

REPORT NUMBER 110(IND)-GTL-03-034

**SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 110(INDICANT)
TIRE SELECTION AND RIMS**

**NISSAN MOTOR CO., LTD
2004 NISSAN MAXIMA PASSENGER CAR
NHTSA NO. C35202**

**GENERAL TESTING LABORATORIES, INC.
1623 LEEDSTOWN ROAD
COLONIAL BEACH, VIRGINIA 22443**



SEPTEMBER 25, 2003

FINAL REPORT

PREPARED FOR

**U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
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WASHINGTON, D.C. 20590**

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16. Abstract This test was conducted on the subject, 2004 Nissan Maxima passenger car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-110-02 (partial), to gather data relating to the normal load requirements specified in FMVSS 110. NHTSA's Office of Safety Performance Standards requested this data to support the agency's TREAD tire rulemaking efforts.					
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TABLE OF CONTENTS

SECTION		PAGE
1	Introduction	1
2	Test Procedure and Summary of Results	2
3	Test Data	3
4	Test Equipment List	10
5	Photographs	11
	5.1 ¾ Frontal View of Vehicle	
	5.2 Vehicle's Certification Label	
	5.3 Vehicle's Tire Information Label	
	5.4 Tire Showing Brand	
	5.5 Tire Showing Model	
	5.6 Tire Showing Size, Load Index and Speed Symbol	
	5.7 Tire Showing Max Load Rating	
	5.8 Tire Showing Max Inflation Pressure	
	5.9 Vehicle Ballasted to Simulate Normal Load Condition	

APPENDIX – Normal Load Occupation Distribution

SECTION 1

INTRODUCTION

1.0 PURPOSE OF INDICANT TEST

A 2004 Nissan Maxima passenger car was subjected to a FMVSS No. 110 (Indicant) test intended to gather data relating to the normal load requirements specified in FMVSS 110. NHTSA's Office of Safety Performance Standards requested this data to support the agency's TREAD tire rulemaking efforts.

1.1 TEST VEHICLE

The test vehicle was a 2004 Nissan Maxima. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 1N4BA41E04C808382

B. NHTSA No.: C35202

C. Manufacturer: NISSAN MOTOR CO., LTD

D. Manufacture Date: 03/03

1.2 TEST DATE

The test vehicle was subjected to testing on June 05, 2003.

SECTION 2

TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 TEST PROCEDURE

The vehicle was inspected, photographed and filled with fuel. It was then weighed to establish total curb weight and the weights of all wheels were measured and recorded. The vehicle was then ballasted to its normal load condition (refer to appendix) and the weights of all wheels were measured and recorded. Tire information labeling data and tire sidewall data were recorded.

This indicant test did not include any other requirements in FMVSS 110.

2.1 SUMMARY OF RESULTS

Test results are provided in Section 3.

**SECTION 3
TEST DATA**

DATA SHEET 1
SUMMARY

VEHICLE MAKE/MODEL/BODY STYLE: 2004 NISSAN MAXIMA PASSENGER CAR
VEHICLE NHTSA NO.: C35202 ; VIN: 1N4BA41E04C808382
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/05/03

<u>REQUIREMENT</u>	<u>YES/NO</u>
The vehicle is equipped with tires that meet the requirements of FMVSS 109 or FMVSS 119.	<u>YES</u>
The vehicle normal load on the tire is not greater than the high speed performance test load specified in FMVSS 109 paragraph S5.5 or FMVSS 119 paragraph S7.4.	<u>YES</u>
For passenger cars, the tire information placard is permanently affixed to the glove compartment door or equally accessible location; and displays the required information (FMVSS 110, S4.3).	<u>YES</u>
For vehicles other than passenger cars, a combined certification/ tire information label or separate tire information label is permanently affixed to either the hinge pillar, door-latch post or to the inward-facing surface of the door next to the driver's seating position (FMVSS 120, S5.3).	<u>N/A</u>

REMARKS:

RECORDED BY: M. A. Olan
APPROVED BY: D. Messick

DATE: 06/05/03

DATA SHEET 2
TEST VEHICLE INFORMATION/RECEIVING INSPECTION

LABORATORY: GENERAL TESTING LABORATORIES DATE: 06/05/03

VEHICLE MODEL YEAR/MAKE/MODEL/BODY STYLE: 2004 NISSAN MAXIMA

MANUFACTURE DATE: 03/03 NHTSA NO.: C35202 BODY COLOR: BLACK

VIN: 1N4BA41E04C808382 VEHICLE TYPE: PASSENGER CAR

GVWR 2062 kg (4546 lbs) GAWR(Fr) 1120 kg (2469 lbs) GAWR(Rr) 951 kg (2097 lbs)

