatment of Parts in a Vacuum	
			AMS2801	1		Heat Treatment of Titanium Alloy Parts	
			AMS-H-81200	1		Heat Treatment of Titanium and Titanium Alloys	
			AMS4928	1		Titanium Alloy Bars, Wire, Forgings, Rings, and Drawn Shapes 6Al-4V Annealed	
			AMS7004	1		Titanium Alloy Preforms from Plasma Arc Directed Energy Deposition Additive Manufacturing on Substrate, Ti-6Al-4V, Stress Relieved	
			GPS70001	2		Material Requirements, Ti-6Al-4V ELI LPBF	

## GA-ASI Special Process List

			GPS70003	2	Material Requirements, Aluminum F357 LPBF	
			EPA90702	2	Annealing of Carburized 655M13 (EN36B), BS S 156 & BS 55 82	
			EPA90703	2	Harden/Temper of Carburized & Annealed 655M13, S 156 & 55 82	
			EPA90704	2	Hardened & Ground Gears Less than 12DP Nonprotuberance Root	
			EPA90705	2	Hardening of M50 VIM-VAR Bearing Steel for Post-HT Grinding	
			EPA90706	2	Age Hardening Heat Treatment of Maraging 250 and 300 Steels	
			EPA90707	2	Solution Treatment of Maraging 300 Steel	
			EPA90709	2	Harden & Temper Part-Machined Crankshafts (50-100mm) 34-38HRC	
			EPA90711	2	Heat Treat of CA007 to the T6 Condition (Sol & Age)	
			EPA90719	2	Age Heat Treatment for Inconel 718	
			EPA90720	2	Harden & Temper Part-Machined Crankshafts (50-100mm) 38-42HRC	
			EPA90721	2	Heat Treat Ni-Si-Cr-No-V Stl (VAR to BS S155 & Equiv Specs	
	AC7102/4	Nitriding	AMS2759/8	1	Ion Nitriding	
			AMS2759/10	1	Automated Gaseous Nitriding Controlled by Nitriding Potential	
			AMS2759/12	1	Automated Gaseous Nitrocarburizing Controlled by Potentials	
			EPA90725	2	Plasma Ion Nitriding of Steel Alloys	
			EPA90728	2	Steel Bars, Forging, Nitriding Steel 3Cr-1Mo-0.2V-0.4C	
	AC7102/6	HIP	EPA90708	2	Low Nitrogen Potential Pulse Plasma Nitriding of S132 Steel	
			GPS70001	2	Material Requirements, Ti-6Al-4V ELI LPBF	
			GPS70003	2	Material Requirements, Aluminum F357 LPBF	
			AMS4992	2	Casting, Structural Investment, Titanium Alloy 6Al-4V Hot Isostatically Pressed	
			EPA90713	2	Hot Isostatic Pressing (HIP'ING) of Castings	
	AC7102/1	Brace	AWS C3.7	2	Specification for Aluminum Brazing	
	AC7102/3	Surface Conditioning	AMS-S-6090	1	Carburizing and Heat Treatment of Carburizing Grade Steel Parts	
			EPA90700	2	Carburizing 655M13 & 835M15 Steel Components	
			EPA90701	2	Carburizing BS S 156 & BS 55 82 Steel Alloy Components	
			AMS 2759/7	1	Carburizing and Heat Treatment of Carburizing Grade Steel Parts	
Composites	AC7118	Core Processing	UBC90983	2*	Fab, Core Processing	
			UBC90982	2*	Fab, Cycom 5320, Sandwich	
		Composites Mfg	UBC90978	2*	Wet Lam Cu Doubler, Cond, Perm	
			UBC90980	2*	Fab, Cycom 5320, Laminare	
			UBC90982	2*	Fab, Cycom 5320, Sandwich	
