

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
A-A-56032	D	Ink, Marking, Epoxy Base
A-A-59316	2-3-99 N2	Abrasive Materials for Blasting
Aluminum Sand and Permanent Mold Casting, Standards for	15th ED 2008	Standards for Aluminum Sand and Permanent Mold Casting
Aluminum Assoc. Chemical Composition Limits for Aluminum Hardeners	6-1-1994	Aluminum Assoc. Chemical Composition Limits for Aluminum Hardeners
Designation & Chem. Comp. Limits for Alum. Alloys (Pink Sheets)	Feb. 2008	Designation & Chemical Composition Limits for Aluminum Alloys in the Form of Castings & Ingot (Pink Sheets)
AMS2175	A	Castings, classification and inspection of
AMS2248	H	Chemical Check Analysis Limits (steel)
AMS2350	AZ	Standards and test methods
AMS2360	D	Room temperature tensile properties of castings
AMS2610	03 (RA 2013)	Pressure Testing, Gaseous Media Pressure as Specified
AMS2615	F	Pressure Testing, Hydraulic
AMS2635	C	Radiographic Inspection
AMS2644	F	Inspection Material, Penetrant
AMS2645	H	Fluorescent penetrant inspection
AMS2646	C	Contrast penetrant inspection
AMS2685	F (STBL 2017)	Welding, tungsten arc, inert gas (GTAW method)
AMS2694	C	In-process Welding of Castings
AMS2700	F	Passivation of Corrosion Resistant Steels
AMS2750	E	Pyrometry
AMS2759	E	Heat treatment of steel parts- general requirements
AMS2759/1	E	Heat Treatment of Carbon and Low-Alloy Steel Parts Minimum Tensile Strength Below 220 ksi (1517 Mpa)
AMS2759/3	F	Heat Treatment of Precipitation Hardening Corrosion Resistant and Maraging Steel Parts
AMS2759/4	C	Heat Treatment Austenitic Corrosion-Resistant Steel Parts
AMS2759/5	D	Heat Treatment Martensitic Corrosion-Resistant Steel Parts

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
AMS2771	F	Heat Treatment of Aluminum Alloy Castings
AMS2804	D (STBL2017)	Identification Castings
AMS2815	U	Identification - Welding Wire, Line Code System
AMS2816	W	Identification - Welding Wire, Tab Marking Method
AMS4190	K	Aluminum Alloy, Welding Wire 5.2Si (4043)
AMS4191	J (RA 2015)	Aluminum Alloy, Welding Wire 6.3Cu - 0.30Mn - 0.18Zr - 0.15Ti - 0.10V (2319)
AMS4210	K	Aluminum Alloy, Castings 5.0Si - 1.2Cu - 0.50Mg (355.0-T51) Precipitation Heat Treated
AMS4212	L	Aluminum Alloy Castings 5.0Si - 1.2Cu - 0.50Mg (355.0-T6) Solution and Precipitation Heat Treated (Composition similar to UNS A03550)
AMS4214	J	Castings, Aluminum Alloy Sand 5.0Si - 1.2Cu - 0.50Mg (355.0-T71) Solution Heat Treated and Overaged
AMS4215	H	Aluminum Alloy , Castings 5.0Si - 1.2Cu - 0.50Mg (C355-T6) Solution and Precipitation Heat Treated
AMS4217	J	Aluminum Alloy Castings 7.0Si - 0.32Mg (356.0-T6) Solution and Precipitation Heat Treated
AMS4218	J (RA2015)	Aluminum Alloy Castings 7.0Si - 0.35Mg (A356.0-T6)(Formerly T6P Temper) Solution and Precipitation Heat Treated
AMS4219	F (RA2015)	Aluminum Alloy Castings 7.0Si - 0.55 Mg - 0.12Ti - 0.06Be (A357.0 T6) Solution and Precipitation Heat Treated
AMS4225	E	Aluminum Alloy, Heat-Resistant, Castings 5.0Cu - 1.5Ni - 0.25Mn - 0.25Sb - 0.25Co - 0.20Ti - 0.20Zr (203.0-T6) Solution Heat Treated and Precipitation Heat Treated
AMS4226	B (STBL2017)	Aluminum Alloy Castings, High Strength 5.0Cu - 0.35Mn - 0.18Zr - 0.10V (224.0) Solution and Precipitation Heat Treated (Overaged)
AMS4229	G	Aluminum Alloy Castings, High Strength 4.5 Cu- .70 Ag-.30 Mn-.25 Mg-.25 Ti (A201.0-T7) Solution Heat Treated and Overaged

