

**REPORT NUMBER: SideNCAPMDB-KAR-22-005**

**NEW CAR ASSESSMENT PROGRAM (NCAP)  
MOVING DEFORMABLE BARRIER SIDE IMPACT TEST**

**General Motors, LLC.  
2022 Chevrolet Bolt EUV SUV**

**NHTSA No: M20220102**

**PREPARED BY:  
APPLUS+ IDIADA KARCO ENGINEERING, LLC.  
9270 HOLLY ROAD  
ADELANTO, CA 92301**



**JUNE 30, 2022**

**FINAL REPORT**

**PREPARED FOR:  
U.S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
OFFICE OF CRASHWORTHINESS STANDARDS  
MAIL CODE: NRM-100  
1200 NEW JERSEY AVE, SE  
WASHINGTON, D.C. 20590**



## TECHNICAL REPORT DOCUMENTATION PAGE

<b>1. Report No.</b> SideNCAPMDB-KAR-22-005	<b>2. Government Accession No.</b>	<b>3. Recipient's Catalog No.</b>																												
<b>4. Title and Subtitle</b> Final Report of New Car Assessment Program Side Impact MDB Testing of a 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102		<b>5. Report Date</b> June 30, 2022																												
		<b>6. Performing Organization Code</b> KAR																												
<b>7. Authors</b> Mr. Shaun Donley, Project Engineer, Applus+ IDIADA KARCO Mr. Alex Beltran, Engineering Manager, Applus+ IDIADA KARCO		<b>8. Performing Organization Report No.</b> TR-P42119-01-NC																												
<b>9. Performing Organization Name and Address</b> Applus+ IDIADA KARCO Engineering, LLC. 9270 Holly Rd. Adelanto, CA 92301		<b>10. Work Unit No.</b>																												
		<b>11. Contract or Grant No.</b> 693JJ920D000015																												
<b>12. Sponsoring Agency Name and Address</b> U. S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NRM-100) 1200 New Jersey Ave., SE Washington, D.C. 20590		<b>13. Type of Report and Period Covered</b> Final Test Report, June 16, 2022 - June 30, 2022																												
		<b>14. Sponsoring Agency Code</b> NRM-100																												
<b>15. Supplementary Notes</b>																														
<b>16. Abstract</b>  A 61.9 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2022 Chevrolet Bolt EUV SUV in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at the Applus IDIADA KARCO Engineering, LLC. facility in Adelanto, California on June 16, 2022.  The impact velocity of the Moving Deformable Barrier was 61.99 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 36.1°C. The target vehicle's maximum post-test static crush was 262 mm located at level 3. The test vehicle's occupant performance data is as follows:																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 35%;">Measurement Description</th> <th colspan="3" style="text-align: center;">Driver ATD (ES-2re)</th> </tr> <tr> <th style="width: 15%;">Units</th> <th style="width: 15%;">IARV</th> <th style="width: 35%;">Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC<sub>36</sub>)</td> <td></td> <td style="text-align: center;">1000</td> <td style="text-align: center;">75.0</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">44</td> <td style="text-align: center;">26</td> </tr> <tr> <td>Total Abdominal Force</td> <td style="text-align: center;">N</td> <td style="text-align: center;">2500</td> <td style="text-align: center;">704</td> </tr> <tr> <td>Pubic Symphysis Force</td> <td style="text-align: center;">N</td> <td style="text-align: center;">6000</td> <td style="text-align: center;">1715</td> </tr> </tbody> </table>				Measurement Description	Driver ATD (ES-2re)			Units	IARV	Result	Head Injury Criteria (HIC <sub>36</sub> )		1000	75.0	Maximum Thoracic Rib Deflection	mm	44	26	Total Abdominal Force	N	2500	704	Pubic Symphysis Force	N	6000	1715				
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Both struck side doors were jammed shut and did not separate from the body at the hinges or latches. The opposite side doors did not open during the side impact event.																														
<b>17. Key Words</b> New Car Assessment Program (NCAP) Side Impact Moving Deformable Barrier (MDB) ES-2re SID-IIs		<b>18. Distribution Statement</b> Copies of this report are available from: National Highway Traffic Safety Admin. Technical Reference Division 1200 New Jersey Ave., SE Washington, DC 20590																												
<b>19. Security Classification of this report</b> UNCLASSIFIED	<b>20. Security Classification of this page</b> UNCLASSIFIED	<b>21. No. of Pages</b> 181	<b>22. Price</b>																											

\*Proposed IARV

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**SECTION 1**  
**TEST PURPOSE AND PROCEDURE**

This moving deformable barrier side impact test is part of the MY 2022 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number 693JJ920D000015. The purpose of this test is to generate comparative side impact performance in a 2022 Chevrolet Bolt EUV 5-Door SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated March 2020.

## SECTION 2

### SUMMARY OF TEST RESULTS

A 2022 Chevrolet Bolt EUV 5-Door SUV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27.6° crabbed position to the tow road guidance system at a velocity of 61.99 km/h (38.52 mph). The target vehicle was stationary and was positioned at an angle of 62.8° to the line of forward motion. The side impact test was conducted by Applus IDIADA KARCO Engineering, LLC. in Adelanto, California, on June 16, 2022. Pre- and post-test photographs of the test vehicle, the MDB and the dummy (ES-2re and SID-IIs) are included in Appendix A of this report.

The dummies were placed in the driver and left rear designated seating position according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated March 2020. The side impact event was documented by 11 cameras. Camera locations are included in Data Sheet No. 5 of this report.

The dummies were instrumented in the following manner:

**DRIVER ATD (ES-2re)**

Primary and redundant head CG tri-axial accelerometers

Chest upper rib, middle rib and lower rib y-axis displacement potentiometers

Abdomen forward, middle, and rear y-axis load cells

Lower spine (12) tri-axial accelerometers

Pubic symphysis y-axis load cell

**PASSENGER ATD (SID-IIs)**

Primary and redundant head CG tri-axial accelerometers

Head angular rate sensors

Chest upper rib, middle rib and lower rib y-axis displacement potentiometers

Abdomen upper rib and lower rib y-axis displacement potentiometers

Lower spine (12) tri-axial accelerometers

Acetabulum and iliac wing y-axis load cells

Appendix B contains the vehicle and dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report. Appendix D of this report contains the test equipment and instrumentation calibration data.

Dummy injury readings were recorded as follows:

Measurement Description	Units	Driver ATD (ES-2re)	
		Threshold	Result
Head Injury Criteria (HIC <sub>36</sub> )		1000	75.0
Maximum Thoracic Rib Deflection	mm	44	26
Combined Abdominal Force	N	2500	704
Pubic Symphysis Force	N	6000	1715

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC <sub>36</sub> )		1000	221.5
Lower Spine (T12) Resultant Acceleration	g	82	31
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	1895
Maximum Thoracic Rib Deflection	mm	38*	24
Maximum Abdominal Rib Deflection	mm	45*	26

\*Proposed IARV

Supplemental restraint information is given below:

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	Yes	No		
Side Airbag 1 (Curtain)	Yes	Yes	Yes	Yes
Side Airbag 2 (Torso/Pelvis)	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	No	No
Seat Belt Load Limiter	Yes	Yes	No	No

### SECTION 3

#### OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2022 Chevrolet Bolt EUV 5-Door SUV NHTSA No. M20220102

Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

#### CONVERSION FACTORS

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	miles/hr	km/hr	1.609344
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.574
Pressure	Tire Pressures	lbf/in <sup>2</sup>	kPa	6.895
Temperature	General Use	°F	°C	$=(T_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf-ft	N•m	1.355

**DATA SHEET NO. 1**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**TEST VEHICLE INFORMATION AND OPTIONS**

NHTSA Number	M20220102
Model Year	2022
Make	Chevrolet
Model	Bolt EUV
Body Style	SUV
VIN	1G1FY6S01N4115525
Body Color	Blue
Odometer Reading (km / mi)	60 / 37
Engine Displacement (L)	N/A
Type / No. of Cylinders	N/A
Engine Placement	N/A
Transmission Type	Automatic
Transmission Speeds	1
Overdrive	Yes
Final Drive	FWD
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes

Traction Control System (TCS)	Yes
Auto-Leveling System	No
Automatic Door Locks	Yes
Power Window Auto-Reverse	Yes
Other Optional Feature	Yes
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	Yes
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	Yes
Rear Pass. Curtain Airbag	Yes
Rear Pass. Head/Torso Airbag	No
Rear Pass. Torso Airbag	No
Rear Pass. Torso/Pelvis Airbag	No
Rear Pass. Pelvis Airbag	No
Driver Seat Belt Pretensioner	Yes
Rear Pass. Seat Belt Pretensioner	No
Driver Load Limiter	Yes
Rear Pass. Load Limiter	No
Other Safety Restraint	Yes

Does Owner's Manual provide instructions to turn off automatic door locks? Yes

**DATA FROM CERTIFICATION LABEL**

Manufactured By	General Motors, LLC
Date of Manufacture	Jul-21
Vehicle Type	Passenger Car

GVWR (kg)	2079
GAWR Front (kg)	1051
GAWR Rear (kg)	1028

**VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION**

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity	2	3		5
Capacity Weight (VCW) (kg)				396.0
DSC x 68.04 (kg)				340.2
Cargo Weight (RCLW) (kg)				55.8

A  
B  
A-B\*

\*\*For trucks or MPVs, if A-B>136, RCLW=136 kg

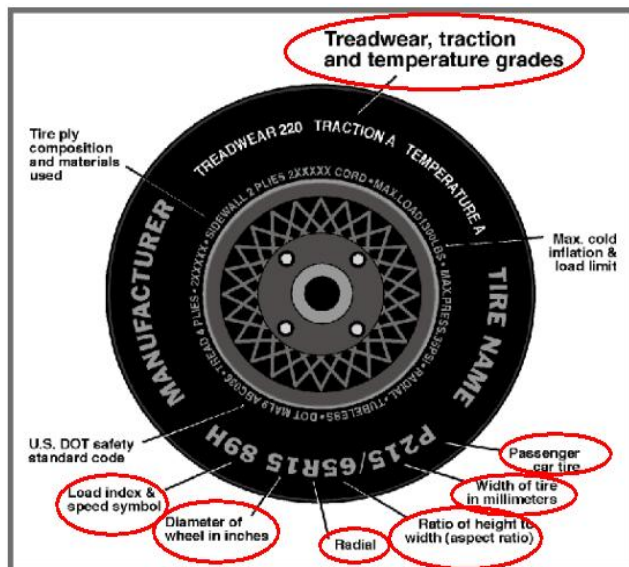
**VEHICLE SEAT TYPE**

Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						w/ Lever	w/ Knob
Front Seat	Yes					Yes	
Rear or Second Row Seat			Yes		Yes		
Third Row Seat							

## DATA SHEET NO. 1 ... (CONTINUED)

### GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	300	300
Cold Pressure (kPa)	250	250
Recommended Tire Size	P215/50 R17	P215/50 R17
Tire Size on Vehicle	P215/50 R17	P215/50 R17
Tire Manufacturer	Michelin	Michelin
Tire Model	Energy	Energy
Treadware	480	480
Traction Grade	A	A
Temperature Grade	B	B
Tire Plies Sidewall	1 Polyester, 2 Steel, 1 Polyamide	1 Polyester, 2 Steel, 1 Polyamide
Tire Plies Body	Polyester	Polyester
Load Index/Speed Symbol	91 H	91 H
Tire Material	Polyester, Steel, Polyamide	Polyester, Steel, Polyamide
DOT Safety Code Left	B338 03RX 2521	B338 03RX 2521
DOT Safety Code Right	B338 03RX 2521	B338 03RX 2521

**DATA SHEET NO. 1 ... (CONTINUED)**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**TIRE PRESSURES**

	Units	LF	RF	LR	RR
As Delivered	kPa	260	260	260	260
Tire Placard	kPa	260	260	260	260
Owner's Manual	kPa	260	260	260	260
As Tested	kPa	260	260	250	250

**MDB TIRE SPECIFICATIONS**

	Units	Requirement	LF	RF	LR	RR
Tire Size		P205/75R15	P205/75R15	P205/75R15	P205/75R15	P205/75R15
Tire Pressure	kPa	200 ± 21	220	220	220	220

**TEST VEHICLE AXLE WEIGHTS**

	Units	As Delivered (UWV)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	478.5	356.5		513.0	442.0		519.5	422.5	
Right	kg	455.0	369.5		474.0	405.5		490.0	408.5	
Ratio	%	56.3%	43.7%		53.8%	46.2%		54.8%	45.2%	
Total	kg	933.5	726.0	1659.5	987.0	847.5	1834.5	1009.5	831.0	1840.5

**TARGET TEST WEIGHT CALCULATION**

Measured Parameter	Units	Value	
Total Delivered Weight (UWV)	kg	1659.5	A
Actual Weight of 2 P572 ATD Used	kg	125.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	55.8	C
Calculated Vehicle Target Wt (TVTWT)	kg	1840.3	A+B+C

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight -4.5 kg to -9.0 kg)?  Yes  No

**TEST VEHICLE ATTITUDE AND CG**

Measurement Description	Units	Fully Loaded	As Tested	Meets Requirement***
LF	mm	705	701	Yes
RF	mm	709	702	Yes
LR	mm	717	707	Yes
RR	mm	713	715	Yes
Vehicle CG (Aft of Front Axle)	mm	1206	1233	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	18	31	

\*\*\*The "As Tested" vehicle attitude measurements must be equal to or within ±10 mm of the "Fully Loaded" vehicle attitude measurements at each wheel well. Indicate "Yes" or "No" for "Meets Requirement"

**DATA SHEET NO. 1 ... (CONTINUED)**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

Test Height Adjustable Setting (If Applicable)	
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**WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW**

Component Description	Weight (kg)
Trunk Trim	6.0

**TEST SURFACE MARKINGS**

	Distance from 63° Impact Angle Line (mm)
Fore 25 mm target	0
Aft 25 mm target	0
Pre-Impact Angle Line	63°

Parallel Track Target	X Location (mm)	Y Location (mm)
A	0	0
B	1355	689
C	1355	3756
D	0	3059

## DATA SHEET NO. 2

### SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

#### SEAT POSITIONING

The driver's seat, front center seat (if applicable), and right front passenger's seat should be set to the mid-track, lowest, mid-angle position. The struck side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rearmost, lowest, mid-angle position.

#### SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	1.3	0.0	0.65
Front Passenger Seat	2.4	0.0	1.2
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

#### SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid Fore/Aft	Forwardmost
Driver Seat	0.7	280	Max		300	
			Mid		290	
			Min		280	
Front Passenger Seat	1.2	741	Max		741	
			Mid		741	
			Min		741	
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

**DATA SHEET NO. 2 ... (CONTINUED)**

**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

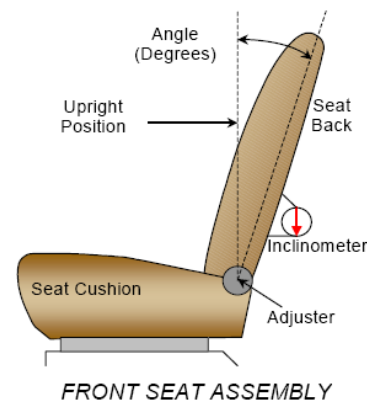
**SEAT FORE/AFT POSITION**

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	240	24	120	12
Front Passenger Seat	236	24	118	12
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

\*Detent zero (0) is the forward most detent

**SEAT BACK ADJUSTMENT**

The driver's seat back is positioned to the manufacturer's designated design angle. The right front passenger's seat back is positioned in a similar manner as the driver's seat back. The struck side rear seat back is fixed. The rear center and non-struck side rear outboard seat backs are positioned in a similar manner as the struck side rear seat back. Seat back angle is measured with a flat edge along the seat back.



**SEAT BACK POSITION**

Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/ Seated Dummy	66.0		14.6	
Front Passenger Seat	59.2		14.2	
Front Center Seat				
Struck Side Rear Seat w/Seated Dummy	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

\*Detent zero (0) is the forward most detent

## DATA SHEET NO. 2 ... (CONTINUED)

### SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

#### SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1. The positions are marked H, M2, M1, L from top to bottom.

	Total No. of Positions	Placed in Position
Driver Seat	4	H
Rear Seat	Fixed	Fixed

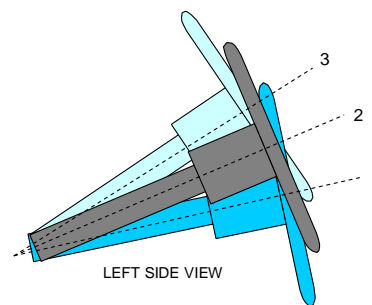
#### HEAD RESTRAINT ADJUSTMENT

The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total No. of Positions	Placed in Position
Driver Seat	8	H
Rear Seat	4	L

#### STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the center of the geometric locus it describes when it moves through its full range of motion.



LEFT SIDE VIEW  
STEERING COLUMN ASSEMBLY

#### STEERING COLUMN POSITIONING

	Degrees	Fore-Aft Position (mm)
Lowermost Position, No. 1	20.3	115
Geometric Center Position, No. 2	22.4	135
Uppermost Position, No. 3	24.4	155
Telescoping Steering Wheel Travel		40
Test Position	22.4	135

**DATA SHEET NO. 2 ... (CONTINUED)**

**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**

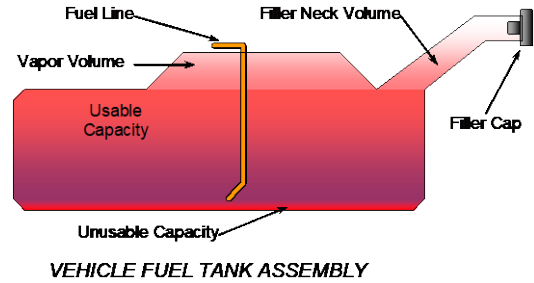
Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102

Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**\*This is an EV, and has no fuel tank.**

**FUEL PUMP**

The vehicle is equipped with an electric fuel pump. The pump runs for 2 seconds after ignition is switched on. If the engine doesn't run, the fuel pump stops running. If there is a



**FUEL TANK CAPACITY**

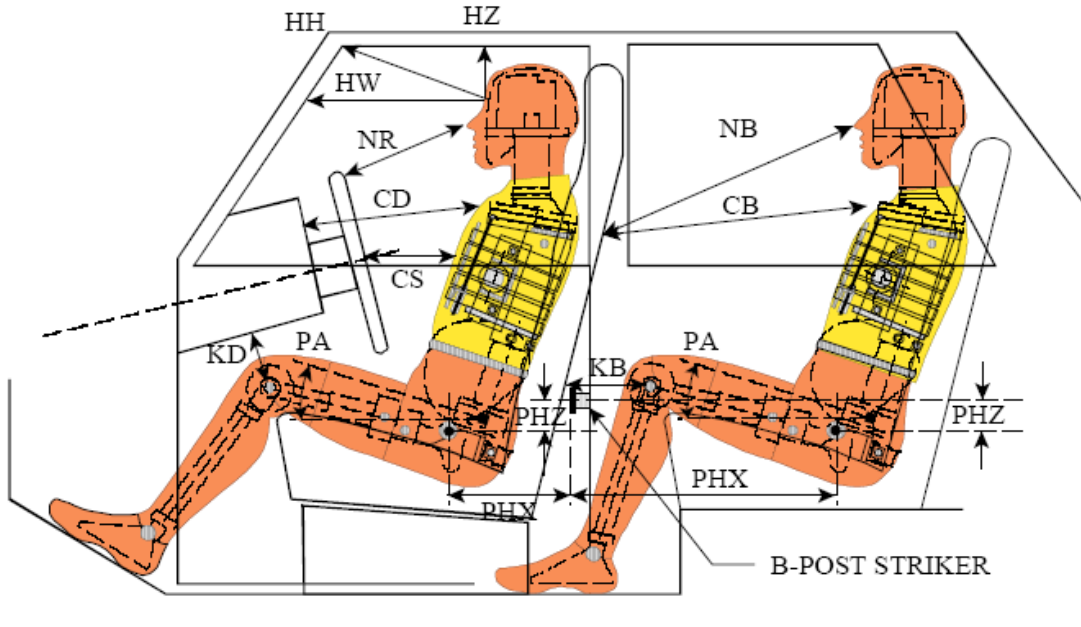
Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	
Actual amount of Solvent Used in Test	
1/3 of Usable Capacity	

Is the Actual Amount of Solvent Used in the test equal to 93% ± 1% of the Usable Capacity stated in the Form No. 1?  **Yes**  **No**

**DATA SHEET NO. 3**

**DUMMY LONGITUDINAL CLEARANCE DIMENSIONS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



**LEFT SIDE VIEW**

NOTE: 2-DOOR VEHICLE SHOWN.  
 REAR DUMMY PHX & PHZ  
 MEASUREMENTS FOR A 4-DOOR  
 VEHICLE WOULD USE THE C-POST  
 STRIKER AS A REFERENCE POINT

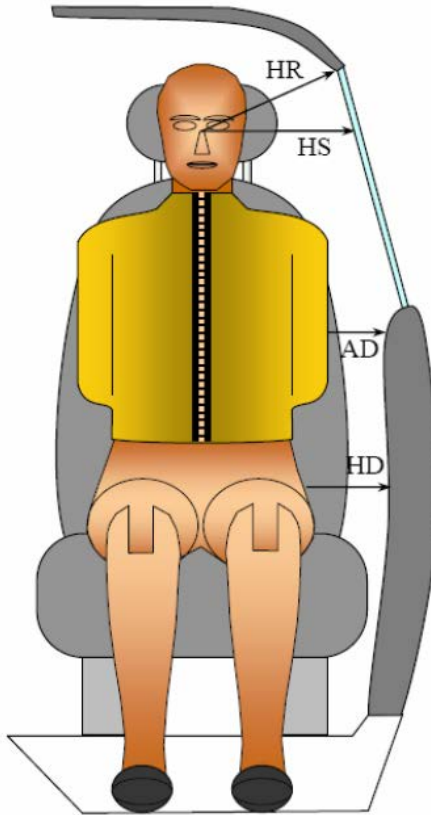
**DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION**

Driver Code	Pass. Code	Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	493			
HW		Head to Windshield	681			
HZ	HZ	Head to Roof	183		235	
NR	NB	Nose to Rim/Seat Back	486		636	
CD	CB	Chest to Dash/Seat Back	585		606	
CS		Chest to Steering Wheel	316			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	112	31.2	368	0.0
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	65	53.2	362	0.0
PAX°	PAX°	Pelvic Tilt Angle X		3.4		20.8
	PAY°	Pelvic Tilt Angle Y		0.0		0.0
PHX	PHX	Hip Point to Striker (x-axis)	216		262	
PHZ	PHZ	Hip Point to Striker (z-axis)	69		202	

## DATA SHEET NO. 4

### DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



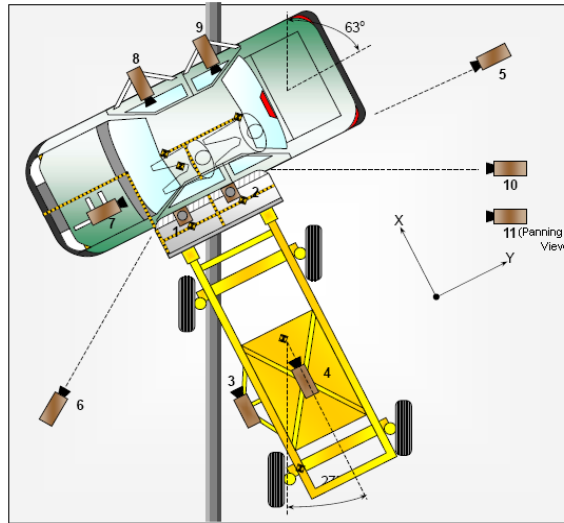
### DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	175	227
HS	Head to Side Window	mm	326	362
AD	Arm to Door	mm	102	148
HD	H-Point to Door	mm	155	182

**DATA SHEET NO. 5**

**CAMERA AND INSTRUMENTATION DATA**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



**CAMERA LOCATIONS AND DATA**

No.	View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	1220	2287	-5486	14	1000
2	Overhead Close-Up	609	2287	-5102	35	1000
3	Left Impact Point (MDB)	-2134	0	-1143	25	1000
4	Side Overall (MDB)	-3912	838	-1829	12.5	1000
5	Rear	-64	2485	-1348	85	1000
6	Left Front	-2266	-3564	-1475	24	1000
7	Driver Front (On-Board)	316	-1424	608	8.5	1000
8	Driver Side (On-Board)	435	-1451	576	8	1000
9	Passenger Side (On-Board)	342	-1418	650	8	1000
10	Real Time Overall				Zoom	30
11	Real Time Inrun				Zoom	30

Reference: Impact Point Projected to Ground; +X = To Front of MDB, +Y = To Right of MDB, +Z = Down

\*All measurements accurate to ±6 mm

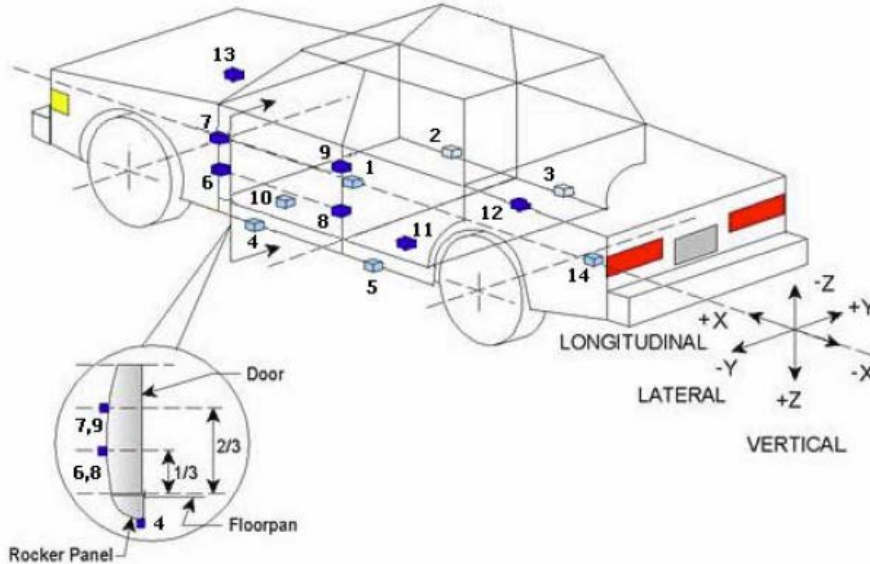
**INSTRUMENTATION**

Driver Dummy Channels	16
Passenger Dummy Channels	19
Vehicle Structure Accelerometers	23
MDB Channels	5
<b>Total</b>	<b>63</b>

**DATA SHEET NO. 6**

**TEST VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



**VEHICLE ACCELEROMETER PRE-TEST LOCATIONS**

Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	1820	0	325
2	Right Sill at Front Seat	2250	710	340
3	Right Sill at Rear Seat	1510	700	340
4	Left Sill at Front Door	2258	-713	310
5	Left Sill at Rear Door	1519	-706	310
6	A-Pillar Lower	2914	-476	540
7	A-Pillar Middle	2914	-746	805
8	B-Pillar Lower	N/A*		
9	B-Pillar Middle			
10	Front Seat Track	2121	-165	400
11	Rear Seat Structure	1515	385	492
12	Right Rear Occupant Compartment	1676	330	387
13	Engine Block	3510	-105	871
14	Rear Floorpan Above Axle	985	0	517

\*No accelerometers were installed on B-Pillar

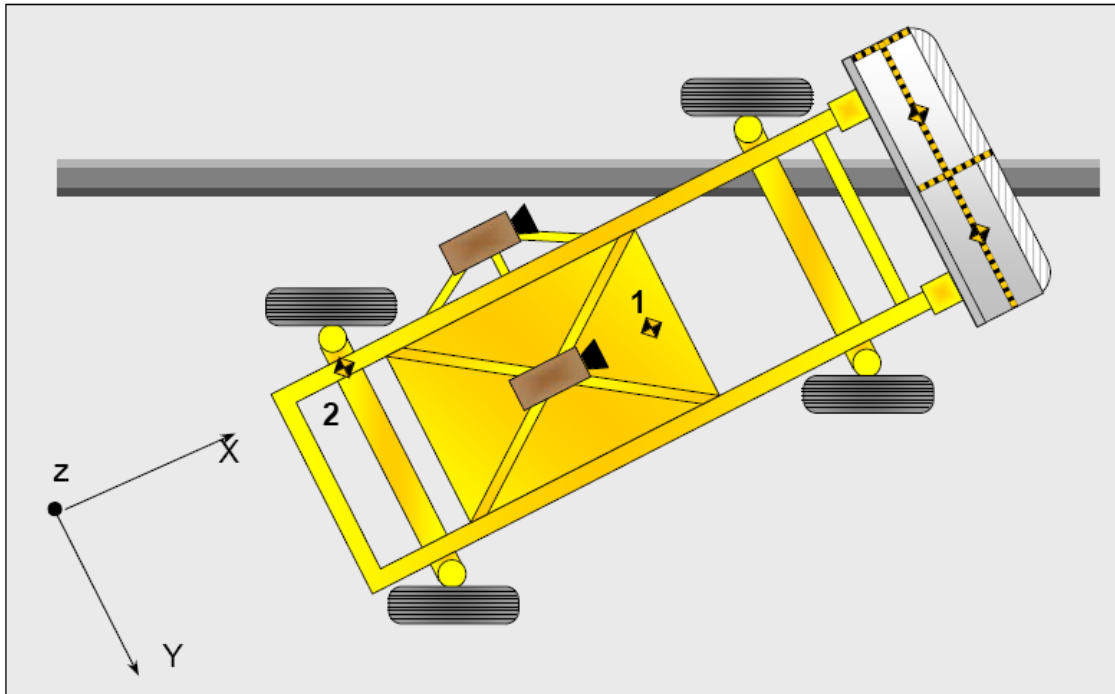
Reference: X – Rear surface of vehicle (+ forward)  
 Y – Vehicle centerline (+ to right)  
 Z – Ground plane (+ down)

**DATA SHEET NO. 7**

**MDB ACCELEROMETER LOCATIONS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102

Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



**MDB ACCELEROMETER LOCATIONS**

Loc. No.	Accelerometer Location	Measurement		
		X	Y	Z
1	MDB CG	-1195	0	-430
2	MDB Rear	-2642	-593	-608

Reference: X – Face of MDB (+ forward)  
 Y – MDB centerline (+ to right)  
 Z – Ground plane (+ down)

**DATA SHEET NO. 8**

**POST-TEST OBSERVATIONS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**TEST DUMMY INFORMATION AND CONTACT POINTS**

Dummy Body Part	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	Curtain Airbag, Headliner	Curtain Airbag
Top of Head	Headliner	Headliner
Left Side of Head	Curtain Airbag	Curtain Airbag
Back of Head	Headrest	Rear Center Seat
Left Shoulder	Torso-Pelvis Airbag	Torso-Pelvis Airbag
Upper Torso	Torso-Pelvis Airbag	Torso-Pelvis Airbag
Lower Torso	Torso-Pelvis Airbag	Torso-Pelvis Airbag
Left Hip	Torso-Pelvis Airbag	Torso-Pelvis Airbag
Left Knee	Door Panel	Door Panel

**POST-TEST DOOR PERFORMANCE**

Description	Struck Side		Non-Struck Side		Rear Hatch/Other
	Front	Rear	Front	Rear	
Remained Closed and Operational	No	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	No
Latch or Hinge System Pulled Out of Their Anchorages	No	No	No	No	No
Disengaged from Latched Position	No	No	No	No	No
Latch Separated from Striker	No	No	No	No	No
Jammed Shut	Yes	Yes	No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)	N/A	N/A	N/A	N/A	N/A

**DATA SHEET NO. 8 ... (CONTINUED)**

**POST-TEST OBSERVATIONS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**POST-TEST SEAT PERFORMANCE**

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	No	No	No
Seat Disengagement from Floor Pan	No	No	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

**POST-TEST STRUCTURAL OBSERVATIONS**

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Good
Sill Separation	No separation
Windshield Damage	None
Side Window Damage	None
Other Notable Effects	None

**DATA SHEET NO. 8 ... (CONTINUED)**

**POST-TEST OBSERVATIONS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

Restraint Type	Struck Side		Struck Side	
	Driver		Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	Yes	No		
Side Airbag 1 (Curtain)	Yes	Yes	Yes	Yes
Side Airbag 2 (Torso/Pelvis)	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	No	No
Seat Belt Load Limiter	Yes	Yes	No	No

**IMPACT POINT LOCATION DATA**

Measured Parameter	Units	Tolerance	Value
Vehicle Wheelbase	mm		2670
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		390
Actual Impact Point (Aft of Front Axle)	mm		373
Horizontal Offset (+ forward / - rearward)	mm	± 50 of Intended Impact Point	17
Vertical Offset (+ down / - up)	mm	± 20 of Intended Impact Point	7

**DATA SHEET NO. 9**  
**MDB SUMMARY OF RESULTS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**MDB SPECIFICATIONS**

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1251
Overall Length including Honeycomb Face	4115
Wheel Base of Framework Carriage	2595
CG location aft of Front Axle	1118

**MDB WEIGHTS**

	Units	Front Axle	Rear Axle	Total
Left	kg	402.0	297.5	699.5
Right	kg	377.0	290.0	667.0
Ratio	%	57.0%	43.0%	100.0%
Totals	kg	779.0	587.5	1366.5

**SPEED AND IMPACT DATA**

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.99
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.97
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.4
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	62.8
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.6

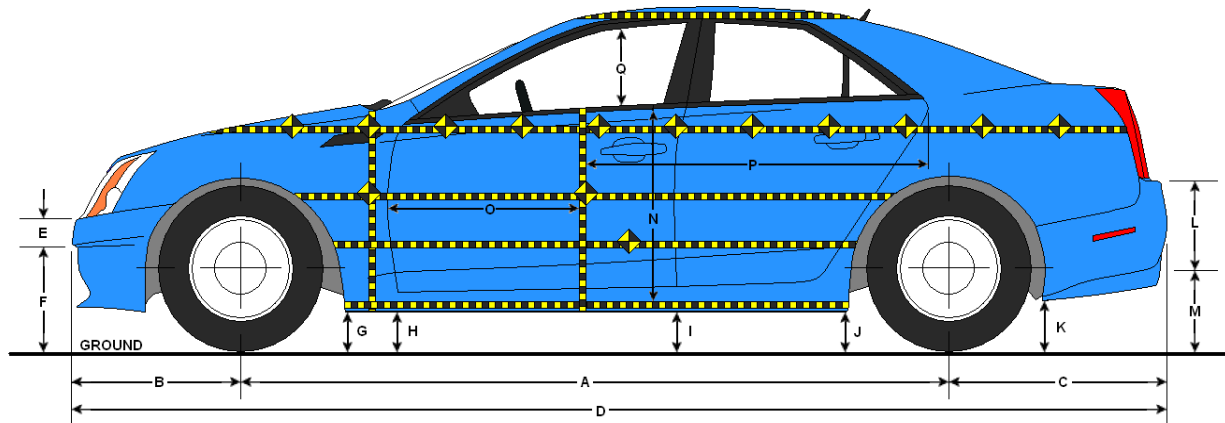
**MAXIMUM STATIC CRUSH OF HONEYCOMB FACE**

Vertical Location			From Centerline		Max. Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	600	Left	240
B	Top of Bumper	533	800	Right	113
C	Mid Level	686	800	Left	145
D	Top of Stack	813	800	Right	116

**DATA SHEET NO. 10**

**TEST VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



**LEFT SIDE VIEW**

**VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION**

Code	Description	Pre-Test	Post-Test	Difference
A	Vehicle Wheelbase	4312	4241	71
B	Front Axle to FSOV	3905	3748	158
C	Rear Axle to RSOV	3605	3591	14
D	Total Vehicle Length at Centerline	3130	3131	-1
E	Front Bumper Thickness	3146	3149	-4
F	Front Bumper Bottom to Ground	3084	3084	0
G	Sill Height at Front Wheel Well	3103	3105	-2
H	Sill Height at Front Door Leading Edge	2025	2026	-1
I	Sill Height at B-Pillar	2042	2045	-3
J1	Sill Height at Rear Wheel Well	2055	2055	-1
J2	Pinch Weld Height at Rear Wheel Well	2074	2077	-3
K	Sill Height Aft of Rear Wheel Well	3077	3078	0
L	Rear Bumper Thickness	3095	3096	-1
M	Rear Bumper Bottom to Ground	3592	3579	12
N	Sill Height to Window Sill Bottom	3605	3591	14
O	Front Door Leading Edge to Impact CL	2645	2702	-57
P	Rear Door Trailing Edge to Impact CL	396	394	2
Q	Front Window Opening	541	570	-28
R	Right Side Length	3756	3702	53
S	Left Side Length	3773	3732	40
T	Vehicle Width at B-Pillar	333	270	63

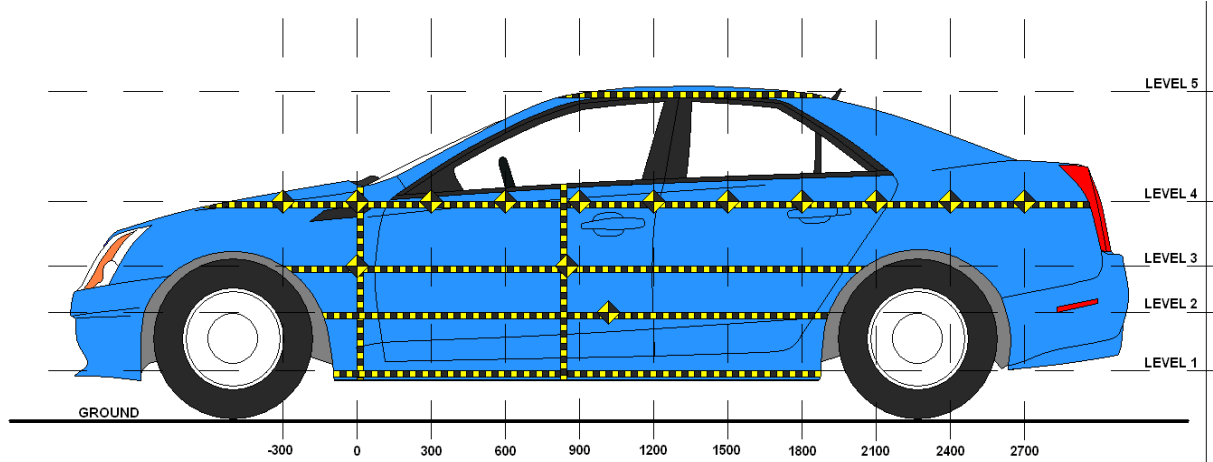
All measurements in mm with tolerance of  $\pm 3$ mm

**DATA SHEET NO. 11**

**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102

Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



**LEFT SIDE VIEW**

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	280	52	1500
2	Occupant H-Point	661	261	1650
3	Mid-Door	720	262	1650
4	Window Sill	953	161	1800
5	Window Top	1546	3	1350

**DATA SHEET NO. 11 ... (CONTINUED)**

**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL**

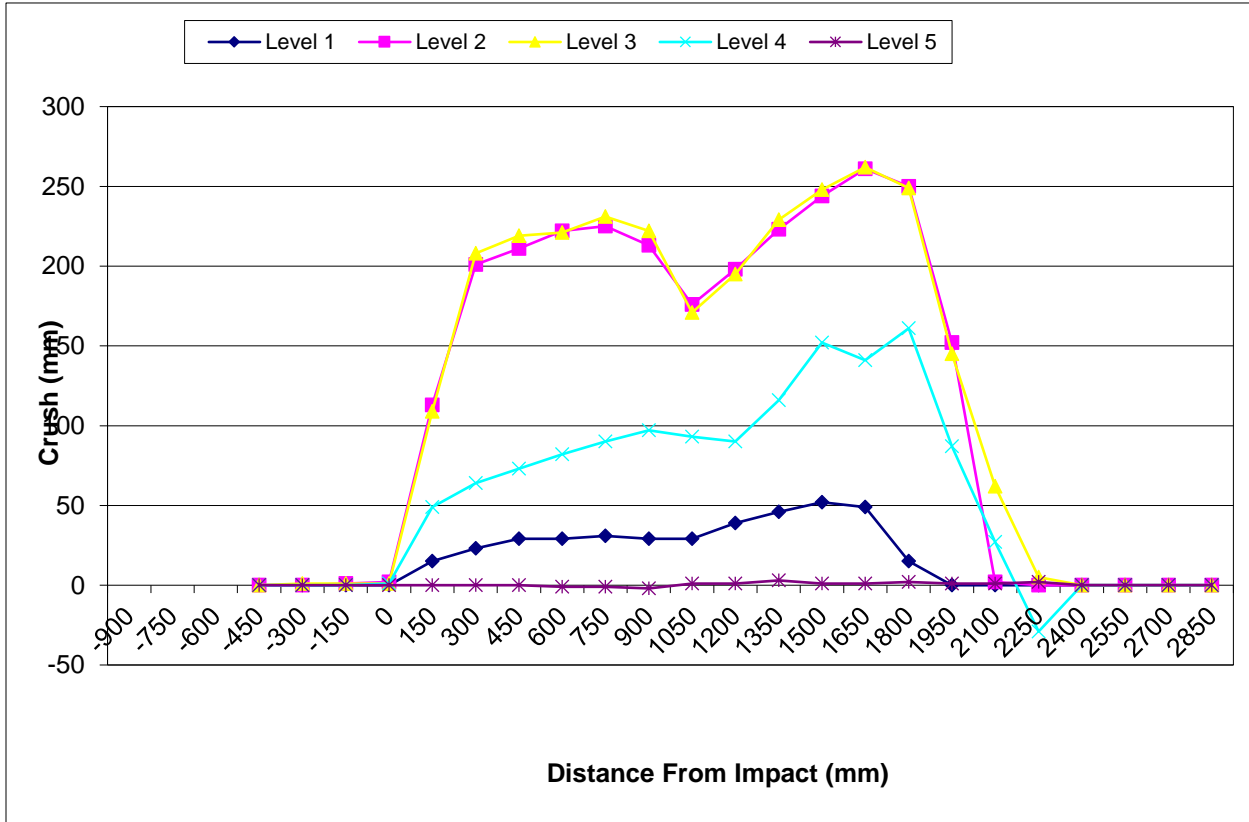
	Pre-Test (mm)					Post-Test (mm)					Difference (mm)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300			616	712				617	712				1	0	
-150		614	619	697			615	620	697			1	1	0	
0	654	619	620	686		654	621	621	687		0	2	1	1	
150	657	625	624	678		672	738	733	727		15	113	109	49	
300	654	628	626	670		677	829	834	734		23	201	208	64	
450	653	630	626	664		682	841	845	737		29	211	219	73	
600	654	631	627	659	909	683	853	848	741	908	29	222	221	82	-1
750	652	634	628	656	917	683	859	859	746	916	31	225	231	90	-1
900	655	636	630	641	928	684	849	852	738	926	29	213	222	97	-2
1050	657	638	633	638	933	686	814	804	731	934	29	176	171	93	1
1200	655	641	637	652	935	694	839	832	742	936	39	198	195	90	1
1350	658	642	638	652	938	704	865	867	768	941	46	223	229	116	3
1500	664	641	639	652	942	716	885	887	804	943	52	244	248	152	1
1650	666	637	635	652	944	715	898	897	793	945	49	261	262	141	1
1800	671	630	629	648	947	686	880	878	809	949	15	250	249	161	2
1950		624	623	647	952		776	768	734	953		152	145	87	1
2100		618	620	643	956		620	682	670	957		2	62	27	1
2250			615	645	961			620	616	963			5	-29	2
2400															
2550															
2700															
2850															

DATA SHEET NO. 11 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102

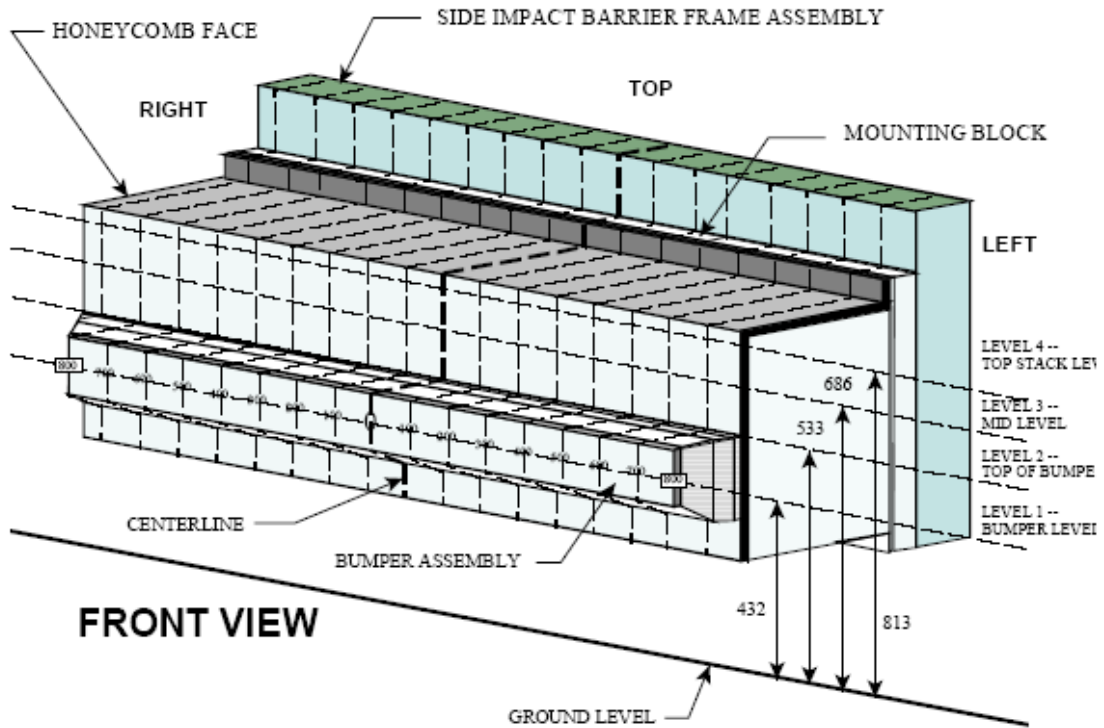
Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



**DATA SHEET NO. 12**

**MDB EXTERIOR STATIC CRUSH MEASUREMENTS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



NOTE: Dimensions are shown in millimeters, mm

**DEFORMABLE BARRIER STATIC CRUSH**

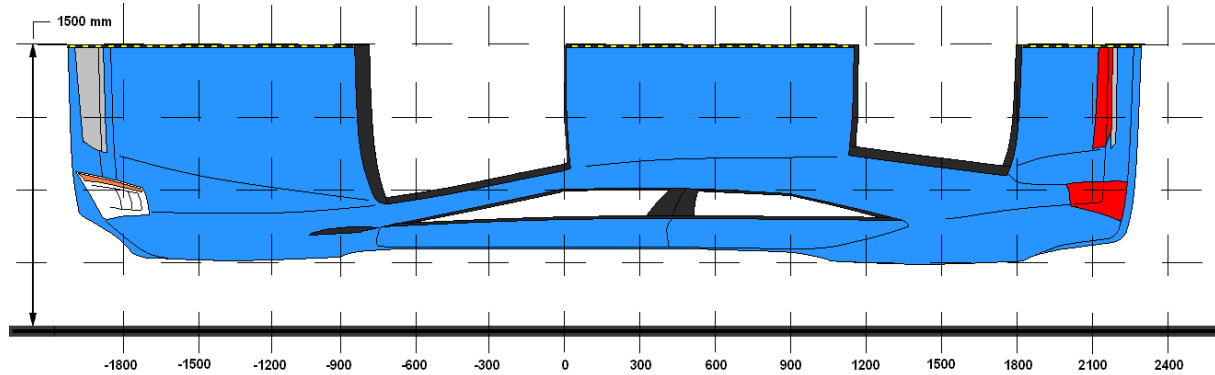
Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		0	100	200	300	400	500	600	700
1	666	642	646	635	650	683	706	700	666	650	652	658	661	667	678	694	735
2	650	640	640	645	655	660	668	689	655	646	645	644	643	646	656	685	764
3	732	732	727	721	716	713	710	710	708	707	710	712	715	716	712	719	730
4	740	735	739	733	734	732	732	729	716	719	716	703	700	698	757	738	732

All dimensions in millimeters.

