

REPORT NUMBER 110-STF-07-002

# SAFETY COMPLIANCE TESTING FOR FMVSS NO. 110 TIRE SELECTION AND RIMS

KIA MOTORS CORPORATION  
2007 HYUNDAI ENTOURAGE  
FOUR-DOOR MPV  
NHTSA NO. C70504

U.S. DOT SAN ANGELO TEST FACILITY  
131 COMANCHE TRAIL, BUILDING 3527  
GOODFELLOW AFB, TEXAS 76908



September 18, 2007

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
ENFORCEMENT  
NVS-220  
OFFICE OF VEHICLE SAFETY COMPLIANCE  
1200 NEW JERSEY AVENUE, SE  
WASHINGTON, D.C. 20590

This publication is distributed by the National Highway Traffic Safety Administration in the interest of information exchange. Opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof.

If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement.

Prepared By: Doris Beebe

Approved By: [Signature]

Accepted By: Theresa M. Jacurata

Acceptance Date: September 18, 2007

1. Report No. 110-STF-07-002	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle  Final Report of FMVSS 110 Compliance Testing of 2007 Hyundai Entourage four-door MPV, NHTSA No. C70504		5. Report Date September 18, 2007	
		6. Performing Organization Code STF	
7. Author(s)  R.N. Gregg, Safety Compliance Specialist Jack Stewart, Junior Systems Analyst		8. Performing Organization Rep#  STF-DOT-07-110-002	
9. Performing Organization Name and Address  U.S. DOT San Angelo Test Facility 131 Comanche Trail, Building 3527 Goodfellow AFB, Texas 76908		10. Work Unit No. (TR AIS)	
		11. Contract or Grant No.	
12. Sponsoring Agency Name and Address  United States Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance 1200 New Jersey Avenue, SE Washington, DC 20590		13. Type of Report and Period Covered  Final Test Report August 22 through August 24, 2007	
		14. Sponsoring Agency Code  NVS-220	
15. Supplementary Notes			
16. Abstract Compliance tests were conducted on the subject 2007 Hyundai Entourage four-door MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-110T-01 for the determination of FMVSS 110 compliance. Test failures identified were as follows: NONE.			
17. Key Words  Compliance Testing Safety Engineering FMVSS 110		18. Distribution Statement  Copies of this report are available from -  NHTSA Technical Information Services NPO-411 1200 New Jersey Avenue, S.E. Washington, DC 20590 Email: <a href="mailto:tis@dot.gov">tis@dot.gov</a>	
19. Security Classification (of this report)  UNCLASSIFIED	21. No. of Pages  39	22. Price	
20. Security Classification (of this page)  UNCLASSIFIED			

## TABLE OF CONTENTS

SECTION	PAGE
1 Purpose of Compliance Test .....	1
2 Test Procedure and Summary of Results .....	2
3 Test Data .....	3
4 Test Equipment List and Calibration Information .....	17
5 Photographs .....	18
Figure	
5.1 ¾ Frontal View from Left Side of Vehicle	
5.2 ¾ Rear View from Right Side of Vehicle	
5.3 Vehicle Certification Label	
5.4 Vehicle Placard	
5.5 Tire Showing Brand	
5.6 Tire Showing Model	
5.7 Tire Showing Size, Load Index and Speed Symbol	
5.8 Tire Showing Max Load Rating and Max Inflation Pressure	
5.9 Tire Showing Construction	
5.10 Tire Showing Serial Number	
5.11 Rim Contour for Full Width of Cross Section	
5.12 Rim Showing Manufacture Date, Size, Type Designation, DOT Symbol, Reference Source, and Manufacturer Symbol	
5.13 Vehicle Front Seat Ballasted for Maximum Load	
5.14 Vehicle Mid Seat Ballasted for Maximum Load	
5.15 Vehicle Rear Seat Ballasted for Maximum Load	
5.16 Rear of Vehicle Shown Ballasted for Cargo	
5.17 Vehicle on Weight Scales	

SECTION 1  
INTRODUCTION

1.1 PURPOSE OF COMPLIANCE TEST

A 2007 Hyundai Entourage four-door MPV was tested to determine if the vehicle was in compliance with the requirements of FMVSS 110. All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure, TP-110T-01, dated December 15, 2005.

This standard establishes requirements to ensure that applicable vehicles are equipped with tires of adequate size and load rating and rims of appropriate size and type designation. This standard also establishes location, content, and format requirements for the Vehicle Placard and optional Tire Inflation Pressure Label.

1.2 TEST VEHICLE

The test vehicle was a 2007 Hyundai Entourage four-door MPV. Nomenclatures applicable to the test vehicle are:

- A. Vehicle Identification Number: KNDMC233776011787
- B. NHTSA No.: C70504
- C. Manufacturer: Kia Motors Corporation
- D. Manufacture Date: 02/2006

1.3 TEST DATE

The test vehicle was tested August 22 through August 24, 2007.

## SECTION 2

### TEST PROCEDURE AND SUMMARY OF RESULTS

#### 2.1 TEST PROCEDURE

The test vehicle was inspected for completeness, systems operability, and appropriate fuel and liquid levels, i.e. oil and coolant. The vehicle was then photographically documented as required by the NHTSA/OVSC Test Procedure. Tire sidewall information was recorded. The owner's manual was reviewed. Pertinent information from the tire and rim was photographed.

