

Now with GPS option

Roughometer II

designed for sealed and unsealed roads



low cost pavement profiling system

hand operated survey products

Introduction

The Roughometer delivers objective and repeatable road roughness results in a cost effective, easy to install portable device.

The Roughometer removes the guesswork in determining ride quality and provides a practical, easy-to-use, portable method of assessing road quality.

The system is quickly and easily fitted to almost any vehicle and is simple to operate.

Designed for both sealed and unsealed roads, the Roughometer is a state-of-the-art alternative to bump integrator devices and an affordable alternative to laser profiling equipment.

Road Management Applications

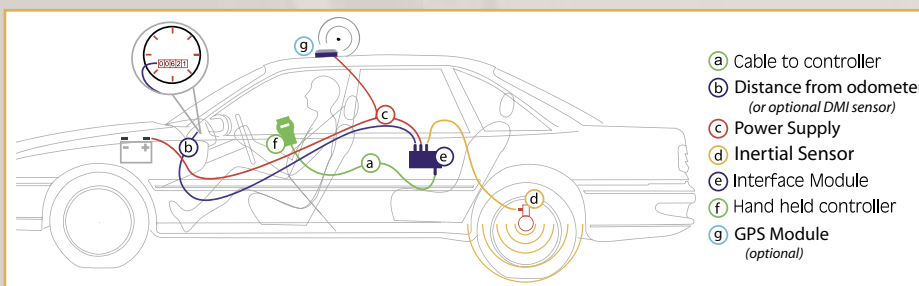
- **Planning schedules:** objectively compare and analyse which roads are in most/least need of repair. Develop and maintain a specific road roughness level which can be used to indicate when grading/works are required.
- **Monitoring the development of roughness:** deterioration trends can be examined by reviewing successive survey results spaced over several months. Compare the performance of materials, equipment and crews, as well as monitor the impact of traffic on road quality.
- **Addressing complaints:** provides objective data for true evaluation of the roughness level of the road.

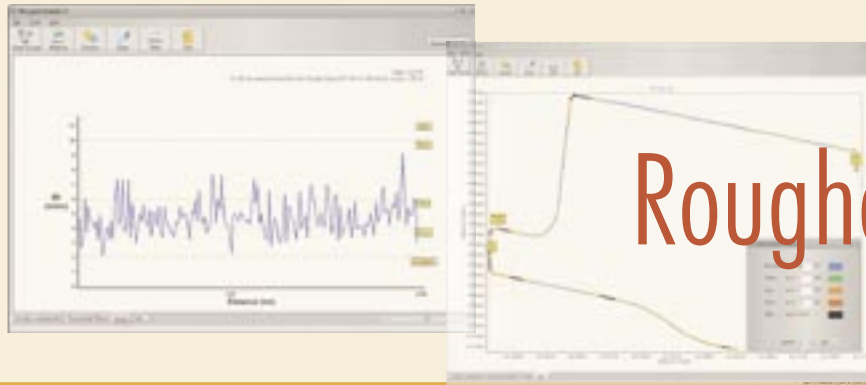
Features and Benefits

- Fast return on investment; a fraction of the cost of a laser profiling system or an equivalent survey service
- Easy to install in most vehicles and simple to operate
- Accuracy and repeatability is maintained with various vehicle types, suspension, passenger loads and speeds
- Innovative axle-mounted inertial sensor (non contact) used to determine road profile, roughness & distance
- No periodic calibration required - reducing the user cost
- Data is collected in a rugged and portable hand-held controller; no computer required in the vehicle
- Outputs in International Roughness Index (IRI) or NAASRA
- Data is easily transferred to an office or laptop computer
- Reports available as detailed tables, graphs or GPS maps and can be exported to CSV files for use in a spreadsheet
- Accurate distance (chainage) and GPS positioning (optional)

Applications

- Ideal for Local government / councils, State Forestry and those responsible for maintaining low volume roads. eg: mining, recreational roads, military, etc.
- Excellent for unsealed roads: no loss of data integrity on dusty or wet roads
- Suitable for the assessment of sealed roads





Roughometer II



Specification Summary

Condition	Requirement
Data Storage Capacity	275 km (170 mile) (max. 99 individual surveys)
Communication	DB9 EIA232 - 9 pin (cable supplied). USB cable adaptor included
Power Source	12 V dc, with cables supplied for cigarette lighter connection or direct battery connection. Mains power adaptor (for office powering of Hand-held Controller). 9 V dc, centre pin positive
Data Sampling Interval	50 mm (2 inches)
Inertial Sensor	Single sensor mounted on inside of driver's side rear wheel. Mounting brackets (live axle and IRS) and a selection of clamps supplied with kit
Roughness units	International Roughness Index (IRI). Australian bump integrator units (NAASRA counts)
Accuracy (Roughness)	IRI: Correlates to better than ± 0.5 IRI of true IRI (when operated within design parameters) NAASRA: ± 12 NAASRA counts
Resolution	IRI: 0.1 IRI. NAASRA: 5 NAASRA counts
Survey Speed	Dependent on road condition. Optimal speed 40 to 60 km/h (25 to 40 mph)
Software / Office Computer	Roughometer Processing software (supplied) for IBM Compatible Pentium II or better running Windows 98/NT/2000/XP. (PC not supplied)
Distance Measurement	Standard - connection through vehicle odometer Optional (recommended) - portable wheel-mounted Distance Measuring Instrument (DMI)
Distance Units	User selectable. Metric (metres, kilometers) or Imperial (mile)
Accuracy (Distance)	Better than 0.1% (with optional DMI)
GPS Module (optional)	
Position Accuracy	5 metres (subject to availability of WAAS).
Update Rate	1 second
Storage Capacity	up to 15 hours
Mounting	Magnetic roof mount (in built)



Components

- Roughometer Hand held controller
- Interface Module
- Inertial Module and mounting brackets (live axle and IRS)
- Odometer interface cable
- Vehicle & Office power cables
- EIA232 communications cable (Hand held Controller to PC) & USB cable adaptor
- Roughometer Processing Software CD & User Manual

Optional Components

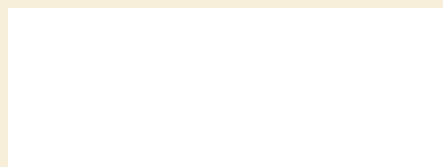
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|---------------------------------------|--|
| Distance Measurement Instrument (DMI) | Portable wheel-mounted distance measuring instrument. <i>Alternative to using vehicle's odometer signal.</i> |
| Odo Signal Amplifier | Accessory for vehicles that output a low odometer pulse signal |
| GPS Module | Magnetic mount GPS / data logger. 20m power/coms office extension cable |

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Note: ARRB Group Ltd reserves the right to change these specifications without notice. Whilst every care is taken in preparing these specifications, ARRB recognises that there may be classes of surface and applications for which the device has not been tested, and for which the device may not meet the stated specifications.

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