

REPORT NUMBER: SideNCAPMDB-KAR-22-001

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

**VOLKSWAGEN DE MEXICO
2022 VOLKSWAGEN TAOS 5-DOOR MPV**

NHTSA No: M20225805

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



APRIL 27, 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, ROOM W43-410
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12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NRM-100) 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		14. Sponsoring Agency Code NRM-100																																																			
		15. Supplementary Notes																																																			
16. Abstract A 61.9 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2022 Volkswagen Taos 5-door MPV 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 April 13, 2022. The impact velocity of the Moving Deformable Barrier was 61.70 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 20.0°C. The target vehicle's maximum post-test static crush was 139 mm located at level 3. The test vehicle's occupant performance data is as follows: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Driver ATD (ES-2re)</th> </tr> <tr> <th>Units</th> <th>IARV</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>110.6</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>44</td> <td>16</td> </tr> <tr> <td>Total Abdominal Force</td> <td>N</td> <td>2500</td> <td>510</td> </tr> <tr> <td>Pubic Symphysis Force</td> <td>N</td> <td>6000</td> <td>1751</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Passenger ATD (SID-IIs)</th> </tr> <tr> <th>Units</th> <th>IARV</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>392.7</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82</td> <td>69</td> </tr> <tr> <td>Total Pelvic Force (Sum of Acetubular and Iliac Forces)</td> <td>N</td> <td>5525</td> <td>2993</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>29</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45*</td> <td>33</td> </tr> </tbody> </table> 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.				Measurement Description	Driver ATD (ES-2re)			Units	IARV	Result	Head Injury Criteria (HIC ₃₆)		1000	110.6	Maximum Thoracic Rib Deflection	mm	44	16	Total Abdominal Force	N	2500	510	Pubic Symphysis Force	N	6000	1751	Measurement Description	Passenger ATD (SID-IIs)			Units	IARV	Result	Head Injury Criteria (HIC ₃₆)		1000	392.7	Resultant Lower Spine Acceleration	g	82	69	Total Pelvic Force (Sum of Acetubular and Iliac Forces)	N	5525	2993	Maximum Thoracic Rib Deflection	mm	38*	29	Maximum Abdominal Rib Deflection	mm	45*	33
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17. Key Words New Car Assessment Program (NCAP) Side Impact Moving Deformable Barrier (MDB) ES-2re SID-IIs		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. Technical Reference Division 1200 New Jersey Ave., SE Washington, DC 20590																																																			
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*Proposed IARV

TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1	Test Purpose and Procedure	1
2	Summary of Test Results	2
3	Occupant and Vehicle Information/Data Sheets	4
<u>Data Sheet</u>		<u>Page</u>
1	General Test and Vehicle Parameter Data	5
2	Seat, Seat Belt, Steering Wheel Adjustment, and Fuel System Data	9
3	Dummy Longitudinal Clearance Dimensions	13
4	Dummy Lateral Clearance Dimensions	14
5	Camera and Instrumentation Data	15
6	Test Vehicle Accelerometer Locations	16
7	MDB Accelerometer Locations	17
8	Post-Test Observations	18
9	MDB Summary of Results	21
10	Test Vehicle Profile Measurements	22
11	Test Vehicle Exterior Crush Measurements	23
12	MDB Exterior Static Crush Measurements	26
13	Vehicle and MDB Damage Profile Distances	27
14	FMVSS No. 301 Static Rollover Results	28
15	Dummy/Vehicle Temperature and Humidity Stabilization	29
<u>Appendix</u>		<u>Page</u>
A	Photographs	A
B	Vehicle and Dummy Response Data Plots	B
C	ATD Configuration and Performance Verification Data	C
D	Test Equipment and Instrumentation Calibration Data	D

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 DTNH22-14-D-00355L. The purpose of this test is to generate comparative side impact performance in a 2022 Volkswagen Taos 5-door MPV. 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 Volkswagen Taos 5-door MPV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.70 km/h (38.33 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Applus IDIADA KARCO Engineering, LLC. in Adelanto, California, on April 13, 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

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 ₃₆)		1000	110.6
Maximum Thoracic Rib Deflection	mm	44	16
Combined Abdominal Force	N	2500	510
Pubic Symphysis Force	N	6000	1751

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	392.7
Lower Spine (T12) Resultant Acceleration	g	82	69
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2993
Maximum Thoracic Rib Deflection	mm	38*	29
Maximum Abdominal Rib Deflection	mm	45*	33

**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	No			
Side Airbag 1 (Curtain)	Yes	Yes	Yes	Yes
Side Airbag 2 (Torso/Pelvis)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	

GENERAL COMMENTS:

- Left Lower A-Post Ay, Channel Failed at 15.0 ms

SECTION 3

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

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 ²	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 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	M20225805	Traction Control System (TCS)	Yes
Model Year	2022	Auto-Leveling System	No
Make	Volkswagen	Automatic Door Locks	Yes
Model	Taos	Power Window Auto-Reverse	Yes
Body Style	5-Door MPV	Other Optional Feature	No
VIN	3VVRX7B24NM044891	Driver Front Airbag	Yes
Body Color	Pyrite Silver Metallic	Driver Curtain Airbag	Yes
Odometer Reading (km / mi)	97 / 60	Driver Head/Torso Airbag	No
Engine Displacement (L)	1.5	Driver Torso Airbag	No
Type / No. of Cylinders	Inline 4-Cylinder	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Transverse	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	No
Transmission Speeds	8	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	FWD	Rear Pass. Torso Airbag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	No
Sunroof / T-Top	No	Rear Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioner	No
Power Seats	Yes	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	No
		Other Safety Restraint	No

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

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Volkswagen De Mexico	GVWR (kg)	1970
Date of Manufacture	21-Dec	GAWR Front (kg)	1040
Vehicle Type	MPV	GAWR Rear (kg)	980

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity	2	3		5	
Capacity Weight (VCW) (kg)				425.0	A
DSC x 68.04 (kg)				340.2	B
Cargo Weight (RCLW) (kg)				84.8	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 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	250	250	250	250
Tire Placard	kPa	250	250	250	250
Owner's Manual	kPa	250	250	250	250
As Tested	kPa	250	250	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 (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	439.0	278.5		491.0	356.0		493.0	353.5	
Right	kg	428.0	306.5		451.5	357.0		451.0	363.0	
Ratio	%	59.7%	40.3%		56.9%	43.1%		56.9%	43.1%	
Total	kg	867.0	585.0	1452.0	942.5	713.0	1655.5	944.0	716.5	1660.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1452.0	A
Actual Weight of 2 P572 ATD Used	kg	125.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	84.8	C
Calculated Vehicle Target Wt (TVTW)	kg	1661.8	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	820	820	Yes
RF	mm	835	829	Yes
LR	mm	822	818	Yes
RR	mm	835	826	Yes
Vehicle CG (Aft of Front Axle)	mm	1159	1157	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	18	21	

***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 Volkswagen Taos 5-door MPV NHTSA No. M20225805
Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

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	4.0
Spare Tire	10.0
Spare Tire Tools	3.5

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 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

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	9.0	0.0	4.5
Front Passenger Seat	4.3	0.0	2.2
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	4.5	223	Max	285	283	280
			Mid	253	253	252
			Min	220	223	223
Front Passenger Seat	2.2	212	Max			
			Mid	212	212	212
			Min			
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 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

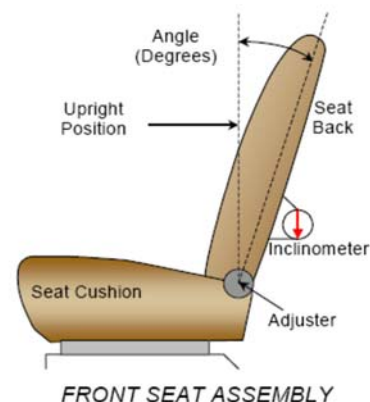
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	254		127	38
Front Passenger Seat	252		126	18
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	64.4		23.0	
Front Passenger Seat	59.8		24.8	
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 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

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

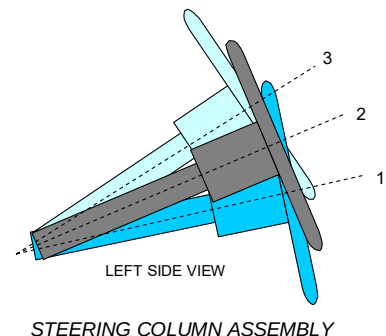
HEAD RESTRAINT ADJUSTMENT

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	3	H
Rear Seat	2	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.

**STEERING COLUMN POSITIONING**

	Degrees	Fore-Aft Position (mm)
Lowermost Position, No. 1	23.1	75
Geometric Center Position, No. 2	25.9	103
Uppermost Position, No. 3	28.6	130
Telescoping Steering Wheel Travel		55
Test Position	25.9	103

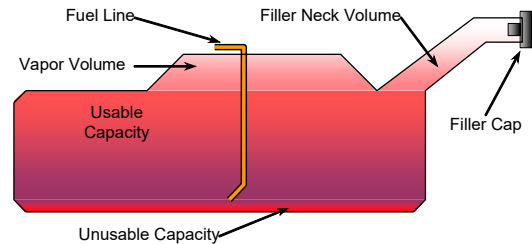
DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

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



VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	50.72
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	50.72
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	47.17
Actual amount of Solvent Used in Test	47.17
1/3 of Usable Capacity	16.91

Is the Actual Amount of Solvent Used in the test equal to 93% $\pm$ 1% of the Usable Capacity stated in the Form No. 1? ☒ Yes ☐ No

DATA SHEET NO. 3

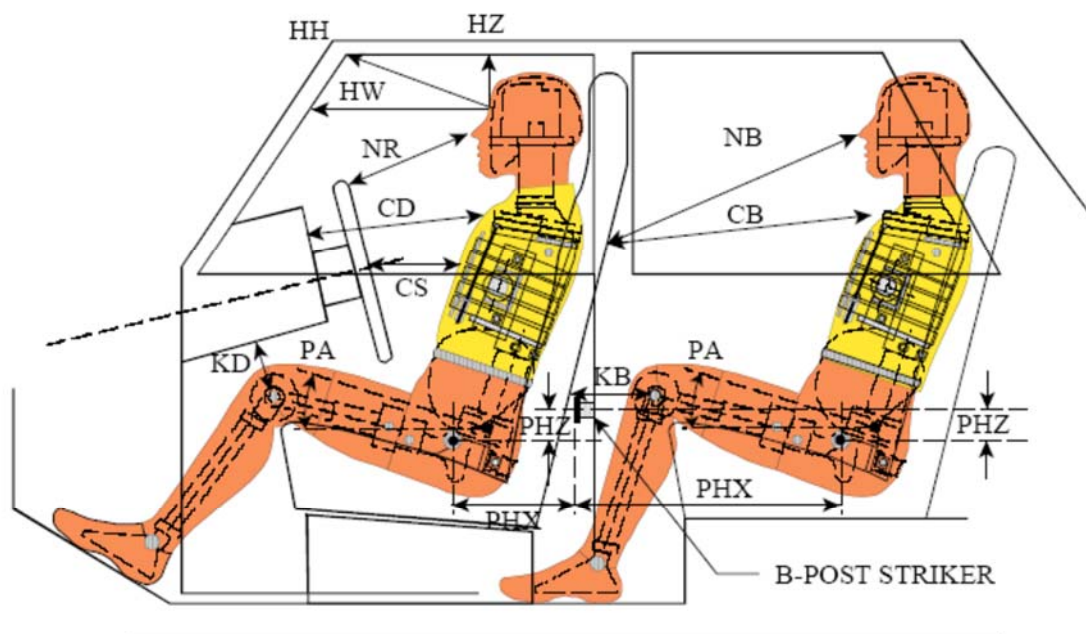
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2022 Volkswagen Taos 5-door MPV

NHTSA No. M20225805

Test Program: NCAP MDB Side Impact Test

Test Date: 04/13/22



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

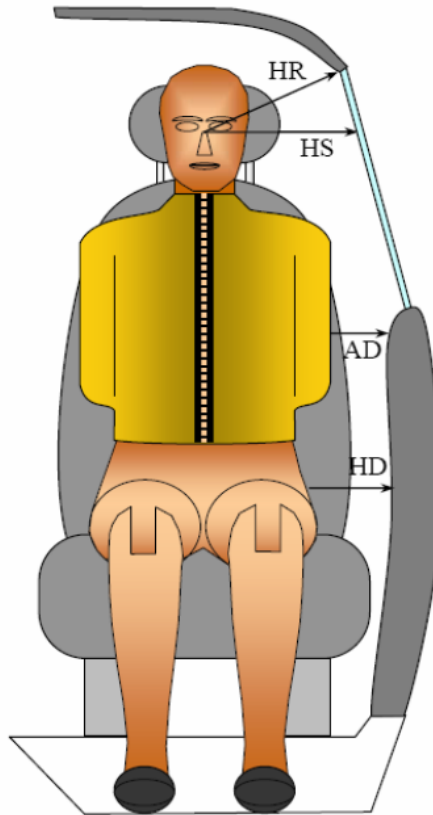
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	430			
HW		Head to Windshield	218			
HZ	HZ	Head to Roof	226		274	
NR	NB	Nose to Rim/Seat Back	476		520	
CD	CB	Chest to Dash/Seat Back	613		472	
CS		Chest to Steering Wheel	368			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	223	22.5	301	15.8
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	194	20.8	299	14.3
PAX°	PAX°	Pelvic Tilt Angle X		3.9		21.2
	PAY°	Pelvic Tilt Angle Y		0.0		0.0
PHX	PHX	Hip Point to Striker (x-axis)	160		247	
PHZ	PHZ	Hip Point to Striker (z-axis)	234		284	

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22



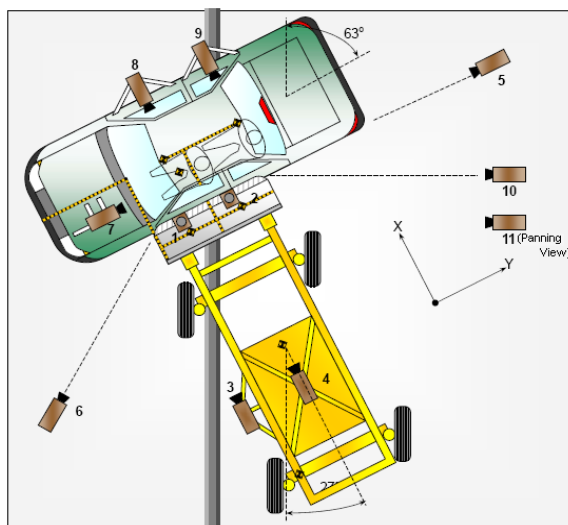
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	356	273
HS	Head to Side Window	mm	242	381
AD	Arm to Door	mm	99	164
HD	H-Point to Door	mm	140	171

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22



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

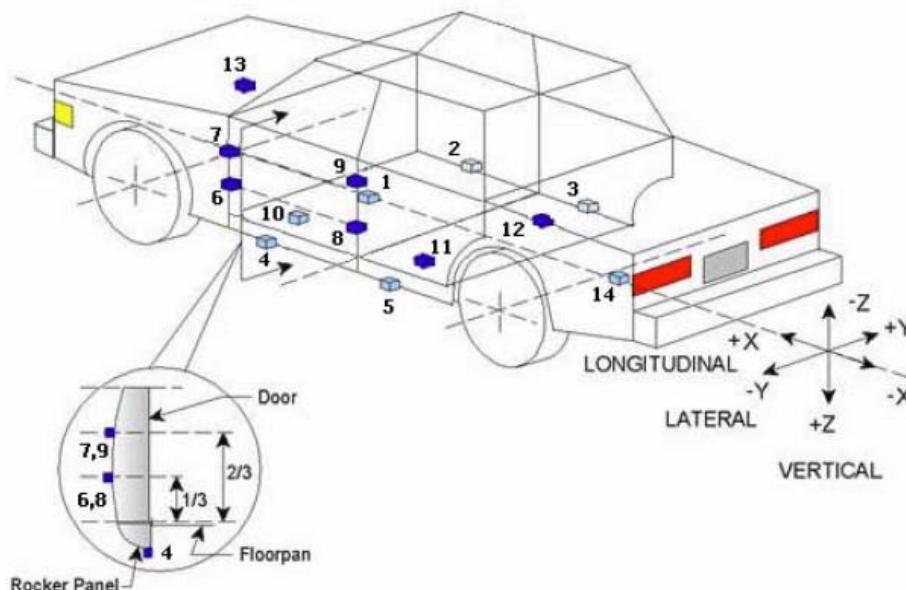
INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	19
Vehicle Structure Accelerometers	23
MDB Channels	5
Total	63

DATA SHEET NO. 6

TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

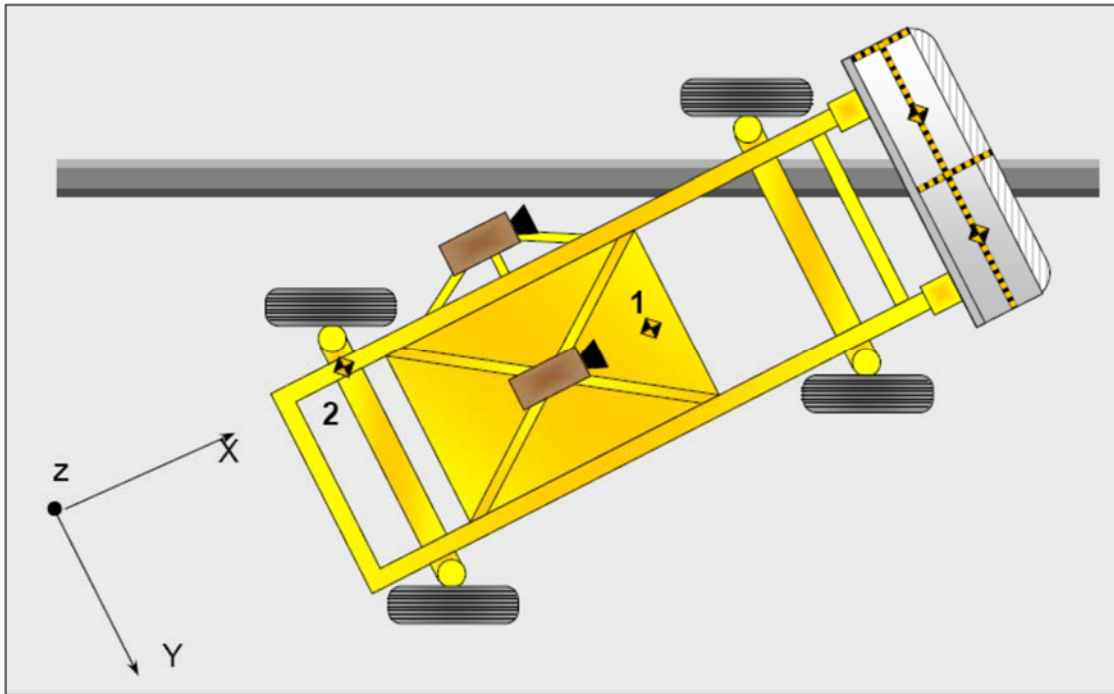
Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	1834	0	452
2	Right Sill at Front Seat	2546	705	360
3	Right Sill at Rear Seat	1822	705	360
4	Left Sill at Front Door	2462	-742	235
5	Left Sill at Rear Door	1700	-742	235
6	A-Pillar Lower	3039	-806	502
7	A-Pillar Middle	3039	-806	880
8	B-Pillar Lower	2033	-731	511
9	B-Pillar Middle	2033	-731	948
10	Front Seat Track	2113	-151	397
11	Rear Seat Structure	1703	-304	436
12	Right Rear Occupant Compartment	1951	353	265
13	Engine Block	3716	342	808
14	Rear Floorpan Above Axle	1051	-45	387

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 Volkswagen Taos 5-door MPV NHTSA No. M20225805
Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22



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 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	Curtain Airbag	Curtain Airbag
Top of Head	Side Header	Curtain Airbag, Rear Center Seat
Left Side of Head	Curtain Airbag	Curtain Airbag
Back of Head	Headrest	Curtain Airbag, Rear Center Seat
Left Shoulder	Door Panel	Door Panel
Upper Torso	Torso-Pelvis Airbag	Door Panel
Lower Torso	Torso-Pelvis Airbag	Door Panel
Left Hip	Door Panel, Torso Pelvis	Door Panel
Left Knee	N/A	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 Volkswagen Taos 5-door MPV NHTSA No. M20225805
Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

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	Broken
Other Notable Effects	None

DATA SHEET NO. 8 ... (CONTINUED)**POST-TEST OBSERVATIONS**

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheelbase	mm		2687
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		398
Actual Impact Point (Aft of Front Axle)	mm		438
Horizontal Offset (+ forward / - rearward)	mm	± 50 of Intended Impact Point	-40
Vertical Offset (+ down / - up)	mm	± 20 of Intended Impact Point	7

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

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

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	61.70
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.58
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.7
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.0
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.7

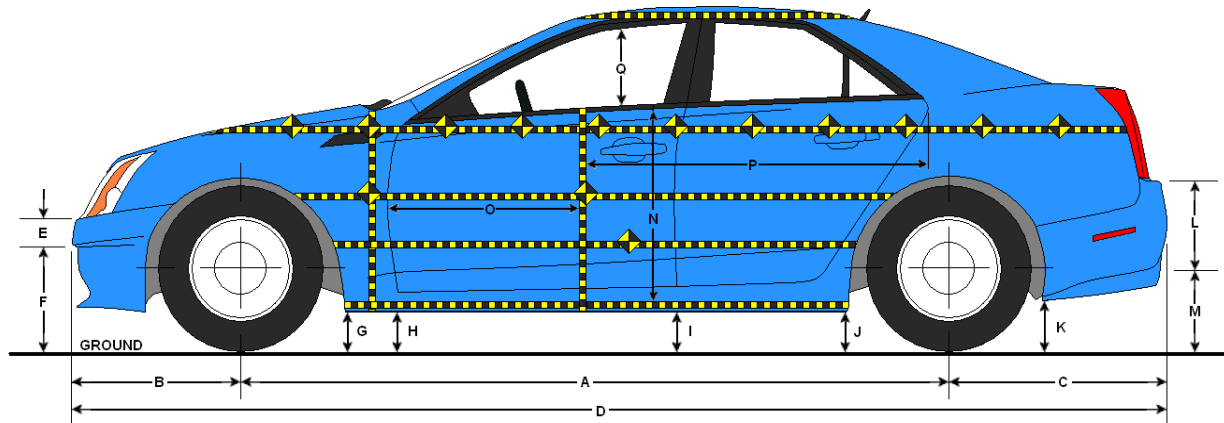
MAXIMUM STATIC CRUSH OF HONEYCOMB FACE

Vertical Location			From Centerline		Max. Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	800	Left	254
B	Top of Bumper	533	200	Right	204
C	Mid Level	686	100	Right	150
D	Top of Stack	813	800	Left	202

DATA SHEET NO. 10

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2687	2667	-20
B	Front Axle to FSOV	905	927	22
C	Rear Axle to RSOV	864	859	-5
D	Total Length at Centerline	4455	4453	-2
E	Front Bumper Thickness	115	114	-1
F	Front Bumper Bottom to Ground	523	511	-12
G	Sill Height at Front Wheel Well	300	297	-3
H	Sill Height at Front Door Leading Edge	304	355	51
I	Sill Height at B-Pillar	311	334	23
J1	Sill Height at Rear Wheel Well	317	356	39
J2	Pinch Weld Height at Rear Wheel Well	273	275	2
K	Sill Height Aft of Rear Wheel Well	807	382	-425
L	Rear Bumper Thickness	157	157	0
M	Rear Bumper Bottom to Ground	477	479	2
N	Sill Height to Bottom of Front Window Sill	786	748	-38
O	Front Door Leading Edge to Impact CL	774	759	-15
P	Rear Door Trailing Edge to Impact CL	1338	1318	-20
Q	Front Window Opening	371	397	26
R	Right Side Length	3300	3302	2
S	Left Side Length	3428	3288	-140
T	Vehicle Width at B-Pillar	1785	1712	-73

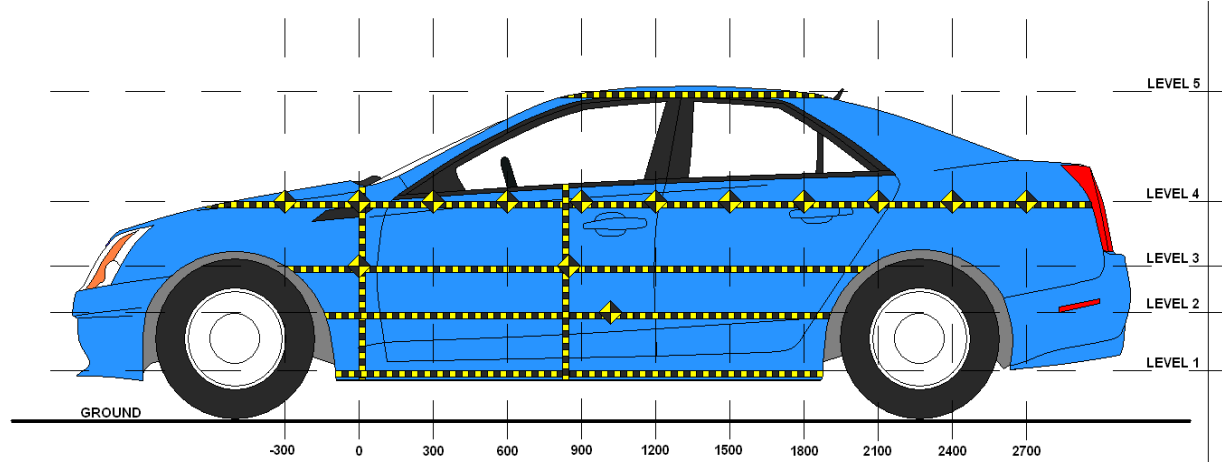
All measurements in mm with tolerance of ± 3 mm

DATA SHEET NO. 11

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805

Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22



LEFT SIDE VIEW

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	382	59	300
2	Occupant H-Point	621	134	1650
3	Mid-Door	719	139	1650
4	Window Sill	1061	65	1800
5	Window Top	1554	-3	2100

DATA SHEET NO. 11 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22

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															
-150				724					662					-62	
0	612	596	598	715		538	531	536	658		-74	-65	-62	-57	
150	611	612	608	703		630	648	646	614		19	36	38	-89	
300	601	619	610	691		660	703	713	625		59	84	103	-66	
450	600	620	611	682		651	735	732	643		51	115	121	-39	
600	598	621	612	671		642	721	727	631		44	100	115	-40	
750	597	623	613	662		641	709	725	630	849	44	86	112	-32	
900	596	625	615	655	879	635	694	720	631	853	39	69	105	-24	-26
1050	600	628	618	650	882	632	696	688	636	860	32	68	70	-14	-22
1200	604	629	622	645	886	655	696	714	647	867	51	67	92	2	-19
1350	611	629	625	644	889	657	724	747	659	873	46	95	122	15	-16
1500	618	630	629	643	892	664	742	763	674	879	46	112	134	31	-13
1650	627	633	630	644	896	670	767	769	696	887	43	134	139	52	-9
1800	638	615	619	649	901	672	742	727	714	893	34	127	108	65	-8
1950			602	654	904			647	679	900			45	25	-4
2100				660	911				653	908				-7	-3
2250															
2400															
2550															
2700															
2850															

DATA SHEET NO. 11 ... (CONTINUED)

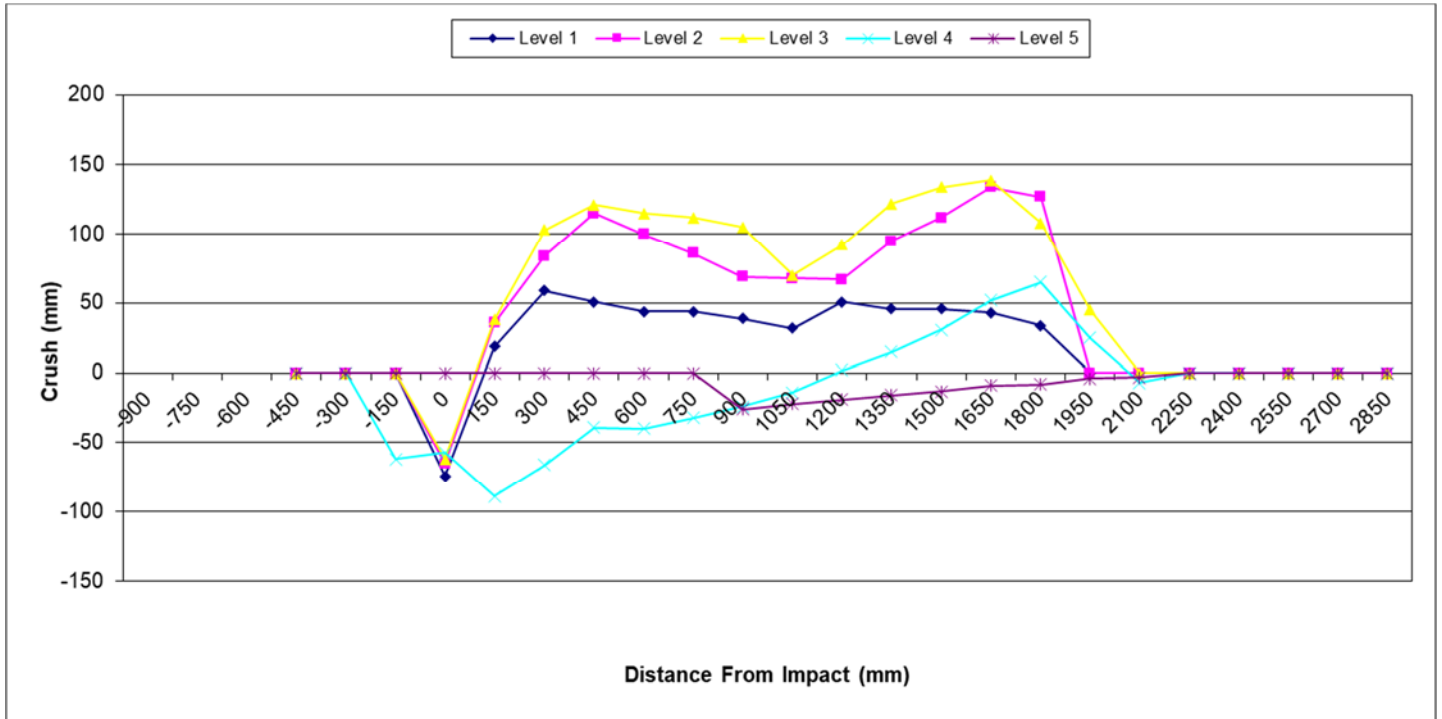
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2022 Volkswagen Taos 5-door MPV

NHTSA No. M20225805

Test Program: NCAP MDB Side Impact Test

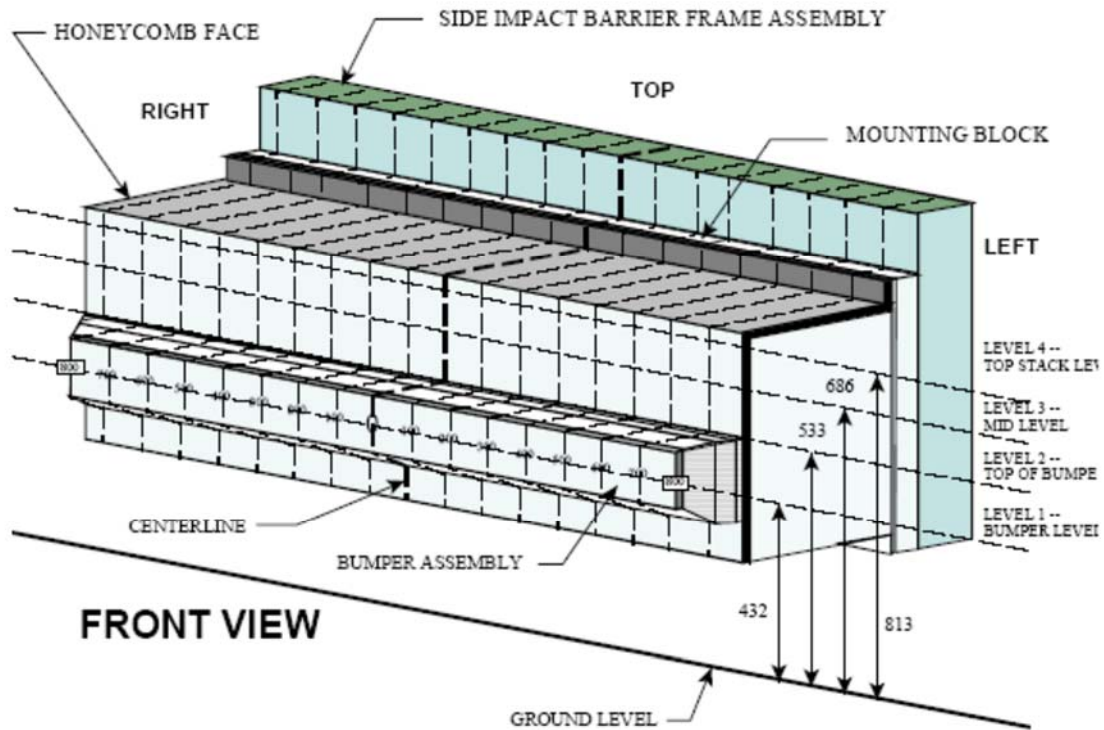
Test Date: 04/13/22



DATA SHEET NO. 12

MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22



NOTE: Dimensions are shown in millimeters, mm

DEFORMABLE BARRIER STATIC CRUSH

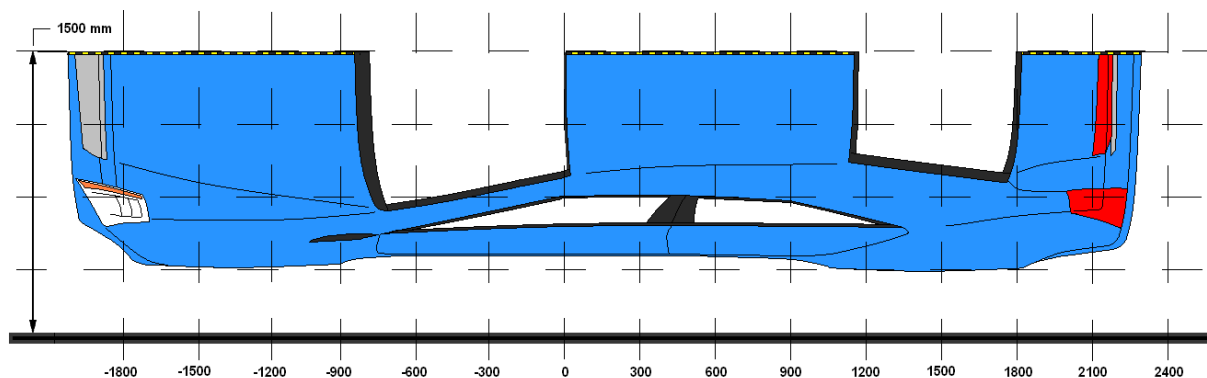
Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	249	249	249	248	247	249	250	253	253	251	249	244	230	231	227	226	254
2	179	192	183	179	176	176	204	172	177	177	178	179	179	176	177	176	184
3	97	101	103	111	121	123	136	150	149	129	120	111	105	102	114	127	147
4	87	79	92	103	127	125	159	167	139	122	116	113	114	129	162	182	202

All dimensions in millimeters.

