

ASTM Standards Related to Corrosion Testing of Metals

Table of Contents

- A239 Practice for Locating the Thinnest Spot in a Zinc (Galvanized) Coating on Iron or Steel Articles
- A923 Test Methods for Detecting Detrimental Intermetallic Phase in Duplex Austenitic/Ferritic Stainless Steels
- A1004 Practice for Establishing Conformance to the Minimum Expected Corrosion Characteristics of Metallic, Painted-Metallic, and Nonmetallic-Coated Steel Sheet Intended for Use as Cold Formed Framing Members
- A1071 Test Method for Evaluating Hygrothermal Corrosion Resistance of Permanent Magnet Alloys
- B117 Practice for Operating Salt Spray (Fog) Apparatus
- B201 Practice for Testing Chromate Coatings on Zinc and Cadmium Surfaces
- B449 Specification for Chromates on Aluminum
- B456 Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium
- B555 Guide for Measurement of Electrodeposited Metallic Coating Thicknesses by Dropping Test
- B734 Specification for Electrodeposited Copper for Engineering Uses
- B765 Guide for Selection of Porosity and Gross Defect Tests for Electrodeposits and Related Metallic Coatings
- B798 Test Method for Porosity in Gold or Palladium Coatings on Metal Substrates by Gel-Bulk Electrography
- B799 Test Method for Porosity in Gold and Palladium Coatings by Sulfurous Acid/Sulfur-Dioxide Vapor
- B808 Standard Test Method for Monitoring of Atmospheric Corrosion Chambers by Quartz Crystal Microbalancesy...
- B809 Test Method for Porosity in Metallic Coatings by Humid Sulfur Vapor ("Flowers-of-Sulfur")
- B810 Standard Test Method for Calibration of Atmospheric Corrosion Test Chambers by Change in Mass of Copper Coupons
- B812 Test Method for Resistance to Environmental Degradation of Electrical Pressure Connections Involving Aluminum and Intended for Residential Applications
- B825 Standard Test Method for Coulometric Reduction of Surface Films on Metallic Test Samples
- B826 Standard Test Method for Monitoring Atmospheric Corrosion Tests by Electrical Resistance Probes
- B827 Standard Practice for Conducting Mixed Flowing Gas (MFG) Environmental Tests
- B845 Standard Guide for Mixed Flowing Gas (MFG) Tests for Electrical Contacts
- B858 Standard Test Method for Ammonia Vapor Test for Determining Susceptibility to Stress Corrosion Cracking in Copper Alloys
- B866 Test Method for Gross Defects and Mechanical Damage in Metallic Coatings by Polysulfide Immersion
- B877 Test Method for Gross Defects and Mechanical Damage in Metallic Coatings by the Phosphomolybdic Acid (PMA) Method
- B895 Test Methods for Evaluating the Corrosion Resistance of Stainless Steel
- B912 Standard Specification for Passivation of Stainless Steels Using Electropolishing
- B920 Practice for Porosity in Gold and Palladium Alloy Coatings on Metal Substrates by Vapors of Sodium Hypochlorite Solution
- B961 Specification for Silver Coated Copper and Copper Alloy Stranded Conductors for Electronic Space Application
- C227 Test Method for Potential Alkali Reactivity of Cement-Aggregate Combinations (Mortar-Bar Method)
- C692 Test Method for Evaluating the Influence of Thermal Insulations on External Stress Corrosion Cracking Tendency of Austenitic Stainless Steel

C876 Test Method for Corrosion Potentials of Uncoated Reinforcing Steel in Concrete
C1152 Test Method for Acid-Soluble Chloride in Mortar and Concrete
C1218 Test Method for Water-Soluble Chloride in Mortar and Concrete
C1431 Guide for Corrosion Testing of Aluminum-Based Spent Nuclear Fuel in Support of Repository Disposal
C1524 Test Method for Water-Extractable Chloride in Aggregate (Soxhlet Method)
C1582 Specification for Admixtures to Inhibit Chloride-Induced Corrosion of Reinforcing Steel in Concrete
C1617 Practice for Quantitative Accelerated Laboratory Evaluation of Extraction Solutions Containing Ions Leached from Thermal Insulation on Aqueous Corrosion of Metals
D130 Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test
D610 Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
D665 Standard Test Method for Rust Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water
D714 Test Method for Evaluating Degree of Blistering of Paints
D849 Standard Test Method for Copper Strip Corrosion by Industrial Aromatic Hydrocarbons
D870 Practice for Testing Water Resistance of Coatings Using Water Immersion
D876 Standard Test Methods for Nonrigid Vinyl Chloride Polymer Tubing Used for Electrical Insulation
D1014 Practice for Conducting Exterior Exposure Tests of Paints and Coatings on Metal Substrates
D1141 Practice for the Preparation of Substitute Ocean Water
D1193 Specification for Reagent Water
D1275 Standard Test Method for Corrosive Sulfur in Electrical Insulating Oils
D1280 Standard Guide for Total Immersion Corrosion Test for Soak Tank Metal...
