mga research corporation

50mph 301 Rear
Test No.: 25101021
ATC Mobility LLC

Ballast 50th Driver and Passenger

Test Date: October 10, 2025

Report Date: October 31, 2025

MGA Ref. No.: C25C3-062.1

FINAL REPORT

PREPARED FOR:

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SIGNATURE APPROVAL PAGE

Procedure Number: FMVSS 301/305 Rear
Rev. 09, dated March 19, 2020

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The results presented in this report relate only to the specified test items as received. MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

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TEST SUMMARY

An offset deformable barrier cart impacted a modified stationary 2024 Chevrolet Suburban at 81.23 km/h. The test was performed at MGA Research Corporation on October 10, 2025.

Five (5) high-speed cameras were used to document the impact event. High speed camera views are listed below.

Camera View	Frame Rate (fps)
Left Rear Half	1,000
Left Side Overall	1,000
Rear Oblique	1,000
Right Rear Half	1,000
Right Side Overall	1,000

Two (2) Part 572O, 50th percentile male ballast dummies were placed in the driver seating position and in the right front passenger seating position. The test dummies were belted.

TEST NOTES

None.

TEST VEHICLE INFORMATION

Model Year	2024	Driver Front Airbag	Yes
Make / Model / Trim Level	Chevrolet Suburban	Driver Knee Airbag	Yes
VIN No.	1GNSKBKD5RR213539	Driver Side Curtain Airbag	Yes
Body Style	MPV	Driver Seatbelt Pretensioner	Yes
Engine Displacement	5.3 L	Tilt / Telescope Steering Wheel	Yes
Engine Type/No. Cylinders	8	Passenger Front Airbag	Yes
Transmission Type	Automatic (10 Speed)	Passenger Knee Airbag	Yes
Final Drive	RWD	Passenger Side Curtain Airbag	Yes
Seating Positions	8	Pass. Seatbelt Pretensioner	Yes

TIRE DATA

Measured Parameter	Front	Rear
Cold Pressure	240	240
Tire Size on Vehicle	275/60R20	275/60R20
Tire Manufacturer	Continental	Continental

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)		As Tested (ATW) (Axle)	
		Front	Rear	Front	Rear
Left	lbs	1461	1655	1594	1861
Right	lbs	1804	1625	1893	1841
Ratio	%	49.9	50.1	48.5	51.5
Totals	lbs	3265	3280	3487	3702
		6545		7189	

Weight of Ballast	460 LB
Location of Ballast	Rear Seat and Rear Floorboard
Vehicle Components Removed	None

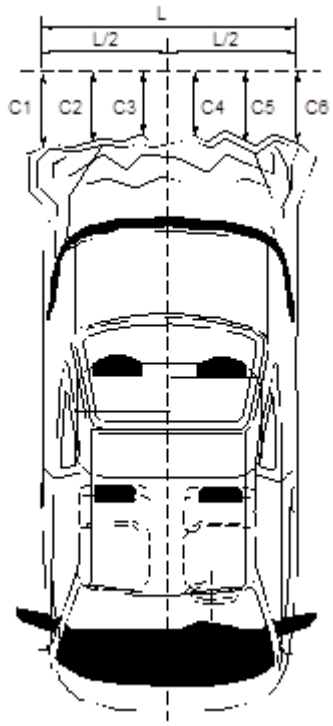
Note: Ballast weight does not include instrumentation, video equipment and data acquisition system.

TEST VEHICLE ATTITUDES

	Units	Left	Right
Front	mm	1020	1017
Rear	mm	1015	1012

GENERAL MDB INFORMATION

Measurement Description	Units	Left	Right
Bottom of Honeycomb	mm	230	229
Bottom of MDB Bumper	mm	279	277
Top of MDB Bumper	mm	483	480
Top of Honeycomb	mm	787	787



VEHICLE MEASUREMENTS

Measurement Description	Units	Pre-Test	Post-Test	Deformation
C1	mm	2550	2155	395
C2	mm	2581	2182	399
C3	mm	2615	2170	445
C4	mm	2615	2241	374
C5	mm	2582	2390	192
C6	mm	2550	2492	58
L	mm	1405	1410	5
W	mm	2068	2068	0
D	mm	2618	2210	408