Subsequent events included weighing the vehicle to establish delivered Unloaded Vehicle Weight and the distribution of weight on the front and rear axles and each wheel position. At each step of the ballasting procedure, data was recorded. Vehicle was ballasted to Full Occupant Load, and Maximum Vehicle Load weight. Ballast was photographically documented for Maximum Vehicle Load weight. The vehicle maximum load on each wheel was measured. Data from each tire furnished with the vehicle were recorded. Tire size information was taken from vehicle certification label and vehicle placard. The right front wheel was removed from the vehicle and the tire was dismounted from the rim. The rim was measured from flange to flange, and rim markings were photographically documented. The owner's manual was checked for all required information on tire loading, and on general tire and loading parameters.

#### 2.2 SUMMARY OF RESULTS

The data indicate compliance of the Hyundai Entourage test vehicle with all requirements tested.

SECTION 3

TEST DATA

## DATA SUMMARY SHEET (1 of 2)

VEHICLE MAKE/MODEL/BODY STYLE: 2007 Hyundai Entourage four-door MPV

VEHICLE NHTSA NO.: C70504 VIN: KNDMC233776011787

VEHICLE TYPE: MPV DATE OF MANUFACTURE: 02/2006

LABORATORY: US DOT San Angelo Test Facility

### LIGHT TRUCK TYPE REQUIREMENTS

**PASS/FAIL**

#### General (Data Sheet 2)

The vehicle must be equipped with tires that meet the requirements of S109 or S119. (S120, S5.1.1) PASS

#### Tire Load Limits (Data Sheet 2)

The sum of the maximum load ratings of the tires fitted to an axle is not less than the gross axle weight rating (GAWR) of the axle system as specified on the certification label. (S120, S5.1.2) PASS

#### Rim (Data Sheet 3)

Each rim is constructed to the dimensions of a rim specified for the tire size equipped on the vehicle. (S120, S5.1.1) PASS

Each rim is properly marked. (S120, S5.2) PASS

#### Certification, Placard, and Tire Inflation Pressure Labels (Data Sheets 4)

The placard and tire inflation pressure label (if provided) are affixed and located correctly, and display the information and format required. (S110, S4.3) PASS

The Part 567 certification label shows the size designation of the tires and and rims appropriate for the vehicle including the tire size(s) listed on the vehicle placard and, if provided, tire inflation pressure label (S110, S4.3.3) PASS

No inflation pressure other than the maximum permissible inflation pressure is shown on the placard and, if any, tire inflation pressure label unless as required (S110, S4.3.4) PASS



## DATA SUMMARY SHEET (2 of 2)

### Vehicle Weight Distribution (Data Sheet 5 )

The Gross Vehicle Weight Rating (GVWR) is not less than the sum of the unloaded vehicle weight, rated cargo load, and 68 kg times the vehicle's designated seating capacity. However, for school buses, the minimum occupant weight allowance is 54 kg. (49 CFR 567, *Certification*)

PASS

### Owner's Manual (Data Sheet 6)

Owner's manual or other document has discussion of Loading and Tires (575.6 (a)(4))

PASS

Owner's manual includes exact statement relating to "Steps for Determining Correct Load Limits." (575.6 (a)(5))

PASS

**DATA SHEET 1**  
**TEST VEHICLE INFORMATION / RECEIVING INSPECTION**

VEHICLE MAKE/MODEL/BODY STYLE: 2007 Hyundai Entourage four-door MPV

VEHICLE NHTSA NUMBER: C70504 TEST DATE: August 22, 2007

VIN: KNDMC233776011787 MANUFACTURE DATE: 02/2006

GVWR: 2,675 kg (5,898 lbs) GAWR (front): 1,360 kg (2,998 lbs)  
GAWR (rear): 1,390 kg (3,064 lbs)

SEATING POSITIONS: FRONT 2 MID 2 REAR 3

ODOMETER READING AT START OF TEST: 1,156 km (718 mi)

ENGINE DATA: 6 Cylinders        Liters        Cubic Inches

TRANSMISSION DATA: X Automatic        Manual        No. of Speeds

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

**CHECK APPROPRIATE BOXES FOR INSTALLED VEHICLE EQUIPMENT:**

<input checked="" type="checkbox"/>	Air Conditioning		Traction Control		Clock
<input checked="" type="checkbox"/>	Tinted Glass	<input checked="" type="checkbox"/>	Tachometer		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		Sun Roof or T-Top	<input checked="" type="checkbox"/>	Passenger Air Bag
	Power Seat(s)	<input checked="" type="checkbox"/>	Tilt Steering Wheel	<input checked="" type="checkbox"/>	Side Curtain Air Bag(s)
<input checked="" type="checkbox"/>	Power Brakes	<input checked="" type="checkbox"/>	Stereo	<input checked="" type="checkbox"/>	Front Disc Brakes
<input checked="" type="checkbox"/>	Antilock Brake System		Telephone		Rear Disc Brakes
	Navigation System		Trailer Hitch		Other -

REMARKS: Vehicle did not have a window sticker as received from previous lab.