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
AMS4235	C	Aluminum Alloy Castings, 4.6Cu - 0.35Mn - 0.25Mg - 0.22Ti (A206.0-T71) Solution and Precipitation Heat Treated
AMS4236	D	Aluminum Alloy Castings 4.6Cu - 0.35Mn - 0.25Mg - 0.22Ti (A206.0-T4) Solution Heat Treated and Naturally Aged
AMS4237	B	Aluminum Alloy Castings, Sand 4.6Cu - 0.35Mn - 0.25Mg - 0.22Ti (206.0-T71) Solution Heat Treated and Naturally Aged
AMS4241	E	Aluminum Alloy Castings 7.0Si - 0.58Mg - 0.15Ti - 0.06Be (D357.0-T6) Solution and Precipitation Heat Treated Dendrite Arm Spacing (DAS) Controlled
AMS4245	F	Aluminum Alloy, Welding Wire 5.0Si-1.2Cu-0.5Mg (C355.0)
AMS4246	E	Aluminum Alloy, Welding Wire 7.0Si - 0.52 Mg (357)
AMS4249	B	Aluminum Alloy Castings 7.0Si - 0.58Mg - 0.15Ti - 0.06Be (D357.0-T6) Solution and Precipitation Heat Treated (Requiring Fatigue and Fracture Toughness Testing)
AMS4260	G (RA 2014)	Aluminum Alloy, Investment Castings 7.0Si - 0.32Mg (356-T6) Solution and Precipitation Heat Treated
AMS4261	F	Aluminum Alloy Casting, Investment 7.0Si - 0.32Mg (356-T51) Precipitation Heat Treated
AMS4284	K	Aluminum Alloy Castings, Permanent Mold 7.0Si - 0.30Mg (356-T6) Solution and Precipitation Heat Treated
AMS4286	F (RA2015)	Aluminum Alloy Castings, Permanent Mold 7.0Si - 0.32Mg (356-T51) As-Cast then Precipitation Heat Treated
AMS4288	11-01 (RA2016)	Aluminum Alloy Castings 7.0Si - 0.58Mg - 0.15Ti (E357.0-T6) Solution and Precipitation Heat Treated
AMS4289	11-01 (RA2013)	Aluminum Alloy Castings, 7.0Si - 0.55Mg - 0.12Ti (F357.0-T6) Solution and Precipitation Heat Treated
AMS4511	10-1-89	Copper-Beryllium Alloy Castings-97Cu - 2.18Be - 0.52 (Co+Ni) - 0.28Si Solution and Precipitation Heat Treated (TF00)
AMS4770	K	Silver Alloy Brazing Filler Metal 50Ag - 18Cd - 16.5Zn - 15.5Cu 1160-1175F Solidus-Liquidus Range

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
AMS4772	J	Silver Alloy Brazing Filler Metal 54Ag - 40Cu - 5.0Zn - 1.0Ni 1325-1575F Solidus-Liquidus Range
AMS4890	D (STBL2018)	Copper-Beryllium Alloy Castings- 97Cu - 2.1Be - 0.52Co - 0.28Si Solution Heat Treated (TB00)
AMS5330	E W/STBL	Steel Castings, Investment 0.80Cr - 1.8Ni - 0.35Mo (0.38 - 0.46C) (SAE 4340 Modified) Annealed
AMS5334	H	Steel, Investment Castings- 0.50Cr - 0.55Ni - 0.20Mo (0.25-0.35C) (SAE 8630 Mod) Normalized and Tempered
AMS5336	H	Steel, Investment Castings- 0.95Cr - 0.20Mo (0.25 - 0.35C) (SAE 4130 Mod) Normalized or Normalized and Tempered
AMS5339	F	Steel, Maraging, Investment Castings 17Ni - 10Co - 4.6Mo - 0.30Ti - 0.06Al Vacuum Melted Homogenized, Overaged, and Solution Heat Treated
AMS5341	C	Steel Castings, Investment, Corrosion Resistant 19.5Cr - 10.5Ni - 0.25S (Type 303) Solution Heat Treated
AMS5342	E (RA2014)	Steel Corrosion-Resistant, Investment Castings 16Cr - 4.1Ni - 0.28Cb (Nb) - 3.2Cu Homogenization, Solution, and Precipitation Heat Treated (H1100) 130 ksi (896 MPa) Tensile Strength (17-4)
AMS5343	E (RA2014)	Steel, Corrosion-Resistant, Investment Castings 16Cr - 4.1Ni - 0.28Cb (Nb) - 3.2Cu Homogenization, Solution and Precipitation Heat Treated (H1000) 150 ksi (1034 MPa) Tensile Strength (17-4)
AMS5344	F (RA2013)	Steel, Corrosion-Resistant, Investment Castings 16Cr - 4.1Ni - 0.28Cb - 3.2Cu Homogenization, Solution, and Precipitation Heat Treated (H900) 180 ksi (1241 MPa) Tensile Strength (17-4)
AMS5346	C (RA2014)	Steel, Corrosion Resistant, Investment Castings 15Cr - 4.6Ni - 0.22Cb (Nb) - 2.8Cu Solution and Precipitation Heat Treated (H925) 180 ksi (1241 MPa) Tensile Strength (15-5)

