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

FORD MOTOR COMPANY
2003 FORD E350 XLT SUPER DUTY 15 PASSENGER BUS
NHTSA NO. C30210

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

SEPTEMBER 26, 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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16. Abstract
This test was conducted on the subject 2003 Ford E350 XLT Super Duty Bus 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

<table>
<thead>
<tr>
<th>SECTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Introduction</td>
<td>1</td>
</tr>
<tr>
<td>2 Test Procedure and Summary of Results</td>
<td>2</td>
</tr>
<tr>
<td>3 Test Data</td>
<td>3</td>
</tr>
<tr>
<td>4 Test Equipment List</td>
<td>10</td>
</tr>
<tr>
<td>5 Photographs</td>
<td>11</td>
</tr>
<tr>
<td>5.1 ( \frac{3}{4} ) Frontal View of Vehicle</td>
<td></td>
</tr>
<tr>
<td>5.2 Vehicle's Certification and Tire Information Label</td>
<td></td>
</tr>
<tr>
<td>5.3 Tire Showing Brand</td>
<td></td>
</tr>
<tr>
<td>5.4 Tire Showing Model</td>
<td></td>
</tr>
<tr>
<td>5.5 Tire Showing Size, Load Index and Speed Symbol</td>
<td></td>
</tr>
<tr>
<td>5.6 Tire Showing Max Load Rating</td>
<td></td>
</tr>
<tr>
<td>5.7 Tire Showing Max Inflation Pressure</td>
<td></td>
</tr>
<tr>
<td>5.8 Vehicle Ballasted to Simulate Normal Load Condition Part 1</td>
<td></td>
</tr>
<tr>
<td>5.9 Vehicle Ballasted to Simulate Normal Load Condition Part 2</td>
<td></td>
</tr>
<tr>
<td>5.10 Vehicle Ballasted to Simulate Normal Load Condition Part 3</td>
<td></td>
</tr>
</tbody>
</table>

APPENDIX – Normal Load Occupation Distribution
SECTION 1

INTRODUCTION

1.0 PURPOSE OF INDICANT TEST

A 2003 Ford E350 XLT Super Duty Bus 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 2003 Ford E350 XLT Super Duty Bus. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 1FBSS31S13HA53319

B. NHTSA No.: C30210

C. Manufacturer: FORD MOTOR COMPANY

D. Manufacture Date: 11/02

1.2 TEST DATE

The test vehicle was subjected to testing on June 04, 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

Currently FMVSS 110 applies only to passenger cars. The subject Ford E350 XLT Super Duty 15 Passenger vehicle is a bus and therefore it is not required to meet FMVSS 110 requirements. It was subjected to the normal load testing as executed for FMVSS 110 compliance verification for information only.
SECTION 3
TEST DATA
VEHICLE MAKE/MODEL/BODY STYLE: 2003 FORD E350 15 P.S.GR. BUS  
VEHICLE NHTSA NO.: C30210 ; VIN: 1FBSS31S13HA53319 
LABORATORY: GENERAL TESTING LABORATORIES  
TEST DATE: 06/04/03

REQUIREMENT

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

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.  

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).  

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).  

REMARKS:

RECORDED BY: [Signature]  
DATE: 06/04/03  
APPROVED BY: [Signature]
DATA SHEET 2
TEST VEHICLE INFORMATION/RECEIVING INSPECTION

LABORATORY: GENERAL TESTING LABORATORIES DATE: 06/04/03

VEHICLE MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003 FORD E350 15 PSGR, BUS

MANUFACTURE DATE: 11/02 NHTSA NO.: C30210 BODY COLOR: WHITE

VIN: 1FBSS313HA53319 VEHICLE TYPE: BUS

GVWR 4218 kg (9300 lbs) GAWR(Fr) 1610 kg (3550 lbs) GAWR(Rr) 2759 kg (6084 lbs)

