

REPORT NUMBER: SINCAP-KAR-19-020

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

**NISSAN MOTOR CO., LTD.
2019 NISSAN KICKS S 5-DOOR SUV**

NHTSA No: M20195208

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



MARCH 26, 2019

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE: NRM-110
1200 NEW JERSEY AVE, SE, ROOM W43-410
WASHINGTON, D.C. 20590**

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By: 

Mr. Malo L. Taua'ese, Engineering Technician
Applus IDIADA KARCO Engineering, LLC.

Reviewed By: 

Mr. Michael L. Dunlap, Director of Operations
Applus IDIADA KARCO Engineering, LLC.

Approved By: 

Mr. Steven D. Matsusaka, Engineering Manager
Applus IDIADA KARCO Engineering, LLC.

Approval Date: March 26, 2019

FINAL REPORT ACCEPTANCE BY OCWS:


Division Chief, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____


COTR, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. SINCAP-KAR-19-020	2. Government Accession No.	3. Recipient's Catalog No.																																																		
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact MDB Testing of a 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208		5. Report Date March 26, 2019																																																		
7. Authors Mr. Malo L. Taua'ese, Engineering Technician, Applus IDIADA KARCO Mr. Steven D. Matsusaka, Engineering Manager, Applus IDIADA KARCO		6. Performing Organization Code KAR																																																		
9. Performing Organization Name and Address Applus IDIADA KARCO Engineering, LLC. 9270 Holly Rd. Adelanto, CA 92301		8. Performing Organization Report No. TR-P39032-01-NC																																																		
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NRM-110) 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		10. Work Unit No.																																																		
		11. Contract or Grant No. DTNH22-14-D-00355L																																																		
		13. Type of Report and Period Covered Final Test Report, March 12, 2019 - 26, 2019																																																		
		14. Sponsoring Agency Code NRM-110																																																		
15. Supplementary Notes																																																				
16. Abstract A 55 / 28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2019 Nissan Kicks S 5-door SUV in accordance with the specifications of the Office of Crash Worthiness 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 March 12, 2019. The impact velocity of the Moving Deformable Barrier was 62.08 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 18.8°C. The target vehicle's maximum post-test static crush was 216 mm located at level 3. The test vehicle's occupant performance data is as follows: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Driver ATD (ES-2re)</th> </tr> <tr> <th>Units</th> <th>IARV</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>158.3</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>44</td> <td>23</td> </tr> <tr> <td>Total Abdominal Force</td> <td>N</td> <td>2500</td> <td>796</td> </tr> <tr> <td>Pubic Symphysis Force</td> <td>N</td> <td>6000</td> <td>1796</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Passenger ATD (SID-IIs)</th> </tr> <tr> <th>Units</th> <th>IARV</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>646.8</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82</td> <td>64</td> </tr> <tr> <td>Total Pelvic Force (Sum of Acetabular and Iliac Forces)</td> <td>N</td> <td>5525</td> <td>2128</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>25</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45*</td> <td>32</td> </tr> </tbody> </table> Both the left front driver and left rear passenger doors were jammed shut. The doors on the struck side of the vehicle did not separate from the body at the hinges or latches. The opposite side doors did not open during the side impact event.			Measurement Description	Driver ATD (ES-2re)			Units	IARV	Result	Head Injury Criteria (HIC ₃₆)		1000	158.3	Maximum Thoracic Rib Deflection	mm	44	23	Total Abdominal Force	N	2500	796	Pubic Symphysis Force	N	6000	1796	Measurement Description	Passenger ATD (SID-IIs)			Units	IARV	Result	Head Injury Criteria (HIC ₃₆)		1000	646.8	Resultant Lower Spine Acceleration	g	82	64	Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	2128	Maximum Thoracic Rib Deflection	mm	38*	25	Maximum Abdominal Rib Deflection	mm	45*	32
Measurement Description	Driver ATD (ES-2re)																																																			
	Units	IARV	Result																																																	
Head Injury Criteria (HIC ₃₆)		1000	158.3																																																	
Maximum Thoracic Rib Deflection	mm	44	23																																																	
Total Abdominal Force	N	2500	796																																																	
Pubic Symphysis Force	N	6000	1796																																																	
Measurement Description	Passenger ATD (SID-IIs)																																																			
	Units	IARV	Result																																																	
Head Injury Criteria (HIC ₃₆)		1000	646.8																																																	
Resultant Lower Spine Acceleration	g	82	64																																																	
Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	2128																																																	
Maximum Thoracic Rib Deflection	mm	38*	25																																																	
Maximum Abdominal Rib Deflection	mm	45*	32																																																	

* Proposed IARV

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 Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave., SE Washington, DC 20590 e-mail: tis@nhtsa.gov FAX 202-493-2833	
19. Security Classification of this report UNCLASSIFIED	20. Security Classification of this page UNCLASSIFIED	21. No. of Pages 153	22. Price

TABLE OF CONTENTS

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

SECTION 1

TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test is part of the MY 2019 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number DTNH22-14-D-00355L. The purpose of this test is to generate comparative side impact performance in a 2019 Nissan Kicks S 5-door SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated October 2015.