RECORDED BY: Robert N. Gregg DATE: August 22, 2007

APPROVED BY: Kenneth H. Yates

**DATA SHEET 2 (1 of 2)**  
**VEHICLE RIM IDENTIFICATION AND LOAD LIMITS**

VEHICLE MAKE/MODEL/BODY STYLE: 2007 Hyundai Entourage four-door MPV

VEHICLE NHTSA NO. C70504 VIN: KNDMC233776011787

LABORATORY: US DOT San Angelo Test Facility TEST DATE: August 24, 2007

All tires on the vehicle (excluding the spare) are the same size: ( X ) YES ( ) NO

Spare tire is the same size as all other tires: ( ) YES ( X ) NO

<b>Tire Sidewall</b>	<b>Right Front</b>	<b>Left Rear</b> (If different)	<b>Spare Tire</b> (If different)
Manufacturer and Model	<u>Kumho Solus KH16</u>	<u></u>	<u>Kumho</u>
Tire Size Designation	<u>225/70R16</u>	<u></u>	<u>T135/90R17</u>
Load Index/Speed Symbol	<u>102T</u>	<u></u>	<u>104M</u>
Maximum Inflation Pressure	<u>300 kPa (44 psi)</u>	<u></u>	<u>420 kPa (60 psi)</u>
Maximum Load Rating	<u>850 kg (1,874 lbs)</u>	<u></u>	<u>900 kg (1,984 lbs)</u>
Tread/Traction/Temperature	<u>440/AA/A</u>	<u></u>	<u>N/A</u>
Tires Have "DOT" Markings	<u>Yes</u>	<u></u>	<u>Yes</u>

Serial Number: Right Front 27VFYA5M0806 Left Front 27VFYA5M0806  
Right Rear 27VFYA5M0806 Left Rear 27VFYA5M1507\*  
Spare H2PTYA1F0806

\*Replacement tire

**DATA SHEET 2 (2 of 2)**  
**VEHICLE TIRE IDENTIFICATION AND LOAD LIMITS**

MOUNTED TIRE VS. AXLE RATING COMPARISON (at sidewall maximum inflation pressure)		
	FRONT AXLE	REAR AXLE
A. GAWR from certification label	1,360 kg (2,998 lbs)	1,390 kg (3,064 lbs)
B. Tire Maximum Load Rating from above	850 kg (1,874 lbs)	850 kg (1,874 lbs)
C. Reduced tire load rating if applicable*	773 kg (1,704 lbs)	773 kg (1,704 lbs)
D. (No. of tires) x (Tire load rating de-rated if appropriate)	1,546 kg (3,408 lbs)	1,546 kg (3,408 lbs)
Is "D" equal to or greater than "A"? (Yes/No)	Yes	Yes

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

DATA INDICATES COMPLIANCE:

PASS/FAIL: PASS

REMARKS: A replacement tire was installed on left rear position because the OE tire was damaged during a different FMVSS test.

RECORDED BY: Robert N. Gregg

DATE: August 24, 2007


APPROVED BY: Kenneth H. Yates

**DATA SHEET 3  
VEHICLE RIM IDENTIFICATION**

VEHICLE MAKE/MODEL/BODY STYLE: 2007 Hyundai Entourage four-door MPV

VEHICLE NHTSA NO. C70504 VIN: KNDMC233776011787

LABORATORY: US DOT San Angelo Test Facility TEST DATE: August 24, 2007

<b>Rim Markings</b>	<b>RIGHT FRONT</b>	<b>LEFT REAR (if different)</b>
A. Source of published dimensions (letter designation)	T	
B. Rim Size	16x6½J	
C. Does rim contain DOT symbol? (Yes/No)	Yes	
D. Manufacturer's name, symbol or trademark (copy format)		
E. Date of manufacture or symbol (copy format)	02 18 06	
F. Letter height (not less than 3 mm)	5 mm	
G. Lettering (impressed or embossed)	Impressed	
H. Are all rim markings legible? (Yes/No)	Yes	
Do items A-C appear on weather side of rim (Yes/No)	Yes	
Do all markings comply with requirements (Yes/No)	Yes	

<b>Rim Measurements</b>	<b>RIGHT FRONT</b>	<b>LEFT REAR (if different)</b>
Rim width	16.5 cm (6.5 in)	
Rim diameter	40.6 cm (16 in)	
Rim measurements same as rim markings?	Yes	

Rims are suitable for tires on vehicle? ( X )YES ( ) NO

Reference source used for tire/rim match verification:

