



Smart Solutions  
Powered by Science

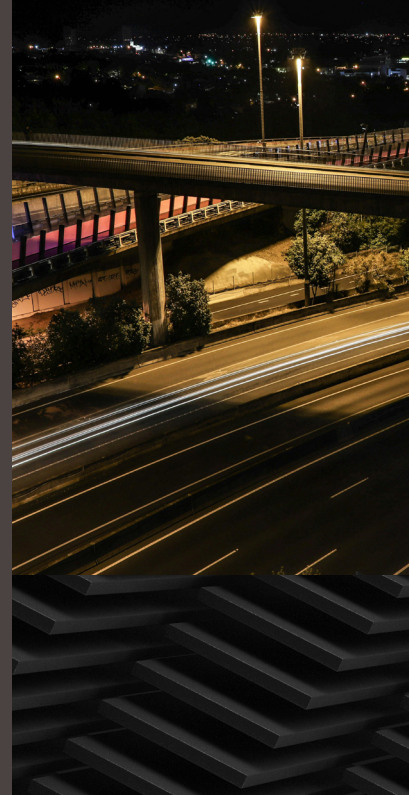
## Road Condition Surveying Capability Statement September 2025



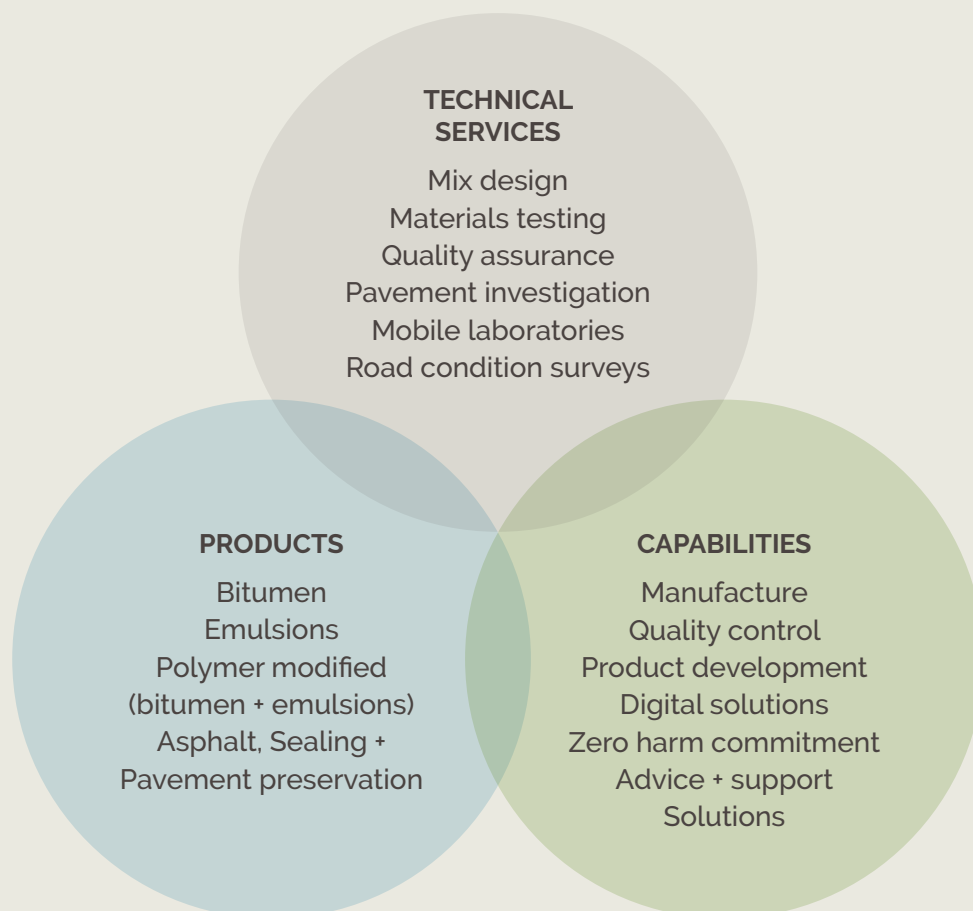


## Innovative road + pavement solutions

At Road Science, we lead with innovation  
— delivering smart, science-driven  
solutions that build safer, stronger, and  
more resilient roads for New Zealand.

