

REPORT NUMBER: SideNCAPMDB-KAR-21-012

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

**HYUNDAI MOTOR COMPANY
2021 GENESIS G80 4-DOOR SEDAN**

NHTSA No: O20214214

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



SEPTEMBER 20, 2021

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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Division Chief, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

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		15. Supplementary Notes																												
16. Abstract A 61.9 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2021 Genesis G80 4-door sedan in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at the Applus IDIADA KARCO Engineering, LLC. facility in Adelanto, California on June 30, 2021. The impact velocity of the Moving Deformable Barrier was 61.88 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 37.2°C. The target vehicle's maximum post-test static crush was 132 mm located at level 2. The test vehicle's occupant performance data is as follows:																														
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Both struck side doors were jammed shut and did not separate from the body at the hinges or latches. The opposite side doors did not open during the side impact event.																														
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

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SECTION 1
TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test is part of the MY 2021 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number DTNH22-14-D-00355. The purpose of this test is to generate comparative side impact performance in a 2021 Genesis G80 4-door sedan. 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 2021 Genesis G80 4-door sedan 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 61.88 km/h (38.30 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 June 30, 2021. 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	100.8
Maximum Thoracic Rib Deflection	mm	44	19
Combined Abdominal Force	N	2500	774
Pubic Symphysis Force	N	6000	1289

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	93.9
Lower Spine (T12) Resultant Acceleration	g	82	24
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	1077
Maximum Thoracic Rib Deflection	mm	38*	20
Maximum Abdominal Rib Deflection	mm	45*	12

*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	No	
Knee Airbag	Yes	No	No	
Side Airbag 1 (Curtain)	Yes	Yes	Yes	Yes
Side Airbag 2 (Torso)	No		Yes	Yes
Side Airbag 3 (Torso/Pelvis)	Yes	Yes	No	
Side Airbag 4 (Front Center)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	No	No	

GENERAL COMMENTS:

- Left Lower A-Post Ay, Channel Failed at 4.9 ms
- Left Mid A-Post Ay, Channel Failed at 21.0 ms
- Left Lower B-Post Ay, Channel Failed at 21.0 ms

SECTION 3

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214

Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

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: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	O20214214
Model Year	2021
Make	Genesis
Model	G80
Body Style	4-Door Sedan
VIN	KMTGB4SC3MU073323
Body Color	Gold Coast Silver
Odometer Reading (km / mi)	68 / 42
Engine Displacement (L)	2.5
Type / No. of Cylinders	Inline 4-Cylinder
Engine Placement	Longitudinal
Transmission Type	Automatic
Transmission Speeds	8
Overdrive	Yes
Final Drive	RWD
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes

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

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

DATA FROM CERTIFICATION LABEL

Manufactured By	Hyundai Motor Company
Date of Manufacture	Mar-21
Vehicle Type	Passenger Car

GVWR (kg)	2315
GAWR Front (kg)	1300
GAWR Rear (kg)	1405

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity	2	3		5
Capacity Weight (VCW) (kg)				400.0
DSC x 68.04 (kg)				340.2
Cargo Weight (RCLW) (kg)				59.8

A
B
A-B*

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

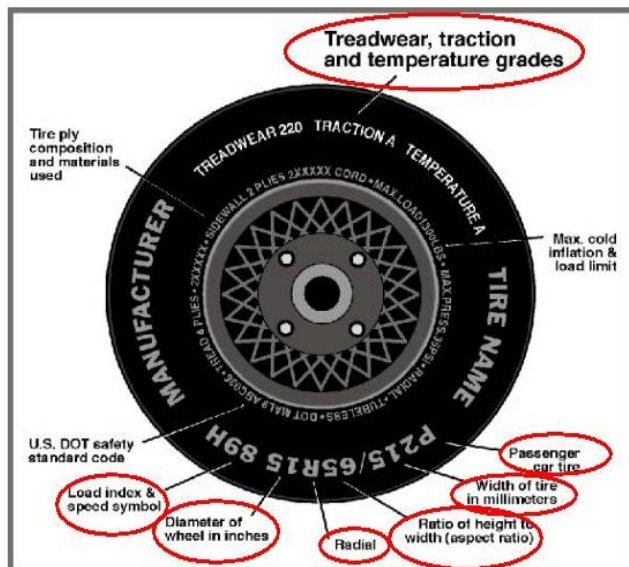
VEHICLE SEAT TYPE

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

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	340	340
Cold Pressure (kPa)	250	250
Recommended Tire Size	P245/50 R18	P245/50 R18
Tire Size on Vehicle	P245/50 R18	P245/50 R18
Tire Manufacturer	Michelin	Michelin
Tire Model	Primacy Tour A/S	Primacy Tour A/S
Treadware	540	540
Traction Grade	A	A
Temperature Grade	A	A
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 2 Steel, 1 Polyamide	2 Polyester, 2 Steel, 1 Polyamide
Load Index/Speed Symbol	104 W	104 W
Tire Material	Polyester, Steel, Polyamide	Polyester, Steel, Polyamide
DOT Safety Code Left	OCXU 020X 1520	OCXU 020X 1520
DOT Safety Code Right	OCXU 020X 1520	OCXU 020X 1520

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

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	476.0	427.5		479.0	490.0		518.5	511.0	
Right	kg	460.5	438.0		545.5	464.5		465.5	493.0	
Ratio	%	52.0%	48.0%		51.8%	48.2%		49.5%	50.5%	
Total	kg	936.5	865.5	1802.0	1024.5	954.5	1979.0	984.0	1004.0	1988.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1802.0	A
Actual Weight of 2 P572 ATD Used	kg	125.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	59.8	C
Calculated Vehicle Target Wt (TVT _W)	kg	1986.8	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	743	744	Yes
RF	mm	747	737	Yes
LR	mm	730	724	Yes
RR	mm	747	744	Yes
Vehicle CG (Aft of Front Axle)	mm	1513	1445	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	29	-17	

***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: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

Test Height Adjustable Setting (If Applicable)	
--	--

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
None	

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: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

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	8.1	0.0	4.1
Front Passenger Seat	7.6	0.0	3.8
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	4.1	208	Max	260	272	285
			Mid	230	240	252
			Min	199	208	218
Front Passenger Seat	3.8	215	Max	263	278	289
			Mid	235	247	259
			Min	206	215	228
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: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

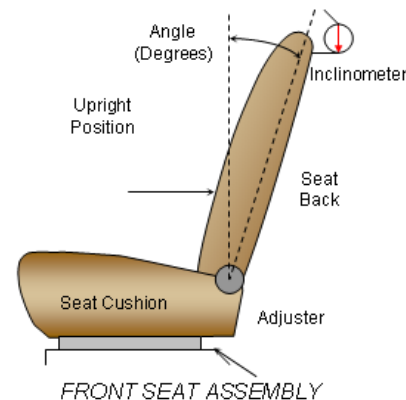
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	240		120	
Front Passenger Seat	240		120	
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 from the back of the headrest post.



SEAT BACK POSITION

Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/ Seated Dummy	66.1		0.5	
Front Passenger Seat	66.0		0.5	
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: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

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

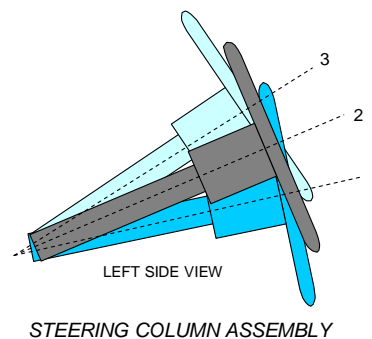
HEAD RESTRAINT ADJUSTMENT

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	5	H
Rear Seat	3	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	18.9	95
Geometric Center Position, No. 2	21.0	120
Uppermost Position, No. 3	23.1	145
Telescoping Steering Wheel Travel		50
Test Position	21.0	120

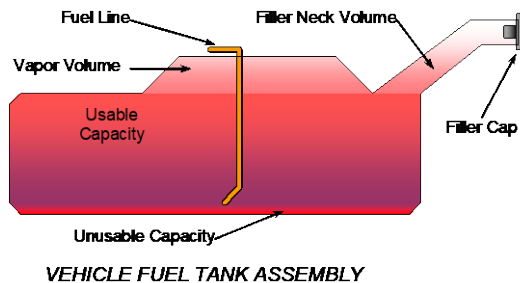
DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

FUEL PUMP

The vehicle is equipped with an electric fuel pump. The pump starts when the ignition is on. It will operate for 1.5 seconds when the ignition is on. Afterwards, the fuel pump operates continually with the engine start.



FUEL TANK CAPACITY

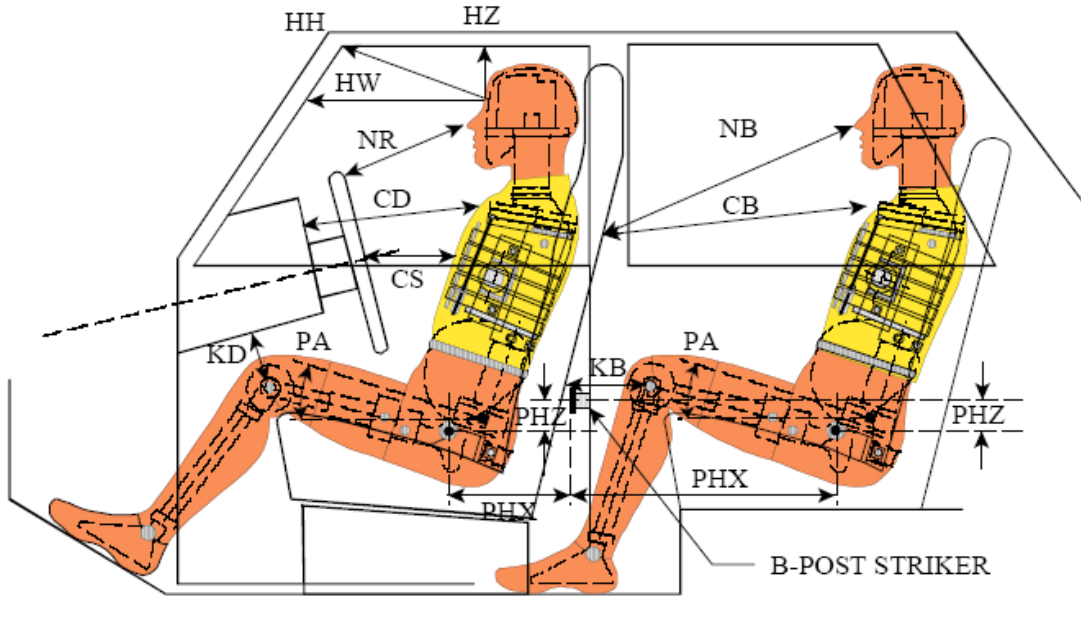
Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	65.11
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	65.11
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	60.55
Actual amount of Solvent Used in Test	60.55
1/3 of Usable Capacity	21.70

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

DATA SHEET NO. 3

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



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

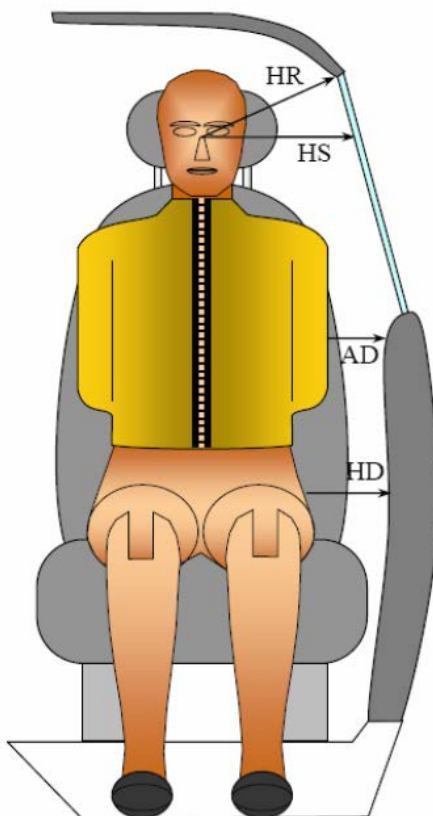
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	331			
HW		Head to Windshield	605			
HZ	HZ	Head to Roof	183		270	
NR	NB	Nose to Rim/Seat Back	450		619	
CD	CB	Chest to Dash/Seat Back	606		582	
CS		Chest to Steering Wheel	410			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	227	30.7	267	17.7
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	196	20.2	264	18.6
PAX°	PAX°	Pelvic Tilt Angle X		16.8		26.0
	PAY°	Pelvic Tilt Angle Y				0.4
PHX	PHX	Hip Point to Striker (x-axis)	123		223	
PHZ	PHZ	Hip Point to Striker (z-axis)	197		282	

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



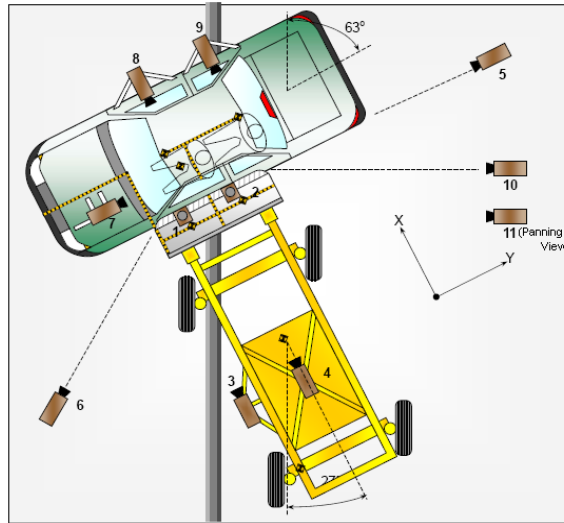
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	196	249
HS	Head to Side Window	mm	357	368
AD	Arm to Door	mm	107	160
HD	H-Point to Door	mm	174	221

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



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)	385	-282	640	6	1000
8	Driver Side (On-Board)	1727	947	358	6	1000
9	Passenger Side (On-Board)	1671	2016	427	6	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

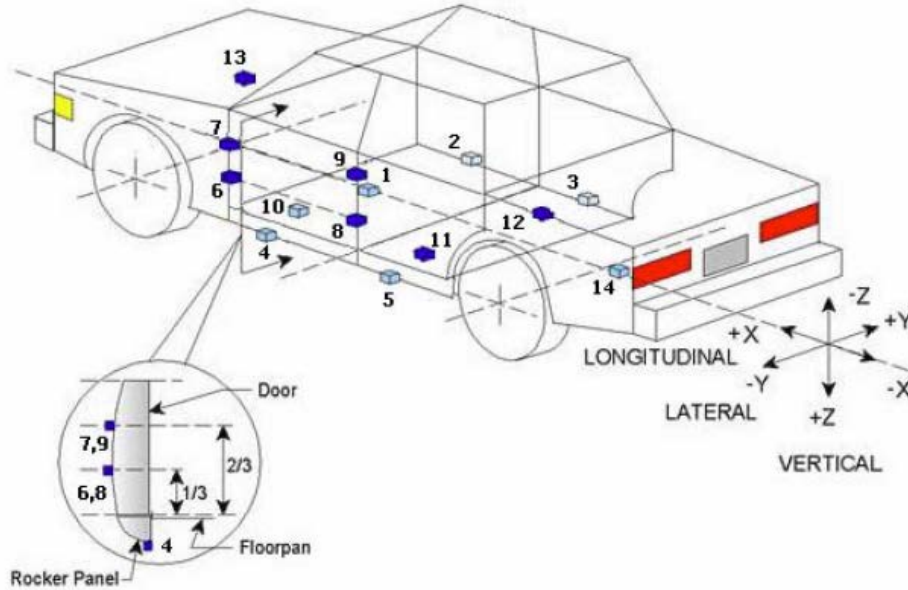
INSTRUMENTATION

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: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2910	0	-730
2	Right Sill at Front Seat	2220	420	-500
3	Right Sill at Rear Seat	3310	490	-480
4	Left Sill at Front Door	1440	-860	-1000
5	Left Sill at Rear Door	2610	-900	-1080
6	A-Pillar Lower	1600	-790	-430
7	A-Pillar Middle	1600	-790	-680
8	B-Pillar Lower	2600	-800	-470
9	B-Pillar Middle	2600	-800	-700
10	Front Seat Track	2410	-110	-280
11	Rear Seat Structure	2930	-440	-320
12	Right Rear Occupant Compartment	2940	420	-330
13	Engine Block	1000	0	-760
14	Rear Floorpan Above Axle	2810	0	-580

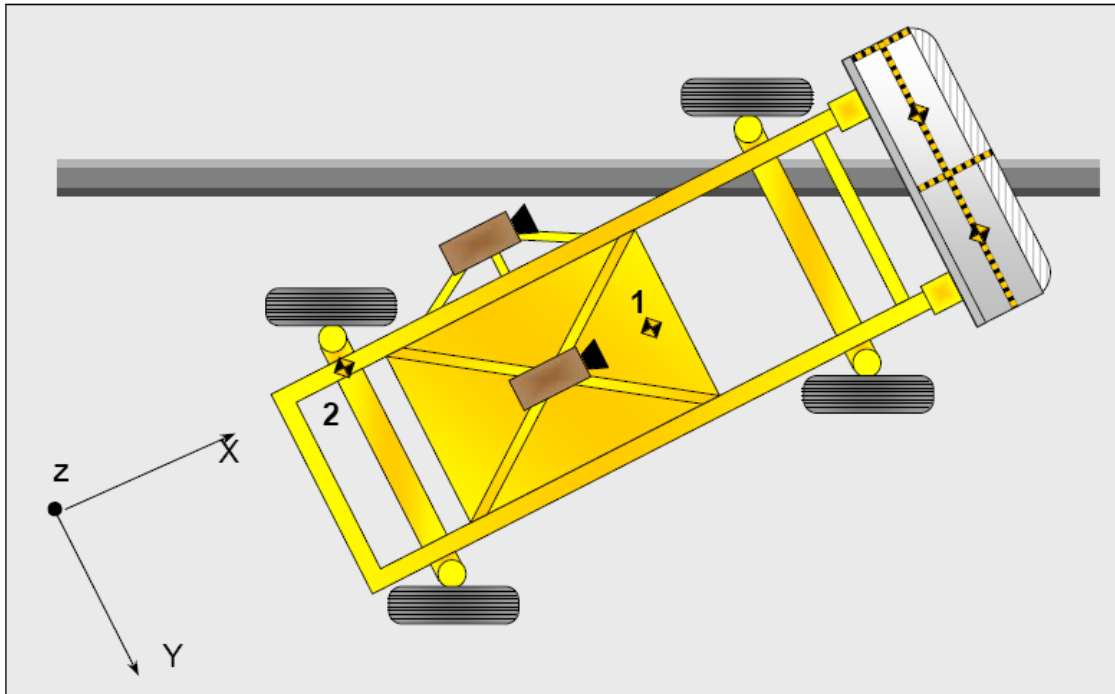
Reference: X – Rear surface of vehicle (+ forward)
 Y – Vehicle centerline (+ to right)
 Z – Ground plane (+ down)

DATA SHEET NO. 7

MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214

Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



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: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

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	Headliner	Curtain Airbag
Left Side of Head	Curtain Airbag	Curtain Airbag
Back of Head	Headliner, Curtain Airbag, Headrest	Headrest
Left Shoulder	Torso/Pelvis Airbag, Door Panel	Torso Airbag, Seatback
Upper Torso	Torso/Pelvis Airbag, Seatback	Seatback
Lower Torso	Torso/Pelvis Airbag, Seatback	Torso Airbag, Seatback
Left Hip	Torso/Pelvis Airbag, Seat bolster	Seat bolster
Left Knee	Door Panel	Door Panel

POST-TEST DOOR PERFORMANCE

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

DATA SHEET NO. 8 ... (CONTINUED)

POST-TEST OBSERVATIONS

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

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: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side		Non-Struck Side	
	Driver		Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	Yes	No	No	
Side Airbag 1 (Curtain)	Yes	Yes	Yes	Yes
Side Airbag 2 (Torso)	No		Yes	Yes
Side Airbag 3 (Torso/Pelvis)	Yes	Yes	No	
Side Airbag 4 (Front Center)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	No	No	

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheelbase	mm		2996
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		509
Actual Impact Point (Aft of Front Axle)	mm		490
Horizontal Offset (+ forward / - rearward)	mm	± 50 of Intended Impact Point	19
Vertical Offset (+ down / - up)	mm	± 20 of Intended Impact Point	12

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

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	61.9
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.0
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.8
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	62.7
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.1

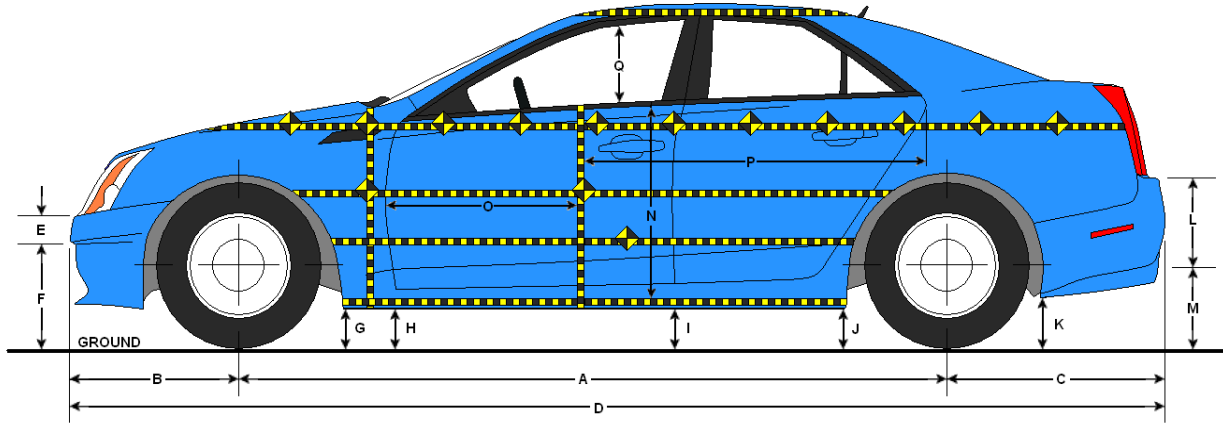
MAXIMUM STATIC CRUSH OF HONEYCOMB FACE

Vertical Location			From Centerline		Max. Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	800	Left	262
B	Top of Bumper	533	800	Left	224
C	Mid Level	686	700	Left	228
D	Top of Stack	813	700	Left	240

DATA SHEET NO. 10

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2996	3005	9
B	Front Axle to FSOV	836	836	0
C	Rear Axle to RSOV	1162	1147	-15
D	Total Length at Centerline	4994	4988	-6
E	Front Bumper Thickness	172	171	-1
F	Front Bumper Bottom to Ground	619	647	28
G	Sill Height at Front Wheel Well	385	406	21
H	Sill Height at Front Door Leading Edge	386	403	17
I	Sill Height at B-Pillar	407	418	11
J1	Sill Height at Rear Wheel Well	347	348	1
J2	Pinch Weld Height at Rear Wheel Well	303	307	4
K	Sill Height Aft of Rear Wheel Well	377	376	-1
L	Rear Bumper Thickness	239	239	0
M	Rear Bumper Bottom to Ground	536	537	1
N	Sill Height to Bottom of Front Window Sill	699	701	2
O	Front Door Leading Edge to Impact CL	662	655	-7
P	Rear Door Trailing Edge to Impact CL	1569	1533	-36
Q	Front Window Opening	382	376	-6
R	Right Side Length	3482	3484	2
S	Left Side Length	3485	3481	-4
T	Vehicle Width at B-Pillar	1867	1803	-64

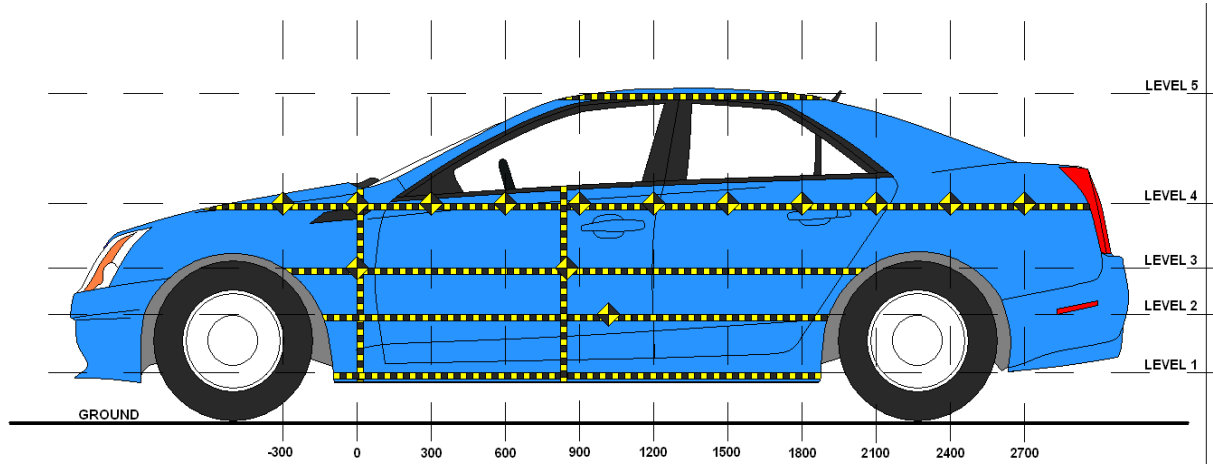
All measurements in mm with tolerance of ± 3 mm

DATA SHEET NO. 11

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214

Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



LEFT SIDE VIEW

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	381	16	1500
2	Occupant H-Point	649	132	1650
3	Mid-Door	789	116	1500
4	Window Sill	1032	115	1650
5	Window Top	1553	4	1950

DATA SHEET NO. 11 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

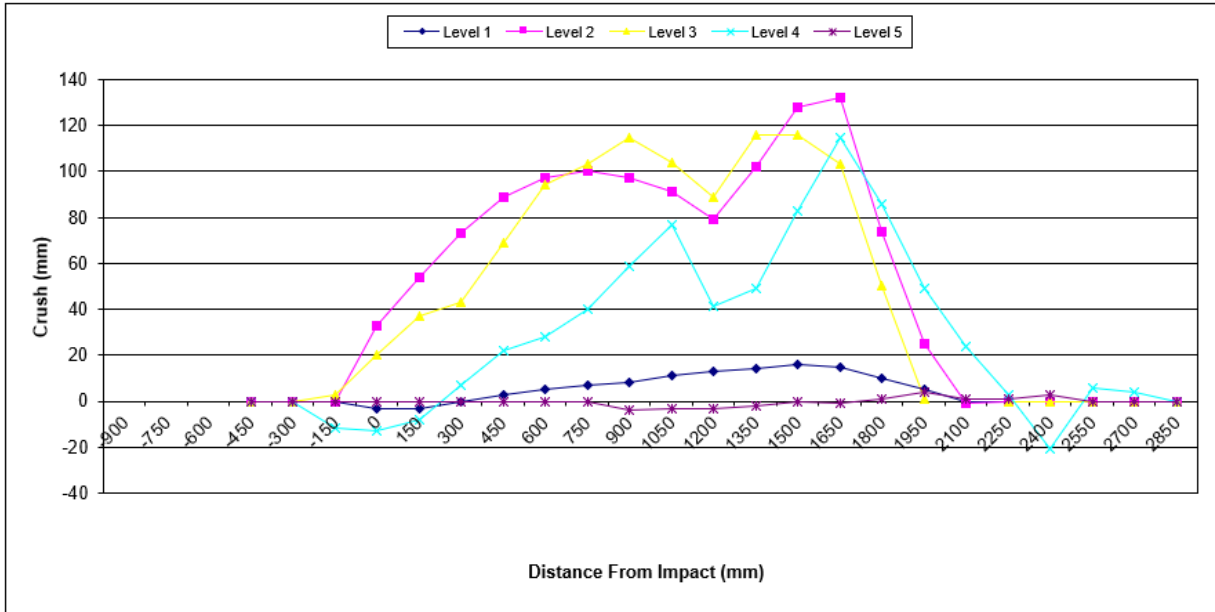
Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

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			551	636				554	624				3	-12	
0	593	560	558	624		590	593	578	611		-3	33	20	-13	
150	599	572	561	615		596	626	598	607		-3	54	37	-8	
300	601	578	564	608		601	651	607	615		0	73	43	7	
450	602	581	565	601		605	670	634	623		3	89	69	22	
600	603	582	564	595		608	679	658	623		5	97	94	28	
750	604	582	563	590		611	682	666	630		7	100	103	40	
900	604	582	562	585	857	612	679	677	644	853	8	97	115	59	-4
1050	603	581	561	584	867	614	672	665	661	864	11	91	104	77	-3
1200	603	582	561	584	878	616	661	650	625	875	13	79	89	41	-3
1350	602	583	564	586	888	616	685	680	635	886	14	102	116	49	-2
1500	601	584	567	588	894	617	712	683	671	894	16	128	116	83	0
1650	600	584	569	591	898	615	716	672	706	897	15	132	103	115	-1
1800	599	578	567	594	900	609	652	617	680	901	10	74	50	86	1
1950	594	568	562	595	899	599	593	563	644	903	5	25	1	49	4
2100		552	551	592	894		551		616	895		-1		24	1
2250				587	891				590	892				3	1
2400				585	889				564	892				-21	3
2550				587					593					6	
2700				595					599					4	
2850															

DATA SHEET NO. 11 ... (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

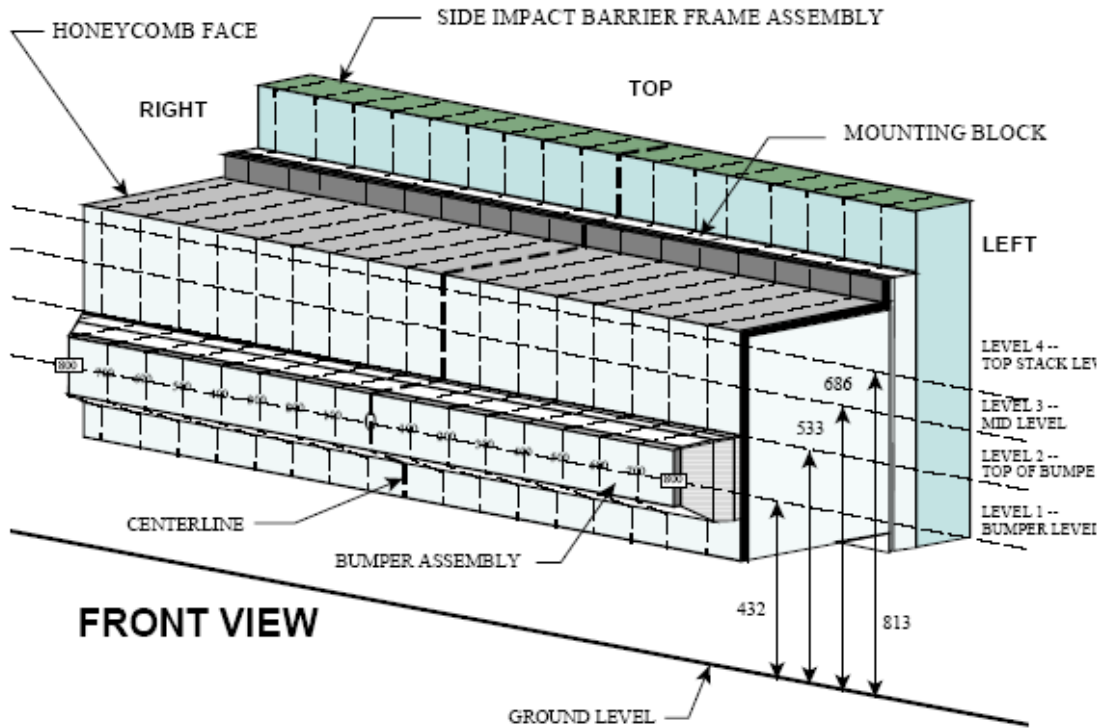
Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



DATA SHEET NO. 12

MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



NOTE: Dimensions are shown in millimeters, mm

DEFORMABLE BARRIER STATIC CRUSH

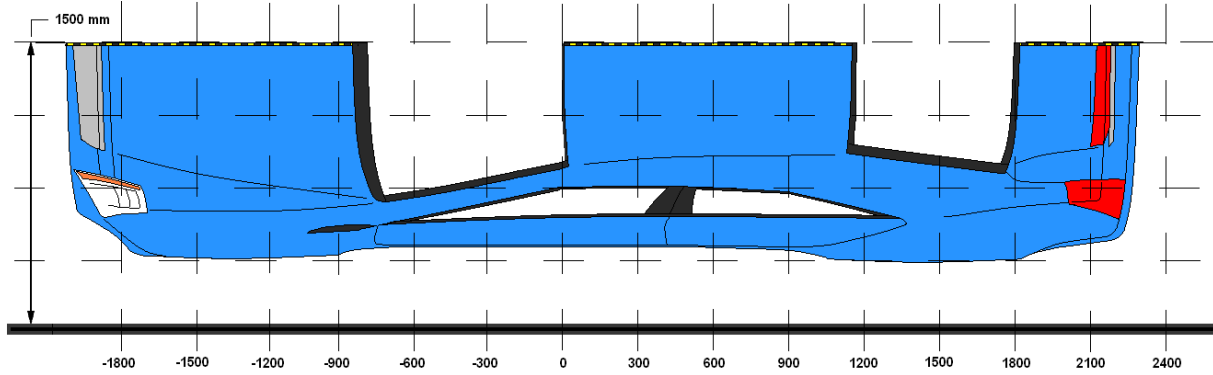
Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		0	100	200	300	400	500	600	700
1	236	223	227	233	234	231	224	218	215	214	215	220	223	229	252	239	262
2	187	192	196	198	199	195	186	181	176	181	181	181	185	191	191	223	224
3	127	133	142	151	162	133	112	99	99	100	106	117	139	160	183	228	221
4	116	116	131	164	191	163	129	95	84	96	107	116	141	166	184	240	229

All dimensions in millimeters.

DATA SHEET NO. 13

VEHICLE AND MDB DAMAGE PROFILE DISTANCES

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214
 Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	2700	4	595	599	4
2	2100	4	592	616	24
3	1500	2	584	712	128
4	1050	3	561	665	104
5	450	2	581	670	89
6	-150	3	551	554	3

MDB DAMAGE PROFILE DISTANCES

DPD	From MDB Centerline		Level	Crush (mm)
	Distance (mm)	Direction		
1	800	Left	1	262
2	500	Left	1	229
3	200	Left	1	215
4	200	Right	1	224
5	500	Right	1	233
6	800	Right	1	236

DATA SHEET NO. 14

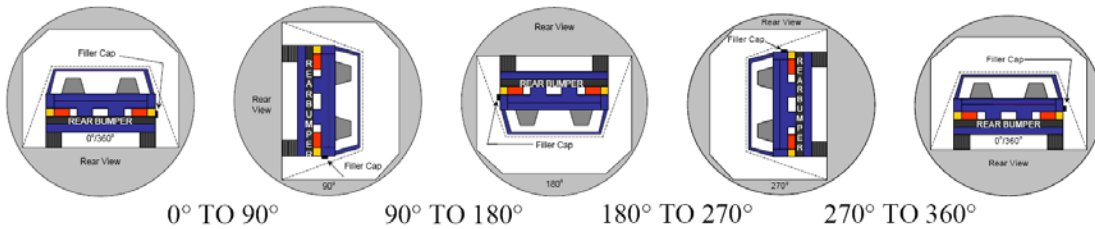
FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214

Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21

Temperature at Time of Impact: 21.9°C Test Time: 2:20P.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°	80	300	380
90° To 180°	84	300	384
180° To 270°	83	300	383
270° To 360°	82	300	382

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

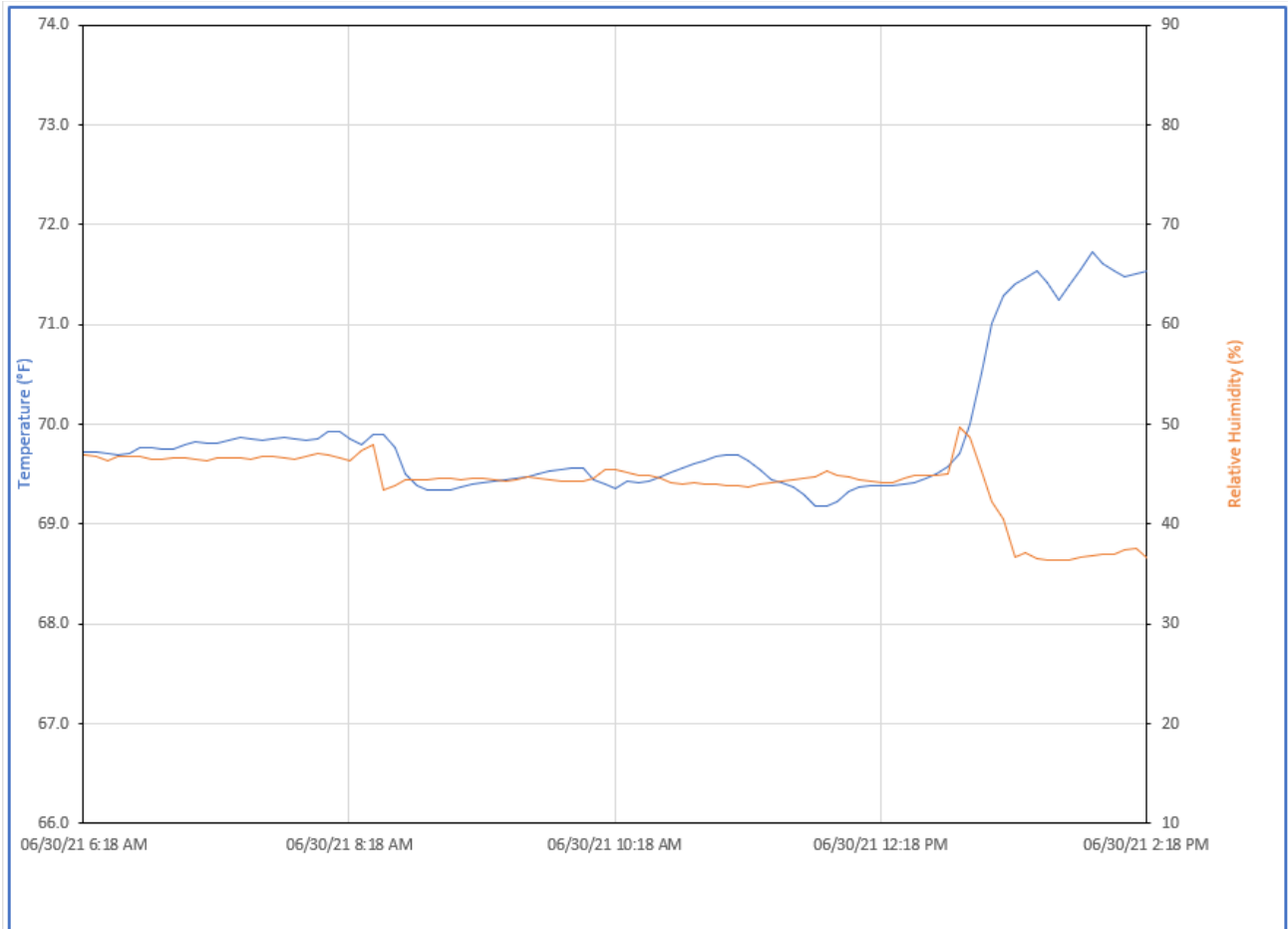
Test Phase	Spillage Location
0° To 90°	
90° To 180°	
180° To 270°	
270° To 360°	

DATA SHEET NO. 15

DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2021 Genesis G80 4-Door Sedan NHTSA No. O20214214