2007 Japan Automobile Tyre Manufacturers Association Yearbook

DATA INDICATES COMPLIANCE: PASS/FAIL: PASS

REMARKS: None

RECORDED BY: Robert N. Gregg DATE: August 24, 2007

APPROVED BY: Kenneth H. Yates

**DATA SHEET 4 (1 of 3)**  
**VEHICLE PLACARD AND TIRE INFLATION PRESSURE LABEL**

VEHICLE MAKE/MODEL/BODY STYLE: 2007 Hyundai Entourage four-door MPV

VEHICLE NHTSA NO. C70504 VIN: KNDMC233776011787

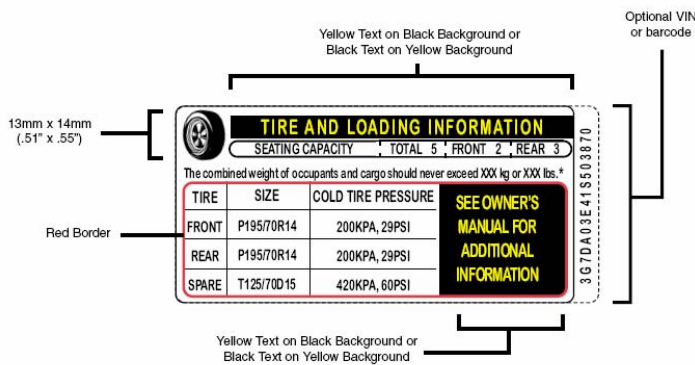
LABORATORY: US DOT San Angelo Test Facility TEST DATE: August 22, 2007

**Identification of Vehicle Labeling**

	(Yes/No)	Location	PASS/FAIL
1. Certification Label*	<u>Yes</u>	<u>Driver's side B pillar</u>	<u>PASS</u>
2. Vehicle Placard*	<u>Yes</u>	<u>Driver's side B pillar</u>	<u>PASS</u>
3. Tire Inflation Pressure Label*	<u>N/A</u>		

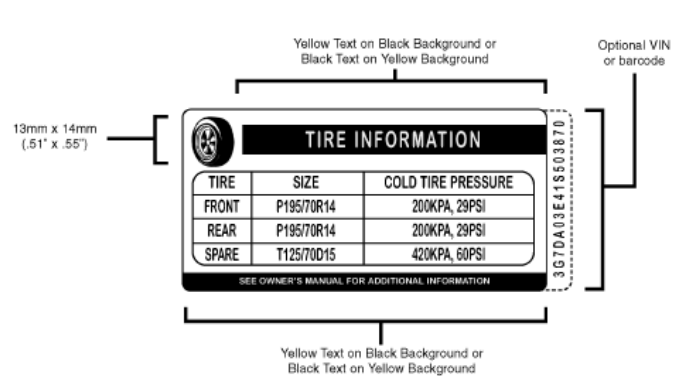
\* Labels must be located as specified in section 12.4 of test procedure.

**Vehicle Placard**



**FIGURE 1**  
**(70 FR 14425)**

**Tire Inflation Pressure Label**



**FIGURE 2**  
**(70 FR 14426)**

**Labeling Notes:**

1. Tire size and pressure can be omitted from the Vehicle Placard if same data is displayed on a Tire Inflation Pressure Label.
2. The Alphanumeric Identifier or Barcode is optional. It can be located vertically, along the right edge or the left edge of the placard or the label, or horizontally, along the bottom edge of the placard or the label.
3. Tire size can include the tire load range identification symbol ("XL" or "reinforced", "B", "C", "D", "E", or "F"), the load index number, and the speed rating symbol, located immediately to the right of the tire size designation.
4. The tire "SIZE" heading can be replaced with "ORIGINAL TIRE SIZE" or "ORIGINAL SIZE."
5. The "SPARE" tire heading can be replaced with "SPARE TIRE."
6. For full size spare tires, the recommended cold tire inflation pressure can be replaced with "SEE ABOVE".
7. If no spare tire is provided, the word "NONE" is to replace the manufacturer's cold tire inflation pressure.

**Vehicle Placard** has the exact color and format as specified in the above Figure 1 and text is in English language.     YES     NO

If no, explain: Text is bilingual.

**DATA SHEET 4 (2 of 3)**  
**VEHICLE PLACARD AND TIRE INFLATION PRESSURE LABEL**

**Vehicle Placard** and, if provided, **Tire Inflation Pressure Label** are permanently affixed.  
 YES     NO

Combined weight of occupants and cargo 525 kg (1,157 lbs)

Seating Capacity: Total 7 ; Front 2 ; Rear 5  
 Is the number of belted seating positions the same as the labeled seating capacity?  
 YES     NO

Is the tire size and pressure provided?             YES     NO

**Tire Information:**

Tire Size:                      Front 225/70R16 ; Rear 225/70R16

Tire Inflation Pressure: Front 240 kPa (35 psi) ; Rear 240 kPa (35 psi)

Are the sizes of the installed tires the same as the sizes of the labeled tires?  
 YES     NO

Is the labeled cold tire inflation pressure equal to or less than the sidewall labeled maximum cold tire inflation pressure?  
 Front axle:     YES     NO      Rear axle:     YES     NO

**Vehicle Certification Label** information:

	Tire Size	Rim Size	Rim Suitable for Tire?*
Front Axle	<u>225/70R16</u>	<u>6.5Jx16</u>	<u>Yes</u>
Rear Axle	<u>225/70R16</u>	<u>6.5Jx16</u>	<u>Yes</u>

\*Referenced source used for tire/rim match verification:

2007 Japan Automobile Tyre Manufacturers Association Yearbook

**DATA SHEET 4 (3 of 3)**  
**VEHICLE PLACARD AND TIRE INFLATION PRESSURE LABEL**

Is (Are) tire size(s) listed on the vehicle placard and/or tire inflation pressure label also listed on the certification label with suitable rim size? ( X ) YES ( ) NO

LABELED TIRE CAPACITY AT SPECIFIED PRESSURE		
GVWR <u>2,675 kg (5,898 lbs)</u>	FRONT AXLE	REAR AXLE
A. GAWR from certification label	1,360 kg (2,998 lbs)	1,390 kg (3,064 lbs)
B. Tire load rating of labeled tire size at labeled inflation pressure*	850 kg (1,874 lbs)	850 kg (1,874 lbs)
C. Reduced tire load rating if applicable**	773 kg (1,704 lbs)	773 kg (1,704 lbs)
D. (No. of tires) x (Tire load rating de-rated if appropriate )	1,546 kg (3,408 lbs)	1,546 kg (3,408 lbs)
Is "D" equal to or greater than "A"?	Yes	Yes

\*Reference source used for determining load rating:

2007 Japan Automobile Tyre Manufacturers Association Yearbook

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

DATA INDICATES COMPLIANCE:

PASS/FAIL: PASS

REMARKS: None

RECORDED BY: Robert N. Gregg

DATE: August 22, 2007

APPROVED BY: Kenneth H. Yates



**DATA SHEET 5 (1 of 2)**  
**CURB WEIGHT, NORMAL LOAD WEIGHT & MAXIMUM VEHICLE WEIGHT**

VEHICLE MAKE/MODEL/BODY STYLE: 2007 Hyundai Entourage four-door MPV

VEHICLE NHTSA NO. C70504 VIN: KNDMC233776011787

LABORATORY: US DOT San Angelo Test Facility TEST DATE: August 22, 2007

Full Fluid Levels: Fuel Full Coolant Full Other Fluids\* Full

\* Transmission, windshield washer, power steering fluid, & engine oil

Tire Pressures:  
(prior to adjustment for weighing)

LF	<u>232 kPa (33.6 psi)</u>	LR	<u>232 kPa (33.6 psi)</u>
RF	<u>231 kPa (33.5 psi)</u>	RR	<u>234 kPa (33.9 psi)</u>

**Vehicle Occupant Load**

Seating Capacity from Placard:

Total 7 ; Front 2 ; Rear 5

Full Occupant Load 476 kg (1,050 lbs)  
[# of occupants x 68 KG per adult occupant and 54 KG per student occupant]

**Vehicle Luggage/Cargo Load**

- |  |                           |
|--|---------------------------|
| (1) Vehicle Capacity Weight (from placard)     | <u>525 kg (1,157 lbs)</u> |
| (2) Full Occupant Load (from above)            | <u>476 kg (1,050 lbs)</u> |
| (3) Luggage/Cargo Load (subtract (2) from (1)) | <u>49 kg (107 lbs)</u>    |

Describe placement of cargo: Equally spaced weight distribution, front to rear and side to side

**DATA SHEET 5 (2 of 2)**  
**VEHICLE WEIGHT DISTRIBUTION**

ITEM	Tire or Vehicle Rating*	Unloaded Vehicle Weight		Vehicle Weight with Full Occupant Load		Vehicle Maximum Weight with Occupants and Cargo	
		Measured	Over-load	Measured	Over-load	Measured	Over-load
Left Front Tire	773 kg (1,704 lbs)	625.5 kg (1,379.0 lbs)	no	693.0 kg (1,527.8 lbs)	no	688.0 kg (1,516.8 lbs)	no
Right Front Tire	773 kg (1,704 lbs)	575.0 kg (1,267.7 lbs)	no	637.0 kg (1,404.3 lbs)	no	632.0 kg (1,393.3 lbs)	no
Front Axle (GAWR)	1,360 kg (2,998 lbs)	1,200.5 kg (2,646.7 lbs)	no	1,330.0 kg (2,932.1 lbs)	no	1,320.0 kg (2,910.1 lbs)	no
Left Rear Tire	773 kg (1,704 lbs)	433.5 kg (955.7 lbs)	no	606.5 kg (1,337.1 lbs)	no	636.0 kg (1,402.1 lbs)	no
Right Rear Tire	773 kg (1,704 lbs)	440.0 kg (970.0 lbs)	no	613.5 kg (1,352.5 lbs)	no	642.5 kg (1,416.5 lbs)	no
Rear Axle (GAWR)	1,390 kg (3,064 lbs)	873.5 kg (1,925.7 lbs)	no	1,220.0 kg (2,689.6 lbs)	no	1,278.5 kg (2,818.6 lbs)	no
Total Vehicle (GVWR)	2,675 kg (5,898 lbs)	2,074.0 kg (4,572.4 lbs)	no	2,550.0 kg (5,621.7 lbs)	no	2,598.5 kg (5,728.7 lbs)	no

\* Vehicle and axle weight ratings (GVWR & GAWR) are located on the vehicle certification label. Vehicle tire load ratings are based upon the inflation pressure specified on the Vehicle Placard or Tire Inflation Pressure Label for each respective axle, as determined from the appropriate Tire and Rim reference manual. If a passenger car tire is installed on a multipurpose passenger vehicle (MPV), truck or bus, the tire's load rating is reduced by dividing by 1.10.

