

**SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 110
TIRE SELECTION AND RIMS
FOR MOTOR VEHICLES WITH A
GVWR OF 4536 KILOGRAMS OR LESS
FOR PASSENGER CAR TESTS**

**GENERAL MOTORS LLC
2020 CHEVROLET BOLT EV, PASSENGER CAR
NHTSA NO. C20200103**

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



January 31, 2020

FINAL REPORT

PREPARED FOR

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

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SECTION 1

INTRODUCTION

1.0 PURPOSE OF COMPLIANCE TEST

A 2020 CHEVROLET BOLT EV PASSENGER CAR was subjected to FMVSS No. 110 testing to determine if the vehicle was in compliance with the requirements of the standard. All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedure, TP-110P-04 dated 28 September 2012 and General Testing Laboratories, Inc (GTL) Test Procedure, TP-110P-04 dated 20 May 2015.

1.1 TEST VEHICLE

The test vehicle was a 2020 CHEVROLET BOLT EV PASSENGER CAR.
Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 1G1FY6S04L4104418

B. NHTSA No.: C20200103

C. Manufacturer: GENERAL MOTORS LLC

D. Manufacture Date: 11/19

E. Color: KINETIC BLUE METALLIC

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 110 testing during the time period January 15-21, 2020.

SECTION 2

TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 GENERAL

The 2020 CHEVROLET BOLT EV PASSENGER CAR, NHTSA No. C20200103, was subjected to FMVSS No. 110 testing during the time period January 15-21, 2020.

2.1 TEST PROCEDURE

Prior to test, 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 DOT/NHTSA and GTL test procedures. Subsequent events included weighing the vehicle to establish delivered curb weight and the distribution of weight on the front and rear axles and each wheel position. The vehicle normal load as well as the maximum load on each wheel was measured. Data from each tire furnished with the vehicle were recorded. The vehicle tire placard was surveyed and photographed. Required dimensional data and other identifying data for the left front and right rear rims were obtained. The contour of the aforementioned rims was documented photographically.

2.2 SUMMARY OF RESULTS

The test vehicle appears to be in compliance with the requirements of FMVSS No. 110.

SECTION 3

TEST DATA

DATA SHEET 1 (1 of 2)
SUMMARY

VEHICLE MAKE/MODEL/BODY STYLE: 2020 CHEVROLET BOLT EV PASSENGER CAR
 VEHICLE NHTSA NO.: C20200103 ; VIN: 1G1FY6S04L4104418
 VEHICLE TYPE: PASSENGER CAR DATE OF MANUFACTURE: 11/19
 LABORATORY: General Testing Laboratories, Inc.
 TEST DATE: January 15-21, 2020

PASSENGER CAR REQUIREMENTS

PASS/FAIL

GENERAL (DATA SHEET 2)

The vehicle must be equipped with tires that meet the requirements of S139. (S110, S4.1)

Pass

TIRE LOAD LIMITS (DATA SHEET 5)

The vehicle maximum load on the tire is not greater than the maximum load rating as marked on the sidewall of the tire. (S110, S4.2.1.1)

Pass

The vehicle normal load on the tire is not greater than the value of 94 percent of the load rating at the vehicle manufacturer's recommended cold inflation pressure for that tire. (S110, S4.2.1.2)

Pass

PLACARD, TIRE INFLATION PRESSURE LABEL AND LOAD CARRYING CAPACITY MODIFICATION LABEL (DATA SHEETS 4 AND 5)

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

Pass

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

Pass

RIMS (DATA SHEETS 3 AND 6)

Each rim is constructed to the dimensions of a rim referred to in FMVSS 139 that is listed by the manufacturer of the tires as suitable for use with those tires. (S110, S4.4.1(a)).

Pass

DATA SUMMARY SHEET (2 of 2)

PASSENGER CAR REQUIREMENTS

PASS/FAIL

Vehicle rims retain deflated tires during a controlled braking application (S110, S4.4.1(b)).

Pass

OWNER'S MANUAL (DATA SHEET 7)

Owner's manual or other documentation has discussion of Vehicle Placard, Loading and Tires (575.6 (a)(4)).

Pass

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

Pass

REMARKS:

RECORDED BY: G. FARRAND
APPROVED BY: D. MESSICK

DATE: 01/21/20

DATA SHEET 2
TEST VEHICLE INFORMATION/RECEIVING INSPECTION

VEHICLE MODEL YEAR/MAKE/BODY STYLE: 2020 CHEVROLET BOLT EV PASSENGER CAR
 NHTSA NO.: C20200103 TEST DATE: 01/15/20-01/21/20
 VIN.: 1G1FY6S04L4104418 MANUFACTURE DATE: 11/19

GVWR 2026 KG (4467 LBS) GAWR(Fr) 1017 KG (2242 LBS) GAWR(Rr) 1009 KG (2225 LBS)

SEATING POSITIONS: FRONT 2 MID _____ REAR 3 OTHER _____

BODY COLOR: Kinetic Blue Metallic

ODOMETER READINGS: ARRIVAL - 69 KILOMETERS (43 MILES)

ENGINE DATA: _____ Cylinders _____ Liters _____ Cubic Inches ☒ Electric

TRANSMISSION DATA: _____ Automatic _____ Manual _____ No. of Speeds

FINAL DRIVE DATA: _____ Rear Drive ☒ Front Drive _____ 4 Wheel Drive

TIRE DATA: Size – 215/50R17 Mfr. – MICHELIN

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

☒	Air Conditioning	☒	Traction Control	☒	Clock
	Tinted Glass		Telephone		Roof Rack
☒	Power Steering	☒	Cruise Control		Console
☒	Power Windows	☒	Rear Window Defroster	☒	Driver Air Bag
☒	Power Door Locks		Sun Roof or T-Top	☒	Passenger Air Bag
	Power Seat(s)		Tachometer	☒	Side Curtain Air Bag(s)
☒	Power Brakes	☒	Tilt Steering Wheel	☒	Front Disc Brakes
☒	Antilock Brake System	☒	Stereo	☒	Rear Disc Brakes
	Navigation System		Trailer Hitch	☒	Other – TPMS
			Other -	☒	Other – THEFT DETERRENT

REMARKS:

RECORDED BY: G. Farrand ; DATE: 01/15/20
 APPROVED BY: D. Messick

DATA SHEET 3
VEHICLE TIRE IDENTIFICATION

VEHICLE MAKE/MODEL/BODY STYLE: 2020 CHEVROLET BOLT EV PASSENGER CAR
 VEHICLE NHTSA NO: C20200103 VIN: 1G1FY6S04L4104418
 VEHICLE TYPE: PASSENGER CAR DATE OF MANUFACTURE: 11/19
 LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 01/15/20

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 () No (X) N/A

<u>TIRE SIDEWALL</u>	Right Front	Left Rear	Spare Tire
Manufacture and Model	<u>MICHELIN</u> <u>GREEN X</u>	<u>MICHELIN</u> <u>GREEN X</u>	<u>N/A</u>
Tire Size Designation	<u>215/50R17</u>	<u>215/50R17</u>	<u></u>
Load Index/Speed Symbol	<u>91H</u>	<u>91H</u>	<u></u>
Maximum Inflation Pressure	<u>300 KPA (44 psi)</u>	<u>300 KPA (44 psi)</u>	<u></u>
Maximum Load Rating	<u>615 KG (1356 lbs)</u>	<u>615 KG (1356 lbs)</u>	<u></u>
Tread/Traction/ Temperature	<u>480 A B</u>	<u>480 A B</u>	<u></u>
Tires have "DOT" Symbol	<u>YES</u>	<u>YES</u>	<u></u>

Serial Number: Right Front DOT B338 03RX 0819 Left Front DOT B338 03RX 0819
 Right Rear DOT B338 03RX 0819 Left Rear DOT B338 03RX 0819
 Spare N/A

DATA INDICATES COMPLIANCE: PASS/FAIL PASS

REMARKS:

RECORDED BY: G. Farrand ; DATE: 01/15/20
 APPROVED BY: D. Messick

DATA SHEET 4
VEHICLE RIM IDENTIFICATION

VEHICLE MAKE/MODEL/BODY STYLE: 2020 CHEVROLET BOLT EV PASSENGER CAR
 VEHICLE NHTSA NO: C20200103 VIN: 1G1FY6S04L4104418
 VEHICLE TYPE: PASSENGER CAR DATE OF MANUFACTURE: 11/19
 LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 01/16/20

<u>RIM MARKINGS (if available)</u>	Right Front	Left Rear
Manufacturer's Name, Symbol or Trademark	<u>KOREA GM</u>	<u>KOREA GM</u>
Rim Size	<u>17 x 6.5J</u>	<u>17 x 6.5J</u>
Load Rating and Max Inflation Pressure	<u>N/A</u>	<u>N/A</u>
Date of Manufacture	<u>C# 2019</u>	<u>C# 2019</u>
Does Rim contain "DOT" Symbol (Yes/No)	<u>YES</u>	<u>YES</u>
Other Rim Markings	<u>See Photos</u>	<u>See Photos</u>

Rim Inspection Comments: _____
 Tire Inspection Comments: SELF SEALING TIRE(S) TREAD SURFACE

RIM SIZE:	Tire Size	Measured Rim Width	Measured Rim Diameter
RIGHT FRONT	<u>215/50R17</u>	<u>6.5"</u>	<u>17"</u>
LEFT REAR	<u>215/50R17</u>	<u>6.5"</u>	<u>17"</u>

Does stamped rim size (if available) agree with the measured rim size?
 Right Front Rim (X) Yes () No Left Rear Rim (X) Yes () No () Not Applicable

Installed rims are suitable for installed tires? (X) Yes () No

REFERENCE USED: 2017 ETRTO STANDARDS MANUAL

DATA INDICATED COMPLIANCE: PASS/FAIL PASS

RECORDED BY: G. Farrand ; DATE: 01/16/20
 APPROVED BY: D. Messick

DATA SHEET 5 (1 of 4)

