Designation: A 880 – 95

# Standard Practice for Criteria for Use in Evaluation of Testing Laboratories and Organizations for Examination and Inspection of Steel, Stainless Steel, and Related Alloys[1]

This standard is issued under the fixed designation A 880; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense.*

## 1. Scope

1.1 This practice provides a guide for the criteria to be used in the evaluation of testing laboratories and organizations engaged in examination and inspection, or both, for specification-conformance of steel, stainless steel, and related alloys.

1.2 This practice is intended for use by an accrediting authority for qualification and accreditation of laboratories and organizations noted in 1.1.

1.3 These criteria include the general characteristics (generic criteria) or organization, facility, human resources, and the necessary controls, for evaluating the ability of testing laboratories, examination organizations, and inspection organizations, to perform their intended functions.

1.4 These criteria also include specific criteria for equipment and personnel qualification, and for necessary quality control procedures, for evaluating the ability of testing laboratories, examination organizations, and inspection organizations to perform specific tests, examinations, and inspections.

1.4.1 If required, the appropriate ASTM Committee A-1 Subcommittee concerned with a particular test, examination, or inspection discipline may supplement this standard with additional specific criteria. See Table 1.

1.5 This practice may not necessarily provide all the generic criteria for the evaluation of independent testing, examination, and inspection agencies as defined in Practice E 548. However, the generic and specific criteria of this standard, including any supplements, are considered appropriate for the evaluation of any testing laboratory or inspection and examination organizations, or both involve in specification conformance (or verification) testing and inspection of steel, stainless steel and related alloys.

1.6 These generic and specific criteria may, where appropriate, be used by an accrediting authority for evaluating the capabilities of a laboratory, examination organization, or inspection organization to perform tests, examinations, or inspections of steel products not related to specification conformance.

1.7 This standard practice may also be employed as an evaluation guideline for individual, governmental, or technical society self-certification programs where accreditation may not be required.

## 2. Referenced Documents

2.1 *ASTM Standards:*

A 90 Test Method for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles[2]

A 239 Test Method for Locating the Thinnest Spot in a Zinc (Galvanized) Coating on Iron or Steel Articles by the Preece Test (Copper Sulfate Dip)[2]

A 255 Test Method for End-Quench Test for Hardenability of Steel[3]

A 262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels[4]

A 275/A275M Test Method for Magnetic Particle Examination of Steel Forgings[3]

A 309 Test Method for Weight and Composition of Coating on Long Terne Sheet by the Triple-Spot Test[2]

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products[4]

A 388/A388M Practice for Ultrasonic Examination of Heavy Steel Forgings[3]

A 428 Test Method for Weight of Coating on Aluminum-Coated Iron or Steel Articles[2]

A 435/A435M Specification for Straight-Beam Ultrasonic Examination of Steel Plates[5]

A 456 Specification for Magnetic Particle Examination of Large Crankshaft Forgings[3]

A 503 Specification for Ultrasonic Examination of Large Forged Crankshafts[3]

[1] This practice is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel, and Related Alloys and is the direct responsibility of Subcommittee A1.13 on Methods of Mechanical Testing.

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[2] *Annual Book of ASTM Standards*, Vol 01.06.

[3] *Annual Book of ASTM Standards*, Vol 01.05.

[4] *Annual Book of ASTM Standards*, Vol 01.03.

[5] *Annual Book of ASTM Standards*, Vol 01.04.