DATA SHEET NO. 13

VEHICLE AND MDB DAMAGE PROFILE DISTANCES

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	2100	5	911	908	-3
2	1650	3	630	769	139
3	1200	3	622	714	92
4	750	3	613	725	112
5	300	3	610	713	103
6	-150	4	724	662	-62

MDB DAMAGE PROFILE DISTANCES

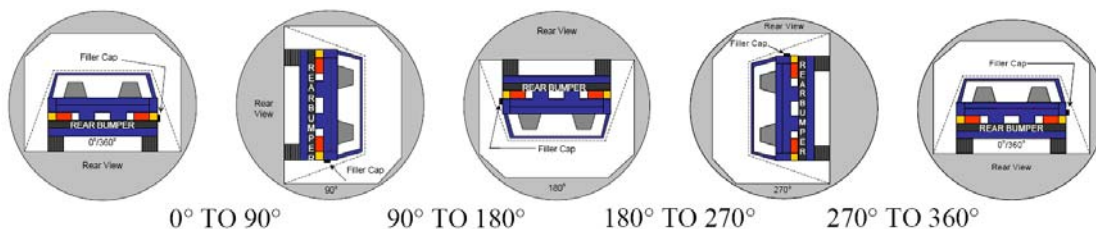
DPD	From MDB Centerline		Level	Crush (mm)
	Distance (mm)	Direction		
1	800	Left	1	254
2	500	Left	1	231
3	200	Left	1	249
4	200	Right	1	250
5	500	Right	1	248
6	800	Right	1	249

DATA SHEET NO. 14

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2022 Volkswagen Taos 5-door MPV NHTSA No. M20225805
 Test Program: NCAP MDB Side Impact Test Test Date: 04/13/22
 Temperature at Time of Impact: 20.0°C Test Time: 3:54 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°	80	300	380
180° To 270°	84	300	384
270° To 360°	79	300	379

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

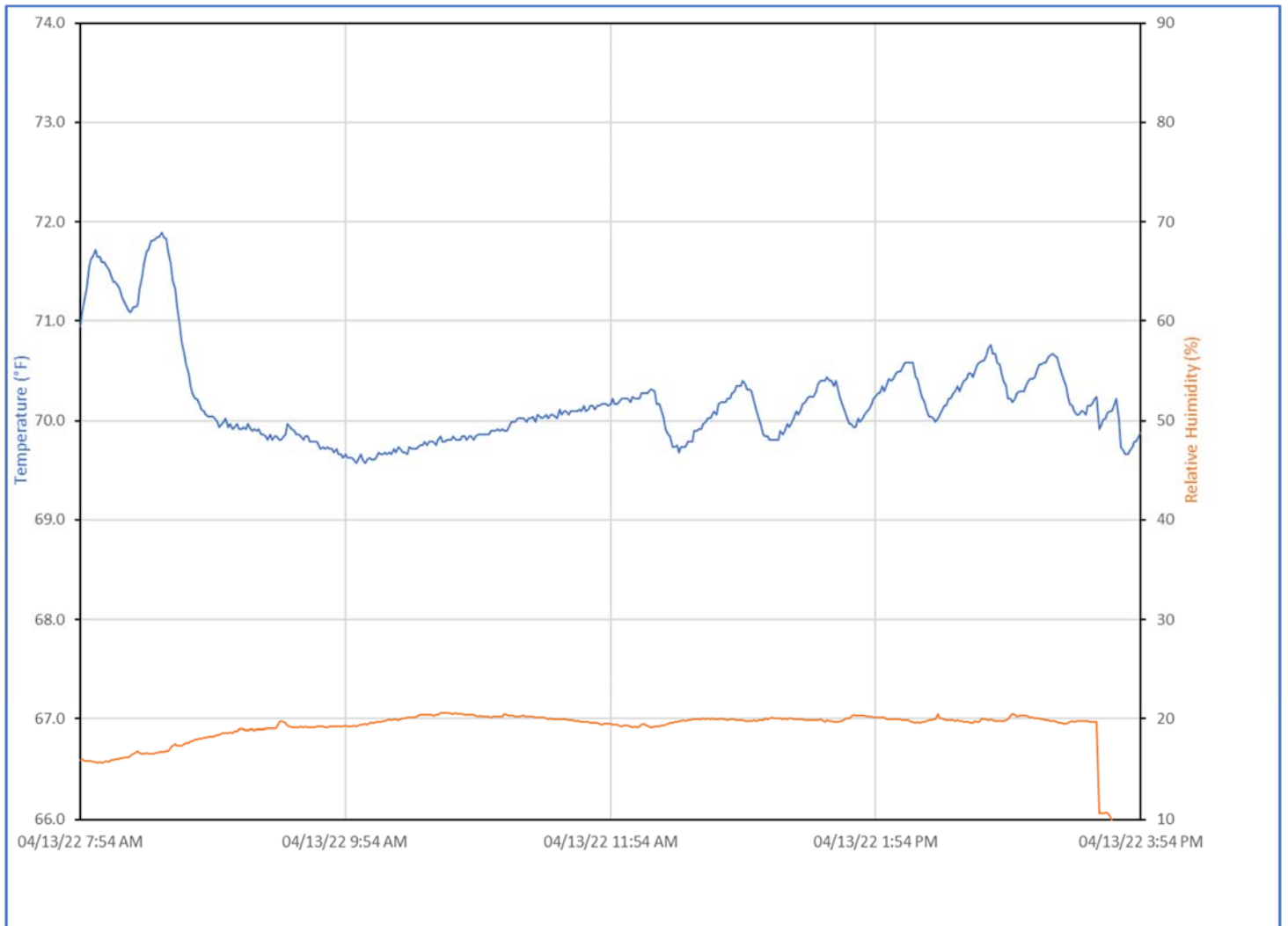
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2022 Volkswagen Taos 5-door MPV

NHTSA No. M20225805

Test Program: NCAP MDB Side Impact Test

Test Date: 04/13/22



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Figure		Page
1	As-Delivered Right Front $\frac{3}{4}$ View of Test Vehicle	A-1
2	As-Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle	A-1
3	Pre-Test Frontal View of Test Vehicle	A-2
4	Post-Test Frontal View of Test Vehicle	A-2
5	Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle	A-3
6	Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle	A-3
7	Pre-Test Left Side View of Test Vehicle	A-4
8	Post-Test Left Side View of Test Vehicle	A-4
9	Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle	A-5
10	Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle	A-5
11	Pre-Test Rear View of Test Vehicle	A-6
12	Post-Test Rear View of Test Vehicle	A-6
13	Pre-Test Right Side View of Test Vehicle	A-7
14	Post-Test Right Side View of Test Vehicle	A-7
15	Pre-Test Overhead View of Test Area	A-8
16	Post-Test Overhead View of Test Area	A-8
17	Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle	A-9
18	Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle	A-9
19	Pre-Test Close-Up View of Impact Point Target	A-10
20	Post-Test Close-Up View of Impact Point Target	A-10
21	Pre-Test Left Front Door Latch Close-Up	A-11
22	Post-Test Left Front Door Latch Close-Up	A-11
23	Pre-Test Left Rear Door Latch Close-Up	A-12
24	Post-Test Left Rear Door Latch Close-Up	A-12
25	Pre-Test Front Close-Up View of Driver Dummy	A-13
26	Post-Test Front Close-Up View of Driver Dummy	A-13
27	Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking	A-14
28	Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View	A-14
29	Post-Test Left Side View of Driver Dummy Shoulder and Door Top View	A-15
30	Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning	A-15
31	Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint	A-16
32	Pre-Test Overhead View of Driver Seat Pan Prior to Dummy Positioning	A-16
33	Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan	A-17
34	Pre-Test Placement of Driver Dummy's Feet	A-17
35	Pre-Test View of Belt Anchorage for Driver Dummy	A-18

TABLE OF PHOTOGRAPHS ... (CONTINUED)

Figure		Page
36	Pre-Test Left Side View of Steering Wheel	A-18
37	View of Disengaged Parking Brake	A-19
38	Pre-Test View of Parking Brake	A-19
39	Pre-Test Close-Up Left Side View of Driver Seat Track	A-20
40	Pre-Test Close-Up Left Side View of Driver Seat Back	A-20
41	Pre-Test Close-Up View of Driver Seat Back or Head Restraint	A-21
42	Pre-Test Driver Dummy and Door Clearance View	A-21
43	Post-Test Driver Dummy and Door Clearance View	A-22
44	Pre-Test Right Side View of Driver Dummy and Front Seat Occupant Compartment	A-22
45	Post-Test Right Side View of Driver Dummy and Front Seat Occupant Compartment	A-23
46	Pre-Test Driver Inner Door Panel View	A-23
47	Post-Test Driver Inner Door Panel View Showing Driver Dummy Contact Locations	A-24
48	Post-Test Driver Dummy Close-Up Head Contact with Vehicle Interior View	A-24
49	Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View	A-25
50	Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View	A-25
51	Post-Test Driver Dummy Close-Up Torso Contact with Side Airbag View	A-26
52	Post-Test Driver Dummy Close-Up Pelvis Contact with Vehicle Interior View	A-26
53	Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View	A-27
54	Post-Test Driver Dummy Close-Up Knee Contact View	A-27
55	Pre-Test Left Side View of Rear Passenger Dummy Showing Belt and Chalking	A-28
56	Pre-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View	A-28
57	Post-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View	A-29
58	Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning	A-29
59	Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint	A-30
60	Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning	A-30
61	Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan	A-31
62	Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck Bracket	A-31
63	Pre-Test View of Rear Passenger Dummy's Head Showing Dummy's Head is Level	A-32
64	Pre-Test Placement of Rear Passenger Dummy's Feet	A-32
65	Pre-Test View of Belt Anchorage for Rear Passenger Dummy	A-33
66	Pre-Test Close-Up Left Side View of Rear Passenger Seat Track	A-33
67	Pre-Test Close-Up Left Side View of Rear Passenger Seat Back	A-34
68	Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint	A-34
69	Pre-Test Rear Passenger Dummy and Door Clearance View	A-35
70	Post-Test Rear Passenger Dummy and Door Clearance View	A-35

TABLE OF PHOTOGRAPHS ... (CONTINUED)

Figure		Page
71	Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment	A-36
72	Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment	A-36
73	Pre-Test Rear Passenger Inner Door Panel View	A-37
74	Post-Test Rear Passenger Inner Door Panel View Showing Rear Passenger Dummy Contact Locations	A-37
75	Post-Test Rear Passenger Dummy Close-Up Head Contact with Vehicle Interior View	A-38
76	Post-Test Rear Passenger Dummy Close-Up Head Contact with Side Airbag View	A-38
77	Post-Test Rear Passenger Dummy Close-Up Torso Contact with Vehicle Interior View	A-39
78	Post-Test Rear Passenger Dummy Close-Up Torso Contact with Side Airbag View	A-39
79	Post-Test Rear Passenger Dummy Close-Up Pelvis Contact with Vehicle Interior View	A-40
80	Post-Test Rear Passenger Dummy Close-Up Pelvis Contact with Side Airbag View	A-40
81	Post-Test Rear Passenger Dummy Close-Up Knee Contact View	A-41
82	Pre-Test View of Fuel Filler Cap or Fuel Filler Neck	A-41
83	Post-Test View of Fuel Filler Cap or Fuel Filler Neck	A-42
84	Pre-Test Front View of MDB Impactor Face	A-42
85	Post-Test Front View of MDB Impactor Face	A-43
86	Pre-Test Top View of MDB Impactor Face	A-43
87	Post-Test Top View of MDB Impactor Face	A-44
88	Pre-Test Left Side View of MDB Impactor Face	A-44
89	Post-Test Left Side View of MDB Impactor Face	A-45
90	Pre-Test Right Side View of MDB Impactor Face	A-45
91	Post-Test Right Side View of MDB Impactor Face	A-46
92	Close-Up View of Vehicle's Certification Label	A-46
93	Close-Up View of Vehicle's Tire Information Placard or Label	A-47
94	Pre-Test Ballast View	A-47
95	Post-Test Primary and Redundant Speed Trap Read-Out	A-48
96	FMVSS No. 301 Static Rollover 0 Degrees	A-48
97	FMVSS No. 301 Static Rollover 90 Degrees	A-49
98	FMVSS No. 301 Static Rollover 180 Degrees	A-49
99	FMVSS No. 301 Static Rollover 270 Degrees	A-50
100	FMVSS No. 301 Static Rollover 360 Degrees	A-50
101	Impact Event	A-51
102	Monroney Label	A-51
103	Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-52
104	Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-52



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

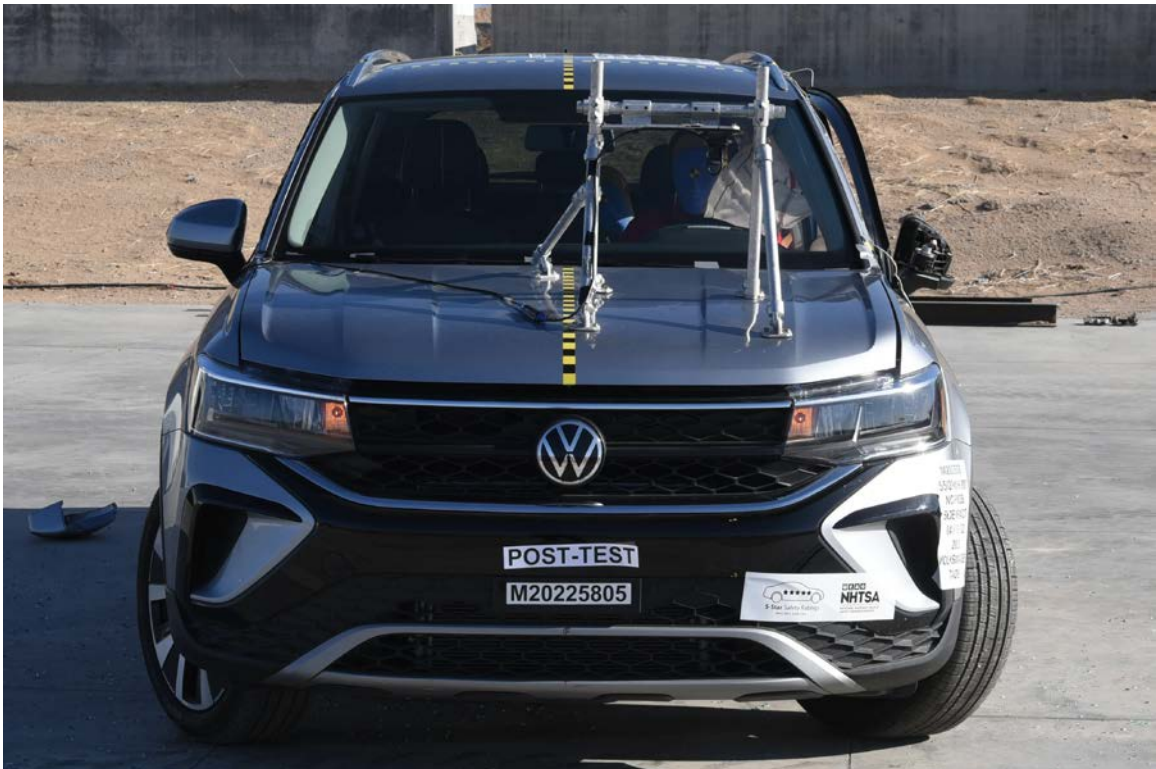


FIGURE 4. Post-Test Frontal View of Test Vehicle



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

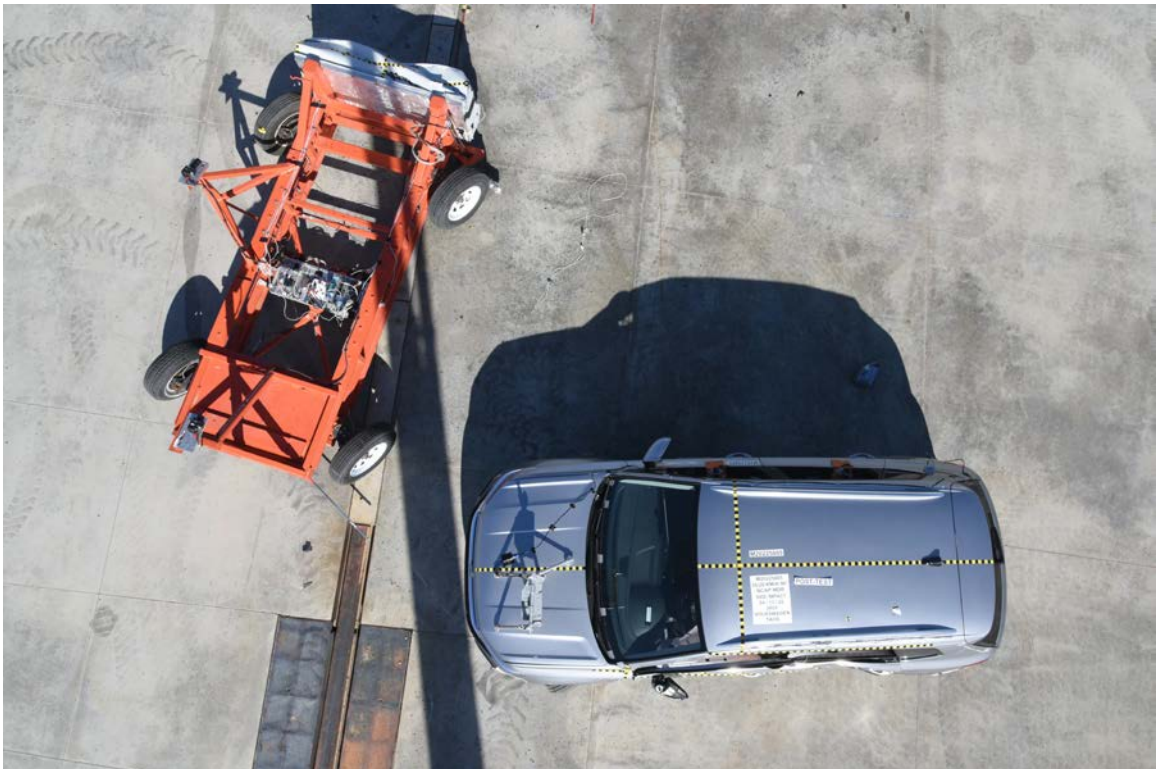


FIGURE 16. Post-Test Overhead View of Test Area



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

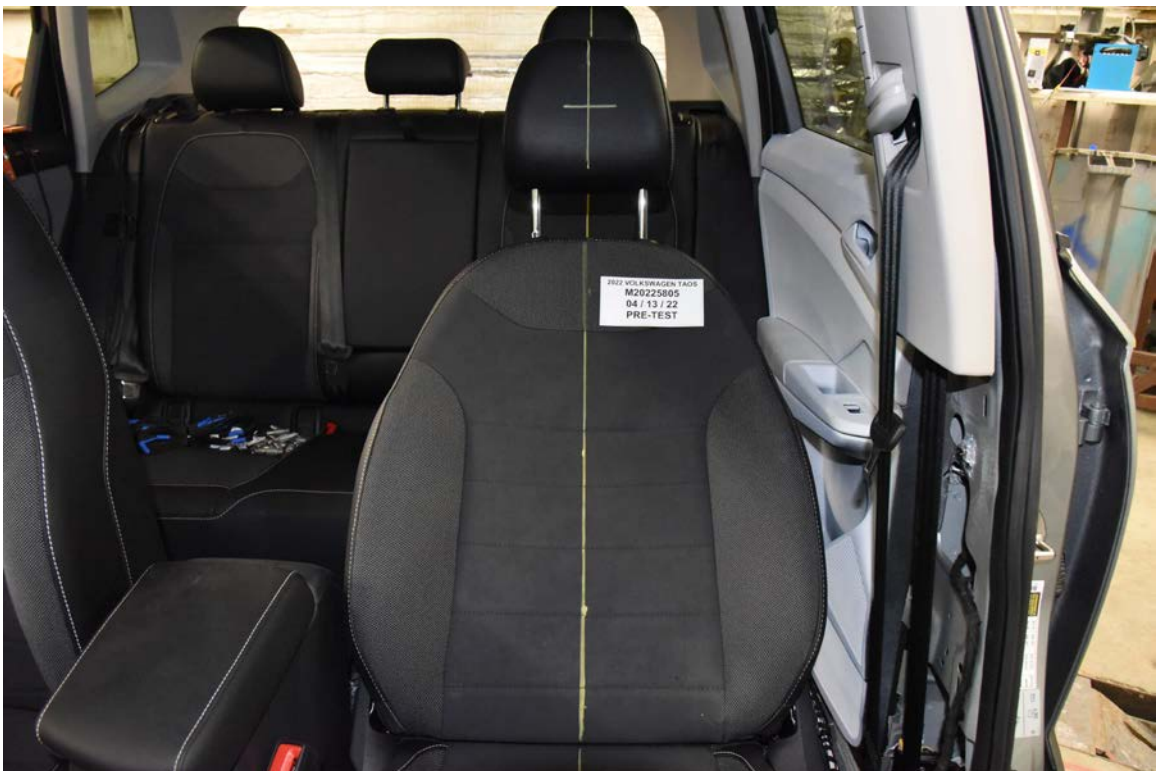


FIGURE 30. Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



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



FIGURE 37. View of Disengaged Parking Brake



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 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



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

Photograph Not Applicable
No Knee Contact Present

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

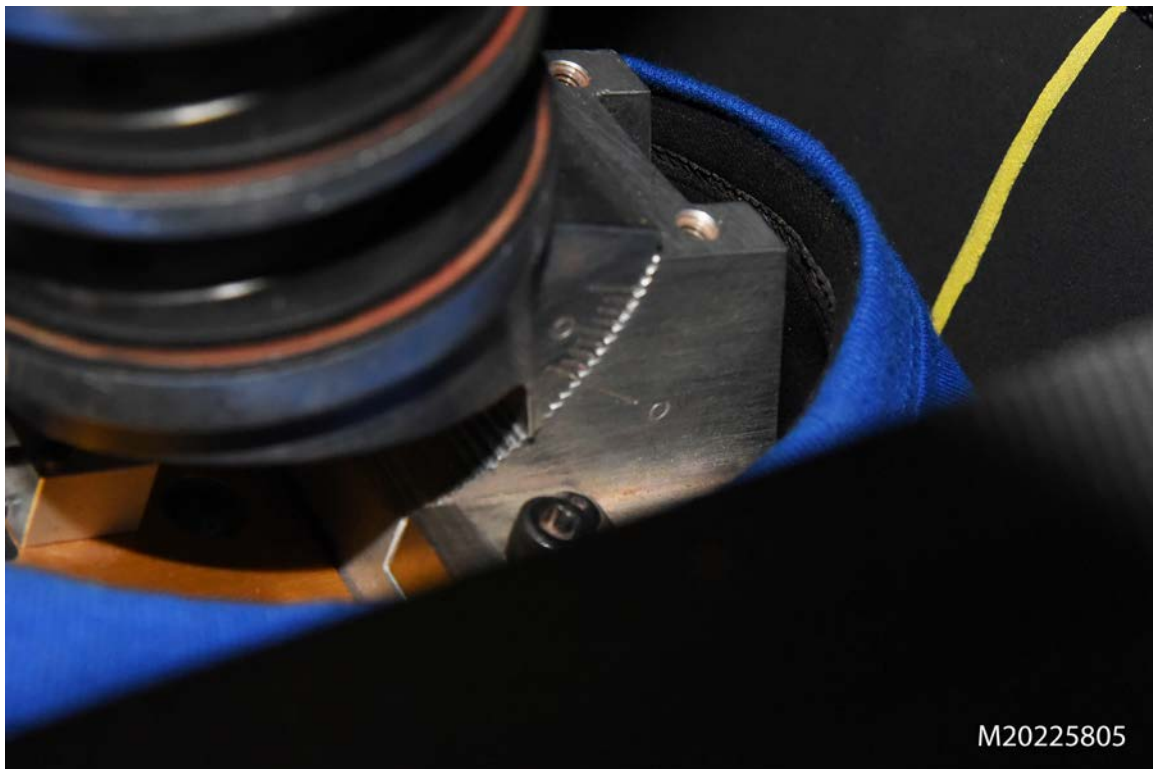


FIGURE 62. Pre-Test View of Rear Passenger Dummy's Neck
Showing Position of Adjustable Neck Bracket



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



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

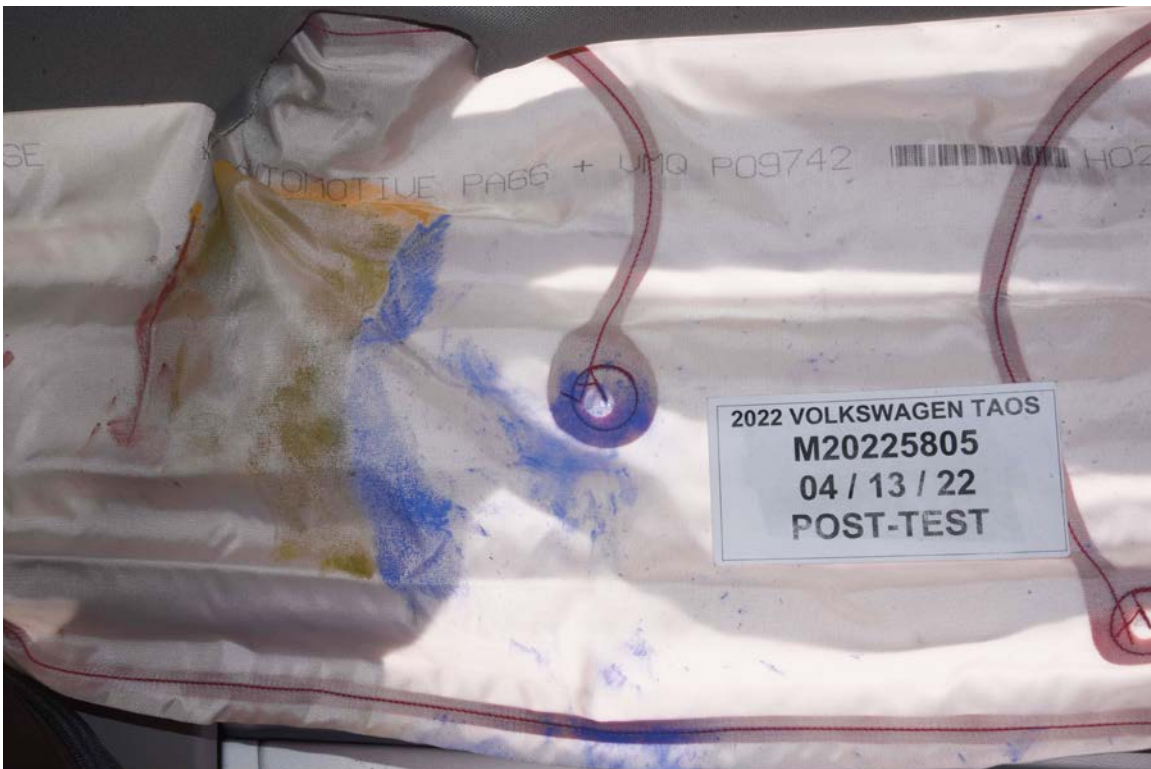


FIGURE 76. Post-Test Rear Passenger Dummy Close-Up
Head Contact with Side Airbag View



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

Photograph Not Applicable
Vehicle Not Equipped With
Rear Side Air Bag

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



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

Photograph Not Applicable
Vehicle Not Equipped With
Rear Side Air Bag

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

Photograph Not Applicable No Knee Contact Present

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

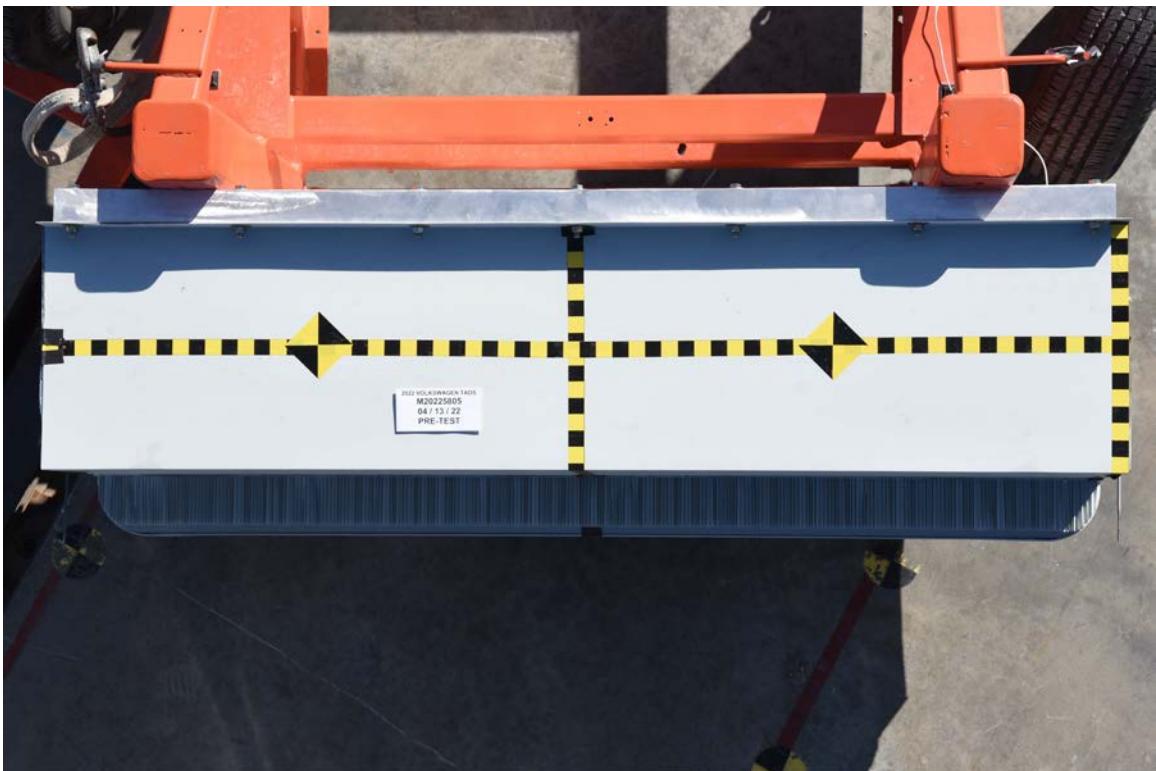


FIGURE 86. Pre-Test Top View of MDB Impactor Face



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



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

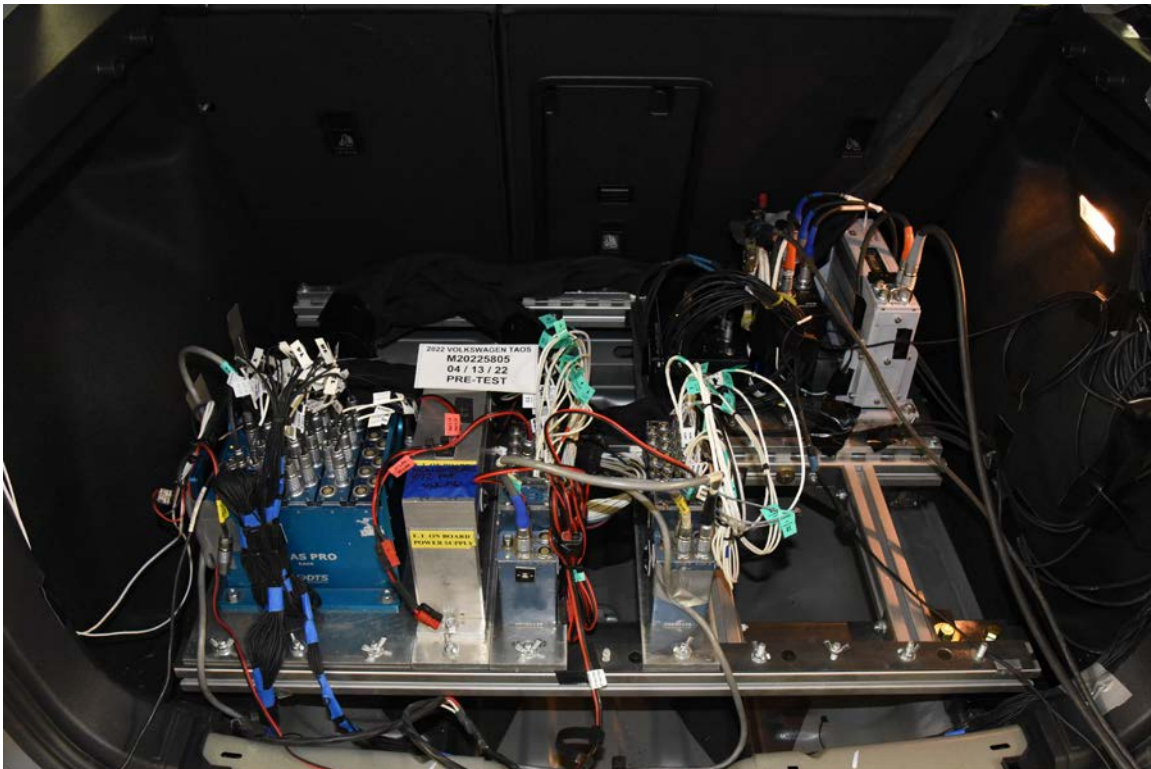


FIGURE 94. Pre-Test Ballast View



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

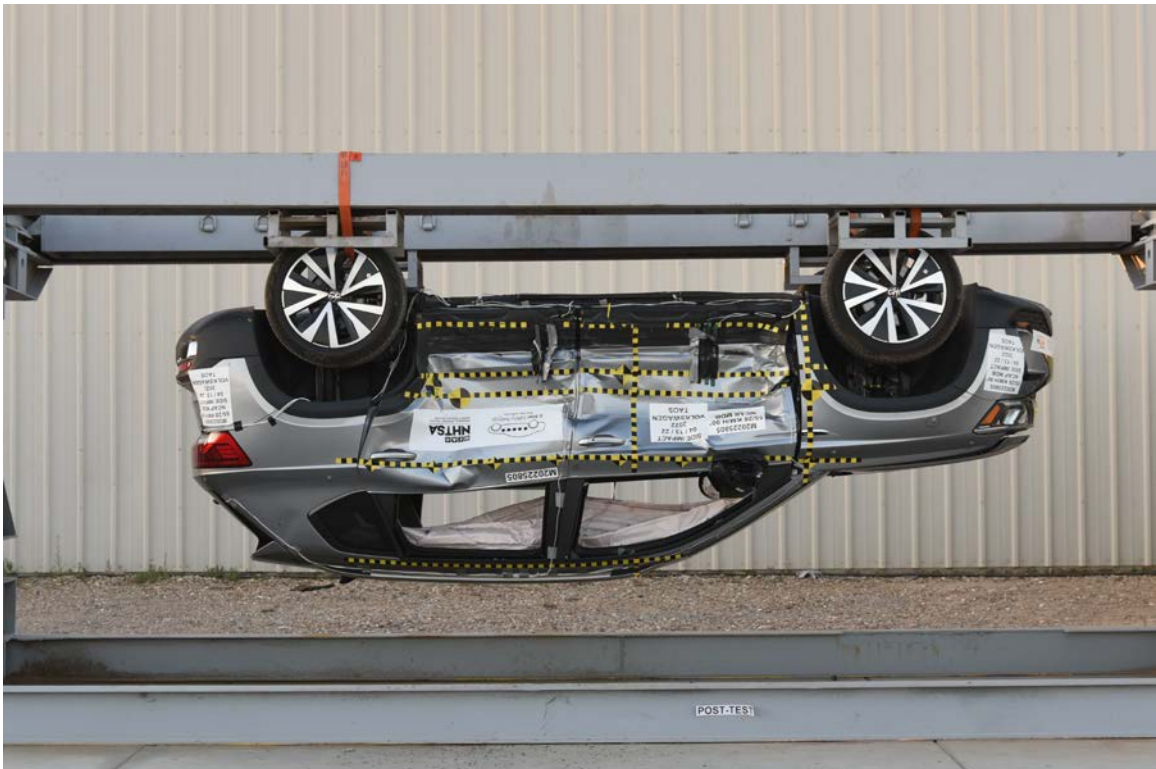


FIGURE 98. FMVSS No. 301 Static Rollover 180 Degrees



FIGURE 99. FMVSS No. 301 Static Rollover 270 Degrees



FIGURE 100. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 101. Impact Event

[illegible]

FIGURE 102. Monroney Label

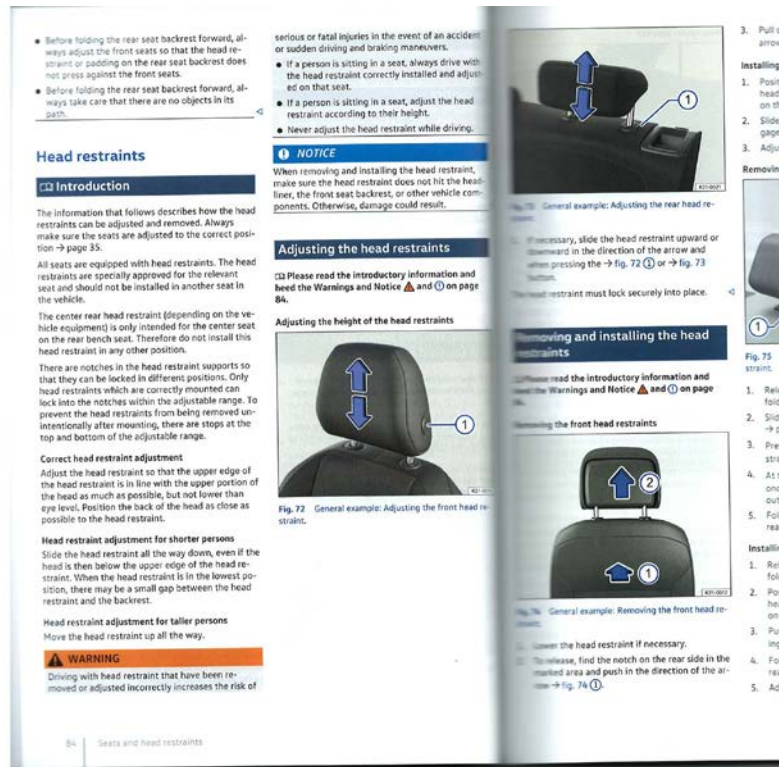


FIGURE 103. Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



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

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

Plot		Page
1	Driver Head Acceleration (X) Primary vs. Time	B-1
2	Driver Head Acceleration (Y) Primary vs. Time	B-1
3	Driver Head Acceleration (Z) Primary vs. Time	B-1
4	Driver Head Resultant Acceleration Primary vs. Time	B-1
5	Driver Upper Thorax Rib Deflection (Y) vs. Time	B-2
6	Driver Middle Thorax Rib Deflection (Y) vs. Time	B-2
7	Driver Lower Thorax Rib Deflection (Y) vs. Time	B-2
8	Driver Thorax Rib Deflection Maximum vs. Time	B-2
9	Driver Anterior Abdominal Force (Y) vs. Time	B-3
10	Driver Middle Abdominal Force (Y) vs. Time	B-3
11	Driver Posterior Abdominal Force (Y) vs. Time	B-3
12	Driver Total Abdominal Force (Y) vs. Time	B-3
13	Driver Pubic Symphysis Force (Y) vs. Time	B-4
14	Passenger Head Acceleration (X) vs. Time Primary	B-5
15	Passenger Head Acceleration (Y) vs. Time Primary	B-5
16	Passenger Head Acceleration (Z) vs. Time Primary	B-5
17	Passenger Head Resultant Acceleration Primary vs. Time	B-5
18	Passenger Lower Spine T12 Acceleration (X) vs. Time	B-6
19	Passenger Lower Spine T12 Acceleration (Y) vs. Time	B-6
20	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-6
21	Passenger Lower Spine T12 Resultant Acceleration vs. Time	B-6
22	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-7
23	Passenger Iliac Force on Impact Side (Y) vs. Time	B-7
24	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-7