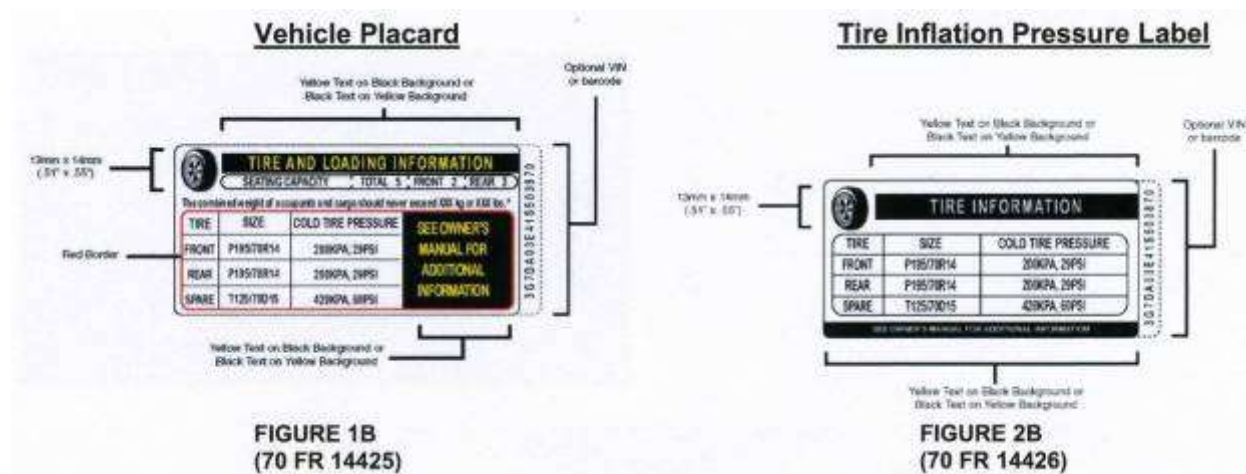
VEHICLE PLACARD, AND TIRE INFLATION PRESSURE LABEL AND OTHER LABELS

VEHICLE MAKE/MODEL/BODY STYLE: 2020 CHEVROLET BOLT EV PASSENGER CARVEHICLE NHTSA NO: C20200103VIN: 1G1FY6S04L4104418VEHICLE TYPE: PASSENGER CARDATE OF MANUFACTURE: 11/19LABORATORY: GENERAL TESTING LABORATORIESTEST DATE: 01/16/20

IDENTIFICATION OF VEHICLE LABELING

	(Yes/No)	Location	Pass/Fail
1. Monroney Label(if attached)	YES	GLOVE BOX	PASS
2. Certification Label*	YES	B PILLAR	PASS
3. Alterer's Label(if attached)	NO	N/A	N/A
4. Vehicle Placard*	YES	B PILLAR	PASS
5. Tire Inflation Pressure Label*	NO	N/A	N/A
6. Load Carrying Capacity Modification Label*	NO	N/A	N/A
7. Dealer/Distributor Optional Equipment Added Label (if attached)	N/A	N/A	N/A

* Labels are to be affixed to the driver's side B-pillar otherwise refer to FMVSS 110 requirements.



CAUTION: LOAD CARRYING CAPACITY REDUCED
 Modifications to this vehicle have reduced the original load carrying capacity by _____ kg or _____ lbs

Black print on yellow background with minimum print size of 2.4 mm high.

FIGURE 3
 (72 FR 68465)

DATA SHEET 5 (2 of 4)
VEHICLE PLACARD, AND TIRE INFLATION PRESSURE LABEL AND OTHER LABELS

Labeling Notes:

1. Tire size and pressure can be omitted from 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 label, or horizontally, along the bottom edge of the placard or 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 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.

DATA SHEET 5 (3 of 4)

VEHICLE PLACARD, AND TIRE INFLATION PRESSURE LABEL AND OTHER LABELS

Vehicle Placard has the exact color and format as specified in the above Figure 1B and text is in English. ☒ Yes ☐ No

If no, explain: _____

Tire Inflation Pressure Label, if provided, has the exact color and format as specified in the above Figure 2B and text is in English. ☐ Yes ☐ No ☒ N/A

If no, explain: _____

Load Carrying Capacity Modification Label, if attached, has the exact color and format as specified in the above Figure 3 and text is in the English language. Verify the label is within 25 mm of vehicle placard and has minimum print size of 2.4 mm high.

☐ Yes ☐ No ☒ N/A

If no, explain: _____

Vehicle Placard and, if provided, **Tire Inflation Pressure Label** and the **Load Carrying Capacity Modification Label** are permanently affixed. ☒ Yes ☐ No

Vehicle Placard information:

Combined weight of occupants and cargo 396 kg (873 lbs)

Seating capacity: Total 5 Front 2 Rear 3

Is the number of belted seating positions the same as the labeled seating capacity?

☒ Yes ☐ No

If no, explain _____

Is the tire size and pressure provided? ☒ Yes ☐ No

If no, is the tire size and pressure provided on a Tire Inflation Pressure Label?

☐ Yes ☐ No

Vehicle Placard or Tire Inflation Pressure Label tire information:

Tire size Front 215/50R17 Rear 215/50R17

Tire Inflation Pressure Front 260KPA (38psi) Rear 260KPA (38psi)

Are the sizes of the installed tires the same as the sizes of the labeled tires?

☒ Yes ☐ No

If no, explain _____

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

DATA SHEET 5 (4 of 4)
VEHICLE PLACARD, AND TIRE INFLATION PRESSURE LABEL AND OTHER LABELS

Load Carrying Capacity Modification Label information: N/A

Distance label is from vehicle placard (no more than 25 mm): _____ mm

Label letter height (must be at least 2.4 mm in height): _____ mm

Load Carrying Capacity reduction: _____ kg

Monroney Label (if attached) information:

Tire Size Listed: Front _____ Rear _____

Installed tire sizes same as labeled tire sizes? (X) YES () NO

Separate Distributor/Dealer Optional Equipment label (if attached):

Equipment Listed: _____ N/A _____

DATA INDICATES COMPLIANCE: PASS/FAIL _____ PASS _____

REMARKS:

RECORDED BY: _____ G. Farrand _____ ;

APPROVED BY: _____ D. Messick _____

DATE: _____ 01/15/20 _____

DATA SHEET 6 (1 of 5)
CURB WEIGHT, NORMAL LOAD WEIGHT & MAXIMUM VEHICLE WEIGHT

VEHICLE MAKE/MODEL/BODY STYLE: 2020 CHEVROLET BOLT EV PASSENGER CAR
 VEHICLE NHTSA NO: C20200103 VIN: 1G1FY6S04L4104418
 VEHICLE TYPE: PASSENGER CAR DATE OF MANUFACTURE: 11/19
 LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 01/15/20-01/21/20

Full Fluid Levels: Fuel Full Coolant Full Other Fluids Full

Tire Pressures: LF 260 KPA (38 psi) LR 260 KPA (38 psi)
 RF 260 KPA (38 psi) RR 260 KPA (38 psi)

A. MEASURED CURB WEIGHT WITH INSTALLED OPTIONS AND ACCESSORIES

LF 455.5 KG (1004 lbs) LR 359.5 KG (793 lbs)
 RF 453.5 KG (1000 lbs) RR 341.5 KG (753 lbs)
 Front Axle 909 KG (2004 lbs) Rear Axle 701 KG (1545 lbs)
 Total Vehicle 1610 KG (3549 lbs)

B. MEASURED VEHICLE NORMAL LOAD WEIGHT

1. Seating Capacity from Vehicle Placard 5
2. Normal Load Number of Occupants (from table in Section 11) 3
 Occupant Distribution: Front Seat 2 Second Seat 1
 Third Seat Fourth Seat
3. Total Normal Occupant Load 204 KG (450 lbs)
 (# of occupants x 68 KG per occupant)
4. Measured Normal Load on Axles
 LF 498 KG (1098 lbs) LR 418.5 KG (923 lbs)
 RF 494.5 KG (1090 lbs) RR 403 KG (888 lbs)
 Front Axle 992.5 KG (2188 lbs) Rear Axle 821.5 KG (1811 lbs)
 Total Vehicle 1814 KG (3999 lbs)
5. Calculated Vehicle Normal Load on the Tire
 Front Tires (Measured front axle normal load/2) 500.5 KG (1103 lbs)
 Rear Tires (Measured rear axle normal load/2) 406.5 KG (896 lbs)

DATA SHEET 6 (2 of 5)
CURB WEIGHT, NORMAL LOAD WEIGHT & MAXIMUM VEHICLE WEIGHT

6. Value of 94 percent of the load rating at the vehicle manufacturer's recommended cold inflation pressure for that tire

Installed Tire Size	Front Axle <u>215/50R17</u>	Rear Axle <u>215/50R17</u>
Load Rating at recommended cold inflation pressure	<u>615 KG (1356 lbs)</u>	<u>615 KG (1356 lbs)</u>
94% of load rating	<u>578.1 KG (1275 lbs)</u>	<u>578.1 KG (1275 lbs)</u>

Vehicle Normal Load on the Tire should not be greater than the Value of 94% of the load rating at the vehicle manufacturer's recommended cold inflation pressure.

