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
ROOM 6111 (NVS-220)
WASHINGTON, D.C. 20590
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NHTSA No. C35202

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June 05, 2003

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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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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

REQUIREMENT

The vehicle is equipped with tires that meet the requirements of FMVSS 109 or FMVSS 119. YES

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. YES

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). YES

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). N/A

REMARKS:

RECORDED BY: ___________________ DATE: 06/05/03
APPROVED BY: ___________________
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:

<table>
<thead>
<tr>
<th>X</th>
<th>Air Conditioning</th>
<th>Traction Control</th>
<th>X</th>
<th>Clock</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Tinted Glass</td>
<td>All Wheel Drive</td>
<td></td>
<td>Roof Rack</td>
</tr>
<tr>
<td>X</td>
<td>Power Steering</td>
<td>X Cruise Control</td>
<td>X</td>
<td>Console</td>
</tr>
<tr>
<td>X</td>
<td>Power Windows</td>
<td>X Rear Window Defroster</td>
<td>X</td>
<td>Driver Air Bag</td>
</tr>
<tr>
<td>X</td>
<td>Power Door Locks</td>
<td>X Sun Roof or T-Top</td>
<td>X</td>
<td>Passenger Air Bag</td>
</tr>
<tr>
<td>X</td>
<td>Power Seat(s)</td>
<td>X Tachometer</td>
<td>X</td>
<td>Front Disc Brakes</td>
</tr>
<tr>
<td>X</td>
<td>Power Brakes</td>
<td>X Tilt Steering Wheel</td>
<td>X</td>
<td>Rear Disc Brakes</td>
</tr>
<tr>
<td>X</td>
<td>Antilock Brake System</td>
<td>X AM/FM/CD</td>
<td></td>
<td>Other -</td>
</tr>
</tbody>
</table>

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

REMARKS:

RECORDED BY: [Signature] DATE: 06/05/03

APPROVED BY: [Signature]
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

<table>
<thead>
<tr>
<th>Wheel</th>
<th>KG (LB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>498 (1098)</td>
</tr>
<tr>
<td>RF</td>
<td>489 (1078)</td>
</tr>
<tr>
<td>LR</td>
<td>310 (684)</td>
</tr>
<tr>
<td>RR</td>
<td>315 (694)</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Wheel</th>
<th>KG (LB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>536 (1182)</td>
</tr>
<tr>
<td>RF</td>
<td>528 (1164)</td>
</tr>
<tr>
<td>LR</td>
<td>339 (748)</td>
</tr>
<tr>
<td>RR</td>
<td>342 (754)</td>
</tr>
</tbody>
</table>

Front axle 1064 KG (2346 LB) Rear 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)

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

* 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: [Signature] DATE: 06/05/03
APPROVED BY: [Signature]
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 (X) No
Is Label Permanently Affixed: ( ) Yes ( ) No
Label Location: __________________________________________
Description of Label: ______________________________________

Vehicle has a separate Tire Information Label or Placard (X) Yes ( ) No
Is Label Permanently Affixed: (X) 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 (X) Yes ( ) No
(2) Terms of Occupants for Each Seat Location (X) 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: ______________________________________ DATE: 06/05/03
APPROVED BY: ______________________________________
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 P245/45R18
Tire Load Index/Speed Symbol 96V
Maximum Inflation Pressure 300 kPa (44 psi)
Maximum Load Rating 710 KG (1565 LBS.)
Mfr. Name or Brand & Code GOODYEAR EAGLE
Tube or Tubeless TUBELESS
Treadwear/Traction/Temp. Grades 260/A/A
Sidewall (Plies & Composition) 2 PLY POLYESTER
Tread (Plies & Composition) 2 PLY POLYESTER
2 PLY STEEL
2 PLY NYLON
Serial Number: Left Front - DOT M6A9 CMWR 0603

Tire has “DOT” markings: (X) YES ( ) NO ( ) UNDETERMINED

REMARKS:

RECORDED BY: [Signature] DATE: 06/05/03
APPROVED BY: [Signature]
### TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>DESCRIPTION</th>
<th>MODEL/ SERIAL NO.</th>
<th>CAL. DATE</th>
<th>NEXT CAL. DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAD SCALES</td>
<td>#1 199744LF</td>
<td>199744LF</td>
<td>06/02</td>
<td>06/20/03</td>
</tr>
<tr>
<td></td>
<td>#2 199744RF</td>
<td>199744RF</td>
<td>06/02</td>
<td>06/20/03</td>
</tr>
<tr>
<td></td>
<td>#3 199744LR</td>
<td>199744LR</td>
<td>06/02</td>
<td>06/20/03</td>
</tr>
<tr>
<td></td>
<td>#4 199744RR</td>
<td>19974RR</td>
<td>06/02</td>
<td>06/20/03</td>
</tr>
<tr>
<td>PRESSURE GAGE</td>
<td>WESKLER</td>
<td>0-100</td>
<td>03/03</td>
<td>05/04</td>
</tr>
<tr>
<td>SURFACE LEVEL</td>
<td>GTL</td>
<td>N/A</td>
<td>BEFORE USE</td>
<td>BEFORE USE</td>
</tr>
</tbody>
</table>
SECTION 5
PHOTOGRAPHS
2004 NISSAN MAXIMA
NHTSA NO. C35202
FMVSS NO. 110 (INDICANT)

FIGURE 5.8
TIRE SHOWING MAX INFLATION PRESSURE
APPENDIX

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

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

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 25º 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.