Vehicle Weights and Dimensions Study

Volume 8

Pavement Response to Heavy Vehicle Test Program: Part 1 -- Data Summary Report

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Abstract

In 1984 a major government/industry cooperative research program was launched to explore the implications of possible changes in allowable truck axle weights and configurations on the types of pavement structures commonly used in Canada. The objective of the program was to develop a consistent technical information base which would facilitate discussions between jurisdictions on achieving more uniform truck weight regulations.

The program of testing included fourteen flexible pavement structures at locations across Canada. Single axle loads tested ranged from 9000 to 11 000 kg, tandem axle loadings ranged from 14 000 to 22 000 kg and triaxle loadings ranged from 20 000 to 32 000 kg. Tandem axle spacings were examined between 1.2 and 1.83 m while triaxle spacings were varied from 2.4 to 4.9 m.

The paper outlines the program of pavement testing which was carried out, including descriptions of the types of pavement structures examined, the instrumentation techniques which were used and the methods by which the data was analyzed. The special vehicle constructed to provide the required axle configurations and loadings is described and the method used to calibrate the axle loadings is reviewed.

Finally, the paper outlines some preliminary findings with respect to the general influence on pavement response of changes in axle loadings and the effects of variations in tandem and triaxle spacings.

Keywords

freight transport
heavy vehicle
truck
weight
axle spacing
dimension
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axle load
load test
strain guage
legislation
regulations
lorry
flexible pavement
deterioration
road network
articulated vehicle

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Supplementary Information

DISCLAIMER

This publication is produced under the auspices of the Technical Steering Committee of the Vehicle Weights and Dimensions Study. The points of view expressed herein are exclusively those of the authors and do not necessarily reflect the opinions of the Technical Steering Committee, Canroad Transportation Research Corporation or its supporting agencies.

This report has been published for the convenience of individuals or agencies with interests in the subject area. Readers are cautioned that the use and interpretation of the data, material and findings contained herein is done at their own risk. Conclusions drawn from this research, particularly as applied to regulation, should include consideration of the broader context of Vehicle Weights and Dimension issues, some of which have been examined in other elements of the research program and are reported on in other volumes in this series.

The Technical Steering Committee will be considering the findings of these research investigations in preparing its "Final Technical Report" (Volume 1 & 2), scheduled for completion in December 1986.

PREFACE

The report which follows constitutes one volume in a series of sixteen which have been produced by contract researchers involved in the Vehicle Weights and Dimensions Study. The research procedures and findings contained herein address one or more specific technical objectives in the context of the development of a consistent knowledge base necessary to achieve the overall goal of the Study; improved uniformity in interprovincial weight and dimension regulations.

The Alberta Research Council was responsible for providing instrumentation and collecting pavement strain and deflection data at fourteen different test sites located across Canada. The cooperation and assistance of the following agencies and companies is gratefully acknowledged for their assistance in the conduct of this program:

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Whelan Motors
Alberta Transportation
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Transport Canada
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Canadian Trucking Association
Truck Trailer Manufacturers Association
Private Motor Truck Council

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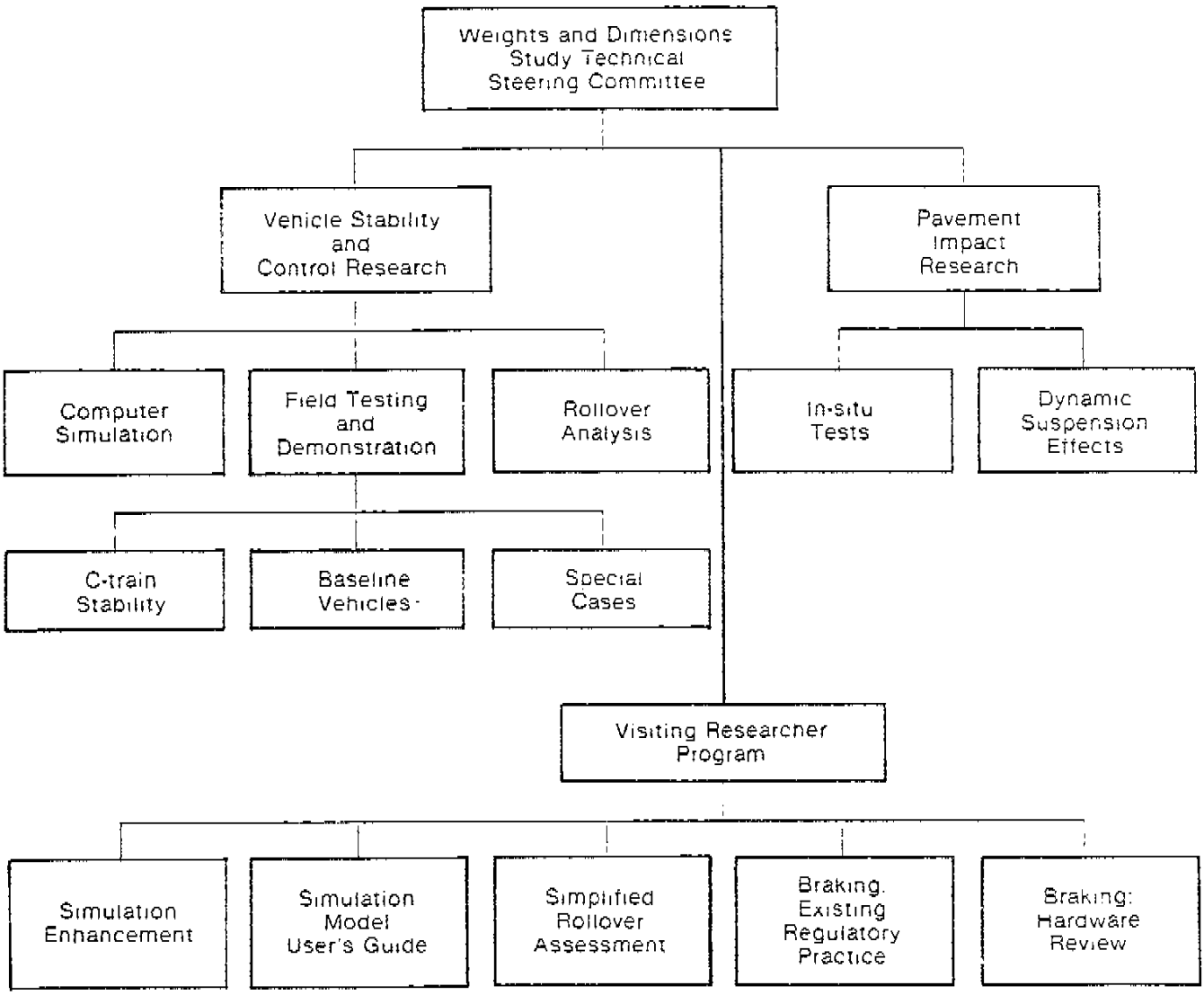
HEAVY VEHICLE WEIGHTS AND DIMENSIONS STUDY

TECHNICAL WORK ELEMENTS OVERVIEW



Volume 8

Pavements Response to Heavy Vehicle Test Program: Part 1 — Data Summary Report

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

In 1984 a major government/industry cooperative research project, the Vehicle Weights and Dimensions Study, was launched with an overall goal of achieving uniformity in the application of vehicle weight and dimension regulations across Canada. As part of this study, a research program was developed to assess the relative destructive effects of traffic load variables on pavements from insitu pavement response measurements. The program, referred to as the Pavement Impacts Investigation, involved the installation of instrumentation capable of recording strains and deflections under moving traffic loads in fourteen flexible pavement structures at various locations across Canada. During the summer of 1985, pavement surface deflections and asphalt concrete-base layer interfacial tensile strains under a wide range of controlled truck axle loads and configurations was carried out at each site. These field measurements, together with established pavement distress criteria, have been used to calculate load equivalency factors for each test configuration.

This report describes the field testing program and summarizes the surface deflections and interfacial tensile strains recorded at each test site. The instrumented pavement structures and the instrumentation and data acquisition system used to record the pavement response variables are briefly described. Vehicle loading conditions and the test procedure followed at each site are presented. The surface deflections and interfacial tensile strains are tabulated by site, axle configuration, gross weights and vehicle velocity.

2.0 INSTRUMENTED PAVEMENT STRUCTURES

The location and description of each instrumented pavement structure included in the study is presented in table 1. This information was extracted from more detailed structural data provided by the host provinces and presented in Section 5.0. The structures were selected as representing typical regional design and construction practices. The fourteen sites encompass pavements with asphalt concrete layer thicknesses ranging from 56 mm to 225 mm, total component layer thicknesses varying from approximately 300 mm to greater than 2000 mm, and a wide spectrum of base, subbase and subsoil materials.

In Alberta, site 9 is immediately adjacent to site 10. Similar paired sites are 3A and 3B, and sites 4 and 5, in Quebec. The multi-channel capabilities of the acquisition system used to monitor the pavement responses enabled these paired sections to be tested concurrently.

3.0 INSTRUMENTATION AND DATA ACQUISITION SYSTEM

Instrumentation developed by the Alberta Research Council for measuring pavement deflections and strains under moving wheel loads was installed in each pavement structure. Details of the instrumentation and a description of the operations of the data acquisition system used to monitor the pavement response variables are presented in Ref. 1.

3.1 Instrumentation

Instrumentation installed at each site consists of:

i) subsurface referencing assemblies for housing surface-set differential transformers, positioned transversely across the outer wheelpath, to measure total pavement deflection,

ii) asphalt plate strain carriers with embedded gauges, positioned across the outer wheelpath at the asphalt concrete-base layer interface, to measure longitudinal interfacial tensile strains,

Table 1 Pavement Test Sites

Site No.	Province	Location	Structure			
			A.C. Thick.(mm)	Base Thick.(mm)-Material	Sub-Base Thick.(mm)-Material	Subgrade Material
1	New Brunswick	Hwy.15 - 10 km. E. of Moncton	225	76 - Crushed rock	460 - Crushed sandstone	Silty-sand
2	Nova Scotia	Hwy.102 - 6 km. S. of Truro	160	275 - Granular	200 - Granular	Gravelly-clay
3A	Quebec	Hwy.40 - 55 km. W. of Quebec City	135	200 - Crushed limestone	625 - Granite sand	Granitic-gravel
3B	Quebec	Hwy.40 - 55 km. W. of Quebec City	130	375 - Crushed limestone	450 - Granitic sand	Granitic-gravel
4	Quebec	Rte.363 - 73 km. W. of Quebec City	56	150 - Granitic gneiss	450 - Granitic sand	Clay
5	Quebec	Rte.363 - 73 km. W. of Quebec City	56	200 - Granitic gneiss	550 - Granitic sand	Clay
6	Ontario	Hwy.7-Peterborough Bypass	110	150 - Granular A	350 - Granular C	Silty-sand
7	Ontario	Hwy.403 - 19 km. W. of Brantford	170	200 - Granular A	250 - Granular B	Sand
8	Ontario	Hwy.55 - 8 km. E. of St. Catnarines	190	300 - Granular A	90 - Old road	Clay
9	Alberta	Hwy.21 - 8 km. N. of Three Hills	136	170 - Cement Stab. Sand	- -	Clay
10	Alberta	Hwy.21 - 8 km. N. of Three Hills	136	250 - Granular	- -	Clay
11	British Columbia	Hwy.97 - 110 km. W. of Chetwynd	75	145-Asphalt bnd.gran. 200 - Granular	610 - Granular 1000 - Shot rock	Peat/Silty Sand
12	British Columbia	Hwy.97 - 112 km. W. of Chetwynd	85	155-Asphalt bnd.gran. 210 - Granular	610 - Granular 975 - Silty gravel	Silty-sand
13	British Columbia	Hwy.16 - 16 km. N.W. of Tete Jaune Cache	100	545 - Granular	50 - Clay and sand 450 - Pit run gravel	Clay

iii) an access port, located off the shoulder, for housing cabling leading from the roadway instrumentation and

iv) a thermocouple string, located near the outer edge of the instrumented lane, for pavement temperature measurements.

The program design called for the installation of three pavement surface deflection and three strain transducers in the outer wheel path at each site. A schematic of a typical pavement transducer layout is shown in figure 1. The triplicate transducer configuration, with deflection and strain transducers directly aligned, minimized the number of test runs required to record maximum strains and deflections under a given vehicle loading and provided backup in the event of a transducer malfunction.

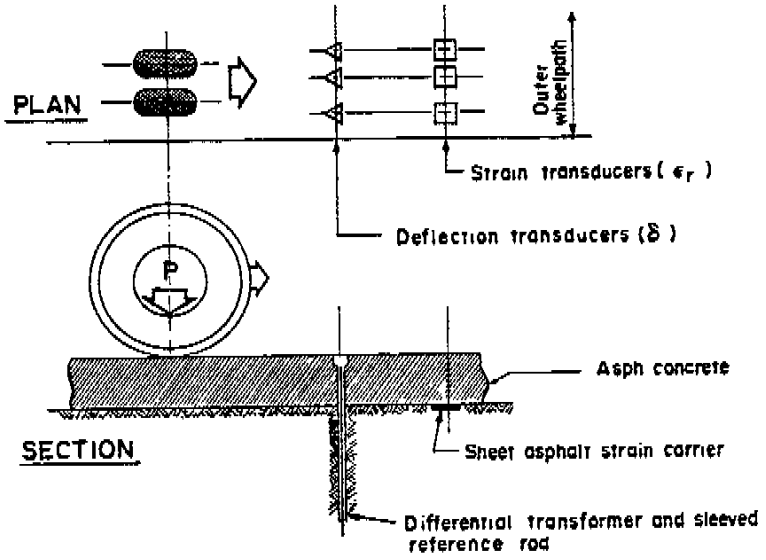


Figure 1. Schematic of Field Instrumentation.

Instrumentation consisting of three strain carriers, housing for three deflection transducers, an access port and a thermocouple string was fabricated for each site. These instrumentation packages, together with all necessary cabling and guidelines describing recommended installation procedures, were forwarded to the host agencies.

3.1.1 Installation of Instrumentation

The instrumentation was installed by Highway and Transportation personnel during the summer and fall of 1984, with regional on-site supervision and technical assistance by Alberta Research Council personnel. This was provided for the installation of all instrumentation at site 1 - New Brunswick, site 2 - Nova Scotia, site 3A and 3B - Quebec, sites 9 and 10 - Alberta, site 13 - British Columbia, and following paving operations for the installation of two deflection transducer casings at site 7 - Ontario. The number of transducers installed at each site and the number operational at the time of carrying out the testing program are presented in the pavements impacts field program summaries contained in Section 5.0.

3.2 Data Acquisition System

The data acquisition system used to record the pavement strains and deflections is developed around a mini-computer with various peripherals and, for field operations, is housed in a van with a self-contained power source. The peripherals include dual hard disks for mass storage of transducer signals and two real time clocks which permit variable signal sampling rates and enable the time of recorded pavement response variables to be identified and vehicle velocities calculated. A video and hardcopy terminal, together with developed software, enable the operator to obtain a visual display and hardcopy printout of maximum and minimum response values recorded under each axle by all designated transducers. The system is capable of monitoring 16 channels simultaneously.

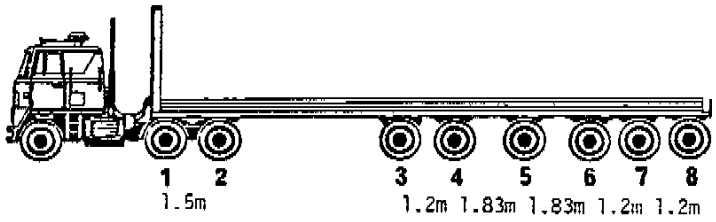
Data collected for all vehicle loadings included in the study was stored on hard disks and subsequently retrieved for summary and analysis.

4.0 FIELD TESTING PROGRAM

In designing the study, it was the consensus of the Pavements Advisory Committee that the program encompass pavement surface deflection and longitudinal interfacial tensile strain measurements under a series of loads and axle configurations at each site. To ensure that vehicle load variables were constant from site to site, and to facilitate field testing operations, a flatdeck trailer was specially modified to accommodate all desired loading conditions. The following contains a brief description of the pavement test vehicle. Load variables included in the study are presented, and field testing procedures are described.

4.1 Pavement Test Vehicle

A schematic of the pavement test vehicle is shown in figure 2.



Tractor: 1985 MACK R688ST:
- 5.1 m wheelbase
- spread tandem drives on Neway ARD244 air suspension

Trailer: 1974 Fruehauf 13.7 m Flatdeck:
- 1 fixed axle on Neway AR95 air suspension
- 5 lift axles on Neway AR95 air suspension

Tires: All axles fitted with Michelin 11R22.5 XZA LRH tires.

Figure 2 Pavement Test Vehicle.

The specially designed trailer, equipped with one fixed axle (axle 6) and five lift axles, together with the tractor steering and tandem drive axles, provided the following axle configurations to the study.

	Configuration	Axle(s)
1)	Single Axle-Single Tire	Steering
2)	Single Axle-Dual Tire	6
3)	Tandem Axle-Dual Tire (1.2 m)	6 & 7
4)	Tandem Axle-Dual Tire (1.5 m)	Drives (1 & 2)
5)	Tandem Axle-Dual Tire (1.8 m)	5 & 6
6)	Triaxle-Dual Tire (2.4 m)	6 & 7 & 8
7)	Triaxle-Dual Tire (3.7 m)	4 & 5 & 6
8)*	Triaxle-Dual Tire (4.9 m)	3 & 5 & 6

*This configuration, with unequal spacings between axles, is commonly termed a belly axle assembly.

Twenty-seven concrete blocks, each weighing 1000 kg, were used for live load. Variations in gross axle weights for each configuration were obtained by loading, unloading and/or repositioning the blocks using a mobile crane on the trailer deck.

4.2 *Loading Conditions*

Calibration of the test vehicle was carried out by Canroad Transportation Research Corporation personnel at the Alfred, Ontario scale site during mid-May 1984. This task involved a) identifying both the number and the location of concrete blocks on the trailer which would yield gross weights for each configuration approximating guidelines established by the Pavements Advisory Committee and, concurrently, b) establishing a testing sequence which would minimize the number of block loading, unloading, and repositioning, operations. The developed testing sequence was comprised of 19 test iterations and is presented in table 2.

Table 2

Venicle Axle Configurations and Loadings by Test Series.

Test Series	Test Configuration	Gross Weight of Test Configuration (kilograms)*	Gross Weight of Tandem Drives (kilograms)
1	Triaxle 2.4 m	31645	10645
2	Triaxle 2.4 m	26145	10345
3	Triaxle 3.7 m	31664	5445
4	Triaxle 4.9 m	31955	6682
5	Tandem 1.2 m	22327	15336
6	Triaxle 2.4 m	20082	15582
7	Triaxle 3.7 m	26036	9109
8a	Tandem 1.8 m	22127	11718
8b	Triaxle 4.9 m	25836	8209
9	Tandem 1.2 m	18100	14936
10a	Tandem 1.8 m	18382	11827
10b	Triaxle 3.7 m	20510	9555
11	Tandem 1.2 m	13582	14582
12	Tandem 1.8 m	14064	12500
13	Single Axle	11127	13136
14a	Single Axle	9182	13236
14b	Steering Axle	3790	13236
15a	Tandem 1.5 m	19280	19280
15b	Steering Axle	5110	19280

*1 kg = 2.205 lb.

Test series identified by letters "a" and "b" involved a change in axle configuration with the number and arrangement of concrete blocks remaining constant. With the exception of test series 15b, steering axle gross weights were relatively constant and approximately equal to 3900 kg. To obtain the steering axle weight equal to 5110 kg, series 15b, the position of the fifth wheel was moved forward approximately 450 mm. In addition to the listed loadings, pavement responses under a 9570 kg single axle-dual tire load (axle 6) were monitored when conducting test series 15a. Inflation pressure of all tires was held constant and equal to 690 kPa throughout the study.

The loading condition matrix obtained from the calibration and used throughout the study is:

Configuration	Gross Weights, (kg)
Steering Axle	3790, 5110
Single Axle	9182, 9570, 11127
Tandem (1.2 m)	13582, 18100, 22327
Tandem (1.5 m)	5445 to 19280
Tandem (1.8 m)	14064, 18382, 22127
Triaxle (2.4 m)	20082, 26145, 31645
Triaxle (3.7 m)	20510, 26036, 31664
Triaxle (4.9 m)	25836, 31955

Prior to commencing field tests, individual axles of each configuration were weighed at the Leduc, Alberta scale station. Gross weights of each configuration were in very close agreement with those obtained during calibration, and with the exception of triaxle configurations tested under series 3, 4, 7 and 8b, the gross weight of each tandem and triaxle group was approximately equally distributed on axles comprising the group. Weight distributions for the four triaxle configurations were:

Test Series	Axle 3	Axle 4	Axle 5	Axle 6	Gross Wt.(kg)
3		9330	10520	11570	31420
4	9300		10860	11690	31850
7		7860	8770	9080	25710
8b	7610		8730	9130	25470

4.2.1 Loading Conditions by Test Site

Axle loads and configurations selected for testing at each site are presented in the data summaries contained in Section 5.0. A minimum of ten loading conditions were tested at six of the 14 instrumented test facilities. This minimum program consisted of minimum and maximum loadings on the single, tandem (1.2 and 1.8 m) and triaxle (2.4 and 3.7 m) configurations. The six sites were; sites 4 and 5 - Quebec, sites 7 and 8 - Ontario, and sites 11 and 12 in British Columbia. The maximum program, encompassing all configurations and loadings, was conducted at site 1 - New Brunswick, site 6 - Ontario, and the two adjacent sites 9 and 10 in Alberta. Since the wheels of the tractor drive tandem (1.5 m) axles were directly aligned with the trailer carrying axles, maximum pavement responses under the drives were recorded concurrent with all carrying axle tests. Tandem drive axle gross weights ranged from 5445 kg to 15580 kg at the majority of sites and to 19280 kg at sites incorporating the full test program. Analyses of pavement deflections and strains caused by these loadings enabled gross weight-equivalency factor relationships for the tandem (1.5 m) axle configuration to be developed for each site.

Pavement response measurements with a standard Benkelman Beam test vehicle (8160 kg single axle on dual tires inflated to 550 kPa) were conducted concurrent with each vehicle test series. The pavement response ratio: Test Vehicle/Standard Beam Vehicle forms the basis for axle load equivalency calculations. The standard vehicle, operator, traffic control and technical support staff at each site were provided by the host province.

4.3 Test Procedure

Pavement responses for each configuration and loading were measured at approximately 6 km/hr., 13 km/hr. and 50 km/hr. at each site. In addition, when posted speed limits, traffic safety and local conditions allowed, one loading configuration was tested at approximately 80 km/hr. To ensure that maximum pavement responses were recorded under each loading condition, a minimum of three test runs were carried out at each velocity level. An engine governor on the test vehicle enabled very close replication of velocity. To record maximum pavement responses caused by the steering axle, test series 14b and 15b, the lateral placement of the test vehicle was shifted for alignment of the single wheel with transducer locations. Asphalt concrete pavement temperatures were recorded at approximately one-half hour intervals during testing at each site.

5.0 RECORDED PAVEMENT RESPONSES

The field testing program commenced on May 29, 1985 in Alberta and was completed on August 19, 1985 in Quebec. The full program included approximately 2500 test runs with the pavement test vehicle and approximately an equal number with the Benkelman Beam test vehicles. The following summarizes the maximum pavement surface deflections and asphalt concrete-base layer interfacial tensile strains recorded under each loading condition included in the study. Minimum residual deflections recorded between axles comprising tandem and triaxle configurations, required for equivalency factor calculations, are also summarized. The pavement response variables are tabulated by site location, axle configuration and gross weight and vehicle velocity. The summaries include site descriptions provided by the host transportation agencies, a listing of vehicle loading conditions and comments regarding the installation and operation of instrumentation at each site.

Parameters included in the tabulated pavement response summaries are:

a) Test series number - refer to table 2.

b) Test date and average vehicle velocity.

c) Axle number - axle(s) of the pavement test vehicle, refer to figure 2, comprising the loading configuration.

d) N - the number of individual test runs carried out at a given velocity to define maximum pavement response values.

e) D_{min}, D_{avg}, D_{max} - minimum, average and maximum pavement surface deflections of the population N, recorded under each axle of the test configuration. Corresponding residual deflections between axles of tandem and triaxle configurations are also tabulated.

f) S_{min}, S_{avg}, S_{max} - the minimum, average and maximum asphalt concrete-base layer interfacial tensile strains of the population N, recorded under the axle of the test configuration.

g) T_1, T_2, T_3, T_4 - temperature at the surface, one-third and two-thirds depths, and the asphalt concrete-base layer interface, respectively at time of test.

SITE 1

NEW BRUNSWICK

Pavement Response to Heavy Vehicles Test Site

Province: New Brunswick Date(s) of Installing Instrumentation: Oct. 12-15, 1984

Site Location: Hwy 15 , approximately 10 km east of the City of Moncton.

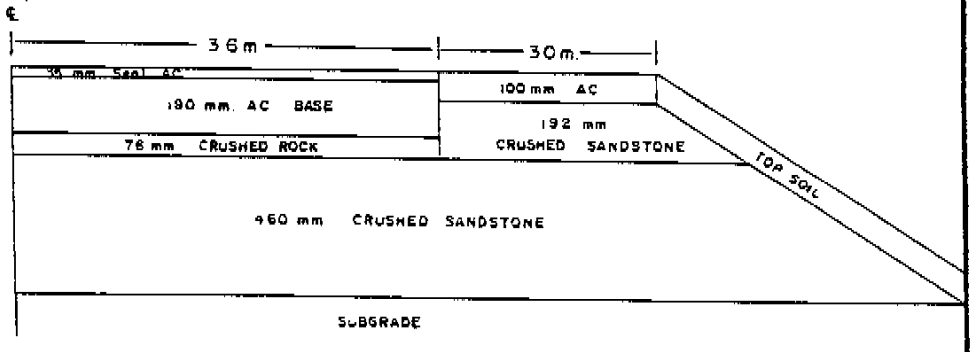
AADT: 10,390 % Truck Vol: 8

Site Description: The site on the east bound right lane of the four lane divided highway, is in a topographical gently rolling tangent section with a 1% down grade. The embankment consists of a silt overlain by a layer of sandstone. The finished grade is approximately 2 m above the permanent water table in a fill area.

Structure: Instr. Lane Width 3.6 m. Adjacent Shoulder Width 3.0 m.
Shoulder Type Paved

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	35 mm seal 190 mm base	150 - 200 pentration asphalt cement
Base Layer(s)	Granular	76 mm	Crushed Rock 0 - 31.5 mm crushed rock Gradation limits attached
Subbase Layer(s)	Granular	460 mm	Crushed sandstone 0 - 76 mm crushed sandstone
Subsoil	Silty Sand	-	Data not available at this time

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: 1 - **New Brunswick**

Test Dates: 85.07.29 to 85.08.02

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Steering Axle		3790	5110	
Single Axle		9182	9570	11127
Tandem (1.2 m)		13582	18100	22327
Tandem (1.5 m)	(17)*	5445	to	19280
Tandem (1.8 m)		14064	18382	22127
Triaxle (2.4 m)		20082	26145	31645
Triaxle (3.7 m)		20510	26036	31664
Triaxle (4.9 m)			25836	31955

*Number of tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed and operational during testing.**

Table 1.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-Dual Tire Load, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
1	85.07.29	6.0	4	0.406	0.427	0.455	4	236	251	265	30.6	24.5	23.3	22.8
		12.6	6	0.457	0.490	0.528	6	256	265	271	35.8	26.3	24.8	23.5
		47.5	3	0.345	0.368	0.394	5	207	219	248	29.0	28.1	26.1	24.3
2	85.07.29	5.1	3	0.574	0.574	0.577	3	357	362	365	36.8	27.1	25.1	23.1
		12.4	5	0.518	0.536	0.559	5	277	300	318	36.5	27.0	25.0	23.0
		48.4	3	0.371	0.396	0.434	5	234	244	257	37.2	28.1	26.2	23.9
3	85.07.30	5.8	6	0.424	0.434	0.442	2	263	264	265	21.1	21.7	22.3	23.4
		11.7	4	0.409	0.417	0.427	4	224	233	247	21.4	21.3	21.9	23.0
		50.2	4	0.274	0.290	0.302	4	154	168	184	21.7	21.3	22.0	22.9
4	85.07.30	5.1	5	0.457	0.467	0.478	3	289	293	297	22.5	21.8	22.3	23.0
		12.4	4	0.434	0.452	0.457	3	226	234	249	23.1	22.2	22.3	23.1
		53.4	4	0.282	0.290	0.302	4	147	154	159	23.8	22.6	23.1	23.3
5	85.07.30	5.1	4	0.465	0.485	0.511	2	300	303	306	24.4	22.9	23.3	23.4
		12.1	3	0.422	0.439	0.457	2	253	256	259	24.6	22.9	22.3	23.3
		52.5	4	0.305	0.315	0.335	4	170	171	175	24.6	23.0	22.4	23.2
6	85.07.30	5.8	4	0.480	0.488	0.495	3	301	304	310	25.8	23.5	23.3	23.4
		11.9	4	0.442	0.460	0.470	3	253	263	269	26.2	23.6	23.4	23.4
		53.8	3	0.305	0.320	0.335	3	174	178	183	25.8	23.2	22.8	22.8
7	85.07.30	8.9	7	0.480	0.488	0.503	2	300	305	309	26.9	22.9	22.5	22.5
		11.6	3	0.483	0.490	0.503	3	284	289	292	28.8	23.0	22.7	22.5
		49.2	2	0.351	0.361	0.371	4	199	208	219	29.8	23.1	22.8	22.4
8A	85.07.31	7.4	4	0.371	0.389	0.401	4	183	193	207	19.7	18.4	19.2	20.8
		12.1	5	0.366	0.384	0.399	3	184	194	210	20.5	18.1	18.7	20.2
		52.9	3	0.257	0.264	0.274	4	119	121	123	21.3	18.2	18.7	20.0
8B	85.07.31	7.7	3	0.399	0.406	0.422	4	206	212	218	22.0	18.3	18.6	19.8
		12.2	4	0.384	0.396	0.406	4	178	186	194	22.5	18.4	18.5	19.6
		50.9	5	0.259	0.279	0.295	5	122	127	135	22.7	18.5	18.6	19.5
9	85.07.31	6.1	3	0.409	0.422	0.427	4	191	207	220	22.3	18.7	18.8	19.5
		13.2	4	0.384	0.399	0.417	4	172	180	186	22.3	19.5	19.4	19.9
		49.2	3	0.287	0.300	0.312	3	138	141	147	22.6	20.3	20.0	20.4
10A	85.07.31	6.3	4	0.432	0.439	0.450	4	223	230	239	22.8	20.9	20.5	20.8
		12.1	3	0.414	0.417	0.417	4	196	204	210	23.0	21.2	20.8	21.0
		47.3	4	0.279	0.300	0.320	4	150	161	175	23.8	22.2	23.4	23.6
10B	85.07.31	6.3	4	0.462	0.490	0.506	4	245	256	267	22.9	21.6	21.4	21.2
		12.2	4	0.465	0.475	0.483	3	231	245	264	25.1	21.5	21.2	21.0
		47.0	3	0.335	0.351	0.358	4	174	181	186	28.0	21.9	21.3	21.1
11	85.07.31	6.1	4	0.490	0.505	0.518	4	256	280	296	28.6	22.1	21.3	21.0
		12.9	6	0.480	0.488	0.498	6	238	255	281	29.6	21.9	21.0	20.5
		48.4	4	0.338	0.358	0.386	4	183	192	199	30.9	22.5	21.3	20.6
		87.4	3	0.297	0.317	0.343	3	134	139	145	31.8	23.9	22.4	21.5
12	85.07.31	6.1	4	0.533	0.538	0.546	4	296	306	313	32.1	24.6	23.0	21.9
		12.6	4	0.505	0.526	0.536	4	253	260	264	31.9	24.9	23.2	22.0
		46.3	4	0.358	0.371	0.394	4	212	214	216	31.6	25.0	23.4	22.1

Table 1.1 - continued

Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-Dual Tire Load, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Avg. Ven. Velocity (km/h)	Surface Deflections (mm)				Interfacial Tensile Strains (mm/mm x 10^{-6})				Asphaltic Concrete Temperature (C)			
			N	D min.	D avg.	D max.	N	S min.	S avg.	S max.	T1	T2	T3	T4
13	85.07.31	6.1	3	0.546	0.556	0.569	4	313	321	334	31.3	25.0	23.5	22.1
		12.7	4	0.521	0.533	0.544	4	273	280	285	31.1	25.3	23.7	22.3
		46.3	4	0.361	0.368	0.378	4	212	222	231	29.9	25.0	23.5	22.1
14A	85.08.02	6.1	4	0.358	0.368	0.378	4	167	176	183	16.8	17.4	17.7	18.6
		12.1	5	0.361	0.371	0.386	5	146	159	176	16.7	17.2	17.4	18.5
		46.2	3	0.239	0.257	0.282	4	115	120	126	16.4	17.0	17.4	18.4
14B	85.08.02	6.4	4	0.371	0.384	0.409	4	179	187	198	16.8	17.3	17.6	18.6
		12.7	4	0.361	0.371	0.378	5	151	158	174	17.6	17.7	17.9	18.9
		47.2	4	0.239	0.251	0.264	4	113	118	121	17.5	17.6	17.9	18.7
15A	85.08.02	6.1	4	0.401	0.404	0.409	4	191	206	231	18.8	18.3	18.5	18.8
		12.1	7	0.376	0.389	0.401	7	164	176	195	19.1	18.4	18.5	19.0
		49.2	5	0.254	0.267	0.279	5	126	130	133	19.7	18.6	18.6	19.1
15B	85.08.02	6.0	3	0.399	0.409	0.417	3	198	204	214	17.6	17.6	17.7	18.5
		12.4	4	0.371	0.381	0.391	4	158	166	172	17.8	17.8	17.9	18.7
		47.2	4	0.241	0.267	0.279	4	119	128	134	18.3	18.2	18.4	18.8

Table 1.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Steering Axle, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14B	85.08.02	3790	5.8	4	0.231	0.236	0.241	4	121	128	137
			12.9	4	0.208	0.213	0.216	4	96	102	117
			50.5	4	0.137	0.146	0.150	4	76	78	82
15B	85.08.02	5110	5.8	3	0.310	0.315	0.323	4	164	170	179
			12.9	4	0.264	0.277	0.287	4	139	141	143
			51.3	4	0.193	0.211	0.226	4	98	102	106

Table 1.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.07.31	9182	5.8	4	0.417	0.429	0.447	4	219	225	230
			12.7	4	0.414	0.419	0.424	4	180	185	191
			47.0	3	0.315	0.335	0.358	4	117	122	125
15A	85.07.31	9570	5.8	4	0.488	0.493	0.498	4	249	253	256
			12.6	4	0.457	0.460	0.465	4	211	214	218
			49.2	4	0.345	0.363	0.384	5	134	143	154
13	85.07.31	11127	5.8	4	0.673	0.701	0.726	4	409	414	423
			12.9	3	0.681	0.701	0.721	4	370	374	379
			51.2	4	0.488	0.505	0.518	3	227	241	269

Table 1.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Ven. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.07.31	13582	5.8	6	4	0.483	0.498	0.511	4	253	256	261
						0.170	0.175	0.175				
				7		0.505	0.508	0.511		236	240	243
			12.9	6	4	0.447	0.457	0.472	4	216	220	226
						0.152	0.163	0.170				
				7		0.478	0.483	0.488		207	212	216
			50.9	6	5	0.366	0.389	0.414	5	121	127	134
						0.145	0.152	0.160				
				7		0.409	0.414	0.417		121	128	139
			92.2	6	3	0.378	0.396	0.427	3	109	113	119
						0.150	0.157	0.163				
				7		0.361	0.391	0.417		93	108	118
9	85.07.31	18100	5.8	6	4	0.490	0.518	0.533	4	235	245	263
						0.208	0.226	0.246				
				7		0.518	0.528	0.536		210	222	236
			12.9	6	5	0.439	0.466	0.480	5	203	213	232
						0.206	0.226	0.246				
				7		0.470	0.488	0.498		179	189	204
			51.0	6	5	0.384	0.391	0.409	5	108	121	131
						0.185	0.193	0.206				
				7		0.394	0.409	0.427		106	110	115
8	85.07.30	22327	6.0	6	4	0.625	0.635	0.643	3	346	353	361
						0.257	0.264	0.272				
				7		0.656	0.671	0.688		336	341	350
			12.9	6	4	0.569	0.587	0.607	4	300	304	309
						0.269	0.272	0.279				
				7		0.617	0.632	0.648		294	298	304
			49.6	6	4	0.465	0.475	0.495	4	170	182	191
						0.231	0.244	0.264				
				7		0.488	0.498	0.506		163	170	174

Table 1.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.07.29	10645	6.0	1	5	0.305	0.330	0.353	5	190	195	202
						0.097	0.107	0.127				
				2		0.323	0.348	0.376		184	187	190
			13.0	1	3	0.376	0.401	0.424	3	202	208	215
						0.094	0.102	0.112				
				2		0.401	0.422	0.442		198	204	208
			51.7	1	4	0.259	0.290	0.338	6	130	144	159
						0.079	0.081	0.081				
				2		0.302	0.323	0.368		139	146	159
2	85.07.29	10345	6.0	1	4	0.399	0.432	0.462	4	252	268	281
						0.066	0.076	0.086				
				2		0.442	0.455	0.472		253	262	281
			13.2	1	4	0.409	0.424	0.439	5	230	237	245
						0.089	0.102	0.112				
				2		0.422	0.439	0.462		207	224	239
			52.9	1	4	0.323	0.343	0.361	5	145	149	154
						0.086	0.094	0.104				
				2		0.368	0.389	0.406		154	156	158
3	85.07.30	5445	6.0	1	3	0.231	0.244	0.259	2	96	97	97
						0.046	0.048	0.051				
				2		0.231	0.241	0.254		96	99	102
			13.2	1	4	0.213	0.221	0.239	4	82	83	84
						0.051	0.056	0.058				
				2		0.206	0.229	0.249		69	74	76
			49.9	1	2	0.190	0.193	0.193	4	46	51	56
						0.046	0.048	0.051				
				2		0.208	0.213	0.218		45	50	54
4	85.07.30	6682	6.1	1	4	0.274	0.295	0.312	2	127	133	139
						0.066	0.074	0.081				
				2		0.274	0.295	0.328		123	126	131
			12.9	1	4	0.287	0.290	0.290	4	102	106	110
						0.066	0.071	0.074				
				2		0.269	0.272	0.279		97	102	113
			50.1	1	3	0.208	0.221	0.231	4	64	72	77
						0.051	0.061	0.071				
				2		0.216	0.231	0.246		56	66	80
5	85.07.30	15336	6.0	1	4	0.439	0.447	0.462	3	255	260	264
						0.086	0.089	0.089				
				2		0.439	0.457	0.472		247	250	251
			12.9	1	4	0.422	0.437	0.450	4	220	225	235
						0.097	0.114	0.135				
				2		0.442	0.472	0.495		222	233	238
			49.6	1	4	0.305	0.325	0.338	4	141	148	153
						0.086	0.099	0.112				
				2		0.312	0.353	0.376		137	141	149

Table 1.5 - continued

Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.07.30	15582	6.0	1	5	0.450	0.472	0.495	3	277	289	297
						0.089	0.102	0.112				
				2		0.462	0.500	0.544		277	290	297
			12.9	1	3	0.465	0.485	0.503	3	247	256	264
						0.119	0.127	0.137				
				2		0.488	0.505	0.518		243	257	271
			52.1	2	3	0.361	0.384	0.401	4	167	171	172
						0.112	0.117	0.119				
				2		0.424	0.434	0.450		162	168	175
7	85.07.30	9109	6.0	1	3	0.399	0.401	0.417	3	212	223	238
						0.081	0.102	0.119				
				2		0.409	0.429	0.427		208	209	212
			13.2	1	4	0.368	0.386	0.409	4	184	186	187
						0.089	0.097	0.107				
				2		0.302	0.325	0.351		114	117	130
			50.7	1	4	0.295	0.310	0.323	4	114	117	130
						0.071	0.084	0.097				
				2		0.302	0.325	0.351		178	184	190
8A	85.07.31	11718	5.8	1	4	0.351	0.358	0.366	4	167	169	174
						0.089	0.099	0.107				
				2		0.361	0.371	0.378		155	165	172
			12.9	1	4	0.320	0.330	0.338	4	127	131	134
						0.081	0.091	0.097				
				2		0.345	0.358	0.368		130	132	134
			49.2	1	4	0.264	0.277	0.287	4	86	89	96
						0.079	0.086	0.094				
				2		0.264	0.290	0.305		77	80	84
8B	85.07.31	8209	6.0	1	4	0.279	0.287	0.297	4	115	123	130
						0.048	0.058	0.064				
				2		0.282	0.297	0.305		119	124	127
			12.7	1	4	0.264	0.277	0.295	4	94	99	102
						0.048	0.069	0.081				
				2		0.272	0.279	0.287		97	103	108
			51.3	1	2	0.213	0.226	0.239	5	57	63	69
						0.046	0.066	0.066				
				2		0.234	0.234	0.234		56	60	64
9	85.07.31	14936	5.8	1	4	0.414	0.424	0.434	4	206	217	232
						0.107	0.122	0.137				
				2		0.439	0.447	0.455		199	212	228
			12.9	1	5	0.378	0.399	0.417	5	162	171	182
						0.114	0.124	0.145				
				2		0.414	0.424	0.447		167	175	183
			51.0	1	5	0.315	0.333	0.351	5	114	118	121
						0.112	0.122	0.127				
				2		0.351	0.371	0.386		108	113	118

Table 1.5 - continued

Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Ven. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
10A	85.07.31	11827	5.8	1	4	0.353	0.373	0.391	4	174	185	196
						0.081	0.091	0.097				
				2		0.376	0.389	0.414		172	178	184
			12.7	1	4	0.353	0.366	0.371	4	150	154	159
						0.102	0.104	0.107				
				2		0.384	0.391	0.399		160	163	166
			50.9	1	3	0.320	0.325	0.328	4	98	101	104
						0.081	0.094	0.097				
				2		0.323	0.328	0.338		97	99	100
10B	85.07.31	9555	5.8	1	4	0.378	0.391	0.399	4	174	186	192
						0.071	0.086	0.102				
				2		0.391	0.409	0.417		184	187	191
			12.9	1	4	0.330	0.356	0.376	4	155	163	168
						0.058	0.071	0.081				
				2		0.353	0.373	0.394		154	159	167
			48.1	1	3	0.274	0.284	0.295	4	101	107	110
						0.064	0.071	0.079				
				2		0.328	0.330	0.335		101	104	110
11	85.07.31	14582	5.8	1	3	0.528	0.531	0.536	4	251	268	275
						0.107	0.117	0.122				
				2		0.538	0.544	0.546		245	264	283
			12.9	1	3	0.470	0.483	0.498	3	224	236	253
						0.104	0.109	0.114				
				2		0.495	0.503	0.513		230	242	256
			50.7	1	4	0.401	0.345	0.417	5	158	160	162
						0.104	0.112	0.119				
				2		0.417	0.432	0.447		153	157	160
			90.1	1	2	0.376	0.378	0.378	3	147	150	154
						0.104	0.117	0.127				
				2		0.450	0.470	0.488		137	140	146
12	85.07.31	12500	5.8	1	4	0.478	0.505	0.554	4	259	275	290
						0.081	0.102	0.137				
				2		0.488	0.516	0.566		263	273	277
			12.9	1	4	0.455	0.470	0.483	4	226	230	236
						0.089	0.097	0.104				
				2		0.472	0.480	0.490		235	237	240
			48.9	1	4	0.361	0.368	0.384	4	145	150	158
						0.081	0.091	0.114				
				2		0.371	0.386	0.406		135	152	168

Table 1.5 - continued

Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Ven. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
13	85.07.31	13136	5.8	1	4	0.511	0.533	0.554	4	276	293	302
						0.079	0.114	0.145				
				2		0.528	0.554	0.584		280	284	288
			12.9	1	4	0.505	0.508	0.513	4	257	257	257
						0.122	0.130	0.137				
				2		0.528	0.533	0.538		247	256	263
			50.5	1	3	0.351	0.373	0.417	4	155	165	179
						0.089	0.099	0.112				
				2		0.384	0.406	0.442		151	163	187
14A	85.08.02	13236	5.8	1	4	0.335	0.353	0.371	4	146	158	166
						0.119	0.130	0.137				
				2		0.358	0.384	0.424		146	161	174
			12.7	1	4	0.335	0.353	0.371	4	130	132	137
						0.130	0.137	0.142				
				2		0.353	0.361	0.368		123	127	131
			47.3	1	4	0.272	0.279	0.287	4	86	91	93
						0.112	0.117	0.127				
				2		0.290	0.306	0.328		81	85	93
15A	85.08.02	19280	5.8	1	4	0.498	0.513	0.528	4	242	246	251
						0.178	0.188	0.198				
				2		0.511	0.531	0.546		249	253	261
			12.6	1	4	0.470	0.472	0.480	4	206	209	214
						0.178	0.193	0.206				
				2		0.490	0.498	0.518		202	207	212
			50.4	1	3	0.391	0.414	0.434	5	139	147	159
						0.185	0.196	0.213				
				2		0.442	0.460	0.478		123	136	150