BELTED SEATING POSITIONS: FRONT 2 MID N/A REAR 2 OTHER N/A

ENGINE DATA: 6 Cylinders 3.5 Liters Cubic Inches

TRANSMISSION DATA: X Automatic Manual 5 No. of Speeds

FINAL DRIVE DATA: Rear Drive X Front Drive 4 Wheel Drive

INSTALLED TIRE DATA: Size - P245/45R18 Mfr. - GOODYEAR

CHECK APPROPRIATE BOXES FOR VEHICLE EQUIPMENT/MAKE SURE ALL OPTIONS ON WINDOW STICKER ARE LISTED:

<input checked="" type="checkbox"/>	Air Conditioning		Traction Control	<input checked="" type="checkbox"/>	Clock
<input checked="" type="checkbox"/>	Tinted Glass		All Wheel Drive		Roof Rack
<input checked="" type="checkbox"/>	Power Steering	<input checked="" type="checkbox"/>	Cruise Control	<input checked="" type="checkbox"/>	Console
<input checked="" type="checkbox"/>	Power Windows	<input checked="" type="checkbox"/>	Rear Window Defroster	<input checked="" type="checkbox"/>	Driver Air Bag
<input checked="" type="checkbox"/>	Power Door Locks	<input checked="" type="checkbox"/>	Sun Roof or T-Top	<input checked="" type="checkbox"/>	Passenger Air Bag
<input checked="" type="checkbox"/>	Power Seat(s)	<input checked="" type="checkbox"/>	Tachometer	<input checked="" type="checkbox"/>	Front Disc Brakes
<input checked="" type="checkbox"/>	Power Brakes	<input checked="" type="checkbox"/>	Tilt Steering Wheel	<input checked="" type="checkbox"/>	Rear Disc Brakes
<input checked="" type="checkbox"/>	Antilock Brake System	<input checked="" type="checkbox"/>	AM/FM/CD		Other -

ARE ALL OPTIONS LISTED ON "WINDOW STICKER" PRESENT ON THE TEST VEHICLE:
(YES/NO) Yes

REMARKS:

RECORDED BY: *M. D. Bla*

DATE: 06/05/03

APPROVED BY: *D. Messer*

DATA SHEET 3
CURB WEIGHT WITH OPTIONS AND NORMAL LOAD

VEHICLE MAKE/MODEL/BODY STYLE: 2004 NISSAN MAXIMA PASSENGER CAR
 VEHICLE NHTSA NO.: C35202 ; VIN: 1N4BA41E04C808382
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 06/05/03

Full Fluid Levels:

Fuel Full ; Coolant Full ; Other Fluids Full

Tire Pressure: LF 220 KPA (32 psi) LR 220 KPA (32 psi)
 RF 220 KPA (32 psi) RR 220 KPA (32 psi)

A. MEASURED CURB WEIGHT WITH INSTALLED OPTIONS AND ACCESSORIES

LF 498 KG (1098 LB) LR 310 KG (684 LB)
 RF 489 KG (1078 LB) RR 315 KG (694 LB)
 Front Axle 987 KG (2176 LB) Rear Axle 625 KG (1378 LB)
 Total Vehicle 1612 KG (3554 LB)

B. MEASURED VEHICLE WEIGHT IN NORMAL LOAD CONDITION

(1) Seating Capacity (from Tire Information Placard) = 4
 Seating Capacity (# of belted seating positions) = 4

(2) Normal Load # of Occupants from Appendix
 Occupant Distribution: Front Seat- 2 Second Seat- 0
 Third Seat - N/A Fourth Seat- N/A

(3) Total Normal Occupant Load 136 KG (300 LB)
 (# of occupants x 68 KG per occupant)

(4) Measured Normal Load on Each Wheel and Axles (Sum)

LF 536 KG (1182 LB) LR 339 KG (748 LB)
 RF 528 KG (1164 LB) RR 342 KG (754 LB)
 Frt Axle 1064 KG (2346 LB) Rr Axle 681 KG (1502 LB)

Total Vehicle 1745 KG (3848 LB)