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
AMS5347	B (RA2014)	Steel, Corrosion Resistant, Investment Castings 15Cr - 4.6Ni - 0.22Cb (Nb) - 2.8Cu Solution and Precipitation Heat Treated (H1000) 150 ksi (1034 MPa) Tensile Strength (15-5)
AMS5349	E	Steel, Corrosion Resistant, Investment Castings, 13Cr Free Machining; Hardened and Tempered
AMS5350	K	Steel, Corrosion and Moderate Heat Resistant, Investment Castings 12.5Cr (SAE 51410) Hardened and Tempered
AMS5352	F	Steel, Corrosion Resistant, Investment Castings, 17Cr - 0.55Mo (0.95 - 120C) Annealed
AMS5354	F	Steel, Corrosion and Heat Resistant Investment Castings, 13Cr - 2.0Ni - 3.0W Hardened and Tempered to 32-38 HCR
AMS5355	J	Steel, Corrosion Resistant, Investment Castings 16Cr - 4.1Ni - 0.28Cb - 3.2Cu Homogenization and Solution Heat Treated or Homogenization, Solution, Precipitation Heat Treated
AMS5357	C	Steel, Corrosion Resistant, Investment Castings 15Cr - 4.6Ni - 0.22Cb - 2.8Cu Solution Heat Treated, Precipitation Hardenable
AMS5358	C	Steel Castings, Investment, Corrosion Resistant 18Cr - 9Ni Solution Heat Treated
AMS5362	L	Steel, Corrosion and Heat Resistant, Investment Castings 19Cr - 12Ni - 1.0Cb (Nb) Solution Heat Treated
AMS5364	C	Steel, Corrosion, and Heat-Resistant, Investment Castings 19.5Cr - 10.5Ni - 0.65Cb (CF-8C) Solution Heat Treated
AMS5366	E (RA2012)	Steel, Corrosion and Heat-Resistant, Investment Castings, 25Cr - 20Ni (CK-20) As-Cast
AMS5383	E	Nickel Alloy, Corrosion and Heat-Resistant, Investment Castings 52.5Ni - 19Cr - 3.0Mo - 5.1Cb(Nb) - 0.90Ti - 0.60Al - 18Fe Vacuum Melted Homogenization and Solution Heat Treated
AMS5604	B	Steel, Sheet ,Strip, and Plate Corrosion Resistant 16.5Cr - 4.0Ni - 4.0Cu - 0.30(Cb+Ta) Solution Heat Treated

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
AMS5629	D	Steel, Corrosion Resistant, Bars, Forgings, Rings, and Extrusions 13Cr - 8.0Ni - 2.2Mo - 1.1Al Vacuum Induction Plus Consumable Electrode Melted Solution Heat Treated, Precipitation Hardenable
AMS5659	G	Steel Bars, Wire, Forgings, Rings, and Extrusions, Corrosion Resistant 15Cr - 4.5Ni - 0.30 (Cb+Ta) - 3.5Cu Consumable Electrode Melted Solution Heat Treated, Precipitation Hardenable
AMS5680	J	Steel, Corrosion and Heat-Resistant, Welding Wire 18.5Cr - 11Ni - 0.40Cb (Nb) (SAE 30347)
AMS5803	F	Steel, Corrosion and Heat-Resistant, Welding Wire 16.4Cr - 4.8Ni - 0.22Cb (Nb) - 3.6Cu Consumable Electrode or Vacuum Induction Melted
AMS5825	G	Steel, Corrosion-Resistant Welding Wire 16.4Cr - 4.8Ni - 0.22Cb (Nb) -3.6Cu
AMS7721	7-1-57	Lead Alloy Sheet and Extrusions 6.5Sb - 0.5Sn
AMS-A-21180	C	Aluminum-Alloy Castings, High Strength
AMS-H-6088C	7-1997	Heat Treatment of Aluminum Alloys
AMS-H-6875	B	Heat Treatment of Steel Raw Materials
AMS-QQ-P-35	A w/cncl 2-05	Passivation Treatments for Corrosion-Resistant Steel
AMS-S-8802	D	Sealing Compound, Temperature Resistant, Integral Fuel Tanks and Fuel Cell Cavities, High Adhesion
AMS-S-13165A	11-1997 can 12-2007	Shot Peening of Metal Parts
AMS-STD-1595	3-1998 Can 9-2002	Qualification of Aircraft, Missile and Aerospace Fusion Welders
AMS-STD-2219	5-1999 Canc 9-2002	Fusion Welding for Aerospace Applications
ANSI/ASQ Z1.4	2003 (R2013)	Sampling Procedures & Tables for Inspection Attributes
ANSI/ISO/ASQC A8402	1994	Quality Management & Quality Assurance Vocabulary
ANSI/NCSL Z540.1	1994	Calibration Laboratories and Measuring and Test Equipment-General Requirements
ANSI/NCSL Z540.3	2006 (R2013)	Requirements for the Calibration of Measuring and Test Equipment
ARP1962	A	Training & Approval of Heat-Treating Personnel