**DATA SHEET NO. 13**

**VEHICLE AND MDB DAMAGE PROFILE DISTANCES**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



**VEHICLE DAMAGE PROFILE DISTANCES**

DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	2250	4	645	616	-29
2	1800	2	630	880	250
3	1200	2	641	839	198
4	600	2	631	853	222
5	150	2	625	738	113
6	-300	3	616	617	1

**MDB DAMAGE PROFILE DISTANCES**

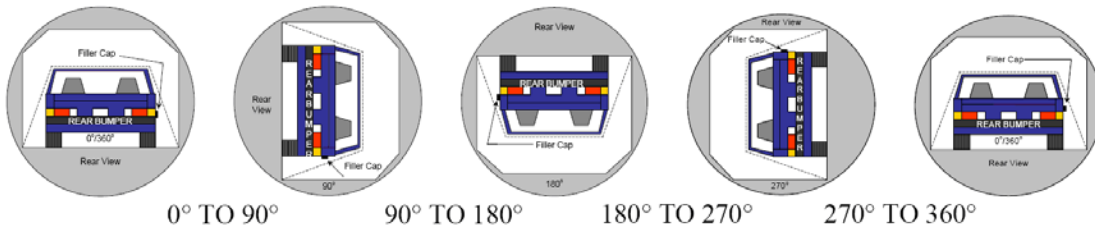
DPD	From MDB Centerline		Level	Crush (mm)
	Distance (mm)	Direction		
1	800	Left	1	215
2	500	Left	1	181
3	200	Left	1	199
4	200	Right	1	215
5	500	Right	1	216
6	800	Right	1	223

**DATA SHEET NO. 14**

**FMVSS NO. 301 STATIC ROLLOVER RESULTS**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22  
 Temperature at Time of Impact: 36.1°C Test Time: 4:33 P.M.

- A. From impact until vehicle motion ceases: N/A oz.  
(Maximum allowable = 1 oz.)
- B. For the 5 minute period after motion ceases: N/A oz.  
(Maximum allowable = 5 oz.)
- C. For the following 25 minutes: N/A oz.  
(Maximum allowable = 1 oz./minute)
- D. Spillage Details: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**SOLVENT COLLECTION TIME TABLE IN SECONDS**

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	82	300	382
90° To 180°	84	300	384
180° To 270°	81	300	381
270° To 360°	85	300	385

**FMVSS 301 SPILLAGE TABLE**

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° To 90°				
90° To 180°				
180° To 270°				
270° To 360°				

**SOLVENT SPILLAGE LOCATION TABLE**

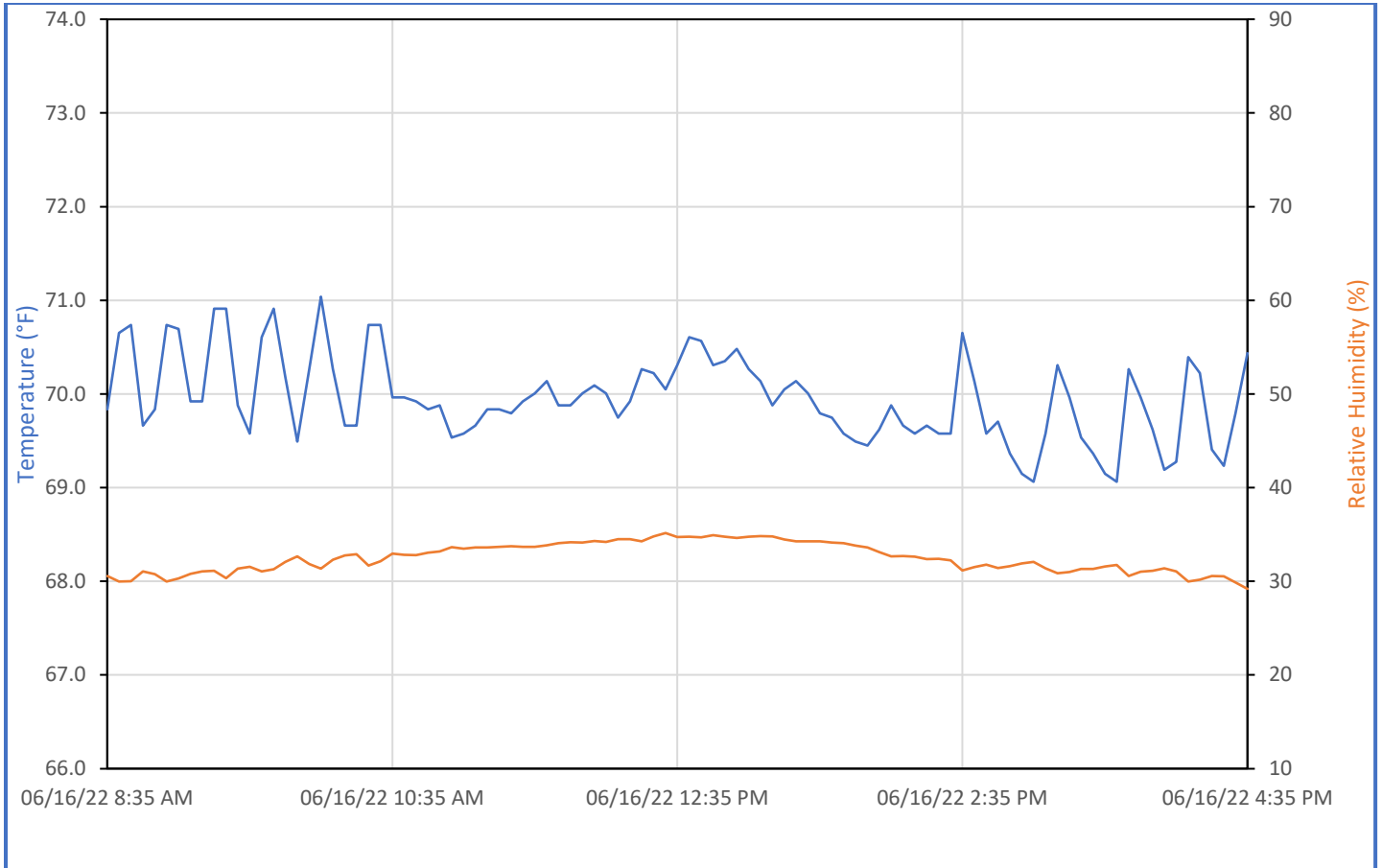
Test Phase	Spillage Location
0° To 90°	
90° To 180°	
180° To 270°	
270° To 360°	

**DATA SHEET NO. 15**

**DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102

Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



**DATA SHEET NO. 305-1****GENERAL TEST AND VEHICLE PARAMETER DATA FOR INDICANT FMVSS NO. 305****TESTING**Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22**TEST VEHICLE INFORMATION**

NHTSA Number	M20220102
Model Year	2022
Make	Chevrolet
Model	Bolt EUV
Body Style	5-Door SUV
Body Color	Blue
Odometer Reading (km / mi)	60 / 37

**DATA FROM VEHICLE'S CERTIFICATION LABEL**

Manufactured By	General Motors, LLC
Date of Manufacture	21-Jul
VIN	1G1FY6S01N4115525
GVWR (kg)	2079

**ELECTRIC VEHICLE PROPULSION SYSTEM**

Type of Electrical Vehicle	Electric
Propulsion Battery Type	Lithium-Ion
Nominal Voltage (V)	348
Automatic Propulsion Battery Disconnect	Yes
Physical Location of Automatic Propulsion Battery Disconnect	Internal to HV Battery
Auxiliary Battery Type	12 Volt AGM (Absorbent Glass Mat)

**PROPULSION BATTERY SYSTEM DATA**

Electrolyte Fluid Type	LiPF6 + EC + EMC
Electrolyte Fluid Specific Gravity (g/cc)	1.2
Electrolyte Fluid Kinematic Viscosity (mm <sup>2</sup> /s)	4.70
Electrolyte Fluid Color	Transparent (APHA<50)
Propulsion Battery Coolant Type	50/50 Deionized water, Dexcool Mix
Propulsion Battery Coolant Color	Clear, pale orange
Propulsion Battery Coolant Specific Gravity	

**LOCATION OF BATTERY MODULES**

Location	Outside Passenger Compartment
----------	-------------------------------

**DATA SHEET NO. 305-1...(CONTINUED)**

**GENERAL TEST AND VEHICLE PARAMETER DATA FOR INDICANT FMVSS NO. 305**

**TESTING**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102

Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

*For all battery types:*

Description	Volts
Minimum Operating Voltage	
Maximum Operating Voltage	400.0
95% of Maximum Operating Voltage	380.0
Test Voltage (no less than 95% of Maximum)*	380.0

*For batteries that are rechargeable ONLY by an energy source on the vehicle:*

Description	Volts
Minimum Operating Voltage	
Maximum Operating Voltage	
Test Voltage (Maximum practicable state of charge within normal operating range)	

**DATA SHEET NO. 305-2**

**PRE-IMPACT DATA FOR INDICANT FMVSS NO. 305 TESTING**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**VEHICLE CHASSIS GROUND POINT(S) LOCATION(S)**

DETAILS OF VEHICLE CHASSIS GROUND POINT(S) AND LOCATION(S):

The FMVSS 305 ground terminal is located on the underside of the vehicle using the propulsion battery tray ground strap to body attachment.

---

**PROPULSION BATTERY SYSTEM**

DETAILS OF PROPULSION BATTERY COMPONENTS:

The FMVSS 305 connections for high voltage battery positive and negative are located in the engine room using the propulsion BUS

---

**DATA SHEET NO. 305-3**

**PRE-IMPACT ELECTRICAL ISOLATION MEASUREMENTS AND CALCULATIONS FOR  
INDICANT FMVSS NO. 305 TESTING**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102

Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**VOLTMETER INFORMATION**

Make	Fluke
Model	87V MAX
Serial No.	50790043
Internal Impedence Value	50 MΩ
Resolution	0.001

**HV BATTERY ELECTRICAL ISOLATION DATA**

Code	Units	Threshold	Pre-Test
V <sub>b</sub>	V		399.00
V <sub>1</sub>	V		192.60
V <sub>2</sub>	V		191.90
R <sub>o</sub>	Ω		1,000,000
V <sub>1</sub> '	V		109.60
V <sub>2</sub> '	V		105.00
R <sub>i1</sub>	Ω		1,511,846
R <sub>i2</sub>	Ω		1,658,257
R <sub>i</sub>	Ω		1,511,846
R <sub>i</sub> /V <sub>b</sub>	Ω/V	500	3,789

Is the Measured Electrical Isolation Value ≥ 500 Ω/V?	Yes
---	-----

**DATA SHEET NO. 305-4**

**POST-IMPACT DATA FOR INDICANT FMVSS NO. 305 TESTING**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**VOLTMETER INFORMATION**

Make	Fluke
Model	87V MAX
Serial No.	50790043
Internal Impedence Value	50 MΩ
Resolution	0.001

**HV BATTERY ELECTRICAL ISOLATION DATA**

Code	Units	Threshold	Post-Test
V <sub>b</sub>	V		4.704
V <sub>1</sub>	V		2.350
V <sub>2</sub>	V		2.280
R <sub>o</sub>	Ω		1,000,000
V <sub>1</sub> '	V		1.050
V <sub>2</sub> '	V		1.032
R <sub>i1</sub>	Ω		2,439,311
R <sub>i2</sub>	Ω		2,455,732
R <sub>i</sub>	Ω		2,439,311
R <sub>i</sub> /V <sub>b</sub>	Ω/V	500	518,561

Is the Measured Electrical Isolation Value ≥ 500 Ω/V?	Yes
---	-----

**PROPULSION BATTERY SYSTEM COMPONENTS**

Has the propulsion battery module moved within the passenger compartment?

No

Describe any movement: There was no movement of the propulsion battery within the passenger compartment.

Has an outside propulsion battery component intruded into the passenger compartment?

No

Describe any intrusion: There was no intrusion of the outside propulsion battery into the passenger compartment.

Is there propulsion battery electrolyte spillage visible in the passenger compartment?

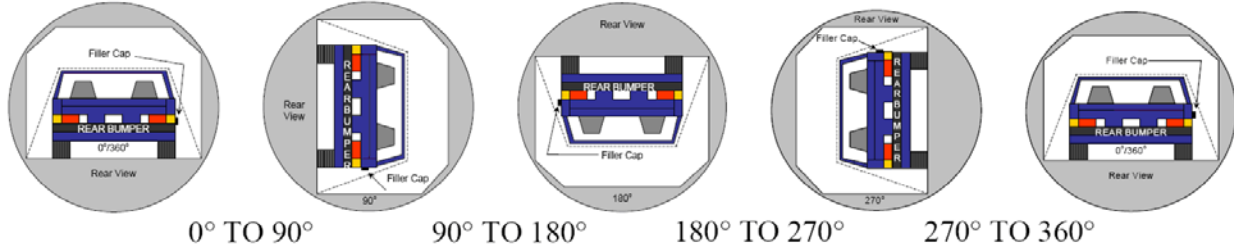
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**DATA SHEET NO. 305-5**

**STATIC ROLLOVER TEST DATA FOR INDICANT FMVSS NO. 305 TESTING**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102

Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22



**PROPULSION BATTERY ELECTROLYTE COLLECTION TIME PERIOD**

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	82	300	382
90° To 180°	84	300	384
180° To 270°	81	300	381
270° To 360°	85	300	385

**TEST VEHICLE PROPULSION BATTERY ELECTROLYTE SPILLAGE**

**NOTE: The maximum allowable Propulsion Battery Electrolyte Spillage is 5.0 Liters.**

Test Phase	Propulsion Battery Electrolyte Spillage (L)	Spillage Location
0° To 90°	0.0	N/A
90° To 180°	0.0	N/A
180° To 270°	0.0	N/A
270° To 360°	0.0	N/A

Is the Total Propulsion Battery Electrolyte Spillage Greater Than 5.0 Liters?	No spillage occurred
Is the Propulsion Battery Electrolyte Spillage Visible in the Passenger Compartment?	N/A

**DATA SHEET NO. 305-5 (CONTINUED...)**

**STATIC ROLLOVER TEST DATA FOR INDICANT FMVSS NO. 305 TESTING**

Test Vehicle: 2022 Chevrolet Bolt EUV SUV NHTSA No. M20220102  
 Test Program: NCAP MDB Side Impact Test Test Date: 06/16/22

**VOLTMETER INFORMATION**

Make	Fluke
Model	87V MAX
Serial No.	50790043
Internal Impedence Value	50 MΩ
Resolution	0.001

**HV BATTERY ELECTRICAL ISOLATION MEASUREMENTS AND CALCULATIONS**

Code	Units	Threshold	0°	90°	180°	270°	360°
V <sub>b</sub>	V		4.705	4.128	4.711	4.719	4.733
V <sub>1</sub>	V		2.200	1.981	2.323	2.272	2.173
V <sub>2</sub>	V		2.252	2.126	2.156	2.083	2.165
R <sub>o</sub>	Ω		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
V <sub>1</sub> '	V		1.023	0.985	1.135	1.125	1.012
V <sub>2</sub> '	V		1.051	1.017	1.000	1.015	1.035
R <sub>i1</sub>	Ω		2,328,270	2,096,348	2,018,145	1,954,298	2,290,243
R <sub>i2</sub>	Ω		2,259,056	2,106,551	2,401,542	2,199,906	2,187,609
R <sub>i</sub>	Ω		2,259,056	2,096,348	2,018,145	1,954,298	2,187,609
R <sub>i</sub> /V <sub>b</sub>	Ω/V	500	480,139	507,836	428,390	414,134	462,204

\* "Zero Volts" is considered as being compliant.

Is the Measured Electrical Isolation Value ≥ 500 Ω/V?	Yes
---	-----

**APPENDIX A  
PHOTOGRAPHS**

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FIGURE 1. As-Delivered Right Front  $\frac{3}{4}$  View of Test Vehicle



FIGURE 2. As-Delivered Left Rear  $\frac{3}{4}$  View of Test Vehicle



FIGURE 3. Pre-Test Frontal View of Test Vehicle

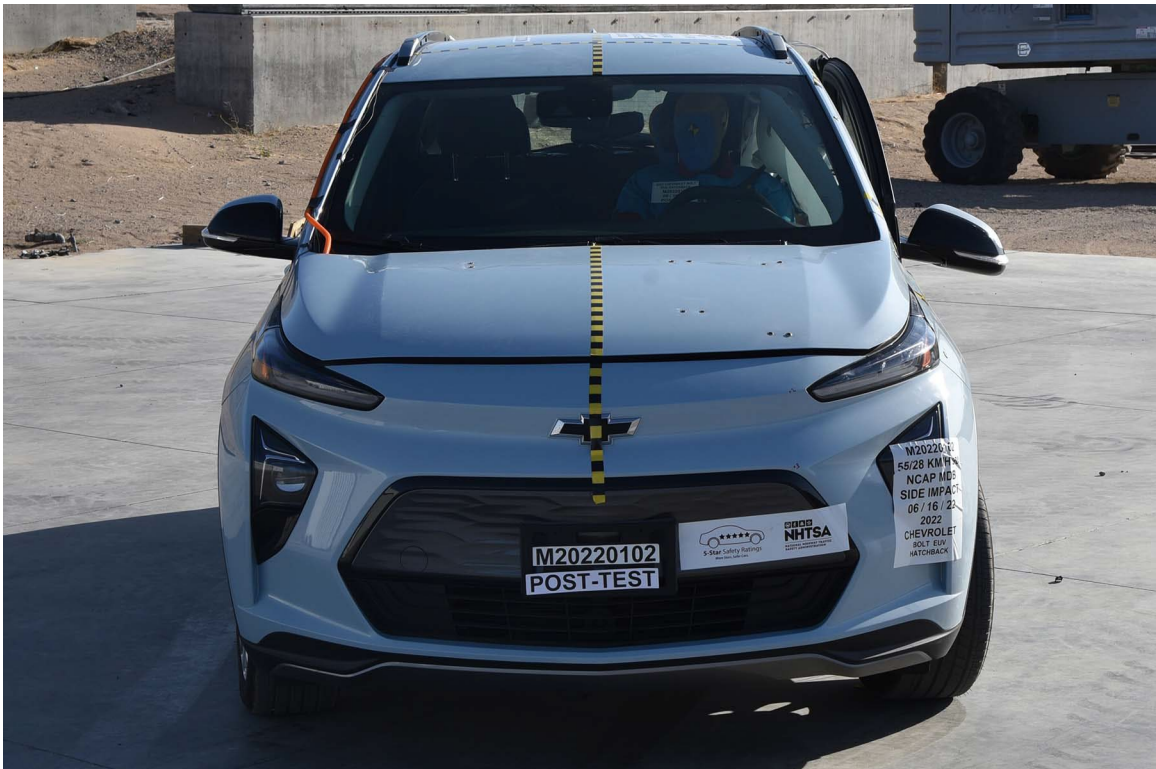


FIGURE 4. Post-Test Frontal View of Test Vehicle



FIGURE 5. Pre-Test Left Front  $\frac{3}{4}$  View of Test Vehicle



FIGURE 6. Post-Test Left Front  $\frac{3}{4}$  View of Test Vehicle



FIGURE 7. Pre-Test Left Side View of Test Vehicle



FIGURE 8. Post-Test Left Side View of Test Vehicle



FIGURE 9. Pre-Test Left Rear  $\frac{3}{4}$  View of Test Vehicle



FIGURE 10. Post-Test Left Rear  $\frac{3}{4}$  View of Test Vehicle



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



FIGURE 13. Pre-Test Right Side View of Test Vehicle



FIGURE 14. Post-Test Right Side View of Test Vehicle



FIGURE 15. Pre-Test Overhead View of Test Area

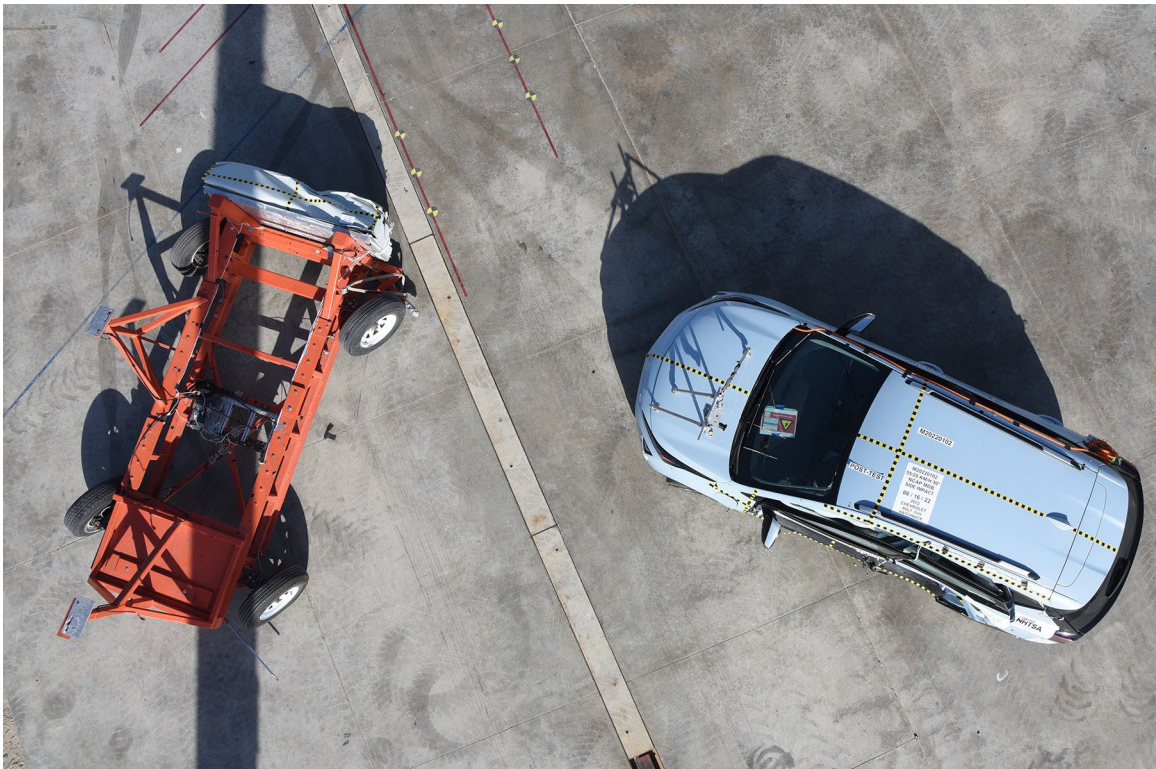


FIGURE 16. Post-Test Overhead View of Test Area



FIGURE 17. Pre-Test Left Side View of MDB Positioned  
Against Side of Test Vehicle



FIGURE 18. Pre-Test Right Side View of MDB Positioned  
Against Side of Test Vehicle



FIGURE 19. Pre-Test Close-Up View of Impact Point Target



FIGURE 20. Post-Test Close-Up View of Impact Point Target



FIGURE 21. Pre-Test Left Front Door Latch Close-Up



FIGURE 22. Post-Test Left Front Door Latch Close-Up



FIGURE 23. Pre-Test Left Rear Door Latch Close-Up



FIGURE 24. Post-Test Left Rear Door Latch Close-Up



FIGURE 25. Pre-Test Front Close-Up View of Driver Dummy



FIGURE 26. Post-Test Front Close-Up View of Driver Dummy



FIGURE 27. Pre-Test Left Side View of Driver Dummy  
Showing Belt and Chalking



FIGURE 28. Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View



FIGURE 29. Post-Test Left Side View of Driver Dummy Shoulder and Door Top View



FIGURE 30. Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



FIGURE 31. Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



FIGURE 32. Pre-Test Overhead View of Driver Seat Pan Prior to Dummy Positioning



FIGURE 33. Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan



FIGURE 34. Pre-Test Placement of Driver Dummy's Feet



FIGURE 35. Pre-Test View of Belt Anchorage for Driver Dummy



FIGURE 36. Pre-Test Left Side View of Steering Wheel

# Photograph Not Available

FIGURE 37. View of Disengaged Parking Brake

# Photograph Not Available

FIGURE 38. Pre-Test View of Parking Brake



FIGURE 39. Pre-Test Close-Up Left Side View of Driver Seat Track



FIGURE 40. Pre-Test Close-Up Left Side View of Driver Seat Back



FIGURE 41. Pre-Test Close-Up View of Driver Seat Back or Head Restraint



FIGURE 42. Pre-Test Driver Dummy and Door Clearance View



FIGURE 43. Post-Test Driver Dummy and Door Clearance View



FIGURE 44. Pre-Test Right Side View of Driver Dummy  
and Front Seat Occupant Compartment



FIGURE 45. Post-Test Right Side View of Driver Dummy and Front Seat Occupant Compartment



FIGURE 46. Pre-Test Driver Inner Door Panel View



FIGURE 47. Post-Test Driver Inner Door Panel View  
Showing Driver Dummy Contact Locations



FIGURE 48. Post-Test Driver Dummy Close-Up Head Contact  
with Vehicle Interior View



FIGURE 49. Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View

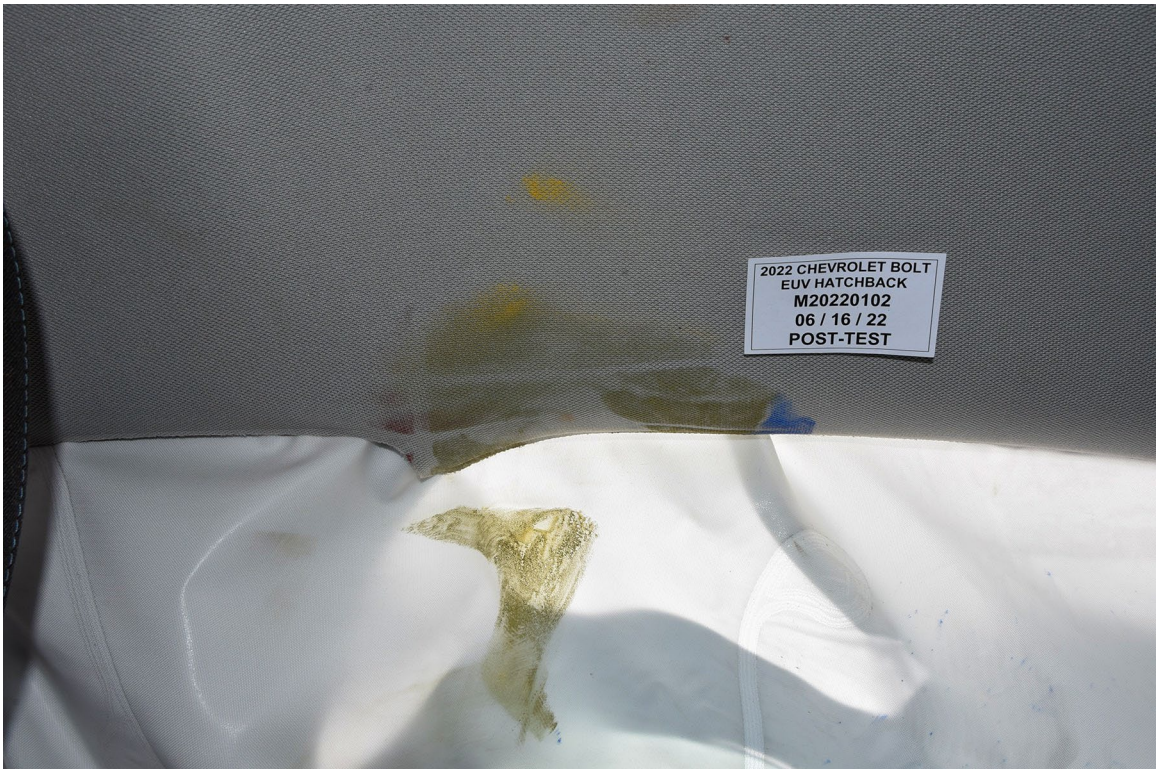


FIGURE 49a. Post-Test Driver Dummy Close-Up Head Contact with Vehicle Interior View



FIGURE 50. Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View



FIGURE 51. Post-Test Driver Dummy Close-Up Torso Contact with Side Airbag View

# Photograph Not Applicable

FIGURE 52. Post-Test Driver Dummy Close-Up Pelvis Contact  
with Vehicle Interior View



FIGURE 53. Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View

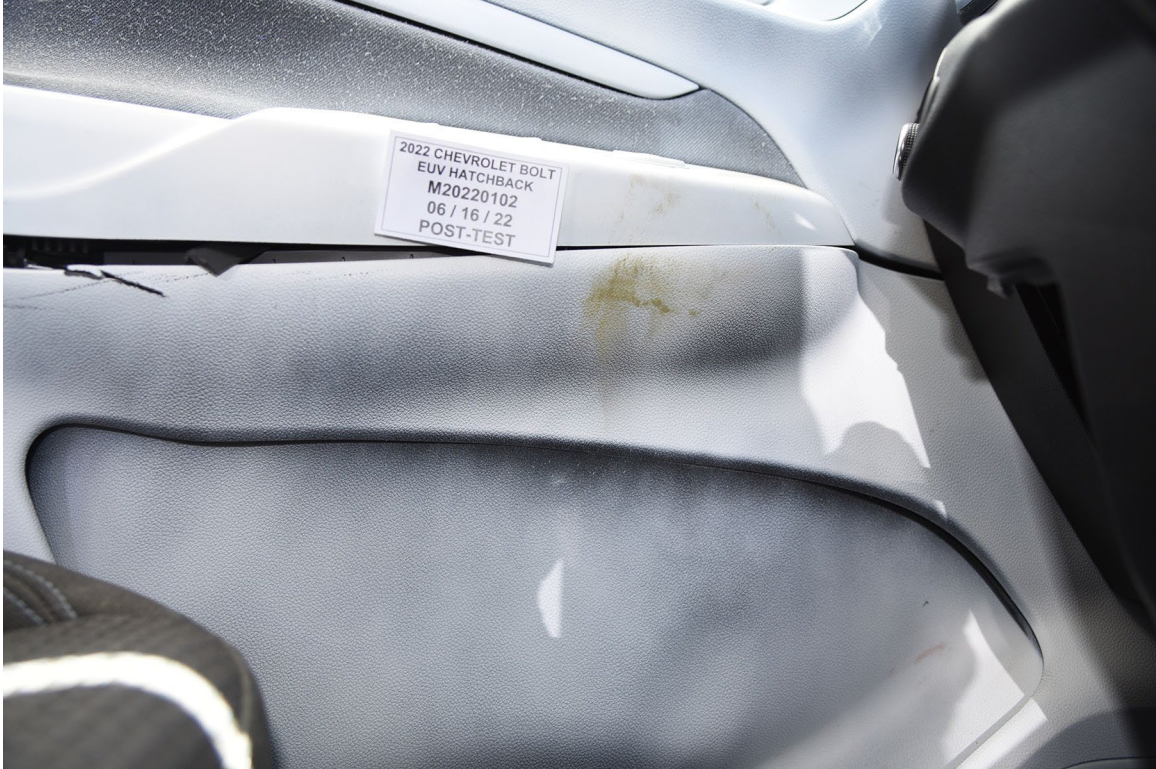


FIGURE 54. Post-Test Driver Dummy Close-Up Knee Contact View



FIGURE 55. Pre-Test Left Side View of Rear Passenger Dummy Showing Belt and Chalking



FIGURE 56. Pre-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View



FIGURE 57. Post-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View



FIGURE 58. Pre-Test Frontal View of Rear Passenger Seat Back  
Prior to Dummy Positioning



FIGURE 59. Pre-Test Frontal View of Rear Passenger Dummy  
Head and Shoulders in Relation to Head Restraint



FIGURE 60. Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning



FIGURE 61. Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



FIGURE 62. Pre-Test View of Rear Passenger Dummy's Neck  
Showing Position of Adjustable Neck Bracket



FIGURE 63. Pre-Test View of Rear Passenger Dummy's Head  
Showing Dummy's Head is Level



FIGURE 64. Pre-Test Placement of Rear Passenger Dummy's Feet



FIGURE 65. Pre-Test View of Belt Anchorage for Rear Passenger Dummy



FIGURE 66. Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



FIGURE 67. Pre-Test Close-Up Left Side View of Rear Passenger Seat Back



FIGURE 68. Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint



FIGURE 69. Pre-Test Rear Passenger Dummy and Door Clearance View



FIGURE 70. Post-Test Rear Passenger Dummy and Door Clearance View



FIGURE 71. Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



FIGURE 72. Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



FIGURE 73. Pre-Test Rear Passenger Inner Door Panel View



FIGURE 74. Post-Test Rear Passenger Inner Door Panel View  
Showing Rear Passenger Dummy Contact Locations

# Photograph Not Applicable

FIGURE 75. Post-Test Rear Passenger Dummy Close-Up  
Head Contact with Vehicle Interior View



FIGURE 76. Post-Test Rear Passenger Dummy Close-Up  
Head Contact with Side Airbag View

# Photograph Not Applicable

FIGURE 77. Post-Test Rear Passenger Dummy Close-Up  
Torso Contact with Vehicle Interior View



FIGURE 78. Post-Test Rear Passenger Dummy Close-Up  
Torso Contact with Side Airbag View

# Photograph Not Applicable

FIGURE 79. Post-Test Rear Passenger Dummy Close-Up  
Pelvis Contact with Vehicle Interior View



FIGURE 80. Post-Test Rear Passenger Dummy Close-Up  
Pelvis Contact with Side Airbag View



FIGURE 81. Post-Test Rear Passenger Dummy Close-Up Knee Contact View



FIGURE 82. Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 83. Post-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 84. Pre-Test Front View of MDB Impactor Face



FIGURE 85. Post-Test Front View of MDB Impactor Face



FIGURE 86. Pre-Test Top View of MDB Impactor Face



FIGURE 87. Post-Test Top View of MDB Impactor Face



FIGURE 88. Pre-Test Left Side View of MDB Impactor Face



FIGURE 89. Post-Test Left Side View of MDB Impactor Face



FIGURE 90. Pre-Test Right Side View of MDB Impactor Face



FIGURE 91. Post-Test Right Side View of MDB Impactor Face



FIGURE 92. Close-Up View of Vehicle's Certification Label

# Photograph Not Available

FIGURE 93. Close-Up View of Vehicle's Tire Information Placard or Label

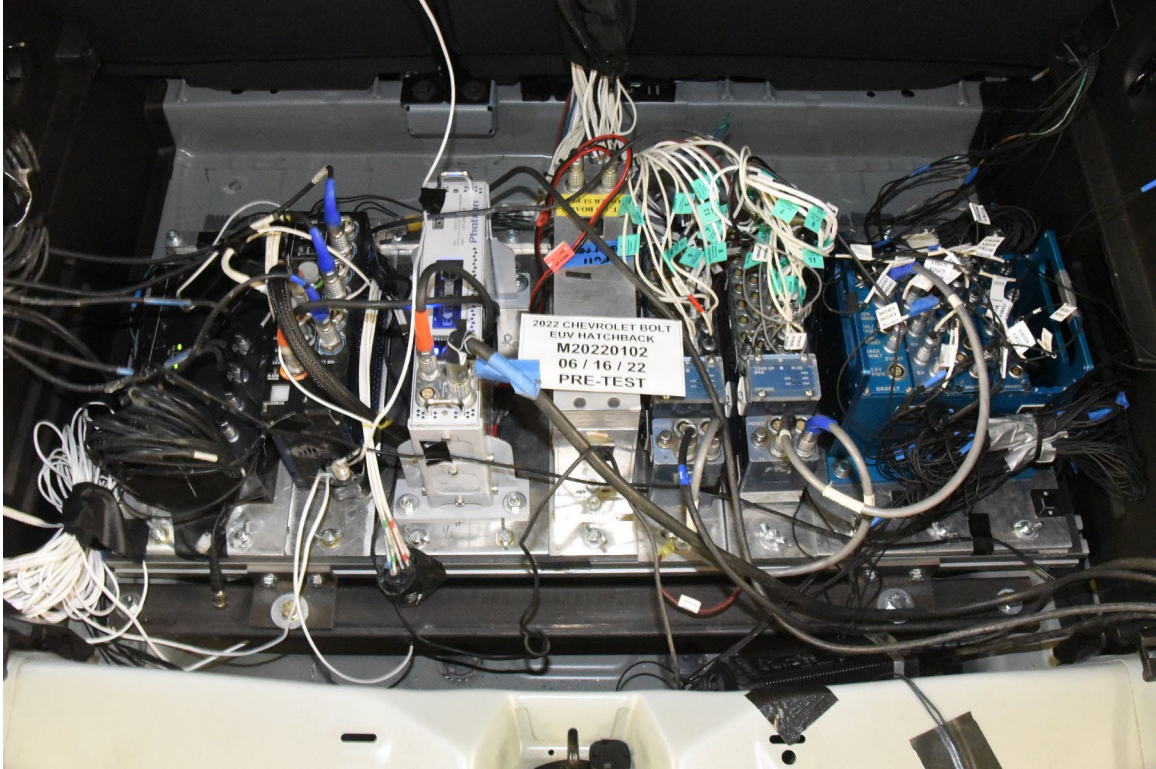


FIGURE 94. Pre-Test Ballast View

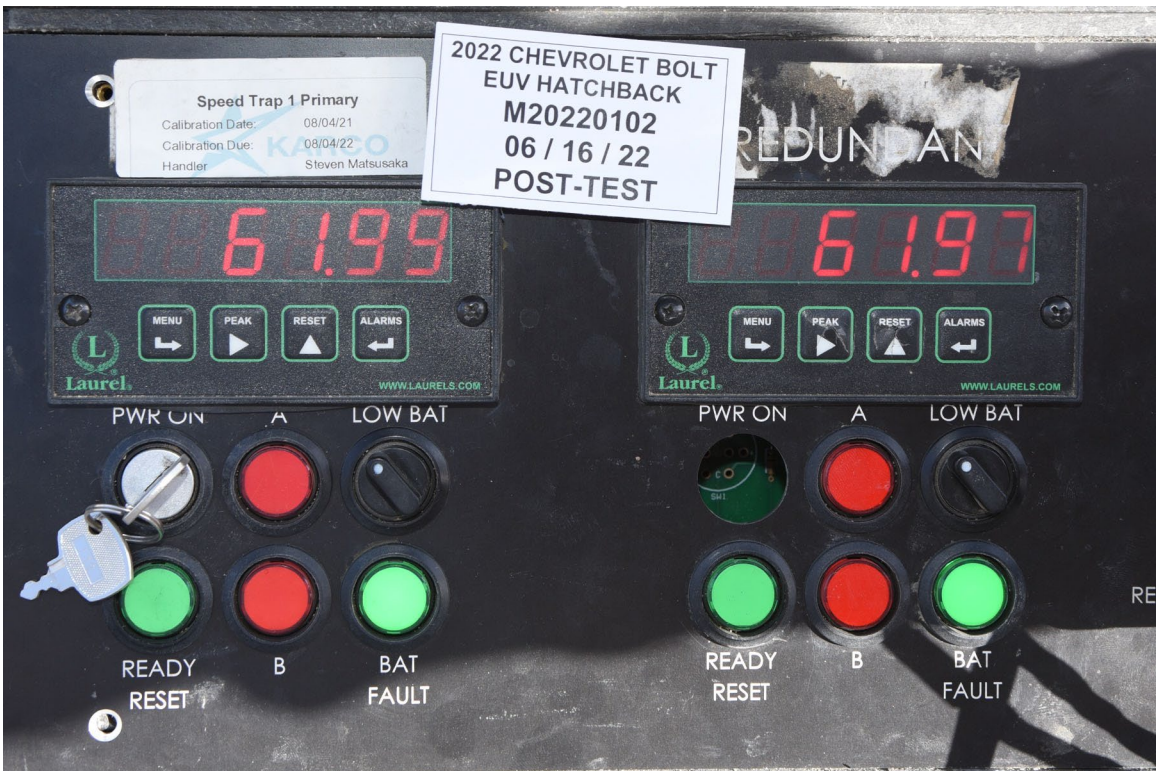


FIGURE 95. Post-Test Primary and Redundant Speed Trap Read-Out



FIGURE 96. FMVSS No. 301 Static Rollover 0 Degrees



FIGURE 97. FMVSS No. 301 Static Rollover 90 Degrees



FIGURE 98. FMVSS No. 301 Static Rollover 180 Degrees



FIGURE 99. FMVSS No. 301 Static Rollover 270 Degrees



FIGURE 100. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 101. Impact Event

**CHEVROLET** 2022 BOLT EUV LT EXTERIOR: ICE BLUE METALLIC INTERIOR: JET BLACK

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<p><b>STANDARD EQUIPMENT</b> <small>ITEMS LISTED BELOW ARE INCLUDED AT NO EXTRA CHARGE IN THE EXHIBITING VEHICLE PRICE. SOME</small></p> <p><b>OWNER BENEFITS</b></p> <ul style="list-style-type: none"> <li>• 3 YEAR / 36,000 MILE* BUMPER-TO-BUMPER LIMITED WARRANTY</li> <li>• 8 YEAR/100,000 MILE* ELECTRIC PROPULSION COMPONENT LIMITED WARRANTY, ROADSIDE ASSISTANCE &amp; COURTESY TRANSPORTATION</li> <li>• *WHICHEVER COMES FIRST SEE CHEVROLET.COM OR DEALER FOR TERMS, DETAILS &amp; LIMITS</li> </ul> <p><b>PERFORMANCE &amp; MECHANICAL</b></p> <ul style="list-style-type: none"> <li>• DC FAST CHARGING PROVISIONS</li> <li>• CHARGING MODULE, 11.5 KW</li> <li>• ELECTRONIC PRECISION SHIFT WITH ONE PEDAL DRIVE MODE</li> <li>• DRIVE MODE CONTROL SWITCH, NORMAL/SPORT</li> </ul>	<p>• DUAL LEVEL CHARGE CORD</p> <p><b>INTERIOR</b></p> <ul style="list-style-type: none"> <li>• SEAT ADJUSTERS, DRIVER AND FRONT PASSENGER 6-WAY MANUAL</li> <li>• SEAT, REAR 60/40 SPLIT-FOLDING</li> <li>• DRIVER INFORMATION CENTER, 8" DIAGONAL, MULTI-COLOR DISPLAY</li> </ul> <p><b>EXTERIOR</b></p> <ul style="list-style-type: none"> <li>• WHEELS, 17" ALUMINUM</li> <li>• HEADLAMPS, LED</li> <li>• DAYTIME RUNNING LAMPS, LED</li> <li>• LAMPS, STOP AND TAIL, LED</li> <li>• MIRRORS, OUTSIDE HEATED, POWER ADJUSTABLE, INTEGRATED TURN SIGNAL INDICATORS, MANUAL FOLDING</li> <li>• WIPERS, FRONT INTERMITTENT, VARIABLE</li> <li>• WIPER, REAR INTERMITTENT WITH WASHER</li> </ul>	<p><b>SAFETY &amp; SECURITY</b></p> <ul style="list-style-type: none"> <li>• HEY SAFETY ASSIST:</li> <li>• AUTOMATIC EMERGENCY BRAKING</li> <li>• FRONT PEDESTRIAN BRAKING</li> <li>• LANE KEEP ASSIST W/ LANE DEPARTURE WARNING</li> <li>• FOLLOWING DISTANCE INDICATOR</li> <li>• FORWARD COLLISION ALERT</li> <li>• NITELBEAM-AUTO HIGH BEAM</li> <li>• PEDESTRIAN FRIENDLY ALERT</li> <li>• HEADLAMP CONTROL AUTOMATIC (ON &amp; OFF)</li> <li>• RE PRESSURE MONITOR SYSTEM</li> <li>• ID REAR VISION CAMERA</li> <li>• RE FILL ALERT</li> </ul> <p><b>CONNECTIVITY FEATURES</b></p> <ul style="list-style-type: none"> <li>• REMOTE VEHICLE START</li> <li>• CHEVROLET INFOTAINMENT 3 PLUS 8.2" DIAG HD COLOR TOUCHSCREEN, VOICE RECOGNITION</li> <li>• BLUETOOTH AUDIO STREAMING</li> <li>• WIRELESS APPLE CARPLAY &amp;</li> </ul>	<p>WIRELESS ANDROID AUTO CAPABLE, IN-VEHICLE APPS AND PERSONALIZATION CAPABLE</p> <ul style="list-style-type: none"> <li>• WIRELESS DEVICE CHARGING</li> <li>• EFFICIENCY DISPLAY SCREENS W/ PROGRAMMABLE CHARGE TIMES</li> <li>• KEYLESS OPEN/START</li> </ul> <p><small>MANUFACTURER'S SUGGESTED RETAIL PRICE</small></p> <p><b>STANDARD VEHICLE PRICE \$33,000.00</b></p> <p><b>OPTIONS &amp; PRICING</b> <small>OPTIONS INSTALLED BY THE MANUFACTURER MAY REPLACE STANDARD EQUIPMENT CHARGE</small></p> <p>TOTAL OPTIONS \$0.00 TOTAL VEHICLE &amp; OPTIONS \$33,000.00 DESTINATION CHARGE \$95.00</p> <p><b>TOTAL VEHICLE PRICE* \$33,995.00</b></p>
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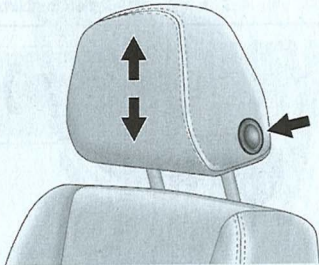
<p><b>Fuel Economy and Environment</b></p> <p><b>Fuel Economy</b></p> <p><b>115 MPGe</b></p> <p>Small station wagons range from 23 to 118 MPGe. The best vehicle rates 142 MPGe.</p> <p>combined city/hwy city highway 125 104 29</p> <p>Drive/EV Range 100 100 247 miles</p> <p>Charge Time: 7.5 hours (240V)</p> <p><b>You save \$3,750</b> in fuel costs over 5 years compared to the average new vehicle.</p>	<p><b>GOVERNMENT 5-STAR SAFETY RATINGS</b></p> <p>This vehicle has not been rated by the government for overall vehicle score, frontal crash, side crash or rollover risk.</p> <p>Source: National Highway Traffic Safety Administration (NHTSA) <a href="http://www.safercar.gov">www.safercar.gov</a> or 1-888-327-4236</p>	<p><b>PARTS CONTENT INFORMATION</b></p> <p>FOR VEHICLES IN THIS CARLINE: U.S./CANADIAN PARTS CONTENT: 63% MAJOR SOURCES OF FOREIGN PARTS CONTENT: KOREA 15%</p> <p>NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS.</p> <p>FOR THIS VEHICLE: FINAL ASSEMBLY POINT: LAKE ORION, MI U.S.A. COUNTRY OF ORIGIN: ENGINE (MOTOR); UNITED STATES TRANSMISSION (ELECTRIC DRIVE UNIT); KOREA</p> <p><small>© 2022 General Motors LLC. GM, Buick, Opel, OnStar, and OnStar are trademarks of General Motors.</small></p>
<p><b>Annual Fuel Cost \$550</b></p> <p>Fuel Economy &amp; Greenhouse Gas Rating (tailpipe only) Smog Rating (tailpipe only)</p> <p>This vehicle emits 0 grams CO<sub>2</sub> per mile. The best emits 0 grams per mile (tailpipe only). Does not include emissions from powertrain components.</p> <p>Full vehicle will vary for many reasons, including driving conditions and how you drive and maintain it. The average new vehicle gets 27 MPG and costs \$6,500 to fuel over 5 years. Cost estimates based on 15,000 miles per year at \$3.13 per gallon. MPGe is miles per gasoline gallon equivalent. Note: emissions are a significant cause of climate change and smog.</p> <p><b>eleconomy.gov</b> Calculate personalized estimates and compare vehicles</p>	<p>Equipped with the safety and security of OnStar®</p> <p>Visit <a href="http://onstar.com">onstar.com</a> for details.</p>	<p>VIN 1G1FY6S01N4115625</p> <p>DEALER TO WHOM DELIVERED: SPORT CHEVROLET COMPANY, LLC 3101 AUTOMOBILE BLVD SILVER SPRING, MD 20904-4999</p> <p><b>4U</b> 1GA0907701</p>

FIGURE 102. Monroney Label

**Seats and Restraints 29**

Adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chance of a neck injury in a crash.