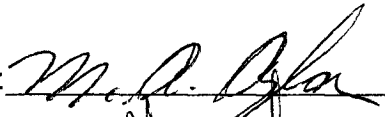
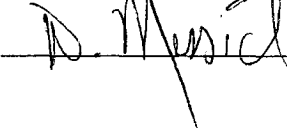
DATA SHEET 3 – CONTINUED

- (5) Calculated Vehicle Normal Load on the Tire
 Front Tires (measured front axle normal load/2) = 532 KG (1173 LB)
 Rear Tires (measured front axle normal load/2) = 341 KG (751 LB)
- (6) High Speed Test Load from (X) FMVSS 109 (S5.5), or () FMVSS 119 (S7.4)

	Front	Rear
(a) Installed Tire Size	<u>P245/45R18</u>	<u>P245/45R18</u>
Max. Load Rating on Sidewall	<u>710 KG(1565 LBS)</u>	<u>710 KG(1565 LBS)</u>
Reduced Sidewall Load Rating (if applicable)*	<u>N/A</u>	<u>N/A</u>
High Speed Test Load (88% of sidewall max. load rating)	<u>625 KG(1377 LBS)</u>	<u>625 KG(1377 LBS)</u>
(b) Optional Tire Size(s)	<u>NONE</u>	<u>NONE</u>

* If a passenger car tire is installed on a multipurpose passenger vehicle (MPV), truck or bus, the tire's load rating shall be reduced by dividing by 1.10.

REMARKS: The Vehicle Normal Load on the Tire is not greater than the High Speed Test Load

RECORDED BY: 
 APPROVED BY: 

DATE: 06/05/03

DATA SHEET 4
TIRE INFORMATION LABEL OR PLACARD

VEHICLE MAKE/MODEL/BODY STYLE: 2004 NISSAN MAXIMA PASSENGER CAR
VEHICLE NHTSA NO.: C35202 ; VIN: 1N4BA41E04C808382
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/05/03

A. Vehicle Type from Certification Label: Passenger Car

B. Identify Vehicle Labeling:

Vehicle has a combined Certification Tire Information Label Yes No
Is Label Permanently Affixed: Yes No
Label Location: _____
Description of Label: _____

Vehicle has a separate Tire Information Label or Placard Yes No
Is Label Permanently Affixed: Yes No
Label Location: Center Console Door
Description of Label: Vinyl

C. Enter Information from Combined or Separate Tire Information Label/Placard

Vehicle Capacity Weight - 322 KG (710 LBS)


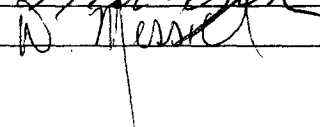
Designated Seating Capacity (DSC) - 4
Expressed In—
(1) Total No. of Occupants Yes No
(2) Terms of Occupants for Each Seat Location Yes No

Manufacturer's Recommended Tire Size and Cold Tire Inflation Pressure For Maximum Load Vehicle Weight:

P245/45R18 FRONT - 220 kPa (32 psi)
REAR - 220 kPa (32 psi)

Manufacturer's Recommended Tire Size and Cold Tire Inflation Pressure For Other Load Conditions: NONE

REMARKS:

RECORDED BY: 
APPROVED BY: 

DATE: 06/05/03

DATA SHEET 5
VEHICLE TIRE DATA

VEHICLE MAKE/MODEL/BODY STYLE: 2004 NISSAN MAXIMA PASSENGER CAR
 VEHICLE NHTSA NO.: C35202 ; VIN: 1N4BA41E04C808382
 LABORATORY: GENERAL TESTING LABORATORIES
 TEST DATE: 06/05/03

All tires on the vehicle are the same size: (Yes/No) Yes

INFORMATION FROM TIRE SIDEWALL:

Left Front Tire

Tire Size Designation	<u>P245/45R18</u>
Tire Load Index/Speed Symbol	<u>96V</u>
Maximum Inflation Pressure	<u>300 kPa (44 psi)</u>
Maximum Load Rating	<u>710 KG (1565 LBS.)</u>
Mfr. Name or Brand & Code	<u>GOODYEAR EAGLE</u>
Tube or Tubeless	<u>TUBELESS</u>
Treadwear/Traction/Temp. Grades	<u>260/A/A</u>
Sidewall (Plies & Composition)	<u>2 PLY POLYESTER</u>
Tread (Plies & Composition)	<u>2 PLY POLYESTER</u> <u>2 PLY STEEL</u> <u>2 PLY NYLON</u>
Serial Number: Left Front -	<u>DOT M6A9 CMWR 0603</u>