		PASS/FAIL
[(5) < (6)]	Front Tires	<u>PASS</u>
	Rear Tires	<u>PASS</u>

C. MEASURED VEHICLE WEIGHT WITH FULL OCCUPANT LOAD

- Seating Capacity from Placard:
Total 5 Front 2 Rear 3
- Full Occupant Load 340 KG (750 lbs)
(# of occupants x 68 KG per occupant)
- Measured Vehicle Weight with Full Occupant Load

LF 509 KG (1122 lbs) LR 475 KG (1047 lbs)
RF 507 KG (1118 lbs) RR 459 KG (1012 lbs)

Front Axle 1016 KG (2240 lbs) Rear Axle 934 KG (2059 lbs)

Total Vehicle 1950 KG (4299 lbs)

D. MEASURED VEHICLE WEIGHT WITH MAXIMUM LOAD (PLACARD)

- Vehicle Capacity Weight (from placard) 396 KG (873 lbs)
- Reduced Capacity Weight if applicable N/A KG (lbs)
(from load carrying capacity modification label)
- Reduced Vehicle Capacity Weight 396 KG (873 lbs)
Subtract (2) from (1)

DATA SHEET 6 (3 of 5)
CURB WEIGHT, NORMAL LOAD WEIGHT & MAXIMUM VEHICLE WEIGHT

4. Full Occupant Load (from C.2 above) 340 KG (750 lbs)
5. Luggage/Cargo Load (subtract 4 from 3) 56 KG (123 lbs)
6. Measured Vehicle Maximum Load on Axles
 LF 503 KG (1109 lbs) LR 506.5 KG (1117 lbs)
 RF 506.5 KG (1117 lbs) RR 490 KG (1080 lbs)
- Front Axle 1009.5 KG (2226 lbs) Rear Axle 996.5 KG (2197 lbs)
- Total Vehicle 2006 KG (4422 lbs.)
7. Calculated Vehicle Maximum Load on the Tire
 Front Tires (Measured front axle maximum load/2) 504.75 KG (1113 lbs)
 Rear Tires (Measured rear axle maximum load/2) 498.25 KG (1098 lbs)
8. Tire Sidewall Maximum Load Ratings

	Front	Rear
Installed Tire Size	<u>215/50R17</u>	<u>215/50R17</u>
Max. Load Rating on Sidewall	<u>615 KG (1356 lbs)</u>	<u>615 KG (1356 lbs)</u>

Vehicle Maximum Load on the Tire should not be greater than the Maximum load rating marked on the Tire Sidewall.

		PASS/FAIL
[(7) < (8)]	Front Tires	<u>PASS</u>
	Rear Tires	<u>PASS</u>

9. Tire Load Ratings at Vehicle Placard and Tire Inflation Pressure Label
Recommended Cold Tire Inflation Pressure.

	Front Axle	Rear Axle
Labeled Tire Size	<u>215/50R17</u>	<u>215/50R17</u>
Labeled Cold Inflation Pressure	<u>260 KPA (38 psi)</u>	<u>260 KPA (38 psi)</u>
Load Rating at this Pressure*	<u>615 KG (1356 lbs)</u>	<u>615 KG (1356 lbs)</u>

*Reference used to obtain Load Rating: 2017 ETRTO STANDARDS MANUAL

DATA SHEET 6 (4 of 5)
CURB WEIGHT, NORMAL LOAD WEIGHT & MAXIMUM VEHICLE WEIGHT

Vehicle Normal Load on the Tire should not be greater than the Tire Load Rating at the Labeled Cold Tire Inflation Pressure.

[B (5) < D (9)]	Front Tires	PASS/FAIL <u>PASS</u>
	Rear Tires	<u>PASS</u>

Vehicle Maximum Load on the Tire should not be greater than the Tire Load Rating at the Labeled Cold Tire Inflation Pressure.

[D (7) < D (9)]	Front Tires	PASS/FAIL <u>PASS</u>
	Rear Tires	<u>PASS</u>

DATA SHEET 6 (5 of 5)
CURB WEIGHT, NORMAL LOAD WEIGHT & MAXIMUM VEHICLE WEIGHT

WEIGHT DISTRIBUTION

Item	Tire or Vehicle Rating* (KG)	Unloaded Vehicle Wt. (KG)		Vehicle Wt. With Full Occupant Load (KG)		Vehicle Maximum Wt. With Occupants and Cargo (KG)	
		Measured	Overload	Measured	Overload	Measured	Overload
Left Front Tire	615	455.5	No	509	No	503	No
Right Front Tire	615	453.5	No	507	No	506.5	No
Front Axle (GAWR)	1017	909	No	1016	No	1009.5	No
Left Rear Tire	615	359.5	No	475	No	506.5	No
Right Rear Tire	615	341.5	No	459	No	490	No
Rear Axle (GAWR)	1009	701	No	934	No	996.5	No
Total Vehicle (GVWR)	2026	1610	No	1950	No	2006	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, TRUCK or bus, the tire's load rating is reduced by dividing by 1.10.

DATA INDICATES COMPLIANCE

PASS/FAIL Pass

REMARKS:

RECORDED BY: G. FARRAND
APPROVED BY: D. MESSICK

DATE: 01/16/20

DATA SHEET 7 (1 of 2)
DEFLATED TIRE RETENTION

VEHICLE MAKE/MODEL/BODY STYLE: 2020 CHEVROLET BOLT EV PASSENGER CAR
 VEHICLE NHTSA NO: C20200103 VIN: 1G1FY6S04L4104418
 VEHICLE TYPE: PASSENGER CAR DATE OF MANUFACTURE: 11/19
 LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 01/21/20

Tire Pressures: LF 260 KPA (38 psi) LR 260 KPA (38 psi)
 RF 260 KPA (38 psi) RR 260 KPA (38 psi)

Test Weight: LF 503 KG (1109 lbs) LR 506.5 KG (1117 lbs)
 RF 506.5 KG (1117 lbs) RR 490 KG (1080 lbs)

Front Axle 1009.5 KG (2226 lbs) Rear Axle 996.5 KG (2197 lbs)

Total Vehicle 2006 KG (4422 lbs)

Retention Test Left Front:

Odometer (START): 43 miles Fuel Level: Full

Ambient Temperature: 7.2°C Wind Speed: 1.5 m/s

Vehicle Speed at time of blow-out: 95.2 kmph

Maximum Deceleration Rate: 2.1 m/sec² Deflation Opening Size 1.3 cm (dia.)

Stopping Distance (Distance traveled after initial release of air): 164.1 m

Distance of Uncontrolled Deviation from a straight line: 0 cm

Description of Bead Separation, Outboard:

None

Description of Bead Separation, Inboard:

None

Vehicle stopped with a controlled brake application (driver opinion): (X) Yes () No

Deflated tire retained on rim for duration of test: (X) Yes () No

DATA SHEET 7 (2 of 2)
DEFLATED TIRE RETENTION

Retention Test Right Rear:

Odometer (START): 46 miles

Fuel Level: Full

Ambient Temperature: 4.5 °C

Wind Speed: 1.5 m/s

Vehicle Speed at time of blow-out: 95.0 kmph

Maximum Deceleration Rate: 2.1 m/sec²

Deflation Opening Size 1.3 cm (dia.)

Stopping Distance (Distance traveled after initial release of air): 153 m

Distance of Uncontrolled Deviation from a straight line: 0 cm

Description of Bead Separation, Outboard:

None

Description of Bead Separation, Inboard:

None

Vehicle stopped with a controlled brake application (driver opinion): (X) Yes () No

Deflated tire retained on rim for duration of test: (X) Yes () No

DATA INDICATES COMPLIANCE:

Left Front
Right Rear

PASS/FAIL

P

P

REMARKS: Vehicle is equipped with Self-Sealing Tires

RECORDED BY: G. Farrand ;
APPROVED BY: D. Messick

DATE: 01/21/20

DATA SHEET 8 (1 of 2)
OWNER'S MANUAL REQUIREMENTS

VEHICLE MAKE/MODEL/BODY STYLE: 2020 CHEVROLET BOLT EV PASSENGER CAR
 VEHICLE NHTSA NO: C20200103 VIN: 1G1FY6S04L4104418
 VEHICLE TYPE: PASSENGER CAR DATE OF MANUFACTURE: 11/19
 LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 01/16/20

Owner's Manual Discusses:

Part 575.6(a) Paragraph	Required Discussion Topic	Discussed in Manual? (Yes/No)
(4) (i)	Tire labeling, including a description and explanation of each marking on the tire provided with the vehicle, and information about the location of the Tire Identification Number (TIN)	YES
(4) (ii)	A. Description and explanation of recommended cold tire inflation pressure.	YES
	B. Description and explanation of FMVSS 110 Vehicle Placard and Tire Inflation Pressure Label and their location(s)	YES
	C. Description and explanation of adverse safety consequences of under-inflation including tire failure	YES
	D. Description and explanation for measuring and adjusting air pressure to achieve proper inflation	YES
(4) (iii)	Glossary of tire terminology, including "cold tire pressure", "maximum inflation pressure", and all non-technical terms defined in S3 of FMVSS 110 and 139	YES
(4) (iv)	Tire care, including maintenance and safety practices	YES
(4) (v)	A. Description and explanation of locating and understanding load limit information, total load capacity, seating capacity, towing capacity and cargo capacity.	YES
	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
	C. Description and explanation for determining compatibility of tire and vehicle load capabilities	YES
	D. Description and explanation of adverse safety consequences of overloading on handling and stopping and on tires	YES

DATA SHEET 8 (2 of 2)
OWNER'S MANUAL REQUIREMENTS

The following verbatim statement, in the English language, is provided in the Owner's Manual.
Reference Part 575.6 (a)(5) (X)Yes () 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 passenger that will be riding in your vehicle
3. Subtract the combined weight of the driver and passenger 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 passenger in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. $(1400 - 750 (5 \times 150) = 650 \text{ lbs.})$
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 you vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult the manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

DATA INDICATES COMPLIANCE

PASS/FAIL PASS

REMARKS:

RECORDED BY: G. Farrand ;
APPROVED BY: D. Messick

DATE: 01/16/20

SECTION 4
TEST EQUIPMENT LIST

TABLE 1 – TEST AND EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
PAD SCALES	INTERCOMP #1 23008LF #2 23008RF #3 23008LR #4 23008RR	23008LF 23008RF 23008LR 23008RR	03/19 03/19 03/19 03/19	03/20 03/20 03/20 03/20
PRESSURE GAGE	BLH	65409	BEFORE USE	BEFORE USE
SURFACE LEVEL	STANLEY	641186	03/19	03/20
INCLINOMETER	MITUTOYO	PRO 360	BEFORE USE	BEFORE USE
PRESSURE TRANSDUCER	BLH	65409	BEFORE USE	BEFORE USE
DATA ACQUISITION COMPUTER	GATEWAY		BEFORE USE	BEFORE USE
ANEMOMETER	OMEGA	53668	11/19	09/20
V-BOX	RACELOGIC	4337	11/19	11/20
SLIP RING ASSEMBLY	GTL	N/A	N/A	N/A
DECELEROMETER	AMMCO		BEFORE USE	BEFORE USE

