



## ASTM International Technical Committee E08 on Fatigue and Fracture

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Committee E08 Webpage:

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**Established:** 1993

**Number of Members:** 480+

**Number of Standards:** 32

**Global Participation:** 32 Countries represented

**The standards are available in:** Volume 03.01 in the *Annual Book of ASTM Standards*

**Meetings:** E08 meets twice each year, in May and November

### SCOPE

The scope of activity within the Committee shall be the advancement of knowledge and understanding of fatigue and fracture phenomena by:

- Promoting research and development of, and education related to, methods to evaluate the fatigue and fracture characteristics of materials and structures;
- Developing standards, proposals, and, when necessary, emergency standards for evaluating fatigue and fracture behavior. The preparation of Standard Practices, Guides, Terminology, and Test Methods is included in this development;
- Sponsoring technical meetings and symposia either independently or cooperatively with other organizations;
- Coordinating the Committee's activities with those of organizations having mutual interests, including other relevant ASTM Committees and non-ASTM organizations.
- The range of Committee interest includes all engineering applications in which materials, processed parts, components or complete assemblies are subjected to loadings that might result in degradation of material or loss of structural integrity. Specific areas of interest include:
  - All phenomena related to cyclic deformation, damage accumulation, crack formation, crack growth, and fracture of either materials or structures;
  - Physical deformation and fracture mechanisms;
  - Constitutive modeling, stress and strain analysis ranging from global to local (e.g., the crack-tip vicinity), and fracture mechanics analysis;
  - Models that relate loading, deformation, configuration and damage parameters to life and residual strength behavior;
  - Fatigue and fracture behavior of welded, fastened, and bonded components or assemblies of metallic or composite materials;
  - Relationships between fatigue and fracture behavior and: (a) material characteristics (e.g., microstructure; thermo-mechanical history; residual stresses), (2) design details (e.g., stress concentrations; construction methods) and (3) operational details (e.g., quality control procedures; fretting; wear; mechanical, chemical, thermal, and radiation environment); and
  - Methods and procedures, including statistical analysis, by which fatigue and fracture characteristics may be described, evaluated, and detected.

### TECHNICAL SUBCOMMITTEES

E08.02 Standards and Terminology

E08.03 Advanced Apparatus and Techniques

E08.04 Structural Applications

E08.05 Cyclic Deformation and Fatigue Crack Formation

E08.06 Crack Growth Behavior

E08.07 Fracture Mechanics

### KEY DOCUMENTS

- E399 Standard Test Method for Linear-Elastic Plane-Strain Fracture Toughness  $K_{Ic}$  of Metallic Materials
- E1049 Standard Practices for Cycle Counting in Fatigue Analysis
- E1820 Standard Test Method for Measurement of Fracture Toughness

