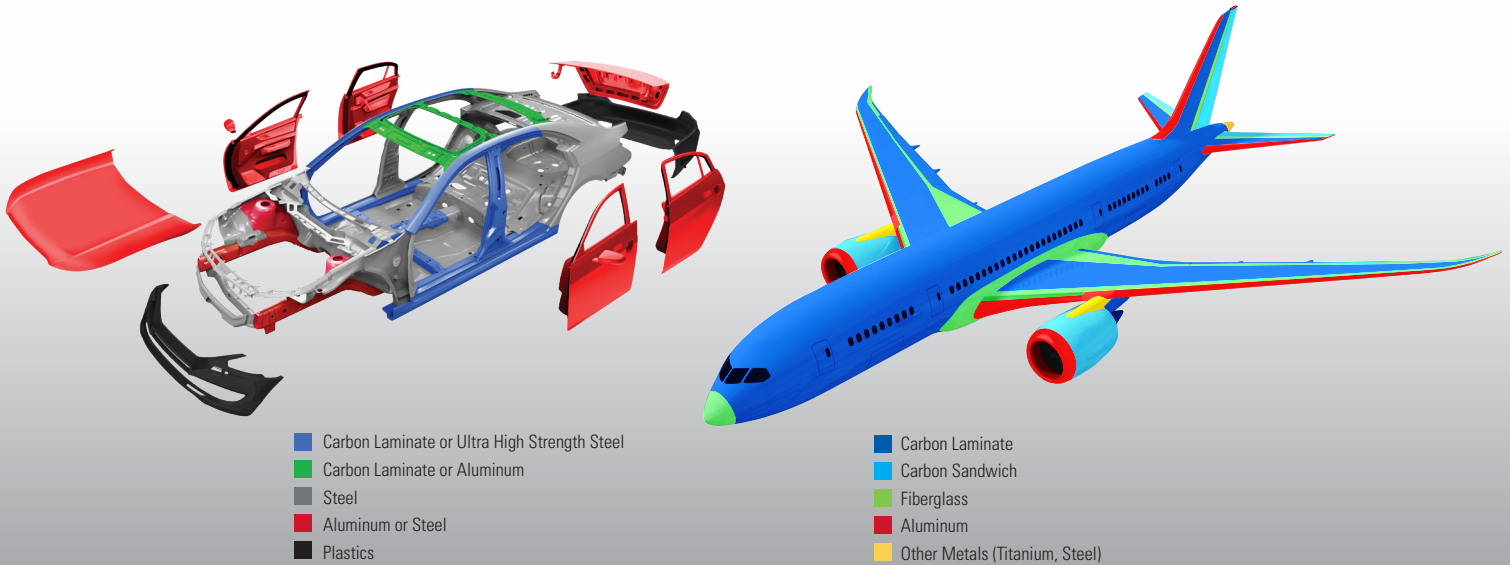




Polymer Matrix Composites Testing Solutions



MTS' composite materials testing solutions are designed to help QC and R&D labs in the evaluation and determination of material properties for plastics, polymer matrix composites and adhesives.



MTS MATERIALS TESTING SOLUTIONS

be certain.

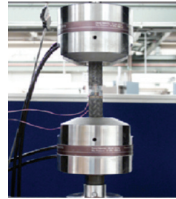
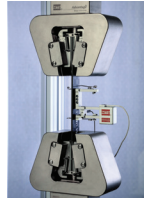
MTS Static & Dynamic Polymer Matrix Composites (PMCs) /Fibre Reinforced Plastics (FRPs) Testing Solutions

