

## Semi-Anechoic Chamber

Millbrook's semi-anechoic chamber (SAC) enables vehicle noise and vibration tests to be completed in a controlled, repeatable environment with low levels of background noise.

Twin rollers are connected to a 350kW DC machine dynamometer, enabling high power vehicles to be tested using a wide range of drive profiles. The room will accommodate vehicles up to the largest trucks and buses.

### Specification

- Entrance door size: 4.7m (high) x 3.8m (wide)
- Working area: 19m x 9m x 5m
- Background noise: 40dB (lin)
- Lower cut-off frequency: 70Hz
- Power absorption: 350kW (50 - 130km/h)
- Drive back: 300kW (50 - 130km/h)
- Tractive Effort: 36kN
- Speed: 0 - 130km/h
- Rollers: 1,200mm diameter, 1,350mm centres
- Tyres: 700mm - 1200mm diameter
- Road load simulation: vehicle inertias to 40kN, simulation of gradients +/-40kN
- Braking inertia: simulation up to 20T
- Max braking force: 200kN (=1g at 20T)
- Chamber ventilation: noise free extraction up to 3.5m/s aux fans for ram-air cooling



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The chamber may be hired for use by customers' own test engineers or tests can be supported by engineers at Millbrook.

Millbrook's engineers will be pleased to advise on appropriate test programmes to achieve specific objectives, or can work to customers' own in-house specifications.

### Typical activities:

- Benchmarking, characterisation and design validation
- Investigation of noise and vibration performance (transmission path analysis, running mode analysis)
- Powertrain noise investigations
- Driveline and axle investigations
- Exhaust system noise and vibration measurement
- Disconnect exercises
- Acoustic transfer function measurement
- Exhaust system transmission loss/insertion loss tests
- Driveline durability testing
- Driveline vibration investigations
- Acoustic testing of individual components requiring very low background noise

