

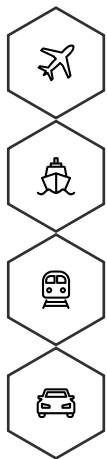
VIPAC

Engineers & Scientists

Leading Commercial
Qualification Testing
Services Australia

PAC Engineers & Scientists
ENVIRONMENTAL TESTING

Environmental Testing



Established in 1973, Vipac Engineers & Scientists has organically grown to become one of Australia's leading engineering testing laboratories and consultancies. Proudly Australian owned and operated, Vipac specialises in environmental testing for commercial and the defence & space industry.

Vipac's A2LA (Certificate #5677.01) accredited qualification services are compliant with a broad range of standards as per **ISO/IEC 17025** for Infrastructure & Asset Integrity and Manufactured Goods. The company provides testing to essential international commercial, military, and packaging standards.

These services include, but are not limited to acceleration, high altitude, high amplitude

shock, hydrostatic pressure, inclination, ingress protection, salt spray, temperature & humidity, and vibration & shock testing.

Vipac offers the ability to custom design and build rigs for the cyclic testing of a wide range of components. These can be built to customer specifications and are able to apply up to 20 tonnes of force.

The company hosts a large, walk-in climatic chamber offering temperatures from -30 to 90°C. It is ideal for large equipment.

By specifying Vipac you will receive a consistent, high-quality service, with facilities in Melbourne plus onsite consulting from Brisbane, Adelaide, and Sydney. The company offers a complete suite of vibration & shock testing options in Melbourne.

Top and Left: Vipac's cutting-edge shaker putting vehicle components through their paces.

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High Amplitude Shock Testing

- > For payloads up to 450kg, with a table size of 1200 x 1200mm.
- > Up to 600g and 2ms high amplitude shock acceleration levels.
- > High velocity SRS testing (suitable for naval assets).
- > All common shock pulse shapes catered for.



Vibration & Shock Testing

- > Electrodynamic shakers up to 60kN force, and with a maximum displacement of 76mm peak-to-peak.
- > Hydraulic shakers for payloads up to 2,000kg and with a maximum displacement of 150mm peak-to-peak.
- > Multiple medium high-force shakers up to 32kN force.
- > Vibration controllers include sine, random, classical, sine-on-random (SOR), random-on-random (ROR), shock response spectra (SRS), and resonance track & dwell.
- > 1Hz to 3kHz vibration.
- > Up to 120kN shock.



Temperature & Humidity Testing

- > A wide temperature range from -70 to +180°C; Relative humidity from 2 to 99%.
- > Fast ramp rates exceeding 6°C/min.
- > Variety of chamber sizes from 1m² to over 50m².
- > Suitable for both commercial plus defence & space assets.
- > Liquid testing.



High Altitude Testing

- > Up to 3kPa (absolute).
- > Controlled pressure ascent and descent ramp rates.
- > Can be combined with high and low temperatures.
- > Suitable for both commercial and defence & space assets.





Left: Vipac provides vital salt spray & corrosion resistance testing.



Applicable Standards

- > **Defence & Space**
 - > DEF(AUST)5000
 - > DEF-STAN 00-35
 - > MIL-STD 167
 - > MIL-STD 810
 - > MIL-STD HP BK
 - > NASA & NATO
 - > SpaceX
 - > RTCA/D0-160F
- > **Commercial**
 - > ISO/IEC 17025
 - > ASTM B117
 - > AS 1170.4
 - > AS IEC 60068
 - > AS IEC 60529
 - > IEC 61373
 - > BS EN 50125
 - > BS EN 50155
 - > ISO 16750



Mechanical Load & Fatigue Testing

- > For static and cyclic load ranges up to 20 tonne.
- > Programmable servo-hydraulic controller for extended duration fatigue testing.
- > Force, displacement, and strain gauging measurements available.
- > Common for the testing of automotive, rail, mining, and defence industry assets.



Salt Spray/Corrosive Atmosphere Testing

- > Assessment of equipment in harsh atmospheres.
- > Ideal for the comparison of coatings or anodizing on hardware.
- > For marine assets or the evaluation of materials.

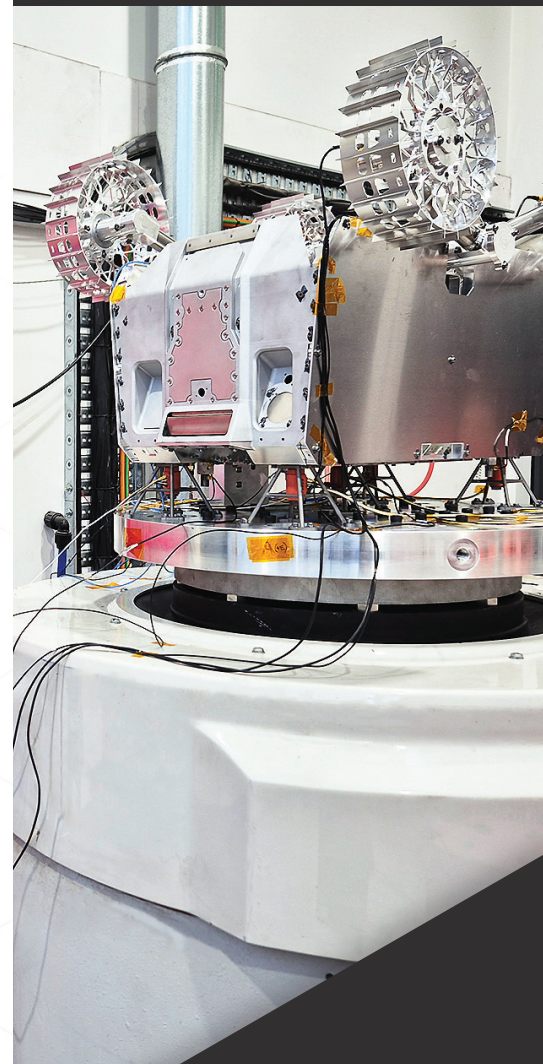
Official Roo-ver Project Partners

Roo-ver is Australia's first Moon rover. It is being designed, built, and tested in Australia as part of the Australian Space Agency's Moon to Mars Trailblazer Initiative. As a Roo-ver Project Partner, Vipac Engineers & Scientists is providing environmental qualification testing to support verification of its hardware for the mission.

Vibration qualification forms a key component of the testing program. The scope includes sine burst, sine vibration, sine sweep, and random vibration testing. Sine sweep testing covers a frequency range of 5 Hz to 2,000 Hz, while

the random vibration profile covers 20 Hz to 2,000 Hz with an overall 14.4 g RMS input and a planned duration of two minutes per axis. Qualification testing is undertaken in three orthogonal axes (X, Y, and Z). The quoted test scope also includes 18 sine sweep cycles and multiple sine vibration profiles across the specified frequency ranges.

Participation in Roo-ver demonstrates the application of Vipac's established environmental testing capabilities to one of Australia's most significant space engineering initiatives.





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& operated since 1973.



Qualifications & Certifications

- > A2LA (Certificate #5677.01) Accredited
- > NATA Accredited Ingress Protection Testing
- > BSI ISO 45001, ISO 9001, and ISO 14001



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