

ASTM D5961 Bearing Test Fixture

Bearing Response Fixture for Composite Laminates

Built to ASTM D5961 — Standard Test Method for Bearing Response of Polymer Matrix Composite Laminates



OVERVIEW

Bearing test fixture for composite laminates loaded through a fastener or pin. The fixture holds the laminate and pin so that load is transferred into the specimen hole, allowing bearing stress versus bearing strain to be measured with extensometry across the hole for strength and stiffness evaluation.

KEY FEATURES

- Double-shear clevis and pin configurations
- Single-shear fastened joint specimens supported
- Hardened, precision-ground pins sized to fastener diameter
- Extensometer mounting provisions across the hole
- Anti-buckling support option for compression loading

TECHNICAL SPECIFICATIONS

Test method	Bearing response of composite laminates
Test type / loading	Pin or fastener bearing, tension or compression
Specimens	Laminates with fastener holes, per ASTM D5961 geometry
Load capacity	50 kN standard; higher capacities on request
Fixture material	Hardened tool steel, corrosion-resistant finish
Pins	Hardened, ground pins to customer fastener diameter
Machine connection	Clevis pin or threaded adapter, to suit customer frame
Compatible frames	Electromechanical and servo-hydraulic universal test machines

APPLICATIONS

- Carbon and glass fiber laminates
- Bolted and riveted composite joints
- Aerospace structural qualification
- Fastener and hole-quality studies

ABOUT THE STANDARD

ASTM D5961 determines the bearing response of polymer matrix composite laminates. It includes procedures for double-shear and single-shear configurations, loaded in tension or compression through a pin or fastener in a hole. Bearing stress, bearing strain, offset bearing strength and ultimate bearing strength are reported, supporting joint design and material qualification.

Ordering & customization: Specify procedure (double or single shear), fastener diameter, laminate thickness, required capacity and test machine connection when ordering.

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-D5961-BTF