The following additional data for this test can be obtained from the Research and Development section of the NHTSA website (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)

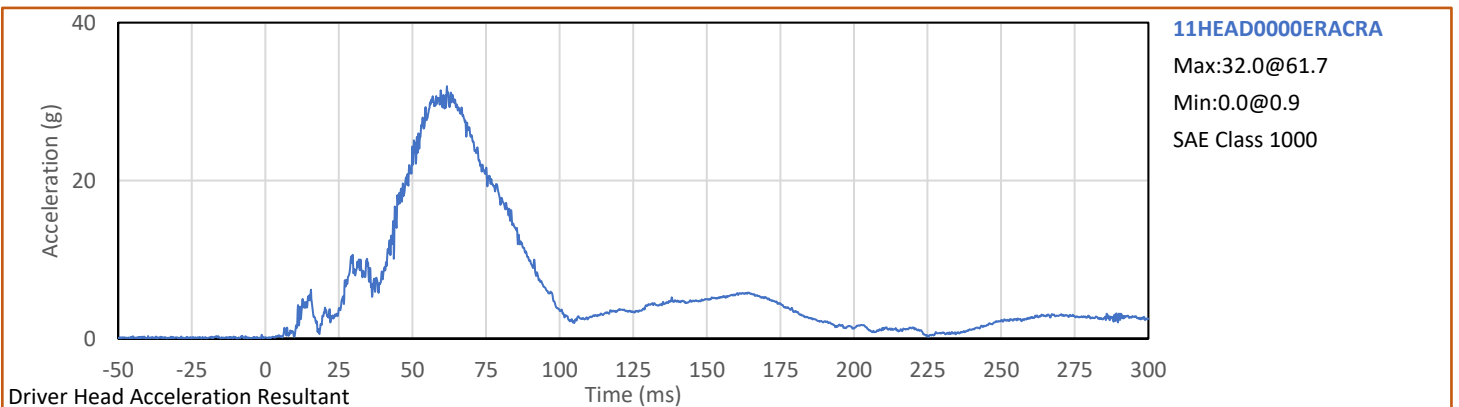
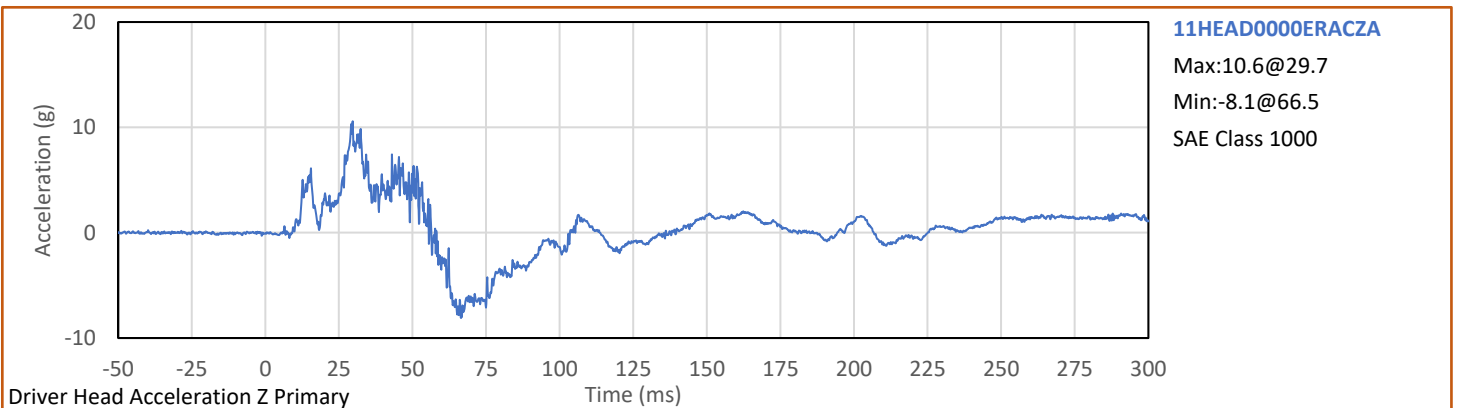
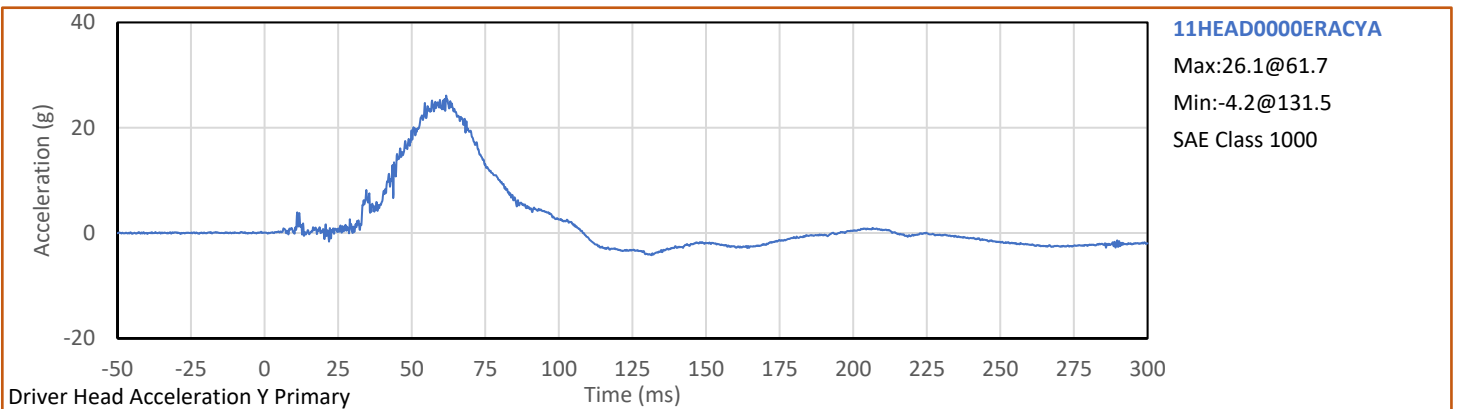
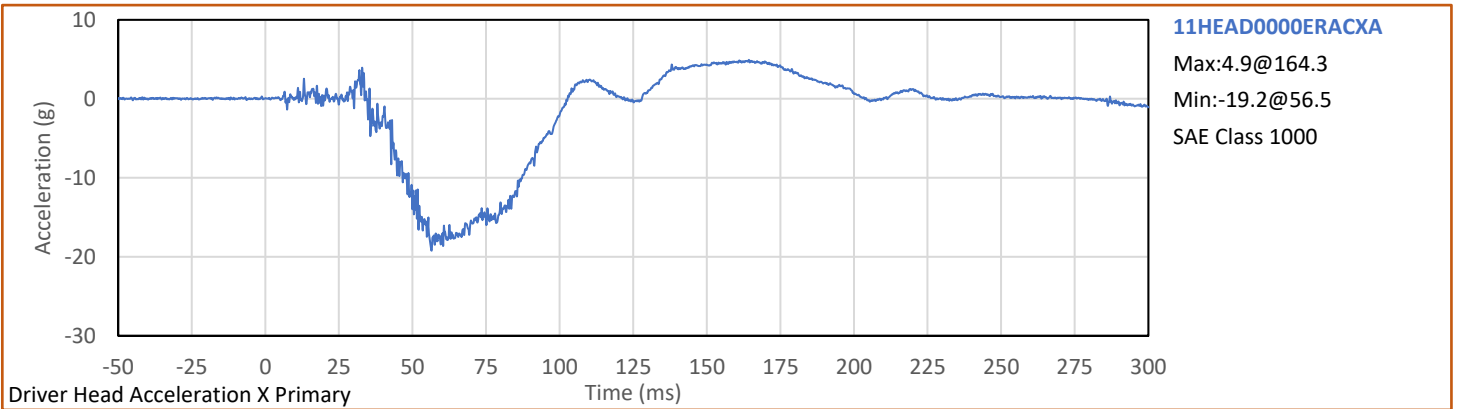
MDB Rear Acceleration (Y)

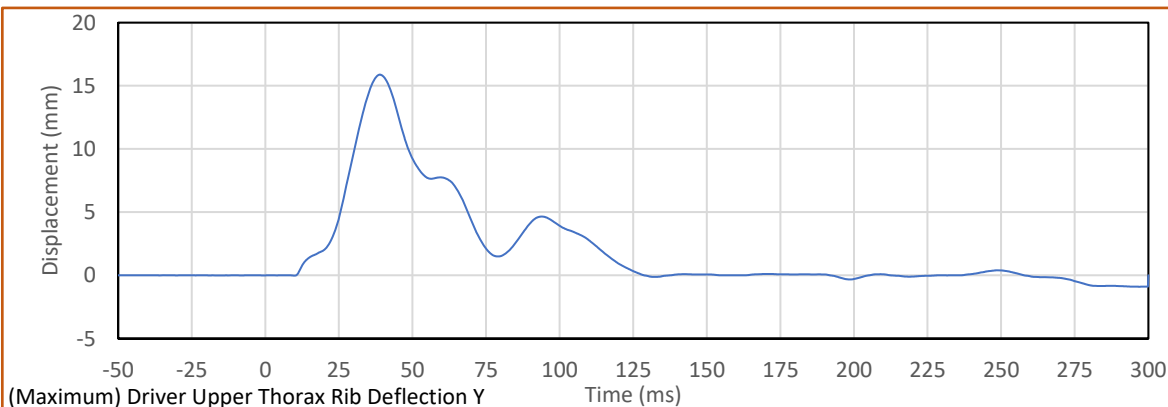
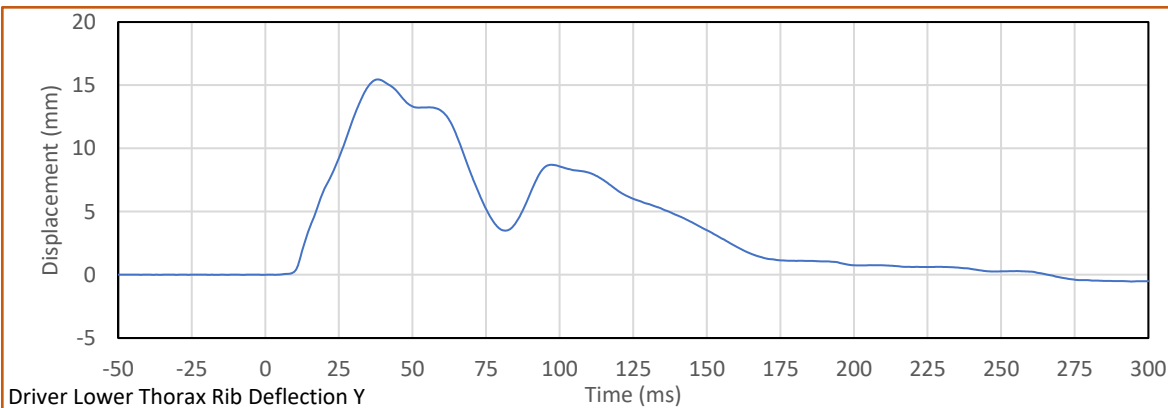
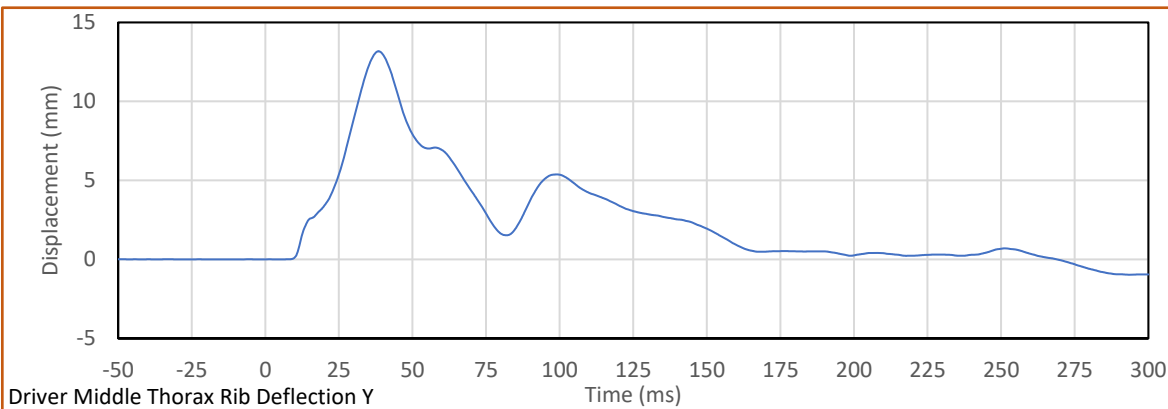
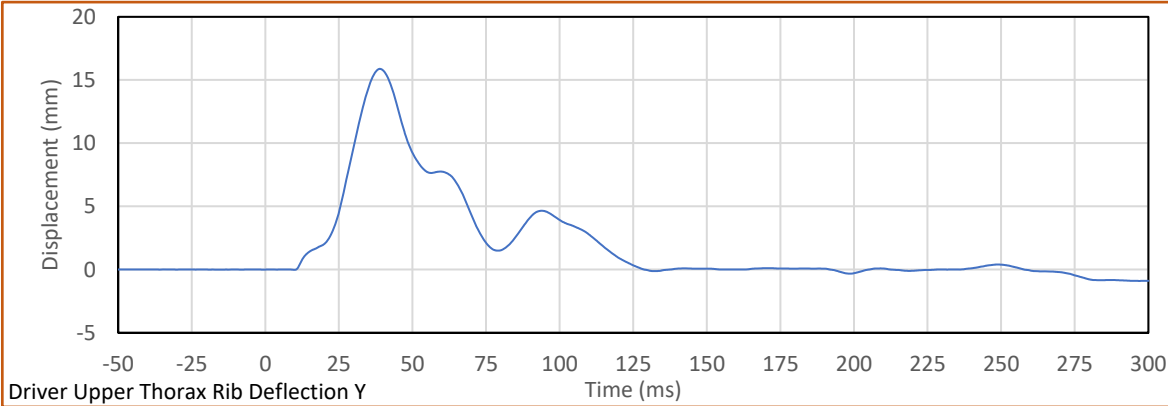
Left MDB Contact Switch

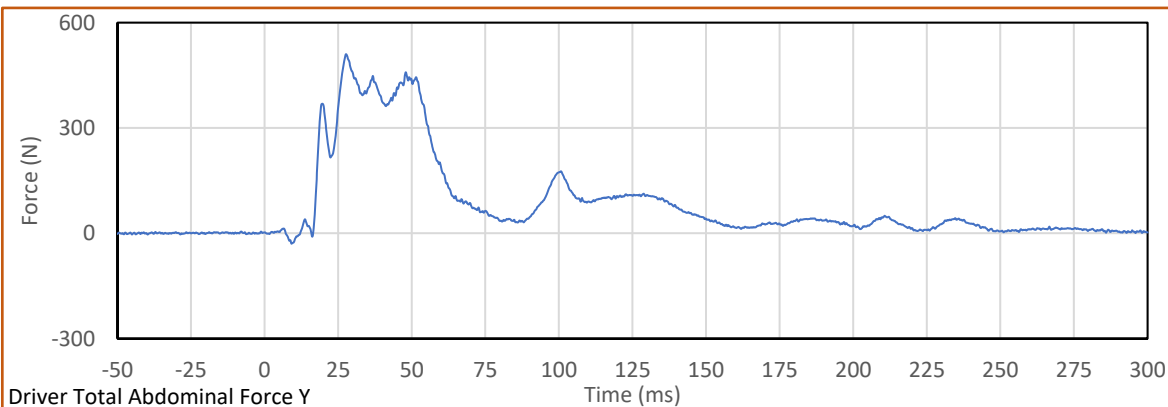
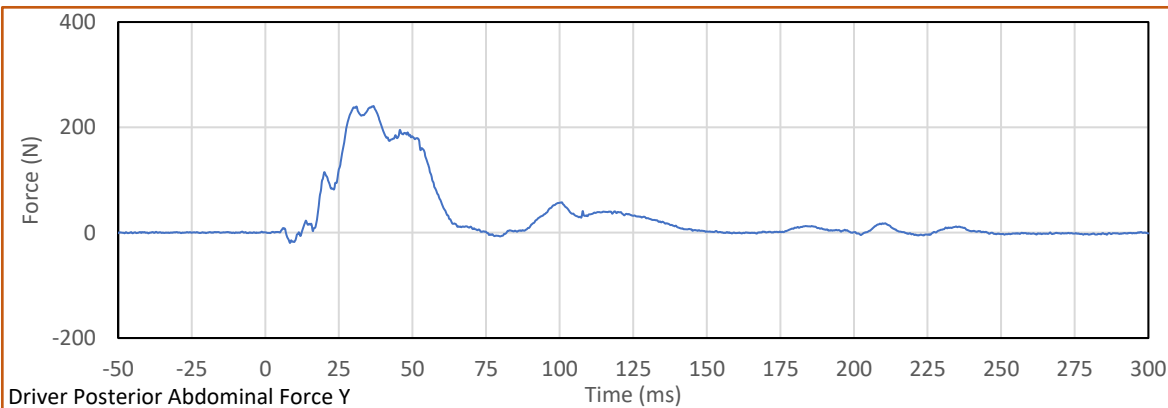
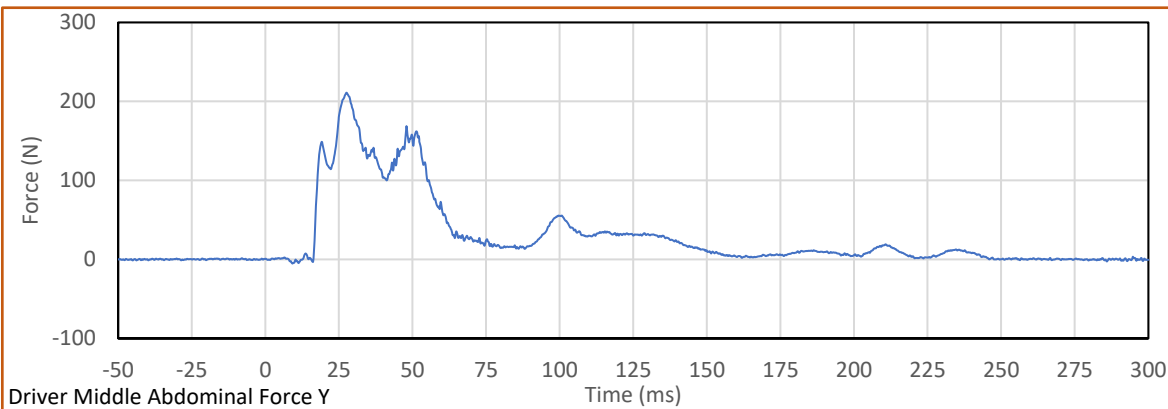
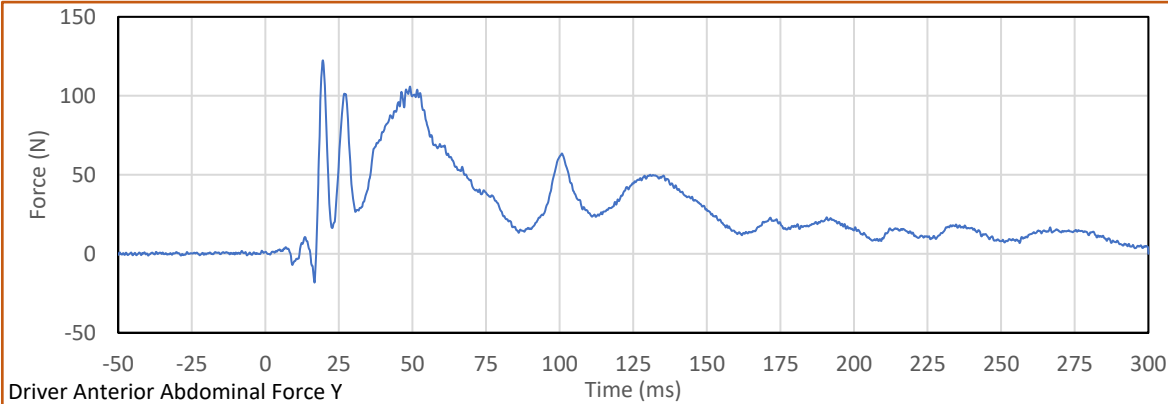
Right MDB Contact Switch

Test Vehicle: 2022 Volkswagen Taos 5-Door MPV
Test Program: NCAP MDB Side Impact Test

NHTSA No.: M20225805
Test Date: 4/13/2022

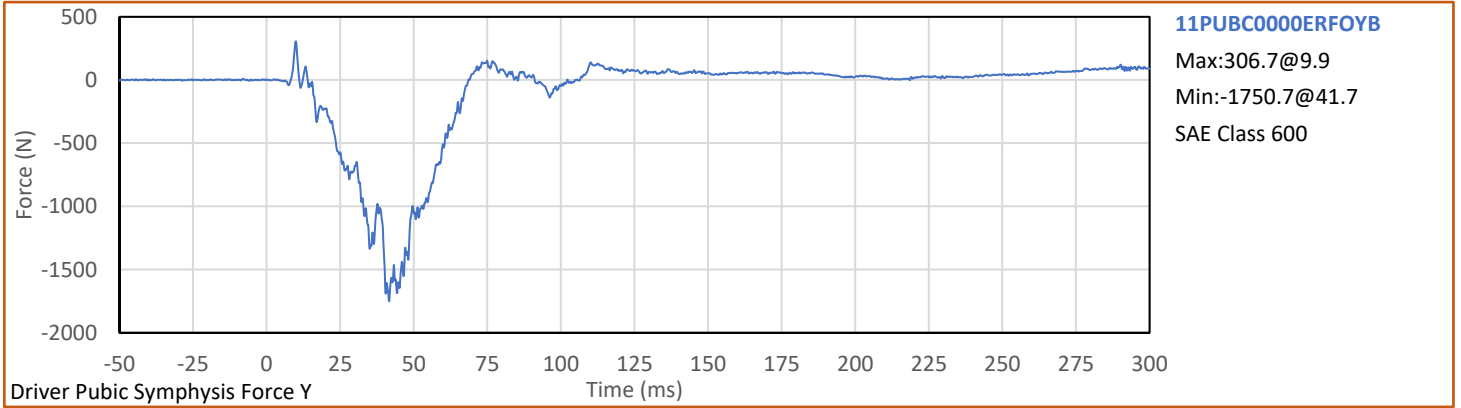


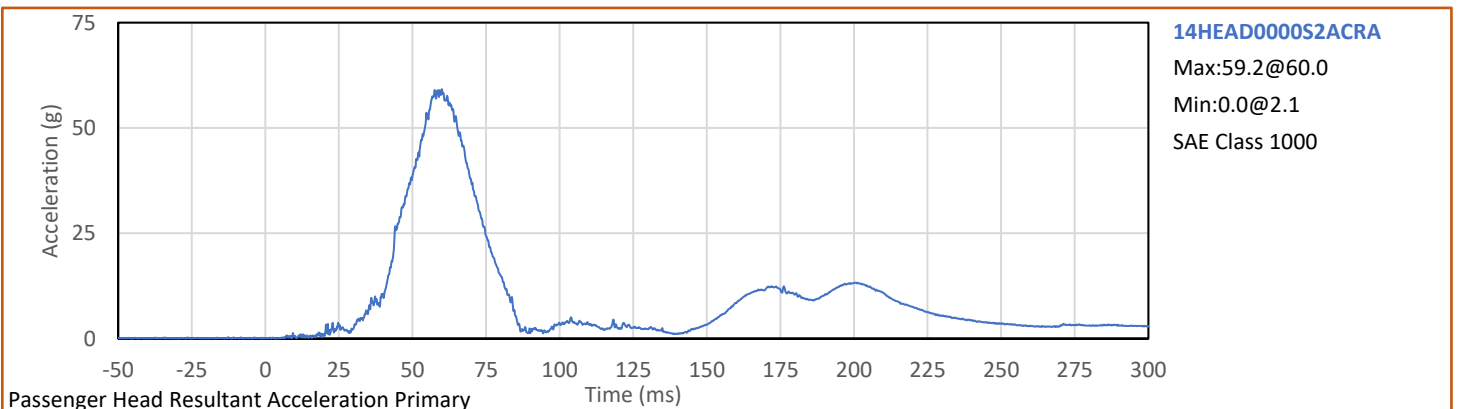
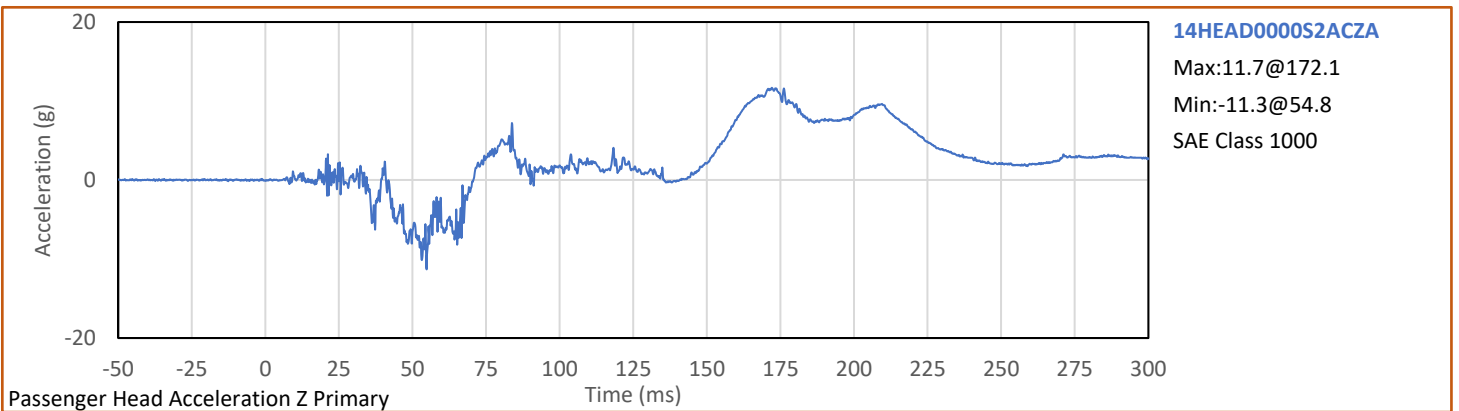
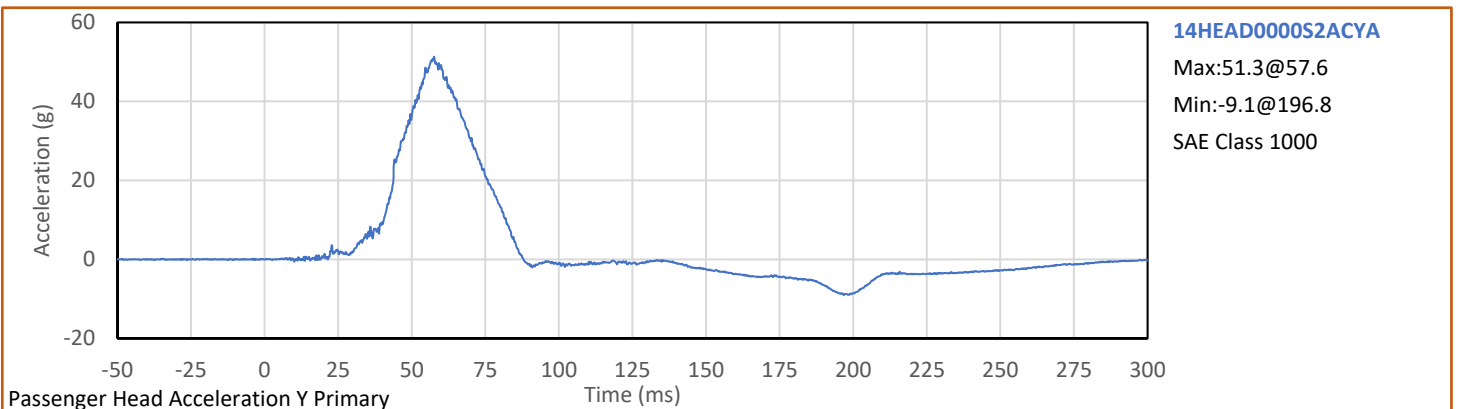
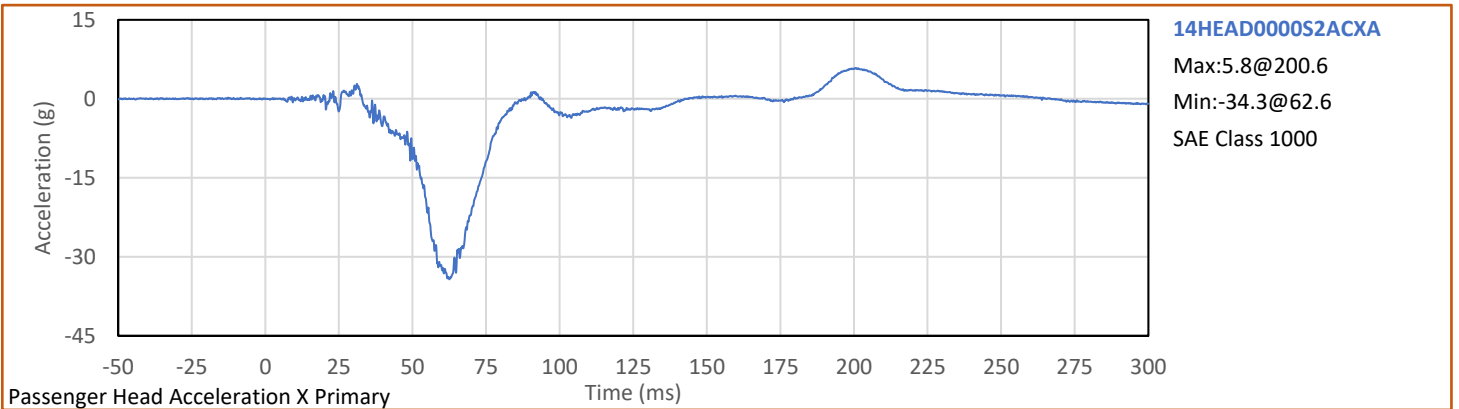




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Test Program: NCAP MDB Side Impact Test

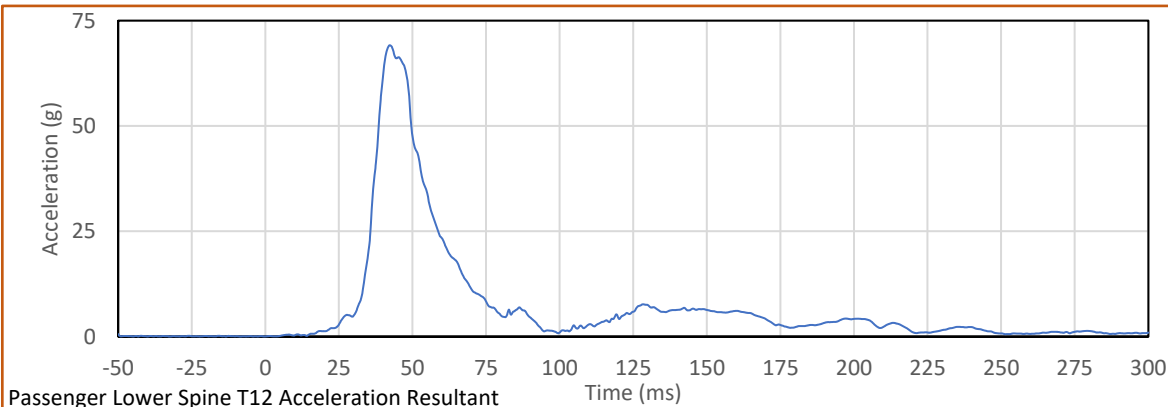
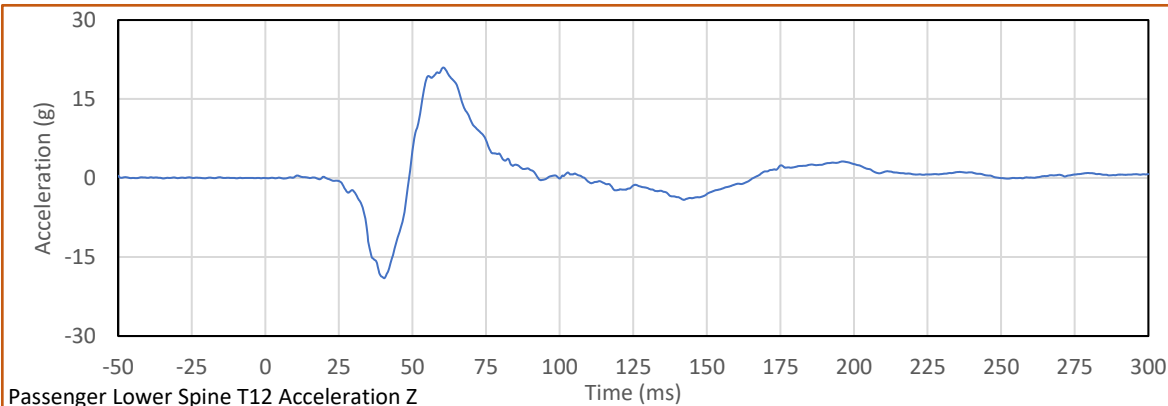
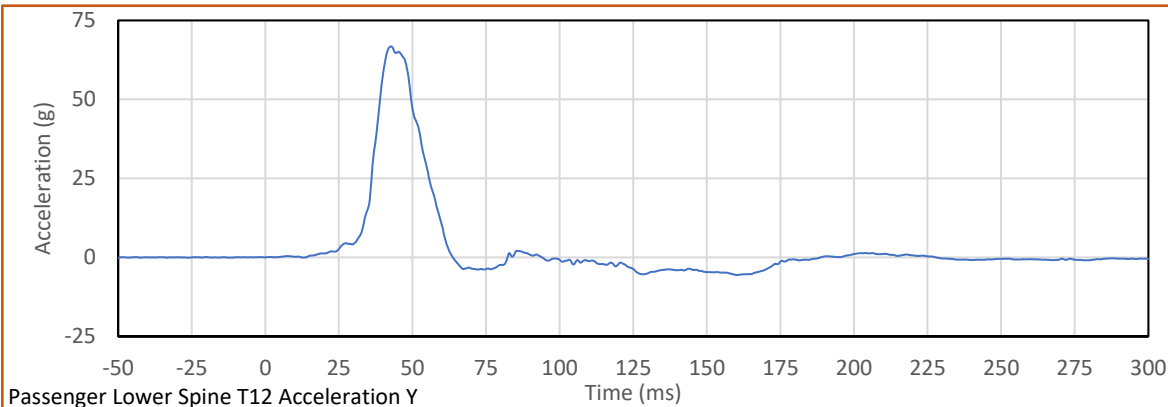
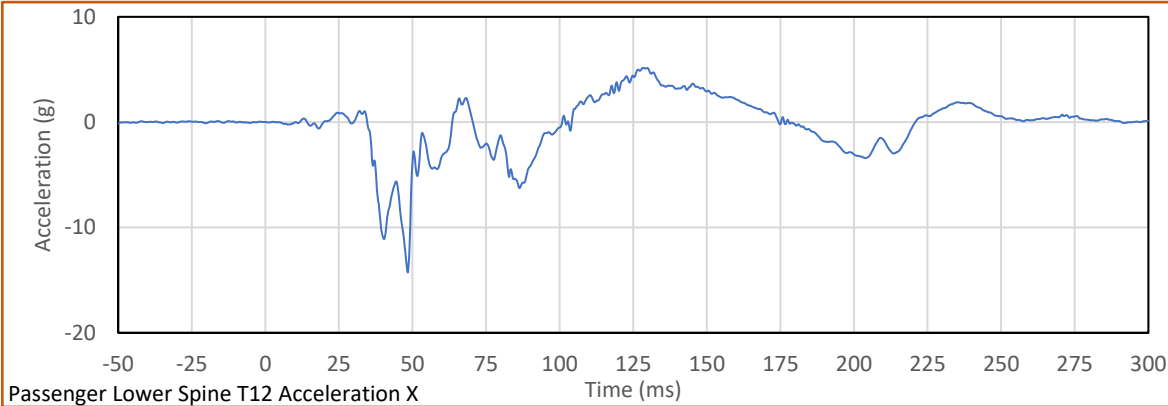
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Test Date: 4/13/2022





