



Standard Terminology Relating to Methods of Mechanical Testing¹

This standard is issued under the fixed designation E 6; 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 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 E 1823.

2. Referenced Documents

2.1 ASTM Standards:

E 8 Test Methods for Tension Testing of Metallic Materials²

E 8M Test Methods for Tension Testing of Metallic Materials [Metric]²

E 796 Test Method for Ductility Testing of Metallic Foil²

E 1823 Terminology Relating to Fatigue and Fracture Testing²

3. Index of Terms

3.1 The definitions of the following terms, which are listed alphabetically, appear in the indicated sections of 4.1.

Term	Section
angle of bend	D
angle of twist	B
angular strain	see strain
axial strain	see strain
bearing area	F
bearing force	F
bearing strain	F
bearing strength	F
bearing stress	F
bearing yield strength	F
bend test	D
break elongation	see maximum elongation
breaking load	B

Brinell hardness number
Brinell hardness test
calibration
calibration factor
chord modulus
compressive strength
compressive stress
compressometer
constraint
creep
creep recovery
creep rupture strength
creep strength
deflectometer
discontinuous yielding
ductility
edge distance
edge distance ratio
elastic constants

elastic limit
elastic true strain
elongation
engineering strain
engineering stress
extensometer
extensometer system
fatigue ductility
fatigue ductility exponent
fatigue life
fracture ductility
fracture strength
fracture stress
free bend
force
gage length
guided bend
hardness
indentation hardness
initial recovery
initial strain
initial stress
Knoop hardness number
Knoop hardness test
linear (tensile or compressive) strain
load
lower yield strength
macrostrain
malleability
mandrel (in bend testing)
maximum elongation
mechanical hysteresis
mechanical properties
mechanical testing
microstrain
modulus of elasticity
modulus of rigidity

C
C
G
G
see **modulus of elasticity**
B
see **stress**
G
A
E
E
E
E
G
B
A
F
F
see **modulus of elasticity** and **Poisson's ratio**
A
A
B
see **strain**
see **stress**
G
G
B
B
B
A
A
see **stress**
D
A
G
D
C
E
E
E
C
C
C
see **strain**
A
B
see **strain**
see **ductility**
D
B
A
A
A
A
see **strain**
A
see **modulus of elasticity**

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

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² Annual Book of ASTM Standards, Vol 03.01.