Table 1.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.07.31	14064	5.8	5	3	0.472	0.490	0.518	4	269	280	296
						0.071	0.097	0.135				
				6		0.511	0.531	0.551		284	293	306
			12.9	5	4	0.386	0.417	0.439	4	238	239	240
						0.056	0.069	0.089				
				6		0.439	0.460	0.488		252	254	255
			48.9	5	4	0.358	0.371	0.386	4	141	153	162
						0.066	0.074	0.079				
				6		0.401	0.417	0.432		164	175	183
10A	85.07.31	18382	5.8	5	4	0.470	0.485	0.495	4	248	253	256
						0.089	0.099	0.107				
				6		0.528	0.538	0.559		256	260	268
			12.7	5	4	0.439	0.455	0.465	4	208	215	222
						0.097	0.104	0.114				
				6		0.495	0.503	0.513		231	232	234
			50.5	5	4	0.353	0.368	0.378	4	133	143	146
						0.094	0.109	0.122				
				6		0.394	0.404	0.432		143	154	163
8A	85.07.31	22127	5.8	5	4	0.488	0.508	0.523	4	271	273	275
						0.130	0.137	0.145				
				6		0.528	0.551	0.577		276	280	287
			12.9	5	4	0.488	0.498	0.505	4	228	230	232
						0.130	0.140	0.152				
				6		0.544	0.546	0.551		239	240	242
			48.9	5	3	0.399	0.417	0.424	4	151	154	158
						0.127	0.135	0.145				
				6		0.424	0.439	0.457		147	151	158

Table 1.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.07.30	20082	6.0	6	4	0.450	0.465	0.480	3	252	257	260
						0.152	0.165	0.170				
				7		0.472	0.480	0.490		232	236	240
						0.170	0.183	0.193				
				8		0.488	0.495	0.511		239	243	245
			12.9	6	3	0.401	0.422	0.439	3	215	221	227
						0.168	0.173	0.178				
				7		0.417	0.439	0.457		200	205	211
						0.185	0.188	0.190				
				8		0.439	0.460	0.483		212	218	224
			52.3	6	4	0.323	0.356	0.384	4	121	132	135
						0.137	0.155	0.163				
				7		0.345	0.368	0.386		101	109	114
						0.150	0.170	0.178				
				8		0.391	0.404	0.409		125	136	143
2	85.07.29	26145	6.0	6	3	0.607	0.615	0.622	4	333	365	386
						0.208	0.216	0.224				
				7		0.625	0.635	0.640		337	351	360
						0.226	0.236	0.241				
				8		0.625	0.635	0.640		357	384	431
			13.0	6	3	0.554	0.579	0.594	5	317	327	330
						0.226	0.234	0.241				
				7		0.592	0.605	0.615		297	302	305
						0.239	0.246	0.254				
				8		0.599	0.620	0.632		318	322	325
			53.3	6	5	0.465	0.480	0.490	5	190	212	220
						0.198	0.216	0.234				
				7		0.472	0.493	0.513		164	181	194
						0.213	0.226	0.241				
				8		0.495	0.518	0.536		198	213	223
1	85.07.29	31645	6.0	6	5	0.566	0.574	0.587	4	294	304	313
						0.279	0.295	0.320				
				7		0.610	0.625	0.643		273	281	289
						0.302	0.317	0.345				
				8		0.610	0.625	0.635		294	298	301
			13.0	6	4	0.594	0.610	0.622	4	304	310	317
						0.249	0.259	0.272				
				7		0.643	0.653	0.665		294	299	306
						0.274	0.290	0.315				
				8		0.650	0.668	0.681		316	319	326
			52.5	6	5	0.465	0.511	0.546	2	230	236	242
						0.231	0.236	0.249				
				7		0.505	0.526	0.561		200	203	206
						0.241	0.251	0.269				
				8		0.511	0.541	0.569		223	229	235

Table 1.8
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
108	85.07.31	20510	5.8	4	3	0.422	0.437	0.455	4	204	215	223
						0.064	0.079	0.097				
				5		0.480	0.495	0.518		227	231	236
						0.086	0.104	0.119				
				6		0.513	0.521	0.528		238	250	260
			12.9	4	3	0.401	0.409	0.417	4	182	185	187
						0.071	0.074	0.079				
				5		0.432	0.444	0.457		198	202	206
						0.071	0.081	0.089				
				6		0.455	0.465	0.483		216	220	227
			48.1	4	3	0.338	0.351	0.366	4	117	122	129
						0.066	0.074	0.086				
				5		0.361	0.371	0.384		126	133	137
						0.086	0.091	0.104				
				6		0.376	0.386	0.394		139	145	151
7	85.07.30	26036	6.0	4	4	0.513	0.526	0.559	5	297	310	316
						0.071	0.094	0.130				
				5		0.518	0.549	0.579		321	330	333
						0.094	0.112	0.142				
				6		0.523	0.574	0.615		346	354	360
			13.0	4	3	0.483	0.498	0.505	4	268	271	274
						0.089	0.099	0.112				
				5		0.488	0.523	0.561		283	286	288
						0.104	0.122	0.142				
				6		0.495	0.531	0.574		308	312	314
			50.7	4	4	0.422	0.437	0.442	4	178	184	190
						0.102	0.104	0.107				
				5		0.462	0.480	0.490		192	196	202
						0.114	0.127	0.135				
				6		0.462	0.493	0.503		203	214	223
3	85.07.30	31664	6.0	4	4	0.483	0.500	0.513	4	284	290	296
						0.102	0.102	0.104				
				5		0.554	0.564	0.574		305	311	316
						0.114	0.119	0.122				
				6		0.594	0.602	0.615		348	349	350
			13.2	4	4	0.457	0.467	0.480	4	245	251	259
						0.102	0.109	0.119				
				5		0.523	0.536	0.551		269	275	279
						0.127	0.135	0.142				
				6		0.559	0.572	0.579		300	303	305
			49.9	4	4	0.358	0.376	0.401	4	158	168	178
						0.097	0.107	0.119				
				5		0.424	0.447	0.478		163	180	198
						0.114	0.130	0.142				
				6		0.455	0.478	0.503		179	191	212

Table 1.9
Summary of Pavement Surface Deflections and Interfacial Tensile Strains under Triaxle (4.9 m Spacing)-Dual Tire Loads, Site 1, New Brunswick

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
8B	85.07.31	25836	6.0	3	4	0.394	0.419	0.432	4	206	210	220
						0.008	0.025	0.038				
				5		0.442	0.455	0.470		223	229	235
						0.094	0.107	0.112				
				6		0.480	0.490	0.505		239	241	243
			12.7	3	4	0.378	0.401	0.409	4	174	180	187
						0.033	0.036	0.041				
				5		0.422	0.424	0.427		186	188	188
						0.102	0.112	0.119				
				6		0.470	0.470	0.470		196	204	208
			50.9	3	5	0.310	0.330	0.351	5	113	121	130
						0.025	0.030	0.041				
				5		0.358	0.366	0.378		114	119	129
						0.089	0.102	0.104				
				6		0.376	0.386	0.406		122	127	139
4	85.07.30	31955	6.1	3	4	0.523	0.528	0.546	3	312	314	316
						0.041	0.053	0.071				
				5		0.577	0.587	0.610		334	339	348
						0.119	0.135	0.157				
				6		0.640	0.655	0.678		357	365	372
			12.9	3	4	0.488	0.498	0.511	4	273	276	279
						0.048	0.051	0.051				
				5		0.538	0.549	0.561		289	293	298
						0.119	0.132	0.145				
				6		0.610	0.620	0.632		316	319	322
			50.5	3	4	0.406	0.417	0.432	4	184	191	203
						0.046	0.053	0.056				
				5		0.455	0.475	0.490		194	203	214
						0.137	0.150	0.160				
				6		0.480	0.511	0.538		210	230	247

SITE 2

NOVA SCOTIA

Pavement Response to Heavy Vehicles Test Site

Province: Nova Scotia Date(s) of Installing Instrumentation: October 10 & 11, 1984

Site Location: Hwy #102

AADT: 5300 % Truck Vol: 17

Site Description:

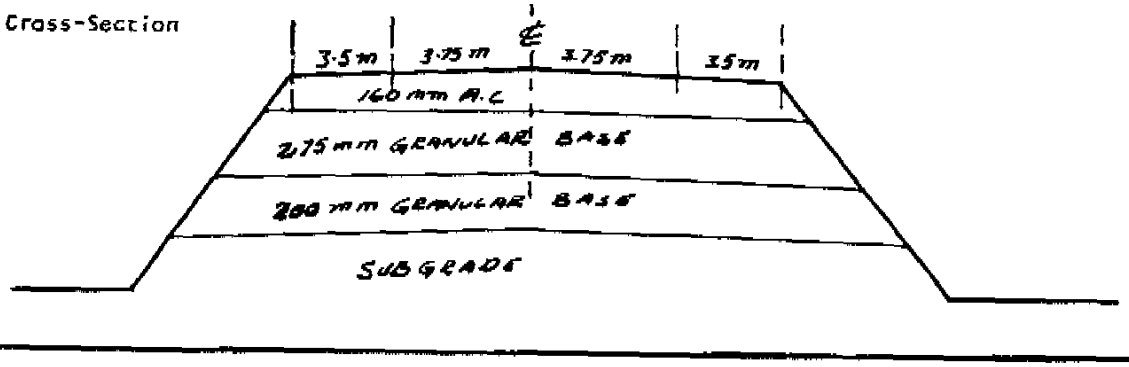
Approximately 5.0 km north of exit 12, Highway #102 which is approximately 6.0 km south of Truro. Site is on a tangent section having less than 1% grade.

Structure: Instr. Lane Width 3.75 m. Adjacent Shoulder Width 3.5 m.

Shoulder Type Bit & Gravel Bit - 0.75 m Gravel 2.75 m

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	160	Pen.Ac 150-200: Type C Asp. Concrete Maximum particle size 14 mm
Base Layer(s)	Granular	(0.75) 275 (200)	"A" Gravel - Max. Particle size 20mm "C" Gravel - Max. Particle size 56mm
Subbase Layer(s)	Granular	200	"E" Gravel, Max. Particle size 112mm
Subsoil	Gravelly Clay		L.L. 22% P. I. 7%

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: **2 - Nova Scotia**

Test Dates: 85.07.24 to 85.07.26

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Steering Axle		3790	5110	
Single Axle		9182	11127	
Tandem (1.2 m)		13582	18100	22327
Tandem (1.5 m)	(14)*	5445	to	15582
Tandem (1.8 m)		14064	18382	22127
Triaxle (2.4 m)		20082	26145	31645
Triaxle (3.7 m)		20509	26036	31664

*Number of tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed and operational during testing.**

2. **Above average pavement temperatures (35°C) for the majority of the test program.**

Table 2.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm)				Interfacial Tensile Strains (mm/mm x 10^{-6})				Asphaltic Concrete Temperatures (C)			
			N	D min.	D avg.	D max.	N	S min.	S avg.	S max.	T1	T2	T3	T4
1	85.07.24	6.3	4	0.617	0.632	0.655	4	655	678	707	33.3	27.7	24.2	22.3
		12.6	6	0.594	0.645	0.688	6	654	666	685	33.7	28.0	24.4	22.1
		50.9	6	0.478	0.518	0.630	6	451	475	494	34.8	29.4	25.2	22.4
2	85.07.24	6.4	3	0.681	0.719	0.787	3	939	966	1008	38.8	32.7	27.8	23.6
		12.9	4	0.625	0.665	0.665	4	853	892	923	39.4	33.4	28.3	24.1
		50.5	4	0.592	0.625	0.643	4	653	685	715	40.1	34.1	28.9	24.4
3	85.07.24	5.8	4	0.704	0.737	0.754	4	1133	1181	1224	41.6	36.2	30.7	26.0
		12.1	4	0.706	0.714	0.719	4	1102	1109	1114	41.7	35.8	30.4	25.5
		48.0	4	0.622	0.658	0.704	3	842	867	881	41.9	37.4	31.1	26.0
5	85.07.24	6.1	4	0.752	0.765	0.777	4	1282	1320	1349	42.1	37.0	31.7	26.6
		12.4	4	0.691	0.721	0.770	4	1228	1266	1291	42.3	37.4	31.2	27.0
		49.6	3	0.655	0.711	0.777	3	980	1006	1040	42.2	37.6	32.6	27.3
6	85.07.24	6.0	3	0.782	0.792	0.800	3	1404	1432	1459	40.8	37.0	32.2	27.0
		13.2	4	0.737	0.757	0.792	4	1396	1421	1459	40.3	36.9	32.3	27.2
		50.7	4	0.704	0.737	0.754	4	1072	1122	1169	40.9	37.8	33.6	28.4
7	85.07.25	5.6	4	0.640	0.653	0.678	4	610	619	633	20.7	19.9	20.6	21.9
		13.0	4	0.574	0.582	0.592	4	498	521	544	21.0	20.2	20.8	21.9
		51.3	4	0.488	0.503	0.511	4	341	345	348	22.6	21.2	21.6	22.6
8A	85.07.25	5.8	4	0.632	0.650	0.665	4	620	632	654	24.2	22.1	22.0	22.9
		12.9	4	0.592	0.602	0.610	4	543	547	554	25.1	22.6	22.0	22.6
		50.5	4	0.528	0.559	0.584	4	353	373	382	26.3	23.4	22.4	22.6
9	85.07.25	5.8	4	0.658	0.673	0.688	4	703	708	712	27.2	24.1	22.6	22.5
		13.5	4	0.617	0.630	0.648	4	584	608	618	28.1	24.9	23.1	22.7
		52.3	4	0.544	0.569	0.607	4	389	410	426	29.4	25.8	23.7	23.0
10A	85.07.25	6.1	4	0.681	0.696	0.711	4	764	776	789	30.7	26.7	24.1	23.1
		13.7	4	0.655	0.671	0.688	4	673	695	715	32.2	27.7	24.8	23.4
		50.6	4	0.566	0.587	0.599	4	468	482	490	34.3	29.1	25.5	23.8
10B	85.07.25	6.1	4	0.691	0.726	0.744	4	970	1035	1075	39.3	33.2	28.3	25.1
		12.7	4	0.665	0.678	0.696	4	914	955	984	40.1	34.1	28.9	25.4
		51.2	4	0.648	0.663	0.681	4	649	667	686	40.7	35.1	29.5	25.7
11	85.07.25	6.0	4	0.719	0.752	0.770	4	1164	1188	1239	41.1	35.7	30.2	26.2
		13.2	4	0.706	0.714	0.726	4	1076	1106	1132	41.9	36.2	30.8	26.8
		51.0	4	0.587	0.625	0.650	4	751	765	773	41.9	36.2	30.6	26.6
12	85.07.25	6.1	4	0.747	0.770	0.792	4	1290	1319	1348	40.9	35.9	30.6	26.2
		12.7	4	0.678	0.716	0.734	4	1148	1188	1236	40.7	36.1	31.4	26.3
		52.0	5	0.615	0.648	0.691	5	815	872	943	40.4	36.3	31.6	26.6
13	85.07.25	5.8	4	0.775	0.792	0.823	4	1388	1430	1470	40.2	36.5	32.2	27.5
		13.7	4	0.782	0.815	0.886	4	1381	1416	1462	40.5	36.5	32.4	27.7
		49.2	3	0.678	0.704	0.719	3	930	975	1004	40.7	36.9	32.6	27.9
14A	85.07.26	5.5	4	0.632	0.655	0.673	4	651	678	714	21.5	21.5	22.2	23.2
		13.0	4	0.594	0.610	0.640	4	569	557	592	21.3	21.3	22.0	22.9
		51.7	3	0.544	0.549	0.559	3	361	385	398	21.4	21.3	21.9	22.8
		80.9	3	0.505	0.538	0.566	3	348	353	364	21.5	21.3	21.9	22.8

Table 2.1 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
14B	85.07.26	5.6	5	0.693	0.721	0.737	5	712	732	750	22.1	21.8	22.3	22.9
		13.2	3	0.650	0.665	0.673	3	637	643	649	22.9	22.4	22.6	23.0
		54.7	4	0.488	0.518	0.584	4	352	376	390	23.4	22.8	22.7	23.1
15B	85.07.26	6.1	4	0.706	0.737	0.770	4	746	801	860	26.0	24.2	23.6	23.8
		13.2	3	0.671	0.683	0.698	3	687	696	706	27.5	25.1	24.0	23.9
		52.1	3	0.584	0.615	0.648	3	438	445	450	28.8	26.0	24.3	23.9

Table 2.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Steering Axle, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14B	85.07.26	3790	6.0	5	0.488	0.516	0.544	4	531	565	598
			12.9	3	0.490	0.503	0.513	4	447	474	490
			51.2	4	0.368	0.394	0.409	4	284	297	304
15B	85.07.26	5110	6.0	4	0.678	0.698	0.721	4	686	727	754
			12.7	3	0.617	0.665	0.706	3	637	644	654
			49.9	4	0.554	0.579	0.587	4	398	423	437

Table 2.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.07.26	9182	6.0	4	0.696	0.742	0.800	4	643	661	674
			13.0	4	0.726	0.739	0.762	4	543	548	555
			53.3	4	0.607	0.612	0.617	4	377	398	414
			77.7	3	0.561	0.582	0.599	3	314	323	336
13	85.07.25	11127	6.0	3	1.242	1.256	1.262	3	1442	1463	1475
			13.0	4	1.199	1.224	1.275	4	1393	1402	1420
			50.1	2	0.991	1.016	1.039	5	1063	1087	1114

Table 2.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.07.25	13582	5.8	6	3	0.922	0.935	0.955	3	1020	1048	1063
						0.450	0.457	0.465				
				7		0.952	0.973	0.991		954	971	982
			13.2	6	4	0.777	0.856	0.978	4	922	928	934
						0.320	0.396	0.511				
				7		0.818	0.894	1.008		853	861	864
			55.2	6	3	0.698	0.742	0.785	4	675	680	698
						0.336	0.384	0.422				
				7		0.706	0.782	0.823		632	646	665
9	85.07.25	18100	5.8	6	3	0.815	0.833	0.859	4	640	658	669
						0.384	0.424	0.465				
				7		0.833	0.864	0.899		622	633	641
			13.0	6	4	0.762	0.792	0.808	4	556	564	576
						0.368	0.411	0.442				
				7		0.787	0.823	0.838		541	551	568
			50.1	6	3	0.648	0.658	0.678	4	381	404	432
						0.386	0.406	0.424				
				7		0.714	0.732	0.762		398	412	435
5	85.07.24	22327	5.8	6	3	1.163	1.181	1.191	3	1283	1337	1372
						0.559	0.582	0.602				
				7		1.217	1.229	1.242		1187	1231	1263
			12.9	6	3	1.179	1.222	1.250	3	1248	1279	1380
						0.617	0.650	0.671				
				7		1.219	1.267	1.303		1163	1187	1199
			52.5	6	3	1.008	1.057	1.105	5	1022	1058	1090
						0.533	0.584	0.635				
				7		1.072	1.143	1.206		949	983	1028

Table 2.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Ven. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.07.24	10645	6.0	1	3	0.546	0.556	0.569	3	577	598	614
						0.178	0.193	0.213				
				2		0.602	0.605	0.607		541	562	582
			13.0	1	3	0.498	0.528	0.544	3	537	545	549
						0.152	0.173	0.185				
				2		0.533	0.566	0.587		512	518	521
			52.6	1	3	0.455	0.462	0.478	3	372	384	393
						0.175	0.180	0.183				
				2		0.465	0.478	0.483		342	357	370
2	85.07.24	10345	5.8	1	3	0.513	0.528	0.536	3	748	784	816
						0.142	0.145	0.145				
				2		0.577	0.584	0.592		714	746	781
			12.9	1	3	0.523	0.566	0.599	4	726	747	763
						0.160	0.188	0.208				
				2		0.569	0.615	0.648		662	686	719
			52.3	1	3	0.521	0.528	0.538	4	513	524	533
						0.198	0.198	0.201				
				2		0.551	0.564	0.577		475	491	504
3	85.07.24	5445	5.8	1	2	0.399	0.411	0.422	4	577	582	640
						0.137	0.147	0.157				
				2		0.414	0.442	0.472		500	535	586
			13.0	1	3	0.376	0.399	0.432	4	531	559	576
						0.114	0.137	0.168				
				2		0.409	0.437	0.478		459	496	529
			51.0	1	4	0.312	0.348	0.371	4	360	375	406
						0.089	0.127	0.152				
				2		0.351	0.384	0.401		328	354	381
5	85.07.24	15336	5.8	1	4	0.744	0.813	0.871	4	1094	1129	1213
						0.206	0.269	0.315				
				2		0.792	0.869	0.937		1043	1102	1164
			12.9	1	3	0.886	0.899	0.907	3	1197	1222	1238
						0.351	0.361	0.368				
				2		0.960	0.986	1.001		1141	1147	1156
			52.3	1	4	0.688	0.742	0.775	5	870	898	942
						0.249	0.284	0.305				
				2		0.754	0.792	0.815		756	802	852
6	85.07.24	15582	5.8	1	4	0.899	0.970	1.049	3	1354	1388	1422
						0.323	0.368	0.439				
				2		0.993	1.064	1.138		1321	1330	1335
			13.0	1	5	0.826	0.899	1.039	5	1319	1340	1362
						0.234	0.300	0.422				
				2		0.912	0.991	1.146		1240	1274	1300
			53.4	1	4	0.767	0.790	0.851	8	938	991	1030
						0.241	0.277	0.351				
				2		0.798	0.841	0.965		874	929	992

Table 2.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
7	85.07.25	9109	5.8	1	4	0.399	0.447	0.488	4	382	391	399
						0.112	0.163	0.193				
				2		0.417	0.470	0.523		349	378	393
			12.9	1	4	0.353	0.386	0.414	4	306	318	324
						0.097	0.132	0.163				
				2		0.371	0.417	0.465		292	311	324
			49.2	1	4	0.338	0.371	0.386	4	216	226	230
						0.127	0.145	0.175				
				2		0.353	0.396	0.439		214	226	236
8A	85.07.25	11718	5.8	1	4	0.462	0.513	0.554	4	454	470	496
						0.160	0.190	0.218				
				2		0.518	0.561	0.602		444	459	475
			13.0	1	4	0.457	0.493	0.528	4	398	409	417
						0.168	0.190	0.213				
				2		0.470	0.513	0.554		394	401	413
			50.4	1	3	0.424	0.460	0.470	4	279	298	313
						0.163	0.178	0.201				
				2		0.442	0.483	0.511		261	292	310
9	85.07.25	14936	5.8	1	3	0.615	0.660	0.686	3	613	629	653
						0.206	0.234	0.264				
				2		0.673	0.732	0.734		594	607	626
			12.9	1	4	0.635	0.650	0.673	4	531	548	562
						0.231	0.249	0.269				
				2		0.686	0.706	0.729		519	524	532
			49.6	1	4	0.544	0.559	0.569	4	372	377	389
						0.231	0.236	0.241				
				2		0.584	0.605	0.625		362	368	372
10A	85.07.25	11827	5.8	1	4	0.528	0.564	0.599	4	585	604	629
						0.160	0.193	0.226				
				2		0.559	0.605	0.648		561	571	589
			12.9	1	4	0.599	0.610	0.630	4	552	556	562
						0.216	0.226	0.241				
				2		0.663	0.676	0.704		523	535	544
			51.7	1	4	0.457	0.475	0.495	4	361	376	390
						0.163	0.173	0.186				
				2		0.490	0.511	0.521		364	376	391
10B	85.07.25	9555	5.8	1	3	0.518	0.549	0.584	3	748	771	797
						0.127	0.155	0.178				
				2		0.536	0.582	0.630		702	711	718
			13.0	1	4	0.544	0.579	0.599	4	670	692	716
						0.175	0.196	0.206				
				2		0.594	0.632	0.673		610	648	682
			50.2	1	4	0.495	0.508	0.518	5	442	459	482
						0.168	0.180	0.190				
				2		0.533	0.544	0.554		419	430	440

Table 2.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.07.25	14582	5.8	1	3	0.762	0.772	0.787	3	1018	1045	1077
						0.269	0.279	0.295				
				2		0.831	0.843	0.866		963	976	995
			13.2	1	3	0.742	0.798	0.848	4	986	1008	1034
						0.218	0.284	0.358				
				2		0.800	0.866	0.930		898	930	967
			55.0	1	4	0.648	0.673	0.721	4	686	694	699
						0.213	0.241	0.287				
				2		0.686	0.724	0.787		622	646	671
12	85.07.25	12500	5.8	1	3	0.698	0.757	0.792	4	1063	1120	1161
						0.190	0.244	0.287				
				2		0.777	0.833	0.886		992	1028	1049
			13.2	1	3	0.759	0.803	0.864	4	1004	1029	1069
						0.290	0.315	0.351				
				2		0.831	0.869	0.930		923	964	998
			48.6	1	4	0.607	0.653	0.706	5	706	721	738
						0.201	0.251	0.302				
				2		0.665	0.726	0.792		679	687	696
13	85.07.25	13136	5.8	1	3	0.914	0.960	1.006	4	1219	1320	1398
						0.361	0.373	0.399				
				2		0.983	1.029	1.072		1191	1242	1292
			13.0	1	4	0.904	0.919	0.935	4	1168	1219	1255
						0.361	0.376	0.414				
				2		0.978	1.011	1.046		1114	1128	1148
			52.3	1	4	0.655	0.706	0.762	5	808	857	888
						0.218	0.264	0.305				
				2		0.711	0.767	0.815		752	790	852
14A	85.07.26	13236	6.0	1	3	0.561	0.610	0.643	4	540	560	577
						0.170	0.218	0.249				
				2		0.599	0.650	0.693		516	536	557
			13.0	1	4	0.577	0.584	0.592	4	472	475	479
						0.226	0.239	0.246				
				2		0.625	0.632	0.650		455	462	467
			53.3	1	4	0.478	0.488	0.495	4	299	313	328
						0.201	0.213	0.226				
				2		0.498	0.523	0.536		309	318	328
			78.5	1	4	0.442	0.467	0.521	5	271	281	297
						0.201	0.218	0.249				
				2		0.490	0.528	0.594		280	290	303

Table 2.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.07.25	14064	5.8	5	3	0.871	0.945	1.008	3	1201	1205	1210
						0.269	0.345	0.406				
				6		0.927	1.001	1.064		1149	1154	1158
			13.2	5	4	0.879	0.955	1.008	4	1036	1063	1079
						0.343	0.396	0.447				
				6		0.935	1.011	1.072		983	1029	1051
			48.6	5	5	0.665	0.752	0.843	5	736	770	800
						0.206	0.290	0.376				
				6		0.754	0.838	0.963		754	794	824
10A	85.07.25	18382	5.8	5	4	0.767	0.828	0.856	4	726	754	783
						0.246	0.290	0.310				
				6		0.826	0.884	0.912		731	749	770
			12.9	5	4	0.810	0.823	0.838	4	646	655	663
						0.287	0.302	0.315				
				6		0.874	0.894	0.914		650	657	665
			51.7	5	4	0.622	0.648	0.681	4	443	460	471
						0.206	0.226	0.264				
				6		0.686	0.721	0.762		482	497	509
8A	85.07.25	22127	5.8	5	4	0.770	0.808	0.841	4	621	644	673
						0.249	0.282	0.305				
				6		0.848	0.884	0.907		632	649	671
			13.0	5	4	0.762	0.777	0.798	4	552	564	580
						0.264	0.277	0.295				
				6		0.843	0.856	0.879		549	568	585
			50.4	5	4	0.640	0.671	0.698	4	406	408	411
						0.246	0.257	0.269				
				6		0.706	0.747	0.777		424	431	438

Table 2.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.07.24	20082	5.8	6	4	1.026	1.107	1.158	5	1247	1300	1377
						0.470	0.559	0.599				
				7		1.064	1.151	1.201		1156	1211	1258
						0.518	0.605	0.648				
				8		1.079	1.161	1.201		1156	1183	1227
			13.0	6	4	0.955	1.019	1.120	5	1195	1221	1260
						0.434	0.498	0.607				
				7		1.008	1.067	1.176		1109	1127	1153
						0.478	0.541	0.648				
				8		1.001	1.072	1.168		1063	1094	1108
			50.5	6	3	0.787	0.856	0.983	5	906	957	1019
						0.376	0.439	0.554				
				7		0.843	0.917	1.039		803	846	881
						0.432	0.503	0.625				
				8		0.859	0.940	1.074		842	864	897
2	85.07.24	26145	5.8	6	4	0.787	0.803	0.815	4	856	879	907
						0.358	0.373	0.386				
				7		0.841	0.853	0.866		783	805	832
						0.391	0.411	0.442				
				8		0.838	0.866	0.899		807	827	845
			13.0	6	4	0.787	0.823	0.848	4	852	864	888
						0.353	0.399	0.427				
				7		0.841	0.874	0.899		772	789	815
						0.409	0.442	0.465				
				8		0.843	0.889	0.914		795	801	808
			52.3	6	4	0.671	0.701	0.742	4	604	627	665
						0.353	0.373	0.391				
				7		0.734	0.759	0.787		558	591	621
						0.394	0.411	0.442				
				8		0.744	0.785	0.826		566	618	650
1	85.07.24	31645	6.0	6	4	0.803	0.841	0.859	5	665	676	702
						0.409	0.442	0.465				
				7		0.874	0.904	0.922		606	626	649
						0.450	0.483	0.513				
				8		0.871	0.912	0.942		606	630	650
			13.0	6	3	0.786	0.810	0.823	3	649	650	651
						0.394	0.427	0.447				
				7		0.866	0.884	0.904		597	603	609
						0.447	0.467	0.488				
				8		0.859	0.881	0.904		610	611	612
			52.6	6	4	0.673	0.704	0.737	3	502	503	503
						0.376	0.394	0.424				
				7		0.729	0.770	0.808		478	481	486
						0.424	0.442	0.478				
				8		0.726	0.787	0.831		500	509	516

Table 2.8
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 2, Nova Scotia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	86.07.25	20509	6.0	4	4	0.704	0.726	0.759	4	828	852	877
						0.208	0.231	0.257				
				5		0.777	0.800	0.826		832	865	892
						0.249	0.272	0.290				
				6		0.815	0.838	0.859		857	869	886
			13.0	4	4	0.698	0.739	0.767	4	727	736	742
						0.241	0.264	0.274				
				5		0.787	0.815	0.838		764	771	777
						0.274	0.295	0.310				
				6		0.826	0.846	0.859		763	768	777
			50.2	4	4	0.561	0.574	0.587	4	476	510	533
						0.170	0.188	0.198				
				5		0.615	0.648	0.673		509	538	558
						0.198	0.218	0.246				
				6		0.640	0.691	0.734		520	570	605
7	86.07.25	26036	5.8	4	4	0.655	0.678	0.691	4	528	531	535
						0.234	0.239	0.241				
				5		0.737	0.754	0.767		541	546	549
						0.269	0.272	0.290				
				6		0.787	0.803	0.810		565	569	572
			13.0	4	4	0.584	0.615	0.632	4	436	439	440
						0.218	0.226	0.231				
				5		0.688	0.709	0.721		470	475	482
						0.254	0.257	0.259				
				6		0.729	0.749	0.762		483	488	494
			49.2	4	4	0.513	0.528	0.533	4	302	310	314
						0.206	0.216	0.224				
				5		0.592	0.607	0.617		312	326	338
						0.231	0.244	0.249				
				6		0.635	0.648	0.663		342	355	366
3	85.07.24	31664	5.8	4	3	0.881	0.904	0.919	4	1024	1090	1156
						0.287	0.312	0.330				
				5		0.998	1.008	1.024		1024	1080	1116
						0.338	0.361	0.376				
				6		1.049	1.064	1.087		1020	1061	1094
			13.0	4	4	0.815	0.876	0.914	4	1043	1069	1100
						0.246	0.305	0.351				
				5		0.950	0.993	1.046		1037	1060	1086
						0.320	0.368	0.417				
				6		1.016	1.054	1.113		1023	1042	1065
			51.0	4	4	0.726	0.757	0.787	3	821	830	845
						0.239	0.269	0.305				
				5		0.848	0.866	0.879		822	835	848
						0.287	0.317	0.338				
				6		0.897	0.919	0.942		820	827	833

SITE 3A

QUEBEC

Pavement Response to Heavy Vehicles Test Site

Province: Quebec Date(s) of Installing Instrumentation: JL. 10-17 1984

Site Location: Hwy 40 - Approx. 55 km west of Quebec City, 0,5 km west of Road #363 -

AADT: _____ % Truck Vol: _____ No Records

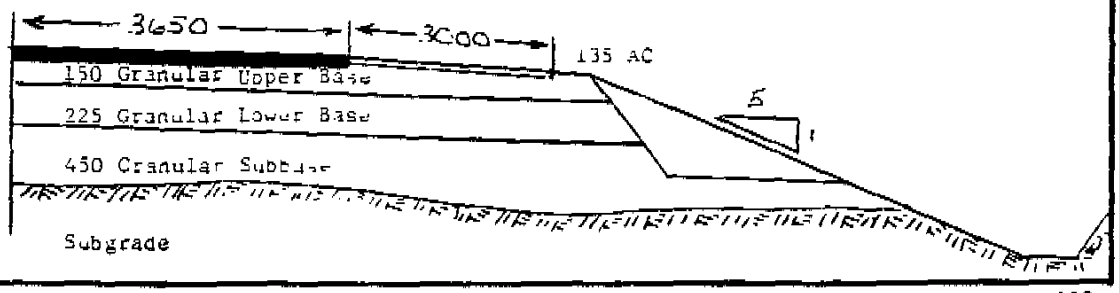
Site Description: The site is located on the westward outer lane of a four lane divided highway. That portion of the highway is slightly cut into a flat gravelly terrain. Construction was completed in August 84.

Note: Site 1 and 2 were damaged during construction and sampling. However, site 1 should be efficient for testing.

Structure: Instr. Lane Width 3.65 m. Adjacent Shoulder Width 3.0 m.
Shoulder Type Gravel

Component Layers		Type	As Constructed Thickness (mm)	Details
Surfacing		AC	130	AC Type MB4 (50 mm) Surface AC Type MB2 (80 mm) Base
Base Layer(s)	Upper	Granular	150	Crushed Limestone 0-19 mm
	Lower	Granular	225	Crushed Limestone 0-63 mm
Subbase Layer(s)		Granular	450	Granitic Sand
Subsoil		Granular		Coarse Granitic Gravel.

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: **3A - Quebec**

Test Dates: 85.08.05 - 85.08.09

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Single Axle		9182	9570	11127
Tandem (1.2 m)		13582	18100	22327
Tandem (1.5 m)	(17)*	5445	to	19280
Tandem (1.8 m)		14064	18382	22127
Triaxle (2.4 m)		20082	26145	31645
Triaxle (3.7 m)		20509	26036	31664
Triaxle (4.9 m)			25836	31955

*Number of Tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed with one (1) deflection transducer not operational during testing. (Lead cable from deflection transducer severed during asphalt concrete coring operations following installation.)**

2. **Plywood shipping stiffeners left under strain transducers during pavement construction. Recorded strains may not be representative of pavement structure.**

3. **Extremely high pavement temperatures (40°C) throughout the test program.**

Table 3A.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
1	85.08.05	5.5	3	0.409	0.427	0.447	3	2347	2438	2509	43.0	37.9	34.7	32.1
		14.8	2	0.401	0.409	0.417	3	2363	2421	2478	45.5	40.1	36.8	32.2
		49.1	3	0.394	0.417	0.434	2	1901	2018	2135	46.0	40.8	37.0	32.2
2	85.08.05	6.4	2	0.513	0.513	0.513	3	2063	2275	2407	44.8	40.9	37.6	34.4
		12.9	3	0.439	0.457	0.472	3	2519	2586	2633	43.3	40.4	37.6	35.1
		47.6	5	0.353	0.373	0.394	4	2128	2220	2388	42.0	40.1	37.6	35.6
3	85.08.06	5.8	3	0.353	0.389	0.424	3	2040	2152	2249	34.7	31.2	29.1	27.7
		13.4	5	0.330	0.358	0.386	4	1826	1897	1930	35.3	32.3	29.9	28.1
		50.9	6	0.312	0.328	0.343	5	1146	1202	1292	38.1	34.5	31.8	29.6
4	85.08.06	6.1	3	0.391	0.396	0.401	2	2358	2397	2436	40.6	37.5	34.8	32.2
		11.6	4	0.343	0.358	0.376	4	2356	2374	2397	43.1	38.9	36.0	33.5
		50.5	5	0.282	0.300	0.317	4	1743	1846	1916	46.0	40.2	37.0	34.0
5	85.08.06	5.8	2	0.417	0.447	0.478	3	2356	2415	2529	46.8	42.1	38.6	35.4
		12.1	3	0.399	0.401	0.409	4	2360	2414	2448	46.1	41.9	38.5	35.4
		49.7	3	0.384	0.391	0.409	8	1867	1983	2202	45.6	42.0	38.9	35.9
6	85.08.07	5.5	4	0.368	0.376	0.386	4	1806	1932	2029	30.6	28.8	27.8	27.5
		11.9	4	0.338	0.351	0.358	5	1737	1767	1796	33.7	30.4	29.6	27.7
		52.5	5	0.317	0.325	0.345	6	1032	1090	1213	34.9	31.2	29.0	27.6
7	85.08.07	5.8	3	0.399	0.406	0.422	4	2153	2288	2403	36.1	32.3	30.1	29.4
		12.7	4	0.358	0.368	0.373	4	2104	2155	2188	37.2	33.1	30.9	29.1
		51.2	4	0.305	0.335	0.368	4	1459	1573	1646	38.7	35.0	32.4	30.3
8A	85.08.07	5.1	4	0.401	0.417	0.450	3	2316	2347	2368	43.1	38.4	35.6	33.1
		12.7	3	0.391	0.404	0.417	4	2070	2137	2259	43.5	38.8	35.7	33.0
		53.9	4	0.328	0.338	0.361	4	1803	1853	1954	43.2	39.3	36.3	33.5
8B	85.08.07	5.5	4	0.409	0.429	0.450	4	2312	2386	2440	41.8	39.4	37.2	34.6
		12.2	4	0.394	0.409	0.422	5	2105	2211	2315	40.8	39.1	37.5	35.3
		51.7	5	0.312	0.325	0.345	5	1971	2008	2046	40.0	38.6	37.2	35.2
9	85.08.08	5.3	3	0.338	0.363	0.386	3	1631	1719	1779	25.0	24.9	25.0	25.5
		13.0	3	0.335	0.361	0.376	3	1309	1401	1498	27.6	25.9	25.5	25.7
		51.5	4	0.274	0.292	0.317	4	742	770	817	31.6	28.5	27.1	26.6
10A	85.08.08	6.0	4	0.378	0.391	0.399	4	2042	2137	2233	36.0	32.5	30.0	29.4
		12.6	4	0.353	0.371	0.394	2	1937	1941	1944	36.6	33.7	31.1	29.0
		50.9	3	0.317	0.333	0.351	4	1122	1227	1296	37.1	34.1	31.2	29.6
10B	85.08.08	6.4	4	0.376	0.394	0.417	3	2231	2270	2312	33.6	32.9	31.9	30.3
		12.6	3	0.361	0.378	0.399	4	1910	2004	2100	33.5	32.1	31.4	30.4
		53.9	5	0.317	0.328	0.338	4	1483	1522	1572	36.0	33.0	31.6	30.6
11	85.08.08	5.5	4	0.409	0.429	0.447	4	1844	1972	2152	30.2	30.4	30.7	30..
		13.2	4	0.361	0.391	0.429	3	1845	1946	2046	32.3	30.4	30.1	29.6
		54.6	4	0.302	0.328	0.366	3	1288	1365	1410	35.1	32.3	31.1	30.1
		81.6	4	0.323	0.338	0.361	2	1164	1222	1279	35.4	33.3	31.7	30.2
12	85.08.09	5.8	4	0.386	0.401	0.409	2	1501	1525	1550	29.3	26.3	24.9	24.3
		11.9	5	0.376	0.381	0.391	3	1226	1255	1272	31.9	28.6	26.7	25.5
		51.7	5	0.295	0.320	0.358	5	653	698	767	34.5	30.4	27.8	26.1

Table 3A.1 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm)				Interfacial Tensile Strains (mm/mm x 10^{-6})				Asphaltic Concrete Temperatures (C)			
			N	D min.	D avg.	D max.	N	S min.	S avg.	S max.	T1	T2	T3	T4
13	85.08.09	6.3	4	0.422	0.439	0.457	3	1762	1784	1804	36.9	32.0	28.9	26.8
		13.7	4	0.391	0.404	0.424	3	1437	1469	1524	38.4	33.9	30.7	28.3
		50.9	4	0.310	0.340	0.366	4	885	943	998	30.3	35.2	31.7	29.0
14A	85.08.09	5.1	4	0.417	0.432	0.447	3	2159	2229	2339	45.0	39.2	34.7	31.0
		12.9	3	0.414	0.427	0.442	3	2005	2069	2155	45.2	39.6	35.5	31.9
		53.8	4	0.330	0.358	0.384	4	1577	1630	1711	45.9	40.5	36.7	33.2
15A	85.08.09	5.5	4	0.361	0.376	0.386	3	2336	2379	2420	46.5	41.6	37.9	34.4
		13.2	5	0.328	0.340	0.361	3	2318	2394	2449	47.2	42.8	39.1	35.8
		55.2	5	0.297	0.307	0.320	4	1880	1963	2013	46.8	44.7	39.6	36.4

Table 3A.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.08.09	9182	6.1	4	0.478	0.495	0.521	3	2070	2151	2217
			13.4	4	0.480	0.500	0.518	3	2135	2167	2200
			51.0	4	0.409	0.455	0.488	2	1694	1728	1762
15A	85.08.09	9670	6.1	3	0.391	0.396	0.424	4	2720	2822	2900
			13.2	4	0.414	0.427	0.432	4	2680	2697	2714
			53.4	4	0.384	0.391	0.399	2	1950	2026	2101
13	85.08.09	11127	6.1	4	0.513	0.531	0.536	3	2121	2131	2139
			13.2	4	0.495	0.513	0.533	3	1865	1886	1910
			50.9	4	0.462	0.490	0.518	4	1101	1189	1319

Table 3A.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.08.08	13582	6.0	6	3	0.414	0.422	0.432	4	1831	1885	1960
						0.142	0.150	0.157				
				7		0.432	0.432	0.434		1652	1722	1808
			13.2	6	4	0.384	0.396	0.414	4	1546	1572	1600
						0.135	0.160	0.183				
				7		0.394	0.414	0.429		1450	1496	1555
			52.8	6	4	0.343	0.358	0.386	2	1044	1056	1067
						0.137	0.163	0.193				
				7		0.361	0.384	0.424		1015	1056	1097
			73.9	6	3	0.353	0.356	0.361	2	873	896	918
						0.157	0.175	0.183				
				7		0.366	0.376	0.391		837	911	984
9	85.08.08	18100	6.0	6	4	0.462	0.466	0.470	4	1510	1551	1617
						0.175	0.193	0.206				
				7		0.472	0.483	0.495		1454	1500	1548
			13.2	6	4	0.417	0.447	0.470	4	1236	1301	1331
						0.170	0.196	0.208				
				7		0.457	0.472	0.480		1243	1291	1315
			50.9	6	4	0.394	0.417	0.429	3	705	752	829
						0.193	0.208	0.213				
				7		0.434	0.447	0.457		781	835	893
5	85.08.06	22327	6.1	6	4	0.566	0.574	0.582	4	2618	2668	2717
						0.201	0.239	0.269				
				7		0.577	0.592	0.625		2380	2439	2506
			13.2	6	4	0.513	0.554	0.592	4	2519	1593	2696
						0.226	0.244	0.257				
				7		0.546	0.566	0.594		2310	2375	2405
			51.8	6	4	0.531	0.554	0.574	3	1920	2011	2185
						0.234	0.251	0.272				
				7		0.554	0.577	0.587		1863	2000	2262

