DYNAFLECT Deflection Testing and Analysis

Why DYNAFLECT Deflection Testing and Analysis?

A DYNAFLECT is a nondestructive testing device for measuring the strength of asphalt concrete (AC) pavements. Housed in a small trailer, the apparatus can measure the strength of pavement structures. Oscillating weights cause the pavement to deflect and rebound in a manner similar to a vehicle driving over a pavement surface. A weak pavement will typically deflect more than a strong pavement. Motion sensing geophones measure the amount of deflection caused by the oscillation of weights. The deflection data is then analyzed to determine whether failure has occurred or will occur in the future at a designated traffic volume.

Pavement Design Factors

- Asphalt and PCC Pavement Recycling
- Flexible and Rigid Overlay Thickness Designs
- Structural Capacity and Remaining Life Analysis
- Performance Monitoring
- Load Transfer Across PCCP Joints
- Analysis of Materials / Failures
- Visual Condition Rating

Why is Deflection Testing Unique?

Unlike most methods, DYNAFLECT deflection design is based upon the measured strength of the existing pavement structure. This process provides accurate results for all pavement structures regardless of condition. AEC combines this data with projected traffic loads and provides feasible design that is neither lacking nor over designed for the desired future life of the structure.

How is Investment Maximized?

Where many improvement projects compete for limited funds, deflection testing and analysis provides data that allows for a thorough evaluation of pavement conditions. Projects can then be prioritized based on sound empirical data rather than ambiguous modeling based on visual inspection, speculation, or gravel equivalencies.

Although common sense suggests the worst pavements should be repaired first, this is not always the best management strategy. Pavements with high levels of deflection but few failures can be rehabilitated for a fraction of the cost of future repairs resulting from neglect. Pavements with excessive deflections and numerous failures often require complete reconstruction.

By deferring projects requiring reconstruction, it allows project managers to attend to pavements that can justifiably be enhanced in the short term. Monies initially set aside for pavements that are determined to require reconstruction can often be shifted and applied to more time sensitive demands. In most cases, it is economically advantageous to defer a project requiring reconstruction as failure has already occurred and preventative actions will yield minimal benefits.

ASSOCIATED ENGINEERING CONSULTANTS, INC.

DYNAFLECT ANALYSIS SOFTWARE

STREET INFORMATION

CLIENT NAME	CITY OF BARRETT	STREET	BEAR CREEK ROAD	ROAD #	13
PROJECT NO.	9299	FROM	SKYWAY ROAD	STATION	0+00
TEST DATE	4/8/2009	TO	PHILBROOK DRIVE	STATION	96+98
ANALYSIS DATE	4/13/2009	DIR/LANE	S1	TOTAL LANES	2
AMBIENT TEMP	67	INTERVAL	200	TESTED BY	AJ

STRUCTURAL DATA

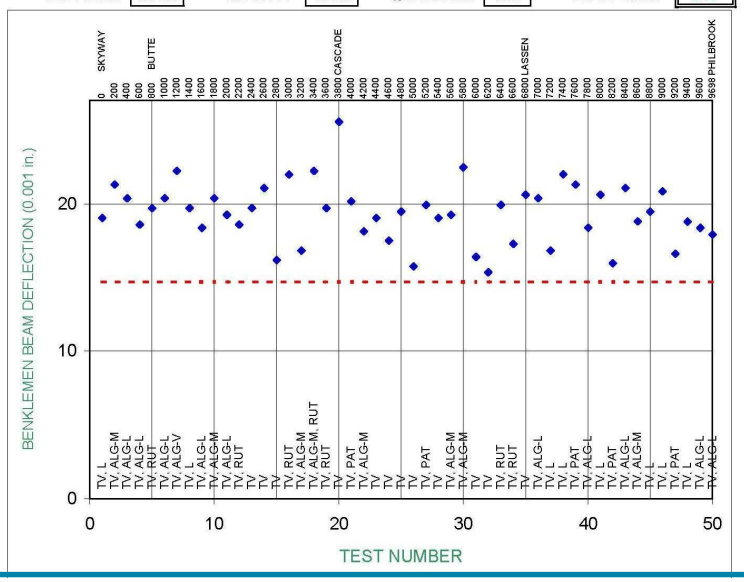
AC THICKNESS	5.0	BASE TYPE	AB	TRAFFIC INDEX	9.0	TOLERABLE DEFL.	15E-03

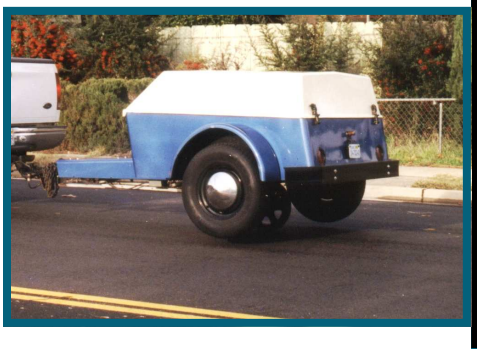
STRUCTURAL ANALYSIS

70% PERCENTILE	20E-03								
80% PERCENTILE	21E-03	MEAN	19E-03	MIN	15E-03	MAX	26E-03	SD	2.0E-03
90% PERCENTILE	22E-03								

OVERLAY DESIGN

DEFLECTION	21E-03	TOLERABLE	15E-03	% REDUCTION	30%	AC OVERLAY	0.15'





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