BELTED SEATING POSITIONS: FRONT 2 2nd 3 3rd 3 4th 3 5th 4

ENGINE DATA: 10 Cylinders 6.8 Liters __ Cubic Inches

TRANSMISSION DATA: X Automatic ___ Manual ___ No. of Speeds

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

INSTALLED TIRE DATA: Size - LT245/75R16 Mfr. - GOODYEAR WRANGLER

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></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</td>
<td>Cruise Control</td>
<td>X</td>
</tr>
<tr>
<td>X</td>
<td>Power Windows</td>
<td>X</td>
<td>Rear Window Defroster</td>
<td>X</td>
</tr>
<tr>
<td>X</td>
<td>Power Door Locks</td>
<td></td>
<td>Sun Roof or T-Top</td>
<td>X</td>
</tr>
<tr>
<td>X</td>
<td>Power Seat(s)</td>
<td>Tachometer</td>
<td>X</td>
<td>Front Disc Brakes</td>
</tr>
<tr>
<td>X</td>
<td>Power Brakes</td>
<td>X</td>
<td>Tilt Steering Wheel</td>
<td>X</td>
</tr>
<tr>
<td>X</td>
<td>Antilock Brake System</td>
<td>X</td>
<td>AM/FM/CD</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: ______ DATE: 06/04/03

APPROVED BY: ______
DATA SHEET 3
CURB WEIGHT WITH OPTIONS AND NORMAL LOAD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 FORD E350 15 PSGR. BUS

VEHICLE NHTSA NO.: C30210 ; VIN: 1FBSS31S13H53319
LABORATORY: GENERAL TESTING LABORATORIES

TEST DATE: 06/04/03

Full Fluid Levels:
Fuel Full ; Coolant Full ; Other Fluids Full

Tire Pressure: LF 415 KPA (60 psi) LR 550 KPA (80 psi)
RF 415 KPA (60 psi) RR 550 KPA (80 psi)

A. MEASURED CURB WEIGHT WITH INSTALLED OPTIONS AND ACCESSORIES

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>703</td>
<td>KG (1549 LB)</td>
</tr>
<tr>
<td>RF</td>
<td>701</td>
<td>KG (1545 LB)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front Axle</td>
<td>1403</td>
<td>KG (3094 LB)</td>
</tr>
<tr>
<td>Rear Axle</td>
<td>1531</td>
<td>KG (3375 LB)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Vehicle</td>
<td>2934</td>
<td>KG (6469 LB)</td>
</tr>
</tbody>
</table>

B. MEASURED VEHICLE WEIGHT IN NORMAL LOAD CONDITION

(1) Seating Capacity (from Tire Information Placard) = N/A
Seating Capacity (# of belted seating positions) = 15

(2) Normal Load # of Occupants from Appendix
Occupant Distribution:
Front Seat - 2
Second Seat - 1
Third Seat - 1
Fourth Seat - 1

(3) Total Normal Occupant Load = 340 KG (750 LB)
(# of occupants x 68 KG per occupant)

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

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>776</td>
<td>KG (1710 LB)</td>
</tr>
<tr>
<td>RF</td>
<td>762</td>
<td>KG (1684 LB)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frt Axle</td>
<td>1538</td>
<td>KG (3391 LB)</td>
</tr>
<tr>
<td>Rr Axle</td>
<td>1735</td>
<td>KG (3825 LB)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Vehicle</td>
<td>3274</td>
<td>KG (7217 LB)</td>
</tr>
</tbody>
</table>
DATA SHEET 3 – CONTINUED

(5) Calculated Vehicle Normal Load on the Tire
Front Tires (measured front axle normal load/2) = 769 KG (1696 LB)
Rear Tires (measured front axle normal load/2) = 868 KG (1913 LB)

(6) High Speed Test Load from ( ) FMVSS 109 (S5.5), or (X) FMVSS 119 (S7.4)

<table>
<thead>
<tr>
<th>Front</th>
<th>Rear</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Installed Tire Size</td>
<td>LT245/75R16</td>
</tr>
<tr>
<td>Max. Load Rating on Sidewall</td>
<td>1380KG(3042 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>1214KG(2677 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: 06/04/03