**Front Seats**



The height of the head restraint can be adjusted. To raise or lower the head restraint, press the button located on the side of the head restraint, and pull up or push the head restraint down, and release the button. Pull and push on the head restraint after the button is released to make sure that it is locked in place.

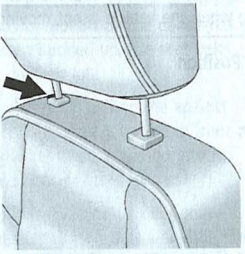
The front seat outboard head restraints are not removable.

**Rear Seats**

The vehicle's rear seats have adjustable head restraints in the outboard seating positions.

The height of the head restraint can be adjusted.

Pull the head restraint up to raise it. Try to move the head restraint to make sure it is locked in place.

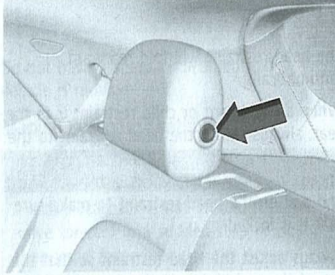


To lower the head restraint, press the button on the top of the seatback and push the head restraint down. Try to move the head restraint after the button is released to make sure it is locked in place.

If installing a child restraint in the rear seat, see "Securing a Child Restraint Designed for the LATCH System" under *Lower Anchors and Tethers for Children (LATCH System)* ⇨ 59.

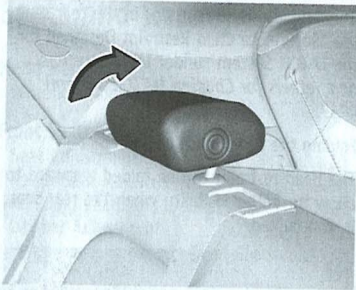
**Folding the Rear Head Restraint**

The head restraint can be folded rearward to allow for better visibility when the rear seat is unoccupied.



To fold the head restraint, press the button on the side of the head restraint.

FIGURE 103. Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



The head restraint will fold rearward automatically.

When an occupant or child restraint is in the seat, always return the head restraint to the full upright position. Pull the head restraint up and forward until it locks into place. Push and pull on the head restraint to make sure that it is locked.

Always adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head.

### Front Seats

#### Seat Adjustment

##### Manual Seats

#### Warning

You can lose control of the vehicle if you try to adjust a driver seat while the vehicle is moving. Adjust the driver seat only when the vehicle is not moving.

#### Seat Position

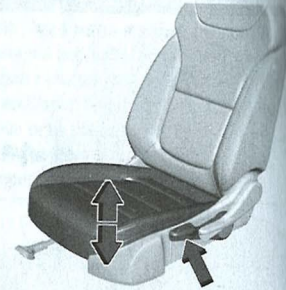


To adjust the seat:

1. Pull the handle at the front of the seat.

2. Slide the seat to the desired position and release the handle.
3. Try to move the seat back and forth to be sure it is locked in place.

#### Seat Height Adjuster



Move the lever on the outboard side of the seat up or down to manually adjust the seat height.

FIGURE 104. Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



FIGURE 305-01. Auxiliary Power Module Warning Label



FIGURE 305-02. Power Inverter Warning Label



FIGURE 305-03. First Responder Warning Label



FIGURE 305-04. First Responder Warning Location



FIGURE 305-05. Other Vehicle Label(s) Related to Electrical Propulsion System

## Photograph Not Applicable

Manual Disconnect Located Underneath  
Rear Seat Cushion.  
Rear Seat Cushion Not Removed Pre-Test

FIGURE 305-06. Manual High Voltage Service Disconnect in Place

# Photograph Not Applicable

Manual Disconnect Located Underneath  
Rear Seat Cushion.  
Rear Seat Cushion Not Removed Pre-Test

FIGURE 305-07. Manual High Voltage Service Disconnect Removed

# Photograph Not Applicable

Manual Disconnect Located Underneath  
Rear Seat Cushion.  
Rear Seat Cushion Not Removed Pre-Test

FIGURE 305-08. Manual High Voltage Service Disconnect Removed

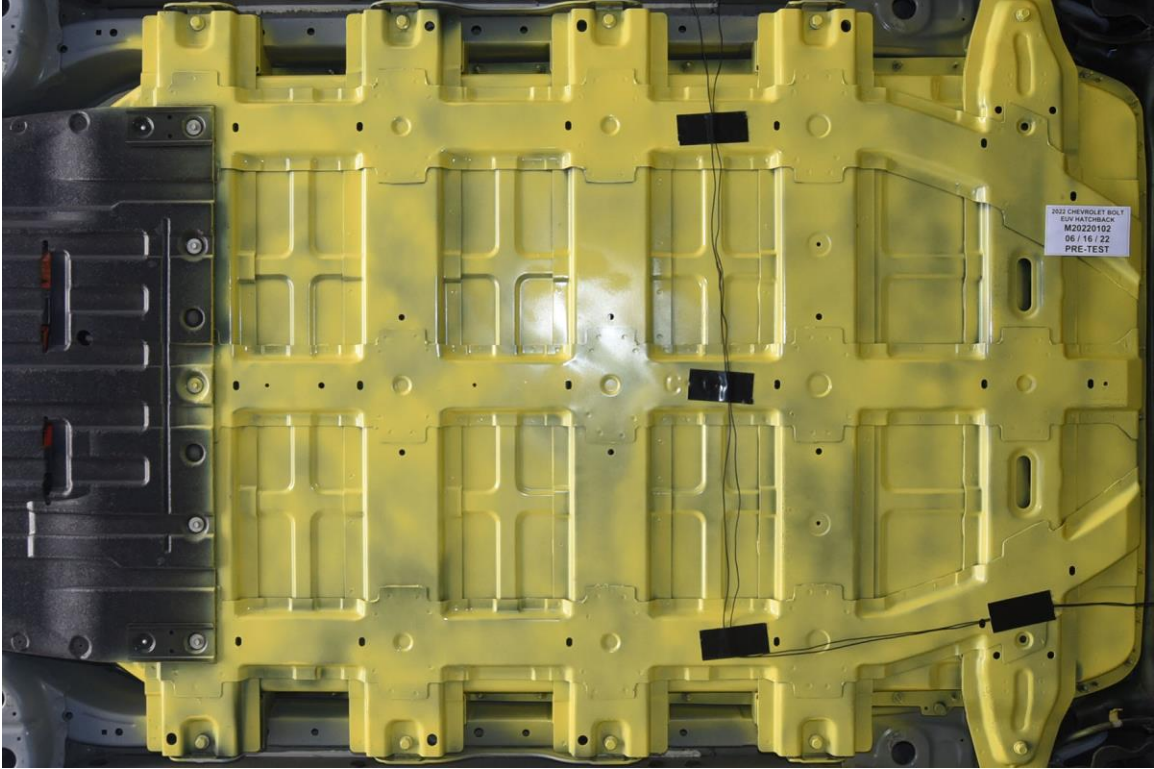


FIGURE 305-09. Pre-Impact View of Propulsion Battery

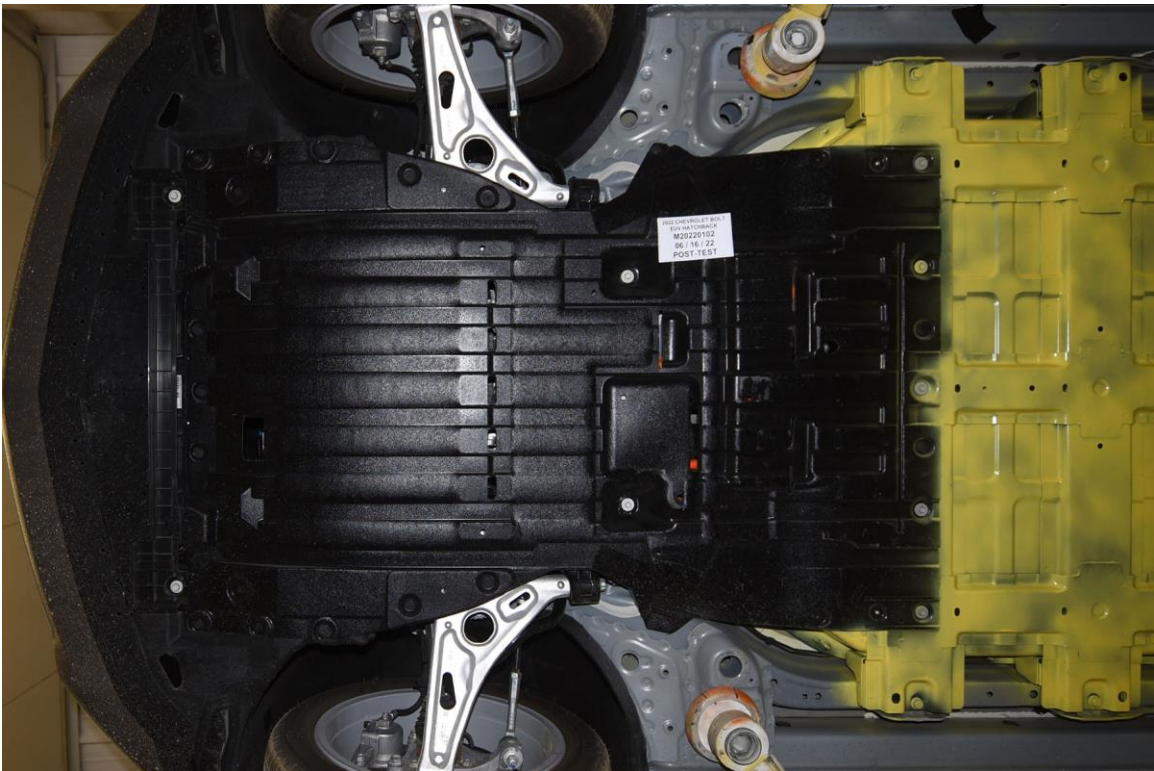


FIGURE 305-010. Post-Impact Front View of Propulsion Battery

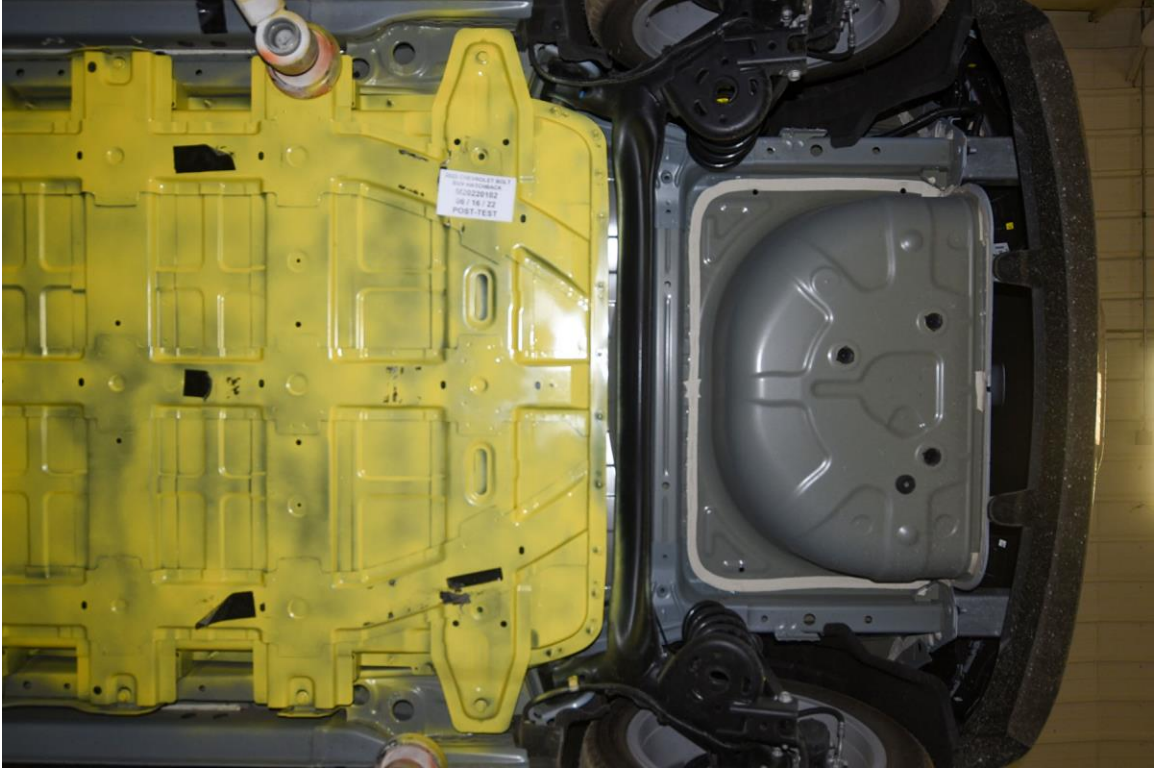


FIGURE 305-011. Post-Impact Rear View of Propulsion Battery

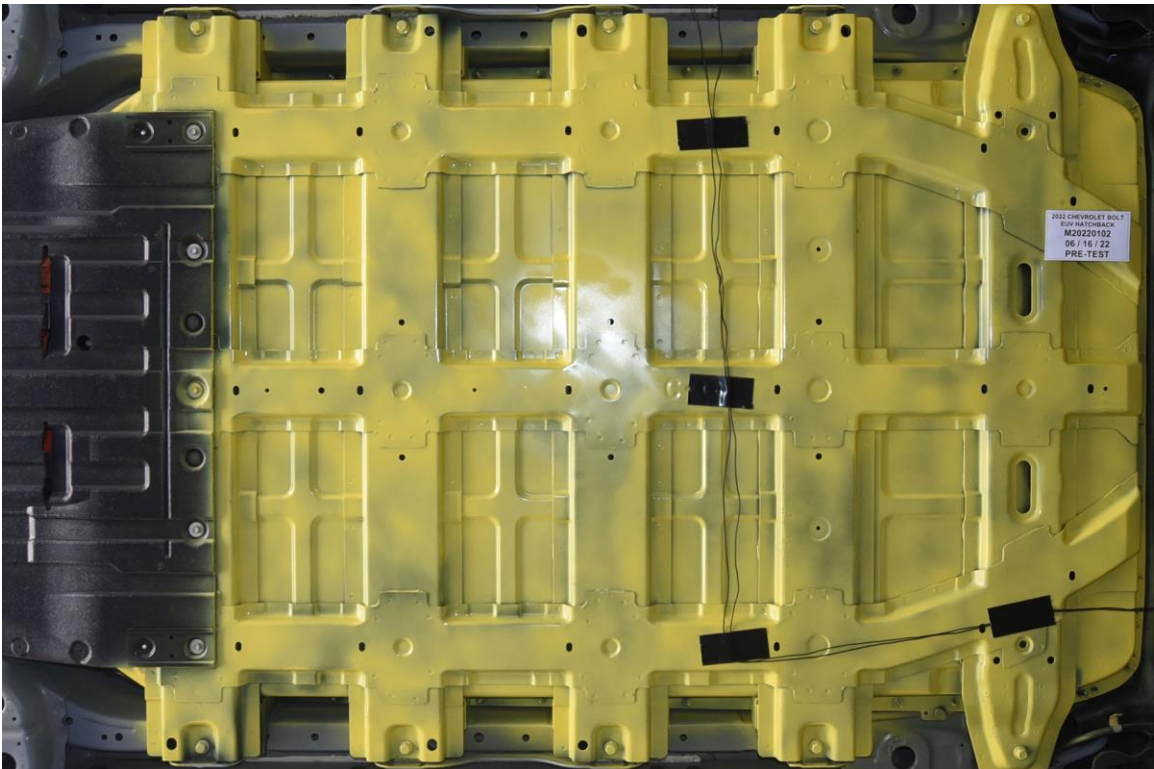


FIGURE 305-012. Pre-Impact View of Battery Box(s) or Container(s) Which Holds Individual Battery Modules

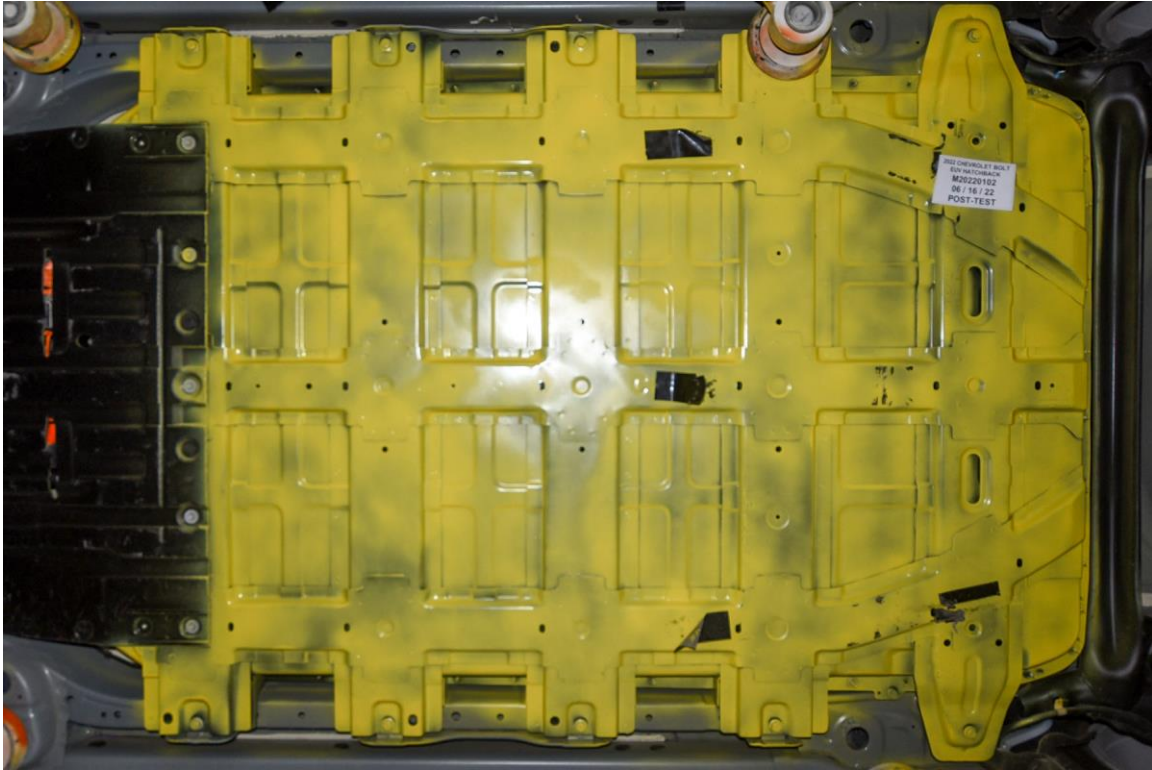


FIGURE 305-013. Post-Impact View of Battery Box(s) or Container(s) Which Holds Individual Battery Modules

# Photograph Not Available

Battery Modules Located Inside Battery Enclosure.  
Battery Enclosure Not Opened Pre-Test.

FIGURE 305-014. Pre-Impact View of Propulsion Battery Module(s)

# Photograph Not Available

Battery Modules Located Inside Battery Enclosure.  
Battery Enclosure Not Opened Pre-Test.

FIGURE 305-015. Post-Impact View of Propulsion Battery Module(s)

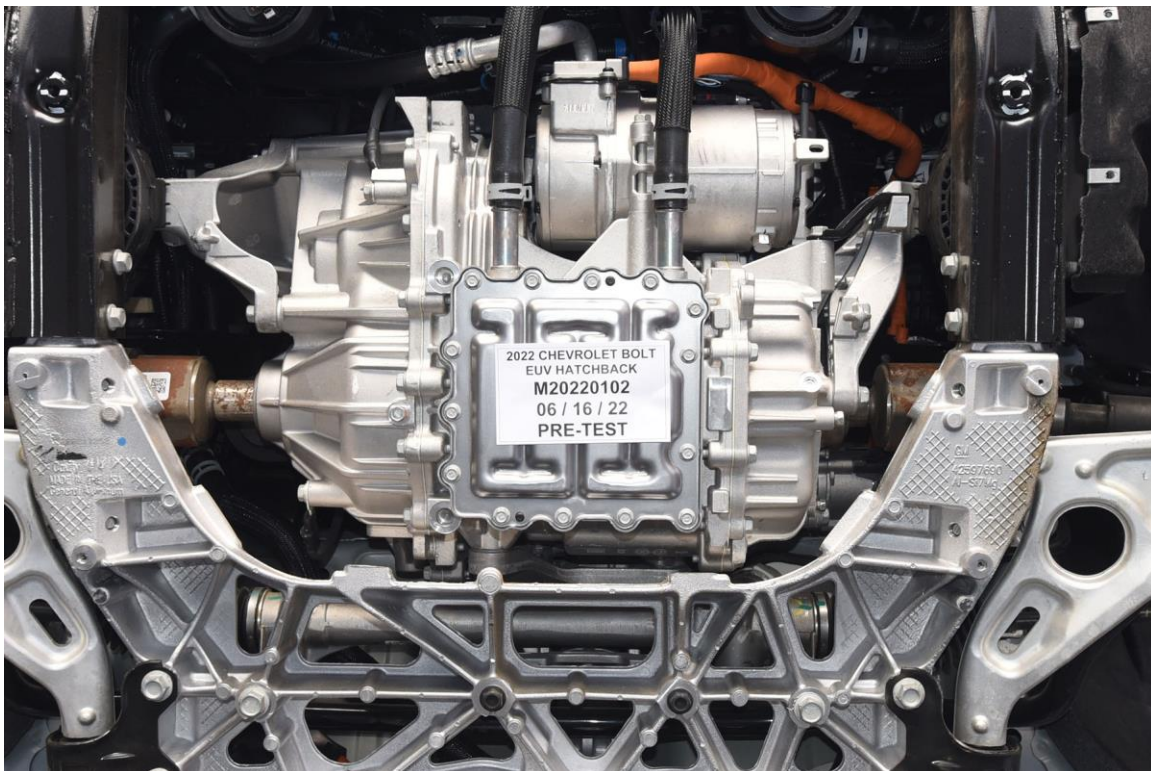


FIGURE 305-016. Pre-Impact View of Electric Propulsion Drive

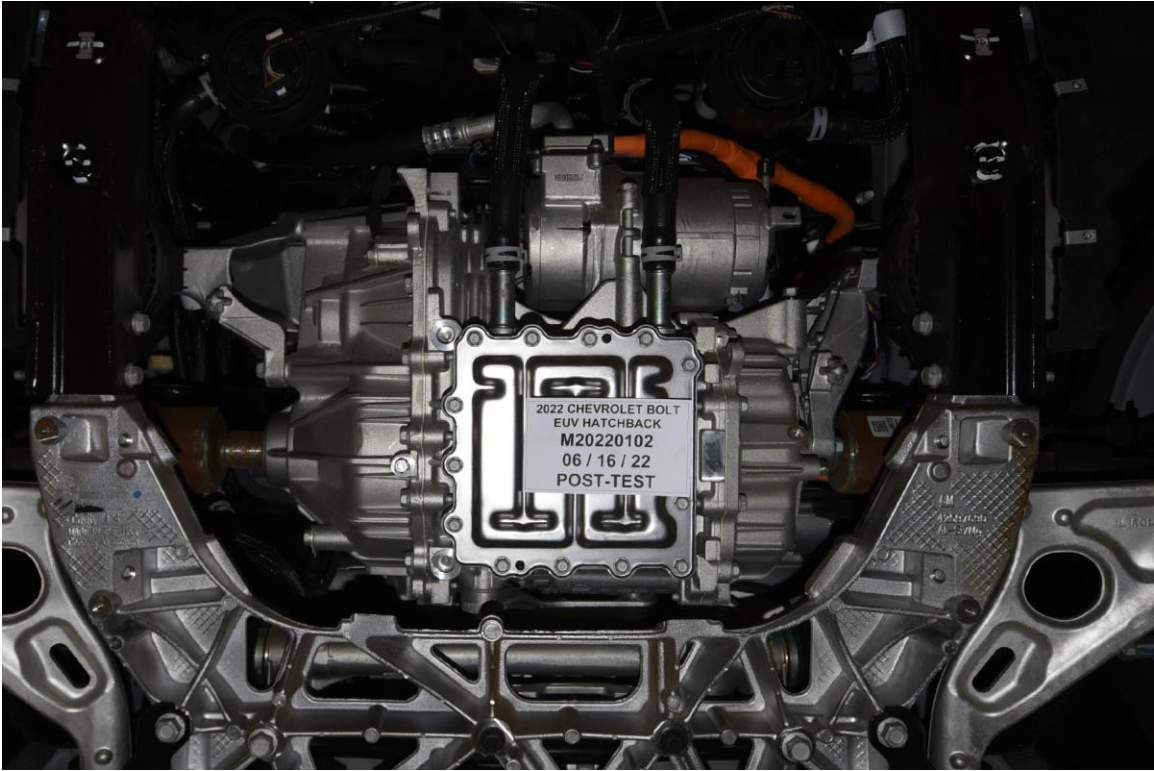


FIGURE 305-017. Post-Impact View of Electric Propulsion Drive



FIGURE 305-018. Pre-Impact View of High Voltage Interconnect(s)

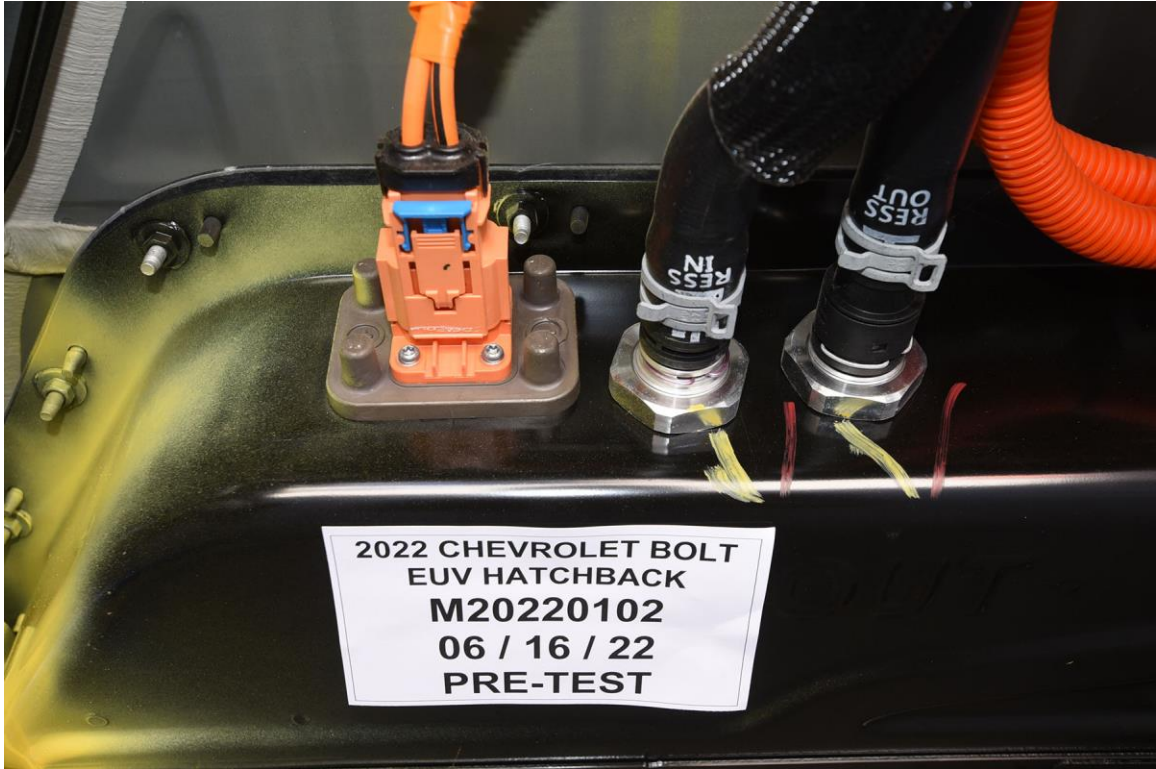


FIGURE 305-019. Pre-Impact View Propulsion Battery Venting System(s)

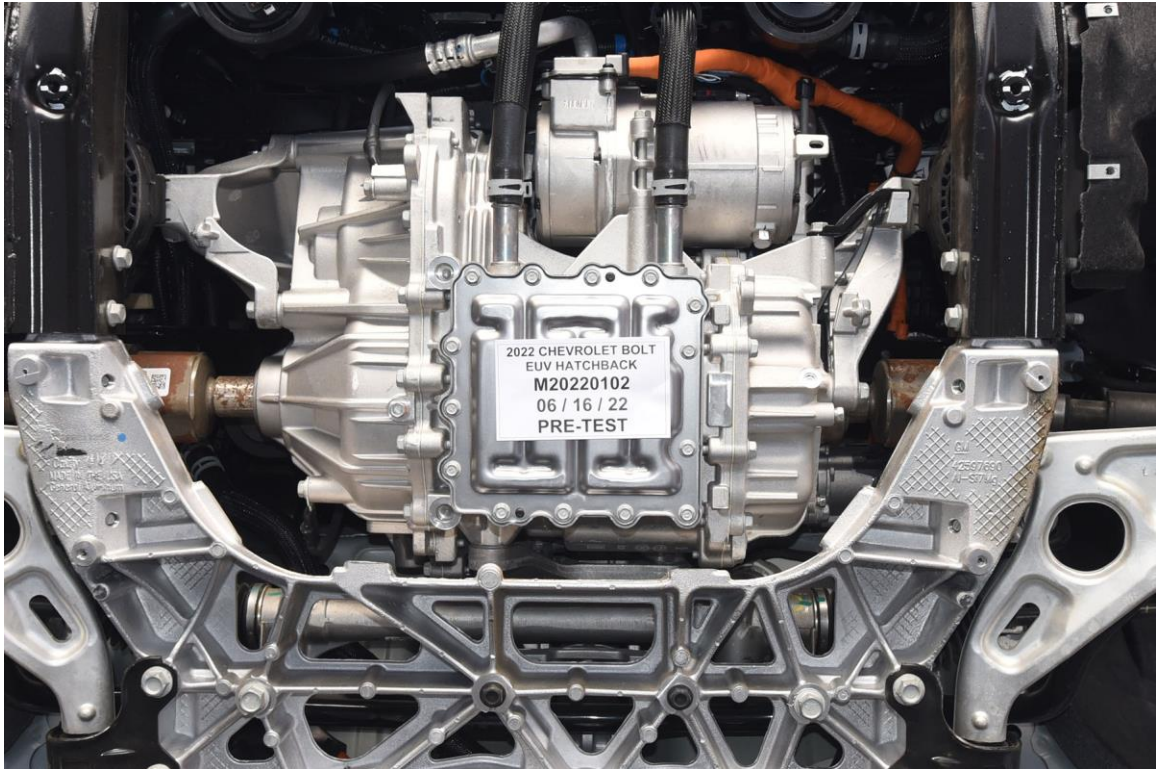


FIGURE 305-020. Pre-Impact View of Other Visible Electric Propulsion Components

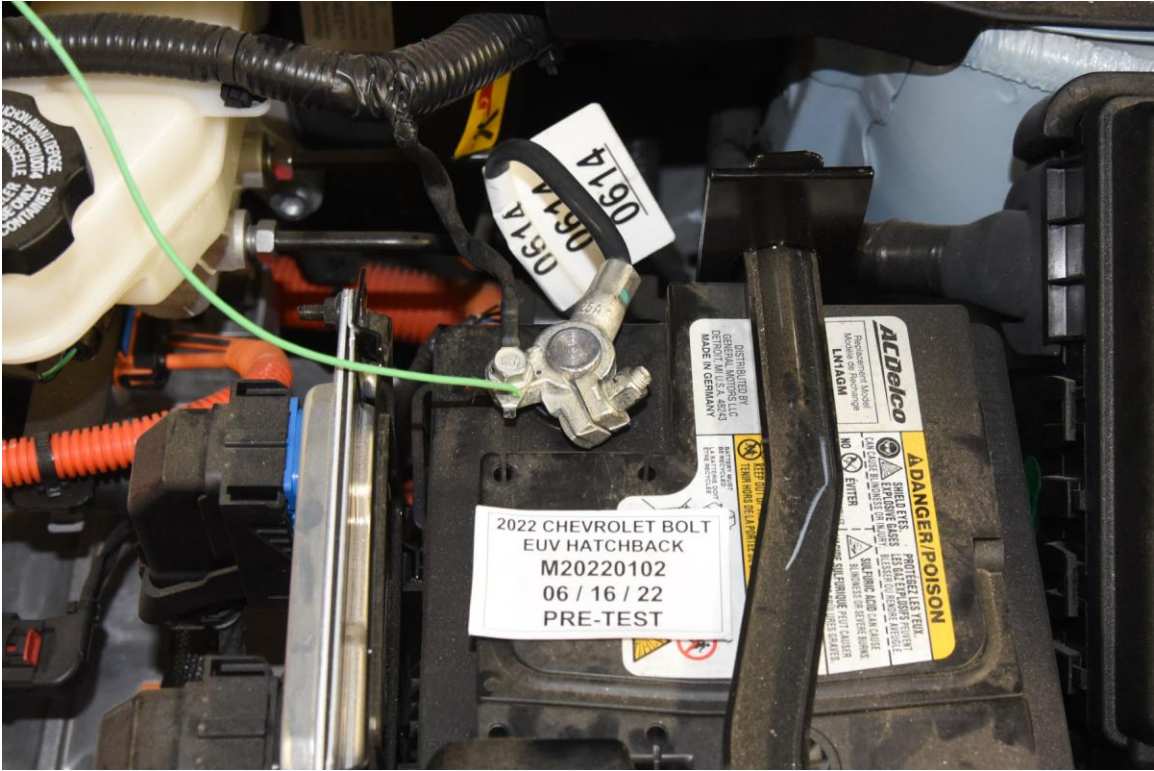


FIGURE 305-021. Pre-Impact View of Ground Lead Attached

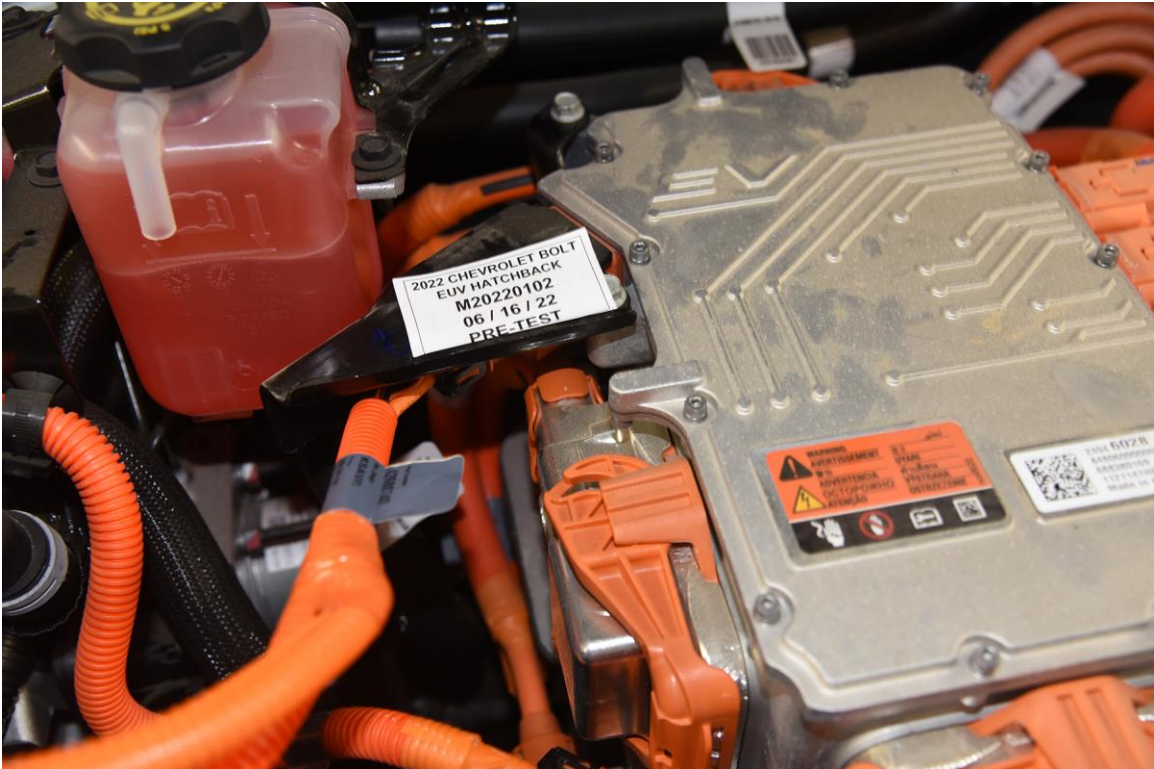


FIGURE 305-022. Pre-Impact View of High Voltage Leads Attached



FIGURE 305-023. Pre-Impact Close-Up View of High Voltage Leads Attached

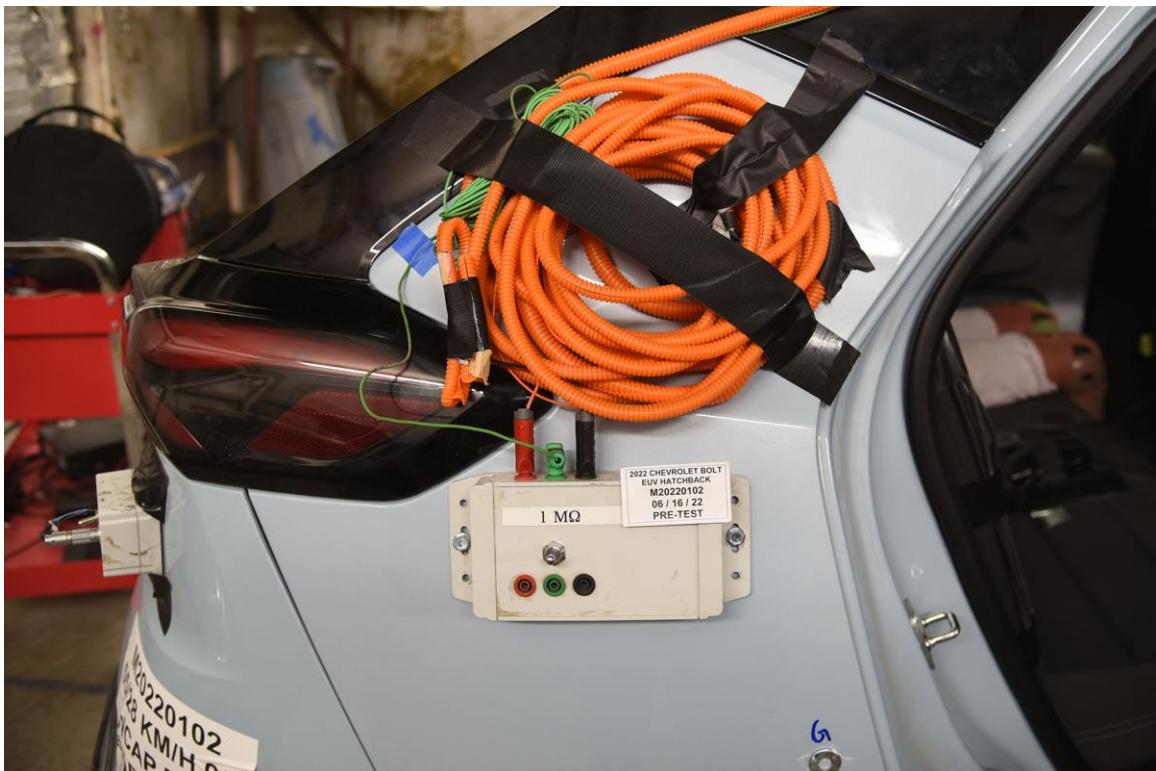


FIGURE 305-024. Pre-Impact View of Installed Test Interface Port



FIGURE 305-025. Post-Impact View of Installed Test Interface Port

# Photograph Not Applicable

FIGURE 305-026. Pre-Impact View of Other Test Devices

# Photograph Not Applicable

FIGURE 305-027. Post-Impact View of Other Test Devices



FIGURE 305-028. FMVSS No. 305 Static Rollover at 90°

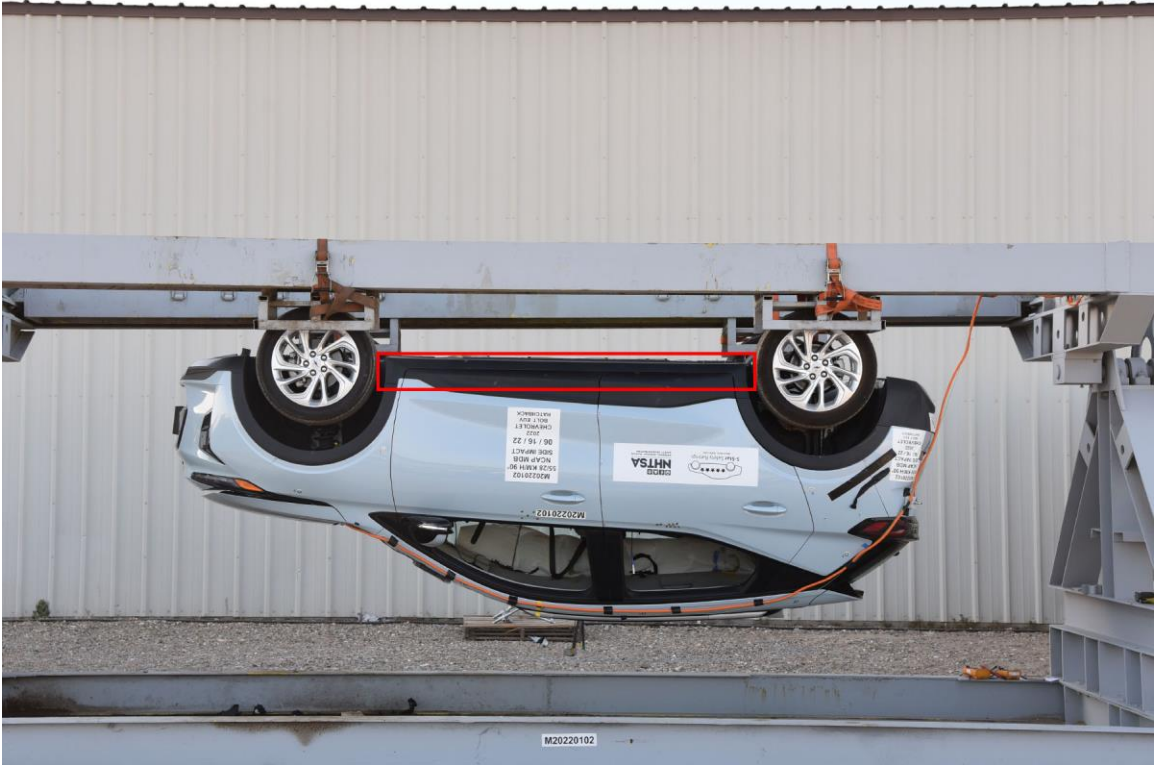


FIGURE 305-029. FMVSS No. 305 Static Rollover at 180°



FIGURE 305-030. FMVSS No. 305 Static Rollover at 270°

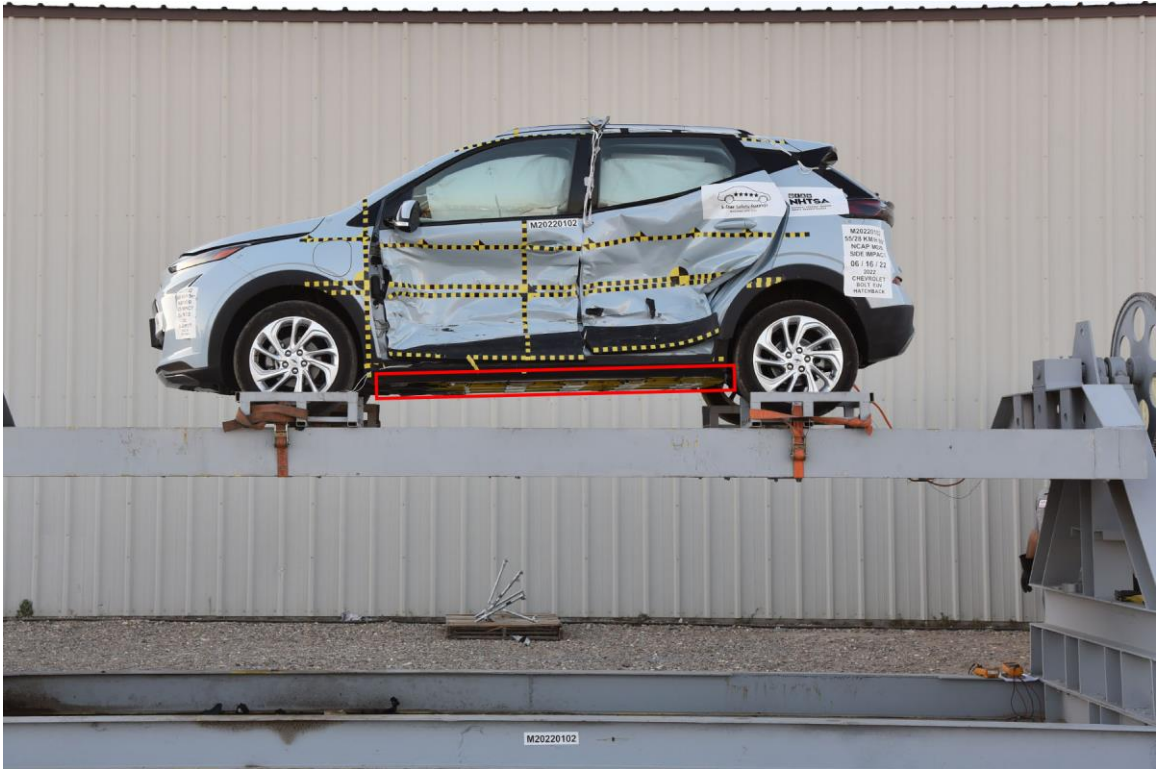


FIGURE 305-031. FMVSS No. 305 Static Rollover at 360°



FIGURE 305-032. Pre-Impact View of the Vehicle Passenger Compartment Adjacent to Propulsion Battery