D1384 Standard Test Method for Corrosion Test for Engine Coolants in Glassware
D1414 Test Method for Rubber O-Rings
D1611 Standard Test Method for Corrosion Produced by Leather in Contact with Metal
D1654 Standard Test Method for Evaluation of Painted or Coated Specimens
D1735 Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus
D1743 Standard Test Method for Determining Corrosion Preventive Properties of Lubricating Greases
D1748 Standard Test Method for Rust Protection by Metal Preservatives in the Humidity Cabinet
D1838 Standard Test Method for Copper Strip Corrosion by Liquefied Petroleum
D2010 Test Methods for Evaluation of Total Sulfation Activity in the Atmosphere by the Lead Dioxide Technique
D2059 Standard Test Method for Resistance of Zippers to Salt Spray (Fog)
D2247 Practice for Testing Water Resistance of Coatings in 100 % Relative Humidity
D2251 Standard Test Method for Metal Corrosion by Halogenated Organic Solvents
D2570 Standard Test Method for Simulated Service Corrosion Testing of Engine Coolants
D2649 Standard Test Method for Corrosion Characteristics of Solid Film Lubricants
D2671 Standard Test Methods for Heat-Shrinkable Tubing for Electrical Use
D2688 Standard Test Methods for Corrosivity of Water in the Absence of Heat Transfer (Weight Loss Method)
D2758 Standard Test Method for Engine Coolants by Engine Dynamometer
D2803 Standard Guide for Testing Filiform Corrosion Resistance of Organic Coatings on Metal

- D2809 Standard Test Method for Cavitation Corrosion and Erosion-Corrosion Characteristics of Aluminum Pumps With Engine Coolants
- D2847 Standard Practice for Testing Engine Coolants in Car and Light Truck Service
- D3263 Test Methods for Corrosivity of Solvent Systems for Removing Water-Formed Deposits
- D3310 Standard Test Method for Determining Corrosivity of Adhesive Materials
- D3316 Standard Test Method for Stability of Perchloroethylene with Copper
- D3451 Guide for Testing Coating Powders and Powder Coatings
- D3482 Standard Practice for Determining Electrolytic Corrosion of Copper by Adhesives
- D3603 Standard Test Method for Rust-Preventing Characteristics of Steam Turbine Oil in the Presence of Water (Horizontal Disk Method)
- D4048 Standard Test Method for Detection of Copper Corrosion from Lubricating Grease
- D4310 Test Method for Determination of Sludging and Corrosion Tendencies of Inhibited Mineral Oils
- D4340 Standard Test Method for Corrosion of Cast Aluminum Alloys in Engine Coolants Under Heat-Rejecting Conditions.