SECTION 5
PHOTOGRAPHS



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.1
¾ LEFT FRONT VIEW OF VEHICLE



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.2
¾ RIGHT REAR VIEW OF VEHICLE



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.3
VEHICLE CERTIFICATION LABEL



TIRE AND LOADING INFORMATION

SEATING CAPACITY : TOTAL 5 : FRONT 2 : REAR 3

The combined weight of occupants and cargo should never exceed **396 kg** or **873 lbs.**

TIRE	ORIGINAL SIZE	COLD TIRE PRESSURE
FRONT	215/50R17 H	260 kPa, 38 PSI
REAR	215/50R17 H	260 kPa, 38 PSI
SPARE	NONE	NONE

SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION

1G1FY6S04L4104418

2020 CHEVROLET BOLT EV PASSENGER CAR
 NHTSA NO. C20200103
 FMVSS NO. 110

FIGURE 5.4
 VEHICLE TIRE INFORMATION LABEL



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.5
VIEW OF TIRE AND RIM ASSEMBLY



2020 CHEVROLET BOLT EV PASSENGER CAR
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FMVSS NO. 110

FIGURE 5.6
TIRE SHOWING MANUFACTURER AND RATINGS



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.7
TIRE SHOWING MODEL AND SIZE



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.8
TIRE SHOWING SELFSEAL



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.9
TIRE SHOWING DOT SERIAL NUMBER



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.10
RIM SHOWING MANUFACTURER AND COUNTRY



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.11
RIM SHOWING SIZE AND DOT MARKING



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.12
RIM SHOWING DATE



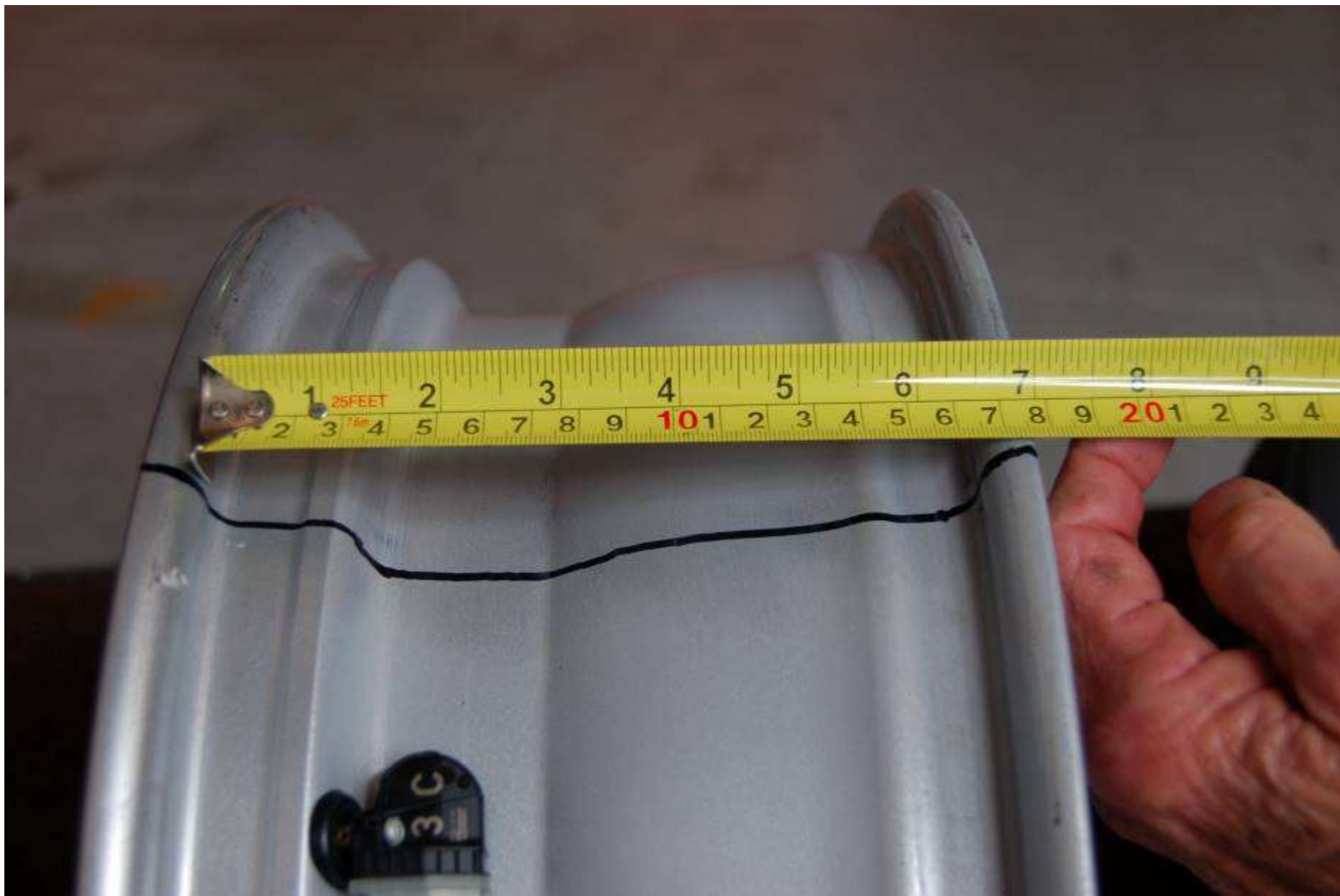
2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.13
RIM SHOWING OTHER MARKINGS



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.14
RIM SHOWING OTHER MARKINGS



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.15
RIM SHOWING CONTOUR



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.16
VIEW OF VEHICLE ON SCALES



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.17
VEHICLE BALLASTED FOR NORMAL LOAD



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.18
VEHICLE BALLASTED FOR FULL LOAD



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.19
VEHICLE BALLASTED FOR CARGO LOAD



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.20
TEST INSTRUMENTATION FOR DEFLATED TIRE RETENTION TEST



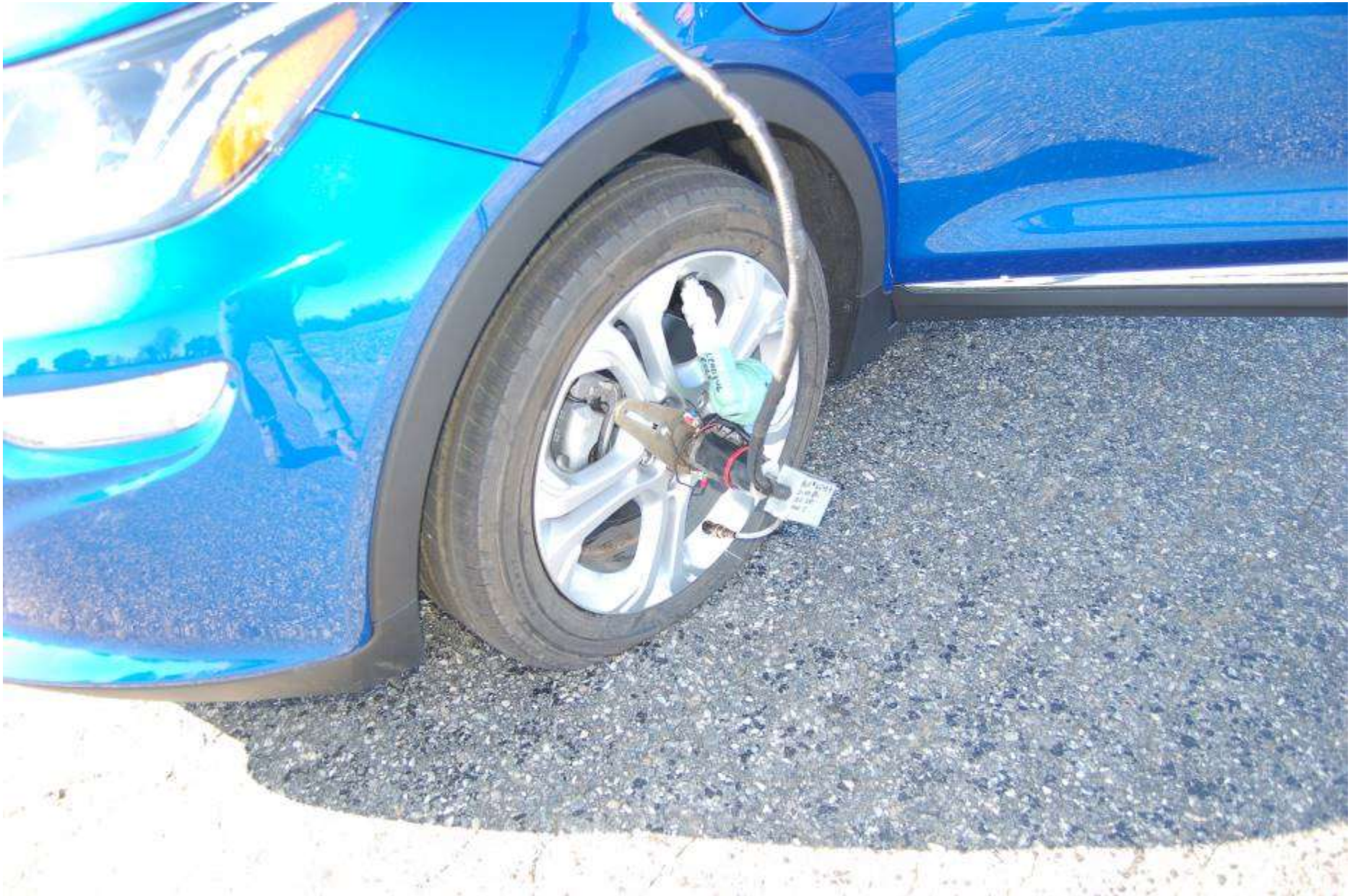
2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.21
DEFLATED TIRE RETENTION TEST SET-UP LEFT FRONT TIRE



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.22
DEFLATED TIRE RETENTION POST TEST LEFT FRONT TIRE



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.23
DEFLATED TIRE RETENTION POST TEST LEFT FRONT TIRE



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.24
DEFLATED TIRE RETENTION POST TEST RIGHT REAR TIRE



2020 CHEVROLET BOLT EV PASSENGER CAR
NHTSA NO. C20200103
FMVSS NO. 110

FIGURE 5.25
DEFLATED TIRE RETENTION POST TEST RIGHT REAR TIRE

SECTION 6
OWNER'S MANUAL INFORMATION

180 Driving and Operating

Warning

If the vehicle's tires spin at high speed, they can explode, and you or others could be injured. The vehicle can overheat, causing an underhood compartment fire or other damage. Spin the wheels as little as possible and avoid going above 56 km/h (35 mph).

press lightly on the accelerator pedal when the electric drive unit is in gear. Slowly spinning the wheels in the forward and reverse directions causes a rocking motion that could free the vehicle. If that does not get the vehicle out after a few tries, it might need to be towed out. See *Towing the Vehicle* ◊ 290.