Lamina & Laminates

In-plane Tensile & Tension / Tension Fatigue

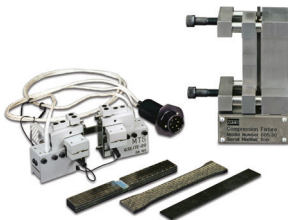


ISO 527-4&5, ASTM D3039, EN 2561 & EN 2597

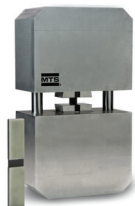


ISO 13003 & ASTM D3479

In-plane Compression Tests End-Loading, Shear-Loading & Combined Loading



ASTM D695 & prEN 2850

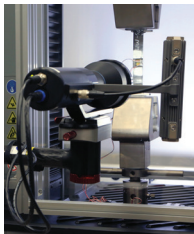


ISO 14126 & ASTM D3410



ASTM D6641

In-plane Shear Tests $\pm 45^\circ$ Tensile, V-Notch Rail & Iosipescu



ISO 14129, ASTM D3518 & EN 6031

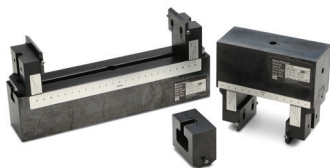


ASTM D7078



ASTM D5379

3 & 4P Flexure & Short Beam Strength



ISO 14125, ASTM D790, ASTM D6272, ASTM D7264, EN 2562 & EN 2746

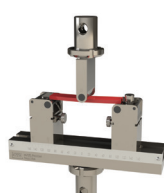


ISO 14130, ASTM D2344, EN 2377 & EN 2563

Fracture Toughness Tests Model I, Model II & Mixed Model I/II



ISO 15024, ASTM D5528, EN 6033 & ASTM D6115



ISO 15114, ASTM D7905 & EN 6034



ASTM D6671

Structural Tests

Open / Closed Hole Tension, Compression & Fatigue



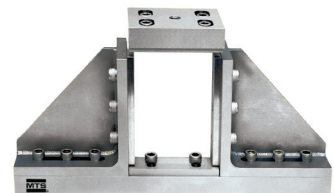
ASTM D5766, ASTM D6742, EN 6035, ASTM D7615, ISO 12817 & ASTM D6484

Bearing & Bearing / Bypass Interaction Response



ASTM D5961, ASTM D6873 & ASTM D7248

Compression After Impact

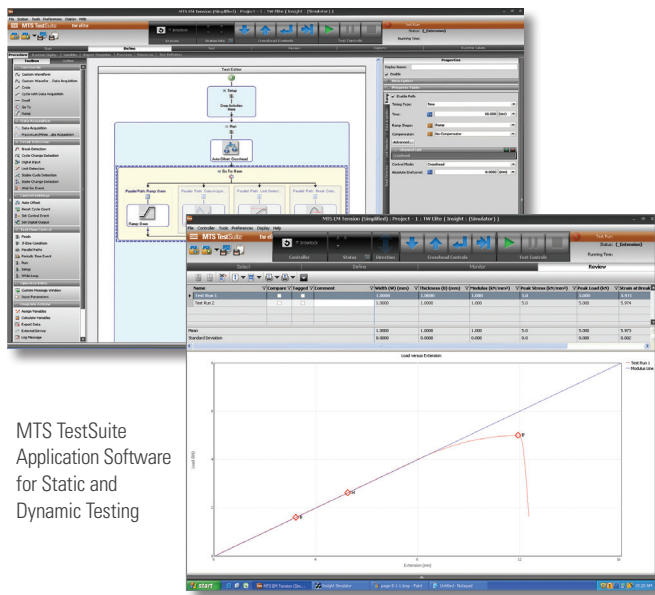


ISO 18352, ASTM D7137 & EN 6038

Composite materials testing labs routinely need to test per international standards, like ISO, ASTM, EN, JEC, etc. or based on tailored manufacturing standards, but they also need to be able to run tests that have never been performed before.

MTS Systems supports a full range of static and dynamic mechanical test methods under a variety of environmental conditions for plastic, polymer matrix composite materials and adhesives.

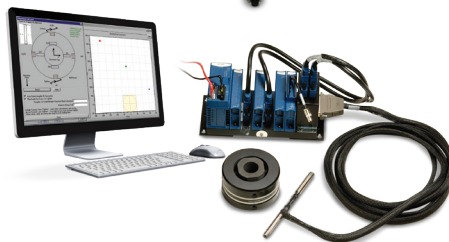
Full Complement of Test Accessories



MTS TestSuite
Application Software
for Static and
Dynamic Testing



Environmental
Simulation Systems



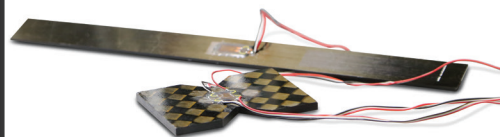
Alignment
Solutions

Learn More

Contact MTS and explore how versatile, high-performance MTS test system can enhance the accuracy and efficiency of your research and development or manufacturing quality testing programs.

- » Robust Electromechanical & Servohydraulic Load Frames
- » Versatile FlexTest® Digital Controllers
- » Modular MTS TestSuite™ Software
- » Fatigue-rated Force Transducers
- » Durable Grips & Fixtures
- » Precision Extensometer/Strain Measurement
- » Accurate & Reliable Environmental Simulation
- » Critical Load Frame Alignment Tools
- » Unmatched MTS Service & Support

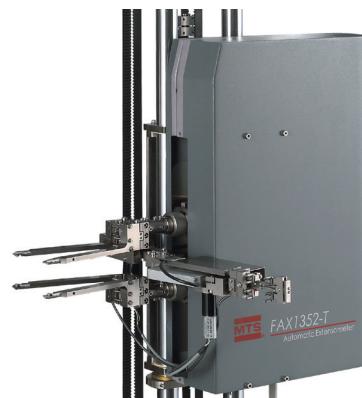
Strain Measurement Options for Every Application