Test Program: NCAP MDB Side Impact Test Test Date: 06/30/21



**APPENDIX A
PHOTOGRAPHS**

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



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



FIGURE 3. Pre-Test Frontal View of Test Vehicle



FIGURE 4. Post-Test Frontal View of Test Vehicle



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



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



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



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



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



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



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



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



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



FIGURE 15. Pre-Test Overhead View of Test Area

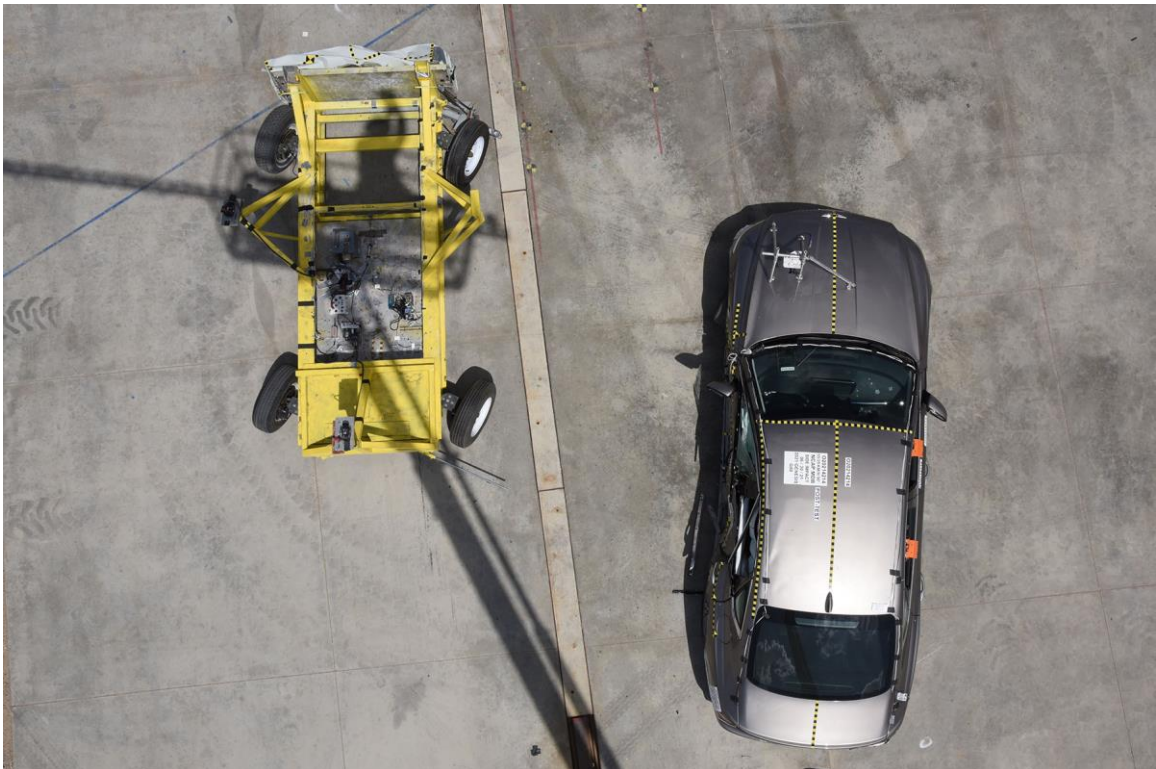


FIGURE 16. Post-Test Overhead View of Test Area



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



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

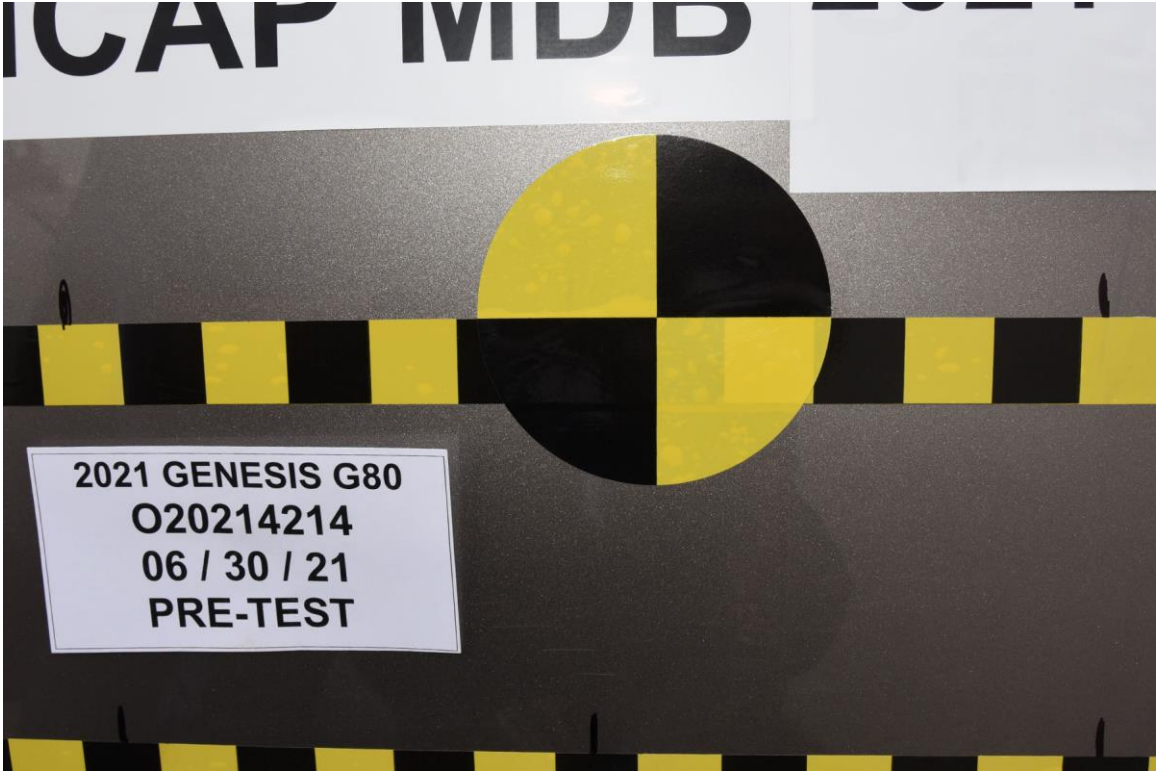


FIGURE 19. Pre-Test Close-Up View of Impact Point Target



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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

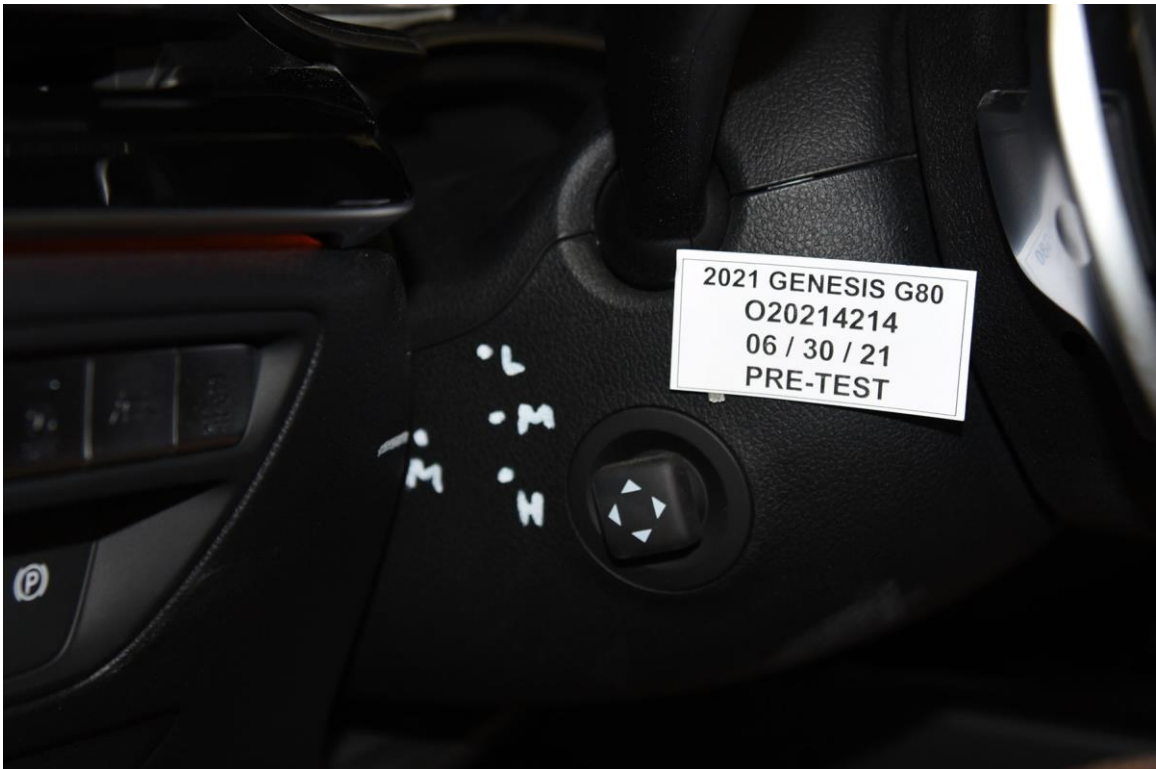


FIGURE 36. Pre-Test Left Side View of Steering Wheel



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

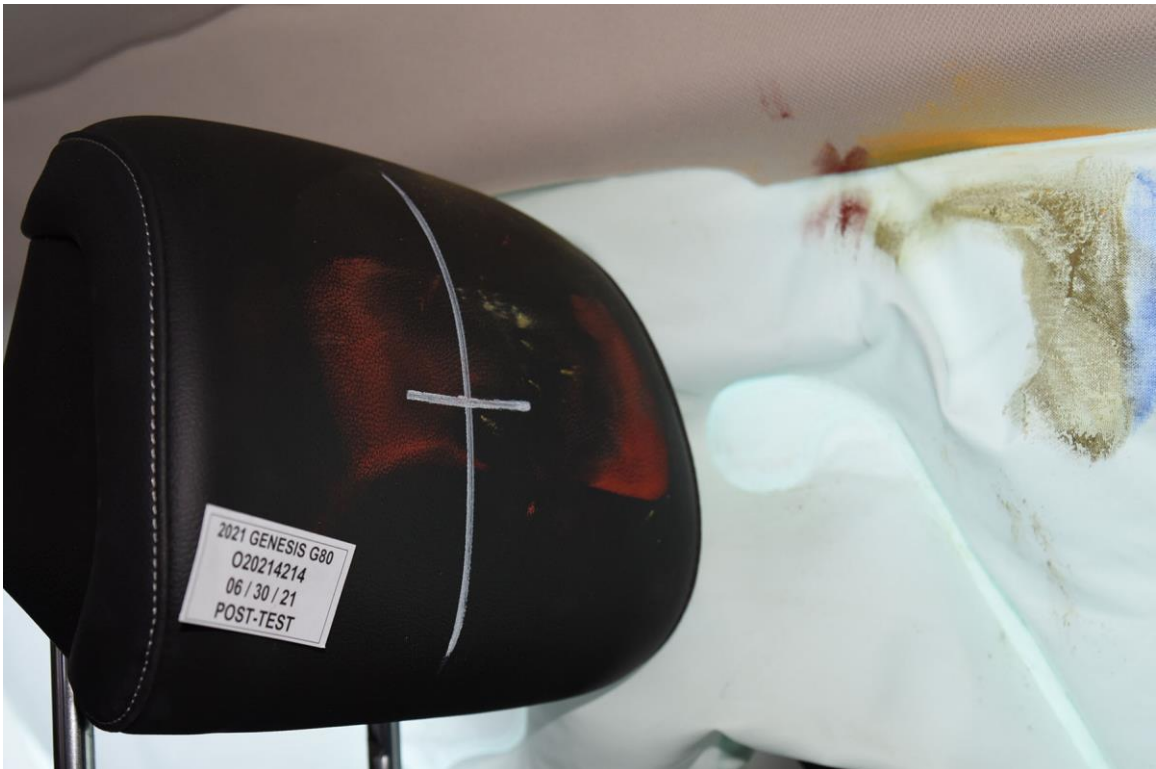


FIGURE 48. Post-Test Driver Dummy Close-Up Head Contact
with Vehicle Interior View

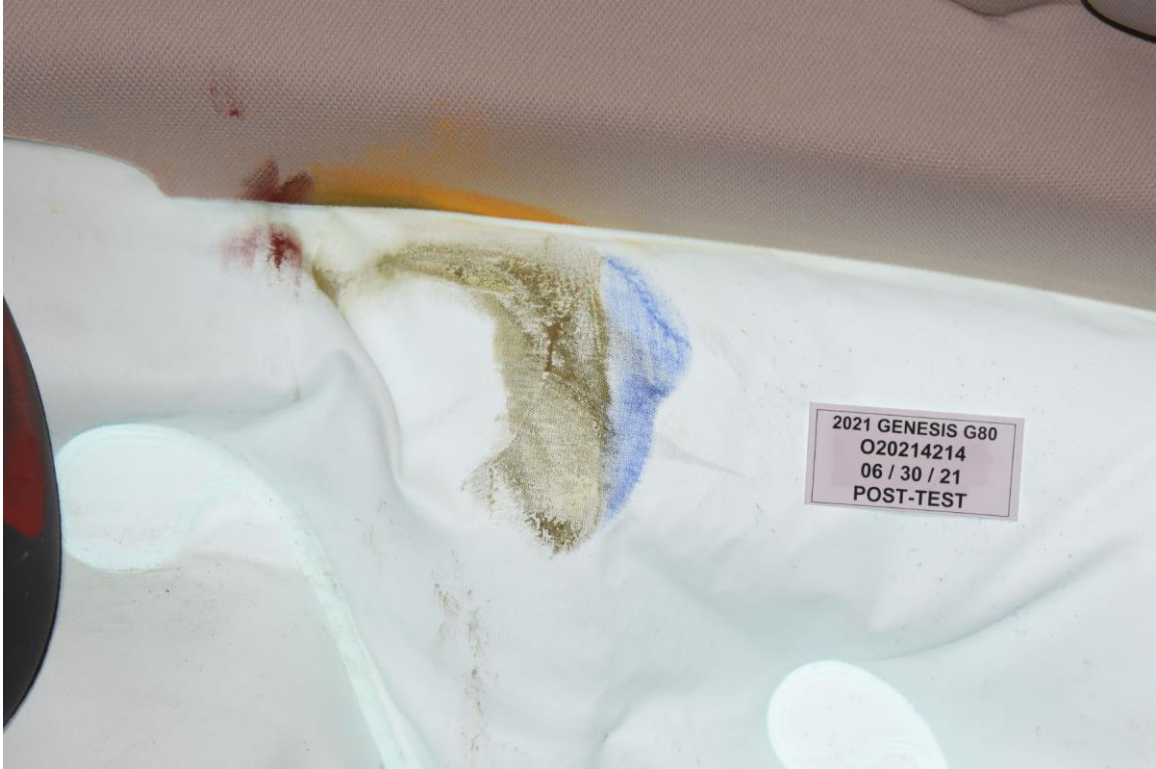


FIGURE 49. Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View

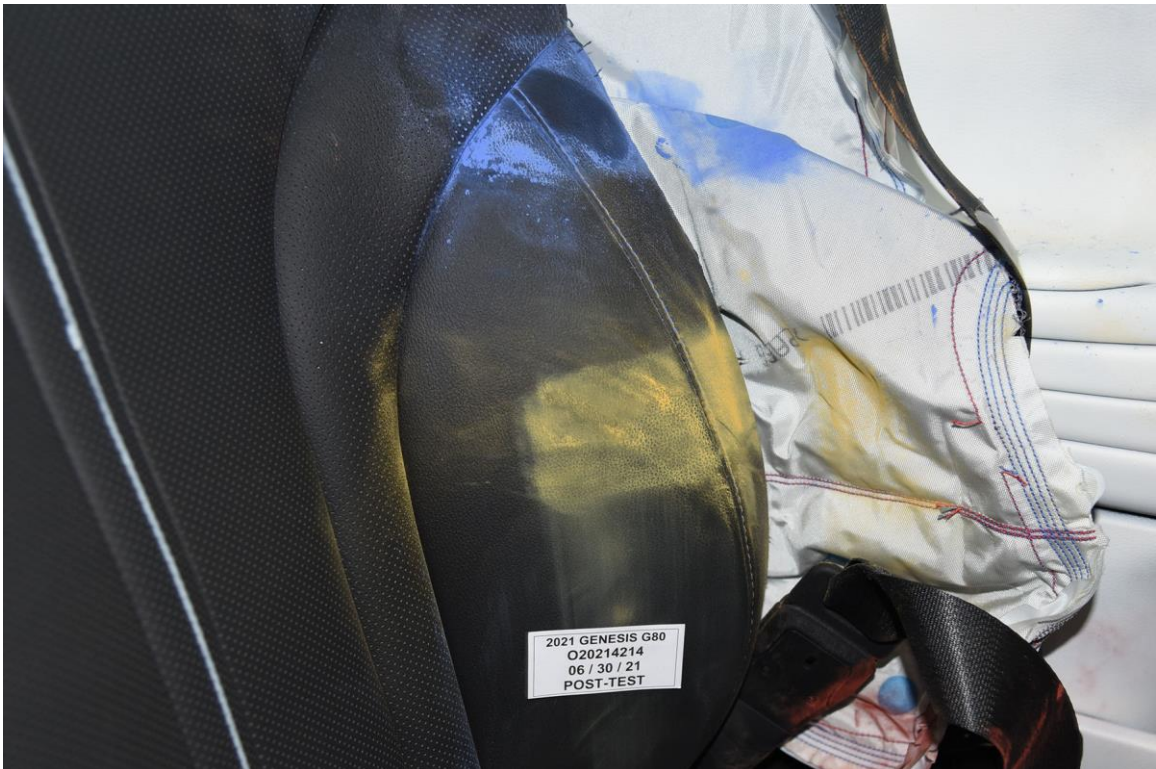


FIGURE 50. Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View

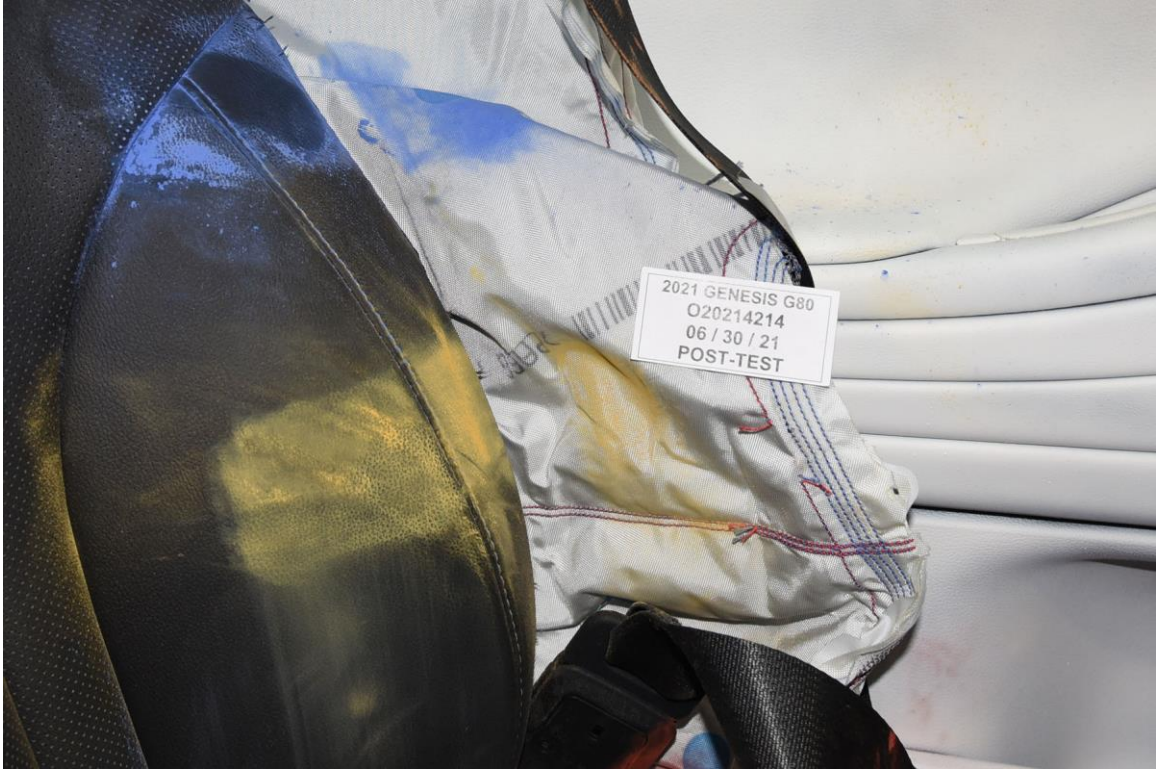


FIGURE 51. Post-Test Driver Dummy Close-Up Torso Contact with Side Airbag View

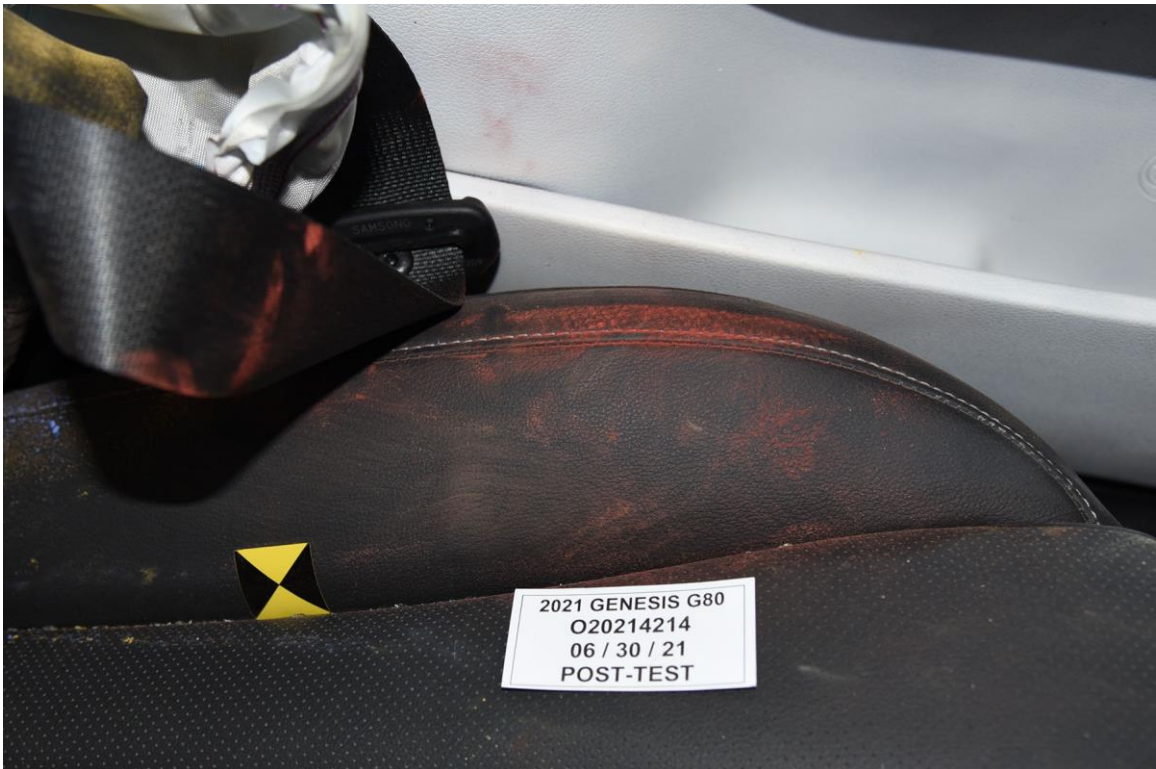


FIGURE 52. Post-Test Driver Dummy Close-Up Pelvis Contact with Vehicle Interior View

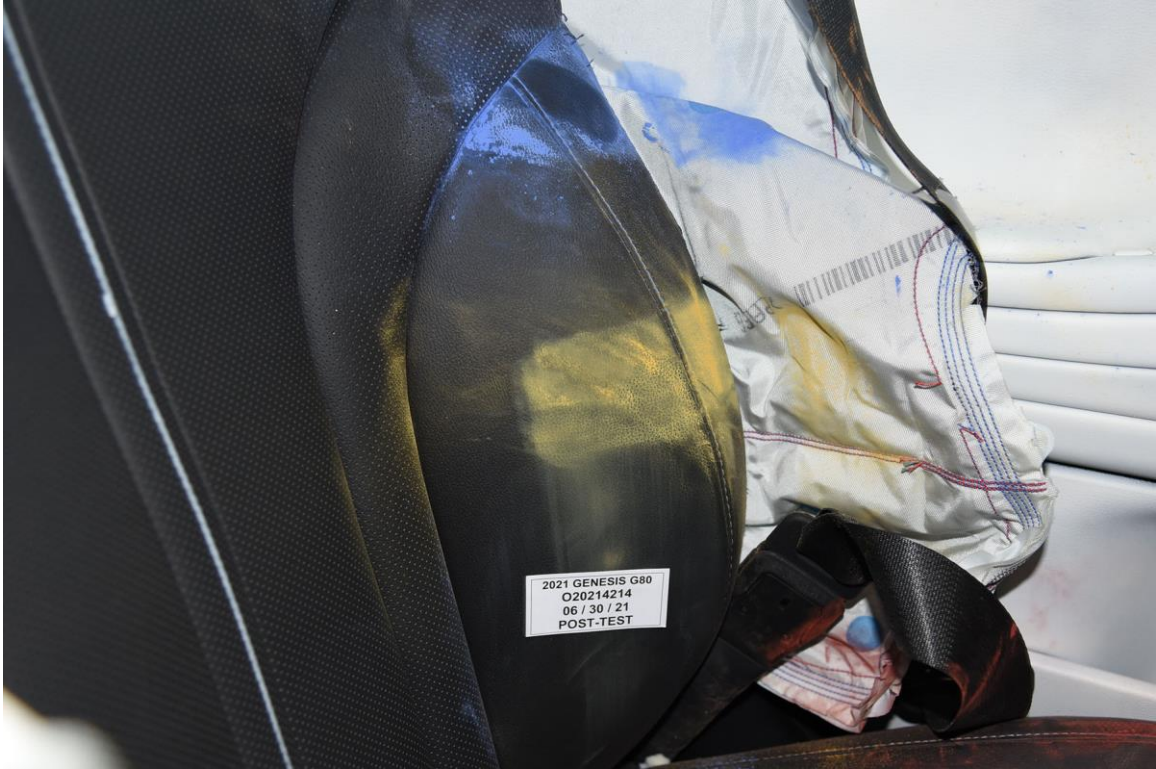


FIGURE 53. Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View



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



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

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



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



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



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



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



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

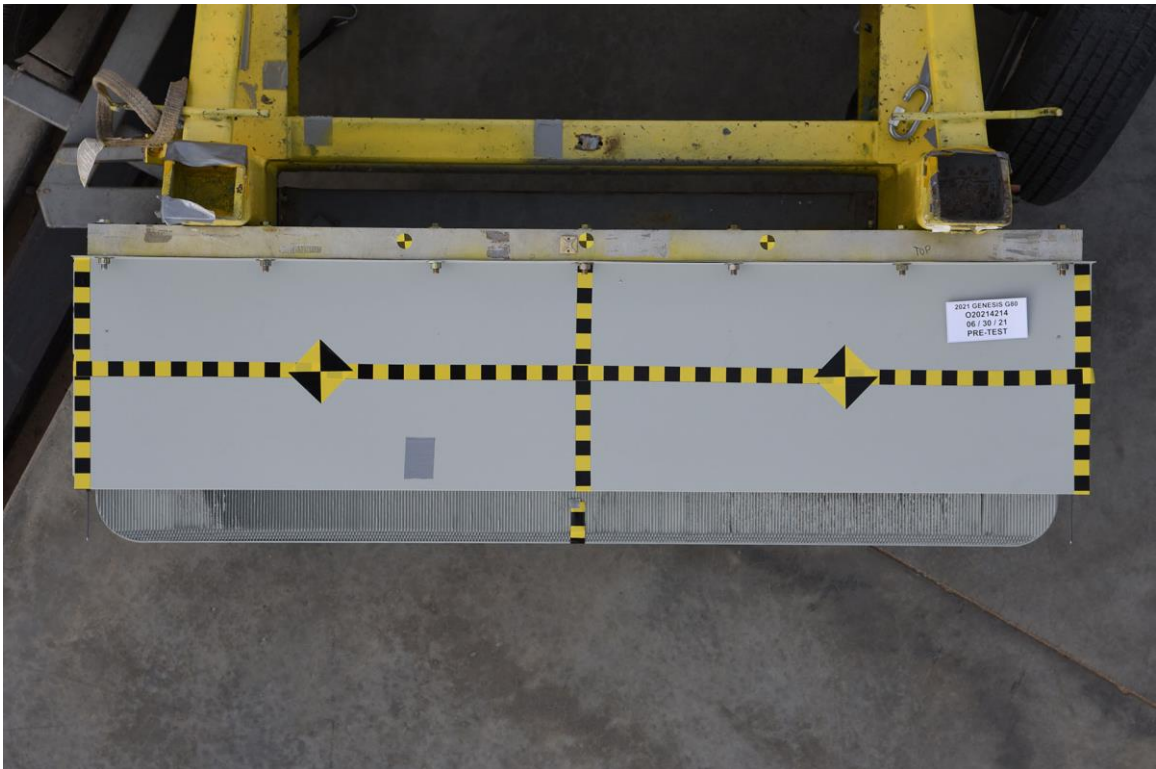


FIGURE 86. Pre-Test Top View of MDB Impactor Face



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



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



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



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



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



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



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

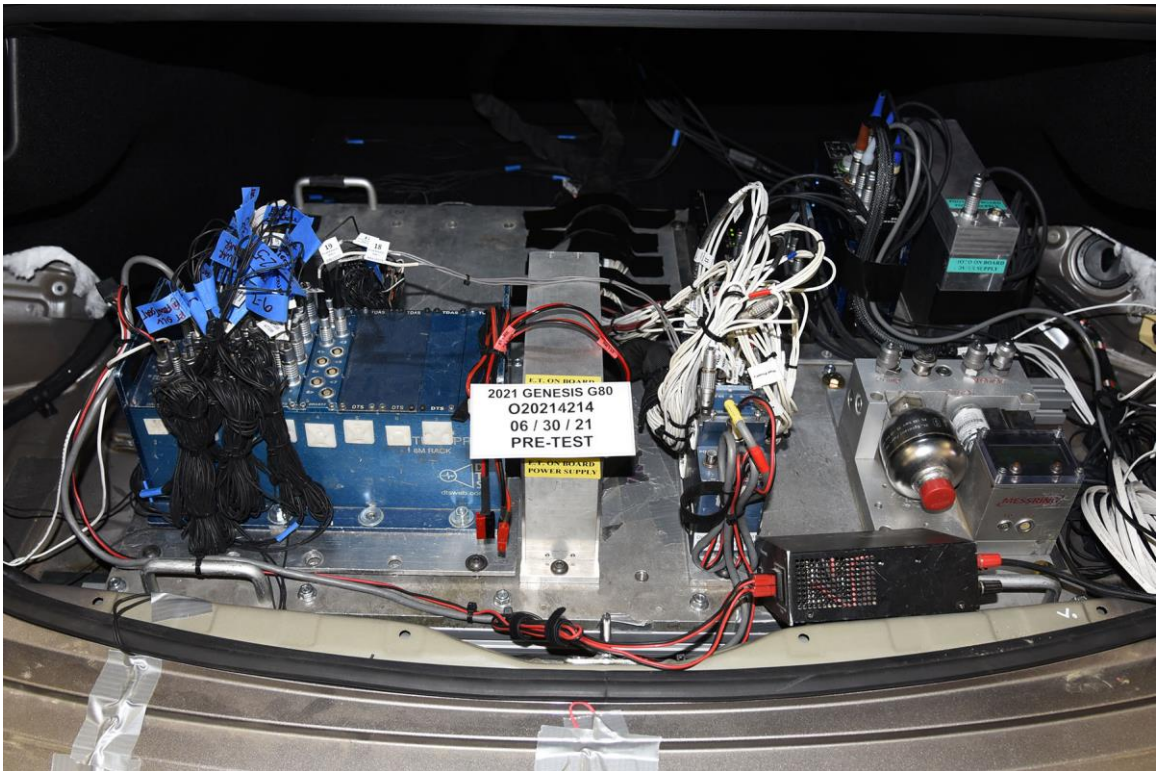


FIGURE 94. Pre-Test Ballast View



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

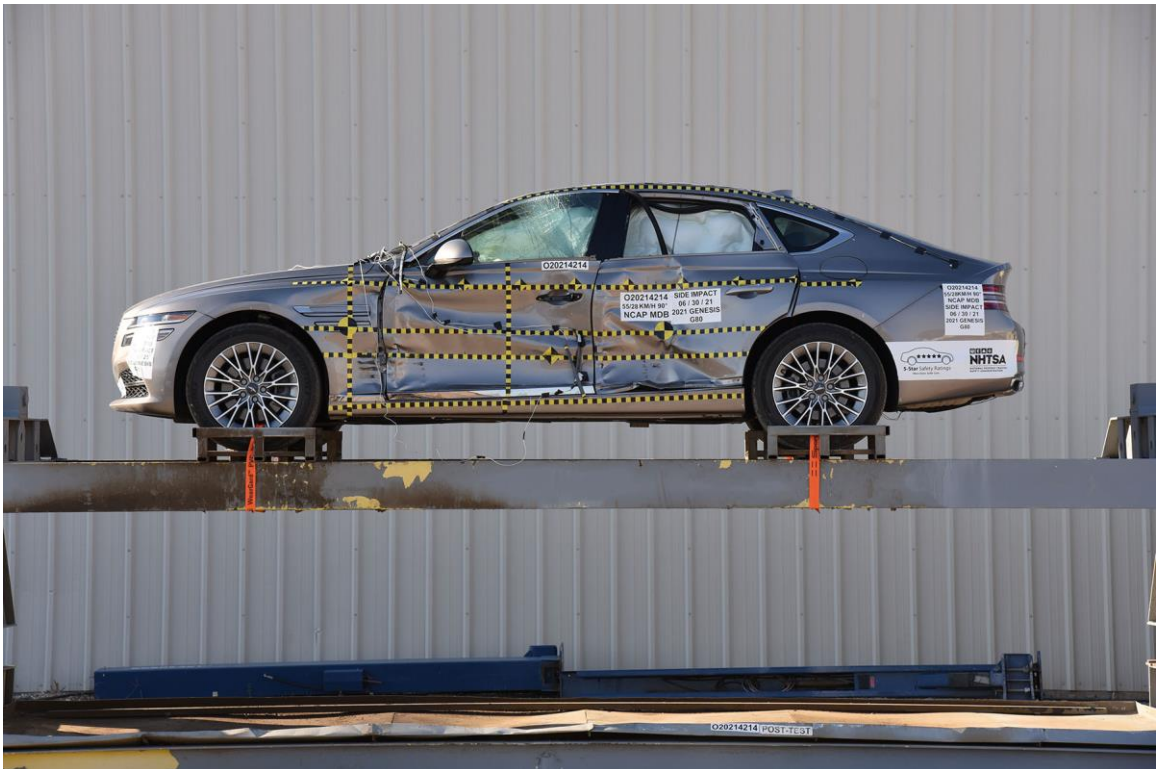


FIGURE 96. FMVSS No. 301 Static Rollover 0 Degrees



FIGURE 97. FMVSS No. 301 Static Rollover 90 Degrees



FIGURE 98. FMVSS No. 301 Static Rollover 180 Degrees

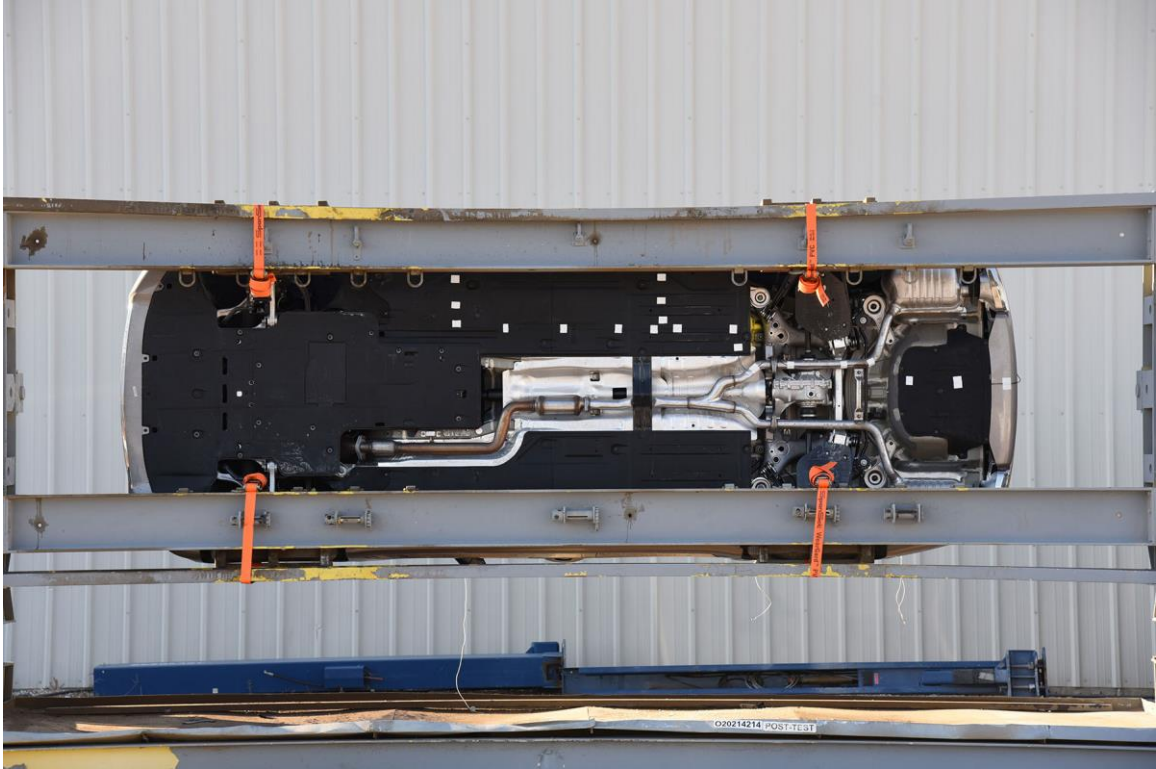


FIGURE 99. FMVSS No. 301 Static Rollover 270 Degrees



FIGURE 100. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 101. Impact Event

<p>GENESIS</p> <p>2021 GV80 RWD 2.5T</p> <p>GENESIS EXPERIENCE</p> <ul style="list-style-type: none"> 3 Yr / 36K Complimentary Maintenance 3 Yr Complimentary Service Value* 3 Yr Complimentary Genesis Connected Services* 3 Yr Complimentary Map Care <p>*Exclusions may apply, see retailer for details</p>		<p>Fuel Economy and Environment</p> <p>26 MPG (combined city/hwy)</p> <p>23 city / 32 highway</p> <p>3.8 gallons per 100 miles</p> <p>You spend \$2,000 more in fuel costs over 5 years compared to the average new vehicle.</p> <p>Annual fuel cost \$1,900</p> <p>Government 5-Star Safety Ratings</p> <p>This vehicle has not been rated by the government for overall vehicle score, frontal crash, side crash or rollover risk.</p>
<p>STANDARD FEATURES:</p> <p>ADVANCED SAFETY TECHNOLOGY</p> <ul style="list-style-type: none"> 10 Airbags including Front Center Airbag Smart Cruise Control with Stop & Go Forward Collision-Avoidance Assist w/ Pedestrian & Cyclist Lane Occupancy Junction Turning, Junction Crossing, Lane Side, and Evasive Steering Assist Highway Driving Assist II Driver Attention Warning Lane Keeping Assist Lane Following Assist Blind-Spot Collision-Avoidance Assist Rear Cross-Traffic Collision-Avoidance Assist Safe Exit Assist Rain-sensing Wipers Parking Distance Warning (Front & Rear) <p>POWERTRAIN TECHNOLOGY</p> <ul style="list-style-type: none"> 2.5L I4 T-GDI (300 HP / 311 lb-ft) 8-Speed Automatic Transmission Multi-Link Front & Rear Suspension Drive Mode Select <p>COMFORT & CONVENIENCE</p> <ul style="list-style-type: none"> 18-inch Alloy Wheels LED Quad Headlights LED Rear Combination Lamps High Beam Assist Power-Folding Outside Mirrors Leatherette Seating Surfaces 12-way Power Front Seats Heated Front Seats Piano Black Gloss Trim Leatherette wrapped/reticulated Upper Inst. Panel Adjustable Interior Ambient Lighting 	<p>COMFORT & CONVENIENCE (cont.)</p> <ul style="list-style-type: none"> Power Tilt & Telescopic Steering Wheel EC Inside Mirror with HomeLink Hands-free Smart Trunk w/ Auto Open Dual Front & Single Rear USB Ports Premium Navigation with 14.5" HD Screen Apple CarPlay™ and Android Auto™ AM/FM/XM Radio™/HD Radio™ with 12 speakers <p>GENESIS WARRANTY</p> <ul style="list-style-type: none"> 5-year/100,000-mile New Vehicle Warranty* 10-year/100,000-mile Powertrain Warranty* 7-year/Unlimited-mile Anti-perforation Warranty* Limited warranties, see dealer for details <p>Full Tank of Gas</p>	<p>Additional Standard Features</p> <ul style="list-style-type: none"> Carpeted Floor Mats Cargo Net <p>Manufacturer's Suggested Retail Price: \$47,700.00</p> <p>ADDED FEATURES:</p> <ul style="list-style-type: none"> *GOLD COAST SILVER (PAZ) Paint \$500.00
<p>SOLD TO: NY710</p> <p>GENESIS OF ITHACA 320 ELMIRA ROAD ITHACA NY 14850</p> <p>SHIPPED TO: NY710</p>	<p>INLAND FREIGHT & HANDLING: \$1,045.00</p> <p>TOTAL PRICE: \$49,245.00</p> <p>VIN: KMT0B45C3MU072323 ENGINE: G4K1MAB8763 EXTERIOR COLOR: GOLD COAST SILVER INTERIOR/SEAT COLOR: BLACK/BLACK MODEL: 2422145 PORT OF ENTRY: BK TRANSPORT: TRUCK ACCESSORY WEIGHT: 7 lbs./ 3 lbs.</p> <p>106 A 1111HMORNI 58</p>	<p>GOVERNMENT 5-STAR SAFETY RATINGS</p> <p>This vehicle has not been rated by the government for overall vehicle score, frontal crash, side crash or rollover risk.</p> <p>Source: National Highway Traffic Safety Administration (NHTSA). www.safercar.gov or 1-888-327-4236</p> <p>PARTS CONTENT INFORMATION</p> <p>FOR VEHICLES IN THIS CARLINE: U.S./CANADIAN PARTS CONTENT: 2% MAJOR SOURCES OF FOREIGN PARTS CONTENT: KOREA: 92% FOR THIS VEHICLE: FINAL ASSEMBLY POINT: ULSAN, KOREA COUNTRY OF ORIGIN: ENGINE: KOREA TRANSMISSION: KOREA</p> <p>Note: Parts content does not include final assembly, distri</p>