- D4350 Standard Test Method for Corrosivity Index of Plastics and Fillers
- D4412 Test Methods for Sulfate-Reducing Bacteria in Water and Water-Formed Deposits
- D4585 Practice for Testing Water Resistance of Coatings Using Controlled Condensation
- D4627 Test Method for Iron Chip Corrosion for Water-Miscible Metalworking Fluids
- D4658 Test Method for Sulfide Ion in Water
- D4778 Standard Test Method for Determination of Corrosion and Fouling Tendency of Cooling Water Under Heat Transfer Conditions
- D5065 Guide for Assessing the Condition of Aged Coatings on Steel Surfaces
- D5367 Practice for Evaluating Coatings Applied Over Surfaces Treated With Inhibitors Used to Prevent Flash Rusting of Steel When Water or Water/Abrasive Blasted
- D5485 Standard Test Method for Determining the Corrosive Effect of Combustion Products Using the Cone Corrosimeter
- D5534 Test Method for Vapor-Phase Rust-Preventing Characteristics of Hydraulic Fluids
- D5894 Standard Practice for Cyclic Salt Fog/UV Exposure of Painted Metal
- D5968 Standard Test Method for Evaluation of Corrosiveness of Diesel Engine Oil at 121°C
- D5969 Standard Test Method for Corrosion-Preventive Properties of Lubricating Greases in Presence of Dilute Synthetic Sea Water Environments
- D6138 Standard Test Method for Determination of Corrosion-Preventive Properties of Lubricating Greases Under Dynamic Wet Conditions (Emcor Test).
- D6208 Standard Test Method for Repassivation Potential of Aluminum and Its Alloys by Galvanostatic Measurement
- D6294 Standard Test Method for Corrosion Resistance of Ferrous Metal Fastener Assemblies Used in Roofing and Waterproofing
- D6557 Standard Test Method for Evaluation of Rust Preventive Characteristics of Automotive Engine Oils
- D6594 Standard Test Method for Evaluation of Corrosiveness of Diesel Engine Oil
- D6675 Standard Practice for Salt-Accelerated Outdoor Cosmetic Corrosion Testing
- D7038 Standard Test Method for Evaluation of Moisture Corrosion Resistance of Automotive Gear Lubricants

- D7087 Test Method for An Imaging Technique to Measure Rust Creepage at Scribe on Coated Test Panels Subjected to Corrosive Environments
- D7095 Standard Test Method for Rapid Determination of Corrosiveness to Copper from Petroleum Products Using a Disposable Copper Foil Strip
- D7376 Standard Practice for Outdoor Evaluation of Wet Stack Storage Conditions on Coil-Coated Metals
- D7583 Test Method for John Deere Coolant Cavitation Test
- D7667 Test Method for Determination of Corrosiveness to Silver by Automotive Spark-Ignition Engine Fuel—Thin Silver Strip Method
- D7671 Test Method for Corrosiveness to Silver by Automotive Spark-Ignition Engine Fuel-Silver Strip Method
- E399 Test Method for Linear-Elastic Plane-Strain Fracture Toughness K_{Ic} of Metallic Materials
- E647 Test Method for Measurement of Fatigue Crack Growth Rates
- E712 Standard Practice for Laboratory Screening of Metallic Containment...
- E745 Standard Practices for Simulated Service Testing for Corrosion of Metallic Containment Materials for Use With Heat-Transfer Fluids in Solar Heating and Cooling Systems
- E937 Standard Test Method for Corrosion of Steel by Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members
- E1597 Test Method for Saltwater Pressure Immersion and Temperature Testing of Photovoltaic Modules for Marine Environments
- E1681 Standard Test Method for Determining a Threshold Stress Intensity Factor
- E2368 Practice for Strain Controlled Thermomechanical Fatigue Testing
- F0326 Standard Test Method for Electronic Measurement for Hydrogen Embrittlement from Cadmium-Electroplating Processes
- F0482 Standard Test Method for Corrosion of Aircraft Metals by Total Immersion.
