

Joint Shear Test Fixture for Advanced Ceramics

Built to ASTM C1469 — Standard Test Method for Shear Strength of Joints of Advanced Ceramics at Ambient Temperature



OVERVIEW

Precision-machined fixture for determining the shear strength of joined advanced ceramics using the asymmetric four-point flexure method. Offset loading points create a zone of near-pure shear across the joint plane at mid-span, so failure is driven through the joint rather than the substrate.

KEY FEATURES

- Asymmetric four-point loading geometry concentrates shear at the joint centerline
- Uniform, straight-notched and V-notched specimen geometries accommodated
- Hardened, ground loading surfaces for repeatable contact and long service life
- Supports force- or displacement-controlled testing on any universal test machine
- Supplied with adapters to suit your load frame (clevis or threaded)

TECHNICAL SPECIFICATIONS

Test method	Asymmetric four-point flexure (shear)
Test temperature	Ambient (room temperature)
Specimens	Machined bar specimens, joint at mid-length; uniform, straight-notched or V-notched
Load capacity	10 kN standard; higher capacities on request
Fixture material	Hardened tool steel, corrosion-resistant finish
Loading members	Hardened, ground rollers / load points
Machine connection	Clevis pin or threaded adapter, to suit customer frame
Compatible frames	Electromechanical and servo-hydraulic universal test machines

APPLICATIONS

- Ceramic matrix composite (CMC) joints
- Brazed and bonded monolithic ceramics
- Aerospace and power-generation hot-section materials
- Joining process development and quality control

ABOUT THE STANDARD

ASTM C1469 measures the shear strength of ceramic joints at ambient temperature using asymmetric four-point flexure. It is particularly suited to continuous-fiber ceramic matrix composites (CMCs) and may also be applied to monolithic advanced ceramics. Specimens are machined from larger joined pieces; the method is intended for joints of low to intermediate strength relative to the substrate.

Ordering & customization: Specify specimen dimensions, notch geometry, required capacity and test machine connection when ordering. Custom spans and specimen sizes available.

Specifications are typical and may vary by configuration; confirm at time of quote. Users should refer to the current edition of the standard for test procedures. Part ref. UGC-C1469-SF