This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: E6 – 15$^{\epsilon 3}$

Standard Terminology Relating to Methods of Mechanical Testing[1]

This standard is issued under the fixed designation E6; 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 U.S. Department of Defense.

ε[1] NOTE—Editorial changes were made throughout in May 2017.
ε[2] NOTE—Editorial changes were made throughout in April 2019.
ε[3] NOTE—Editorial changes were made throughout in May 2020.

1. Scope

1.1 This terminology covers the principal terms relating to methods of mechanical testing of solids. The general definitions are restricted and interpreted, when necessary, to make them particularly applicable and practicable for use in standards requiring or relating to mechanical tests. These definitions are published to encourage uniformity of terminology in product specifications.

1.2 Terms relating to fatigue and fracture testing are defined in Terminology E1823.

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E8/E8M Test Methods for Tension Testing of Metallic Materials

E796 Test Method for Ductility Testing of Metallic Foil (Withdrawn 2009)[3]

E1823 Terminology Relating to Fatigue and Fracture Testing

2.2 *ISO Standard:*[4]

ISO/IEC Guide 99:2007 International Vocabulary of metrology—Basic and general concepts and terms (VIM)

2.3 *NIST Technical Notes:*

NIST Technical Note 1297 Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results[5]

2.4 *BIPM Standard:*[6]

JCGM 200 : International vocabulary of metrology — Basic and general concepts and associated terms (VIM).

3. Index of Cross-References and Associated Definitions

3.1 The terms listed below are associated with terminology that is fundamental or commonly used. The definition for the term of interest is related to or is given below the definition for the fundamental term cited.

Term	
angular strain	see **strain**
axial strain	see **strain**
bending strain	see **strain**
chord modulus	see **modulus of elasticity**
direct verification	see **verification**
compressive stress	see **stress**
elastic constants	see **modulus of elasticity** and **Poisson's ratio**
elastic modulus	see **modulus of elasticity**
engineering strain	see **strain**
engineering stress	see **stress**
fracture stress	see **stress**
indirect verification	see **verification**
linear (tensile or compressive) strain	see **strain**
macrostrain	see **strain**
malleability	see **ductility**
microstrain	see **strain**
modulus of rigidity	see **modulus of elasticity**
nominal stress	see **stress**
normal stress	see **stress**

[1] This terminology is under the jurisdiction of ASTM Committee E28 on Mechanical Testing and is the direct responsibility of Subcommittee E28.91 on Terminology except where designated otherwise. A subcommittee designation in parentheses following a definition indicates the subcommittee with responsibility for that definition.

Current edition approved Dec. 1, 2015. Published March 2016. Originally approved in 1923. Last previous edition approved in 2009 as E6 – 09b$^{\epsilon 1}$. DOI: 10.1520/E0006-15E03.

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

[3] The last approved version of this historical standard is referenced on www.astm.org.

[4] Available from International Organization for Standardization (ISO), 1 rue de Varembé, Case postale 56, CH-1211, Geneva 20, Switzerland, http://www.iso.ch.

[5] Available from National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, http://www.nist.gov.

[6] Available from BIPM - Pavillon de Breteuil F-92312 Sèvres Cedex FRANCE. this document is available free-of-charge at https://www.bipm.org/en/publications/guides/vim.html

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. United States