Tire has "DOT" markings: (X) YES () NO () UNDETERMINED

REMARKS:

RECORDED BY:

DATE: 06/05/03

APPROVED BY:

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
PAD SCALES	#1 199744LF	199744LF	06/02	06/20/03
	#2 199744RF	199744RF	06/02	06/20/03
	#3 199744LR	199744LR	06/02	06/20/03
	#4 199744RR	19974RR	06/02	06/20/03
PRESSURE GAGE	WESKLER	0-100	03/03	05/04
SURFACE LEVEL	GTL	N/A	BEFORE USE	BEFORE USE

**SECTION 5
PHOTOGRAPHS**



2004 NISSAN MAXIMA
NHTSA NO. C35202
FMVSS NO. 110 (INDICANT)

FIGURE 5.1
¾ FRONTAL VIEW OF VEHICLE

MANUFACTURED BY NISSAN MOTOR CO., LTD.

DATE 03/03 GVWR 4545 LB
GAWR FR. 2469 LB GAWR RR. 2897 LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY, BUMPER AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
SEE OWNERS MANUAL FOR ADDITIONAL INFORMATION.

VIN: 1N4BA41E04C808382 PASSENGER CAR

COLOR TRIM TRANS AXLE ENGINE
K03 T K 1 RESF22R GR24 1 U0350E 3498CC 02000

MODEL: BLJRLYN-EU4 462



1N4BA41E04C808382

2004 NISSAN MAXIMA
NHTSA NO. C35202
FMVSS NO. 110 (INDICANT)

FIGURE 5.2
VEHICLE'S CERTIFICATION LABEL

LOADING WEIGHT	SEATING CAPACITY	FRONT AXLE WEIGHT	FRONT WHEEL WEIGHT	REAR WHEEL WEIGHT	TOTAL WEIGHT	LOADING WEIGHT	SEATING CAPACITY
1100 (2400)	5	1100 (2400)	1100 (2400)	1100 (2400)	3300 (7200)	1100 (2400)	5
RECOMMENDED COLD INFLATION PRESSURE PRESSION DE L'AIR FROIDE RECOMMANDÉE DES PNEUS FROIDS							
FRONT (kg)	FRONT (lbs)	REAR (kg)	REAR (lbs)				
1100 (2400)	1100 (2400)	1100 (2400)	1100 (2400)				
DO NOT USE VEHICLES OF TO WHI 10 KPH SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION UTILISER UNiquement LES VEHICLES MAX 10 KPH POUR LES DETAILS SE REPORTER AU MANUEL DU CONDUCTEUR							