Table 3A.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.08.05	10645	6.1	1	3	0.386	0.394	0.399	4	1242	1301	1378
						0.081	0.102	0.112				
				2		0.406	0.411	0.417		1235	1290	1329
			13.4	1	5	0.394	0.417	0.442	3	1719	1805	1917
						0.109	0.140	0.160				
				2		0.429	0.450	0.488		1727	1853	1932
			54.6	1	4	0.312	0.328	0.351	2	1010	1161	1311
						0.071	0.104	0.130				
				2		0.343	0.361	0.399		1165	1259	1363
2	85.08.05	10345	6.1	1	3	0.366	0.384	0.414	4	1390	1441	1512
						0.038	0.064	0.097				
				2		0.368	0.384	0.406		1385	1422	1491
			13.4	1	4	0.394	0.417	0.424	3	1632	1715	1835
						0.079	0.117	0.142				
				2		0.406	0.422	0.434		1566	1635	1758
			51.8	1	6	0.305	0.325	0.338	3	1223	1251	1275
						0.064	0.089	0.122				
				2		0.345	0.361	0.378		1181	1202	1214
3	85.08.06	5445	6.1	1	4	0.180	0.208	0.234	2	669	717	764
						0.033	0.053	0.071				
				2		0.213	0.229	0.249		677	755	832
			13.4	1	4	0.198	0.203	0.208	3	685	726	770
						0.025	0.041	0.056				
				2		0.193	0.206	0.213		686	765	846
			51.8	1	6	0.119	0.152	0.168	3	407	419	433
						0.048	0.056	0.058				
				2		0.145	0.165	0.183		316	377	415
4	85.08.06	6682	6.1	1	3	0.249	0.274	0.290	3	1012	1106	1266
						0.058	0.081	0.097				
				2		0.272	0.290	0.320		1026	1154	1340
			13.2	1	3	0.234	0.241	0.246	3	1052	1146	1255
						0.041	0.048	0.056				
				2		0.218	0.251	0.282		1026	1178	1291
			52.8	1	4	0.183	0.193	0.208	2	613	654	695
						0.046	0.074	0.097				
				2		0.178	0.190	0.226		565	594	622
5	85.08.06	15336	6.1	1	4	0.417	0.434	0.442	3	1502	1591	1730
						0.081	0.117	0.130				
				2		0.442	0.460	0.455		1486	1559	1677
			13.2	1	4	0.401	0.414	0.434	2	2164	2370	2575
						0.089	0.114	0.130				
				2		0.429	0.444	0.455		2159	2243	2326
			51.8	1	4	0.384	0.409	0.429	3	1501	1513	1526
						0.122	0.135	0.150				
				2		0.422	0.437	0.450		1485	1533	1611

Table 3A.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Ven. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.08.07	15582	6.1	1	4	0.409	0.429	0.439	3	1489	1589	1771
						0.122	0.150	0.165				
				2		0.409	0.432	0.457		1502	1589	1753
			13.2	1	4	0.366	0.394	0.422	3	1331	1371	1414
						0.091	0.124	0.142				
				2		0.386	0.414	0.429		1333	1401	1462
			51.3	1	4	0.351	0.368	0.384	5	699	737	767
						0.104	0.124	0.145				
				2		0.358	0.381	0.391		673	711	781
7	85.08.07	9109	6.1	1	4	0.295	0.307	0.317	2	1198	1353	1508
						0.071	0.076	0.079				
				2		0.330	0.335	0.343		1190	1327	1463
			13.4	1	4	0.296	0.307	0.317	3	1152	1207	1263
						0.079	0.089	0.097				
				2		0.312	0.325	0.335		1174	1226	1325
			48.9	1	2	0.262	0.277	0.290	2	776	809	841
						0.086	0.104	0.122				
				2		0.290	0.300	0.310		738	772	805
8A	85.08.07	11718	6.1	1	4	0.373	0.404	0.429	2	1920	1929	1938
						0.071	0.109	0.145				
				2		0.386	0.404	0.422		1921	1933	1944
			13.4	1	4	0.366	0.386	0.401	3	1619	1668	1751
						0.071	0.109	0.137				
				2		0.373	0.404	0.422		1621	1696	1796
			51.2	1	5	0.297	0.307	0.323	4	938	966	1000
						0.066	0.086	0.112				
				2		0.282	0.320	0.353		779	876	933
8B	85.08.07	8209	6.1	1	3	0.302	0.310	0.310	2	1459	1501	1543
						0.064	0.066	0.074				
				2		0.323	0.335	0.361		1372	1482	1592
			13.4	1	3	0.297	0.310	0.317	4	1428	1539	1681
						0.064	0.076	0.086				
				2		0.310	0.328	0.338		1348	1522	1750
			50.9	1	4	0.249	0.257	0.272	2	892	991	1089
						0.074	0.089	0.109				
				2		0.241	0.269	0.295		808	973	1137
9	85.08.08	14936	6.1	1	4	0.394	0.401	0.409	4	1236	1277	1340
						0.102	0.114	0.119				
				2		0.406	0.422	0.429		1223	1286	1328
			13.2	1	4	0.376	0.394	0.406	4	921	982	1120
						0.102	0.114	0.122				
				2		0.401	0.411	0.429		925	994	1187
			50.9	1	4	0.320	0.338	0.358	4	536	577	626
						0.114	0.122	0.137				
				2		0.366	0.376	0.394		544	603	686

Table 3A.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains ($mm/mm \times 10^{-6}$) N	S min.	S avg.	S max.
10A	85.08.08	11827	6.1	1	4	0.330	0.361	0.394	4	1133	1228	1311
						0.074	0.089	0.104				
				2		0.366	0.373	0.386		1149	1247	1378
			13.2	1	4	0.335	0.345	0.353	2	1145	1240	1335
						0.058	0.094	0.135				
				2		0.338	0.368	0.384		1116	1264	1412
			51.8	1	4	0.279	0.295	0.330	3	703	727	742
						0.079	0.089	0.112				
				2		0.290	0.315	0.335		647	669	710
10B	85.08.08	9555	6.1	1	4	0.287	0.307	0.328	2	1471	1605	1738
						0.064	0.074	0.081				
				2		0.312	0.328	0.345		1567	1710	1852
			13.2	1	4	0.287	0.292	0.297	3	1307	1440	1641
						0.056	0.076	0.089				
				2		0.297	0.317	0.338		1349	1361	1634
			52.0	1	5	0.269	0.282	0.312	3	754	824	877
						0.079	0.091	0.102				
				2		0.282	0.290	0.297		669	748	812
11	85.08.08	14582	5.8	1	3	0.384	0.414	0.447	2	1710	1716	1722
						0.081	0.102	0.122				
				2		0.422	0.434	0.455		1677	1681	1685
			13.2	1	4	0.361	0.404	0.429	2	1572	1792	2011
						0.074	0.107	0.130				
				2		0.391	0.427	0.442		1567	1746	1925
			52.8	1	4	0.338	0.371	0.391	2	870	965	1059
						0.094	0.107	0.135				
				2		0.373	0.389	0.406		824	962	1099
			73.9	1	3	0.366	0.368	0.376	3	856	885	902
						0.086	0.109	0.137				
				2		0.373	0.384	0.399		823	849	886
12	85.08.09	12500	6.1	1	4	0.343	0.356	0.376	3	986	1026	1089
						0.071	0.094	0.119				
				2		0.366	0.378	0.399		1043	1077	1146
			13.2	1	4	0.335	0.353	0.368	3	793	818	837
						0.086	0.107	0.135				
				2		0.361	0.376	0.391		823	892	949
			50.5	1	4	0.282	0.315	0.343	4	433	463	484
						0.081	0.099	0.127				
				2		0.320	0.335	0.353		447	514	572

Table 3A.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
13	85.08.09	13136	6.1	1	4	0.391	0.401	0.409	3	1136	1166	1207
						0.109	0.112	0.114				
				2		0.406	0.419	0.432		1173	1222	1290
			13.2	1	4	0.356	0.394	0.424	2	1266	1311	1356
						0.097	0.112	0.137				
				2		0.401	0.417	0.447		1347	1408	1469
			52.1	1	4	0.317	0.343	0.358	3	632	679	743
						0.086	0.107	0.137				
				2		0.338	0.368	0.391		701	753	848
14A	85.08.09	13236	6.1	1	4	0.406	0.427	0.450	2	1636	1637	1638
						0.086	0.102	0.130				
				2		0.422	0.439	0.472		1631	1648	1664
			13.4	1	4	0.429	0.444	0.450	3	1382	1493	1692
						0.109	0.124	0.160				
				2		0.447	0.465	0.480		1428	1565	1827
			51.0	1	4	0.376	0.391	0.409	2	1171	1218	1264
						0.089	0.119	0.135				
				2		0.394	0.422	0.439		1138	1272	1406
15A	85.08.09	19280	6.1	1	4	0.409	0.427	0.447	4	2521	2609	2763
						0.097	0.130	0.157				
				2		0.414	0.437	0.462		2312	2415	2538
			13.2	1	4	0.422	0.447	0.465	3	2372	2489	2557
						0.145	0.152	0.160				
				2		0.462	0.467	0.483		2302	2360	2395
			53.4	1	4	0.366	0.386	0.422	2	1664	1856	2048
						0.109	0.137	0.157				
				2		0.378	0.401	0.424		1585	1808	2031

Table 3A.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.08.09	14064	6.1	5	4	0.358	0.384	0.401	3	1125	1146	1156
						0.081	0.107	0.127				
				6		0.399	0.417	0.432		1161	1175	1198
			13.2	5	4	0.368	0.384	0.406	4	836	862	880
						0.089	0.107	0.130				
				6		0.394	0.409	0.417		868	884	909
			50.5	5	4	0.338	0.348	0.353	3	492	539	573
						0.081	0.099	0.112				
				6		0.353	0.381	0.401		559	632	669
10A	85.08.08	18382	6.1	5	4	0.450	0.467	0.483	4	1922	1997	2029
						0.097	0.112	0.142				
				6		0.483	0.498	0.528		1929	1974	2048
			13.2	5	4	0.432	0.460	0.490	4	1692	1771	1871
						0.102	0.119	0.145				
				6		0.450	0.475	0.511		1616	1707	1808
			52.0	5	5	0.414	0.429	0.442	3	1023	1124	1201
						0.094	0.117	0.135				
				6		0.409	0.439	0.465		1142	1235	1296
8A	85.08.07	22127	6.1	5	4	0.518	0.549	0.584	4	2430	2558	2659
						0.127	0.147	0.165				
				6		0.544	0.566	0.582		2348	2397	2478
			13.4	5	4	0.523	0.541	0.561	4	2430	2493	2576
						0.152	0.160	0.168				
				6		0.528	0.564	0.592		2351	2377	2434
			51.2	5	5	0.478	0.500	0.511	2	1835	1899	1960
						0.137	0.152	0.160				
				6		0.490	0.523	0.559		1681	1701	1721

Table 3A.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.08.07	20082	6.1	6	3	0.386	0.394	0.409	4	1504	1561	1636
						0.170	0.188	0.216				
				7		0.417	0.419	0.422		1402	1433	1490
						0.173	0.190	0.206				
				8		0.434	0.437	0.439		1425	1447	1486
			13.2	6	3	0.363	0.368	0.384	4	1235	1275	1336
						0.165	0.180	0.193				
				7		0.378	0.389	0.401		1160	1198	1264
						0.165	0.180	0.193				
				8		0.384	0.391	0.399		1182	1228	1305
			51.7	6	5	0.338	0.343	0.351	3	665	712	736
						0.152	0.173	0.206				
				7		0.353	0.366	0.378		670	714	734
						0.165	0.180	0.201				
				8		0.358	0.373	0.386		702	743	775
2	85.08.05	26145	6.1	6	2	0.536	0.561	0.584	3	2457	2492	2534
						0.168	0.208	0.246				
				7		0.536	0.569	0.599		2212	2249	2282
						0.224	0.234	0.241				
				8		0.577	0.597	0.610		2112	2146	2178
			13.4	6	4	0.536	0.556	0.569	3	2174	2278	2384
						0.206	0.234	0.257				
				7		0.566	0.587	0.602		2067	2117	2206
						0.216	0.239	0.249				
				8		0.577	0.597	0.610		2013	2081	2152
			51.0	6	4	0.480	0.500	0.521	2	1978	2087	2196
						0.208	0.218	0.231				
				7		0.528	0.541	0.551		1879	2019	2159
						0.224	0.239	0.262				
				8		0.511	0.533	0.554		1940	2044	2147
1	85.08.05	31645	6.1	6	3	0.594	0.605	0.610	4	2397	2515	2600
						0.241	0.254	0.269				
				7		0.615	0.632	0.643		2169	2255	2375
						0.254	0.267	0.282				
				8		0.648	0.653	0.663		2261	2329	2448
			13.4	6	4	0.599	0.615	0.638	4	2461	2572	2696
						0.262	0.279	0.290				
				7		0.643	0.648	0.678		2229	2343	2434
						0.295	0.307	0.335				
				8		0.638	0.655	0.673		2243	2344	2395
			54.4	6	3	0.544	0.559	0.587	2	2166	2212	2258
						0.254	0.262	0.279				
				7		0.561	0.579	0.582		1983	2076	2169
						0.254	0.269	0.279				
				8		0.574	0.597	0.607		2100	2128	2156

Table 3A.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
108	85.08.08	20609	6.1	4	3	0.391	0.394	0.399	3	1621	1724	1796
						0.094	0.097	0.104				
				5		0.422	0.429	0.439		1861	1915	1950
						0.119	0.119	0.119				
				6		0.424	0.429	0.434		1802	1875	1960
			13.2	4	4	0.335	0.358	0.378	4	1572	1652	1767
						0.071	0.086	0.094				
				5		0.361	0.373	0.378		1719	1786	1856
						0.074	0.099	0.119				
				6		0.378	0.386	0.399		1737	1797	1865
			52.0	4	5	0.317	0.340	0.366	2	1095	1126	1156
						0.094	0.107	0.119				
				5		0.353	0.373	0.399		1191	1208	1225
						0.097	0.122	0.142				
				6		0.368	0.389	0.409		1229	1296	1363
7	85.08.07	26036	6.1	4	4	0.417	0.442	0.455	4	1867	1921	1957
						0.109	0.119	0.130				
				5		0.450	0.478	0.503		2080	2118	2155
						0.130	0.137	0.152				
				6		0.495	0.508	0.528		2062	2100	2153
			13.4	4	4	0.417	0.429	0.439	4	1767	1813	1866
						0.104	0.112	0.127				
				5		0.447	0.455	0.462		1881	1932	1963
						0.112	0.130	0.142				
				6		0.472	0.480	0.490		1913	1937	1961
			48.9	4	5	0.378	0.394	0.414	4	1164	1246	1343
						0.109	0.127	0.168				
				5		0.386	0.417	0.442		1345	1437	1511
						0.112	0.132	0.150				
				6		0.432	0.439	0.442		1401	1507	1601
3	85.08.06	31664	6.1	4	4	0.447	0.478	0.503	4	1827	1899	1975
						0.112	0.142	0.160				
				5		0.490	0.528	0.554		1997	2092	2156
						0.130	0.152	0.183				
				6		0.521	0.549	0.566		2054	2119	2177
			13.4	4	4	0.442	0.460	0.470	3	1719	1799	1949
						0.112	0.124	0.135				
				5		0.488	0.500	0.511		1909	1975	2058
						0.130	0.142	0.160				
				6		0.511	0.523	0.538		1942	2012	2108
			51.3	4	3	0.422	0.434	0.450	2	979	1119	1258
						0.145	0.147	0.150				
				5		0.480	0.490	0.495		1239	1288	1336
						0.157	0.170	0.183				
				6		0.478	0.503	0.538		1335	1417	1499

Table 3A.8
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (4.9 m Spacing)-Dual Tire Loads, Site 3A, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
8B	85.08.07	25836	6.1	3	3	0.424	0.447	0.462	2	2034	2095	2156
						0.053	0.061	0.071				
				5		0.462	0.483	0.503		2327	2364	2401
						0.089	0.109	0.130				
				6		0.480	0.503	0.536		2224	2283	2342
			13.4	3	4	0.406	0.429	0.462	2	1964	2077	2189
						0.041	0.056	0.074				
				5		0.439	0.457	0.478		2262	2302	2342
						0.097	0.114	0.135				
				6		0.457	0.480	0.490		2128	2216	2304
			50.9	3	5	0.409	0.427	0.442	3	1599	1666	1771
						0.053	0.076	0.097				
				5		0.424	0.444	0.456		1684	1879	2043
						0.119	0.145	0.168				
				6		0.457	0.475	0.498		1510	1724	1891
4	85.08.06	31955	6.1	3	4	0.483	0.508	0.526	4	2091	2168	2302
						0.053	0.081	0.097				
				5		0.511	0.546	0.569		2466	2511	2570
						0.152	0.163	0.170				
				6		0.544	0.574	0.594		2332	2399	2506
			13.2	3	4	0.447	0.465	0.478	4	2060	2162	2336
						0.041	0.061	0.079				
				5		0.457	0.500	0.526		2290	2367	2441
						0.112	0.137	0.152				
				6		0.511	0.531	0.554		2255	2285	2332
			52.0	3	5	0.422	0.444	0.478	2	1433	1541	1649
						0.048	0.064	0.079				
				5		0.470	0.480	0.521		1504	1613	1721
						0.119	0.147	0.168				
				6		0.488	0.506	0.521		1528	1706	1883

SITE 3B

QUEBEC

Pavement Response to Heavy Vehicles Test Site

Province: Quebec Date(s) of Installing Instrumentation: JL. 10-17 1984

Site Location: Hwy 40 Adjacent to site #1

AADT: _____ % Truck Vol: _____ No Records

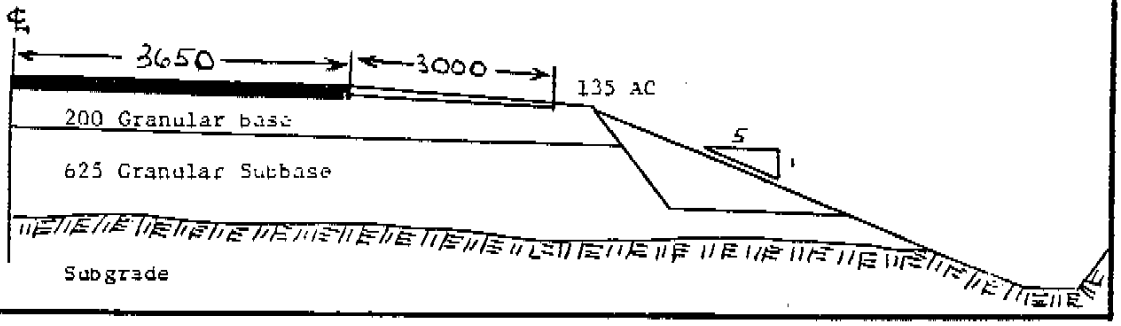
Site Description: Idem site #1.

Structure: Instr. Lane Width 3.65m. Adjacent Shoulder Width 3.0 m.

Shoulder Type Gravel

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	135	A.C. Type MB4 (49 mm) Surface A.C. Type MB2 (85 mm) Base
Base Layer(s)	Granular	200	Crushed Limestone 0-19 mm
Subbase Layer(s)	Granular	625	Granitic Sand.
Subsoil	Granular		Coarse Granitic Gravel

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: **3B - Quebec**

Test Dates: 85.08.05 - 85.08.09

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Single Axle		9182	9570	11127
Tandem (1.2 m)		13582	18100	22327
Tandem (1.5 m)	(17)*	5445	to	19280
Tandem (1.8 m)		14064	18382	22127
Triaxle (2.4 m)		20082	26145	31645
Triaxle (3.7 m)		20509	26036	31664
Triaxle (4.9 m)			25836	31955

*Number of tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed with one (1) strain transducer damaged during pavement construction.**

2. **Computer hardware malfunction resulted in a displacement of the reference datum from the null position for two (2) deflection transducers, with no loss of data.**

3. **Plywood shipping stiffeners left under strain transducers during installation. Recorded strains may not be representative of pavement structure.**

4. **Extremely high pavement temperatures (40°C) throughout the test program.**

Table 3B.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm)				Interfacial Tensile Strains (mm/mm x 10^{-6})				Asphaltic Concrete Temperatures (C)			
			N	D min.	D avg.	D max.	N	S min.	S avg.	S max.	T1	T2	T3	T4
1	85.08.05	5.8	3	0.414	0.427	0.439	2	1150	1154	1158	43.0	37.9	34.7	32.1
		14.2	2	0.406	0.411	0.417	2	1075	1107	1138	45.5	40.1	35.8	32.2
		50.1	3	0.401	0.452	0.495	2	1022	1046	1060	46.0	40.8	37.0	32.2
2	85.08.05	8.5	5	0.414	0.432	0.442	3	1130	1188	1244	44.8	40.9	37.6	34.4
		12.9	4	0.409	0.424	0.470	4	1100	1174	1217	43.3	40.4	37.6	35.1
		48.6	2	0.394	0.427	0.432	2	988	1004	1020	42.0	40.1	37.6	35.6
3	85 08.06	6.4	4	0.399	0.409	0.424	4	925	996	1052	34.7	31.2	29.1	27.7
		13.0	3	0.386	0.404	0.432	3	931	997	1003	35.3	32.2	29.9	28.1
		50.4	4	0.343	0.366	0.391	4	723	737	815	38.1	34.5	31.8	29.6
4	85.08.06	6.8	4	0.394	0.419	0.434	3	1034	1132	1191	40.6	37.5	34.8	32.2
		11.7	5	0.394	0.417	0.450	5	1110	1136	1149	43.1	38.9	36.0	33.5
		49.6	3	0.368	0.371	0.391	3	922	943	959	45.0	40.2	37.0	34.0
5	85.08.06	6.1	5	0.414	0.437	0.470	5	1053	1141	1199	46.8	42.1	38.6	35.4
		11.6	3	0.424	0.432	0.442	3	1156	1176	1203	46.1	41.9	38.5	35.4
		49.1	4	0.391	0.409	0.432	6	1020	1050	1112	45.6	42.0	38.9	35.9
6	85.08.07	5.6	4	0.378	0.384	0.394	4	907	940	971	30.6	28.8	27.8	27.5
		13.2	4	0.366	0.378	0.399	5	776	806	837	33.7	30.4	29.6	27.7
		49.9	4	0.343	0.361	0.378	4	608	640	697	34.9	31.2	29.0	27.6
7	85.08.07	6.1	5	0.391	0.399	0.406	5	1047	1076	1109	36.1	32.3	30.1	28.4
		13.4	5	0.373	0.389	0.394	5	996	1015	1045	37.2	33.1	30.9	29.1
		51.2	4	0.320	0.351	0.376	3	736	786	831	38.7	35.4	32.4	30.3
8A	85.08.07	5.3	4	0.384	0.399	0.409	4	1064	1118	1152	43.1	38.4	35.6	33.1
		12.7	4	0.386	0.399	0.409	4	1037	1050	1065	43.5	38.8	35.7	33.0
		52.3	4	0.373	0.384	0.399	4	941	969	991	43.2	39.3	36.3	33.5
8B	85.08.7	5.5	4	0.414	0.419	0.424	4	1134	1157	1178	41.8	39.4	37.4	34.6
		12.1	5	0.384	0.389	0.399	5	967	1019	1113	40.8	39.1	37.5	35.3
		52.5	4	0.361	0.376	0.399	4	865	928	962	40.0	38.6	37.2	35.2
9	85.08.08	5.3	4	0.366	0.373	0.384	4	837	867	890	25.0	24.9	25.0	25.5
		12.9	4	0.338	0.348	0.358	4	697	714	736	27.6	25.9	25.5	25.7
		51.5	4	0.320	0.330	0.343	4	459	503	524	31.6	28.5	27.1	26.6
10A	85.08.08	6.0	4	0.376	0.381	0.386	4	1006	1028	1041	36.0	32.5	30.0	28.4
		12.7	4	0.368	0.371	0.378	4	915	939	965	36.6	33.7	31.1	29.0
		52.1	4	0.358	0.366	0.373	5	670	702	735	37.1	34.1	31.2	29.6
10B	85.08.08	6.4	3	0.391	0.396	0.406	4	1032	1064	1093	33.6	32.9	31.9	30.3
		13.4	4	0.368	0.371	0.376	4	969	987	1006	33.5	32.1	31.4	30.4
		54.7	4	0.335	0.351	0.366	6	650	714	824	36.0	33.0	31.6	30.6
11	85.08.08	5.5	4	0.376	0.391	0.401	4	1019	1044	1060	30.2	30.4	30.7	30.1
		13.2	4	0.351	0.376	0.394	4	892	945	1018	32.3	30.4	30.1	29.6
		54.6	4	0.338	0.363	0.417	4	720	734	764	35.1	32.3	31.1	30.1
		81.6	4	0.310	0.323	0.338	4	573	598	609	35.4	33.3	31.7	30.2
12	85.08.09	5.8	4	0.391	0.396	0.399	4	783	817	833	29.3	26.3	24.9	24.3
		11.9	5	0.368	0.376	0.384	4	703	707	715	31.9	28.6	26.7	25.5
		52.9	4	0.323	0.348	0.378	3	503	510	515	34.5	30.4	27.8	26.1

Table 3B.1 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
13	85.08.09	6.3	4	0.391	0.404	0.409	4	935	988	1022	36.9	32.0	28.9	26.8
		13.7	4	0.368	0.389	0.399	4	877	904	934	38.4	33.9	30.7	28.3
		51.3	4	0.353	0.371	0.386	2	551	570	590	40.3	35.2	31.7	29.0
14A	85.08.09	5.3	4	0.399	0.417	0.439	4	1084	1113	1132	45.0	39.2	34.7	31.0
		12.7	4	0.391	0.406	0.422	4	1036	1078	1106	46.2	39.6	35.5	31.9
		52.0	4	0.368	0.373	0.378	5	807	871	913	45.9	40.5	36.7	33.2
15A	85.08.09	5.5	4	0.399	0.414	0.429	4	1091	1133	1158	46.5	41.6	37.9	34.4
		13.2	5	0.406	0.424	0.465	5	1065	1106	1140	47.2	42.8	39.1	35.8
		54.6	4	0.366	0.391	0.424	4	910	962	987	46.8	44.7	39.6	36.4

Table 38.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 38, Quebec

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.08.09	9182	6.1	4	0.465	0.480	0.488	4	1177	1192	1203
			13.4	4	0.488	0.498	0.513	4	1161	1183	1197
			51.5	6	0.422	0.442	0.470	4	910	943	1014
15A	85.08.09	9670	6.1	4	0.498	0.521	0.546	3	1141	1195	1258
			13.2	4	0.511	0.528	0.536	4	1157	1194	1264
			53.6	3	0.483	0.495	0.518	3	1014	1088	1158
13	85.08.09	11127	6.1	4	0.503	0.528	0.544	4	1045	1111	1154
			13.4	4	0.495	0.518	0.536	4	1031	1041	1049
			50.9	4	0.480	0.506	0.521	4	752	765	775

Table 3B.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D mnn.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S mnn.	S avg.	S max.
11	85.08.08	13582	5.8	6	3	0.406	0.427	0.455	4	1007	1021	1041
						0.112	0.135	0.160				
				7		0.394	0.424	0.470		945	961	991
			13.2	6	4	0.414	0.429	0.447	4	941	981	1011
						0.135	0.155	0.165				
				7		0.409	0.419	0.434		910	933	949
			52.8	6	3	0.361	0.376	0.386	4	654	713	759
						0.135	0.147	0.160				
				7		0.361	0.381	0.394		637	667	703
			73.9	6	3	0.328	0.343	0.353	2	665	677	689
						0.135	0.142	0.152				
				7		0.338	0.351	0.358		637	646	655
9	85.08.08	18100	6.1	6	4	0.429	0.439	0.450	4	858	889	914
						0.160	0.168	0.178				
				7		0.432	0.450	0.457		890	904	919
			13.2	6	4	0.439	0.450	0.455	4	780	802	817
						0.183	0.190	0.198				
				7		0.465	0.472	0.478		785	812	827
			50.9	6	4	0.386	0.404	0.417	4	524	548	571
						0.168	0.175	0.185				
				7		0.399	0.417	0.429		529	553	576
5	86.08.06	22327	6.1	6	4	0.602	0.607	0.615	4	1309	1333	1343
						0.262	0.272	0.279				
				7		0.607	0.625	0.638		1270	1282	1294
			13.2	6	4	0.561	0.599	0.617	4	1255	1295	1325
						0.226	0.264	0.287				
				7		0.577	0.615	0.643		1225	1250	1287
			51.2	6	4	0.561	0.587	0.602	4	1177	1209	1233
						0.264	0.282	0.290				
				7		0.561	0.589	0.610		1024	1101	1166

Table 3B.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.08.05	10645	6.1	1	5	0.368	0.384	0.386	3	949	1008	1056
						0.102	0.112	0.127				
				2		0.373	0.396	0.414		954	1019	1101
			13.4	1	4	0.373	0.384	0.391	3	927	984	1043
						0.109	0.127	0.135				
				2		0.384	0.396	0.409		922	960	980
			54.6	1	4	0.320	0.335	0.368	2	559	785	1010
						0.094	0.109	0.145				
				2		0.312	0.343	0.391		642	830	1019
2	85.08.05	10345	6.1	1	2	0.378	0.386	0.394	3	946	971	1018
						0.112	0.117	0.119				
				2		0.414	0.419	0.424		931	970	991
			13.4	1	4	0.335	0.348	0.358	4	743	770	800
						0.071	0.094	0.112				
				2		0.335	0.358	0.373		722	767	864
			52.0	1	5	0.305	0.323	0.338	3	807	854	915
						0.097	0.104	0.112				
				2		0.320	0.338	0.345		840	862	876
3	85.08.06	5445	6.1	1	4	0.226	0.234	0.241	4	592	637	698
						0.053	0.076	0.094				
				2		0.216	0.246	0.264		628	646	678
			13.4	1	4	0.206	0.218	0.234	4	506	519	543
						0.058	0.076	0.089				
				2		0.218	0.224	0.231		491	513	547
			51.3	1	6	0.137	0.157	0.170	2	370	382	393
						0.053	0.064	0.074				
				2		0.157	0.170	0.185		321	339	357
4	85.08.06	6682	6.1	1	3	0.282	0.297	0.310	3	767	860	942
						0.089	0.099	0.104				
				2		0.305	0.307	0.310		827	858	893
			13.2	1	4	0.264	0.274	0.282	2	780	823	866
						0.081	0.089	0.097				
				2		0.264	0.284	0.310		805	823	841
			53.9	1	2	0.226	0.229	0.231	2	698	747	795
						0.094	0.094	0.094				
				2		0.246	0.264	0.279		665	714	763
5	85.08.06	15336	6.1	1	4	0.432	0.447	0.462	3	1095	1165	1227
						0.122	0.137	0.150				
				2		0.465	0.475	0.488		1103	1135	1193
			13.2	1	4	0.432	0.457	0.472	3	1134	1151	1174
						0.122	0.137	0.152				
				2		0.455	0.475	0.483		1018	1112	1165
			51.5	1	5	0.399	0.414	0.450	5	927	962	1036
						0.114	0.140	0.157				
				2		0.409	0.437	0.478		929	990	1052

Table 3B.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.08.07	15582	6.1	1	4	0.399	0.419	0.447	3	864	910	934
						0.109	0.130	0.150				
				2		0.417	0.434	0.472		864	909	938
			13.2	1	4	0.394	0.411	0.432	3	813	847	877
						0.089	0.112	0.127				
				2		0.406	0.424	0.455		801	867	911
			51.3	1	4	0.376	0.381	0.384	2	620	629	637
						0.119	0.127	0.135				
				2		0.376	0.391	0.406		638	654	670
7	85.08.07	9109	6.1	1	4	0.310	0.317	0.320	3	823	845	888
						0.086	0.094	0.102				
				2		0.320	0.338	0.345		868	894	941
			13.4	1	3	0.302	0.310	0.317	3	718	790	856
						0.081	0.089	0.094				
				2		0.287	0.317	0.338		746	894	828
			48.9	1	5	0.249	0.254	0.262	2	602	660	718
						0.053	0.066	0.081				
				2		0.239	0.257	0.269		515	581	647
8A	85.08.07	11718	6.1	1	4	0.351	0.366	0.376	3	943	971	1020
						0.071	0.079	0.086				
				2		0.368	0.381	0.391		914	967	1023
			13.2	1	3	0.384	0.391	0.399	4	954	1027	1109
						0.094	0.104	0.112				
				2		0.409	0.424	0.434		946	1039	1104
			50.9	1	4	0.317	0.330	0.358	2	807	846	885
						0.074	0.097	0.112				
				2		0.305	0.343	0.376		886	908	930
8B	85.08.07	8209	6.1	1	3	0.317	0.333	0.345	3	926	970	994
						0.074	0.094	0.104				
				2		0.338	0.348	0.361		900	927	965
			13.4	1	4	0.287	0.312	0.328	3	919	973	1010
						0.058	0.086	0.102				
				2		0.323	0.340	0.351		894	913	935
			50.2	1	3	0.241	0.251	0.264	2	750	779	808
						0.071	0.076	0.086				
				2		0.264	0.269	0.279		769	811	853
9	85.08.08	14936	6.1	1	4	0.358	0.368	0.376	4	768	782	792
						0.064	0.079	0.089				
				2		0.373	0.389	0.401		780	805	827
			13.2	1	4	0.366	0.376	0.384	4	699	724	760
						0.086	0.094	0.097				
				2		0.399	0.404	0.406		718	748	781
			50.1	1	3	0.328	0.338	0.351	3	438	477	537
						0.086	0.089	0.094				
				2		0.345	0.358	0.376		455	509	569

Table 3B.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10A	85.08.08	11827	6.1	1	4	0.330	0.345	0.358	4	866	914	951
						0.058	0.071	0.079				
				2		0.361	0.371	0.378		889	932	994
			13.2	1	3	0.312	0.335	0.353	3	744	816	873
						0.058	0.074	0.081				
				2		0.358	0.371	0.391		788	844	886
			52.0	1	5	0.264	0.290	0.305	2	585	652	719
						0.046	0.061	0.079				
				2		0.272	0.290	0.312		614	671	728
10B	85.08.08	9555	6.1	1	4	0.320	0.330	0.345	4	859	921	959
						0.058	0.069	0.081				
				2		0.330	0.345	0.366		852	895	918
			13.2	1	4	0.290	0.307	0.328	3	829	893	943
						0.046	0.061	0.079				
				2		0.297	0.323	0.338		825	852	877
			51.5	1	6	0.231	0.257	0.274	3	674	689	719
						0.041	0.056	0.071				
				2		0.234	0.269	0.310		572	626	657
11	85.08.08	14582	6.0	1	4	0.376	0.394	0.417	3	995	1036	1092
						0.071	0.102	0.119				
				2		0.399	0.411	0.432		984	1014	1047
			13.2	1	4	0.386	0.409	0.424	3	943	996	1045
						0.079	0.094	0.104				
				2		0.386	0.419	0.450		929	948	982
			52.8	1	4	0.330	0.348	0.361	3	716	732	832
						0.066	0.081	0.094				
				2		0.338	0.366	0.376		744	770	801
			73.2	1	2	0.338	0.356	0.373	2	605	634	663
						0.097	0.104	0.109				
				2		0.373	0.384	0.394		612	671	729
12	85.08.09	12500	6.1	1	4	0.351	0.361	0.373	4	677	725	775
						0.079	0.089	0.102				
				2		0.361	0.376	0.391		685	692	698
			13.2	1	4	0.345	0.356	0.373	4	629	652	673
						0.079	0.094	0.112				
				2		0.366	0.376	0.394		685	692	698
			50.5	1	4	0.279	0.307	0.320	3	405	432	452
						0.071	0.089	0.102				
				2		0.312	0.330	0.343		458	485	509

Table 3B.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D mnn.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S mnn.	S avg.	S max.
13	85.08.09	13136	6.1	1	4	0.378	0.394	0.401	4	845	906	953
						0.079	0.089	0.097				
				2		0.394	0.411	0.422		884	931	962
			13.4	1	4	0.376	0.396	0.414	4	849	872	909
						0.079	0.099	0.109				
				2		0.391	0.409	0.417		857	874	889
			50.9	1	4	0.323	0.340	0.351	3	498	548	581
						0.081	0.089	0.097				
				2		0.330	0.358	0.373		593	609	628
14A	85.08.09	13236	6.1	1	4	0.406	0.409	0.417	4	1011	1071	1130
						0.102	0.109	0.122				
				2		0.417	0.427	0.442		1053	1089	1122
			13.4	1	4	0.422	0.434	0.457	4	1020	1076	1121
						0.102	0.117	0.135				
				2		0.447	0.457	0.470		1036	1075	1110
			51.3	1	5	0.366	0.376	0.391	3	857	908	949
						0.086	0.104	0.114				
				2		0.384	0.401	0.417		862	903	935
15A	85.08.09	19280	6.1	1	4	0.503	0.528	0.554	4	1230	1271	1286
						0.127	0.142	0.157				
				2		0.526	0.536	0.546		1187	1225	1255
			13.2	1	4	0.495	0.531	0.551	4	1185	1246	1300
						0.145	0.157	0.170				
				2		0.528	0.549	0.561		1198	1220	1238
			53.6	1	3	0.442	0.467	0.511	3	1007	1069	1136
						0.135	0.145	0.157				
				2		0.472	0.493	0.528		1022	1121	1196

Table 3B.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.08.09	14064	6.1	5	4	0.376	0.394	0.414	4	755	790	816
						0.086	0.091	0.097				
				6		0.399	0.414	0.422		773	799	841
			13.2	5	4	0.391	0.396	0.399	4	685	703	728
						0.081	0.091	0.102				
				6		0.414	0.417	0.422		685	702	720
			50.5	5	4	0.317	0.340	0.361	3	439	465	499
						0.066	0.084	0.097				
				6		0.338	0.363	0.376		451	476	516
10A	85.08.08	18382	6.1	5	4	0.457	0.465	0.472	4	1067	1086	1129
						0.086	0.099	0.104				
				6		0.483	0.488	0.498		1045	1088	1109
			13.2	5	4	0.429	0.457	0.472	4	1019	1048	1063
						0.071	0.099	0.119				
				6		0.465	0.483	0.503		996	1018	1046
			52.0	5	5	0.384	0.414	0.429	4	683	742	776
						0.074	0.094	0.112				
				6		0.414	0.429	0.450		732	775	815
8A	85.08.07	22127	6.1	5	4	0.518	0.531	0.544	4	1229	1276	1296
						0.119	0.135	0.142				
				6		0.554	0.566	0.582		1210	1219	1230
			13.4	5	4	0.538	0.549	0.566	4	1165	1246	1290
						0.114	0.142	0.152				
				6		0.546	0.572	0.582		1173	1214	1247
			51.2	5	5	0.465	0.500	0.528	3	1014	1060	1138
						0.109	0.142	0.160				
				6		0.472	0.521	0.561		962	1054	1109

Table 3B.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	86.08.07	20082	6.1	6	4	0.391	0.406	0.424	4	872	911	939
						0.157	0.226	0.201				
				7		0.414	0.432	0.455		823	864	890
						0.165	0.193	0.218				
				8		0.401	0.427	0.450		841	869	915
			13.2	6	4	0.384	0.391	0.394	4	813	830	838
						0.137	0.157	0.175				
				7		0.406	0.417	0.434		813	824	835
						0.165	0.178	0.198				
				8		0.376	0.396	0.422		777	812	833
			51.3	6	5	0.343	0.358	0.378	3	592	626	643
						0.168	0.173	0.175				
				7		0.351	0.371	0.394		572	610	634
						0.160	0.180	0.190				
				8		0.343	0.363	0.394		543	599	641
2	86.08.05	26145	6.1	6	2	0.577	0.579	0.582	3	1268	1331	1381
						0.239	0.241	0.241				
				7		0.599	0.605	0.607		1203	1226	1243
						0.241	0.246	0.249				
				8		0.584	0.587	0.587		1142	1159	1175
			13.4	6	4	0.546	0.554	0.559	4	1255	1308	1348
						0.213	0.229	0.241				
				7		0.566	0.574	0.582		1143	1225	1275
						0.234	0.249	0.272				
				8		0.551	0.564	0.582		1125	1171	1233
			51.8	6	6	0.470	0.488	0.505	6	972	1044	1099
						0.213	0.224	0.239				
				7		0.483	0.508	0.526		904	980	1126
						0.206	0.229	0.246				
				8		0.472	0.495	0.518		931	997	1041
1	86.08.05	31645	6.1	6	5	0.566	0.587	0.607	5	1294	1315	1381
						0.239	0.259	0.279				
				7		0.587	0.622	0.648		1215	1251	1300
						0.269	0.279	0.302				
				8		0.584	0.615	0.640		1169	1217	1248
			13.4	6	5	0.582	0.597	0.615	5	1278	1301	1336
						0.264	0.272	0.279				
				7		0.610	0.627	0.648		1229	1256	1283
						0.272	0.287	0.302				
				8		0.617	0.625	0.632		1174	1228	1273
			55.0	6	3	0.538	0.559	0.574	4	1003	1079	1177
						0.239	0.259	0.272				
				7		0.538	0.566	0.582		1047	1093	1124
						0.274	0.287	0.302				
				8		0.574	0.579	0.584		988	1052	1140

Table 3B.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.08.08	20609	6.1	4	3	0.399	0.414	0.424	4	972	1039	1072
						0.104	0.109	0.112				
				5		0.439	0.444	0.455		892	991	1060
						0.102	0.104	0.112				
				6		0.457	0.462	0.470		930	1003	1034
			13.2	4	4	0.358	0.378	0.386	4	904	946	986
						0.066	0.074	0.079				
				5		0.399	0.409	0.417		947	973	996
						0.089	0.097	0.102				
				6		0.417	0.432	0.450		949	977	1001
			51.5	4	6	0.312	0.325	0.345	6	646	685	719
						0.071	0.079	0.086				
				5		0.338	0.358	0.384		626	675	751
						0.074	0.086	0.102				
				6		0.351	0.371	0.401		640	689	763
7	85.08.07	26036	6.1	4	4	0.439	0.450	0.457	4	1067	1090	1103
						0.122	0.132	0.145				
				5		0.495	0.500	0.505		1087	1122	1153
						0.135	0.147	0.157				
				6		0.498	0.508	0.521		1118	1132	1145
			13.4	4	4	0.434	0.439	0.442	4	1044	1063	1092
						0.097	0.122	0.137				
				5		0.450	0.483	0.498		1052	1069	1080
						0.119	0.145	0.160				
				6		0.483	0.505	0.521		1060	1089	1130
			48.9	4	4	0.373	0.394	0.414	3	707	796	864
						0.102	0.109	0.127				
				5		0.432	0.437	0.442		801	827	862
						0.112	0.124	0.127				
				6		0.429	0.455	0.472		858	876	890
3	85.08.06	31664	6.1	4	4	0.488	0.505	0.513	4	1049	1083	1114
						0.157	0.165	0.170				
				5		0.528	0.549	0.582		1044	1097	1136
						0.165	0.188	0.208				
				6		0.559	0.572	0.582		1068	1088	1122
			13.4	4	4	0.498	0.505	0.511	4	1023	1049	1065
						0.152	0.163	0.170				
				5		0.544	0.556	0.569		1030	1057	1076
						0.183	0.190	0.201				
				6		0.559	0.566	0.574		1069	1082	1116
			51.3	4	6	0.417	0.442	0.465	5	696	730	772
						0.122	0.145	0.165				
				5		0.472	0.495	0.513		739	810	853
						0.150	0.163	0.178				
				6		0.478	0.505	0.533		689	804	866

Table 3B.8
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (4.9 m Spacing)-Dual Tire Loads, Site 3B, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
8B	85.08.07	25836	6.1	3	4	0.442	0.470	0.498	3	1191	1228	1256
						0.056	0.084	0.104				
				5		0.472	0.498	0.528		1120	1135	1166
						0.097	0.127	0.157				
				6		0.490	0.521	0.551		1063	1121	1153
			13.4	3	4	0.434	0.470	0.490	4	1129	1152	1169
						0.046	0.086	0.109				
				5		0.462	0.505	0.526		1128	1162	1202
						0.102	0.140	0.157				
				6		0.483	0.516	0.528		1093	1122	1151
			50.9	3	5	0.399	0.411	0.439	4	906	950	1026
						0.089	0.089	0.094				
				5		0.424	0.442	0.465		957	966	972
						0.130	0.137	0.142				
				6		0.450	0.467	0.488		902	966	1019
4	85.08.06	31955	6.1	3	4	0.513	0.528	0.544	4	1230	1236	1243
						0.081	0.104	0.127				
				5		0.574	0.582	0.587		1229	1264	1292
						0.183	0.193	0.198				
				6		0.594	0.612	0.617		1206	1226	1242
			13.2	3	4	0.526	0.531	0.536	4	1211	1245	1300
						0.089	0.107	0.114				
				5		0.561	0.574	0.587		1223	1249	1271
						0.175	0.193	0.201				
				6		0.602	0.605	0.607		1177	1216	1252
			52.0	3	5	0.472	0.495	0.518	5	954	1036	1140
						0.081	0.097	0.104				
				5		0.521	0.538	0.551		992	1035	1071
						0.165	0.183	0.198				
				6		0.528	0.551	0.594		930	951	979

SITE 4

QUEBEC

Pavement Response to Heavy Vehicles Test Site

Province: Quebec Date(s) of Installing Instrumentation: Nov. 2 1984

Site Location: Hwy Chemin de la Rivière Blanche, St-Casimir de Portneuf. Approx. 73 km west of Quebec City, 18 km north of sites 1 and 2 (via Road 363)

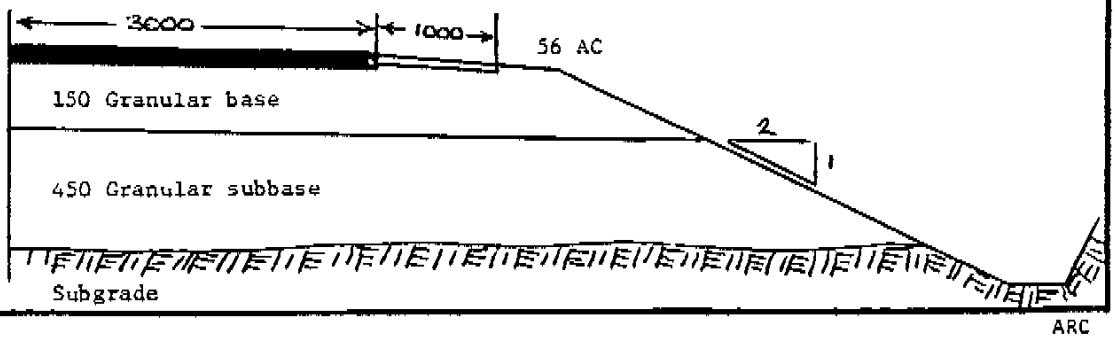
AADT: _____ % Truck Vol: _____ No Records

Site Description: The site is located on the northward lane of a two lane local road. In that area, the road is cut into a flat clayey terrain. The northern end of the two adjacent sections (3 and 4) is build on a clay fill due to a small gully. Construction was completed in november 1984 but only the two site were paved.