- F483 Standard Test Method for Total Immersion Corrosion Test for Aircraft Maintenance Chemicals
- F485 Standard Test Method for Effects of Cleaners on Unpainted Aircraft Surfaces
- F519 Standard Test Method for Mechanical Hydrogen Embrittlement Evaluation of Plating/Coating Processes and Service Environments
- F746 Standard Test Method for Pitting or Crevice Corrosion of Metallic Surgical Implant Materials
- F897 Standard Test Method for Measuring Fretting Corrosion of Osteosynthesis Plates and Screws
- F945 Standard Test Method for Stress-Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials
- F1089 Standard Test Method for Corrosion of Surgical Instruments
- F1110 Standard Test Method for Sandwich Corrosion Test
- F1111 Standard Test Method for Corrosion of Low-Embrittling Cadmium Plate by Aircraft Maintenance Chemicals..
- F1113 Standard Test Method for Electrochemical Measurement of Diffusible Hydrogen in Steels (Barnacle Electrode)
- F1182 Standard Specification for Anodes, Sacrificial Zinc Alloy
- F1459 Standard Test Method for the Determination of the Susceptibility of Metallic Materials to Hydrogen Gas Embrittlement
- F1624 Standard Test Method for Measurement of Hydrogen Embrittlement Threshold in Steel by the Incremental Step Loading Technique
- F1801 Standard Practice for Corrosion Fatigue Testing of Metallic Implant Materials

- F1875 Standard Practice for Fretting Corrosion Testing of Modular Implant Interfaces: Hip Femoral Head-bore and Cone Taper Interface
- F1940 Test Method for Process Control Verification to Prevent Hydrogen Embrittlement in Plated or Coated Fasteners
- F2078 Standard Terminology Relating to Hydrogen Embrittlement Testing
- F2111 Standard Practice for Measuring Intergranular Attack or End Grain Pitting on Metals Caused by Aircraft Chemical Processes
- F2129 Test Method for Conducting Cyclic Potentiodynamic Polarization Measurements to Determine the Corrosion Susceptibility of Small Implant Devices
- F2832 Guide for Accelerated Corrosion Testing for Mechanical Fasteners
- G1 Practice for Preparing, Cleaning, and Evaluating Corrosion Test Specimens
- G2 Test Method for Corrosion Testing of Products of Zirconium, Hafnium, and Their Alloys in Water at 680F or in Steam at 750F
- G3 Practice for Conventions Applicable to Electrochemical Measurements in Corrosion Testing
- G4 Guide for Conducting Corrosion Tests in Field Applications
- G5 Reference Test Method for Making Potentiodynamic Anodic Polarization Measurements
- G16 Guide for Applying Statistics to Analysis of Corrosion Data
- G28 Test Methods for Detecting Susceptibility to Intergranular Corrosion in Wrought, Nickel-Rich, Chromium-Bearing Alloys
- G30 Practice for Making and Using U-Bend Stress-Corrosion Test Specimens
- G31 Guide for Laboratory Immersion Corrosion Testing of Metals
- G32 Test Method for Cavitation Erosion Using Vibratory Apparatus
- G33 Practice for Recording Data from Atmospheric Corrosion Tests of Metallic-Coated Steel Specimens
- G34 Test Method for Exfoliation Corrosion Susceptibility in 2XXX and 7XXX Series Aluminum Alloys (EXCO Test)
- G35 Practice for Determining the Susceptibility of Stainless Steels and Related Nickel-Chromium-Iron Alloys to Stress-Corrosion Cracking in Polythionic Acids
- G36 Practice for Evaluating Stress-Corrosion-Cracking Resistance of Metals and Alloys in a Boiling Magnesium Chloride Solution
- G37 Practice for Use of Mattssons Solution of pH 7.2 to Evaluate the Stress-Corrosion Cracking Susceptibility of Copper-Zinc Alloys
- G38 Practice for Making and Using C-Ring Stress-Corrosion Test Specimens
- G39 Practice for Preparation and Use of Bent-Beam Stress-Corrosion Test Specimens
