



Road Science

Products and Services

Road Science provides the best solutions by listening intently to customers, looking to the future and applying our industry leading expertise.

Road Science is New Zealand's leading designer and supplier of bitumen and bitumen based products, with five IANZ accredited testing laboratories, and four bitumen plants.

We are committed to advancing the pavements industry through innovative products and services that are developed and supported by engineering science. As an industry, we believe there can be improvement, and through our people and processes, we are leading the charge in meeting customers' needs. At Road Science we are providing innovative products that will help ensure better pavement outcomes now and into the future.

We are listeners

It all starts with you. Our commitment is to better understand the customer challenges, so we can continue to deliver high-performing products within increasingly limited budgets.

With our end-to-end service capabilities, we can blend seamlessly into your construction journey, and have the flexibility, procedure and practices to ensure you get what you need, when you need it.

We take the 'direct route' approach. We will never over-promise and underdeliver, and ensure our relationships are built on trust for the betterment of the industry.

We are experts

We are a passionate team of thinkers and do-ers. We constantly exceed expectations.

From manufacturing and delivery of bitumen, through to laboratory services and pavement design, we have the strongest team of experts and thought-leaders in the industry.

Through the services we offer, we have a focus on research and development. You will feel confident that the roading solutions we are providing you – no matter how new – are always grounded in tested and proven solutions, and have been designed by the best.

We find solutions

Where you see a road, we see an opportunity. We are constantly pushing the envelope to increase the quality and sustainability of our products, meaning greater cost efficiencies and longer-lasting products.

With the ability to replicate real-life situations, we can predict performance and ensure it is built to last.



Our Products

Bitumen

Road Science supplies a full range of Standard Penetration Bitumens. Common Bitumen Grades are 40/50, 60/70, 80/100, 130/150, 180/200.

Our team will be able to guide and work alongside you to create or identify the right product for your particular need.

Bitumen emulsion

By finding a way to adjust the particle sizes of the bitumen droplets, Road Science has created an emulsion that can be sprayed at 80°C (a significant reduction from the normal operational temperature for hot or cutback bitumen of 180°C). It also cures faster, is more weather-resistant and stores for longer.

Emulsions allow the temperature of transported and sprayed bitumen to be below 100°C (typically around 80°C). This keeps everyone safe throughout every stage of handling the product.

New generation emulsions eliminate the risk of explosion as the need for adhesion and 'cutback' agents such as kerosene are no longer required. Roothing teams are more comfortable using emulsions as they know they can return home without having to deal with fumes and kerosene clouds that hot cutback bitumen creates.

The benefits of using a Road Science Emulsion over cutback are not only technical, but social and environmental. An independent study by CarboNZero has revealed new generation emulsions have almost half the carbon footprint of hot or cutback bitumen.





David Alexander
R&D Projects Manager

Nikhil Vishwanath
Process Engineer



Simeon Hall
R&D Solutions Manager

Darcy Rogers
Technical Development Manager

Products

Bitumen emulsions

The benefits of using bitumen emulsion over hotcut cutback bitumen are social, technical and environmental.

Recent advances in bitumen emulsion technology mean emulsion is now a viable alternative to hot cutback for all chip seal pavement solutions. Emulsions are now capable of achieving applications which were previously considered difficult or not possible.

As the use of emulsion eliminates the most significant safety risks associated with hot cut back bitumen and is now considered best practice for chip sealing in New Zealand.

Social

Bitumen emulsion reduces the spray temperature from 170°C to 80°C this eliminates serious burns and explosions associated with the use of hot cutback bitumen.

Emulsion eliminates the risk of explosion as the need for cutback agents such as kerosene are no longer needed. Roothing teams are more comfortable using emulsions as they know they can return home without having to deal with fumes that hot cutback bitumen creates.

Technical

Emulsion cures onto the chip under a wide range of environmental conditions which reduces the risk of early life stripping and this leads to an extension of the sealing season.

Emulsion binders provide better adhesion to chip than cutback binders do. This leads to some designers using less binder for emulsion than for the equivalent cutback seal.

Environment

Every sealing season the current usage of hot cutback bitumen emits over **3.5 million litres** of kerosene to atmosphere. Emulsion does not require the addition of kerosene and therefore eliminates the damage caused to both people and the environment. An independent study by CarboNZero has revealed new generation emulsions halves the CO2 emissions associated with chip sealing, this is equivalent to planting 650,000 trees.