**TABLE 1 Fields of Testing, Examination, and Inspection; and Standards Available**

| | |
|---|---|
| *Tension Testing, Room Temperature* | *Impact Testing Drop Weight* |
| A 370 | E 208 |
| A 770 | *Impact Testing, Swing Weight* |
| E 8 | E 436 |
| E 111 | E 604 |
| E 132 | *Miscellaneous Tests* |
| E 143 | A 255 |
| E 345 | A 610 |
| F 606 | A 800 |
| *Tension Testing, Elevated Temperature* | A 802 |
| E 21 | E 228 |
| E 139 | E 289 |
| E 192 | E 558 |
| *Compression Testing, Room Temperature* | *Calibration Standards* |
| E 9 | A 799 |
| *Compression Testing, Elevated Temperature* | E 4 |
| E 209 | E 74 |
| *Bend Testing* | E 83 |
| A 370 | E 1012 |
| E 190 | *Chemical Analysis* |
| E 290 | A 751 |
| *Hardness Testing* | *Formability* |
| A 370 | E 517 |
| A 833 | E 643 |
| E 10 | E 646 |
| E 18 | *Weight of Coatings* |
| E 92 | A 90 |
| E 103 | A 239 |
| E 110 | A 309 |
| E 384 | A 428 |
| E 448 | A 630 |
| F 606 | A 754 |
| *Corrosion Testing* | *Nondestructive Examination* |
| A 262 | A 275 |
| A 763 | A 388 |
| *Macroetch Testing* | A 435 |
| A 604 | A 456 |
| E 340 | A 503 |
| *Metallographic Testing* | A 577 |
| E 562 | A 578 |
| *Impact Testing, Charpy V-Notch* | A 745 |
| A 370 | E 114 |
| A 673 | E 494 |
| E 23 | E 709 |
| | E 797 |

A 577/A577M Specification for Ultrasonic Angle-Beam Examination of Steel Plates[5]

A 578/A578M Specification for Straight-Beam Ultrasonic Examination of Plain and Clad Steel Plates for Special Applications[5]

A 604 Test Method for Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets[3]

A 610 Methods of Sampling and Testing Ferroalloys for Determination of Size[6]

A 630 Test Methods for Determination of Tin Coating Weights for Hot-Dip and Electrolytic Tin Plate[2]

A 673/A673M Specification for Sampling Procedure for Impact Testing of Structural Steel[5]

A 745/A745M Practice for Ultrasonic Examination of Austenitic Steel Forgings[3]

A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products[4]

A 754 Test Method for Coating Thickness by X-Ray Fluorescence[2]

A 763 Practices for Detecting Susceptibility to Intergranular Attack in Ferritic Stainless Steels[4]

A 770/A770M Specification for Through-Thickness Tension Testing of Steel Plates for Special Applications[5]

A 799/A799M Practice for Steel Castings, Stainless, Instrument Calibration, for Estimating Ferrite Content[6]

A 800/A800M Practice for Steel Casting, Austenitic Alloy, Estimating Ferrite Content Thereof[6]

A 802/A802M Practice for Steel Castings, Textures and Discontinuities, Evaluation and Specifying, by Visual Examination[6]

A 833 Practice for Indentation Hardness of Metallic Materials by Comparison Hardness Testers[3]

E 4 Practices for Load Verification of Testing Machines[7]

E 8 Test Methods of Tension Testing of Metallic Materials[7]

E 9 Test Methods of Compression Testing of Metallic Materials at Room Temperature[7]

E 10 Test Method for Brinell Hardness of Metallic Materials[7]

E 18 Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials[7]

E 21 Practice for Elevated Temperature Tension Tests of Metallic Materials[7]

E 23 Test Methods for Notched Bar Impact Testing of Metallic Materials[7]

E 74 Practice of Calibration of Force-Measuring Instruments for Verifying the Load Indication of Testing Machines[7]

E 83 Practice for Verification and Classification of Extensometers[7]

E 92 Test Method for Vickers Hardness of Metallic Materials[7]

E 103 Test Method for Rapid Indentation Hardness Testing of Metallic Materials[7]

E 110 Test Method for Indentation Hardness of Metallic Materials by Portable Hardness Testers[7]

E 111 Test Method for Young's Modulus, Tangent Modulus, and Chord Modulus[7]

E 112 Test Methods for Determining Average Grain Size[7]

E 114 Practice for Ultrasonic Pulse-Echo Straight-Beam Examination by the Contact Method[8]

E 132 Test Method for Poisson's Ratio at Room Temperature[7]

E 139 Practice for Conducting Creep, Creep-Rupture, and Stress-Rupture Tests of Metallic Materials[7]

E 143 Test Method for Shear Modulus at Room Temperature[7]

E 165 Practice for Liquid Penetrant Inspection Method[8]

E 190 Test Method for Guided Bend Test for Ductility of Welds[7]

E 208 Test Method for Conducting Drop-Weight Test to

[6] *Annual Book of ASTM Standards*, Vol 01.02.

[7] *Annual Book of ASTM Standards*, Vol 03.01.

[8] *Annual Book of ASTM Standards*, Vol 03.03.