- G41 Practice for Determining Cracking Susceptibility of Metals Exposed Under Stress to a Hot Salt Environment
- G44 Practice for Exposure of Metals and Alloys by Alternate Immersion in Neutral 3.5 % Sodium Chloride Solution
- G46 Guide for Examination and Evaluation of Pitting Corrosion
- G47 Test Method for Determining Susceptibility to Stress-Corrosion Cracking of 2XXX and 7XXX Aluminum Alloy Products
- G48 Test Methods for Pitting and Crevice Corrosion Resistance of Stainless Steels and Related Alloys by Use of Ferric Chloride Solution
- G49 Practice for Preparation and Use of Direct Tension Stress-Corrosion Test Specimens
- G50 Practice for Conducting Atmospheric Corrosion Tests on Metals

- G51 Test Method for Measuring pH of Soil for Use in Corrosion Testing
- G52 Practice for Exposing and Evaluating Metals and Alloys in Surface Seawater
- G57 Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method
- G58 Practice for Preparation of Stress-Corrosion Test Specimens for Weldments
- G59 Test Method for Conducting Potentiodynamic Polarization Resistance Measurements
- G60 Practice for Conducting Cyclic Humidity Exposures
- G61 Test Method for Conducting Cyclic Potentiodynamic Polarization Measurements for Localized Corrosion Susceptibility of Iron-, Nickel-, or Cobalt-Based Alloys
- G64 Classification of Resistance to Stress-Corrosion Cracking of Heat-Treatable Aluminum Alloys
- G66 Test Method for Visual Assessment of Exfoliation Corrosion Susceptibility of 5XXX Series Aluminum Alloys (ASSET Test)
- G67 Test Method for Determining the Susceptibility to Intergranular Corrosion of 5XXX Series Aluminum Alloys by Mass Loss After Exposure to Nitric Acid (NAMLT Test)
- G69 Test Method for Measurement of Corrosion Potentials of Aluminum Alloys
- G71 Guide for Conducting and Evaluating Galvanic Corrosion Tests in Electrolytes
- G73 Test Method for Liquid Impingement Erosion Using Rotating Apparatus
- G78 Guide for Crevice Corrosion Testing of Iron-Base and Nickel-Base Stainless Alloys in Seawater and Other Chloride-Containing Aqueous Environments
- G82 Guide for Development and Use of a Galvanic Series for Predicting Galvanic Corrosion Performance
- G84 Practice for Measurement of Time-of-Wetness on Surfaces Exposed to Wetting Conditions as in Atmospheric Corrosion Testing
- G85 Practice for Modified Salt Spray (Fog) Testing
- G87 Practice for Conducting Moist SO₂ Tests
- G91 Practice for Monitoring Atmospheric SO₂ Deposition Rate for Atmospheric Corrosivity Evaluation
- G92 Practice for Characterization of Atmospheric Test Sites
- G96 Guide for Online Monitoring of Corrosion in Plant Equipment (Electrical and Electrochemical Methods)
- G97 Test Method for Laboratory Evaluation of Magnesium Sacrificial Anode Test Specimens for Underground Applications
- G100 Test Method for Conducting Cyclic Galvanostaircase Polarization
- G101 Guide for Estimating the Atmospheric Corrosion Resistance of Low-Alloy Steels
- G102 Practice for Calculation of Corrosion Rates and Related Information from Electrochemical Measurements
- G103 Practice for Evaluating Stress-Corrosion Cracking Resistance of Low Copper 7XXX Series Al-Zn-Mg-Cu Alloys in Boiling 6 % Sodium Chloride Solution
- G106 Practice for Verification of Algorithm and Equipment for Electrochemical Impedance Measurements
- G107 Guide for Formats for Collection and Compilation of Corrosion Data for Metals for Computerized Database Input
- G108 Test Method for Electrochemical Reactivation (EPR) for Detecting Sensitization of AISI Type 304 and 304L Stainless Steels
- G109 Test Method for Determining Effects of Chemical Admixtures on Corrosion of Embedded Steel Reinforcement in Concrete Exposed to Chloride Environments