FIGURE 102. Monroney Label

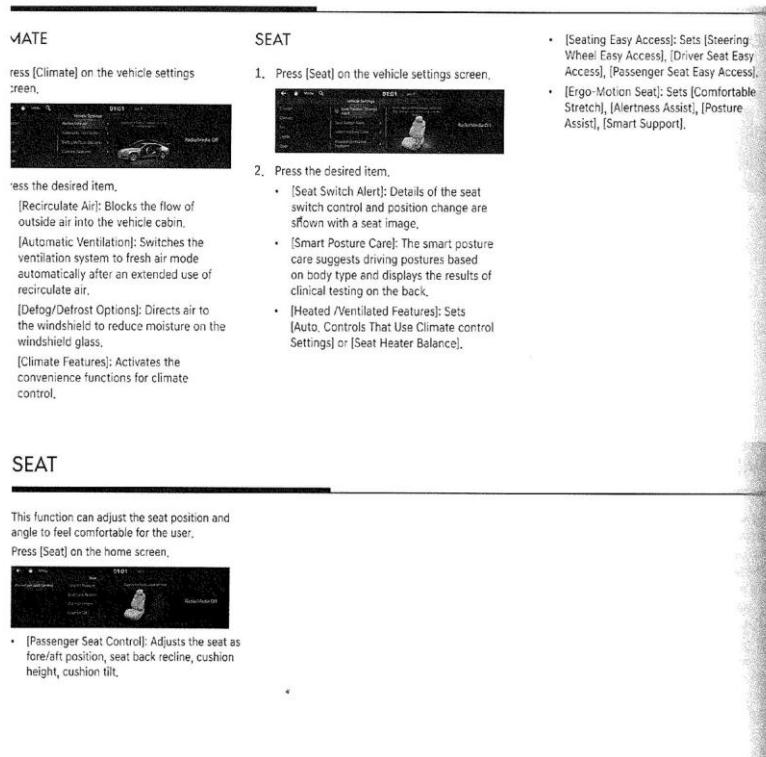


FIGURE 103. Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

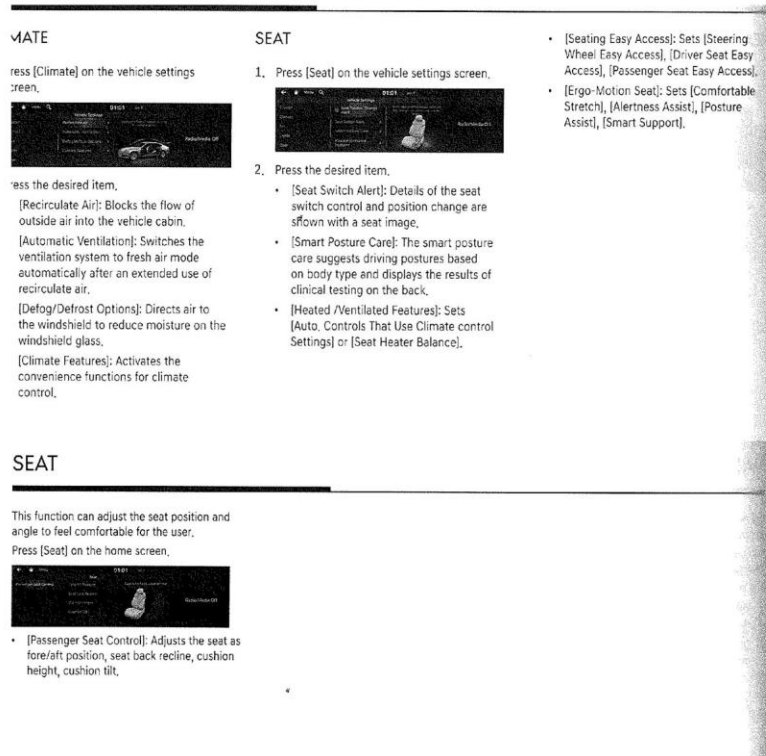


FIGURE 104. Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

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2	Driver Head Acceleration (Y) Primary vs. Time	B-1
3	Driver Head Acceleration (Z) Primary vs. Time	B-1
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6	Driver Middle Thorax Rib Deflection (Y) vs. Time	B-2
7	Driver Lower Thorax Rib Deflection (Y) vs. Time	B-2
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22	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-7
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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)

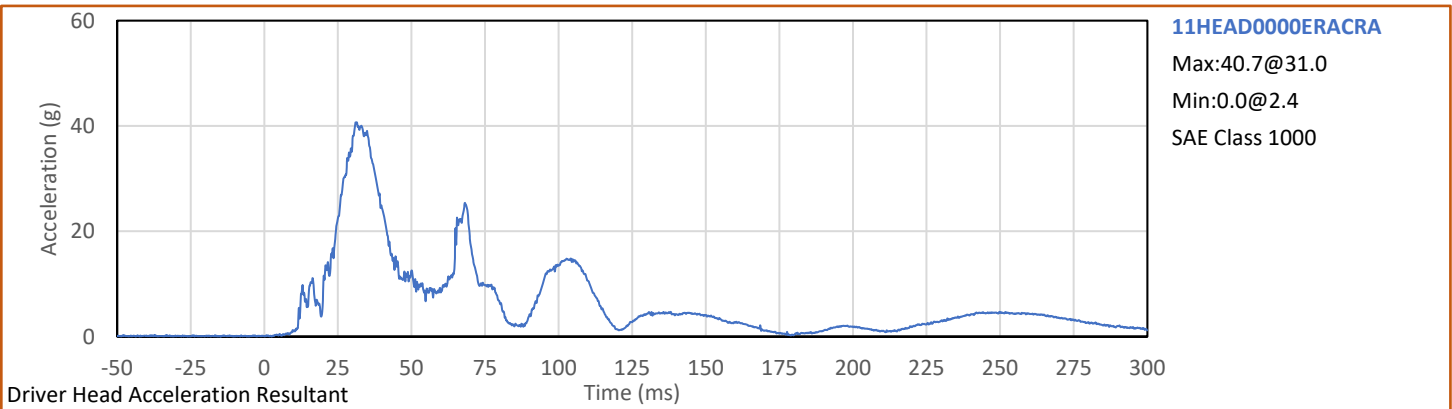
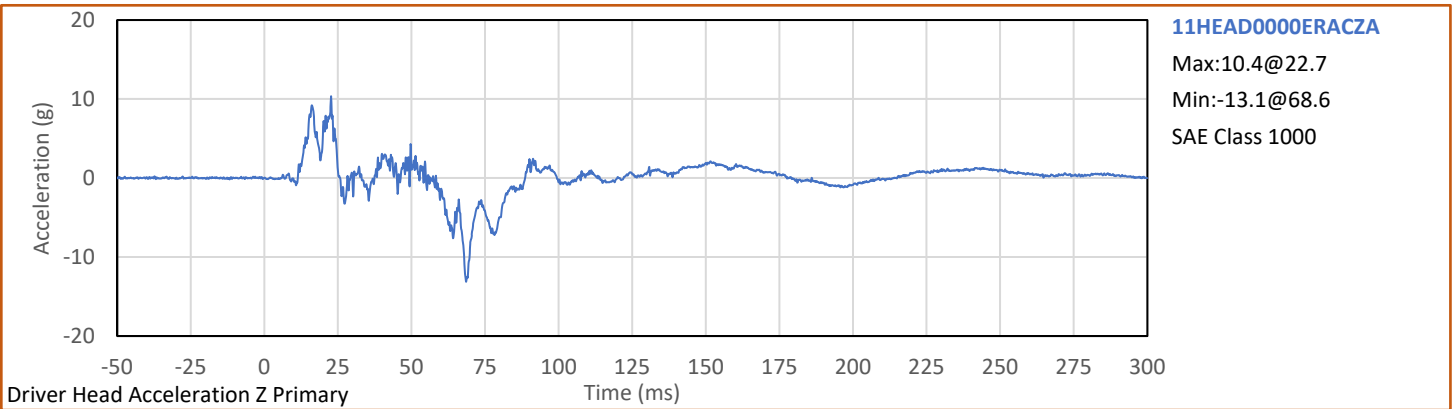
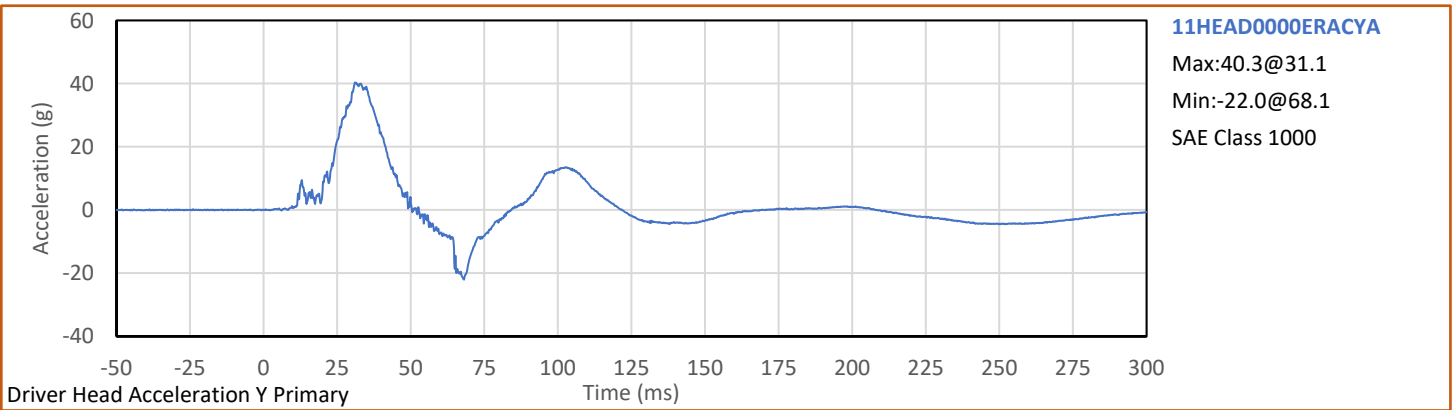
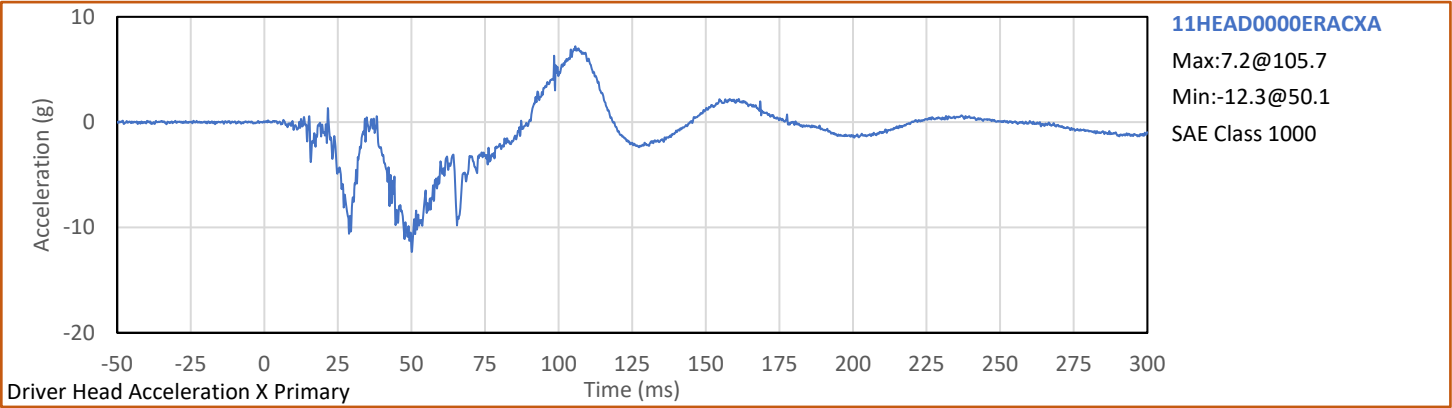
MDB Center of Gravity Acceleration (Z)

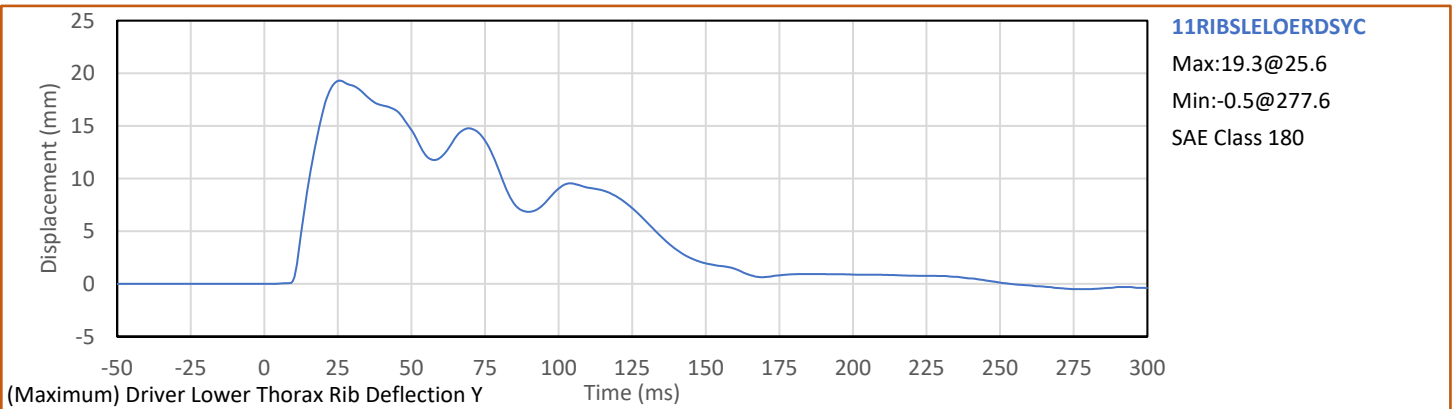
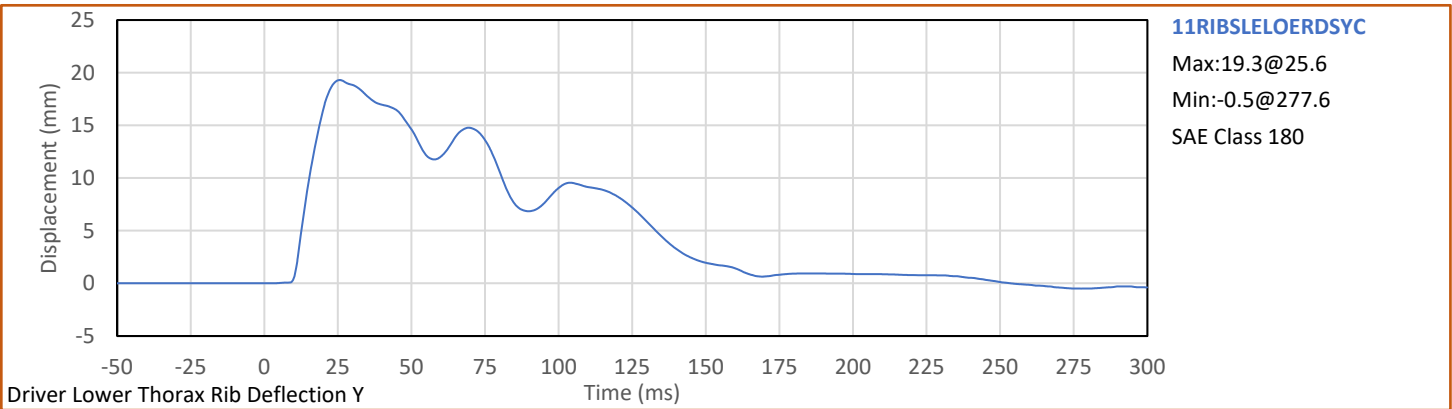
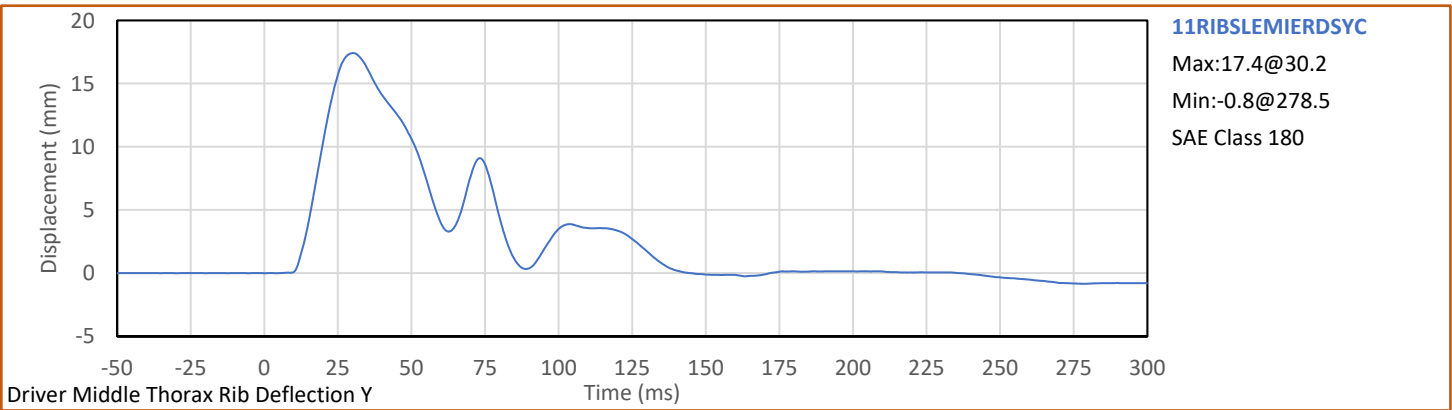
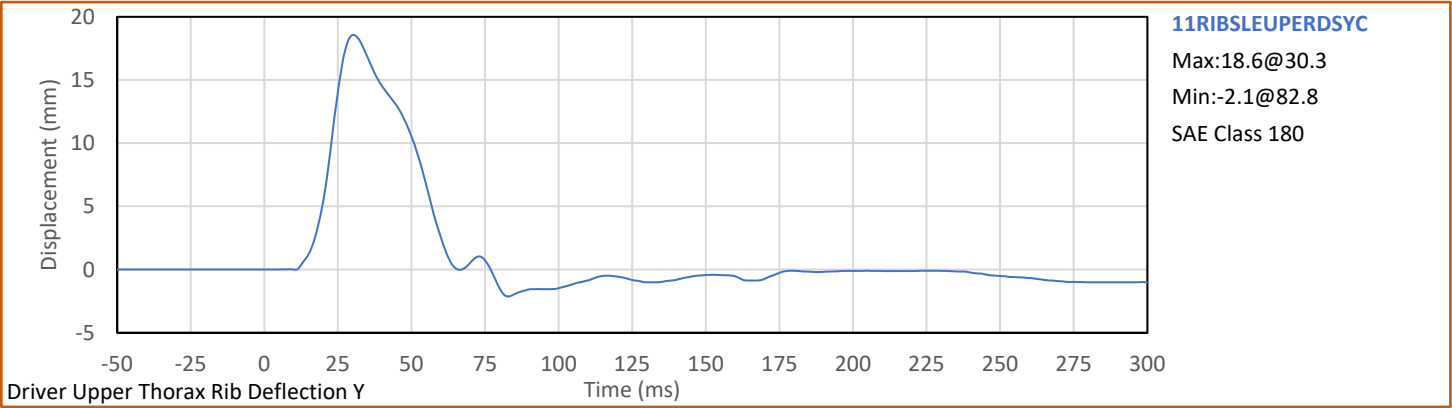
MDB Rear Acceleration (X)

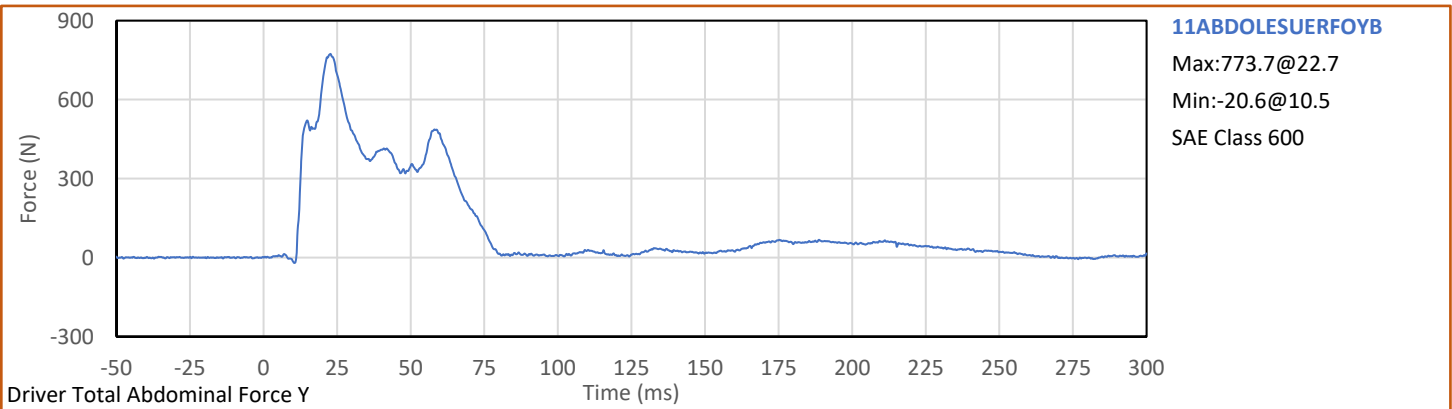
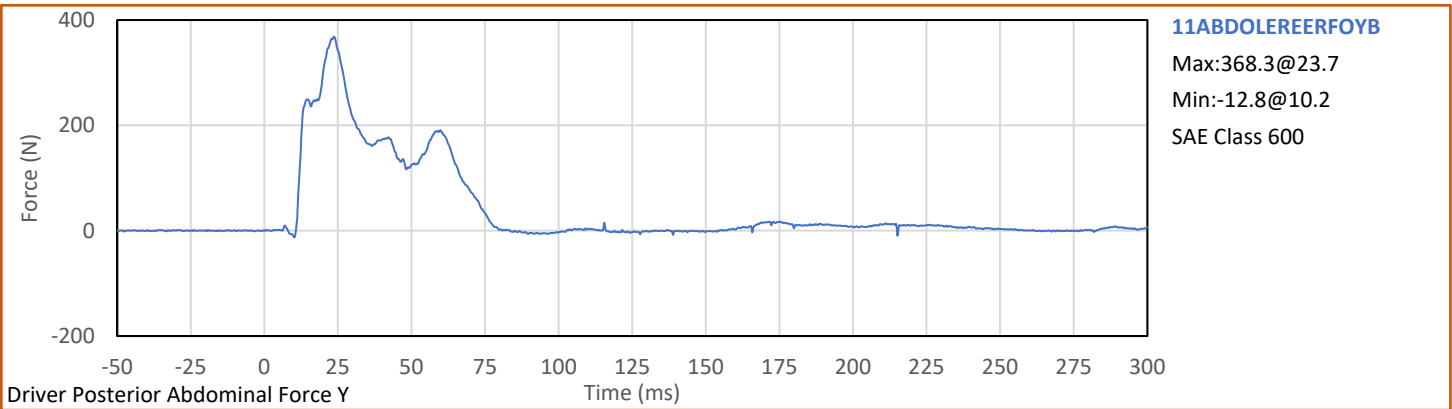
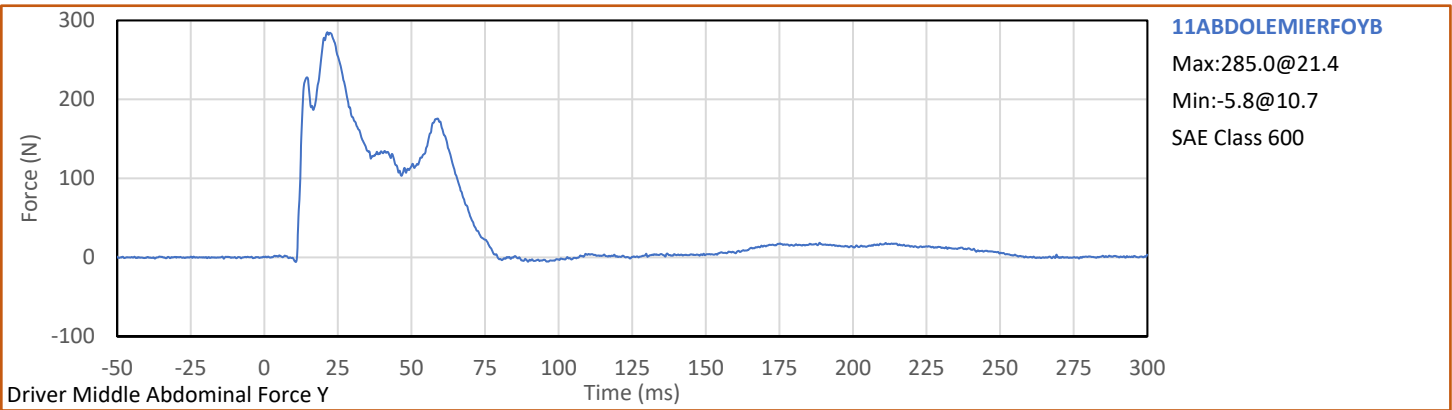
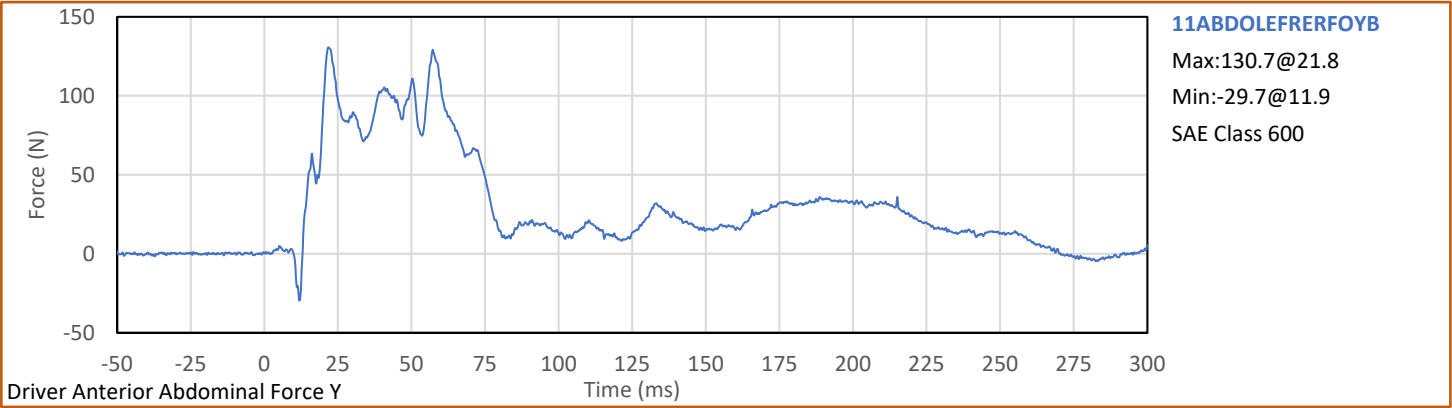
MDB Rear Acceleration (Y)

Left MDB Contact Switch

Right MDB Contact Switch

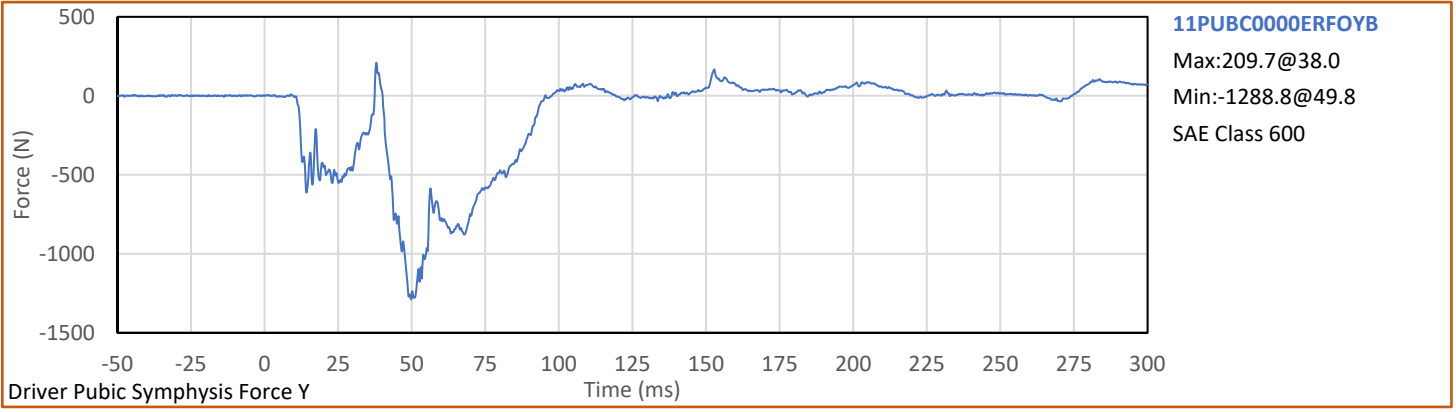


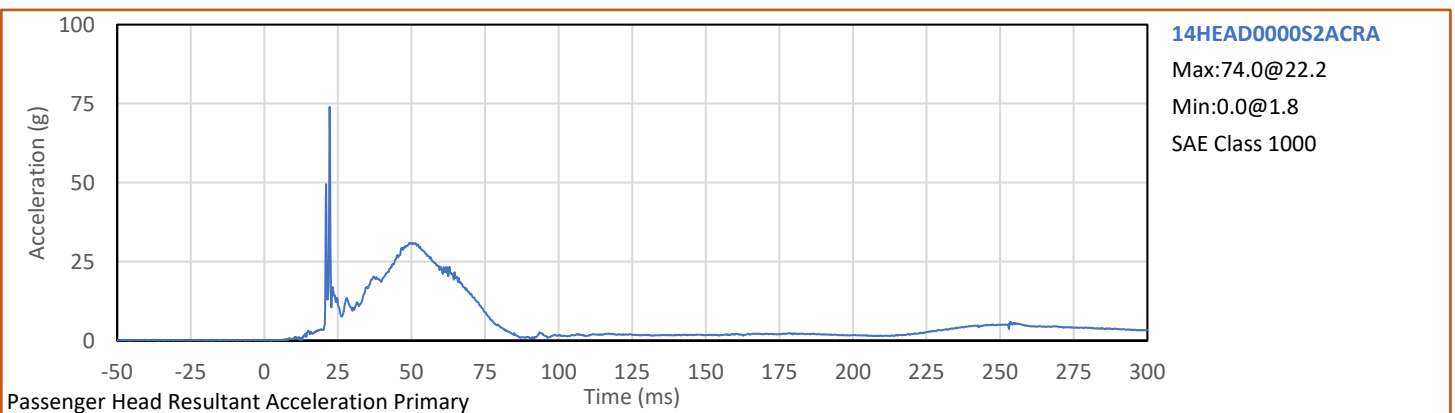
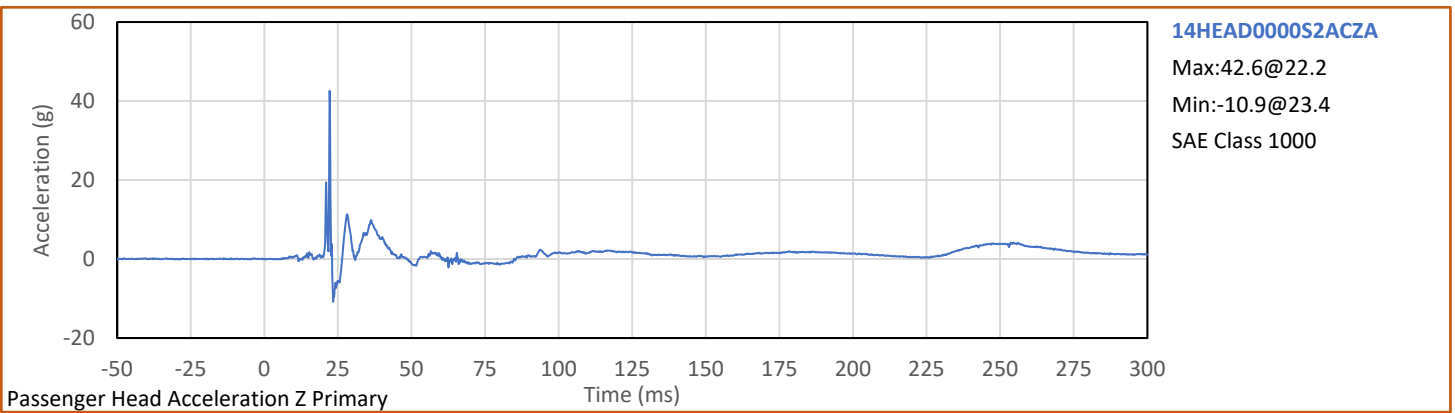
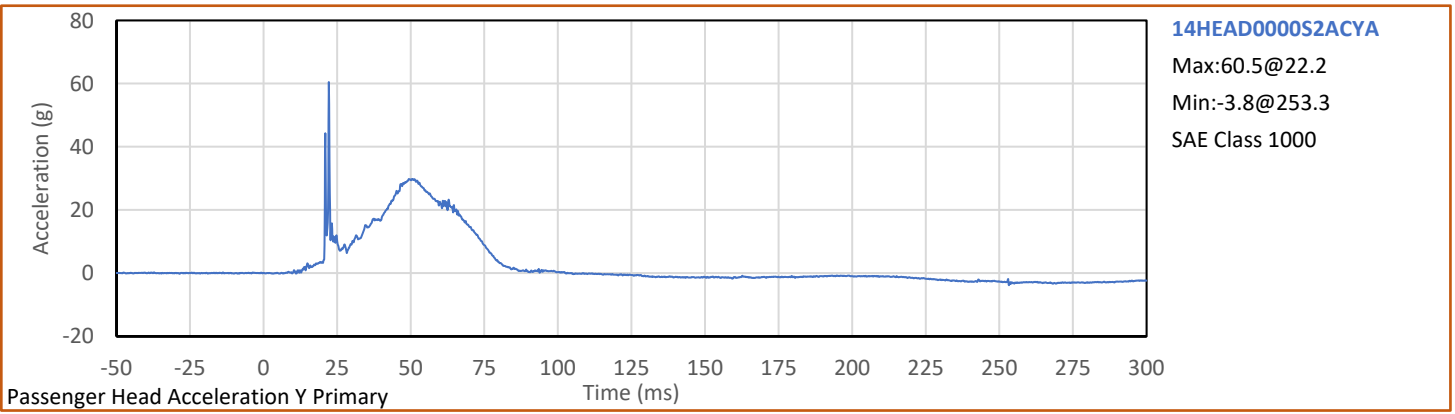
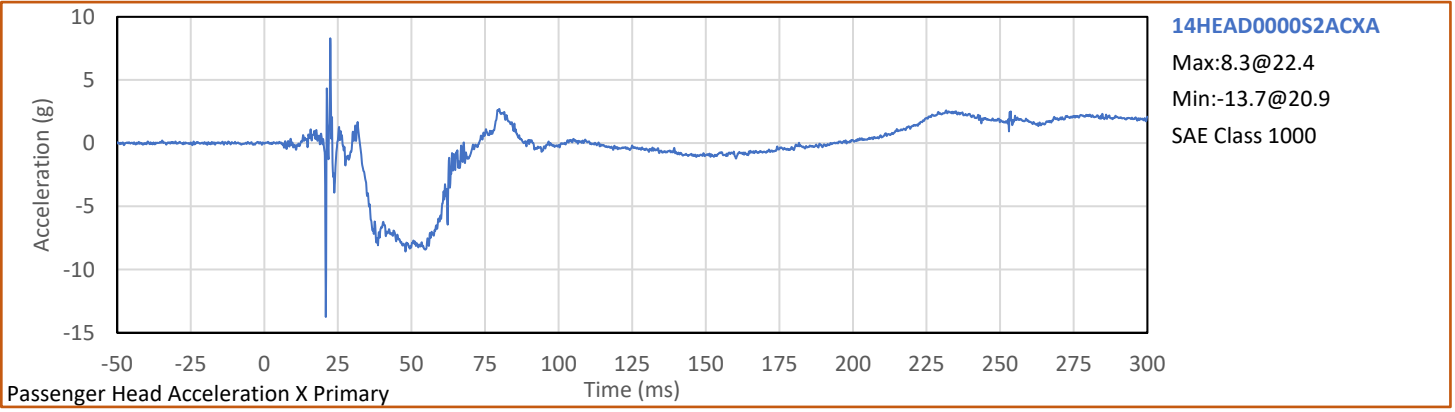