SECTION 2

SUMMARY OF TEST RESULTS

A 2019 Nissan Kicks S 5-door SUV 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 62.08 km/h (38.57 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 March 12, 2019. 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 October 2015. 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	158.3
Maximum Thoracic Rib Deflection	mm	44	23
Combined Abdominal Force	N	2500	796
Pubic Symphysis Force	N	6000	1796

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	646.8
Lower Spine (T12) Resultant Acceleration	g	82	64
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2128
Maximum Thoracic Rib Deflection	mm	38*	25
Maximum Abdominal Rib Deflection	mm	45*	32

*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/Pelvis)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	

GENERAL COMMENTS

The doors on the struck side of the vehicle remained closed and latched. There was no separation at the hinges or latches. The doors on the non-struck side remained closed and latched. There was no ATD value that exceeded its limit. The Left Lower B-Post Y and Left Mid B-Post Y channels were not installed on the test vehicle. The Right Rear Sill channel failed, and no data was collected.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

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	lb/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: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	M20195208
Model Year	2019
Make	Nissan
Model	Kicks S
Body Style	5-Door SUV
VIN	3N1CP5CUXKL471859
Body Color	Silver
Odometer Reading (km / mi)	76 / 47
Engine Displacement (L)	1.6
Type / No. of Cylinders	Transverse 4
Engine Placement	Inline
Transmission Type	Automatic
Transmission Speeds	CVT
Overdrive	No
Final Drive	FWD
Roof Rack	Yes
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes

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

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

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Co., LTD.
Date of Manufacture	Nov-18
Vehicle Type	Passenger Car

GVWR (kg)	1633
GAWR Front (kg)	863
GAWR Rear (kg)	770

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity	2	3		5
Capacity Weight (VCW) (kg)				385.0
DSC x 68.04 (kg)				340.2
Cargo Weight (RCLW) (kg)				44.8

A

B

A-B

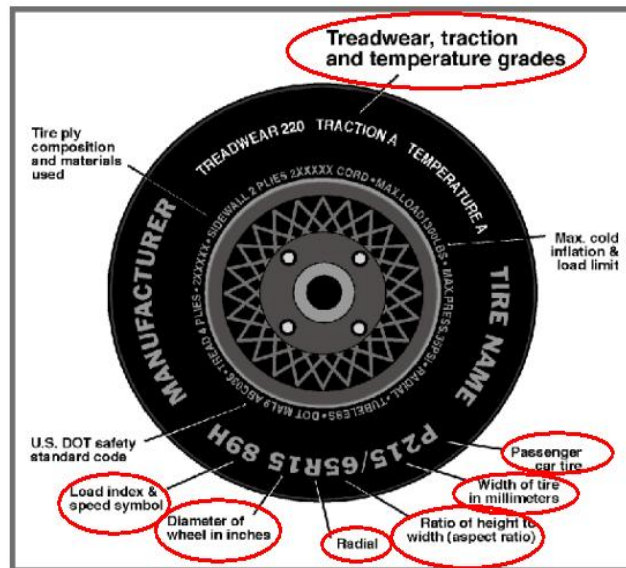
VEHICLE SEAT TYPE

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: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19



Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	300	300
Cold Pressure (kPa)	220	220
Recommended Tire Size	P205/60R16	P205/60R16
Tire Size on Vehicle	P205/60R16	P205/60R16
Tire Manufacturer	Firestone	Firestone
Tire Model	FT140	FT140
Treadware	500	500
Traction Grade	A	A
Temperature Grade	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Nylon	1 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	105H	105H
Tire Material	Polyester Steel, Nylon	Polyester Steel, Nylon
DOT Safety Code Left	V6XW FT0 3218	V6XW FT0 3218
DOT Safety Code Right	V6XW FT0 3218	V6XW FT0 3218

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	220	220	220	220
Tire Placard	kPa	220	220	220	220
Owner's Manual	kPa	220	220	220	220
As Tested	kPa	220	220	220	220

MDB TIRE SPECIFICATIONS

	Units	Requirement	LF	RF	LR	RR
Tire Size		P205/60R16	P205/60R16	P205/60R16	P205/60R16	P205/60R16
Tire Pressure	kPa	230 ± 21	230	230	230	230

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	360.5	240.5		416.0	303.0		396.5	328.5	
Right	kg	363.0	222.5		374.0	257.5		373.5	260.0	
Ratio	%	61.0%	39.0%	100.0%	58.5%	41.5%	100.0%	56.7%	43.3%	100.0%
Total	kg	723.5	463.0	1186.5	790.0	560.5	1350.5	770.0	588.5	1358.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1186.5	A
Actual Weight of 2 P572 ATD Used	kg	125.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	44.8	C
Calculated Vehicle Target Wt (TVTW)	kg	1356.3	A+B+C

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e.