APPROVED BY: [Signature]
DATA SHEET 4
TIRE INFORMATION LABEL OR PLACARD

VEHICLE MAKE/MODEL/BODY STYLE: 2003 FORD E350 15 P.SGR. BUS
VEHICLE NHTSA NO.: C30210; VIN: 1FBSS31S33A58319
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/04/03

A. Vehicle Type from Certification Label: BUS (NOT SCHOOL BUS)

B. Identify Vehicle Labeling:

Vehicle has a combined Certification Tire Information Label (X) Yes ( ) No
Is Label Permanently Affixed: (X) Yes ( ) No
Label Location: "B" Pillar
Description of Label: Vinyl

Vehicle has a separate Tire Information Label or Placard ( ) Yes (X) No
Is Label Permanently Affixed: ( ) Yes ( ) No
Label Location: ____________________________
Description of Label: _________________________

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

Vehicle Capacity Weight - N/A (see remarks)

Designated Seating Capacity (DSC) - N/A (see remarks)
Expressed In—
(1) Total No. of Occupants ( ) Yes ( ) No
(2) Terms of Occupants for Each Seat Location ( ) Yes ( ) No

Manufacturer’s Recommended Tire Size(s) and Cold Tire Inflation Pressure(s) for Maximum Load Vehicle Weight:

FRONT - 414 kPa (60 psi)
REAR - 552 kPa (80 psi)

Manufacturer’s Recommended Tire Size(s) and Cold Tire Inflation Pressure(s) for Other Load Conditions: NONE

REMARKS: The vehicle labeling requirements of FMVSS 120 for a bus do not include Vehicle Capacity Weight (VCW) or Designated Seating Capacity (DSP) as required by FMVSS 110 passenger car labeling.

RECORDED BY: [Signature] DATE: 06/04/03
APPROVED BY: [Signature]
DATA SHEET 5
VEHICLE TIRE DATA

VEHICLE MAKE/MODEL/BODY STYLE: 2003 FORD E350 15 PSGR. BUS
VEHICLE NHTSA NO.: C30210; VIN: 1FBSS31S13HA53319
LABORATORY: GENERAL TESTING LABORATORIES
TEST DATE: 06/04/03

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

INFORMATION FROM TIRE SIDEWALL:

Right Front Tire

Tire Size Designation ___________ LT245/75R16
Tire Load Index/Speed Symbol ___________ 120/116L
Maximum Inflation Pressure ___________ 550 kPa (80 psi)
Maximum Load Rating ___________ 1380 KG (3042 LBS)
Mfr. Name or Brand & Code ___________ GOODYEAR WRANGLER
Tube or Tubeless ___________ TUBELESS
Treadwear/Traction/Temp. Grades ___________ N/A
Sidewall (Ply & Composition) ___________ 2 PLY POLYESTER
Tread (Ply & Composition) ___________ 2 PLY POLYESTER
 ___________ 2 PLY STEEL
 ___________ 2 PLY NYLON
Serial Number: ___________ Right Front - DOT MD11 MMWV 4502

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

REMARKS:

RECORDED BY: ___________ DATE: 06/04/03
APPROVED BY: ___________
SECTION 4
INSTRUMENTATION AND 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>06/03</td>
</tr>
<tr>
<td></td>
<td>#2 199744RF</td>
<td>199744RF</td>
<td>06/02</td>
<td>08/03</td>
</tr>
<tr>
<td></td>
<td>#3 199744LR</td>
<td>199744LR</td>
<td>06/02</td>
<td>06/03</td>
</tr>
<tr>
<td></td>
<td>#4 199744RR</td>
<td>199744RR</td>
<td>06/02</td>
<td>06/03</td>
</tr>
<tr>
<td>PRESSURE GAGE</td>
<td>WESKLER</td>
<td>0-100</td>
<td>11/02</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
FIGURE 8.7
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 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.