



DATA COLLECTION LIMITED STRUCTURAL TESTING



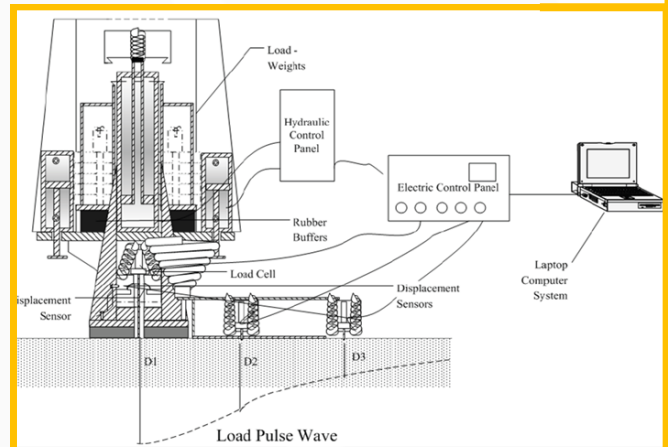
SURVEY: STRUCTURAL TESTING

BENEFITS

- » Independent surveyor, receive a fair outcome without any vested interest
- » Rapid testing; one test point completed within a minute
- » High accuracy data provided at required intervals
- » Skilled operators with sound understanding on good quality data
- » Operated from the safety of the vehicle; no need to be physically on the network
- » Real time, on-site, monitoring of data ensuring high quality reliable data is delivered

Pavement structural testing is required to ascertain pavement strength, and therefore performance. Data Collection Limited performs such pavement structural testing utilising JILS Falling Weight Deflectometer (FWD) and Heavy Weight Deflectometer (HWD).

Travel of heavy vehicle over a pavement causes it to momentarily bend, applying stresses and strains within the pavement structure. This, in turn, leads to surface fatigue and / or subgrade deformation. A FWD and HWD replicates this stress by dropping a known load onto the pavement surface and recording pavement deflection, and stresses and strains, required to ascertain pavement strength and performance.



Standards

- » AUSTRROADS Specification AG:AM/S002 Specification For Pavement Deflection Measurement With a Falling Weight Deflectometer (FWD)
- » AUSTRROADS Test Method AG:AM/T006
- » AASHTO Designation: R 32-11
- » COST 336

For testing pavements such as airfields, ports and thick highway pavements, a regular FWD load may not be enough. That's when a HWD is ideal; to apply greater loads to obtain decent deflections. Both equipment have a standard 300mm diameter load plate with nine velocity transducers (geophone sensors). These sensors are mounted in the "sensor boom", positioned at set distances from the load cell. Where the FWD and HWD differ is in the amount of pressure they can apply to the pavement. An FWD can apply a load up to 120kN, while the HWD can go up to 240kN.

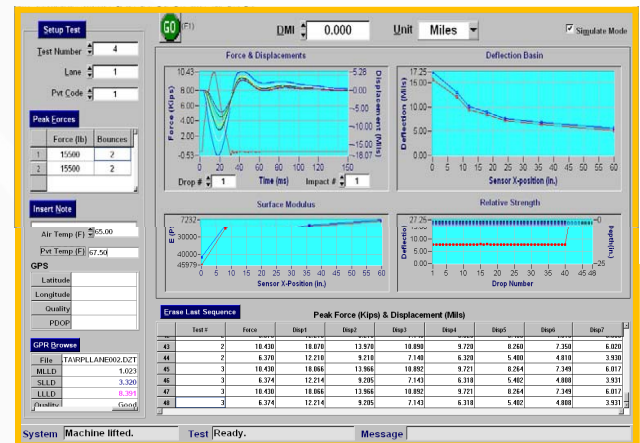


SURVEY: STRUCTURAL TESTING

Network level testing is typically required along the outer wheel-path of the kerb lane at 100 or 200 centreline metres, alternating the lanes. Project level testing requires closer spacing with rehabilitations typically requiring a test point every 25 centreline 'metres' along the outer wheel-paths (or closer to provide 33 points per site). New builds typically require a test in both wheel-paths with a test pint every 20m along each alternating wheel-paths.

Applications

- Used in forward works programmes and for modelling
- Pavement designs, rehabilitations and reconstruction
- Newly built pavement compliance testing
- Network asset value
- Pavement residual life
- Deflection and curvature results can be used to target geotechnical testing



DELIVERABLES

Raw FWD File (F25 format)	Deflection and Curvature Results	Estimated Subgrade CBR
Layer Moduli Results Based on Pavement Layer Information	Structural Number (SNP) for RAMM and dTIMS	Remaining Life Based on Traffic Count Data
Spatial Positioning of Each Test Point	Airfields: PCN Assessment	Pavement Designs



OVERVIEW: SURVEY SERVICES

THE DCL ADVANTAGE

- » Leading-edge technology for accurate and comprehensive data for road maintenance prioritisation
- » Original manufacturers of the road survey technology
- » Unrivalled expertise to maximise capabilities and optimise system configuration
- » One stop shop solution with all required technical and operational experience
- » Pool of resources with offices in New Zealand and India

Data Collection Limited (DCL) is a New Zealand owned and registered company who perform highly technical highway surveys and manufacture ROMDAS equipment.

We have been manufacturing and providing advanced road survey equipment to clients for the past 30 years. From our origins in the early 1990s, we have a proven track record in the collection of highway and asset information, both in New Zealand and internationally.

DCL's Survey services specialises in providing innovative solutions for measuring and managing pavements. We invest in highly technical survey equipment that is designed to meet New Zealand and international standards.

Catering to the satisfaction of our clients, we provide data and information on assets, surface and sub-surface conditions. Our services can be applied to a wide spectrum of industries including roads, airports, ports and railways.

Our team has collective knowledge and technical skills with varied experience. We are dedicated to collect and report accurate, reliable pavement information which is critical to successfully prioritising budgets and maintaining a high standard of service.

Our Expertise

We have a dedicated team offering technical expertise for two types of surveys:

» Pavement Condition Survey

Information on the condition of the pavement surface and assets, visually and automatically

- » Pavement Surface Condition with video imagery
- » High speed survey with automatic pavement surface assessments
- » Automatic crack detection and mapping
- » GIS mapping
- » Roadside inventory and asset management
- » Road construction quality testing

» Structural Testing

Providing sub-surface structural data

- » Falling Weight Deflectometer Testing to determine pavement strength and identify failures
- » Heavy Weight Deflectometer Testing; for thicker pavements, airports and ports