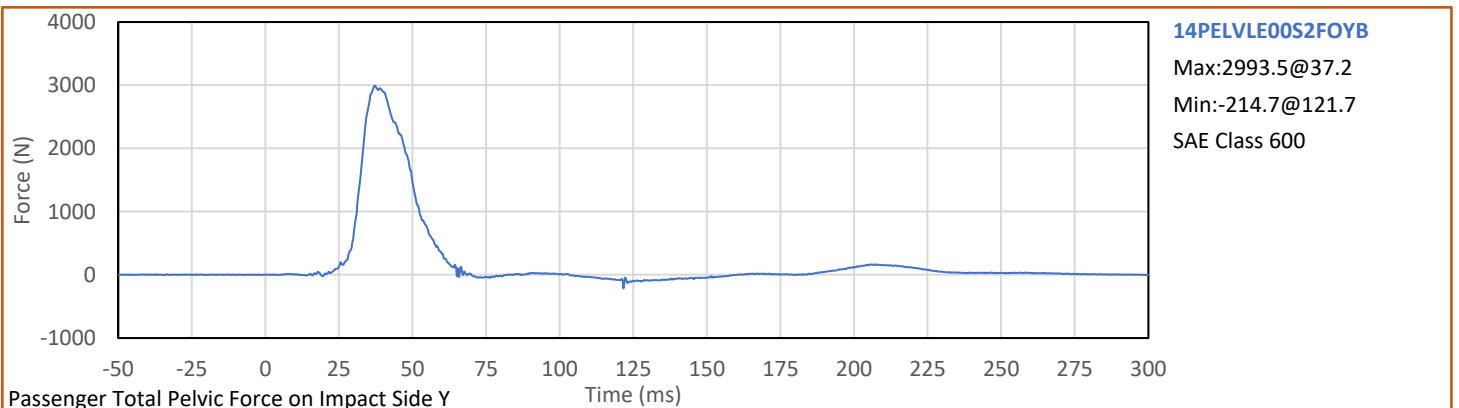
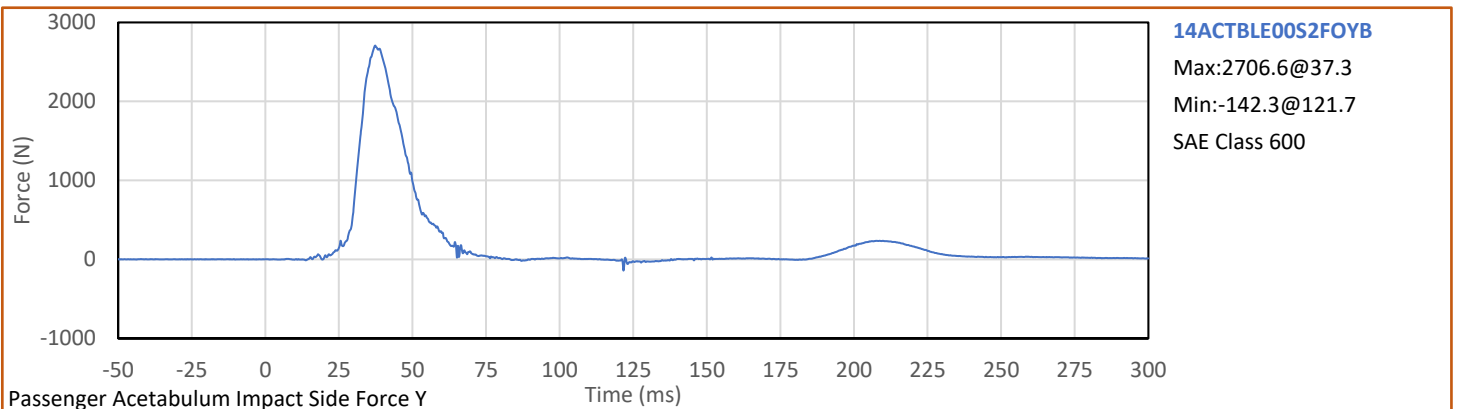
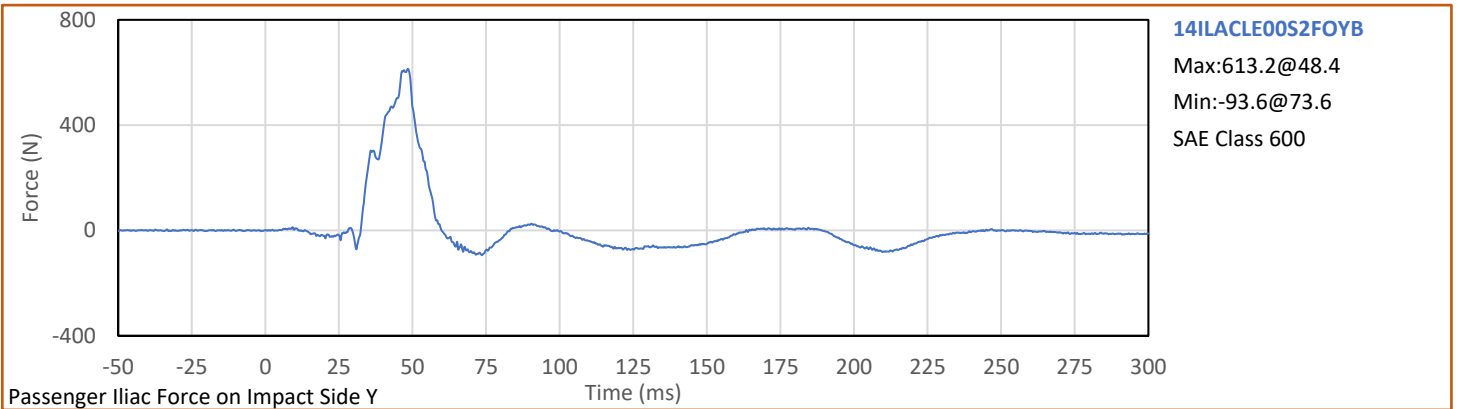
Test Vehicle: 2022 Volkswagen Taos 5-Door MPV
Test Program: NCAP MDB Side Impact Test

NHTSA No.: M20225805
Test Date: 4/13/2022



Test Vehicle: 2022 Volkswagen Taos 5-Door MPV
Test Program: NCAP MDB Side Impact Test

NHTSA No.: M20225805
Test Date: 4/13/2022



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

ATD Serial No.: F037

Test Date: 2022-04-08

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	23	Pass
1 - Sitting Height	mm	900	918	911	Pass
2 - Seat to Shoulder Joint	mm	558	572	569	Pass
3 - Seat to Lower Face of Thoracic Spine Box	mm	346	356	348	Pass
4 - Seat to Hip Joint (bolt center)	mm	97	103	102	Pass
5 - Sole to Seat, Sitting	mm	433	451	443	Pass
6 - Head Width	mm	152	158	156	Pass
7 - Shoulder/Arm Width	mm	461	479	474	Pass
8 - Thorax Width	mm	322	332	329	Pass
9 - Abdomen Width	mm	273	287	279	Pass
10 - Pelvis Lap Width	mm	359	373	366	Pass
11 - Head Depth	mm	196	206	203	Pass
12 - Thorax Depth	mm	262	272	270	Pass
13 - Abdomen Depth	mm	194	204	197	Pass
14 - Pelvis Depth	mm	235	245	240	Pass
15 - Back of Buttocks to Hip Joint (bolt Center)	mm	150	160	159	Pass
16 - Back of Buttocks to Front Knee	mm	597	615	613	Pass
				Overall Test Results	Pass

Technician:



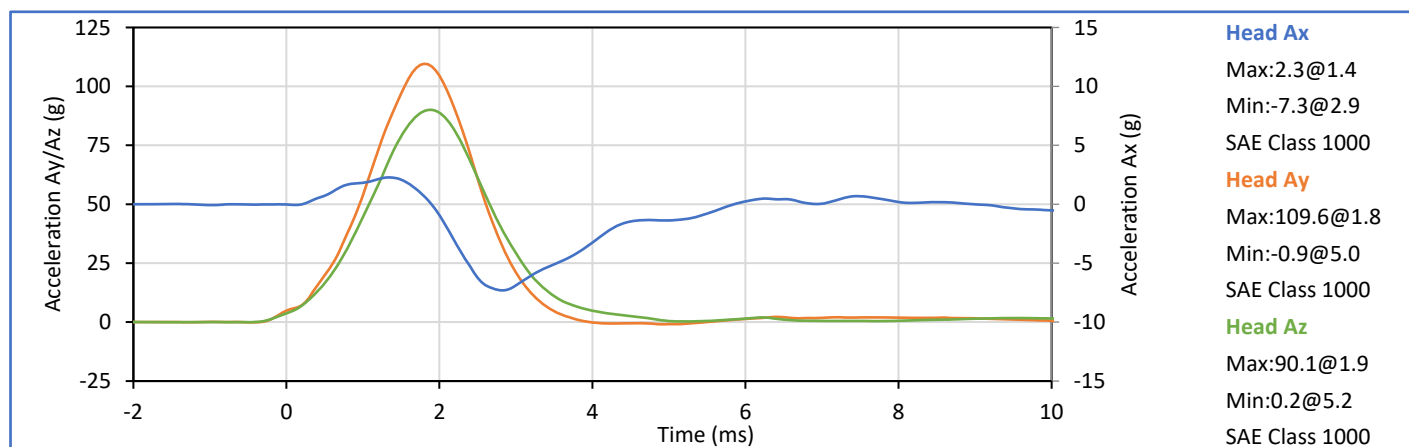
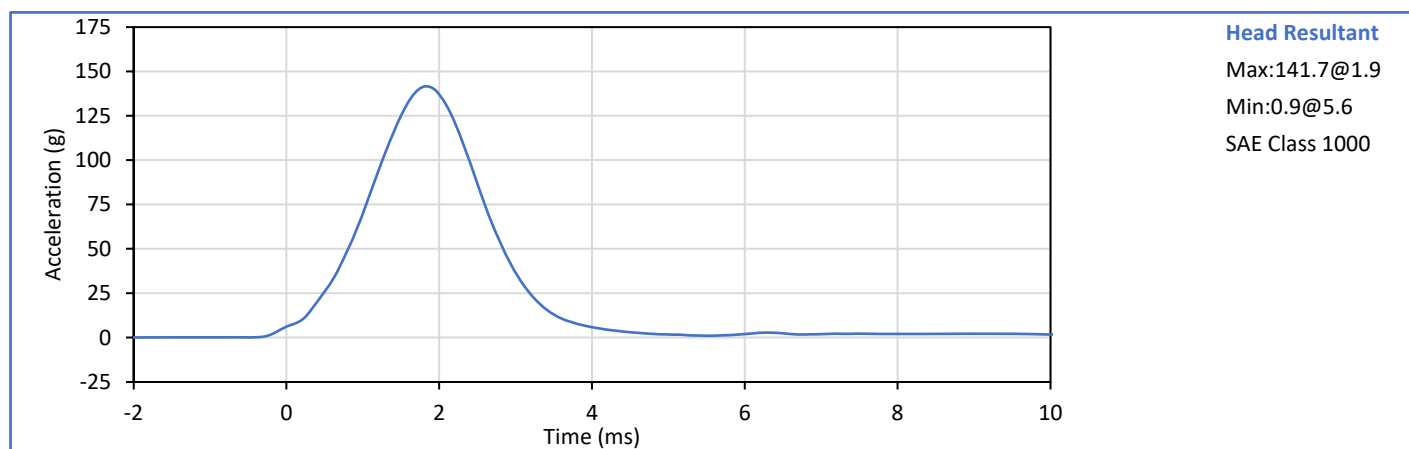
G. Holguin

Approved By:



J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.8	Pass
Laboratory Relative Humidity	%	10	70	23	Pass
Peak Resultant Acceleration	g	125.0	155.0	141.7	Pass
Peak Head Ax	g	-15.0	15.0	2.3	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results		Pass



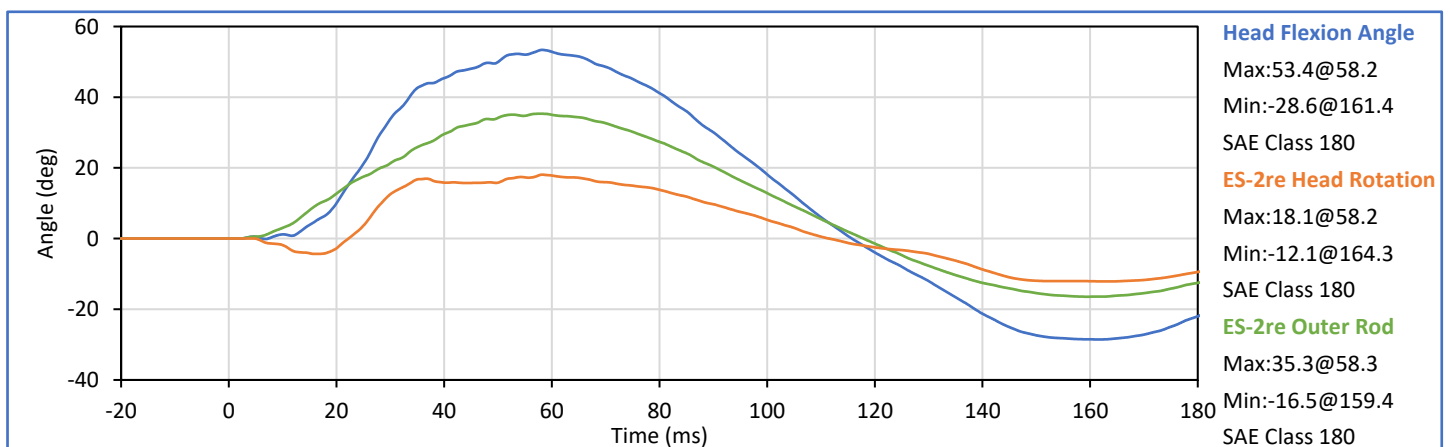
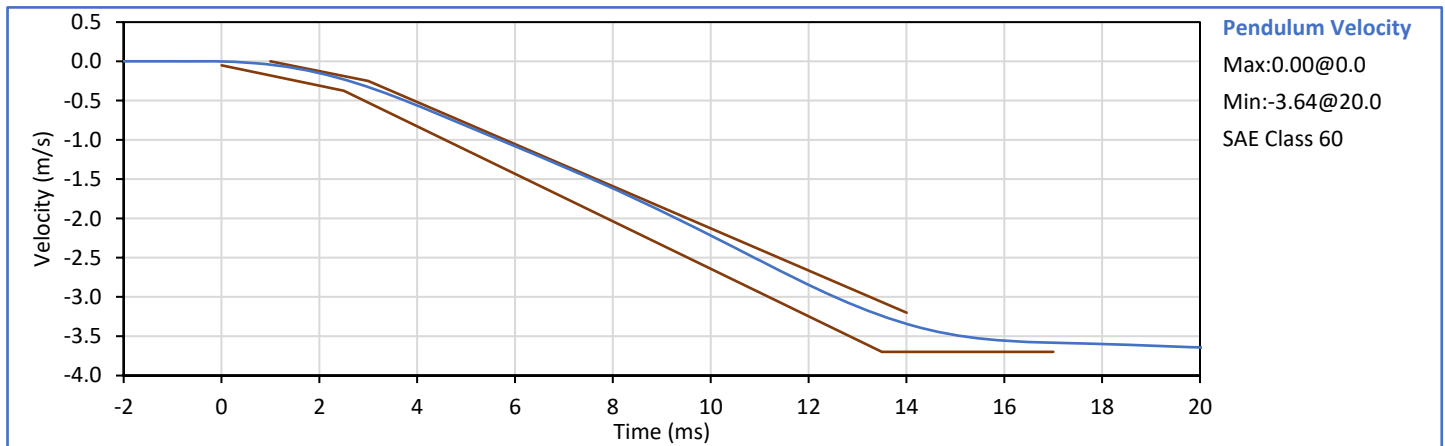
Technician:

G. Holguin

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.8	Pass
Laboratory Relative Humidity	%	10	70	23	Pass
Pendulum Velocity	m/s	3.30	3.50	3.49	Pass
Peak Headform Flexion	deg	49.0	59.0	53.4	Pass
Time of Peak Headform Flexion	ms	54.0	66.0	58.2	Pass
Flexion Decay (Peak to zero)	ms	53.0	88.0	57.5	Pass
Overall Test Results					Pass



Technician:

G. Holguin

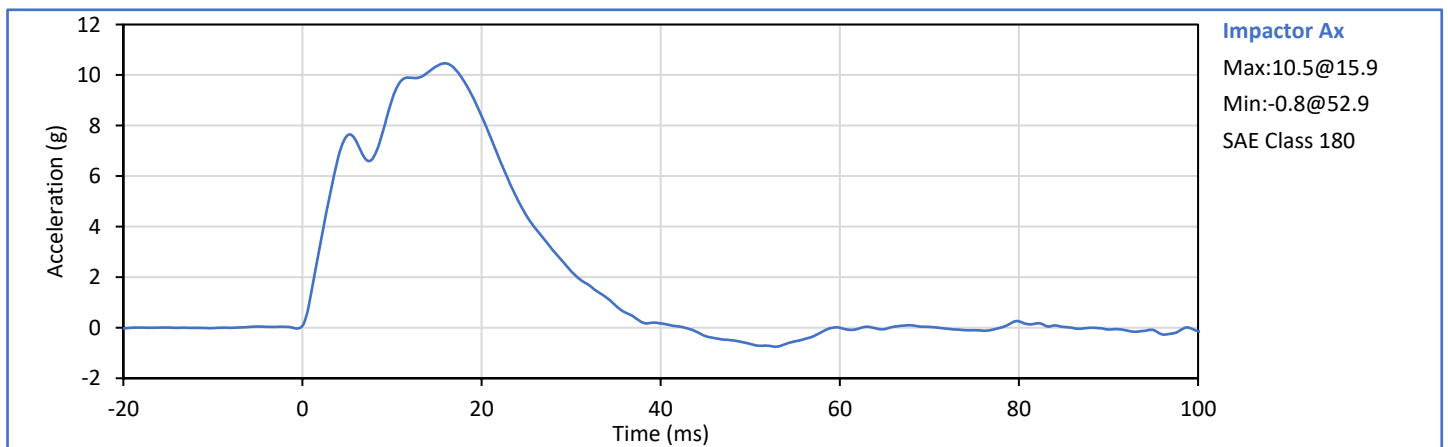
Approved By:

J. Hernandez

ATD Serial No.: F037

Test Date: 2022-04-11

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	20	Pass
Impactor Velocity	m/s	4.20	4.40	4.26	Pass
Peak Impactor Ax	g	7.5	10.5	10.5	Pass
Overall Test Results					Pass



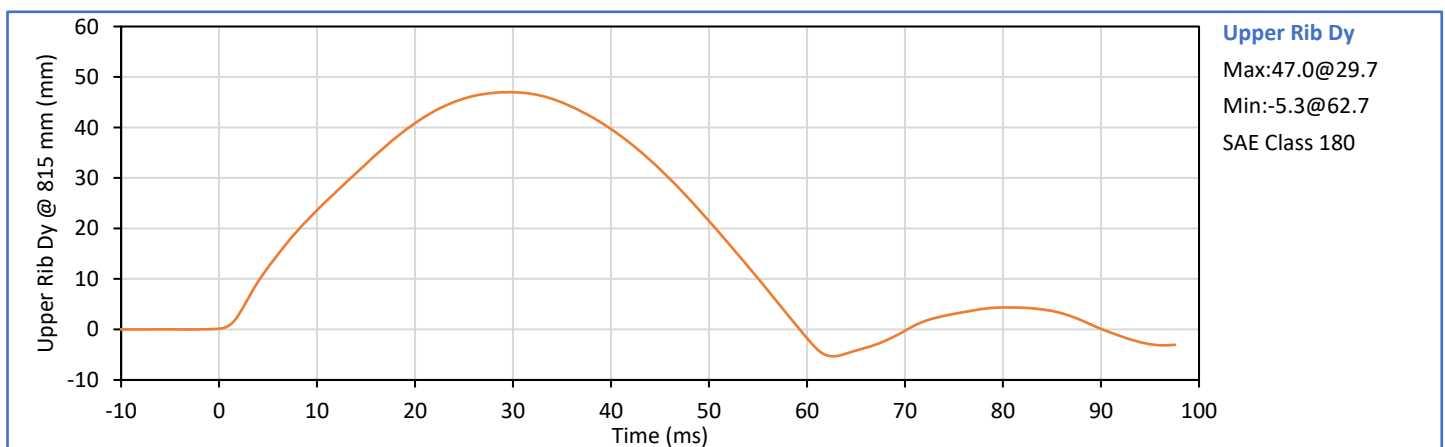
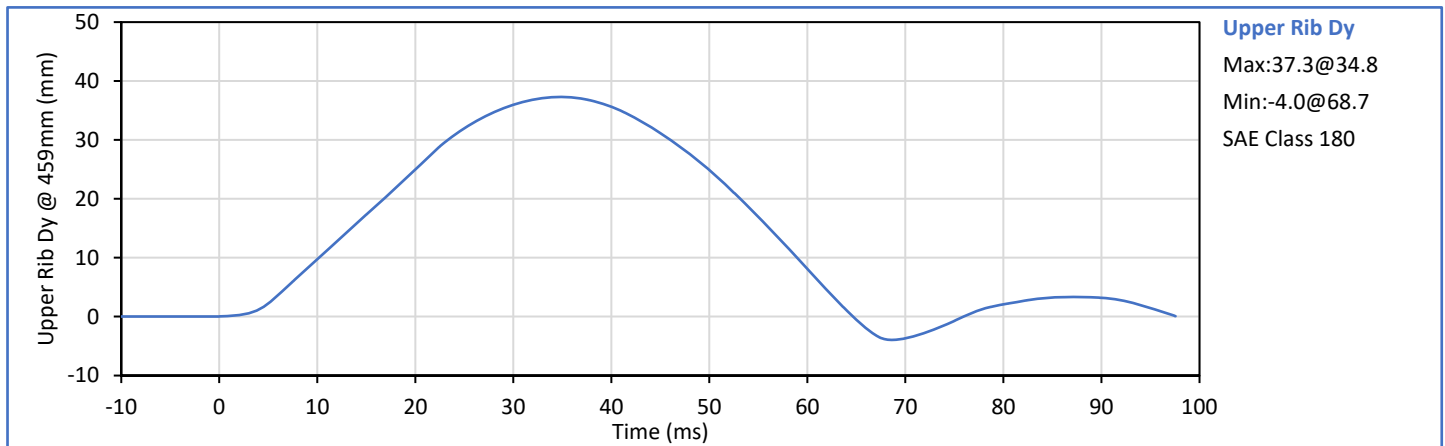
Technician: _____

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	24	Pass
Upper Rib Dy @ 459mm	mm	36.0	40.0	37.3	Pass
Upper Rib Dy @ 815mm	mm	46.0	51.0	47.0	Pass
Overall Test Results					Pass



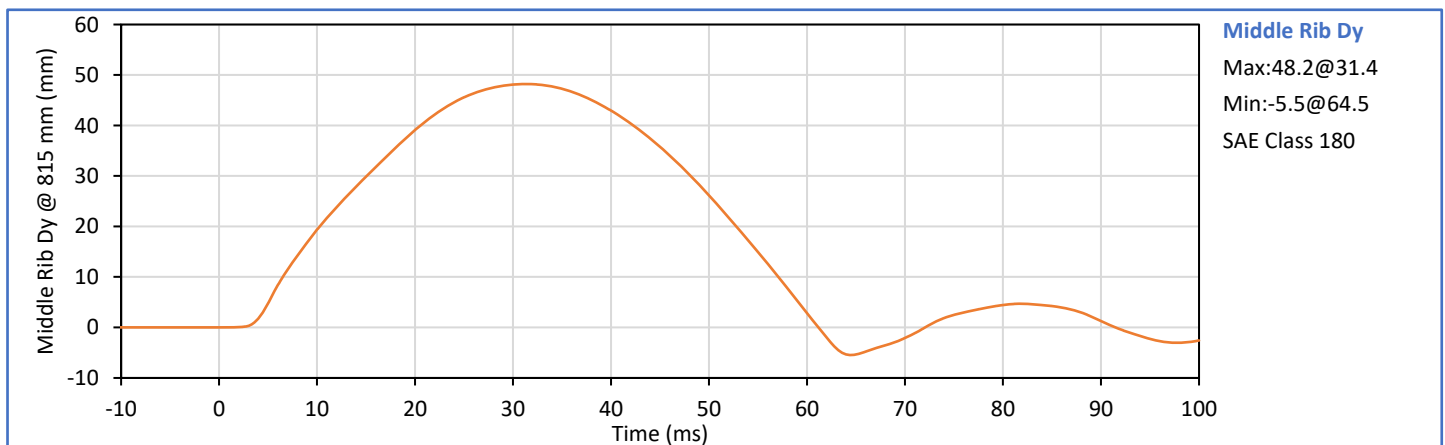
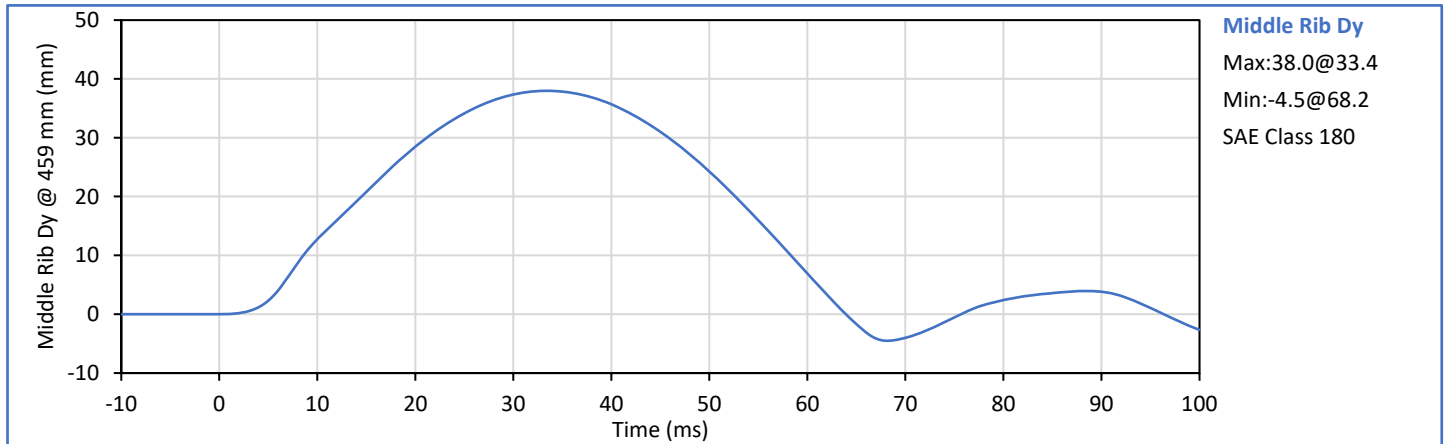
Technician:

G. Holguin

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	24	Pass
Middle Rib Dy @ 459mm	mm	36.0	40.0	38.0	Pass
Middle Rib Dy @ 815mm	mm	46.0	51.0	48.2	Pass
Overall Test Results				Pass	Pass



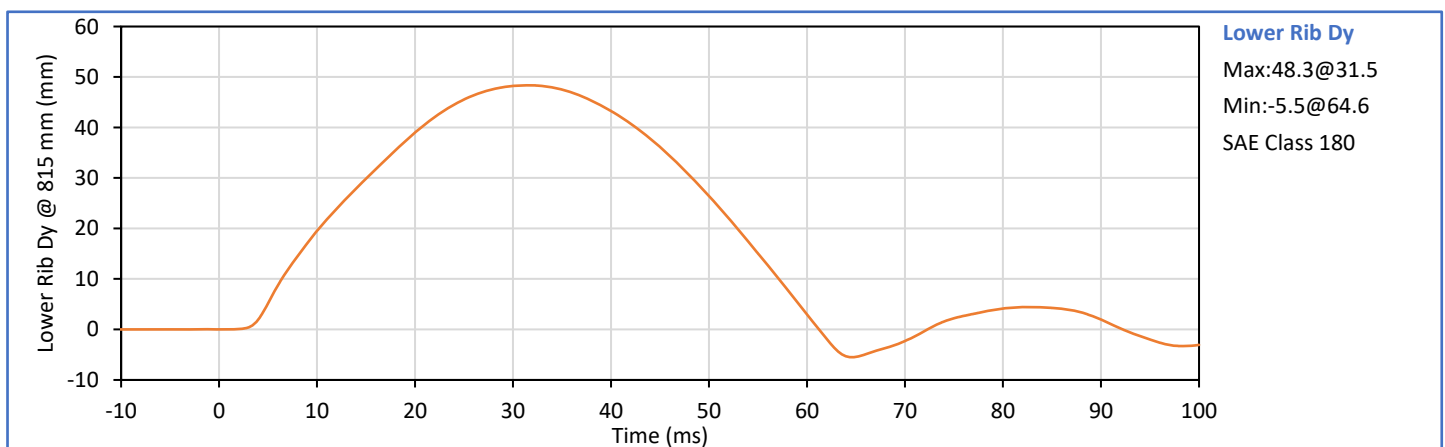
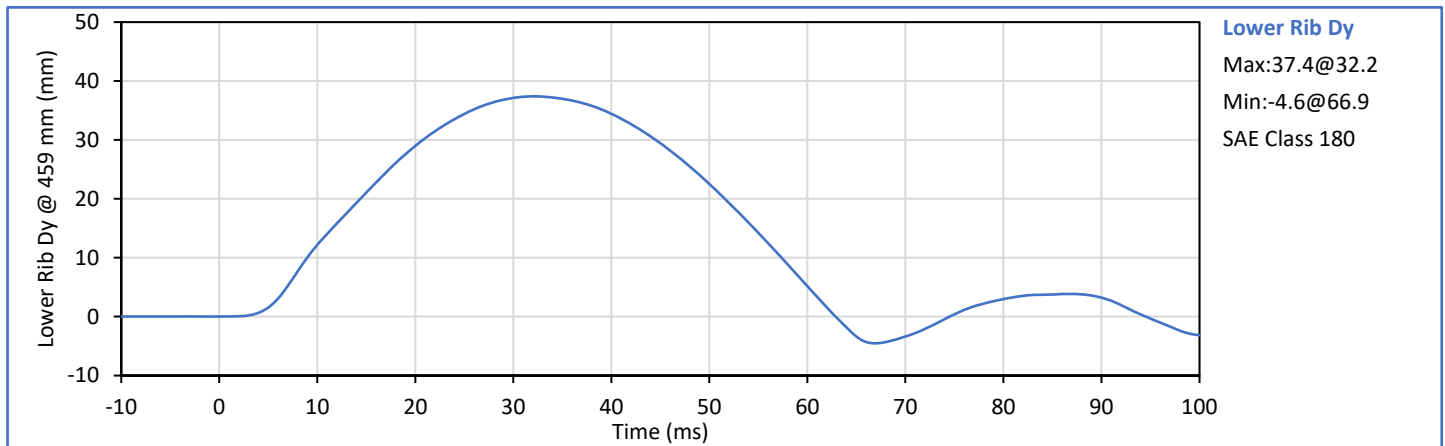
Technician:

G. Holguin

Approved By:

J. Hernandez

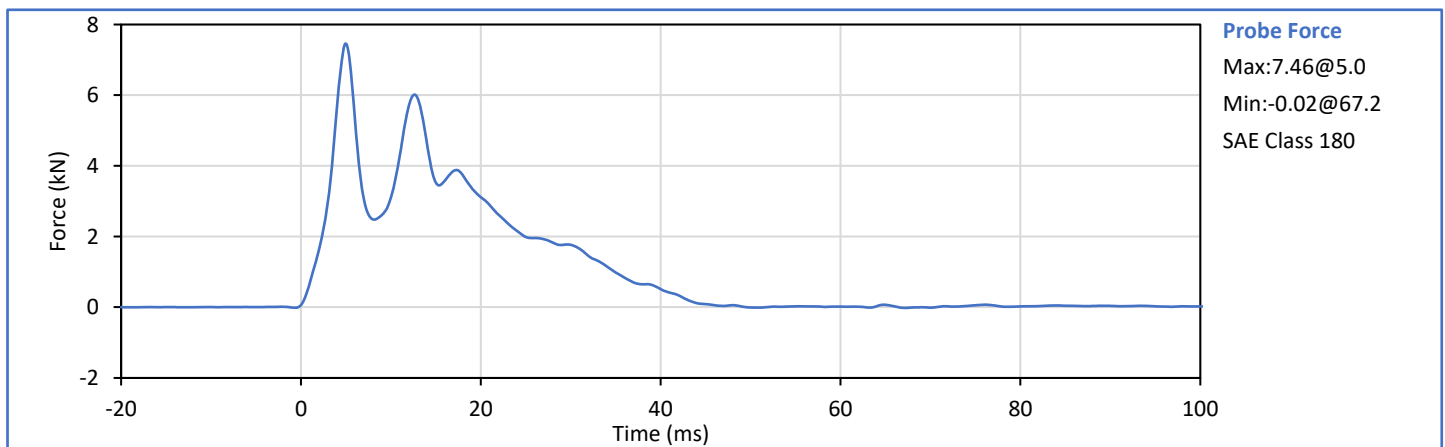
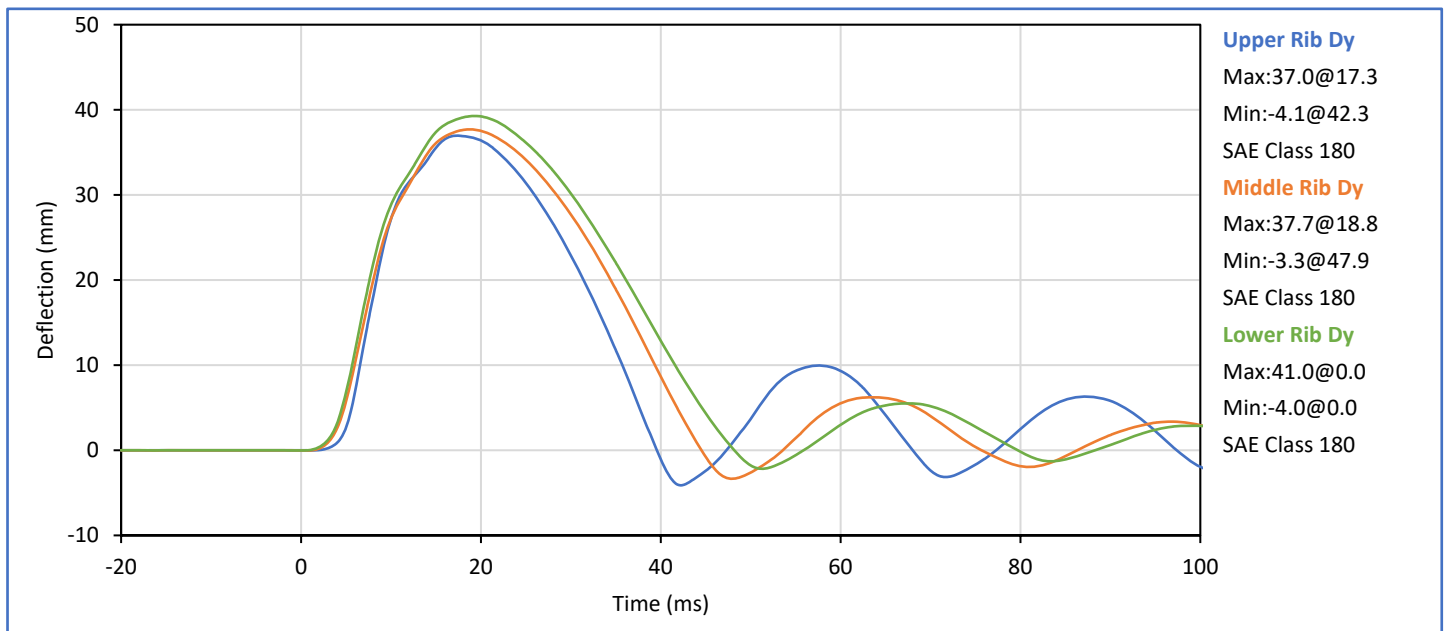
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	23	Pass
Lower Rib Dy @ 459mm	mm	36.0	40.0	37.4	Pass
Lower Rib Dy @ 815mm	mm	46.0	51.0	48.3	Pass
Overall Test Results				Pass	Pass



Technician: G. Holguin

Approved By: J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	22	Pass
Impactor Velocity	m/s	5.40	5.60	5.51	Pass
Peak Upper Rib Dy	mm	34.0	41.0	37.0	Pass
Peak Middle Rib Dy	mm	37.0	45.0	37.7	Pass
Peak Lower Rib Dy	mm	37.0	44.0	39.3	Pass
Peak Impactor Force After 6 ms	kN	5.10	6.20	6.01	Pass
Overall Test Results					Pass