FIGURE 305-033. Post-Impact View of the Vehicle Passenger Compartment Adjacent to Propulsion Battery

**Photograph Not Applicable**

**No Propulsion Battery  
Mounting and/or  
Intrusion Failure**

FIGURE 305-034. Post-Impact Propulsion Battery System Mounting and or Intrusion Failure(s)

**Photograph Not Applicable**

**No Battery Component  
Intrusion**

FIGURE 305-035. Post-Impact View of Battery Component Intrusion

**Photograph Not Applicable**

**No Propulsion  
Battery Movement or  
Retention loss**

FIGURE 305-036. Post-Impact View of Battery Module Movement or Retention Loss

**Photograph Not Applicable**

**No Propulsion Battery  
Electrolyte Spillage**

FIGURE 305-037. Post-Impact View of Propulsion Battery Electrolyte Spillage Location

**Photograph Not Applicable**

**No Propulsion Battery  
Electrolyte Spillage**

FIGURE 305-038. Post-Test View of Propulsion Battery Electrolyte Spillage Location

**APPENDIX B**  
**VEHICLE AND DUMMY RESPONSE DATA PLOTS**

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The following additional data for this test can be obtained from the Research and Development section of the NHTSA website ([www.NHTSA.gov](http://www.NHTSA.gov))

## **Additional Driver & Passenger Dummy Instrumentation Data**

Driver Lower Spine T12 Acceleration (X)  
Driver Lower Spine T12 Acceleration (Y)  
Driver Lower Spine T12 Acceleration (Z)  
Driver Head Acceleration Redundant (X)  
Driver Head Acceleration Redundant (Y)  
Driver Head Acceleration Redundant (Z)  
Passenger Head Acceleration Redundant (X)  
Passenger Head Acceleration Redundant (Y)  
Passenger Head Acceleration Redundant (Z)

## **Vehicle Instrumentation Data**

Vehicle Center of Gravity Acceleration (X)  
Vehicle Center of Gravity Acceleration (Y)  
Vehicle Center of Gravity Acceleration (Z)  
Right Side Sill at Front Seat Acceleration (X)  
Right Side Sill at Front Seat Acceleration (Y)  
Right Side Sill at Front Seat Acceleration (Z)  
Right Side Sill at Rear Seat Acceleration (X)  
Right Side Sill at Rear Seat Acceleration (Y)  
Right Side Sill at Rear Seat Acceleration (Z)  
Left Side Sill at Front Seat Acceleration (Y)  
Left Side Sill at Rear Seat Acceleration (Y)  
Lower A-Post Acceleration (Y)  
Middle A-Post Acceleration (Y)  
Lower B-Post Acceleration (Y)  
Middle B-Post Acceleration (Y)  
Front Seat Track Acceleration (Y)  
Rear Seat Structure Acceleration (Y)  
Right Rear Occupant Compartment Acceleration (Y)  
Engine Block (X)  
Engine Block (Y)  
Rear Floorpan Above Axle Acceleration (X)  
Rear Floorpan Above Axle Acceleration (Y)  
Rear Floorpan Above Axle Acceleration (Z)

### **MDB Instrumentation Data**

MDB Center of Gravity Acceleration (X)

MDB Center of Gravity Acceleration (Y)

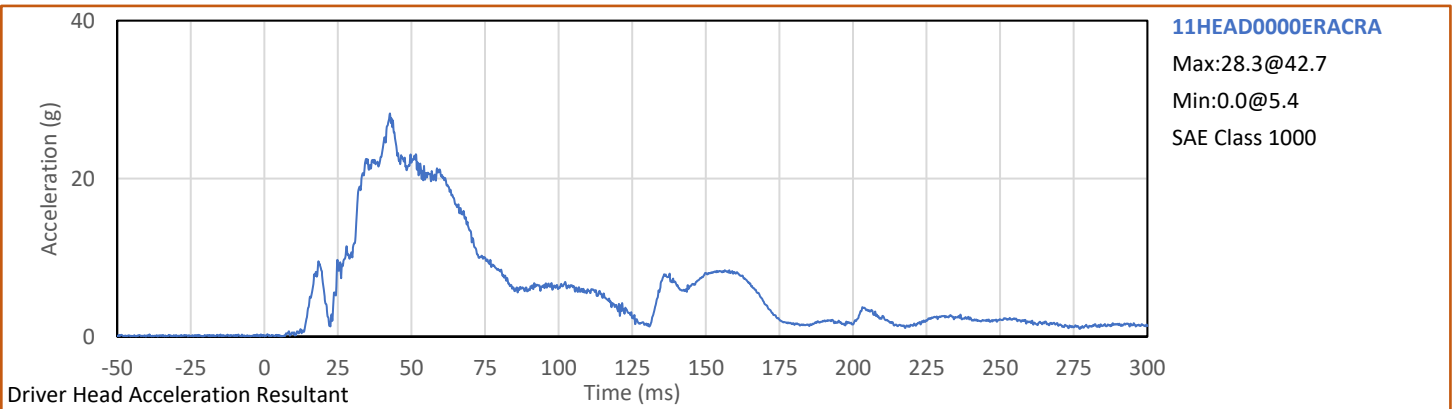
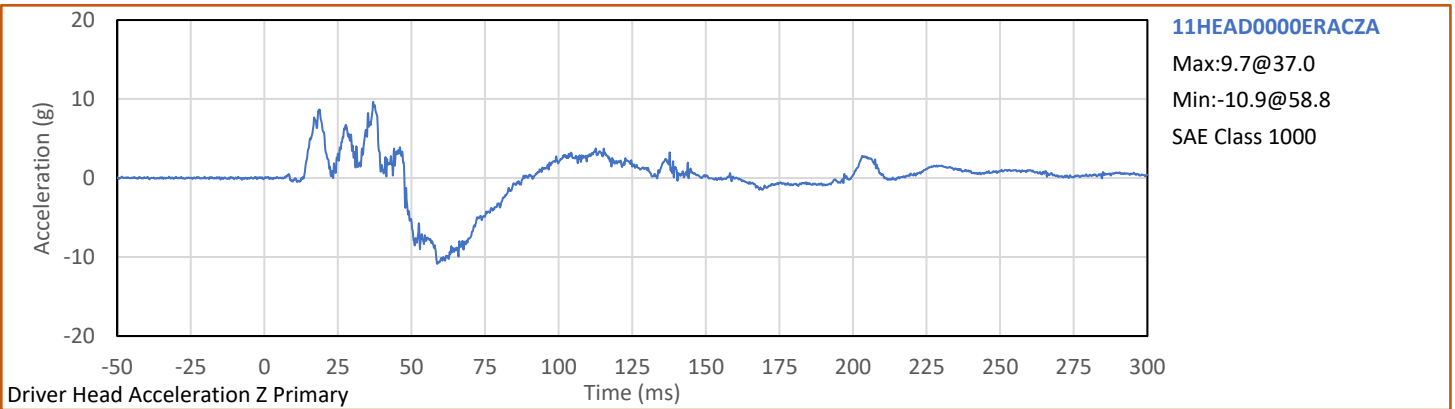
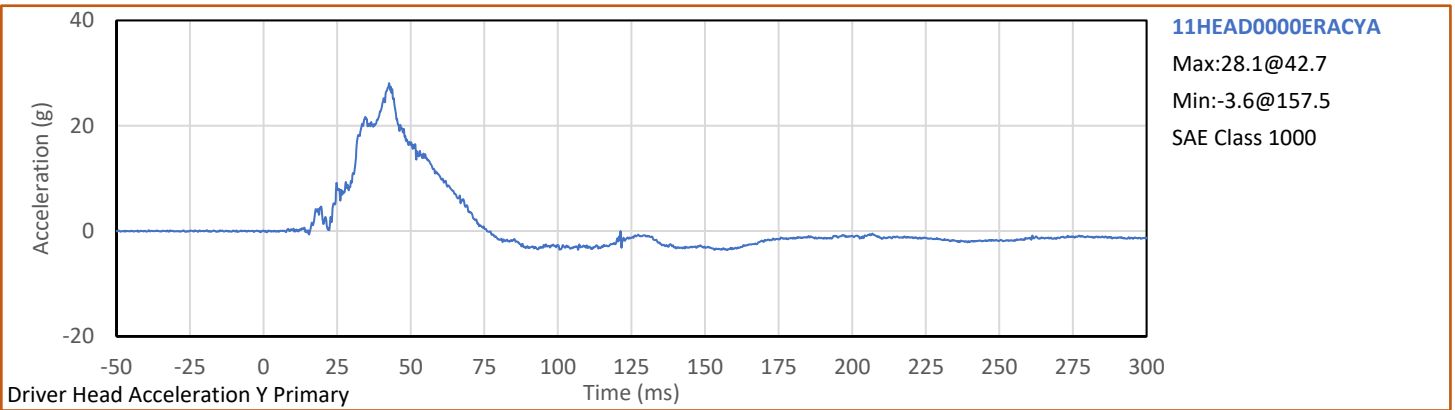
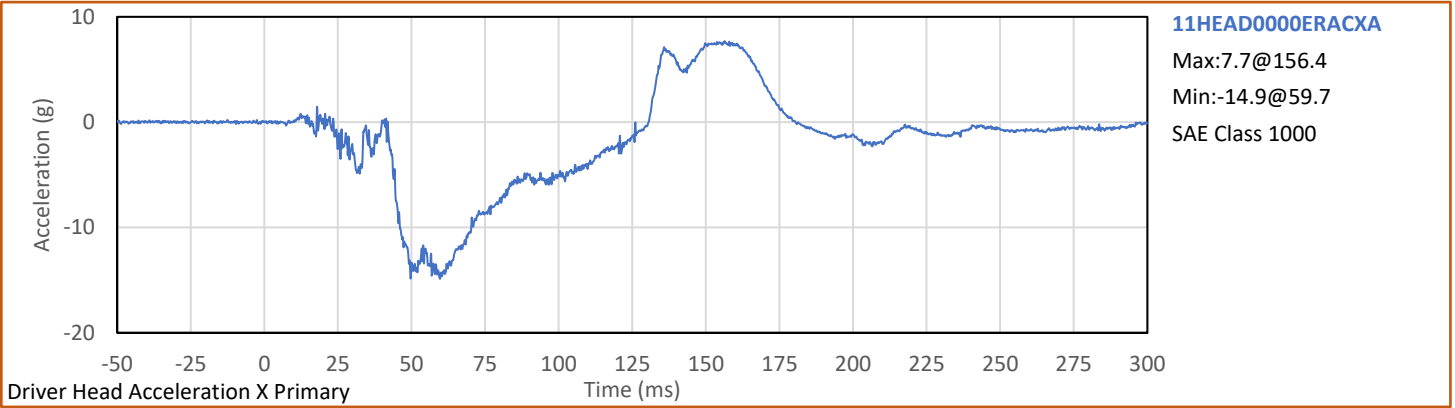
MDB Center of Gravity Acceleration (Z)

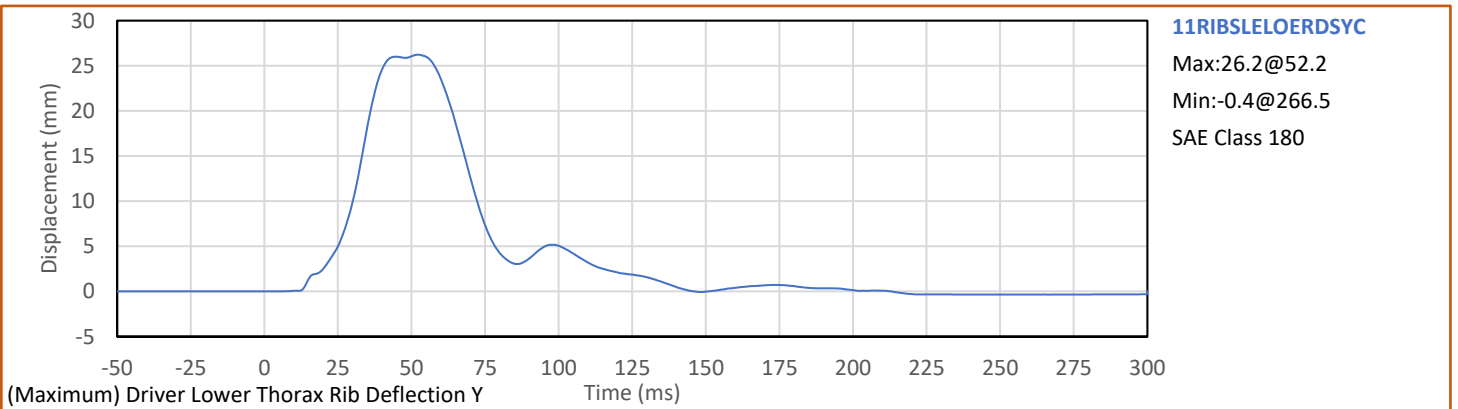
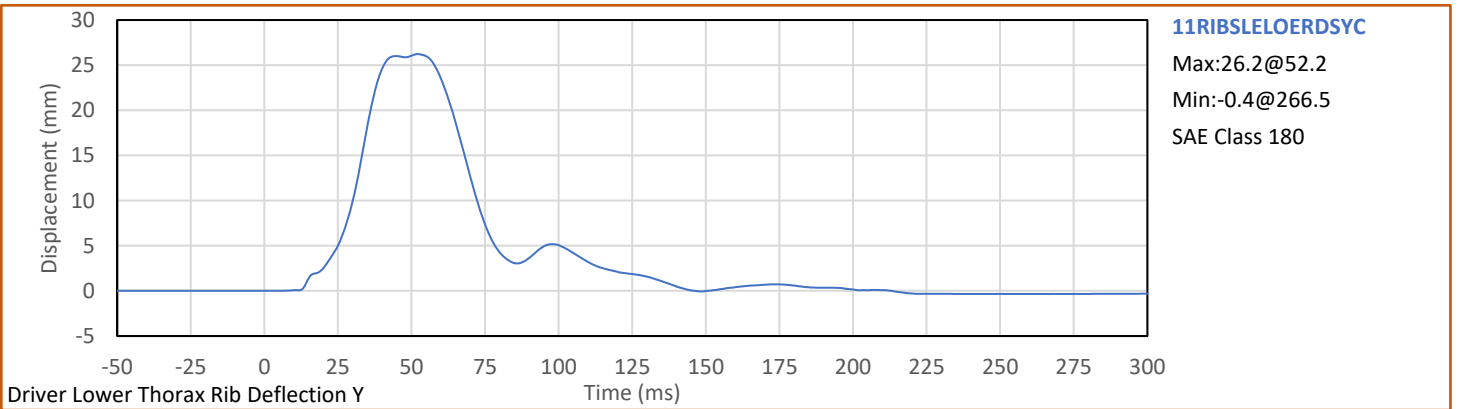
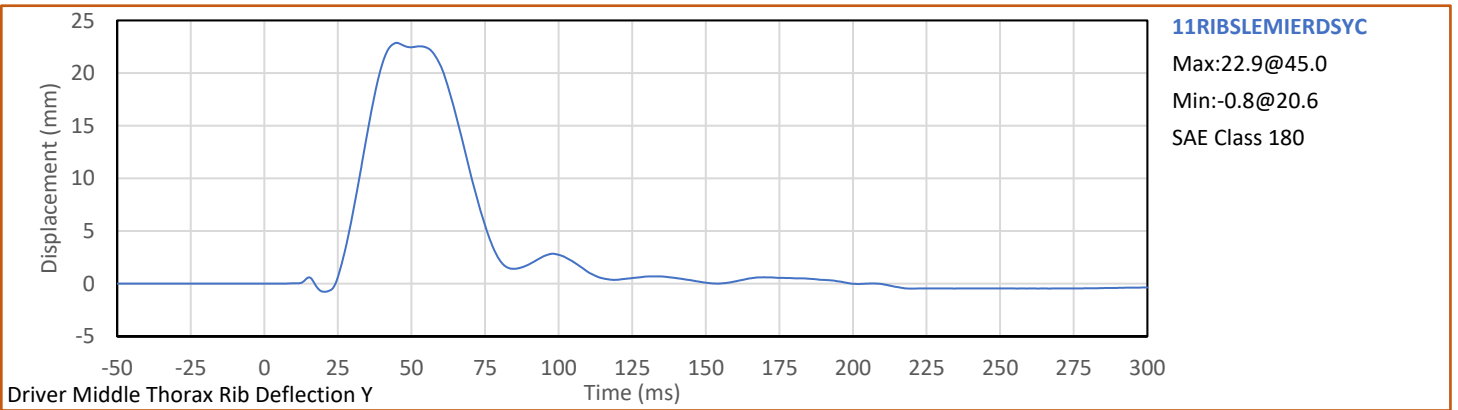
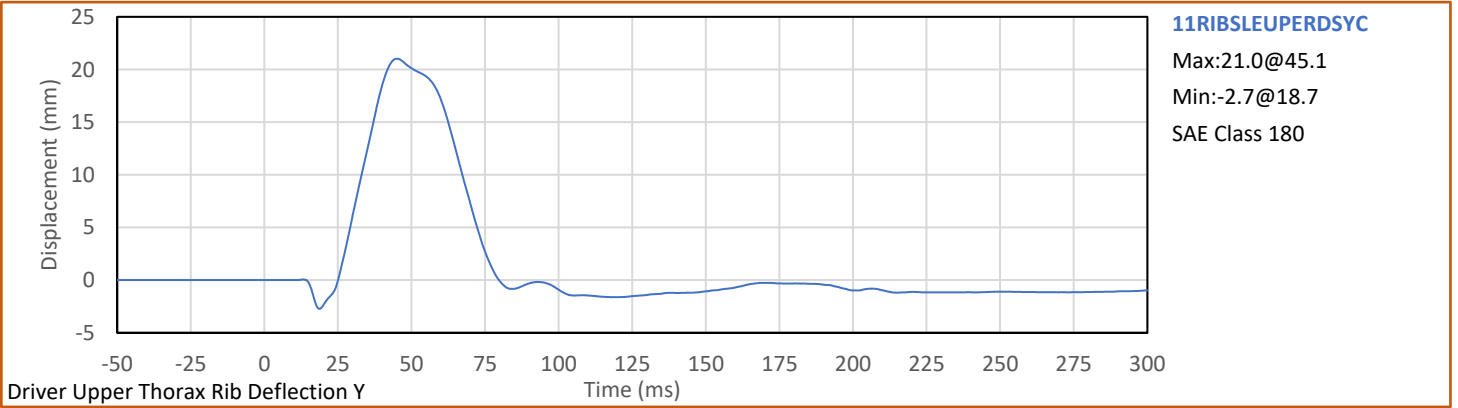
MDB Rear Acceleration (X)

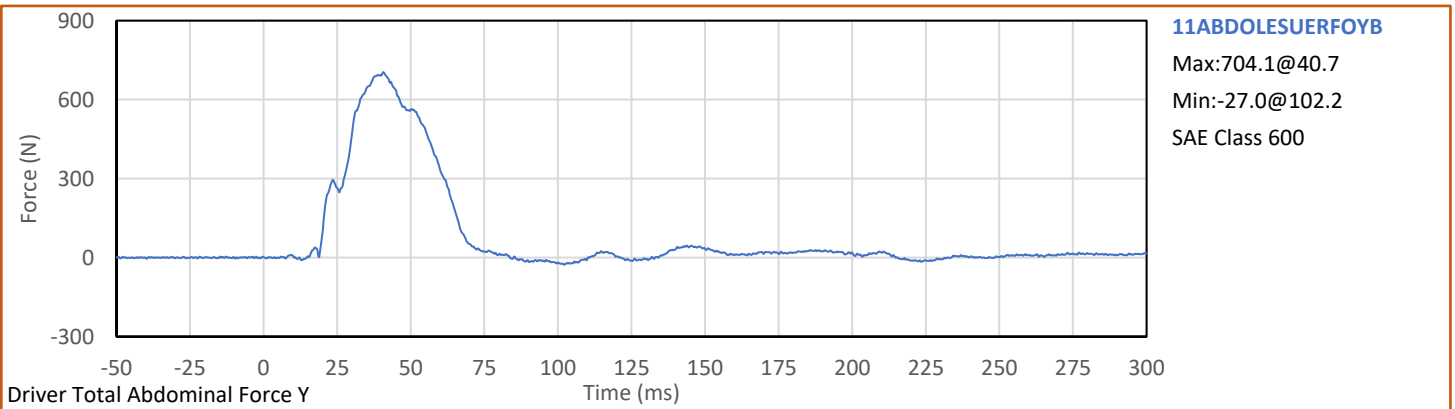
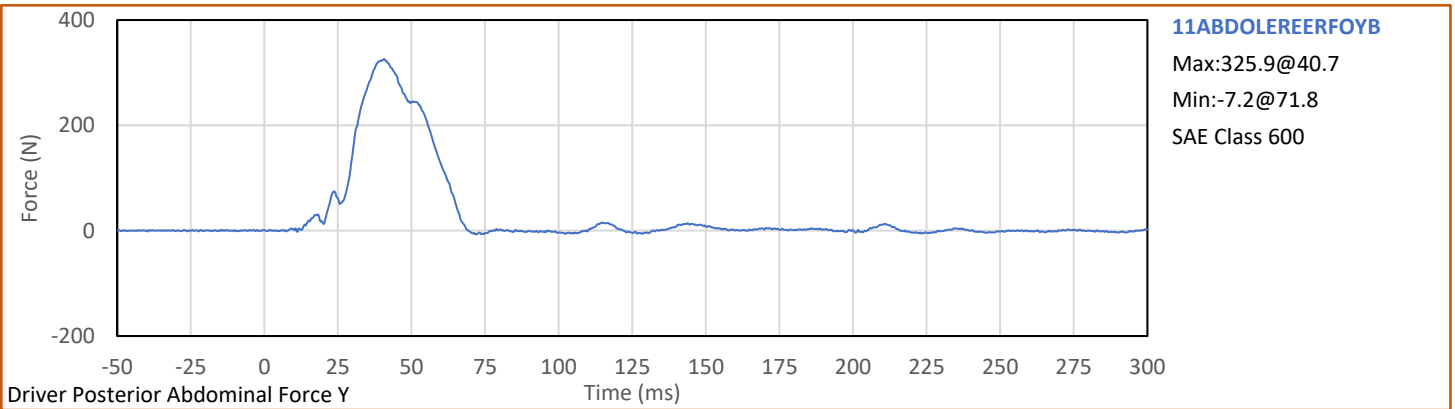
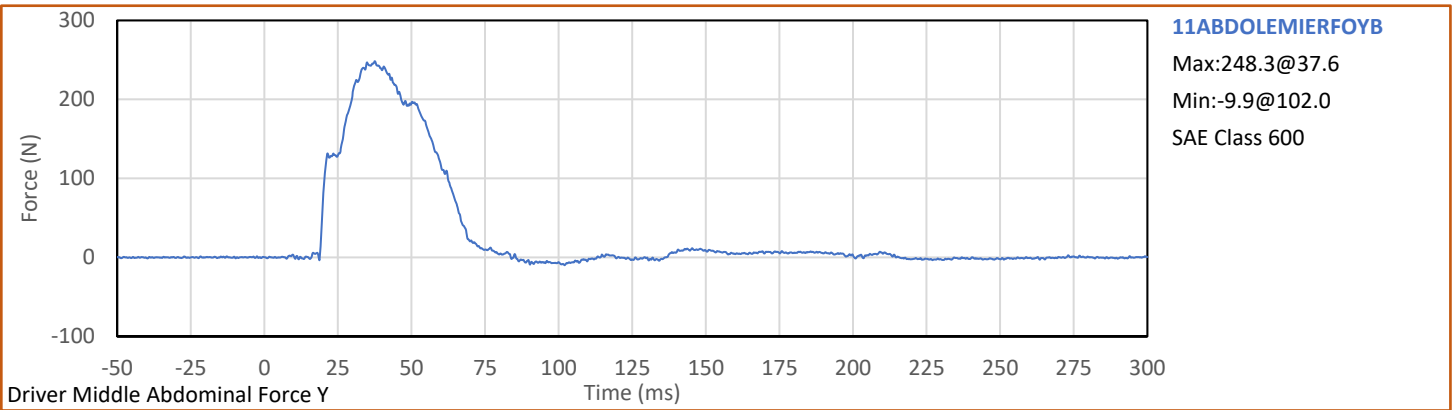
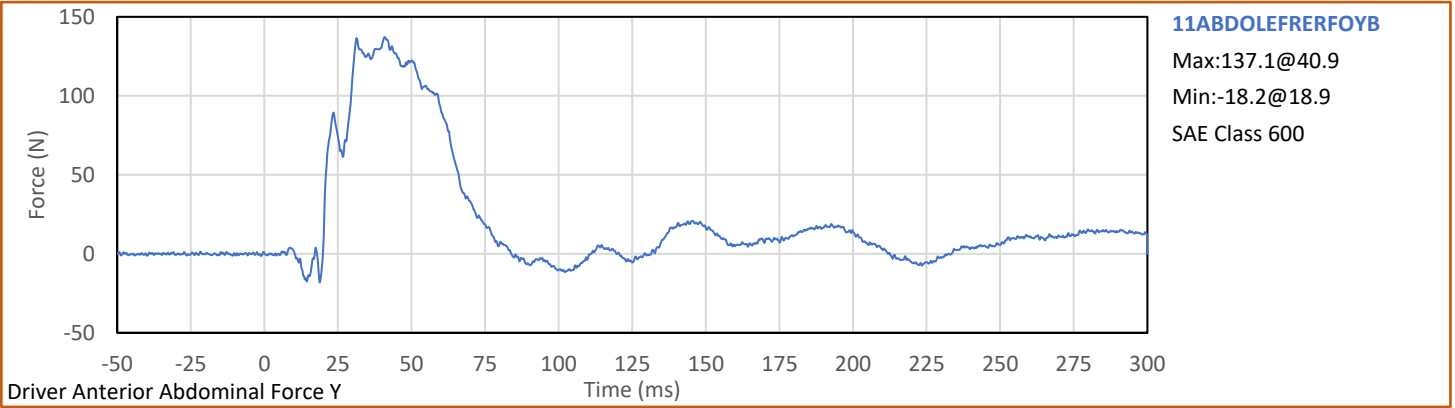
MDB Rear Acceleration (Y)

Left MDB Contact Switch

Right MDB Contact Switch

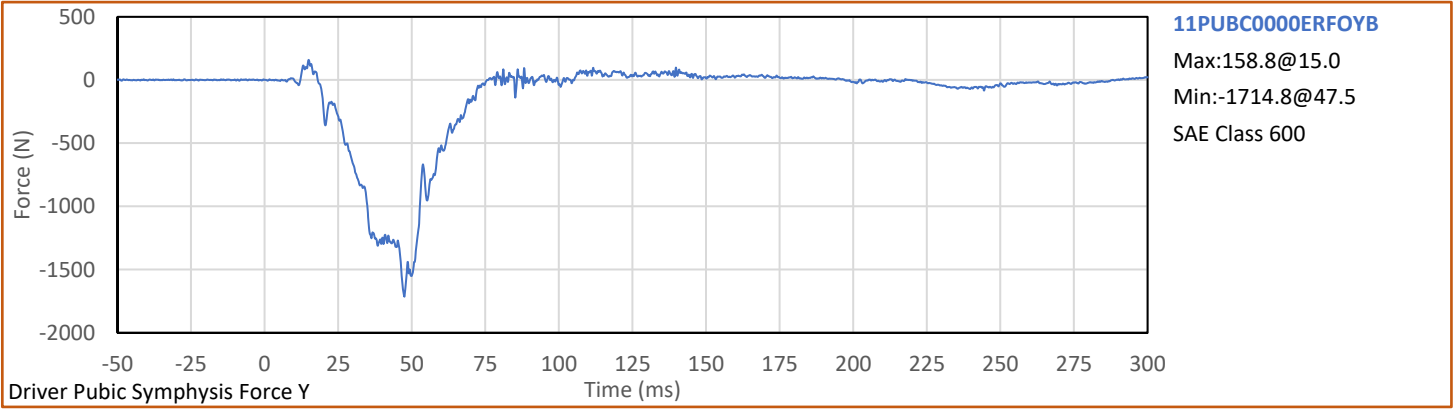


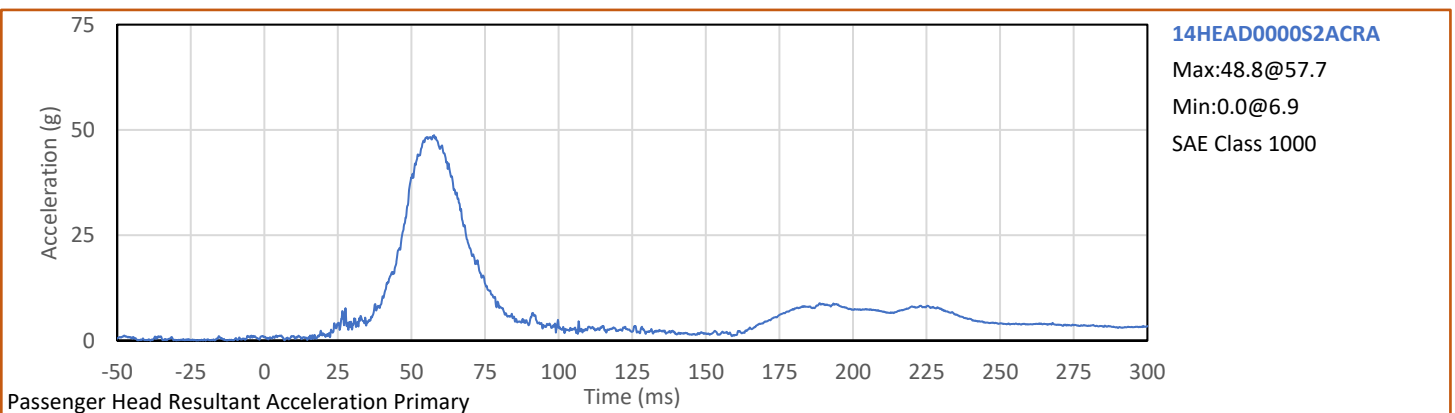
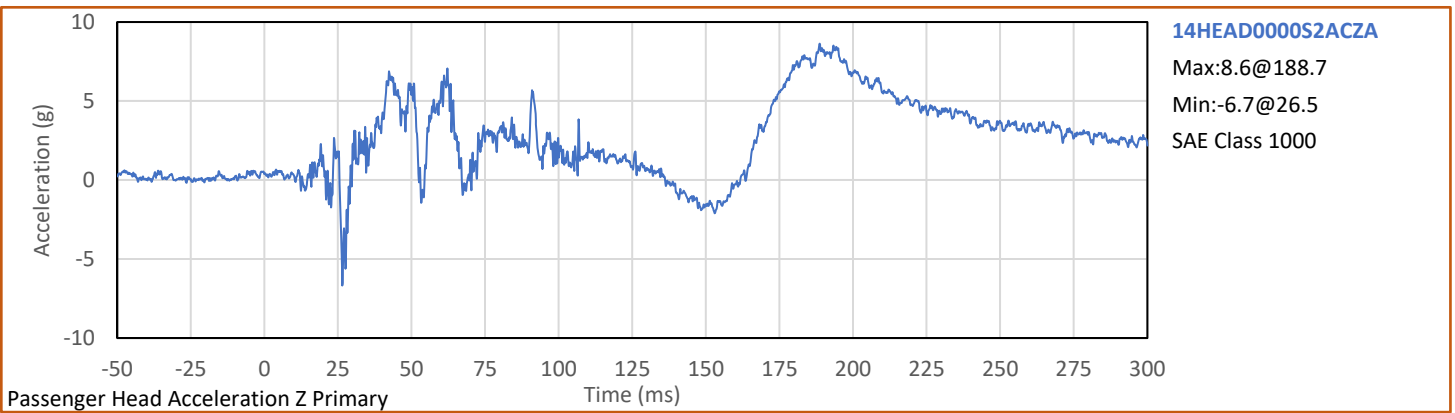
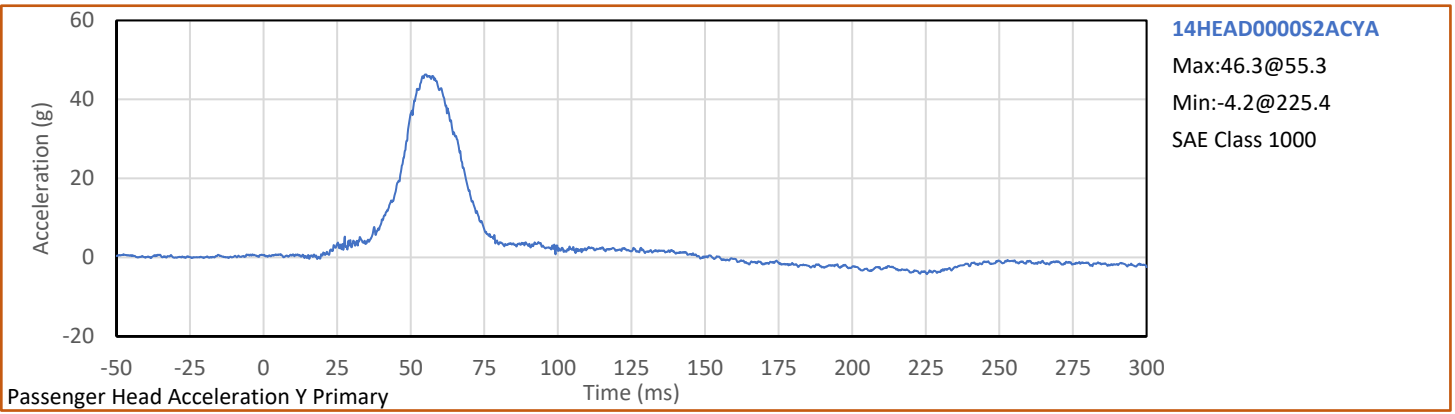
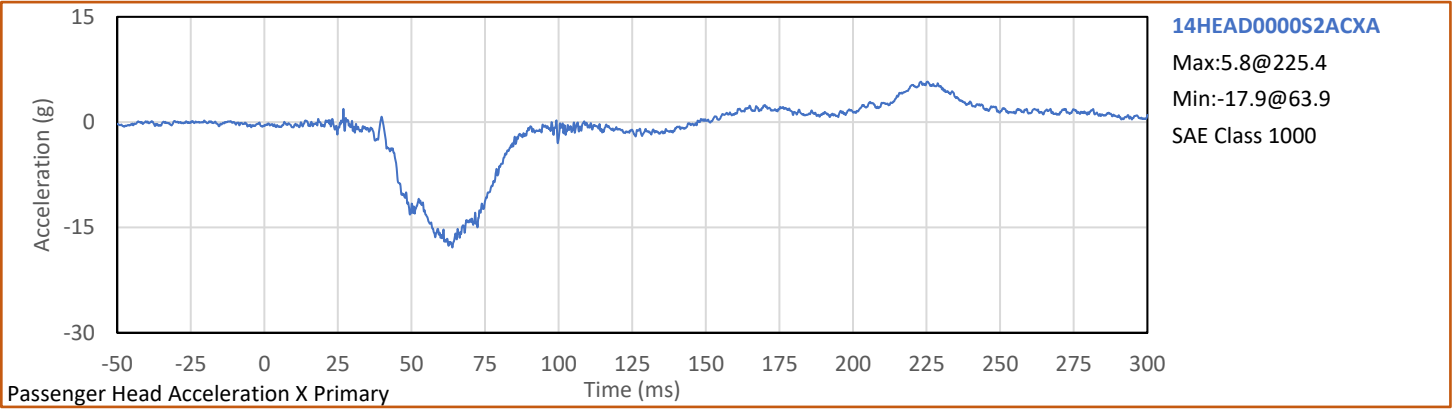


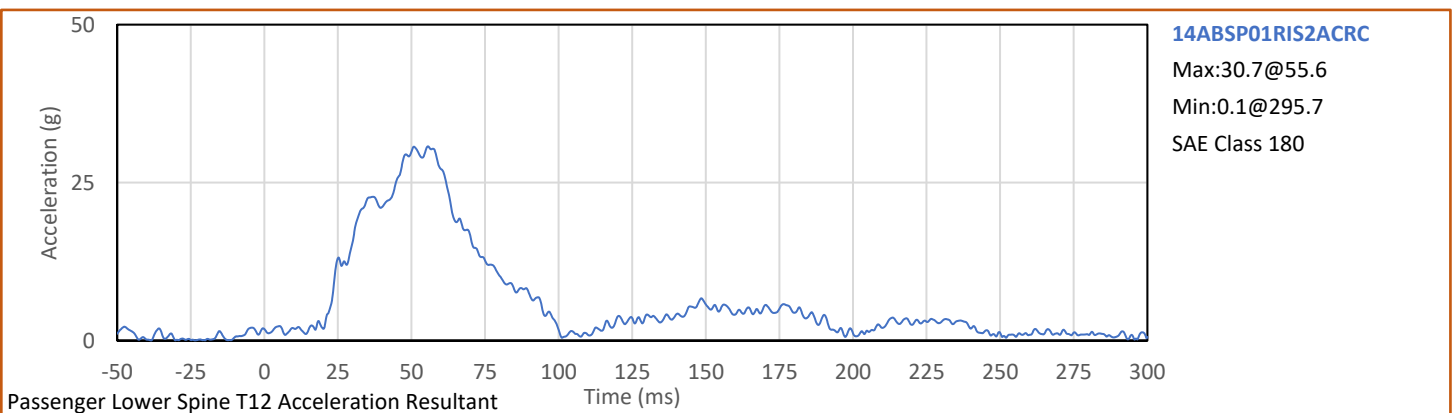
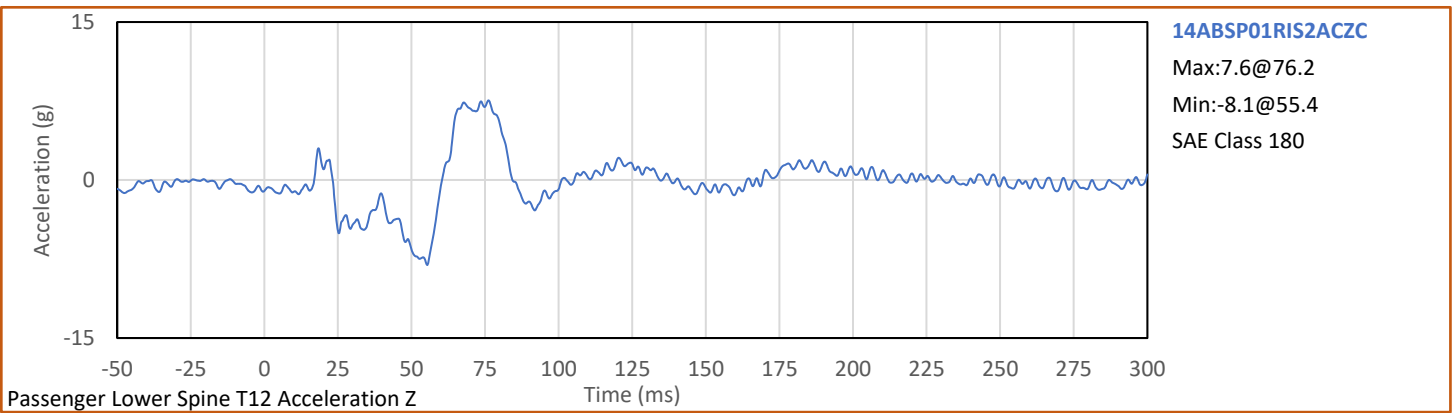
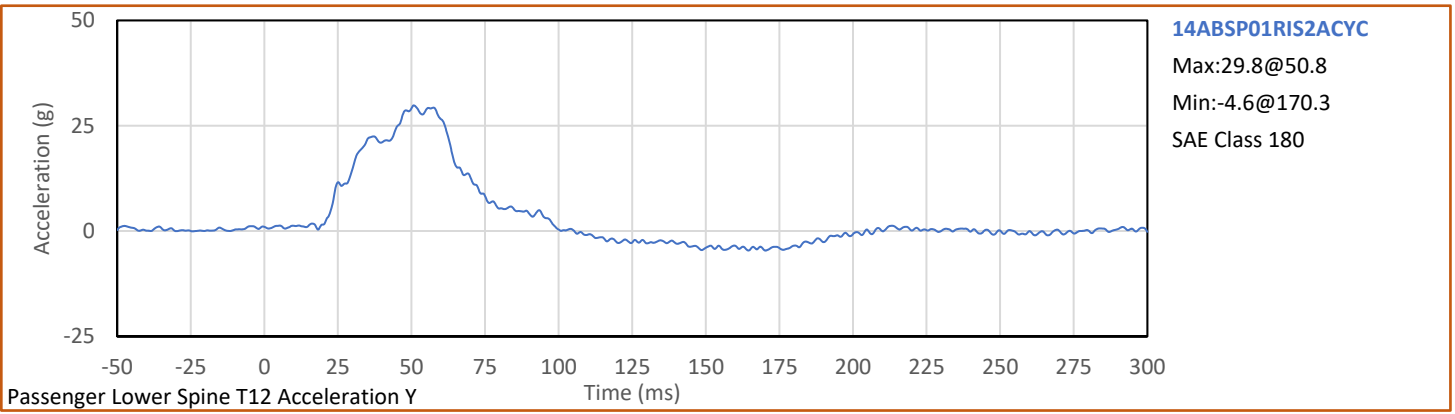
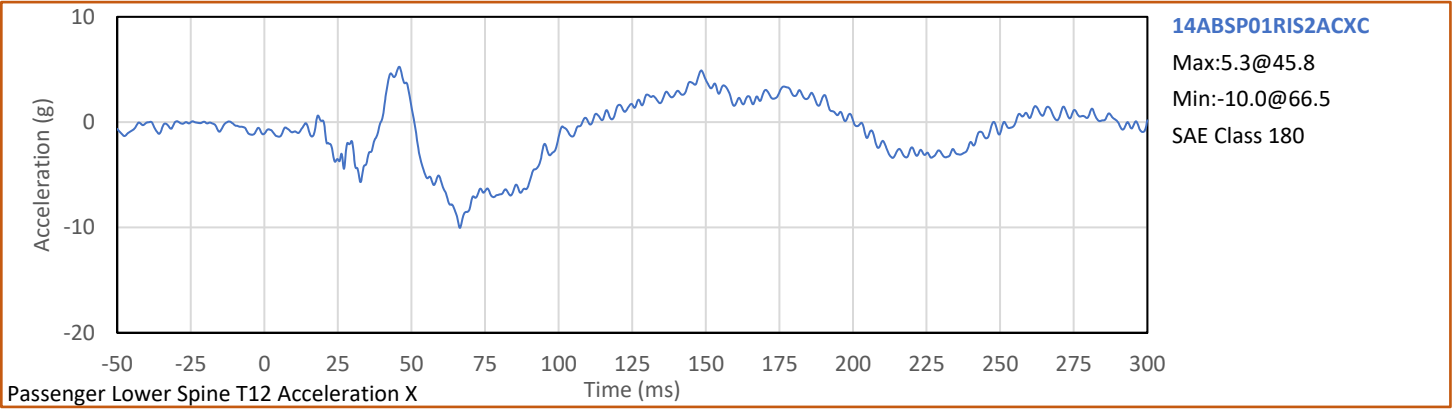


Test Vehicle: 2022 Chevrolet Bolt EUV 5-Door SUV  
Test Program: NCAP MDB Side Impact Test

NHTSA No.: M20220102  
Test Date: 6/16/2022







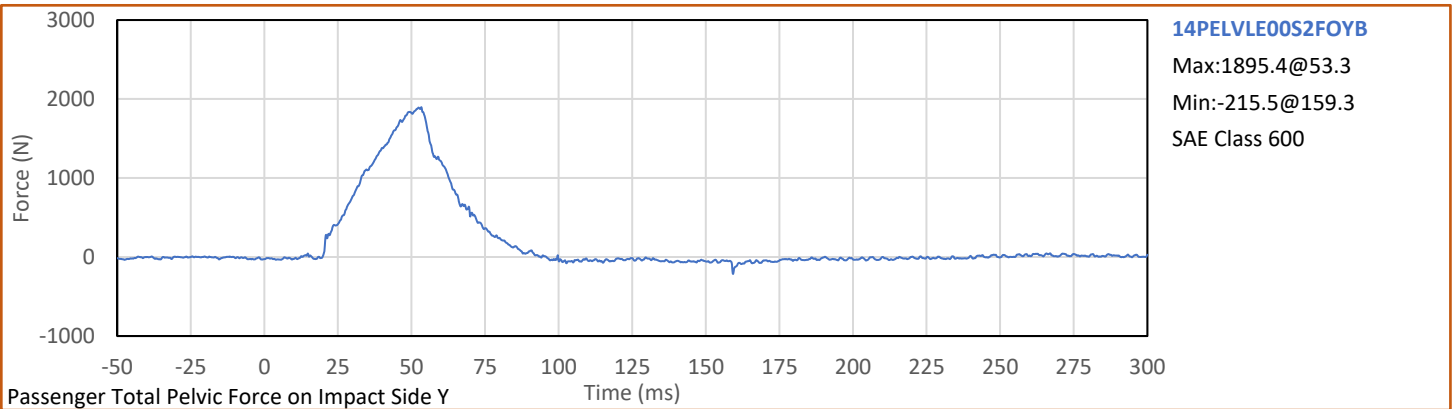
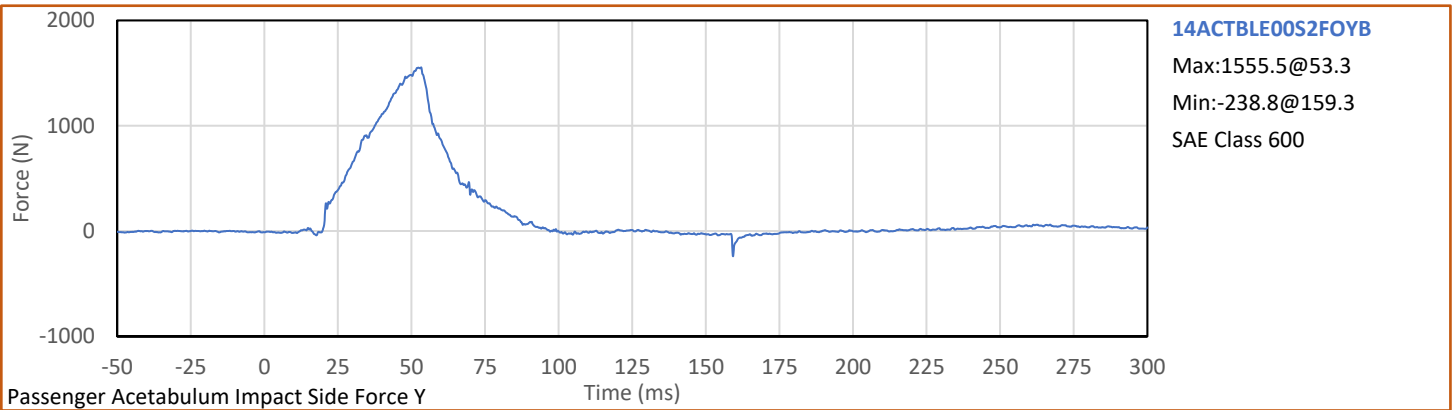
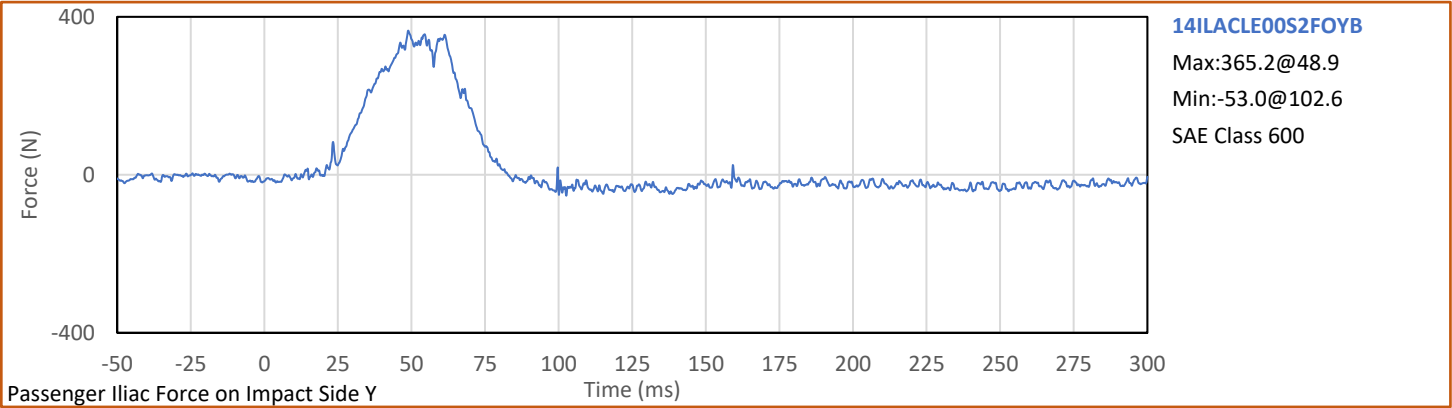
Test Vehicle: 2022 Chevrolet Bolt EUV 5-Door SUV