			UBC90985	2*	Fabrication, SQRTM, 5320-1	
			UBC90986	2*	Tencate EX1522/4581 Honeycomb Radome Structure	
			UBC90988	2*	Bladder Fabrication, Cycom 5320	
			UBC90989	2*	Fabrication, Forward and AFT Stub Spar	
			GPS60001	2*	Multi-Band Radome	
			GPS60002	2*	Resin Transfer Molding (RTM), Lamination	
			GPS62003	2*	Resin Transfer Molding (RTM), Cure/Injection	
		Adhesive Bonding	UBC90666	2*	PSA & PSA Components	
			UBC90962	2*	Liquid Shim & Adhesive Bonding	
		Composites Equipment Qual	UBC90973	2*	Autoclave and Oven Certification	
			UBC90974	2*	Cure Tool Validation	
Non-Conventional Machining (Checklists: AC7116 +)	AC7116/3	EDM	UBC90971	2	Process Verification, Non-Conventional Machining (NCM)	
			MPS7124	2	Procedure for Wire EDM: Electrical Discharge Machining	
Fabrication (Checklists: AM - AC7131 +)	N/A	SuperPlastic Forming	UBC90975	3	Super Plastic Forming, Titanium	
	AC7131/1	Additive Manufacturing	GPS70002/GPS70001/GPS70003	2*	LPBF AM, Metallic	Nadcap checklist is only for <b>Laser and Electron Beam Metallic Powder Bed</b> Additive Manufacturing ** AC7131/1 has replaced AC7110/14
			AMS7002	2	Process Requirements for Production of Metal Powder Feedstock for Use in Additive Manufacturing of Aerospace Parts	
			AMS7003	2	Laser Powder Bed Fusion Process	
	AC7131/2		AMS7004	2	Titanium Alloy Preforms from Plasma Arc Directed Energy Deposition Additive Manufacturing on Substrate, Ti-6Al-4V, Stress Relieved	
			AMS7005	2	Wire Fed Plasma Arc Directed Energy Deposition Additive Manufacturing Process	
			GPS70007	2	Plasma Arc Directed Energy Disposition (PA-DED) Machine Qualification for Ti6Al-4V	
	N/A		UBC90970	3	3D Printed Components, Fabrication (FDM)	
	N/A		GPS80000/GPS80001/GPS80002	3	LPBF AM, Plastic (SLS)	
Welding (Checklists: AC7110 + AC7110/12 + AC7110/13 +)	AC7110/5	Fusion Weld	AWS D17.1	2*	Specification for Fusion Welding for Aerospace Applications	TIG, MIG, EB, LBW, Plasma, etc.
			AWS D1.2	2*	Structural Welding Code - Aluminum	
			MPS7116	2*	Welding Procedures	
	AC7110/3	Electron Beam Weld	AWS D17.1	2*	Specification for Fusion Welding for Aerospace Applications	
			AWS C7.1	2*	Recommended Practices for Electron Beam Welding and Allied Processes	
			AMS2680	2*	Electron-Beam Welding for Fatigue Critical Applications	
	AC7110/6	Laser Beam Weld	AWS D17.1	2*	Specification for Fusion Welding for Aerospace Applications	
	AC7110/4	Resistance Weld	AWS D17.2	2*	Specification for Resistance Welding for Aerospace Applications	
Non-Destructive Testing	AC7110/1	Brace	AWS C3.4	2	Specification for Torch Brazing	
	AC7114/3	Ultrasonic	GPS90001	2*	Ultrasonic Inspection	