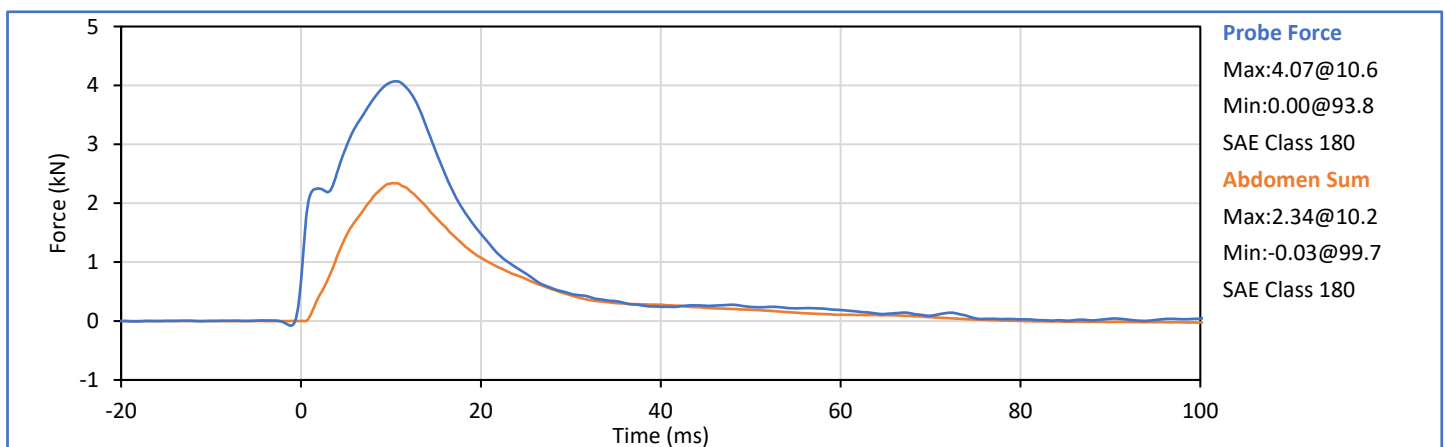
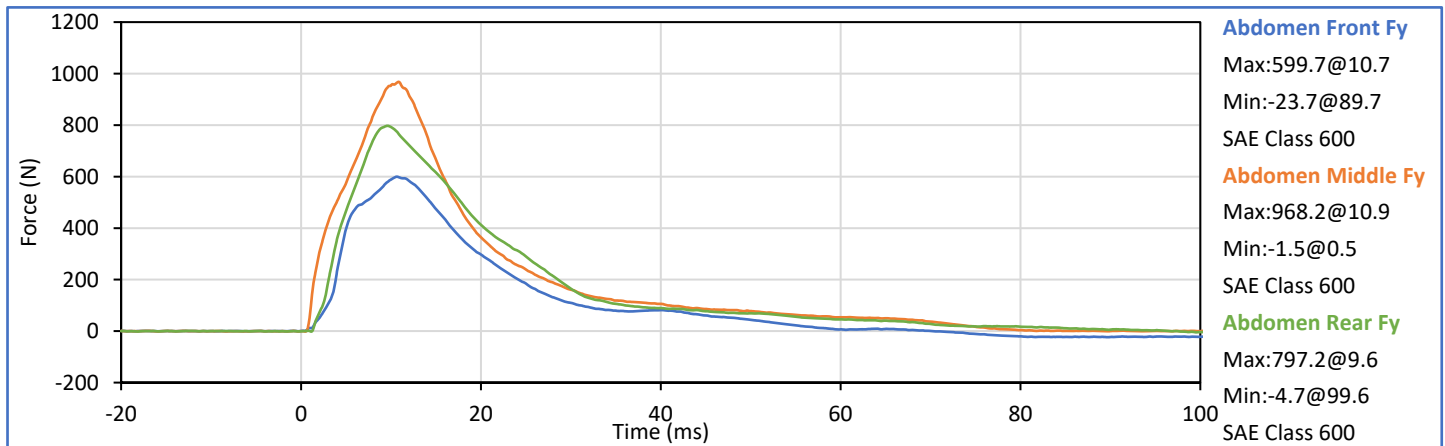
Technician:

G. Holguin

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	21	Pass
Impactor Velocity	m/s	3.90	4.10	3.91	Pass
Peak Impactor Force	kN	4.00	4.80	4.07	Pass
Time of Peak Impactor Force	ms	10.6	13.0	10.6	Pass
Sum of Abdomen Forces	kN	2.20	2.70	2.34	Pass
Time of Peak Sum Abdomen Force	ms	10.0	12.3	10.2	Pass
Overall Test Results					Pass



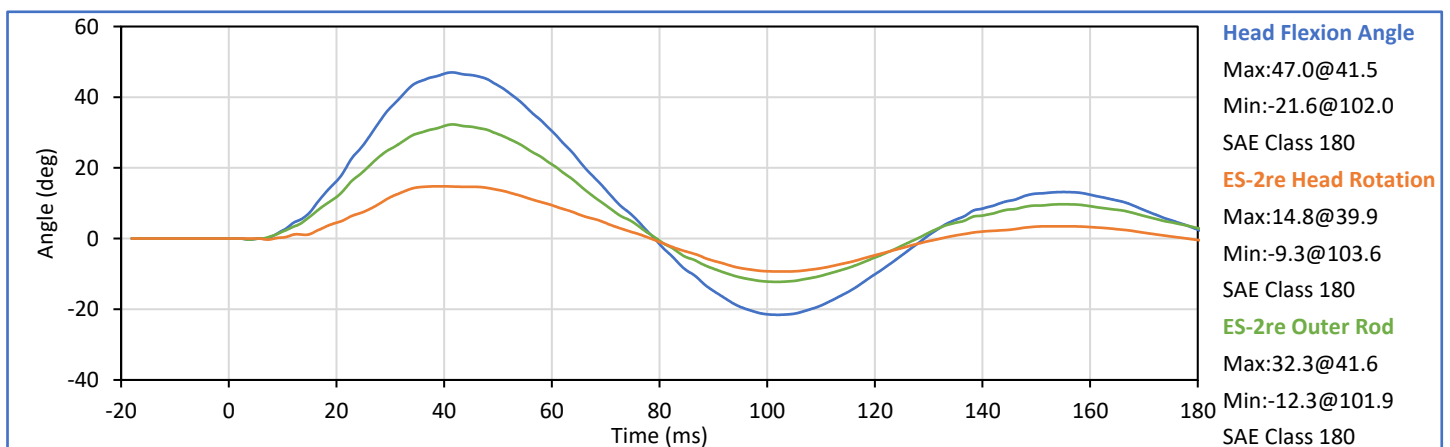
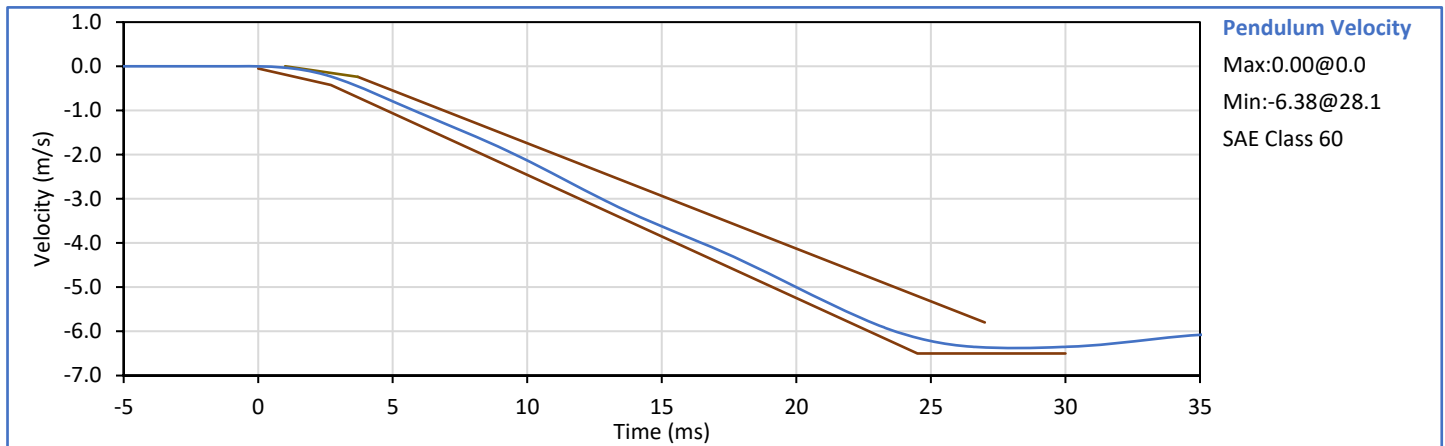
Technician:

G. Holguin

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	24	Pass
Pendulum Velocity	m/s	5.95	6.15	6.14	Pass
Peak Headform Flexion	deg	45.0	55.0	47.0	Pass
Time of Peak Headform Flexion	ms	39.0	53.0	41.5	Pass
Flexion Decay (Peak to zero)	ms	37.0	57.0	37.6	Pass
Overall Test Results					Pass



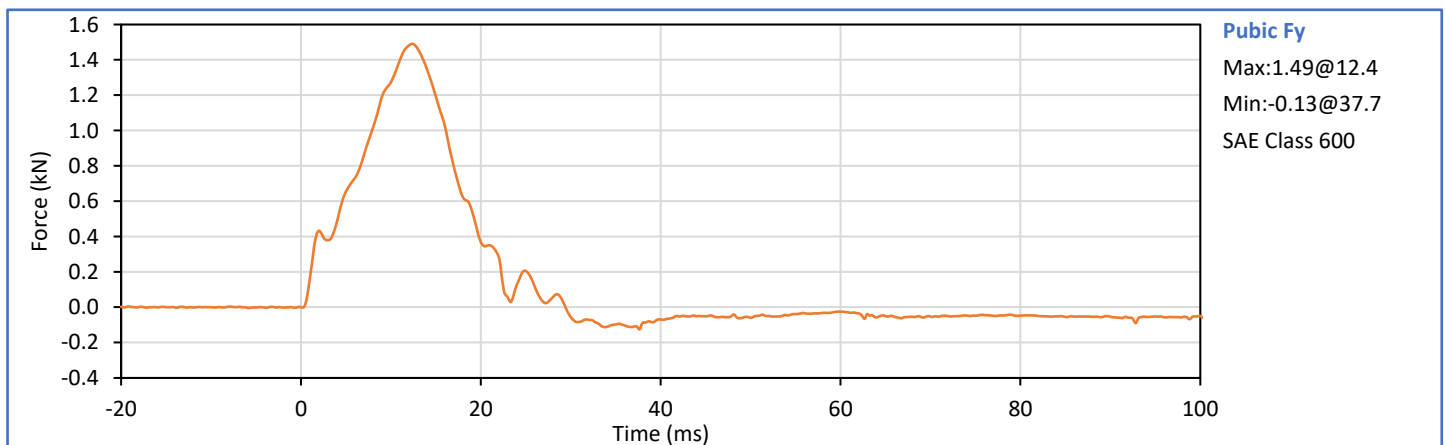
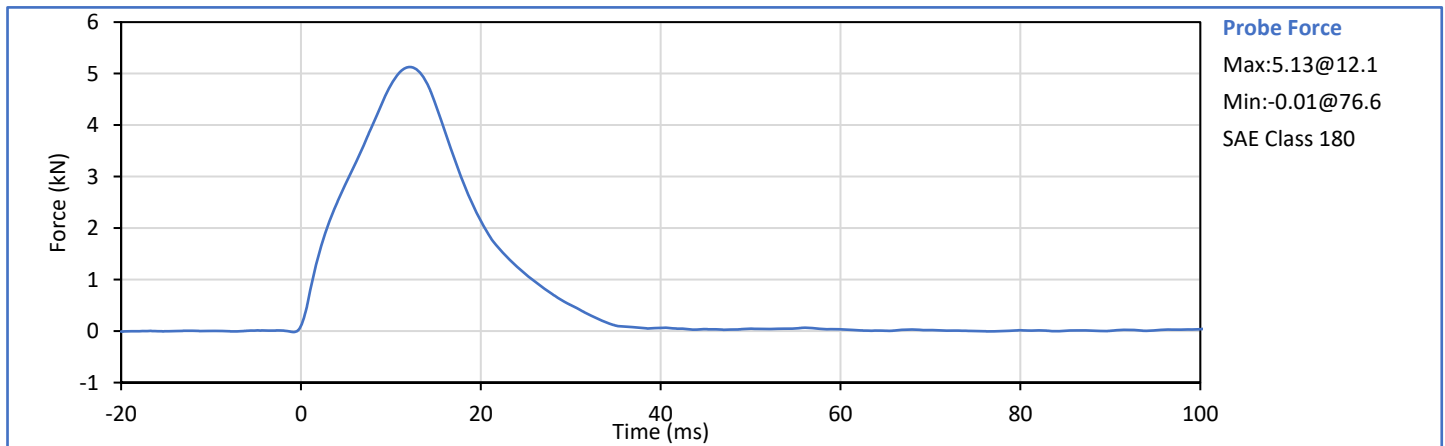
Technician:

G. Holguin

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	25	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Impactor Force	kN	4.70	5.40	5.13	Pass
Time of Peak Impactor Force	ms	11.8	16.1	12.1	Pass
Pubic Symphysis Fy	kN	1.23	1.59	1.49	Pass
Time of Peak Pubic Symphysis Fy	ms	12.2	17.0	12.4	Pass
Overall Test Results					Pass



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: 2022-04-07

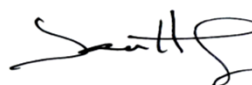
Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	31	Pass
A - Sitting Height	mm	772	788	780	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	85	Pass
D - H Point From Seatback	mm	141	151	151	Pass
E - Shoulder Pivot From Backline	mm	97	107	103	Pass
F - Thigh Clearance	mm	119	135	126	Pass
G - Head Breadth	mm	140	148	143	Pass
H - Head Back From Backline	mm	40	46	42	Pass
I - Head Depth	mm	178	188	187	Pass
J - Head Circumference	mm	541	551	549	Pass
K - Buttock To Knee Length	mm	514	540	526	Pass
L - Popliteal Height	mm	343	369	362	Pass
K - Knee Pivot To Floor Height	mm	392	409	399	Pass
N - Buttock Popliteal Length	mm	416	442	436	Pass
O - Chest Depth W/O Jacket	mm	195	211	202	Pass
P - Foot Length	mm	216	232	222	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	321	Pass
R - Arm Length	mm	249	259	253	Pass
S - Knee Joint To Seatback	mm	477	493	484	Pass
V - Shoulder Width	mm	341	357	346	Pass
W - Foot Width	mm	78	94	80	Pass
Y - Chest Circumference W/Jacket	mm	851	881	859	Pass
Z - Waist Circumference	mm	761	791	776	Pass
				Overall Test Results	Pass

Technician:



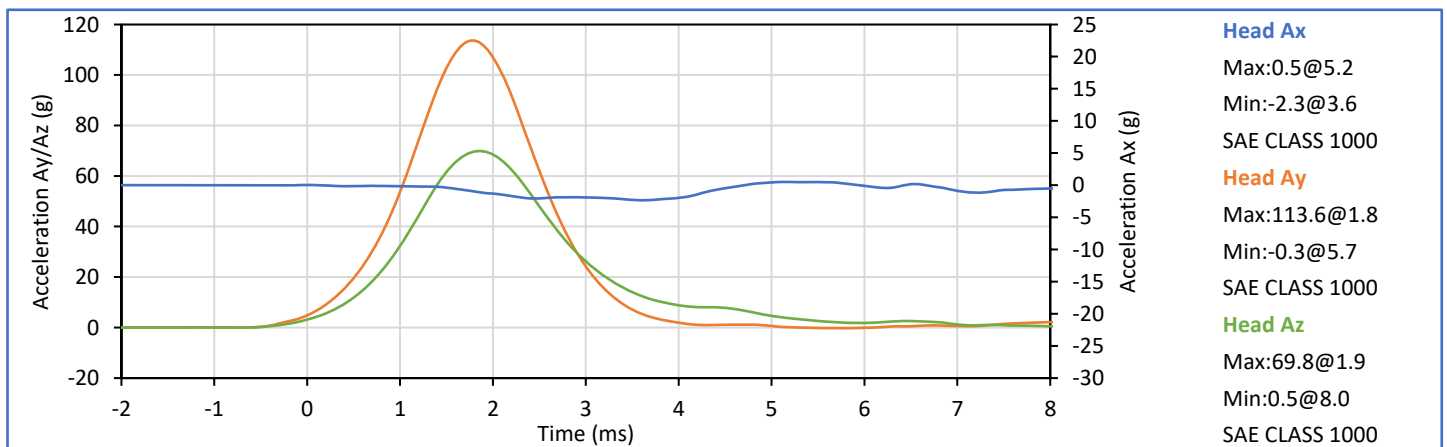
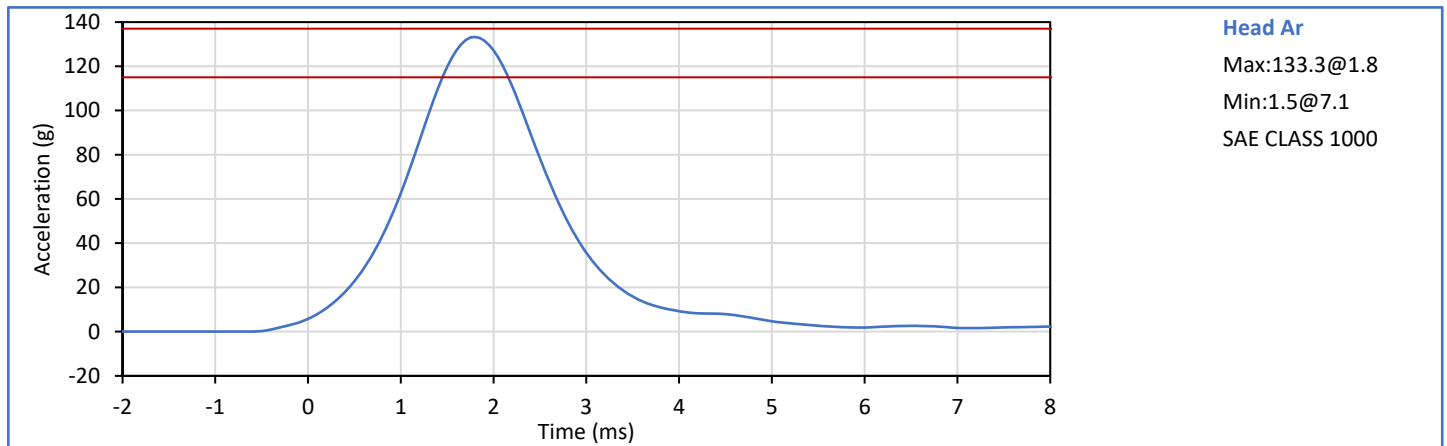
G. Holguin

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	26	Pass
Peak Resultant Acceleration	g	115.0	137.0	133.3	Pass
Peak Head Ax	g	-15.0	15.0	-2.3	Pass
Oscillations After Main Pulse	%	0.0	15.0	2.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results	Pass	



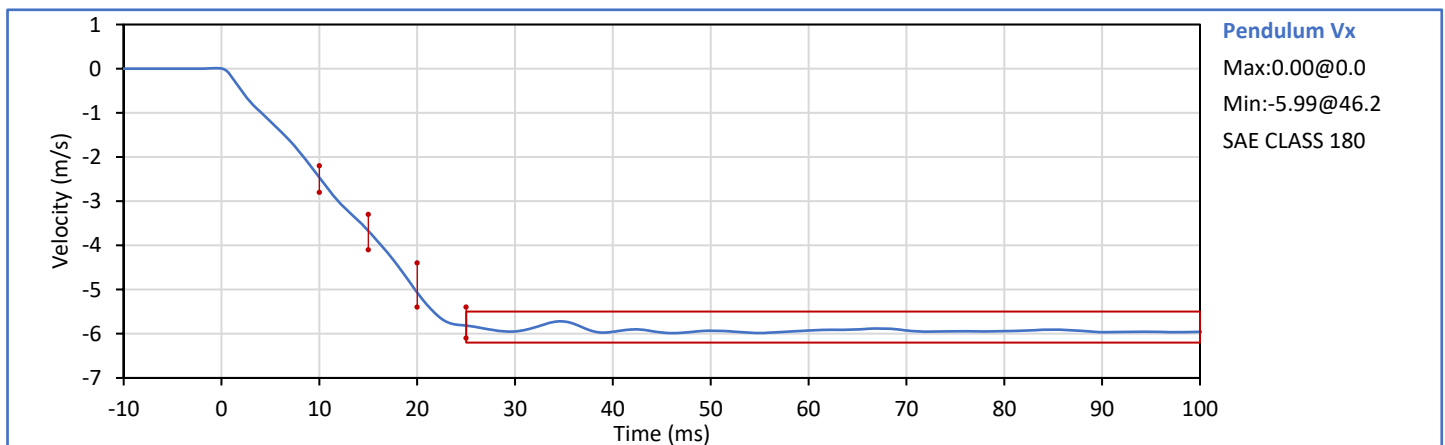
Technician:

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	26	Pass
Pendulum Velocity	m/s	5.51	5.63	5.58	Pass
Pendulum Decel at 10 ms	m/s	-2.80	-2.20	-2.46	Pass
Pendulum Decel at 15 ms	m/s	-4.10	-3.30	-3.67	Pass
Pendulum Decel at 20 ms	m/s	-5.40	-4.40	-5.07	Pass
Pendulum Decel at 25 ms	m/s	-6.10	-5.40	-5.82	Pass
Pendulum Decel from 25-100 ms	m/s	-6.20	-5.50	-5.99/-5.72	Pass
Peak "D" Plane Rotation	deg	-81.0	-71.0	-77.6	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	59.4	Pass
Peak Occ. Condyle Moment	Nm	36.0	44.0	42.1	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	110.9	Pass
Overall Test Results					Pass

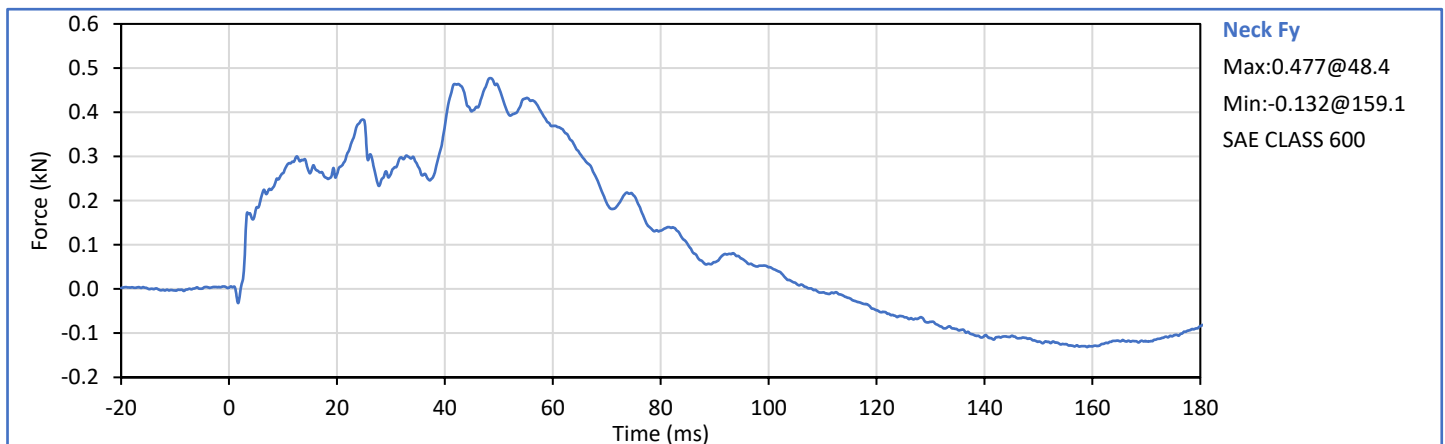
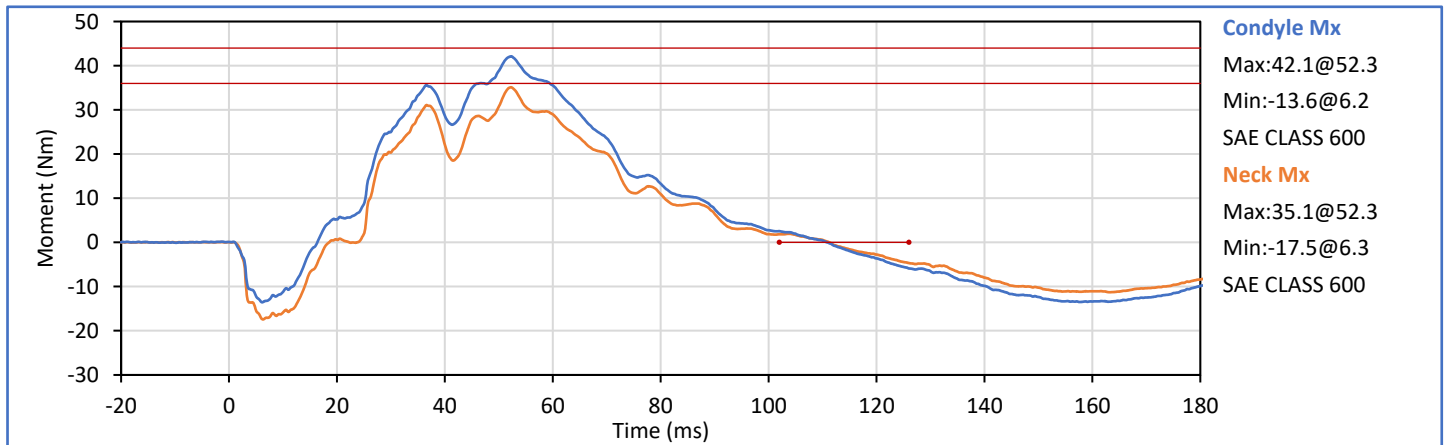
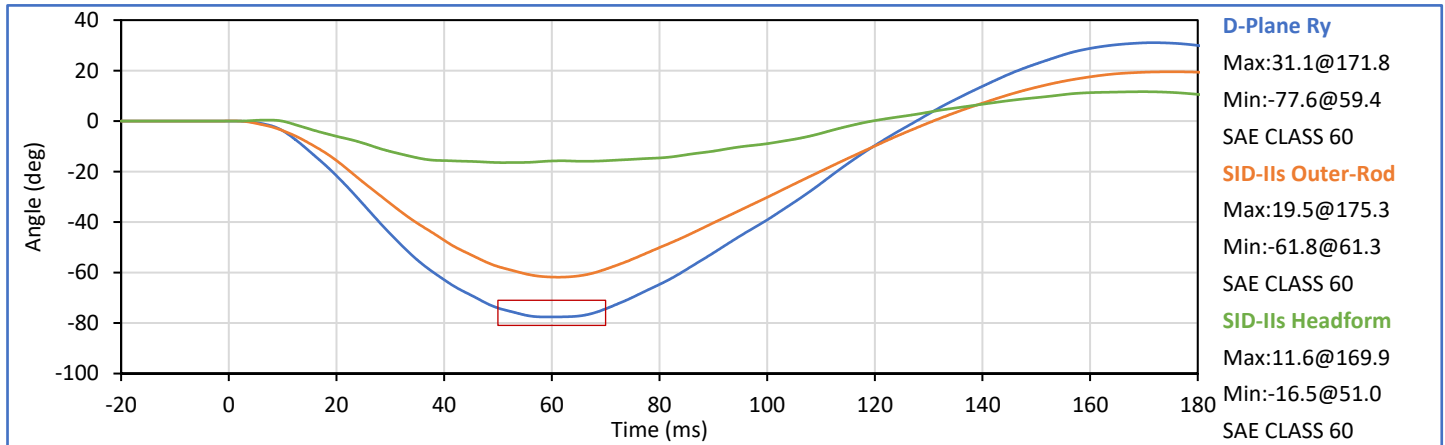


Technician:

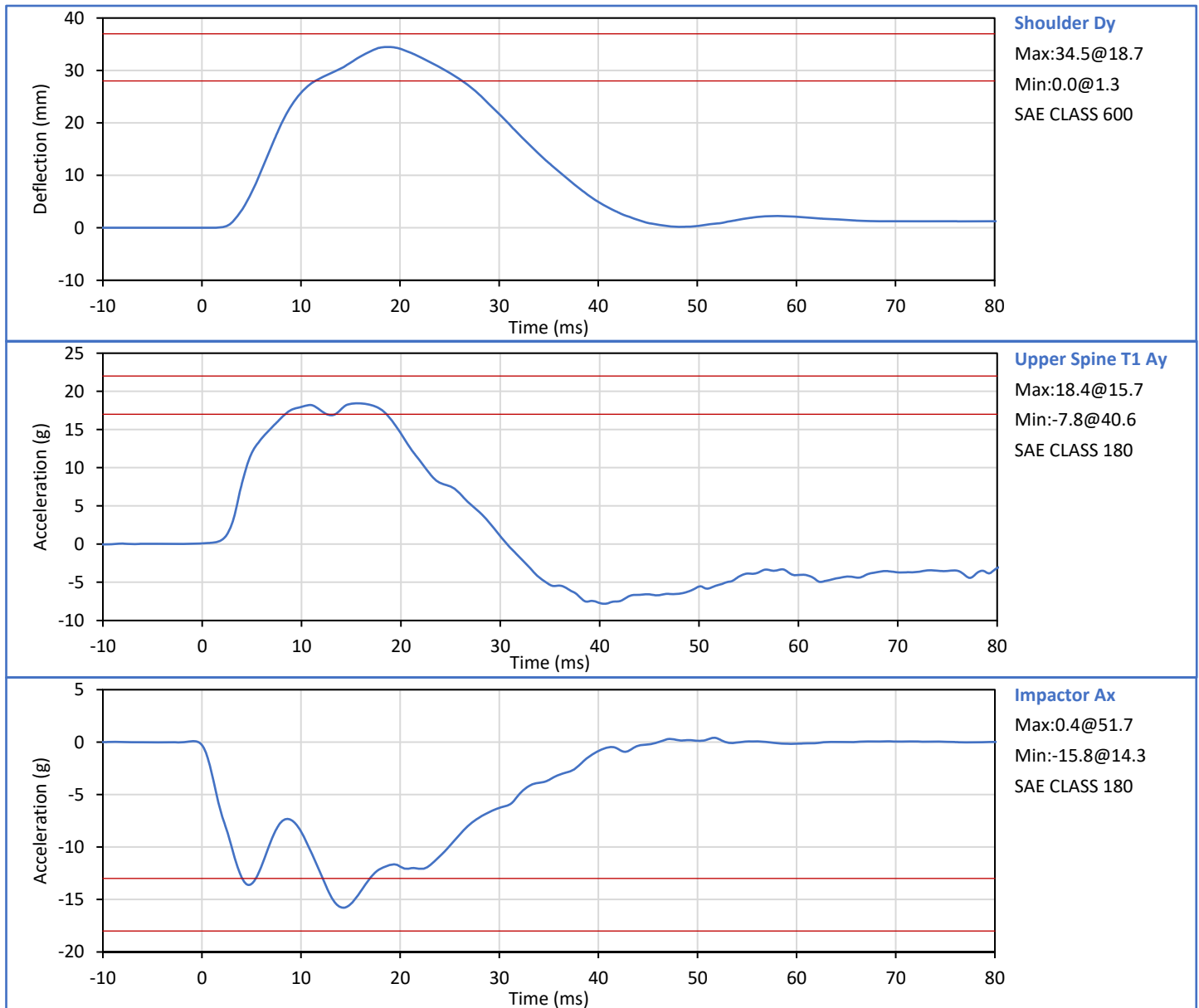
G. Holguin

Approved By:

J. Hernandez



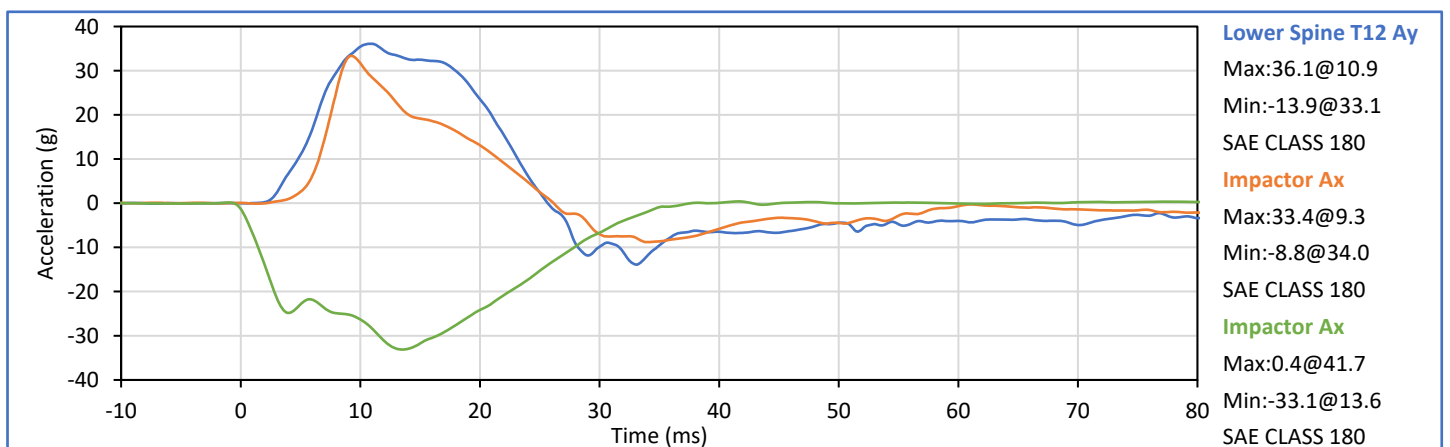
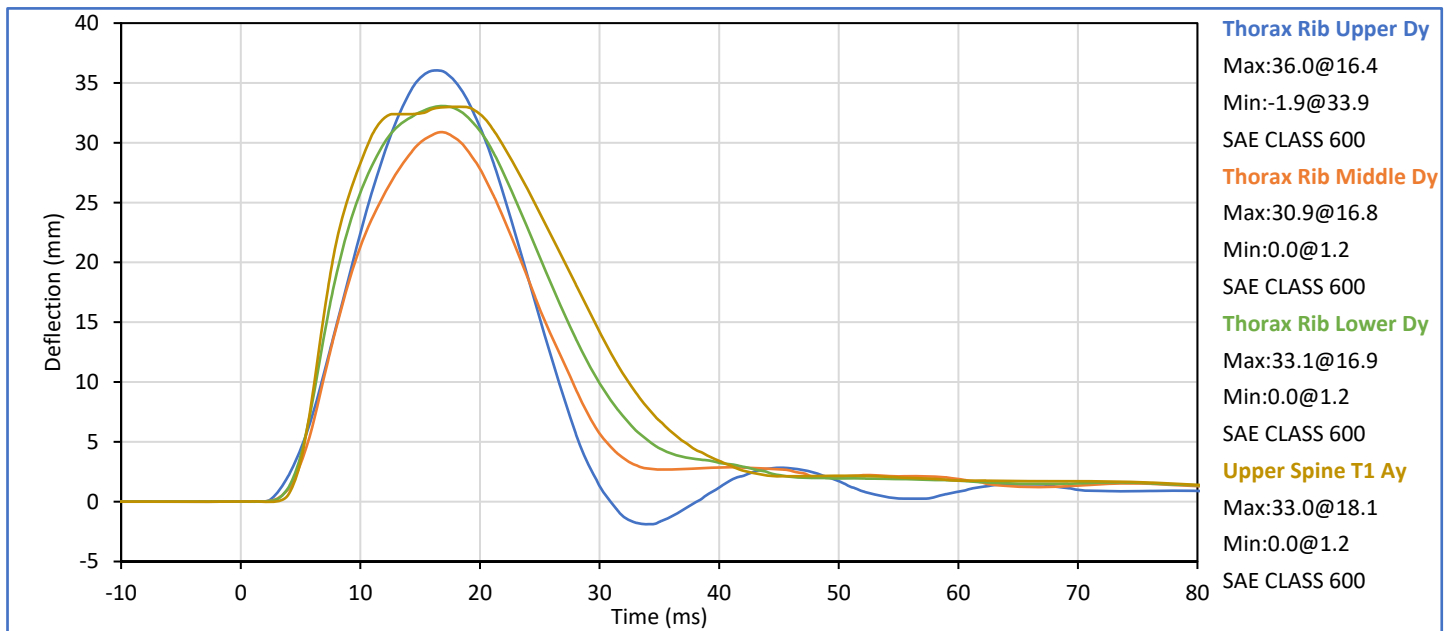
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	20	Pass
Impactor Velocity	m/s	4.20	4.40	4.31	Pass
Peak Shoulder Dy	mm	28.0	37.0	34.5	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	18.4	Pass
Peak Impactor Ax	g	-18.0	-13.0	-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	42	Pass
Impactor Velocity	m/s	6.60	6.80	6.75	Pass
Peak Shoulder Dy	mm	31.0	40.0	36.0	Pass
Peak Upper Rib Dy	mm	25.0	32.0	30.9	Pass
Peak Middle Rib Dy	mm	30.0	36.0	33.1	Pass
Peak Lower Rib Dy	mm	32.0	38.0	33.0	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	36.1	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	33.4	Pass
Peak Impactor Ax	g	-36.0	-30.0	-33.1	Pass
Overall Test Results				Pass	Pass



