Dynamic Impact Test Facility
A word from us...

Holmes Solutions is proud to be an industry leading engineering consultancy and internationally accredited test agency.

We are recognised globally as leading experts in the performance of engineered systems under high-energy dynamic forces or impacts. Our work includes full scale crash testing of roadside safety hardware, anti-terrorism products, validation of rock fall protection systems, development and testing of adventure recreation devices and earthquake engineering restraint products.

Holmes Solutions have a proven history providing services to numerous international clients, both within government and industry sectors.

We look forward to working with you.

Dr Chris Allington
Chief Executive Officer
Holmes Solutions Limited Partnership
THE HOLMES SOLUTIONS ADVANTAGE

At Holmes Solutions we pride ourselves on providing our clients with a strong return on investment. We are passionate about solving technical challenges and delivering savings.

Client satisfaction is a key motivator for our entire team. We strive to remain agile whilst maintaining a strong depth of knowledge across the multidisciplinary areas in which we operate. This allows us to confidently tackle projects of varying sizes and complexity.

With a unique set of skills under one roof, our in-house team of mechanical and structural engineers work together with our ISO 17025 accredited test facilities to help our clients engineer smarter products. By providing tailored programs from Research and Development through to Compliance, we can help you gain competitive advantage and commercial success.

Our services form a comprehensive value package, including:

- Research and Product Development
- Compliance Testing
- Product Approval

At Holmes Solutions, each project is unique and presents a variety of challenges and rewards. We thrive on meeting these challenges head-on with an innovative approach.
RESEARCH AND DEVELOPMENT

Our drive is to achieve the optimal design solution for our client’s needs; designs that provide the greatest performance for the least amount of compromise.

Holmes Solutions can work with you to provide guidance, pre or post testing, to ensure that your system best meets all your requirements. We take into consideration key factors, such as:

- Manufacturing Costs
- Optimal Performance
- Ease of Installation
- Transport Costs

Our research and development services include:

**Engineering Review and Product Assessment**

To help reduce the risks and assist your commercial success, we offer a full engineering review of your existing product design prior to engaging a full testing program.

The purpose of this review is to analyse the design in context of the required regulations and to identify possible failure modes. Additionally, this review highlights design opportunities to help improve your market adoption and performance.
Feasibility Testing

Undertaking feasibility testing on system components can provide better preliminary performance indicators compared to desktop analysis alone. This can be particularly effective in cases where the material behaviours are difficult to derive or calculate.

Feasibility testing of your system may include a series of small scale static tests or low speed dynamic impacts.

Prototype Manufacture

We operate a full-scale prototype manufacturing facility. This allows us to quickly iterate new design solutions, fabricate prototypes and verify performance.

The physical evidence gained from prototype testing allows us to accurately identify ways to optimise performance — we can take you well beyond where traditional designers stop.

Full Scale Dynamic Research and Development Testing

To help optimise your testing investment, our initial research and development tests can verify your product will likely meet the required evaluation criteria of compliance testing and achieve the performance required.

These tests provide invaluable feedback regarding the function of your system and give you the opportunity to make design refinements prior to investing in full compliance tests.

Real data from physical testing helps you gain the trust of engineers and approval agencies.

OUR SERVICES
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COMPLIANCE TESTING

Our ISO 17025 accredited test facilities enable us to effectively evaluate your systems. We develop programmes to provide data in accordance with the international standards you require. Programmes may include a combination of full scale testing, medium scale testing and engineering analysis. Authorities around the world use the output data as a key factor for deciding whether to approve your products for use in their respective regions.

Our ISO 17025 laboratory is accredited to undertake testing to various international standards including:

- MASH and NCHRP 350
- EN 1317
- EN 12767
- ASTM 2656 and PAS 68/(IWA 14-1)

As the only approved southern hemisphere testing laboratory of American Federal Highways Administration (FHWA) and recognition by numerous Notified Bodies in Europe for CE Marking, our test results are used for product approvals around the globe.

We are proud to have published in excess of 500 research reports on tested systems, and have achieved a 100% success rate with obtaining Letters of Approval. Systems we have tested are now commonly used throughout New Zealand, Australia, Europe, and the United States of America.

Our geographical location provides you with the unique opportunity to test your systems all-year-round and away from prying eyes.
OUR EXPERIENCE

We have completed successful testing programmes on a range of hardware, including:

- Wire rope longitudinal barriers
- Wire rope terminal ends
- Rigid and semi-rigid longitudinal barriers
- Gating and non-gating terminal ends/crash cushions
- Temporary plastic, concrete and steel longitudinal barriers
- Temporary plastic terminal ends
- Temporary and permanent sign support structures
- Breakaway utility poles
- Pole protection systems
- Security products (including bollards, security gates and fences)
- Anti-terrorist devices
- Rock fall protection systems
OUR SERVICES

As an active industry participant we regularly engage with other thought-leaders within the industry, attending a range of road safety conferences and research committee meetings.

PRODUCT APPROVAL

We understand the importance of getting products to market in a timely and cost effective manner. Our aim is to provide a balanced evaluation programme that will meet both the requirements of the compliance standards and provide an economical solution for your product approval.

Working in collaboration with you to gain a clear understanding of your needs will allow us to determine the best program to achieve product compliance. Our focus is on navigating the best pathway to market and achieving the best possible outcomes for your business and the industry as a whole.

We have a good relationship with a wide range of regulatory bodies in their respective disciplines and can assist you in gaining approval by providing engineering support. Additionally we have had specific experience in gaining approval for new innovative products previously tested to other regional standards.
TEST FACILITIES OVERVIEW

The Holmes Solutions impact testing facility is located at Ruapuna International Raceway in Christchurch, New Zealand. The facility has 350m of sealed roadway on either side of our primary crash testing area. Test articles of a maximum installed length of 400m, with approach angles varying from 0° to 90°, can be accommodated.

All test areas are fully certified under our ISO 17025 accreditation. The raceway provides access to over 3 km of sealed roadway surfaces able to be used for vehicle dynamics and handling tests. Roadways include straight road sections, cornering sections, transition zones and skid pad.

We have a full range of customisable test pads which can be used 12 months a year, including V-ditch (batter hinge), AASHTO Standard and weak soil, asphalt and concrete.

Our facility is capable of testing with small passenger vehicles through to heavy utility vehicles such as 10 tonne box trucks, or 36 tonne tractor and trailer units.

In addition to the high speed test facility, we operate a materials and component testing facility, complete with Universal Test Machines, large scale pendulum, and structural strong floor. This comprehensive setup allows us to complete component and materials testing prior to committing to a full scale crash test.

Operational in all seasons, our test facilities allow us to do feasibility through to full scale crash tests with both small and heavy vehicles.
Holmes Group companies share a culture of curiosity - the desire to explore and achieve excellence in engineered solutions.
Holmes Solutions will work with you to achieve unrivalled success. Our market-leading knowledge, engineering wisdom, and unique approach to problem solving allows us to make gains that others simply cannot achieve.

If you have a need, give us a call or email. Our team will be more than happy to talk through your requirements and possible solutions.