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
ARP4992	B	Periodic Test for Processing Solutions
ARP9013	A (CAN2018)	Statistical Product Acceptance Requirements
ARP9013/1	A (CAN2018)	Statistical Product Acceptance Requirements (SPAR) Using Isolated Lot Sampling Methods
ARP9013/2	A (CAN2018)	Statistical Product Acceptance Requirements (SPAR) Using Attribute or Variable Lot Acceptance Sampling Plans
ARP9013/3	A (CAN2018)	Statistical Product Acceptance Requirements (SPAR) Using Process Control Methods
ARP9013/4	A (CAN2018)	Statistical Product Acceptance Requirements (SPAR) Using Continuous Sampling, Skip-Lot Sampling, or Methods for Special Cases
ARP9134	03/2004	Supply Chain Risk Management Guideline
ARP9162	05/2005	Aerospace Operator Self-Verification Programs
AS478	N	Identification Marking Methods
AS5202	A	Internal Straight Thread Design
AS6174	A	Counterfeit Material; Acquisition of Authentic and Conforming Material
AS6462	A	AS5553A, Fraudulent/ Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, & Disposition Verification Criteria
AS9015	09/2007	Supplier Self Verification Process Delegation Programs
AS9100	D	Quality Systems Aerospace Model for Quality Assurance in Design, Development, Production, Installation and Servicing
AS9101	E	Quality Management Systems Audit Requirements for Aviation, Space and Defense Organizations
AS9102	B	Aerospace First Article Inspection Requirement
AS9103	A	Variation Management of Key Characteristics
AS9117	3/2016	Delegated Product Release Verification
AS9131	B	Quality Management Systems - Nonconformance Documentation
AS9138	01-2018	Aerospace Series - Quality Management System Statistics Product Acceptance Requirements

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
AS9145	11-2016	Aerospace Series - Requirements for Advanced Product Quality Planning & Production Part Approval Process
AS9146	04-2017	Foreign Object Damage (FOD) Prevention Program - Requirements for Aviation, Space, and Defense Organizations
AS13000	5/2014	Problem Solving Requirements for Suppliers
AS13001	A	Delegated Product Release Verification Training Requirements
AS13003	02-2015	Measurement Systems Analysis Requirements for the Aero Engine Supply Chain
ASME B46.1	2009 (8-20-10)	Surface Texture (Surface Roughness, Waviness and Lay)
ASME BPVC-IX	2011a Addenda (7-1-11)	Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, & Welding and Brazing Operators
ASME Y14.100	17 (2013)	Engineering Drawing Practices
ASME Y14.24	2012 (issued 4/5/13)	Types and Applications of Engineering Drawings
ASME Y14.38	2007 (RA 2013)	Abbreviations and Acronyms for Use on Drawings and Related Documents
ASME Y14.41	2003	Digital Product Definition Data Practices
ASME Y14.5	2009	Dimensioning and Tolerancing
ASME Y14.8	2009	Castings, Forgings, and Molded Parts
ASTM A148/148M	15a	Standard Specification for Steel Castings, High strength, for Structural Purposes
ASTM A27/A27M	17	Standard Specification for Steel Casting, Carbon, For General Application
ASTM A216/A216M	16	Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service
ASTM A262	13	Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels
ASTM A296	1980	Specification for Corrosion Resistant Iron-Chromium & Iron-Chromium Nickel & Nickel-B Alloy Castings
ASTM A351/A351M	18	Standard Specification for Casting, Austenitic, for Pressure-Containing Parts
ASTM A370	17a	Standard Test Methods and Definitions for Mechanical testing of Steel Products

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
ASTM A488/A488M	17	Standard Practice for Steel Castings, Welding, Qualifications of Procedures and Personnel
ASTM A703/A703M	18	Standard Specification for Steel Castings, General Requirements for Pressure Containing Parts
ASTM A732/A732M	14	Standard Specification for Castings, Investment, Carbon and Low Alloy Steel for General Application, and Cobalt Alloy for High Strength at Elevated Temperatures
ASTM A743/A743M	13ae1	Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application
ASTM A747/A747M	16	Standard Specification for Steel Castings, Stainless, Precipitation Hardening
ASTM A751	14a	Standard Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products
ASTM A781/A781M	18b	Standard Specification for Castings, Steel and Alloy, Common Requirements for General Industrial Use
ASTM A802/A802M	95 (2010e1)	Standard Practice for Steel Castings, Surface Acceptance Standards, Visual Examination
ASTM A957/A957M	18	Standard Specification for Investment Castings, Steel & Alloy, Common Requirements, for General Industrial Use
ASTM A985/A985M	18a	Standard Specification for Steel Investment Castings, General Requirements, for Pressure-Containing Parts
ASTM A997	08 (2018)	Standard Practice for Investment Castings, Surface Acceptance Standards, Visual Examination
ASTM B26/B26M	18	Standard Specification for Aluminum-Alloy Sand Castings
ASTM B85/B85M	10	Standard Specification for Aluminum-Alloy Die Casting
ASTM B108/B108M	18	Standard Specification for Aluminum-Alloy Permanent Mold Castings
ASTM B179	18	Standard Specification for Aluminum Alloys in Ingot and Molten Forms for Castings from all Casting Processes
ASTM B557	15	Standard Test Methods of Tension Testing Wrought and Cast Aluminum and Magnesium Alloy Products