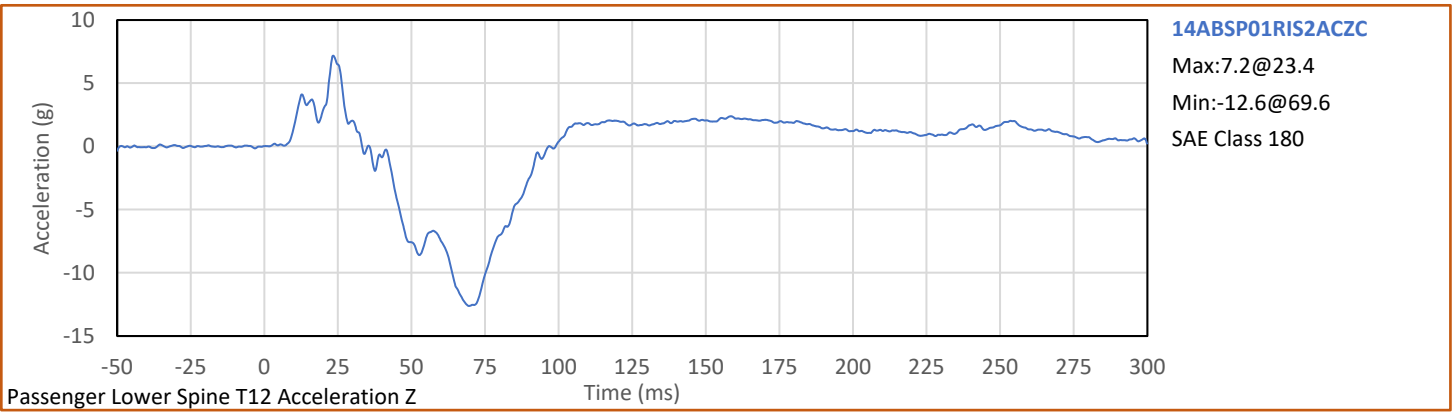
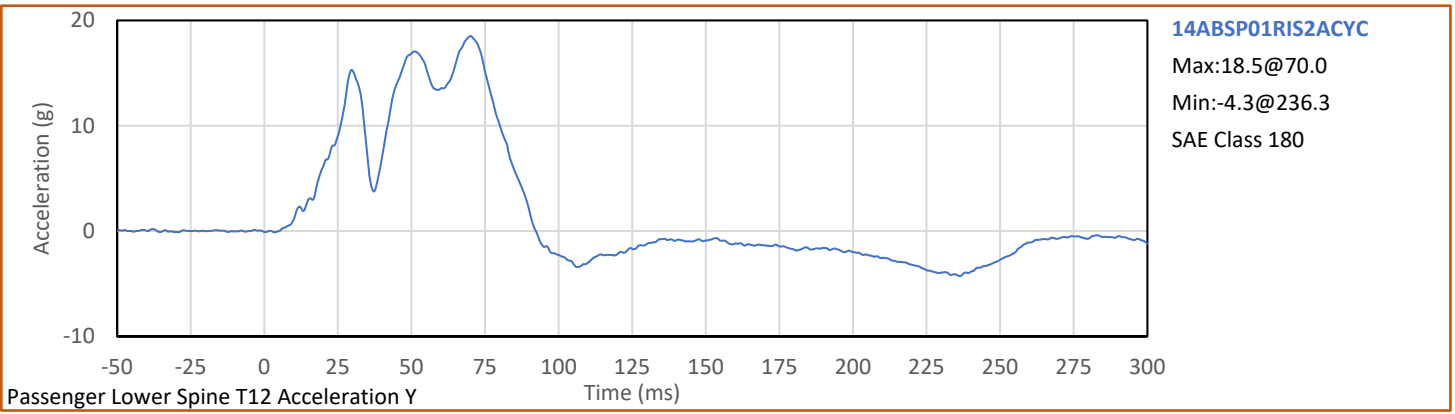
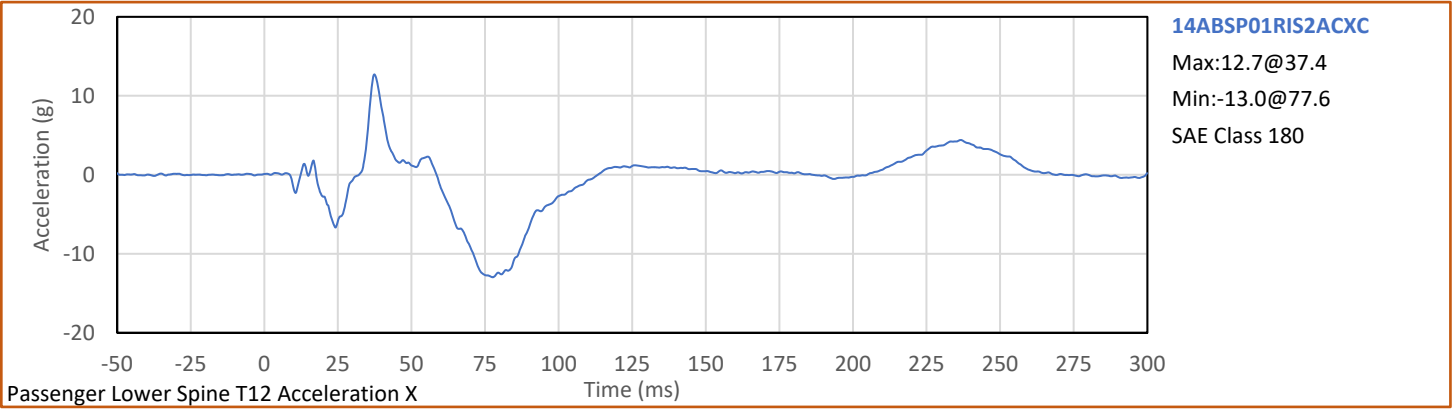


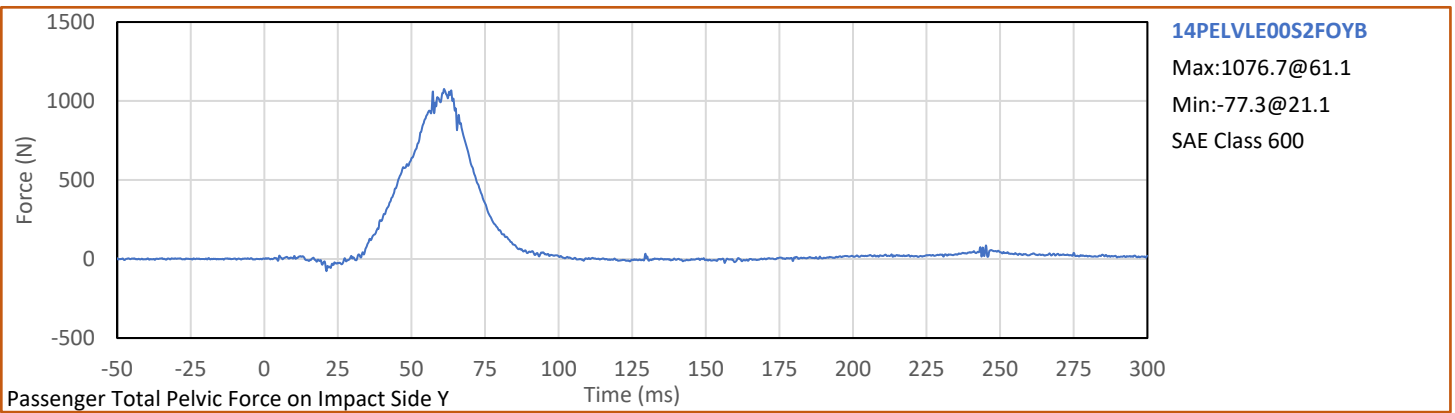
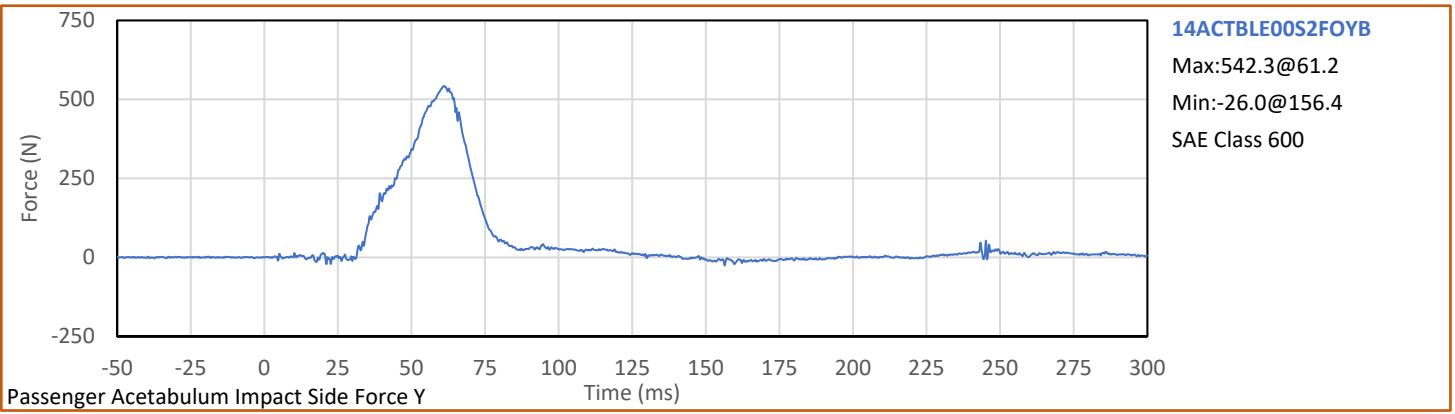
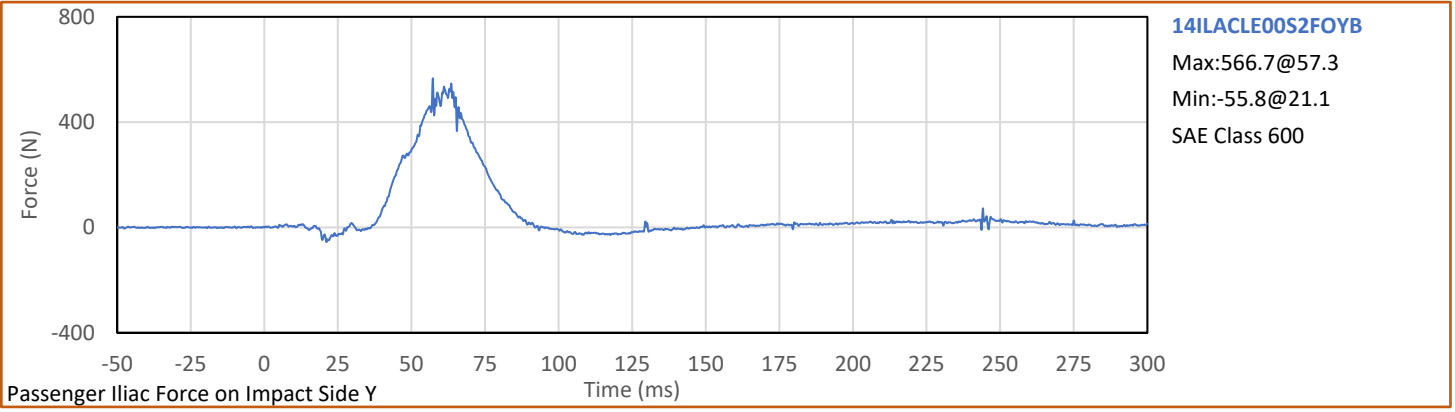
Test Vehicle: 2021 Genesis G80 4-Door Sedan
Test Program: NCAP MDB Side Impact Test

NHTSA No.: O20214214
Test Date: 6/30/2021









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

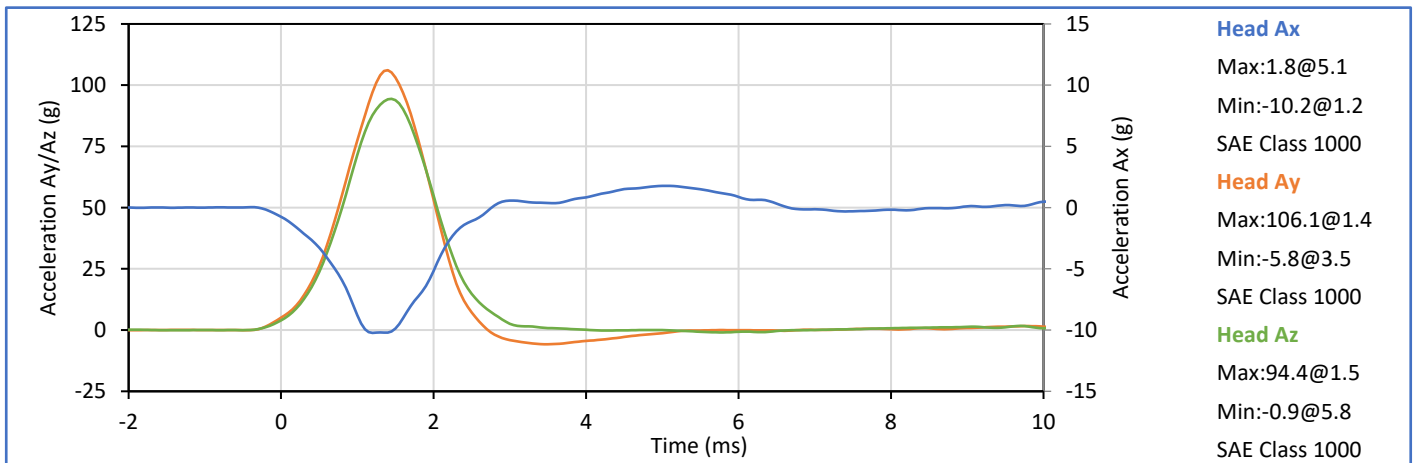
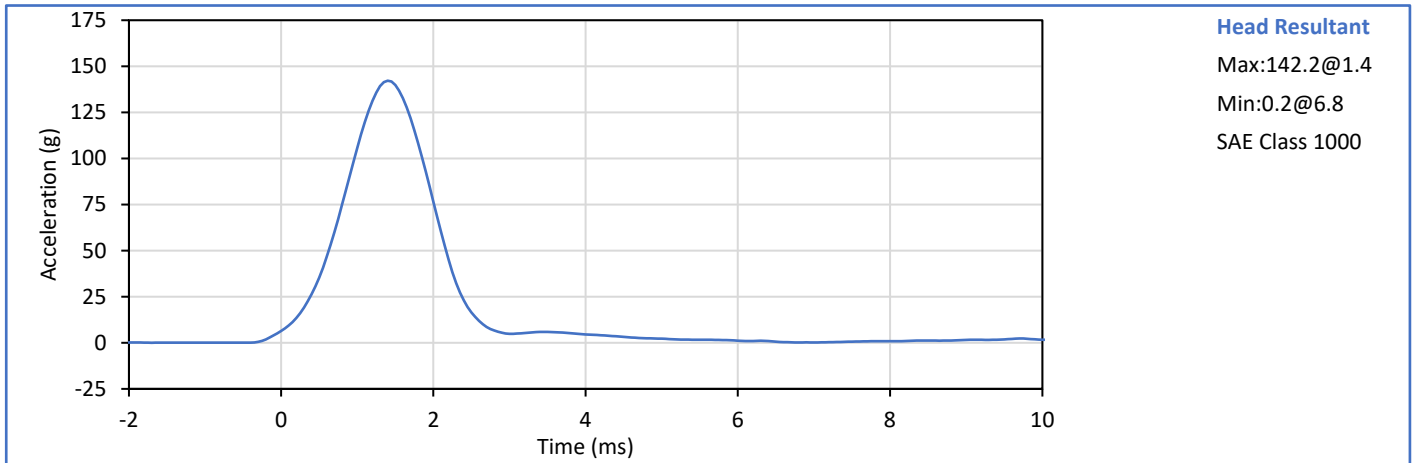
Test Date: 2021-06-26

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	32	Pass
1 - Sitting Height	mm	900	918	909	Pass
2 - Seat to Shoulder Joint	mm	558	572	565	Pass
3 - Seat to Lower Face of Thoracic Spine Box	mm	346	356	350	Pass
4 - Seat to Hip Joint (bolt center)	mm	97	103	101	Pass
5 - Sole to Seat, Sitting	mm	433	451	443	Pass
6 - Head Width	mm	152	158	156	Pass
7 - Shoulder/Arm Width	mm	461	479	475	Pass
8 - Thorax Width	mm	322	332	326	Pass
9 - Abdomen Width	mm	273	287	277	Pass
10 - Pelvis Lap Width	mm	359	373	365	Pass
11 - Head Depth	mm	196	206	200	Pass
12 - Thorax Depth	mm	262	272	268	Pass
13 - Abdomen Depth	mm	194	204	198	Pass
14 - Pelvis Depth	mm	235	245	240	Pass
15 - Back of Buttocks to Hip Joint (bolt Center)	mm	150	160	158	Pass
16 - Back of Buttocks to Front Knee	mm	597	615	613	Pass
				Overall Test Results	Pass


Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

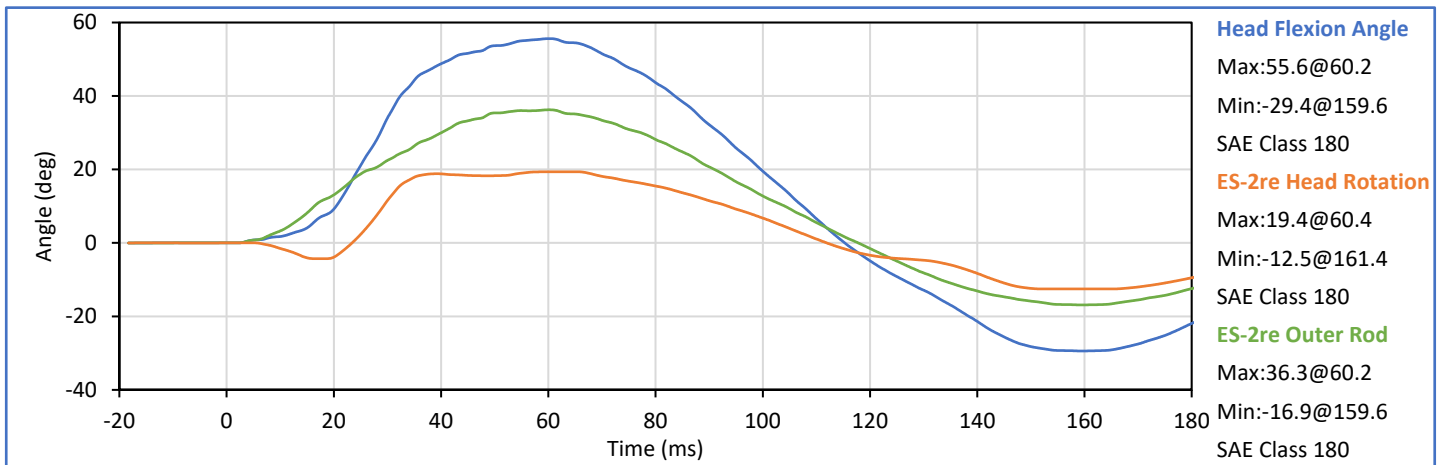
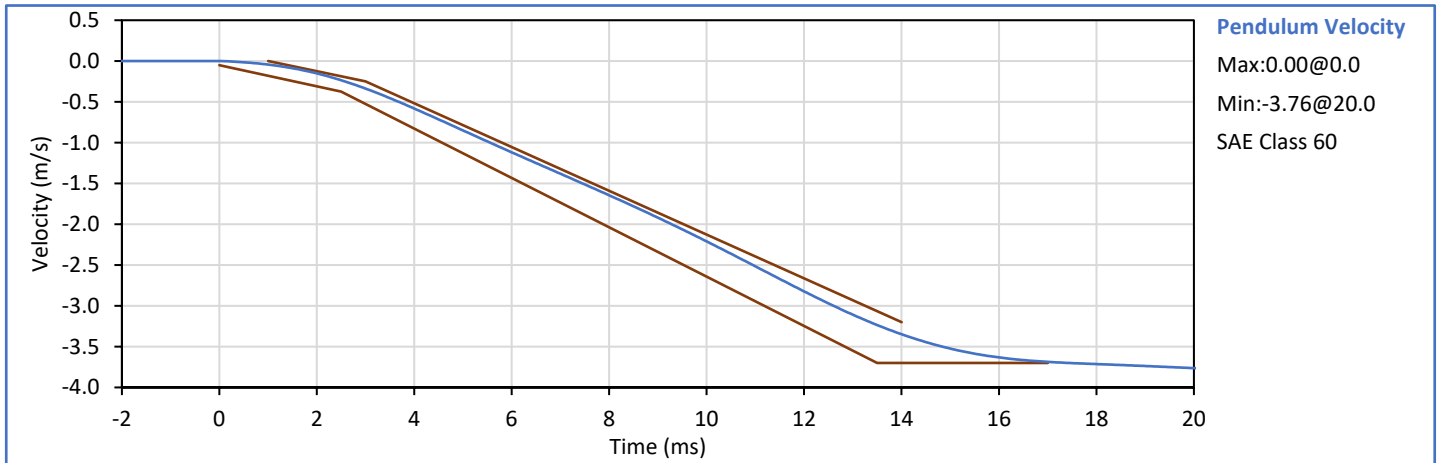
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.1	Pass
Laboratory Relative Humidity	%	10	70	44	Pass
Peak Resultant Acceleration	g	125.0	155.0	142.2	Pass
Peak Head Ax	g	-15.0	15.0	1.8	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
Overall Test Results					Pass

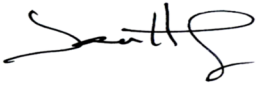



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

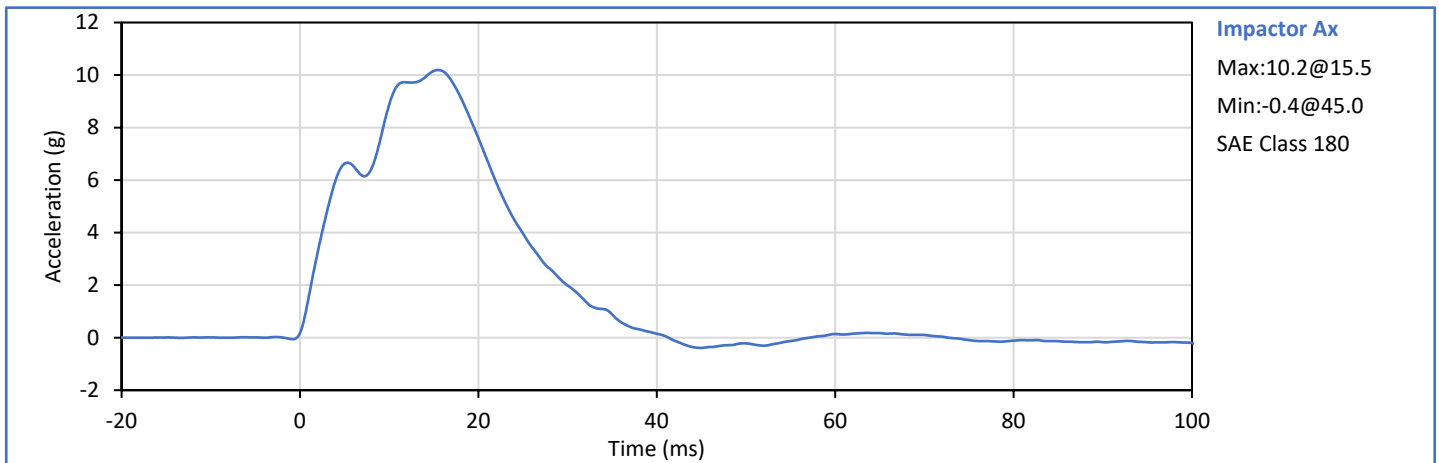
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	43	Pass
Pendulum Velocity	m/s	3.30	3.50	3.49	Pass
Peak Headform Flexion	deg	49.0	59.0	55.6	Pass
Time of Peak Headform Flexion	ms	54.0	66.0	60.2	Pass
Flexion Decay (Peak to zero)	ms	53.0	88.0	55.1	Pass
Overall Test Results					Pass

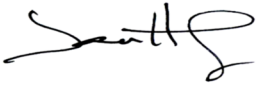



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

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	32	Pass
Impactor Velocity	m/s	4.20	4.40	4.33	Pass
Peak Impactor Ax	g	7.5	10.5	10.2	Pass
Overall Test Results					Pass



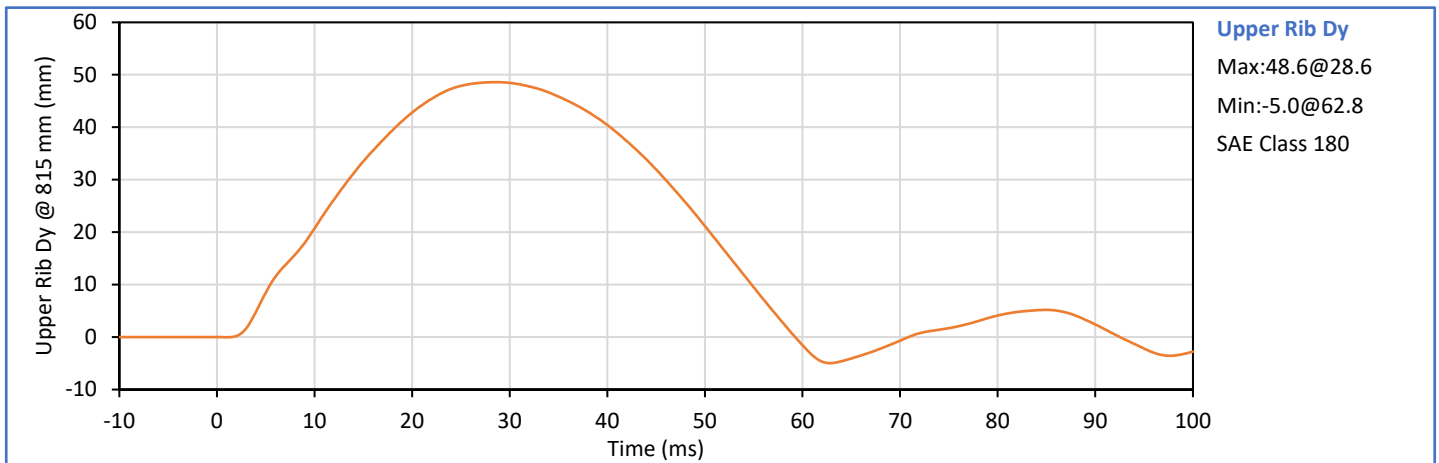
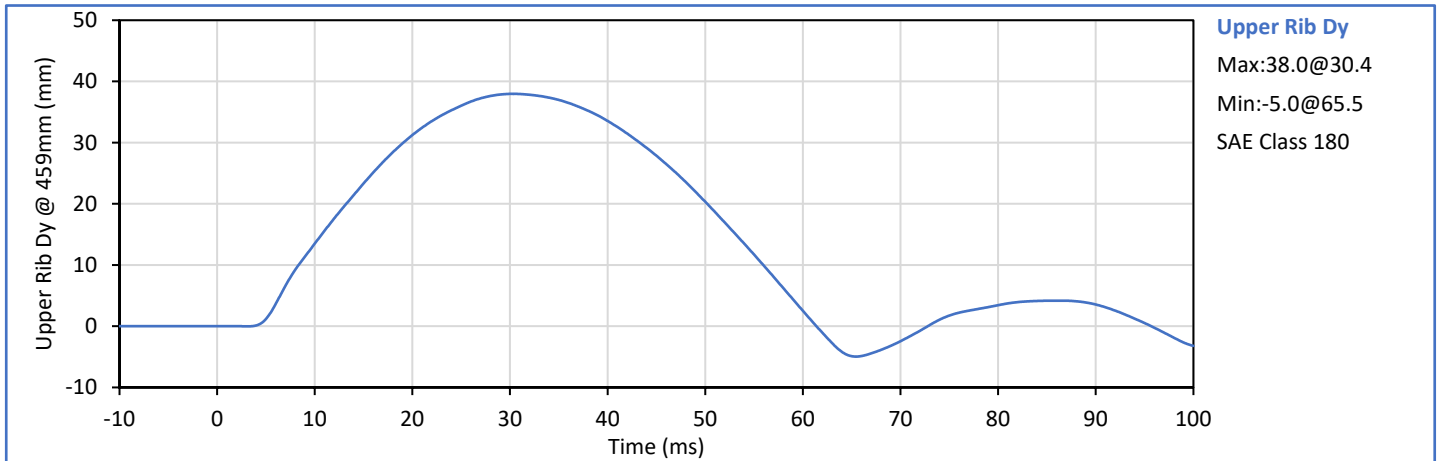
Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

ATD Serial No.: F037

Test Date: 2021-06-25

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	34	Pass
Upper Rib Dy @ 459mm	mm	36.0	40.0	38.0	Pass
Upper Rib Dy @ 815mm	mm	46.0	51.0	48.6	Pass
Overall Test Results					Pass



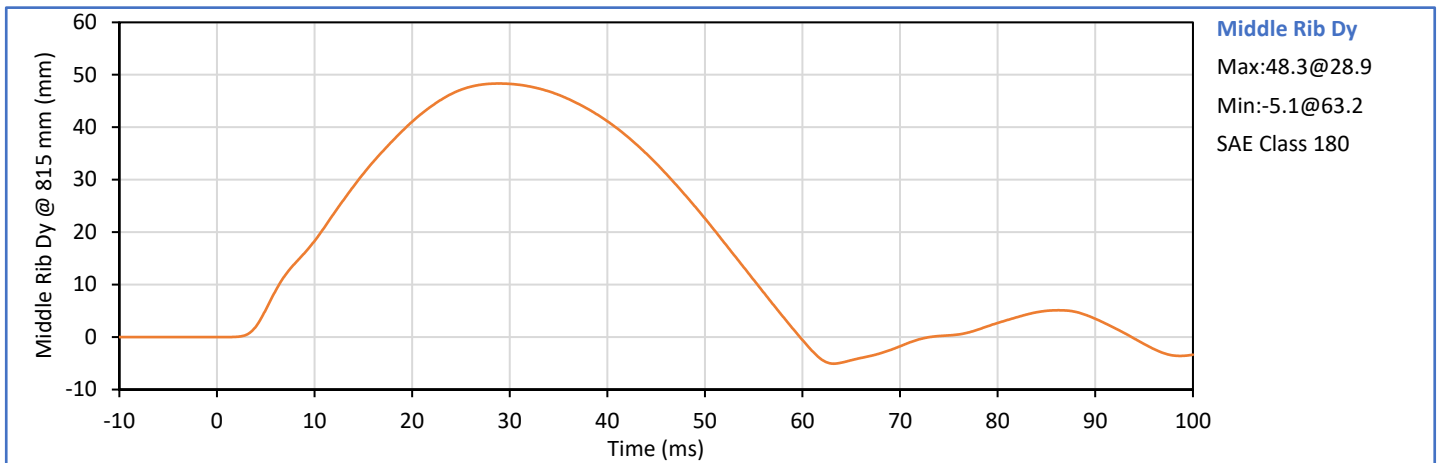
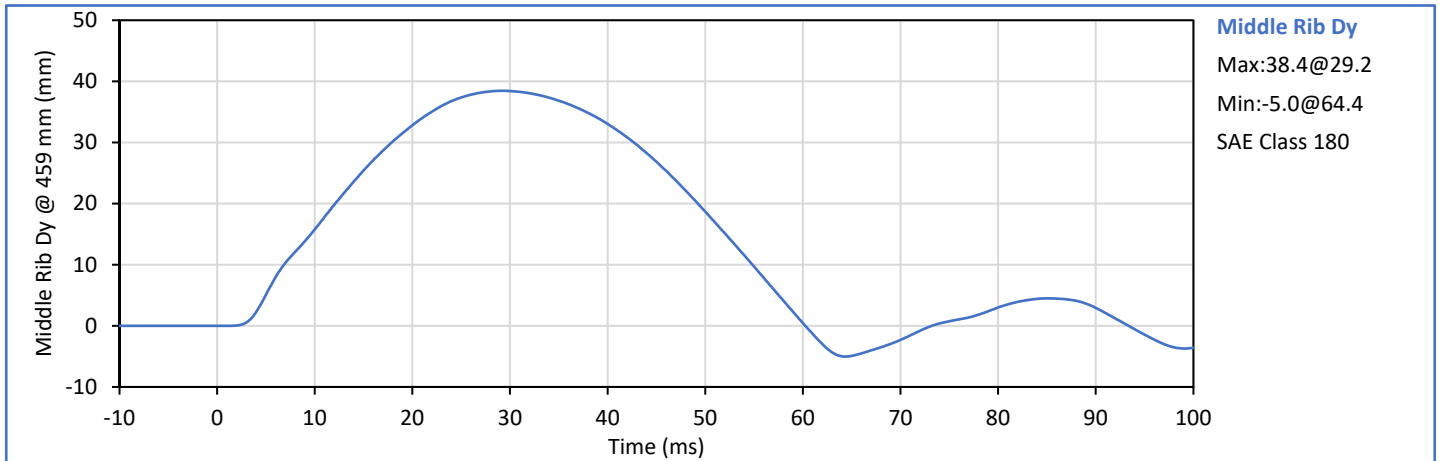
Technician: *J. Hernandez*
J. Hernandez

Approved By: *P. Puzzuto*
P. Puzzuto

ATD Serial No.: F037

Test Date: 2021-06-25

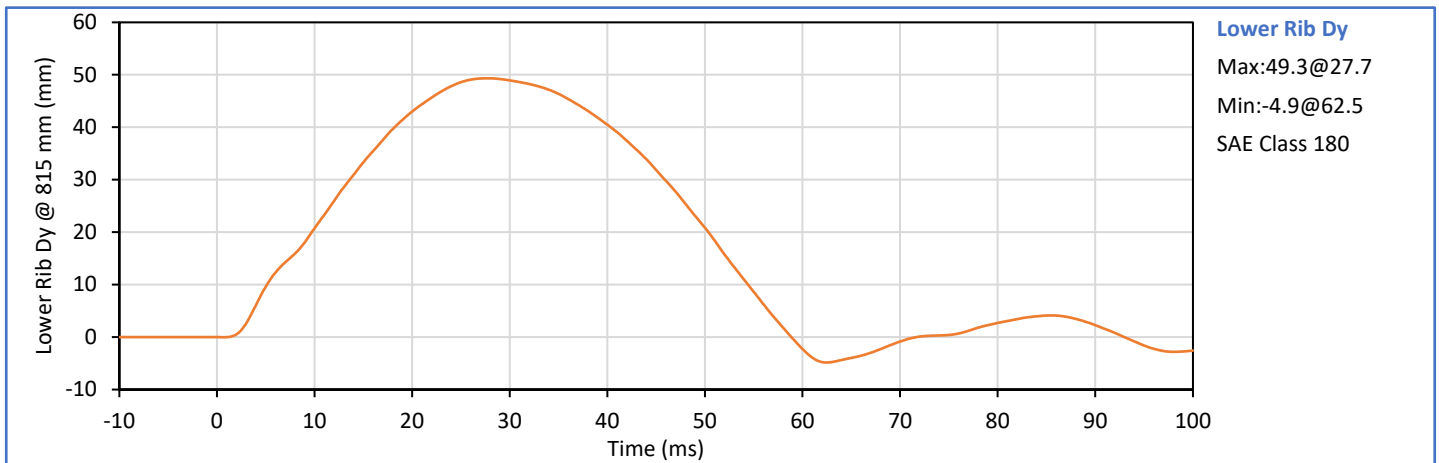
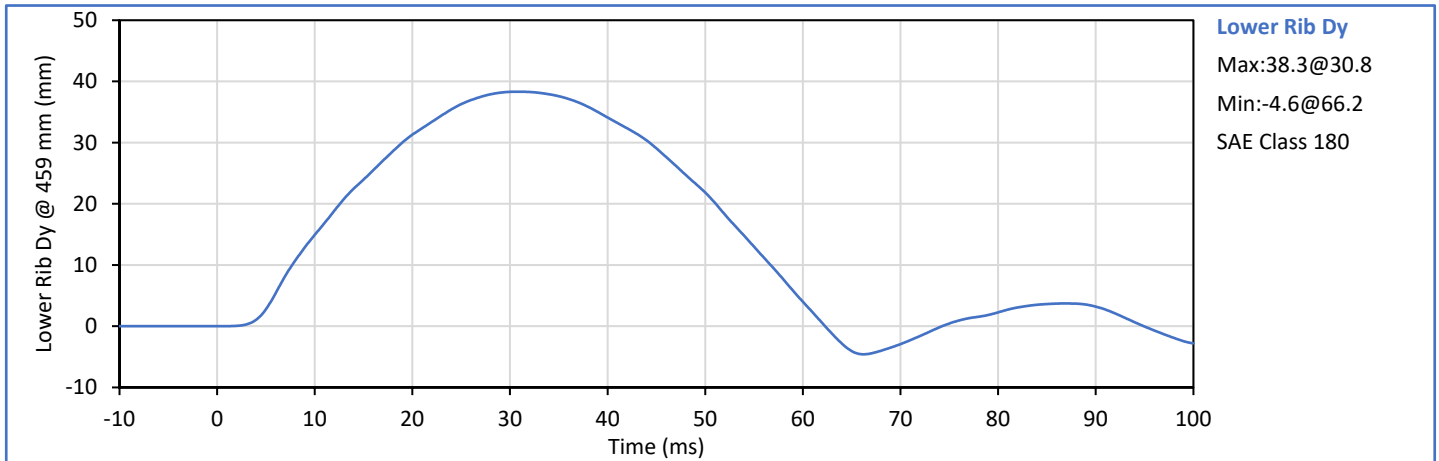
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	34	Pass
Middle Rib Dy @ 459mm	mm	36.0	40.0	38.4	Pass
Middle Rib Dy @ 815mm	mm	46.0	51.0	48.3	Pass
Overall Test Results					Pass

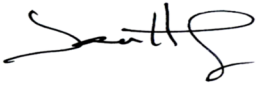



Technician: *J. Hernandez*
J. Hernandez

Approved By: *P. Puzzuto*
P. Puzzuto

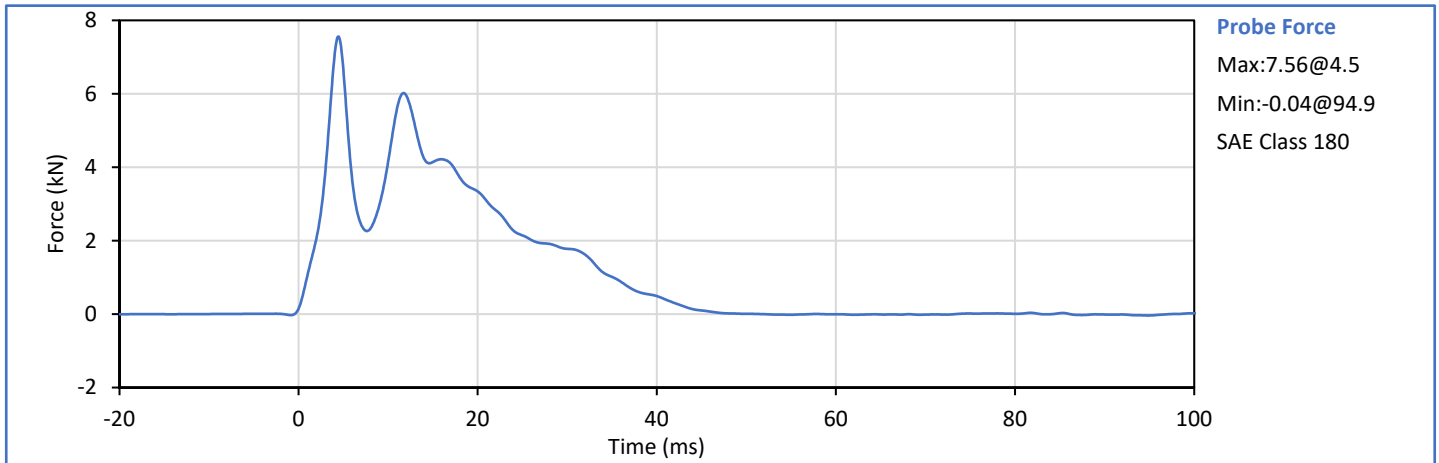
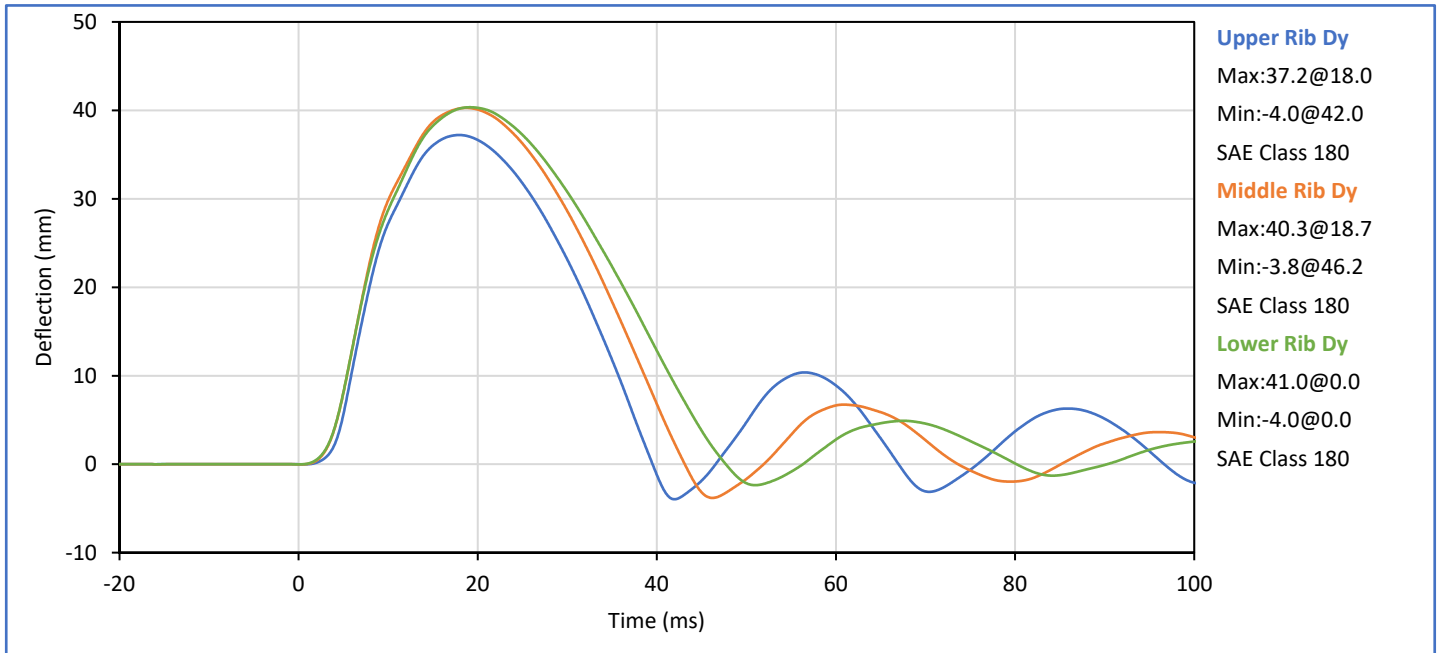
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	34	Pass
Lower Rib Dy @ 459mm	mm	36.0	40.0	38.3	Pass
Lower Rib Dy @ 815mm	mm	46.0	51.0	49.3	Pass
Overall Test Results					Pass





Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

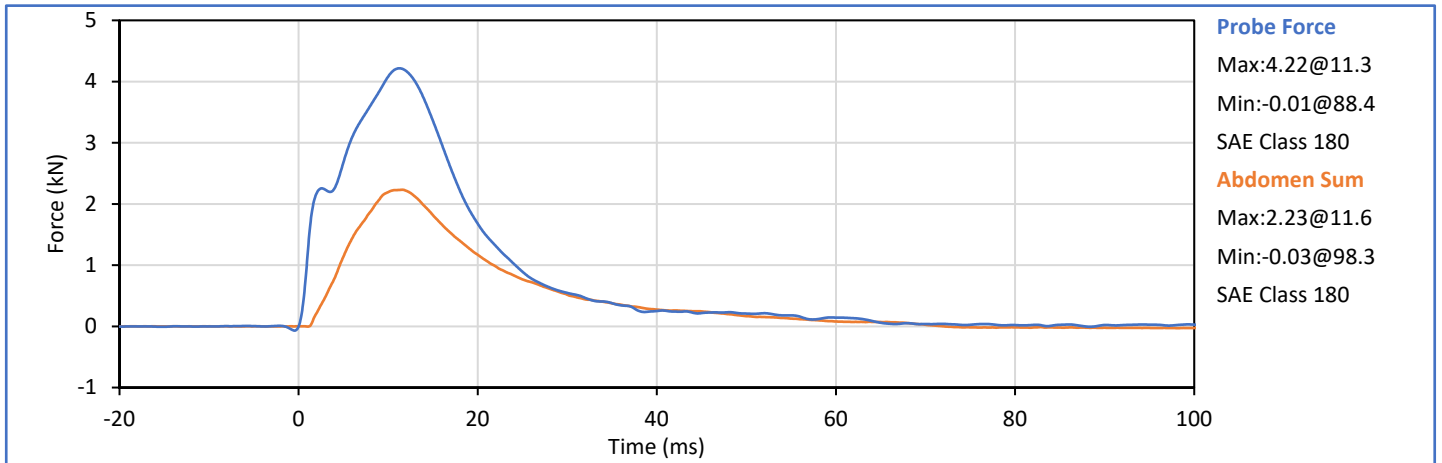
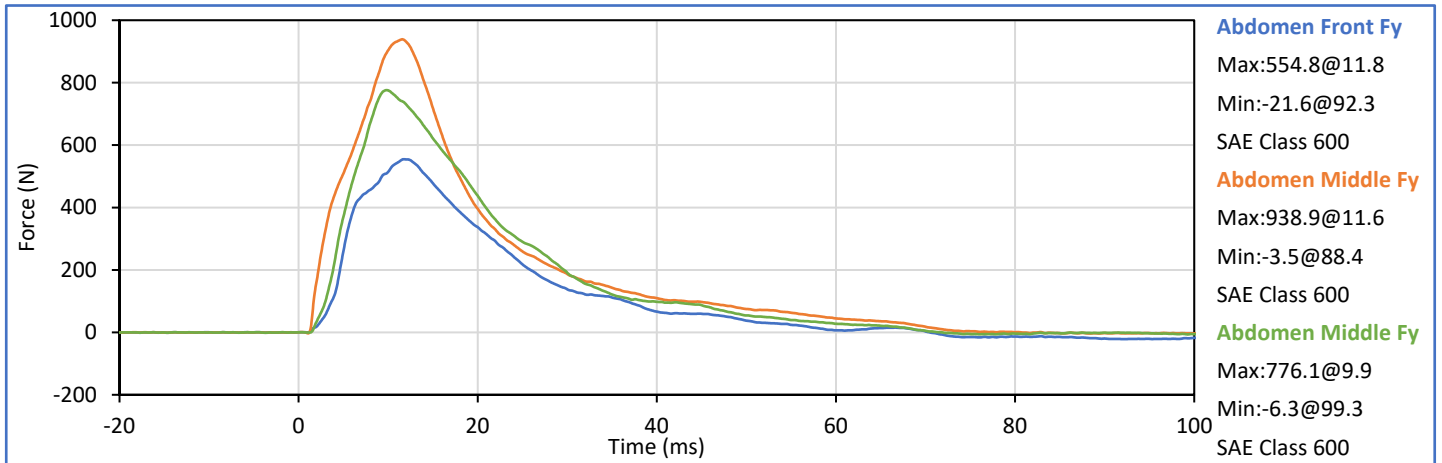
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	32	Pass
Impactor Velocity	m/s	5.40	5.60	5.52	Pass
Peak Upper Rib Dy	mm	34.0	41.0	37.2	Pass
Peak Middle Rib Dy	mm	37.0	45.0	40.3	Pass
Peak Lower Rib Dy	mm	37.0	44.0	40.4	Pass
Peak Impactor Force After 6 ms	kN	5.10	6.20	6.02	Pass
Overall Test Results					Pass

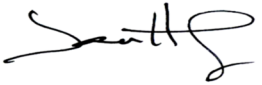



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

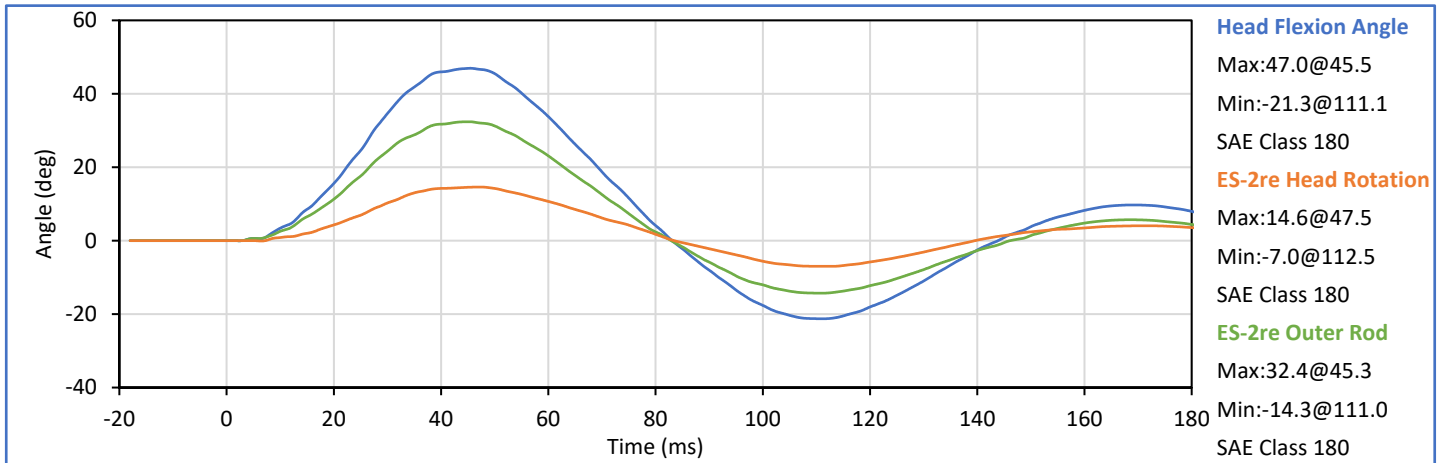
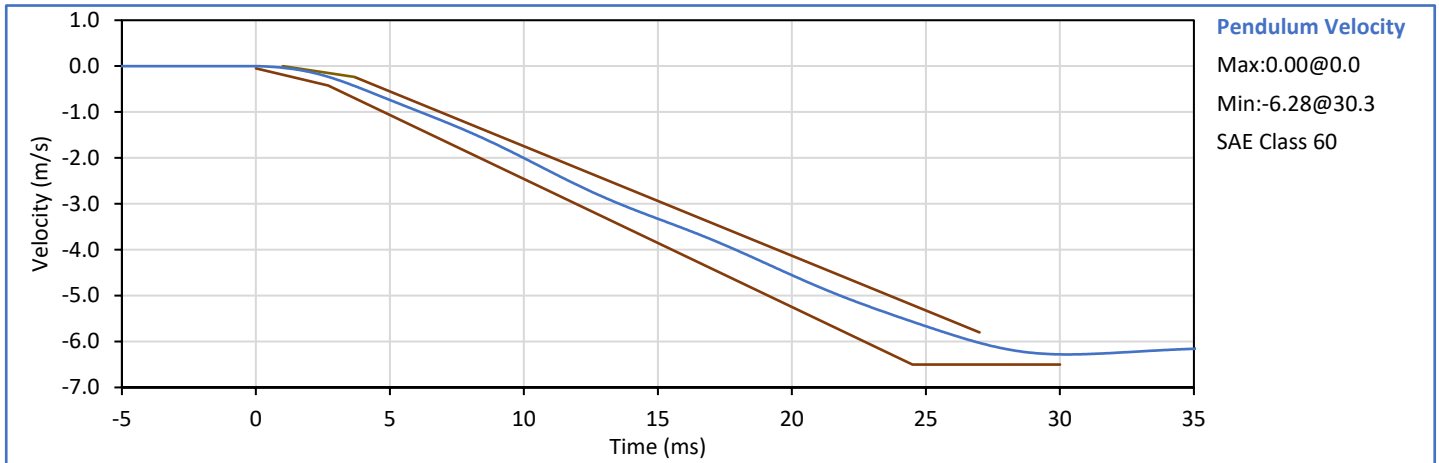
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	33	Pass
Impactor Velocity	m/s	3.90	4.10	4.01	Pass
Peak Impactor Force	kN	4.00	4.80	4.22	Pass
Time of Peak Impactor Force	ms	10.6	13.0	11.3	Pass
Sum of Abdomen Forces	kN	2.20	2.70	2.23	Pass
Time of Peak Sum Abdomen Force	ms	10.0	12.3	11.6	Pass
Overall Test Results					Pass





Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

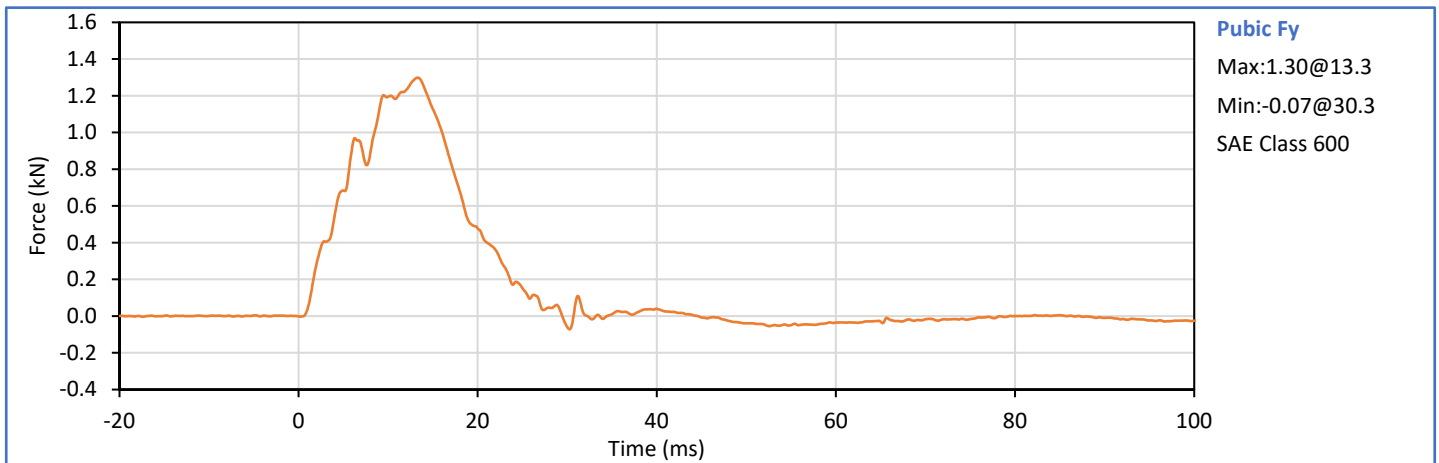
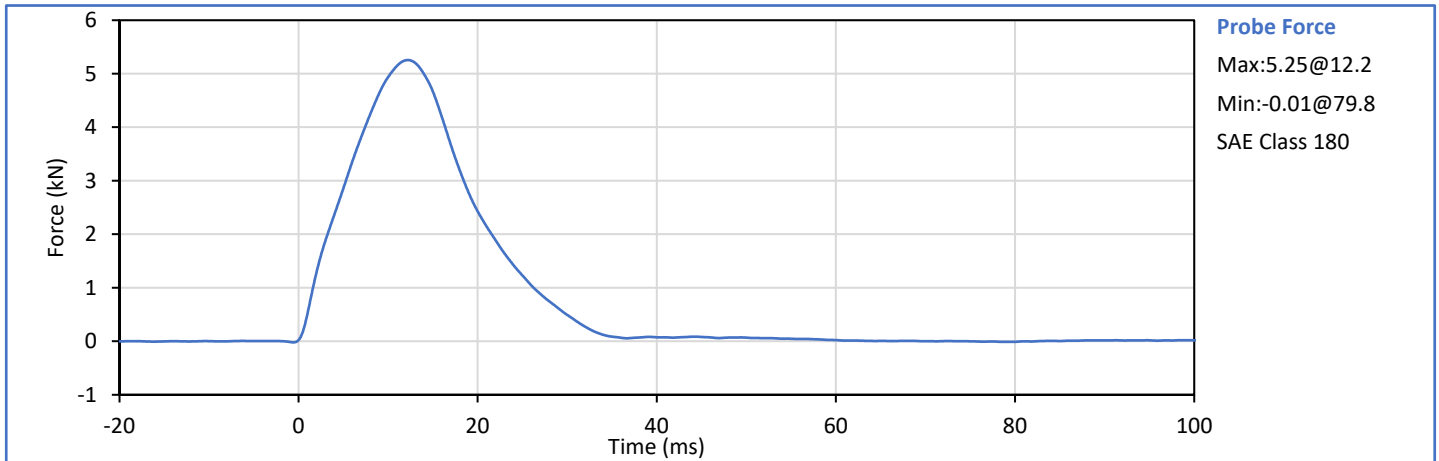
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	43	Pass
Pendulum Velocity	m/s	5.95	6.15	6.08	Pass
Peak Headform Flexion	deg	45.0	55.0	47.0	Pass
Time of Peak Headform Flexion	ms	39.0	53.0	45.5	Pass
Flexion Decay (Peak to zero)	ms	37.0	57.0	37.7	Pass
Overall Test Results					Pass

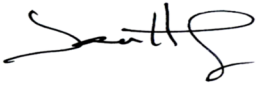



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

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	33	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Impactor Force	kN	4.70	5.40	5.25	Pass
Time of Peak Impactor Force	ms	11.8	16.1	12.2	Pass
Pubic Symphysis Fy	kN	1.23	1.59	1.30	Pass
Time of Peak Pubic Symphysis Fy	ms	12.2	17.0	13.3	Pass
Overall Test Results					Pass



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

APPENDIX C
Pre-Test ATD Qualification and Performance Verification
SID-IIs Small Side Impact ATD, Left Side Configuration
S/N: 308

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	781	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	150	Pass
E - Shoulder Pivot From Backline	mm	97	107	102	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	187	Pass
J - Head Circumference	mm	541	551	549	Pass
K - Buttock To Knee Length	mm	514	540	532	Pass
L - Popliteal Height	mm	343	369	357	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	201	Pass
P - Foot Length	mm	216	232	220	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	318	Pass
R - Arm Length	mm	249	259	255	Pass
S - Knee Joint To Seatback	mm	477	493	489	Pass
V - Shoulder Width	mm	341	357	350	Pass
W - Foot Width	mm	78	94	81	Pass
Y - Chest Circumference W/Jacket	mm	851	881	866	Pass
Z - Waist Circumference	mm	761	791	783	Pass
Overall Test Results					Pass

Technician: _____



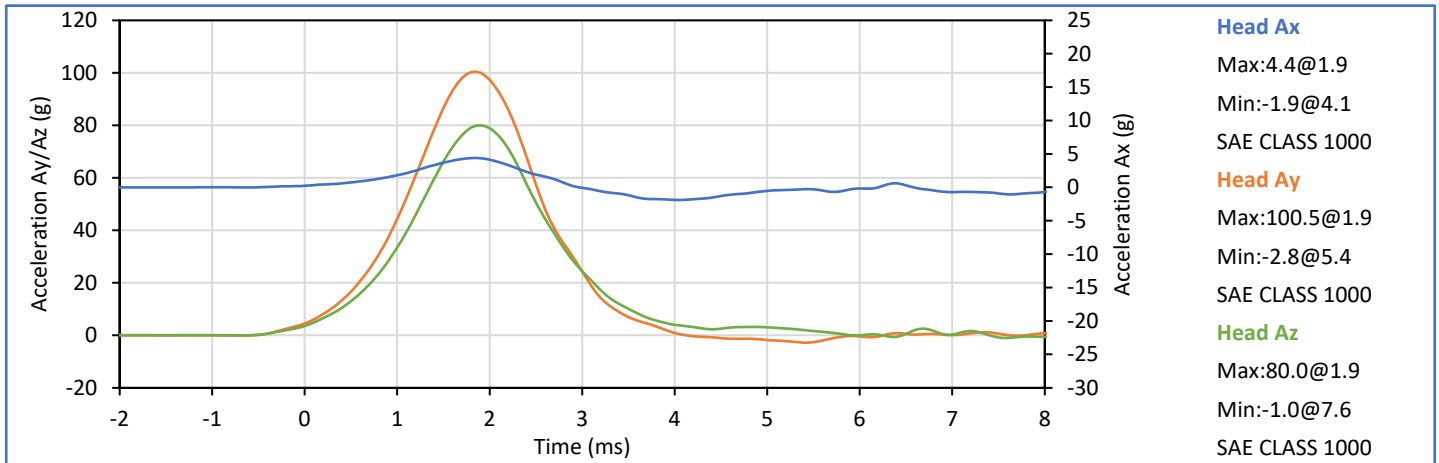
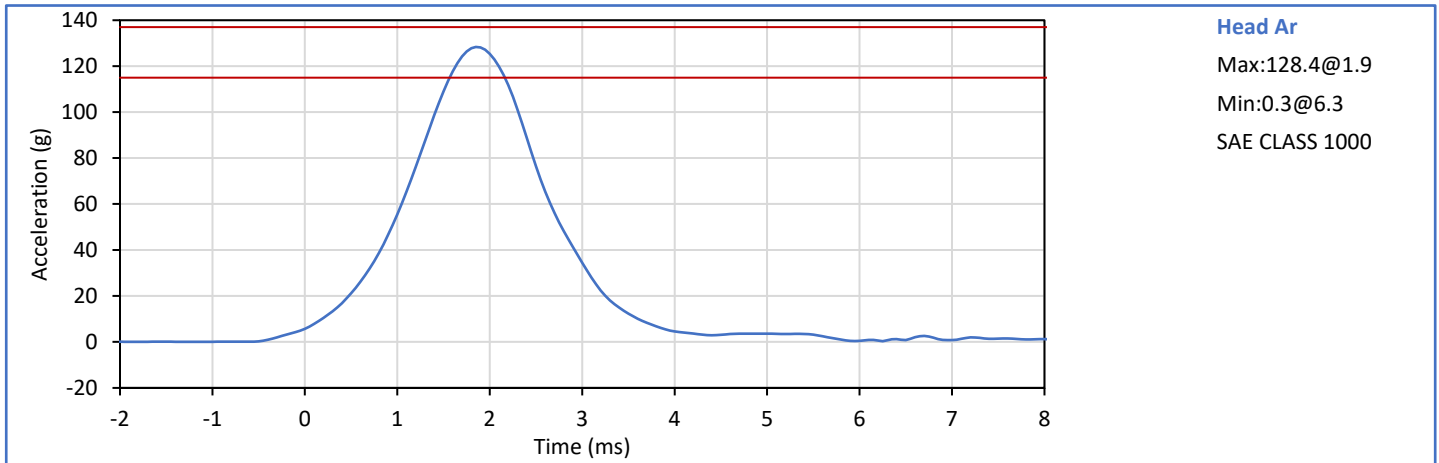
J. Hernandez


Approved By: _____




P. Puzzuto

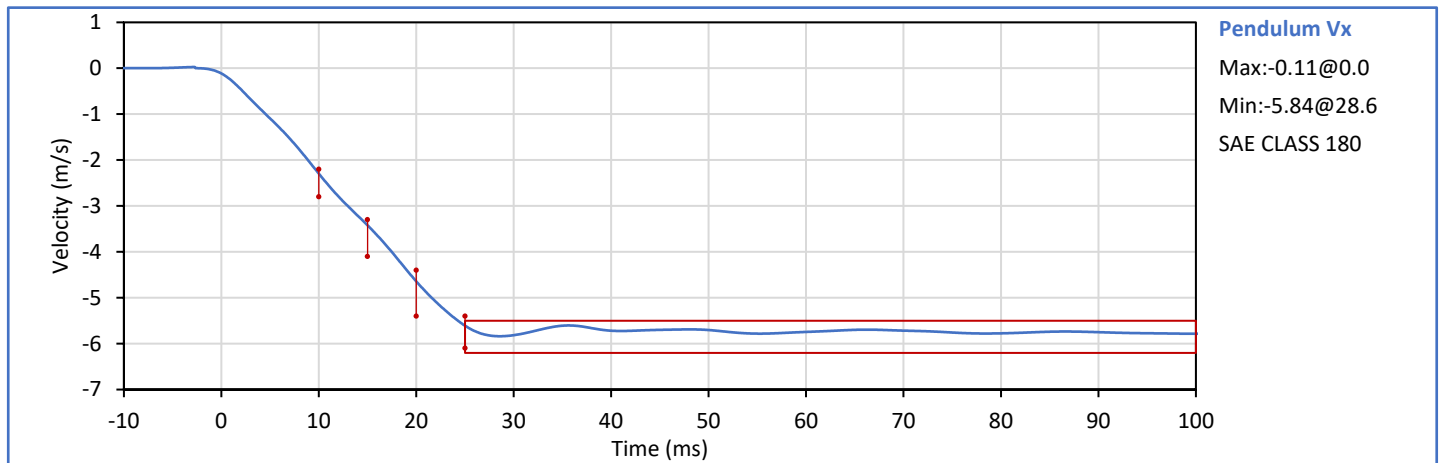
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.7	Pass
Laboratory Relative Humidity	%	10	70	43	Pass
Peak Resultant Acceleration	g	115.0	137.0	128.4	Pass
Peak Head Ax	g	-15.0	15.0	4.4	Pass
Oscillations After Main Pulse	%	0.0	15.0	2.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
Overall Test Results					Pass




Technician: 
J. Hernandez

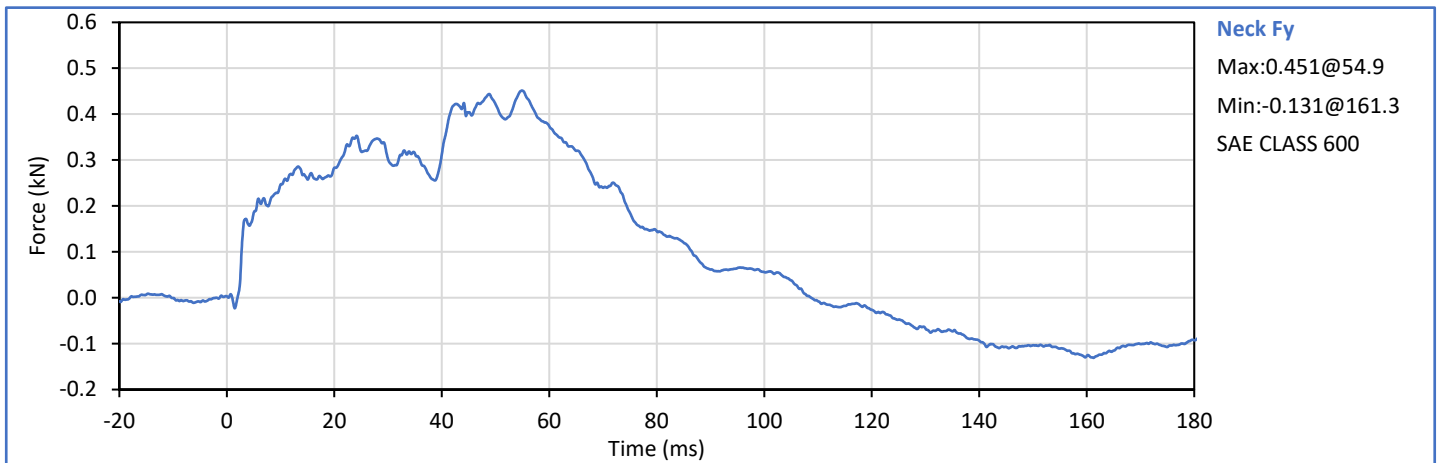
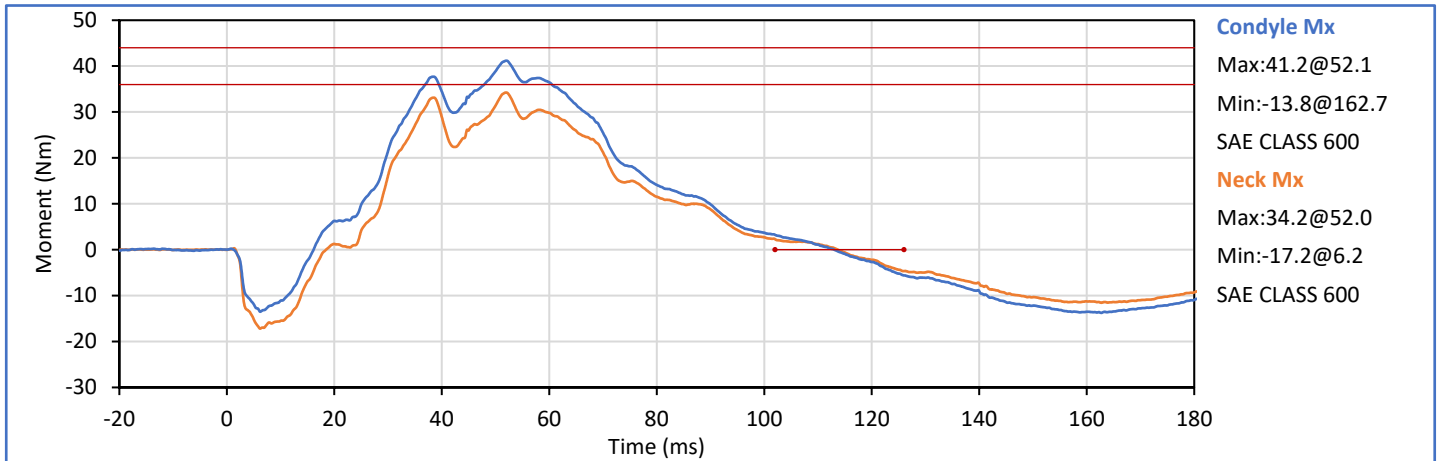
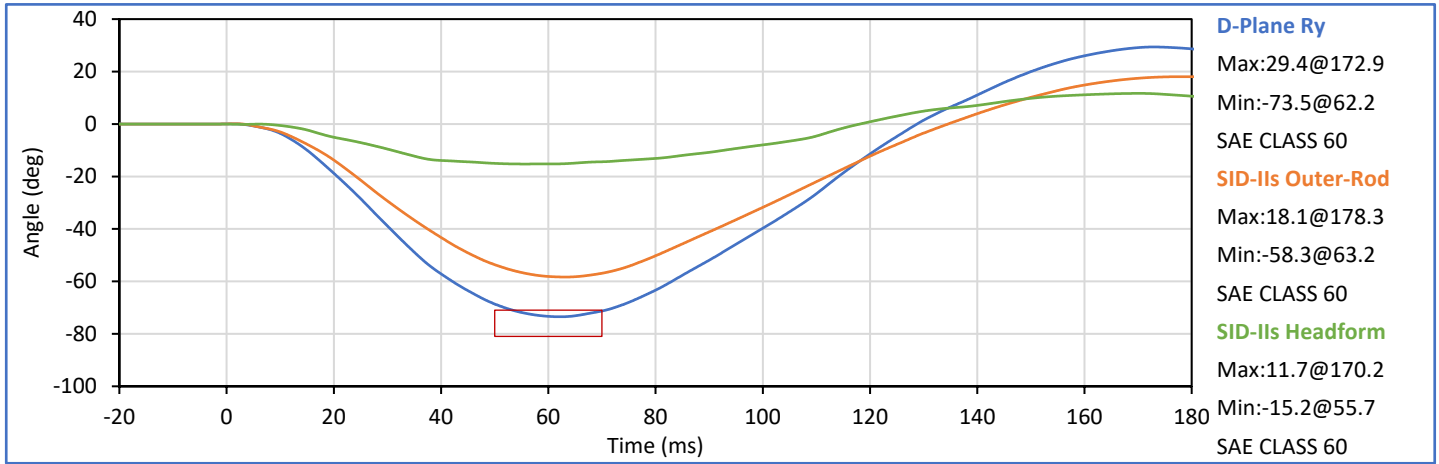
Approved By: 
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Pendulum Velocity	m/s	5.51	5.63	5.59	Pass
Pendulum Decel at 10 ms	m/s	-2.80	-2.20	-2.30	Pass
Pendulum Decel at 15 ms	m/s	-4.10	-3.30	-3.42	Pass
Pendulum Decel at 20 ms	m/s	-5.40	-4.40	-4.64	Pass
Pendulum Decel at 25 ms	m/s	-6.10	-5.40	-5.61	Pass
Pendulum Decel from 25-100 ms	m/s	-6.20	-5.50	-5.84/-5.61	Pass
Peak "D" Plane Rotation	deg	-81.0	-71.0	-73.5	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	62.2	Pass
Peak Occ. Condyle Moment	Nm	36.0	44.0	41.2	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	113.0	Pass
Overall Test Results					Pass

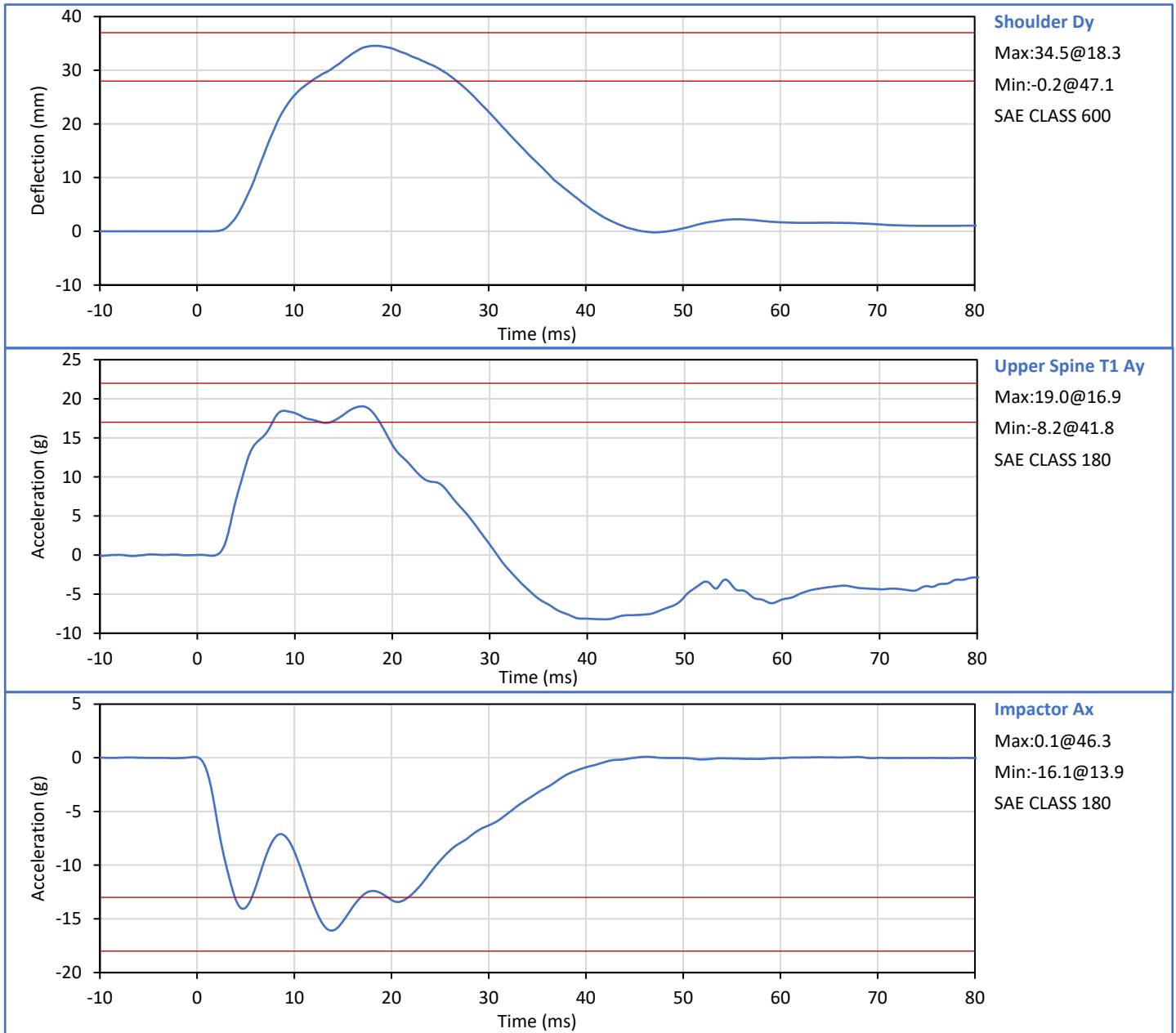


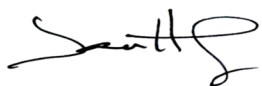
Technician: 
J. Hernandez


Approved By: 
P. Puzzuto



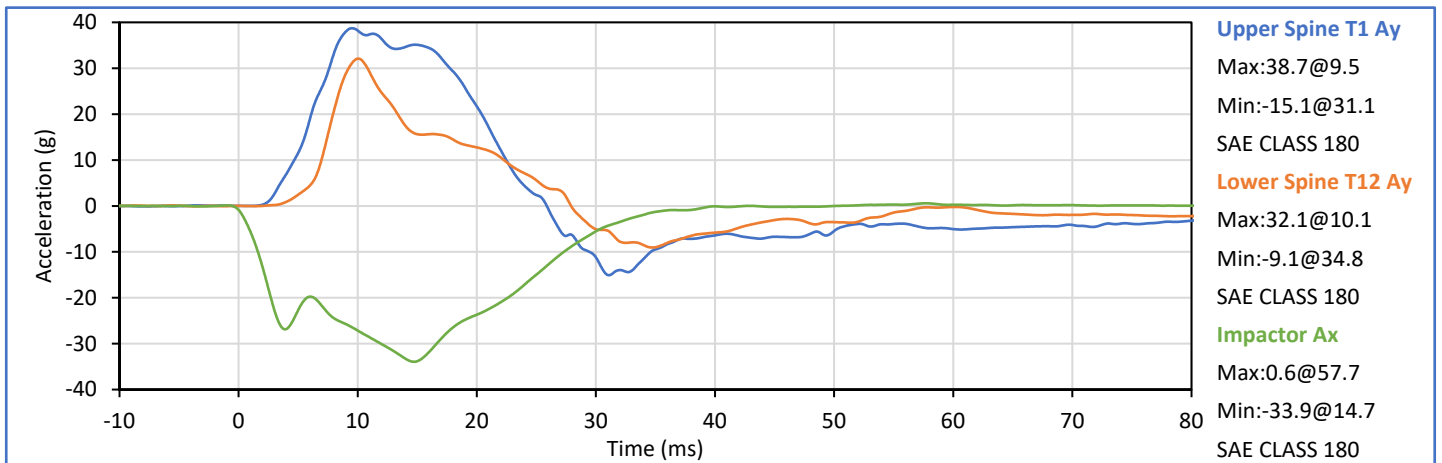
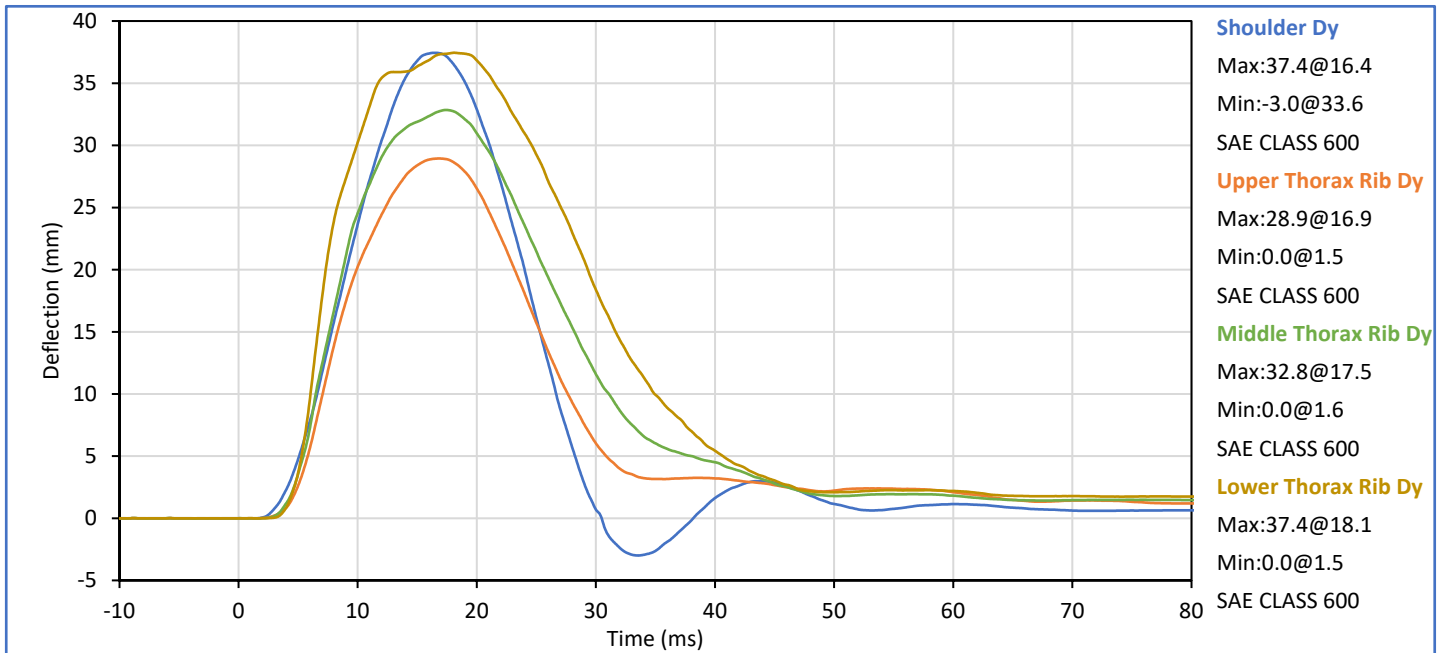
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	34	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Shoulder Dy	mm	28.0	37.0	34.5	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	19.0	Pass
Peak Impactor Ax	g	-18.0	-13.0	-16.1	Pass
Overall Test Results					Pass




Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

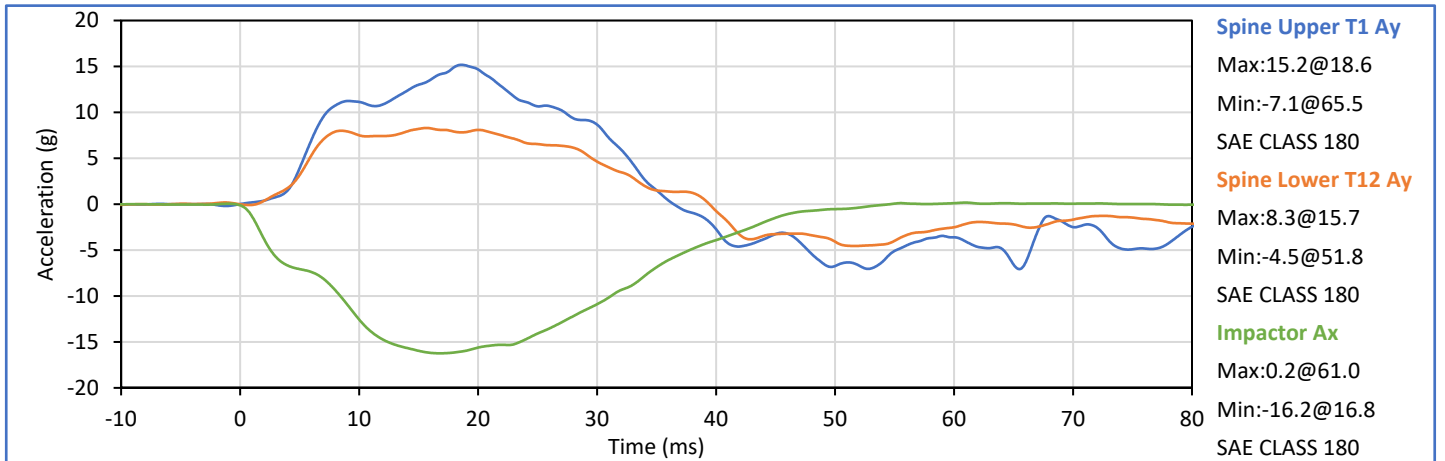
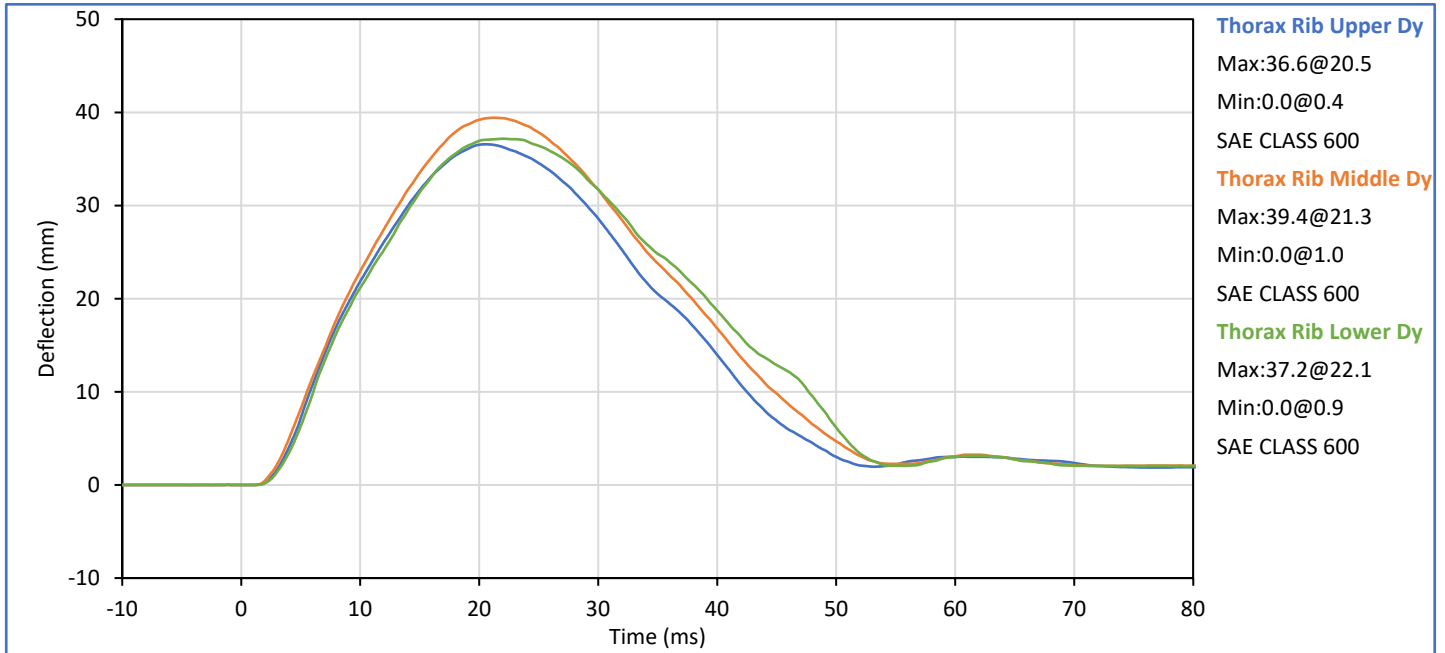
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	34	Pass
Impactor Velocity	m/s	6.60	6.80	6.71	Pass
Peak Shoulder Dy	mm	31.0	40.0	37.4	Pass
Peak Upper Rib Dy	mm	25.0	32.0	28.9	Pass
Peak Middle Rib Dy	mm	30.0	36.0	32.8	Pass
Peak Lower Rib Dy	mm	32.0	38.0	37.4	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	38.7	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	32.1	Pass
Peak Impactor Ax	g	-36.0	-30.0	-33.9	Pass
Overall Test Results					Pass




Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

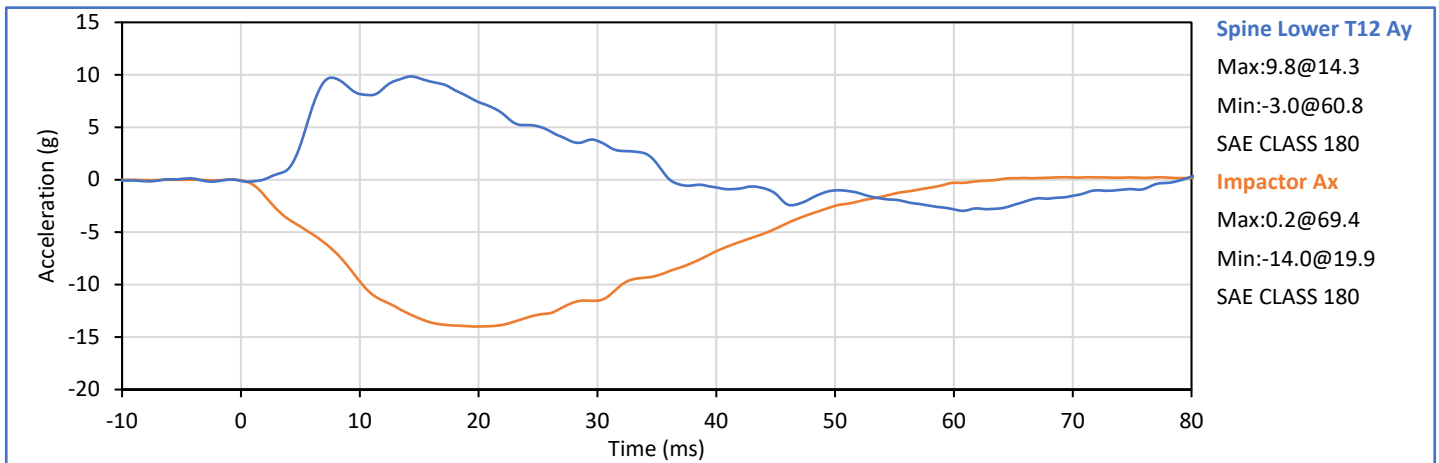
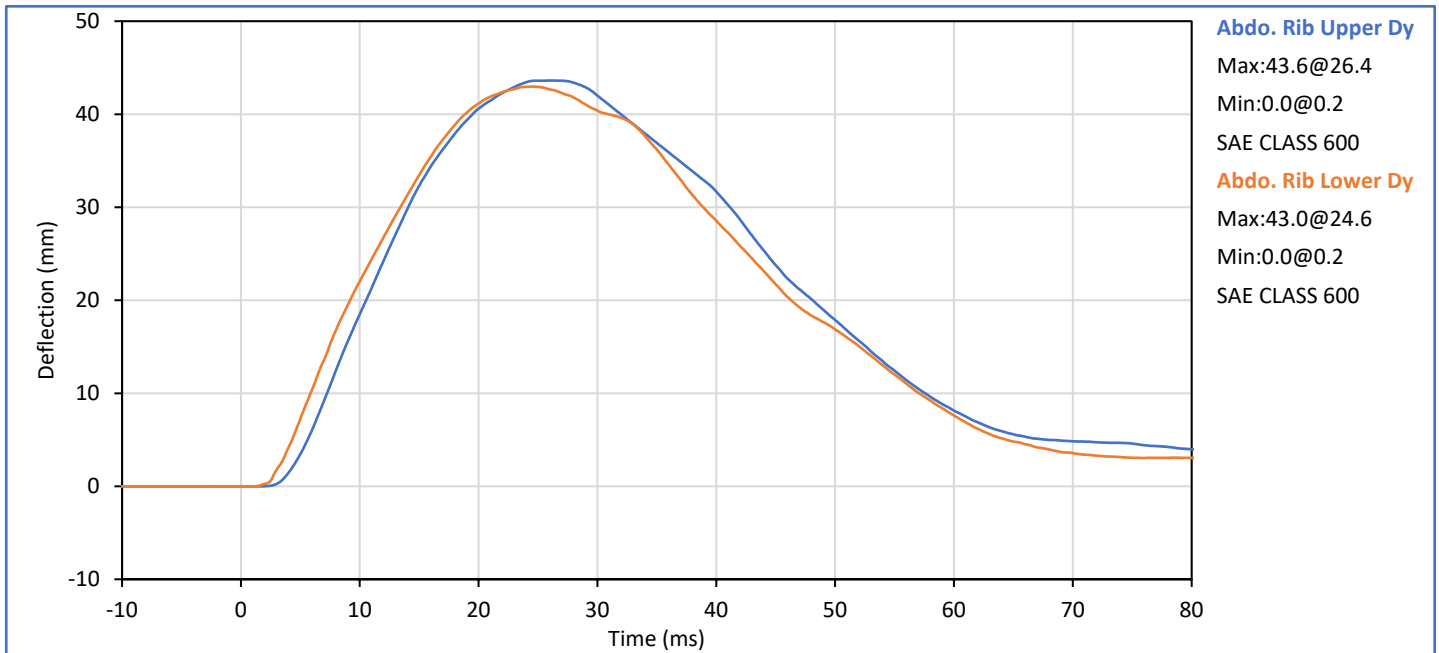
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	34	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Thorax Rib Upper Dy	mm	32.0	40.0	36.6	Pass
Peak Thorax Rib Middle Dy	mm	39.0	45.0	39.4	Pass
Peak Thorax Rib Lower Dy	mm	35.0	43.0	37.2	Pass
Peak Spine Upper T1 Ay	g	13.0	17.0	15.2	Pass
Peak Spine Lower T12 Ay	g	7.0	11.0	8.3	Pass
Peak Impactor Ax	g	-18.0	-14.0	-16.2	Pass
Overall Test Results					Pass




Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

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	34	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	43.6	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	43.0	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	9.8	Pass
Peak Impactor Ax	g	-16.0	-12.0	-14.0	Pass
Overall Test Results					Pass

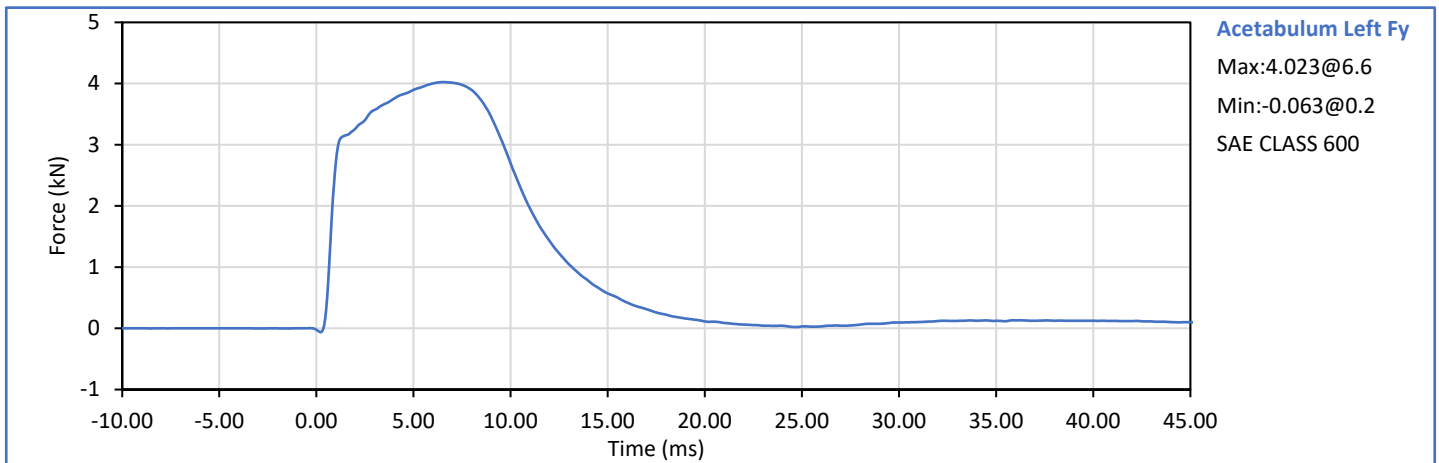
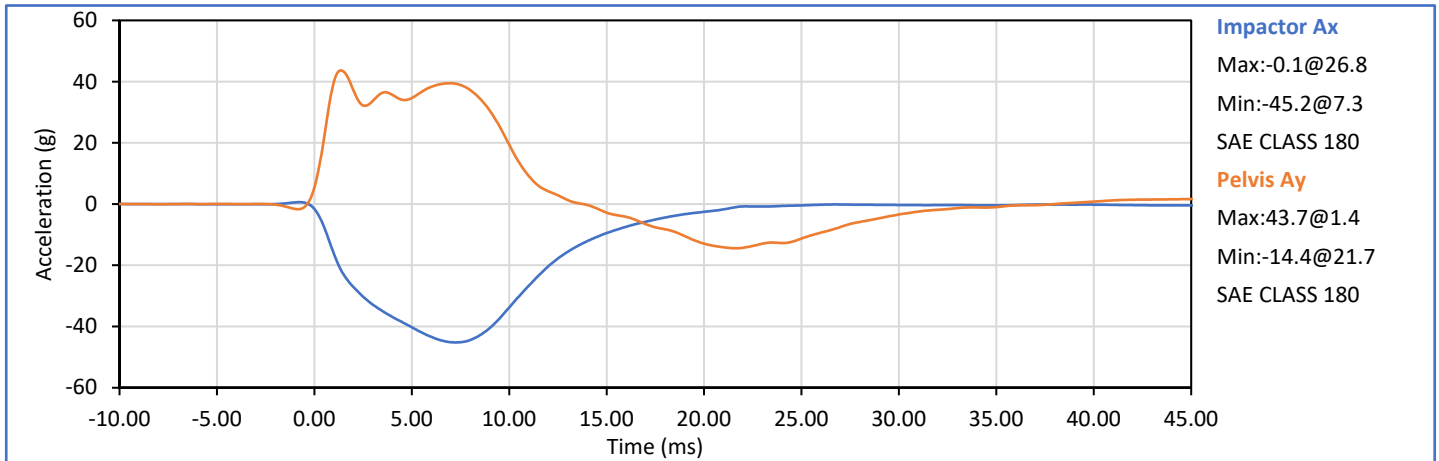


Technician: 
J. Hernandez


Approved By: 
P. Puzzuto

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	33	Pass
Impactor Velocity	m/s	6.60	6.80	6.72	Pass
Peak Acetabulum Fy	kN	3.60	4.30	4.02	Pass
Pelvis Ay after 6ms	g	34.0	42.0	39.5	Pass
Peak Impactor Ax	g	-47.0	-38.0	-45.2	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 13037



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto



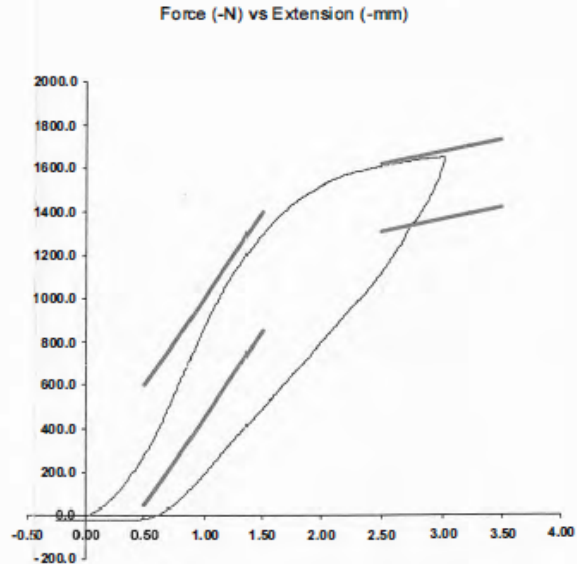
SID-IIs Pelvis Plug Certification Test

Plug S/N 13037
Test Number 10357
Report Number 10392
Test Date 7/30/2019 1:10:39 PM

	Test Results	Spec.Min	Spec.Max
Force @ 0.5 mm (N)	284.04	50.00	600.00
Force @ 1.5 mm (N)	1,301.74	850.00	1,400.00
Force @ 2.5 mm (N)	1,611.94	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,652.11	1,361.00	1,673.00

Testing Machine STM-20 5965642
Load Cell S/N (F1360847), Units (LBS) 1000
Crosshead Speed (mm / min) or Rate 12.7
Extension or Position Measured by XHD_100 (XHD100)

Notes:



Operator

Part Number 180-4450

Template No 107 30-Jul-19
SACO Research

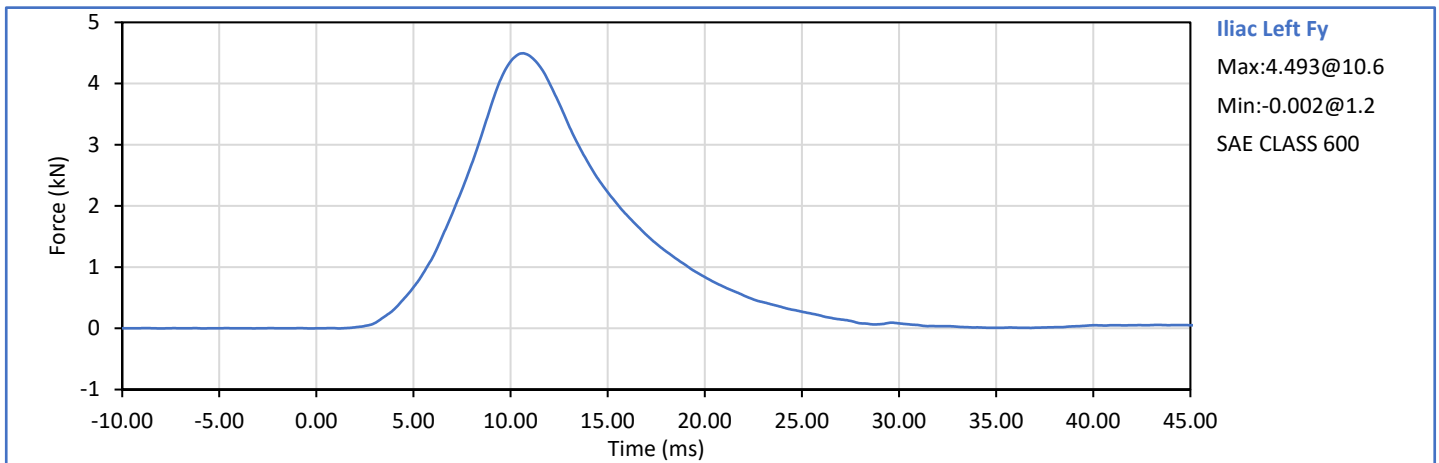
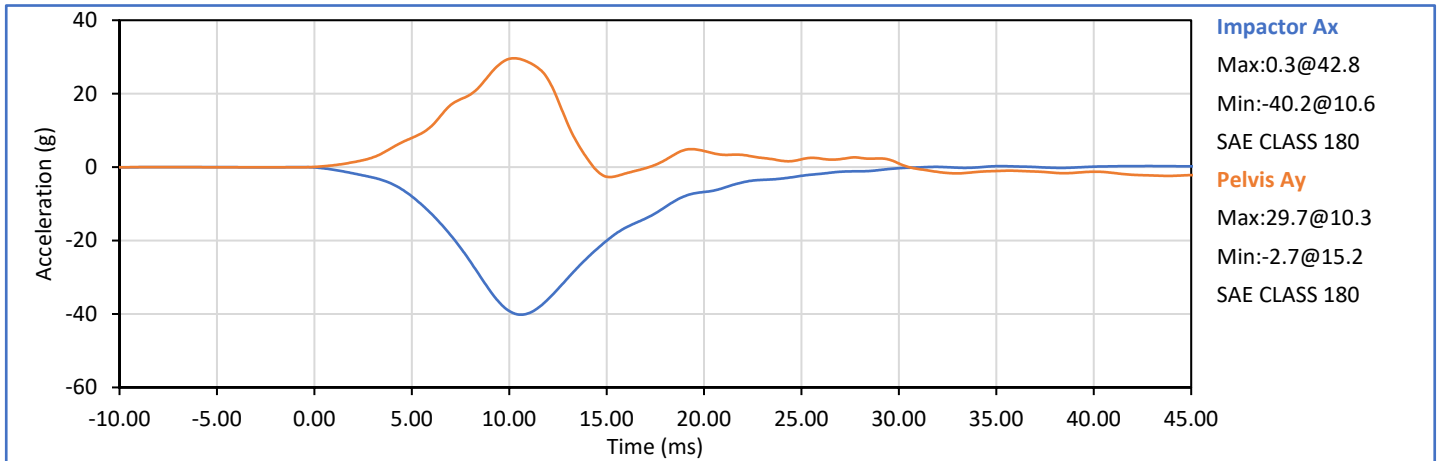
By: DC Date: 7/30/2019

SACO Research 41735 Elm St, #401 Murrieta, CA 92562 Tel 310-894-2082 FAX


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	33	Pass
Impactor Velocity	m/s	4.20	4.40	4.34	Pass
Peak Iliac Fy	kN	4.10	5.10	4.69	Pass
Peak Pelvis Ay	g	28.0	39.0	34.7	Pass
Peak Impactor Ax	g	-45.0	-36.0	-40.2	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 12228 *

* Plug is not impacted and remains certified



Technician: 
J. Hernandez

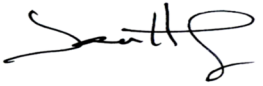
Approved By: 
P. Puzzuto


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

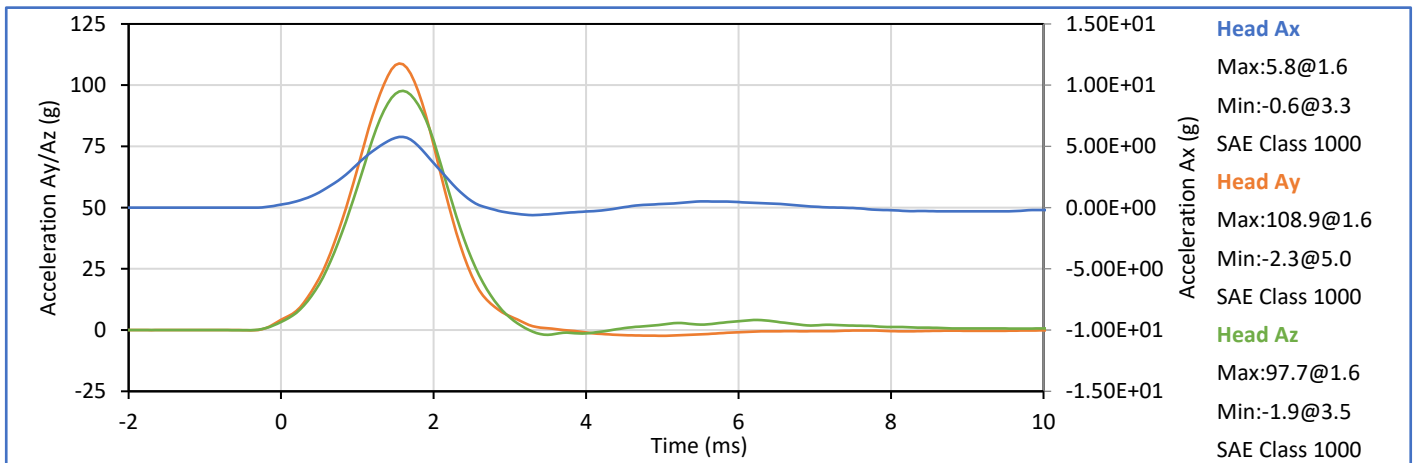
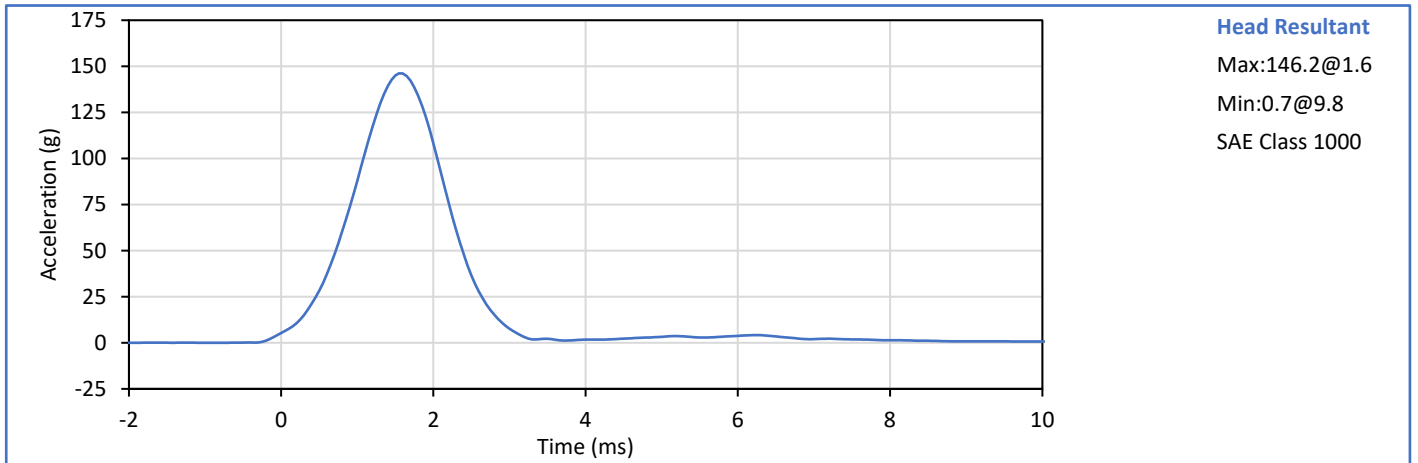
Test Date: 2021-07-07

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
1 - Sitting Height	mm	900	918	913	Pass
2 - Seat to Shoulder Joint	mm	558	572	570	Pass
3 - Seat to Lower Face of Thoracic Spine Box	mm	346	356	352	Pass
4 - Seat to Hip Joint (bolt center)	mm	97	103	101	Pass
5 - Sole to Seat, Sitting	mm	433	451	445	Pass
6 - Head Width	mm	152	158	156	Pass
7 - Shoulder/Arm Width	mm	461	479	470	Pass
8 - Thorax Width	mm	322	332	331	Pass
9 - Abdomen Width	mm	273	287	283	Pass
10 - Pelvis Lap Width	mm	359	373	368	Pass
11 - Head Depth	mm	196	206	198	Pass
12 - Thorax Depth	mm	262	272	265	Pass
13 - Abdomen Depth	mm	194	204	202	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	605	Pass
				Overall Test Results	Pass


Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

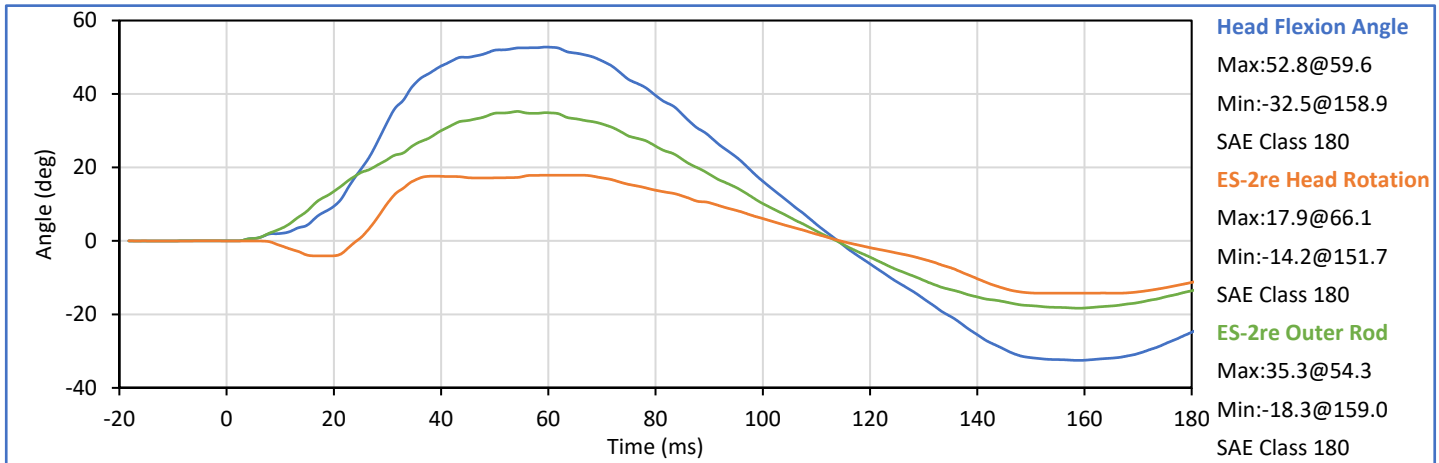
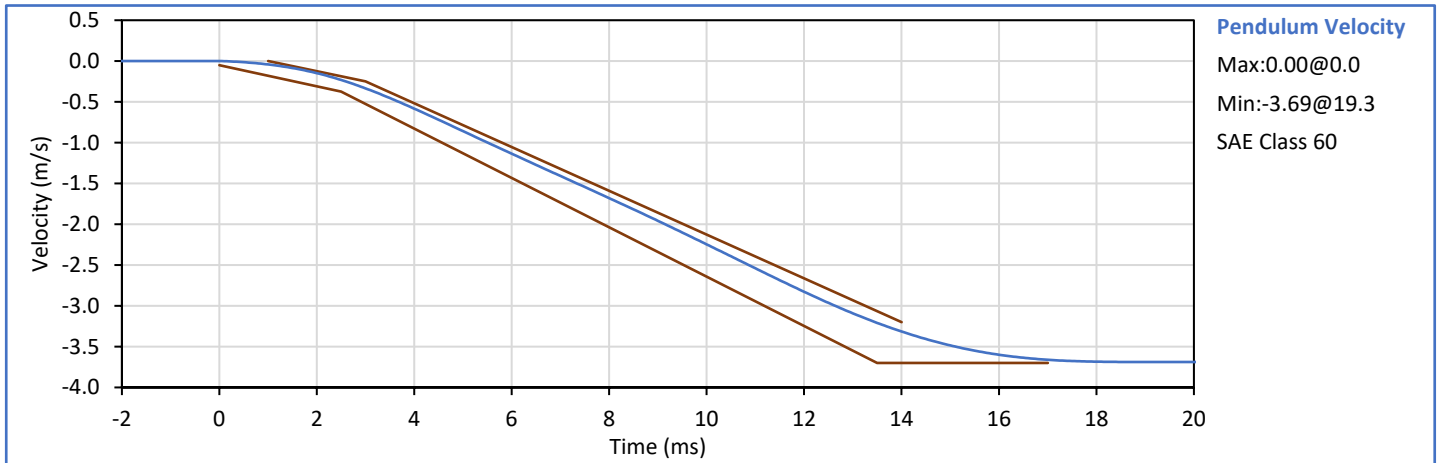
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.7	Pass
Laboratory Relative Humidity	%	10	70	45	Pass
Peak Resultant Acceleration	g	125.0	155.0	146.2	Pass
Peak Head Ax	g	-15.0	15.0	5.8	Pass
Oscillations After Main Pulse	%	0.0	15.0	2.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
Overall Test Results					Pass

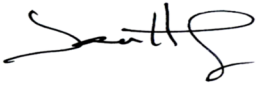



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

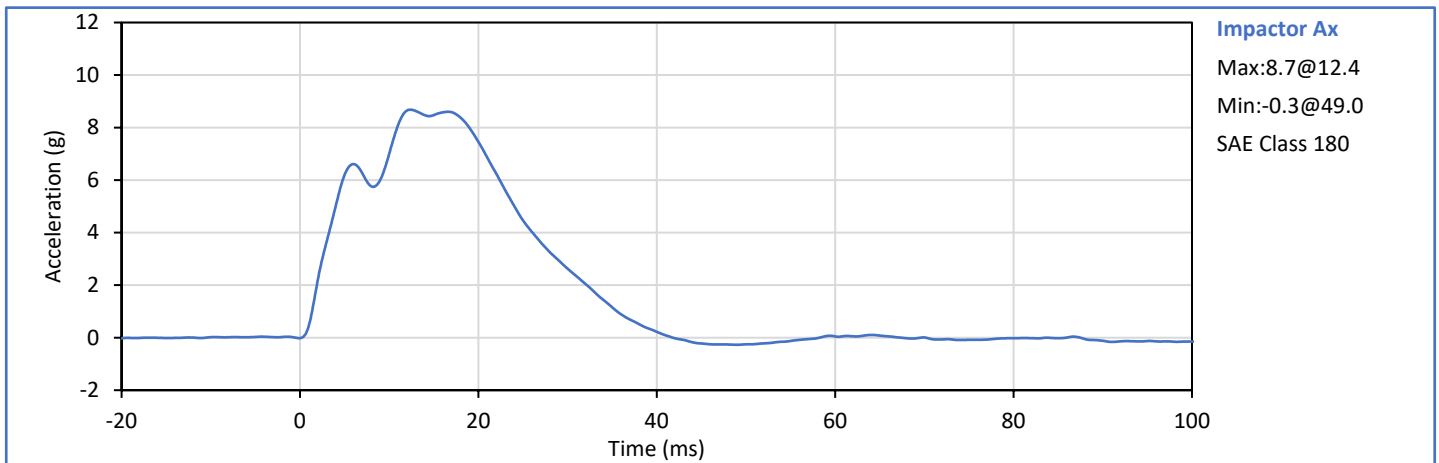
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	45	Pass
Pendulum Velocity	m/s	3.30	3.50	3.46	Pass
Peak Headform Flexion	deg	49.0	59.0	52.8	Pass
Time of Peak Headform Flexion	ms	54.0	66.0	59.6	Pass
Flexion Decay (Peak to zero)	ms	53.0	88.0	54.4	Pass
Overall Test Results					Pass



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

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	39	Pass
Impactor Velocity	m/s	4.20	4.40	4.35	Pass
Peak Impactor Ax	g	7.5	10.5	8.7	Pass
Overall Test Results					Pass



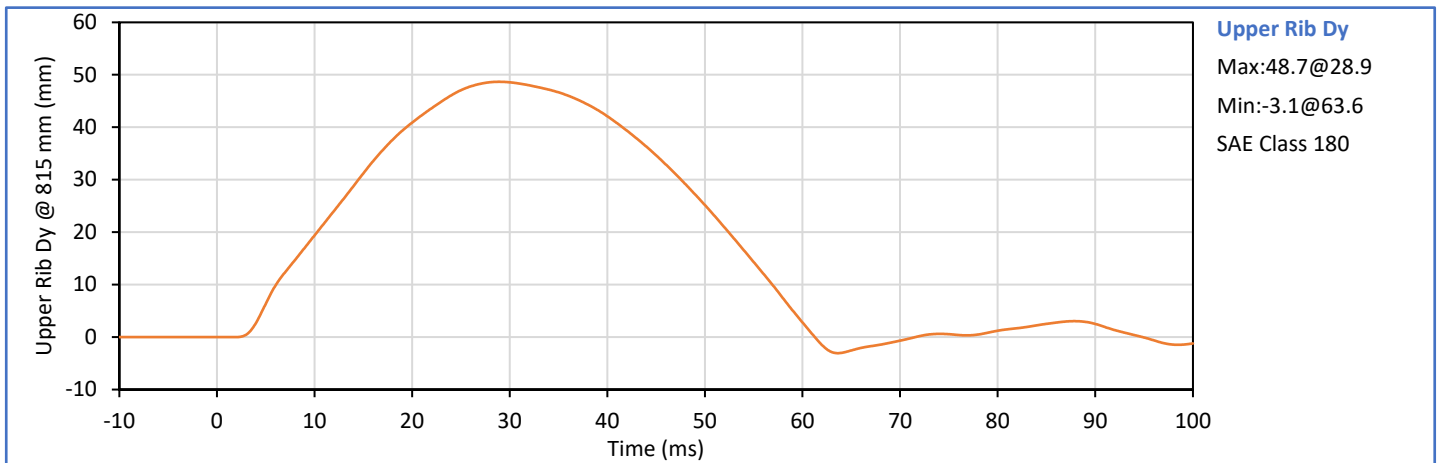
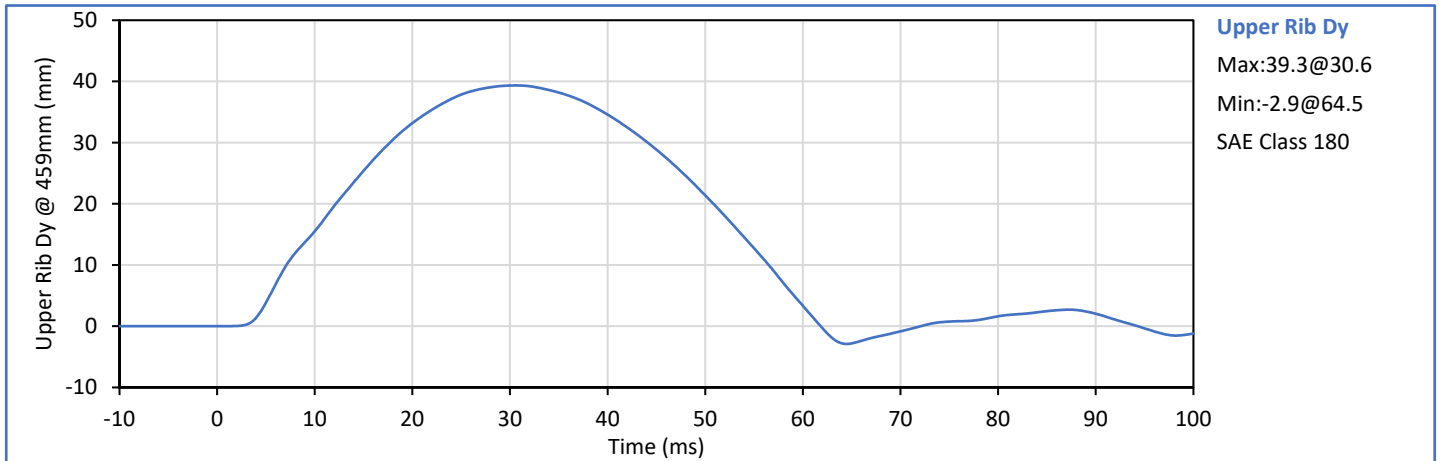
Technician: *J. Hernandez*
J. Hernandez

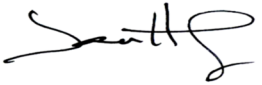
Approved By: *P. Puzzuto*
P. Puzzuto


ATD Serial No.: F037

Test Date: 2021-07-08

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	40	Pass
Upper Rib Dy @ 459mm	mm	36.0	40.0	39.3	Pass
Upper Rib Dy @ 815mm	mm	46.0	51.0	48.7	Pass
Overall Test Results					Pass