DATA INDICATES COMPLIANCE:

PASS/FAIL: PASS

REMARKS: None

RECORDED BY: Robert N. Gregg

DATE: August 22, 2007

APPROVED BY: Kenneth H. Yates

**DATA SHEET 6 (1 of 2)**  
**OWNER'S MANUAL REQUIREMENTS**

VEHICLE MAKE/MODEL/BODY STYLE: 2007 Hyundai Entourage four-door MPV

VEHICLE NHTSA NO. C70504 VIN: KNDMC233776011787

LABORATORY: US DOT San Angelo Test Facility TEST DATE: August 24, 2007

**Owner's Manual Discusses:**

<b>Part 575.6(a) Paragraph</b>	<b>Required Discussion Topic</b>	<b>Discussed in Manual? (YES/NO)</b>	<b>Page Numbers</b>
(4)(i)	Tire labeling, including a description and explanation of each marking on the tires provided with the vehicle, and information about the location of the Tire Identification Number (TIN).	YES	8-3
(4)(ii)	(A) Description and explanation of recommended cold tire inflation pressure.	YES	8-3
	(B) Description and explanation of FMVSS 110 Vehicle Placard and Tire Inflation Pressure Label and their location(s).	YES	7-3
	(C) Description and explanation of adverse safety consequences of under-inflation including tire failure.	YES	6-38
	(D) Description and explanation for measuring and adjusting air pressure to achieve proper inflation.	YES	6-39
(4)(iii)	Glossary of tire terminology, including "cold tire pressure," maximum inflation pressure," and "recommended inflation pressure," and all non-technical terms defined in S3 of FMVSS 110 & 139.	YES	6-37
(4)(vi)	Tire care, including maintenance and safety practices.	YES	6-40
(4)(v)	(A) Description and explanation of locating and understanding load limit information, total load capacity, seating capacity, towing capacity, and cargo capacity.	YES	4-41, 6-38
	(B) Description and explanation for calculating total and cargo load capacities with varying seating configurations including quantitative examples showing/illustrating how the vehicle's cargo and luggage capacity decreases as the combined number and size of occupants increases.	YES	4-41, 4-42, 4-43, 4-44
	(C) Description and explanation for determining compatibility of tire and vehicle load capabilities.	YES	4-41, 4-42, 4-43
	(D) Description and explanation of adverse safety consequences of overloading on handling and stopping and on tires.	YES	4-44

**DATA SHEET 6 (2 of 2)**  
**OWNER'S MANUAL REQUIREMENTS**

The following statement, in the English language, is provided verbatim in the Owner's Manual. Reference Part 575.6(a)(5)                      YES ( X )      NO ( )

**Steps for Determining Correct Load Limit**

- (1) Locate the statement "The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs." on your vehicle's placard.
- (2) Determine the combined weight of the driver and passengers that will be riding in your vehicle.
- (3) Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
- (4) The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1400 lbs. and there will be five 150 lb passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. (1400-750 (5x150) = 650 lbs.)
- (5) Determine the combined weight of the luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
- (6) If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

DATA INDICATES COMPLIANCE:

PASS/FAIL:   PASS  

REMARKS:   None  

RECORDED BY:   Robert N. Gregg  

DATE:   August 24, 2007  

APPROVED BY:   Kenneth H. Yates

## SECTION 4

## TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TABLE 1 – EQUIPMENT INFORMATION LIST

<b>EQUIPMENT</b>	<b>DESCRIPTION</b>	<b>MODEL/ SERIAL NO</b>	<b>CAL. DATE</b>	<b>NEXT CAL. DATE</b>
PLATFORM SCALE (BALLAST)	HOWE RICHARDSON	MODEL #6401 SERIAL #0181- 5509-26	8/14/2007	8/14/2008
AIR PRESSURE GAUGE	ASHCROFT GENERAL PURPOSE DIGITAL GAUGE	MODEL #D1005PS 02L 100 PSI SERIAL #20017398- 01	12/20/07	12/20/2008
FLOOR SCALES (VEHICLE)	INTERCOMP SW DELUXE SCALES	PART #100156 SERIAL #27032382	8/14/2007	8/14/2008

SECTION 5  
PHOTOGRAPHS



2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.1  
¾ FRONTAL VIEW FROM LEFT SIDE OF VEHICLE