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
ASTM B597	1992 (1998)	Standard Practice for Heat Treating of Aluminum Alloys
ASTM B618/B618M	18	Standard Specification for Aluminum-Alloy Investment Castings
ASTM B660	08	Standard Practices for Packaging/Packing of Aluminum and Magnesium Products
ASTM B686/B686M	18	Standard Specification for Aluminum Alloy Castings, High Strength
ASTM B917/B917M	12	Standard Practice for Heat Treatment of Aluminum Alloy Castings from all Processes
ASTM B985	12 (2016)	Standard Practice for Sampling Aluminum Ingots, Billets, Castings and Finished or Semi-Finished Wrought Aluminum Products for Compositional Analysis
ASTM B998	17	Standard Guide for Hot Isostatic Pressing (HIP) of Aluminum Alloy Castings
ASTM D95	13e1	Standard Test Method for Water in Petroleum Products and Bituminous Materials by Distillation
ASTM D740	94 (2001)	Standard Specification for Methyl Ethyl Ketone
ASTM D3951	15	Standard Practice for Commercial Packaging
ASTM E3	11	Standard Guide for Preparation of Metallographic Specimens
ASTM E4	16	Standard Practices for Force Verification of Testing Machines
ASTM E6	15	Standard Terminology Relating to Methods of Mechanical Testing
ASTM E8/E8M	16a	Standard Test Methods for Tension Testing of Metallic Materials
ASTM E10	18	Standard Test Method for Brinell Hardness of Metallic Materials
ASTM E18	17e1	Standard Test Methods for Rockwell Hardness of Metallic Materials
ASTM E23	06	Standard Test Methods for Notched Bar Impact Testing of Metallic Materials
ASTM E29	13	Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
ASTM E34	11e1	Standard Test Methods for Chemical Analysis of Aluminum and Aluminum Base Alloys
ASTM E83	16	Standard Practice for Verification and Classification of Extensometer System

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
ASTM E94	04 (2010)	Standard Guide for Radiographic Examination
ASTM E110	14	Standard Test Method for Rockwell and Brinell Hardness of Metallic Materials by Portable Hardness Tester
ASTM E112	96e3	Standard Test Methods for Determining Average Grain Size
ASTM E139	11	Standard Test Method for Conducting Creep, Creep-Rupture, and Stress-Rupture Tests of Metallic Materials
ASTM E140	12be1	Standard Hardness Conversion Tables for Metals Relationship Among Brinell, Vickers, Rockwell, Superficial, Knoop, Scleroscope, and Leeb Hardness
ASTM E142	92	Standard Method for Controlling Quality of Radiographic Testing
ASTM E155	15	Standard Reference Radiographs for Inspection of Aluminum and Magnesium Castings
ASTM E165/E165M	12	Standard Practice for Liquid Penetrant Examination for General Industry
ASTM E192	15	Standard Reference Radiographs of Investment Steel Castings for Aerospace Applications
ASTM E220	13	Standard Test Method for Calibration of Thermocouples by Comparison Techniques
ASTM E227	90 (1996)	Standard Test Method for Optical Emission Spectrometric Analysis of Aluminum and Aluminum Alloys by the Point-to Plane Technique
ASTM E230/230M	17	Standard Specification and Temperature-Electromotive Force (emf) Tables for Standardized Thermocouples
ASTM E353	93 RA06	Standard Test Methods for Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys
ASTM E407	07 (RA 2015)e1	Standard Practice for Microetching Metals and Alloys
ASTM E415	17	Standard Test Method for Analysis of Carbon and Low-Alloy Steel by Spark Atomic Emission Spectrometry
ASTM E433	71RA03	Standard Reference Photographs for Liquid Penetrant Inspection

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
ASTM E515	95RA00	Standard Test Method for Leaks Using Bubble Emission Techniques
ASTM E562	05e1	Standard Test Method for Determining Volume Fraction by Systematic Manual Point Count
ASTM E608/E608M	06	Standard Specification for Mineral-Insulated, Metal-Sheathed Base Metal Thermocouples
ASTM E716	16	Standard Practices for Sampling and Sample Preparation of Aluminum and Aluminum Alloys for Determination of Chemical Composition by Spectrochemical Analysis
ASTM E746	18	Standard Practice for Determining Relative Image Quality Response of Industrial Radiographic Imaging Systems
ASTM E747	04 (R/A2010)	Standard Practice for Design, Manufacture and Material Grouping Classification of Wire Image Quality Indicators (IQI) Used for Radiology
ASTM E883	1999	Standard Guide for Reflected-Light Photomicrography
ASTM E930	99 (R/A 15)	Standard Test Methods for Estimating the Largest Grain Observed in a Metallographic Section (ALA Grain Size)
ASTM E999	10	Standard Guide for Controlling the Quality of Industrial Radiographic Film Processing
ASTM E1012	14	Standard Practice for Verification of Testing Frame and Specimen Alignment Under Tensile and Compressive Axial Force Application
ASTM E1019	00	Standard Test Methods for Determination of Carbon, Sulfur, Nitrogen and Oxygen in Steel and in Iron, Nickel and Cobalt Alloys
ASTM E1025	11	Standard Practice for Design, Manufacture, and Material Grouping Classification of Hole-Type Image Quality Indicators (IQI) Used for Radiology
ASTM E1079	10	Standard Practice for Calibration of Transmission Densitometers
ASTM E1086	14	Standard Test Method for Atomic Emission Vacuum Spectrometric Analysis of Stainless Steel by Point-to-Plane Excitation Technique