Structure: Instr. Lane Width 3.0 m. Adjacent Shoulder Width 1.0 m. (60 m section beside control box = 4 m shoulder)
Shoulder Type Gravel

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	56	A.C. Type MB3
Base Layer(s)	Granular	150	Crushed Granitic Gneiss. 0-19 mm
Subbase Layer(s)	Granular	450	Granitic Sand.
Subsoil	Clay		Average: L.L. = 30 I.P. = 13

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: **4 - Quebec**

Test Dates: 85.08.14 - 85.08.19

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Single Axle		9182	11127	
Tandem (1.2 m)		13582	18100	22327
Tandem (1.5 m)	(14)*	5445	to	15582
Tandem (1.8 m)		14064	18382	22127
Triaxle (2.4 m)		20082	26145	31645
Triaxle (3.7 m)		20509	26036	31664

*Number of tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed and operational during testing.**

2. **Moderately high pavement temperatures (30°C) encountered during testing.**

Table 4.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 4, Quebec

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
1	85.08.14	5.6	4	1.031	1.054	1.072	3	1183	1189	1194	40.8	39.1	37.3	34.4
		12.1	4	0.960	0.986	1.008	3	1018	1042	1060	41.1	39.4	37.7	34.8
		49.6	4	0.889	0.919	0.963	3	784	817	840	39.4	38.3	37.5	35.4
2	85.08.15	6.0	4	0.968	0.975	0.986	3	685	687	689	30.1	29.4	28.8	27.6
		12.1	5	0.874	0.909	0.970	4	580	619	661	29.6	29.0	28.7	27.7
		48.9	4	0.841	0.859	0.879	5	458	472	484	29.2	28.8	28.6	27.8
3	85.08.15	6.3	4	0.950	0.983	0.980	4	629	641	650	26.9	26.9	27.2	27.0
		13.5	4	0.927	0.950	0.978	3	539	552	557	26.9	26.9	26.9	26.9
		49.9	5	0.838	0.861	0.889	5	419	430	450	26.9	26.9	27.1	27.0
5	85.08.15	6.3	4	0.986	1.018	1.026	4	560	591	625	25.8	25.9	26.3	26.2
		14.2	4	0.914	0.952	1.011	5	472	501	524	25.1	25.2	25.6	25.7
		50.9	3	0.823	0.841	0.871	6	360	384	410	24.3	24.6	25.1	25.4
6	85.08.16	5.3	4	0.927	0.965	1.008	3	383	396	405	22.8	21.9	21.1	20.3
		13.0	4	0.886	0.904	0.935	4	350	367	386	25.0	23.7	22.8	21.5
		50.5	4	0.777	0.820	0.851	4	307	335	398	27.7	26.1	25.0	23.4
7	85.08.16	5.6	4	0.991	1.006	1.016	4	569	580	606	31.0	29.2	27.9	25.8
		12.4	3	0.975	0.988	1.011	2	552	579	606	33.5	31.5	30.2	27.7
		47.8	3	0.866	0.884	0.904	4	413	426	447	35.2	33.2	31.9	29.4
8A	85.08.16	5.0	4	1.057	1.069	1.079	3	854	894	926	32.6	31.8	31.2	29.5
		12.7	4	0.975	0.996	1.019	3	699	703	710	33.8	32.6	31.6	29.7
		51.5	3	0.866	0.886	0.902	4	455	487	517	34.2	33.0	32.3	30.4
9	85.08.16	5.8	4	1.031	1.067	1.090	4	820	839	890	31.9	31.6	31.5	30.1
		12.9	4	0.937	0.955	0.986	4	622	652	673	31.7	31.3	31.1	30.2
		50.7	5	0.815	0.833	0.866	4	468	496	536	33.2	32.2	31.6	30.4
10A	85.08.16	5.1	3	1.006	1.013	1.026	3	865	885	905	34.9	33.8	33.1	31.6
		12.9	6	0.922	0.947	1.011	4	673	707	747	35.9	34.9	34.2	32.6
		50.4	4	0.841	0.869	0.907	6	460	490	525	34.8	34.0	33.5	32.0
10B	85.08.17	5.1	4	0.950	0.968	0.991	4	394	406	423	22.8	21.8	20.9	19.8
		13.7	4	0.866	0.876	0.897	4	349	356	365	24.7	23.3	22.9	21.0
		53.9	5	0.754	0.786	0.808	3	309	326	342	26.4	24.9	24.2	22.5
11	85.08.17	6.1	4	0.968	0.975	0.983	2	495	505	515	28.6	26.9	26.0	23.9
		12.9	4	0.871	0.889	0.919	2	444	447	450	30.7	28.6	27.6	25.3
		52.8	5	0.808	0.841	0.879	5	377	390	402	32.1	30.1	29.1	26.9
		89.3	4	0.922	0.932	0.952	3	381	387	393	32.7	31.1	30.4	28.1
12	85.08.17	5.6	4	0.983	1.006	1.019	2	907	918	930	35.5	33.6	32.6	32.2
		12.4	5	0.914	0.942	0.968	2	764	777	789	37.1	35.1	34.0	31.4
		51.2	2	0.851	0.864	0.874	3	486	521	588	37.7	36.0	35.2	32.7
13	85.08.19	5.8	4	0.945	0.978	1.001	4	421	439	467	24.4	23.8	23.3	22.7
		12.9	4	0.889	0.914	0.942	4	375	389	409	25.1	24.2	23.8	23.0
		52.8	4	0.826	0.856	0.886	3	326	337	358	27.4	26.0	25.4	24.0
14A	85.08.19	5.8	4	0.968	0.980	0.993	2	590	613	636	30.2	28.5	27.6	25.6
		13.0	4	0.919	0.942	0.975	3	498	500	502	32.4	30.2	29.1	26.8
		49.9	4	0.826	0.856	0.881	4	379	399	411	33.1	31.4	30.5	28.4

Table 4.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 4, Quebec

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.08.19	9182	6.0	5	1.097	1.138	1.166	3	640	674	701
			13.0	4	1.120	1.138	1.158	3	577	589	605
			53.8	5	1.011	1.029	1.054	3	418	449	503
13	85.08.19	11127	6.0	4	1.295	1.321	1.354	4	471	482	498
			13.0	4	1.275	1.295	1.336	4	427	456	475
			49.4	5	1.146	1.189	1.242	3	402	417	427

Table 4.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 4, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.08.17	13582	5.8	6	5	0.991	1.006	1.057	3	621	633	647
						0.615	0.655	0.726				
				7		0.986	1.008	1.046		645	686	716
			13.0	6	4	0.950	1.006	1.034	4	531	554	591
						0.584	0.627	0.655				
				7		0.993	1.029	1.062		573	596	616
			51.7	6	6	0.897	0.937	0.998	2	429	444	458
						0.559	0.617	0.686				
				7		0.866	0.886	0.937		477	484	491
			81.9	6	4	0.856	0.886	0.914	4	336	390	424
						0.582	0.630	0.650				
				7		0.856	0.897	0.937		381	428	466
9	85.08.16	18100	5.8	6	4	1.273	1.323	1.384	4	907	951	986
						0.803	0.864	0.927				
				7		1.303	1.346	1.417		910	990	1071
			12.9	6	4	1.255	1.288	1.346	4	736	760	785
						0.818	0.853	0.907				
				7		1.295	1.328	1.384		752	789	825
			51.5	6	6	1.247	1.260	1.270	5	492	547	568
						0.823	0.853	0.879				
				7		1.194	1.229	1.250		533	596	673
5	85.08.15	22327	5.8	6	4	1.527	1.562	1.600	4	651	670	683
						1.062	1.082	1.105				
				7		1.615	1.641	1.679		714	735	784
			12.9	6	4	1.491	1.554	1.618	4	524	552	580
						1.006	1.090	1.158				
				7		1.582	1.643	1.722		600	623	634
			50.9	6	6	1.417	1.461	1.491	6	397	453	483
						1.011	1.046	1.079				
				7		1.433	1.491	1.560		421	453	478

Table 4.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 4, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.08.14	10645	6.0	1	4	0.907	0.963	1.041	3	1164	1182	1197
						0.361	0.444	0.546				
				2		0.945	0.980	1.039		1177	1186	1197
			12.9	1	4	0.879	0.922	0.945	4	906	967	1043
						0.399	0.434	0.470				
				2		0.897	0.945	0.975		918	942	974
			53.1	1	5	0.754	0.815	0.871	4	748	826	907
						0.378	0.422	0.498				
				2		0.737	0.808	0.879		545	749	1015
2	85.08.15	10345	5.8	1	3	0.800	0.805	0.810	4	662	715	766
						0.335	0.409	0.475				
				2		0.775	0.833	0.871		645	698	756
			12.9	1	5	0.800	0.826	0.846	5	647	683	740
						0.373	0.406	0.442				
				2		0.815	0.838	0.859		581	628	730
			50.1	1	6	0.640	0.671	0.704	6	326	420	553
						0.323	0.361	0.394				
				2		0.630	0.658	0.686		269	378	454
3	85.08.15	5445	5.8	1	3	0.470	0.498	0.546	4	486	559	638
						0.206	0.229	0.269				
				2		0.483	0.508	0.554		433	510	600
			12.9	1	4	0.505	0.533	0.569	4	498	539	559
						0.218	0.251	0.290				
				2		0.518	0.544	0.566		409	478	524
			51.5	1	5	0.343	0.378	0.414	3	284	313	330
						0.135	0.168	0.216				
				2		0.254	0.305	0.343		207	216	227
5	85.08.15	15336	5.8	1	4	1.031	1.052	1.072	4	657	679	693
						0.536	0.554	0.577				
				2		1.046	1.074	1.102		643	670	702
			12.9	1	4	1.031	1.087	1.146	4	580	605	621
						0.546	0.584	0.643				
						1.097	1.130	1.176		544	572	593
			50.9	1	6	0.897	0.930	0.998	5	422	440	458
						0.462	0.511	0.559				
				2		0.881	0.947	1.019		401	442	475
6	85.08.16	15582	5.6	1	4	1.024	1.054	1.102	4	475	494	521
						0.511	0.564	0.622				
				2		1.062	1.090	1.138		452	485	507
			13.0	1	4	1.031	1.067	1.102	4	441	469	513
						0.551	0.574	0.617				
				2		1.087	1.105	1.135		394	432	452
			50.4	1	5	0.927	0.955	0.968	4	356	379	409
						0.478	0.513	0.566				
				2		0.897	0.945	1.011		297	331	353

Table 4.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 4, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
7	85.08.16	9109	6.0	1	4	0.744	0.767	0.785	4	671	717	816
						0.384	0.406	0.417				
				2		0.770	0.785	0.800		663	682	719
			13.0	1	4	0.714	0.739	0.754	4	637	680	738
						0.335	0.361	0.391				
				2		0.729	0.752	0.770		600	660	722
			52.3	1	4	0.622	0.653	0.681	5	391	442	524
						0.305	0.333	0.368				
				2		0.582	0.625	0.643		265	398	560
8A	85.08.16	11718	5.8	1	4	0.889	0.919	0.952	4	789	782	959
						0.391	0.462	0.495				
				2		0.886	0.932	0.952		760	825	965
			12.9	1	4	0.930	0.942	0.968	4	742	826	889
						0.424	0.450	0.472				
				2		0.937	0.952	0.970		755	837	911
			52.0	1	4	0.823	0.838	0.864	4	572	635	691
						0.373	0.422	0.470				
				2		0.786	0.826	0.864		515	573	616
9	85.08.16	14936	5.8	1	4	1.034	1.077	1.138	3	869	932	975
						0.554	0.577	0.602				
				2		1.067	1.107	1.138		893	931	974
			12.9	1	4	1.026	1.077	1.128	4	719	785	832
						0.533	0.551	0.566				
				2		1.062	1.113	1.158		702	765	816
			51.7	1	7	0.914	0.970	1.019	5	548	570	602
						0.457	0.516	0.544				
				2		0.922	0.991	1.046		502	527	581
10A	85.08.16	11827	6.0	1	4	0.881	0.912	0.963	4	809	957	1083
						0.406	0.457	0.503				
				2		0.907	0.919	0.942		768	921	1065
			13.0	1	4	0.894	0.932	0.963	4	874	910	978
						0.455	0.490	0.518				
				2		0.927	0.970	0.991		835	882	933
			50.2	1	5	0.752	0.800	0.826	5	520	568	602
						0.394	0.409	0.432				
				2		0.762	0.792	0.815		472	561	632
10B	85.08.17	9555	5.8	1	4	0.696	0.709	0.721	4	446	461	491
						0.335	0.338	0.343				
				2		0.688	0.721	0.754		410	436	451
			12.9	1	3	0.698	0.729	0.752	3	387	411	437
						0.358	0.378	0.429				
				2		0.663	0.739	0.782		390	395	401
			50.7	1	6	0.559	0.599	0.640	2	316	320	325
						0.241	0.302	0.368				
				2		0.513	0.561	0.655		288	312	326

Table 4.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 4, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.08.17	14582	5.8	1	5	0.958	0.993	1.026	5	467	491	513
						0.472	0.526	0.577				
				2		0.970	1.016	1.064		460	485	506
			12.9	1	4	0.968	1.013	1.031	4	472	512	561
						0.480	0.526	0.559				
				2		0.960	1.034	1.082		443	493	524
			53.6	1	6	0.914	0.947	1.008	6	390	419	462
						0.450	0.516	0.592				
				2		0.927	0.960	1.011		337	400	500
			81.9	1	4	0.874	0.927	0.958	4	437	465	517
						0.424	0.500	0.544				
				2		0.859	0.907	0.945		383	433	480
12	85.08.17	12500	6.0	1	4	0.831	0.869	0.963	2	693	787	881
						0.401	0.442	0.503				
				2		0.818	0.879	0.930		697	791	885
			13.0	1	5	0.904	0.952	0.978	3	718	743	779
						0.478	0.508	0.536				
				2		0.922	0.980	1.006		669	765	897
			50.9	1	6	0.810	0.826	0.871	6	560	610	673
						0.378	0.414	0.429				
				2		0.792	0.831	0.864		470	572	715
13	85.08.19	13136	6.0	1	4	0.897	0.907	0.927	4	410	484	586
						0.455	0.495	0.521				
				2		0.919	0.945	0.960		430	479	553
			13.0	1	4	0.874	0.904	0.963	4	421	456	475
						0.470	0.503	0.569				
				2		0.922	0.958	1.006		415	444	464
			49.4	1	5	0.744	0.792	0.848	5	257	304	358
						0.384	0.424	0.455				
				2		0.714	0.777	0.826		249	296	352
14A	85.08.19	13236	6.0	1	5	0.864	0.917	0.975	4	551	610	691
						0.434	0.470	0.490				
				2		0.851	0.932	0.968		567	615	667
			13.0	1	4	0.945	0.965	0.986	4	532	575	601
						0.472	0.503	0.526				
				2		0.952	0.970	0.978		504	545	601
			49.9	1	5	0.831	0.848	0.871	5	336	423	474
						0.417	0.462	0.505				
				2		0.833	0.856	0.894		354	393	470

Table 4.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 4, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.08.17	14064	6.0	5	4	0.970	1.003	1.039	4	884	999	1051
						0.373	0.437	0.488				
				6		0.970	1.001	1.041		931	1002	1064
			13.0	5	5	1.016	1.049	1.090	4	856	922	969
						0.439	0.478	0.526				
				6		0.975	1.021	1.054		856	885	919
			50.9	5	6	0.881	0.902	0.930	6	516	646	775
						0.335	0.368	0.401				
				6		0.810	0.833	0.859		541	648	691
10A	85.08.16	18382	6.0	5	4	1.222	1.257	1.283	4	998	1041	1095
						0.551	0.569	0.610				
				6		1.214	1.262	1.283		980	1026	1060
			13.0	5	4	1.247	1.288	1.331	4	801	876	910
						0.577	0.597	0.607				
				6		1.214	1.273	1.295		832	854	904
			49.6	5	5	1.082	1.133	1.179	3	600	645	702
						0.472	0.498	0.518				
				6		1.057	1.100	1.146		636	658	687
8A	85.08.16	22127	5.8	5	4	1.430	1.453	1.471	4	959	1004	1032
						0.625	0.663	0.681				
				6		1.463	1.488	1.511		929	954	980
			12.9	5	4	1.407	1.440	1.486	4	835	883	927
						0.640	0.655	0.688				
				6		1.382	1.427	1.473		800	826	844
			50.7	5	4	1.326	1.354	1.382	4	568	598	629
						0.587	0.610	0.640				
				6		1.311	1.356	1.374		500	544	606

Table 4.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 4, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D mn.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S mn.	S avg.	S max.
6	85.08.16	20082	5.8	6	4	0.963	0.998	1.041	4	431	452	466
						0.648	0.676	0.704				
				7		1.054	1.079	1.120		419	436	451
						0.650	0.688	0.742				
				8		0.978	1.008	1.074		431	456	479
			13.0	6	4	0.978	1.024	1.072	4	407	421	457
						0.655	0.688	0.729				
				7		1.072	1.105	1.143		397	413	430
						0.663	0.691	0.719				
				8		1.011	1.024	1.064		375	437	470
			60.4	6	5	0.886	0.892	0.914	5	309	330	359
						0.584	0.625	0.671				
				7		0.919	0.942	0.970		235	296	332
						0.577	0.605	0.638				
				8		0.770	0.805	0.838		263	300	353
2	85.08.15	26145	5.8	6	4	1.240	1.283	1.313	4	777	795	805
						0.823	0.853	0.881				
				7		1.374	1.410	1.450		801	837	881
						0.846	0.886	0.919				
				8		1.280	1.323	1.361		808	848	913
			12.9	6	4	1.270	1.285	1.306	5	633	663	681
						0.841	0.874	0.897				
				7		1.369	1.407	1.430		673	693	712
						0.866	0.884	0.907				
				8		1.303	1.328	1.354		657	715	763
			50.1	6	4	1.143	1.163	1.209	6	397	452	492
						0.803	0.841	0.897				
				7		1.222	1.255	1.313		415	453	471
						0.792	0.818	0.866				
				8		1.046	1.097	1.179		366	463	458
1	85.08.14	31645	6.0	6	3	1.615	1.656	1.714	4	1222	1256	1294
						0.991	1.102	1.209				
				7		1.745	1.824	1.920		1259	1295	1349
						0.986	1.125	1.232				
				8		1.664	1.740	1.839		1198	1277	1363
			12.9	6	4	1.521	1.577	1.600	4	1091	1134	1174
						0.952	1.041	1.095				
				7		1.679	1.740	1.798		1230	1260	1283
						0.930	1.057	1.146				
				8		1.577	1.648	1.697		1161	1224	1263
			53.1	6	5	1.463	1.539	1.595	5	722	773	815
						1.049	1.090	1.168				
				7		1.651	1.737	1.811		690	779	929
						1.039	1.115	1.217				
				8		1.486	1.587	1.664		850	909	1036

Table 4.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 4, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.08.17	20509	5.8	4	4	0.871	0.881	0.889	4	444	477	504
						0.373	0.384	0.394				
					5	0.919	0.937	0.950		494	510	519
						0.391	0.401	0.417				
					6	0.894	0.914	0.935		456	478	490
			13.0	3	4	0.859	0.909	0.952	4	413	432	459
						0.353	0.401	0.455				
					5	0.907	0.955	1.006		458	466	476
						0.386	0.429	0.472				
					6	0.886	0.912	0.935		411	428	444
			50.7	6	4	0.726	0.757	0.777	6	281	304	338
						0.330	0.353	0.384				
					5	0.815	0.843	0.864		353	360	374
						0.320	0.351	0.384				
					6	0.742	0.770	0.792		301	353	375
7	85.08.16	26036	6.0	4	4	1.095	1.120	1.138	2	691	691	691
						0.505	0.561	0.622				
					5	1.257	1.275	1.298		742	758	766
						0.569	0.602	0.617				
					6	1.240	1.257	1.288		694	704	714
			13.0	4	4	1.041	1.064	1.095	3	628	647	679
						0.472	0.498	0.513				
					5	1.168	1.204	1.240		674	710	744
						0.490	0.521	0.561				
					6	1.166	1.196	1.242		600	636	665
			51.8	5	4	0.897	0.955	0.986	2	523	530	536
						0.414	0.442	0.470				
					5	1.046	1.085	1.146		499	517	536
						0.455	0.478	0.505				
					6	0.960	1.021	1.090		488	492	496
3	85.08.15	31664	5.8	3	4	1.240	1.267	1.313	3	670	725	752
						0.602	0.635	0.671				
					5	1.384	1.425	1.481		754	769	780
						0.648	0.671	0.719				
					6	1.422	1.458	1.514		752	760	777
			13.0	4	4	1.247	1.278	1.298	4	608	632	650
						0.584	0.620	0.638				
					5	1.367	1.400	1.443		604	628	655
						0.622	0.686	0.726				
					6	1.367	1.422	1.466		608	643	658
			51.5	5	4	1.095	1.140	1.206	3	435	477	503
						0.511	0.554	0.648				
					5	1.275	1.321	1.417		511	533	552
						0.538	0.612	0.711				
					6	1.273	1.303	1.354		472	511	532

SITE 5

QUEBEC

Pavement Response to Heavy Vehicles Test Site

Province: Quebec Date(s) of Installing Instrumentation: Nov. 2 1984

Site Location: Hwy Chemin de la Rivière Blanche, Adjacent to site #3.

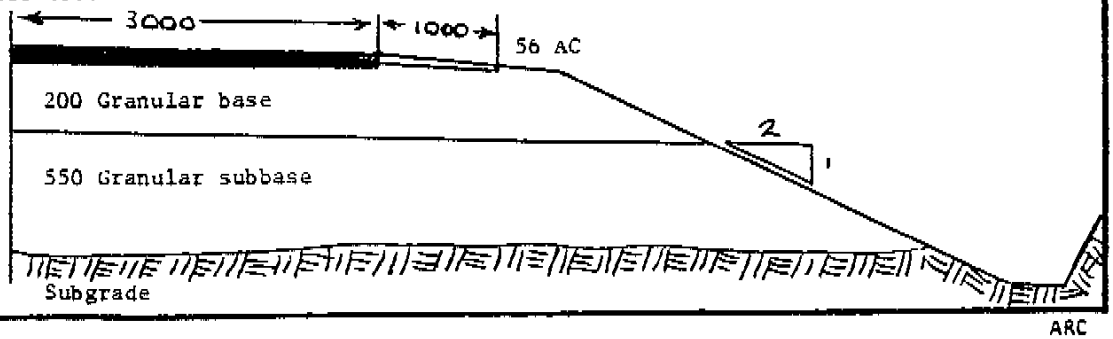
AADT: _____ % Truck Vol: _____ No Records

Site Description: Idem site #3.

Structure: Instr. Lane Width 3.0 m. Adjacent Shoulder Width 1.0 m.
Shoulder Type Gravel

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	56	A.C. Type MB3
Base Layer(s)	Granular	200	Crushed Granitic Gneiss. 0-19 mm
Subbase Layer(s)	Granular	550	Granitic Sand.
Subsoil	Clay		Average: L.L. = 30 I.P. = 13

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: **5 - Quebec**

Test Dates: 85.08.14 - 85.08.19

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Single Axle		9182	11127	
Tandem (1.2 m)		13582	18100	22327
Tandem (1.5 m)	(14)*	5445	to	15582
Tandem (1.8 m)		14064	18382	22127
Triaxle (2.4 m)		20082	26145	31645
Triaxle (3.7 m)		20509	26036	31664

*Number of tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed and operational during testing.**

2. **Computer hardware malfunction resulted in a displacement of the reference datum from the null position for two (2) deflection transducers, with no loss of data.**

3. **Moderately high pavement temperatures (30°C) encountered during testing.**

Table 5.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 5, Quebec

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
1	85.08.14	5.6	4	1.031	1.039	1.054	4	1199	1224	1268	40.8	39.1	37.3	34.4
		11.9	3	0.970	0.986	1.008	3	1081	1111	1145	41.1	39.4	37.7	34.8
		51.0	3	0.993	1.029	1.046	3	982	1006	1023	39.4	38.3	37.5	35.4
2	85.08.15	6.0	4	0.962	0.963	0.968	4	791	839	868	30.1	29.4	28.8	27.6
		11.7	4	0.902	0.917	0.935	4	711	717	730	29.6	29.0	28.7	27.7
		49.2	5	0.831	0.848	0.881	3	552	587	625	29.2	28.8	28.6	27.8
3	85.08.15	6.3	4	0.919	0.942	0.958	2	811	823	835	26.8	26.9	27.2	27.0
		13.5	3	0.914	0.922	0.930	4	580	610	626	26.9	26.9	26.9	26.9
		49.9	5	0.826	0.853	0.904	4	422	485	544	26.9	26.9	27.1	27.0
5	85.08.15	6.3	4	0.952	0.965	0.978	4	735	750	764	25.8	25.9	26.3	26.2
		14.2	4	0.894	0.917	0.960	3	654	684	707	25.1	25.2	25.6	25.7
		52.9	3	0.879	0.894	0.912	5	515	571	613	24.3	24.6	25.1	25.4
6	85.08.16	5.3	4	0.856	0.886	0.904	4	559	579	600	22.8	21.9	21.1	20.3
		13.0	4	0.846	0.861	0.871	3	483	523	552	25.0	23.7	22.8	21.5
		50.9	5	0.800	0.820	0.856	3	431	464	494	27.7	26.1	25.0	23.4
7	85.08.16	5.6	4	0.975	0.980	0.986	3	655	681	715	31.0	29.2	27.9	25.8
		12.7	4	0.894	0.904	0.912	4	622	647	661	33.5	31.5	30.2	27.7
		50.7	3	0.848	0.889	0.930	5	346	495	606	35.2	33.2	31.9	29.4
8A	85.08.16	5.0	4	0.978	0.988	0.998	4	856	887	909	32.6	31.8	31.2	29.5
		12.7	4	0.922	0.952	0.970	4	727	771	831	33.8	32.6	31.6	29.7
		51.2	4	0.864	0.914	0.968	3	598	653	686	34.2	33.0	32.3	30.4
9	85.08.16	6.0	3	0.991	1.021	1.046	4	878	912	939	31.9	31.6	31.5	30.1
		12.9	4	0.919	0.952	1.001	4	748	762	768	31.7	31.3	31.1	30.2
		51.2	6	0.889	0.922	0.998	3	565	586	625	33.2	32.2	31.6	30.4
10A	85.08.16	5.3	4	0.942	0.970	1.008	4	974	1027	1065	34.9	33.8	33.1	31.6
		13.8	5	0.970	1.003	1.046	4	861	886	919	35.9	34.9	34.2	32.6
		49.7	5	0.871	0.912	1.011	5	560	584	606	34.8	34.0	33.5	32.0
10B	85.08.17	5.1	4	0.871	0.881	0.897	4	544	562	586	22.8	21.8	20.9	19.8
		13.7	4	0.818	0.838	0.848	4	464	493	511	24.7	23.3	22.9	21.0
		53.3	5	0.706	0.800	0.848	5	395	436	464	26.4	24.9	24.2	22.5
11	85.08.17	6.1	4	0.879	0.897	0.904	4	584	619	637	28.6	26.9	26.0	23.9
		12.9	3	0.848	0.864	0.879	4	500	556	588	30.7	28.6	27.6	25.3
		51.7	3	0.838	0.869	0.912	3	460	483	527	32.1	30.1	29.1	26.9
		86.3	2	0.864	0.889	0.914	3	407	463	555	32.7	31.1	30.4	28.1
12	85.08.17	5.6	4	0.886	0.912	0.958	4	865	884	910	35.5	33.6	32.6	32.2
		12.2	5	0.851	0.864	0.871	4	808	827	845	37.1	35.1	34.0	31.4
		51.2	6	0.803	0.861	0.904	4	618	672	714	37.7	36.0	35.2	32.7
13	85.06.19	5.8	4	0.866	0.889	0.912	4	572	603	628	24.4	23.8	23.3	22.7
		12.9	4	0.833	0.853	0.864	4	503	544	597	25.1	24.2	23.8	23.0
		52.1	2	0.859	0.897	0.935	5	442	469	512	27.4	26.0	25.4	24.0
14A	85.08.19	5.8	4	0.838	0.869	0.889	4	650	681	707	30.2	28.5	27.6	25.6
		13.0	4	0.833	0.846	0.856	4	574	615	674	32.4	30.2	29.1	26.8
		52.1	5	0.818	0.866	0.937	5	431	475	495	33.1	31.4	30.5	28.4

Table 5.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 5, Quebec

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.08.19	9182	6.0	5	1.031	1.082	1.102	4	815	835	876
			13.0	4	1.031	1.069	1.105	4	766	787	803
			49.9	5	0.914	0.947	0.991	3	628	637	645
13	85.08.19	11127	6.0	4	1.201	1.219	1.234	4	670	703	764
			13.0	4	1.206	1.214	1.224	4	616	635	651
			49.2	4	1.049	1.110	1.209	4	490	523	567

Table 5.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 5, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.08.17	13582	6.0	6	5	0.952	0.998	1.041	5	719	767	805
						0.551	0.605	0.638				
				7		0.960	1.003	1.031		730	776	885
			13.0	6	4	0.986	1.031	1.054	4	714	731	743
						0.622	0.681	0.721				
				7		0.991	1.024	1.057		662	679	708
			51.8	6	4	0.864	0.871	0.886	2	581	599	617
						0.533	0.582	0.607				
				7		0.904	0.922	0.937		407	453	498
			82.4	6	3	0.754	0.800	0.826	3	478	519	577
						0.546	0.582	0.615				
				7		0.833	0.856	0.904		500	528	569
9	85.08.16	18100	5.8	6	4	1.367	1.387	1.410	4	1011	1125	1173
						0.823	0.871	0.902				
				7		1.374	1.402	1.425		1061	1080	1100
			12.9	6	4	1.275	1.303	1.354	4	860	919	967
						0.798	0.836	0.871				
				7		1.280	1.339	1.377		900	919	933
			52.3	6	3	1.102	1.148	1.224	2	679	712	744
						0.726	0.770	0.838				
				7		1.151	1.229	1.318		659	661	662
5	85.08.15	22327	5.8	6	4	1.521	1.587	1.633	4	813	849	881
						1.057	1.115	1.158				
				7		1.590	1.641	1.679		833	867	896
			12.9	6	4	1.463	1.488	1.521	4	730	740	763
						1.024	1.041	1.057				
				7		1.521	1.557	1.595		714	740	773
			50.4	6	6	1.110	1.194	1.255	2	616	623	629
						0.798	0.861	0.912				
				7		1.217	1.298	1.354		614	630	646

Table 5.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 5, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.08.14	10645	6.1	1	3	0.912	0.927	0.952	3	1102	1193	1242
						0.422	0.457	0.498				
				2		0.935	0.988	1.041		1133	1187	1222
			12.9	1	3	0.897	0.932	0.960	2	1032	1061	1089
						0.406	0.439	0.470				
				2		0.886	0.922	0.963		917	919	921
			52.3	1	2	0.815	0.856	0.897	2	750	820	890
						0.480	0.508	0.536				
				2		0.848	0.881	0.914		574	774	975
2	85.08.15	10345	5.8	1	3	0.815	0.851	0.879	2	841	867	892
						0.399	0.422	0.450				
				2		0.838	0.869	0.902		699	740	780
			12.9	1	4	0.808	0.826	0.848	3	560	708	787
						0.373	0.404	0.429				
				2		0.798	0.831	0.846		597	675	788
			50.1	1	3	0.638	0.658	0.673	3	386	426	474
						0.345	0.358	0.368				
				2		0.630	0.645	0.671		318	406	414
3	85.08.15	5445	5.8	1	3	0.521	0.533	0.546	3	397	445	492
						0.231	0.259	0.305				
				2		0.483	0.513	0.538		316	337	349
			13.0	1	4	0.505	0.516	0.521	4	397	418	441
						0.208	0.241	0.269				
				2		0.472	0.498	0.518		292	337	372
			50.4	1	4	0.282	0.323	0.345	2	235	250	264
						0.142	0.175	0.198				
				2		0.290	0.302	0.310		207	236	264
5	85.08.15	15336	5.8	1	3	1.067	1.074	1.079	4	662	686	731
						0.592	0.625	0.648				
				2		1.120	1.143	1.158		600	650	674
			12.9	1	4	1.001	1.024	1.062	3	593	629	651
						0.538	0.564	0.599				
				2		1.019	1.054	1.110		555	597	633
			51.3	1	3	0.810	0.833	0.851	2	426	495	564
						0.434	0.455	0.488				
				2		0.818	0.820	0.866		377	384	391
6	85.08.16	15582	5.8	1	3	1.011	1.046	1.082	2	536	563	589
						0.503	0.569	0.617				
				2		1.041	1.074	1.110		490	507	524
			13.0	1	4	1.031	1.062	1.087	2	523	564	604
						0.546	0.572	0.599				
				2		1.034	1.085	1.130		484	518	551
			51.3	1	4	0.889	0.902	0.922	2	431	476	521
						0.472	0.488	0.518				
				2		0.879	0.919	0.960		405	428	450

Table 5.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 5, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
7	85.08.16	9109	6.0	1	4	0.734	0.777	0.815	3	775	836	941
						0.323	0.361	0.406				
				2		0.762	0.786	0.823		689	758	801
			12.9	1	4	0.770	0.780	0.790	2	720	766	811
						0.330	0.353	0.373				
				2		0.747	0.765	0.785		614	693	771
			52.8	1	4	0.546	0.589	0.630	3	435	448	460
						0.239	0.282	0.310				
				2		0.599	0.607	0.617		337	377	417
8A	85.08.16	11718	5.8	1	2	1.001	1.008	1.019	4	976	1038	1108
						0.518	0.521	0.521				
				2		1.006	1.019	1.031		885	990	1091
			13.0	1	3	0.919	0.952	0.978	4	706	798	857
						0.409	0.460	0.505				
				2		0.935	0.963	0.993		751	777	808
			51.2	1	2	0.808	0.813	0.818	2	540	626	712
						0.462	0.516	0.569				
				2		0.841	0.932	1.024		431	569	706
9	85.08.16	14936	5.8	1	3	1.120	1.125	1.128	4	862	900	992
						0.566	0.582	0.607				
				2		1.153	1.163	1.171		807	885	939
			12.9	1	4	1.049	1.079	1.105	4	795	802	805
						0.498	0.546	0.574				
				2		1.067	1.115	1.161		727	762	787
			51.8	1	6	0.846	0.884	0.919	3	537	609	679
						0.434	0.485	0.518				
				2		0.945	0.965	1.001		531	590	667
10A	85.08.16	11827	6.0	1	4	0.930	0.947	0.963	3	1110	1157	1239
						0.447	0.472	0.498				
				2		0.975	0.991	1.011		1047	1126	1172
			13.0	1	3	0.902	0.937	0.970	3	860	991	1114
						0.447	0.470	0.490				
				2		0.958	0.975	0.991		906	984	1083
			50.2	1	2	0.721	0.759	0.798	2	634	717	799
						0.368	0.373	0.378				
				2		0.775	0.795	0.815		524	616	708
10B	85.08.17	9555	5.8	1	2	0.714	0.719	0.721	4	557	594	651
						0.335	0.348	0.358				
				2		0.726	0.732	0.734		476	551	640
			12.9	1	4	0.688	0.709	0.729	4	451	508	545
						0.358	0.378	0.391				
				2		0.696	0.729	0.762		387	456	515
			51.5	1	4	0.574	0.579	0.587	2	329	356	383
						0.287	0.320	0.353				
				2		0.574	0.594	0.632		318	319	320

Table 5.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 5, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.08.17	14582	6.0	1	5	0.945	0.988	1.026	3	678	732	792
						0.472	0.521	0.546				
				2		0.960	1.016	1.064		617	689	742
			12.9	1	4	0.993	1.024	1.067	3	616	632	647
						0.505	0.559	0.599				
				2		0.991	1.029	1.082		568	597	634
			52.0	1	4	0.792	0.813	0.831	2	594	652	710
						0.429	0.450	0.465				
				2		0.846	0.866	0.881		560	582	604
			81.9	1	3	0.800	0.831	0.856	3	515	572	682
						0.455	0.521	0.569				
				2		0.856	0.892	0.912		468	513	557
12	85.08.17	12500	6.0	1	3	0.902	0.930	0.950	3	893	948	1039
						0.460	0.483	0.511				
				2		0.935	0.946	0.960		939	997	1088
			13.0	1	5	0.894	0.930	0.968	4	850	920	978
						0.457	0.483	0.505				
				2		0.894	0.914	0.945		799	914	1049
			50.9	1	3	0.744	0.759	0.777	3	576	649	732
						0.422	0.427	0.434				
				2		0.777	0.800	0.815		594	685	779
13	85.08.19	13136	5.8	1	4	0.846	0.866	0.889	3	577	603	617
						0.447	0.457	0.472				
				2		0.856	0.879	0.897		527	556	574
			13.0	1	4	0.879	0.897	0.919	2	502	505	507
						0.447	0.480	0.513				
				2		0.904	0.917	0.930		459	477	494
			49.4	1	4	0.726	0.808	0.978	3	471	508	552
						0.406	0.475	0.607				
				2		0.737	0.813	0.937		394	439	525
14A	85.08.19	13236	6.0	1	5	0.859	0.884	0.902	3	701	720	740
						0.439	0.462	0.480				
				2		0.859	0.894	0.914		653	694	752
			13.0	1	4	0.871	0.897	0.919	3	569	652	788
						0.455	0.475	0.511				
				2		0.879	0.909	0.952		560	631	758
			49.9	1	3	0.742	0.757	0.767	3	551	570	586
						0.406	0.427	0.439				
				2		0.775	0.790	0.803		498	560	634

Table 5.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 5, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.08.17	14064	6.0	5	4	0.945	0.978	1.008	4	1032	1109	1153
						0.422	0.465	0.483				
				6		0.930	0.970	0.991		1032	1070	1138
			13.0	5	5	0.986	0.998	1.024	5	925	1007	1089
						0.478	0.490	0.503				
				6		0.952	0.968	0.991		965	1000	1044
			50.9	5	6	0.744	0.790	0.859	3	800	812	823
						0.310	0.368	0.434				
				6		0.759	0.818	0.914		651	750	812
8A	85.08.16	22127	5.8	5	4	1.392	1.440	1.499	4	1014	1041	1071
						0.648	0.701	0.767				
				6		1.387	1.466	1.519		972	1030	1075
			12.9	5	4	1.384	1.425	1.455	4	901	938	962
						0.663	0.691	0.729				
				6		1.384	1.420	1.458		888	948	992
			50.7	5	4	1.161	1.206	1.234	4	663	716	797
						0.533	0.572	0.643				
				6		1.247	1.288	1.367		678	711	777
10A	85.08.16	18382	6.0	5	4	1.242	1.267	1.288	4	1053	1105	1136
						0.559	0.589	0.625				
				6		1.242	1.278	1.306		1117	1161	1189
			13.0	5	4	1.232	1.262	1.283	4	931	1021	1088
						0.569	0.594	0.617				
				6		1.234	1.242	1.255		986	1039	1101
			50.2	5	4	1.016	1.059	1.128	3	718	781	844
						0.439	0.483	0.513				
				6		1.039	1.082	1.130		654	705	779

Table 5.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 5, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.08.16	20082	5.8	6	3	0.978	0.996	1.024	4	596	604	614
						0.610	0.648	0.673				
				7		1.062	1.113	1.158		536	543	551
						0.602	0.663	0.704				
				8		0.998	1.044	1.082		528	567	601
			13.0	6	4	1.011	1.041	1.064	4	565	582	624
						0.632	0.671	0.693				
				7		1.095	1.120	1.138		495	524	564
						0.650	0.673	0.698				
				8		1.026	1.041	1.054		511	555	598
			49.1	6	3	0.902	0.907	0.912	2	450	475	499
						0.561	0.607	0.638				
				7		0.945	0.988	1.041		357	382	406
						0.607	0.635	0.665				
				8		0.851	0.881	0.904		379	428	476
2	85.08.16	26145	5.8	6	4	1.214	1.285	1.321	4	931	978	1036
						0.823	0.879	0.914				
				7		1.351	1.417	1.448		930	1000	1061
						0.823	0.884	0.914				
				8		1.250	1.306	1.344		1003	1032	1093
			12.9	6	5	1.224	1.255	1.280	5	811	861	934
						0.800	0.843	0.886				
				7		1.369	1.397	1.433		795	842	901
						0.838	0.869	0.907				
				8		1.242	1.285	1.326		835	867	909
			50.1	6	3	1.046	1.074	1.105	3	708	748	780
						0.759	0.775	0.785				
				7		1.191	1.217	1.234		645	686	751
						0.775	0.795	0.815				
				8		1.102	1.123	1.138		628	685	726
1	85.08.14	31645	6.0	6	3	1.519	1.552	1.646	4	1352	1422	1544
						0.993	1.046	1.135				
				7		1.666	1.755	1.819		1523	1555	1599
						1.031	1.072	1.118				
				8		1.595	1.651	1.720		1475	1502	1519
			12.9	6	3	1.537	1.565	1.582	4	1283	1305	1325
						1.049	1.059	1.067				
				7		1.760	1.770	1.791		1311	1397	1502
						1.062	1.074	1.097				
				8		1.618	1.638	1.648		1227	1336	1417
			52.3	6	3	1.369	1.455	1.554	3	1051	1101	1175
						0.968	1.024	1.135				
				7		1.600	1.661	1.775		1061	1139	1267
						1.026	1.110	1.232				
				8		1.504	1.575	1.697		1044	1167	1336

Table 5.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 5, Quebec

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
108	85.08.17	20509	5.8	4	3	0.810	0.818	0.831	4	620	665	724
						0.409	0.419	0.424				
				5		0.881	0.902	0.912		675	692	719
						0.401	0.419	0.439				
				6		0.866	0.874	0.881		594	637	703
			12.9	4	4	0.826	0.836	0.848	4	531	547	571
						0.376	0.406	0.429				
				5		0.881	0.907	0.935		557	591	606
						0.394	0.429	0.457				
				6		0.846	0.874	0.889		499	541	586
			51.5	4	5	0.665	0.688	0.704	6	338	377	443
						0.320	0.345	0.353				
				5		0.770	0.792	0.803		353	403	469
						0.305	0.343	0.386				
				6		0.704	0.734	0.777		320	365	447
7	85.08.16	26036	6.0	4	4	1.024	1.072	1.105	4	739	820	900
						0.472	0.521	0.559				
				5		1.179	1.209	1.262		756	814	865
						0.511	0.549	0.599				
				6		1.151	1.201	1.247		720	803	877
			13.0	4	4	1.057	1.074	1.095	4	768	806	840
						0.490	0.503	0.511				
				5		1.184	1.204	1.232		789	803	838
						0.495	0.549	0.577				
				6		1.158	1.173	1.194		735	791	846
			51.8	4	5	0.846	0.874	0.930	5	425	589	678
						0.386	0.417	0.439				
				5		1.001	1.046	1.074		482	608	710
						0.417	0.452	0.478				
				6		0.922	0.993	1.024		435	531	618
3	86.08.15	31664	5.8	4	3	1.217	1.240	1.270	4	905	932	975
						0.617	0.648	0.688				
				5		1.382	1.402	1.425		849	872	897
						0.681	0.706	0.737				
				6		1.369	1.387	1.402		862	869	876
			13.0	4	4	1.191	1.206	1.224	4	791	813	833
						0.615	0.632	0.650				
				5		1.328	1.356	1.384		795	848	897
						0.638	0.683	0.706				
				6		1.328	1.354	1.387		787	809	817
			51.5	4	5	0.958	0.973	1.001	4	458	511	585
						0.455	0.480	0.521				
				5		1.102	1.125	1.176		532	577	661
						0.505	0.526	0.566				
				6		1.016	1.059	1.130		390	519	645

SITE 6

ONTARIO

Pavement Response to Heavy Vehicles Test Site

Province: Ontario Date(s) of Installing Instrumentation: Oct-Nov. 1984

Site Location: Hwy 7 Peterborough Bypass, approx. 2.0 km east Jct. Highway 115.