NHTSA No.: M20220102



Test Program: NCAP MDB Side Impact Test

Test Date: 6/16/2022



**APPENDIX C**  
**ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

**APPENDIX C**  
**Pre-Test ATD Qualification and Performance Verification**  
**ES-2re 50th Male Side Impact ATD, Left Side Configuration**  
**S/N: F037**

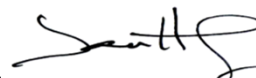
Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	22.0	Pass
Laboratory Relative Humidity	%	10	70	21	Pass
1 - Sitting Height	mm	900	918	911	Pass
2 - Seat to Shoulder Joint	mm	558	572	565	Pass
3 - Seat to Lower Face of Thoracic Spine Box	mm	346	356	353	Pass
4 - Seat to Hip Joint (bolt center)	mm	97	103	100	Pass
5 - Sole to Seat, Sitting	mm	433	451	438	Pass
6 - Head Width	mm	152	158	157	Pass
7 - Shoulder/Arm Width	mm	461	479	471	Pass
8 - Thorax Width	mm	322	332	325	Pass
9 - Abdomen Width	mm	273	287	279	Pass
10 - Pelvis Lap Width	mm	359	373	369	Pass
11 - Head Depth	mm	196	206	203	Pass
12 - Thorax Depth	mm	262	272	269	Pass
13 - Abdomen Depth	mm	194	204	201	Pass
14 - Pelvis Depth	mm	235	245	243	Pass
15 - Back of Buttocks to Hip Joint (bolt Center)	mm	150	160	156	Pass
16 - Back of Buttocks to Front Knee	mm	597	615	613	Pass
				Overall Test Results	Pass

Technician: \_\_\_\_\_



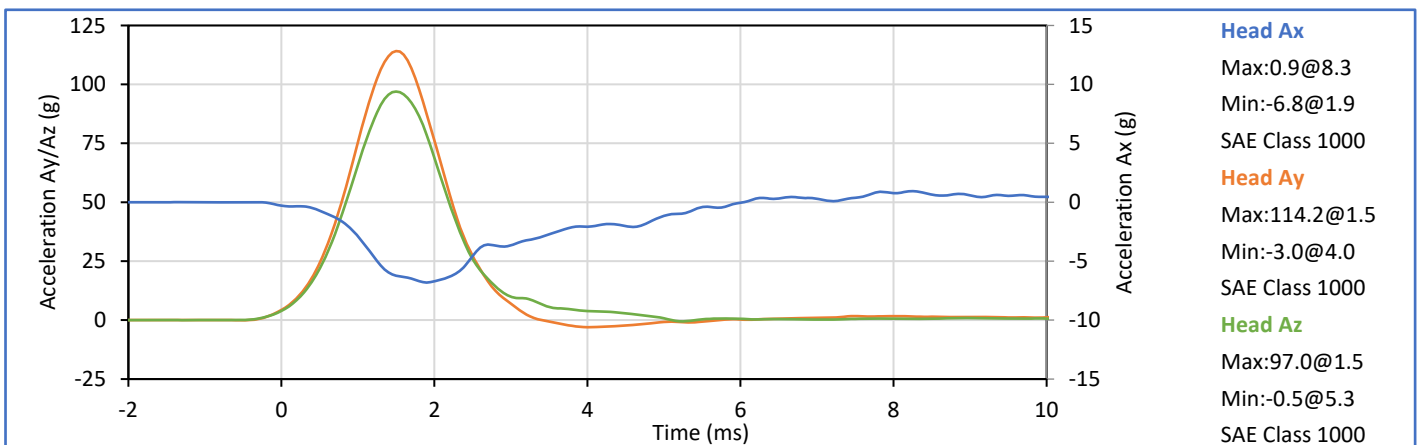
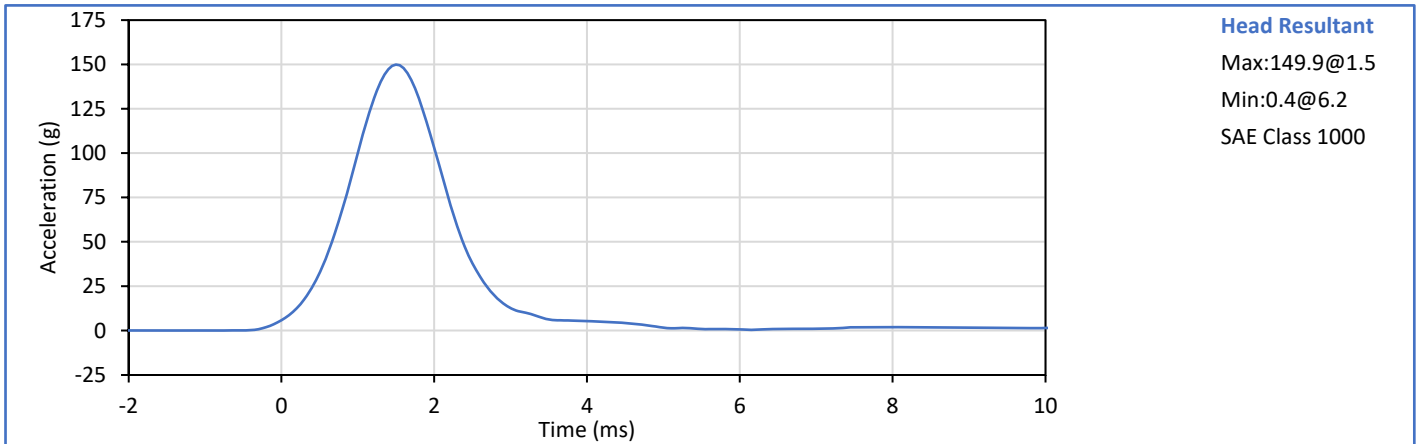
G. Holguin

Approved By: \_\_\_\_\_




J. Hernandez

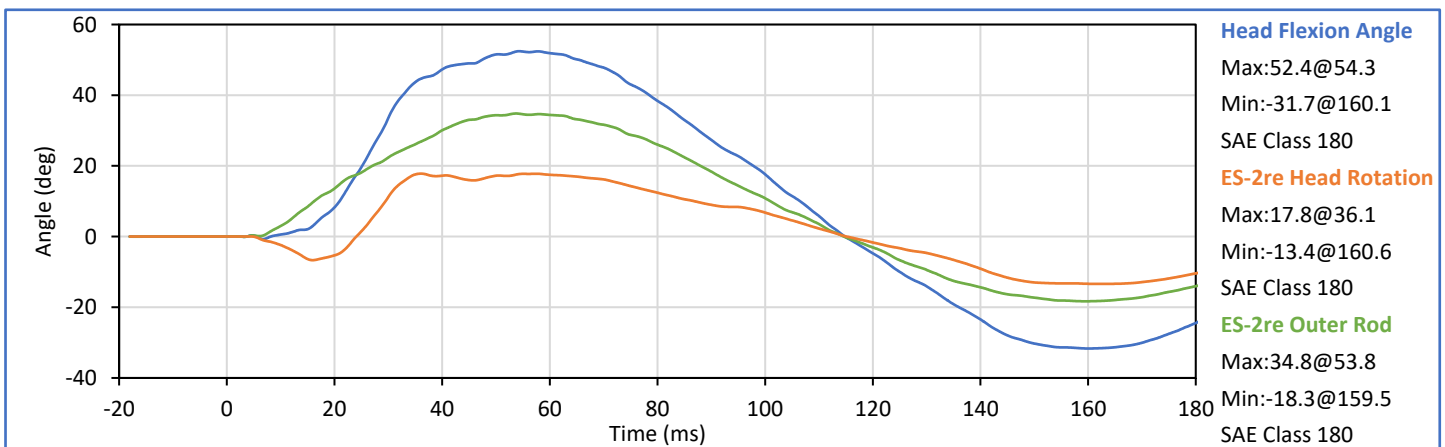
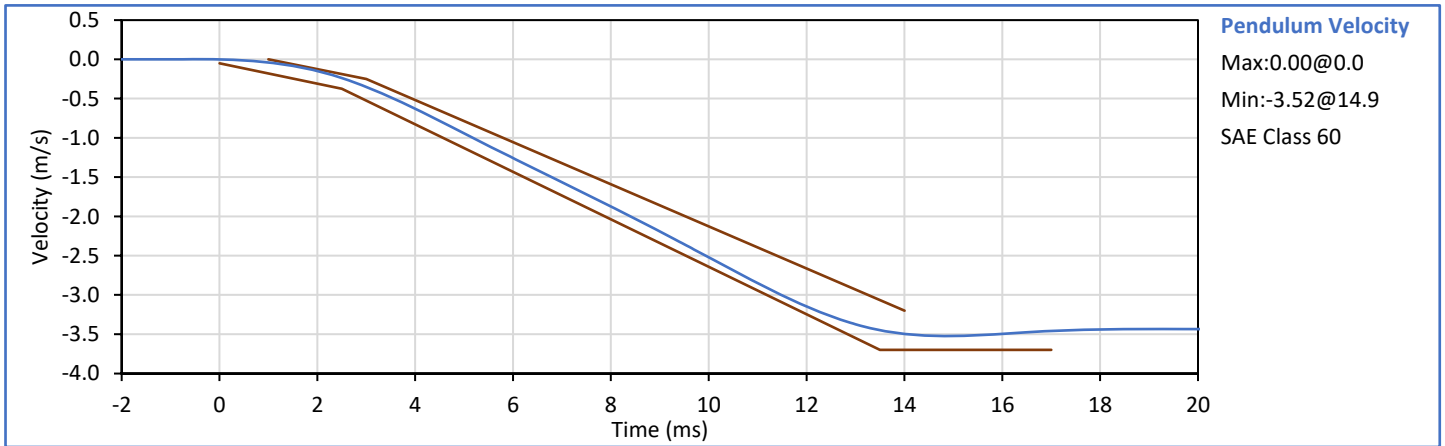
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.2	Pass
Laboratory Relative Humidity	%	10	70	31	Pass
Peak Resultant Acceleration	g	125.0	155.0	149.9	Pass
Peak Head Ax	g	-15.0	15.0	0.9	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
<b>Overall Test Results</b>					<b>Pass</b>




Technician:   
G. Holguin

Approved By:   
J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	33	Pass
Pendulum Velocity	m/s	3.30	3.50	3.42	Pass
Peak Headform Flexion	deg	49.0	59.0	52.4	Pass
Time of Peak Headform Flexion	ms	54.0	66.0	54.3	Pass
Flexion Decay (Peak to zero)	ms	53.0	88.0	60.5	Pass
<b>Overall Test Results</b>					<b>Pass</b>



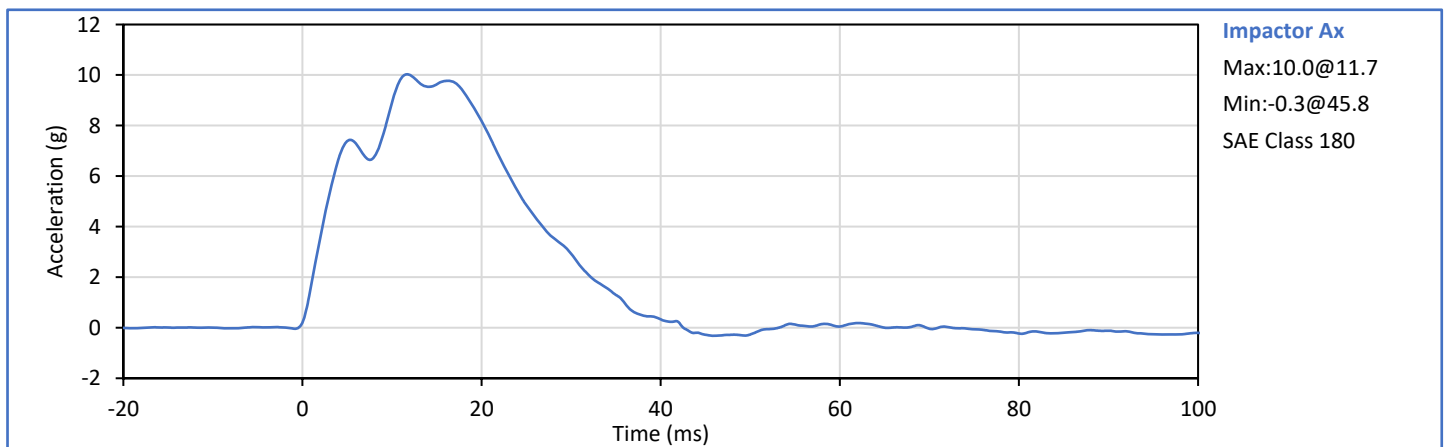
Technician:   
G. Holguin

Approved By:   
J. Hernandez

ATD Serial No.: F037

Test Date: 2022-06-06

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Impactor Velocity	m/s	4.20	4.40	4.30	Pass
Peak Impactor Ax	g	7.5	10.5	10.0	Pass
Overall Test Results					Pass



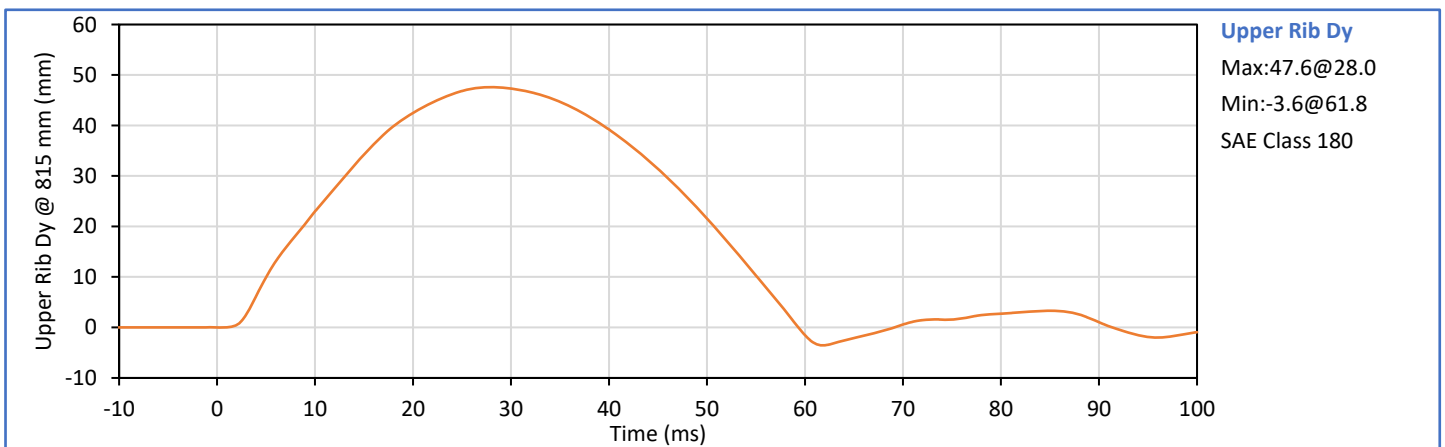
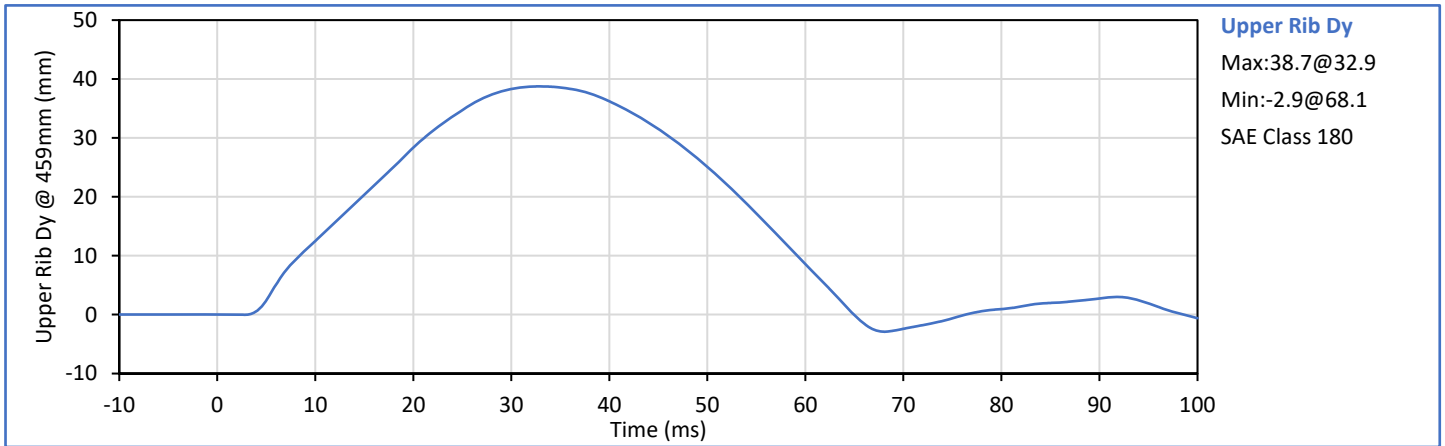
Technician: \_\_\_\_\_

G. Holguin

Approved By: \_\_\_\_\_

J. Hernandez

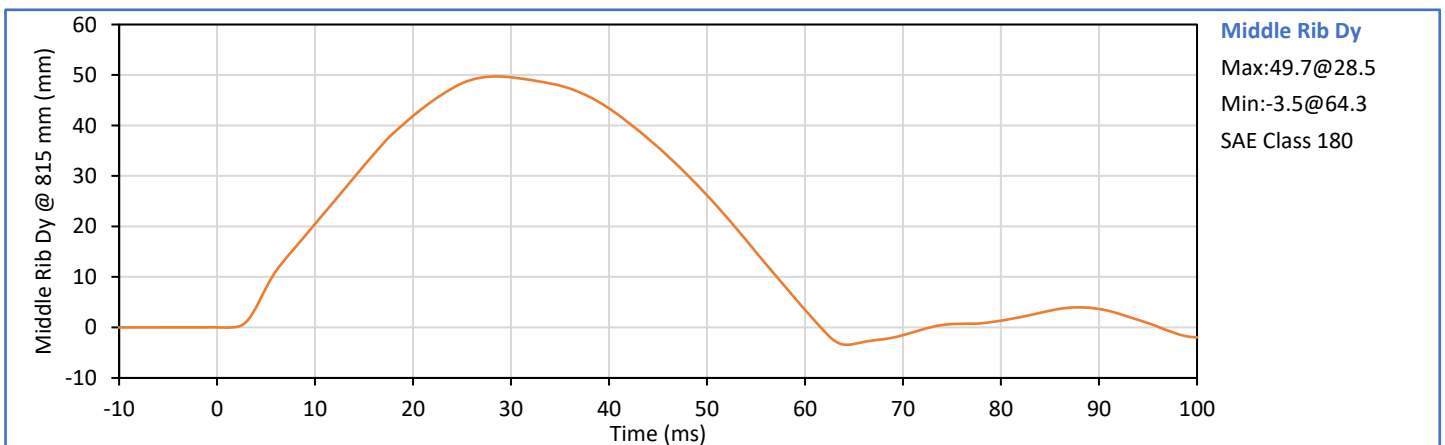
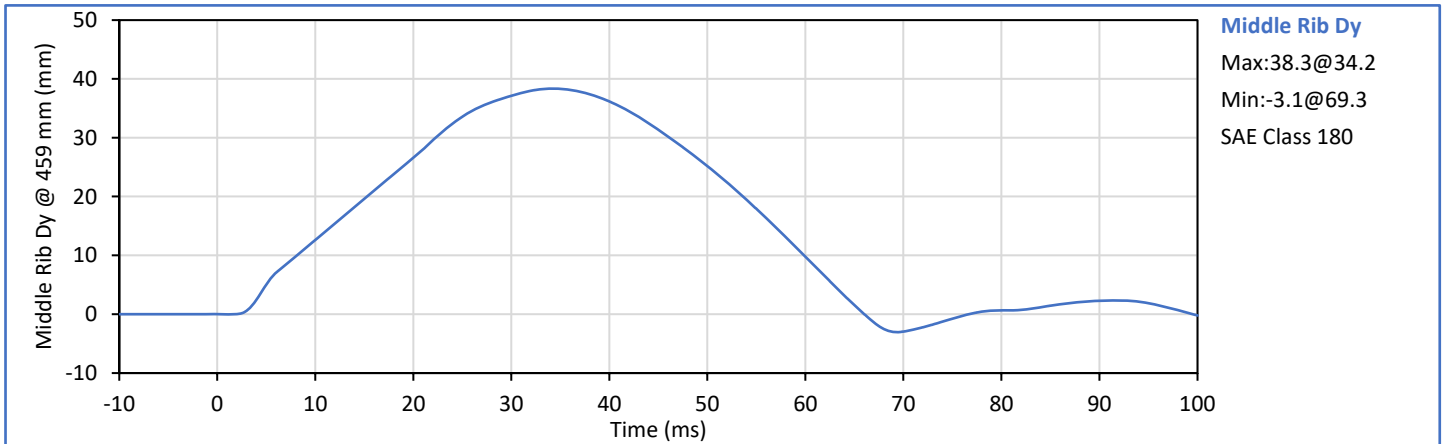
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Relative Humidity	%	10	70	32	Pass
Upper Rib Dy @ 459mm	mm	36.0	40.0	38.7	Pass
Upper Rib Dy @ 815mm	mm	46.0	51.0	47.6	Pass
Overall Test Results					Pass




Technician:           *G. Holguin*            
G. Holguin

Approved By:           *J. Hernandez*            
J. Hernandez

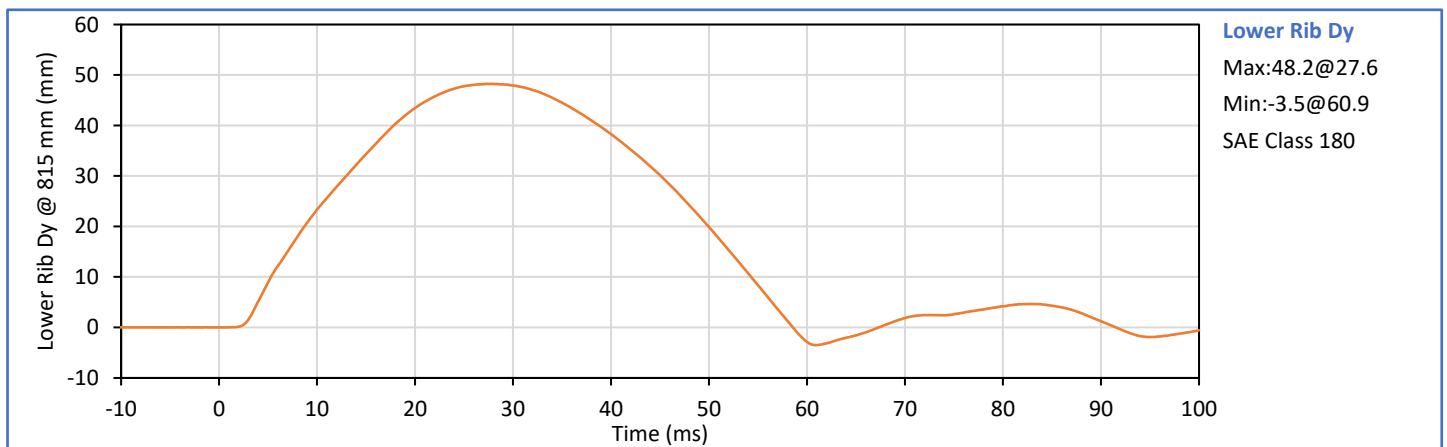
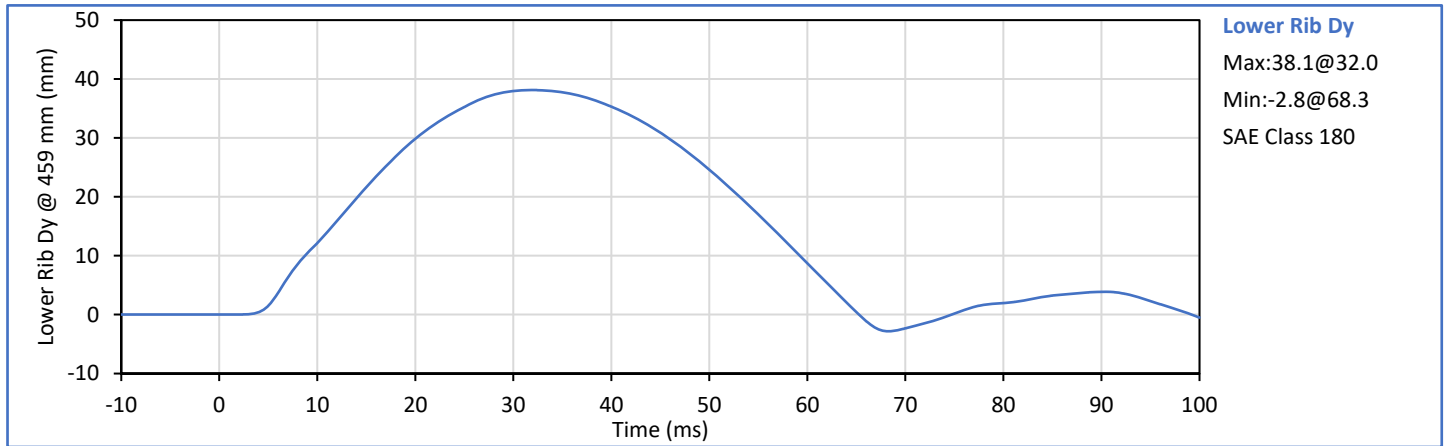
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.3	Pass
Laboratory Relative Humidity	%	10	70	32	Pass
Middle Rib Dy @ 459mm	mm	36.0	40.0	38.3	Pass
Middle Rib Dy @ 815mm	mm	46.0	51.0	49.7	Pass
Overall Test Results					Pass



Technician:   
G. Holguin

Approved By:   
J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.5	Pass
Laboratory Relative Humidity	%	10	70	33	Pass
Lower Rib Dy @ 459mm	mm	36.0	40.0	38.1	Pass
Lower Rib Dy @ 815mm	mm	46.0	51.0	48.2	Pass
Overall Test Results					Pass



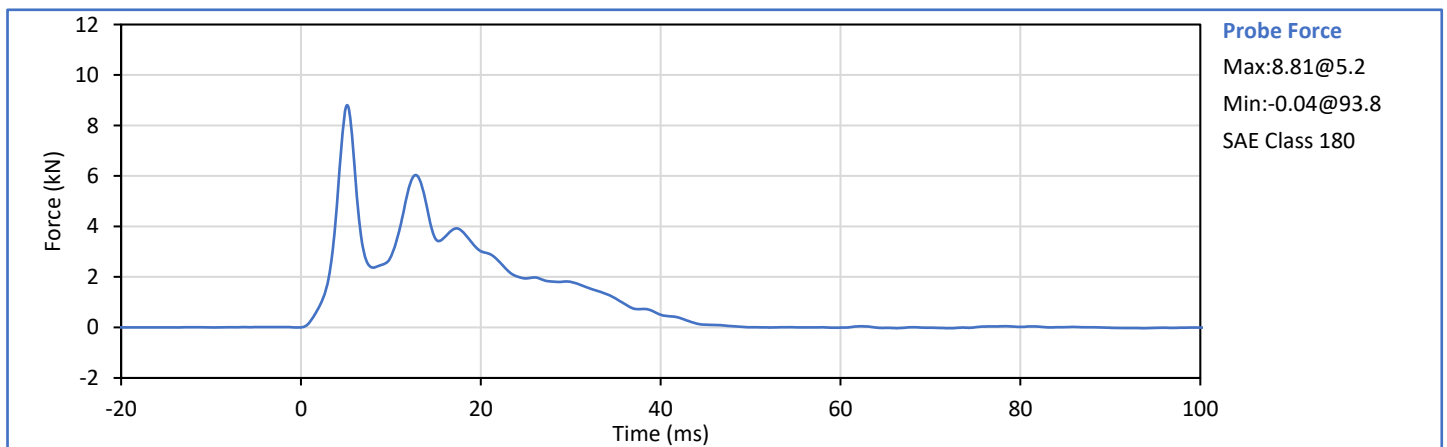
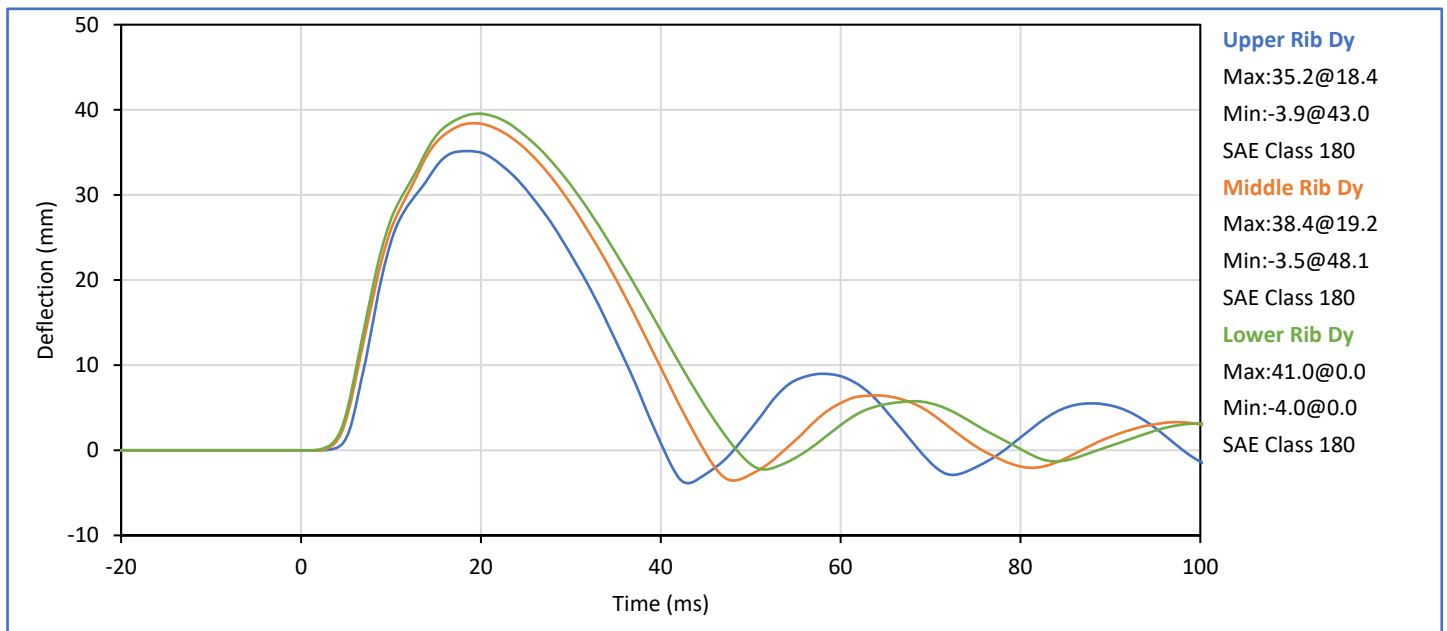
Technician: \_\_\_\_\_

G. Holguin


Approved By: \_\_\_\_\_

J. Hernandez

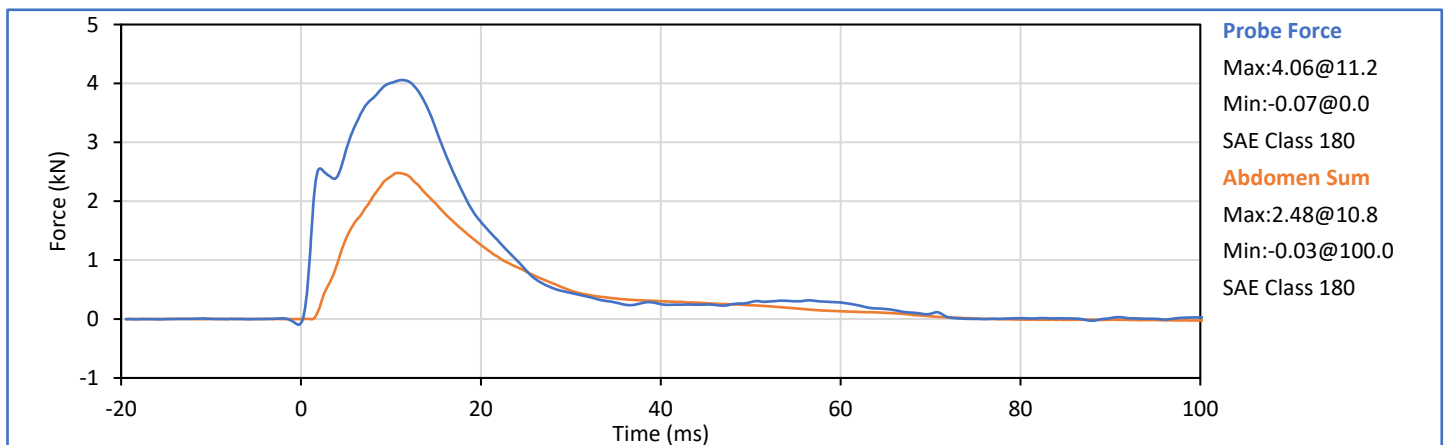
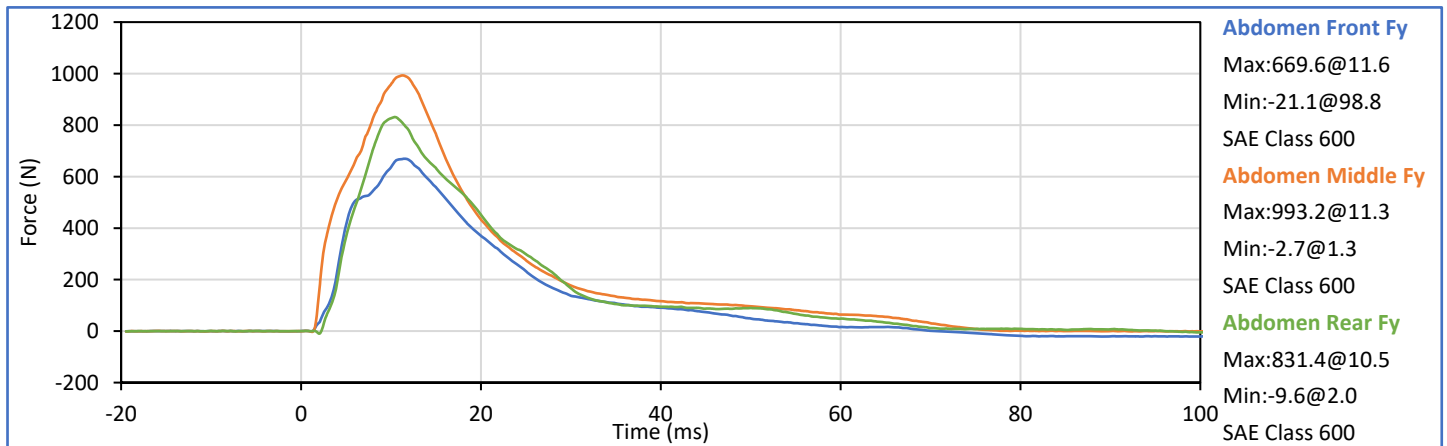
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Impactor Velocity	m/s	5.40	5.60	5.51	Pass
Peak Upper Rib Dy	mm	34.0	41.0	35.2	Pass
Peak Middle Rib Dy	mm	37.0	45.0	38.4	Pass
Peak Lower Rib Dy	mm	37.0	44.0	39.6	Pass
Peak Impactor Force After 6 ms	kN	5.10	6.20	6.17	Pass
<b>Overall Test Results</b>					<b>Pass</b>



Technician:   
G. Holguin

Approved By:   
J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	3.90	4.10	3.98	Pass
Peak Impactor Force	kN	4.00	4.80	4.06	Pass
Time of Peak Impactor Force	ms	10.6	13.0	11.2	Pass
Sum of Abdomen Forces	kN	2.20	2.70	2.48	Pass
Time of Peak Sum Abdomen Force	ms	10.0	12.3	10.8	Pass
<b>Overall Test Results</b>					<b>Pass</b>



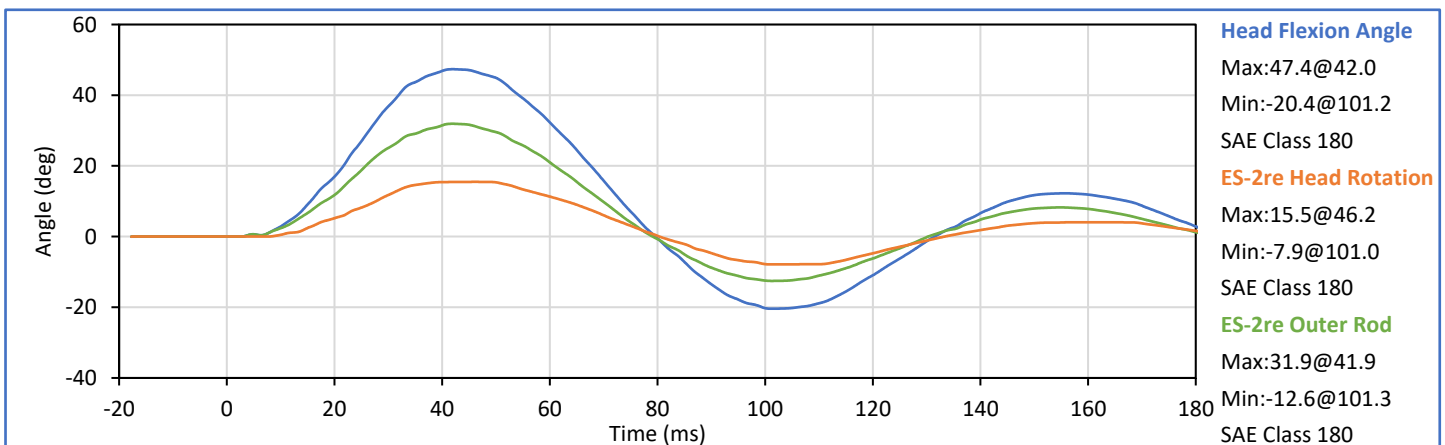
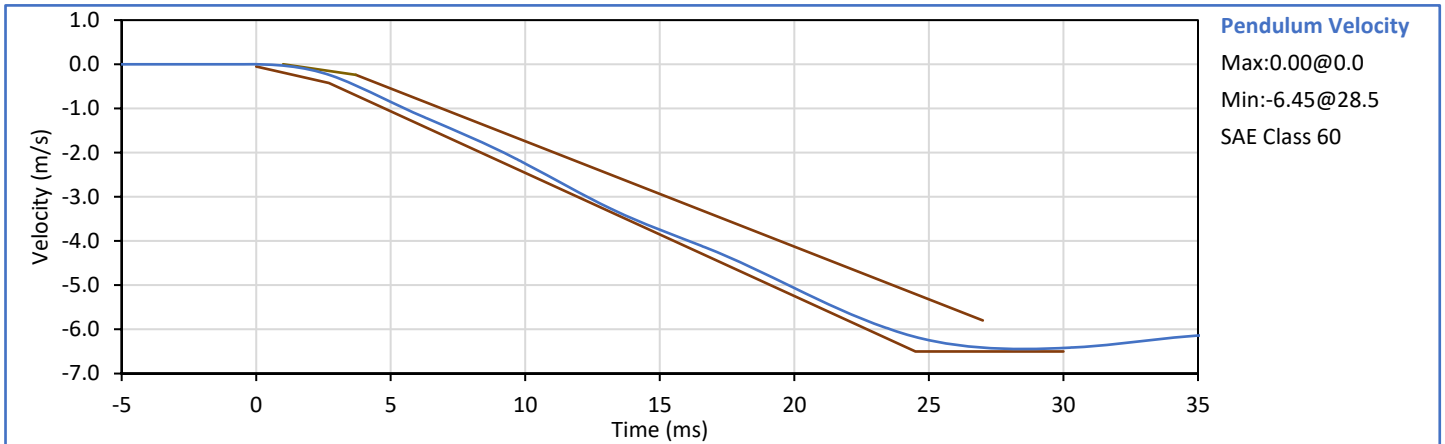
Technician: \_\_\_\_\_

G. Holguin


Approved By: \_\_\_\_\_

J. Hernandez

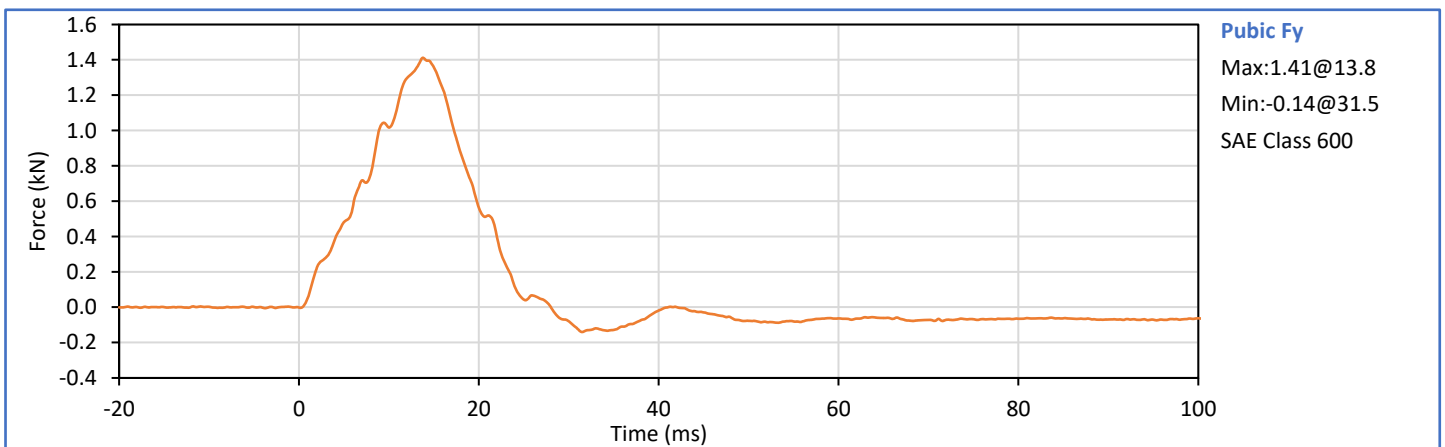
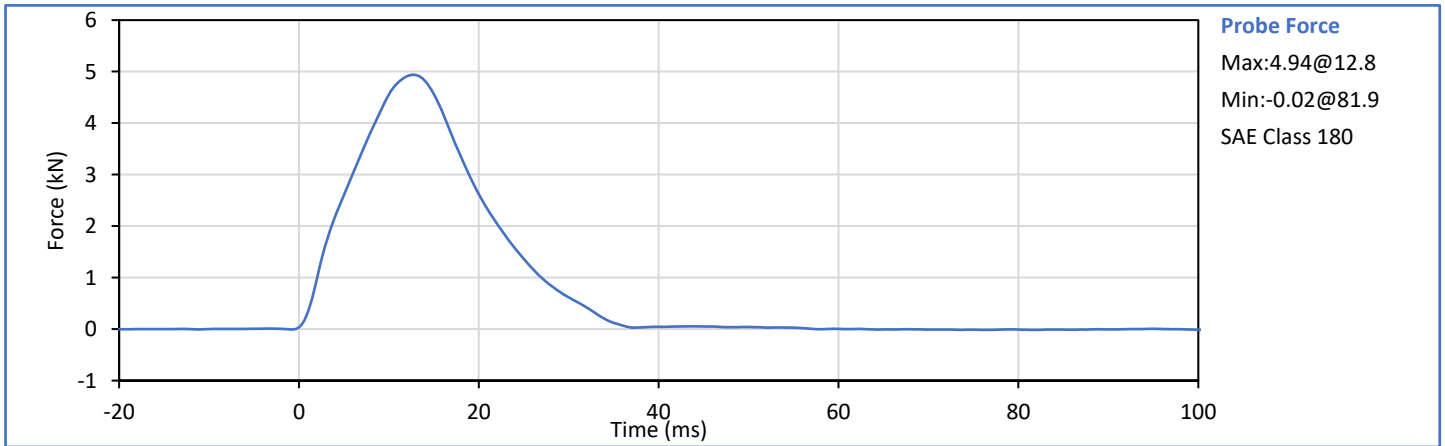
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	37	Pass
Pendulum Velocity	m/s	5.95	6.15	6.14	Pass
Peak Headform Flexion	deg	45.0	55.0	47.4	Pass
Time of Peak Headform Flexion	ms	39.0	53.0	42.0	Pass
Flexion Decay (Peak to zero)	ms	37.0	57.0	37.6	Pass
<b>Overall Test Results</b>					<b>Pass</b>




Technician:   
G. Holguin

Approved By:   
J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Impactor Force	kN	4.70	5.40	4.94	Pass
Time of Peak Impactor Force	ms	11.8	16.1	12.8	Pass
Pubic Symphysis Fy	kN	1.23	1.59	1.41	Pass
Time of Peak Pubic Symphysis Fy	ms	12.2	17.0	13.8	Pass
<b>Overall Test Results</b>					<b>Pass</b>



Technician:   
G. Holguin

Approved By:   
J. Hernandez

**APPENDIX C**  
**Pre-Test ATD Qualification and Performance Verification**  
**SID-IIs Small Side Impact ATD, Left Side Configuration**  
**S/N: 299**