Vehicle Load Limits

It is very important to know how much weight the vehicle can carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo, and all nonfactory-installed options.

Two labels on the vehicle may show how much weight it may properly carry: the Tire and Loading Information label and the Certification label.

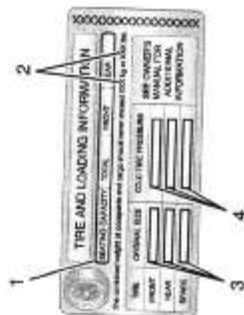
Warning

Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). This can cause systems to break and change the way the vehicle handles. This could cause loss of control and a crash. Overloading can also reduce stopping distance, damage the tires, and shorten the life of the vehicle.

Rocking the Vehicle to Get it Out

Turn the steering wheel left and right to clear the area around the front wheels. Turn off TCS. Shift back and forth between R (Reverse) and a low forward gear, spinning the wheels as little as possible. To prevent electric drive unit wear, wait until the wheels stop spinning before shifting gears. Release the accelerator pedal while shifting, and

Tire and Loading Information Label



Label Example

A vehicle-specific Tire and Loading Information label is attached to the vehicle's center pillar (B-pillar). The Tire and Loading Information label shows the number of occupant seating positions (1), and the maximum vehicle capacity weight (2) in kilograms and pounds.

The Tire and Loading Information label also shows the tire size of the original equipment tires (3) and the recommended cold tire inflation pressures (4). For more information on tires and inflation see *Tires* ⇨ 260 and *Tire Pressure* ⇨ 266.

There is also important loading information on the Certification label. It may show the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axle. See "Certification Label" later in this section.

"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 (5 x 150) = 650 lbs.)

5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely

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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.*

This vehicle is neither designed nor intended to tow a trailer.



Example 1

1. Vehicle Capacity Weight for Example 1 = 453 kg (1,000 lbs).

2. Subtract Occupant Weight @ 68 kg (150 lbs) $\times 2 = 136$ kg (300 lbs).

3. Available Occupant and Cargo Weight = 317 kg (700 lbs).

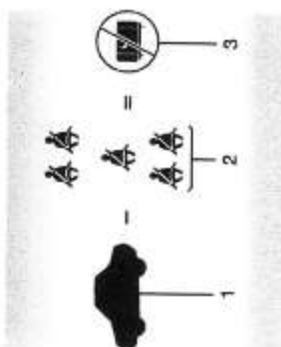


Example 2

1. Vehicle Capacity Weight for Example 2 = 453 kg (1,000 lbs).

2. Subtract Occupant Weight @ 68 kg (150 lbs) $\times 5 = 340$ kg (750 lbs).

3. Available Cargo Weight = 113 kg (250 lbs).



Example 3

1. Vehicle Capacity Weight for Example 3 = 453 kg (1,000 lbs).

2. Subtract Occupant Weight @ 91 kg (200 lbs) $\times 5 = 453$ kg (1,000 lbs).

3. Available Cargo Weight = 0 kg (0 lbs).

Refer to the vehicle's Tire and Loading Information label for specific information about the vehicle's capacity weight and seating positions. The combined weight of the driver, passengers, and cargo should never exceed the vehicle's capacity weight.

Certification Label

Label Example

A vehicle-specific Certification label is attached to the vehicle's center pillar (B-pillar). The label may show the gross weight capacity of the vehicle, called the Gross Vehicle Weight Rating (GVWR). The GVWR includes the weight of the vehicle, all occupants, fuel, and cargo.

Warning

Things inside the vehicle can strike and injure people in a sudden stop or turn, or in a crash.

- Put things in the cargo area of the vehicle. In the cargo area, put them as far forward as possible. Try to spread the weight evenly.

(Continued)

Warning (Continued)

- Never stack heavier things, like suitcases, inside the vehicle so that some of them are above the tops of the seats.
- Do not leave an unsecured child restraint in the vehicle.
- Secure loose items in the vehicle.
- Do not leave a seat folded down unless needed.

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Wheels and Tires

Tires

Every new GM vehicle has high-quality tires made by a leading tire manufacturer. See the warranty manual for information regarding the tire warranty and where to get service. For additional information refer to the tire manufacturer.



Warning

- Poorly maintained and improperly used tires are dangerous.
- Overloading the tires can cause overheating as a result of too much flexing. There could be a blowout and a serious crash. See *Vehicle Load Limits* → 180.

(Continued)

Warning (Continued)

- Underinflated tires pose the same danger as overloaded tires. The resulting crash could cause serious injury. Check all tires frequently to maintain the recommended pressure. Tire pressure should be checked when the tires are cold.
- Overinflated tires are more likely to be cut, punctured, or broken by a sudden impact — such as when hitting a pothole. Keep tires at the recommended pressure.
- Worn or old tires can cause a crash. If the tread is badly worn, replace them.

(Continued)

Warning (Continued)

- Replace any tires that have been damaged by impacts with potholes, curbs, etc.
- Improperly repaired tires can cause a crash. Only the dealer or an authorized tire service center should repair, replace, dismount, and mount the tires.
- Do not spin the tires in excess of 56 km/h (35 mph) on slippery surfaces such as snow, mud, ice, etc. Excessive spinning may cause the tires to explode.

All-Season Tires

This vehicle may come with all-season tires. These tires are designed to provide good overall

performance on most road surfaces and weather conditions. Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. Original equipment all-season tires can be identified by the last two characters of this TPC code, which will be "MS."

Consider installing winter tires on the vehicle if frequent driving on snow or ice-covered roads is expected. All-season tires provide adequate performance for most winter driving conditions, but they may not offer the same level of traction or performance as winter tires on snow or ice-covered roads. See *Winter Tires* ◊ 261.

Winter Tires

This vehicle was not originally equipped with winter tires. Winter tires are designed for increased traction on snow and ice-covered roads. Consider installing winter tires on the vehicle if frequent driving on ice or snow covered

roads is expected. See your dealer for details regarding winter tire availability and proper tire selection. Also, see *Buying New Tires* ◊ 274.

With winter tires, there may be decreased dry road traction, increased road noise, and shorter tread life. After changing to winter tires, be alert for changes in vehicle handling and braking.

If using winter tires:

- Use tires of the same brand and tread type on all four wheel positions.
- Use only radial ply tires of the same size, load range, and speed rating as the original equipment tires.

Winter tires with the same speed rating as the original equipment tires may not be available for H, V, W, Y, and ZR speed rated tires. If winter tires with a lower speed rating are chosen, never exceed the tire's maximum speed capability.

Self-Sealing Tires

This vehicle may have self-sealing tires. These tires have a material inside that can seal punctures up to 6 mm (0.25 in) in the tread area. The tire may lose air pressure if the sidewall is damaged or the tread puncture is too large. If the Tire Pressure Monitor System indicates the tire pressure is low, inspect the tire for damage and inflate it to the recommended pressure. If the tire is unable to maintain the recommended pressure, contact the nearest authorized GM servicing facility immediately for inspection and repair or replacement. To locate the nearest GM servicing facility, call GM Customer Assistance.

Caution

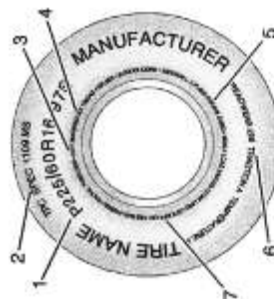
Do not drive on a deflated self-sealing tire as this could damage the tire. Make sure the tire is inflated to the recommended pressure or have it immediately repaired or replaced.

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When tire replacement is needed, replace with a self-sealing tire, because the vehicle does not come with a spare tire or tire changing equipment.

Tire Sidewall Labeling

Useful information about a tire is molded into its sidewall. The example shows a typical passenger tire sidewall.



Passenger (P-Metric) Tire Example

1) **Tire Size** : The tire size is a combination of letters and numbers used to define a

particular tire's width, height, aspect ratio, construction type, and service description. See the "Tire Size" illustration later in this section.

(2) **TPC Spec (Tire Performance Criteria Specification)** : Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

(3) **DOT (Department of Transportation)** : The Department of Transportation (DOT) code indicates that the tire is in compliance with the U.S. Department of Transportation Motor Vehicle Safety Standards.

DOT Tire Date of Manufacture : The last four digits of the TIN indicate the tire

manufactured date. The first two digits represent the week (01-52) and the last two digits, the year. For example, the third week of the year 2010 would have a four-digit DOT date of 0310.

(4) **Tire Identification Number (TIN)** : The letters and numbers following the DOT code are the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

(5) **Tire Ply Material** : The type of cord and number of plies in the sidewall and under the tread.

(6) **Uniform Tire Quality Grading (UTQG)** : Tire manufacturers are required to grade tires based on three performance factors: treadwear,

traction, and temperature resistance. For more information see *Uniform Tire Quality Grading* ⇨ 276.

