

Seat SYSTEMS TEST

SYSTEMS TEST • DURABILITY • FATIGUE • REPEATABILITY

- Range of flexible facilities for seat component and seat testing
- Legislative, development and durability tests
- New test configurations developed to meet customer needs
- Comprehensive service
- Rapid customised response

Seat testing at Millbrook is integrated to subject seats to all the real-world inputs they are likely to see in service. Climatic conditioning, repeated cover & cushion wear cycles, frame and mechanism durability & fatigue and structural strength tests can all be conducted on site to provide complete seat test programme solution at a single location.

Test Equipment

- FANUC Robot seat durability facility with interchangeable seat forms
- Team CubeTM multi-axis shaker table in climatic chamber
- Seat cover wear rigs with various degrees of freedom
- Seat frame fatigue rigs
- Corrosion chamber
- Dust chamber
- Electromagnetic shakers up to 2,300 kgf
- Vibration slip table
- Sine, random, shock and road load data controllers
- Pneumatic actuators and PLC controllers
- HyGe Sled (12" reverse acting linear shock tester)
- Pendulum Impact System
- TEKSCAN Measurement System for pressure mapping
- FMVSS 201U Free Motion Headform Impact System

Technical SPECIFICATIONS

Cover & Frame Durability

- Robot with load cell seat form
- Jounce, squirm, side entry, exit
- Frame Fatigue
- Frame static loading

Environmental Tests

- High, low temperature & humidity
- Salt spray, dust intrusion
- Infra-red sunload simulation

Technical SPECIFICATIONS

Adjust Mechanism Durability

- Recline, height adjust, lumbar support mechanism
- Slider & lock mechanism
- Head restraint adjustment
- Frame fatigue loads

Static Airbag Deployment

- High speed digital video up to 3,000 fps
- Environmental conditioning of airbag modules:- High, low temperature & humidity, Dust ingress, drop and vibration

Dynamic Safety Tests

- ECE R17: Seat & seat anchorage strength & Luggage retention test

Static Safety Tests

- ECE R17, R21 & R25: Seat back & head restraint moment arm test & Interior projections pendulum test

Multi-Axis Life Simulation

- Team Cube™ multi-axis shaker table
- Road profile shock and vibration
- Simulation control
- Durability testing of all deployable systems
- High frequency range and low operating noise
- Climatic chamber range -400 C to 1200C / 98% RH 18m3 capacity
- Infra-red lamps for elevated surface temperatures
- Squeak & rattle subjective assessments
- Microphone for sound recordings

Seat Comfort Assessment

- Seat/occupant interface pressure distribution
- Static or dynamic measurements
- In-vehicle subjective appraisal

Millbrook OVERVIEW

Millbrook is one of Europe's leading locations for the development and demonstration of every type of land vehicle, from motorcycles and passenger cars to heavy commercial, military and off-road vehicles. Located at the geographical centre of the UK automotive and fuels industry and situated centrally in the strategic Oxford to Cambridge Arc just 65 kilometres to the north of London, our custom-built facility provides virtually every test, validation and homologation service necessary for today's demanding programmes, complemented by a worldwide reputation for confidentiality, service and competitiveness.

Although significant work has been done commercially on behalf of many research organisations, Millbrook has always focused on real world applications and understand the constraints, limitations and budgetary controls that affect our customers. Our staff have experience and expertise from backgrounds in test work within vehicle manufacturers' engineering departments, so they know what their customers expect from a test. Putting working relationships first, and seeing things from the customer's point of view, means Millbrook's support will survive the test of time.