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
ASTM E1165	12	Standard Test Method for Measurement of Focal Spots of Industrial X-Ray Tubes by Pinhole Imaging
ASTM E1251	17a	Standard Test Method for Analysis of Aluminum and Aluminum Alloys by Spark Atomic Emission Spectrometry
ASTM E1254	13	Standard Guide for Storage of Radiographs and Unexposed Industrial Radiographic Films
ASTM E1255	09	Standard Practice for Radioscopy
ASTM E1282	11	Standard Guide for Specifying the Chemical Compositions and Selecting Sampling Practices and Quantitative Analysis Methods for Metals, Ores, and Related Materials
ASTM E1316	18a	Standard Terminology for Nondestructive Examinations
ASTM E1390	06	Standard Specification for Illuminators Used for Viewing Industrial Radiographs
ASTM E1411	09	Standard Practice for Qualification of Radioscopic Systems
ASTM E1417/E1417M	16	Standard Practice for Liquid Penetrant Testing
ASTM E1453	09	Standard Guide for Storage of Magnetic Tape Media that Contains Analog or Digital Radioscopic Data
ASTM E1734	09	Standard Practice for Radioscope Examination of Castings
ASTM E1742/E1742M	18	Standard Practice for Radiographic Examination
ASTM E1817	08	Standard Practice for Controlling Quality of Radiological Examination by Using Representative Quality Indicators (RQI's)
ASTM E2002	98 (RA 2009)	Standard Practice for Determining Total Image Unsharpness in Radiology
ASTM E2104	09	Standard Practice for Radiographic Examination of Advanced Aero and Turbine Materials and Components
ASTM E2339	15	Standard Practice for Digital Imaging and Communication in Nondestructive Evaluation (DICONDE)
ASTM E2422	11	Standard Digital Reference Images for Inspection of Aluminum Castings

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
ASTM E2445/E2445M	14	Standard Practice for Performance Evaluation and Long-Term Stability of Computed Radiography Systems
ASTM E2597	07e1	Standard Practice for Manufacturing Characterization of Digital Detector Arrays
ASTM E2660	11	Standard Digital Reference Images for Investment Steel Castings for Aerospace Applications
ASTM E2698	18e1	Standard Practice for Radiological Examination Using Digital Detector Arrays
ASTM E2699	13	Digital Imaging and Communication in Nondestructive Evaluation (DICONDE) for Digital Radiographic (DR) Test
ASTM E2737	10 (2018)	Standard Practice for Digital Detector Array Performance Evaluation and Long-Term Stability
AWS A2.4	7th ed, 2012	Standard Symbols for Welding, Brazing & Nondestructive Examination
AWS A3.0M/A3.0	12th ED, 2010	Standard Welding Terms & Definitions
AWS A5.18/A5.18M	2017	Specification for Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding
AWS A5.9/A5.9M	8th ED, 2012	Specification for Bare Stainless Steel Welding Electrodes and Rods
AWS A5.10/A5.10M	10th ED, 2012	Welding Consumables- Wire Electrodes, Wires and Rods for Welding of Aluminum and Aluminum-Alloys- Classification
AWS A5.12M/A5.12	7th ED, 2009	Specification for Tungsten and Oxide Dispersed Tungsten Electrodes for Arc Welding & Cutting
AWS B2.1/B2.1M	5th ED, 2009	Specification for Welding Procedure and Performance Qualification
AWS C5.5/C5.5M	2003	Recommended Practices for Gas Tungsten Arc Welding
AWS D17.1/D17.1M	7/28/17	Specification for Fusion Welding for Aerospace Applications
AWS QC1	2006	Standard for AWS Certification of Welding Inspectors
BB-H-1168	D, N1	Helium, Technical
BS EN 571-1	1997	Non-Destructive Testing - Penetrant Testing
BS EN 1371-1	2011	Founding - Liquid Penetrant Testing - Part 1: Sand, Gravity Die & Low Pressure Die Castings

