

V-Notched Rail Shear Fixture for Composites

Built to ASTM D7078 — Standard Test Method for Shear Properties of Composite Materials by V-Notched Rail Shear Method



OVERVIEW

V-notched rail shear fixture for determining the in-plane shear properties of composite laminates per ASTM D7078. Two fixture halves clamp the edges of a V-notched specimen with bolted rails; tensile loading of the fixture shears the gauge section between the notches, producing a large uniform shear region.

KEY FEATURES

- Bolted rails clamp specimen edges for high load transfer by friction
- Large gauge section suits textile and coarse-weave laminates
- Fixture halves guided for alignment of the notch root line
- Open gauge area for strain gauges or DIC
- Loaded in tension through standard clevis connections

TECHNICAL SPECIFICATIONS

Test method	V-notched rail shear
Test type / loading	Tensile loading of fixture producing in-plane shear
Specimens	Flat V-notched laminates per ASTM D7078 geometry
Load capacity	50 kN standard; higher capacities on request
Fixture material	Hardened steel, corrosion-resistant finish
Gripping surfaces	Bolted clamping rails with textured faces
Machine connection	Clevis pin or threaded adapter, to suit customer frame
Compatible frames	Electromechanical and servo-hydraulic universal test machines

APPLICATIONS

- In-plane shear of composite laminates
- Woven and textile composites
- Aerospace material allowables
- Composite R&D labs

ABOUT THE STANDARD

ASTM D7078 determines the shear properties of high-modulus fiber-reinforced composites using a V-notched rail shear specimen. The specimen is clamped by rails along its edges and loaded in tension through the fixture, creating shear between the notches. Compared with the Iosipescu method, the larger gauge section suits textile and coarse-weave laminates.

Ordering & customization: Specify specimen thickness, required capacity and test machine connection.

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.
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