(7) Maximum Cold Inflation Load Limit : Maximum load that can be carried and the maximum pressure needed to support that load.

Tire Designations

Tire Size

The example shows a typical passenger vehicle tire size.

P225/60R16 97S

The diagram shows the tire size code 'P225/60R16 97S' with six numbered callouts: 1 points to 'P', 2 points to '225', 3 points to the slash '/', 4 points to '60', 5 points to 'R16', and 6 points to '97S'.

(1) Passenger (P-Metric) Tire : The United States version of a metric tire sizing system. The letter "P" as the first character in the tire size means a passenger

vehicle tire engineered to standards set by the U.S. Tire and Rim Association.

(2) Tire Width : The three-digit number indicates the tire section width in millimeters from sidewall to sidewall.

(3) Aspect Ratio : A two-digit number that indicates the tire height-to-width measurements. For example, if the tire size aspect ratio is 60, as shown in item (3) of the illustration, it would mean that the tire's sidewall is 60 percent as high as it is wide.

(4) Construction Code : A letter code is used to indicate the type of ply construction in the tire. The letter "R" means radial ply construction; the letter "D" means diagonal or bias ply construction.

(5) Rim Diameter : Diameter of the wheel in inches.

(6) Service Description : These characters represent the load index and speed rating of the tire. The load index represents the load carrying capacity a tire is certified to carry. The speed rating is the maximum speed a tire is certified to carry a load.

Tire Terminology and Definitions

Air Pressure : The amount of air inside the tire pressing outward on each square inch of the tire. Air pressure is expressed in kPa (kilopascal) or psi (pounds per square inch).

Accessory Weight : The combined weight of optional accessories. Some examples of optional accessories are, electric drive unit, power windows, power seats, and air conditioning.

Aspect Ratio : The relationship of a tire's height to its width.

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Belt : A rubber coated layer of cords that is located between the plies and the tread. Cords may be made from steel or other reinforcing materials.

Bead : The tire bead contains steel wires wrapped by steel cords that hold the tire onto the rim.

Bias Ply Tire : A pneumatic tire in which the plies are laid at alternate angles less than 90 degrees to the centerline of the tread.

Cold Tire Pressure : The amount of air pressure in a tire, measured in kPa (kilopascal) or psi (pounds per square inch) before a tire has built up heat from driving. See *Tire Pressure* 266.

curb Weight : The weight of a motor vehicle with standard and optional equipment including the

maximum capacity of fuel, oil, and coolant, but without passengers and cargo.

DOT Markings : A code molded into the sidewall of a tire signifying that the tire is in compliance with the U.S. Department of Transportation (DOT) Motor Vehicle Safety Standards. The DOT code includes the Tire Identification Number (TIN), an alphanumeric designator which can also identify the tire manufacturer, production plant, brand, and date of production.

GAWR FRT : Gross Axle Weight Rating for the front axle. See *Vehicle Load Limits* 180.

GAWR RR : Gross Axle Weight Rating for the rear axle. See *Vehicle Load Limits* 180.

GVWR : Gross Vehicle Weight Rating. See *Vehicle Load Limits* 180.

Intended Outboard Sidewall : The side of an asymmetrical tire, that must always face outward when mounted on a vehicle.

Kilopascal (kPa) : The metric unit for air pressure.

Light Truck (LT-Metric) Tire : A tire used on light duty trucks and some multipurpose passenger vehicles.

Load Index : An assigned number ranging from 1 to 279 that corresponds to the load carrying capacity of a tire.

Maximum Inflation Pressure : The maximum air pressure to which a cold tire can be inflated. The maximum air pressure is molded onto the sidewall.

Maximum Load Rating : The load rating for a tire at the maximum permissible inflation pressure for that tire.

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Maximum Loaded Vehicle Weight : The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

Normal Occupant Weight : The number of occupants a vehicle is designed to seat multiplied by 68 kg (150 lbs). See *Vehicle Load Limits* ⇨ 180.

Occupant Distribution : Designated seating positions.

Outward Facing Sidewall : The side of an asymmetrical tire that has a particular side that faces outward when mounted on a vehicle. The side of the tire that contains a whitewall, bears white lettering, or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same moldings on the other sidewall of the tire.

Passenger (P-Metric) Tire : A tire used on passenger cars and some light duty trucks and multipurpose vehicles.

Recommended Inflation

Pressure : Vehicle manufacturer's recommended tire inflation pressure as shown on the tire placard. See *Tire Pressure* ⇨ 266 and *Vehicle Load Limits* ⇨ 180.

Radial Ply Tire : A pneumatic tire in which the ply cords that extend to the beads are laid at 90 degrees to the centerline of the tread.

Rim : A metal support for a tire and upon which the tire beads are seated.

Sidewall : The portion of a tire between the tread and the bead.

Speed Rating : An alphanumeric code assigned to a tire indicating the maximum speed at which a tire can operate.

Traction : The friction between the tire and the road surface. The amount of grip provided.

Tread : The portion of a tire that comes into contact with the road.

Treadwear Indicators : Narrow bands, sometimes called wear bars, that show across the tread of a tire when only 1.6 mm (1/16 in) of tread remains. See *When It Is Time for New Tires* ⇨ 274.

UTQGS (Uniform Tire Quality Grading Standards) : A tire information system that provides consumers with ratings for a tire's traction, temperature, and treadwear. Ratings are determined by tire manufacturers using

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government testing procedures. The ratings are molded into the sidewall of the tire. See *Uniform Tire Quality Grading* ⇨ 276.

Vehicle Capacity Weight : The number of designated seating positions multiplied by 150 kg (150 lbs) plus the rated cargo load. See *Vehicle Load Limits* ⇨ 180.

Vehicle Maximum Load on the tire : Load on an individual tire due to curb weight, accessory weight, occupant weight, and cargo weight.

Vehicle Placard : A label permanently attached to a vehicle showing the vehicle's capacity weight and the original equipment tire size and recommended inflation pressure. See "Tire and Loading Information Label" under *Vehicle Load Limits* ⇨ 180.

Tire Pressure

Tires need the correct amount of air pressure to operate effectively.



Warning

Neither tire underinflation nor overinflation is good. Underinflated tires, or tires that do not have enough air, can result in:

- Tire overloading and overheating which could lead to a blowout.
- Premature or irregular wear.
- Poor handling.
- Reduced battery-electric range.

(Continued)

Warning (Continued)

Overinflated tires, or tires that have too much air, can result in:

- Unusual wear.
- Poor handling.
- Rough ride.
- Needless damage from road hazards.

The Tire and Loading

Information label on the vehicle indicates the original equipment tires and the correct cold tire inflation pressures. The recommended pressure is the minimum air pressure needed to support the vehicle's maximum load carrying capacity. See *Vehicle Load Limits* ⇨ 180.

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How the vehicle is loaded affects vehicle handling and ride comfort. Never load the vehicle with more weight than it was designed to carry.

When to Check

Check the pressure of the tires once a month or more.

How to Check

Use a good quality pocket-type gauge to check the tire pressure. Proper tire inflation cannot be determined by looking at the tire. Check the tire inflation pressure when the tires are cold, meaning the vehicle has not been driven for at least three hours or no more than 1.6 km (1 mi).

Remove the valve cap from the tire valve stem. Press the tire gauge firmly onto the valve to get the pressure measurement. If the cold tire inflation pressure matches the recommended

pressure on the Tire and Loading Information label, no further adjustment is necessary.

If the inflation pressure is low, add air until the recommended pressure is reached. If the inflation pressure is high, press on the metal stem in the center of the tire valve to release air.

Re-check the tire pressure with the tire gauge.

Put the valve caps back on the valve stems to keep out dirt and moisture and prevent leaks. Use only valve caps designed for the vehicle by GM. TPMS sensors could be damaged and would not be covered by the vehicle warranty.

Tire Pressure Monitor System

The Tire Pressure Monitor System (TPMS) uses radio and sensor technology to check tire pressure levels. The TPMS sensors monitor

the air pressure in your tires and transmit tire pressure readings to a receiver located in the vehicle.

Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated.

Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can

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lead to tire failure. Under-inflation also reduces fuel efficiency and tire road life, and may affect the vehicle's handling and stopping ability.

Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

Your vehicle has also been equipped with a TPMS malfunction indicator to indicate when the system is not operating properly. The TPMS malfunction indicator is combined with the low tire pressure telltale. When the system detects a malfunction, the telltale will flash for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists. When the malfunction indicator is illuminated, the system may not be able to detect or signal low tire

pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly.

See *Tire Pressure Monitor*

Operation ⇨ 268.

See *Radio Frequency Statement* ⇨ 325.

Tire Pressure Monitor Operation

This vehicle may have a Tire Pressure Monitor System (TPMS). The TPMS is designed to warn the driver when a low tire pressure condition exists. TPMS sensors are mounted onto each tire and wheel assembly, excluding the spare tire and wheel assembly. The TPMS

sensors monitor the air pressure in the tires and transmits the tire pressure readings to a receiver located in the vehicle.



When a low tire pressure condition is detected, the TPMS illuminates the low tire pressure warning light located on the instrument cluster. If the warning light comes on, stop as soon as possible and inflate the tires to the recommended pressure shown on the Tire and Loading Information label. See *Vehicle Load Limits* ⇨ 180.

A message to check the pressure in a specific tire displays in the Driver Information Center (DIC). The low tire pressure warning light and the DIC warning message come on at each ignition cycle using POWER UP until the tires are inflated to the correct inflation pressure. Using the

DIC, tire pressure levels can be viewed. For additional information and details about the DIC operation and displays see *Driver Information Center (DIC)* ⇨ 120.

The low tire pressure warning light may come on in cool weather when the vehicle is first started, and then turn off as the vehicle is driven. This could be an early indicator that the air pressure is getting low and needs to be inflated to the proper pressure.

A Tire and Loading Information label, attached to your vehicle, shows the size of the original equipment tires and the correct inflation pressure for the tires when they are cold. See *Vehicle Load Limits* ⇨ 180, for an example of the Tire and Loading Information label and its location. Also see *Tire Pressure* ⇨ 266.