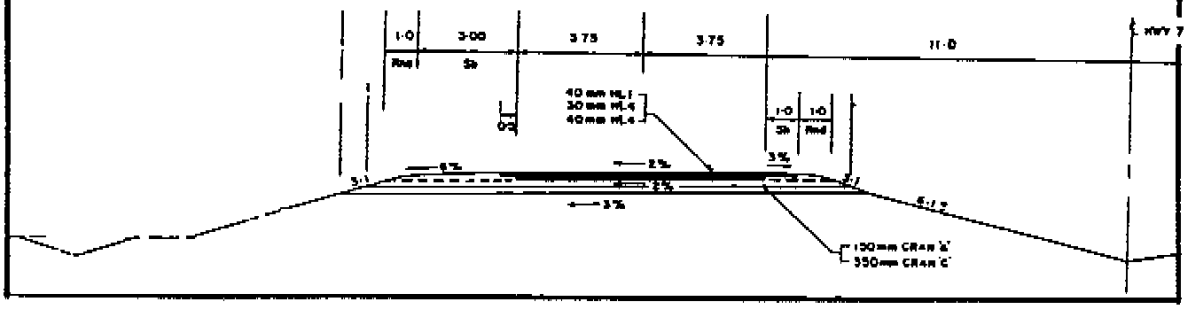
AADT: 7800 % Truck Vol: 12.5%

Site Description: This site is on the west bound No. 2 lane of new construction to twin the existing highway. Topography is mainly flat broken by a number of drumlins. The subgrade varies from silty sand to a clayey sand. The ditchline is approx. 1.0 m below the edge of pavement.

Structure: Instr. Lane Width 3.75m. Adjacent Shoulder Width 0.5 m.
Shoulder Type Paved

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	110	70 mm HL 4 (24 fts) 40 mm HL 1 AC 85/100 Esso Montreal
Base Layer(s)	Gran. A	150	Grading Chart Supplied
Subbase Layer(s)	Gran. C	350	Grading Chart Supplied
Subsoil	Silty Sa. to Clayey Sand		

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: **6 - Ontario**

Test Dates: 85.07.17 - 85.07.19

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Steering Axle		3790	5110	
Single Axle		9182	9570	11127
Tandem (1.2 m)		13582	18100	22327
Tandem (1.5 m)	(17)*	5445	to	19280
Tandem (1.8 m)		14064	18382	22127
Triaxle (2.4 m)		20082	26145	31645
Triaxle (3.7 m)		20510	26036	31664
Triaxle (4.9 m)			25836	31955

*Number of tandem axle loads

Comments:

1. **Two (2) deflection transducers and three (3) strain transducers installed. One (1) strain transducer not operational during testing and deflection transducers transversely misaligned approximately 100 mm.**

2. **High pavement temperatures (35 to 40°C) for the majority of the testing program.**

Table 6.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-Dual Tire Load, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
1	85.07.17	5.5	4	0.414	0.427	0.442	4	459	471	496	25.5	24.8	24.4	23.3
		12.1	3	0.401	0.417	0.424	3	378	385	397	26.8	26.5	25.8	24.5
		50.9	3	0.401	0.406	0.414	3	333	339	348	29.4	29.3	28.0	26.3
2	85.07.17	5.8	4	0.455	0.460	0.462	4	577	620	641	30.1	29.6	28.9	26.6
		12.4	4	0.424	0.447	0.480	4	529	567	598	32.0	31.6	30.6	28.0
		47.0	4	0.409	0.419	0.427	4	398	417	436	34.4	33.5	31.8	28.8
3	85.07.17	6.0	4	0.488	0.500	0.513	4	762	791	825	34.8	33.8	32.4	29.3
		14.2	2	0.465	0.488	0.511	2	682	696	710	34.9	33.9	32.9	29.6
		47.6	3	0.450	0.460	0.470	3	554	583	600	36.9	36.1	34.4	30.9
4	85.07.17	5.6	4	0.496	0.511	0.528	4	906	944	1002	36.6	36.1	35.6	32.5
		13.2	3	0.488	0.500	0.511	3	792	824	845	38.5	37.9	36.8	33.7
		45.4	3	0.483	0.490	0.503	3	617	650	674	40.8	40.0	38.4	34.8
5	85.07.17	6.1	4	0.533	0.538	0.544	4	1120	1147	1165	41.1	39.3	38.0	33.8
		13.0	3	0.498	0.513	0.523	3	1011	1022	1028	40.4	38.9	38.0	34.0
		46.5	3	0.465	0.496	0.533	3	684	731	767	39.0	37.9	37.4	34.3
6	85.07.17	6.4	4	0.518	0.523	0.533	4	1141	1187	1251	40.0	38.5	37.7	34.6
		14.3	4	0.488	0.513	0.521	4	1039	1044	1049	40.6	38.8	38.0	34.5
		45.4	3	0.465	0.485	0.511	3	773	807	828	41.6	39.5	38.7	35.1
7	85.07.18	5.8	3	0.450	0.452	0.455	3	495	509	521	22.6	22.9	23.0	23.3
		12.7	3	0.422	0.422	0.424	3	436	442	447	23.4	23.6	23.6	23.7
		48.0	5	0.394	0.414	0.424	5	305	315	321	24.3	24.1	23.9	23.8
8A	85.07.18	6.1	4	0.462	0.465	0.470	4	525	537	545	25.7	25.5	25.1	24.7
		13.0	4	0.417	0.434	0.450	4	407	434	450	26.7	26.7	26.2	25.5
		49.6	3	0.409	0.437	0.457	3	374	393	411	27.4	27.2	26.7	25.6
8B	85.07.18	6.4	4	0.462	0.465	0.472	4	590	618	655	28.9	28.4	27.9	26.3
		12.7	3	0.455	0.460	0.465	3	531	557	570	30.0	29.5	28.9	27.1
		49.4	3	0.432	0.442	0.455	3	442	448	452	32.0	31.5	30.3	28.2
9	85.07.18	6.0	3	0.472	0.483	0.495	3	732	757	788	33.9	33.2	31.7	29.1
		12.9	4	0.462	0.472	0.483	4	624	663	682	33.7	32.9	31.9	29.2
		49.9	3	0.455	0.457	0.462	3	482	503	516	34.0	32.9	32.1	29.2
10A	85.07.18	6.0	3	0.490	0.498	0.513	3	925	984	1060	38.8	37.0	35.5	31.7
		13.5	3	0.465	0.480	0.488	3	821	890	931	38.9	37.1	35.8	32.0
		48.6	3	0.456	0.470	0.488	3	681	700	722	39.6	37.9	36.7	32.7
10B	85.07.18	5.8	3	0.496	0.503	0.518	3	1141	1177	1234	40.3	38.6	37.5	33.3
		14.2	4	0.472	0.483	0.495	4	1026	1079	1146	40.3	38.5	37.5	33.4
		47.6	3	0.465	0.475	0.483	3	731	762	792	40.8	38.7	38.0	33.8
11	85.07.18	5.8	3	0.523	0.528	0.533	3	1329	1386	1441	41.7	39.4	38.4	34.2
		13.5	3	0.470	0.490	0.505	3	1298	1308	1327	42.3	40.7	39.8	35.8
		48.3	3	0.480	0.500	0.528	3	881	957	1011	42.9	41.2	40.8	37.1
12	85.07.18	5.8	4	0.521	0.526	0.533	4	1426	1446	1463	42.9	41.5	41.0	37.4
		13.5	3	0.478	0.493	0.503	4	1305	1358	1392	43.0	41.6	41.2	37.7
		46.5	3	0.478	0.490	0.505	3	922	958	992	43.5	42.1	41.5	38.2

Table 6.1 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-Dual Tire Load, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
13	85.07.19	6.0	4	0.442	0.452	0.462	4	503	541	570	23.1	23.1	23.5	23.9
		13.4	3	0.450	0.455	0.457	3	446	451	460	23.0	23.0	23.4	23.8
		48.9	3	0.432	0.437	0.442	3	349	358	368	22.6	22.7	23.1	23.6
		89.5	3	0.378	0.404	0.424	3	294	313	334	22.5	22.7	23.1	23.7
14A	85.07.19	6.1	4	0.447	0.465	0.480	4	529	543	580	23.3	23.3	23.3	24.1
		13.2	4	0.422	0.437	0.447	4	440	461	482	24.1	24.1	23.9	24.5
		49.1	3	0.432	0.434	0.439	4	333	351	369	24.7	24.7	24.7	24.8
14B	85.07.19	6.3	3	0.495	0.505	0.521	3	605	620	630	28.8	27.9	27.1	26.3
		12.4	4	0.470	0.480	0.498	4	520	545	568	30.7	30.3	29.2	27.6
		49.1	4	0.462	0.472	0.480	4	413	425	454	32.1	31.3	30.1	28.0
15A	85.07.19	6.4	3	0.505	0.511	0.513	3	788	806	832	30.8	30.3	30.3	29.1
		13.8	3	0.483	0.488	0.495	3	673	682	694	30.1	29.7	29.8	28.8
		51.8	3	0.465	0.472	0.480	3	504	509	512	30.0	29.8	29.8	28.8
15B	85.07.19	6.1	4	0.511	0.516	0.523	4	807	826	846	31.6	31.0	30.7	28.8
		12.7	4	0.506	0.513	0.518	4	685	704	732	31.4	30.9	30.6	29.0
		48.4	4	0.450	0.465	0.488	4	394	411	447	31.0	30.5	30.4	28.9

Table 6.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Steering Axle, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14B	85.07.19	3790	6.1	4	0.406	0.427	0.457	3	616	662	711
			12.9	3	0.391	0.399	0.406	4	511	565	597
			48.3	4	0.353	0.389	0.462	3	434	450	466
15B	85.07.19	5110	5.8	4	0.490	0.503	0.511	4	925	952	966
			12.7	4	0.470	0.490	0.506	3	752	800	825
			48.1	4	0.439	0.447	0.455	3	564	594	612

Table 6.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.07.19	9182	6.0	4	0.505	0.523	0.544	4	574	594	612
			13.0	4	0.498	0.511	0.533	4	500	508	517
			48.0	4	0.462	0.475	0.480	4	370	377	386
15A	85.07.19	9570	6.0	4	0.587	0.605	0.632	3	941	955	967
			13.2	4	0.561	0.589	0.625	3	722	741	779
			50.2	4	0.513	0.528	0.544	2	533	540	547
13	85.07.19	11127	6.0	4	0.569	0.589	0.602	4	613	623	637
			13.0	4	0.546	0.569	0.587	4	508	525	545
			49.1	3	0.518	0.536	0.569	3	418	422	426
			90.6	3	0.521	0.531	0.538	3	333	354	366

Table 6.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Ven. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.07.18	13582	6.0	6	4	0.566	0.579	0.594	4	1459	1527	1563
						0.198	0.216	0.226				
				7		0.574	0.587	0.607		1317	1380	1402
			13.0	6	4	0.513	0.528	0.551	3	1300	1315	1333
						0.175	0.188	0.218				
				7		0.521	0.544	0.569		1181	1196	1209
			51.2	6	5	0.480	0.506	0.518	3	937	947	959
						0.206	0.221	0.257				
				7		0.488	0.518	0.538		874	899	914
9	85.07.18	18100	6.0	6	4	0.561	0.584	0.599	4	808	834	854
						0.193	0.221	0.234				
				7		0.569	0.594	0.607		783	804	821
			13.0	6	4	0.551	0.569	0.587	3	667	683	702
						0.198	0.229	0.257				
				7		0.566	0.587	0.610		666	679	694
			51.3	6	4	0.528	0.554	0.577	3	541	547	567
						0.241	0.254	0.272				
				7		0.551	0.564	0.587		529	546	564
5	85.07.17	22327	5.8	6	4	0.777	0.790	0.808	4	1216	1236	1246
						0.330	0.343	0.361				
				7		0.786	0.805	0.826		1109	1117	1120
			12.9	6	4	0.663	0.706	0.734	3	1113	1130	1153
						0.264	0.290	0.320				
				7		0.698	0.737	0.770		1011	1048	1068
			52.0	6	3	0.678	0.696	0.726	4	780	803	849
						0.295	0.325	0.351				
				7		0.714	0.724	0.747		784	803	826

Table 6.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.07.17	10645	5.5	1	4	0.345	0.363	0.378	4	444	451	458
						0.086	0.107	0.137				
				2		0.358	0.376	0.394		431	438	451
			12.9	1	4	0.315	0.335	0.353	4	338	368	389
						0.081	0.099	0.114				
				2		0.335	0.348	0.366		334	361	383
			52.9	1	4	0.305	0.312	0.323	3	296	303	313
						0.097	0.109	0.119				
				2		0.320	0.330	0.345		302	307	313
2	85.07.17	10345	5.8	1	5	0.351	0.366	0.378	3	574	593	606
						0.089	0.091	0.097				
				2		0.345	0.376	0.394		552	569	582
			12.9	1	3	0.345	0.353	0.358	3	488	507	521
						0.081	0.097	0.114				
				2		0.368	0.371	0.378		482	494	507
			49.6	1	3	0.310	0.320	0.335	4	357	379	398
						0.081	0.097	0.099				
				2		0.305	0.343	0.368		361	383	406
3	85.07.17	5445	6.0	1	2	0.269	0.272	0.272	2	537	540	543
						0.086	0.091	0.094				
				2		0.264	0.277	0.290		496	500	504
			12.9	1	4	0.224	0.231	0.239	4	452	462	478
						0.066	0.076	0.086				
				2		0.226	0.241	0.257		430	443	454
			50.4	1	3	0.178	0.196	0.218	3	317	333	350
						0.074	0.097	0.112				
				2		0.185	0.208	0.231		300	307	316
4	85.07.17	6682	6.0	1	3	0.315	0.323	0.330	4	752	786	809
						0.094	0.102	0.107				
				2		0.302	0.335	0.358		692	724	758
			12.9	1	4	0.297	0.302	0.305	3	653	656	661
						0.102	0.107	0.112				
				2		0.295	0.307	0.323		578	590	610
			51.0	1	3	0.241	0.251	0.264	3	459	470	479
						0.081	0.091	0.104				
				2		0.234	0.251	0.274		423	439	458
5	85.07.17	15336	5.8	1	4	0.566	0.584	0.622	4	1195	1253	1290
						0.168	0.185	0.213				
				2		0.594	0.615	0.648		1148	1187	1215
			12.9	1	4	0.495	0.526	0.551	4	1072	1098	1122
						0.119	0.140	0.168				
				2		0.518	0.549	0.574		1016	1049	1069
			51.7	1	2	0.470	0.493	0.513	4	708	742	775
						0.157	0.163	0.168				
				2		0.488	0.521	0.554		688	729	759

Table 6.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.07.17	15582	6.0	1	4	0.551	0.574	0.599	3	1354	1404	1439
						0.122	0.147	0.193				
				2		0.561	0.589	0.630		1218	1257	1299
			13.0	1	4	0.518	0.533	0.569	3	1191	1210	1236
						0.104	0.137	0.150				
				2		0.506	0.544	0.584		1122	1130	1137
			51.2	1	3	0.533	0.546	0.554	4	837	868	897
						0.178	0.188	0.193				
				2		0.574	0.584	0.592		805	827	846
7	85.07.18	9109	5.8	1	4	0.290	0.295	0.302	3	405	408	410
						0.079	0.084	0.094				
				2		0.295	0.307	0.315		381	387	391
			12.9	1	3	0.290	0.292	0.295	3	330	335	338
						0.074	0.084	0.094				
				2		0.295	0.307	0.323		313	323	332
			50.5	1	5	0.257	0.264	0.274	3	242	245	248
						0.089	0.102	0.112				
				2		0.269	0.279	0.297		238	243	247
8A	85.07.18	11718	5.8	1	4	0.378	0.389	0.401	4	508	525	544
						0.097	0.107	0.122				
				2		0.378	0.399	0.422		499	509	515
			12.9	1	4	0.368	0.384	0.399	3	452	464	476
						0.094	0.109	0.130				
				2		0.376	0.391	0.406		436	445	451
			49.4	1	4	0.345	0.353	0.358	4	317	329	336
						0.114	0.122	0.137				
				2		0.335	0.363	0.376		317	322	325
8B	85.07.17	8209	6.0	1	3	0.320	0.330	0.343	4	517	541	553
						0.089	0.102	0.119				
				2		0.320	0.340	0.368		486	503	520
			13.0	1	3	0.287	0.300	0.310	4	462	466	474
						0.071	0.076	0.081				
				2		0.320	0.325	0.330		440	448	456
			48.9	1	5	0.257	0.272	0.290	5	324	335	342
						0.071	0.084	0.104				
				2		0.264	0.279	0.302		292	388	336
9	85.07.18	14936	6.0	1	4	0.495	0.505	0.518	3	830	851	872
						0.119	0.140	0.152				
				2		0.503	0.521	0.533		768	793	811
			13.0	1	4	0.483	0.498	0.521	4	726	737	752
						0.119	0.142	0.157				
				2		0.480	0.511	0.533		674	694	715
			51.3	1	4	0.432	0.455	0.472	4	511	549	576
						0.137	0.150	0.175				
				2		0.470	0.485	0.511		524	539	561

Table 6.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10A	85.07.18	11827	6.0	1	4	0.434	0.447	0.465	3	1026	1069	1098
						0.104	0.122	0.142				
				2		0.447	0.465	0.472		950	996	1027
			13.0	1	4	0.414	0.442	0.457	4	927	931	935
						0.094	0.122	0.150				
				2		0.447	0.472	0.490		884	886	890
			50.4	1	4	0.376	0.409	0.414	4	643	656	665
						0.119	0.132	0.145				
				2		0.434	0.442	0.447		616	643	659
10B	85.07.18	9565	5.8	1	4	0.386	0.404	0.427	3	1173	1242	1279
						0.086	0.099	0.122				
				2		0.401	0.406	0.414		1128	1183	1214
			13.0	1	4	0.376	0.389	0.394	4	1047	1065	1085
						0.089	0.104	0.122				
				2		0.401	0.417	0.434		1018	1028	1044
			49.7	1	3	0.358	0.363	0.371	3	707	733	762
						0.094	0.122	0.137				
				2		0.351	0.381	0.414		665	685	708
11	85.07.18	14582	6.0	1	4	0.538	0.546	0.559	3	1532	1563	1585
						0.135	0.145	0.152				
				2		0.569	0.577	0.587		1454	1470	1478
			13.0	1	4	0.503	0.523	0.546	4	1352	1409	1447
						0.102	0.127	0.170				
				2		0.505	0.538	0.574		1266	1316	1340
			50.9	1	4	0.488	0.500	0.521	4	945	983	1026
						0.135	0.155	0.193				
				2		0.505	0.528	0.566		892	923	943
12	85.07.18	12500	5.8	1	3	0.521	0.528	0.538	4	1552	1601	1669
						0.142	0.152	0.163				
				2		0.533	0.544	0.551		1454	1520	1587
			12.9	1	3	0.483	0.516	0.538	3	1369	1429	1461
						0.114	0.152	0.170				
				2		0.495	0.528	0.551		1361	1368	1374
			48.0	1	3	0.414	0.442	0.462	3	955	988	1007
						0.107	0.140	0.163				
				2		0.432	0.465	0.483		917	932	941

Table 6.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
13	85.07.19	13136	5.8	1	3	0.432	0.455	0.462	3	520	538	554
						0.137	0.142	0.150				
				2		0.432	0.457	0.472		504	526	540
			13.0	1	4	0.406	0.422	0.434	4	446	458	463
						0.119	0.130	0.137				
				2		0.422	0.434	0.439		431	447	459
			49.1	1	3	0.366	0.378	0.394	3	302	321	338
						0.114	0.124	0.137				
				2		0.366	0.389	0.414		296	316	333
			90.6	1	3	0.361	0.378	0.391	3	277	284	298
						0.122	0.145	0.163				
				2		0.368	0.391	0.409		275	279	285
14A	85.07.19	13236	6.0	1	4	0.427	0.442	0.457	4	547	561	569
						0.112	0.127	0.157				
				2		0.439	0.450	0.470		535	548	557
			13.0	1	4	0.409	0.422	0.432	4	472	479	483
						0.112	0.124	0.142				
				2		0.427	0.437	0.457		463	468	472
			48.0	1	4	0.378	0.394	0.417	4	336	345	354
						0.122	0.140	0.152				
				2		0.401	0.406	0.414		309	332	346
15A	85.07.19	19280	6.0	1	4	0.602	0.615	0.640	4	886	915	958
						0.170	0.183	0.193				
				2		0.615	0.630	0.643		833	861	902
			13.2	1	4	0.574	0.607	0.625	4	735	767	799
						0.152	0.185	0.198				
				2		0.592	0.622	0.635		699	729	752
			50.2	1	4	0.551	0.559	0.566	3	554	576	590
						0.168	0.185	0.208				
				2		0.569	0.579	0.594		535	561	582

Table 6.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.07.18	14064	6.0	5	4	0.579	0.594	0.607	4	1686	1692	1698
						0.150	0.168	0.183				
				6		0.584	0.612	0.635		1536	1539	1544
			12.9	5	4	0.536	0.554	0.577	3	1312	1354	1438
						0.142	0.170	0.198				
				6		0.561	0.579	0.594		1195	1260	1354
			48.0	5	3	0.483	0.511	0.533	4	905	950	1006
						0.142	0.170	0.190				
				6		0.498	0.528	0.551		889	951	1023
10A	86.07.18	18382	6.0	5	4	0.566	0.599	0.625	4	1015	1083	1153
						0.142	0.175	0.206				
				6		0.594	0.627	0.658		979	1037	1094
			13.0	5	4	0.566	0.589	0.607	4	930	955	972
						0.137	0.173	0.208				
				6		0.594	0.625	0.655		930	960	982
			50.4	5	4	0.569	0.577	0.584	3	677	732	772
						0.178	0.185	0.193				
				6		0.592	0.606	0.622		683	738	770
8A	86.07.18	22127	5.8	5	4	0.574	0.579	0.599	4	614	622	634
						0.145	0.160	0.185				
				6		0.592	0.610	0.632		625	631	643
			13.0	5	4	0.546	0.569	0.592	4	533	542	552
						0.130	0.152	0.183				
				6		0.587	0.599	0.617		557	564	574
			49.4	5	4	0.513	0.541	0.561	3	405	413	419
						0.157	0.168	0.185				
				6		0.551	0.577	0.599		423	428	436

Table 6.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.07.17	20082	6.0	6	4	0.536	0.559	0.602	4	1222	1273	1323
						0.190	0.216	0.259				
				7		0.574	0.592	0.640		1101	1154	1181
						0.213	0.234	0.287				
				8		0.559	0.587	0.640		1097	1134	1166
			13.0	6	4	0.518	0.538	0.559	4	1039	1088	1120
						0.185	0.203	0.208				
				7		0.536	0.559	0.579		929	981	1008
						0.198	0.221	0.239				
				8		0.538	0.561	0.579		902	961	982
			51.2	6	4	0.513	0.526	0.528	3	750	769	785
						0.231	0.249	0.264				
				7		0.533	0.559	0.569		708	719	728
						0.231	0.267	0.287				
				8		0.533	0.551	0.561		706	710	716
2	85.07.17	26145	5.8	6	5	0.521	0.531	0.538	5	578	619	657
						0.198	0.208	0.231				
				7		0.544	0.551	0.559		556	601	636
						0.206	0.216	0.224				
				8		0.544	0.549	0.559		570	612	650
			12.9	6	4	0.513	0.536	0.559		507	536	549
						0.193	0.216	0.231				
				7		0.518	0.546	0.577		490	514	528
						0.216	0.229	0.254				
				8		0.511	0.544	0.574		503	530	545
			49.9	6	4	0.480	0.500	0.523	3	442	449	464
						0.206	0.231	0.257				
				7		0.495	0.521	0.546		417	434	450
						0.218	0.246	0.279				
				8		0.498	0.513	0.533		444	456	470
1	85.07.17	31645	5.8	6	4	0.544	0.564	0.584	4	452	504	529
						0.226	0.251	0.279				
				7		0.569	0.594	0.617		447	500	525
						0.234	0.264	0.297				
				8		0.561	0.594	0.625		472	518	548

Table 6.8
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.07.18	20510	5.8	4	4	0.472	0.490	0.518	3	1317	1363	1449
						0.107	0.130	0.170				
				5		0.513	0.541	0.574		1112	1225	1315
						0.112	0.140	0.170				
				6		0.513	0.549	0.577		1067	1186	1264
			13.0	4	4	0.465	0.472	0.488	4	1122	1168	1191
						0.127	0.132	0.135				
				5		0.521	0.531	0.538		1079	1112	1158
						0.127	0.137	0.145				
				6		0.528	0.541	0.551		1055	1093	1145
			49.7	4	3	0.409	0.437	0.457	4	718	730	759
						0.122	0.137	0.168				
				5		0.462	0.490	0.505		699	769	805
						0.142	0.173	0.190				
				6		0.483	0.516	0.533		742	769	799
7	85.07.18	26036	5.8	4	4	0.439	0.444	0.450	4	472	483	504
						0.104	0.122	0.130				
				5		0.483	0.498	0.505		474	497	527
						0.122	0.127	0.137				
				6		0.488	0.503	0.511		492	514	543
			12.9	4	4	0.434	0.442	0.455	3	428	433	439
						0.112	0.119	0.135				
				5		0.480	0.498	0.513		448	452	460
						0.122	0.130	0.137				
				6		0.490	0.503	0.521		464	472	480
			50.5	4	5	0.386	0.404	0.424		297	315	330
						0.130	0.140	0.157				
				5		0.442	0.457	0.495		314	336	348
						0.130	0.147	0.175				
				6		0.442	0.472	0.513		336	354	370
3	85.07.17	31664	5.8	4	3	0.528	0.564	0.584	3	813	826	850
						0.122	0.157	0.175				
				5		0.607	0.632	0.655		768	795	838
						0.163	0.190	0.206				
				6		0.635	0.663	0.681		768	797	845

Table 6.9
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (4.9 m Spacing)-Dual Tire Loads, Site 6, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
8B	85.07.17	25836	6.0	3	4	0.472	0.493	0.518	4	649	668	702
						0.074	0.086	0.104				
				5		0.518	0.526	0.538		597	620	670
						0.127	0.150	0.178				
				6		0.538	0.556	0.584		612	642	695
			13.0	3	4	0.457	0.465	0.480	4	577	602	621
						0.068	0.069	0.074				
				5		0.503	0.508	0.518		562	588	598
						0.114	0.119	0.127				
				6		0.523	0.538	0.546		590	615	632
			48.9	3	5	0.399	0.424	0.442	4	451	478	515
						0.071	0.081	0.094				
				5		0.455	0.478	0.503		387	442	472
						0.114	0.137	0.152				
				6		0.472	0.503	0.546		411	460	487
4	85.07.17	31955	6.0	3	4	0.607	0.620	0.643	4	1086	1107	1157
						0.112	0.124	0.150				
				5		0.658	0.678	0.704		1007	1039	1097
						0.186	0.206	0.226				
				6		0.698	0.719	0.744		942	975	1036
			12.9	3	4	0.602	0.615	0.622	4	927	970	1011
						0.127	0.135	0.150				
				5		0.658	0.676	0.688		860	903	947
						0.208	0.216	0.224				
				6		0.688	0.716	0.726		833	875	917
			51.0	3	3	0.544	0.569	0.574	3	698	738	766
						0.097	0.122	0.135				
				5		0.607	0.625	0.635		678	714	743
						0.190	0.208	0.218				
				6		0.671	0.681	0.688		702	739	766

SITE 7

ONTARIO

Pavement Response to Heavy Vehicles Test Site

Province: Ontario Date(s) of Installing Instrumentation: Oct-Nov 1984

Site Location: Hwy 403 Approx. 2.6 km east Brant County Road 25 and approx. 19.0 km west Jct. Hwy. 24 & 403 (Brantford)

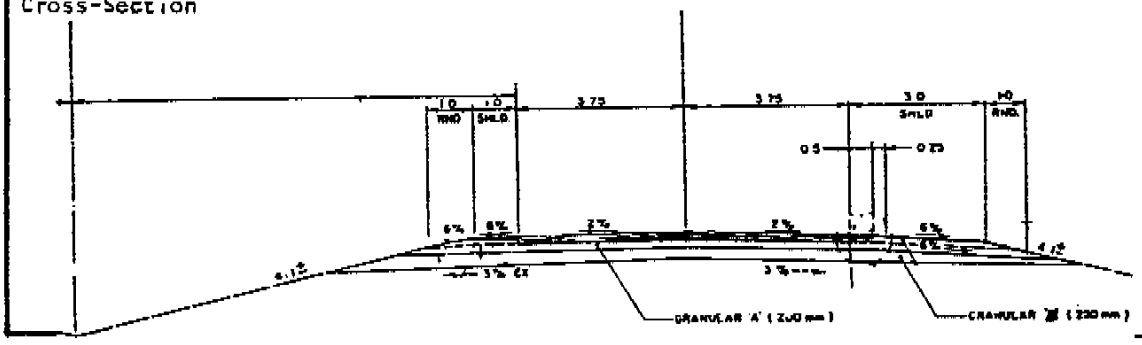
AADT: 8400 % Truck Vol: 20

Site Description: This site is on new construction of the east bound No. 2 lane of a four-lane divided highway. Topography is level with occasional ridges and undulating areas. Subgrade varies from sand and sandy loam to gravel and clay loam tills. Ditch line is approximately 2.0 m below edge of pavement.

Structure: Instr. Lane Width 3.75m. Adjacent Shoulder Width 0.5 m.
Shoulder Type Paved

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	170	130 mm HL 4 (2 Lifts) 40 mm HL 1 AC 85/100 Petrocan
Base Layer(s)	Gran. A	200	Oakville Grading Chart Supplied
Subbase Layer(s)	Gran. B	250	Grading Chart Supplied
Subsoil	Sand to Sandy Loam		F. Gr. 2 Cl. 13 C.& M. Sa. 31 FMC 13.5 F.& VF.Sa. 34 Si 20

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: 7 - Ontario

Test Dates: 85.07.08 - 85.07.10

Venicle Loadings:

Axle Configuration		Gross Weights (kg)		
Single Axle		9182	11127	
Tandem (1.2 m)		13582	22327	
Tandem (1.5 m)	(10)*	5445	to	15582
Tandem (1.8 m)		14064	22127	
Triaxle (2.4 m)		20082	31645	
Triaxle (3.7 m)		20509	31664	

*Number of tandem axle loads

Comments:

1. Three (3) deflection and three (3) strain transducers installed. One (1) deflection transducer cable severed during installation. The remaining five (5) transducers operational during testing.

2. High pavement temperatures (40°C) encountered during approximately one-half of the testing program.

Table 7.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-Dual Tire Load, Site 7, Ontario

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
1	85.07.08	4.2	4	0.310	0.315	0.328	4	332	350	365	26.6	26.0	24.2	23.9
		10.3	5	0.274	0.290	0.312	5	312	318	329	28.5	28.2	24.4	23.8
		48.4	6	0.231	0.254	0.274	6	216	233	244	30.0	28.3	25.1	24.0
3	85.07.08	6.4	4	0.320	0.328	0.335	4	378	389	395	33.3	31.7	27.6	25.4
		12.9	4	0.317	0.323	0.328	4	341	363	379	31.9	30.9	27.5	25.1
		49.2	6	0.226	0.267	0.295	6	259	264	279	33.0	31.5	27.8	25.4
5	85.07.08	5.8	4	0.330	0.340	0.353	4	413	427	438	33.8	32.5	28.7	26.1
		13.4	4	0.282	0.307	0.328	4	344	370	386	33.2	32.1	28.7	26.1
		51.7	4	0.269	0.279	0.290	4	260	274	293	34.6	33.1	29.5	26.9
6	85.07.09	5.3	4	0.302	0.310	0.323	4	309	324	336	23.5	23.4	23.3	23.9
		12.4	4	0.290	0.295	0.297	4	261	280	308	24.5	24.2	23.7	24.2
		53.1	4	0.246	0.249	0.257	4	191	200	204	26.1	25.4	24.1	24.2
8A	85.07.09	6.6	4	0.305	0.320	0.330	4	325	343	373	29.3	28.0	25.3	24.7
		12.6	4	0.310	0.312	0.317	4	308	315	321	30.2	28.8	25.8	24.8
		51.8	4	0.269	0.274	0.282	4	234	236	240	31.1	29.6	26.4	25.1
10B	85.07.09	5.3	4	0.328	0.333	0.338	4	407	410	413	32.8	31.1	27.3	25.5
		13.5	4	0.317	0.320	0.323	4	332	352	365	33.7	32.0	27.8	25.8
		52.3	4	0.269	0.277	0.290	4	231	253	279	34.3	32.6	28.2	25.9
11	85.07.09	4.8	4	0.343	0.351	0.361	4	451	468	487	36.3	34.8	30.5	27.6
		13.7	4	0.323	0.330	0.343	4	378	391	399	36.9	35.3	30.9	27.8
		52.1	4	0.282	0.297	0.310	4	289	302	317	37.1	35.5	31.2	28.0
		71.1	3	0.249	0.277	0.295	3	269	272	276	39.0	36.7	31.5	28.2
12	85.07.09	4.8	3	0.368	0.371	0.373	3	478	498	511	40.1	37.7	32.2	28.7
		13.4	4	0.351	0.358	0.366	4	438	460	467	41.4	38.9	33.4	29.6
		52.1	4	0.312	0.320	0.328	4	314	328	338	41.9	39.2	33.6	29.5
13	85.07.09	4.8	4	0.376	0.386	0.391	4	536	544	552	40.3	38.0	32.7	28.7
		14.2	4	0.353	0.361	0.368	4	446	458	478	39.4	37.7	33.0	29.1
		52.9	5	0.310	0.325	0.351	5	344	355	366	40.5	38.7	34.1	30.2
14	85.07 09	5.1	4	0.391	0.396	0.401	4	533	548	559	41.4	39.3	34.7	30.9
		12.9	4	0.361	0.373	0.384	4	484	495	507	41.0	39.3	34.7	30.8
		48.4	4	0.320	0.338	0.351	4	391	396	405	41.4	39.9	35.3	31.3

Table 7.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 7, Ontario

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
14A	85.07.09	9182	6.0	4	0.455	0.457	0.470	4	573	580	586
			13.0	4	0.414	0.437	0.478	4	503	502	516
			48.4	4	0.378	0.394	0.429	4	377	391	402
13	85.07.09	11127	6.0	4	0.488	0.496	0.511	4	582	596	602
			12.9	4	0.465	0.483	0.495	4	535	536	537
			49.2	5	0.378	0.411	0.462	5	399	407	417

Table 7.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 7, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
11	85.07.09	13582	5.8	6	3	0.338	0.356	0.368	5	337	370	405
						0.178	0.188	0.201				
				7		0.358	0.371	0.386		329	356	389
			12.9	6	4	0.343	0.348	0.361	4	325	329	333
						0.168	0.185	0.201				
				7		0.351	0.366	0.378		317	321	326
			51.0	6	4	0.264	0.279	0.302	4	222	237	249
						0.170	0.175	0.178				
				7		0.269	0.290	0.306		220	230	243
			72.6	6	3	0.272	0.277	0.282	3	200	203	206
						0.165	0.170	0.175				
				7		0.279	0.290	0.302		202	207	214
5	85.07.08	22327	6.0	6	4	0.450	0.467	0.480	4	496	500	504
						0.257	0.274	0.295				
				7		0.483	0.493	0.503		479	484	488
			12.9	6	3	0.457	0.462	0.465	4	433	436	439
						0.279	0.287	0.290				
				7		0.478	0.483	0.490		423	428	430
			49.7	6	4	0.391	0.401	0.414	4	322	327	330
						0.264	0.269	0.282				
				7		0.406	0.422	0.429		312	318	321

Table 7.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 7, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
1	85.07.08	10645	5.8	1	4	0.231	0.241	0.264	4	245	249	252
						0.109	0.114	0.122				
				2		0.246	0.257	0.262		235	247	255
			12.6	1	4	0.226	0.231	0.239	4	204	210	220
						0.104	0.112	0.119				
				2		0.239	0.249	0.257		199	208	214
			52.1	1	4	0.201	0.208	0.218	4	153	158	162
						0.097	0.112	0.119				
				2		0.206	0.218	0.231		139	147	154
3	85.07.08	5445	6.0	1	4	0.152	0.163	0.175	4	155	163	167
						0.064	0.071	0.081				
				2		0.152	0.170	0.190		155	163	169
			12.9	1	4	0.130	0.145	0.160	4	130	136	143
						0.058	0.071	0.086				
				2		0.135	0.145	0.157		123	130	138
			52.1	1	5	0.097	0.109	0.119	5	82	88	96
						0.048	0.056	0.066				
				2		0.097	0.112	0.122		77	81	94
5	85.07.08	15336	6.0	1	4	0.330	0.335	0.338	4	394	411	422
						0.137	0.142	0.150				
				2		0.330	0.343	0.351		391	398	403
			12.9	1	4	0.287	0.317	0.338	4	331	350	368
						0.112	0.142	0.168				
				2		0.305	0.335	0.358		313	337	353
			49.7	1	3	0.282	0.295	0.302	3	247	264	273
						0.142	0.150	0.160				
				2		0.310	0.312	0.312		248	263	276
6	85.07.09	15582	5.8	1	5	0.295	0.302	0.310	5	299	303	313
						0.130	0.135	0.137				
				2		0.305	0.315	0.323		301	304	309
			12.7	1	4	0.279	0.290	0.302	4	243	261	272
						0.135	0.140	0.145				
				2		0.290	0.300	0.317		239	256	273
			48.6	1	4	0.249	0.259	0.269	4	175	190	198
						0.142	0.150	0.157				
				2		0.262	0.272	0.282		175	180	184
8A	85.07.09	11718	5.8	1	4	0.246	0.259	0.269	4	261	271	280
						0.094	0.107	0.114				
				2		0.262	0.272	0.287		263	275	283
			12.9	1	4	0.231	0.251	0.269	4	231	239	247
						0.109	0.117	0.127				
				2		0.246	0.264	0.287		230	238	244
			51.0	1	4	0.201	0.224	0.246	3	169	178	186
						0.104	0.119	0.135				
				2		0.213	0.239	0.257		161	174	182

Table 7.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 7, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.07.09	9655	5.8	1	4	0.234	0.244	0.254	4	264	275	284
						0.089	0.094	0.097				
				2		0.241	0.249	0.254		248	268	279
			12.7	1	3	0.231	0.236	0.241	3	228	240	247
						0.089	0.099	0.114				
				2		0.234	0.241	0.249		227	239	253
			52.5	1	2	0.201	0.203	0.206	2	175	176	178
						0.097	0.099	0.102				
				2		0.216	0.218	0.218		174	175	176
11	85.07.09	14582	5.8	1	3	0.330	0.351	0.366	3	426	434	439
						0.152	0.155	0.157				
				2		0.368	0.373	0.378		419	423	430
			12.9	1	4	0.335	0.340	0.353	4	364	373	379
						0.130	0.147	0.160				
				2		0.343	0.353	0.358		372	374	379
			51.0	1	2	0.282	0.295	0.310	2	284	284	285
						0.137	0.142	0.145				
				2		0.320	0.325	0.330		281	283	285
			72.6	1	3	0.254	0.277	0.295	3	238	248	256
						0.122	0.132	0.145				
				2		0.282	0.297	0.310		203	224	240
12	85.07.09	12500	6.0	1	4	0.264	0.279	0.287	4	394	416	425
						0.109	0.114	0.127				
				2		0.282	0.295	0.305		386	408	425
			12.9	1	4	0.305	0.310	0.312	4	365	372	378
						0.112	0.117	0.119				
				2		0.317	0.328	0.343		357	365	373
			49.4	1	4	0.264	0.279	0.287	4	267	282	295
						0.109	0.114	0.127				
				2		0.282	0.295	0.305		263	278	292
13	85.07.09	13136	6.0	1	4	0.343	0.356	0.384	4	468	476	487
						0.122	0.137	0.165				
				2		0.358	0.376	0.409		459	468	472
			12.9	1	4	0.323	0.338	0.358	4	410	414	418
						0.135	0.147	0.157				
				2		0.335	0.361	0.376		401	406	411
			49.2	1	4	0.297	0.305	0.317	4	312	319	324
						0.112	0.122	0.135				
				2		0.310	0.333	0.351		309	323	328
14A	85.07.09	13236	6.0	1	4	0.351	0.363	0.376	4	484	506	540
						0.122	0.132	0.142				
				2		0.366	0.373	0.384		455	486	503
			13.0	1	3	0.343	0.371	0.394	3	452	459	466
						0.132	0.147	0.170				
				2		0.358	0.391	0.424		434	436	441
			48.4	1	3	0.302	0.312	0.317	3	325	336	342
						0.119	0.124	0.137				
				2		0.305	0.330	0.366		318	329	338

Table 7.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 7, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.07.09	14064	6.0	5	4	0.353	0.363	0.373	4	413	426	441
						0.112	0.119	0.127				
				6		0.384	0.386	0.391		427	440	454
			12.9	5	4	0.345	0.348	0.353	4	370	376	382
						0.112	0.119	0.130				
				6		0.368	0.373	0.384		378	384	389
			49.4	5	4	0.295	0.307	0.328	4	267	274	280
						0.104	0.119	0.137				
				6		0.320	0.335	0.358		279	287	293
8A	85.07.09	22127	5.8	5	4	0.384	0.389	0.394	4	387	396	413
						0.150	0.157	0.170				
				6		0.417	0.427	0.434		397	406	419
			12.9	5	4	0.361	0.378	0.386	4	350	354	362
						0.137	0.150	0.165				
				6		0.399	0.409	0.424		362	366	370
			51.0	5	4	0.343	0.345	0.351	4	253	262	273
						0.135	0.157	0.168				
				6		0.361	0.371	0.384		276	281	287

Table 7.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 7, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
6	85.07.09	20082	5.8	6	5	0.269	0.282	0.302	5	245	251	256
						0.160	0.170	0.183				
				7		0.295	0.306	0.320		218	223	228
						0.168	0.183	0.198				
				8		0.295	0.306	0.312		243	248	252
			12.7	6	4	0.262	0.274	0.287	4	211	215	218
						0.168	0.175	0.183				
				7		0.297	0.302	0.310		184	188	191
						0.175	0.183	0.198				
				8		0.290	0.295	0.305		210	214	218
			48.6	6	4	0.234	0.241	0.249	4	142	147	154
						0.165	0.170	0.178				
				7		0.254	0.264	0.269		110	124	134
						0.178	0.180	0.185				
				8		0.254	0.262	0.272		134	147	157
1	85.07.08	31645	5.8	6	4	0.386	0.391	0.394	4	365	373	378
						0.246	0.251	0.269				
				7		0.414	0.422	0.429		336	347	356
						0.264	0.274	0.282				
				8		0.406	0.417	0.424		350	359	368
			12.6	6	4	0.366	0.376	0.386	4	325	329	336
						0.246	0.254	0.262				
				7		0.414	0.417	0.422		304	309	312
						0.269	0.277	0.290				
				8		0.399	0.401	0.406		318	324	328
			52.1	6	4	0.335	0.343	0.345	4	238	246	251
						0.249	0.257	0.262				
				7		0.361	0.373	0.386		215	221	230
						0.254	0.264	0.274				
				8		0.358	0.366	0.378		235	240	243

Table 7.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 7, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
10B	85.07.09	20509	5.8	4	4	0.282	0.295	0.302	4	312	316	321
						0.102	0.107	0.109				
				5		0.317	0.325	0.335		313	319	324
						0.112	0.114	0.119				
				6		0.312	0.335	0.358		328	335	340
			12.7	4	4	0.272	0.279	0.290	3	276	280	285
						0.109	0.114	0.119				
				5		0.282	0.312	0.330		285	287	289
						0.112	0.122	0.130				
				6		0.310	0.320	0.335		304	306	308
			52.5	4	4	0.224	0.229	0.234	4	191	197	203
						0.081	0.091	0.102				
				5		0.262	0.267	0.272		199	203	207
						0.097	0.102	0.104				
				6		0.272	0.282	0.295		226	231	240
3	85.07.08	31664	6.0	4	4	0.345	0.356	0.376	4	410	414	417
						0.130	0.145	0.165				
				5		0.406	0.411	0.432		423	430	437
						0.165	0.175	0.190				
				6		0.417	0.434	0.457		438	443	450
			12.9	4	4	0.338	0.353	0.366	4	360	369	375
						0.130	0.140	0.150				
				5		0.401	0.404	0.406		381	390	398
						0.157	0.173	0.190				
				6		0.414	0.429	0.434		390	404	411
			52.1	4	5	0.282	0.297	0.305	3	260	269	277
						0.109	0.127	0.142				
				5		0.335	0.353	0.368		301	303	305
						0.137	0.152	0.157				
				6		0.345	0.368	0.384		317	321	324

SITE 8

ONTARIO

Pavement Response to Heavy Vehicles Test Site

Province: Ontario Date(s) of Installing Instrumentation: Oct-Nov. 1984

Site Location: Hwy 55 Approx. 7.5 km east QEW (St. Catharines) and approx. 1.0 km west Virgil

AADT: 4950 % Truck Vol: 6.0%

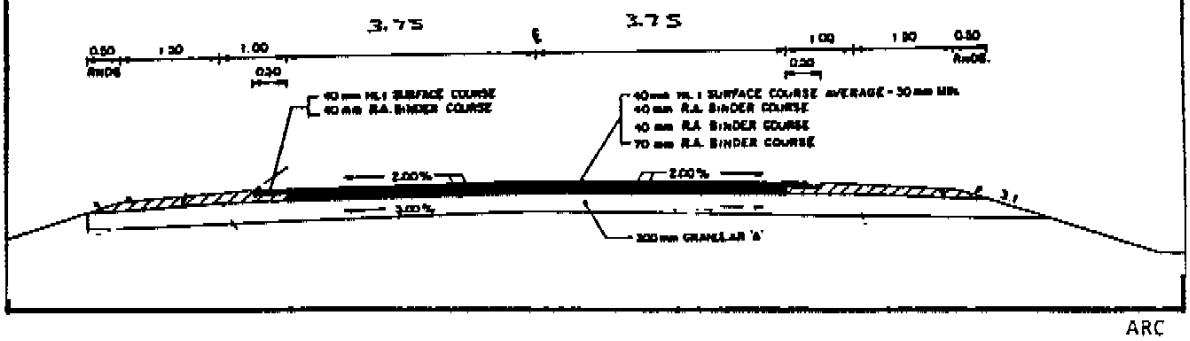
Site Description: The site is on the west bound lane of a two-lane road in a topographical flat area with depressions at major water courses. The existing pavement was removed and excavated full width and used for recycling at a 70:30 ratio. The subgrade is a clay to clay loam where the surface and subsurface drainage is poor. The ditch line approx. 1.2 m below edge of pavement.