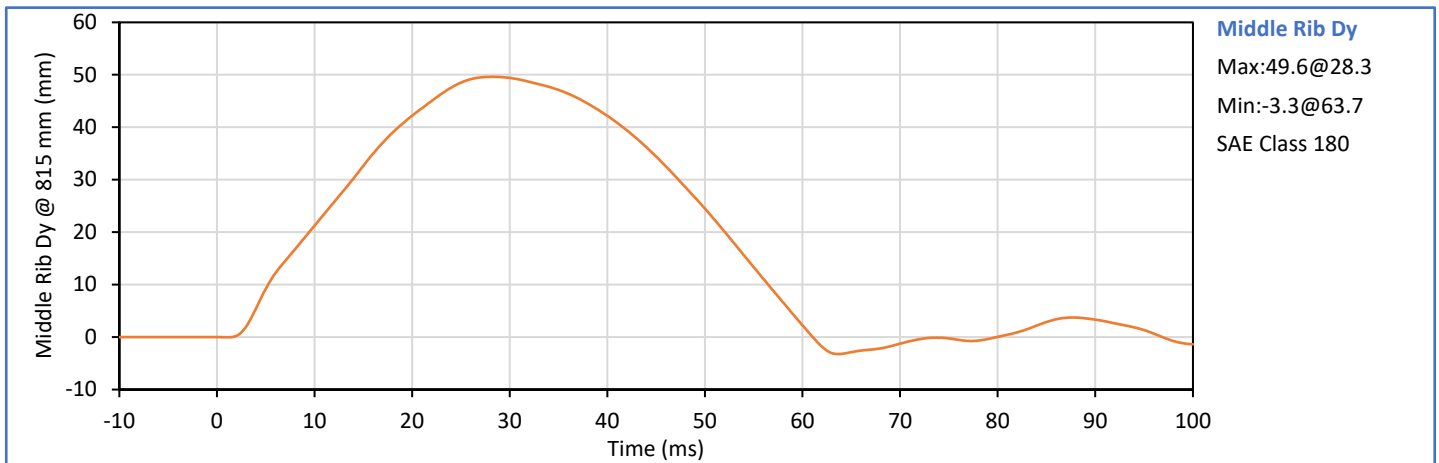
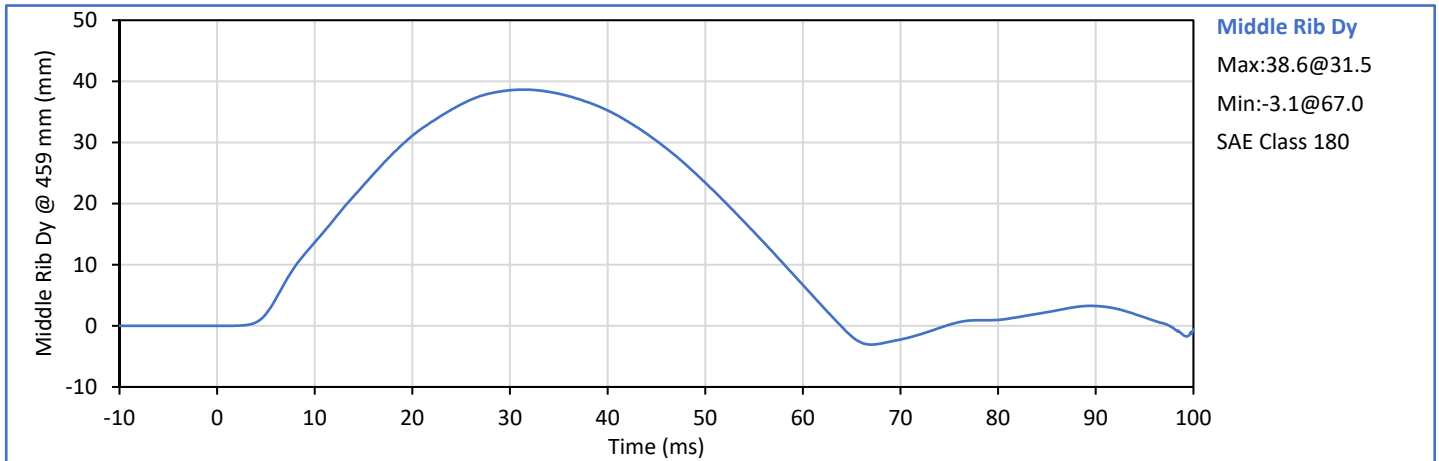
Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

ATD Serial No.: F037

Test Date: 2021-07-08

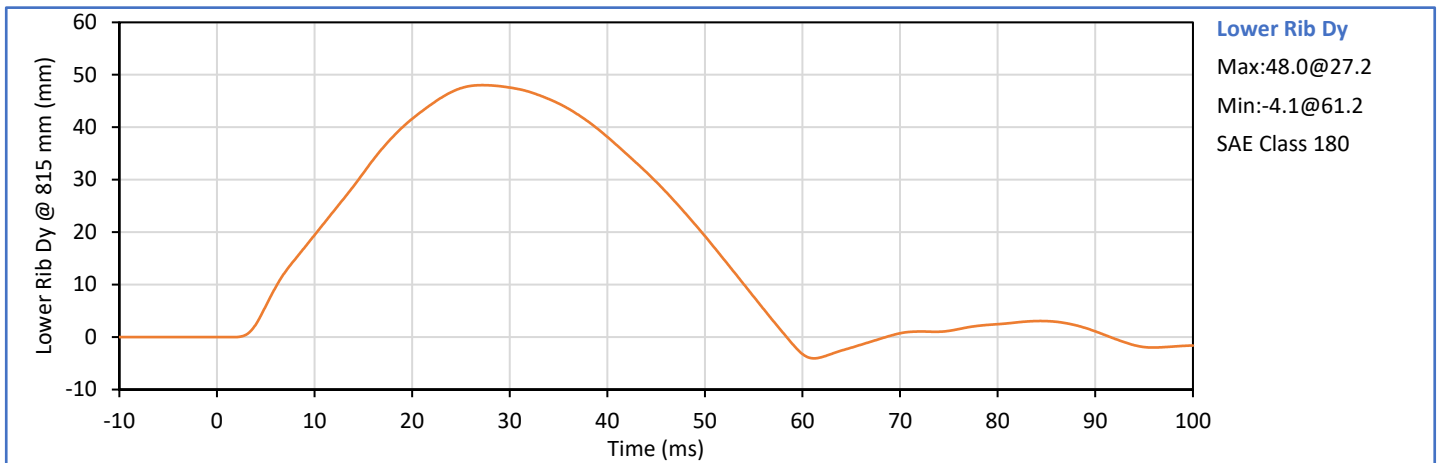
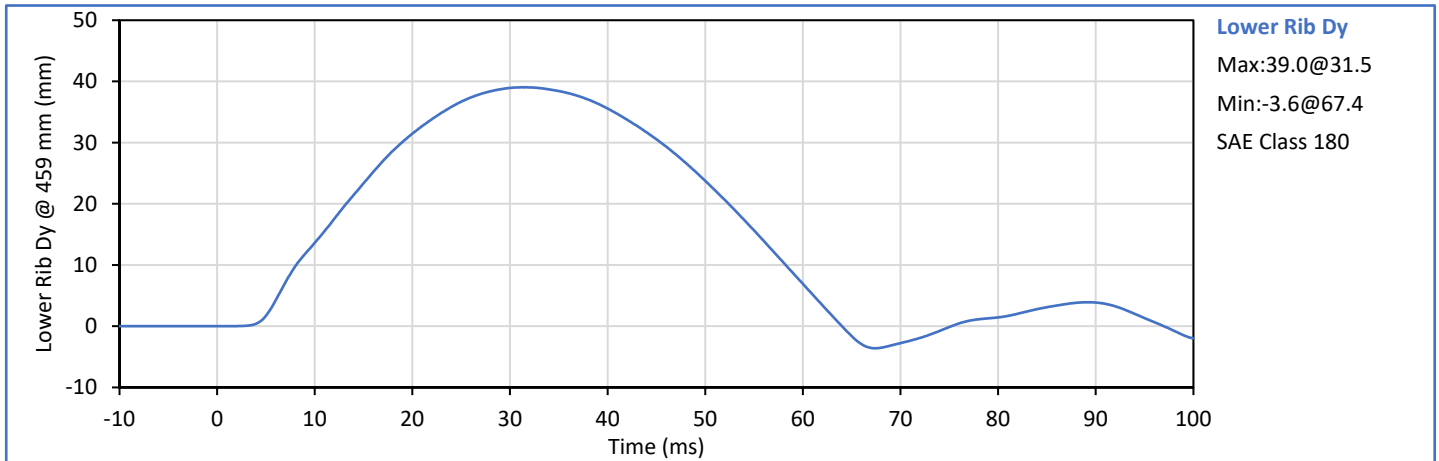
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	42	Pass
Middle Rib Dy @ 459mm	mm	36.0	40.0	38.6	Pass
Middle Rib Dy @ 815mm	mm	46.0	51.0	49.6	Pass
Overall Test Results					Pass

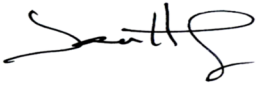



Technician: *J. Hernandez*
J. Hernandez

Approved By: *P. Puzzuto*
P. Puzzuto

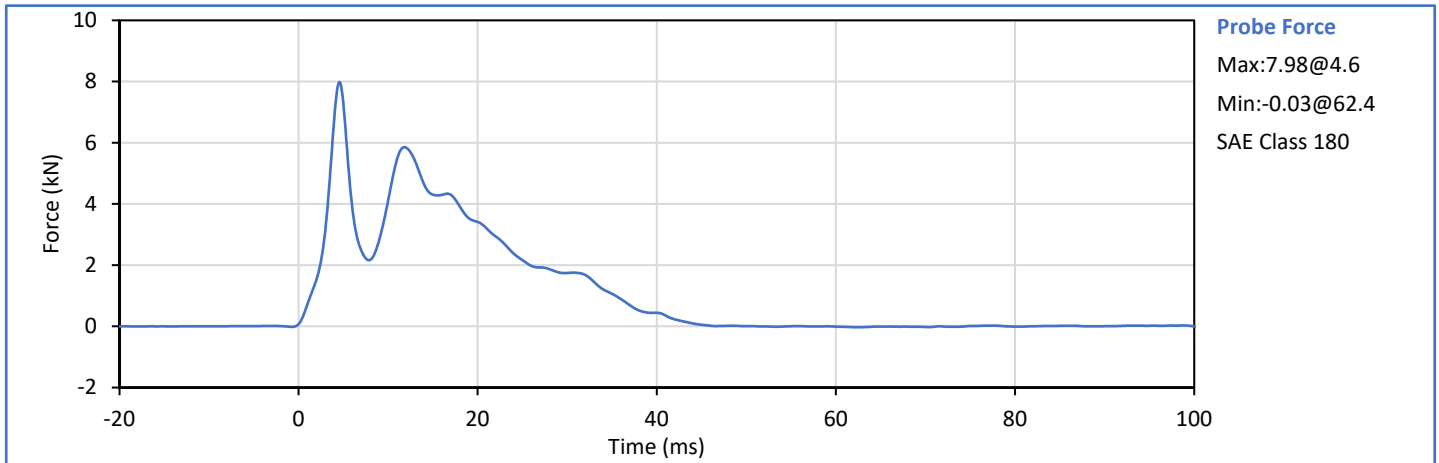
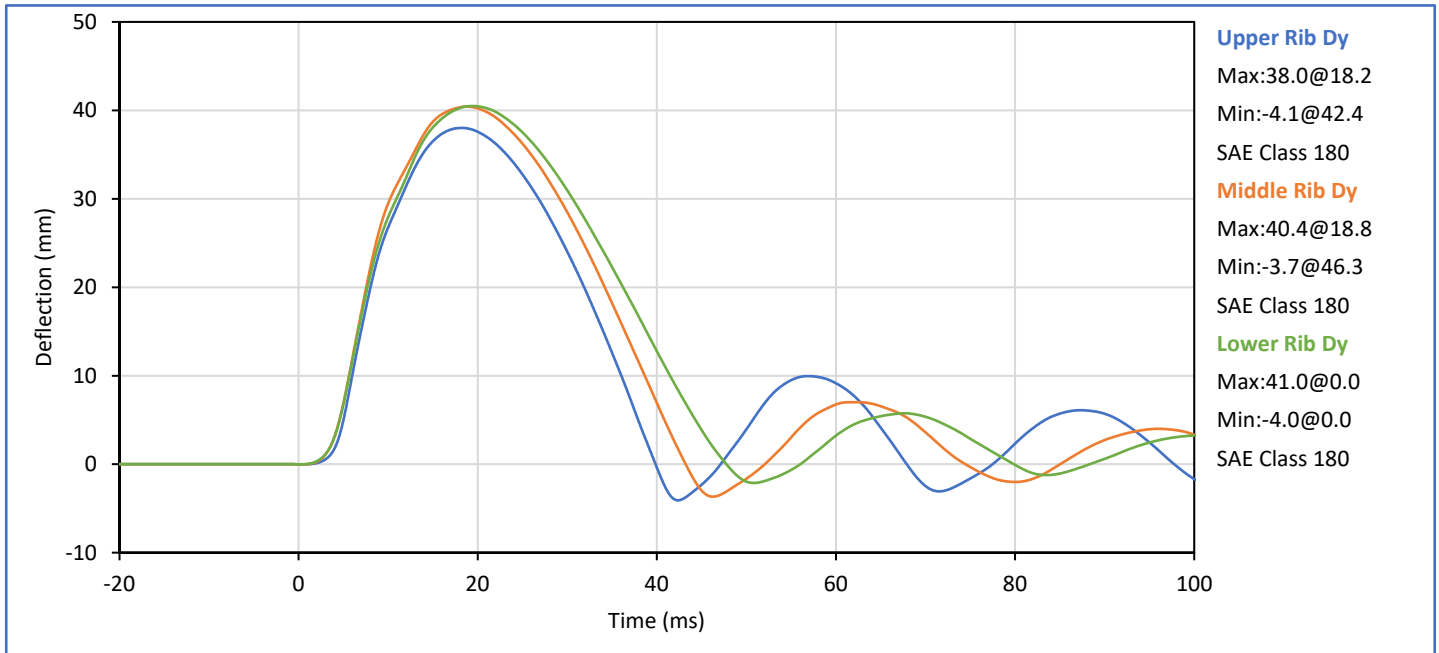
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	44	Pass
Lower Rib Dy @ 459mm	mm	36.0	40.0	39.0	Pass
Lower Rib Dy @ 815mm	mm	46.0	51.0	48.0	Pass
Overall Test Results					Pass

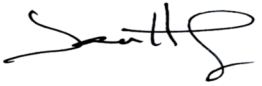



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

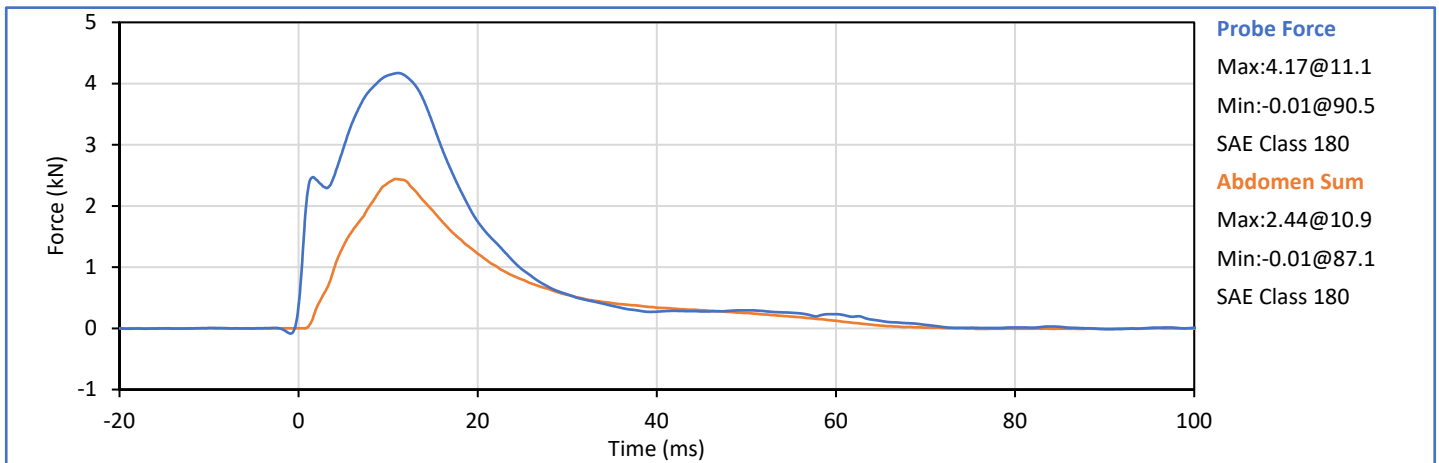
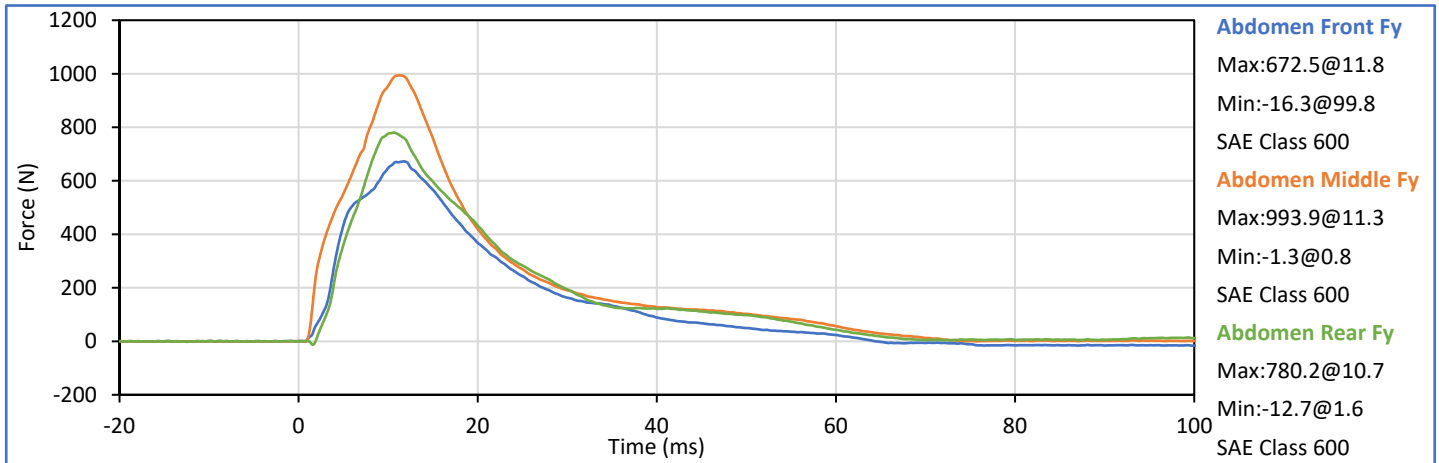
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	39	Pass
Impactor Velocity	m/s	5.40	5.60	5.51	Pass
Peak Upper Rib Dy	mm	34.0	41.0	38.0	Pass
Peak Middle Rib Dy	mm	37.0	45.0	40.4	Pass
Peak Lower Rib Dy	mm	37.0	44.0	40.5	Pass
Peak Impactor Force After 6 ms	kN	5.10	6.20	5.85	Pass
Overall Test Results					Pass




Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

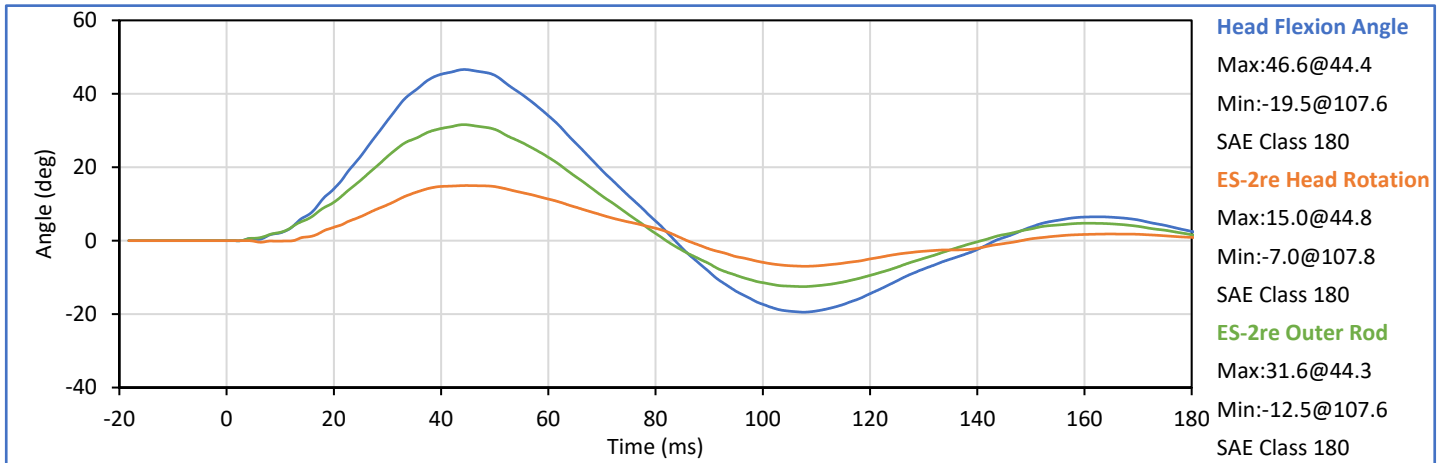
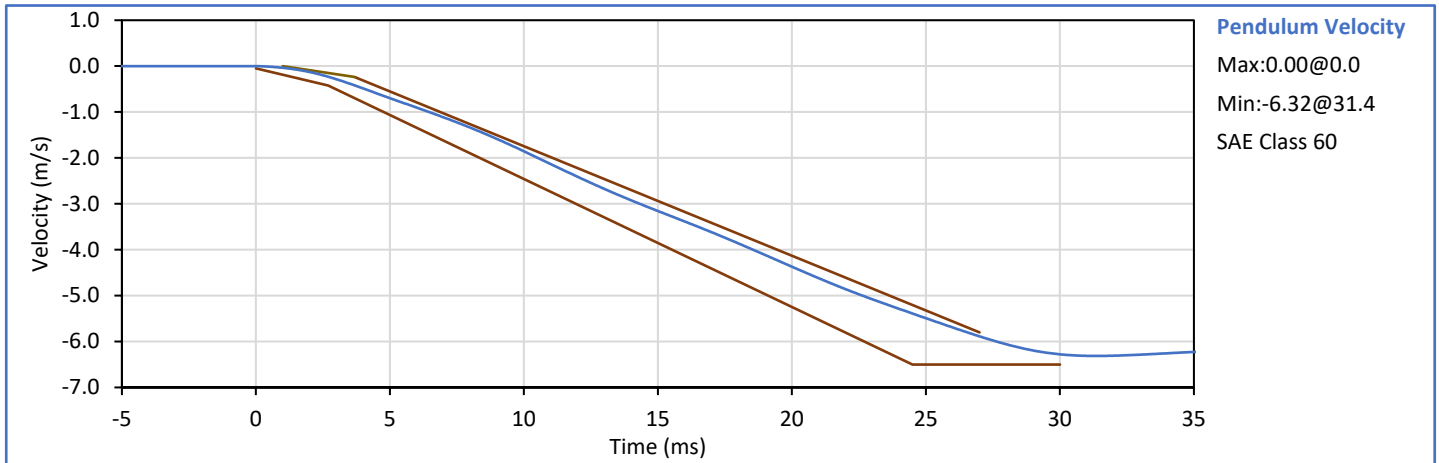
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	39	Pass
Impactor Velocity	m/s	3.90	4.10	4.03	Pass
Peak Impactor Force	kN	4.00	4.80	4.17	Pass
Time of Peak Impactor Force	ms	10.6	13.0	11.1	Pass
Sum of Abdomen Forces	kN	2.20	2.70	2.44	Pass
Time of Peak Sum Abdomen Force	ms	10.0	12.3	10.9	Pass
Overall Test Results					Pass

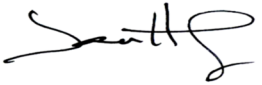



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

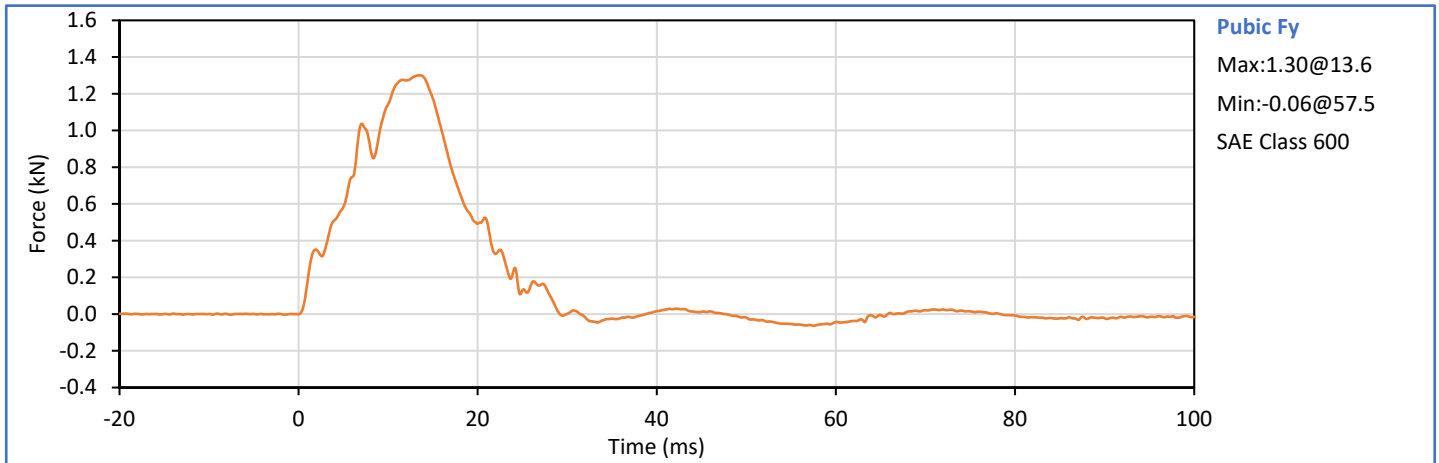
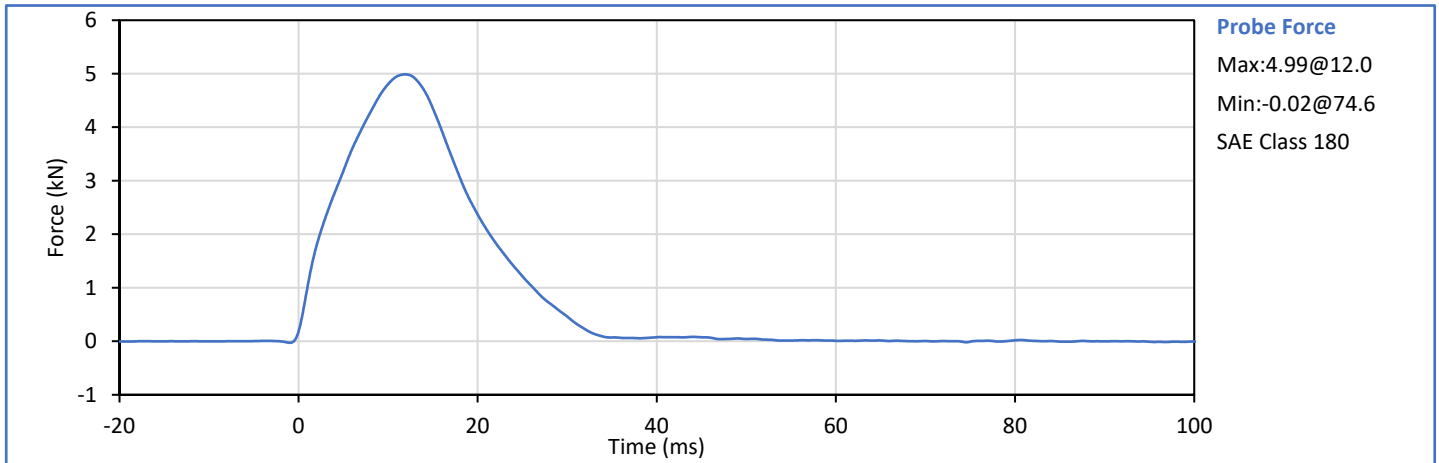
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	46	Pass
Pendulum Velocity	m/s	5.95	6.15	6.09	Pass
Peak Headform Flexion	deg	45.0	55.0	46.6	Pass
Time of Peak Headform Flexion	ms	39.0	53.0	44.4	Pass
Flexion Decay (Peak to zero)	ms	37.0	57.0	39.3	Pass
Overall Test Results					Pass

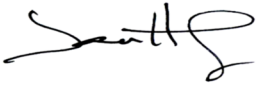



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

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	39	Pass
Impactor Velocity	m/s	4.20	4.40	4.33	Pass
Peak Impactor Force	kN	4.70	5.40	4.99	Pass
Time of Peak Impactor Force	ms	11.8	16.1	12.0	Pass
Pubic Symphysis Fy	kN	1.23	1.59	1.30	Pass
Time of Peak Pubic Symphysis Fy	ms	12.2	17.0	13.6	Pass
Overall Test Results					Pass



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

APPENDIX C
Post-Test ATD Qualification and Performance Verification
SID-IIs Small Side Impact ATD, Left Side Configuration
S/N: 308

Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
A - Sitting Height	mm	772	788	779	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	83	Pass
D - H Point From Seatback	mm	141	151	148	Pass
E - Shoulder Pivot From Backline	mm	97	107	103	Pass
F - Thigh Clearance	mm	119	135	129	Pass
G - Head Breadth	mm	140	148	146	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	530	Pass
L - Popliteal Height	mm	343	369	360	Pass
K - Knee Pivot To Floor Height	mm	392	409	398	Pass
N - Buttock Popliteal Length	mm	416	442	437	Pass
O - Chest Depth W/O Jacket	mm	195	211	204	Pass
P - Foot Length	mm	216	232	226	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	318	Pass
R - Arm Length	mm	249	259	255	Pass
S - Knee Joint To Seatback	mm	477	493	487	Pass
V - Shoulder Width	mm	341	357	348	Pass
W - Foot Width	mm	78	94	88	Pass
Y - Chest Circumference W/Jacket	mm	851	881	871	Pass
Z - Waist Circumference	mm	761	791	787	Pass
Overall Test Results					Pass

Technician:



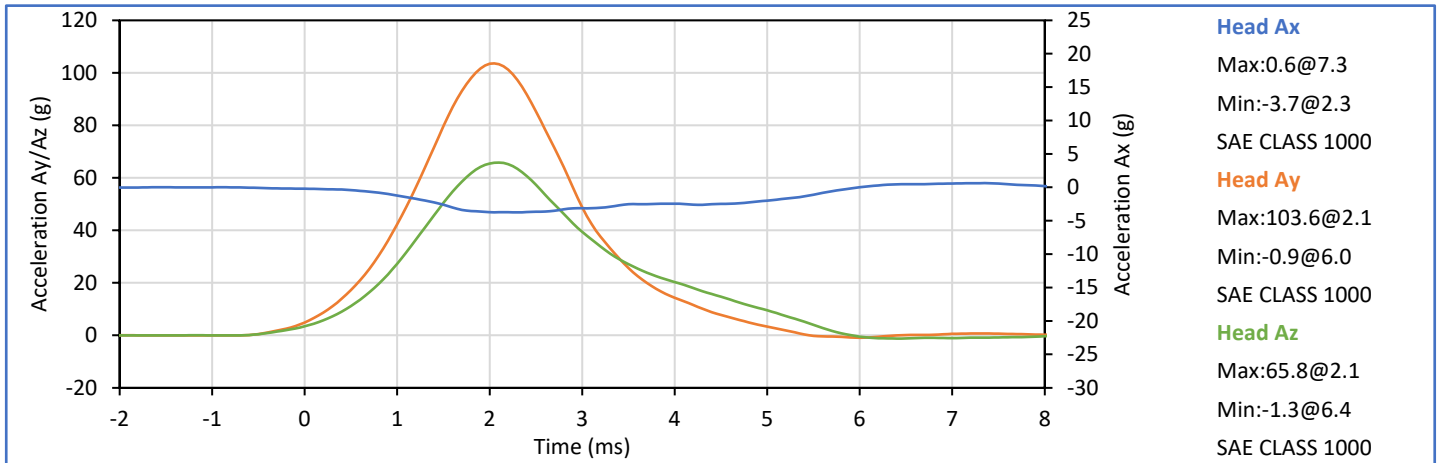
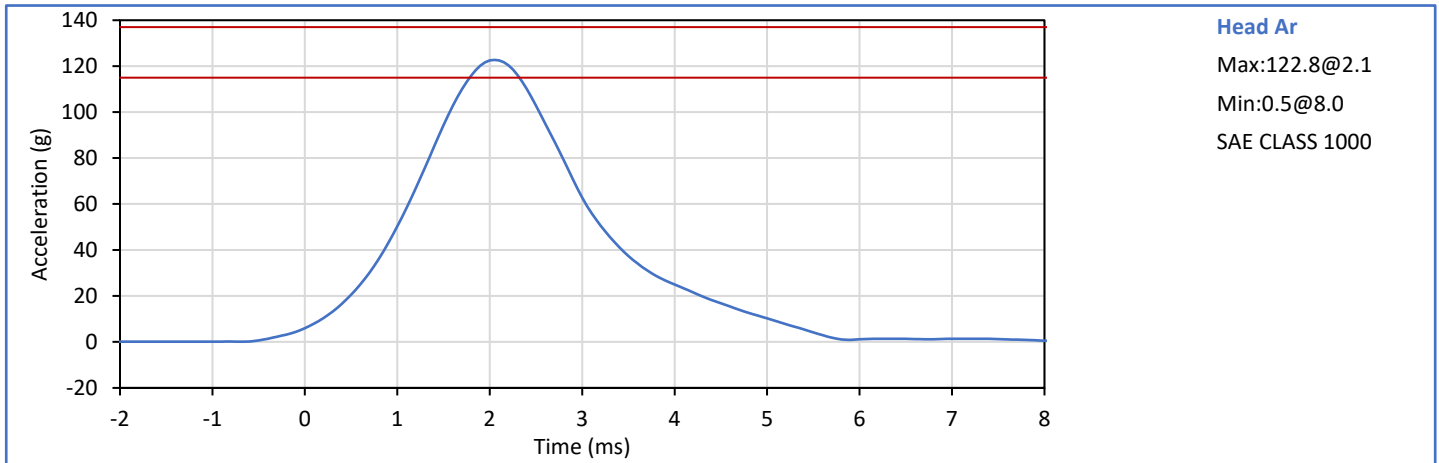
J. Hernandez


Approved By:




P. Puzzuto

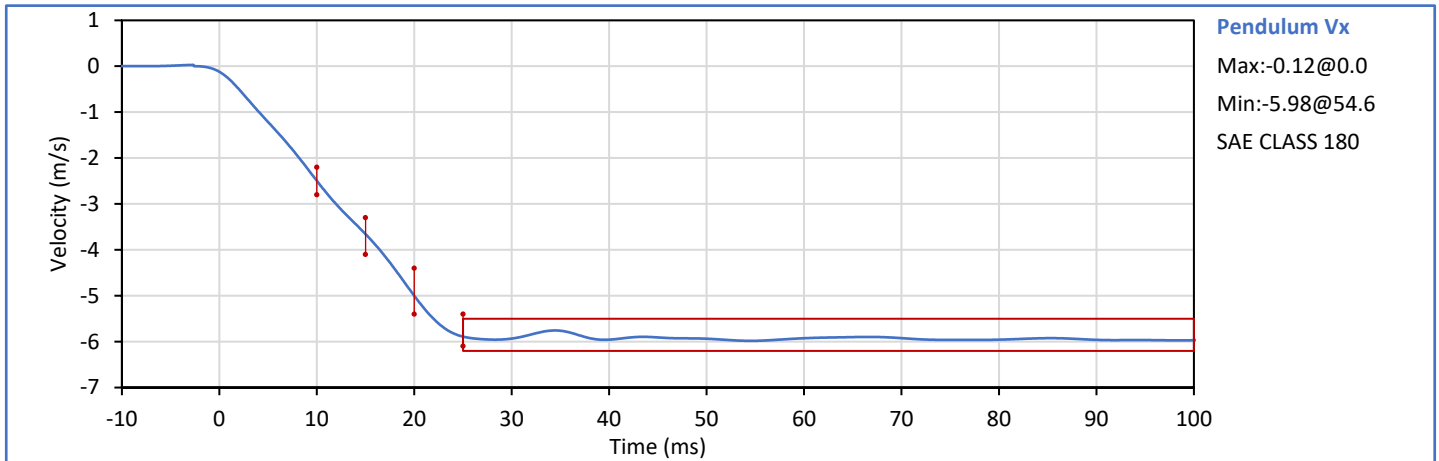
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.1	Pass
Laboratory Relative Humidity	%	10	70	26	Pass
Peak Resultant Acceleration	g	115.0	137.0	122.8	Pass
Peak Head Ax	g	-15.0	15.0	-3.7	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
Overall Test Results					Pass



Technician: 
J. Hernandez

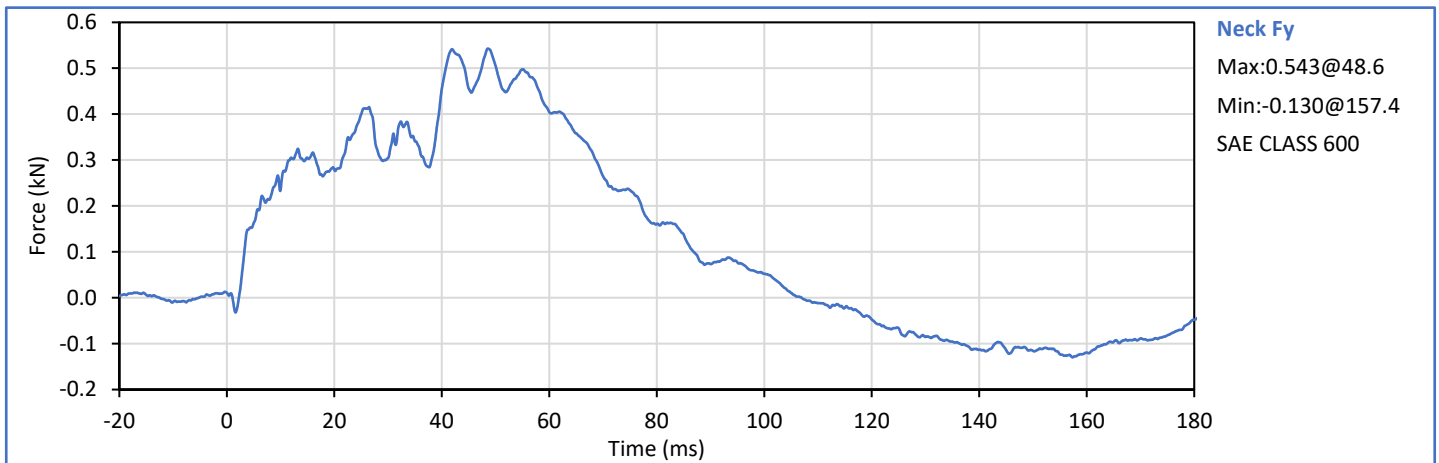
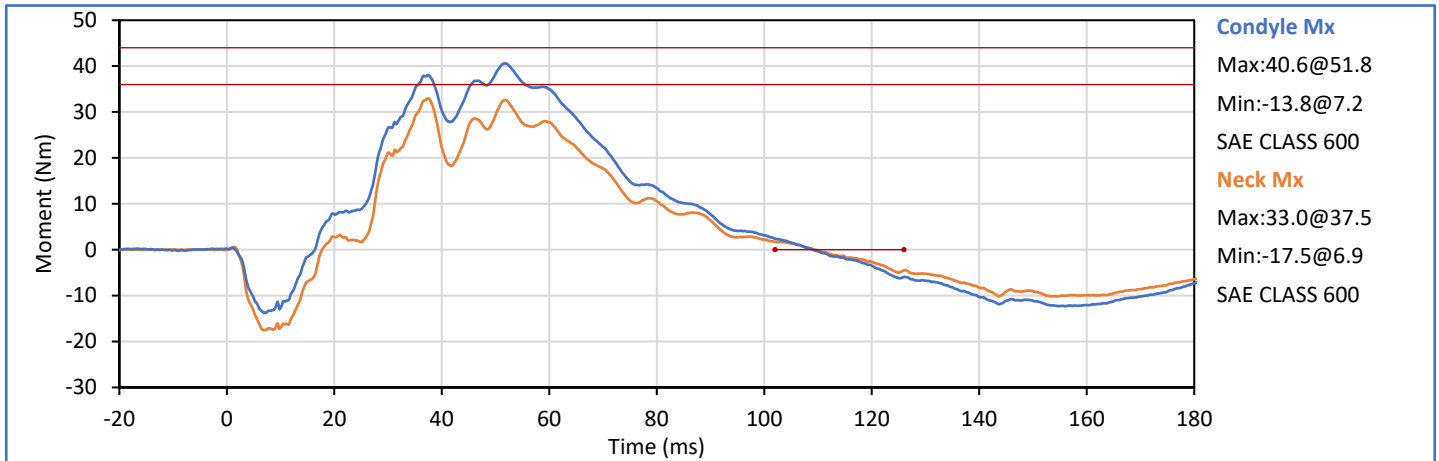
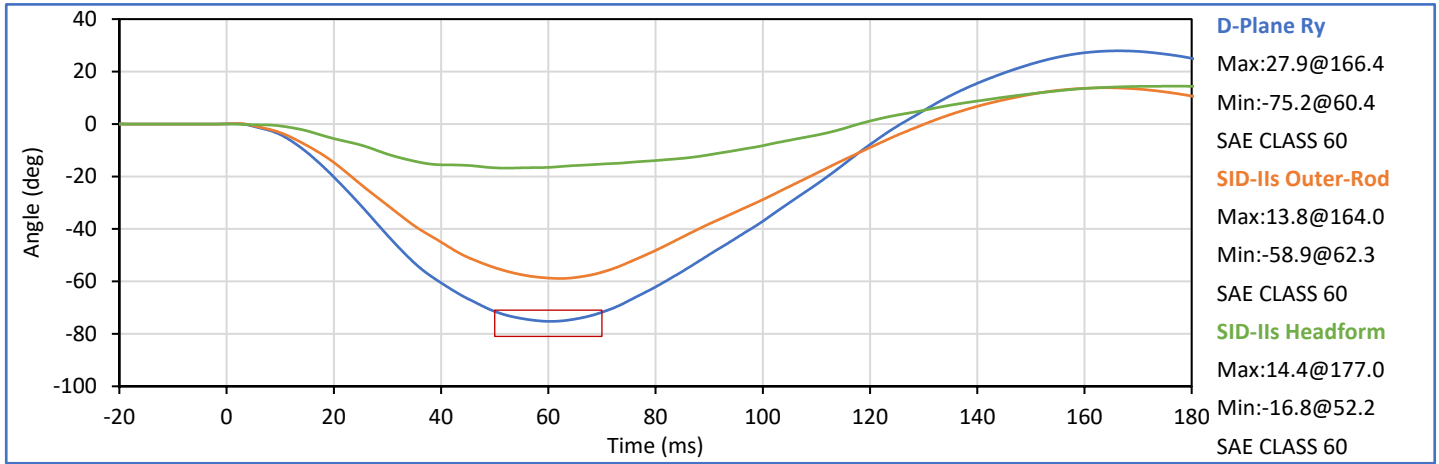
Approved By: 
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	30	Pass
Pendulum Velocity	m/s	5.51	5.63	5.59	Pass
Pendulum Decel at 10 ms	m/s	-2.80	-2.20	-2.50	Pass
Pendulum Decel at 15 ms	m/s	-4.10	-3.30	-3.66	Pass
Pendulum Decel at 20 ms	m/s	-5.40	-4.40	-5.00	Pass
Pendulum Decel at 25 ms	m/s	-6.10	-5.40	-5.89	Pass
Pendulum Decel from 25-100 ms	m/s	-6.20	-5.50	-5.98/-5.76	Pass
Peak "D" Plane Rotation	deg	-81.0	-71.0	-75.2	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	60.4	Pass
Peak Occ. Condyle Moment	Nm	36.0	44.0	40.6	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	109.0	Pass
Overall Test Results					Pass