Calculated Test Vehicle Target Weight -4.5 kg to -9.0 kg)? ☒ Yes ☐ No

TEST VEHICLE ATTITUDE AND CG

Measurement Description	Units	Fully Loaded	As Tested	Meets Requirement***
LF	mm	791	790	Yes
RF	mm	805	800	Yes
LR	mm	822	828	Yes
RR	mm	835	843	Yes
Vehicle CG (Aft of Front Axle)	mm	1136	1088	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	51	49	

***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: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Trunk Trim & Tools	13.0
Ballast / Equipment Added	52.0

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

DATA SHEET NO. 2**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19**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	3.1	0.0	1.6
Front Passenger Seat	Fixed	Fixed	Fixed
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	1.6	260	Max			
			Mid	250	260	269
			Min			
Front Passenger Seat	Fixed	263	Max			
			Mid	252	263	271
			Min			
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

DATA SHEET NO. 2 ... (CONTINUED)**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

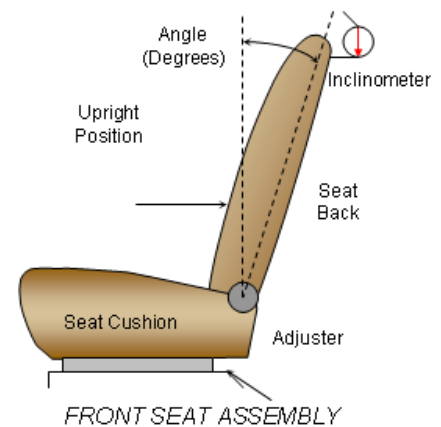
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	240	25	120	12
Front Passenger Seat	240	25	120	12
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

*Detent zero (0) is the forward most detent

SEAT BACK ADJUSTMENT

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

**SEAT BACK POSITION**

Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/ Seated Dummy	56.5	21	4.4	3
Front Passenger Seat	52.8	24	3.6	3
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: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

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, M3, M2, M1, L from top to bottom.

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

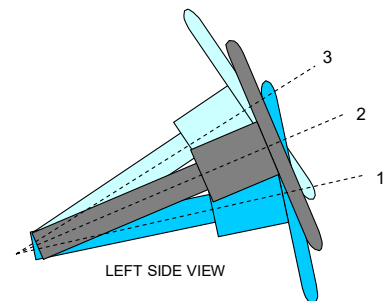
HEAD RESTRAINT ADJUSTMENT

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

	Total No. of Positions	Placed in Position
Driver Seat	3	H
Rear Seat	1	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 ASSEMBLY

	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	23.5	90
Geometric Center - Position 2	25.5	108
Uppermost - Position 3	27.5	126
Telescoping Steering Wheel Travel		36
Test Position	25.5	108

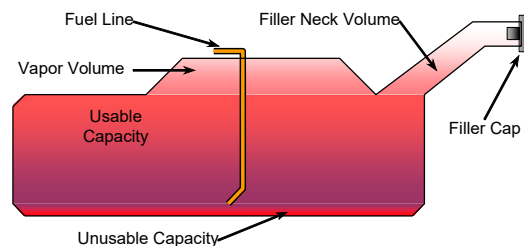
DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

FUEL PUMP

The vehicle is equipped with an electronic fuel pump. The fuel pump starts when the ignition is on



FUEL TANK CAPACITY

VEHICLE FUEL TANK ASSEMBLY

Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	40.88
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	40.88
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	38.02
Actual amount of Solvent Used in Test	38.02
1/3 of Usable Capacity	13.63

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

DATA SHEET NO. 3

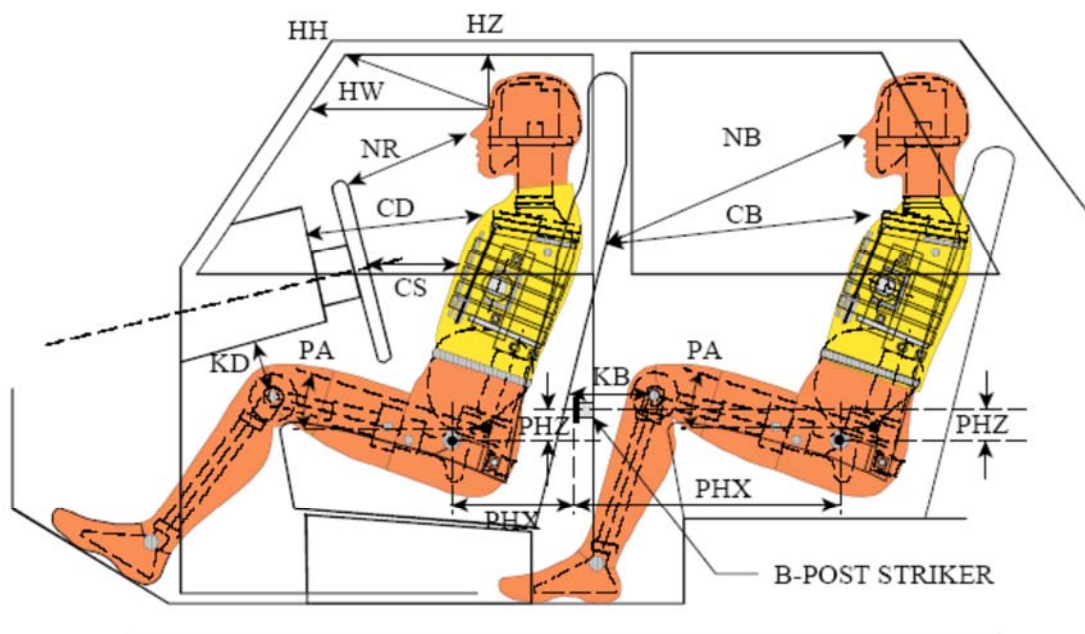
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV

NHTSA No. M20195208

Test Program: NCAP MDB Side Impact Test

Test Date: 03/12/19



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

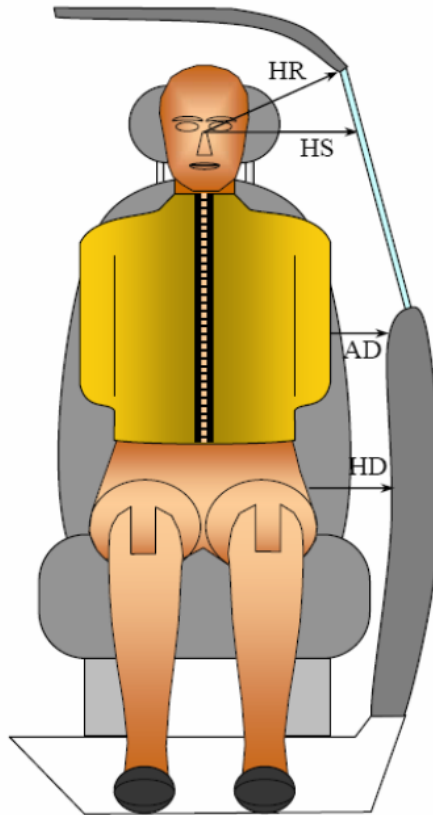
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	355			
HW		Head to Windshield	575			
HZ	HZ	Head to Roof	143		276	
NR	NB	Nose to Rim/Seat Back	437		582	
CD	CB	Chest to Dash/Seat Back	535		557	
CS		Chest to Steering Wheel	339			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	127	18.1	247	10.7
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	99	21.3	249	12
PAX°	PAX°	Pelvic Tilt Angle X		12.7		20.5
	PAY°	Pelvic Tilt Angle Y		0.1		0.2
PHX	PHX	Hip Point to Striker (x-axis)	171		300	
PHZ	PHZ	Hip Point to Striker (z-axis)	67		253	

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19



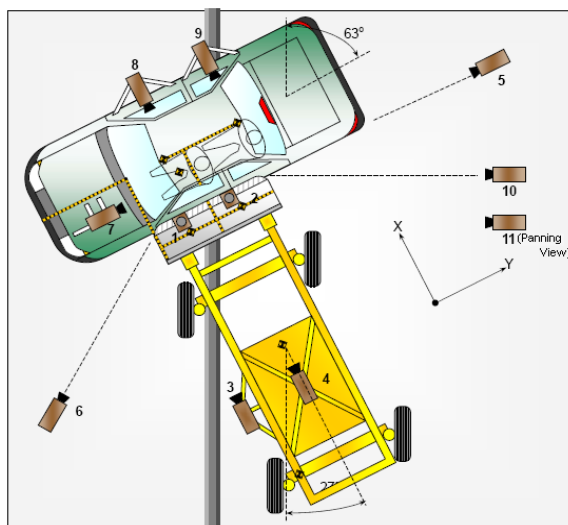
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	203	258
HS	Head to Side Window	mm	376	347
AD	Arm to Door	mm	98	159
HD	H-Point to Door	mm	134	173

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19



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)	517	-375	-656	8.5	1000
8	Driver Side (On-Board)	1856	789	-450	8.5	1000
9	Passenger Side (On-Board)	1814	1497	-509	8.5	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

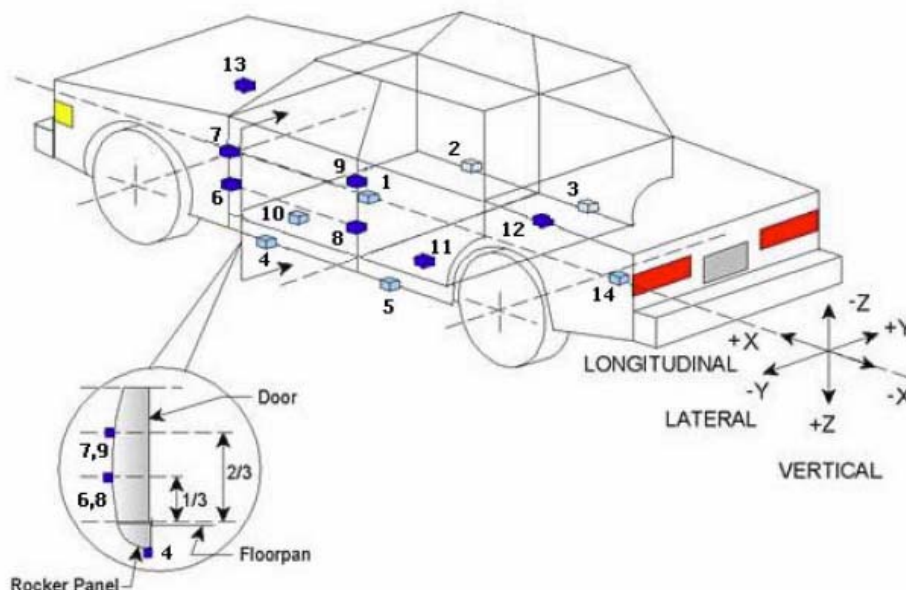
INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	19
Vehicle Structure Accelerometers	23
MDB Channels	7
Total	65

