



# Standard Guide to Test Methods and Standards for Nondestructive Testing of Advanced Ceramics<sup>1</sup>

This standard is issued under the fixed designation C1175; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This guide identifies and describes standard procedures and methods for nondestructive testing of advanced ceramics using radiology, ultrasonics, liquid penetrants, and acoustic emission.

1.2 This guide identifies existing standards for nondestructive testing that have been determined to be (or have been modified to be) applicable to the examination of advanced ceramics. These standards have been generated by, and are under the jurisdiction of, ASTM Committee E07 on Nondestructive Testing. Selection and application of these standards to be followed must be governed by experience and the specific requirements in each individual case, together with agreement between producer and user.

1.3 The values stated in SI units are to be regarded as the standard. The inch-pound units given in parentheses are for information only.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

E94 Guide for Radiographic Examination

E114 Practice for Ultrasonic Pulse-Echo Straight-Beam Contact Testing

E165 Practice for Liquid Penetrant Examination for General Industry

E317 Practice for Evaluating Performance Characteristics of Ultrasonic Pulse-Echo Testing Instruments and Systems

without the Use of Electronic Measurement Instruments  
E494 Practice for Measuring Ultrasonic Velocity in Materials  
E569 Practice for Acoustic Emission Monitoring of Structures During Controlled Stimulation  
E587 Practice for Ultrasonic Angle-Beam Contact Testing  
E650 Guide for Mounting Piezoelectric Acoustic Emission Sensors  
E664 Practice for the Measurement of the Apparent Attenuation of Longitudinal Ultrasonic Waves by Immersion Method  
E750 Practice for Characterizing Acoustic Emission Instrumentation  
E797 Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method  
E976 Guide for Determining the Reproducibility of Acoustic Emission Sensor Response  
E999 Guide for Controlling the Quality of Industrial Radiographic Film Processing  
E1000 Guide for Radioscopy  
E1065 Guide for Evaluating Characteristics of Ultrasonic Search Units  
E1079 Practice for Calibration of Transmission Densitometers  
E1106 Test Method for Primary Calibration of Acoustic Emission Sensors  
E1165 Test Method for Measurement of Focal Spots of Industrial X-Ray Tubes by Pinhole Imaging  
E1208 Practice for Fluorescent Liquid Penetrant Testing Using the Lipophilic Post-Emulsification Process  
E1209 Practice for Fluorescent Liquid Penetrant Testing Using the Water-Washable Process  
E1210 Practice for Fluorescent Liquid Penetrant Testing Using the Hydrophilic Post-Emulsification Process  
E1219 Practice for Fluorescent Liquid Penetrant Testing Using the Solvent-Removable Process  
E1220 Practice for Visible Penetrant Testing Using Solvent-Removable Process  
E1254 Guide for Storage of Radiographs and Unexposed Industrial Radiographic Films  
E1255 Practice for Radioscopy  
E1316 Terminology for Nondestructive Examinations

<sup>1</sup> This guide is under the jurisdiction of ASTM Committee C28 on Advanced Ceramics and is the direct responsibility of Subcommittee C28.03 on Physical Properties and Non-Destructive Evaluation.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.