

Aligned Tensile Fixture for Monolithic Ceramics

Built to ASTM C1273 — Standard Test Method for Tensile Strength of Monolithic Advanced Ceramics at Ambient Temperatures



OVERVIEW

Tensile fixture for monolithic advanced ceramics per ASTM C1273. Because brittle ceramics are highly sensitive to bending, the load train is designed for precise alignment, with grips that load the specimen through its shoulders or faces so failure occurs in the uniform gauge section.

KEY FEATURES

- Load train designed for low-bending alignment
- Grip inserts matched to shouldered or flat specimen geometries
- Compatible with strain-gauged alignment verification specimens
- Compliant interfaces reduce stress concentrations at the grip
- Supplied with adapters to suit your load frame (clevis or threaded)

TECHNICAL SPECIFICATIONS

Test method	Uniaxial tension, ambient temperature
Test type / loading	Monotonic axial tension
Specimens	Shouldered or flat ceramic specimens per ASTM C1273
Load capacity	10 kN standard; higher capacities on request
Fixture material	Heat-treated alloy steel
Gripping surfaces	Inserts matched to specimen shoulder or faces
Machine connection	Clevis pin or threaded adapter, to suit customer frame
Compatible frames	Electromechanical and servo-hydraulic universal test machines

APPLICATIONS

- Silicon nitride and silicon carbide
- Alumina and zirconia ceramics
- Design allowables for ceramic parts
- Materials research and qualification

ABOUT THE STANDARD

ASTM C1273 determines the tensile strength of monolithic advanced ceramics at ambient temperature under monotonic uniaxial loading. Because of the material's brittleness, the method stresses specimen geometry, gripping and load train alignment to keep bending to a minimum, and supports fractography of failed specimens to identify strength-limiting flaws.

Ordering & customization: Specify specimen geometry and dimensions, required capacity and test machine connection when ordering. Alignment couplers 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-C1273-TF