- G110 Practice for Evaluating Intergranular Corrosion Resistance of Heat Treatable Aluminum Alloys by Immersion in Sodium Chloride + Hydrogen Peroxide Solution
- G111 Guide for Corrosion Tests in High Temperature or High Pressure Environment, or Both
- G112 Guide for Conducting Exfoliation Corrosion Tests in Aluminum Alloys
- G116 Practice for Conducting Wire-on-Bolt Test for Atmospheric Galvanic Corrosion
- G119 Guide for Determining Synergism Between Wear and Corrosion
- G123 Test Method for Evaluating Stress-Corrosion Cracking of Stainless Alloys with Different Nickel Content in Boiling Acidified Sodium Chloride Solution
- G129 Practice for Slow Strain Rate Testing to Evaluate the Susceptibility of Metallic Materials to Environmentally Assisted Cracking
- G134 Test Method for Erosion of Solid Materials by Cavitating Liquid Jet
- G135 Guide for Computerized Exchange of Corrosion Data for Metals
- G139 Test Method for Determining Stress-Corrosion Cracking Resistance of Heat-Treatable Aluminum Alloy Products Using Breaking Load Method
- G140 Test Method for Determining Atmospheric Chloride Deposition Rate by Wet Candle Method
- G142 Test Method for Determination of Susceptibility of Metals to Embrittlement in Hydrogen Containing Environments at High Pressure, High Temperature, or Both
- G146 Practice for Evaluation of Disbonding of Bimetallic Stainless Alloy/Steel Plate for Use in High-Pressure, High-Temperature Refinery Hydrogen Service
- G148 Practice for Evaluation of Hydrogen Uptake, Permeation, and Transport in Metals by an Electrochemical Technique
- G150 Test Method for Electrochemical Critical Pitting Temperature Testing of Stainless Steels
- G157 Guide for Evaluating Corrosion Properties of Wrought Iron- and Nickel-Based Corrosion Resistant Alloys for Chemical Process Industries
- G158 Guide for Three Methods of Assessing Buried Steel Tanks
- G161 Guide for Corrosion-Related Failure Analysis
- G162 Practice for Conducting and Evaluating Laboratory Corrosion Tests in Soils
- G165 Practice for Determining Rail-to-Earth Resistance
- G168 Practice for Making and Using Precracked Double Beam Stress Corrosion Specimens
- G170 Guide for Evaluating and Qualifying Oilfield and Refinery Corrosion Inhibitors in the Laboratory
- G180 Test Method for Corrosion Inhibiting Admixtures for Steel in Concrete by Polarization Resistance in Cementitious Slurries
- G184 Practice for Evaluating and Qualifying Oil Field and Refinery Corrosion Inhibitors Using Rotating Cage
- G185 Practice for Evaluating and Qualifying Oil Field and Refinery Corrosion Inhibitors Using the Rotating Cylinder Electrode
- G186 Test Method for Determining Whether Gas-Leak-Detector Fluid Solutions Can Cause Stress Corrosion Cracking of Brass Alloys
- G187 Test Method for Measurement of Soil Resistivity Using the Two-Electrode Soil Box Method
- G188 Specification for Leak Detector Solutions Intended for Use on Brasses and Other Copper Alloys
- G189 Guide for Laboratory Simulation of Corrosion Under Insulation

- G192 Test Method for Determining the Crevice Repassivation Potential of Corrosion-Resistant Alloys Using a Potentiodynamic-Galvanostatic-Potentiostatic Technique
- G193 Terminology and Acronyms Relating to Corrosion
- G198 Test Method for Determining the Relative Corrosion Performance of Driven Fasteners in Contact with Treated Wood
- G199 Guide for Electrochemical Noise Measurement
- G200 Test Method for Measurement of Oxidation-Reduction Potential (ORP) of Soil
- G202 Test Method for Using Atmospheric Pressure Rotating Cage
- G205 Guide for Determining Corrosivity of Crude Oils
- R0006 Condensed Metric Practice Guide for Corrosion (This is not an ASTM standard)