Structure: Instr. Lane Width 3.75m. Adjacent Shoulder Width 0.5 m.

Shoulder Type Paved

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	190	150 mm RA Binder (3 lifts) 40 mm HL 3 AC 150/200 Gulf Clarkson
Base Layer(s)	Gran. A	300	Grading Chart Supplied
Subbase Layer(s)	Old Road	90 ±	
Subsoil	Clay to Clay Loam		Sa. 20 SL 34 CL 46

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: 8 - Ontario

Test Dates: 85.07.11 - 85.07.15

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Single Axle		9182	11127	
Tandem (1.2 m)		13582	22327	
Tandem (1.5 m)	(10)*	5445	to	15582
Tandem (1.8 m)		14064	22127	
Triaxle (2.4 m)		20082	31645	
Triaxle (3.7 m)		20509	31664	

*Number of tandem axle loads

Comments:

1. Two (2) deflection and three (3) strain transducers installed. No response from two (2) strain transducers, possibly due to severing of cables during shoulder construction.

2. Extremely high pavement temperatures (45°C) encountered during approximately one-third of testing program.

Table 8.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-Dual Tire Load, Site 8, Ontario

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm)				Interfacial Tensile Strains (mm/mm x 10^{-6})				Asphaltic Concrete Temperatures (C)			
			N	D min.	D avg.	D max.	N	S min.	S avg.	S max.	T1	T2	T3	T4
1	86.07.11	5.3	5	0.368	0.386	0.422	4	332	344	353	39.4	33.1	28.4	26.2
		11.1	4	0.358	0.371	0.384	3	291	302	320	40.5	34.3	29.1	26.4
		47.0	4	0.312	0.328	0.343	7	184	210	244	43.4	38.0	32.2	28.9
3	86.07.11	5.5	4	0.447	0.462	0.457	4	444	474	491	46.1	40.8	34.2	30.0
		10.8	4	0.414	0.432	0.447	6	378	394	409	47.3	42.0	35.4	30.6
		42.0	5	0.353	0.373	0.391	5	292	298	309	47.4	42.0	35.4	30.6
5	86.07.11	5.8	4	0.462	0.478	0.488	4	532	569	618	48.9	43.4	36.9	31.3
		11.4	3	0.442	0.452	0.462	4	456	466	472	49.4	44.3	37.6	32.3
		46.3	3	0.394	0.411	0.429	4	324	340	349	47.6	43.4	37.1	31.9
6	86.07.12	6.8	4	0.320	0.333	0.353	4	173	191	215	21.3	21.5	22.7	24.3
		11.1	3	0.323	0.325	0.330	3	192	211	218	28.9	26.1	24.9	25.4
		45.9	4	0.264	0.297	0.328	5	153	160	169	31.1	28.1	26.1	25.8
8A	86.07.12	6.6	4	0.358	0.376	0.401	4	293	305	321	39.0	34.0	29.1	27.3
		11.3	4	0.366	0.384	0.399	4	268	280	288	39.1	34.4	30.2	27.3
		48.0	4	0.295	0.312	0.358	4	184	202	211	39.4	35.0	31.5	27.4
10B	86.07.15	5.3	3	0.330	0.340	0.358	3	263	268	271	25.7	25.3	25.2	25.5
		11.1	5	0.269	0.302	0.323	5	210	216	223	25.8	25.5	25.2	25.6
		46.0	4	0.257	0.279	0.302	4	151	158	167	26.0	25.7	25.4	25.6
11	86.07.15	6.4	4	0.305	0.330	0.345	4	239	250	259	26.3	25.9	25.7	25.7
		11.9	4	0.297	0.305	0.317	4	214	221	228	26.5	25.9	25.7	25.7
		45.5	3	0.257	0.264	0.272	3	165	165	165	26.6	25.9	25.6	25.6
12	86.07.15	6.4	3	0.335	0.345	0.353	3	256	268	281	26.6	26.0	25.6	25.5
		12.2	4	0.310	0.315	0.323	4	220	225	231	26.4	26.0	25.6	25.5
		45.1	4	0.262	0.274	0.287	4	158	161	163	26.3	25.9	25.6	25.6
13	86.07.15	5.6	3	0.366	0.371	0.376	4	275	281	288	26.5	25.9	25.7	25.6
		12.9	3	0.320	0.323	0.328	4	227	232	238	26.6	26.1	25.8	25.6
		48.9	4	0.246	0.262	0.279	4	170	172	174	26.9	26.3	25.8	25.6
14	86.07.15	5.8	4	0.353	0.371	0.378	4	280	289	295	27.5	26.5	25.9	25.7
		13.4	4	0.305	0.317	0.323	4	239	243	247	27.8	26.7	26.1	25.9
		45.5	4	0.257	0.267	0.274	4	175	176	176	27.6	26.9	26.2	25.9

Table 8.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 8, Ontario

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.07.15	9182	5.8	4	0.358	0.376	0.394	4	295	302	308
			12.7	4	0.343	0.353	0.361	4	251	252	252
			50.5	4	0.254	0.259	0.264	4	162	167	174
13	85.07.15	11127	5.8	4	0.424	0.432	0.442	4	333	335	337
			12.7	4	0.401	0.406	0.414	4	267	274	277
			49.2	4	0.317	0.320	0.323	4	183	190	198

Table 8.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 8, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.07.15	13582	5.8	6	4	0.290	0.302	0.320	4	214	218	222
						0.201	0.218	0.231				
				7		0.317	0.320	0.320		214	216	220
			12.7	6	4	0.272	0.284	0.302	4	170	176	180
						0.206	0.218	0.226				
				7		0.305	0.312	0.323		167	170	171
			48.3	6	4	0.213	0.224	0.239	4	106	114	123
						0.190	0.201	0.216				
				7		0.241	0.254	0.272		110	115	121
5	85.07.11	22327	5.8	6	4	0.617	0.627	0.632	4	629	655	675
						0.343	0.358	0.366				
				7		0.655	0.676	0.696		602	623	640
			12.7	6	4	0.584	0.607	0.622	4	545	553	560
						0.353	0.366	0.386				
				7		0.648	0.655	0.671		529	536	545
			48.9	6	3	0.483	0.498	0.505	3	358	362	370
						0.335	0.343	0.353				
				7		0.544	0.554	0.566		381	385	391

Table 8.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 8, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.07.11	10645	5.8	1	4	0.257	0.279	0.305	5	208	226	245
						0.097	0.119	0.135				
				2		0.254	0.282	0.317		190	221	242
			12.7	1	4	0.239	0.257	0.264	4	208	212	216
						0.114	0.119	0.127				
				2		0.262	0.279	0.297		210	212	214
			51.7	1	4	0.213	0.226	0.239	4	149	155	162
						0.114	0.132	0.145				
				2		0.246	0.257	0.272		147	152	157
3	85.07.11	5445	5.8	1	4	0.165	0.173	0.183	4	174	178	190
						0.064	0.071	0.074				
				2		0.160	0.178	0.198		161	178	191
			12.9	1	2	0.178	0.188	0.198	4	145	153	159
						0.081	0.084	0.086				
				2		0.178	0.196	0.213		149	158	173
			51.7	1	3	0.157	0.165	0.175	3	113	116	119
						0.081	0.091	0.097				
				2		0.150	0.163	0.178		114	117	121
5	85.07.11	15336	5.8	1	4	0.424	0.437	0.450	4	492	502	513
						0.152	0.160	0.170				
				2		0.434	0.462	0.490		483	492	504
			12.7	1	4	0.401	0.432	0.455	4	413	419	430
						0.157	0.173	0.185				
				2		0.432	0.457	0.480		413	420	433
			48.9	1	4	0.361	0.371	0.378	4	272	294	308
						0.168	0.178	0.183				
				2		0.394	0.404	0.414		280	304	322
6	85.07.12	15582	5.8	1	4	0.323	0.338	0.358	4	198	203	206
						0.183	0.196	0.213				
				2		0.353	0.363	0.373		204	208	211
			12.6	1	4	0.305	0.330	0.351	4	188	191	194
						0.183	0.198	0.216				
				2		0.335	0.361	0.373		186	190	194
			48.6	1	4	0.264	0.279	0.290	3	133	137	139
						0.178	0.188	0.193				
				2		0.305	0.315	0.323		135	142	149
8A	85.07.12	11718	5.8	1	4	0.287	0.305	0.343	4	224	236	251
						0.137	0.152	0.168				
				2		0.310	0.325	0.361		219	232	248
			12.7	1	4	0.282	0.300	0.320	4	204	207	211
						0.137	0.152	0.168				
				2		0.305	0.325	0.338		200	207	214
			49.9	1	4	0.193	0.239	0.287	4	126	141	150
						0.104	0.150	0.190				
				2		0.218	0.272	0.323		127	141	150

Table 8.4 - continued

Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 8, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.07.15	9650	5.8	1	4	0.198	0.208	0.218	4	155	161	165
						0.102	0.112	0.127				
				2		0.193	0.213	0.241		149	153	163
			12.7	1	4	0.193	0.206	0.216	4	135	138	141
						0.119	0.122	0.127				
				2		0.213	0.218	0.224		130	134	137
			49.6	1	3	0.168	0.173	0.175	4	90	92	93
						0.109	0.119	0.127				
				2		0.175	0.193	0.208		82	87	90
11	85.07.15	14582	5.8	1	4	0.295	0.300	0.310	4	228	238	248
						0.142	0.155	0.165				
				2		0.320	0.323	0.328		232	237	245
			12.7	1	4	0.282	0.295	0.305	4	191	192	194
						0.168	0.178	0.183				
				2		0.312	0.328	0.338		195	198	200
			48.3	1	3	0.216	0.224	0.239	4	131	133	135
						0.145	0.160	0.170				
				2		0.257	0.264	0.274		122	131	143
12	85.07.15	12500	5.8	1	3	0.249	0.259	0.269	4	200	202	206
						0.135	0.145	0.157				
				2		0.241	0.279	0.297		184	201	215
			12.6	1	4	0.231	0.249	0.272	4	169	171	175
						0.142	0.152	0.157				
				2		0.262	0.272	0.282		169	170	171
			48.0	1	4	0.183	0.208	0.224	4	113	116	119
						0.137	0.152	0.157				
				2		0.224	0.239	0.262		106	113	117
13	85.07.15	13136	5.8	1	4	0.279	0.295	0.317	4	222	227	235
						0.145	0.157	0.165				
				2		0.305	0.315	0.320		227	233	243
			12.7	1	4	0.264	0.274	0.282	4	182	186	191
						0.160	0.165	0.168				
				2		0.282	0.295	0.317		176	183	191
			49.2	1	4	0.198	0.229	0.264	4	126	128	131
						0.152	0.160	0.175				
				2		0.241	0.251	0.297		117	125	130
14	85.07.15	13236	5.8	1	4	0.262	0.284	0.297	4	222	230	236
						0.122	0.142	0.150				
				2		0.272	0.302	0.320		218	232	239
			12.7	1	4	0.282	0.284	0.290	4	188	191	195
						0.165	0.170	0.175				
				2		0.295	0.315	0.328		188	192	200
			50.5	1	4	0.201	0.216	0.226	4	126	130	134
						0.152	0.152	0.157				
				2		0.234	0.244	0.254		127	129	133

Table 8.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 8, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains ($mm/mm \times 10^{-6}$) N	S min.	S avg.	S max.
12	85.07.15	14064	5.8	5	4	0.274	0.295	0.310	4	231	233	236
						0.109	0.122	0.130				
				6		0.317	0.325	0.338		247	248	249
			12.6	5	4	0.264	0.274	0.290	4	187	190	192
						0.127	0.137	0.150				
				6		0.297	0.305	0.312		194	198	200
			48.0	5	4	0.208	0.213	0.216	4	108	118	123
						0.122	0.137	0.145				
				6		0.239	0.249	0.257		118	132	139
8A	85.07.12	22127	5.8	5	4	0.480	0.493	0.518	4	352	360	365
						0.190	0.201	0.208				
				6		0.528	0.533	0.546		378	391	395
			12.7	5	4	0.465	0.467	0.480	4	305	312	316
						0.185	0.198	0.206				
				6		0.490	0.508	0.518		324	329	333
			49.9	5	4	0.345	0.386	0.417	4	206	215	227
						0.145	0.186	0.218				
				6		0.384	0.427	0.457		222	230	239

Table 8.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 8, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
6	85.07.12	20082	5.8	6	4	0.295	0.315	0.338	4	167	170	173
						0.226	0.239	0.257				
				7		0.345	0.373	0.386		162	166	170
						0.249	0.264	0.272				
				8		0.353	0.373	0.391		180	186	188
			12.6	6	4	0.302	0.306	0.310	4	149	153	157
						0.234	0.244	0.264				
				7		0.351	0.361	0.373		145	147	149
						0.257	0.269	0.287				
				8		0.358	0.368	0.376		166	167	167
			48.6	6	4	0.241	0.254	0.272	3	102	106	110
						0.218	0.226	0.231				
				7		0.257	0.287	0.310		96	101	104
						0.239	0.246	0.257				
				8		0.320	0.320	0.323		115	118	122
1	85.07.11	31645	5.8	6	5	0.457	0.483	0.518	5	337	364	383
						0.302	0.317	0.343				
				7		0.526	0.546	0.577		328	363	372
						0.335	0.351	0.366				
				8		0.526	0.551	0.582		345	375	398
			12.7	6	4	0.447	0.460	0.465	4	322	327	330
						0.312	0.323	0.343				
				7		0.518	0.533	0.546		308	315	320
						0.335	0.351	0.366				
				8		0.526	0.536	0.546		333	337	340
			51.7	6	4	0.353	0.373	0.386	4	214	220	224
						0.295	0.305	0.312				
				7		0.409	0.427	0.442		195	204	214
						0.317	0.323	0.330				
				8		0.422	0.432	0.442		222	232	243

Table 8.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 8, Ontario

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.07.15	20509	5.8	4	4	0.254	0.262	0.269	4	195	200	204
						0.112	0.124	0.135				
				5		0.295	0.307	0.323		211	218	222
						0.130	0.142	0.150				
				6		0.310	0.323	0.330		224	229	232
			12.7	4	4	0.224	0.241	0.249	4	163	164	165
						0.112	0.122	0.127				
				5		0.282	0.284	0.290		170	174	175
						0.142	0.147	0.152				
				6		0.287	0.297	0.305		183	186	190
			49.6	4	4	0.152	0.185	0.208	4	100	102	105
						0.109	0.119	0.127				
				5		0.213	0.226	0.231		106	111	114
						0.114	0.132	0.137				
				6		0.216	0.234	0.254		130	132	134
3	85.07.11	31664	5.8	4	4	0.465	0.472	0.490	4	434	460	478
						0.168	0.178	0.185				
				5		0.544	0.559	0.577		487	512	528
						0.208	0.216	0.226				
				6		0.574	0.589	0.610		512	534	556
			12.9	4	4	0.424	0.447	0.472	4	385	399	413
						0.150	0.163	0.175				
				5		0.505	0.533	0.554		438	443	450
						0.183	0.203	0.216				
				6		0.533	0.561	0.592		467	472	475
			51.7	4	5	0.343	0.378	0.401	5	264	282	305
						0.135	0.155	0.168				
				5		0.429	0.447	0.472		295	309	325
						0.175	0.185	0.206				
				6		0.457	0.472	0.490		322	336	354

SITE 9

ALBERTA

Pavement Response to Heavy Vehicle Test Site

Province: Alberta **Date(s) of Installing Instrumentation:** Oct. 15-17, 1984
(Transducers only - the rest will be completed in spring).

Site Location: Hwy 21 About 75 km northeast of Calgary.

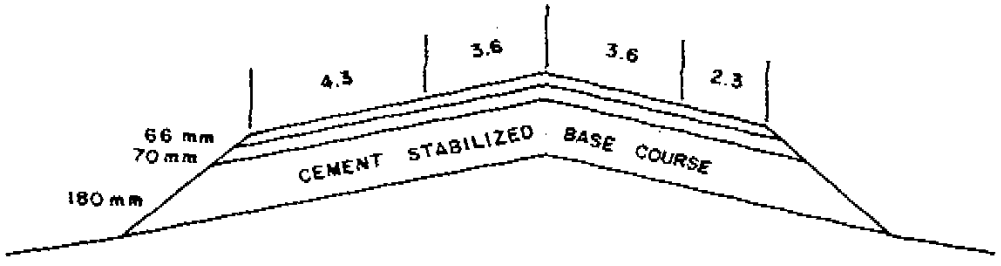
AADT: 1700 **% Truck Vol:** 11

Site Description: The Test Section is located on the S.B.L. in control section 21:14 between STA 41 + 450 to 41 + 500. The two lane highway is in a topographically low flat tangent section in an area of gently rolling terrain. The existing soil type is primarily CH:CI material with some SC.

Structure: Instr. Lane Width 3.6 m. Adjacent Shoulder Width 2.3 m.
Shoulder Type Paved

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	66	Same as granular test section.
	Recycled Asphalt Pavement	70	Same as granular test section.
Base Layer(s)	Cement Treated Base Course (Soil-Cement)	167 mm	Design = 7.0% cement content(based on dry wt. agg).Dry Density=1800 kg/m^3 at 13.1% moisture content. Ave. Const.=7.3% C.C.,Dry Density=1792kg/m^3 @12.6% M.C.Ave.compaction=98.7%of standard Proctor.
Subsoil	Clay		Same as granular test section.

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: **9 - Alberta**

Test Dates: 85.05.29 - 85.06.06

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Steering Axle		3790	5110	
Single Axle		9182	9570	11127
Tandem (1.2 m)		13582	18100	22327
Tandem (1.5 m)	(17)*	5445	to	19280
Tandem (1.8 m)		14064	18382	22127
Triaxle (2.4 m)		20082	26145	31645
Triaxle (3.7 m)		20510	26036	31664
Triaxle (4.9 m)			25836	31955

*Number of tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed and operational during testing.**

Table 9.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
1	85.05.29	7.9	2	0.536	0.584	0.632	2	149	158	166	23.4	20.1	18.4	16.9
		17.7	4	0.533	0.551	0.582	4	146	152	159	23.9	20.8	19.6	17.4
		47.2	6	0.429	0.447	0.457	6	111	121	131	24.2	24.0	20.8	17.8
2	85.05.30	8.5	3	0.551	0.566	0.605	3	138	145	151	20.0	16.9	15.9	15.2
		14.6	3	0.511	0.551	0.577	4	129	138	145	23.6	19.6	19.0	16.6
		43.1	4	0.432	0.452	0.470	4	106	110	114	24.9	21.0	19.0	16.6
3	85.05.30	8.2	3	0.607	0.627	0.640	3	224	230	237	27.0	24.1	22.5	19.6
		11.9	2	0.615	0.632	0.650	2	204	218	234	29.2	24.9	22.9	19.7
		48.1	4	0.422	0.455	0.483	4	113	120	129	31.2	26.0	23.7	20.4
4	85.05.30	8.7	4	0.610	0.640	0.706	3	269	275	284	32.0	27.0	24.6	21.2
		12.7	4	0.546	0.584	0.643	3	253	266	273	33.0	27.8	25.5	21.9
		48.0	5	0.419	0.457	0.513	3	159	162	178	29.8	27.8	26.9	22.4
5	85.05.31	8.4	4	0.513	0.559	0.592	4	165	173	184	16.0	15.4	15.6	16.1
		14.0	4	0.533	0.566	0.584	4	156	163	170	16.8	16.1	16.2	16.4
		48.0	5	0.427	0.444	0.465	5	108	112	117	17.7	16.9	16.7	16.8
6	85.05.31	8.4	3	0.599	0.605	0.605	3	167	179	191	18.8	17.4	16.9	16.5
		13.8	3	0.538	0.564	0.577	3	163	165	169	18.3	17.3	16.9	16.5
		49.9	3	0.417	0.447	0.470	3	108	113	117	18.2	17.4	17.2	16.8
7	85.06.03	5.8	4	0.544	0.554	0.561	3	224	229	235	27.6	22.2	20.6	18.6
		13.5	4	0.480	0.516	0.536	4	170	183	198	27.6	22.8	21.2	18.2
		47.2	11	0.361	0.386	0.432	10	106	117	130	30.7	25.3	23.8	20.2
8A	85.06.04	5.8	4	0.551	0.569	0.615	4	183	195	202	17.6	15.7	15.9	16.9
		13.5	4	0.498	0.526	0.569	4	147	158	166	20.0	17.3	17.1	17.2
		47.0	3	0.432	0.455	0.470	4	108	111	117	22.1	18.7	18.1	17.5
8B	85.06.04	5.8	3	0.594	0.635	0.678	3	219	220	222	24.6	20.6	19.4	18.2
		13.5	6	0.483	0.538	0.630	6	176	187	199	26.0	21.8	20.8	18.6
		48.8	5	0.384	0.417	0.455	5	108	115	126	28.4	23.7	22.3	19.9
9	85.06.04	5.8	3	0.574	0.582	0.584	3	334	336	338	34.4	28.2	26.0	22.2
9	85.06.05	5.8	4	0.528	0.533	0.538	5	191	200	208	20.5	19.3	19.0	19.7
		14.0	3	0.450	0.478	0.498	4	166	169	174	22.7	20.9	20.2	20.2
		48.4	2	0.391	0.396	0.401	4	104	109	114	24.5	21.8	20.9	20.4
10A	85.06.05	5.8	4	0.528	0.544	0.544	4	231	241	245	27.2	23.2	22.0	20.5
		13.5	4	0.495	0.533	0.602	4	190	198	204	27.6	24.0	22.7	21.0
		47.2	3	0.401	0.439	0.462	3	120	129	135	26.8	24.3	23.3	21.5
10B	85.06.05	5.8	3	0.483	0.523	0.551	3	301	311	316	29.9	26.4	25.1	22.7
		14.5	3	0.470	0.485	0.511	3	244	247	249	30.8	27.5	26.1	23.5
		50.5	3	0.401	0.427	0.480	3	134	146	153	31.4	28.0	26.5	23.9
11	85.06.05	5.8	3	0.528	0.544	0.566	2	334	338	342	33.1	28.5	26.8	23.9
		13.7	4	0.478	0.490	0.518	4	268	275	285	34.0	29.2	27.5	24.2
		50.2	3	0.409	0.429	0.439	3	151	166	191	35.7	30.6	28.6	25.1
12	85.06.05	5.8	4	0.470	0.526	0.538	4	382	399	411	34.6	31.0	29.5	26.0
		13.4	3	0.498	0.544	0.574	3	301	303	304	30.7	29.8	28.9	25.5
		54.2	3	0.361	0.381	0.399	3	159	169	173	27.7	28.0	28.0	25.2
		82.2	2	0.384	0.389	0.394	2	127	127	127	27.6	27.1	27.5	25.5

Table 9.1 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
13	85.06.06	5.8	3	0.546	0.559	0.569	3	193	195	198	15.8	15.5	15.6	17.0
		13.5	4	0.465	0.511	0.533	4	146	155	161	16.8	16.3	16.1	17.1
		50.1	3	0.399	0.432	0.450	4	106	111	115	16.9	16.3	16.2	17.0
14A	85.06.06	5.8	3	0.561	0.574	0.599	3	186	196	206	18.3	16.8	17.0	17.4
		14.0	4	0.544	0.554	0.561	4	165	170	174	20.1	18.2	17.5	18.1
		51.2	2	0.465	0.478	0.488	4	109	110	111	22.1	19.8	18.8	18.6
14B	85.06.06	5.8	5	0.610	0.635	0.663	3	243	245	249	28.3	23.9	21.9	20.0
		15.0	3	0.508	0.554	0.617	3	183	193	201	29.9	25.2	23.1	20.7
		50.1	5	0.424	0.460	0.490	6	131	135	141	31.4	26.4	24.1	21.3
15A	85.06.06	5.8	4	0.546	0.564	0.577	3	394	403	421	35.5	30.4	28.7	24.0
		13.8	3	0.521	0.528	0.538	3	298	306	316	36.2	30.9	29.2	24.9
		52.0	2	0.409	0.452	0.495	2	169	184	195	36.9	31.6	29.8	25.4
15B	85.06.06	5.6	5	0.569	0.594	0.615	2	332	341	350	34.6	28.5	26.2	22.4
		14.2	3	0.566	0.582	0.594	3	272	292	295	35.3	29.6	27.1	23.0
		52.3	3	0.439	0.460	0.470	3	143	160	171	35.1	30.2	28.1	23.8

Table 9.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Steering Axle, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14B	85.06.06	3790	6.0	6	0.345	0.361	0.386	4	180	199	219
			12.7	3	0.361	0.406	0.498	2	183	187	191
			46.7	3	0.254	0.272	0.290	2	121	122	122
15B	85.06.06	5110	5.8	3	0.478	0.511	0.561	2	358	370	382
			12.6	3	0.429	0.450	0.480	2	308	310	312
			49.2	3	0.323	0.336	0.391	3	155	170	182

Table 9.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.06.06	9182	5.8	3	0.638	0.650	0.673	3	203	206	208
			12.6	3	0.592	0.620	0.650	3	171	175	178
			48.3	3	0.498	0.511	0.521	3	125	130	141
15A	85.06.06	9570	6.0	3	0.688	0.704	0.714	4	426	431	438
			12.6	3	0.719	0.734	0.762	2	351	353	355
			51.2	4	0.569	0.597	0.622	3	180	189	203
13	85.06.06	11127	5.8	3	0.726	0.762	0.800	3	210	216	220
			12.7	3	0.686	0.688	0.688	4	182	186	188
			46.7	4	0.587	0.599	0.632	4	137	147	157

Table 9.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.06.05	13582	5.8	6	4	0.577	0.587	0.602	3	352	356	358
						0.411	0.419	0.429				
				7		0.592	0.606	0.632		285	288	292
			12.7	6	4	0.523	0.559	0.577	4	268	273	279
						0.401	0.419	0.429				
				7		0.569	0.587	0.607		214	220	228
			45.4	6	3	0.478	0.490	0.503	3	146	158	173
						0.348	0.376	0.401				
				7		0.505	0.513	0.523		118	131	149
9	85.06.04	18100	5.8	6	3	0.747	0.762	0.792	3	341	347	357
						0.554	0.564	0.577				
				7		0.767	0.787	0.808		283	288	292
9	85.06.05	18100	5.8	6	3	0.681	0.737	0.800	3	207	213	219
						0.538	0.572	0.599				
				7		0.726	0.752	0.767		161	171	179
			12.7	6	4	0.663	0.673	0.688	3	158	165	170
						0.521	0.541	0.574				
				7		0.719	0.726	0.742		142	144	146
			45.7	6	4	0.607	0.638	0.671	4	120	132	143
						0.488	0.493	0.505				
				7		0.648	0.653	0.663		92	100	105
5	85.05.31	22327	5.8	6	3	0.889	0.904	0.919	4	223	225	230
						0.665	0.709	0.721				
				7		0.968	0.983	0.993		186	189	193
			12.7	6	4	0.856	0.874	0.912	4	190	193	194
						0.615	0.668	0.683				
				7		0.937	0.945	0.907		155	161	164
			48.1	6	2	0.795	0.805	0.818	3	141	151	157
						0.671	0.701	0.729				
				7		0.864	0.864	0.864		127	130	131

Table 9.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.05.29	10645	5.8	1	3	0.483	0.549	0.594	3	153	166	186
						0.226	0.239	0.251				
				2		0.528	0.569	0.594		147	155	167
			12.6	1	4	0.470	0.500	0.544	3	147	153	157
						0.218	0.236	0.251				
				2		0.472	0.533	0.610		142	145	150
			47.2	1	3	0.439	0.460	0.490	4	102	113	123
						0.211	0.221	0.226				
				2		0.457	0.495	0.533		98	111	119
2	85.05.30	10345	5.8	1	3	0.422	0.467	0.498	3	122	130	135
						0.193	0.208	0.224				
				2		0.488	0.503	0.521		121	127	134
			12.6	1	4	0.384	0.434	0.455	3	120	128	138
						0.193	0.216	0.229				
				2		0.457	0.478	0.498		111	119	129
			48.8	1	4	0.394	0.409	0.434	6	84	96	106
						0.185	0.198	0.208				
				2		0.401	0.437	0.462		78	87	97
3	85.05.30	5445	5.8	1	3	0.290	0.333	0.368	3	127	138	144
						0.127	0.132	0.137				
				2		0.302	0.333	0.351		110	124	136
			12.7	1	2	0.310	0.328	0.345	2	101	112	122
						0.119	0.124	0.127				
				2		0.297	0.310	0.320		95	102	109
			48.8	1	3	0.297	0.312	0.323	3	72	74	77
						0.114	0.124	0.135				
				2		0.269	0.297	0.320		64	66	69
4	85.05.30	6682	5.8	1	3	0.419	0.434	0.455	3	237	241	245
						0.155	0.178	0.213				
				2		0.414	0.437	0.462		190	196	205
			12.7	1	2	0.386	0.401	0.417	3	174	184	190
						0.155	0.163	0.175				
				2		0.399	0.409	0.417		159	161	163
			47.5	1	3	0.312	0.361	0.424	3	99	107	117
						0.119	0.152	0.175				
				2		0.330	0.368	0.422		78	101	123
5	85.05.31	15336	5.8	1	4	0.582	0.594	0.607	4	184	198	204
						0.274	0.310	0.335				
				2		0.630	0.655	0.686		184	190	192
			12.7	1	4	0.561	0.574	0.592	4	156	162	167
						0.323	0.351	0.368				
				2		0.615	0.638	0.650		148	152	156
			48.1	1	3	0.508	0.528	0.538	3	122	128	134
						0.317	0.346	0.373				
				2		0.584	0.594	0.610		117	119	121

Table 9.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.05.31	15582	5.8	1	2	0.678	0.683	0.688	3	212	218	223
						0.378	0.399	0.417				
				2		0.711	0.724	0.737		183	194	200
			12.6	1	3	0.622	0.630	0.643	3	167	178	184
						0.368	0.386	0.409				
				2		0.620	0.676	0.704		169	170	170
			47.8	1	4	0.556	0.569	0.579	4	125	131	140
						0.330	0.343	0.361				
				2		0.610	0.630	0.671		120	126	129
7	85.06.03	9109	5.8	1	3	0.401	0.419	0.439	2	188	190	191
						0.216	0.221	0.234				
				2		0.394	0.422	0.439		167	169	171
			12.6	1	3	0.376	0.389	0.406	4	126	140	156
						0.190	0.206	0.216				
				2		0.378	0.414	0.465		123	131	138
			47.0	1	6	0.305	0.325	0.351	6	92	97	109
						0.185	0.201	0.216				
				2		0.323	0.356	0.376		77	91	105
8A	85.06.04	11718	5.8	1	4	0.465	0.485	0.505	4	163	170	178
						0.226	0.262	0.282				
				2		0.465	0.503	0.523		147	151	158
			12.7	1	3	0.406	0.442	0.480	4	128	136	143
						0.216	0.246	0.277				
				2		0.442	0.470	0.488		126	132	137
			47.2	1	3	0.399	0.419	0.447	3	88	102	111
						0.231	0.257	0.292				
				2		0.401	0.434	0.472		81	87	93
8B	85.06.04	8209	5.8	1	3	0.381	0.394	0.401	3	154	163	167
						0.208	0.211	0.213				
				2		0.384	0.396	0.409		137	143	147
			12.7	1	4	0.351	0.384	0.432	5	110	123	138
						0.193	0.216	0.264				
				2		0.386	0.404	0.432		104	114	119
			43.5	1	3	0.282	0.297	0.317	5	80	89	96
						0.142	0.175	0.201				
				2		0.287	0.317	0.353		76	82	92
9	85.06.04	14936	5.8	1	3	0.561	0.589	0.622	3	337	354	371
						0.358	0.371	0.378				
				2		0.617	0.638	0.640		304	311	321

Table 9.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
9	85.06.05	14936	5.8	1	3	0.546	0.561	0.587	4	204	208	215
						0.323	0.343	0.411				
				2		0.523	0.584	0.653		182	187	191
			12.7	1	3	0.518	0.528	0.536	4	154	167	180
						0.351	0.368	0.406				
				2		0.561	0.587	0.617		153	162	178
			45.7	1	4	0.503	0.513	0.521	4	124	127	129
						0.328	0.335	0.351				
				2		0.455	0.500	0.536		108	112	122
10A	85.06.05	11827	5.8	1	3	0.447	0.470	0.480	3	206	213	224
						0.287	0.290	0.295				
				2		0.470	0.508	0.528		182	192	203
			12.7	1	4	0.432	0.442	0.450	4	160	172	187
						0.272	0.290	0.315				
				2		0.470	0.493	0.546		158	164	174
			45.1	1	3	0.338	0.386	0.422	4	108	115	125
						0.234	0.267	0.297				
				2		0.361	0.434	0.511		94	104	120
10B	85.06.05	9555	5.8	1	2	0.401	0.414	0.424	3	252	267	284
						0.236	0.251	0.267				
				2		0.409	0.419	0.427		210	221	226
			12.7	1	2	0.406	0.414	0.424	3	208	217	227
						0.229	0.239	0.246				
				2		0.409	0.429	0.447		166	171	176
			44.6	1	4	0.317	0.335	0.353	4	114	119	123
						0.216	0.221	0.241				
				2		0.338	0.363	0.376		94	105	114
11	85.06.05	14582	6.0	1	4	0.538	0.554	0.587	4	337	351	370
						0.351	0.371	0.391				
				2		0.559	0.584	0.607		276	300	316
			12.7	1	3	0.546	0.559	0.577	4	297	302	309
						0.353	0.368	0.381				
				2		0.577	0.594	0.625		251	258	264
			45.4	1	3	0.450	0.490	0.528	3	176	189	199
						0.307	0.340	0.361				
				2		0.523	0.544	0.569		163	168	173

Table 9.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.06.05	12500	5.8	1	3	0.472	0.488	0.505	2	390	398	406
						0.282	0.297	0.310				
				2		0.505	0.518	0.538		338	348	357
			12.7	1	3	0.478	0.493	0.521	4	284	305	328
						0.295	0.307	0.317				
				2		0.495	0.523	0.554		241	256	286
			46.8	1	4	0.366	0.378	0.394	4	153	166	183
						0.211	0.239	0.269				
			72.2	1	3	0.287	0.317	0.353	3	119	124	131
						0.170	0.213	0.239				
				2		0.340	0.351	0.361		94	112	126
13	85.06.06	13136	5.8	1	2	0.546	0.559	0.574	3	165	173	184
						0.312	0.330	0.351				
				2		0.592	0.597	0.599		144	159	167
			12.7	1	3	0.518	0.528	0.536	4	146	149	152
						0.295	0.312	0.338				
				2		0.528	0.554	0.569		133	138	141
			46.7	1	4	0.378	0.424	0.447	4	100	105	109
						0.241	0.262	0.282				
				2		0.439	0.462	0.472		92	98	101
14A	85.06.06	13236	5.8	1	3	0.498	0.541	0.594	3	184	189	194
						0.295	0.307	0.323				
				2		0.528	0.569	0.587		171	174	176
			12.6	1	3	0.488	0.513	0.536	3	154	155	158
						0.279	0.315	0.358				
				2		0.528	0.556	0.579		143	144	146
			48.8	1	2	0.457	0.465	0.470	3	106	113	122
						0.262	0.279	0.295				
				2		0.505	0.505	0.505		92	97	108
15A	85.06.06	19200	5.8	1	3	0.726	0.749	0.767	3	443	458	484
						0.472	0.503	0.528				
				2		0.803	0.818	0.841		364	378	392
			12.6	1	3	0.726	0.739	0.759	3	379	385	392
						0.488	0.511	0.521				
				2		0.792	0.810	0.841		317	322	327
			51.2	1	4	0.632	0.650	0.665	4	219	224	230
						0.424	0.450	0.480				
				2		0.673	0.706	0.729		182	205	225

Table 9.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains ($mm/mm \times 10^{-6}$) N	S min.	S avg.	S max.
12	85.06.05	14064	5.8	5	3	0.564	0.559	0.566	3	388	399	406
						0.302	0.312	0.320				
				6		0.564	0.574	0.584		356	363	375
			12.7	5	4	0.472	0.503	0.521	4	290	303	317
						0.282	0.300	0.317				
				6		0.511	0.523	0.546		268	275	288
			46.8	5	3	0.406	0.427	0.439	3	173	174	175
						0.201	0.241	0.274				
				6		0.417	0.439	0.452		141	143	147
			89.6	5	3	0.323	0.363	0.414	2	116	120	123
						0.183	0.201	0.211				
				6		0.312	0.345	0.378		111	118	125
10A	85.06.05	18382	5.8	5	3	0.660	0.678	0.693	3	244	252	257
						0.376	0.404	0.434				
				6		0.698	0.711	0.739		227	232	238
			12.7	5	4	0.602	0.638	0.655	4	192	202	211
						0.366	0.389	0.450				
				6		0.643	0.660	0.678		195	199	202
			45.1	5	4	0.521	0.533	0.551	4	142	151	160
						0.315	0.330	0.351				
				6		0.569	0.579	0.584		131	142	151
8A	85.06.04	22127	5.8	5	3	0.770	0.787	0.800	4	207	213	223
						0.442	0.493	0.574				
				6		0.810	0.828	0.846		195	204	208
			12.7	5	3	0.714	0.762	0.803	4	176	179	182
						0.419	0.452	0.495				
				6		0.767	0.790	0.800		175	181	188
			47.2	5	3	0.640	0.658	0.678	3	150	154	156
						0.399	0.411	0.417				
				6		0.704	0.719	0.744		142	149	157

Table 9.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.05.31	20082	5.8	6	2	0.660	0.668	0.673	3	182	188	195
						0.478	0.493	0.508				
				7		0.737	0.739	0.739		149	157	161
						0.490	0.503	0.513				
				8		0.726	0.729	0.732		145	147	149
			12.6	6	3	0.632	0.663	0.706	3	137	146	146
						0.434	0.437	0.439				
				7		0.714	0.719	0.721		117	119	122
						0.457	0.467	0.472				
				8		0.671	0.683	0.698		114	119	122
			47.8	6	4	0.521	0.536	0.556	4	97	103	106
						0.371	0.399	0.417				
				7		0.582	0.612	0.643		73	76	80
						0.384	0.401	0.414				
				8		0.561	0.579	0.599		76	83	88
2	85.05.30	26145	5.8	6	3	0.726	0.737	0.747	3	170	176	182
						0.488	0.503	0.523				
				7		0.833	0.843	0.859		143	148	154
						0.495	0.498	0.503				
				8		0.752	0.787	0.810		145	148	152
			12.6	6	4	0.648	0.701	0.729	4	150	163	179
						0.475	0.508	0.551				
				7		0.747	0.795	0.843		130	135	150
						0.483	0.508	0.569				
				8		0.759	0.785	0.813		130	136	148
			48.8	6	4	0.544	0.597	0.632	4	111	118	121
						0.442	0.457	0.493				
				7		0.663	0.704	0.742		89	93	98
						0.439	0.465	0.518				
				8		0.602	0.648	0.673		88	95	104
1	85.05.29	31645	5.8	6	4	0.810	0.866	0.960	4	162	176	191
						0.592	0.650	0.693				
				7		0.968	1.006	1.046		153	163	172
						0.617	0.668	0.711				
				8		0.904	0.945	1.001		153	159	166
			12.6	6	4	0.792	0.838	0.859	4	162	181	202
						0.640	0.650	0.688				
				7		0.904	0.970	1.021		139	161	178
						0.638	0.671	0.704				
				8		0.859	0.919	1.011		147	157	171
			47.2	6	4	0.762	0.780	0.823	4	143	148	156
						0.513	0.551	0.577				
				7		0.851	0.892	0.927		115	123	132
						0.538	0.569	0.587				
				8		0.818	0.846	0.874		115	128	133

Table 9.8
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
108	85.06.05	20509	5.8	4	4	0.495	0.528	0.582	4	277	289	307
						0.269	0.295	0.312				
				5		0.574	0.594	0.625		264	275	283
						0.320	0.343	0.366				
				6		0.559	0.584	0.610		232	256	268
			12.7	4	3	0.488	0.511	0.544	3	212	220	227
						0.279	0.290	0.297				
				5		0.546	0.549	0.551		179	196	211
						0.312	0.320	0.328				
				6		0.538	0.546	0.559		187	190	191
			44.6	4	4	0.394	0.419	0.450	4	123	130	140
						0.234	0.246	0.254				
				5		0.462	0.488	0.523		132	141	150
						0.257	0.279	0.297				
				6		0.429	0.472	0.511		113	127	148
7	85.06.03	26036	5.8	4	4	0.607	0.625	0.638	3	216	218	221
						0.328	0.351	0.409				
				5		0.678	0.726	0.711		203	214	221
						0.366	0.389	0.424				
				6		0.714	0.732	0.747		206	209	211
			12.6	4	4	0.554	0.589	0.625	4	157	168	183
						0.338	0.345	0.353				
				5		0.643	0.668	0.693		162	169	175
						0.358	0.384	0.406				
				6		0.673	0.693	0.711		165	170	175
			47.0	4	5	0.465	0.493	0.544	6	106	124	143
						0.302	0.315	0.330				
				5		0.546	0.572	0.602		127	131	149
						0.323	0.346	0.376				
				6		0.577	0.607	0.640		122	134	143
3	85.05.20	31664	5.8	4	4	0.754	0.792	0.826	3	260	269	281
						0.366	0.409	0.480				
				5		0.864	0.892	0.927		270	271	272
						0.429	0.460	0.508				
				6		0.658	0.919	0.937		122	134	143
			12.7	4	3	0.719	0.734	0.742	4	223	230	236
						0.353	0.366	0.358				
				5		0.803	0.843	0.871		221	228	236
						0.391	0.406	0.434				
				6		0.866	0.879	0.889		208	216	223
			48.8	4	4	0.640	0.668	0.704	5	141	145	151
						0.343	0.356	0.368				
				5		0.759	0.772	0.792		158	166	174
						0.401	0.411	0.422				
				6		0.815	0.823	0.831		160	167	178

Table 9.9
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (4.9 m Spacing)-Dual Tire Loads, Site 9, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
8B	85.06.04	25836	5.8	3	3	0.599	0.602	0.607	3	206	212	222
						0.190	0.196	0.198				
				5		0.688	0.698	0.711		196	204	211
						0.358	0.368	0.373				
				6		0.729	0.754	0.792		194	201	208
			12.7	3	4	0.559	0.612	0.678	5	163	174	188
						0.201	0.216	0.226				
				5		0.643	0.658	0.681		162	169	179
						0.345	0.353	0.368				
				6		0.665	0.688	0.732		163	171	179
			43.5	3	4	0.480	0.513	0.536	5	133	141	154
						0.150	0.190	0.246				
				5		0.546	0.579	0.617		134	142	149
						0.338	0.353	0.366				
				6		0.602	0.625	0.638		127	139	150
4	85.05.30	31955	5.8	3	4	0.752	0.782	0.808	4	335	351	370
						0.198	0.257	0.338				
				5		0.871	0.909	0.922		309	327	346
						0.434	0.483	0.533				
				6		0.935	0.952	0.970		295	306	313
			12.7	3	3	0.737	0.759	0.798	3	297	300	304
						0.175	0.231	0.328				
				5		0.826	0.861	0.881		274	277	281
						0.414	0.429	0.442				
				6		0.886	0.897	0.914		274	278	283
			47.5	3	5	0.566	0.615	0.650	4	179	192	208
						0.168	0.188	0.216				
				5		0.683	0.744	0.782		164	189	256
						0.394	0.424	0.465				
				6		0.759	0.808	0.851		180	206	268

SITE 10

ALBERTA

Pavement Response to Heavy Vehicle Test Site

Province: Alberta **Date(s) of Installing Instrumentation:** Oct. 15-19, 1984

(*Transducers only-the rest will be completed in spring*).

Site Location: Hwy 21 About 75 km northeast of Calgary.

