

Durability and RELIABILITY

CORROSION • DURABILITY • POWERTRAIN • QUALITY

- Accelerated exposure
- Correlated to real world usage
- Facilities for truck size & loads
- No public road restrictions
- Light & heavy duty off highway vehicles

In the laboratory, system and component rigs are custom-built to provide a bespoke test solution with no compromises in their mode of operation.

Complex tests systems are designed and built, resulting in accurate replication of in-service conditions and faithful duplication of field issues. Load cases are determined from customer requirements, industry standard or road load data from public roads or the proving ground.

On the track, Millbrook has available a comprehensive suite of vehicle durability test schedules developed over 35 years of vehicle test operations. Our specialist schedule correlation team can reproduce tests based on in-service data, or from other facilities around the world, to provide tailor-made schedules to suit the needs of customers.

Millbrook is an ideal location for powertrain testing and validation offering a range of curves from cambered bends to hairpin corners where the powertrain is subjected to lateral accelerations and differential loading. Additional realistic and repeatable loads are given by special features within the tracks designed to input shock loading and low frequency high peak torque loading. Our unique Hill Route enables loading conditions to be sustained for extended periods while a continuous high speed environment is provided by the High Speed Circuit.

Accelerated corrosion testing simulates the effects of corrosion that are experienced by a vehicle during its 'in-service' life, including the very corrosive environments of the North East and South East areas of North America. Correlation between test and 'in-service' life has been achieved by monitoring deterioration and corrosion exposure of vehicles in normal service, and tailoring the procedures to reproduce these parameters with a much reduced elapsed time, providing an acceleration ratio for cosmetic corrosion of 26:1.

This combination of structural laboratories, comprehensive track system, corrosion, exhaust emission and workshop facilities etc., provides meaningful and repeatable testing in a secure environment.

Technical SPECIFICATIONS

Paved Roads

- 3.2km (2.0 mile) circumference banked high speed circle allowing neutral steer operation at speeds up to 160km/h (100mph) and frequently used at over 240km/h (150mph)
- Hill Route with constant gradients of 7, 11, 14, 17, 21 & 26% arranged in loops that can be repeated or bypassed as required
- Simulated City Driving Course with defined speeds, stop start and reverse manoeuvre points
- 20 & 25% test slopes with a winch anchor point at the top of the 20% slope
- Special Surfaces area consisting of sinuoidal and random wave forms with rough blacktop and 'cat's-eyes'
- Various engineering features are available to introduce peak loads into the vehicle
- All paved roads, except the City Course are suitable for use by vehicles with axle loadings up to 13 tonnes

Unpaved Roads

- Cross Country course with regularly graded surface and gradients up to 30% suitable for all classes of vehicles
- Loose surface and sand hill climb sections
- Off-road course for recreational vehicles with twist course, water holes and high speed straights
- Gravel Road which simulates European and American unpaved roads

Corrosion Test Facilities

- High temperature, high humidity chamber 11.1m x 3.5m x 3.5m high will maintain 49°C and 100% RH
- Separate heat and humidity sources enable chamber to be used as heat chamber up to 40°C
- Salt spray and splash trough with controlled brine concentration
- Salt spray corrosion chamber (1 000 litre capacity)
- Grit and Mud troughs to provide poultice accumulation and an abrasive medium
- Gravel Road to provide stone damage and dust
- Corrosion acceleration process monitored by coupon evaluation
- Highly trained inspection and reporting team with full photographic support

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.