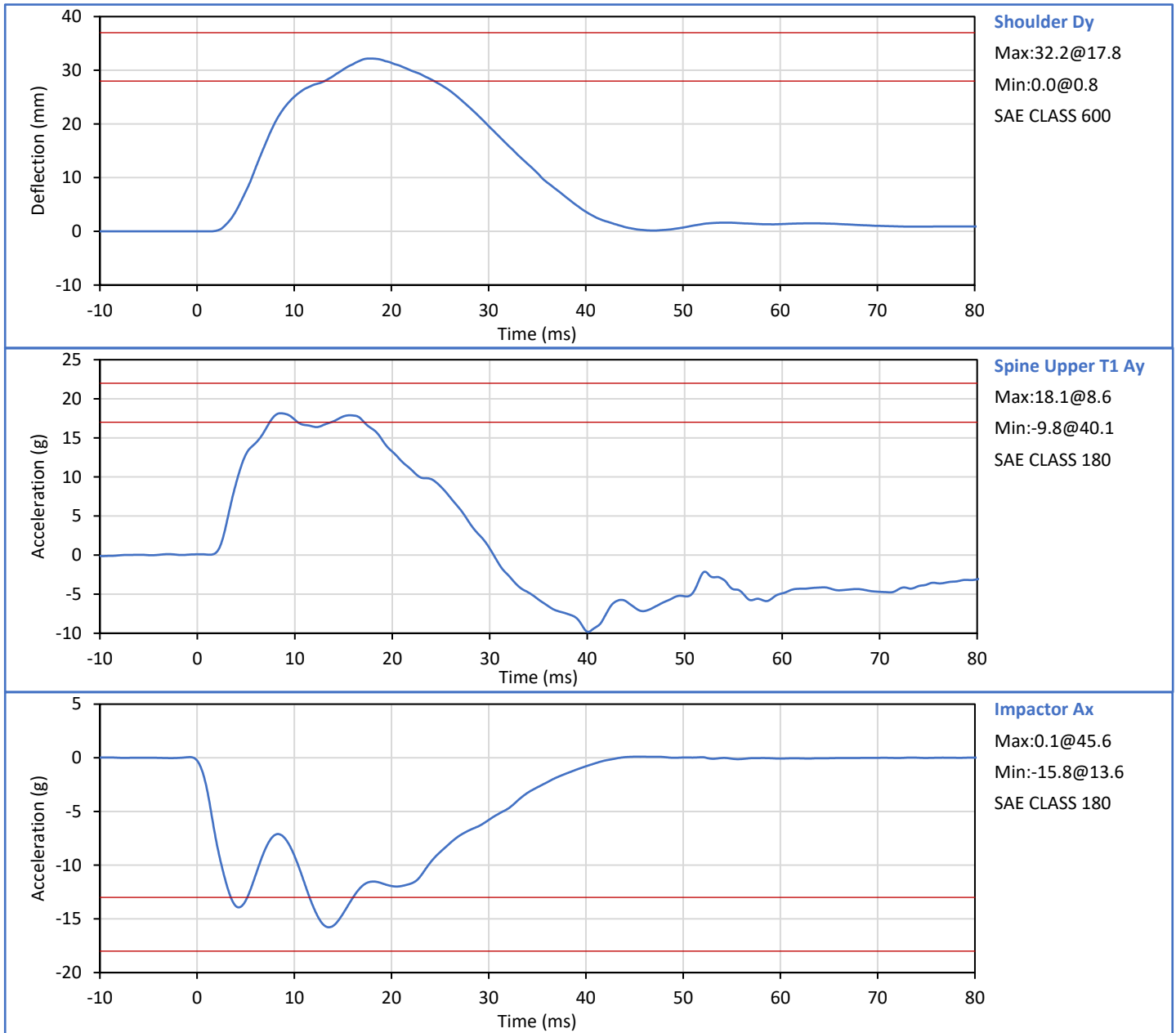


Technician: *J. Hernandez*
J. Hernandez


Approved By: *P. Puzzuto*
P. Puzzuto



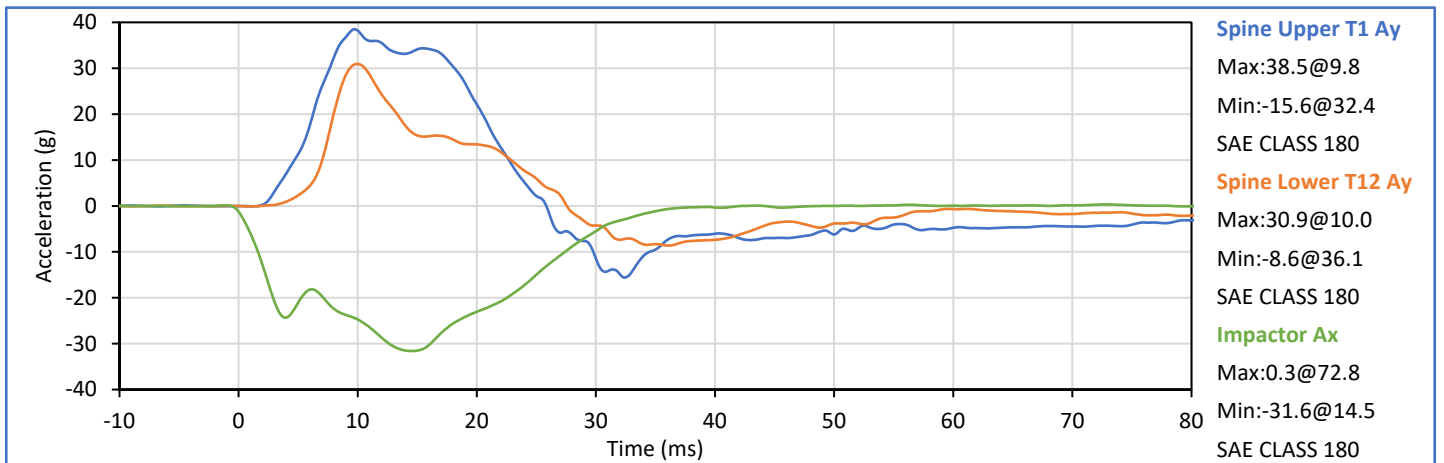
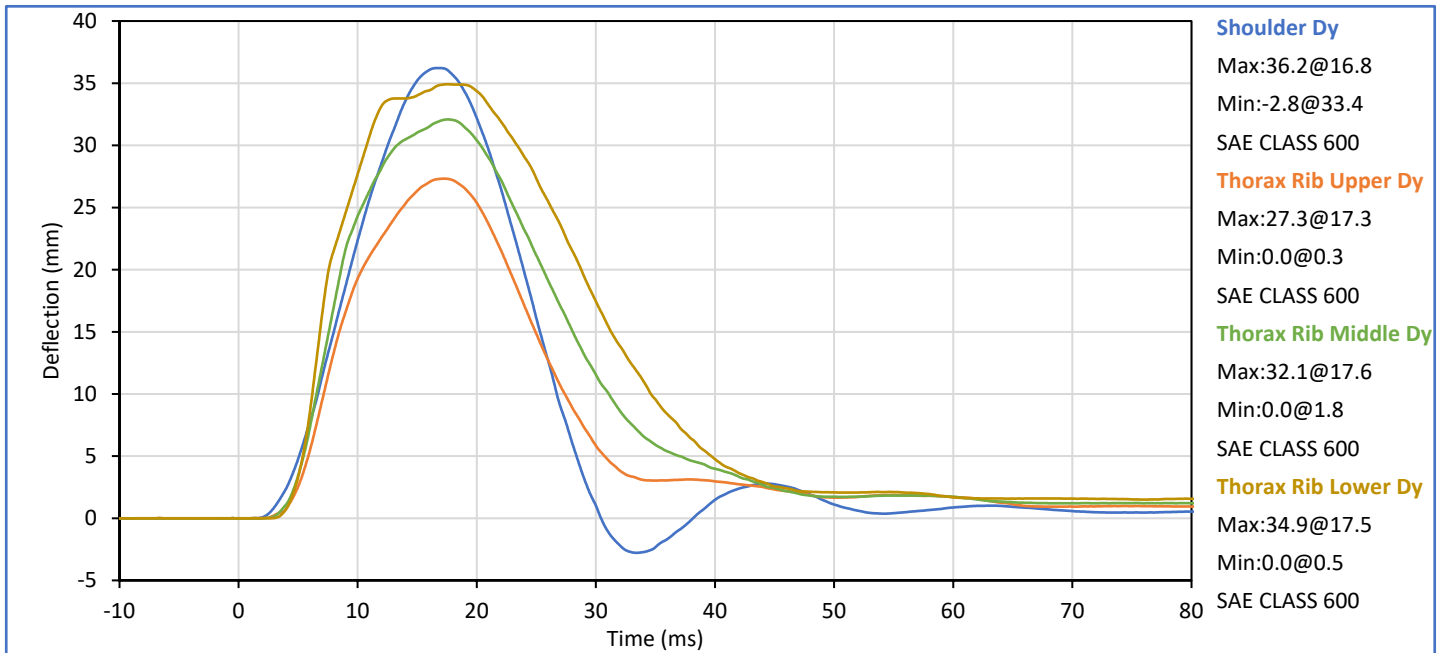
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	47	Pass
Impactor Velocity	m/s	4.20	4.40	4.33	Pass
Peak Shoulder Dy	mm	28.0	37.0	32.2	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	18.1	Pass
Peak Impactor Ax	g	-18.0	-13.0	-15.8	Pass
Overall Test Results					Pass




Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

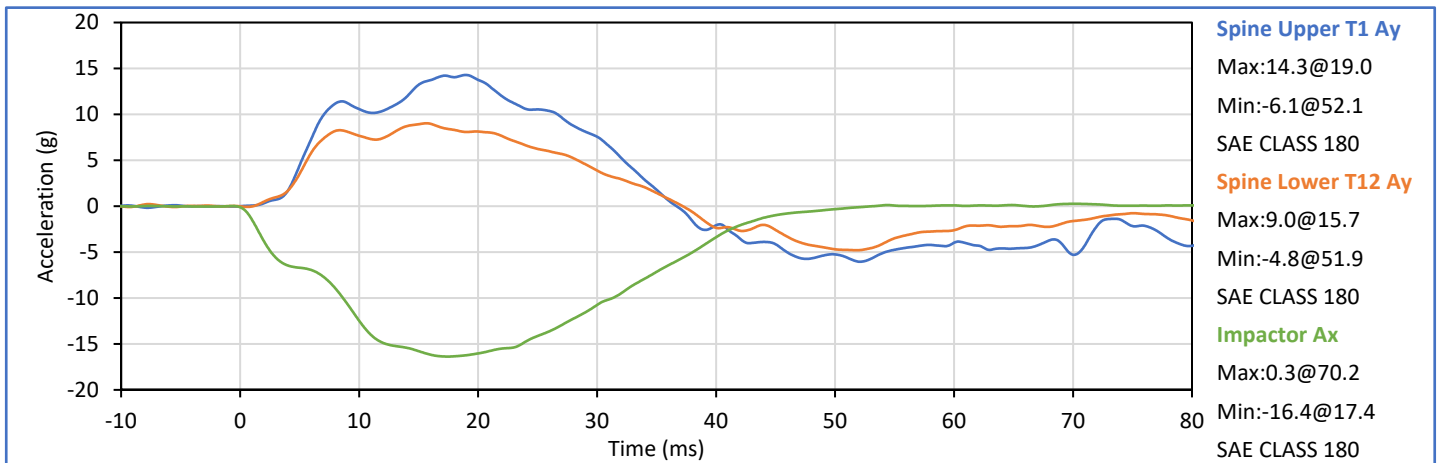
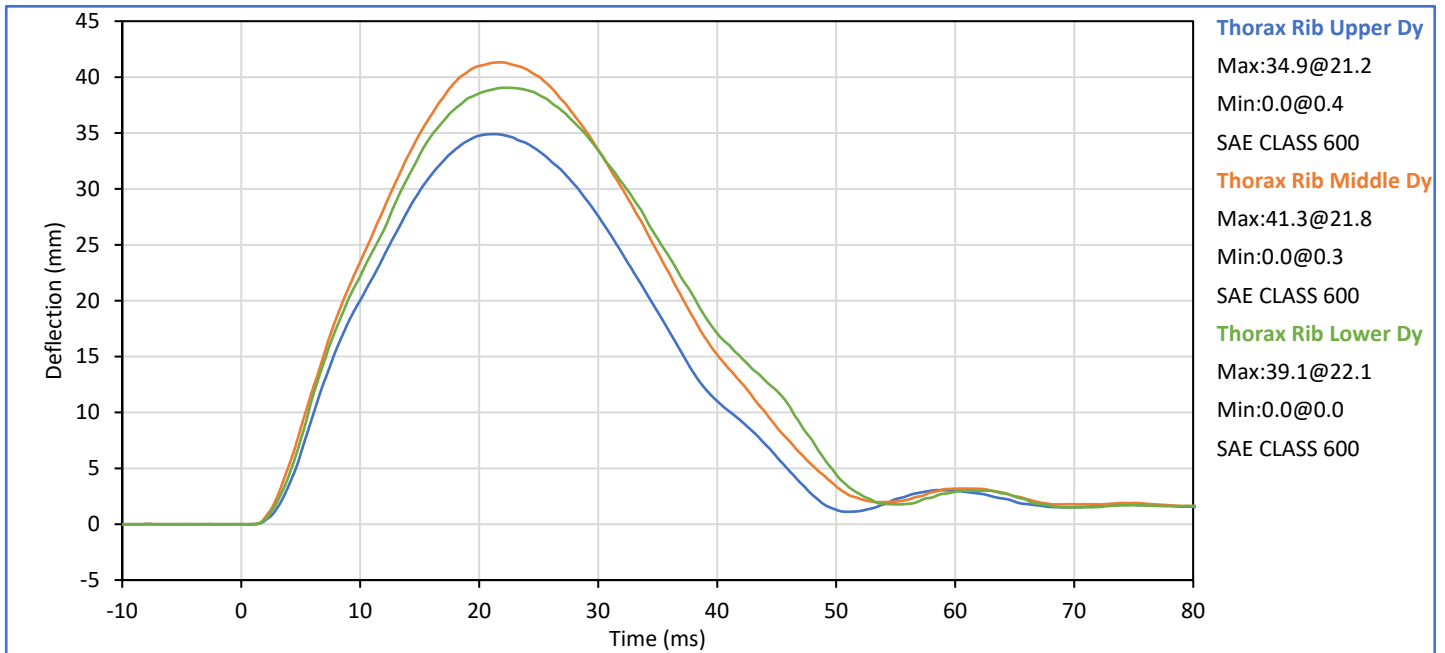
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	47	Pass
Impactor Velocity	m/s	6.60	6.80	6.74	Pass
Peak Shoulder Dy	mm	31.0	40.0	36.2	Pass
Peak Upper Rib Dy	mm	25.0	32.0	27.3	Pass
Peak Middle Rib Dy	mm	30.0	36.0	32.1	Pass
Peak Lower Rib Dy	mm	32.0	38.0	34.9	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	38.5	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	30.9	Pass
Peak Impactor Ax	g	-36.0	-30.0	-31.6	Pass
Overall Test Results					Pass




Technician: 
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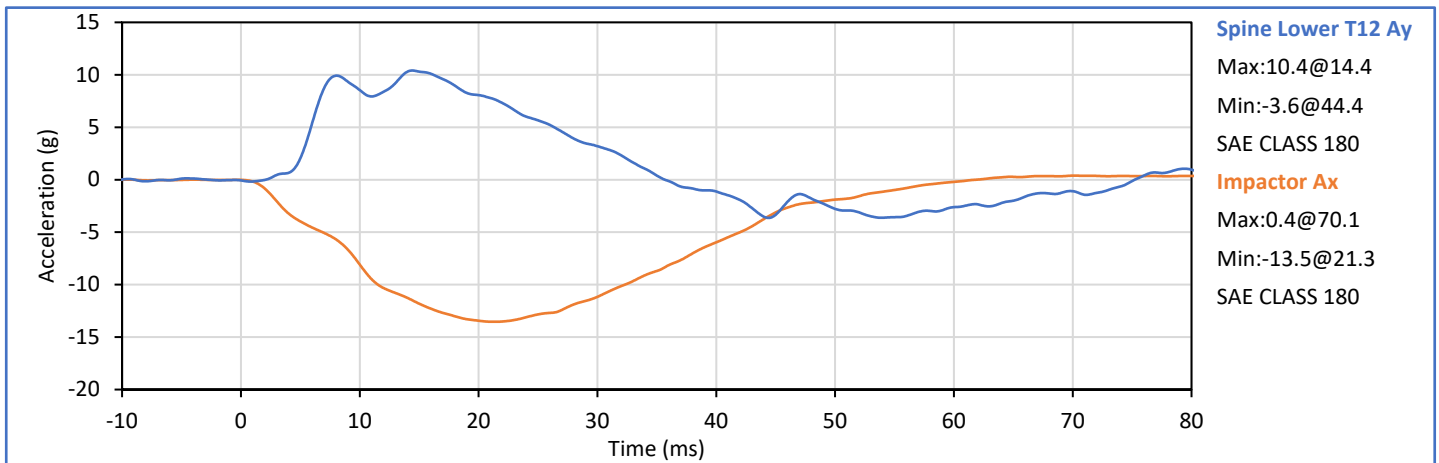
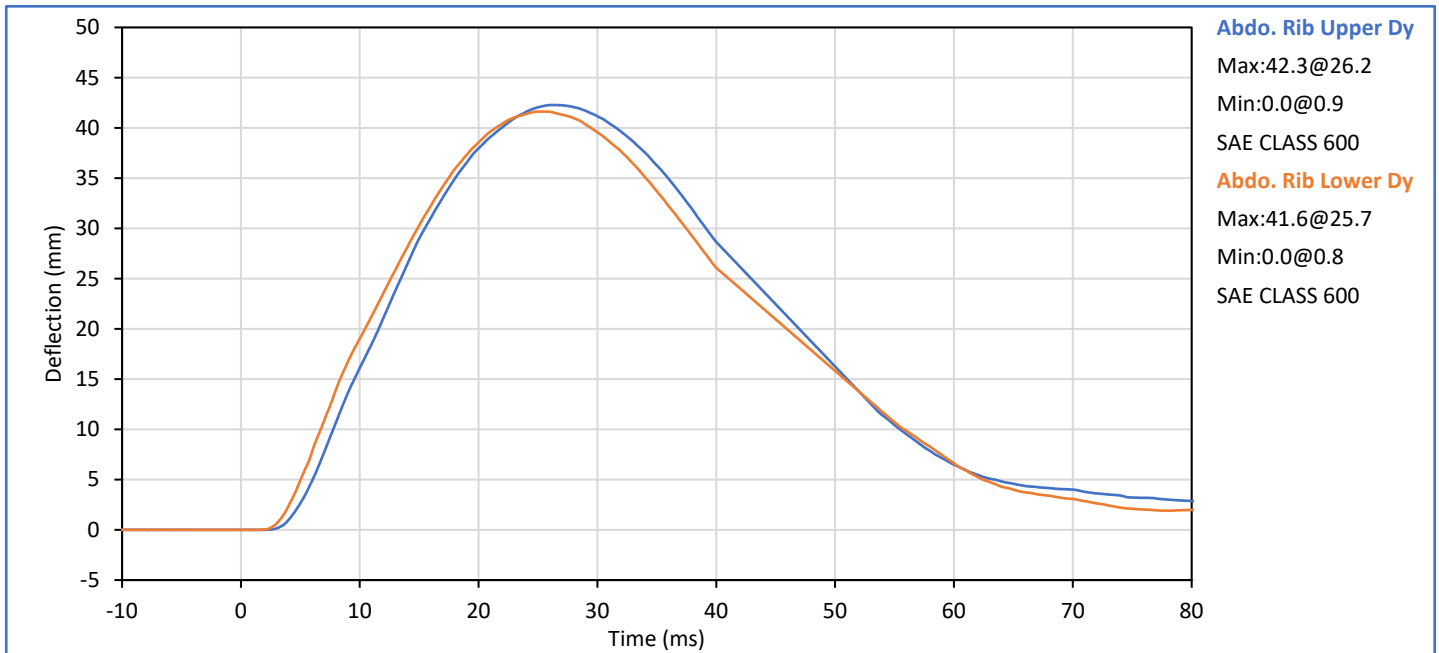
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	47	Pass
Impactor Velocity	m/s	4.20	4.40	4.31	Pass
Peak Thorax Rib Upper Dy	mm	32.0	40.0	34.9	Pass
Peak Thorax Rib Middle Dy	mm	39.0	45.0	41.3	Pass
Peak Thorax Rib Lower Dy	mm	35.0	43.0	39.1	Pass
Peak Spine Upper T1 Ay	g	13.0	17.0	14.3	Pass
Peak Spine Lower T12 Ay	g	7.0	11.0	9.0	Pass
Peak Impactor Ax	g	-18.0	-14.0	-16.4	Pass
Overall Test Results					Pass




Technician: 
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P. Puzzuto

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	47	Pass
Impactor Velocity	m/s	4.20	4.40	4.34	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	42.3	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	41.6	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	10.4	Pass
Peak Impactor Ax	g	-16.0	-12.0	-13.5	Pass
Overall Test Results					Pass

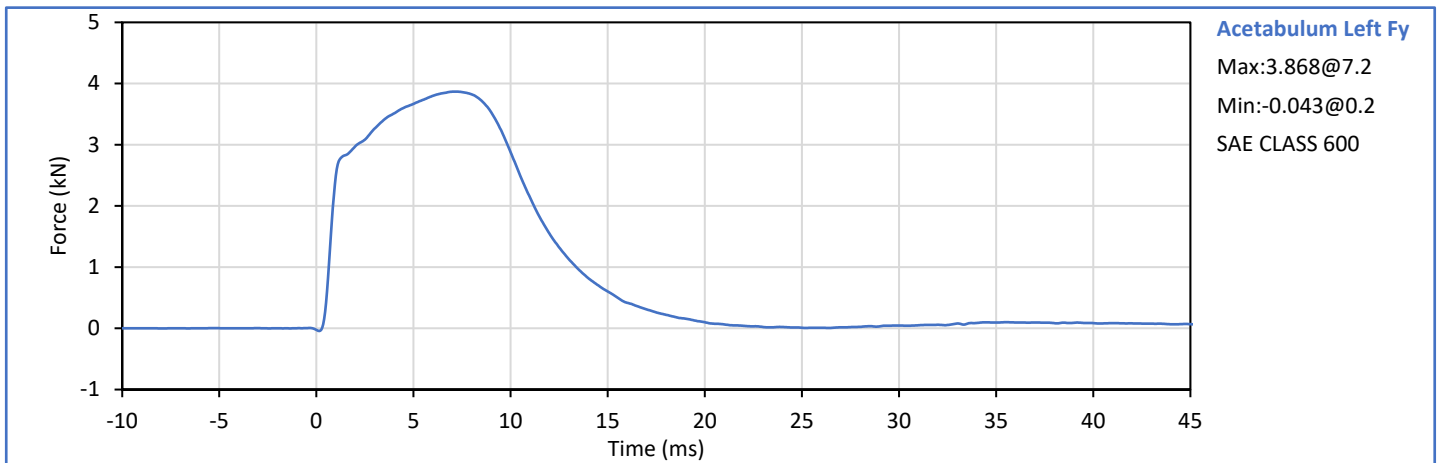
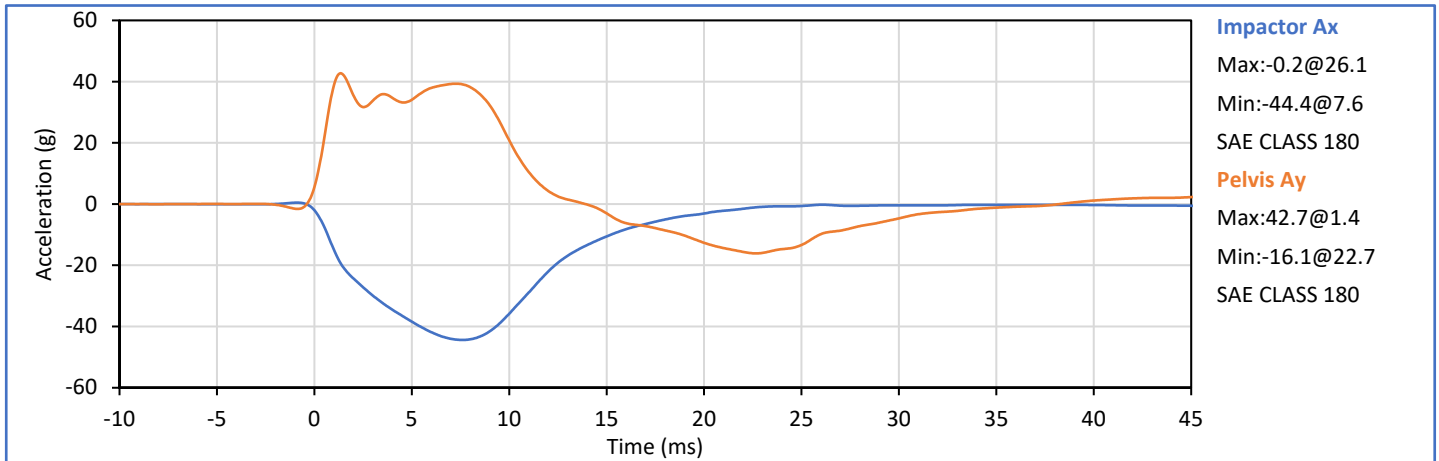


Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

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	47	Pass
Impactor Velocity	m/s	6.60	6.80	6.72	Pass
Peak Acetabulum Fy	kN	3.60	4.30	3.87	Pass
Pelvis Ay after 6ms	g	34.0	42.0	39.3	Pass
Peak Impactor Ax	g	-47.0	-38.0	-44.4	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 13888



Technician: *J. Hernandez*
J. Hernandez

Approved By: *P. Puzzuto*
P. Puzzuto

ATD Serial No.: 308

Test Date: 2021-07-08

Pelvis Plug S/N: 13888



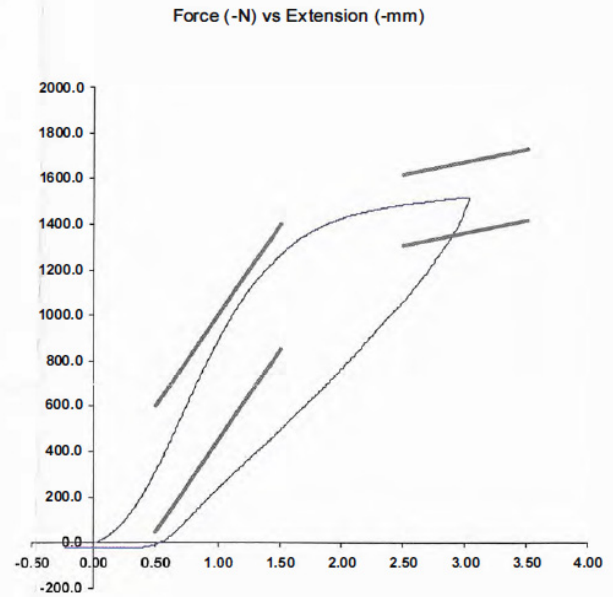
SID-IIs Pelvis Plug Certification Test

Plug S/N 13888
Test Number 13362
Report Number 13407
Test Date 5/20/2020 8:08:13 PM

	Test Results	Spec. Min	Spec. Max
Force @ 0.5 mm (N)	324.55	50.00	600.00
Force @ 1.5 mm (N)	1,264.49	850.00	1,400.00
Force @ 2.5 mm (N)	1,484.35	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,516.98	1,361.00	1,673.00

Testing Machine STM-20 5965542
Load Cell S/N (FI360947), Units (LBS) 1000
Preload Value (-N) 22.24
Crosshead Speed (mm / min) or Rate 12.7
Extension or Position Measured by XHD_100 (XHD100)

Notes:



Operator

Part Number 180-4450

Template No 107 20-May-20
SACO Research

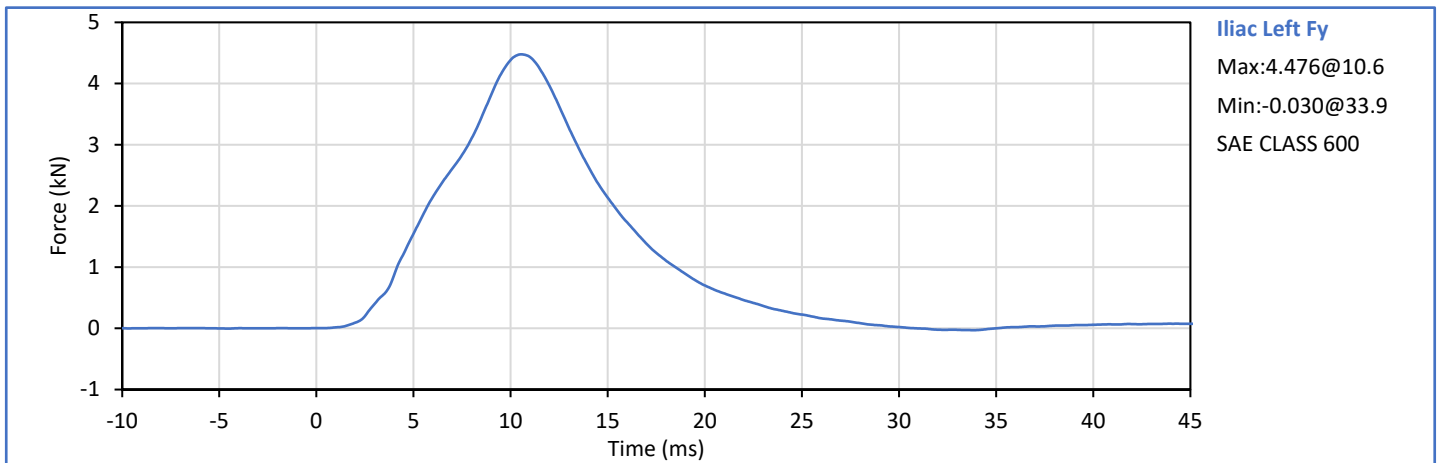
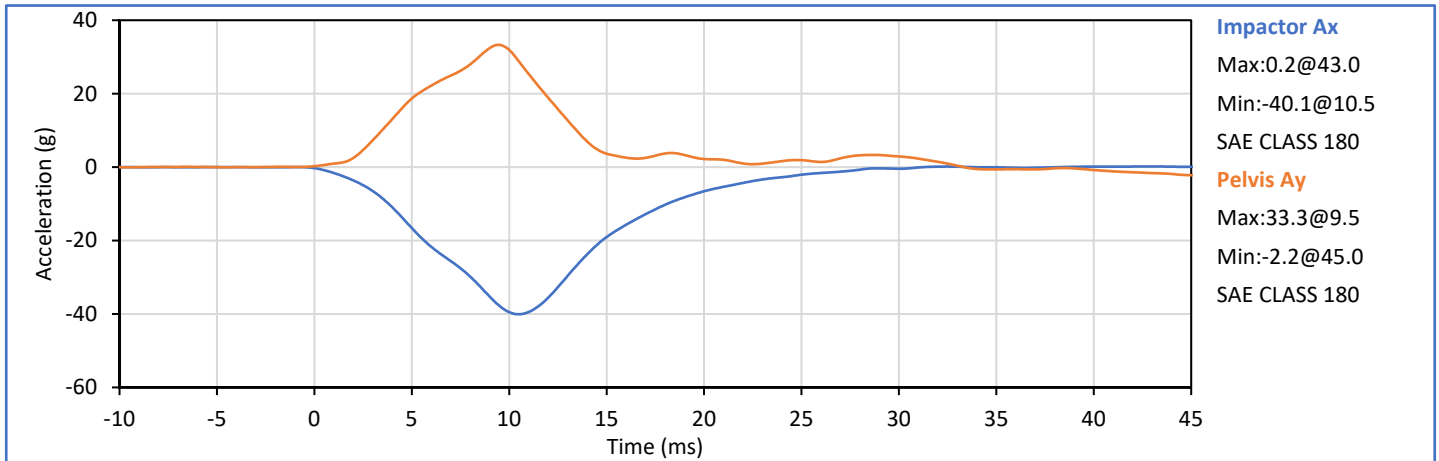
By: DC Date: 5/20/2020


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


Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	46	Pass
Impactor Velocity	m/s	4.20	4.40	4.33	Pass
Peak Iliac Fy	kN	4.10	5.10	4.48	Pass
Peak Pelvis Ay	g	28.0	39.0	34.7	Pass
Peak Impactor Ax	g	-45.0	-36.0	-40.1	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 12228 *

* Plug is not impacted and remains certified



Technician: 
J. Hernandez

Approved By: 
P. Puzzuto

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	2021-01-13
Head Acceleration Y Primary	P58865	Endevco	7264C-2k	2021-01-13
Head Acceleration Z Primary	P58867	Endevco	7264C-2k	2021-01-13
Head Acceleration X Redundant	P58859	Endevco	7264C-2k	2021-01-13
Head Acceleration Y Redundant	P58866	Endevco	7264C-2k	2021-01-13
Head Acceleration Z Redundant	P58873	Endevco	7264C-2k	2021-01-13
Upper Thorax Rib Deflection Y	209 (ES-2 Rib)	Honeywell	F38000203	2021-01-13
Middle Thorax Rib Deflection Y	210 (ES-2 Rib)	Honeywell	F38000203	2021-01-13
Lower Thorax Rib Deflection Y	207 (ES-2 Rib)	Honeywell	F38000203	2021-01-13
Anterior Abdominal Force Y	1514 Fy	R.A. Denton	2631J	2021-01-29
Middle Abdominal Force Y	1510 Fy	R.A. Denton	2631J	2021-01-29
Posterior Abdominal Force Y	1515 Fy	R.A. Denton	2631J	2021-01-29
Lower Spine T12 Acceleration X	P63856	Endevco	7264C-2k	2021-01-13
Lower Spine T12 Acceleration Y	P50063	Endevco	7264C-2k	2021-01-13
Lower Spine T12 Acceleration Z	P51880	Endevco	7264C-2k	2021-01-13
Pubic Symphysis Force Y	506 Fy	R.A. Denton	3096JFL	2021-01-29

Table 2 - Left Rear Passenger ATD Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Head Acceleration X Primary	P63980	Endevco	7264C-2k	2021-01-06
Head Acceleration Y Primary	P58861	Endevco	7264C-2k	2021-01-06
Head Acceleration Z Primary	P51261	Endevco	7264C-2k	2021-01-06
Head Acceleration X Redundant	P58808	Endevco	7264C-2k	2021-01-06
Head Acceleration Y Redundant	P63310	Endevco	7264C-2k	2021-01-06
Head Acceleration Z Redundant	P49189	Endevco	7264C-2k	2021-01-06
Head Rotation Rate X	ARS11393	DTS	ARS PRO-18k (2kHz)	2020-08-04
Head Rotation Rate Y	ARS13119	DTS	ARS PRO-18k (2kHz)	2020-08-04
Head Rotation Rate Z	ARS13586	DTS	ARS PRO-18k (2kHz)	2020-08-04
Upper Thorax Rib Deflection Y	1249	Servo	08TCI-3725	2021-01-05
Middle Thorax Rib Deflection Y	1219	Servo	08TCI-3725	2021-01-05
Lower Thorax Rib Deflection Y	1221	Servo	08TCI-3725	2021-01-05
Upper Abdomen Rib Deflection Y	1252	Servo	08TCI-3725	2021-01-05
Lower Abdomen Rib Deflection Y	1283	Servo	08TCI-3725	2021-01-05
Lower Spine T12 Acceleration X	P52108	Endevco	7264C-2k	2021-01-06
Lower Spine T12 Acceleration Y	P63970	Endevco	7264C-2k	2021-01-06
Lower Spine T12 Acceleration Z	P51712	Endevco	7264C-2k	2021-01-06
Iliac Wing Impact Side Force Y	272 Fy (Iliac)	R.A. Denton	3228J	2020-07-17
Acetabulum Impact Side Force Y	260 Fy (Acetabulum)	R.A. Denton	3249J	2020-07-17

Table 3 - Vehicle Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Vehicle CG Ax	A265916	MSI	52F-2k	2021-05-14
Vehicle CG Ay	10854	Endevco	757F-2k	2021-03-23
Vehicle CG Az	10836	Endevco	757F-2k	2021-03-23
Right Side Sill at Front Seat Ax	A331786	MSI	52F-2k	2021-03-22
Right Side Sill at Front Seat Ay	10866	Endevco	757F-2k	2021-03-23
Right Side Sill at Front Seat Az	10910	Endevco	757F-2k	2021-03-23
Right Side Sill at Rear Seat Ax	11161	Endevco	757F-2k	2021-03-23
Right Side Sill at Rear Seat Ay	A273384	MSI	52F-2k	2021-02-26
Right Side Sill at Rear Seat Az	A148222	MSI	52F-2k	2021-02-26
Left Side Sill at Front Seat Ay	A298363	MSI	52F-2k	2021-02-26
Left Side Sill at Rear Seat Ay	A331794	MSI	52F-2k	2021-03-22
Left Lower A-Pillar Ay	A265871	MSI	52F-2k	2021-05-14
Left Middle A-Pillar Ay	A330829	MSI	52F-2k	2021-03-22
Left Lower B-Pillar Ay	A273395	MSI	52F-2k	2021-03-23
Left Middle B-Pillar Ay	10378	Endevco	757F-2k	2021-03-11
Driver Seat Track at H-Point Ay	10863	Endevco	757F-2k	2021-03-22
Rear Seat Structure Ay	A254881	MSI	52F-2k	2021-03-23
Right Rear Occupant Comp. Ay	10371	Endevco	757F-2k	2021-03-11
Engine Block Top Ax	A345139	MSI	52F-2k	2021-05-14
Engine Block Top Ay	A298380	MSI	52F-2k	2021-03-11
Rear Floopan Above Axle Ax	10897	Endevco	757F-2k	2021-03-23
Rear Floopan Above Axle Ay	10250	Endevco	757F-2k	2021-03-23
Rear Floopan Above Axle Az	11162	Endevco	757F-2k	2021-03-22

Table 4 - Moving Deformable Barrier (MDB) Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
MDB CG Ax	10259	Endevco	757F-2k	2021-03-23
MDB CG Ay	10876	Endevco	757F-2k	2021-03-23
MDB CG Az	10870	Endevco	757F-2k	2021-03-22
MDB Left Side at Rear Axle Ax	A298392	MSI	52F-2k	2021-03-11
MDB Left Side at Rear Axle Ay	A217318	MSI	52F-2k	2021-02-25