AADT: 1700 **% Truck Vol:** 11

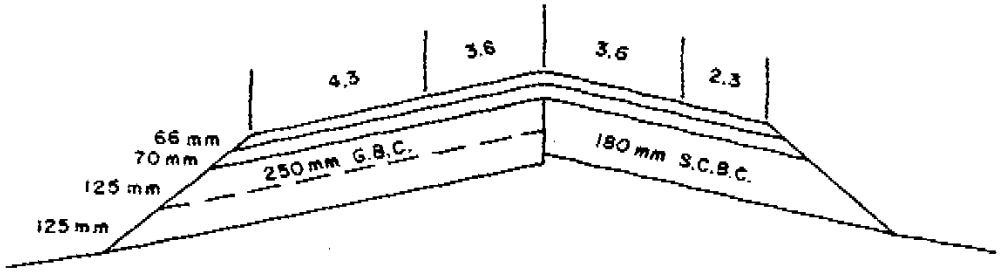
Site Description: The test section is located on the S.B.L. in control section 21:14 between STA 41 + 400 to 41 + 450. The two lane highway is in a topographically low flat tangent section in an area of gently rolling terrain. The existing soil type is CH:CI material with some SC.

Structure: Instr. Lane Width 3.6m. **Adjacent Shoulder Width** 2.3 m.

Shoulder Type Paved

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	66 mm	MST Design #1939 BR1 AC 200-300A Ave Compaction=97.9% of 75 Blow Marshall
	Recycled Asphalt Pavement	70 mm	70/30 R/V Ratio with SC 3000 Asphalt MST Design #1939B Ave. Compaction=92 0% of 75 Blow Marshall Asphalt content was 5.7%.based on dry wt. agg. 0.4% above Design.
Base Layer(s)	Granular	250 mm	Des. 1-16 Granular Waterbound Design Dry Density=2180 kg/m^3 @M.C. =7.6% Actual Ave. Dry Density=2080 kg/m^3@ M.C.=5.7% Ave. Compaction=95.6% of Standard Proctor
Subsoil	Clay		CI, LL=40.2, PI=24.3 Max. Dry Density=1737 kg/m^3 Optimum moisture=17.4%,Actual Ave. M.C.=13.8% Ave. % compaction=100% + of Standard Proctor.

Cross-Section



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: **10 - Alberta**

Test Dates: 85.05.29 - 85.06.06

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Steering Axle		3790	5110	
Single Axle		9182	9570	11127
Tandem (1.2 m)		13582	18100	22327
Tandem (1.5 m)	(17)*	5445	to	19280
Tandem (1.8 m)		14064	18382	22127
Triaxle (2.4 m)		20082	26145	31645
Triaxle (3.7 m)		20510	26036	31664
Triaxle (4.9 m)			25836	31955

*Number of tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed and operational during testing.**

Table 10.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
1	85.05.29	7.9	4	0.665	0.706	0.737	3	281	287	296	23.4	20.1	18.4	16.9
		17.7	4	0.632	0.665	0.704	3	252	255	259	23.9	20.8	19.6	17.4
		47.2	7	0.518	0.574	0.622	7	200	209	219	24.2	24.0	20.8	17.8
2	85.05.30	8.5	4	0.577	0.605	0.627	3	199	215	238	20.0	16.9	15.9	15.2
		14.6	3	0.622	0.658	0.693	2	240	243	247	23.6	19.6	19.0	16.6
		43.1	5	0.538	0.564	0.577	5	184	190	204	24.9	21.0	19.0	16.6
3	85.05.30	8.2	4	0.711	0.749	0.767	4	281	299	309	27.0	24.2	22.5	19.6
		11.9	3	0.688	0.724	0.759	2	297	308	318	29.2	24.9	22.9	19.7
		48.1	5	0.602	0.615	0.630	3	230	239	245	31.2	26.0	23.7	20.4
4	85.05.30	8.7	3	0.800	0.805	0.808	3	310	317	328	32.0	27.0	24.6	21.2
		12.7	4	0.696	0.721	0.747	2	348	351	353	33.0	27.8	25.5	21.9
		48.0	6	0.610	0.640	0.678	4	259	279	296	29.8	27.8	26.9	22.4
5	85.05.31	8.4	2	0.640	0.665	0.688	3	238	245	252	16.0	15.4	15.6	16.1
		14.0	4	0.607	0.615	0.638	3	223	231	247	16.8	16.1	16.2	16.4
		48.0	5	0.511	0.536	0.559	6	159	173	187	17.7	16.9	16.7	16.8
6	85.05.31	8.4	3	0.635	0.650	0.665	3	255	265	279	18.8	17.4	16.9	16.5
		13.8	3	0.622	0.635	0.648	3	235	243	253	18.3	17.3	16.9	16.5
		49.9	3	0.483	0.511	0.538	3	175	179	187	18.2	17.4	17.2	16.8
7	85.06.03	5.8	3	0.673	0.683	0.693	3	287	294	308	27.6	22.2	20.6	18.6
		13.5	4	0.577	0.599	0.615	3	296	295	309	27.6	22.8	21.2	18.2
		47.2	3	0.546	0.584	0.643	5	220	227	235	30.7	25.3	23.8	20.2
8A	85.06.04	5.8	3	0.617	0.648	0.678	4	263	275	287	17.6	15.7	15.9	16.9
		13.5	4	0.544	0.559	0.574	4	220	225	230	20.0	17.3	17.1	17.2
		47.0	3	0.490	0.531	0.587	3	169	180	187	22.1	18.7	18.1	17.5
8B	85.06.04	5.8	3	0.594	0.617	0.630	2	288	290	292	24.6	20.6	19.4	18.2
		13.5	6	0.594	0.625	0.696	4	242	272	284	26.0	21.8	20.8	18.6
		48.8	5	0.490	0.531	0.554	4	171	199	228	28.4	23.7	22.3	19.9
9	85.06.04	5.8	3	0.658	0.693	0.734	3	323	338	345	34.4	28.2	26.0	22.2
9	85.06.05	5.8	5	0.594	0.625	0.706	5	261	280	287	20.5	19.3	19.0	19.7
		14.0	4	0.536	0.584	0.615	3	248	254	257	22.7	20.9	20.2	20.2
		48.4	4	0.450	0.513	0.577	4	173	189	211	24.5	21.8	20.9	20.3
10A	85.06.05	5.8	4	0.650	0.668	0.686	4	276	288	298	27.2	23.2	22.0	20.5
		13.5	4	0.579	0.615	0.648	3	282	291	298	27.6	24.0	22.7	21.0
		47.2	4	0.488	0.523	0.564	4	230	237	243	26.8	24.3	23.3	21.5
10B	85.06.05	5.8	3	0.678	0.711	0.770	3	308	311	314	29.9	26.4	25.1	22.7
		14.5	3	0.625	0.660	0.711	3	275	285	304	30.8	27.5	26.1	23.5
		49.2	4	0.518	0.546	0.577	2	252	262	272	31.4	28.0	26.5	23.9
11	85.06.05	6.0	5	0.688	0.734	0.767	5	328	334	342	33.1	28.5	26.8	23.9
		13.7	4	0.632	0.691	0.734	4	293	302	310	34.0	29.2	27.5	24.2
		50.2	4	0.554	0.599	0.630	4	257	269	276	35.7	30.6	28.6	25.1
12	85.06.05	5.8	4	0.686	0.711	0.737	4	362	369	372	34.6	31.0	29.5	25.0
		13.4	3	0.625	0.655	0.673	3	288	324	330	30.7	29.8	28.9	25.5
		54.2	5	0.538	0.569	0.587	5	213	228	236	27.7	28.0	28.0	25.2
		82.2	3	0.498	0.528	0.559	3	207	212	218	27.6	27.1	27.5	25.5

Table 10.1 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm)				Interfacial Tensile Strains (mm/mm x 10^{-6})				Asphaltic Concrete Temperatures (C)			
			N	D min.	D avg.	D max.	N	S min.	S avg.	S max.	T1	T2	T3	T4
13	85.06.06	5.8	3	0.584	0.610	0.630	3	248	253	256	15.8	15.5	15.6	17.0
		13.5	4	0.566	0.582	0.607	4	219	223	234	16.8	16.3	16.1	17.1
		50.1	4	0.478	0.511	0.518	4	162	169	178	16.9	16.3	16.2	17.0
14A	85.06.06	5.8	3	0.602	0.610	0.622	3	271	272	275	18.3	16.8	17.0	17.4
		14.0	4	0.561	0.574	0.594	4	240	250	260	20.1	18.2	17.5	18.1
		51.2	4	0.434	0.472	0.523	3	182	187	195	22.1	19.8	18.8	18.6
14B	85.06.06	5.8	7	0.650	0.673	0.706	6	287	309	323	28.3	23.9	21.9	20.0
		15.0	3	0.640	0.645	0.648	2	247	264	280	29.9	25.2	23.1	20.7
		50.1	7	0.536	0.566	0.594	4	212	230	243	31.4	26.4	24.1	21.3
15A	85.06.06	5.8	3	0.734	0.744	0.752	4	364	377	389	35.5	30.4	28.7	24.0
		13.8	2	0.673	0.681	0.686	3	303	332	353	36.2	30.9	29.2	24.9
		52.0	4	0.587	0.602	0.617	4	245	272	289	36.9	31.6	29.8	25.4
15B	85.06.06	5.6	5	0.673	0.709	0.739	4	330	339	348	34.6	28.5	26.2	22.4
		14.2	3	0.663	0.696	0.726	3	321	335	342	35.3	29.6	27.1	23.0
		52.3	4	0.559	0.597	0.658	4	252	265	288	35.1	30.2	28.1	23.8

Table 10.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Steering Axle, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14B	85.06.06	3790	5.8	4	0.495	0.531	0.579	5	302	323	352
			12.7	3	0.457	0.472	0.498	4	288	305	316
			47.8	3	0.338	0.345	0.351	3	202	217	228
15B	85.06.06	5110	5.8	3	0.625	0.655	0.681	3	399	424	458
			12.7	3	0.592	0.605	0.625	3	399	407	415
			48.4	3	0.490	0.505	0.526	3	289	297	311

Table 10.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.06.06	9182	5.8	3	0.605	0.640	0.678	3	294	300	307
			12.6	3	0.696	0.706	0.719	3	267	273	277
			48.8	4	0.546	0.559	0.582	4	204	209	218
15A	85.06.06	9570	5.8	3	0.922	0.952	0.986	3	423	436	454
			14.0	3	0.831	0.869	0.886	3	391	393	394
			51.7	3	0.711	0.726	0.734	3	280	307	341
13	85.06.06	11127	5.8	3	0.721	0.759	0.831	3	320	324	329
			12.7	4	0.752	0.767	0.795	4	284	293	300
			46.7	4	0.592	0.632	0.665	4	217	227	239

Table 10.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains ($mm/mm \times 10^{-6}$) N	S min.	S avg.	S max.
11	85.06.05	13582	5.8	6	3	0.785	0.792	0.800	3	337	340	343
						0.399	0.417	0.439				
				7		0.767	0.782	0.800		327	338	351
			12.7	6	3	0.742	0.792	0.856	4	308	318	329
						0.414	0.429	0.450				
				7		0.742	0.782	0.810		304	314	325
			44.6	6	3	0.602	0.625	0.640	3	231	251	264
						0.330	0.358	0.401				
				7		0.622	0.632	0.643		228	231	233
9	85.06.04	18100	5.8	6	3	0.871	0.927	0.978	3	355	359	366
						0.498	0.551	0.635				
				7		0.856	0.917	0.970		361	375	386
9	85.06.05		5.8	6	4	0.777	0.818	0.848	4	299	304	309
						0.518	0.531	0.551				
				7		0.810	0.841	0.866		285	291	296
			12.7	6	4	0.754	0.767	0.782	4	256	267	275
						0.483	0.500	0.511				
				7		0.759	0.787	0.810		249	257	269
			45.7	6	4	0.678	0.686	0.691	4	204	215	231
						0.483	0.493	0.498				
				7		0.673	0.701	0.719		189	202	216
5	85.05.31	22327	5.8	6	3	0.945	1.021	1.074	4	324	331	337
						0.630	0.676	0.719				
				7		0.983	1.036	1.079		307	308	309
			12.7	6	3	0.945	0.980	1.008	4	284	286	288
						0.663	0.681	0.698				
				7		0.993	1.016	1.031		249	263	271
			48.1	6	3	0.851	0.869	0.889	3	227	232	239
						0.643	0.660	0.671				
				7		0.886	0.902	0.919		195	199	202

Table 10.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem (1.5 m Spacing)-Dual Tire Loads, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.05.29	10645	5.8	1	4	0.546	0.594	0.663	3	250	266	276
						0.234	0.267	0.295				
				2		0.546	0.612	0.681		247	258	267
			12.7	1	3	0.526	0.536	0.544	4	196	201	207
						0.224	0.257	0.305				
				2		0.528	0.561	0.577		191	197	200
			47.8	1	7	0.470	0.511	0.561	5	183	197	207
						0.206	0.249	0.274				
				2		0.480	0.533	0.569		174	181	186
2	85.05.30	10345	5.8	1	3	0.457	0.516	0.559	2	198	203	208
						0.254	0.262	0.272				
				2		0.488	0.531	0.559		204	209	214
			12.7	1	5	0.498	0.521	0.538	4	202	208	214
						0.239	0.254	0.274				
				2		0.528	0.569	0.599		192	198	208
			47.8	1	6	0.429	0.467	0.503	3	121	132	145
						0.198	0.234	0.279				
				2		0.432	0.472	0.498		115	133	146
3	85.05.30	5445	5.8	1	3	0.317	0.386	0.432	2	179	191	202
						0.122	0.135	0.160				
				2		0.351	0.376	0.391		171	187	203
			12.7	1	2	0.391	0.394	0.394	3	143	153	163
						0.176	0.180	0.183				
				2		0.399	0.417	0.434		147	151	154
			48.3	1	3	0.279	0.310	0.351	3	106	120	145
						0.127	0.140	0.150				
				2		0.302	0.305	0.310		92	103	118
4	85.05.30	6682	5.8	1	3	0.439	0.495	0.528	2	238	261	284
						0.152	0.193	0.239				
				2		0.483	0.518	0.569		240	258	275
			12.6	1	3	0.432	0.452	0.478	3	207	223	234
						0.168	0.196	0.213				
				2		0.434	0.485	0.513		196	218	235
			48.1	1	3	0.335	0.351	0.368	4	142	150	157
						0.122	0.150	0.178				
				2		0.328	0.368	0.391		136	156	170
5	85.05.31	15336	5.8	1	3	0.650	0.673	0.704	3	247	249	252
						0.330	0.340	0.358				
				2		0.696	0.714	0.737		247	251	253
			12.7	1	3	0.632	0.660	0.711	2	232	241	249
						0.317	0.343	0.358				
				2		0.673	0.721	0.744		220	229	238
			48.1	1	3	0.582	0.592	0.610	3	170	176	180
						0.328	0.348	0.361				
				2		0.607	0.630	0.658		159	167	179

Table 10.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem (1.5 m Spacing)-Dual Tire Loads, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains ($mm/mm \times 10^{-6}$) N	S min.	S avg.	S max.
6	85.05.31	15582	5.8	1	3	0.681	0.734	0.782	2	307	312	316
						0.353	0.384	0.401				
				2		0.734	0.780	0.808		281	284	287
			12.6	1	3	0.673	0.696	0.719	2	260	264	268
						0.353	0.389	0.432				
				2		0.719	0.744	0.770		265	265	265
			47.8	1	4	0.587	0.610	0.643	4	191	198	202
						0.297	0.335	0.368				
				2		0.610	0.645	0.673		171	185	195
7	85.06.03	9109	5.8	1	4	0.455	0.480	0.536	4	225	237	248
						0.190	0.206	0.218				
				2		0.442	0.480	0.505		207	222	236
			12.6	1	4	0.404	0.427	0.450	3	190	211	245
						0.183	0.208	0.241				
				2		0.414	0.442	0.472		178	201	230
			47.0	1	6	0.366	0.381	0.401	3	174	185	196
						0.160	0.175	0.216				
				2		0.409	0.417	0.439		183	177	168
8A	85.06.04	11718	5.8	1	4	0.450	0.500	0.526	3	224	230	236
						0.254	0.277	0.310				
				2		0.478	0.536	0.584		225	225	226
			12.7	1	4	0.478	0.505	0.531	3	191	202	210
						0.231	0.249	0.267				
				2		0.490	0.521	0.556		187	193	200
			47.2	1	3	0.429	0.434	0.442	3	143	156	164
						0.249	0.251	0.254				
				2		0.456	0.467	0.483		142	148	153
8B	85.06.04	8209	5.8	1	3	0.399	0.404	0.414	3	203	211	219
						0.178	0.193	0.213				
				2		0.434	0.452	0.478		186	194	203
			12.7	1	4	0.361	0.381	0.429	3	194	200	206
						0.142	0.173	0.193				
				2		0.386	0.411	0.456		183	187	192
			45.1	1	5	0.320	0.363	0.434	5	142	150	165
						0.135	0.168	0.208				
				2		0.338	0.373	0.419		133	150	161
9	85.06.04	14936	5.8	1	3	0.711	0.752	0.795	3	360	385	416
						0.287	0.333	0.368				
				2		0.759	0.803	0.841		370	397	394

Table 10.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem (1.5 m Spacing)-Dual Tire Loads, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
9	85.06.05	14936	5.8	1	4	0.625	0.655	0.678	4	277	286	294
						0.305	0.361	0.447				
				2		0.673	0.691	0.719		259	269	284
			12.7	1	3	0.630	0.632	0.638	4	245	262	275
						0.320	0.333	0.351				
				2		0.643	0.638	0.683		241	256	277
			45.7	1	4	0.508	0.546	0.566	4	198	208	215
						0.305	0.315	0.328				
				2		0.546	0.569	0.577		209	211	212
10A	85.06.05	11827	5.8	1	4	0.554	0.572	0.592	4	274	285	295
						0.269	0.279	0.290				
				2		0.602	0.630	0.658		278	293	301
			12.7	1	4	0.538	0.556	0.577	4	252	261	270
						0.239	0.264	0.277				
				2		0.574	0.605	0.650		249	263	269
			44.4	1	5	0.450	0.470	0.483	5	182	198	219
						0.218	0.249	0.295				
				2		0.495	0.513	0.538		170	189	210
10B	85.06.05	9555	5.8	1	3	0.584	0.587	0.592	4	259	302	350
						0.231	0.234	0.239				
				2		0.551	0.574	0.607		263	293	318
			12.7	1	3	0.490	0.505	0.518	3	244	268	288
						0.206	0.224	0.234				
				2		0.561	0.569	0.584		242	268	286
			44.6	1	4	0.358	0.386	0.404	4	180	194	208
						0.152	0.160	0.170				
				2		0.394	0.434	0.483		190	194	200
11	85.06.05	14582	5.8	1	3	0.752	0.759	0.775	3	353	264	373
						0.328	0.343	0.368				
				2		0.785	0.795	0.803		351	352	354
			12.7	1	4	0.706	0.732	0.770	3	352	359	364
						0.295	0.335	0.368				
				2		0.729	0.777	0.820		344	351	360
			44.6	1	4	0.582	0.610	0.640	3	269	292	314
						0.254	0.277	0.297				
				2		0.638	0.653	0.665		293	297	301

Table 10.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem (1.5 m Spacing)-Dual Tire Loads, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.06.05	12500	5.8	1	2	0.706	0.719	0.732	3	368	383	395
						0.297	0.330	0.361				
				2		0.744	0.765	0.785		335	380	411
			12.7	1	4	0.648	0.655	0.671	4	321	331	338
						0.272	0.277	0.287				
				2		0.678	0.691	0.706		317	327	336
			47.8	1	4	0.483	0.511	0.538	3	208	235	244
						0.193	0.221	0.239				
				2		0.488	0.541	0.574		196	224	239
			72.3	1	3	0.414	0.429	0.442	3	162	185	198
						0.193	0.203	0.211				
				2		0.457	0.472	0.490		184	192	199
13	85.06.06	13136	5.8	1	2	0.577	0.592	0.607	3	255	259	265
						0.257	0.290	0.320				
				2		0.622	0.632	0.640		234	240	244
			12.7	1	4	0.551	0.589	0.615	4	204	211	219
						0.272	0.295	0.310				
				2		0.587	0.612	0.655		202	208	214
			46.7	1	4	0.442	0.460	0.483	4	139	151	163
						0.234	0.246	0.274				
				2		0.470	0.511	0.528		142	151	160
14A	85.06.06	13236	5.8	1	3	0.533	0.541	0.551	3	253	262	267
						0.241	0.282	0.310				
				2		0.559	0.566	0.574		251	261	268
			12.6	1	3	0.546	0.559	0.577	3	234	237	241
						0.290	0.312	0.345				
				2		0.577	0.594	0.622		218	222	231
			48.8	1	4	0.472	0.480	0.498	3	169	170	171
						0.224	0.246	0.269				
				2		0.498	0.513	0.533		145	150	169
15A	85.06.06	19200	5.8	1	4	0.871	0.932	0.978	4	438	467	487
						0.394	0.439	0.472				
				2		0.960	0.993	1.039		421	445	478
			12.6	1	3	0.879	0.889	0.904	3	421	445	452
						0.401	0.414	0.422				
				2		0.930	0.950	0.965		406	412	422
			51.2	1	4	0.688	0.749	0.782	4	283	307	325
						0.279	0.340	0.368				
				2		0.704	0.787	0.831		316	333	349

Table 10.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.06.05	14064	5.8	5	3	0.726	0.782	0.874	3	386	393	402
						0.234	0.287	0.345				
				6		0.747	0.805	0.866		361	366	370
			12.7	5	4	0.706	0.734	0.780	4	317	330	340
						0.279	0.340	0.414				
				6		0.742	0.767	0.800		320	329	340
			47.8	5	3	0.554	0.566	0.577	4	242	257	270
						0.239	0.284	0.330				
				6		0.584	0.602	0.622		232	253	264
			72.3	5	3	0.498	0.521	0.544	3	196	209	222
						0.196	0.201	0.203				
				6		0.513	0.551	0.577		176	184	195
10A	85.06.05	18382	5.8	5	3	0.818	0.820	0.823	4	331	336	345
						0.345	0.394	0.480				
				6		0.851	0.853	0.856		334	339	342
			12.7	5	3	0.762	0.795	0.841	4	312	320	326
						0.345	0.384	0.409				
				6		0.810	0.826	0.846		299	317	329
			44.4	5	3	0.658	0.671	0.686	4	242	262	270
						0.297	0.305	0.323				
				6		0.704	0.732	0.752		252	257	260
8A	85.06.04	22127	5.8	5	4	0.770	0.808	0.836	4	322	328	338
						0.366	0.386	0.401				
				6		0.866	0.881	0.889		318	322	328
			12.7	5	4	0.770	0.787	0.815	4	287	293	296
						0.376	0.386	0.414				
				6		0.826	0.836	0.866		285	292	299
			47.2	5	3	0.663	0.681	0.698	3	243	246	252
						0.356	0.371	0.384				
				6		0.737	0.752	0.782		210	227	236

Table 10.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.05.31	20082	5.8	6	3	0.729	0.734	0.742	3	243	251	263
						0.457	0.465	0.470				
				7		0.777	0.782	0.790		219	228	234
						0.472	0.478	0.488				
				8		0.752	0.767	0.792		228	240	253
			12.6	6	3	0.665	0.686	0.704	3	226	230	236
						0.417	0.452	0.503				
				7		0.726	0.759	0.815		191	196	198
						0.442	0.457	0.483				
				8		0.678	0.709	0.742		196	207	220
			47.8	6	4	0.602	0.610	0.615	3	151	163	171
						0.409	0.439	0.465				
				7		0.638	0.671	0.734		122	136	142
						0.439	0.456	0.480				
				8		0.622	0.627	0.638		142	147	151
2	85.05.30	26145	5.8	6	2	0.851	0.851	0.851	3	268	276	283
						0.564	0.599	0.643				
				7		0.942	0.947	0.950		236	242	244
						0.592	0.597	0.599				
				8		0.897	0.902	0.907		252	261	267
			12.7	6	5	0.810	0.848	0.886	4	260	272	285
						0.544	0.551	0.554				
				7		0.894	0.925	0.970		216	232	248
						0.566	0.582	0.587				
				8		0.871	0.904	0.942		244	252	268
			47.8	6	6	0.719	0.754	0.785	5	178	189	210
						0.505	0.526	0.538				
				7		0.815	0.876	0.881		138	160	173
						0.533	0.549	0.582				
				8		0.759	0.798	0.846		160	175	200
1	85.05.29	31645	5.8	6	2	1.039	1.074	1.110	2	321	327	333
						0.688	0.701	0.714				
				7		1.201	1.181	1.158		291	300	310
						0.719	0.752	0.785				
				8		1.138	1.194	1.250		322	326	329
			12.7	6	4	0.975	1.013	1.034	4	314	323	330
						0.610	0.663	0.696				
				7		1.113	1.135	1.153		267	275	283
						0.650	0.698	0.734				
				8		1.057	1.095	1.123		279	295	305
			47.8	6	6	0.864	0.909	0.945	6	242	269	284
						0.638	0.648	0.658				
				7		0.993	1.026	1.074		222	230	240
						0.688	0.709	0.737				
				8		0.945	0.991	1.041		235	246	256

Table 10.8
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.06.05	20509	5.8	4	4	0.650	0.660	0.665	4	300	325	334
						0.246	0.269	0.287				
				5		0.696	0.737	0.795		321	332	337
						0.290	0.335	0.399				
				6		0.742	0.767	0.798		320	329	338
			12.7	4	3	0.655	0.665	0.681	3	293	303	316
						0.257	0.300	0.376				
				5		0.721	0.737	0.754		310	313	316
						0.287	0.292	0.297				
				6		0.729	0.744	0.754		300	305	310
			44.6	4	4	0.434	0.465	0.490	3	212	229	253
						0.201	0.211	0.224				
				5		0.472	0.516	0.538		235	240	246
						0.185	0.216	0.236				
				6		0.490	0.526	0.569		206	226	242
7	85.06.03	26036	5.8	4	4	0.678	0.714	0.742	4	313	317	320
						0.302	0.333	0.368				
				5		0.775	0.826	0.886		326	334	342
						0.345	0.384	0.439				
				6		0.803	0.856	0.889		328	338	348
			12.6	4	4	0.658	0.681	0.706	4	286	293	300
						0.297	0.315	0.361				
				5		0.767	0.795	0.815		293	314	329
						0.345	0.361	0.371				
				6		0.785	0.820	0.841		308	317	334
			47.0	4	5	0.566	0.599	0.610	4	217	233	242
						0.290	0.295	0.302				
				5		0.673	0.706	0.737		244	257	266
						0.320	0.338	0.351				
				6		0.719	0.744	0.777		240	254	273
3	85.06.30	31664	5.8	4	3	0.930	0.965	0.983	3	354	366	372
						0.399	0.414	0.429				
				5		1.090	1.110	1.128		366	371	379
						0.457	0.472	0.483				
				6		1.143	1.171	1.194		374	377	379
			12.7	4	2	0.904	0.958	1.008	3	318	335	354
						0.414	0.439	0.462				
				5		1.041	1.077	1.110		334	349	362
						0.466	0.493	0.518				
				6		1.074	1.125	1.176		352	354	358
			48.3	4	4	0.767	0.782	0.798	4	272	283	305
						0.376	0.384	0.399				
				5		0.935	0.952	0.968		283	301	326
						0.450	0.455	0.462				
				6		0.963	0.998	1.016		297	308	321

Table 10.9
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (4.9 m Spacing)-Dual Tire Loads, Site 10, Alberta

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
88	85.06.04	25836	5.8	3	3	0.655	0.668	0.693	3	285	293	299
						0.160	0.175	0.196				
				5		0.759	0.767	0.775		304	314	321
						0.328	0.343	0.361				
				6		0.767	0.805	0.841		315	317	319
			12.7	3	4	0.622	0.648	0.704	4	277	285	300
						0.168	0.203	0.282				
				5		0.698	0.724	0.747		293	298	304
						0.320	0.351	0.427				
				6		0.714	0.744	0.782		287	293	297
			45.1	3	4	0.513	0.536	0.554	4	203	227	245
						0.160	0.178	0.190				
				5		0.617	0.638	0.688		223	233	259
						0.290	0.297	0.305				
				6		0.635	0.650	0.663		233	246	260
4	85.05.30	31965	5.8	3	3	1.001	1.031	1.062	3	410	426	451
						0.312	0.328	0.343				
				5		1.224	1.227	1.234		402	424	441
						0.536	0.556	0.582				
				6		1.295	1.318	1.354		386	411	425
			12.6	3	4	0.950	0.980	1.031	3	395	408	424
						0.295	0.338	0.384				
				5		1.090	1.138	1.194		415	422	431
						0.503	0.536	0.566				
				6		1.206	1.252	1.313		390	399	407
			47.5	3	5	0.762	0.785	0.808	4	310	326	330
						0.249	0.274	0.312				
				5		0.919	0.952	0.986		321	337	346
						0.417	0.462	0.503				
				6		1.011	1.046	1.105		320	332	349

SITE 11

BRITISH COLUMBIA

Pavement Response to Heavy Vehicles Test Site

Province: B.C. Date(s) of Installing Instrumentation: Sept. 27-30, 1984

Site Location: Hwy 97 Pine Pass RTAC Site B, station 1753 + 75 (ft).

Parsnip R. Bridge to Chetwynd Inventory kilometer 55.13

AADT: 690 % Truck Vol: 1%

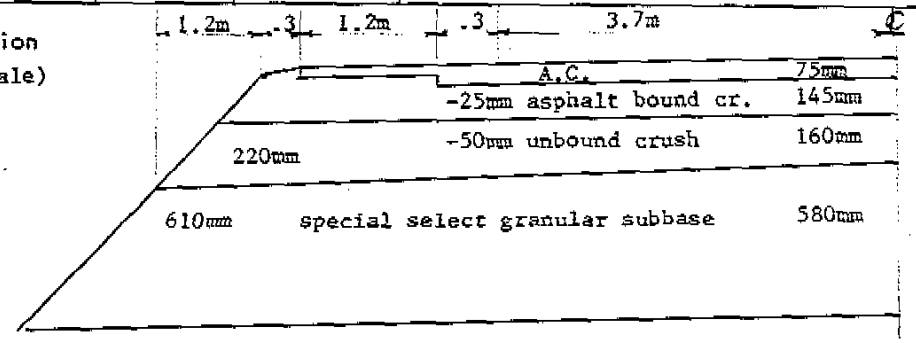
Site Description: The site on the southbound lane of a two-lane highway is on a fill through a flat swampy area. The road prism sits on a rock fill approx. 1.3 meters above a swamp consisting of peat over silty sand. The water table was at swamp level at the time of installation.

Structure: Instr. Lane Width 3.7 m. Adjacent Shoulder Width 1.5 m.

Shoulder Type paved

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	75	Single lift of 6%, dense graded AC
Base Layer(s)	AC bound	145	-25 mm AC bound crushed granular base, open graded.
	Granular	center 160 shoulder 220	-50 mm unbound crushed granular base, open graded.
Subbase Layer(s)	Granular	center 580 shoulder 610	-75 mm Special Select Granular Subbase.
	Granular Fill	center 1340 shoulder 1100	Shot rock
Subsoil	granular peat granular	400 250 600 +	Shot rock fill submerged into peat swamp Peat Silty sand

Cross-Section (not to scale)



Note: Shoulder not yet constructed at time of RTAC installation.

ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: **11 - British Columbia**

Test Dates: 85.06.21 - 85.06.25

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Single Axle		9182	11127	
Tandem (1.2 m)		13582	22327	
Tandem (1.5 m)	(10)*	5445	to	15582
Tandem (1.8 m)		14064	22127	
Triaxle (2.4 m)		20082	31645	
Triaxle (3.7 m)		20509	31664	

*Number of tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed. One (1) strain transducer not operational.**

2. **Due to computer hardware malfunction, strain measurements were not obtained for all loading conditions.**

Table 11.1

Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 11, British Columbia

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
1	85.06.21	4.7	5	0.559	0.572	0.587					19.1	19.5	18.7	18.4
		12.7	5	0.498	0.505	0.518					18.8	19.5	18.7	18.4
		48.8	3	0.457	0.472	0.490					19.0	19.9	19.0	18.7
3	85.06.21	5.5	5	0.569	0.617	0.640					20.0	20.4	18.8	18.6
		12.2	6	0.561	0.582	0.602					21.1	21.8	19.4	19.1
		48.9	6	0.457	0.505	0.526					21.5	22.3	20.2	19.8
5	85.06.24	5.3	3	0.566	0.572	0.577					26.7	27.7	23.1	22.1
		12.9	5	0.457	0.500	0.538					26.8	28.2	23.1	22.1
		49.2	4	0.432	0.444	0.457					27.8	29.8	23.5	22.4
6	85.06.24	5.5	4	0.544	0.569	0.592					28.7	31.0	24.0	22.9
		12.4	4	0.498	0.513	0.523					29.2	31.7	24.5	23.3
		43.6	7	0.424	0.452	0.495					29.8	32.1	25.0	23.6
8A	85.06.24	5.1	3	0.610	0.627	0.640					30.2	32.6	25.5	24.2
		12.2	4	0.566	0.582	0.607					30.5	32.4	26.2	24.9
		45.1	4	0.490	0.503	0.521					30.4	31.6	26.8	25.4
10B	85.06.24	4.8	4	0.602	0.610	0.622					30.0	30.9	26.6	25.4
		12.4	3	0.551	0.556	0.561					28.0	30.6	26.2	25.2
10B	85.06.25	5.5	4	0.455	0.467	0.480					17.4	18.8	15.8	15.7
		13.4	5	0.394	0.414	0.432					18.7	20.3	16.4	16.1
		50.1	5	0.361	0.391	0.409					20.2	21.8	17.4	16.9
11	85.06.25	6.0	4	0.483	0.488	0.498					21.3	22.5	18.4	17.8
		12.4	4	0.424	0.455	0.472					21.5	22.6	18.8	18.2
		50.4	3	0.384	0.391	0.401					21.6	22.9	19.0	18.4
12	85.06.25	5.5	4	0.488	0.511	0.523					22.4	23.8	19.5	18.8
		12.6	4	0.447	0.460	0.465					22.9	24.6	20.0	19.2
		49.1	5	0.391	0.422	0.455					23.7	25.4	20.5	19.6
13	85.06.25	4.7	4	0.546	0.556	0.569					25.7	27.3	22.1	21.1
		12.7	6	0.470	0.488	0.503					26.0	27.4	22.5	21.5
		49.2	4	0.422	0.444	0.483					25.9	27.1	22.8	21.8
		71.9	5	0.384	0.399	0.432					25.8	26.9	23.0	22.0
14A	85.06.25	5.1	4	0.561	0.572	0.579					26.3	27.7	23.2	22.4
		12.9	5	0.503	0.513	0.538					27.0	28.7	23.7	22.9
		46.7	5	0.432	0.462	0.513					27.3	28.8	24.4	23.5

Table 11.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 11, British Columbia

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains ($mm/mm \times 10^{-6}$) N	S min.	S avg.	S max.
14A	85.06.25	9182	5.5	4	0.594	0.615	0.622				
			12.9	4	0.577	0.589	0.602				
			48.4	5	0.488	0.511	0.538				
13	85.06.25	11127	5.5	4	0.650	0.658	0.673				
			12.6	4	0.610	0.636	0.648				
			48.6	4	0.513	0.533	0.546				
			82.7	3	0.472	0.485	0.503				

Table 11.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 11, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains ($mm/mm \times 10^{-6}$) N	S min.	S avg.	S max.
11	85.06.25	13582	5.8	6	4	0.478	0.488	0.511				
						0.259	0.277	0.287				
				7		0.488	0.503	0.518				
			12.4	6	4	0.432	0.455	0.472				
						0.246	0.262	0.274				
				7		0.432	0.467	0.480				
			48.1	6	5	0.335	0.358	0.384				
						0.231	0.249	0.259				
				7		0.358	0.386	0.401				
5	85.06.24	22327	5.8	6	3	0.762	0.765	0.770				
						0.414	0.419	0.427				
				7		0.800	0.805	0.808				
			12.7	6	4	0.726	0.737	0.754				
						0.417	0.432	0.457				
				7		0.754	0.775	0.815				
			46.8	6	4	0.630	0.640	0.658				
						0.394	0.406	0.424				
				7		0.673	0.686	0.711				

Table 11.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 11, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.06.21	10645	5.8	1	5	0.442	0.450	0.462				
						0.170	0.183	0.190				
				2		0.439	0.467	0.490				
			12.6	1	5	0.422	0.434	0.442				
						0.168	0.180	0.193				
				2		0.439	0.455	0.470				
			47.8	1	5	0.323	0.338	0.351				
						0.152	0.170	0.198				
				2		0.353	0.368	0.378				
3	85.06.21	5445	5.8	1	3	0.274	0.295	0.320				
						0.104	0.107	0.112				
				2		0.290	0.302	0.323				
			12.9	1	6	0.264	0.282	0.297				
						0.104	0.112	0.127				
				2		0.297	0.302	0.315				
			48.9	1	5	0.178	0.203	0.224				
						0.081	0.091	0.107				
				2		0.216	0.226	0.257				
5	85.06.24	15336	5.8	1	3	0.536	0.559	0.574				
						0.218	0.229	0.234				
				2		0.584	0.587	0.592				
			12.7	1	4	0.513	0.533	0.551				
						0.216	0.221	0.241				
				2		0.544	0.554	0.574				
			46.8	1	4	0.432	0.434	0.439				
						0.198	0.206	0.213				
				2		0.470	0.475	0.480				
6	85.06.24	15582	5.8	1	3	0.577	0.584	0.599				
						0.226	0.231	0.234				
				2		0.622	0.627	0.635				
			12.4	1	3	0.551	0.561	0.569				
						0.239	0.239	0.241				
				2		0.594	0.602	0.610				
			47.0	1	7	0.450	0.466	0.483				
						0.201	0.218	0.231				
				2		0.478	0.505	0.528				
8A	85.06.24	11718	5.8	1	4	0.505	0.521	0.533				
						0.175	0.183	0.198				
				2		0.536	0.549	0.566				
			12.6	1	4	0.465	0.513	0.533				
						0.185	0.201	0.216				
				2		0.480	0.536	0.559				
			48.3	1	4	0.406	0.422	0.439				
						0.168	0.188	0.201				
				2		0.434	0.457	0.480				

Table 11.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 11, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.06.24	9555	5.1	1	4	0.434	0.462	0.483				
						0.142	0.157	0.170				
				2		0.457	0.480	0.505				
			11.1	1	4	0.409	0.427	0.439				
						0.142	0.157	0.163				
				2		0.427	0.455	0.465				
10B	85.06.25	9555	5.5	1	4	0.338	0.351	0.368				
						0.145	0.152	0.160				
				2		0.358	0.366	0.368				
			12.6	1	4	0.328	0.328	0.328				
						0.145	0.155	0.160				
				2		0.345	0.353	0.368				
			48.9	1	6	0.257	0.274	0.287				
						0.142	0.157	0.170				
				2		0.282	0.297	0.312				
11	85.06.25	14582	5.8	1	4	0.483	0.498	0.513				
						0.213	0.224	0.234				
				2		0.503	0.518	0.533				
			12.4	1	4	0.450	0.462	0.480				
						0.201	0.213	0.226				
				2		0.465	0.490	0.505				
			48.1	1	5	0.384	0.391	0.401				
						0.208	0.213	0.224				
				2		0.414	0.419	0.424				
12	85.06.25	12500	5.5	1	4	0.442	0.450	0.457				
						0.185	0.190	0.198				
				2		0.450	0.467	0.480				
			12.7	1	4	0.427	0.437	0.450				
						0.175	0.183	0.190				
				2		0.432	0.455	0.465				
			46.8	1	4	0.353	0.358	0.361				
						0.183	0.188	0.193				
				2		0.368	0.381	0.401				
13	85.06.25	13136	5.5	1	4	0.480	0.498	0.518				
						0.193	0.206	0.216				
				2		0.503	0.528	0.544				
			12.6	1	4	0.480	0.488	0.498				
						0.198	0.211	0.218				
				2		0.503	0.516	0.528				
			48.6	1	4	0.384	0.396	0.401				
						0.178	0.190	0.206				
				2		0.409	0.427	0.462				
			82.7	1	3	0.338	0.351	0.371				
						0.175	0.175	0.175				
				2		0.371	0.386	0.406				

Table 11.4 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 11, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
14A	86.06.25	13236	5.5	1	4	0.521	0.526	0.528				
						0.185	0.201	0.216				
				2		0.544	0.554	0.566				
			12.9	1	4	0.503	0.508	0.518				
						0.185	0.203	0.216				
				2		0.521	0.528	0.538				
			48.4	1	5	0.401	0.417	0.424				
						0.183	0.193	0.216				
				2		0.447	0.457	0.478				

Table 11.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 11, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.06.25	14064	5.5	5	4	0.470	0.483	0.490				
						0.178	0.180	0.185				
				6		0.505	0.513	0.521				
			12.7	5	4	0.432	0.444	0.450				
						0.163	0.178	0.183				
				6		0.470	0.480	0.495				
			46.8	5	4	0.368	0.386	0.394				
						0.163	0.168	0.175				
				6		0.399	0.406	0.414				
8A	85.06.24	22127	5.8	5	4	0.729	0.744	0.770				
						0.259	0.272	0.295				
				6		0.800	0.823	0.856				
			12.6	5	4	0.729	0.749	0.762				
						0.269	0.292	0.310				
				6		0.823	0.833	0.848				
			48.3	5	4	0.617	0.640	0.665				
						0.239	0.259	0.272				
				6		0.704	0.719	0.752				

Table 11.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 11, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.06.24	20082	5.8	6	3	0.577	0.582	0.587				
						0.295	0.300	0.302				
				7		0.607	0.615	0.617				
						0.312	0.320	0.328				
				8		0.617	0.625	0.630				
			12.4	6	3	0.544	0.546	0.546				
						0.287	0.292	0.295				
				7		0.592	0.592	0.592				
						0.315	0.315	0.315				
				8		0.584	0.594	0.602				
			47.0	6	5	0.422	0.450	0.470				
						0.269	0.277	0.287				
				7		0.465	0.483	0.505				
						0.282	0.295	0.305				
				8		0.480	0.493	0.505				
1	85.06.21	31645	5.8	6	5	0.754	0.759	0.775				
						0.457	0.462	0.470				
				7		0.823	0.826	0.838				
						0.488	0.500	0.518				
				8		0.833	0.843	0.856				
			12.6	6	5	0.698	0.716	0.742				
						0.427	0.444	0.455				
				7		0.777	0.790	0.800				
						0.480	0.490	0.511				
				8		0.782	0.800	0.818				
			47.8	6	5	0.610	0.625	0.640				
						0.409	0.427	0.455				
				7		0.681	0.704	0.729				
						0.455	0.467	0.498				
				8		0.688	0.709	0.737				

Table 11.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 11, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.06.24	20509	5.1	4	4	0.546	0.566	0.592				
						0.178	0.196	0.213				
				5		0.607	0.622	0.650				
						0.208	0.221	0.234				
				6		0.610	0.638	0.658				
			11.1	4	4	0.505	0.526	0.546				
						0.185	0.196	0.208				
				5		0.528	0.572	0.592				
						0.208	0.213	0.224				
				6		0.554	0.597	0.622				
10B	85.06.25	20509	5.5	4	4	0.422	0.432	0.439				
						0.178	0.185	0.193				
				5		0.470	0.478	0.483				
						0.190	0.198	0.208				
				6		0.483	0.493	0.498				
			12.6	4	4	0.386	0.399	0.414				
						0.183	0.193	0.201				
				5		0.457	0.460	0.465				
						0.198	0.211	0.216				
				6		0.470	0.472	0.472				
			48.9	4	6	0.315	0.325	0.345				
						0.163	0.175	0.193				
				5		0.358	0.376	0.399				
						0.178	0.193	0.206				
				6		0.366	0.389	0.406				
3	85.06.21	31664	5.8	4	3	0.698	0.724	0.737				
						0.287	0.310	0.328				
				5		0.808	0.831	0.848				
						0.328	0.361	0.391				
				6		0.856	0.881	0.897				
			12.9	4	6	0.686	0.706	0.721				
						0.272	0.297	0.310				
				5		0.782	0.805	0.818				
						0.328	0.348	0.361				
				6		0.838	0.859	0.871				
			48.9	4	6	0.566	0.589	0.615				
						0.246	0.259	0.282				
				5		0.678	0.701	0.742				
						0.295	0.310	0.335				
				6		0.704	0.747	0.782				

SITE 12

BRITISH COLUMBIA

Pavement Response to Heavy Vehicles Test Site

Province: B.C. Date(s) of Installing Instrumentation: Sept. 27-30, 1984

Site Location: Hwy 97 Pine Pass RTAC Site C, Station 1806 + 50 (feet)

Parsnip River Bridge to Chetwynd inventory kilometer 56.73.