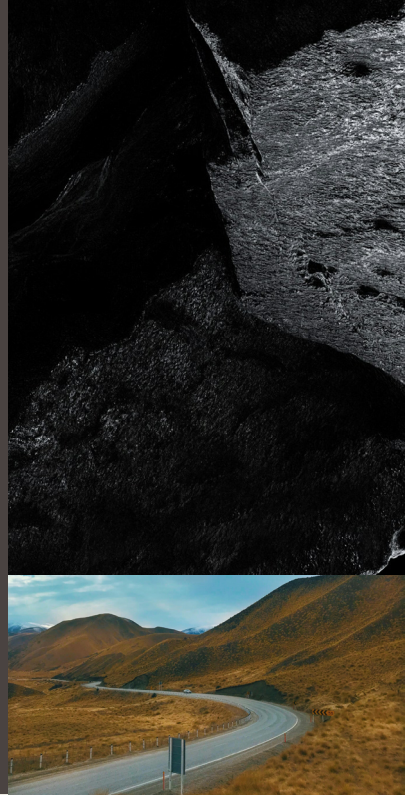


### Our complete solution



## Our values

Our values are the foundation of everything we do at Road Science reflecting who we are, how we work, and the impact we strive to make across the road and pavements industry.



### We are listeners

We believe great outcomes start with listening - to each other and to our customers. By asking the right questions and reflecting with empathy, we identify the real challenges to be solved. This helps us to build trust, set realistic expectations, and deliver lasting value.

Our culture values people first. We're inclusive, open to diverse thought, and easy to work with - never defensive. We stay agile in how we deliver, back each other as a team, and work with shared purpose. Together, we aim not to over promise, but to exceed expectations through honest relationships, unity, and consistent follow-through.



### We are your trusted experts

We're a passionate team of thinkers and doers - industry-recognised for our curiosity, craft and commitment to solving tomorrow's problems. We combine deep technical knowledge with genuine care for people, always designing for safer outcomes and zero harm.

Proudly Kiwi-made, we build trust through consistent delivery, open communication and humble confidence in what we do. We stay present - in the field, in the industry and in our relationships - because great outcomes are built together. We learn from the past, challenge ourselves with new thinking and take pride in doing what we say we'll do, every time.

We don't just follow best practice - we help shape what's next.



### We deliver solutions

Every solution is a team effort - from plant operators to mobile crews, office staff to lab technicians. We combine deep expertise with agility, working together to solve the real problems our customers face.

We embrace technology, adapt to change, and aren't afraid to think outside the box. We follow through, even when things get tough, learning from setbacks and staying focused on the outcome. Through strong partnerships - both within our team and with our customers - we deliver smarter, safer, and more sustainable solutions that stand the test of time.



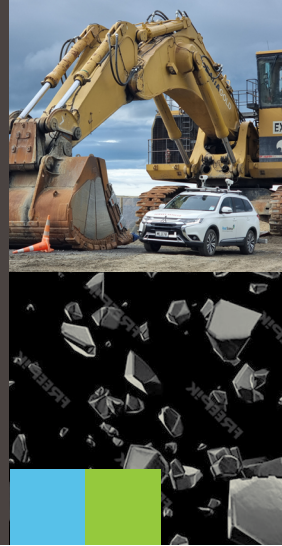
**“At Road Science, our strength lies in our people. We live our values every day - we listen, we are your trusted experts, and we deliver solutions. By fostering a culture of innovation, we unlock creativity and transform bold ideas into real-world road infrastructure solutions. Our team is committed to shaping the future of New Zealand’s roads and pavements through expertise, collaboration, and a relentless drive to make a difference.”**

Doug Carrasco  
General Manager  
Road Science + Asphalt Production



# Our Road Condition Surveying Services

Delivering precise insights to optimise pavement performance, asset management, and infrastructure decision-making.