DATA SHEET NO. 6

TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

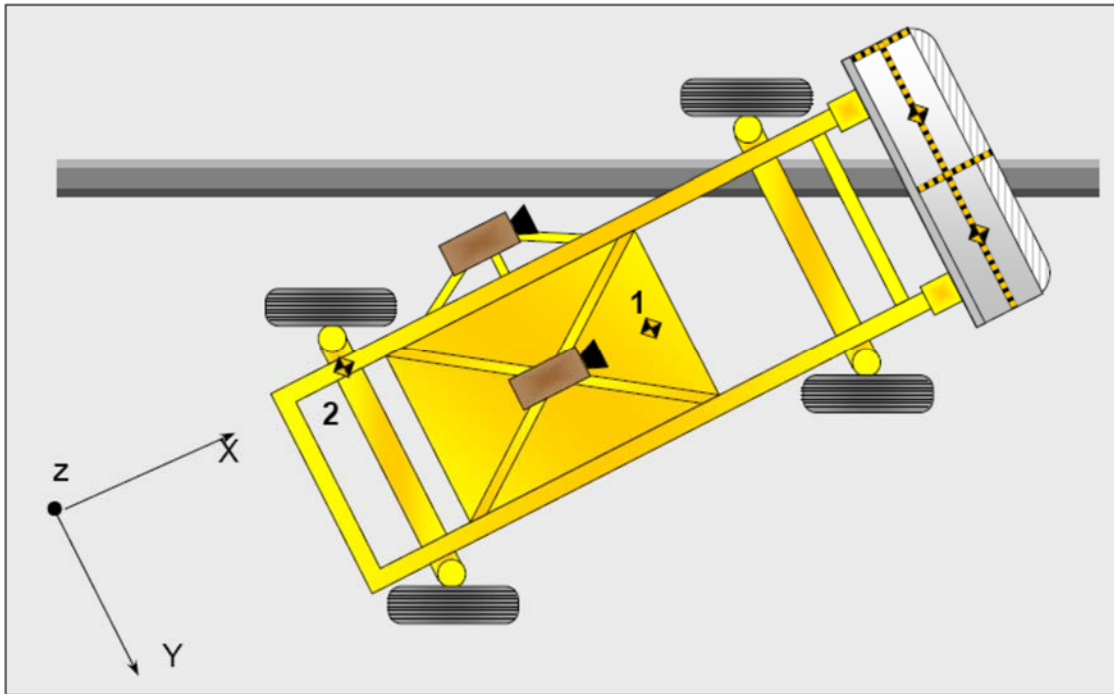
Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	1920	0	-500
2	Right Sill at Front Seat	2450	670	-360
3	Right Sill at Rear Seat	1535	660	-390
4	Left Sill at Front Door	2550	-710	-220
5	Left Sill at Rear Door	1560	-698	-225
6	A-Pillar Lower	2930	-790	-475
7	A-Pillar Middle	2935	-790	-800
8	B-Pillar Lower	N/A	N/A	N/A
9	B-Pillar Middle	N/A	N/A	N/A
10	Front Seat Track	2300	-520	-390
11	Rear Seat Structure	1460	310	-330
12	Right Rear Occupant Compartment	1460	310	-330
13	Engine Block	3440	70	-820
14	Rear Floorpan Above Axle	1080	0	-520

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: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19



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: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

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	Curtain Airbag, Side Header	Curtain Airbag, Side Header, Center Headrest
Left Side of Head	Curtain Airbag, Side Header	Curtain Airbag
Back of Head	Curtain Airbag, Side Header, Headrest	Curtain Airbag, Headrest, Seatback
Left Shoulder	Curtain Airbag, Door Panel	Curtain Airbag, Door Panel
Upper Torso	Side Airbag, Seat	Door Panel
Lower Torso	Side Airbag, Seat	Door Panel
Left Hip	Side Airbag	Door Panel, Seat
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: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

POST-TEST SEAT PERFORMANCE

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

POST-TEST STRUCTURAL OBSERVATIONS

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

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

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side		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/Pelvis)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2622
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		371
Actual Impact Point (Aft of Front Axle)	mm		392
Horizontal Offset (+ forward / - rearward)	mm	± 50 of Intended Impact Point	-21
Vertical Offset (+ down / - up)	mm	± 20 of Intended Impact Point	7

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

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	62.08
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.04
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.3
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.1
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.1