Polymer Modified Bitumen

Road Science creates polymer modified bitumen products that are specially engineered for specific situations and applications.

Bitumen is a material that can be modified in a number of ways. The most important thing is to keep in mind is what you are trying to achieve, we can then match the properties to your desired outcome.

We have the knowledge to match specific binder modifications to your Individual surfacing issues.

Product selector

Visit <https://roadscience.co.nz/product-selector> this tool will help select the perfect product for your need.

Our People

We are a passionate team of thinkers and do-ers. We constantly exceed expectations.

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Through every service we offer, we have a focus on research and development. You will feel confident that the roading solutions we are providing you – no matter how new – are always grounded in tested and proven solutions, and have been designed by the best.

"I VALUED THE SPEED OF THE INITIAL CURING, WHICH MEANT LESS RISK OF DAMAGE TO THE ROAD. LESS KEROSENE IN THE MIX ALSO MEANT LESS RISK OF THE ROAD BLEEDING AND "BLACK TARRY STUFF STICKING TO YOUR TYRES AND GOING EVERYWHERE." JOHN RYAN, ENGINEER AT SIGMA CONSULTANTS



Ross Godkin
National Manufacturing Manager



Our Services

Laboratories

Road Science has specialised IANZ accredited laboratories located in Auckland, Mount Maunganui, Wellington and Christchurch.

The laboratories provide expert advice surrounding:

- Mix design
- Materials testing
- Quality assurance; and
- Pavement investigation

Our experienced team ensure clients meet New Zealand Transport Agency (NZTA), local authority and special projects specifications.

Both reliable and with fast turnaround, the Road Science laboratory team provide more than just test results and data, they offer technical assistance and analysis of the results for projects or tenders.

The Road Science laboratory team can provide technical support for projects, from initial tender and design phase, right through to quality control and compliance testing during the construction phase.

Pavement

Headed by Phillip Muir and Dr Greg Arnold, Road Science has the only testing facility in Australasia capable of running aggregate tests on all layers of road construction.

Proven test methodology simulates in-field performance and accurately predicts road base life expectancy. This exclusive Road Science methodology enables laboratory testing of non-conforming aggregates to prove performance characteristics and gain regulatory approval.

Road Science testing is all about on site process improvement, helping you achieve a higher quality outcome for less money, less disruption for key stakeholders, and improved management of resources. Road Science has an array of test methods at its disposal including Repeated Load Tri-axial (RLT) and flexural beam tests.

Through collaborative consulting Dr Arnold also provides data to help pavement designers find the best treatment to prevent early failure and reduce 'whole of life costs.'

Road Science current methodology has been accepted by NZTA and all major authorities.



Dr Greg Arnold
Principal Pavement Engineer

Research and development

The Road Science Research and Development facility is located at Mount Maunganui. It is focused on creating a programme of innovations to deliver better value and quality road solutions. With New Zealand's experts on bitumen, emulsion and polymer modified products, Road Science has the best equipment and technology to give you the best advice.

A big part of Road Science's work involves collaboration with customers to identify solutions for challenging road surfacing and construction situations.

Technical development

The Technical Development team uses an innovation process to ensure customer solutions are scoped, developed and delivered effectively. By working with customers, operational teams, researchers and funding bodies, solutions can be quickly prototyped and tested by our customers, leading to lower development costs and faster implementation of solutions.

The Technical Development team also has relationships with other key business partners and can draw on a wide range of materials technology and expertise to meet a wide range of customer requirements.

Benefits of this process

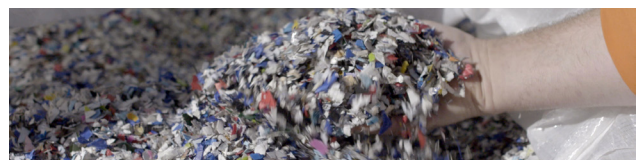
- Acceleration of product speed-to-market
- Increases likelihood of product success
- Improvement of focus
- Achieves efficient and effective allocation of scarce resources
- Greater collaboration with our customers

Recent product created - Plas Mix

Last year New Plymouth District Council approached Road Science about their growing waste plastic problem. They had an existing partnership with EnviroNZ and together the two entities were able to come up with a ground-breaking solution, Plas Mix.