## Data collection services

At Road Science we offer a variety of advanced road condition survey services to help you assess and optimise the performance of your road and airport infrastructure. With cutting-edge technology and a team of experts, we offer precise, reliable, and actionable data to support better decision-making and improve road management.

Our specialised services include:



A mobile platform that captures high-resolution images and geospatial data for real-time road condition assessments.



A road profiling system that accurately measures surface texture, ride quality, and irregularities.



Assesses road friction and skid resistance to ensure optimal safety and traction in all conditions.



Measures pavement deflection to assess structural capacity and optimise rehabilitation strategies. Our fleet also includes the Fast FWD - faster, smarter, and safer.







## Pegasus captures high-speed, high accuracy mobile data for both road and airport runway surveying



Road Science offers high-speed, mobile surveying with the Leica Pegasus Two Ultimate – the only system of its kind in New Zealand. This cutting-edge technology revolutionises road and infrastructure surveying by delivering data with precision, efficiency, and safety.

The Pegasus transforms how infrastructure is captured and monitored, offering a fast, reliable, and data-rich solution for surveying projects. Whether for road maintenance, asset management, airport runway testing, or infrastructure planning, the Pegasus delivers the insights needed to make informed decisions with confidence throughout your project.

### The Pegasus system integrates advanced components including

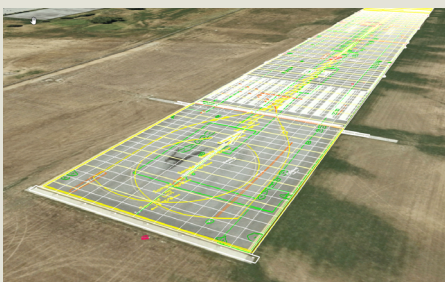
- Laser scanning, capturing up to 1 million points per second with sub-centimetre accuracy via its Z&F profiler.
- Six photogrammetric cameras, capturing high-resolution images every 0.5m to 10m.
- Two external cameras dedicated to assessing pavement conditions such as cracking, roughness, and rutting.
- 360° camera coverage for comprehensive analysis of surrounding structures and features.
- An inertial measurement unit (IMU) for accurate geospatial data alignment.

### Benefits

- **Faster** - Rapid, high-volume data collection delivers timely insights
- **Safer** - Surveys are conducted from within the vehicle, keeping personnel out of live lanes
- **Smarter** - Market-leading technology ensures accuracy, quality, and versatility

### Industry Specifications

Pegasus road conditioning surveys supply PCI (Pavement crack index) reports to the ASTM International standard.



#### ENVIRONMENT



Airports



Road Pavements





Hawkeye is a road profiling system that accurately measures surface texture, ride quality, and irregularities.



Hawkeye high-speed survey vehicles are equipped with laser profiler technology that enables continuous, highly accurate recording of road and pavement data — including roughness, texture, and geometry, that links back to GPS and distance-based measurements.

Hawkeye surveys are the modern solution for safe, efficient, and comprehensive road corridor data collection.

## Benefits

- High speed data collection reduces costs and decreases data delivery time frames
- Data available to inform pre-construction planning and post-construction validation. Includes roughness (NAASRA testing), macrotexture (Sand Patch or MPD), and geometry
- High resolution cameras and dedicated software deliver visual outputs to support office-based site analysis and observations
- Seamless data integration with chainage and GPS coordinates, simplifying location of data
- Safer usability - Using Hawkeye removes the need to place people in live traffic lanes to capture data

## International Compliance Standards

- Measuring the longitudinal profile: ASTM E950.
- Pavement roughness: AASHTO PP37; Austroads AGAM-T002.
- Pavement macrotexture: ASTM E1845; Austroads AGAM-T014; ISO 13473.
- Austroads repeatability tests: AGAM-T004, T005.



### ENVIRONMENT



Residential



Motorway



Rural



Industrial





Falling Weight  
Deflectometer

FWD is a non-destructive testing device that evaluates the structural condition of pavements.



The Falling Weight Deflectometer (FWD) is a trailer-mounted system that applies a dynamic load, or "falling weight", to a pavement surface and measures the resulting seismic response using geophones to capture changes in the pavement's velocity or "deflection" - ideal for both road and airport testing.