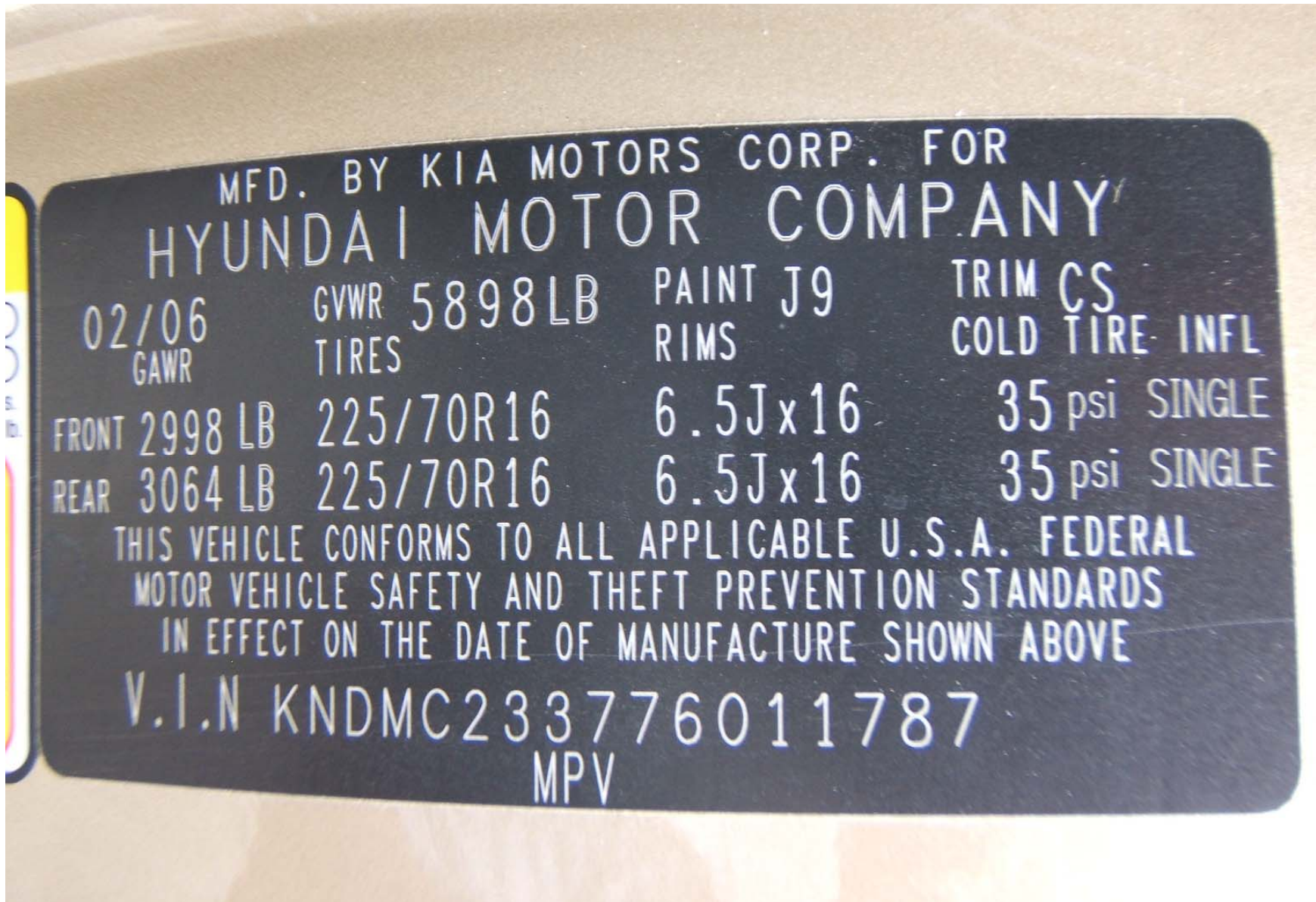




2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.2  
¾ REAR VIEW FROM RIGHT SIDE OF VEHICLE





MFD. BY KIA MOTORS CORP. FOR  
HYUNDAI MOTOR COMPANY

02/06  
GAWR

GVWR 5898 LB  
TIRES

PAINT J9  
RIMS

TRIM CS  
COLD TIRE INFL

FRONT 2998 LB

225/70R16

6.5Jx16

35 psi SINGLE

REAR 3064 LB

225/70R16

6.5Jx16

35 psi SINGLE

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S.A. FEDERAL  
MOTOR VEHICLE SAFETY AND THEFT PREVENTION STANDARDS  
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE

V.I.N KNDMC233776011787

MPV

2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO.110

FIGURE 5.3  
VEHICLE CERTIFICATION LABEL



## TIRE AND LOADING INFORMATION PNEUS ET CHARGE-INFORMATION

SEATING CAPACITY	TOTAL 7	FRONT 2	REAR 5
------------------	---------	---------	--------

NOMBRE DE SIÈGES	TOTAL 7	AVANT 2	ARRIÈRE 5
------------------	---------	---------	-----------

The combined weight of occupants and cargo should never exceed 525 kg or 1,157 lbs.  
Le poids combiné des occupants et du chargement ne doit jamais excéder 525 kg ou 1,157 lb.