ATD Serial No.: 299

Test Date: 2022-05-16

Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	22	Pass
A - Sitting Height	mm	772	788	780	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	87	Pass
D - H Point From Seatback	mm	141	151	144	Pass
E - Shoulder Pivot From Backline	mm	97	107	100	Pass
F - Thigh Clearance	mm	119	135	126	Pass
G - Head Breadth	mm	140	148	145	Pass
H - Head Back From Backline	mm	40	46	43	Pass
I - Head Depth	mm	178	188	182	Pass
J - Head Circumference	mm	541	551	547	Pass
K - Buttock To Knee Length	mm	514	540	537	Pass
L - Popliteal Height	mm	343	369	351	Pass
K - Knee Pivot To Floor Height	mm	392	409	396	Pass
N - Buttock Popliteal Length	mm	416	442	424	Pass
O - Chest Depth W/O Jacket	mm	195	211	208	Pass
P - Foot Length	mm	216	232	226	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	317	Pass
R - Arm Length	mm	249	259	257	Pass
S - Knee Joint To Seatback	mm	477	493	487	Pass
V - Shoulder Width	mm	341	357	348	Pass
W - Foot Width	mm	78	94	82	Pass
Y - Chest Circumference W/Jacket	mm	851	881	856	Pass
Z - Waist Circumference	mm	761	791	786	Pass
				Overall Test Results	Pass

Technician:



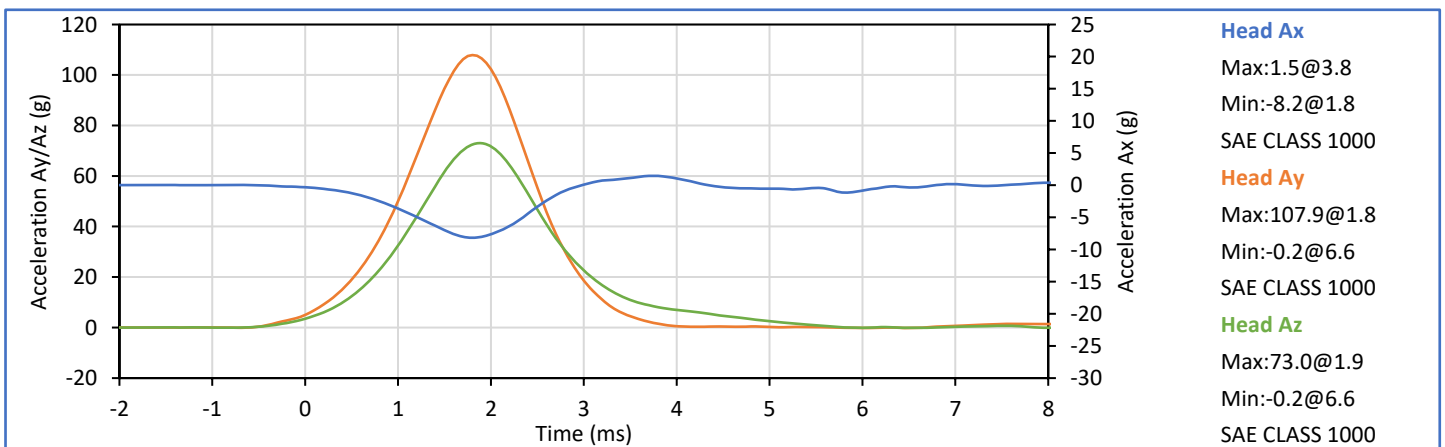
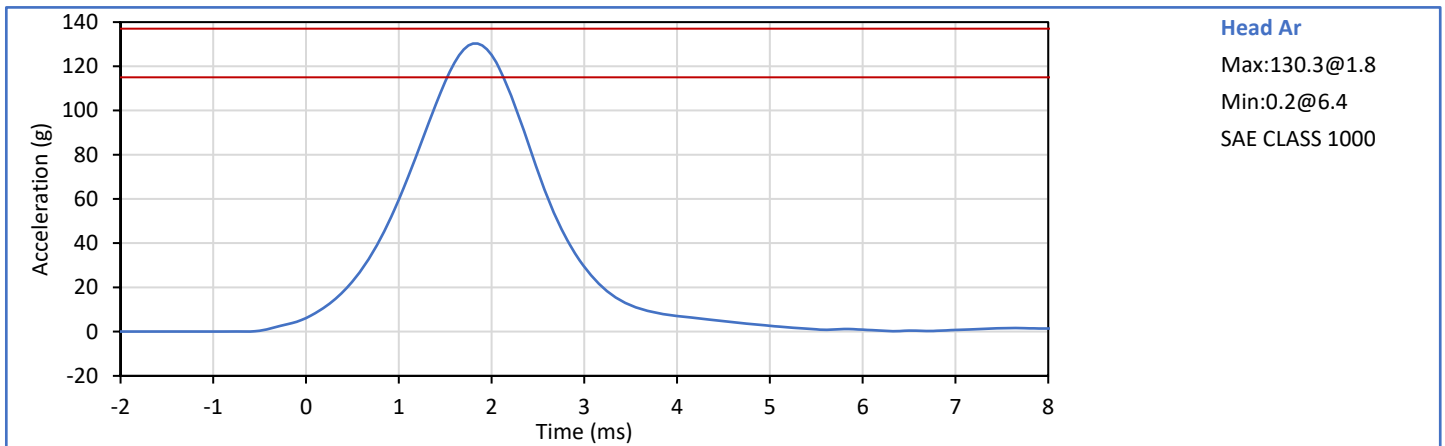
G. Holguin

Approved By:



J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.7	Pass
Laboratory Relative Humidity	%	10	70	32	Pass
Peak Resultant Acceleration	g	115.0	137.0	130.3	Pass
Peak Head Ax	g	-15.0	15.0	-8.2	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
<b>Overall Test Results</b>					<b>Pass</b>



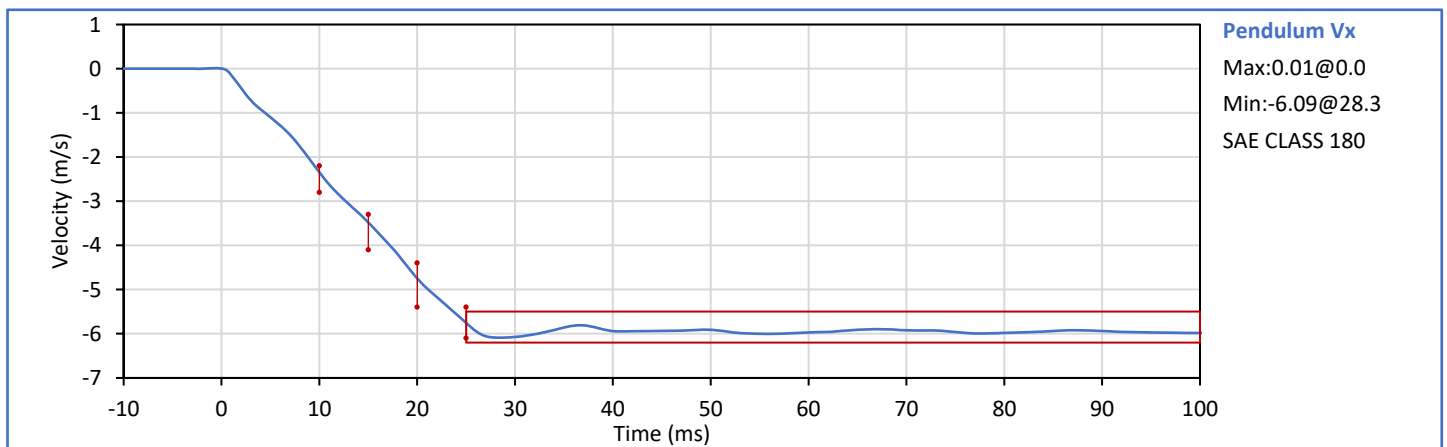
Technician: \_\_\_\_\_

G. Holguin

Approved By: \_\_\_\_\_

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.8	Pass
Laboratory Relative Humidity	%	10	70	34	Pass
Pendulum Velocity	m/s	5.51	5.63	5.55	Pass
Pendulum Decel at 10 ms	m/s	-2.80	-2.20	-2.35	Pass
Pendulum Decel at 15 ms	m/s	-4.10	-3.30	-3.48	Pass
Pendulum Decel at 20 ms	m/s	-5.40	-4.40	-4.75	Pass
Pendulum Decel at 25 ms	m/s	-6.10	-5.40	-5.76	Pass
Pendulum Decel from 25-100 ms	m/s	-6.20	-5.50	-6.09/-5.76	Pass
Peak "D" Plane Rotation	deg	-81.0	-71.0	-73.6	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	61.5	Pass
Peak Occ. Condyle Moment	Nm	36.0	44.0	42.8	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	112.8	Pass
Overall Test Results					Pass



Technician: \_\_\_\_\_

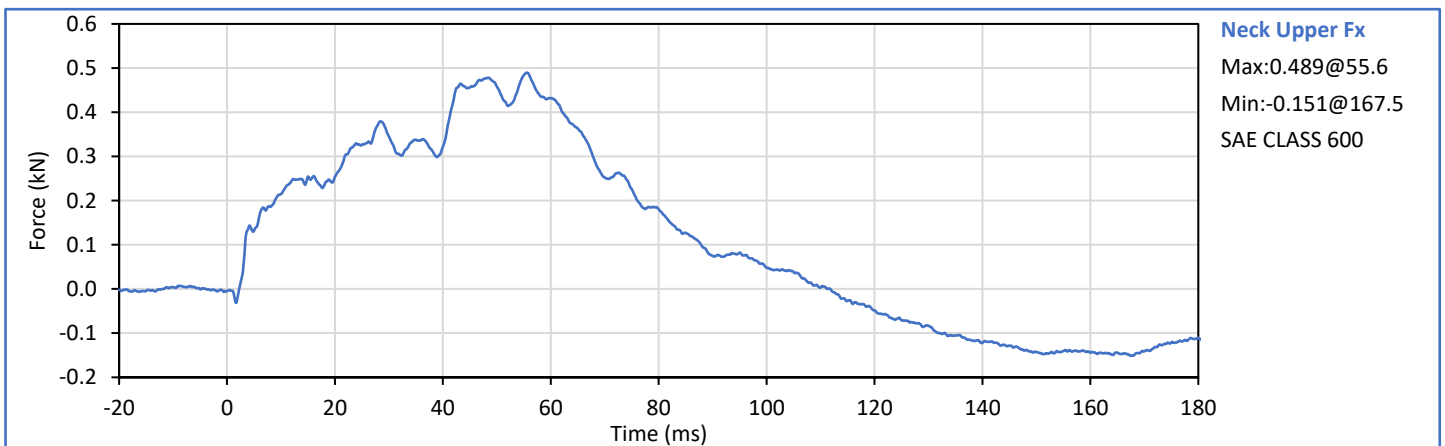
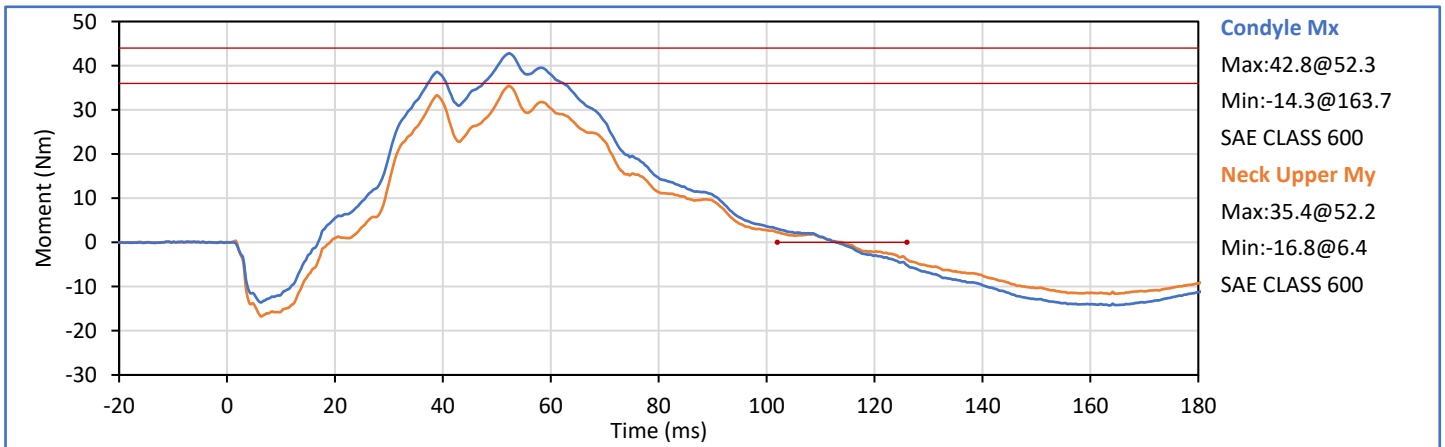
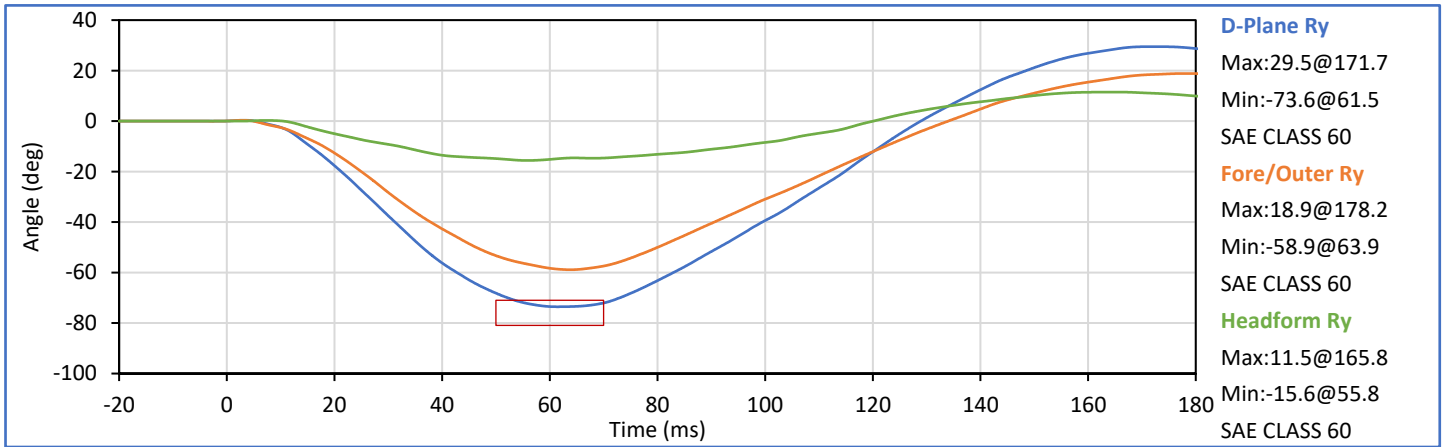
*G. Holguin*

G. Holguin

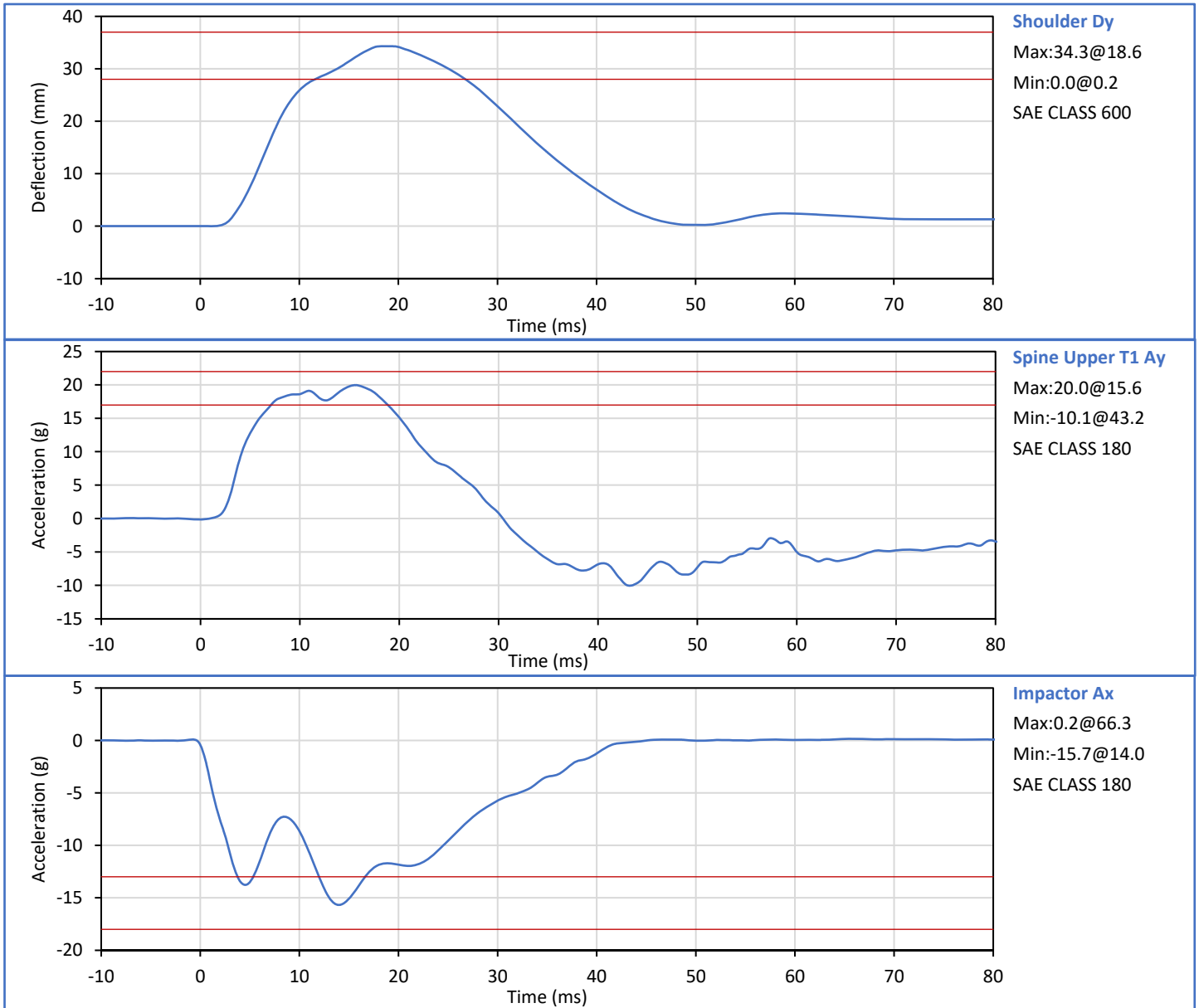
Approved By: \_\_\_\_\_

*J. Hernandez*


J. Hernandez



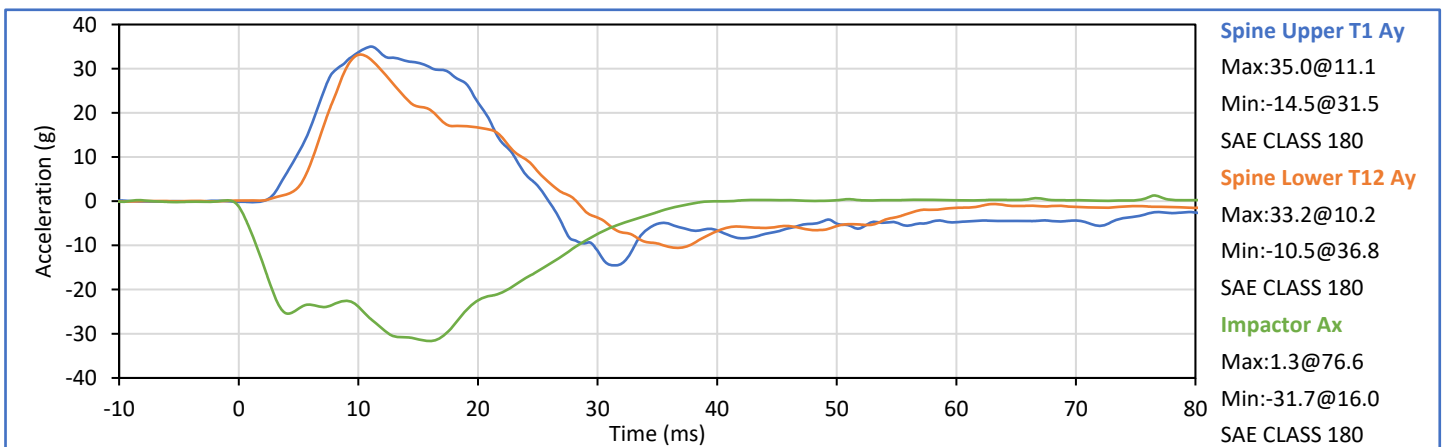
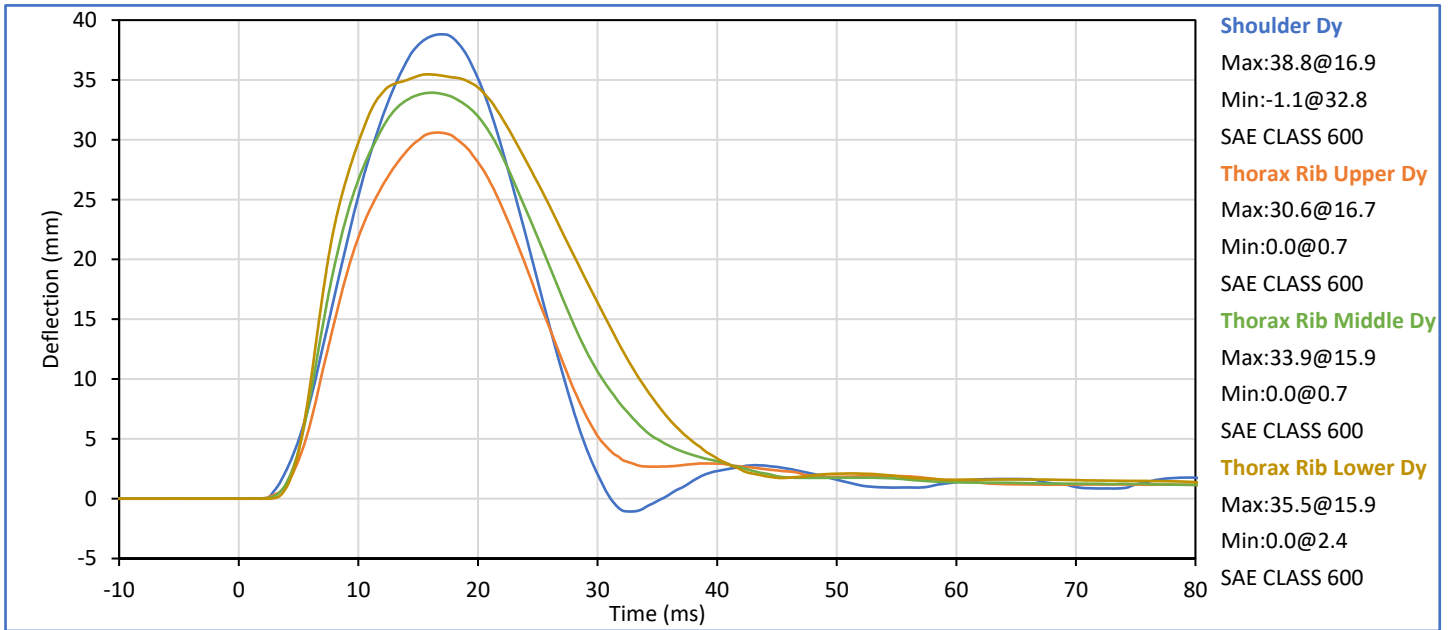
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.8	Pass
Laboratory Relative Humidity	%	10	70	31	Pass
Impactor Velocity	m/s	4.20	4.40	4.31	Pass
Peak Shoulder Dy	mm	28.0	37.0	34.3	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	20.0	Pass
Peak Impactor Ax	g	-18.0	-13.0	-15.7	Pass
<b>Overall Test Results</b>					<b>Pass</b>



Technician:   
G. Holguin

Approved By:   
J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	22.0	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	6.60	6.80	6.71	Pass
Peak Shoulder Dy	mm	31.0	40.0	38.8	Pass
Peak Upper Rib Dy	mm	25.0	32.0	30.6	Pass
Peak Middle Rib Dy	mm	30.0	36.0	33.9	Pass
Peak Lower Rib Dy	mm	32.0	38.0	35.5	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	35.0	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	33.2	Pass
Peak Impactor Ax	g	-36.0	-30.0	-31.7	Pass
Overall Test Results					Pass



Technician:

*G. Holguin*

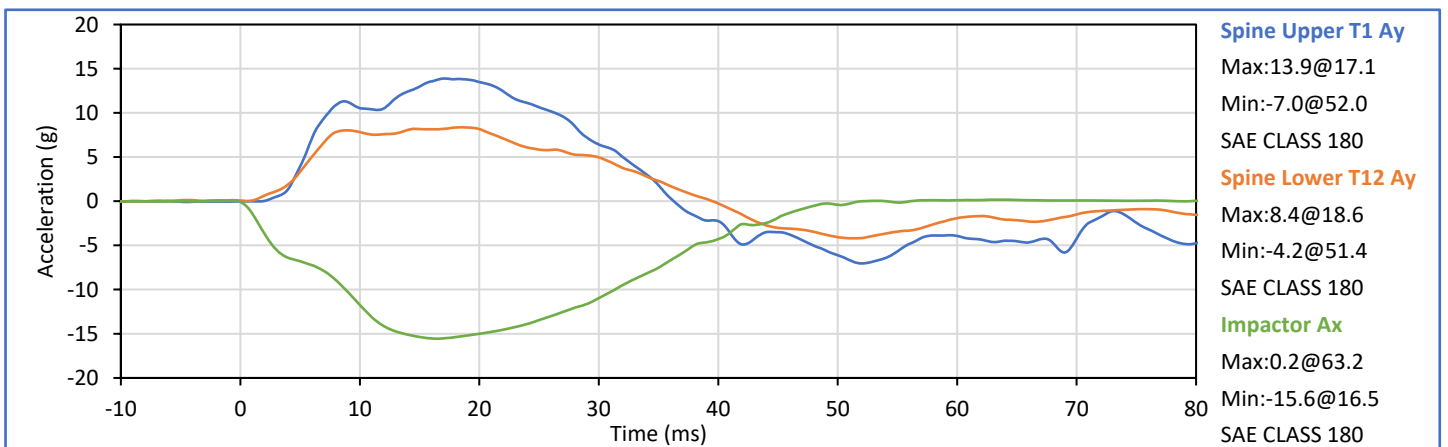
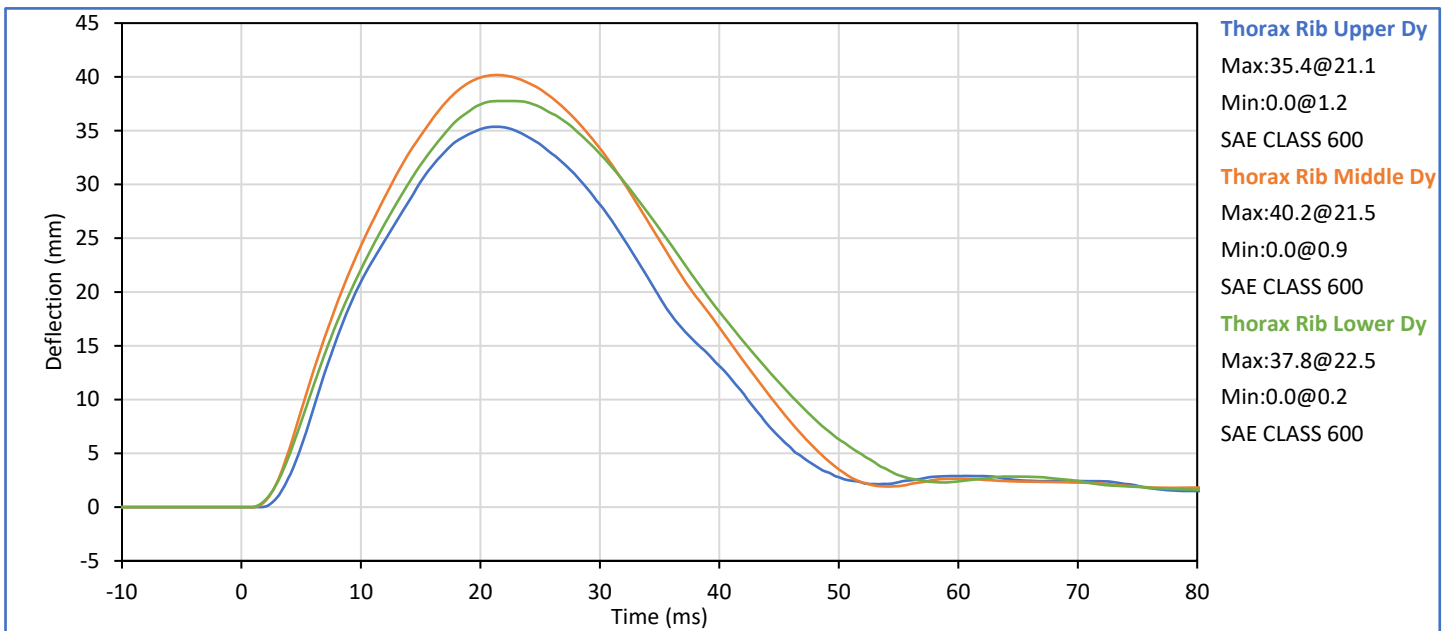
G. Holguin

Approved By:

*J. Hernandez*

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	31	Pass
Impactor Velocity	m/s	4.20	4.40	4.30	Pass
Peak Thorax Rib Upper Dy	mm	32.0	40.0	35.4	Pass
Peak Thorax Rib Middle Dy	mm	39.0	45.0	40.2	Pass
Peak Thorax Rib Lower Dy	mm	35.0	43.0	37.8	Pass
Peak Spine Upper T1 Ay	g	13.0	17.0	13.9	Pass
Peak Spine Lower T12 Ay	g	7.0	11.0	8.4	Pass
Peak Impactor Ax	g	-18.0	-14.0	-15.6	Pass
Overall Test Results					Pass



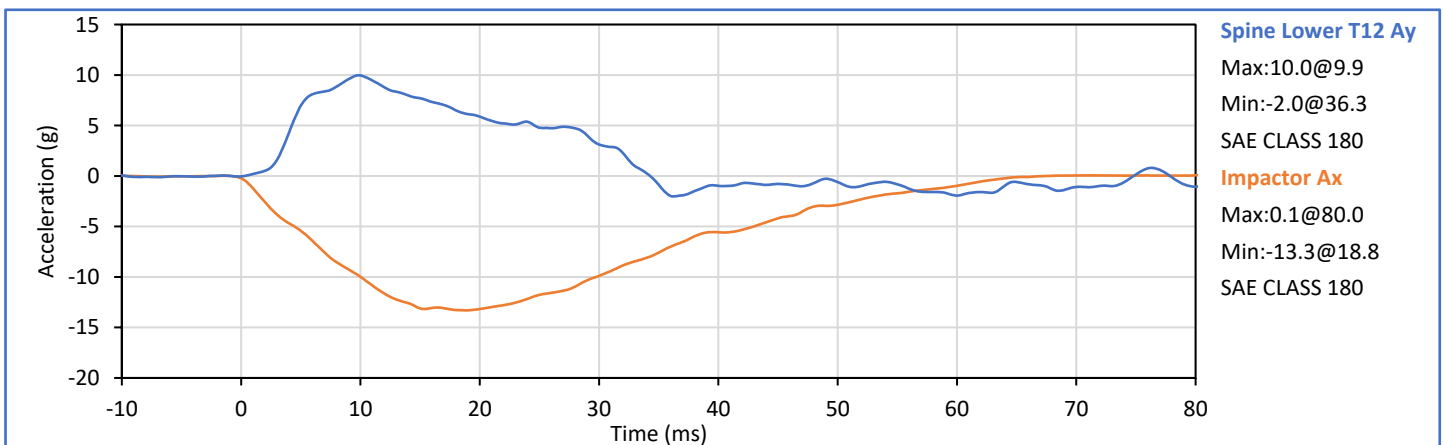
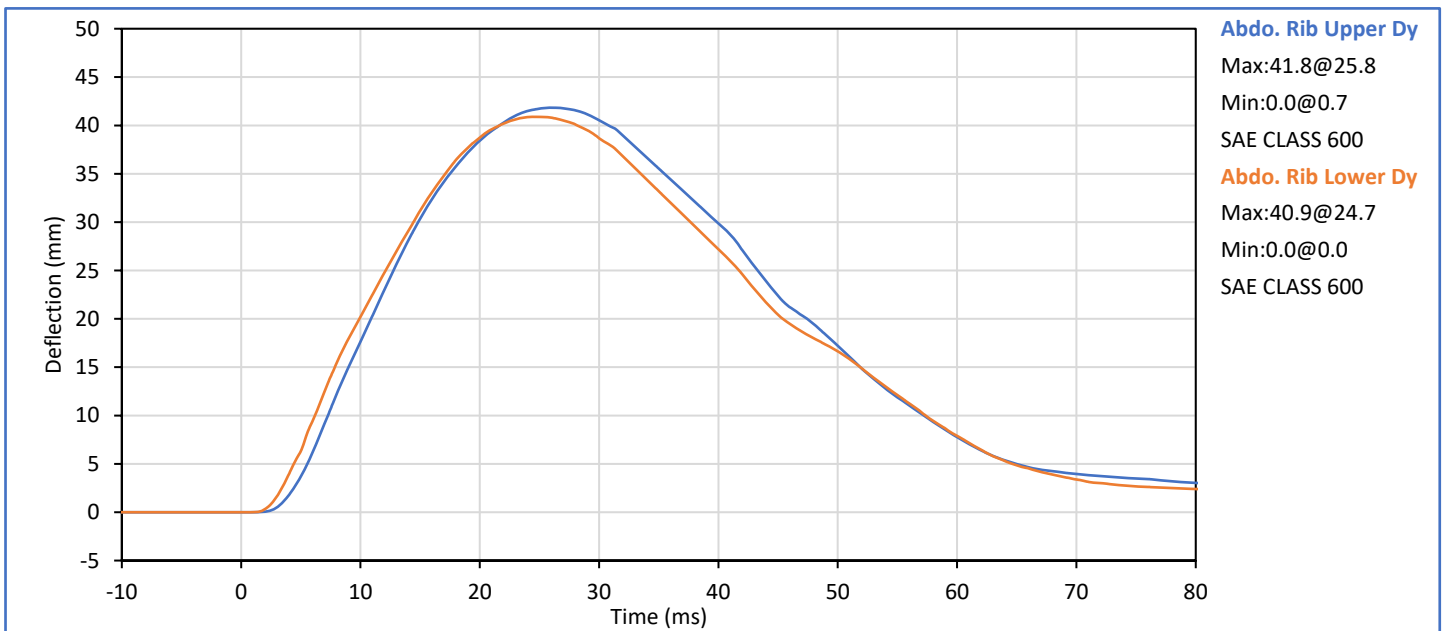
Technician: \_\_\_\_\_

G. Holguin

Approved By: \_\_\_\_\_

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	41.8	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	40.9	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	10.0	Pass
Peak Impactor Ax	g	-16.0	-12.0	-13.3	Pass
Overall Test Results					Pass



Technician: \_\_\_\_\_

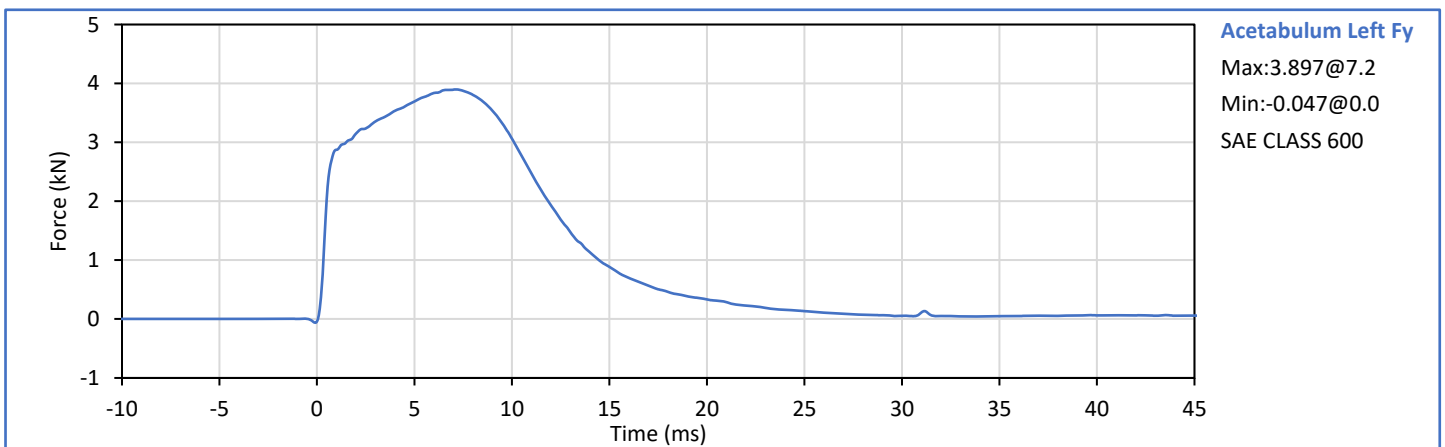
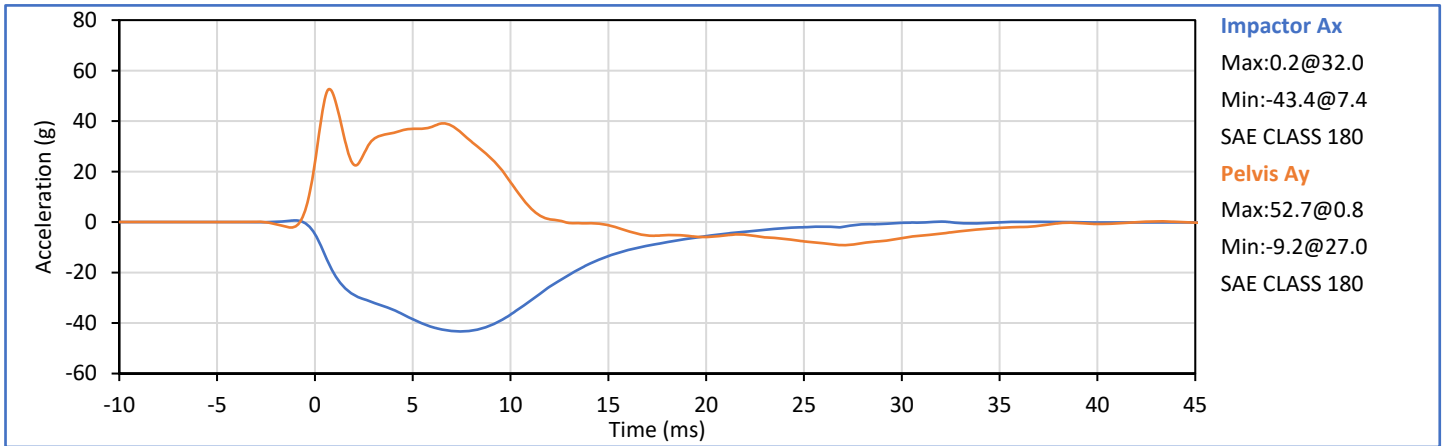
G. Holguin

Approved By: \_\_\_\_\_


J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.9	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	6.60	6.80	6.66	Pass
Peak Acetabulum Fy	kN	3.60	4.30	3.90	Pass
Pelvis Ay after 6ms	g	34.0	42.0	39.1	Pass
Peak Impactor Ax	g	-47.0	-38.0	-43.4	Pass
<b>Overall Test Results</b>					<b>Pass</b>

Pelvis Plug S/N: 13693



Technician:   
G. Holguin

Approved By:   
J. Hernandez



**SID-IIs Pelvis Plug Certification Test**

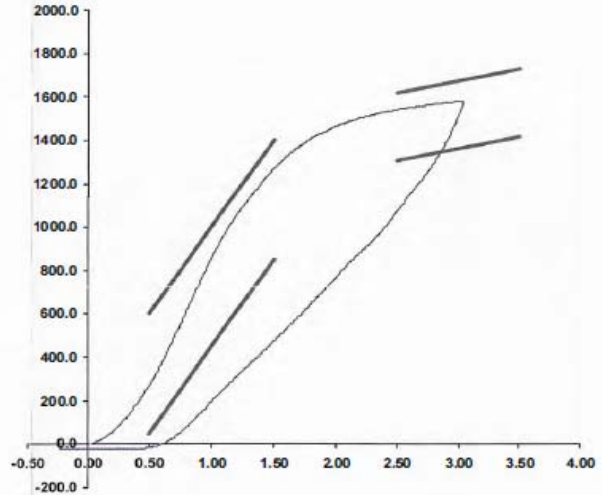
Plug S/N 13693  
Test Number 11341  
Report Number 11379  
Test Date 9/26/2019 1:48:26 PM

	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	283.58	50.00	600.00
Force @ 1.5 mm (N)	1,274.82	850.00	1,400.00
Force @ 2.5 mm (N)	1,541.24	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,579.27	1,361.00	1,673.00

Testing Machine STM-20 5965542  
Load Cell S/N (F1360947), Units (LBS) 1000  
Crosshead Speed (mm/min) or Rot 12.7  
Extension or Position Measured by XHD\_100 (XHD100)

Notes:

Force (-N) vs Extension (-mm)



Operator \_\_\_\_\_

Part Number 180-4450

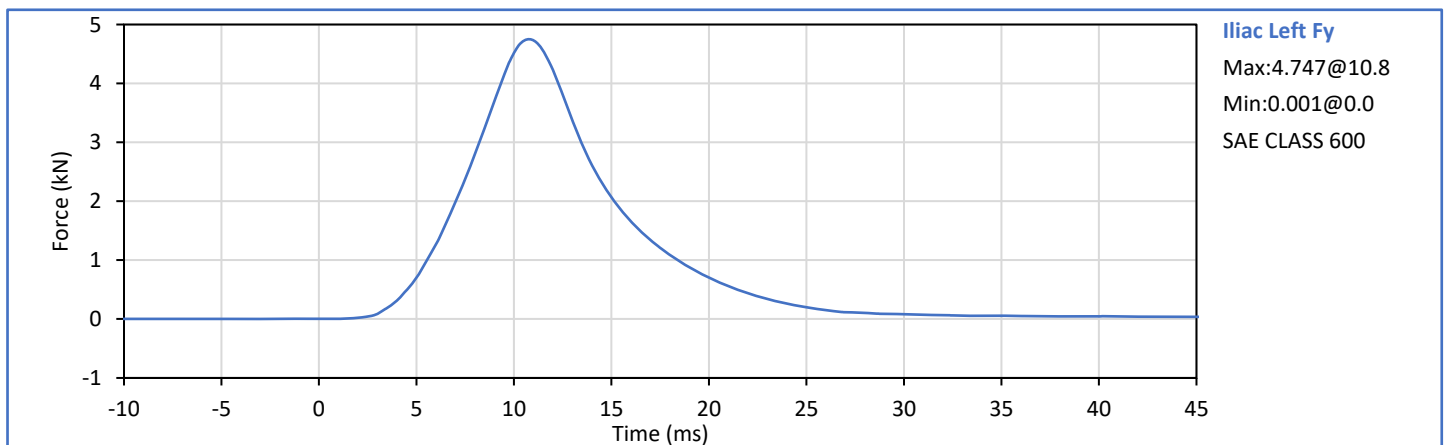
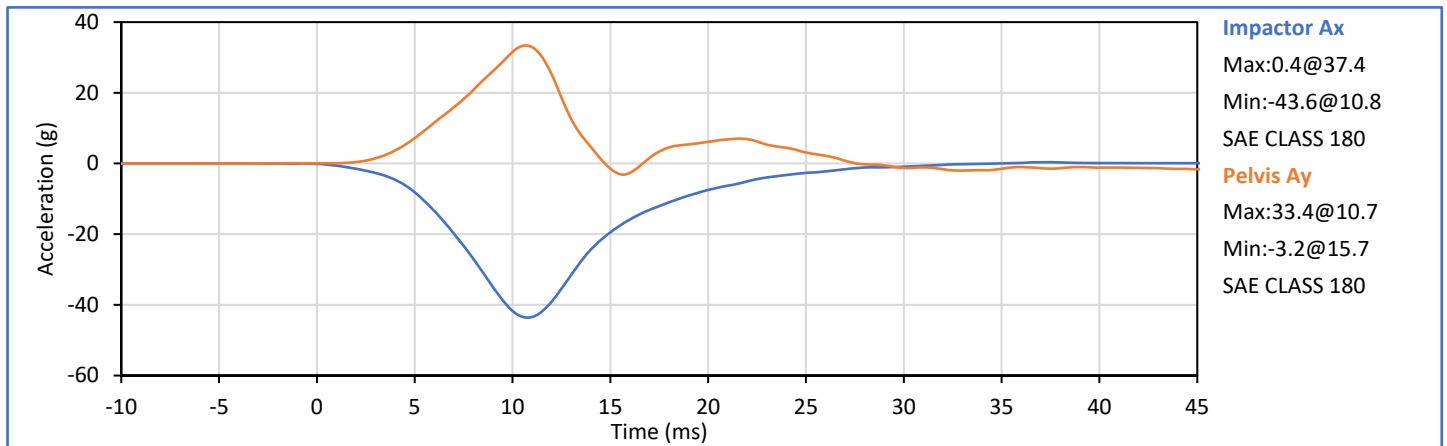
Template No 107 26-Sep-19  
SACO Research

By: [Signature] Date: 9/26/2019  
SACO Research 41735 Elm St, #401 Murietta, CA 92562 Tel 310-694-2082 FAX

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.8	Pass
Laboratory Relative Humidity	%	10	70	32	Pass
Impactor Velocity	m/s	4.20	4.40	4.33	Pass
Peak Iliac Fy	kN	4.10	5.10	4.75	Pass
Peak Pelvis Ay	g	28.0	39.0	34.7	Pass
Peak Impactor Ax	g	-45.0	-36.0	-43.6	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 12228 \*

\* Plug is not impacted and remains certified



Technician: \_\_\_\_\_

G. Holguin

Approved By: \_\_\_\_\_

J. Hernandez

**APPENDIX C**  
**Post-Test ATD Qualification and Performance Verification**  
**ES-2re 50th Male Side Impact ATD, Left Side Configuration**  
**S/N: F037**

Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
1 - Sitting Height	mm	900	918	908	Pass
2 - Seat to Shoulder Joint	mm	558	572	567	Pass
3 - Seat to Lower Face of Thoracic Spine Box	mm	346	356	350	Pass
4 - Seat to Hip Joint (bolt center)	mm	97	103	101	Pass
5 - Sole to Seat, Sitting	mm	433	451	443	Pass
6 - Head Width	mm	152	158	157	Pass
7 - Shoulder/Arm Width	mm	461	479	471	Pass
8 - Thorax Width	mm	322	332	326	Pass
9 - Abdomen Width	mm	273	287	277	Pass
10 - Pelvis Lap Width	mm	359	373	366	Pass
11 - Head Depth	mm	196	206	201	Pass
12 - Thorax Depth	mm	262	272	266	Pass
13 - Abdomen Depth	mm	194	204	199	Pass
14 - Pelvis Depth	mm	235	245	240	Pass
15 - Back of Buttocks to Hip Joint (bolt Center)	mm	150	160	158	Pass
16 - Back of Buttocks to Front Knee	mm	597	615	607	Pass
Overall Test Results					Pass