Plas Mix is in essence raw shredded plastic that goes into asphalt. Road Science Laboratories have gone to great effort to identify the optimum plastic mix and the actual size needed for a successful product.

The first large scale trial of Plas Mix was delivered last month in New Plymouth. This was the first example in New Zealand, where plastic has been used to surface a public road. The trial consumed 500 kilograms of hard plastic waste in 100M of road. This is equivalent plastic waste to what 3,000 people would generate in one week.







***“By leading transport technology Road Science is paving the way for a stronger and more sustainable industry.” Dr Greg Arnold
NZHIT’s 2018 Conference***

Meet the Road Science Team



**Ross Godkin -
National Manufacturing
Manager**

Ross is Road Science's National Manufacturing Manager for our four bitumen plants. His interest lies in ensuring all products are of exceptional quality while ensuring our work environments are safe and sustainable.



**Janet Jackson -
National Laboratory
Manager**

Janet leads the Road Science laboratories located in Auckland, Mount Maunganui, Wellington, Christchurch as well as our mobile laboratories. They are home to the most advanced binder, asphalt and aggregates testing facilities in New Zealand.



**Phillip Muir -
Operational Support
Manager**

Phil Muir has more than 25 years' experience in road construction and surfacing. Phil is recognised for his significant technical skills, especially in regard to bitumen and bituminous products, pavement surfacing and chip sealing.



**Greg Arnold -
Principal Pavement
Engineer**

Greg has over 22 years' experience in research, pavement design and project management. With a comprehensive understanding of aggregate testing and methodologies. He has a proven background in working with consultants to achieve best practice pavement design.



**Steve King -
Support Technician**

Steve has a broad range of industry expertise and is very knowledgeable about Road Science products. He looks forward to you making contact with him so he can guide you through the various product and services available to you.



**Sarah Moorcroft -
Marketing Advisor**

Is responsible for creating meaningful customer communication. She manages our digital and marketing strategy to clearly align to our customer requirements. She also loves creating our social media and video content!



**Mike Tyne -
Mechanical Services
Manager**

Mike has years of experience with managing bitumen and asphalt plants. He is an expert with on-site storage, sprayers and tankers. Mike leads the engineering team to make sure they are available to design, project manage, maintain and consult on projects.



**Darcy Rogers -
Technical Development
Manager**

Darcy is a an expert in New Zealand for asphalt and bitumen based surfacings. He is passionate about understanding the fundamental science behind our customers challenges and uses this knowledge to advance the industry through high integrity R&D.



**Murray Robertson -
General Manager**

Challenging the status quo, delivering innovative solutions and working collaboratively are the foundations for Murray's drive to make positive societal change. Murray has a background in civil and roading construction coupled with network maintenance in Intelligent Transport Systems. Leading the Road Science team Murray is excited about what the business can offer the New Zealand market.



AT ROAD SCIENCE WE ENCOURAGE INNOVATION SO THAT WE CAN
BUILD CREATIVITY. OUR GOAL IS TO TRANSFORM GREAT IDEAS INTO
INVENTIVE AND MATERIAL TRANSPORT TECHNOLOGY SOLUTIONS.

MURRAY ROBERTSON, GENERAL MANAGER



HEAD OFFICE

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9/2 OWENS PLACE
MOUNT MAUNGANUI, 3116
07 575 1150

LABORATORIES

AUCKLAND
645 GREAT SOUTH ROAD,
PENROSE
AUCKLAND, 1061
09 580 2495

BITUMEN PLANTS

BLUFF
50 FORESHORE ROAD
BLUFF, 9814
03 212 8723

LYTTTELTON
CHARLOTTE JANE QUAY
PORT LYTTTELTON
CHRISTCHURCH, 8082
03 328 7791

MOUNT MAUNGANUI
198 TOTARA STREET
MOUNT MAUNGANUI, 3116
07 575 1160

NEW PLYMOUTH
1 WHARF STREET
PORT TARANAKI
NEW PLYMOUTH, 4310
06 751 5765

CHRISTCHURCH
397 MCLEANS ISLAND ROAD
HAREWOOD
CHRISTCHURCH 8051
03 359 0757

KAIKOURA
89 KOWHAI FORD ROAD
KAIKOURA 7371
03 319 5084

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