TIRE/ PNEU	SIZE/ DIMENSION	COLD TIRE PRESSURE/ PRESSION À FROID	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION	CONSULTER LE GUIDE DU PROPRIÉTAIRE POUR OBTENIR DES RENSEIGNEMENTS ADDITIONNELS
FRONT/ AVANT	225/70R16	240KPA , 35PSI		
REAR/ ARRIÈRE	225/70R16	240KPA , 35PSI		
SPARE/ SECOURS	T135/90R17	420kPa , 60psi		





2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.5  
TIRE SHOWING BRAND





2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.6  
TIRE SHOWING MODEL



2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.7  
TIRE SHOWING SIZE, LOAD INDEX, AND SPEED SYMBOL





2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.8  
TIRE SHOWING MAX LOAD RATING AND MAX INFLATION PRESSURE



2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.9  
TIRE SHOWING CONSTRUCTION





2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.10  
TIRE SHOWING SERIAL NUMBER





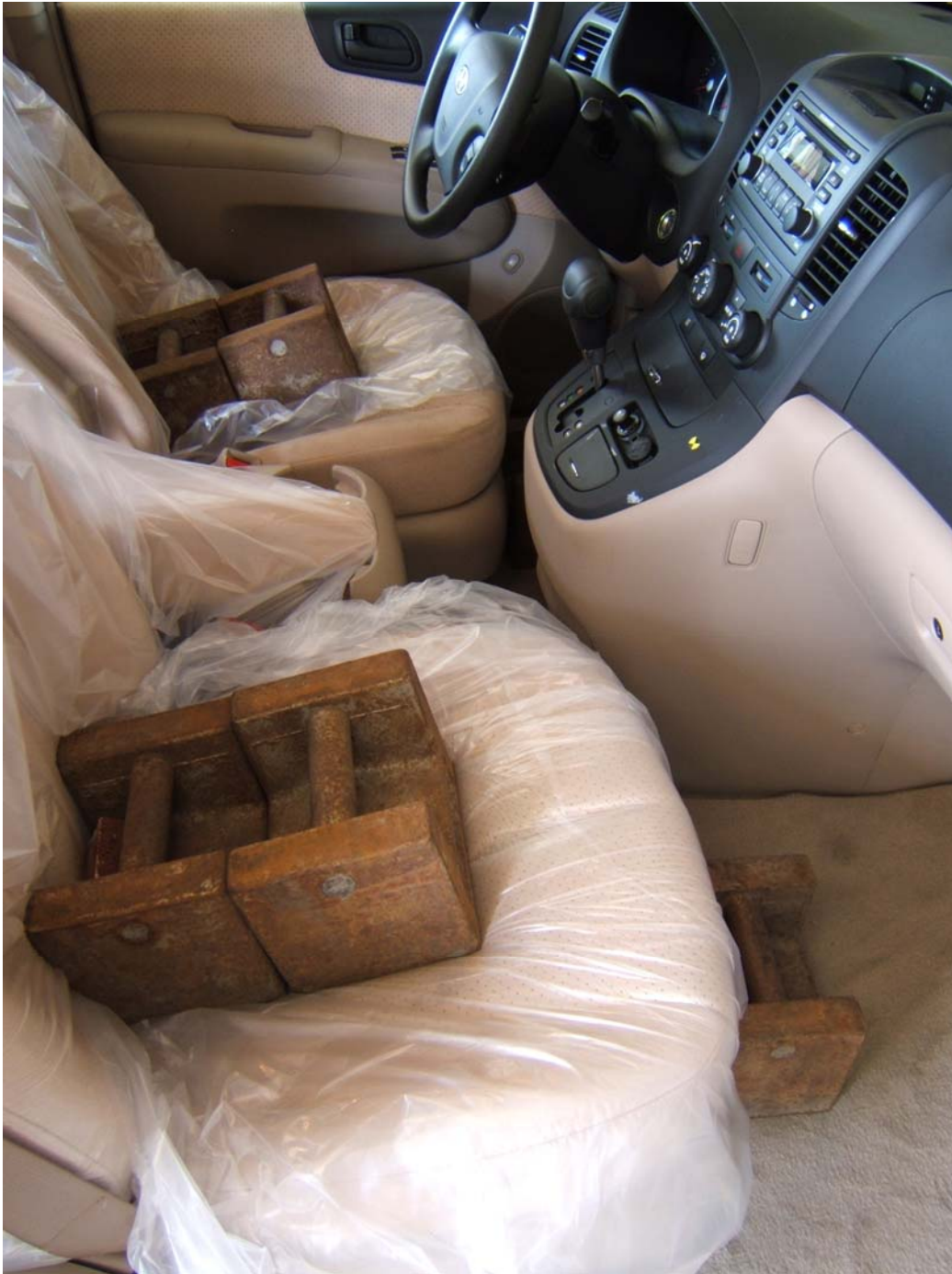
2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.11  
RIM CONTOUR FOR FULL WIDTH OF CROSS SECTION



2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.12  
RIM SHOWING MANUFACTURE DATE, SIZE, TYPE DESIGNATION,  
DOT SYMBOL, REFERENCE SOURCE, AND MANUFACTURER SYMBOL



2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.13  
VEHICLE FRONT SEAT BALLASTED  
FOR MAXIMUM LOAD





2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.14  
VEHICLE MID SEAT BALLASTED  
FOR MAXIMUM LOAD



2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.15  
VEHICLE REAR SEAT BALLASTED FOR MAXIMUM LOAD





2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.16  
REAR OF VEHICLE SHOWN BALLASTED FOR CARGO



2007 HYUNDAI ENTOURAGE  
NHTSA NO. C70504  
FMVSS NO. 110

FIGURE 5.17  
VEHICLE ON WEIGHT SCALES