Technician: \_\_\_\_\_



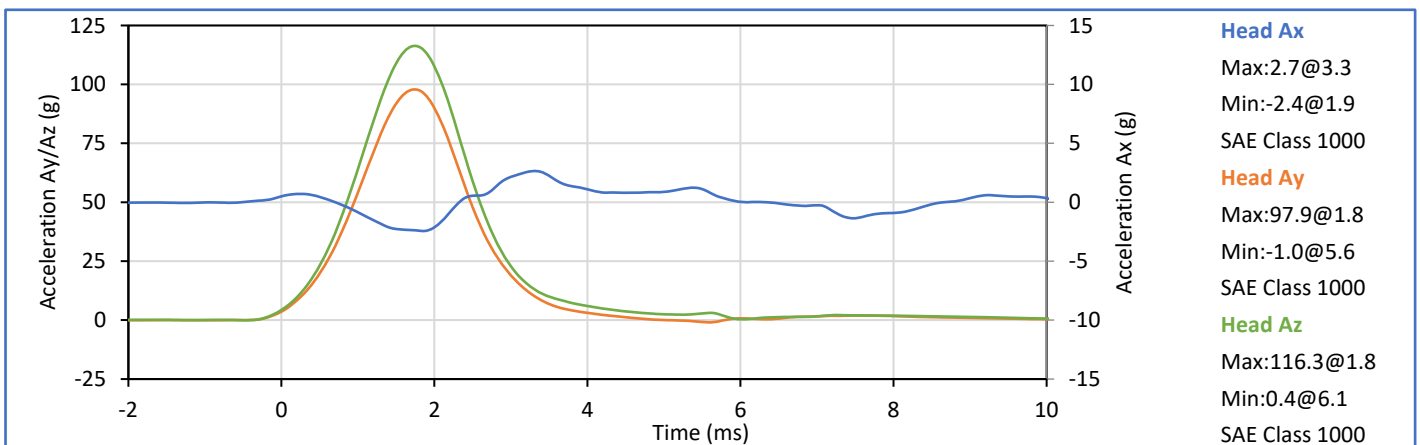
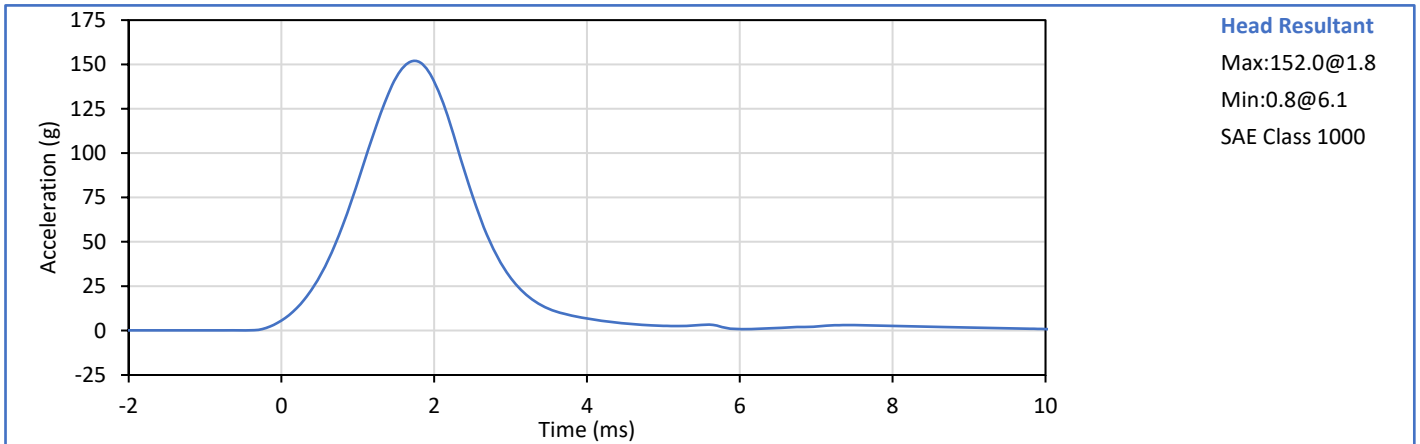
G. Holguin

Approved By: \_\_\_\_\_




J. Hernandez

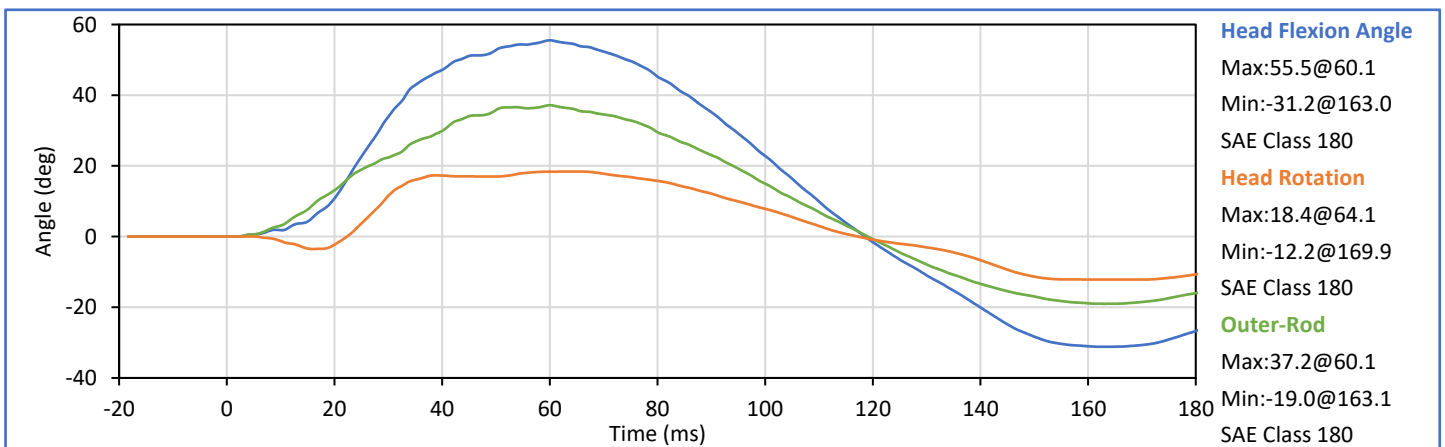
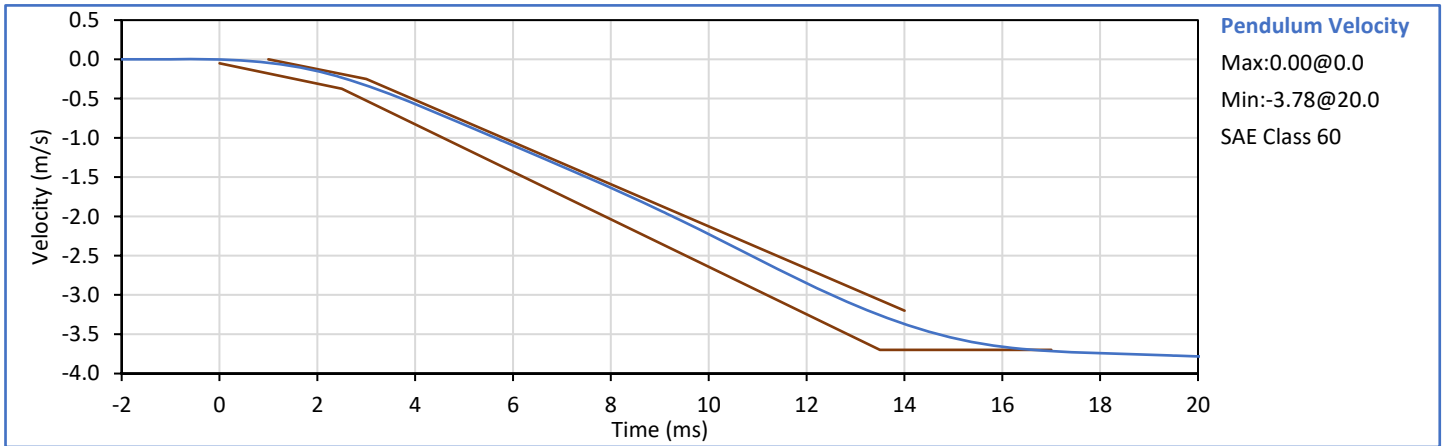
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.3	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Peak Resultant Acceleration	g	125.0	155.0	152.0	Pass
Peak Head Ax	g	-15.0	15.0	2.7	Pass
Oscillations After Main Pulse	%	0.0	15.0	2.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
<b>Overall Test Results</b>					<b>Pass</b>




Technician:   
G. Holguin

Approved By:   
J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	20.9	Pass
Laboratory Relative Humidity	%	10	70	34	Pass
Pendulum Velocity	m/s	3.30	3.50	3.45	Pass
Peak Headform Flexion	deg	49.0	59.0	55.5	Pass
Time of Peak Headform Flexion	ms	54.0	66.0	60.1	Pass
Flexion Decay (Peak to zero)	ms	53.0	88.0	58.5	Pass
Overall Test Results					Pass



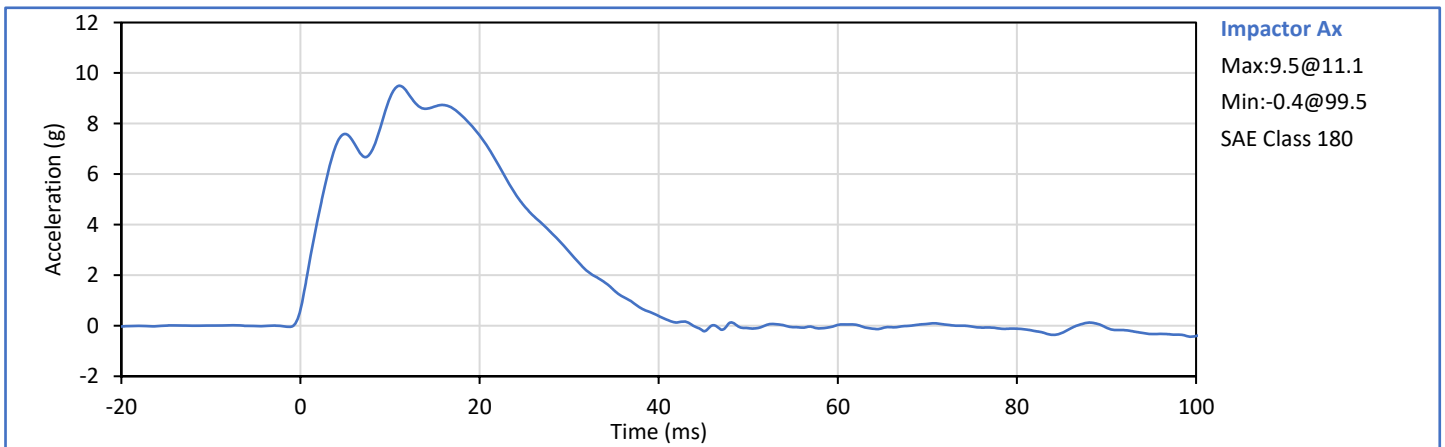
Technician:   
G. Holguin

Approved By:   
J. Hernandez

ATD Serial No.: F037

Test Date: 2022-06-17

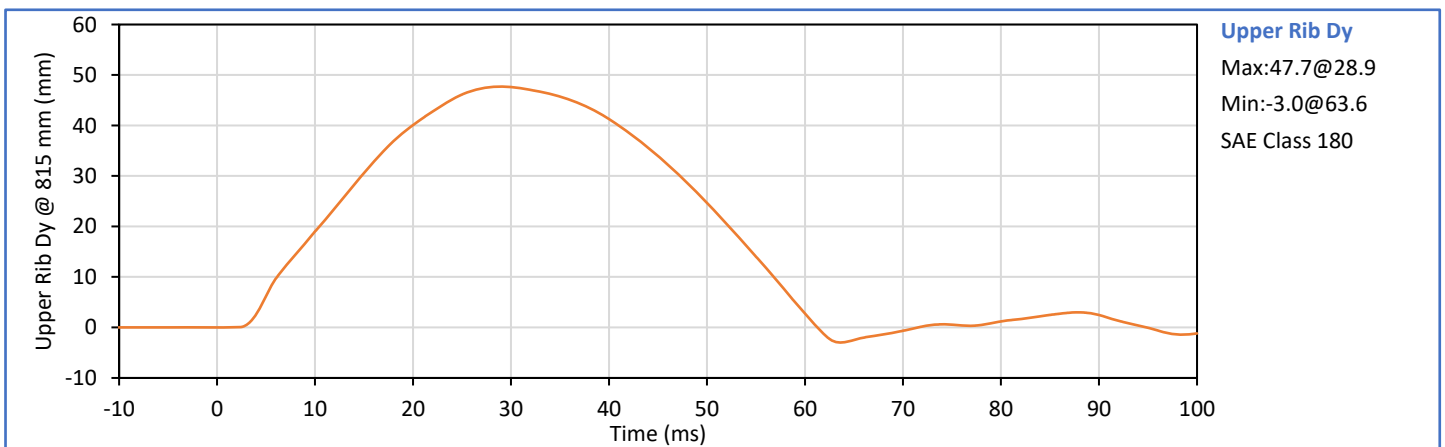
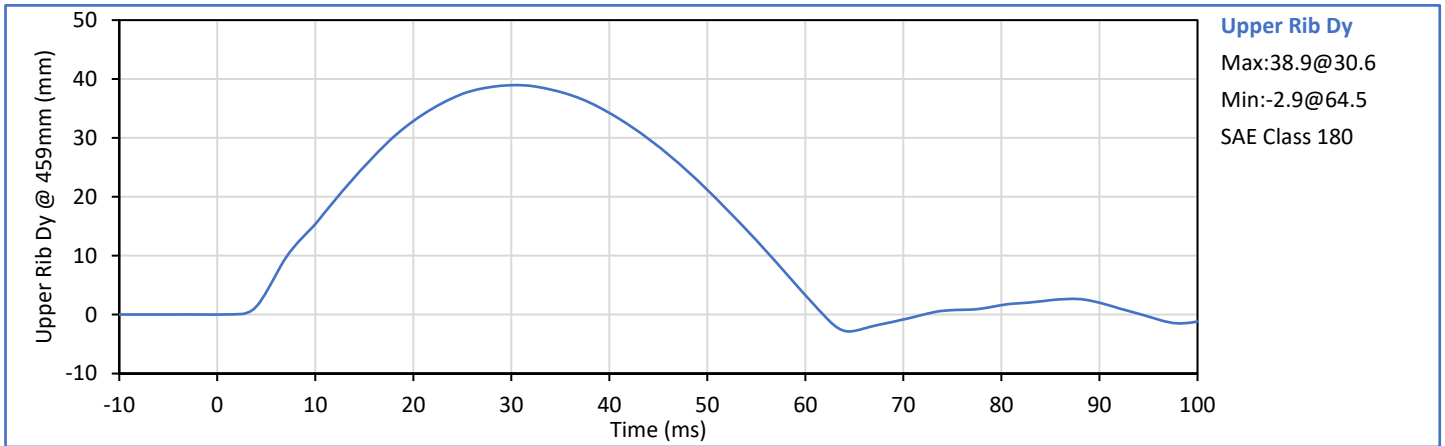
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Impactor Velocity	m/s	4.20	4.40	4.30	Pass
Peak Impactor Ax	g	7.5	10.5	9.5	Pass
Overall Test Results					Pass




Technician: *G. Holguin*  
G. Holguin

Approved By: *J. Hernandez*  
J. Hernandez

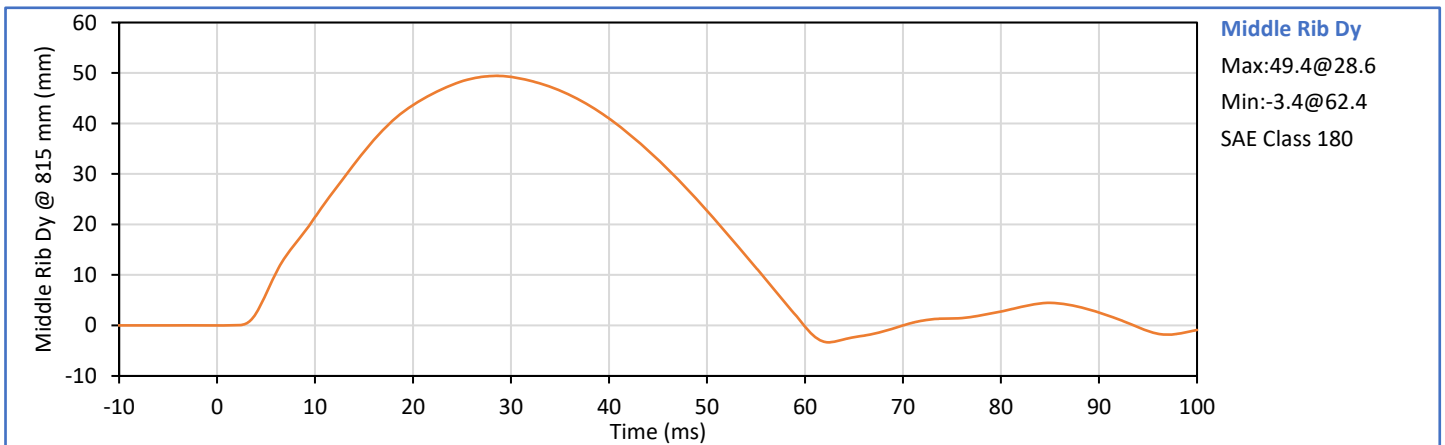
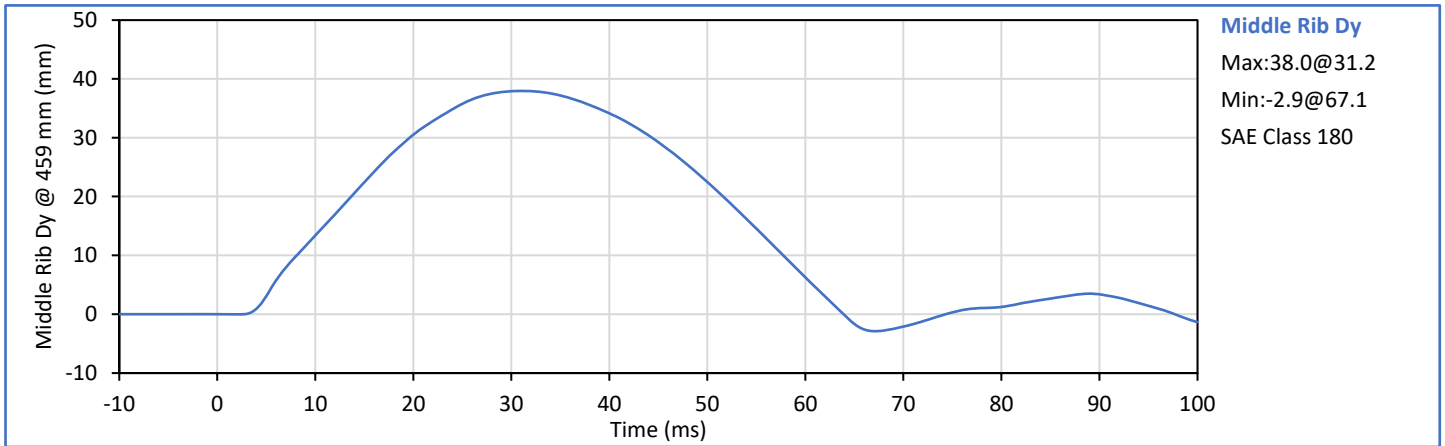
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	40	Pass
Upper Rib Dy @ 459mm	mm	36.0	40.0	38.9	Pass
Upper Rib Dy @ 815mm	mm	46.0	51.0	47.7	Pass
Overall Test Results					Pass



Technician:   
G. Holguin

Approved By:   
J. Hernandez

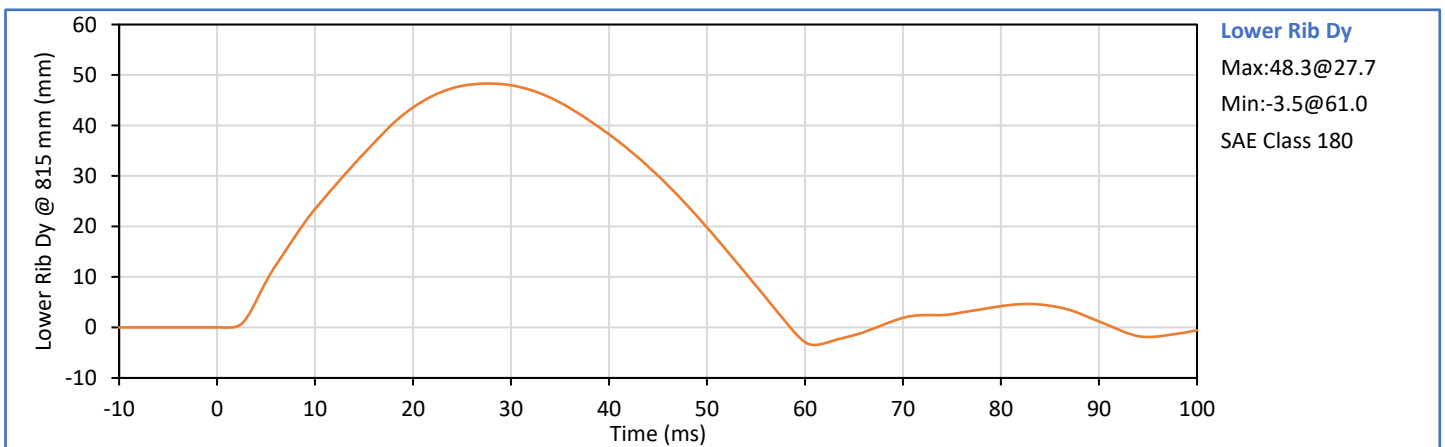
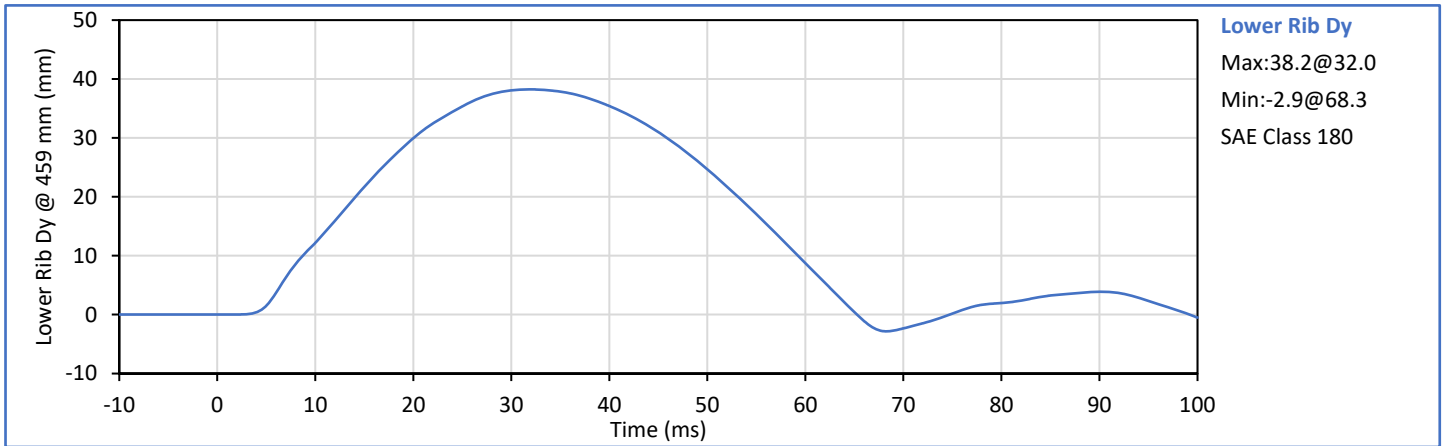
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	40	Pass
Middle Rib Dy @ 459mm	mm	36.0	40.0	38.0	Pass
Middle Rib Dy @ 815mm	mm	46.0	51.0	49.4	Pass
Overall Test Results					Pass



Technician:           *G. Holguin*            
G. Holguin

Approved By:           *J. Hernandez*            
J. Hernandez

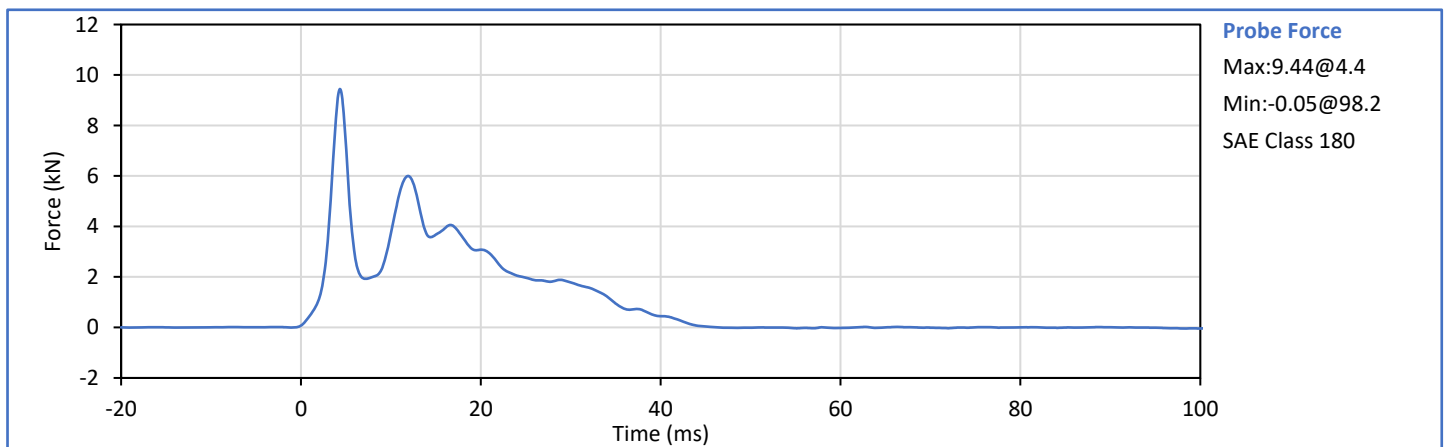
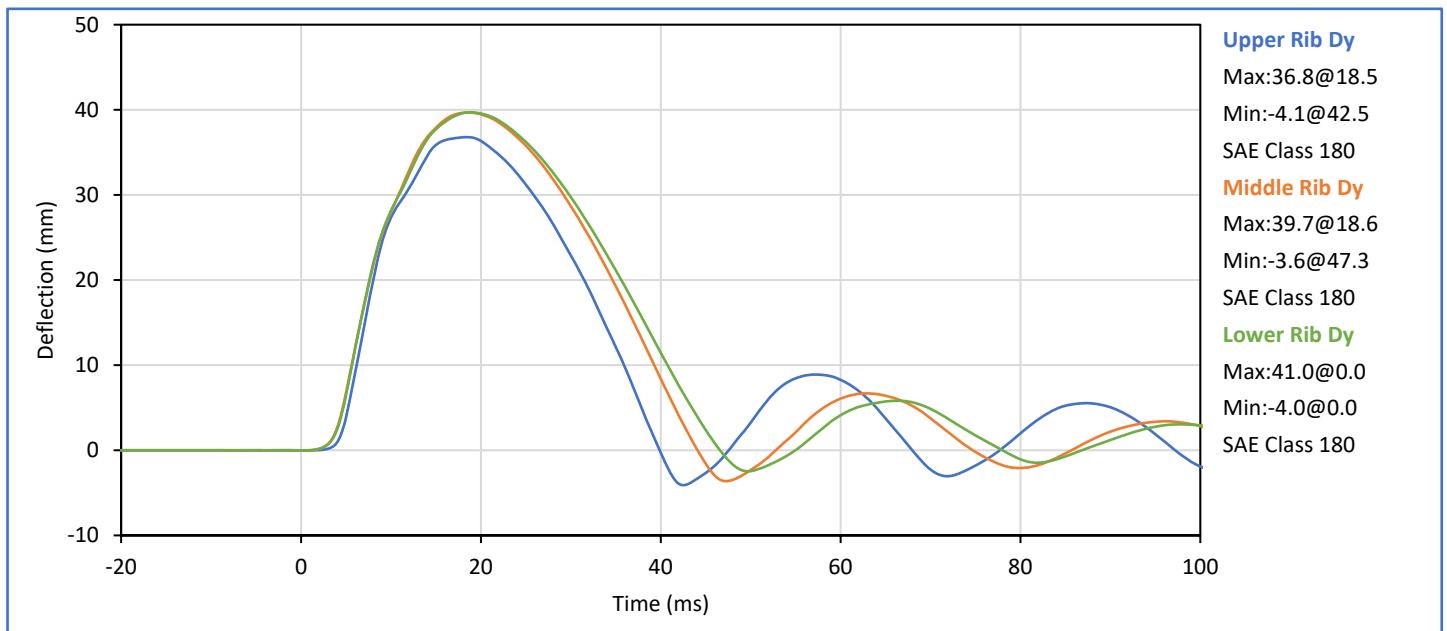
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.3	Pass
Laboratory Relative Humidity	%	10	70	40	Pass
Lower Rib Dy @ 459mm	mm	36.0	40.0	38.2	Pass
Lower Rib Dy @ 815mm	mm	46.0	51.0	48.3	Pass
Overall Test Results					Pass




Technician:           *G. Holguin*            
G. Holguin

Approved By:           *J. Hernandez*            
J. Hernandez

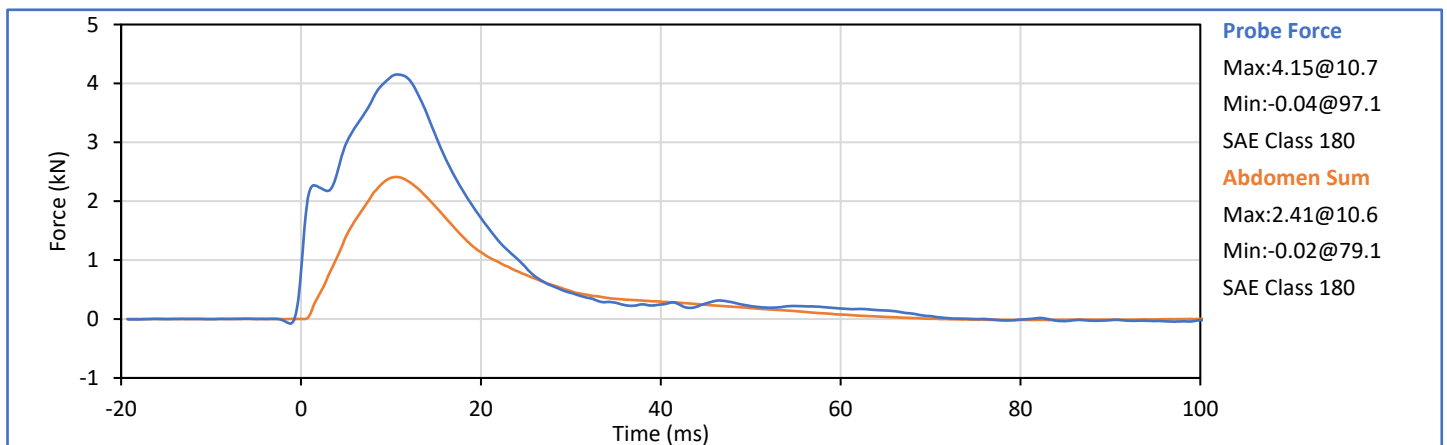
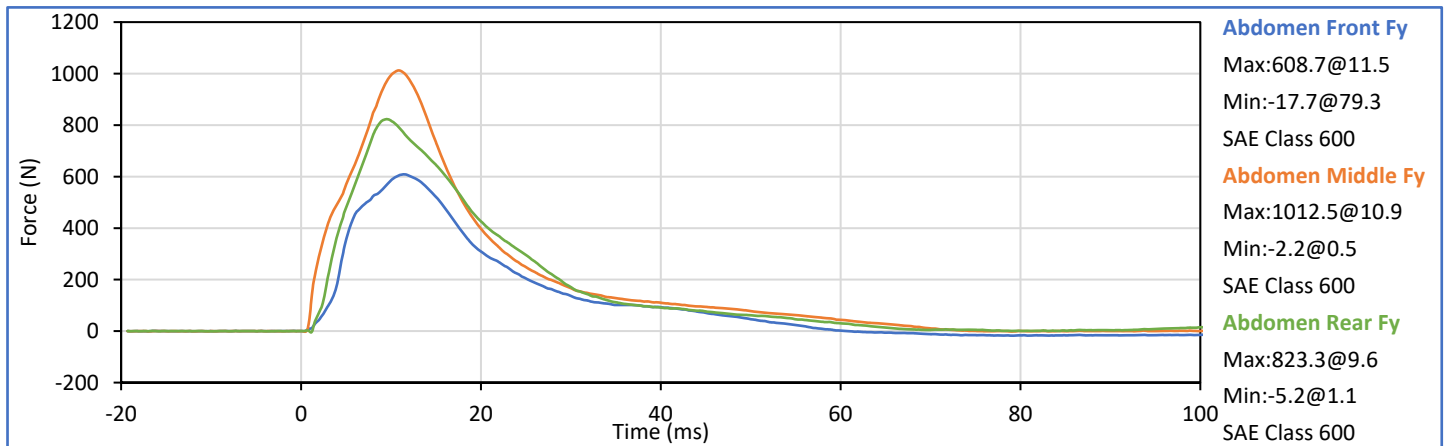
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.3	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	5.40	5.60	5.58	Pass
Peak Upper Rib Dy	mm	34.0	41.0	36.8	Pass
Peak Middle Rib Dy	mm	37.0	45.0	39.7	Pass
Peak Lower Rib Dy	mm	37.0	44.0	39.7	Pass
Peak Impactor Force After 6 ms	kN	5.10	6.20	6.00	Pass
<b>Overall Test Results</b>					<b>Pass</b>



Technician:   
G. Holguin

Approved By:   
J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.3	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	3.90	4.10	3.98	Pass
Peak Impactor Force	kN	4.00	4.80	4.15	Pass
Time of Peak Impactor Force	ms	10.6	13.0	10.7	Pass
Sum of Abdomen Forces	kN	2.20	2.70	2.41	Pass
Time of Peak Sum Abdomen Force	ms	10.0	12.3	10.6	Pass
<b>Overall Test Results</b>					<b>Pass</b>



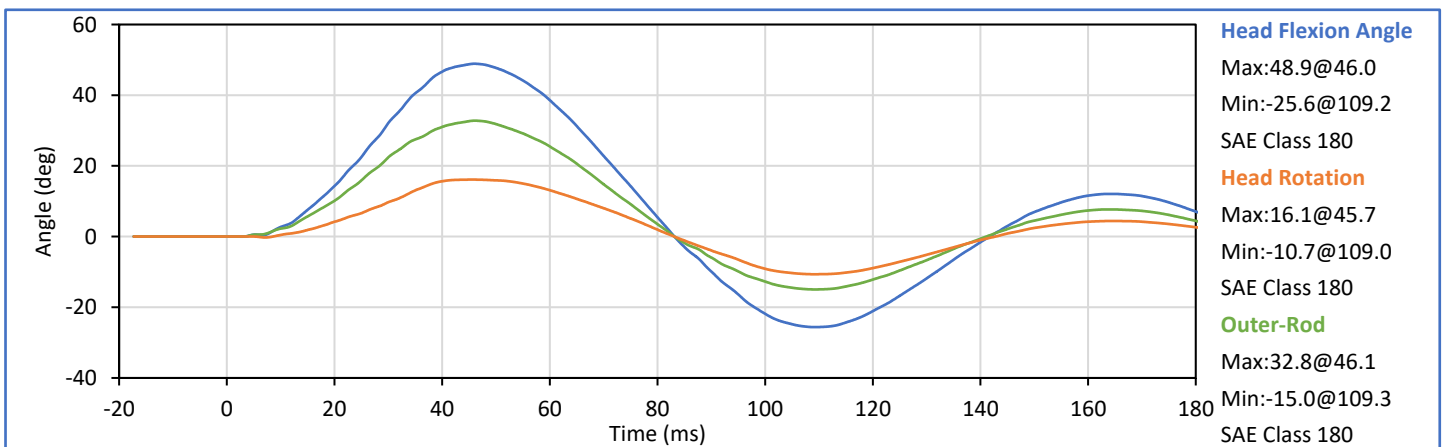
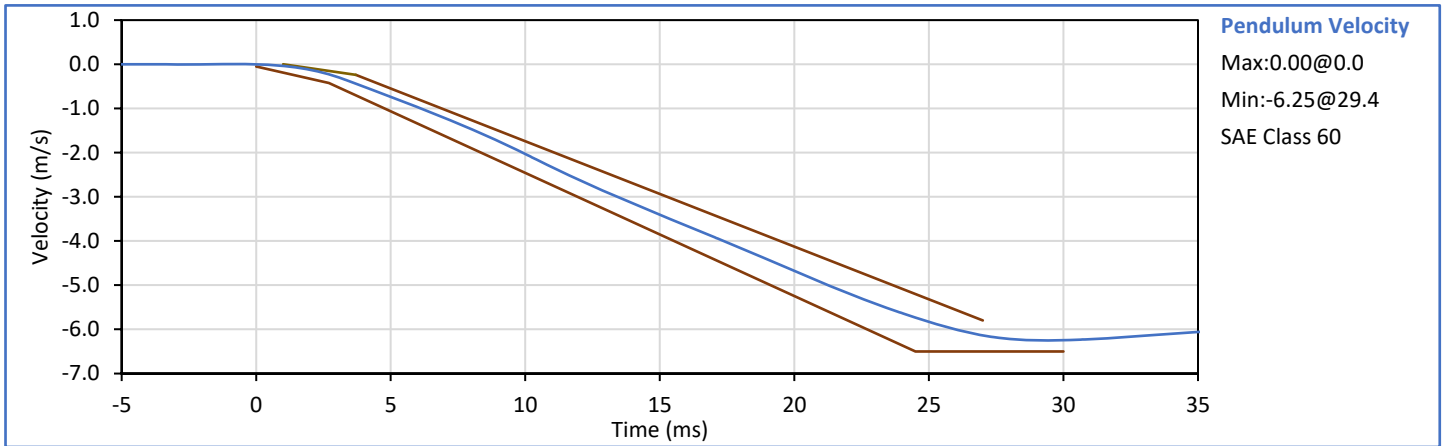
Technician: \_\_\_\_\_

G. Holguin


Approved By: \_\_\_\_\_

J. Hernandez

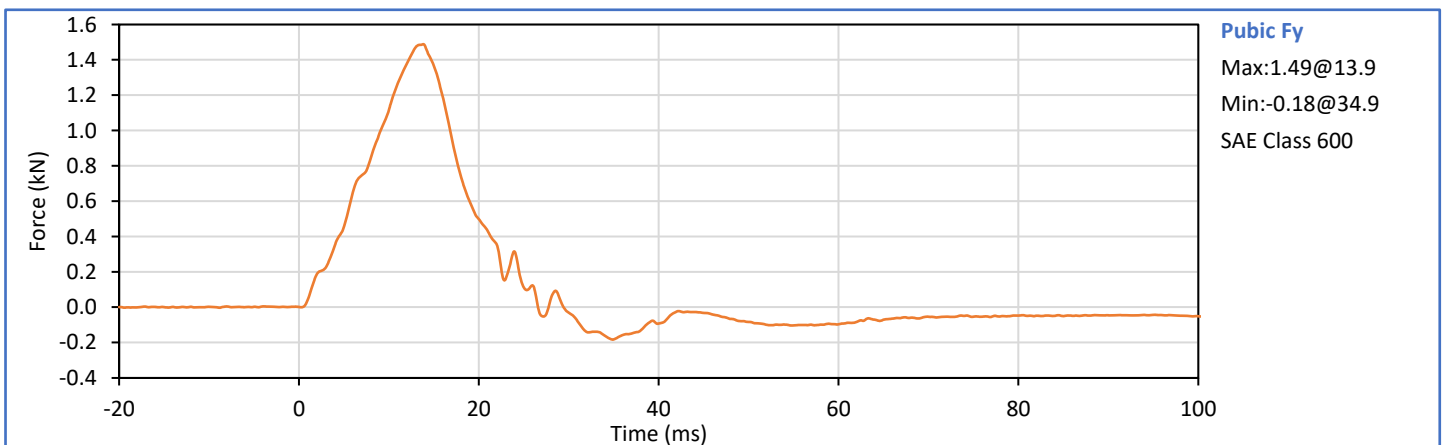
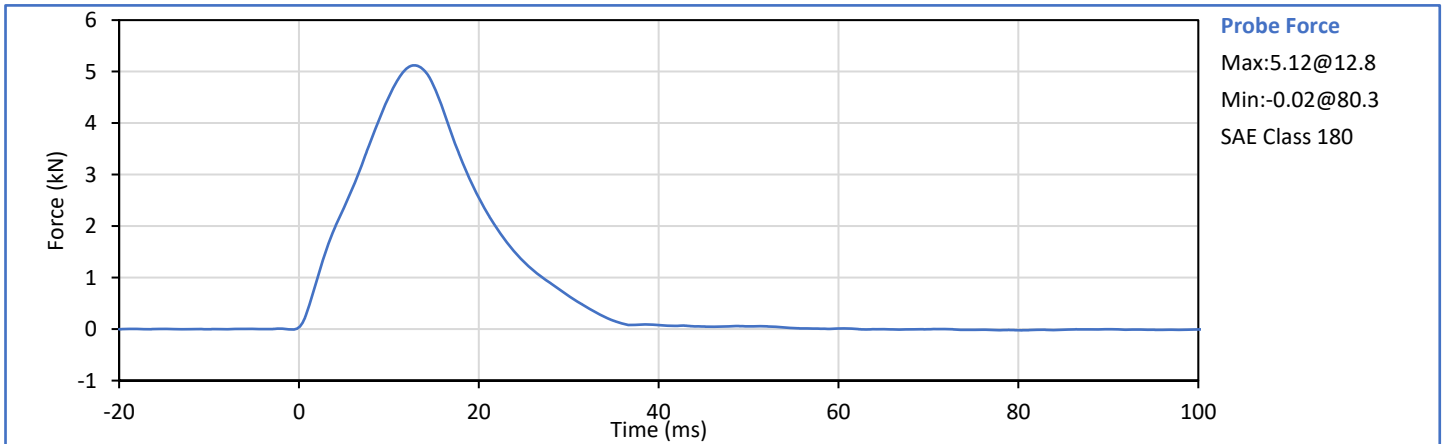
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.8	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Pendulum Velocity	m/s	5.95	6.15	6.13	Pass
Peak Headform Flexion	deg	45.0	55.0	48.9	Pass
Time of Peak Headform Flexion	ms	39.0	53.0	46.0	Pass
Flexion Decay (Peak to zero)	ms	37.0	57.0	37.2	Pass
Overall Test Results					Pass




Technician:   
G. Holguin

Approved By:   
J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	31	Pass
Impactor Velocity	m/s	4.20	4.40	4.30	Pass
Peak Impactor Force	kN	4.70	5.40	5.12	Pass
Time of Peak Impactor Force	ms	11.8	16.1	12.8	Pass
Pubic Symphysis Fy	kN	1.23	1.59	1.49	Pass
Time of Peak Pubic Symphysis Fy	ms	12.2	17.0	13.9	Pass
<b>Overall Test Results</b>					<b>Pass</b>



Technician:   
G. Holguin

Approved By:   
J. Hernandez

**APPENDIX C**  
**Post-Test ATD Qualification and Performance Verification**  
**SID-IIs Small Side Impact ATD, Left Side Configuration**  
**S/N: 299**

ATD Serial No.: 299

Test Date: 2022-06-21

Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	22	Pass
A - Sitting Height	mm	772	788	776	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	86	Pass
D - H Point From Seatback	mm	141	151	146	Pass
E - Shoulder Pivot From Backline	mm	97	107	104	Pass
F - Thigh Clearance	mm	119	135	130	Pass
G - Head Breadth	mm	140	148	144	Pass
H - Head Back From Backline	mm	40	46	43	Pass
I - Head Depth	mm	178	188	183	Pass
J - Head Circumference	mm	541	551	544	Pass
K - Buttock To Knee Length	mm	514	540	527	Pass
L - Popliteal Height	mm	343	369	350	Pass
K - Knee Pivot To Floor Height	mm	392	409	398	Pass
N - Buttock Popliteal Length	mm	416	442	427	Pass
O - Chest Depth W/O Jacket	mm	195	211	203	Pass
P - Foot Length	mm	216	232	225	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	319	Pass
R - Arm Length	mm	249	259	254	Pass
S - Knee Joint To Seatback	mm	477	493	486	Pass
V - Shoulder Width	mm	341	357	353	Pass
W - Foot Width	mm	78	94	84	Pass
Y - Chest Circumference W/Jacket	mm	851	881	860	Pass
Z - Waist Circumference	mm	761	791	776	Pass
Overall Test Results					Pass

Technician:



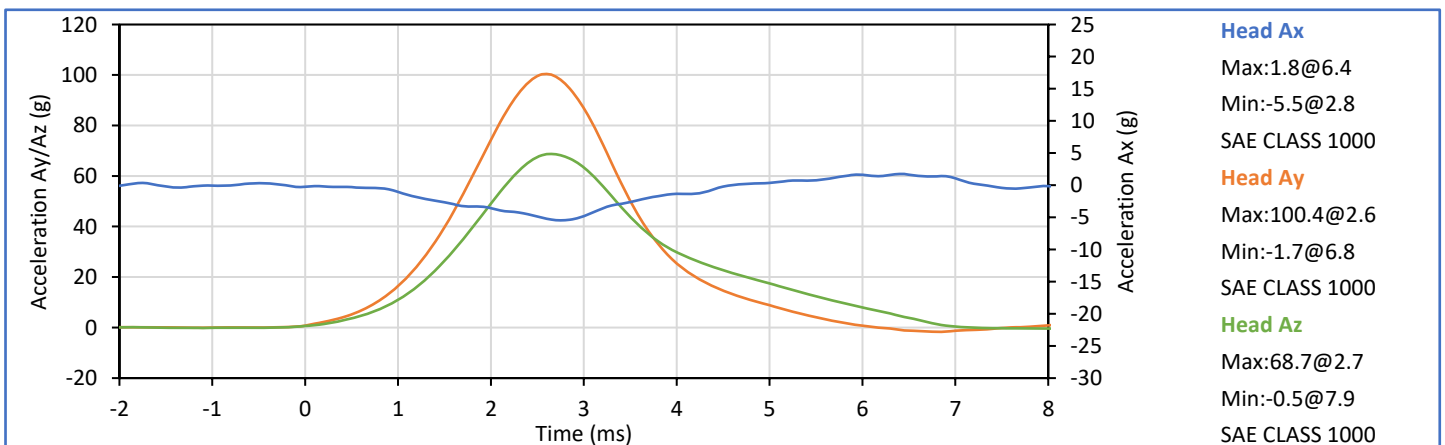
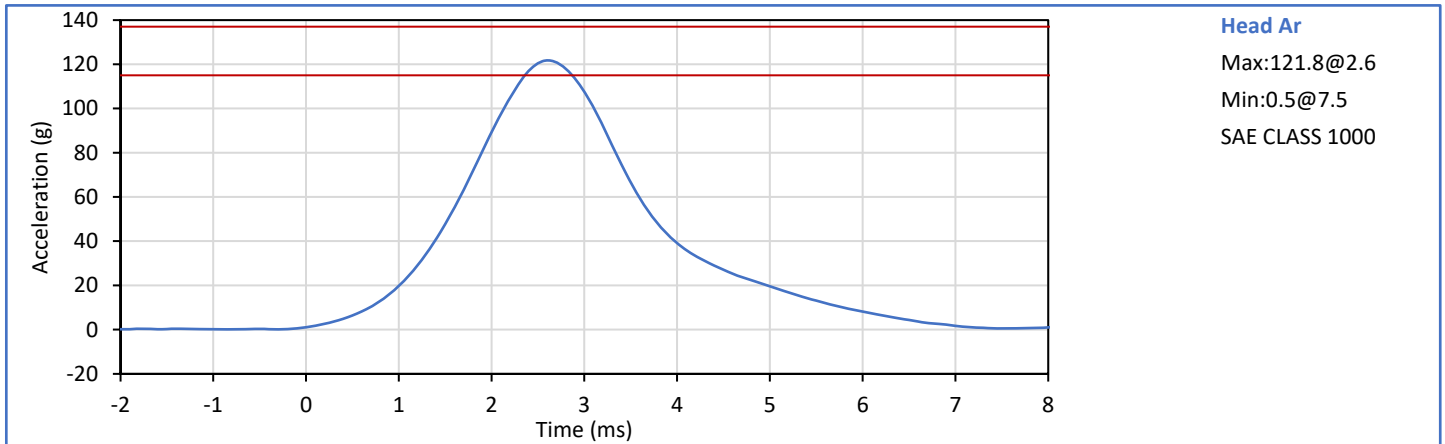
G. Holguin