The TPMS can warn about a low tire pressure condition but it does not replace normal tire maintenance. See *Tire Inspection* ⇨ 272, *Tire Rotation* ⇨ 273 and *Tires* ⇨ 260.

Caution

Tire sealant materials are not all the same. A non-approved tire sealant could damage the TPMS sensors. TPMS sensor damage caused by using an incorrect tire sealant is not covered by the vehicle warranty. Always use only the GM approved tire sealant available through your dealer or included in the vehicle.

Factory-installed Tire Inflator Kits use a GM-approved liquid tire sealant. Using non-approved tire sealants could damage the TPMS sensors. See *Tire Sealant and Compressor Kit* ⇨ 280 for information regarding the inflator kit materials and instructions.

TPMS Malfunction Light and Message

The TPMS will not function properly if one or more of the TPMS sensors are missing or inoperable. When the system detects a malfunction, the

low tire warning light flashes for about one minute and then stays on for the remainder of the ignition cycle using POWER ⇨. A DIC warning message also displays. The malfunction light and DIC warning message come on at each ignition cycle using POWER ⇨ until the problem is corrected. Some of the conditions that can cause these to come on are:

- One of the road tires has been replaced with the spare tire. The spare tire does not have a TPMS sensor. The malfunction light and DIC message should go off after the road tire is replaced and the sensor matching process is performed successfully. See "TPMS Sensor Matching Process" later in this section.
- The TPMS sensor matching process was not done or not completed successfully after rotating the tires. The malfunction light and the DIC message should go off after successfully completing the

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sensor matching process. See "TPMS Sensor Matching Process" later in this section.

One or more TPMS sensors are missing or damaged. The malfunction light and the DIC message should go off when the TPMS sensors are installed and the sensor matching process is performed successfully. See your dealer for service.

Replacement tires or wheels do not match the original equipment tires or wheels. Tires and wheels other than those recommended could prevent the TPMS from functioning properly. See *Buying New Tires* ⇨ 274.

- Operating electronic devices or being near facilities using radio wave frequencies similar to the TPMS could cause the TPMS sensors to malfunction.

If the TPMS is not functioning properly it cannot detect or signal a low tire condition. See your dealer

for service if the TPMS malfunction light and DIC message come on and stay on.

Tire Fill Alert (If Equipped)

This feature provides visual and audible alerts outside the vehicle to help when inflating an underinflated tire to the recommended cold tire pressure.

When the low tire pressure warning light comes on:

1. Park the vehicle in a safe, level place.
2. Set the parking brake firmly.
3. Place the vehicle in P (Park).
4. Add air to the tire that is underinflated. The turn signal lamp will flash.

When the recommended pressure is reached, the horn sounds once and the turn signal lamp will stop flashing and briefly turn solid.

Repeat these steps for all underinflated tires that have illuminated the low tire pressure warning light.

Warning

Overinflating a tire could cause the tire to rupture and you or others could be injured. Do not exceed the maximum pressure listed on the tire sidewall. See *Tire Sidewall Labeling* ⇨ 262 and *Vehicle Load Limits* ⇨ 180.

If the tire is overinflated by more than 35 kPa (5 psi), the horn will sound multiple times and the turn signal lamp will continue to flash for several seconds after filling stops. To release and correct the pressure, while the turn signal lamp is still flashing, briefly press the center of the valve stem. When the recommended pressure is reached, the horn sounds once.

If the turn signal lamp does not flash within 15 seconds after starting to inflate the tire, the tire fill alert has not been activated or is not working.

If the hazard warning flashers are on, the tire fill alert visual feedback will not work properly.

The TPMS will not activate the tire fill alert properly under the following conditions:

- There is interference from an external device or transmitter.
- The air pressure from the inflation device is not sufficient to inflate the tire.
- There is a malfunction in the TPMS.
- There is a malfunction in the horn or turn signal lamps.
- The identification code of the TPMS sensor is not registered to the system.
- The battery of the TPMS sensor is low.

If the tire fill alert does not operate due to TPMS interference, move the vehicle about 1 m (3 ft) back or forward and try again. If the tire fill alert feature is not working, use a tire pressure gauge.

TPMS Sensor Matching Process

Each TPMS sensor has a unique identification code. The identification code needs to be matched to a new tire/wheel position after rotating the vehicle's tires or replacing one or more of the TPMS sensors. The TPMS sensor matching process should also be performed after replacing a spare tire with a road tire containing the TPMS sensor. The malfunction light and the DIC message should go off at the next ignition cycle using POWER ⏻. The sensors are matched to the tire/wheel positions, using a TPMS relearn tool, in the following order: driver side front tire, passenger side front tire, passenger side rear tire, and driver side rear. See your dealer for service or to purchase a

relearn tool. A TPMS relearn tool can also be purchased. See Tire Pressure Monitor Sensor Activation Tool at www.gmtoolsandequipment.com or call 1-800-GM TOOLS (1-800-468-6657).

There are two minutes to match the first tire/wheel position, and five minutes overall to match all four tire/wheel positions. If it takes longer, the matching process stops and must be restarted.

The TPMS sensor matching process is:

1. Set the parking brake.
2. Press POWER ⏻ to start the vehicle. See *Power Button* ⤵ 184.
3. Make sure the Tire Pressure info page option is turned on. The info pages on the DIC can be turned on and off through the Options menu. See *Driver Information Center (DIC)* ⤵ 120.

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1. Use the DIC controls on the right side of the steering wheel to scroll to the Tire Pressure screen under the DIC info page.

2. Press and hold $\checkmark$ in the center of the DIC controls. A message requesting acceptance of the process may display.

The horn sounds twice to signal the receiver is in relearn mode and the TIRE LEARNING ACTIVE message displays on the DIC screen.

3. Start with the driver side front tire.

7. Place the relearn tool against the tire sidewall, near the valve stem. Then press the button to activate the TPMS sensor. A horn chirp confirms that the sensor identification code has been matched to this tire and wheel position.

Tire Inspection

We recommend that the tires, including the spare tire, if the vehicle has one, be inspected for signs of wear or damage at least once a month.

Replace the tire if:

- The indicators at three or more places around the tire can be seen.
- There is cord or fabric showing through the tire's rubber.
- The tread or sidewall is cracked, cut, or snagged deep enough to show cord or fabric.
- The tire has a bump, bulge, or split.
- The tire has a puncture, cut, or other damage that cannot be repaired well because of the size or location of the damage.

8. Proceed to the passenger side front tire, and repeat the procedure in Step 7.

9. Proceed to the passenger side rear tire, and repeat the procedure in Step 7.

10. Proceed to the driver side rear tire, and repeat the procedure in Step 7. The horn sounds two times to indicate the sensor identification code has been matched to the driver side rear tire, and the TPMS sensor matching process is no longer active. The TIRE LEARNING ACTIVE message on the DIC display screen goes off.

11. Turn the vehicle off.

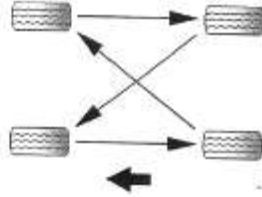
12. Set all four tires to the recommended air pressure level as indicated on the Tire and Loading Information label.

Tire Rotation

Tires should be rotated every 12 000 km (7,500 mi). See *Maintenance Schedule* ⇨ 304.

Tires are rotated to achieve a uniform wear for all tires. The first rotation is the most important.

Anytime unusual wear is noticed, rotate the tires as soon as possible, check for proper tire inflation pressure, and check for damaged tires or wheels. If the unusual wear continues after the rotation, check the wheel alignment. See *When It Is Time for New Tires* ⇨ 274 and *Wheel Replacement* ⇨ 278.



Use this rotation pattern when rotating the tires.

If the vehicle has a compact spare tire, do not include it in the tire rotation.

Adjust the front and rear tires to the recommended inflation pressure on the Tire and Loading Information label after the tires have been rotated. See *Tire Pressure* ⇨ 266 and *Vehicle Load Limits* ⇨ 180.

Reset the Tire Pressure Monitor System. See *Tire Pressure Monitor Operation* ⇨ 268.

Check that all wheel nuts are properly tightened. See "Wheel Nut Torque" under *Capacities and Specifications* ⇨ 314.

Warning

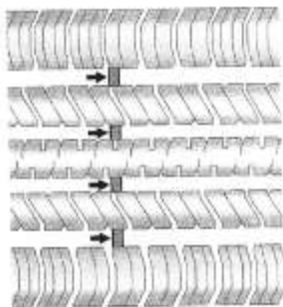
Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause a crash. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, a cloth or a paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.

Lightly coat the inner diameter of the wheel hub opening with wheel bearing grease after a wheel change or tire rotation to prevent corrosion or rust build-up. Do not get grease on the wheel mounting surface or on the wheel nuts or bolts.

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When It Is Time for New Tires

Factors such as maintenance, temperatures, driving speeds, vehicle loading, and road conditions affect the wear rate of the tires.



Treadwear indicators are one way to tell when it is time for new tires. Treadwear indicators appear when the tires have only 1.6 mm (1/16 in) or less of tread remaining. See *Tire Inspection* ◊ 272 and *Tire Rotation* ◊ 273.

The rubber in tires ages over time. This also applies to the spare tire, if the vehicle has one, even if it is never used. Multiple factors including temperatures, loading conditions, and inflation pressure maintenance affect how fast aging takes place. GM recommends that tires, including the spare if equipped, be replaced after six years, regardless of tread wear. To identify the age of a tire, use the tire manufacture date which is the last four digits of the DOT Tire Identification Number (TIN) which is molded into one side of the tire sidewall. The first two digits represent the week (01–52) and the last two digits, the year. For example, the third week of the year 2010 would have a four-digit DOT date of 0310.

Vehicle Storage

Tires age when stored normally mounted on a parked vehicle. Park a vehicle that will be stored for at least a month in a cool, dry, clean area away from direct sunlight to slow aging. This area should be free

of grease, gasoline, or other substances that can deteriorate rubber.