AADT: 690 % Truck Vol: 1%

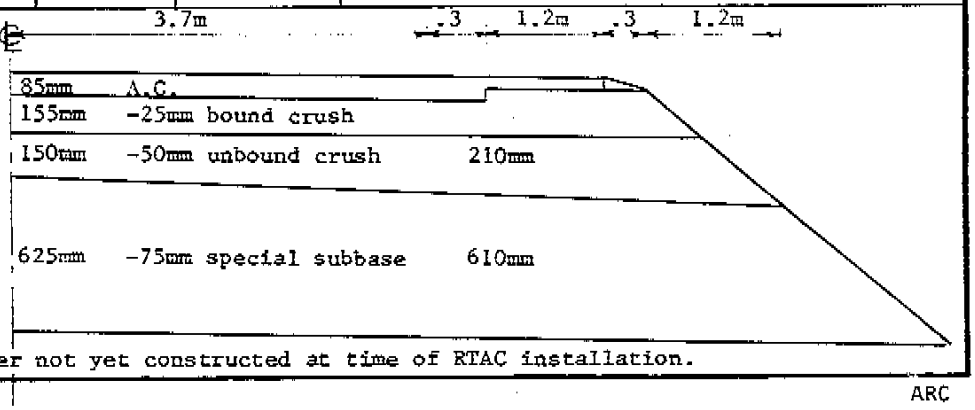
Site Description: The site is on the northbound lane of a two-lane highway on a straight level cut at a high point of the Pine Pass. The right of way appears well drained.

Structure: Instr. Lane Width 3.7 m. Adjacent Shoulder Width 1.5 m.

Shoulder Type paved

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	85	Single lift of dense graded AC.
Base Layer(s)	AC bound	155	-25 mm AC bound, crushed granular base, open graded.
	Granular	Center 150 Shoulder 210	-50 mm unbound, crushed granular base, open graded
Subbase Layer(s)	Granular	Center 625 Shoulder 610	-75 mm Special Select Granular Subbase
	Granular Fill	Center 850 Shoulder 975	Silty gravel
Subsoil	Granular	1000 +	Silty sand

Cross-Section (not to scale)



Note: Shoulder not yet constructed at time of RTAC installation.

ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: 12 - British Columbia

Test Dates: 85.06.18 - 85.06.20

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Steering Axle		3790	5110	
Single Axle		9182	11127	
Tandem (1.2 m)		13582	18100	22327
Tandem (1.5 m)	(14)*	5445	to	15582
Tandem (1.8 m)		14064	18382	22127
Triaxle (2.4 m)		20082	26145	31645
Triaxle (3.7 m)		20509	26036	31664

*Number of tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed and operational during testing. Pavement response measurements indicated a possible transverse misalignment of strain transducers relative to deflection transducer locations.**

2. **Wide range of pavement temperatures (20 to 40°C) during testing.**

Table 12.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm)				Interfacial Tensile Strains (mm/mm x 10^{-6})				Asphaltic Concrete Temperatures (C)			
			N	D min.	D avg.	D max.	N	S min.	S avg.	S max.	T1	T2	T3	T4
1	85.06.20	5.3	4	0.678	0.691	0.698	4	480	499	528	28.9	27.8	26.6	25.1
		12.7	3	0.648	0.663	0.673	3	342	349	357	29.1	28.3	27.3	25.7
		54.1	6	0.737	0.762	0.792	6	143	157	164	29.2	28.6	27.5	25.9
2	85.06.20	4.8	5	0.671	0.688	0.706	5	423	465	517	25.3	24.8	24.4	23.5
		12.9	3	0.622	0.640	0.650	3	294	313	340	25.8	25.1	24.6	23.6
		53.6	4	0.650	0.698	0.737	4	114	140	163	27.1	25.9	25.2	24.0
3	85.06.20	4.8	5	0.615	0.660	0.688	4	443	460	495	26.8	26.0	24.7	23.2
		12.2	5	0.630	0.648	0.665	4	297	312	334	26.0	25.7	24.8	23.4
		52.9	4	0.688	0.693	0.698	4	135	142	147	25.1	25.1	24.5	23.4
5	85.06.20	4.8	3	0.650	0.658	0.663	3	397	402	405	25.9	24.7	23.4	22.4
		13.2	3	0.630	0.643	0.665	4	211	256	284	25.7	24.8	23.6	22.5
		48.9	4	0.630	0.658	0.688	4	100	114	123	27.0	25.6	24.2	22.9
6	85.06.20	4.8	3	0.610	0.627	0.640	2	348	352	357	22.3	22.0	21.7	21.5
		12.6	4	0.579	0.597	0.617	4	235	262	288	22.3	22.3	21.9	21.2
		52.5	4	0.704	0.711	0.726	4	108	121	130	22.8	22.3	21.7	21.0
7	85.06.20	4.8	4	0.625	0.635	0.658	4	332	356	387	17.4	18.3	19.0	19.3
		12.7	3	0.569	0.635	0.673	3	238	250	259	17.6	18.4	19.1	19.4
		52.9	6	0.622	0.653	0.678	7	70	93	115	19.7	19.9	20.2	20.5
8A	85.06.18	4.7	4	0.688	0.698	0.714	4	695	738	771	38.5	36.1	33.1	29.6
		13.0	7	0.617	0.648	0.678	4	626	654	666	39.2	37.0	34.1	30.7
		51.2	4	0.737	0.762	0.810	4	304	364	410	39.6	37.6	35.1	31.5
9	85.06.18	5.3	3	0.686	0.714	0.747	4	808	891	942	40.8	39.1	36.6	33.1
		12.9	3	0.706	0.737	0.782	3	764	793	812	40.7	39.1	36.8	33.4
		52.0	3	0.754	0.762	0.767	3	407	437	486	40.4	38.8	36.6	33.3
10A	85.06.18	6.4	4	0.729	0.757	0.777	4	941	982	1045	38.8	37.8	36.0	33.0
		12.9	4	0.752	0.759	0.767	5	756	790	825	38.2	37.5	36.1	33.4
		51.3	8	0.759	0.798	0.843	4	398	455	512	38.4	37.6	36.2	33.7
10B	85.06.19	5.1	4	0.594	0.612	0.630	4	259	276	298	22.7	22.2	21.2	20.3
		12.6	4	0.579	0.592	0.602	4	175	188	200	23.0	22.5	21.7	20.9
		50.4	4	0.584	0.632	0.681	4	65	75	88	23.4	22.8	22.0	21.1
11	85.06.19	6.3	4	0.610	0.620	0.638	4	280	290	296	24.2	23.6	22.7	21.7
		12.4	3	0.592	0.617	0.622	4	196	214	226	24.2	23.7	22.8	21.7
		53.1	5	0.650	0.693	0.721	5	78	89	97	24.5	24.0	23.1	22.0
		99.9	4	0.610	0.640	0.665	4	41	56	78	27.1	26.2	24.9	23.6
12	85.06.19	5.1	5	0.648	0.668	0.688	6	409	449	492	26.7	26.3	25.5	24.2
		12.9	6	0.610	0.635	0.673	7	210	279	340	27.8	27.3	26.3	24.8
		51.5	5	0.698	0.729	0.752	7	92	126	163	32.4	31.0	29.1	27.0
13	85.06.19	4.5	5	0.681	0.709	0.747	5	618	662	723	36.2	34.2	31.7	29.3
		12.6	4	0.622	0.655	0.688	3	521	542	552	36.5	34.5	31.8	29.1
		50.9	4	0.721	0.744	0.770	4	226	246	263	36.0	34.4	32.1	29.3

Table 12.1 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm)				Interfacial Tensile Strains (mm/mm x 10^{-6})				Asphaltic Concrete Temperatures (C)			
			N	D min.	D avg.	D max.	N	S min.	S avg.	S max.	T1	T2	T3	T4
14A	85.06.19	4.3	4	0.714	0.734	0.762	4	699	737	792	34.5	33.8	32.5	30.2
		12.9	4	0.696	0.706	0.729	4	491	539	576	34.5	33.5	32.2	30.0
		50.9	4	0.737	0.747	0.762	4	249	258	265	34.9	33.6	32.2	30.1
14B	85.06.20	4.3	9	0.602	0.627	0.665	9	247	274	318	22.9	21.8	20.6	19.6
		12.7	2	0.622	0.653	0.681	4	194	199	207	24.5	23.3	21.9	20.4
		51.5	4	0.648	0.683	0.721	6	53	76	92	27.4	26.1	24.4	22.8
15B	85.06.20	4.8	5	0.640	0.660	0.678	4	382	438	470	29.1	27.6	25.8	23.7
		12.6	6	0.602	0.630	0.671	6	226	274	312	23.7	23.8	23.6	22.1
		54.1	5	0.673	0.704	0.734	5	114	128	135	19.6	20.5	21.3	21.0

Table 12.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Steering Axle, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14B	85.06.20	3790	6.1	4	0.648	0.673	0.706	5	247	280	309
			13.2	5	0.650	0.678	0.721	5	232	249	277
			49.9	5	0.561	0.615	0.648	4	141	153	164
15B	85.06.20	5110	5.8	4	0.726	0.757	0.775	4	447	488	512
			12.6	6	0.648	0.683	0.742	5	312	361	398
			50.2	5	0.663	0.686	0.706	4	188	202	222

Table 12.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.06.19	9182	5.5	4	0.770	0.823	0.859	4	862	898	937
			12.9	4	0.759	0.790	0.808	4	711	723	736
			47.5	5	0.714	0.747	0.800	4	414	429	443
13	85.06.19	11127	6.1	4	0.800	0.813	0.818	4	720	743	755
			13.2	3	0.777	0.798	0.826	3	535	591	621
			46.7	4	0.752	0.772	0.798	4	375	393	414

Table 12.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.06.19	13582	6.0	6	4	0.617	0.658	0.681	4	342	364	381
						0.150	0.173	0.185				
				7		0.650	0.683	0.704		368	380	387
			13.2	6	4	0.635	0.660	0.696	4	259	268	279
						0.157	0.170	0.201				
				7		0.663	0.681	0.714		271	279	292
			50.7	6	5	0.602	0.625	0.663	3	123	142	155
						0.160	0.173	0.193				
				7		0.592	0.638	0.663		145	152	163
			97.8	6	4	0.625	0.653	0.686	4	64	80	97
						0.163	0.168	0.175				
				7		0.650	0.665	0.678		61	72	98
9	85.06.18	18100	6.0	6	4	0.785	0.795	0.803	4	1136	1236	1302
						0.185	0.203	0.224				
				7		0.803	0.826	0.841		1120	1210	1250
			13.2	6	4	0.767	0.828	0.886	4	946	1018	1047
						0.272	0.312	0.368				
				7		0.800	0.861	0.930		896	935	982
			50.5	6	4	0.759	0.780	0.818	4	593	616	669
						0.305	0.325	0.351				
				7		0.798	0.823	0.856		562	585	617
5	85.06.20	22327	6.1	6	3	0.815	0.820	0.823	3	439	452	470
						0.231	0.234	0.239				
				7		0.826	0.833	0.843		434	443	459
			13.0	6	4	0.808	0.815	0.823	4	340	350	366
						0.241	0.246	0.249				
				7		0.800	0.810	0.818		342	354	366
			49.9	6	4	0.754	0.775	0.803	3	190	211	228
						0.226	0.244	0.274				
				7		0.770	0.795	0.846		202	214	220

Table 12.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.06.20	10645	6.0	1	3	0.472	0.495	0.511	3	358	451	515
						0.058	0.086	0.104				
				2		0.495	0.533	0.566		397	475	520
			13.2	1	3	0.490	0.559	0.625	4	370	390	402
						0.071	0.086	0.130				
				2		0.559	0.607	0.673		390	393	399
			51.2	1	3	0.513	0.592	0.671	5	188	200	219
						0.086	0.117	0.168				
				2		0.569	0.617	0.696		158	174	195
2	85.06.20	10345	6.1	1	2	0.518	0.566	0.615	2	383	390	398
						0.066	0.086	0.104				
						0.579	0.610	0.643		394	408	421
			13.2	1	2	0.495	0.554	0.610	3	276	299	334
						0.074	0.109	0.145				
				2		0.559	0.615	0.671		288	314	357
			51.3	1	3	0.528	0.589	0.630	3	142	161	184
						0.086	0.107	0.122				
				2		0.569	0.617	0.650		145	164	186
3	85.06.20	5445	6.1	1	3	0.386	0.422	0.465	3	318	337	369
						0.051	0.066	0.094				
				2		0.434	0.452	0.478		336	354	377
			13.2	1	3	0.378	0.330	0.483	2	266	241	256
						0.041	0.058	0.086				
				2		0.376	0.427	0.462		199	218	236
			51.5	1	4	0.145	0.157	0.170	1	41	41	41
						0.048	0.061	0.079				
				2		0.160	0.178	0.201		34	36	38
5	85.06.20	15336	6.1	1	3	0.592	0.594	0.599	3	395	428	451
						0.089	0.099	0.104				
				2		0.648	0.655	0.665		402	417	435
			13.0	1	4	0.655	0.676	0.691	4	293	336	374
						0.114	0.124	0.135				
				2		0.696	0.701	0.719		321	333	352
			49.9	1	2	0.584	0.610	0.635	3	160	175	187
						0.107	0.119	0.135				
				2		0.660	0.665	0.671		169	187	199
6	85.06.20	15582	6.0	1	3	0.665	0.691	0.706	3	389	400	410
						0.104	0.114	0.127				
				2		0.696	0.714	0.721		365	377	402
			13.0	1	3	0.587	0.653	0.706	3	265	278	293
						0.122	0.127	0.130				
				2		0.632	0.673	0.714		290	295	302
			52.0	1	3	0.462	0.541	0.650	3	111	133	167
						0.104	0.109	0.119				
				2		0.566	0.602	0.663		119	135	164

Table 12.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
7	85.06.20	9109	6.0	1	3	0.513	0.528	0.546	3	231	276	306
						0.064	0.071	0.086				
				2		0.561	0.574	0.584		294	314	332
			13.4	1	3	0.323	0.356	0.406	2	114	144	174
						0.046	0.056	0.074				
				2		0.343	0.386	0.472		122	154	186
			52.3	1	3	0.450	0.518	0.592	3	102	105	108
						0.064	0.094	0.114				
				2		0.490	0.559	0.625		84	99	109
8A	85.06.18	11718	5.8	1	4	0.632	0.678	0.726	4	889	920	971
						0.119	0.142	0.170				
				2		0.681	0.711	0.747		840	904	951
			13.0	1	5	0.602	0.663	0.706	7	699	743	781
						0.102	0.124	0.168				
				2		0.630	0.671	0.698		673	753	796
			49.2	1	2	0.561	0.587	0.617	2	483	514	544
						0.094	0.102	0.107				
				2		0.622	0.627	0.632		495	506	516
9	85.06.18	14936	6.0	1	2	0.622	0.645	0.665	2	1069	1160	1251
						0.114	0.119	0.127				
				2		0.671	0.683	0.696		1109	1166	1224
			13.2	1	2	0.714	0.721	0.729	2	968	986	1004
						0.170	0.175	0.178				
				2		0.747	0.749	0.752		946	981	1016
			50.5	1	3	0.577	0.612	0.655	4	528	580	613
						0.175	0.188	0.211				
				2		0.635	0.683	0.742		535	581	637
10A	85.06.18	11827	6.1	1	4	0.579	0.622	0.681	4	930	1066	1211
						0.081	0.122	0.178				
				2		0.655	0.698	0.759		996	1124	1263
			13.2	1	3	0.546	0.597	0.650	3	837	895	937
						0.127	0.152	0.175				
				2		0.584	0.638	0.688		856	917	986
			52.9	1	3	0.490	0.528	0.559	3	406	447	504
						0.135	0.137	0.142				
				2		0.559	0.582	0.599		450	534	630
10B	85.06.19	9555	6.1	1	3	0.439	0.503	0.544	1	223	242	252
						0.064	0.094	0.112				
				2		0.498	0.546	0.577		279	281	284
			13.2	1	3	0.551	0.579	0.610	5	174	182	200
						0.094	0.117	0.150				
				2		0.579	0.594	0.610		175	191	206
			49.9	1	2	0.495	0.521	0.546	2	96	98	100
						0.097	0.102	0.104				
				2		0.559	0.564	0.569		85	88	90

Table 12.5 - continued
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
11	85.06.19	14582	6.0	1	3	0.592	0.640	0.706	3	310	328	344
						0.104	0.127	0.142				
				2		0.648	0.678	0.714		332	339	344
			13.2	1	3	0.658	0.671	0.696	4	245	260	284
						0.114	0.135	0.160				
				2		0.665	0.683	0.704		253	268	292
			50.7	1	3	0.602	0.622	0.635	3	135	145	163
						0.119	0.127	0.135				
				2		0.638	0.653	0.681		117	130	139
			97.8	1	3	0.602	0.617	0.640	3	90	93	96
						0.112	0.117	0.127				
				2		0.640	0.648	0.655		108	120	131
12	85.06.19	12500	5.6	1	4	0.625	0.645	0.665	4	478	504	558
						0.107	0.112	0.114				
				2		0.650	0.678	0.696		504	510	513
			12.6	1	5	0.544	0.640	0.665	3	346	364	398
						0.079	0.112	0.127				
				2		0.566	0.640	0.671		349	358	366
			49.9	1	2	0.457	0.538	0.622	3	142	162	199
						0.071	0.089	0.107				
				2		0.495	0.574	0.655		151	191	247
13	85.06.19	13136	6.1	1	4	0.496	0.541	0.574	2	597	636	674
						0.064	0.084	0.107				
				2		0.521	0.569	0.602		646	656	665
			13.2	1	2	0.678	0.691	0.704	2	588	618	649
						0.112	0.132	0.152				
				2		0.691	0.706	0.719		565	586	606
			46.7	1	3	0.546	0.584	0.648	3	306	355	398
						0.081	0.107	0.130				
				2		0.599	0.620	0.656		283	317	385
14A	85.06.19	13236	5.5	1	4	0.640	0.688	0.762	4	752	832	945
						0.086	0.132	0.160				
				2		0.678	0.711	0.759		787	836	927
			12.9	1	4	0.625	0.665	0.704	4	634	670	736
						0.089	0.135	0.190				
				2		0.648	0.698	0.721		622	662	695
			47.5	1	3	0.640	0.671	0.711	3	419	440	463
						0.127	0.147	0.178				
				2		0.663	0.698	0.744		401	436	456

Table 12.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
12	85.06.19	14064	5.6	5	5	0.686	0.721	0.742	5	435	482	524
						0.089	0.112	0.135				
				6		0.691	0.724	0.744		405	482	533
			12.6	5	5	0.696	0.716	0.726	5	356	389	415
						0.097	0.114	0.122				
				6		0.696	0.721	0.742		345	380	422
			49.9	5	6	0.594	0.640	0.678	5	203	230	256
						0.079	0.097	0.122				
				6		0.607	0.645	0.688		196	233	257
10A	85.06.18	18382	6.1	5	4	0.826	0.874	0.912	3	1258	1288	1311
						0.152	0.198	0.249				
				6		0.831	0.874	0.952		1207	1249	1286
			13.2	5	2	0.798	0.833	0.881	2	1052	1054	1055
						0.160	0.203	0.246				
				6		0.833	0.876	0.919		1075	1077	1079
			52.9	5	4	0.729	0.752	0.767	4	633	678	736
						0.178	0.188	0.198				
				6		0.792	0.805	0.815		628	677	706
8A	85.06.18	22127	5.8	5	4	0.914	0.935	0.955	4	634	699	750
						0.168	0.196	0.226				
				6		0.930	0.940	0.955		572	654	703
			13.0	5	7	0.798	0.836	0.894	3	704	781	837
						0.114	0.152	0.201				
				6		0.831	0.866	0.912		638	755	840
			49.2	5	5	0.785	0.800	0.823	4	499	549	574
						0.142	0.168	0.201				
				6		0.777	0.828	0.859		487	536	558

Table 12.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.06.20	20082	6.0	6	4	0.704	0.716	0.737	3	349	368	394
						0.168	0.175	0.190				
				7		0.698	0.711	0.734		349	356	368
						0.175	0.185	0.208				
				8		0.696	0.714	0.737		348	357	372
			13.0	6	4	0.673	0.696	0.706	4	275	283	294
						0.178	0.183	0.190				
				7		0.688	0.711	0.721		268	277	289
						0.193	0.201	0.208				
				8		0.698	0.711	0.719		261	284	313
			52.0	6	3	0.658	0.678	0.696	3	139	161	174
						0.178	0.180	0.185				
				7		0.691	0.696	0.698		143	155	168
						0.190	0.201	0.208				
				8		0.663	0.688	0.698		162	165	167
2	85.06.20	26145	6.1	6	4	0.767	0.782	0.810	4	513	528	543
						0.170	0.196	0.239				
				7		0.782	0.800	0.831		491	506	520
						0.201	0.216	0.246				
				8		0.759	0.782	0.826		471	482	492
			13.2	6	3	0.744	0.775	0.810	3	402	408	411
						0.193	0.224	0.259				
				7		0.767	0.803	0.841		393	400	406
						0.224	0.246	0.279				
				8		0.762	0.792	0.833		399	411	418
			51.3	6	6	0.648	0.696	0.734	3	230	235	240
						0.190	0.213	0.234				
				7		0.704	0.721	0.775		227	240	251
						0.208	0.231	0.246				
				8		0.665	0.721	0.770		236	242	247
1	85.06.20	31645	6.0	6	3	0.808	0.826	0.848	3	584	587	590
						0.213	0.234	0.249				
				7		0.823	0.843	0.864		560	572	581
						0.218	0.246	0.264				
				8		0.826	0.853	0.886		523	555	586
			13.2	6	4	0.792	0.810	0.843	4	431	440	455
						0.201	0.231	0.272				
				7		0.808	0.826	0.859		409	433	452
						0.226	0.244	0.274				
				8		0.800	0.820	0.856		406	432	450
			51.2	6	5	0.754	0.798	0.848	4	249	275	293
						0.224	0.249	0.295				
				7		0.798	0.818	0.843		238	270	298
						0.249	0.279	0.315				
				8		0.792	0.815	0.848		245	261	284

Table 12.8
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 12, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.
10B	85.06.19	20509	6.1	4	4	0.622	0.650	0.673	3	314	318	320
						0.097	0.127	0.145				
				5		0.663	0.693	0.711		300	310	324
						0.094	0.137	0.157				
				6		0.681	0.706	0.729		308	319	325
			13.2	4	3	0.635	0.645	0.658	3	224	227	232
						0.112	0.127	0.152				
				5		0.671	0.681	0.704		223	224	226
						0.130	0.147	0.170				
				6		0.678	0.693	0.711		234	237	240
			49.9	4	4	0.490	0.561	0.622	4	114	120	130
						0.086	0.109	0.127				
				5		0.610	0.648	0.671		108	127	142
						0.122	0.142	0.152				
				6		0.625	0.655	0.686		125	134	141
7	85.06.20	26036	6.0	4	4	0.688	0.698	0.711	4	369	388	403
						0.104	0.119	0.142				
				5		0.719	0.732	0.754		358	383	421
						0.130	0.135	0.142				
				6		0.721	0.739	0.754		364	386	422
			13.4	4	3	0.622	0.653	0.673	3	275	280	283
						0.089	0.099	0.107				
				5		0.704	0.714	0.721		288	290	293
						0.122	0.127	0.130				
				6		0.698	0.719	0.729		288	291	293
			52.3	4	6	0.607	0.665	0.721	5	142	150	164
						0.102	0.124	0.145				
				5		0.688	0.711	0.726		151	158	167
						0.122	0.145	0.170				
				6		0.706	0.724	0.744		139	159	172
3	85.06.20	31664	6.1	4	5	0.744	0.780	0.833	5	487	512	531
						0.107	0.132	0.178				
				5		0.810	0.833	0.874		447	474	492
						0.119	0.155	0.206				
				6		0.818	0.856	0.899		438	467	490
			13.2	4	4	0.726	0.747	0.775	4	385	409	422
						0.102	0.124	0.178				
				5		0.767	0.800	0.859		362	388	413
						0.122	0.152	0.218				
				6		0.803	0.831	0.894		356	379	414
			51.5	4	3	0.678	0.693	0.711	3	204	218	236
						0.130	0.132	0.135				
				5		0.752	0.762	0.775		235	244	253
						0.145	0.157	0.163				
				6		0.777	0.790	0.803		253	266	281

SITE 13

BRITISH COLUMBIA

Pavement Response to Heavy Vehicles Test Site

Province: B.C. Date(s) of Installing Instrumentation: July 17-19, 1984

Site Location: Hwy 16E RTAC Site A between McBride and Tete Jaune Cache. Chainage 21610 (0000 is at Lee Road, chainage increasing eastward, metric).

AADT: 1035 % Truck Vol: 0.3% (1978)

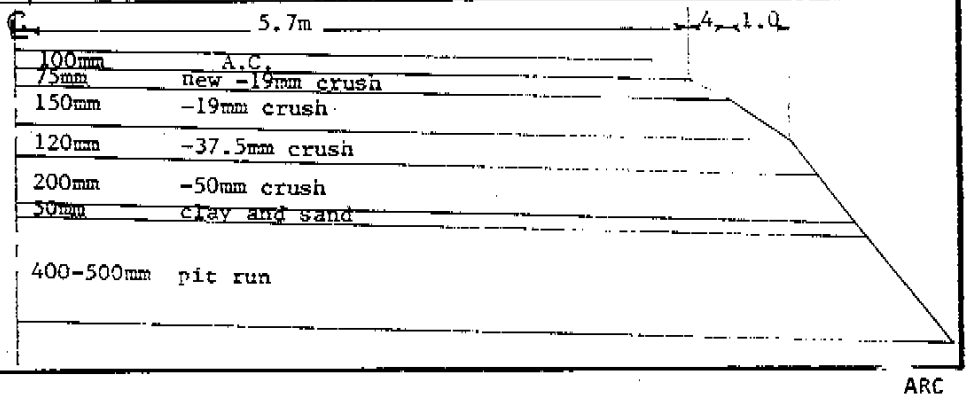
Site Description: The site is on the west-bound lane of a two-lane highway on a straight level stretch through farm fields in a broad valley between two mountain ranges. The clay subgrade has always presented drainage problems.

Structure: Instr. Lane Width 5.7 m. Adjacent Shoulder Width ____ m.

Shoulder Type paved

Component Layers	Type	As Constructed Thickness (mm)	Details
Surfacing	AC	100	
Base Layer(s)	Granular	75	new - 19 mm dense graded crush
		150	- 19 mm crush
		120	- 37.5 mm crush
		200	- 50 mm crush
Subbase Layer(s)		50	Clay and sand (old road surface?)
		400-500	Pit run, max. size 300 mm
Subsoil		300+	clay

Cross-Section (not to scale)



ARC

PAVEMENT IMPACTS FIELD PROGRAM

Test Site: **13 - British Columbia**

Test Dates: 85.06.12 - 85.06.13

Vehicle Loadings:

Axle Configuration		Gross Weights (kg)		
Single Axle		9182	11127	
Tandem (1.2 m)		13582	22327	
Tandem (1.5 m)	(10)*	5445	to	15582
Tandem (1.8 m)		14064	22127	
Triaxle (2.4 m)		20082	31645	
Triaxle (3.7 m)		20509	31664	

*Number of tandem axle loads

Comments:

1. **Three (3) deflection and three (3) strain transducers installed and operational during testing.**

Table 13.1
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under 8160 kg Single Axle-dual Tire Load, Site 13, British Columbia

Test Series No.	Test Date YY.MM.DD	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10-6) N	S min.	S avg.	S max.	Asphaltic Concrete Temperatures (C) T1	T2	T3	T4
1	85.06.12	4.0	4	0.561	0.572	0.584	3	570	586	601	18.8	18.6	17.8	17.4
		10.3	4	0.561	0.589	0.617	4	513	528	549	20.8	20.4	19.6	18.6
		48.3	3	0.518	0.536	0.569	3	365	395	423	21.9	21.5	20.5	19.3
3	85.06.12	3.5	4	0.617	0.627	0.650	4	706	725	735	23.3	22.7	21.7	20.0
		12.2	4	0.602	0.627	0.643	4	586	599	608	22.5	22.1	21.4	19.7
		48.3	4	0.521	0.559	0.587	3	442	465	494	22.5	22.3	22.0	20.6
5	85.06.12	4.2	4	0.625	0.653	0.688	4	728	750	777	25.2	24.7	23.6	21.8
		13.0	3	0.584	0.592	0.599	2	645	654	663	25.7	25.3	24.1	22.4
		51.3	4	0.503	0.521	0.549	4	495	510	513	25.5	25.1	24.0	22.3
6	85.06.12	3.7	4	0.622	0.645	0.655	3	793	800	803	23.4	22.8	22.6	21.3
		12.4	4	0.561	0.594	0.622	4	679	702	715	22.6	22.4	22.3	21.0
		50.9	4	0.505	0.551	0.632	4	492	535	577	21.4	21.5	21.8	20.7
8A	85.06.12	4.5	4	0.650	0.655	0.665	4	690	715	744	18.7	19.6	20.6	20.0
		12.1	3	0.592	0.597	0.610	3	634	637	640	19.0	19.5	20.6	20.2
		50.1	3	0.554	0.556	0.561	3	500	502	507	18.4	19.0	20.1	20.0
10B	85.06.12	3.9	4	0.617	0.640	0.655	3	675	704	735	18.0	18.5	19.5	19.6
		11.9	3	0.584	0.605	0.625	4	630	640	646	18.0	18.2	19.5	19.6
		51.2	3	0.523	0.549	0.592	3	495	499	502	17.5	18.1	19.2	19.4
11	85.06.13	4.3	5	0.622	0.650	0.673	5	613	633	658	18.6	19.1	18.7	17.6
		11.9	4	0.610	0.630	0.658	4	557	564	569	20.3	21.0	20.2	19.0
		50.4	5	0.559	0.579	0.617	5	414	447	468	22.7	22.1	21.0	19.4
		95.4	2	0.602	0.615	0.625	3	402	426	455	23.3	22.7	21.6	20.1
12	85.06.13	4.0	6	0.648	0.668	0.688	3	752	778	808	26.4	25.8	24.7	22.5
		11.4	3	0.655	0.681	0.696	4	679	705	748	26.9	26.0	24.8	22.7
		52.3	4	0.561	0.584	0.617	3	568	592	605	26.8	25.7	24.5	22.5
13	85.06.13	5.6	4	0.678	0.681	0.686	4	719	756	797	25.9	25.1	24.3	22.4
		11.7	4	0.635	0.650	0.686	4	683	697	722	25.9	25.4	24.9	23.1
		53.4	3	0.569	0.599	0.622	3	577	593	610	26.6	26.0	25.2	23.4
14A	85.06.13	6.1	4	0.658	0.676	0.691	3	760	768	781	26.9	26.0	25.1	23.2
		11.6	4	0.665	0.683	0.696	4	700	717	727	26.2	25.4	24.8	22.9
		54.7	4	0.559	0.607	0.632	3	624	632	643	25.4	25.1	24.6	22.6

Table 13.2
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Single Axle-Dual Tire Loads, Site 13, British Columbia

Test Series No.	Test Date YY.MM.DD.	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.06.13	9182	5.8	4	0.775	0.820	0.859	4	759	788	825
			12.9	3	0.823	0.833	0.841	3	743	773	797
			49.9	4	0.635	0.688	0.782	4	637	652	671
13	85.06.13	11127	5.8	3	0.889	0.894	0.897	3	804	812	811
			12.9	3	0.838	0.866	0.889	4	775	800	868
			49.9	3	0.752	0.790	0.815	4	640	649	662

Table 13.3
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.2 m Spacing)-Dual Tire Loads, Site 13, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
11	85.06.13	13582	5.8	6	5	0.663	0.673	0.706	5	577	611	650
						0.290	0.310	0.330				
				7		0.686	0.696	0.711		576	600	628
			12.9	6	3	0.640	0.663	0.681	4	519	526	537
						0.274	0.290	0.315				
				7		0.658	0.686	0.704		512	524	542
			48.1	6	4	0.533	0.554	0.569	3	402	406	409
						0.239	0.257	0.282				
				7		0.577	0.589	0.599		411	415	421
			88.2	6	3	0.528	0.541	0.554	2	391	396	402
						0.257	0.267	0.274				
				7		0.538	0.572	0.594		345	375	406
5	85.06.12	22327	5.8	6	4	0.782	0.823	0.881	4	688	705	739
						0.351	0.386	0.462				
				7		0.831	0.864	0.935		690	714	766
			12.9	6	4	0.841	0.864	0.904	3	696	718	734
						0.399	0.434	0.470				
				7		0.871	0.899	0.927		692	719	732
			50.1	6	5	0.742	0.775	0.787	3	561	598	629
						0.376	0.389	0.409				
				7		0.777	0.808	0.838		556	590	628

Table 13.4
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 13, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
1	85.06.12	10645	6.0	1	4	0.465	0.488	0.523	3	535	544	555
						0.142	0.160	0.183				
				2		0.480	0.505	0.554		541	548	557
			13.0	1	3	0.434	0.462	0.505	3	482	503	521
						0.130	0.155	0.183				
				2		0.478	0.493	0.521		472	488	499
			48.4	1	4	0.368	0.389	0.417	5	344	355	365
						0.086	0.117	0.145				
				2		0.409	0.414	0.417		349	359	379
3	85.06.12	5445	5.8	1	4	0.315	0.343	0.366	3	472	496	513
						0.104	0.119	0.130				
				2		0.335	0.363	0.378		440	450	462
			12.7	1	4	0.328	0.345	0.366	4	362	384	405
						0.102	0.135	0.183				
				2		0.343	0.363	0.391		329	335	340
			50.1	1	2	0.274	0.300	0.323	4	247	253	265
						0.109	0.119	0.127				
				2		0.287	0.315	0.343		227	243	256
5	85.06.12	15336	5.8	1	3	0.574	0.597	0.632	3	764	789	815
						0.150	0.180	0.218				
				2		0.587	0.597	0.696		755	786	805
			12.9	1	4	0.610	0.635	0.673	3	681	711	754
						0.208	0.231	0.264				
				2		0.658	0.686	0.734		628	679	742
			50.5	1	4	0.546	0.554	0.559	4	523	540	574
						0.193	0.203	0.218				
				2		0.574	0.584	0.592		532	537	544
6	85.06.12	15582	5.8	1	4	0.655	0.693	0.711	5	808	833	870
						0.206	0.254	0.290				
				2		0.686	0.739	0.762		743	813	836
			12.6	1	3	0.607	0.655	0.691	4	714	764	801
						0.198	0.229	0.249				
				2		0.663	0.693	0.711		674	717	764
			45.4	1	4	0.566	0.594	0.625	4	545	576	600
						0.206	0.224	0.249				
				2		0.594	0.617	0.632		547	560	573
8A	85.06.12	11718	5.8	1	3	0.574	0.592	0.607	4	678	716	742
						0.208	0.221	0.239				
				2		0.632	0.640	0.650		667	691	715
			12.9	1	3	0.566	0.582	0.602	4	645	658	671
						0.193	0.216	0.239				
				2		0.574	0.594	0.615		606	615	629
			49.4	1	4	0.432	0.470	0.503	4	436	450	475
						0.137	0.160	0.175				
				2		0.462	0.493	0.533		427	439	452

Table 13.4 - continued

Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 13, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.06.12	9655	5.8	1	3	0.511	0.544	0.569	4	581	639	677
						0.178	0.198	0.216				
				2		0.566	0.574	0.579		584	603	614
			12.9	1	4	0.478	0.500	0.518	4	519	552	578
						0.178	0.198	0.218				
				2		0.511	0.538	0.559		507	529	547
			47.6	1	2	0.455	0.480	0.503	5	375	389	405
						0.081	0.127	0.170				
				2		0.457	0.490	0.523		345	383	451
11	85.06.13	14582	5.8	1	4	0.584	0.622	0.663	5	645	686	707
						0.183	0.208	0.241				
				2		0.622	0.653	0.688		638	662	675
			12.9	1	4	0.594	0.625	0.650	4	583	592	605
						0.175	0.216	0.239				
				2		0.617	0.655	0.691		543	569	606
			48.1	1	4	0.566	0.572	0.587	4	431	440	450
						0.157	0.190	0.213				
				2		0.584	0.599	0.625		443	450	454
			89.3	1	4	0.470	0.516	0.538	4	368	392	417
						0.127	0.165	0.190				
				2		0.533	0.572	0.594		368	391	434
12	85.06.13	12500	5.8	1	5	0.617	0.635	0.665	4	803	875	946
						0.104	0.188	0.216				
				2		0.655	0.673	0.681		789	809	833
			12.9	1	4	0.594	0.622	0.655	4	744	765	799
						0.190	0.218	0.257				
				2		0.650	0.673	0.688		698	718	758
			49.2	1	4	0.488	0.516	0.533	4	536	555	581
						0.142	0.152	0.170				
				2		0.490	0.536	0.566		503	550	613
13	85.06.13	13136	5.8	1	4	0.640	0.686	0.711	4	801	839	888
						0.201	0.213	0.226				
				2		0.696	0.711	0.729		776	810	834
			12.9	1	4	0.632	0.660	0.673	4	764	787	799
						0.190	0.213	0.234				
				2		0.663	0.696	0.714		694	722	751
			49.9	1	4	0.528	0.559	0.594	4	565	603	625
						0.160	0.180	0.206				
				2		0.559	0.602	0.655		561	585	593

Table 13.4 – continued

Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.5 m Spacing)-Dual Tire Loads, Site 13, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
14A	85.06.13	13236	5.8	1	4	0.655	0.686	0.704	4	770	820	881
						0.178	0.211	0.249				
				2		0.671	0.724	0.747		770	811	858
			12.9	1	4	0.658	0.696	0.714	4	719	745	793
						0.119	0.211	0.259				
				2		0.714	0.742	0.787		704	744	785
			49.9	1	4	0.528	0.561	0.592	4	562	602	621
						0.145	0.168	0.206				
				2		0.577	0.605	0.640		566	576	584

Table 13.5
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Tandem Axle (1.8 m Spacing)-Dual Tire Loads, Site 13, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
12	85.06.13	14064	5.8	5	4	0.706	0.711	0.714	4	740	753	766
						0.206	0.231	0.259				
				6		0.744	0.752	0.762		739	768	791
			12.9	5	4	0.663	0.696	0.726	4	723	733	744
						0.218	0.236	0.254				
				6		0.714	0.742	0.767		719	726	732
			49.2	5	4	0.544	0.569	0.587	3	564	572	589
						0.160	0.175	0.190				
				6		0.584	0.617	0.640		572	606	649
8A	85.06.12	22127	5.8	5	3	0.800	0.826	0.851	3	738	752	766
						0.269	0.305	0.351				
				6		0.889	0.899	0.914		730	735	738
			12.9	5	4	0.787	0.805	0.823	4	673	706	722
						0.287	0.317	0.371				
				6		0.866	0.879	0.899		673	702	724
			50.1	5	3	0.719	0.739	0.754	4	558	576	590
						0.241	0.246	0.254				
				6		0.754	0.775	0.792		548	576	590

Table 13.6
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (2.4 m Spacing)-Dual Tire Loads, Site 13, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
6	85.06.12	20082	5.8	6	4	0.681	0.714	0.747	4	740	758	775
						0.302	0.335	0.353				
				7		0.726	0.759	0.785		667	692	715
						0.312	0.351	0.376				
				8		0.711	0.749	0.777		678	702	739
			12.6	6	2	0.665	0.678	0.691	3	675	682	688
						0.310	0.323	0.335				
				7		0.719	0.719	0.721		638	642	646
						0.328	0.345	0.358				
				8		0.696	0.704	0.711		630	639	651
			45.4	6	4	0.574	0.597	0.630	4	486	522	554
						0.287	0.305	0.320				
				7		0.622	0.643	0.688		479	499	519
						0.290	0.310	0.353				
				8		0.610	0.627	0.648		503	516	528
1	85.06.12	31645	5.8	6	5	0.686	0.726	0.792	4	523	592	613
						0.323	0.358	0.424				
				7		0.744	0.777	0.826		536	556	571
						0.376	0.394	0.442				
				8		0.734	0.770	0.833		565	578	600
			12.9	6	4	0.704	0.737	0.775	3	552	560	568
						0.368	0.389	0.406				
				7		0.782	0.795	0.841		508	516	527
						0.401	0.419	0.450				
				8		0.726	0.772	0.815		553	540	543
			48.9	6	3	0.671	0.696	0.726	4	442	456	471
						0.315	0.348	0.391				
				7		0.726	0.747	0.785		421	434	443
						0.345	0.376	0.424				
				8		0.711	0.734	0.782		442	457	475

Table 13.7
Summary of Pavement Surface Deflections and Interfacial Tensile Strains Under Triaxle (3.7 m Spacing)-Dual Tire Loads, Site 13, British Columbia

Test Series No.	Test Date YY.MM.DD	Gross Weight kilograms	Avg. Veh. Velocity (km/h)	Axle No.	Surface Deflections (mm) N	D min.	D avg.	D max.	Interfacial Tensile Strains (mm/mm x 10^{-6}) N	S min.	S avg.	S max.
10B	85.06.12	20509	5.8	4	3	0.635	0.648	0.658	4	658	676	685
						0.216	0.231	0.254				
				5		0.696	0.706	0.726		665	677	691
						0.226	0.249	0.274				
				6		0.698	0.726	0.737		690	699	704
			12.9	4	4	0.617	0.627	0.632	4	577	591	604
						0.208	0.224	0.241				
				5		0.671	0.686	0.691		596	602	605
						0.234	0.251	0.269				
				6		0.688	0.696	0.714		620	625	652
			46.0	4	3	0.505	0.526	0.569	3	431	443	455
						0.163	0.175	0.193				
				5		0.561	0.572	0.592		443	460	478
						0.168	0.185	0.213				
				6		0.574	0.597	0.643		473	475	476
3	85.06.12	31664	5.8	4	4	0.711	0.729	0.747	3	756	758	762
						0.241	0.264	0.297				
				5		0.798	0.823	0.848		693	703	714
						0.282	0.305	0.335				
				6		0.833	0.859	0.889		697	716	731
			12.7	4	4	0.579	0.721	0.737	4	637	659	690
						0.249	0.269	0.302				
				5		0.777	0.813	0.838		608	622	638
						0.297	0.315	0.345				
				6		0.826	0.846	0.859		620	630	649
			46.8	4	5	0.533	0.605	0.681	5	500	517	545
						0.135	0.185	0.272				
				5		0.630	0.691	0.787		491	525	589
						0.168	0.213	0.296				
				6		0.648	0.716	0.810		521	535	600

6.0 REFERENCES

1. Christison, J.T. "In Situ Measurements of Pavement Behavior Under Load". Roads and Transportation Association of Canada, Transportation Forum, Vol. 1 - 4, March 1985.

Conversion factors

Length

1 km	0.621371 mile
1 m	1.09361 yd 3.2808 ft
1 cm	0.393701 in
1 mm	0.03937 in
1 μm	39.3701 μin
1 mile	**1.60934 km**
1 yd	**0.9144 m**
1 ft	**0.3048 m**
1 in	**25.4 mm**
1 milli-in (thou)	**25.4 μm**
1 μin	**0.0254 μm**

Force

1 N	0.10197 kgf 0.22481 lbf
1 kN	101.971 kgf 224.809 lbf
1 kgf (kilopond)	**9.80665 N** 2.20462 lbf
1 dyn	**10^{-5}N** 0.224809 x 10^{-5}lbf
1 lbf	**4.44822 N** 0.45359 kgf
1 tonf	**9.96402 kN** 1016.05 kgf

Mass

1 tonne	**1000 kg** 0.98420 ton 2204.62 lb
1 kg	0.01968 cwt 2.20462 lb
1 g	0.03527 oz
1 ton	**1016.05 kg** 1.01605 tonne
1 cwt	**50.8023 kg**
1 lb	**0.45359 kg**
1 oz	**28.349 g**

Area

1 km^2 (100 hectares)	247.105 acres
1 hectare (ha)	2.47105 acres **10000 m^2**
1 m^2	1.19599 yd^2
1 cm^2	0.155 in^2
1 mm^2	0.00155 in^2
1 mile^2	**2.58999 km^2**
1 acre (4840 yd^2)	**4046.86 m^2** **0.404686 ha**
1 yd^2	**0.836127 m^2**
1 ft^2	**0.092903 m^2**
1 in^2	**645.16 mm^2**

Pressure, stress

1 Pa (N/m^2)	0.01 mbar 0.000145 lbf/in^2
1 kPa (kN/m^2)	0.01 kgf/cm^2 10 mbar 20.885 lbf/ft^2 0.2953 in Hg
1 kgf/cm^2	**98.0665 kPa** 14.223 lbf/in^2
1 bar	**100 kPa** 14.5038 lbf/in^2
1 mbar	**100 Pa** 2.0886 lbf/ft^2
1 atm	**101.325 kPa** 14.6959 lbf/in^2
1 mm Hg (torr)	**133.322 Pa** 0.01934 lbf/in^2
1 mm H_2O	**9.80665 Pa** 0.001422 lbf/in^2
1 lbf/in^2	**6.89476 kPa** 0.07031 kgf/cm^2 68.9476 mbar
1 lbf/ft^2	**47.8803 Pa** 0.4788 mbar
1 tonf/ft^2	**107.252 kPa** 1.094 kgf/cm^2
1 in Hg	**3.38639 kPa** 0.491 lbf/in^2
1 ft H_2O	**2.98907 kPa** 0.030 kgf/cm^2 22.3997 mm Hg