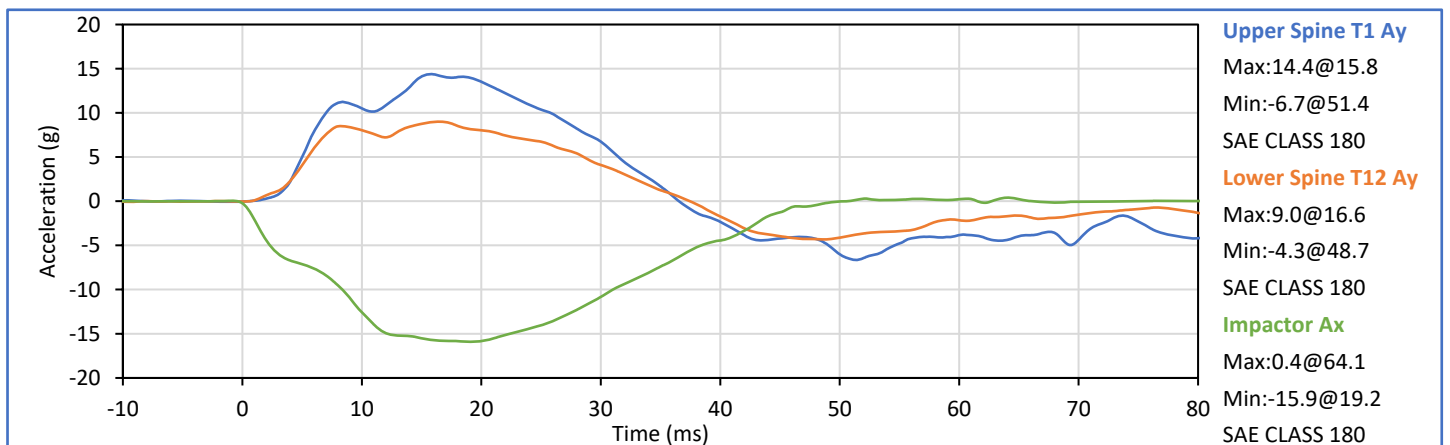
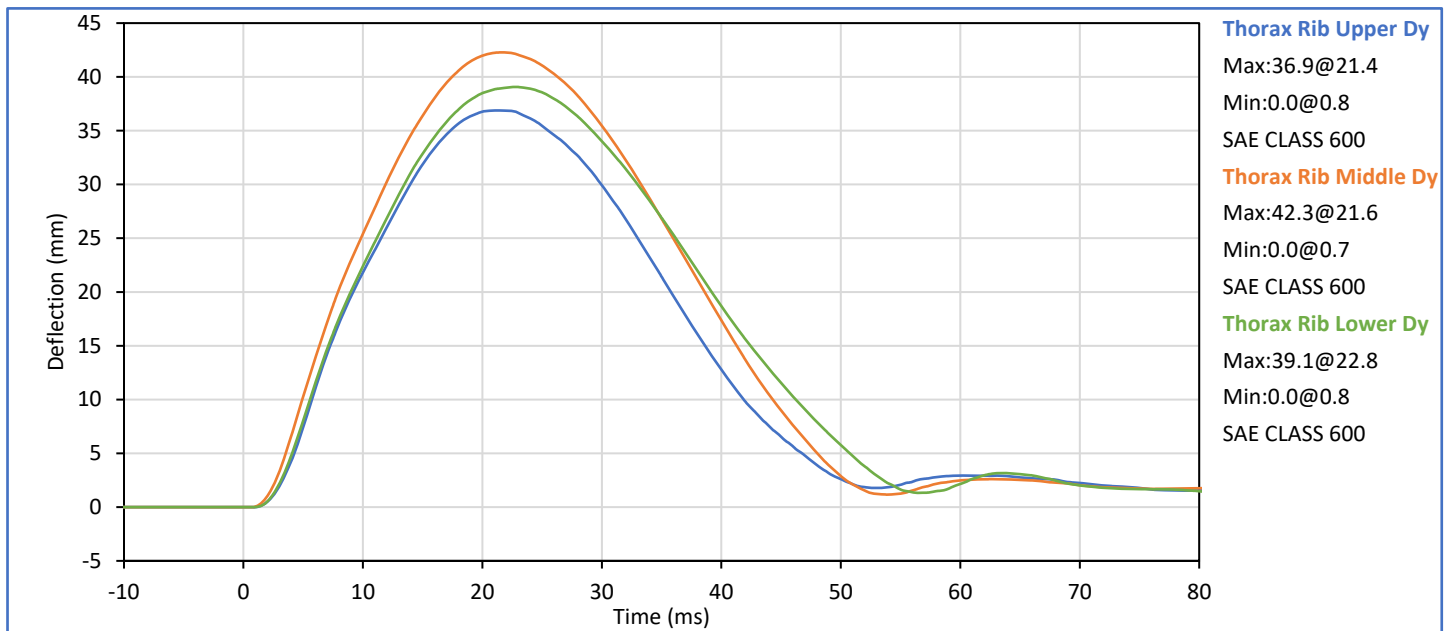
Technician:

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
Impactor Velocity	m/s	4.20	4.40	4.31	Pass
Peak Thorax Rib Upper Dy	mm	32.0	40.0	36.9	Pass
Peak Thorax Rib Middle Dy	mm	39.0	45.0	42.3	Pass
Peak Thorax Rib Lower Dy	mm	35.0	43.0	39.1	Pass
Peak Spine Upper T1 Ay	g	13.0	17.0	14.4	Pass
Peak Spine Lower T12 Ay	g	7.0	11.0	9.0	Pass
Peak Impactor Ax	g	-18.0	-14.0	-15.9	Pass
Overall Test Results					Pass



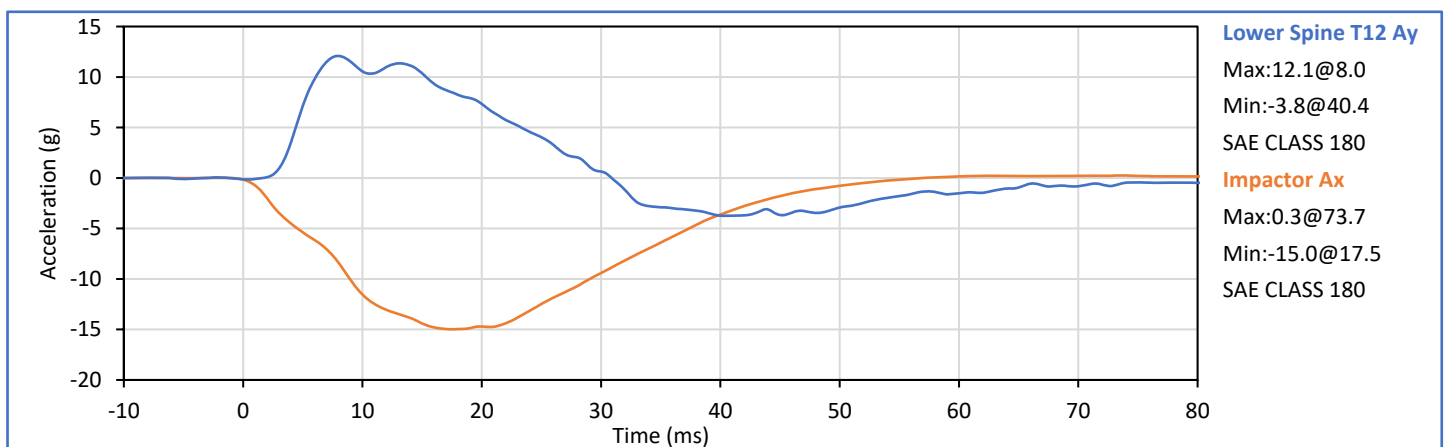
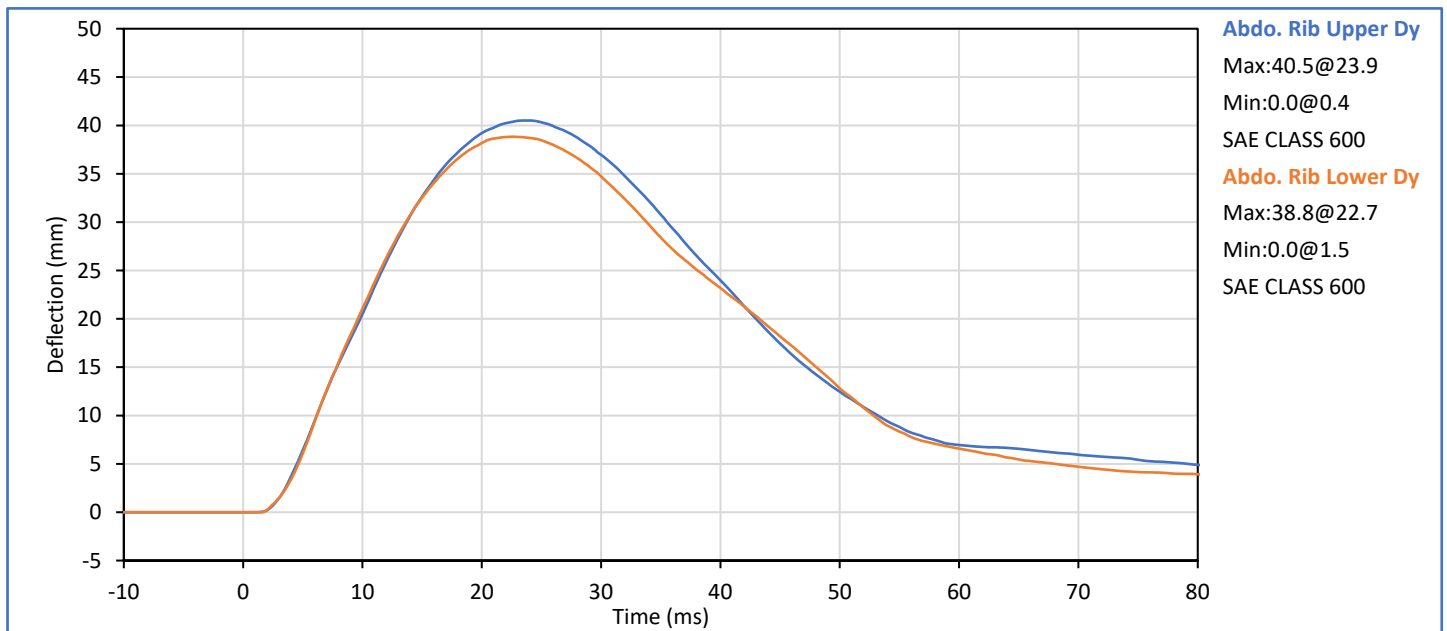
Technician:

G. Holguin

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	20	Pass
Impactor Velocity	m/s	4.20	4.40	4.31	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	40.5	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	38.8	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	12.1	Pass
Peak Impactor Ax	g	-16.0	-12.0	-15.0	Pass
Overall Test Results					Pass



Technician:

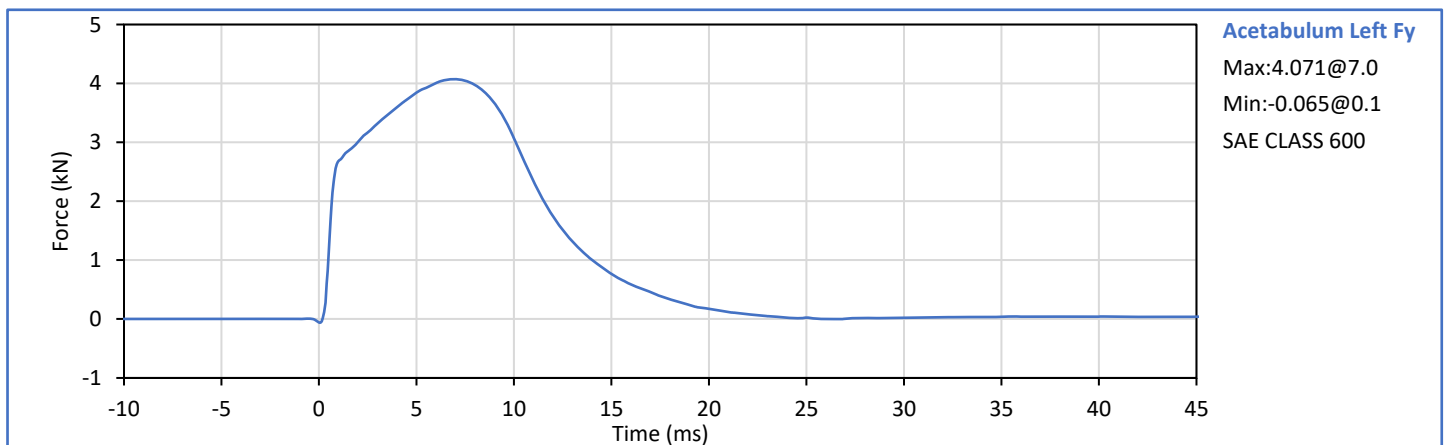
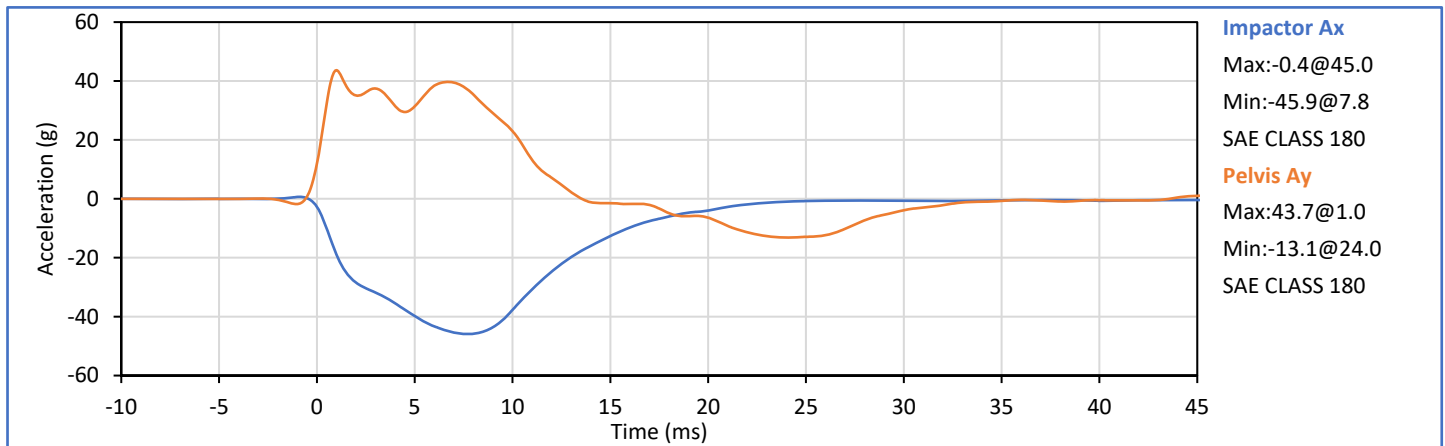
G. Holguin

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Relative Humidity	%	10	70	33	Pass
Impactor Velocity	m/s	6.60	6.80	6.72	Pass
Peak Acetabulum Fy	kN	3.60	4.30	4.07	Pass
Pelvis Ay after 6ms	g	34.0	42.0	39.7	Pass
Peak Impactor Ax	g	-47.0	-38.0	-45.9	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 13027



Technician: G. Holguin

Approved By: J. Hernandez



SID-IIs Pelvis Plug Certification Test

Plug S/N 13027

Test Number 10346

Report Number 10381

Test Date 7/30/2019 12:54:41 PM

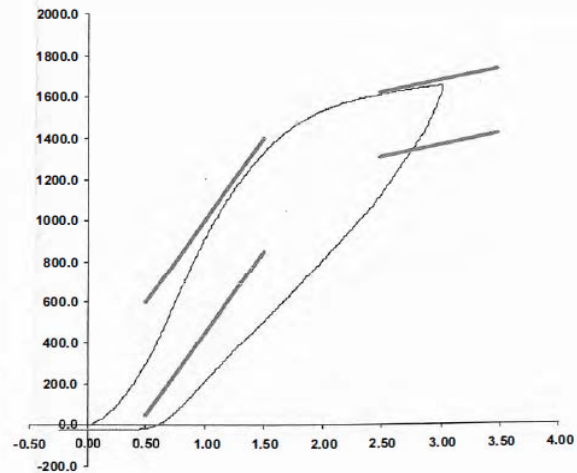
	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	302.53	50.00	600.00
Force @ 1.5 mm (N)	1,331.07	850.00	1,400.00
Force @ 2.5 mm (N)	1,610.31	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,652.44	1,361.00	1,673.00

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

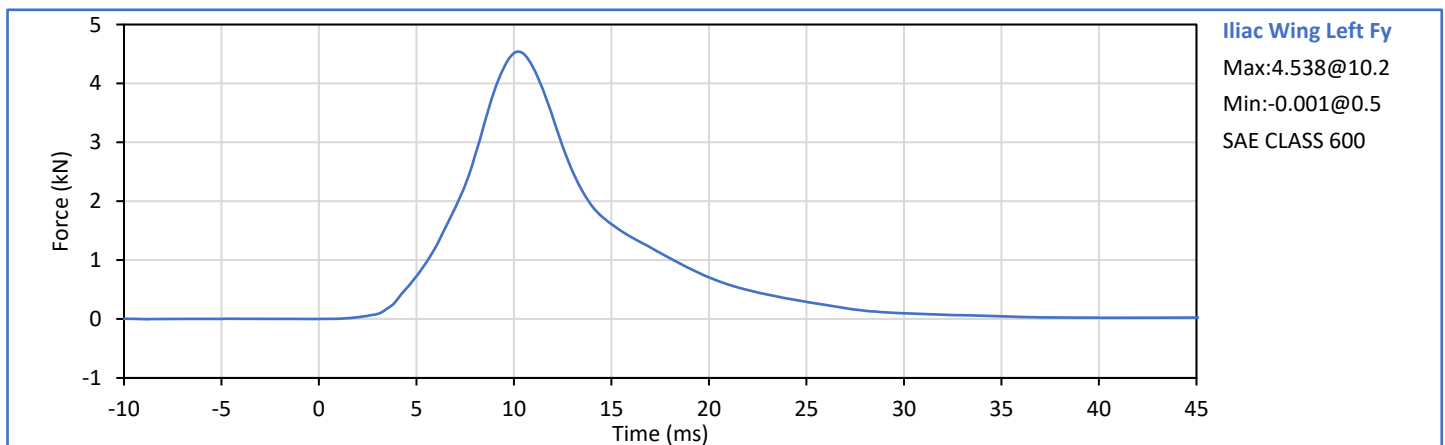
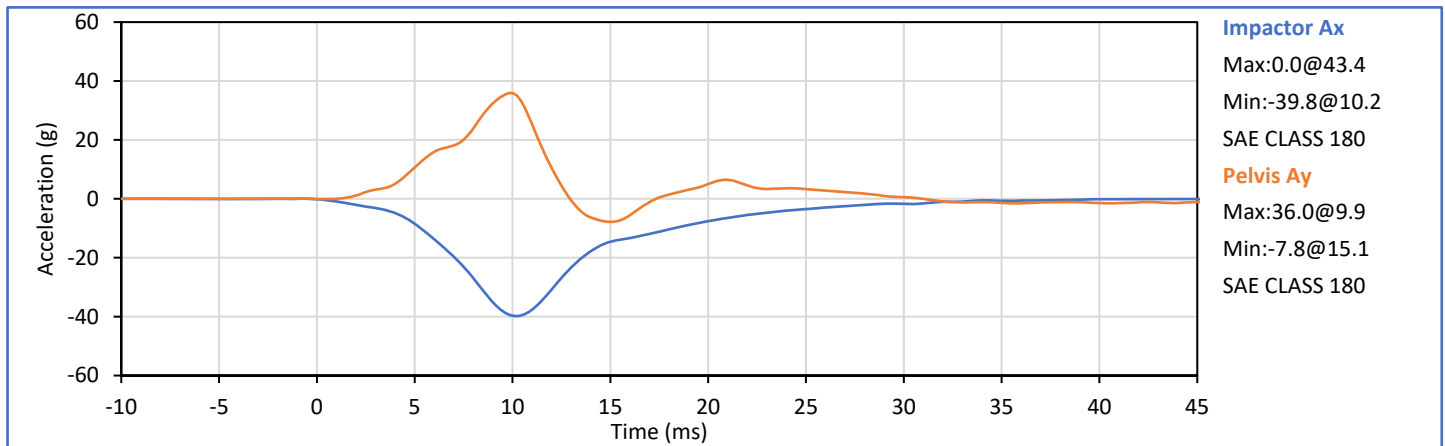
ATD Serial No.: 299

Test Date: 2022-04-12

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	19	Pass
Impactor Velocity	m/s	4.20	4.40	4.33	Pass
Peak Iliac Fy	kN	4.10	5.10	4.54	Pass
Peak Pelvis Ay	g	28.0	39.0	34.7	Pass
Peak Impactor Ax	g	-45.0	-36.0	-39.8	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

ATD Serial No.: F037

Test Date: 2022-04-18

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:



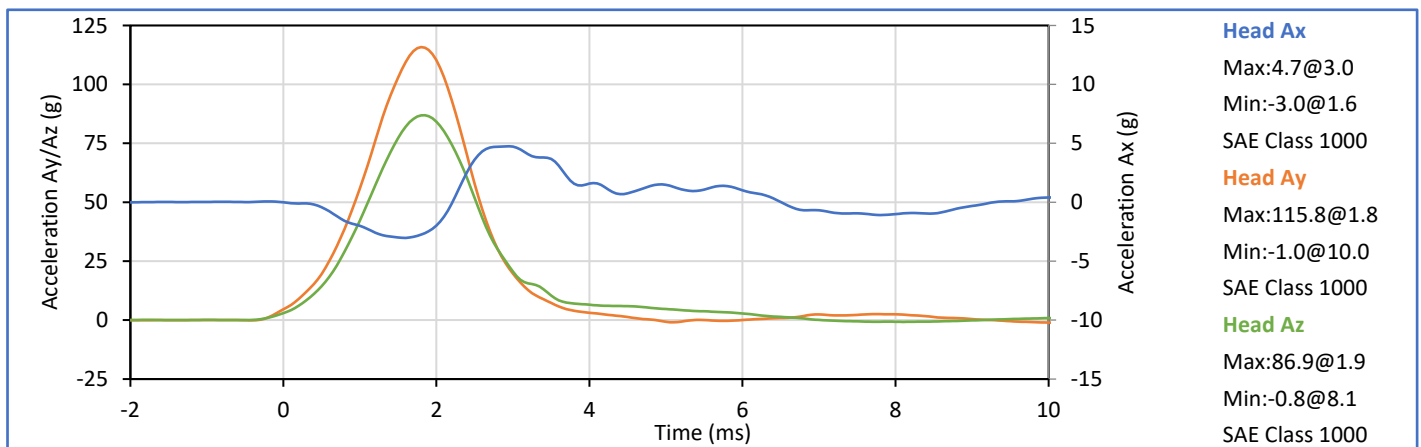
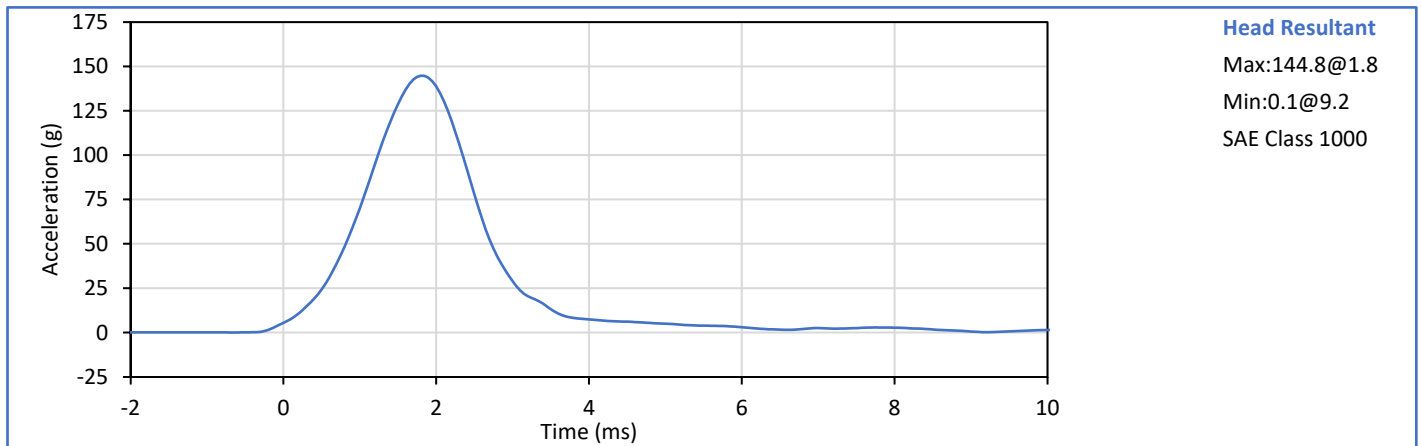
G. Holguin

Approved By:



J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.1	Pass
Laboratory Relative Humidity	%	10	70	32	Pass
Peak Resultant Acceleration	g	125.0	155.0	144.8	Pass
Peak Head Ax	g	-15.0	15.0	4.7	Pass
Oscillations After Main Pulse	%	0.0	15.0	2.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results		Pass



Technician:

G. Holguin

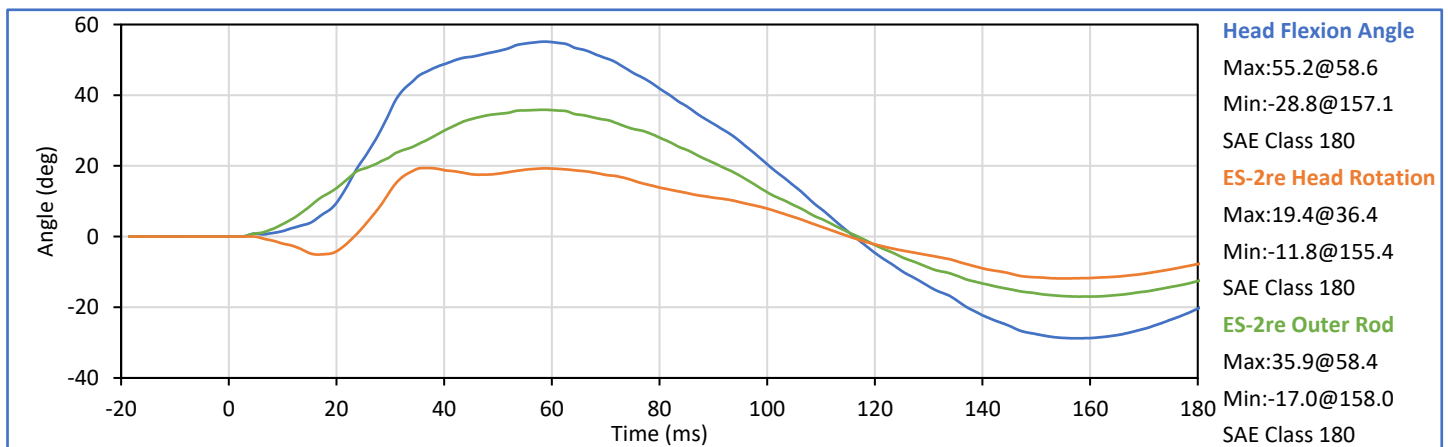
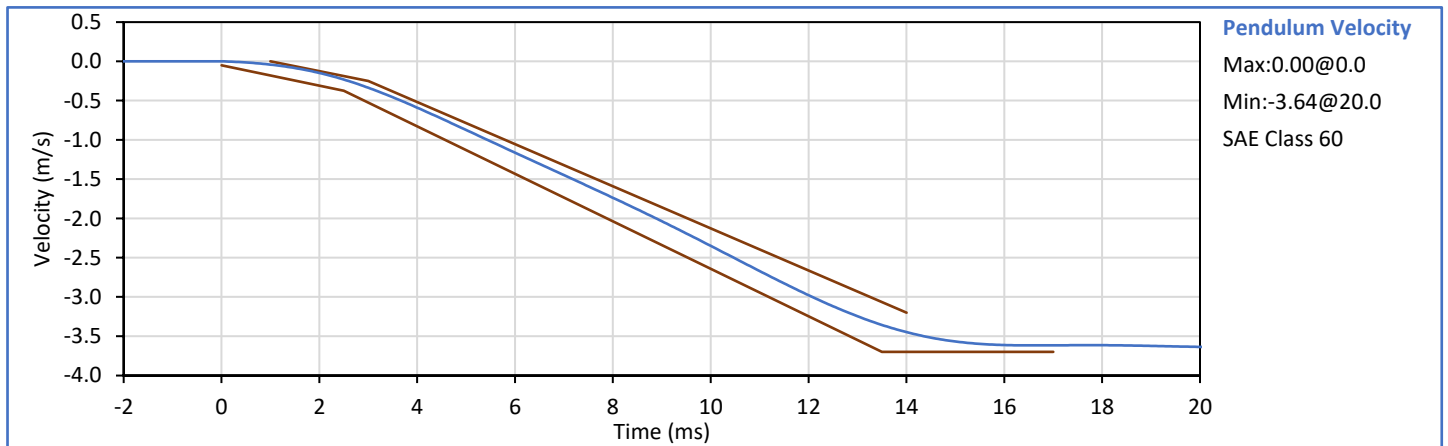
G. Holguin

Approved By:

J. Hernandez

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	20.9	Pass
Laboratory Relative Humidity	%	10	70	34	Pass
Pendulum Velocity	m/s	3.30	3.50	3.42	Pass
Peak Headform Flexion	deg	49.0	59.0	55.2	Pass
Time of Peak Headform Flexion	ms	54.0	66.0	58.6	Pass
Flexion Decay (Peak to zero)	ms	53.0	88.0	57.6	Pass
Overall Test Results					Pass



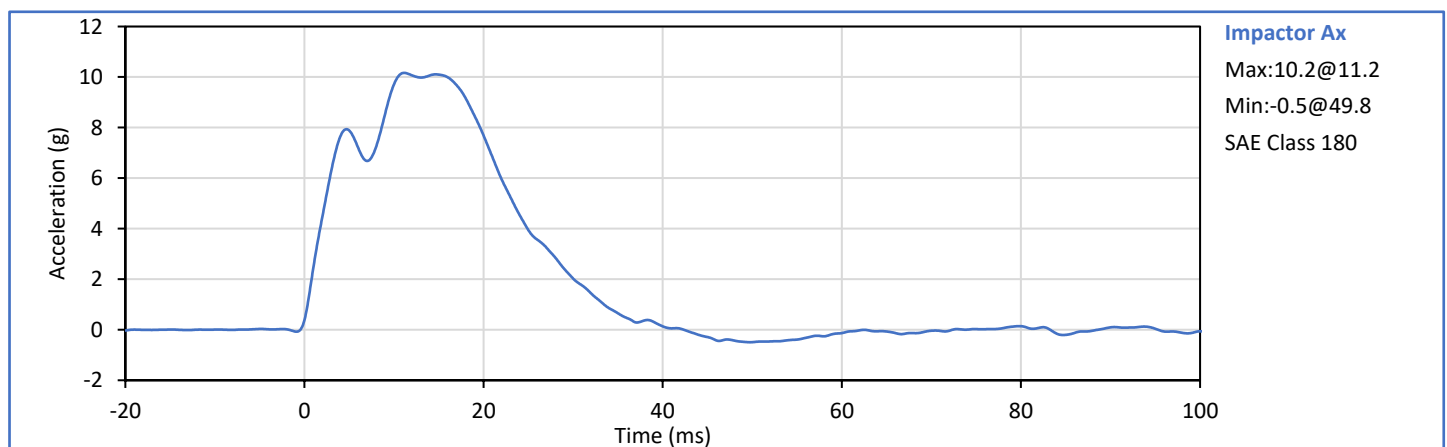
Technician:

G. Holguin

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.8	Pass
Laboratory Relative Humidity	%	10	70	26	Pass
Impactor Velocity	m/s	4.20	4.40	4.29	Pass
Peak Impactor Ax	g	7.5	10.5	10.2	Pass
Overall Test Results					Pass



Technician:

G. Holguin

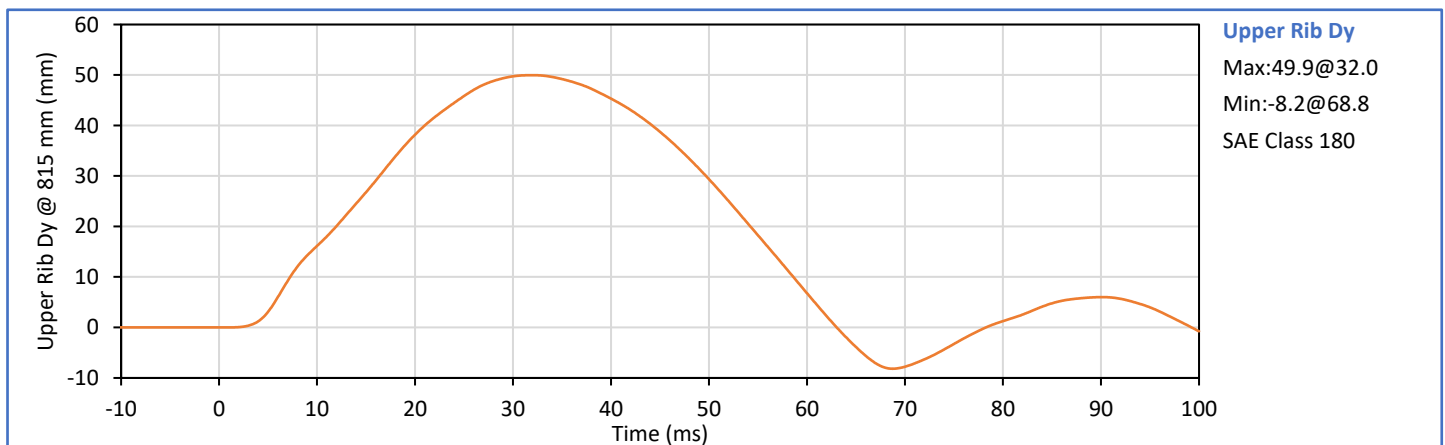
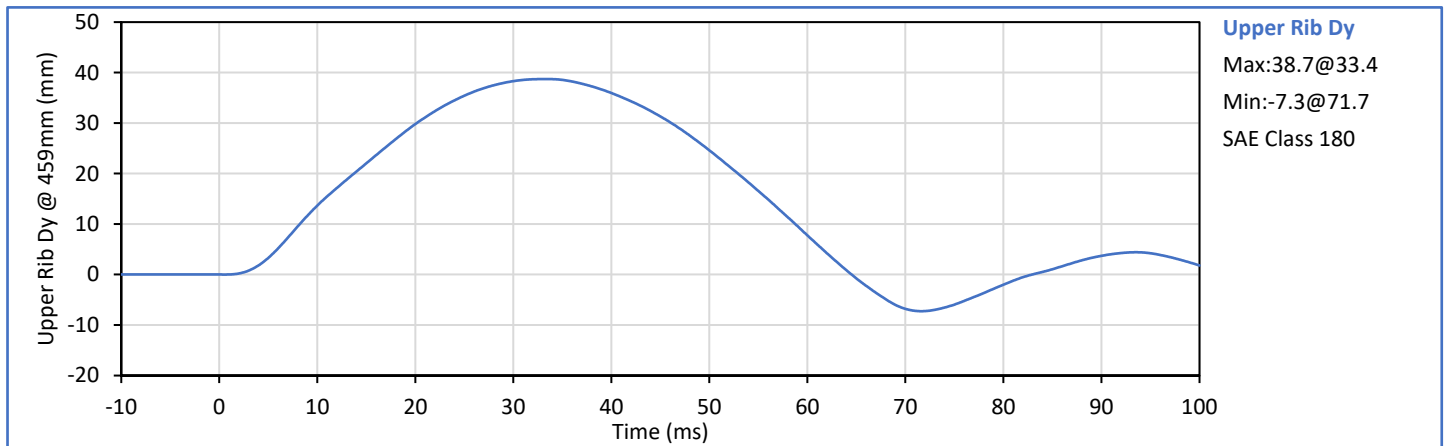
G. Holguin

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	36	Pass
Upper Rib Dy @ 459mm	mm	36.0	40.0	38.7	Pass
Upper Rib Dy @ 815mm	mm	46.0	51.0	49.9	Pass
Overall Test Results				Pass	Pass



Technician:

G. Holguin

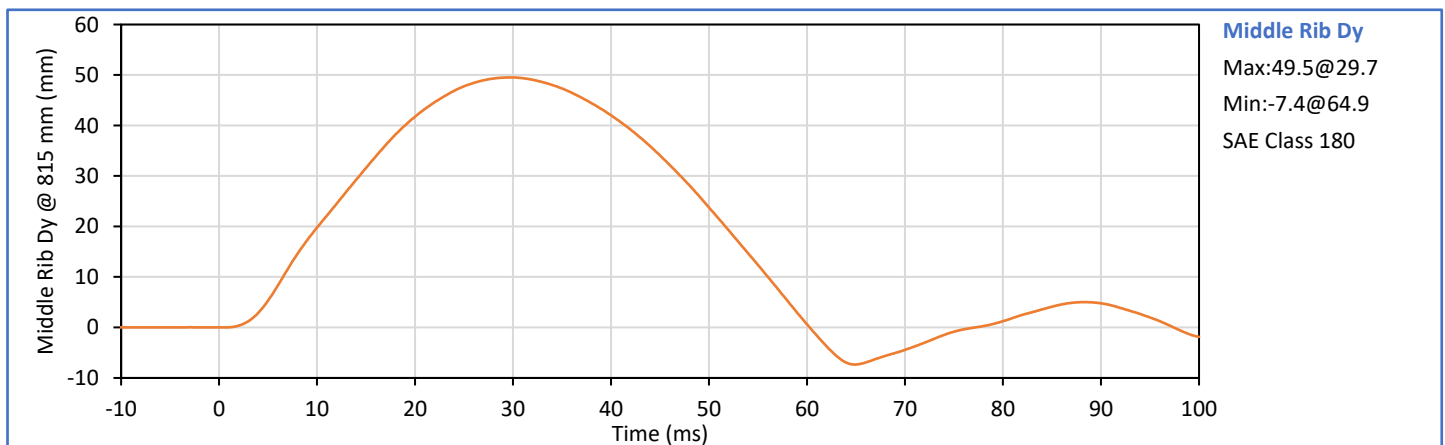
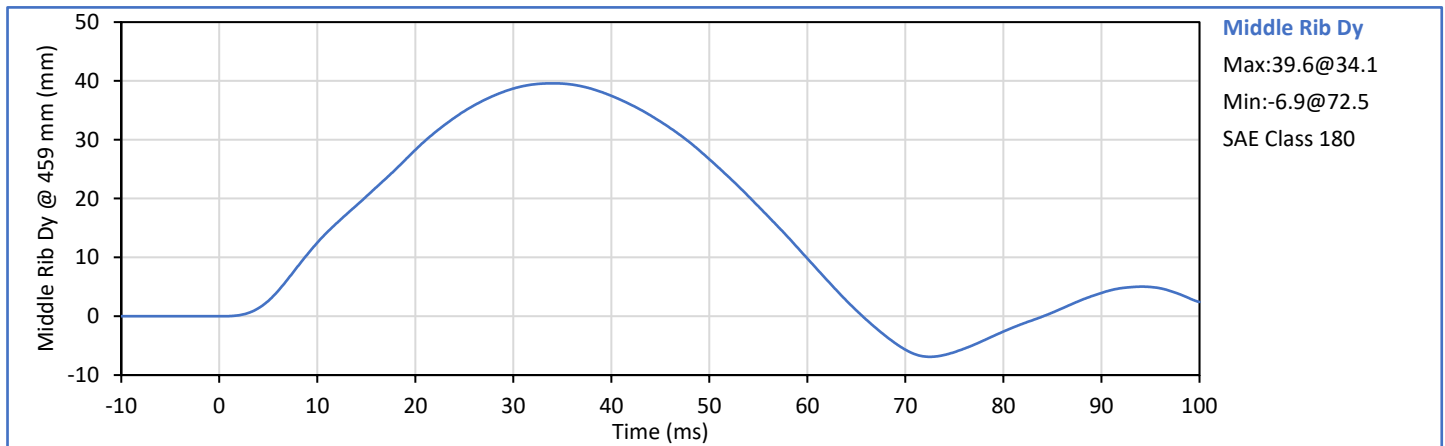
G. Holguin

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	36	Pass
Middle Rib Dy @ 459mm	mm	36.0	40.0	39.6	Pass
Middle Rib Dy @ 815mm	mm	46.0	51.0	49.5	Pass
Overall Test Results				Pass	Pass



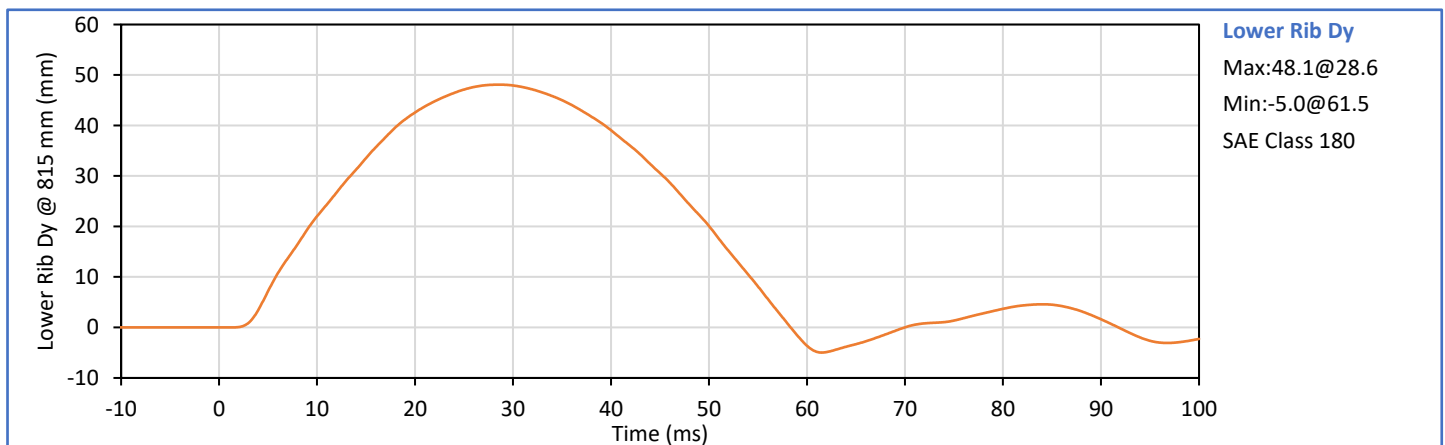
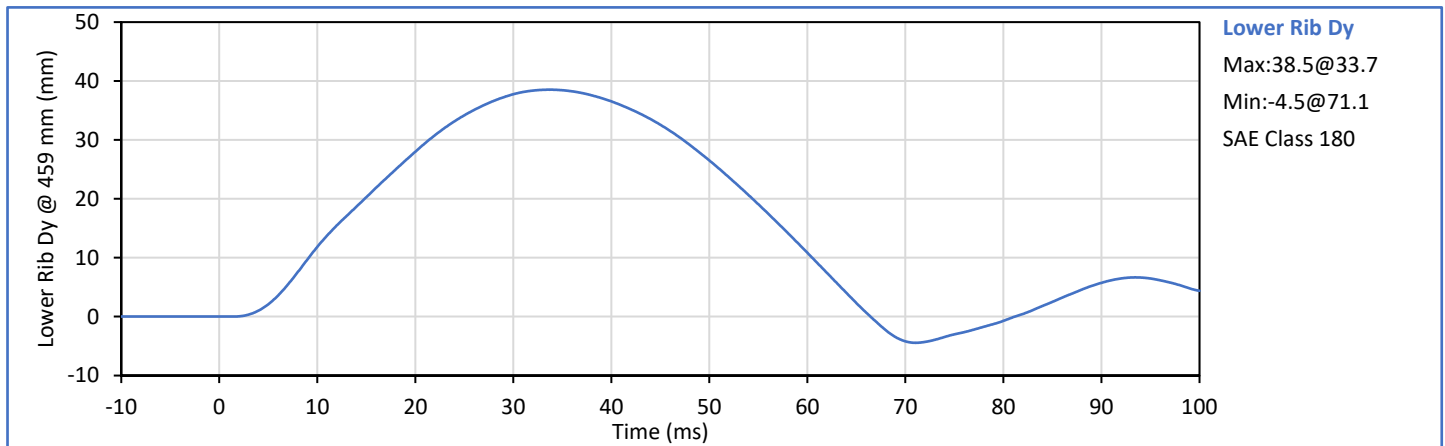
Technician:

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	36	Pass
Lower Rib Dy @ 459mm	mm	36.0	40.0	38.5	Pass
Lower Rib Dy @ 815mm	mm	46.0	51.0	48.1	Pass
Overall Test Results				Pass	Pass



Technician:

G. Holguin

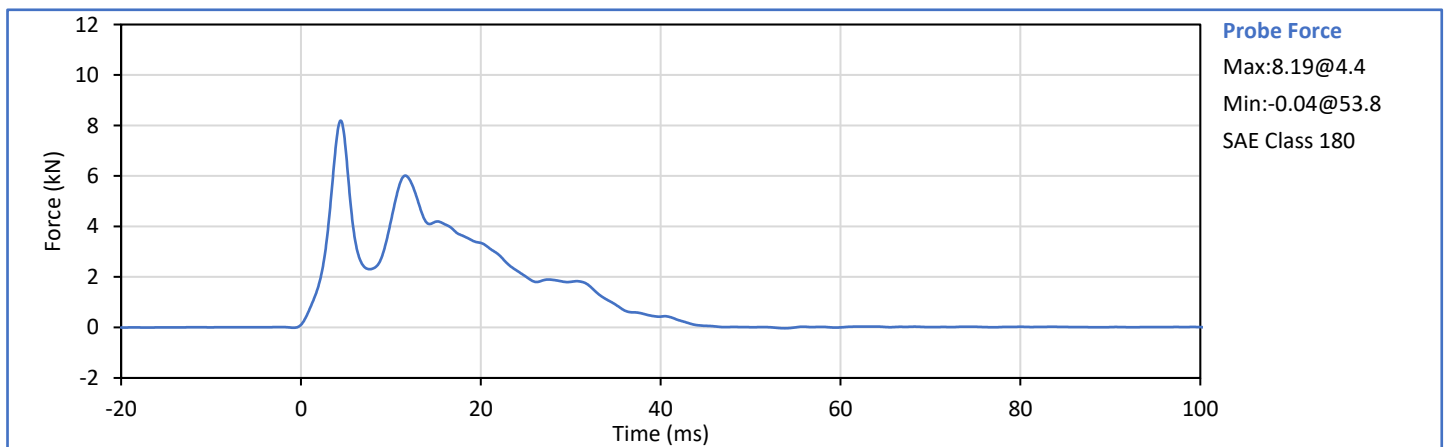
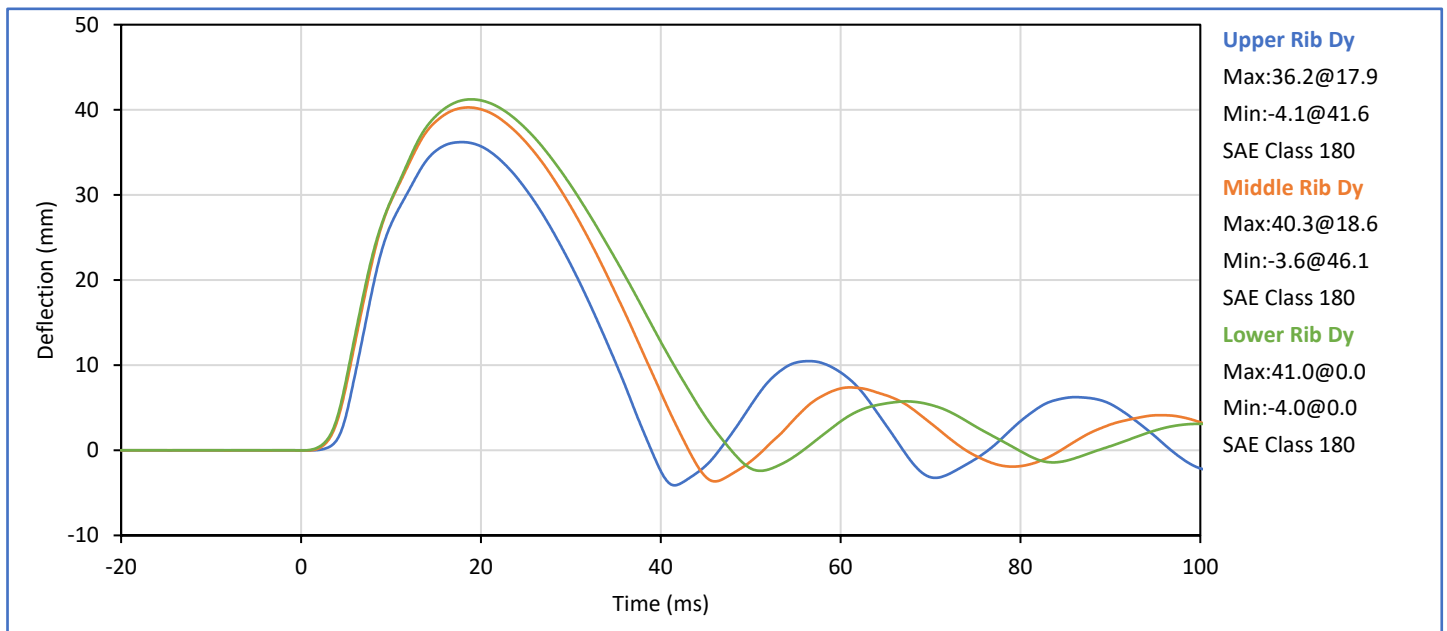
G. Holguin

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	27	Pass
Impactor Velocity	m/s	5.40	5.60	5.46	Pass
Peak Upper Rib Dy	mm	34.0	41.0	36.2	Pass
Peak Middle Rib Dy	mm	37.0	45.0	40.3	Pass
Peak Lower Rib Dy	mm	37.0	44.0	41.2	Pass
Peak Impactor Force After 6 ms	kN	5.10	6.20	6.01	Pass
Overall Test Results					Pass



Technician:

G. Holguin

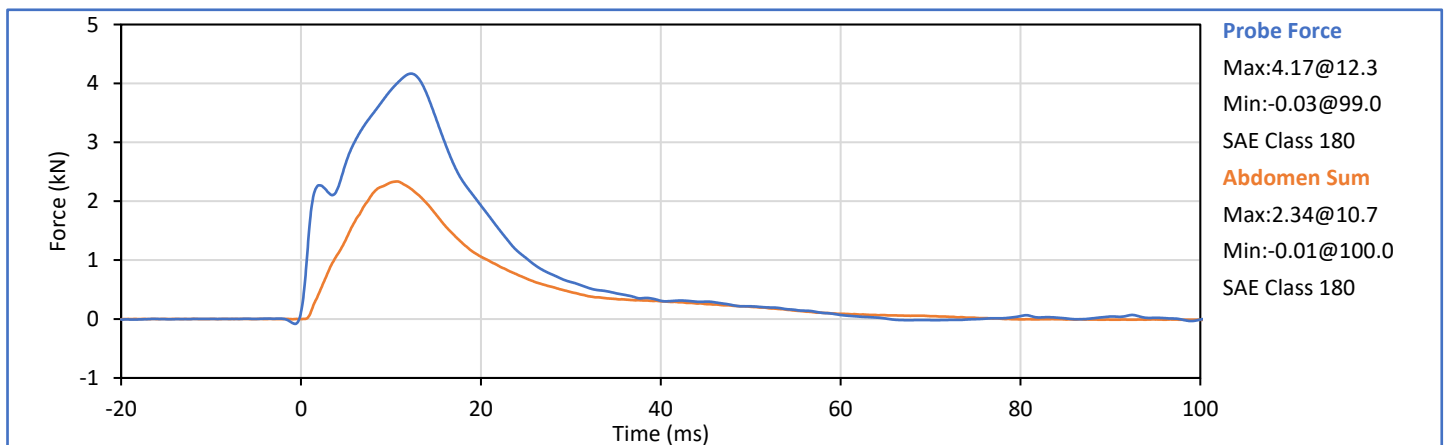
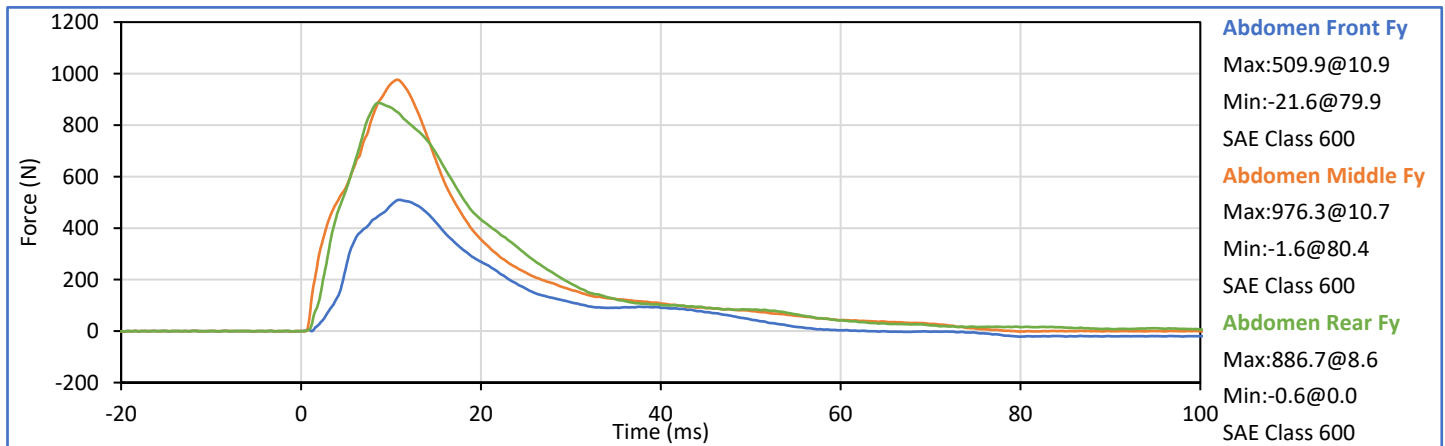
G. Holguin

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	27	Pass
Impactor Velocity	m/s	3.90	4.10	4.09	Pass
Peak Impactor Force	kN	4.00	4.80	4.17	Pass
Time of Peak Impactor Force	ms	10.6	13.0	12.3	Pass
Sum of Abdomen Forces	kN	2.20	2.70	2.34	Pass
Time of Peak Sum Abdomen Force	ms	10.0	12.3	10.7	Pass
Overall Test Results					Pass



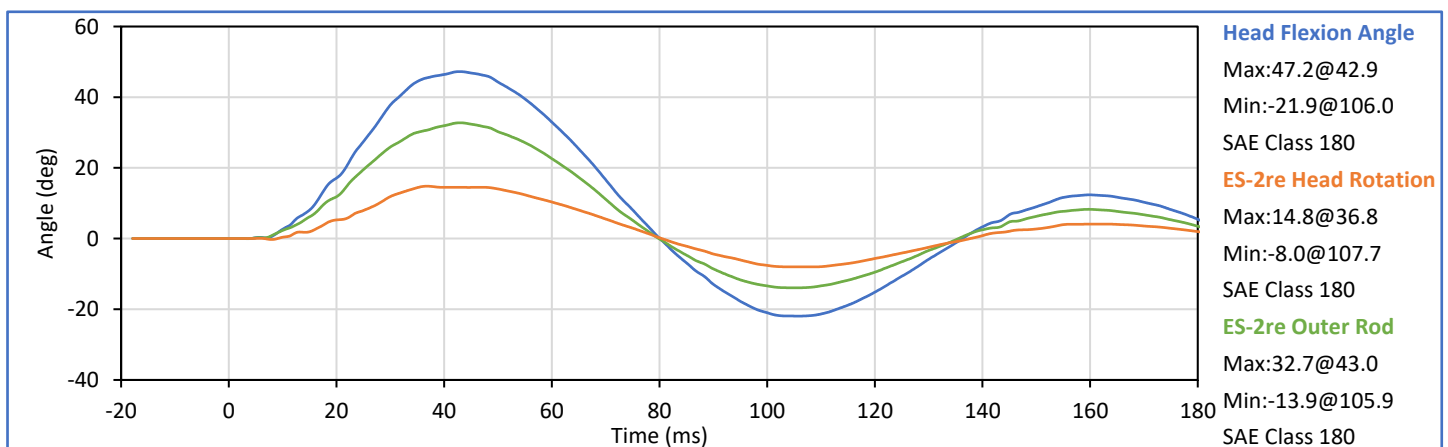
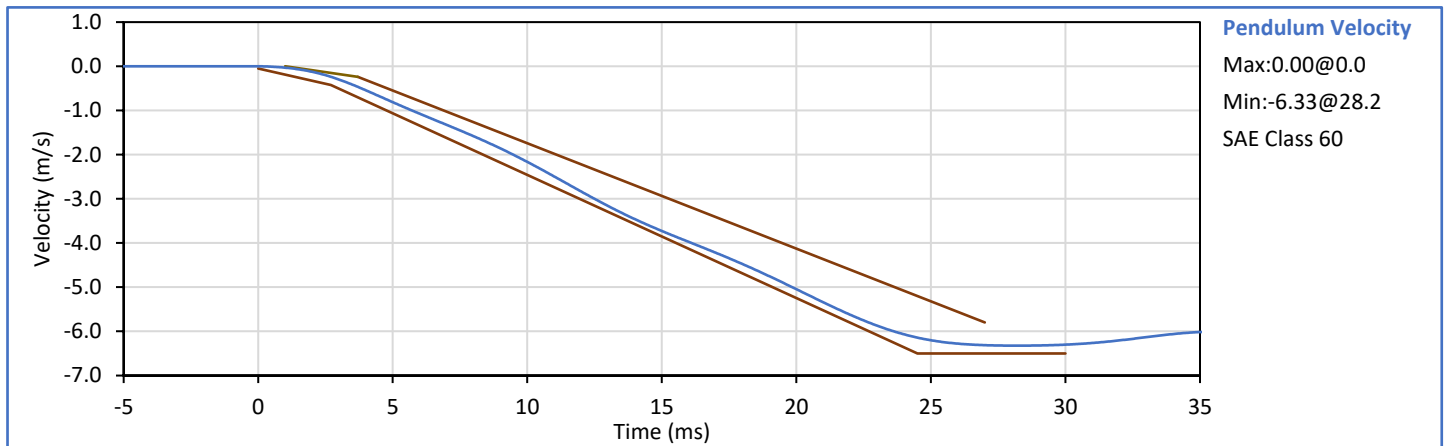
Technician:

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	31	Pass
Pendulum Velocity	m/s	5.95	6.15	6.14	Pass
Peak Headform Flexion	deg	45.0	55.0	47.2	Pass
Time of Peak Headform Flexion	ms	39.0	53.0	42.9	Pass
Flexion Decay (Peak to zero)	ms	37.0	57.0	37.2	Pass
Overall Test Results					Pass



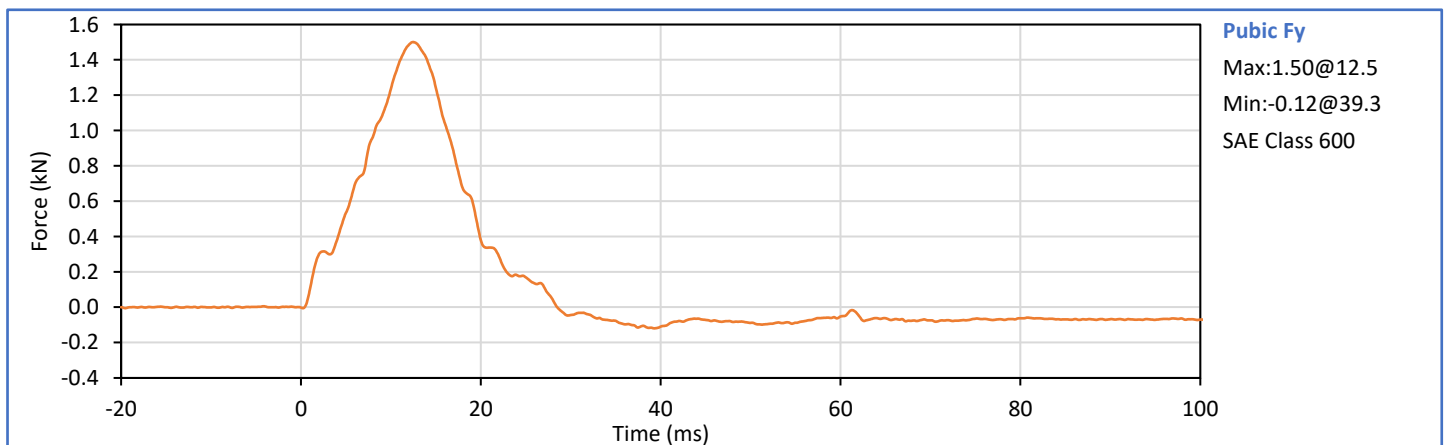
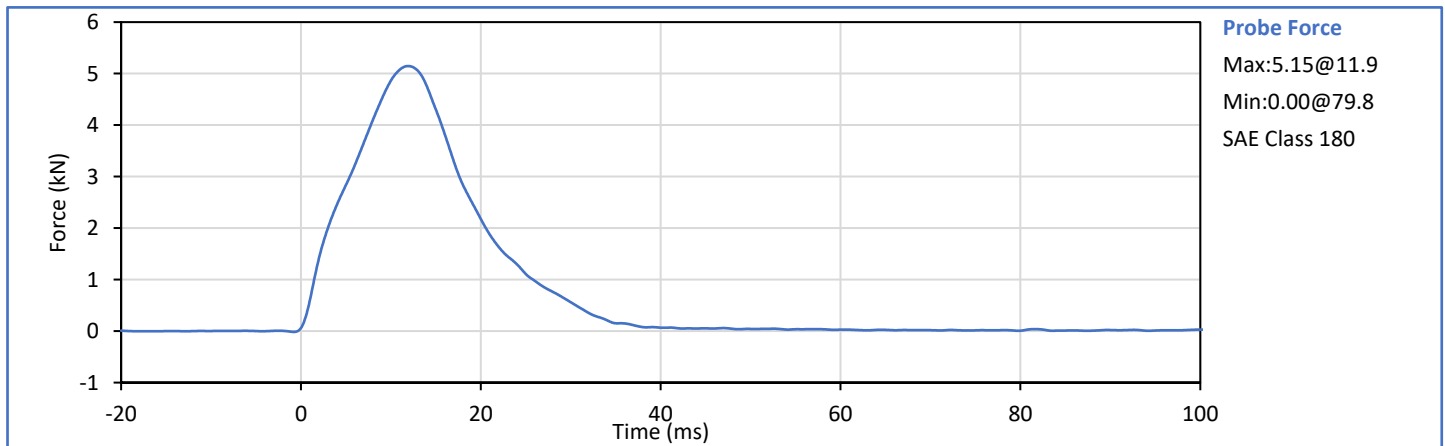
Technician:

G. Holguin

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.8	Pass
Laboratory Relative Humidity	%	10	70	27	Pass
Impactor Velocity	m/s	4.20	4.40	4.30	Pass
Peak Impactor Force	kN	4.70	5.40	5.15	Pass
Time of Peak Impactor Force	ms	11.8	16.1	11.9	Pass
Pubic Symphysis Fy	kN	1.23	1.59	1.50	Pass
Time of Peak Pubic Symphysis Fy	ms	12.2	17.0	12.5	Pass
Overall Test Results					Pass



Technician:

G. Holguin

G. Holguin

Approved By:

J. Hernandez

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: 2022-04-18

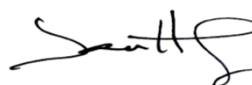
Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	22	Pass
A - Sitting Height	mm	772	788	779	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	86	Pass
D - H Point From Seatback	mm	141	151	146	Pass
E - Shoulder Pivot From Backline	mm	97	107	101	Pass
F - Thigh Clearance	mm	119	135	127	Pass
G - Head Breadth	mm	140	148	144	Pass
H - Head Back From Backline	mm	40	46	42	Pass
I - Head Depth	mm	178	188	185	Pass
J - Head Circumference	mm	541	551	549	Pass
K - Buttock To Knee Length	mm	514	540	534	Pass
L - Popliteal Height	mm	343	369	350	Pass
K - Knee Pivot To Floor Height	mm	392	409	399	Pass
N - Buttock Popliteal Length	mm	416	442	431	Pass
O - Chest Depth W/O Jacket	mm	195	211	205	Pass
P - Foot Length	mm	216	232	222	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	319	Pass
R - Arm Length	mm	249	259	256	Pass
S - Knee Joint To Seatback	mm	477	493	491	Pass
V - Shoulder Width	mm	341	357	346	Pass
W - Foot Width	mm	78	94	85	Pass
Y - Chest Circumference W/Jacket	mm	851	881	859	Pass
Z - Waist Circumference	mm	761	791	787	Pass
				Overall Test Results	Pass

Technician:



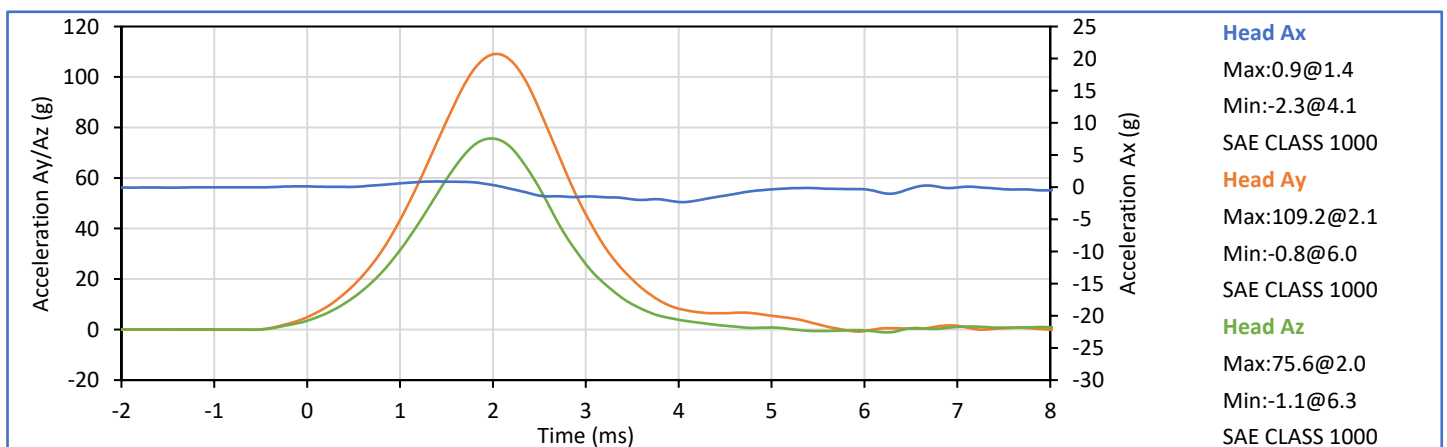
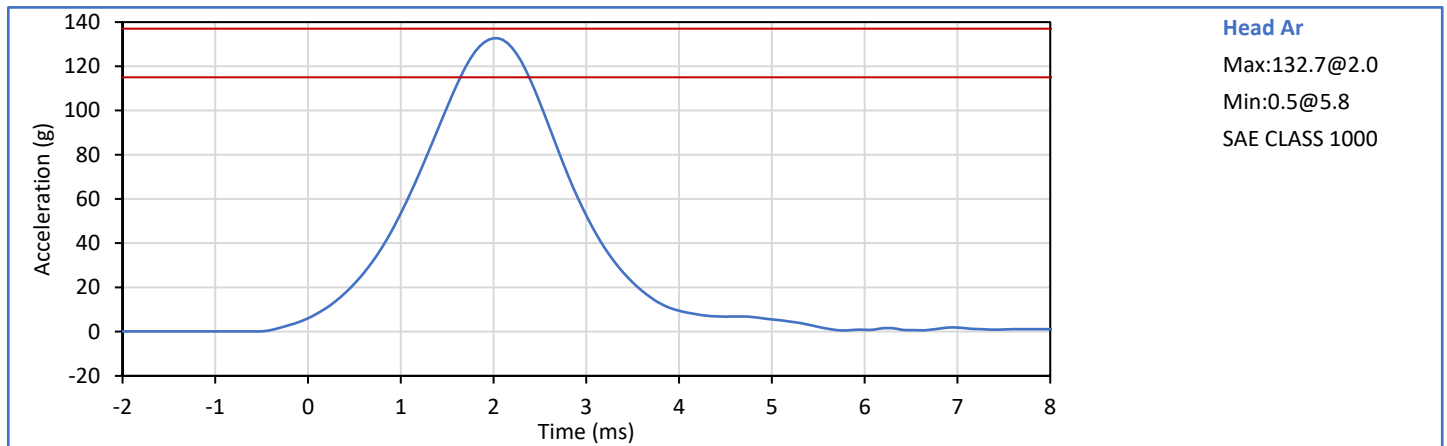
G. Holguin

Approved By:



J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	22.2	Pass
Laboratory Relative Humidity	%	10	70	35	Pass
Peak Resultant Acceleration	g	115.0	137.0	132.7	Pass
Peak Head Ax	g	-15.0	15.0	-2.3	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results	Pass	



Technician:

G. Holguin

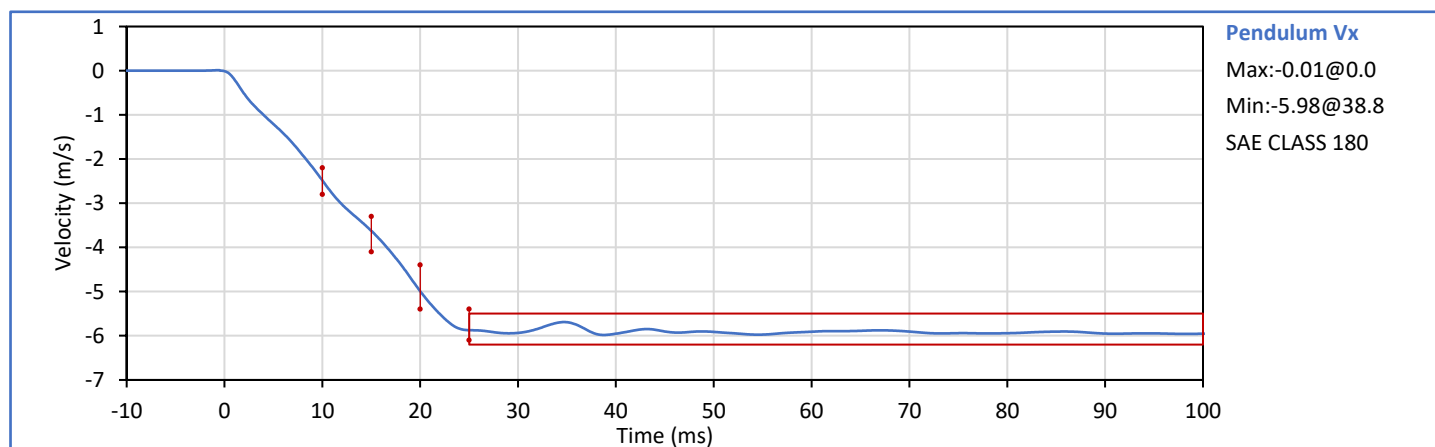
G. Holguin

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	35	Pass
Pendulum Velocity	m/s	5.51	5.63	5.59	Pass
Pendulum Decel at 10 ms	m/s	-2.80	-2.20	-2.48	Pass
Pendulum Decel at 15 ms	m/s	-4.10	-3.30	-3.63	Pass
Pendulum Decel at 20 ms	m/s	-5.40	-4.40	-4.99	Pass
Pendulum Decel at 25 ms	m/s	-6.10	-5.40	-5.88	Pass
Pendulum Decel from 25-100 ms	m/s	-6.20	-5.50	-5.98/-5.69	Pass
Peak "D" Plane Rotation	deg	-81.0	-71.0	-75.3	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	59.0	Pass
Peak Occ. Condyle Moment	Nm	36.0	44.0	42.7	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	112.1	Pass
				Overall Test Results	Pass