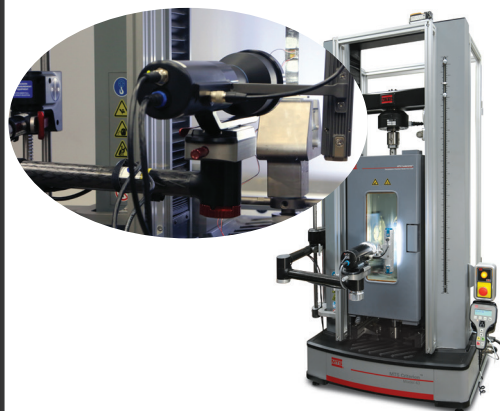
Strain Gages



Clip-on Axial, Biaxial or Axial Averaging Extensometers



Automatic Extensometer



Non-contacting Video Extensometer

Standards

Examples of the many composites testing standards

Polymer Matrix Composites (PMCs) / Fibre Reinforced Plastics (FRPs)	
LAMINA AND LAMINATES	STANDARD
In-plane tensile tests	ISO 527-1, ISO 527-4, ISO 527-5, ASTM D3039, EN 2561, EN 2597
In-plane compression tests	ISO 14126, ASTM D695, ASTM D3410, ASTM D6641, ASTM D5467, prEN 2850
In-plane shear tests	ISO 14129, ISO 15310, ASTM D3518, ASTM D3846, ASTM D4255, ASTM D5379, ASTM D7078, EN 6031
Flexural tests (3-point and 4-point bend)	ISO 14125, ASTM D790, ASTM D6272, ASTM D7264, EN 2562, EN 2746
Short beam / Apparent Interlaminar shear	ISO 14130, ASTM D2344, EN 2377, EN 2563
Fracture toughness (Mode I & II, Mixed Mode I & II)	ISO 15024, ISO 15114, ASTM D5528, ASTM D6115, ASTM D6671, ASTM D7905, EN 6033, EN 6034
In-plane tension / tension fatigue	ISO 13003, ASTM D3479
STRUCTURAL	STANDARD
Notched (open hole, filled hole) tension tests	ASTM D5766, ASTM D6742, EN 6035
Notched (open hole, filled hole) compressive tests	ISO 12817, ASTM D6484, ASTM D6742, EN 6036
Notched (open hole) fatigue test	ASTM D7615
Bolted joint (static, fatigue bypass) strength tests	ASTM D5961, ASTM D6873, ASTM D7248, EN 6037, EN 13706-2
Compression after impact	ISO 18352, ASTM D7137, EN 6038
SANDWICH CONSTRUCTION	STANDARD
Tensile	ISO 1926, ASTM C297, ASTM D1623, EN 2243-4
Node Tensile Strength	ASTM C363
Compression	ISO 844, ASTM C364, ASTM C365, ASTM D5467, ASTM D1621
Shear	ISO 1922, ASTM C273, ASTM C394, ASTM C393, ASTM D7250
Flexure	ISO 1209, ASTM D7249, ASTM D7250
Static energy absorption	ASTM D7336

Resin / Plastics	Standards
Tensile	ISO 527-2, ISO 527-3, ASTM D638, ASTM D882
Tensile – high strain rates	ISO 18872
Compression	ISO 604, ASTM D695
Flexure	ISO 178, ASTM D790, ASTM D6272
Shear	ASTM D732
Fracture toughness	ISO 13586, ASTM D6068
Fatigue crack propagation	ISO 15850
Fatigue	ASTM D7774, ASTM D7791
Impact	ISO 179-1, ASTM D6110, ISO 180, ASTM D256, ASTM D4812
Bearing strength	ASTM D953
DMA	ISO 6721 Part 4 & 12, ASTM D5034, ASTM D5024, ASTM D5026, ASTM D7028 (PMC)

Adhesives (Plastics & Metal)	Standards
Tensile / Tensile strength	ISO 6922, ASTM D897, ASTM D2095, EN 15870, EN 26922
Lap shear	ISO 4587, ASTM D3163, ASTM D3164, ASTM D5868, prEN 6060, ASTM D1002, ASTM D3165, ASTM D2295, ASTM D2557, EN ISO 9664, ASTM D3166, ASTM D3528, EN 2243-1, ISO 11003-2, ASTM D5656, EN 14869-2, EN 1465
Shear strength	ISO 10123, ASTM D4562, EN 15337, ISO 11003-1, EN 14869-1
Peel	ISO 14679, ASTM D1184, EN 1966, ASTM D1781, EN 2243-3, ISO 4578, ASTM D3167, EN 1464, EN 2243-2, EN ISO 11339, ASTM D1876, ISO 8510-1, ASTM D6862, ASTM D3330 (Method F), EN 28510-1, ISO 8510-2, ASTM D903, ASTM D3330 (Method A, B – E), EN 28510-2
Fracture strength	ISO 25217, ASTM D5041, ASTM D3433
Impact strength	EN ISO 9653, ASTM D950



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