Parking for an extended period can cause flat spots on the tires that may result in vibrations while driving. When storing a vehicle for at least a month, remove the tires or raise the vehicle to reduce the weight from the tires.

Buying New Tires

GM has developed and matched specific tires for the vehicle. The original equipment tires installed were designed to meet General Motors Tire Performance Criteria Specification (TPC Spec) system rating. When replacement tires are needed, GM strongly recommends buying tires with the same TPC Spec rating.

GM's exclusive TPC Spec system considers over a dozen critical specifications that impact the overall performance of the

vehicle, including brake system performance, ride and handling, traction control, and tire pressure monitoring performance. GM's TPC Spec number is molded onto the tire's sidewall near the tire size. If the tires have an all-season tread design, the TPC Spec number will be followed by MS for mud and snow. See *Tire Sidewall Labeling* ⇨ 262, for additional information.

GM recommends replacing worn tires in complete sets of four. Uniform tread depth on all tires will help to maintain the performance of the vehicle. Braking and handling performance may be adversely affected if all the tires are not replaced at the same time. If proper rotation and maintenance have been done, all four tires should wear out at about the same time. See *Tire Rotation* ⇨ 273 for information

on proper tire rotation. However, if it is necessary to replace only one axle set of worn tires, place the new tires on the rear axle.

Winter tires with the same speed rating as the original equipment tires may not be available for H, V, W, and ZR speed rated tires. Never exceed the winter tire's maximum speed capability when using winter tires with a lower speed rating.

Warning

Mixing tires of different sizes (other than those originally installed on the vehicle), brands, or types may cause loss of control of the vehicle, resulting in a crash or other vehicle damage. Use the same size, load range, and type of tires as the original tires.

Warning

Tires could explode during improper service. Attempting to mount or dismount a tire could cause injury or death. Only your dealer or authorized tire service center should mount or dismount the tires.

Warning

Using bias-ply tires on the vehicle may cause the wheel rim flanges to develop cracks after many miles of driving. A tire and/or wheel could fail suddenly and cause a crash. Use only radial-ply tires with the wheels on the vehicle.

If the vehicle tires must be replaced with a tire that does not have a TPC Spec number, make

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ure they are the same size, bad range, speed rating, and onstruction (radial) as the original tires.

ehicles that have a tire pressure monitoring system could give an inaccurate low-pressure warning if non-TPC spec rated tires are installed. See *Tire Pressure Monitor Operation* ◊ 268.

The Tire and Loading information label indicates the original equipment tires on the vehicle. See *Vehicle Load Limits* ◊ 180.

Different Size Tires and Wheels

If wheels or tires are installed that are a different size than the original equipment wheels and tires, vehicle performance, including its braking, ride and handling characteristics, stability, and resistance to rollover may be affected. If the vehicle has electronic systems such as antilock

brakes, rollover airbags, traction control, electronic stability control, or All-Wheel Drive, the performance of these systems can also be affected.

Warning

If different sized wheels are used, there may not be an acceptable level of performance and safety if tires not recommended for those wheels are selected. This increases the chance of a crash and serious injury. Only use GM specific wheel and tire systems developed for the vehicle, and have them properly installed by a GM certified technician.

See *Buying New Tires* ◊ 274 and *Accessories and Modifications* ◊ 237.

Uniform Tire Quality Grading

The following information relates to the system developed by the United States National Highway Traffic Safety Administration (NHTSA), which grades tires by treadwear, traction, and temperature performance. This applies only to vehicles sold in the United States. The grades are molded on the sidewalls of most passenger car tires. The Uniform Tire Quality Grading (UTQG) system does not apply to deep tread, winter tires, compact spare tires, tires with nominal rim diameters of 10 to 12 inches (25 to 30 cm), or to some limited-production tires.

While the tires available on General Motors passenger cars and light trucks may vary with respect to these grades, they must also conform to federal

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safety requirements and additional General Motors Tire Performance Criteria (TPC) standards. Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example:	graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.
Treadwear 200 Traction AA Temperature A All Passenger Car Tires Must Conform to Federal Safety Requirements In Addition To These Grades.	Traction The traction grades, from highest to lowest, are AA, A, B, and C. Those grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance. Warning: The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include
Treadwear The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and one-half (1½) times as well on the government course as a tire	acceleration, cornering, hydroplaning, or peak traction characteristics. Temperature The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law. Warning: The

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temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, overinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

Wheel Alignment and Tire Balance

Tires and wheels were aligned and balanced at the factory to provide the longest tire life and best overall performance. Adjustments to wheel alignment and tire balancing are not necessary on a regular basis. Consider an alignment check where is unusual tire wear or the vehicle is significantly pulling to one side or the other. Some slight pull to the left or right, depending on the design of the road and/or other road surface variations such as troughs and ruts, is normal. If the vehicle is pulling when driving on a smooth

road, the tires and wheels may need to be rebalanced. See your dealer for proper diagnosis.

Wheel Replacement

Replace any wheel that is bent, cracked, or badly rusted or corroded. If wheel nuts keep coming loose, the wheel, wheel bolts, and wheel nuts should be replaced. If the wheel leaks air, replace it. Some aluminum wheels can be repaired. See your dealer if any of these conditions exist.

Your dealer will know the kind of wheel that is needed.

Each new wheel should have the same load-carrying capacity, diameter, width, offset, and be mounted the same way as the one it replaces.

Replace wheels, wheel bolts, wheel nuts, or Tire Pressure Monitor System (TPMS) sensors with new GM original equipment parts.



Warning

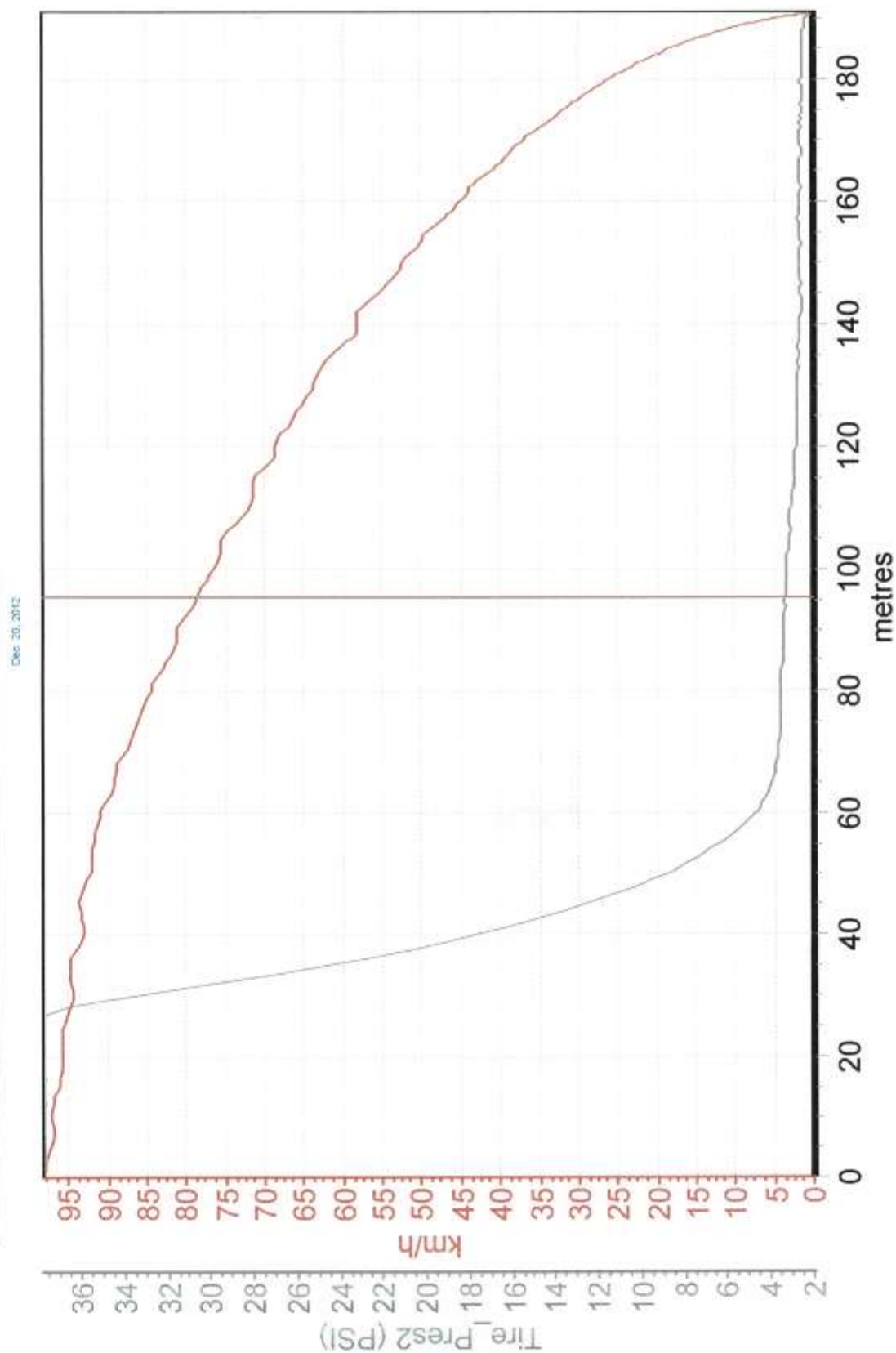
Using the wrong replacement wheels, wheel bolts, or wheel nuts can be dangerous. It could affect the braking and handling of the vehicle. Tires can lose air, and cause loss of control, causing a crash. Always use the correct wheel, wheel bolts, and wheel nuts for replacement.

Caution

The wrong wheel can also cause problems with bearing life, brake cooling, speedometer or odometer calibration, headlamp aim, bumper height, vehicle ground clearance, and tire or tire chain clearance to the body and chassis.

SECTION 7 TEST PLOTS

**FMVSS 110 Deflated Tire Retention
2020 Chev Bolt
Left Front 1-21-2020**



FMVSS 110 Deflated Tire Retention
2020 Chev Bolt
Right Rear 1-21-2020