2004 NISSAN MAXIMA
 NHTSA NO. C35202
 FMVSS NO. 110 (INDICANT)

FIGURE 5.3
 VEHICLE'S TIRE INFORMATION LABEL



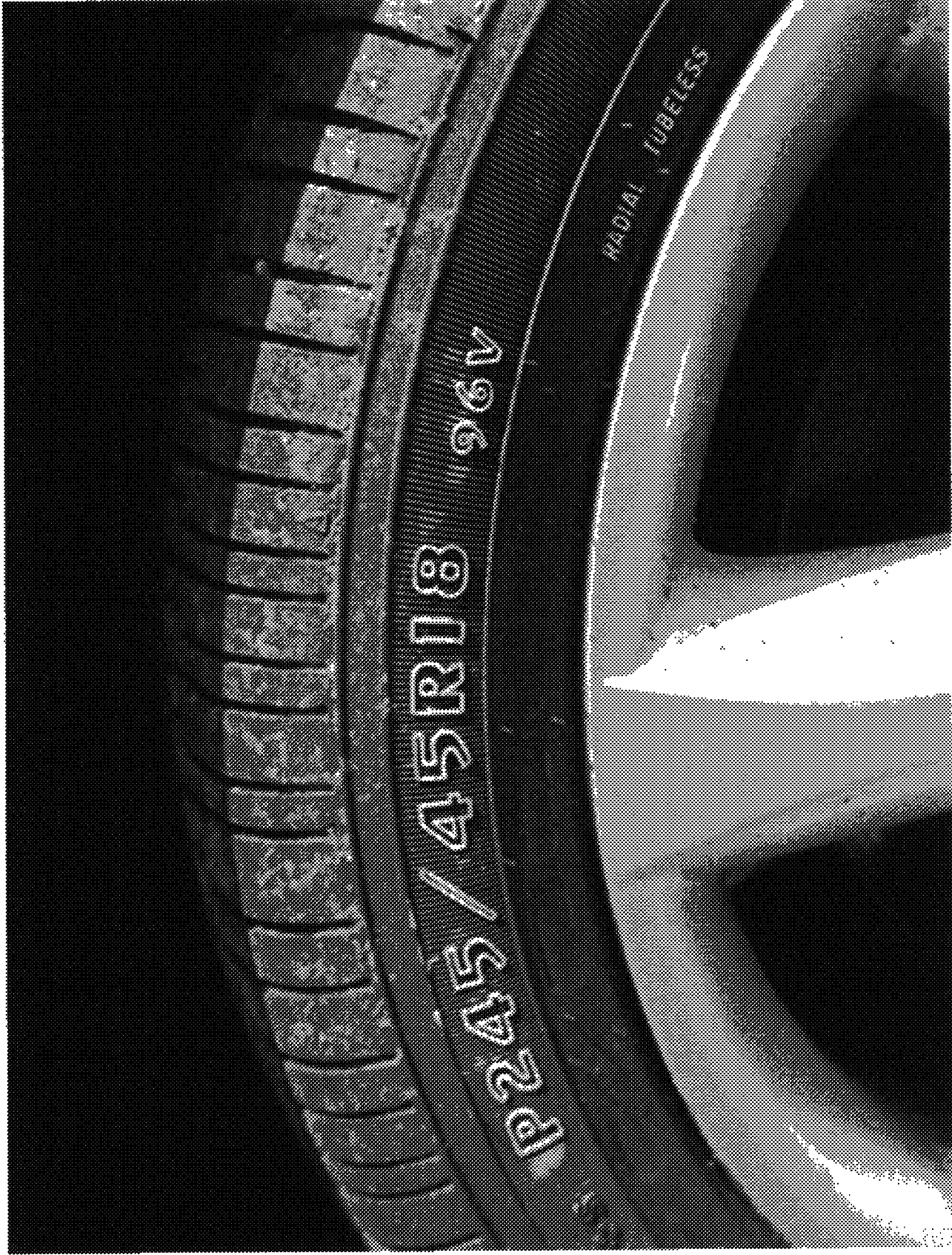
2004 NISSAN MAXIMA
NHTSA NO. C35202
FMVSS NO. 110 (INDICANT)

FIGURE 5.4
TIRE SHOWING BRAND



2004 NISSAN MAXIMA
NHTSA NO. C35202
FMVSS NO. 110 (INDICANT)

FIGURE 5.5
TIRE SHOWING MODEL



2004 NISSAN MAXIMA
NHTSA NO. C35202
FMVSS NO. 110 (INDICANT)

FIGURE 5.6
TIRE SHOWING SIZE, LOAD INDEX AND SPEED
SYMBOL



2004 NISSAN MAXIMA
NHTSA NO. C35202
FMVSS NO. 110 (INDICANT)

FIGURE 5.7
TIRE SHOWING MAX LOAD RATING



2004 NISSAN MAXIMA
NHTSA NO. C35202
FMVSS NO. 110 (INDICANT)

FIGURE 5.8
TIRE SHOWING MAX INFLATION PRESSURE



FIGURE 5.9
VEHICLE BALLASTED TO SIMULATE NORMAL
LOAD CONDITION

2004 NISSAN MAXIMA
NHTSA NO. C35202
FMVSS NO. 110 (INDICANT)

APPENDIX

Table 1 – Occupant Loading and Distribution for Vehicle Normal Load for Various Designated Seating Capacities

Designated Seating Capacities, numbers of Occupants	Vehicle normal load, number of occupants	Occupant distribution in a normally loaded vehicle
2 through 4	2	2 in front
5 through 10	3	2 in front, 1 in second seat
11 through 15	5	2 in front, 1 in second seat, 1 in third seat, 1 in fourth seat
16 through 22	7	2 in front, 2 in second seat, 2 in third seat, 1 in fourth seat

NOTE: For the indicant test each seat was adjusted to its full down and mid forward to aft position with the seat back adjusted to a 25° reclined angle. Each designated seat position was ballasted with 54 KG (120 LBS) in the seat and 14 KG (30 LBS) on the floor directly in front of the respective seat position.