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
BS EN 1371-2	1998	Founding - Liquid Penetrant Inspection - Part 2: Investment Castings
BS EN 1706	2010	Aluminum & Aluminum Alloys - Castings - Chemical Composition & Mechanical Properties
BS EN 12543-5	1999	Non-destructive testing - Characteristics of focal spots in Industrial X-Ray systems for use in Non-Destructive Testing
BS ISO 965-1	1998 (Coreg 7-2009)	ISO General Purpose Metric Screw Threads-Tolerances
BS EN ISO 6506-1	2nd ED, 12-15-05	Metallic Materials - Brinell Hardness Test - Part 1: Test Method
BS EN ISO 8062-3	2007 , Corrigendum Jan-09, 1-31-10	Geometrical Product Specifications (GPS) - Dimensional and Geometrical Tolerances for Molded parts - Part 3: General dimensional and geometrical tolerances and machining allowances for castings
BS EN ISO 9712	12, 6-30-12	Non-Destructive Testing - Qualification and Certification of NDT personnel
CGA G-11.1	2004 (RA2008)	Commodity Specification for Argon
DOD-D-1000	B, N1 7-1-90	Drawings, Engineering & Associated Lists
DOD-STD-2168	CN1, 3-20-95	Defense System Software Quality Program
FED-STD-595	C, CN1, 7-31-08	Colors used in Government Procurement
GGG-G-15	C A1 8-14-76, N1, 7-13-99	Gage Blocks & Accessories (Inch & Metric)
GGG-P-463	C, A1 6-15-77	Plate, Surface, (Granite) (Inch & Metric)
IC Alloy Chemistry Index Book	Ninth Edition 2.5M 7/01	Alloy Index - Air-Melt Specification Alloys - C-M Group Specialty Materials & Alloys Group of SPS Technologies
ISO International Vocabulary Metrology	2nd ED, 1993	International Vocabulary of Basic and General Terms in Metrology
ISO 2768-1	1st ED 11-15-89	General Tolerances - Part 1: Tolerances for linear and angular dimensions without individual tolerance indications
ISO 2768-2	1st ED 11-15-89	General Tolerances - Part 2: Geometrical Tolerances for features without individual tolerance indications
ISO 5725-1	1st ED 1994, TC1 2-15-98	Accuracy (trueness and precision) of Measurement Methods and Results - Part 1: General Principles and Definitions

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
ISO 5725-2	1st ED 1994, TC1 5-15-02	Accuracy (trueness and precision) of measurement methods and results - Part 2: Basic Method for the Determination of Repeatability and Reproducibility of a Standard Measurement Method
ISO 8062	2nd ED, 4/1/94	Castings - Systems of Dimensional Tolerances and Machining Allowances
ISO 9000	4th ED, 9-15-15	Quality Management Systems - Fundamentals and Vocabulary
ISO 9001	5th ED, 9-15-15	Quality Management Systems-Requirements
ISO 9002	2nd ED, 7/1/94	Quality Systems - Model for Quality Assurance in Production, Installation and Servicing
ISO 9004	3rd ED, 11-1-09	Managing for the Sustained Success of an Organization - A Quality Management Approach
ISO 10007	2nd ED, 6/15/2003	Quality Management Systems - Guidelines for Configuration Management
ISO 10012	1st ED, 4-15-03	Measurement Management Systems - Requirements for Measurement Processes and Measuring Equipment
ISO 10014	1st ED, 7-1-06	Quality Management - Guidelines for Realizing Financial and Economic Benefits
ISO 10015	1ST ED, 12-15-99	Quality Management-Guidelines for Training
ISO 10049	1Sst ED, 4-1-92	Aluminum Alloy Castings - Visual Method for Assessing the Porosity
ISO 14001	2nd Edition (11-15-04)	Environmental Management Systems-Requirements with Guidance for use
ISO/IEC 17025	3rd Ed, 11-2017	General Requirements for the Competence of Testing and Calibration Laboratories
ISO/TS 16949	3rd ED, 6-15-09	Quality Management Systems - Particular Requirements for the Application of ISO 9001:2008 for Automotive Production and Relevant Service Part Organizations
ISO/IEC GUIDE 2	7th ED, 1996	Standardization and Related Activities - General Vocabulary
MIL-A-8625	F	Anodic Coatings for Aluminum and Aluminum Alloys
MIL-A-18455	C, N1,6-7-91	Argon, Technical
MIL-A-21180	D,N1, Canceled 9-10-99	Aluminum Alloy Castings, High Strength
MIL-A-21380	B	Abrasive Materials for Blasting

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
MIL-C-5541	E	Chemical Conversion Coatings on Aluminum and Aluminum Alloys
MIL-C-6021	H, N1	Casting, Classification & Inspection of
MIL-C-11866	C, N4, 8-4-98	Castings, Precision, Nonferrous
MIL-DTL-5541	F	Chemical Conversion Coatings on Aluminum and Aluminum Alloys
MIL-H-6875	H, N1, 2-2-99	Heat Treatment of Steel Raw Materials
MIL-HDBK-683	AT, N2 4-13-04	Statistical Process Control (SPC) Implementation & Evaluation Aid
MIL-HDBK-6870	A , (N1 9-5-08) 8-28-01	DOD (Department of Defense) Handbook Inspection Program Requirements, Nondestructive for Aircraft & Missile Materials & Parts
MIL-I-6866	B, Int Amd 3	Inspection, Penetrant Method of
MIL-I-8500	D, N1, 2-19-95	Interchangeability & Replaceability of Component
MIL-I-13857	B, N2 3-23-98	Impregnation of Metal Castings
MIL-I-25135	E, N1	Penetrant Inspection
MIL-I-45208	A, N1, 10-1-96	Inspection System requirements
MIL-P-47158	MI, N1 8-7-89	Penetrant Inspection, Soundness Requirements for Materials, Parts & Weldments
MIL-PRF-23377	J, A2, 4-10-07	Performance Specification - Primer Coatings: Epoxy, High-Solids
MIL-PRF-85582	D A1, 6-9-06	Performance Specification Primer Castings: Epoxy, Waterborne
MIL-S-7720	A, N1 12-12-97	Steel, Corrosion-Resistant (18-8) Bars, Wire & Forging Stock (Aircraft Quality)
MIL-S-22141	B, N1, 11-6-91	Steel, Investment Castings Alloy & Carbon Steel
MIL-S-81591	68, N1, 2-23-93	Steel, Investment Castings, Carbon and Corrosion Resisting
MIL-STD-100	G, N1 12-14-01	Standard Practice for Engineering Drawings
MIL-STD-120	50, CN1, 9-9-63	Gage Inspection
MIL-STD-129	R, CN1	Military Marking for Shipment and Storage
MIL-STD-130	N	Identification Marking of U.S. Military Property
MIL-STD-139	A, N1, 7-28-99	Radiographic Inspection, Soundness Requirements for Aluminum and Magnesium Castings (For Small Arms Parts)