SEAT POSITIONING INFORMATION

Adjustment	Parameter	Driver	Right Front Passenger
Seat Track	Adjustment Type	Power	Power
	Fore/Aft Total Travel (mm)	255*	255*
	Total Number of Detents		
	Test Position (mm from Foremost)	128	128
	Test Position Detent (Foremost as 0)		
Seat Cushion Angle	Adjustment Type	Power	Power
	Measurement Location	Seat Cushion Centerline	No Cushion Centerline
	Minimum Angle (°)		
	Maximum Angle (°)		
	Test Position Angle	Lowest	Lowest
	Additional Description		
Seat Height	Adjustment Type	Power	Manual
	Minimum Height (mm)		
	Maximum Height (mm)		
	Test Position Height	Lowest	Lowest
	Additional Description		
Seat Back Angle	Adjustment Type	Power	Power
	Measurement Location	OB HRP	OB HRP
	Design Detent (Foremost as 0)		
	Design Angle (°)	7.5	7.5
	Test Position Detent (Foremost as 0)		
	Test Position Angle (°)		
D-Ring	Total Adjustment Positions		
	Test Position (Uppermost as 0)		
Headrest	Test Position	Uppermost	Uppermost

* Full range of movement using all seat position controls

POST-TEST OBSERVATIONS

ENVIRONMENTAL CONDITIONS AT TIME OF TEST

Measured Parameter	Units	Value
Test Time		12:25 pm
Temperature	°C	21
Humidity	%RH	63

DOOR OPENING INFORMATION

Description	Driver	Passenger
Pre-Test Door Condition	Unlocked	Unlocked
Post-Test Front Door Condition	Closed / Unlocked Opened without tools	Closed / Unlocked Opened without tools
Post-Test Rear Door Condition	Closed / Unlocked Opened without tools	Closed / Unlocked Opened without tools

IMPACT POINT DATA

Measured Parameter	Units	Value
Width of Vehicle	mm	2068
Vehicle Centerline to Edge of Barrier	mm	413
Horizontal Offset (+inboard / -outboard)	mm	8 L
Vertical Offset (+inboard/-outboard)	Mm	2 D

FMVSS 301 FUEL SYSTEM EVALUATION

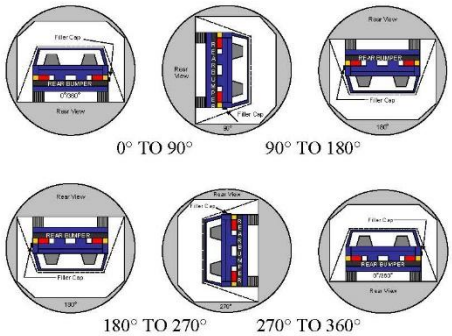
A. From impact until vehicle motion ceases: (Maximum Allowable = 1 — 0 oz.

B. For the 5-minute period after motion ceases: (Maximum Allowable = 5 — 0 oz.

C. For the following 25 minutes: (Maximum Allowable = 1 ounce / minute) — 0

D. Spillage — None

FMVSS 301 STATIC ROLLOVER RESULTS



1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage: **None**

static rollover summary

Test Phase	Units	Rotation Time	Hold Time	Total Time
0° to 90°	s	**89**	**300**	**389**
90° to 180°	s	**90**	**300**	**390**
180° to 270°	s	**86**	**300**	**386**
270° to 360°	s	**82**	**300**	**382**

solvent collection SPILLAGE

Test Phase	Units	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	oz	**0**	**0**	**0**	
90° to 180°	oz	**0**	**0**	**0**	
180° to 270°	oz	**0**	**0**	**0**	
270° to 360°	oz	**0**	**0**	**0**	

SOLVENT SPILLAGE LOCATION

Test Phase	Spillage Location Description
0° to 90°	**No Spillage**
90° to 180°	**No Spillage**
180° to 270°	**No Spillage**
270° to 360°	**No Spillage**