FWD data is a cornerstone of pavement design and is extensively used worldwide to assess the performance, durability, and expected lifespan of pavements. It is a mandatory requirement for all NZTA and Auckland Transport reseal and rehabilitation projects. Enabling engineers to make informed decisions about pavement design, maintenance, and rehabilitation without damaging the road.

## Benefits

- Conducts rapid automated, structural pavement testing suitable for global applications
- Individual layer modulus determination
- Identifies specific pavement layers that are at risk of failure, offering more precise analysis than simple bearing capacity assessments
- Ideal for QA/QC of newly constructed pavements, ensuring compliance and performance
- Compares multiple rehabilitation options, such as plane-off and recycling, rather than simply applying overlays
- Provides accurate, reproducible, and repeatable structural data for informed decision-making
- Real-time and automated monitoring of load cell, geophones, and data variations ensures the highest quality data collection
- Mechanistic-empirical analysis applicable to a wide range of pavement structures.

Our fleet also includes the FAST FWD. - 45% less traffic exposure - Faster, smarter, and safer!

## Industry Specifications

Our FWD testing adheres to Austroads ASTM AG:AM/T006 standards.



### ENVIRONMENT



Airports

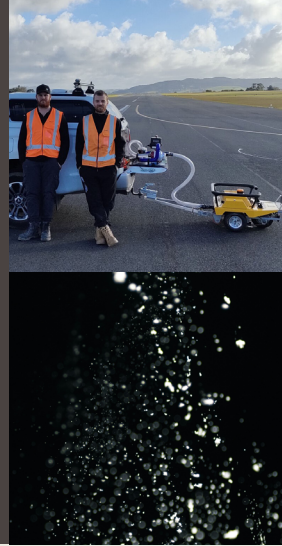


Road  
Pavements



# GripTester MK2

GripTester MK2 is the advanced solution for high-precision surface friction testing of airports and skid resistance of SCRIM sites.



GripTester MK2 delivers reliable, real-time data to support safer, more efficient airport and road operations, and is designed for both airport surface assessments and Sidewayforce Coefficient Routine Investigation Machine (SCRIM) site validation.

The GripTester MK2 combines cutting-edge sensor technology with intelligent software to provide consistent, accurate friction measurements at speed. This enables proactive maintenance planning and ensures compliance with national safety standards.

## Benefits

- **Rapid testing** - streamlined testing process enabling quick and efficient assessments of large surface areas
- **Real-time results** - obtain instant feedback on friction levels
- **Reporting** - comprehensive reports delivered with graphs and recommendations for targeted maintenance and safety improvements

## Airport Surface Testing

Runways, taxiways, and aprons are subject to constant wear from aircraft movements and environmental exposure. GripTester MK2 empowers airport authorities to monitor surface friction with precision - identifying low-grip zones and supporting targeted maintenance to reduce risk and maintain operational safety.

## SCRIM Site Validation

GripTester MK2 enhances the validation of SCRIM sites by delivering rapid, high-resolution friction data. Its advanced sensors and on-board analytics ensure accurate assessments of skid resistance, helping road authorities maintain safe driving conditions across the network.

## Industry Specifications

GripTester MK2 survey vehicles comply with the [NZTA T10](#) specifications for state highway skid resistance management, and [AC139-13](#) standards for Civil Aviation Authority requirements of runway surface friction testing.

### ENVIRONMENT



Airports



Road Pavements



**“Road Science remains at the forefront of road and pavement innovation. Their unwavering focus on customer-driven, sustainable solutions is actively shaping New Zealand’s transport infrastructure — making our roads safer, more intelligent, and future-ready.”**

Murray Robertson  
Managing Director  
Downer New Zealand





## Our locations

Tauranga and Christchurch vehicle hubs provide nationwide support for road and pavement surveying wherever your projects need us.



Nation-wide  
service delivery

**FWD** 

**Pegasus** 

**Hawkeye** 

**GripTester MK2** 



## Key contacts

Get in touch with Road Science today —  
our team is ready to support your projects  
with proven expertise.

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