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
MIL-STD-171	F	Finishing of Metal and Wood Surfaces
MIL-STD-248	D, N1 8-28-97	Welding and Brazing Procedure and Performance Qualification
MIL-STD-276	A	Impregnation of Porous Metal Castings & Powdered Metal Components
MIL-STD-278	F, N2 8-28-97	Welding & Casting Standard
MIL-STD-453	C, CN2, 12-12-96	Military Specification, Inspection, Radiographic
MIL-STD-1537	C, N2	Test Method Standard for Electrical Conductivity Test for Verification of Heat Treatment of Aluminum Alloys Eddy Current Method
MIL-STD-1595	A, N2, 6-16-98	Qualification of Aircraft, Missile & Aerospace Fusion Welders
MIL-STD-1907	89, N5 9-30-14	Inspection, Liquid Penetrant & Magnetic Particle, Soundness Requirements for Materials, Parts & Weldments
MIL-STD-1916	96, 3-1-96	DOD Preferred Methods for Acceptance of Product
MIL-STD-2035	A	Non-Destructive Testing Acceptance Criteria
MIL-STD-2073-1	E	Standard Practice for Military Packaging
MIL-STD-2175	A	Castings, classification and inspection of Use only when specifically referenced by process.
MIL-STD-2219	A, N2	Fusion Welding for Aerospace Applications
MIL-STD-6866	89, N2 11-22-96	Military Standard, Inspection, Liquid Penetrant
MIL-W-13855	D, N1, 5-28-87	Weapon, Small Arm and Aircraft Armament Subsystems, General Specification for
MIL-W-22248	A, Amd 2 6-6-85	Weldments, Aluminum & Aluminum Alloy
MIL-W-63150	77, N2, 2-8-07	Weapons & Support Material Standard Quality Assurance Provisions for
MS16142	C	Boss, Gasket Seal Straight Thread Tube Fitting, Standard Dimensions For
NAS410	4	Certification & Qualification of Nondestructive Test Personnel
NAS 823	2	Cast surface comparison standard
NASM33537	5-2002	Insert, Screw Thread, Helical Coil, Inch Series, Coarse and Fine Thread, Standard Assembly Dimensions for

Carley Foundry Industry Specifications Index

3/6/2019

Specification Designation	Current Revision Level	Specification Title
NAVORD OD 8841	A	Castings-Dimensions, Tolerances & Draft (Special Applications)
NIST SP 800-171	June 2015	Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations
NIST SP 1038	May 2006	The International System of Units (SI) - Conversion Factors for General Use
QPL-23377	10/2/2018	Qualified Products List of Products Qualified under Military Specification MIL-PRF-23377 Primer Coatings - Epoxy, High-Solids
QPL-AMS2644	7/12/2018	Qualified Products List of Products Qualified Under Performance Specification SAE AMS2644, Inspection Material, Penetrant
QQ-A-596	E, N2, 11-25-92	Aluminum Alloy Permanent & Semipermanent Mold Castings
QQ-A-601	F, N2, 1-23-91	Aluminum Alloy Sand Castings
QQ-P-35	C, N3, 9-11-98	Passivation Treatment for Corrosion-Resistant Steel
RP-1	April 2010	Establishment and Adjustment of Calibration Intervals
S9074-AQ-GIB-010/248	8-1-95	Requirements for Welding & Brazing Procedure & Performance Qualification
S9074-AR-GIB-010/278	8-1-95	Requirements for Fabrication Welding & Inspection, Casting Inspection & Repair for Machinery, Piping, & Pressure Vessels
SAE J452	JAN2018 (STBL18)	General Information - Chemical Compositions, Mechanical and Physical Properties of SAE Aluminum Casting Alloys
SAE J792a	6-1968	Blast Cleaning
T9074-AS-GIB-010/271	4-30-97	Requirements for Nondestructive Testing Methods
WS 18811	C (4-9-86)	Naval Sea Systems Specification for Castings
WS 19181	B (9-30-88)	Process Specification for Fusion Welding of Aluminum Alloys (Except 2014)