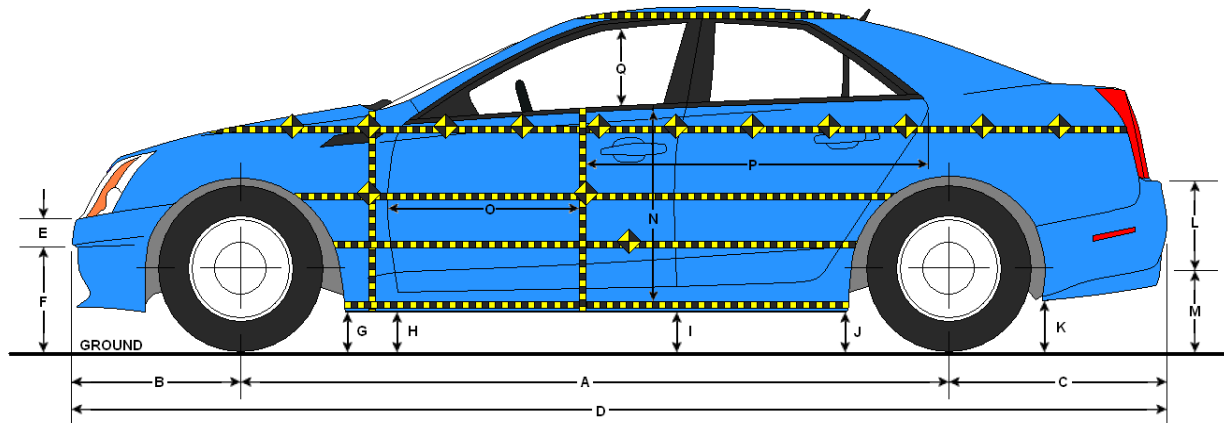
MAXIMUM STATIC CRUSH OF HONEYCOMB FACE

Vertical Location			From Centerline		Max. Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	800	Right	189
B	Top of Bumper	533	700	Right	68
C	Mid Level	686	800	Right	87
D	Top of Stack	813	800	Left	98

DATA SHEET NO. 10

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

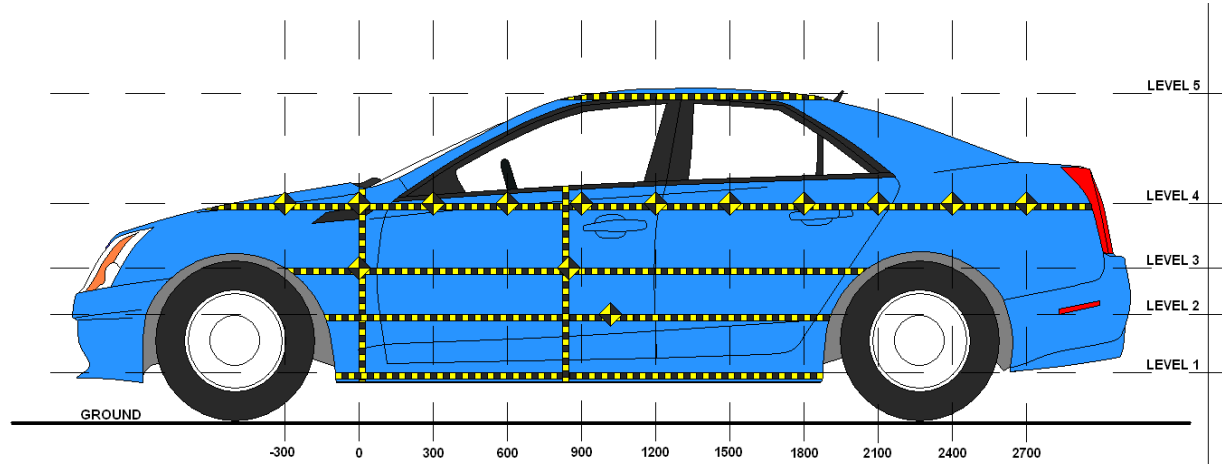
Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2622	2569	-53
B	Front Axle to FSOV	860	919	59
C	Rear Axle to RSOV	802	796	-6
D	Total Length at Centerline	4284	4284	0
E	Front Bumper Thickness	190	191	1
F	Front Bumper Bottom to Ground	488	494	6
G	Sill Height at Front Wheel Well	354	358	4
H	Sill Height at Front Door Leading Edge	353	389	36
I	Sill Height at B-Pillar	258	288	30
J1	Sill Height at Rear Wheel Well	240	281	41
J2	Pinch Weld Height at Rear Wheel Well	225	244	19
K	Sill Height Aft of Rear Wheel Well	348	344	-4
L	Rear Bumper Thickness	152	153	1
M	Rear Bumper Bottom to Ground	480	484	4
N	Sill Height to Bottom of Front Window Sill	712	619	-93
O	Front Door Leading Edge to Impact CL	765	753	-12
P	Rear Door Trailing Edge to Impact CL	1375	1370	-5
Q	Front Window Opening	428	452	24
R	Right Side Length	3148	3152	4
S	Left Side Length	3150	3135	-15
T	Vehicle Width at B-Pillar	1732	1613	-119