## GA-ASI Special Process List

(Checklists: AC7114 + )			UBC90999	2*		Inspect & Accept, Composite	
			AMS2154	2*		Inspection, Ultrasonic, Wrought Metals, Process for	
			AMS2630	2*		Inspection, Ultrasonic Product Over 0.5 inch thick	
			AMS2631	2*		Ultrasonic Inspection Titanium and Titanium Alloy Bar, Billet, and Plate	
	AC7114/1	Penetrant	ASTM E1417	2*		Standard Practice for Liquid Penetrant Testing	
			UHK31482	2*		Cast Titanium Alloy MLG Strut NDT Criteria for MQ-9 Reaper	
	Film: AC7114/4 Digital: AC7114/6 (DDA) AC7114/8 (CR)	Radiography	ASTM E1742	2*		Standard Practice for Radiographic Examination	/4 is for film radiography only /6 & /8 are for digital radiography (replaces /10)
			ASTM E1570	2*		Standard Practice for Fan Beam Computed Tomographic (CT) Examination	
			ASTM E1441	2*		Standard Guide for Computed Tomography (CT)	
			ASTM E3375	2*		Standard Practice for Cone Beam Computed Tomographic (CT) Examination	
			UBC90999	2*		Inspect & Accept, Composite	
			UHK31482	2*		Cast Titanium Alloy MLG Strut NDT Criteria for MQ-9 Reaper	
			EPA90902	2*		Qualification Requirements for Castings using CT Scanning	
	AC7114/2	Magnetic Particle	ASTM E1444	2*	BSI BS EN ISO 9934-1 / -2 / -3	Standard Practice for Magnetic Particle Testing for Aerospace	
			EPA90900	2*		Magnetic Particle Inspection	
	AC7114/5	Eddy Current	ASTM E215	2*		Standard Practice for Standardizing Equipment and Electromagnetic Examination of Seamless Aluminum-Alloy Tube	
			ASTM E426	2*		Standard Practice for Electromagnetic (Eddy Current) Examination of Seamless and Welded Tubular Products, Titanium, Austenitic Stainless Steel and Similar Alloys	
			ASTM E571	2*		Standard Practice for Electromagnetic (Eddy Current) Examination of Nickel and Nickel Alloy Tubular Products	
	N/A	Infrared	GPS90002	3		Infrared Thermography	
	N/A		UBC90999	3		Inspect & Accept, Composite	
	N/A		ASTM E2582	3		Standard Practice for Infrared Flash Thermography of Composite Panels and Repair Patches used in Aerospace Applications	
	N/A	Shearography	UBC90999	3		Inspect & Accept, Composite	
	N/A		ASTM E2581	3		Standard Practice for Shearography of Polymer Matrix Composites, Sandwich Core Materials and Filament-Wound Pressure Vessels in Aerospace Applications	
Surface Enhancement (Checklist: AC7117 + )	AC7117 /1 - Computer Control /2 - Automated Peen /3 - Peen Forming /4 - Flapper Peen /5 - Manual Peen	Shot Peen	AMS2430	2		Shot Peening	There will be a /x checklist depending on the type of process/equipment each supplier has
Coating (Checklists: AC7109 + )	AC7109/2	Vapor Deposited Coating	AMS2444A	2		Coating, Titanium Nitride Physical Vapor Deposition	
Electrical (Checklists: AC7119, AC7120, AC7121 + )		Electrical	IPC J-STD-001	***		Requirements for Soldered Electrical and Electronic Assemblies	
			IPC-A-610	***		Acceptability of Electronic Assemblies	
	AC7121, /1		IPC/WHMA-A-620	***		Requirements and Acceptance for Cable and Wire Harness Assemblies	
	AC7119/2		IPC 6012	***		Qualification and Performance Specification for Rigid Printed Boards	
	AC7119		IPC-A-600 CLASS 3	***		Acceptability of Printed Boards	
	AC7120, /2, /6		IPC SM-840	***		Qualification and Performance Specification of Permanent Solder Mask and Flexible Cover Materials	
			IPC 4553	***		Specification for Immersion Silver Plating for Printed Boards	
			IPC 4552	***		Specification for Electroless Nickel/Immersion Gold (ENIG) Plating for Printed Boards	
			IPC 6013 TYPE 4, CLASS 3	***		Qualification and Performance Specification for Flexible/Rigid-Flexible Printed Boards	
			IPC CC-830, TYPE AR	***		Qualification and Performance of Electrical Insulating Compound for Printed Wiring Assemblies	
		Electrical Bonding	UBC90968	***		Electrical Bonding	

**Code Legend:**

- 1 Nadcap Accreditation Required - Both slash sheet (/x) and processing specification need to be listed on suppliers' approval scope
- 2 Nadcap Accreditation Required - Only slash sheet (/x) is required to be listed on suppliers' approval scope
- 2\* GA-ASI & Nadcap Approval Required - Only slash sheet (/x) is required to be listed on suppliers' approval scope
- 3 GA-ASI Approval Only Required - Process not audited by Nadcap
- \*\*\* Not required at this time