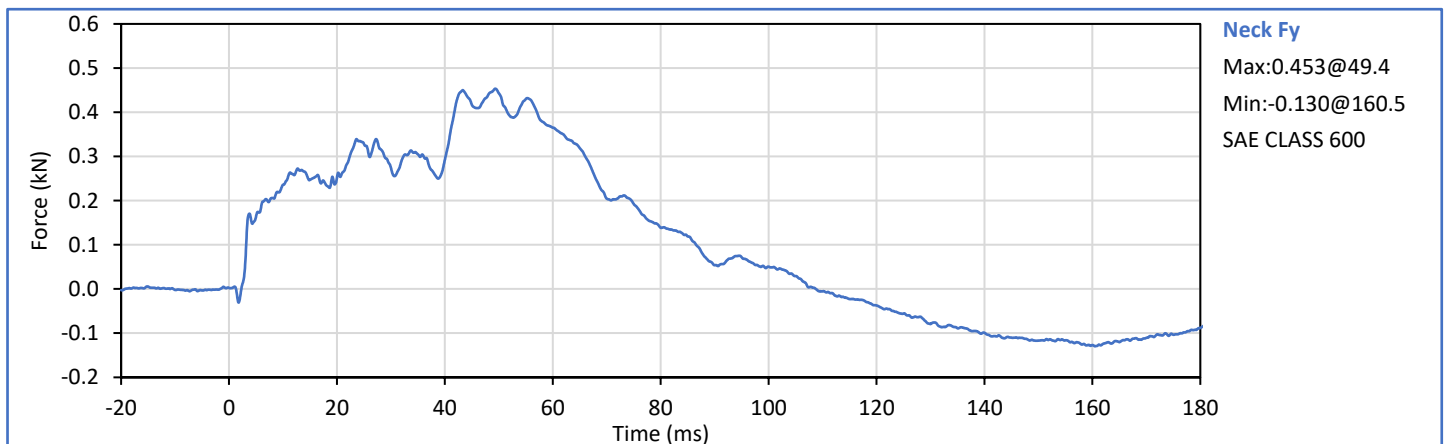
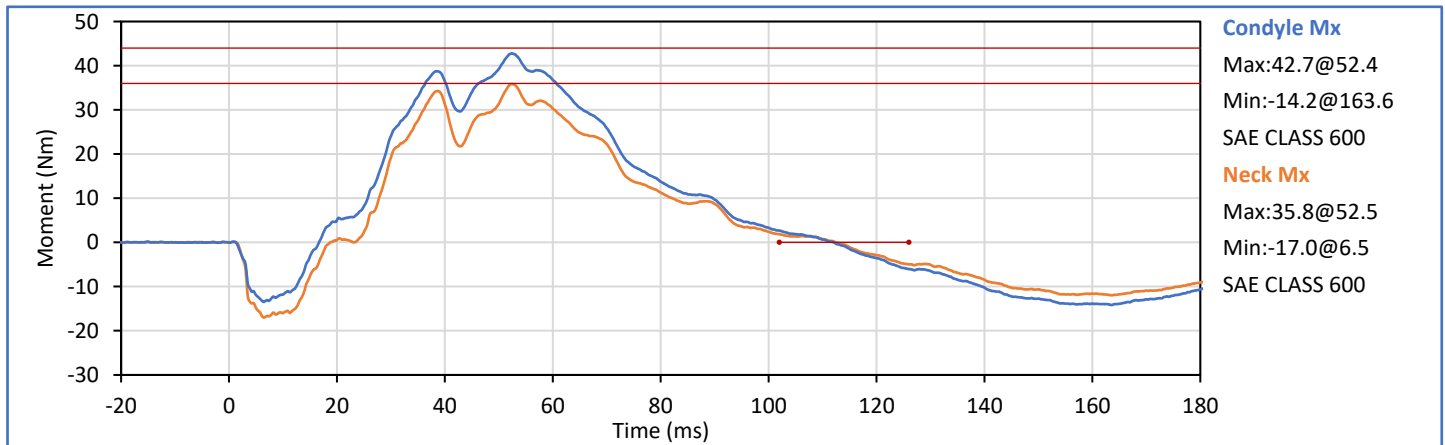
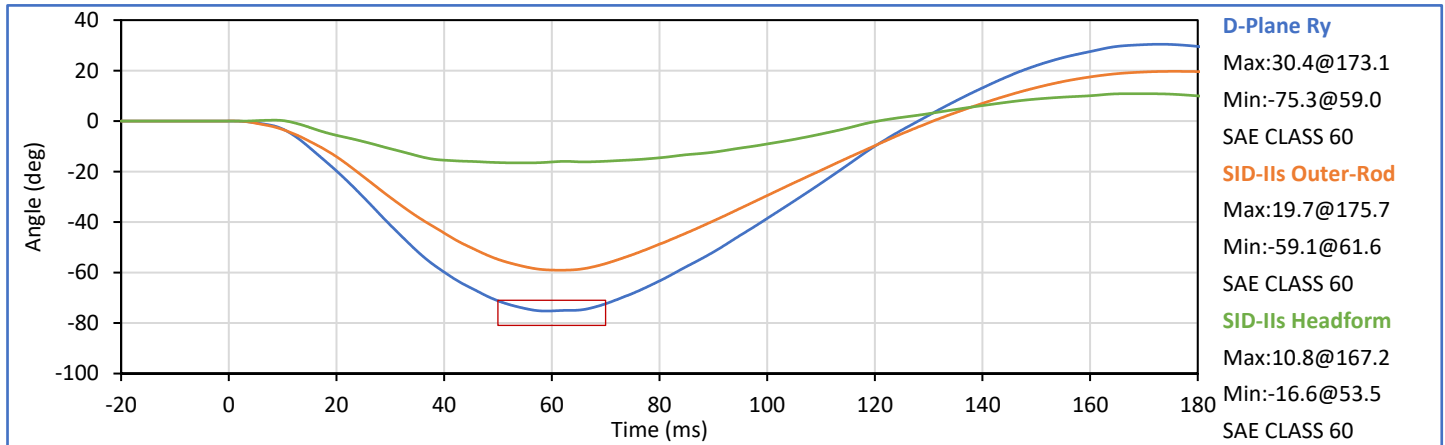


Technician:

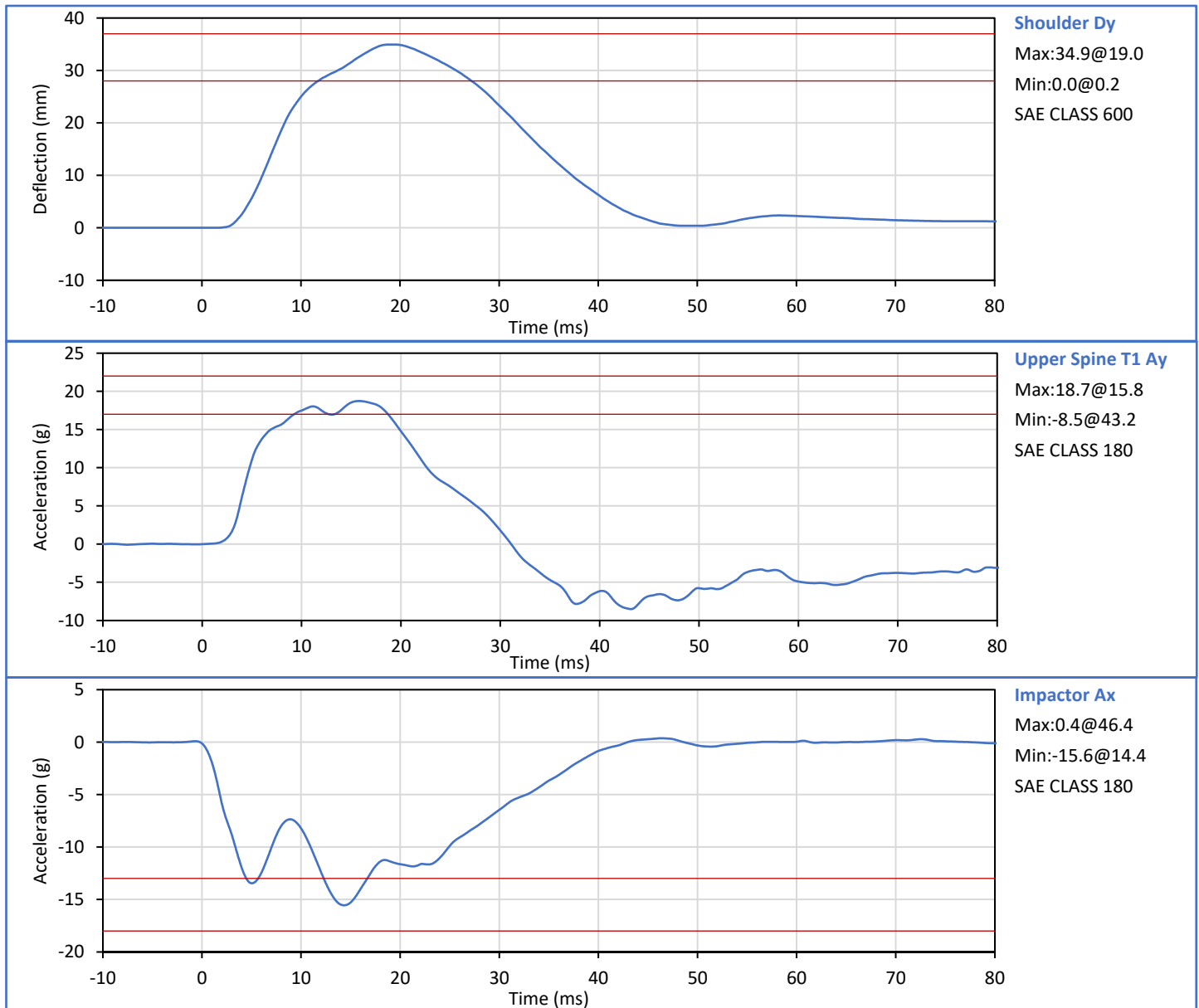
G. Holguin

Approved By:

J. Hernandez



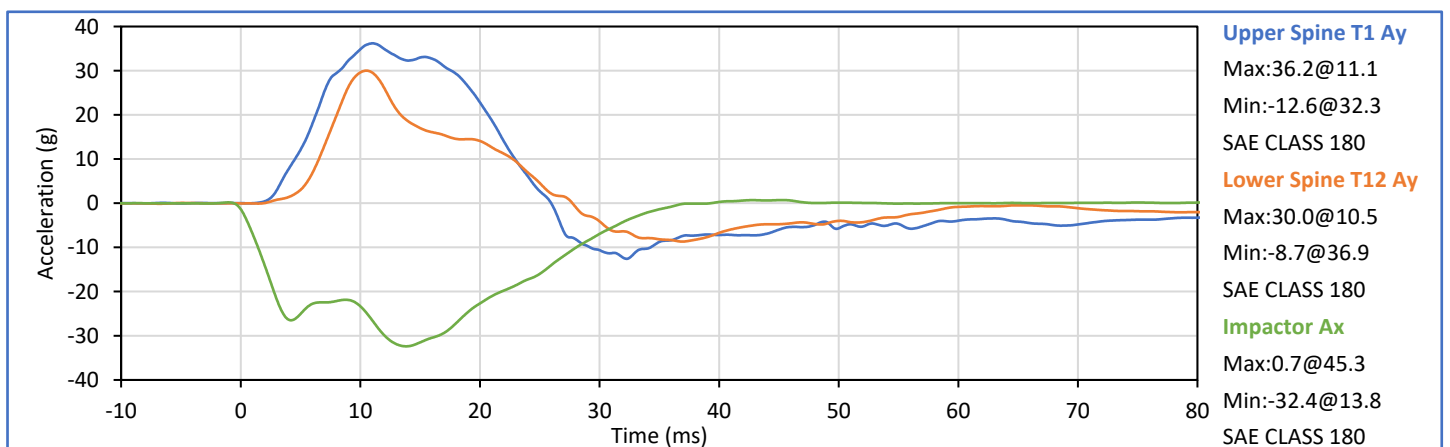
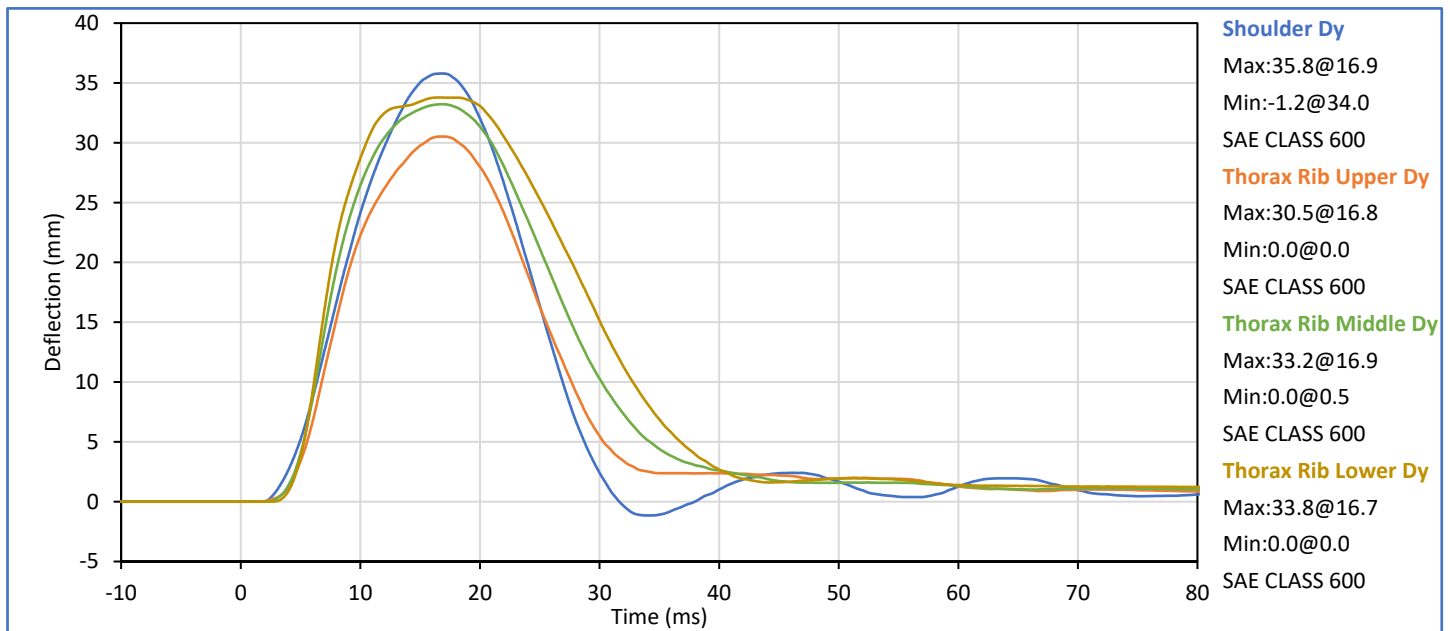
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Relative Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	4.20	4.40	4.36	Pass
Peak Shoulder Dy	mm	28.0	37.0	34.9	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	18.7	Pass
Peak Impactor Ax	g	-18.0	-13.0	-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	21.1	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Impactor Velocity	m/s	6.60	6.80	6.65	Pass
Peak Shoulder Dy	mm	31.0	40.0	35.8	Pass
Peak Upper Rib Dy	mm	25.0	32.0	30.5	Pass
Peak Middle Rib Dy	mm	30.0	36.0	33.2	Pass
Peak Lower Rib Dy	mm	32.0	38.0	33.8	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	36.2	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	30.0	Pass
Peak Impactor Ax	g	-36.0	-30.0	-32.4	Pass
Overall Test Results				Pass	Pass



Technician:

G. Holguin

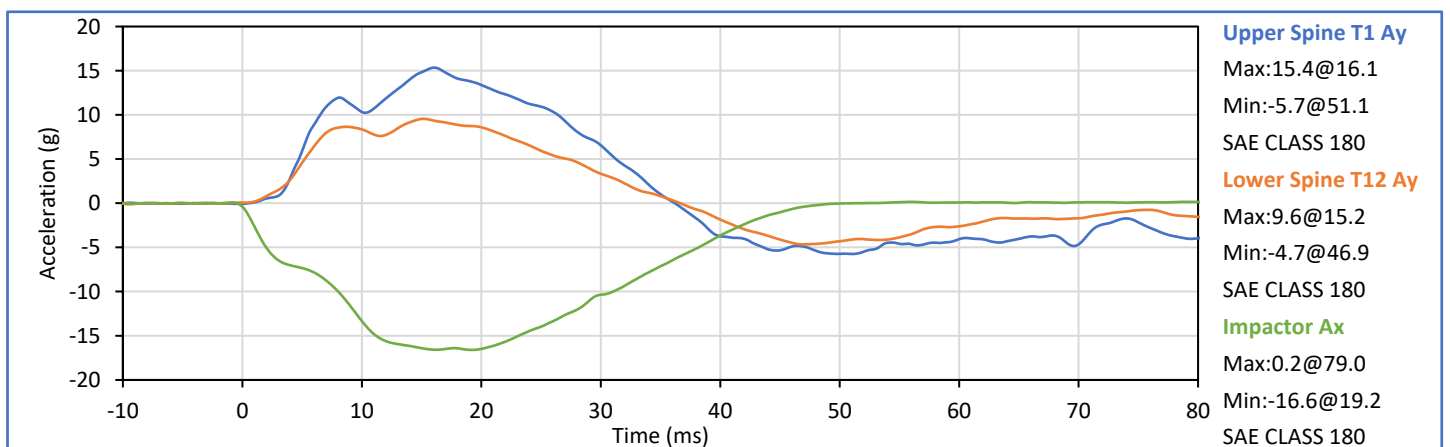
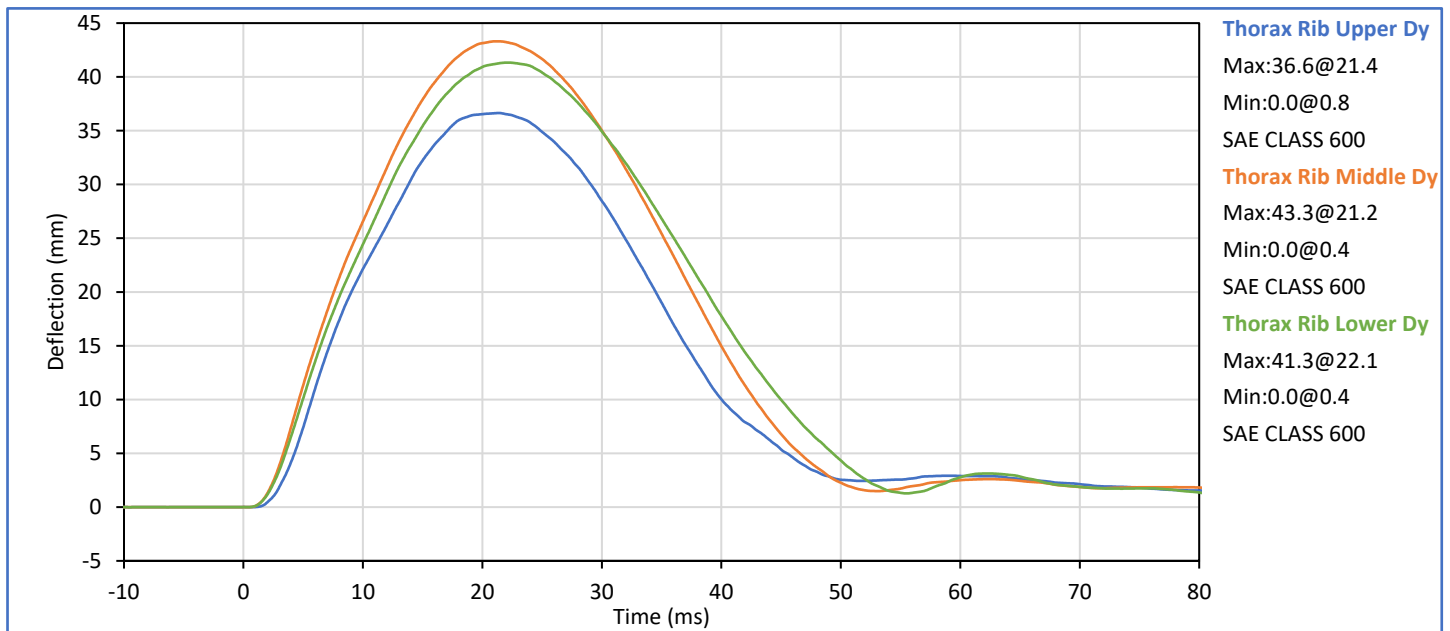
G. Holguin

Approved By:

J. Hernandez

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Impactor Velocity	m/s	4.20	4.40	4.37	Pass
Peak Thorax Rib Upper Dy	mm	32.0	40.0	36.6	Pass
Peak Thorax Rib Middle Dy	mm	39.0	45.0	43.3	Pass
Peak Thorax Rib Lower Dy	mm	35.0	43.0	41.3	Pass
Peak Spine Upper T1 Ay	g	13.0	17.0	15.4	Pass
Peak Spine Lower T12 Ay	g	7.0	11.0	9.6	Pass
Peak Impactor Ax	g	-18.0	-14.0	-16.6	Pass
Overall Test Results					Pass



Technician:

G. Holguin

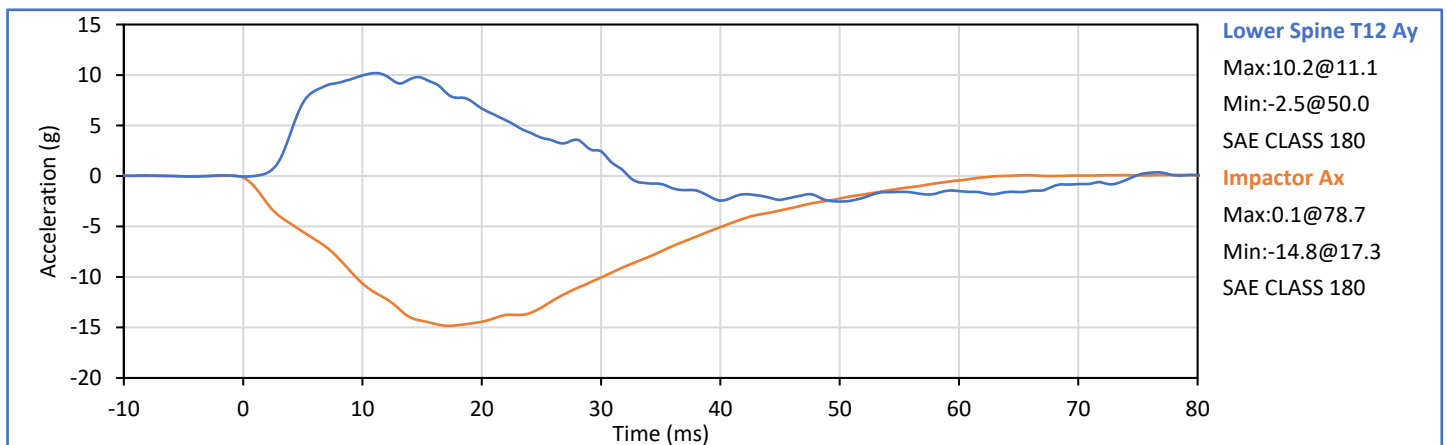
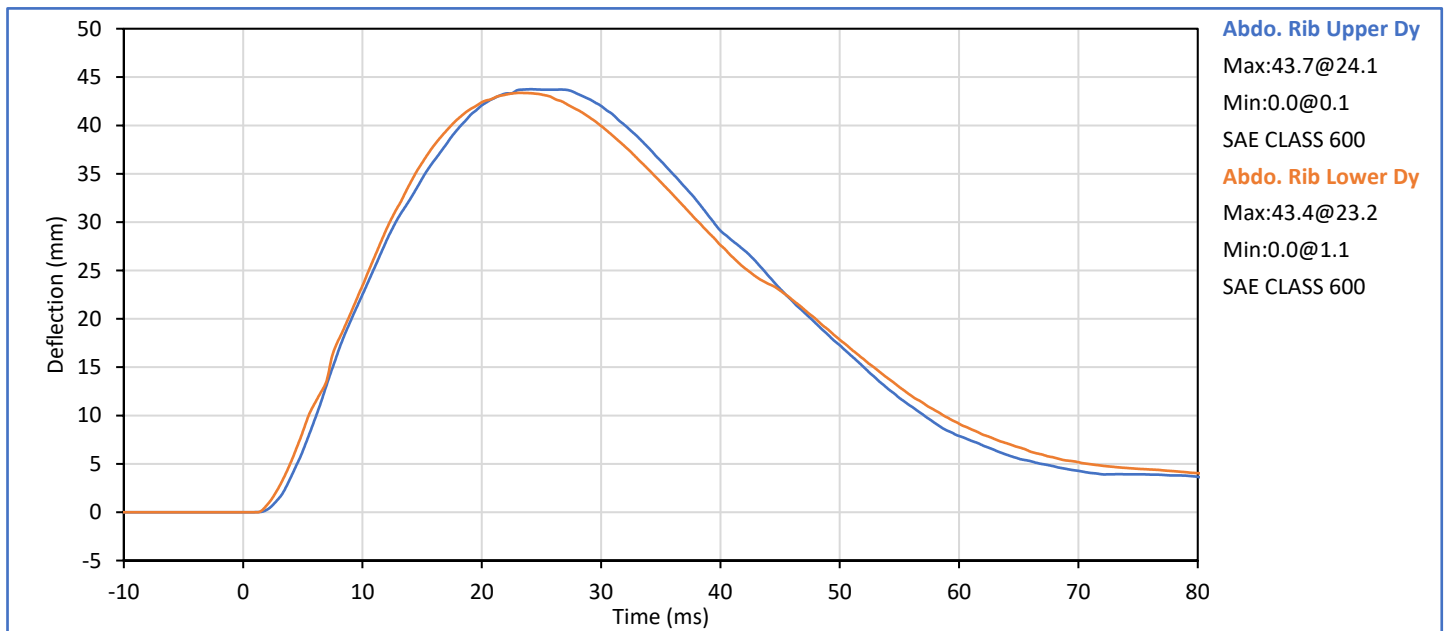
G. Holguin

Approved By:

J. Hernandez

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	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	43.7	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	43.4	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	10.2	Pass
Peak Impactor Ax	g	-16.0	-12.0	-14.8	Pass
Overall Test Results					Pass



Technician:

G. Holguin

G. Holguin

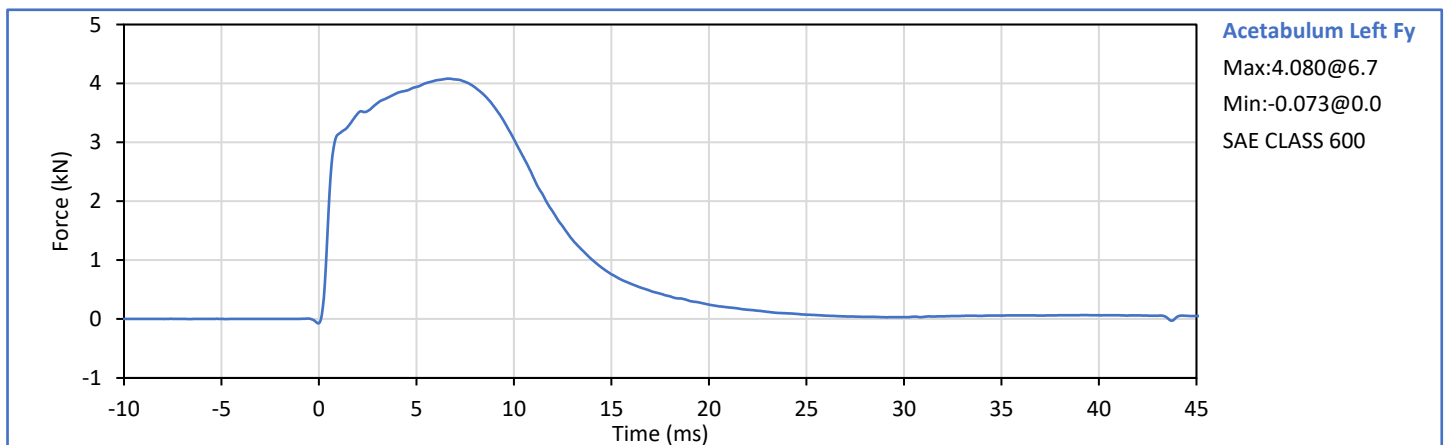
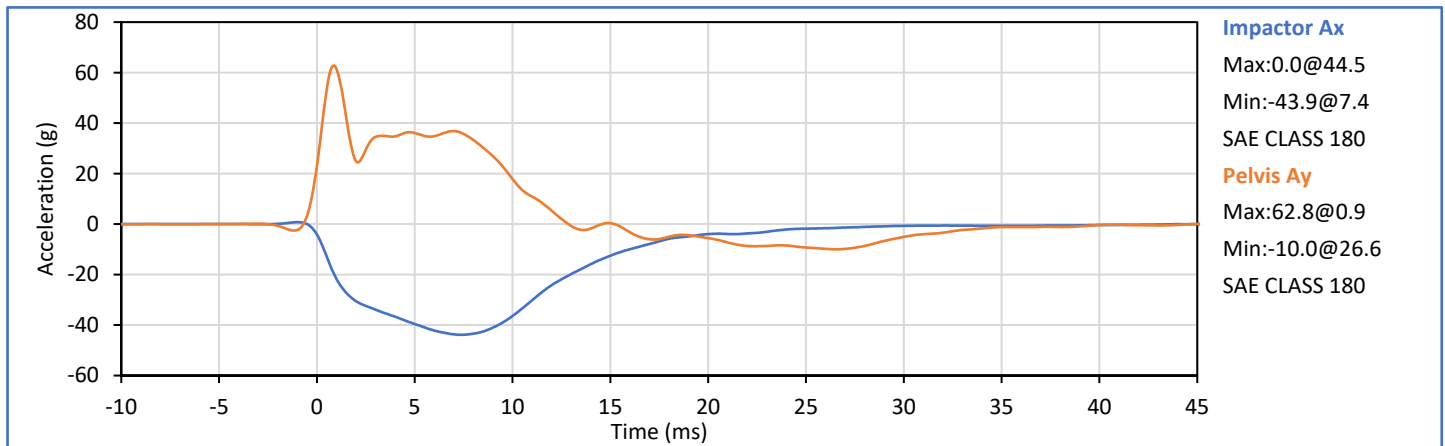
Approved By:

J. Hernandez

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Impactor Velocity	m/s	6.60	6.80	6.70	Pass
Peak Acetabulum Fy	kN	3.60	4.30	4.08	Pass
Pelvis Ay after 6ms	g	34.0	42.0	36.8	Pass
Peak Impactor Ax	g	-47.0	-38.0	-43.9	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 13102



Technician: G. Holguin

Approved By: J. Hernandez

ATD Serial No.: 299

Test Date: 2022-04-19

Pelvis Plug S/N: 13102



SID-IIs Pelvis Plug Certification Test

Plug S/N 13102

Test Number 10422

Report Number 10457

Test Date 7/30/2019 4:55:43 PM

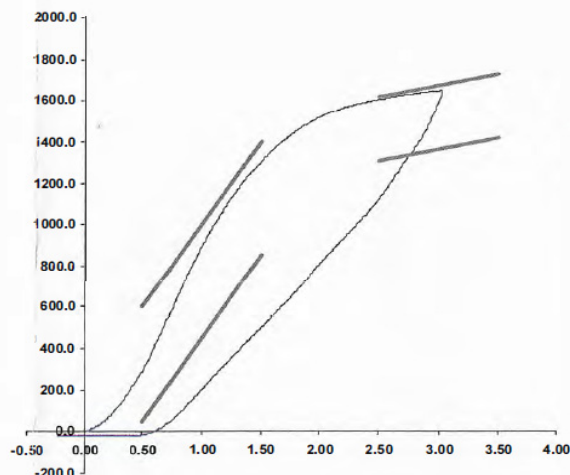
	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	304.99	50.00	600.00
Force @ 1.5 mm (N)	1,307.42	850.00	1,400.00
Force @ 2.5 mm (N)	1,607.00	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,649.58	1,361.00	1,673.00

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: BC Date: 7/30/2019

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

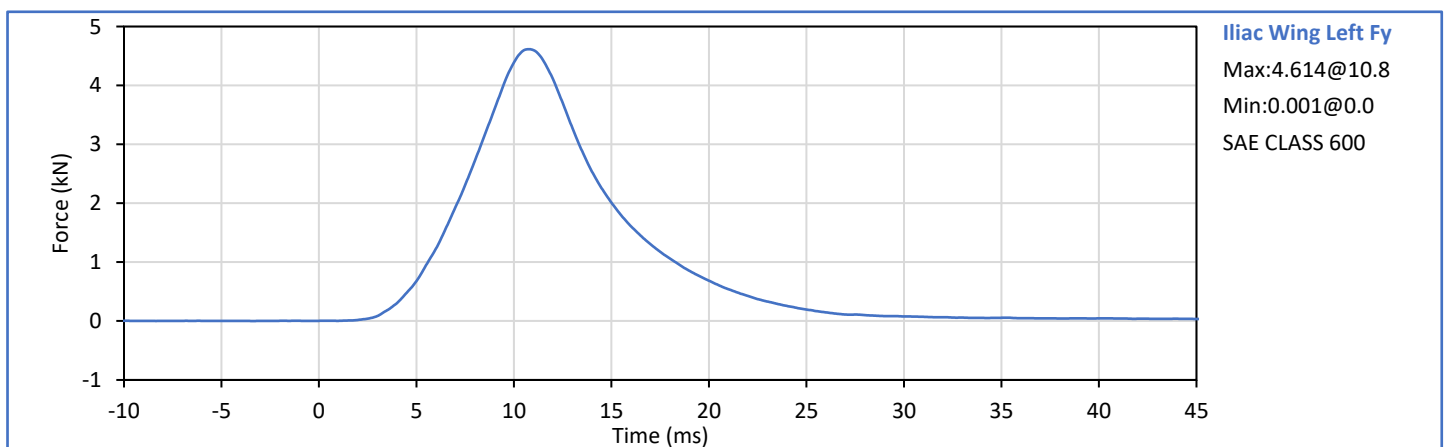
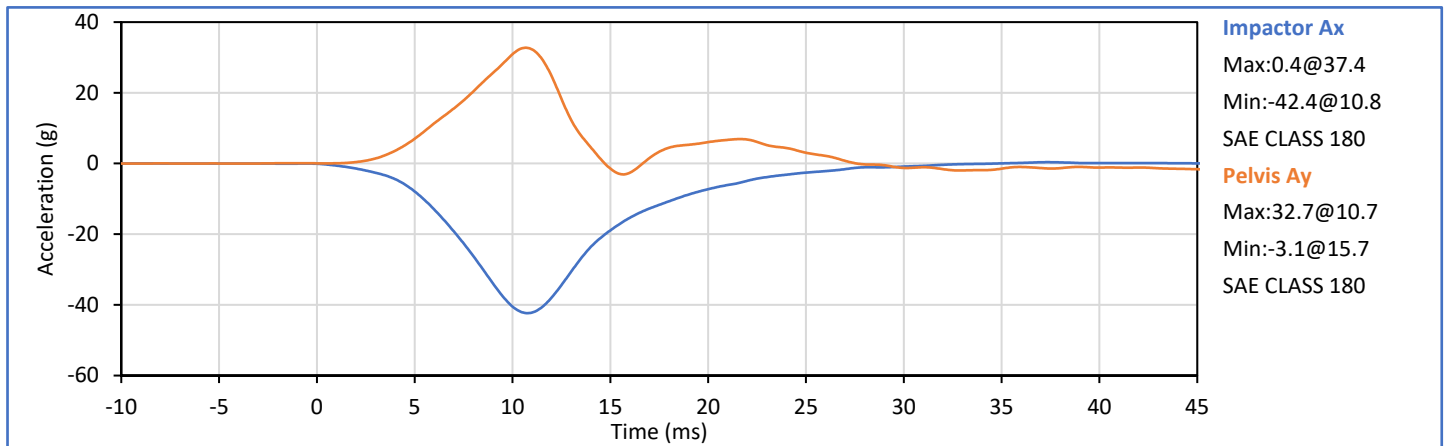
ATD Serial No.: 299

Test Date: 2022-04-19

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	26	Pass
Impactor Velocity	m/s	4.20	4.40	4.33	Pass
Peak Iliac Fy	kN	4.10	5.10	4.61	Pass
Peak Pelvis Ay	g	28.0	39.0	34.7	Pass
Peak Impactor Ax	g	-45.0	-36.0	-42.4	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	A361493	MSI	52F-2k	2022-01-14
Vehicle CG Ay	A345120	MSI	52F-2k	2022-01-14
Vehicle CG Az	A330829	MSI	52F-2k	2022-03-09
Right Side Sill at Front Seat Ax	A354885	MSI	52F-2k	2021-11-03
Right Side Sill at Front Seat Ay	A361329	MSI	52F-2k	2022-01-18
Right Side Sill at Front Seat Az	A361334	MSI	52F-2k	2021-11-03
Right Side Sill at Rear Seat Ax	A361464	MSI	52F-2k	2022-01-18
Right Side Sill at Rear Seat Ay	A361486	MSI	52F-2k	2021-11-03
Right Side Sill at Rear Seat Az	A356285	MSI	52F-2k	2022-01-18
Left Side Sill at Front Seat Ay	A354795	MSI	52F-2k	2021-11-01
Left Side Sill at Rear Seat Ay	A354803	MSI	52F-2k	2021-11-01
Left Lower A-Pillar Ay	A345138	MSI	52F-2k	2022-01-18
Left Middle A-Pillar Ay	A361475	MSI	52F-2k	2021-11-15
Left Lower B-Pillar Ay	A359350	MSI	52F-2k	2021-11-15
Left Middle B-Pillar Ay	A336674	MSI	52F-2k	2022-01-28
Driver Seat Track at H-Point Ay	A361503	MSI	52F-2k	2021-11-15
Rear Seat Structure Ay	A273410	MSI	52F-2k	2022-01-14
Right Rear Occupant Comp. Ay	A358557	MSI	52F-2k	2022-01-31
Engine Block Top Ax	A356283	MSI	52F-2k	2022-03-09
Engine Block Top Ay	A331801	MSI	52F-2k	2022-01-28
Rear Floopan Above Axle Ax	A361465	MSI	52F-2k	2022-01-14
Rear Floopan Above Axle Ay	A273393	MSI	52F-2k	2022-01-31
Rear Floopan Above Axle Az	A358744	MSI	52F-2k	2022-01-18

Table 4 - Moving Deformable Barrier (MDB) Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
MDB CG Ax	A383346	MSI	52F-2k	2021-11-02
MDB CG Ay	A358703	MSI	52F-2k	2022-02-10
MDB CG Az	A356286	MSI	52F-2k	2022-03-01
MDB Left Side at Rear Axle Ax	A358576	MSI	52F-2k	2022-01-18
MDB Left Side at Rear Axle Ay	A383372	MSI	52F-2k	2022-03-11