Approved By:




J. Hernandez

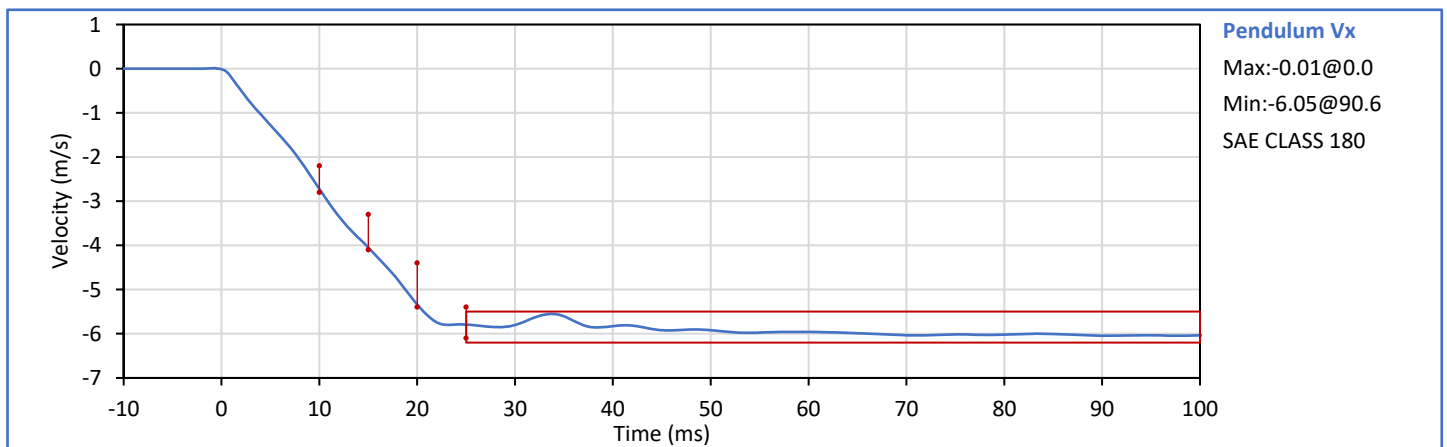
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.1	Pass
Laboratory Relative Humidity	%	10	70	35	Pass
Peak Resultant Acceleration	g	115.0	137.0	121.8	Pass
Peak Head Ax	g	-15.0	15.0	-5.5	Pass
Oscillations After Main Pulse	%	0.0	15.0	4.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
<b>Overall Test Results</b>					<b>Pass</b>



Technician:   
G. Holguin

Approved By:   
J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	45	Pass
Pendulum Velocity	m/s	5.51	5.63	5.56	Pass
Pendulum Decel at 10 ms	m/s	-2.80	-2.20	-2.72	Pass
Pendulum Decel at 15 ms	m/s	-4.10	-3.30	-4.05	Pass
Pendulum Decel at 20 ms	m/s	-5.40	-4.40	-5.34	Pass
Pendulum Decel at 25 ms	m/s	-6.10	-5.40	-5.79	Pass
Pendulum Decel from 25-100 ms	m/s	-6.20	-5.50	-6.05/-5.55	Pass
Peak "D" Plane Rotation	deg	-81.0	-71.0	-73.1	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	57.5	Pass
Peak Occ. Condyle Moment	Nm	36.0	44.0	39.7	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	105.9	Pass
Overall Test Results					Pass

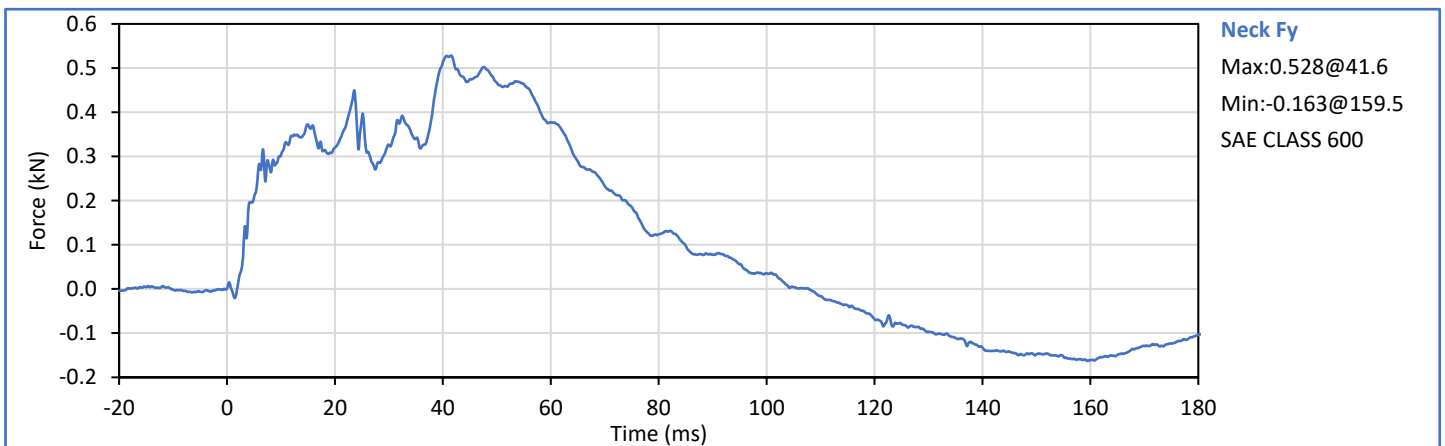
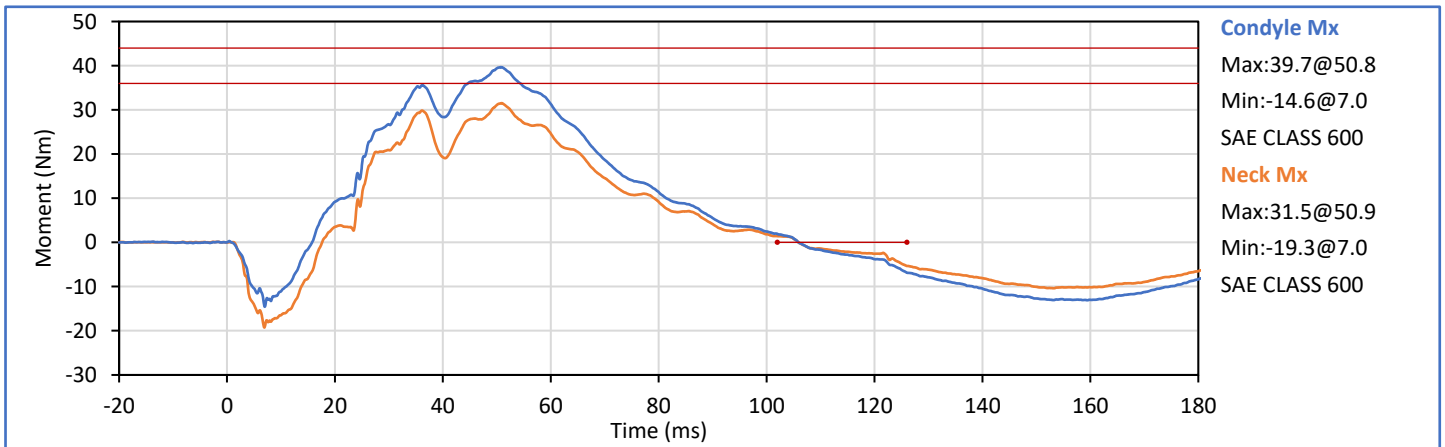
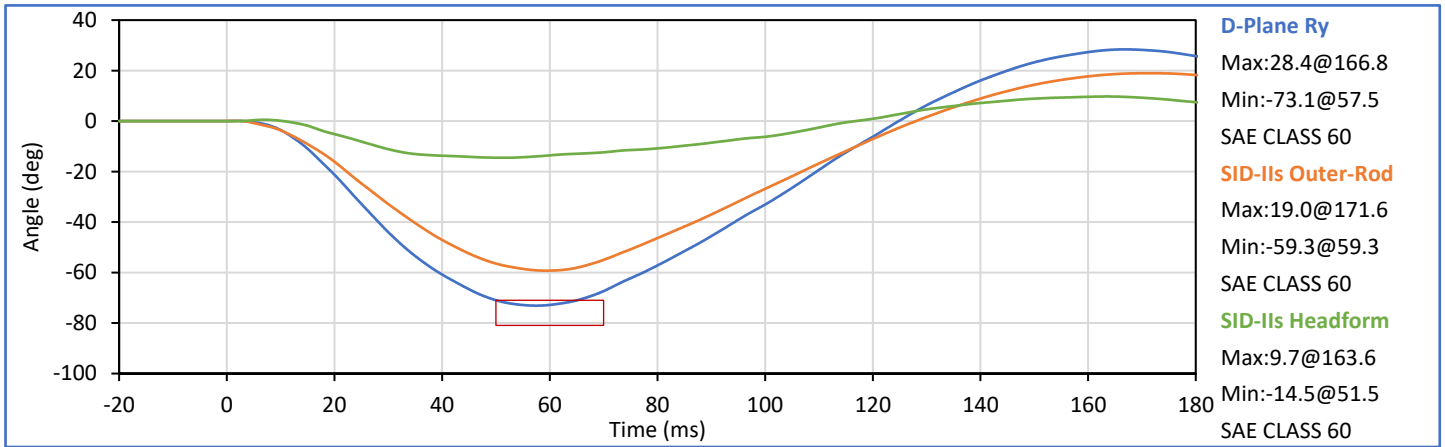


Technician: \_\_\_\_\_

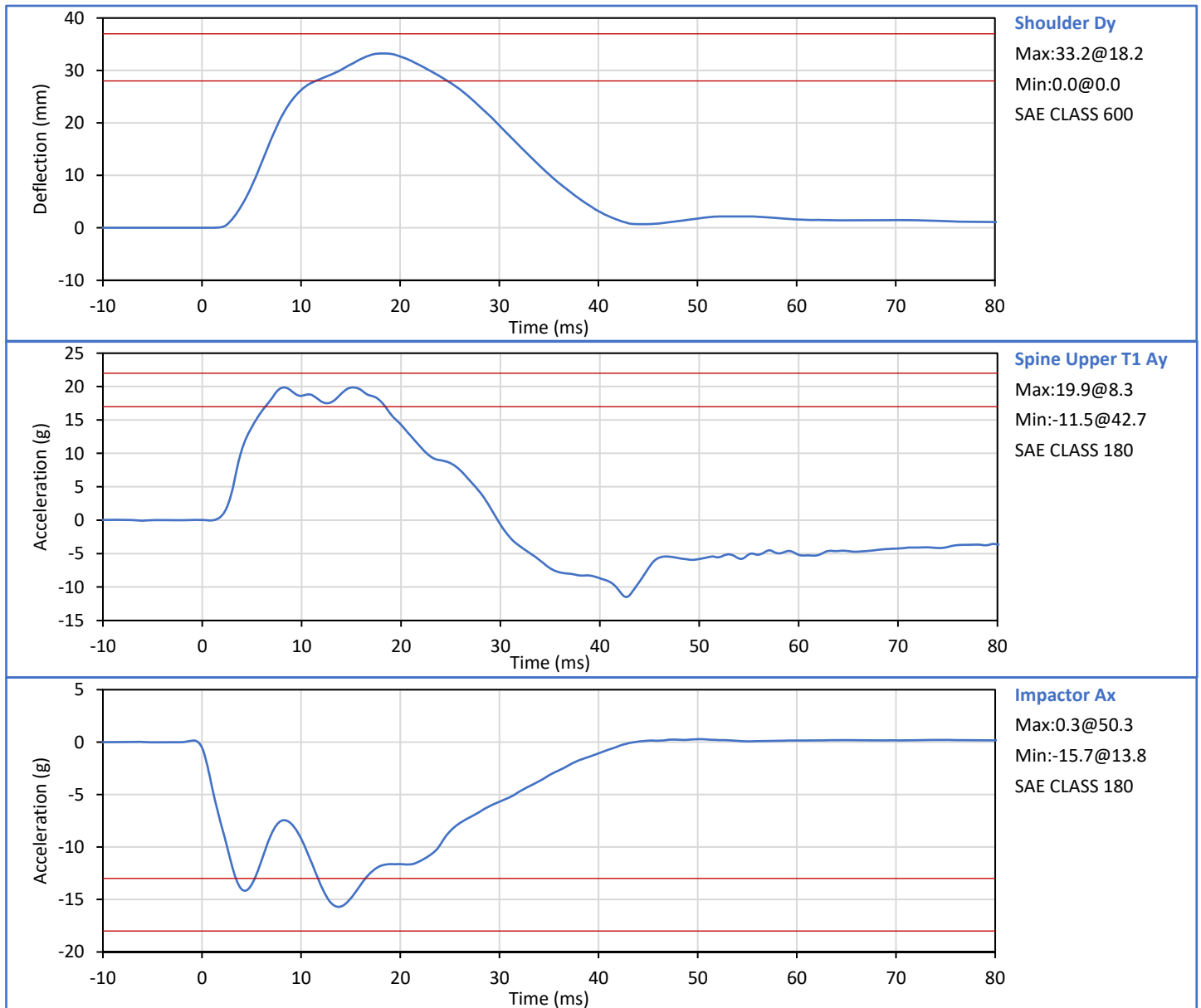
G. Holguin

Approved By: \_\_\_\_\_

J. Hernandez



Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	20.7	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	4.20	4.40	4.29	Pass
Peak Shoulder Dy	mm	28.0	37.0	33.2	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	19.9	Pass
Peak Impactor Ax	g	-18.0	-13.0	-15.7	Pass
Overall Test Results					Pass



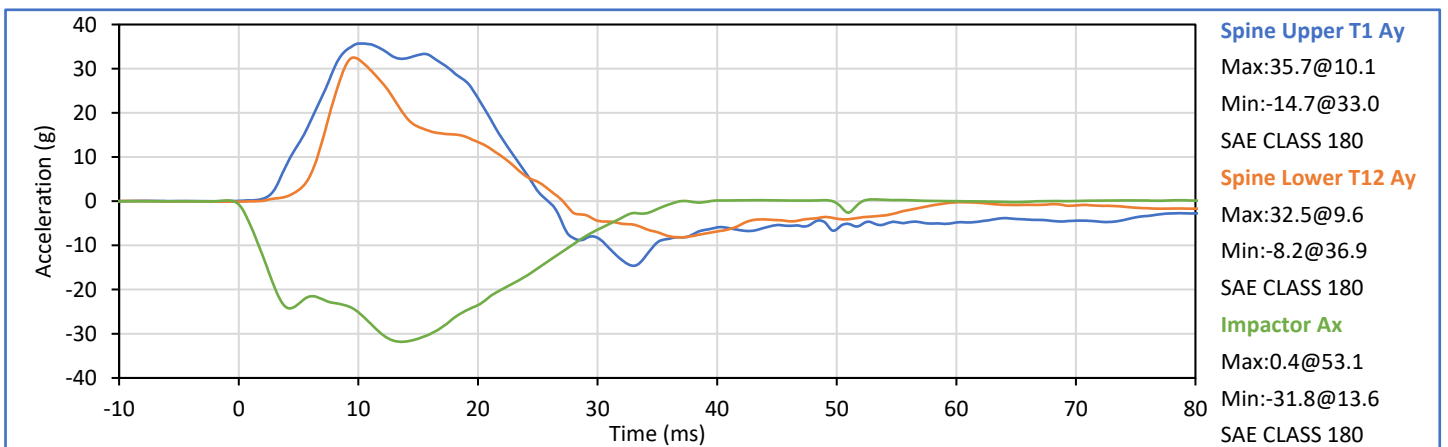
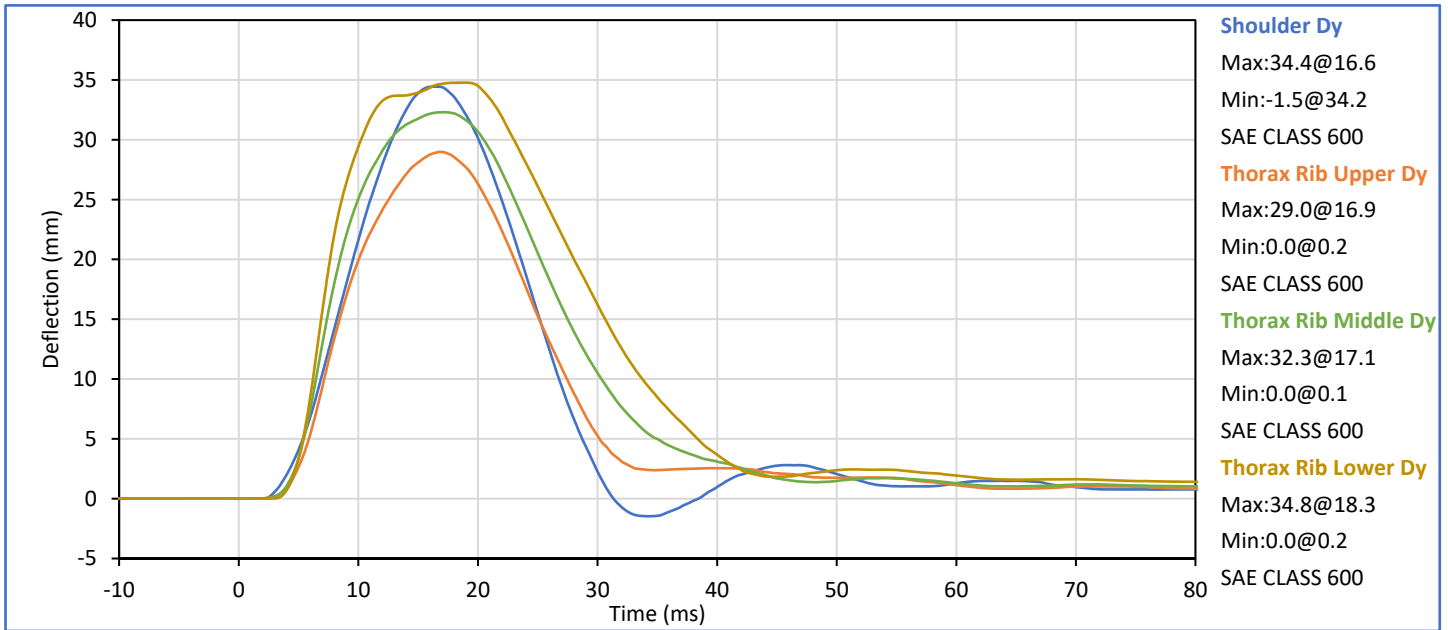
Technician: \_\_\_\_\_

G. Holguin


Approved By: \_\_\_\_\_

J. Hernandez

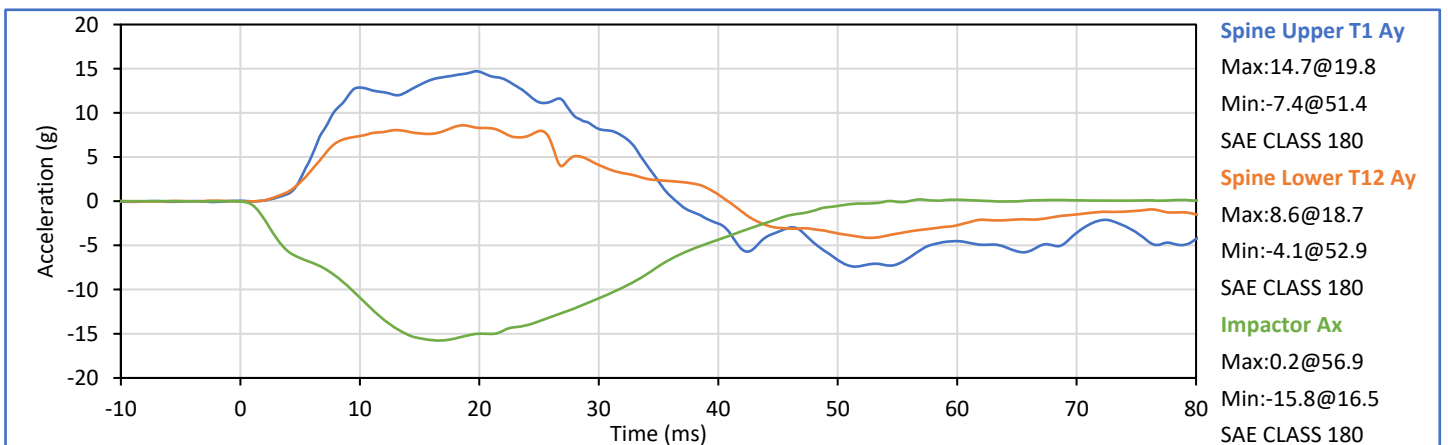
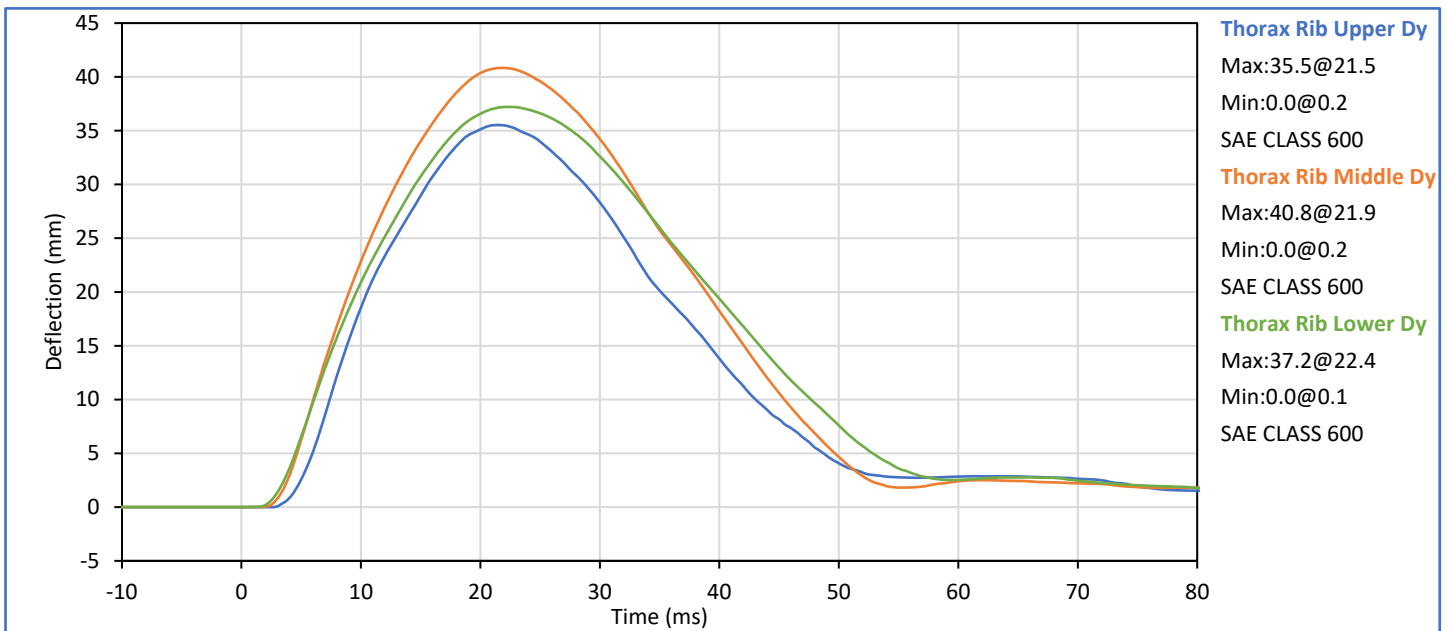
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	6.60	6.80	6.66	Pass
Peak Shoulder Dy	mm	31.0	40.0	34.4	Pass
Peak Upper Rib Dy	mm	25.0	32.0	29.0	Pass
Peak Middle Rib Dy	mm	30.0	36.0	32.3	Pass
Peak Lower Rib Dy	mm	32.0	38.0	34.8	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	35.7	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	32.5	Pass
Peak Impactor Ax	g	-36.0	-30.0	-31.8	Pass
Overall Test Results					Pass



Technician:   
G. Holguin

Approved By:   
J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.0	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	4.20	4.40	4.30	Pass
Peak Thorax Rib Upper Dy	mm	32.0	40.0	35.5	Pass
Peak Thorax Rib Middle Dy	mm	39.0	45.0	40.8	Pass
Peak Thorax Rib Lower Dy	mm	35.0	43.0	37.2	Pass
Peak Spine Upper T1 Ay	g	13.0	17.0	14.7	Pass
Peak Spine Lower T12 Ay	g	7.0	11.0	8.6	Pass
Peak Impactor Ax	g	-18.0	-14.0	-15.8	Pass
Overall Test Results					Pass



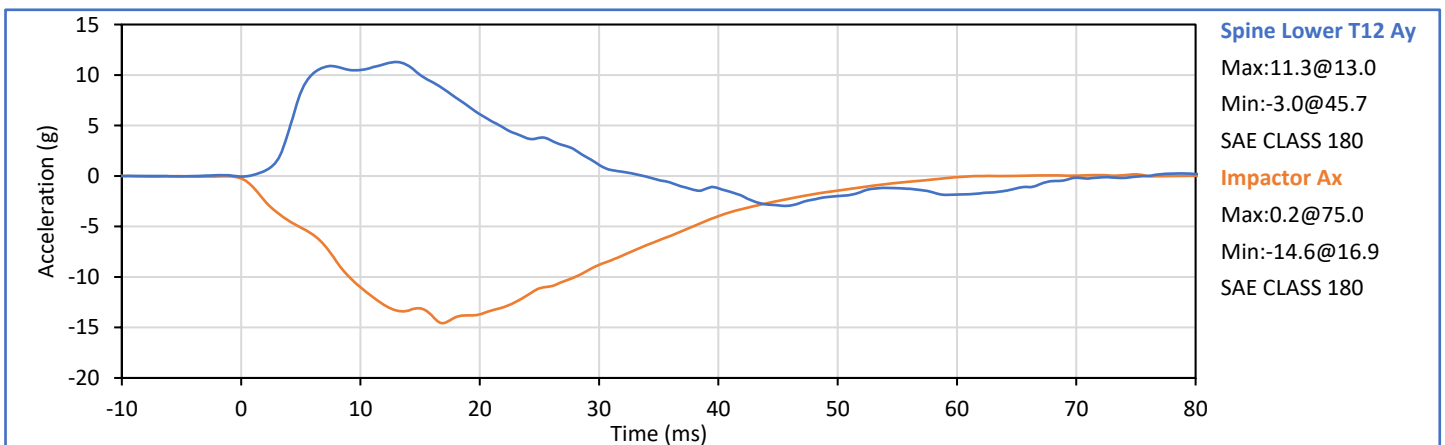
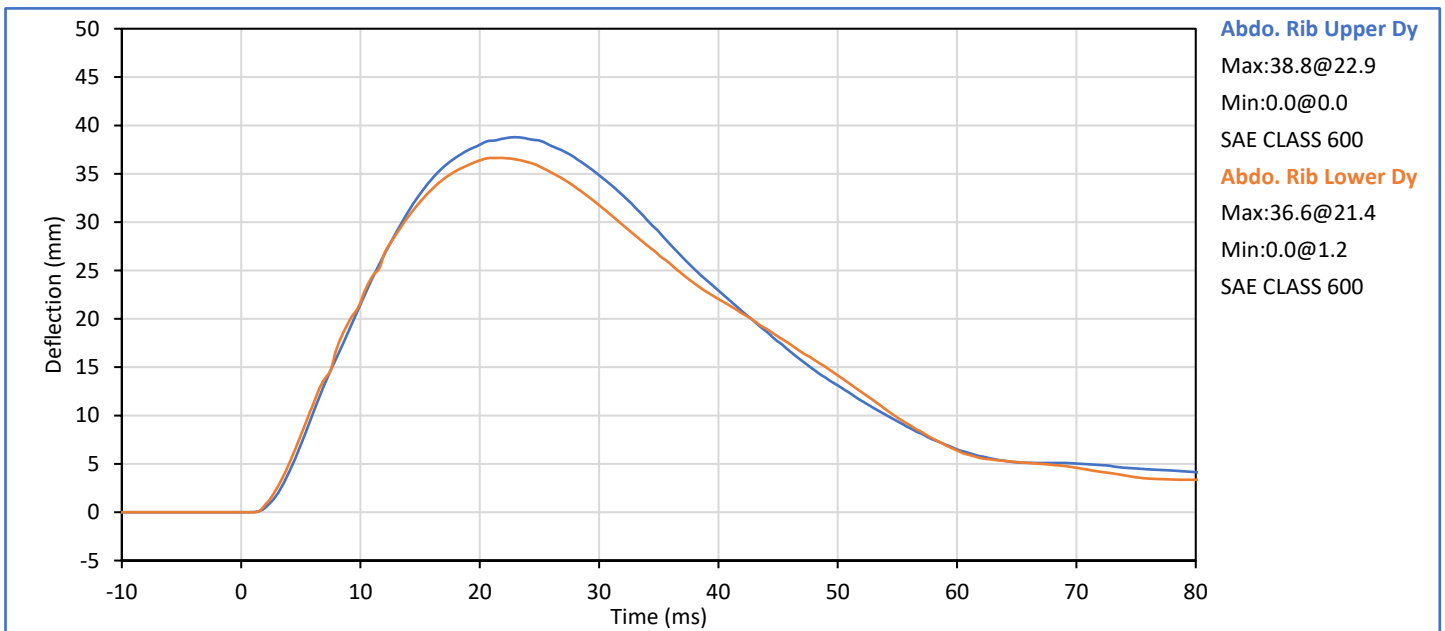
Technician: \_\_\_\_\_

G. Holguin

Approved By: \_\_\_\_\_

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	38.8	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	36.6	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	11.3	Pass
Peak Impactor Ax	g	-16.0	-12.0	-14.6	Pass
<b>Overall Test Results</b>					<b>Pass</b>



Technician: \_\_\_\_\_

*G. Holguin*

G. Holguin

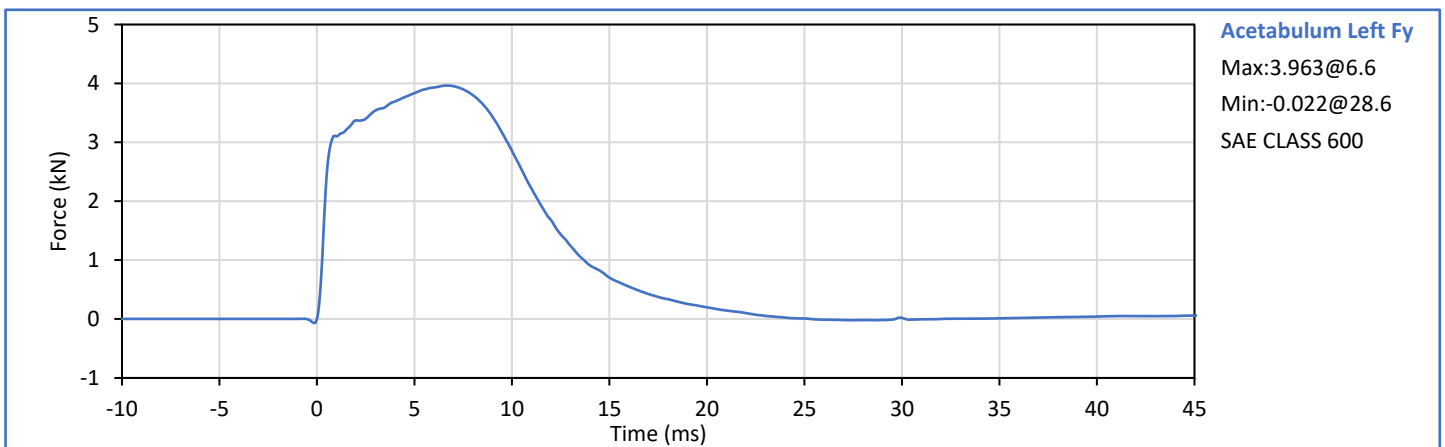
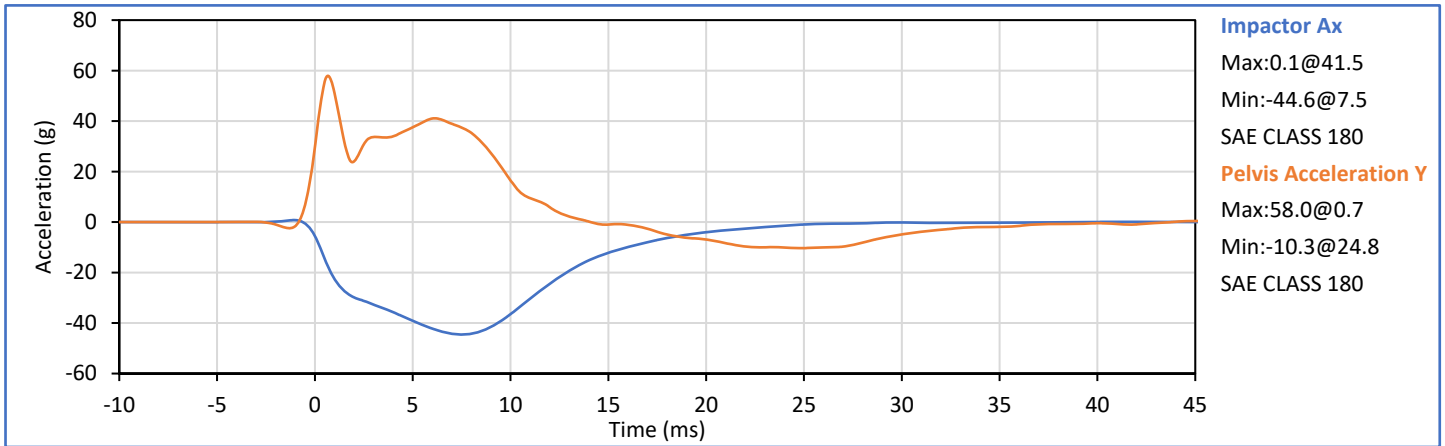
Approved By: \_\_\_\_\_

*J. Hernandez*

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Relative Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	6.60	6.80	6.74	Pass
Peak Acetabulum Fy	kN	3.60	4.30	3.96	Pass
Pelvis Ay after 6ms	g	34.0	42.0	41.1	Pass
Peak Impactor Ax	g	-47.0	-38.0	-44.6	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 13033



Technician: \_\_\_\_\_

G. Holguin

Approved By: \_\_\_\_\_

J. Hernandez

ATD Serial No.: 299

Test Date: 2022-06-21

Pelvis Plug S/N: 13033



**SID-IIs Pelvis Plug Certification Test**

Plug S/N 13033

Test Number 10353

Report Number 10388

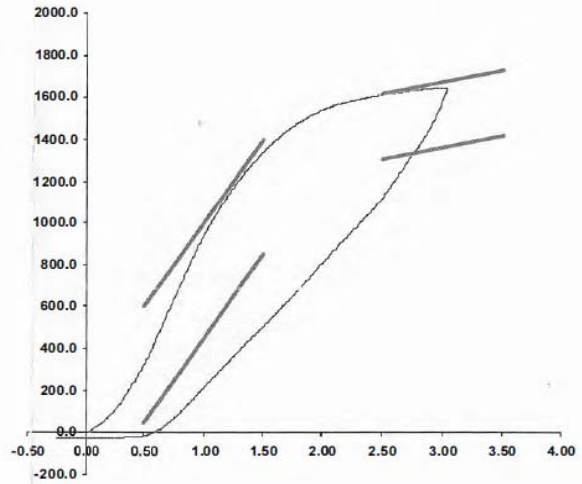
Test Date 7/30/2019 1:05:21 PM

	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	326.79	50.00	600.00
Force @ 1.5 mm (N)	1,345.41	850.00	1,400.00
Force @ 2.5 mm (N)	1,615.23	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,648.81	1,361.00	1,673.00

Testing Machine STM-20 5965542  
Load Cell S/N (F1360947), Units (LBS) 1000  
Crosshead Speed (mm / min) or Rate 12.7  
Extension or Position Measured by XHD\_100 (XHD100)

Notes:

Force (-N) vs Extension (-mm)



Operator

Part Number 180-4450

Template No 107 30-Jul-19  
SACO Research

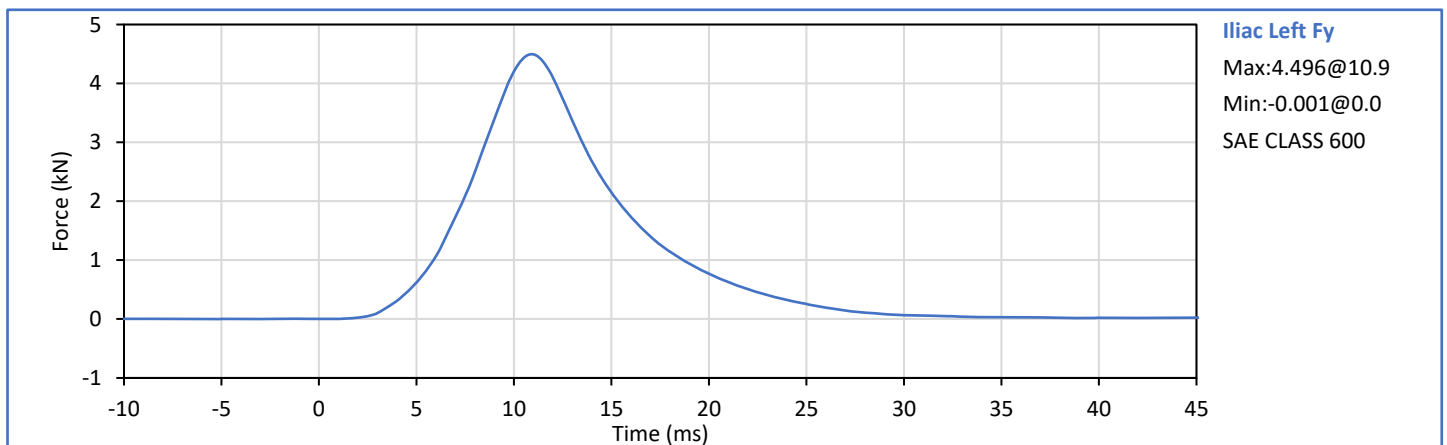
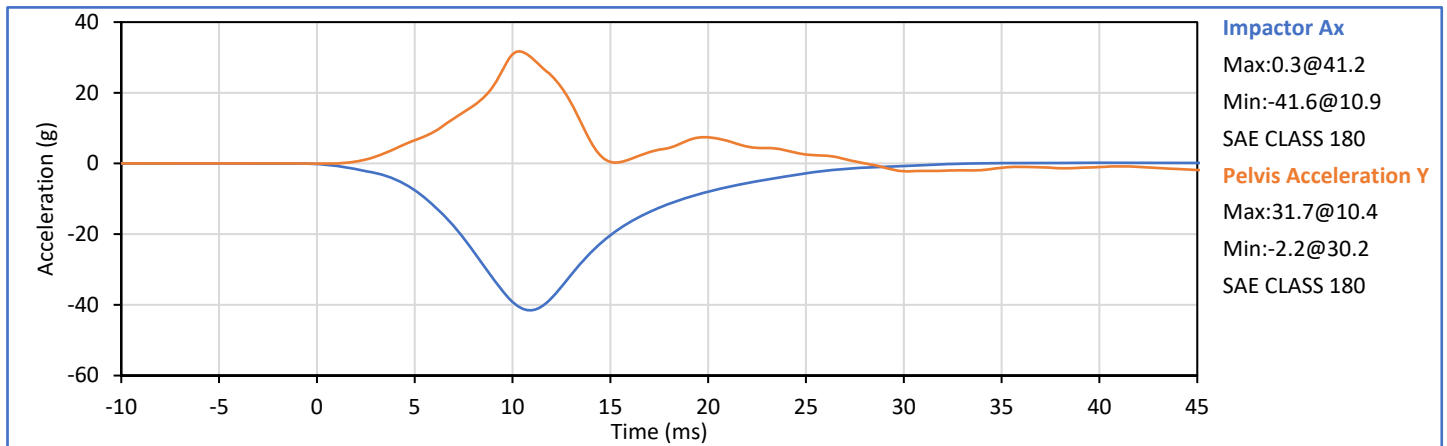
By: DC Date: 7/30/2019

SACO Research 41735 Elm St, #401 Murrieta, CA 92562 Tel 310-694-2082 FAX

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Iliac Fy	kN	4.10	5.10	4.50	Pass
Peak Pelvis Ay	g	28.0	39.0	34.7	Pass
Peak Impactor Ax	g	-45.0	-36.0	-41.6	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 12228 \*

\* Plug is not impacted and remains certified



Technician: \_\_\_\_\_

G. Holguin

Approved By: \_\_\_\_\_

J. Hernandez

**APPENDIX D**  
**TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA**

**Table 1 - Driver ATD Instrumentation**

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Head Acceleration X Primary	P58858	Endevco	7264C-2k	2022-04-08
Head Acceleration Y Primary	P58865	Endevco	7264C-2k	2022-04-08
Head Acceleration Z Primary	P58867	Endevco	7264C-2k	2022-04-08
Head Acceleration X Redundant	P58859	Endevco	7264C-2k	2022-04-08
Head Acceleration Y Redundant	P58866	Endevco	7264C-2k	2022-04-08
Head Acceleration Z Redundant	P58873	Endevco	7264C-2k	2022-04-08
Upper Thorax Rib Deflection Y	209 (ES-2 Rib)	Honeywell	F38000203	2022-04-07
Middle Thorax Rib Deflection Y	210 (ES-2 Rib)	Honeywell	F38000203	2022-04-07
Lower Thorax Rib Deflection Y	207 (ES-2 Rib)	Honeywell	F38000203	2022-04-08
Anterior Abdominal Force Y	1514 Fy	R.A. Denton	2631J	2022-03-30
Middle Abdominal Force Y	1510 Fy	R.A. Denton	2631J	2022-03-30
Posterior Abdominal Force Y	1515 Fy	R.A. Denton	2631J	2022-03-30
Lower Spine T12 Acceleration X	P63856	Endevco	7264C-2k	2022-04-08
Lower Spine T12 Acceleration Y	P50063	Endevco	7264C-2k	2022-04-08
Lower Spine T12 Acceleration Z	P51880	Endevco	7264C-2k	2022-04-08
Pubic Symphysis Force Y	506 (Pubic)	R.A. Denton	3096JFL	2022-03-30

**Table 2 - Left Rear Passenger ATD Instrumentation**

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Head Acceleration X Primary	P51929	Endevco	7264C-2k	2022-04-09
Head Acceleration Y Primary	P50086	Endevco	7264C-2k	2022-04-09
Head Acceleration Z Primary	P51931	Endevco	7264C-2k	2022-04-09
Head Acceleration X Redundant	P68604	Endevco	7264C-2k	2022-04-09
Head Acceleration Y Redundant	P51934	Endevco	7264C-2k	2022-04-09
Head Acceleration Z Redundant	P58736	Endevco	7264C-2k	2022-04-09
Head Rotation Rate X	ARS7342	DTS	ARS PRO-8k (2kHz)	2022-03-15
Head Rotation Rate Y	ARS7473	DTS	ARS PRO-8k (2kHz)	2022-03-15
Head Rotation Rate Z	ARS7548	DTS	ARS PRO-8k (2kHz)	2022-03-15
Upper Thorax Rib Deflection Y	1143	Servo	08TCI-3725	2022-04-08
Middle Thorax Rib Deflection Y	1075	Servo	08TCI-3725	2022-04-11
Lower Thorax Rib Deflection Y	1213	Servo	08TCI-3725	2022-04-08
Upper Abdomen Rib Deflection Y	1218	Servo	08TCI-3725	2022-04-08
Lower Abdomen Rib Deflection Y	1177	Servo	08TCI-3725	2022-04-08
Lower Spine T12 Acceleration X	P58761	Endevco	7264C-2k	2022-04-09
Lower Spine T12 Acceleration Y	P50077	Endevco	7264C-2k	2022-04-09
Lower Spine T12 Acceleration Z	P58795	Endevco	7264C-2k	2022-04-09
Iliac Wing Impact Side Force Y	284 (Iliac)	R.A. Denton	3228J	2022-03-30
Acetabulum Impact Side Force Y	272 (Acetabulum)	R.A. Denton	3249J	2022-03-30

**Table 3 - Vehicle Instrumentation**

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Vehicle CG Ax	A383343	MSI	52F-2k	2022-04-14
Vehicle CG Ay	A354838	MSI	52F-2k	2022-02-10
Vehicle CG Az	A358535	MSI	52F-2k	2022-01-14
Right Side Sill at Front Seat Ax	A361471	MSI	52F-2k	2022-05-20
Right Side Sill at Front Seat Ay	A358532	MSI	52F-2k	2022-04-19
Right Side Sill at Front Seat Az	A383368	MSI	52F-2k	2022-05-23
Right Side Sill at Rear Seat Ax	A254887	MSI	52F-2k	2022-01-31
Right Side Sill at Rear Seat Ay	10866	Endevco	757F-2k	2022-03-11
Right Side Sill at Rear Seat Az	A298578	MSI	52F-2k	2022-02-07
Left Side Sill at Front Seat Ay	10910	Endevco	757F-2k	2022-04-18
Left Side Sill at Rear Seat Ay	A383378	MSI	52F-2k	2022-04-14
Left Lower A-Pillar Ay	A383338	MSI	52F-2k	2022-04-14
Left Middle A-Pillar Ay	A356493	MSI	52F-2k	2022-05-23
Left Lower B-Pillar Ay	220238	BST	11CF-2k	2022-05-26
Left Middle B-Pillar Ay	220239	BST	11CF-2k	2022-05-26
Driver Seat Track at H-Point Ay	A356476	MSI	52F-2k	2022-01-31
Rear Seat Structure Ay	A336676	MSI	52F-2k	2022-03-11
Right Rear Occupant Comp. Ay	A356453	MSI	52F-2k	2022-05-05
Engine Block Top Ax	A383336	MSI	52F-2k	2022-03-11
Engine Block Top Ay	A331818	MSI	52F-2k	2022-05-20
Rear Floopan Above Axle Ax	A383328	MSI	52F-2k	2022-03-11
Rear Floopan Above Axle Ay	A383360	MSI	52F-2k	2022-04-14
Rear Floopan Above Axle Az	A354807	MSI	52F-2k	2022-05-19

**Table 4 - Moving Deformable Barrier (MDB) Instrumentation**

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
MDB CG Ax	220211	BST	11CF-2k	2022-05-20
MDB CG Ay	220199	BST	11CF-2k	2022-02-21
MDB CG Az	220161	BST	11CF-2k	2022-05-27
MDB Left Side at Rear Axle Ax	220129	BST	11CF-2k	2022-02-15
MDB Left Side at Rear Axle Ay	220158	BST	11CF-2k	2022-05-24