All measurements in mm with tolerance of ± 3 mm

DATA SHEET NO. 11

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19



LEFT SIDE VIEW

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	267	18	1500
2	Occupant H-Point	631	204	600
3	Mid-Door	696	216	600
4	Window Sill	1006	68	1650
5	Window Top	1506	1	1950

DATA SHEET NO. 11 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208

Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

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				745					735					-10	
0		627	625	722			624	620	715			-3	-5	-7	
150	677	628	628	710		671	763	753	702		-6	135	125	-8	
300	680	629	627	703		677	830	836	706		-3	201	209	3	
450	680	631	627	695		680	831	843	710		0	200	216	15	
600	680	633	629	697		682	837	845	727		2	204	216	30	
750	680	635	631	700	932	684	833	844	743	924	4	198	213	43	-8
900	680	638	633	699	921	688	823	839	754	915	8	185	206	55	-6
1050	681	641	637	697	918	690	812	806	737	916	9	171	169	40	-2
1200	682	645	641	694	922	695	824	841	752	917	13	179	200	58	-5
1350	682	650	646	689	922	697	847	840	742	918	15	197	194	53	-4
1500	683	646	646	688	923	701	829	829	747	920	18	183	183	59	-3
1650	684	634	636	687	926	702	828	815	755	922	18	194	179	68	-4
1800	677	625	626	687	924	694	806	780	718	924	17	181	154	31	0
1950			624	681	926			738	688	927			114	7	1
2100				698	931				715	929				17	-2
2250				705	937				748	937				43	0
2400				716					726					10	
2550															
2700															
2850															

DATA SHEET NO. 11 ... (CONTINUED)

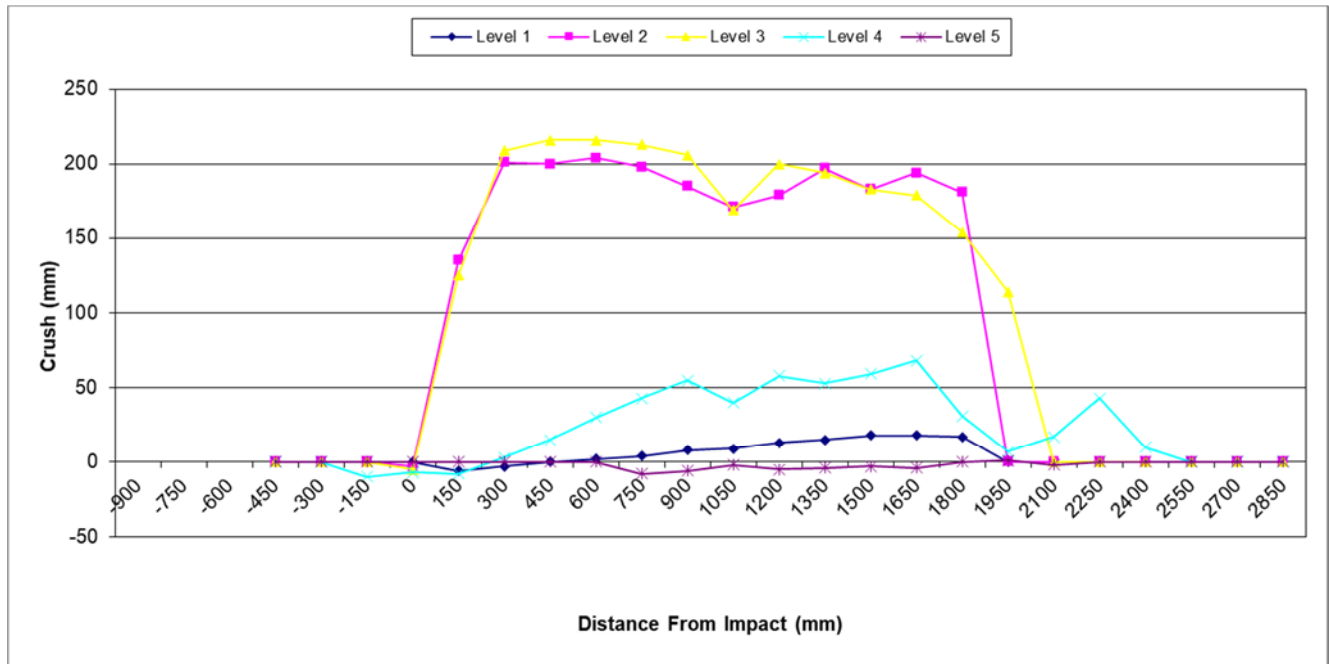
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV

NHTSA No. M20195208

Test Program: NCAP MDB Side Impact Test

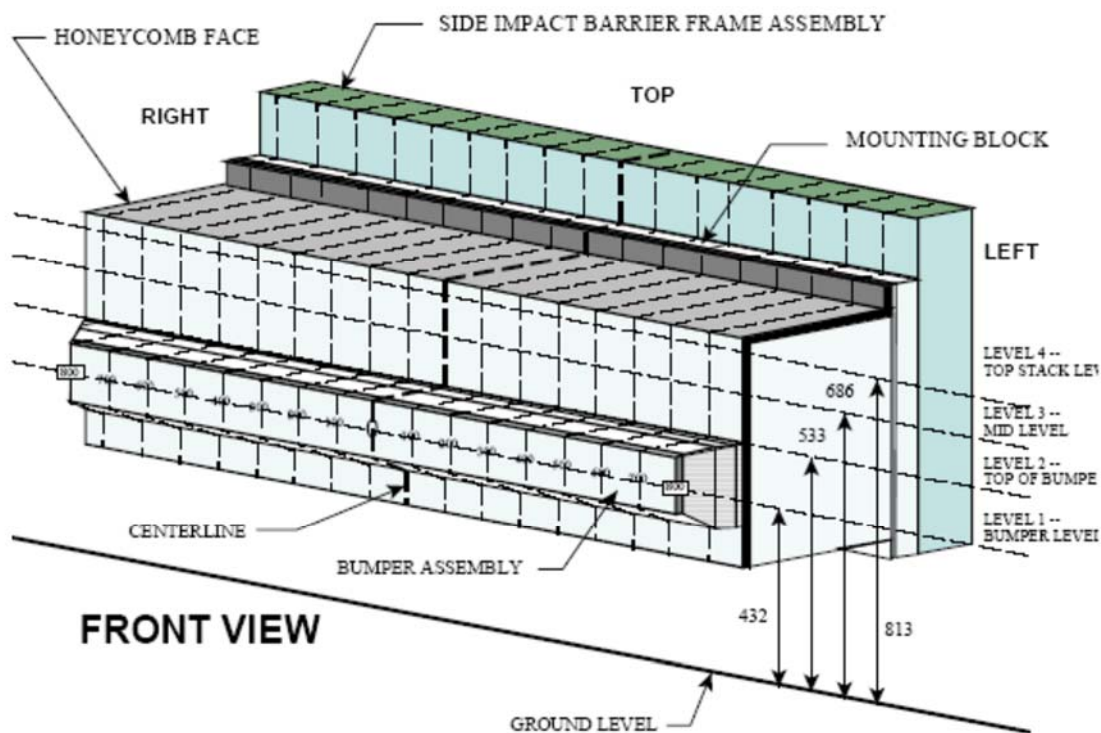
Test Date: 03/12/19



DATA SHEET NO. 12

MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19



NOTE: Dimensions are shown in millimeters, mm

DEFORMABLE BARRIER STATIC CRUSH

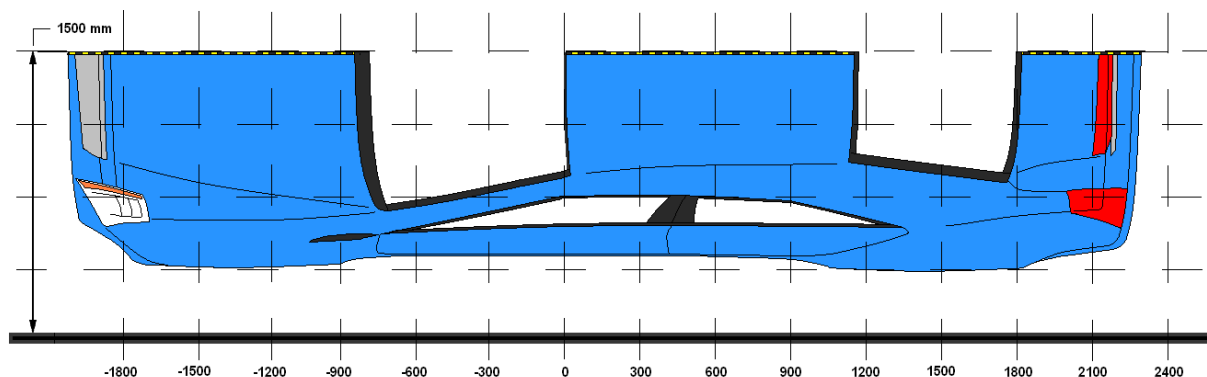
Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	189	179	169	172	169	164	167	164	139	134	149	139	149	137	142	149	179
2	67	68	67	67	61	57	60	67	37	32	27	22	27	27	30	37	57
3	87	37	27	18	10	17	22	37	37	17	17	12	15	22	32	42	67
4	67	39	19	12	17	27	55	57	47	31	27	27	38	48	63	77	98

All dimensions in millimeters.

DATA SHEET NO. 13

VEHICLE AND MDB DAMAGE PROFILE DISTANCES

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	2400	4	716	726	10
2	1950	3	624	738	114
3	1350	2	650	847	197
4	900	3	633	839	206
5	300	3	627	836	209
6	-150	4	745	735	-10

MDB DAMAGE PROFILE DISTANCES

DPD	From MDB Centerline		Level	Crush (mm)
	Distance (mm)	Direction		
1	800	Left	1	179
2	500	Left	1	137
3	200	Left	1	149
4	200	Right	1	167
5	500	Right	1	172
6	800	Right	1	189

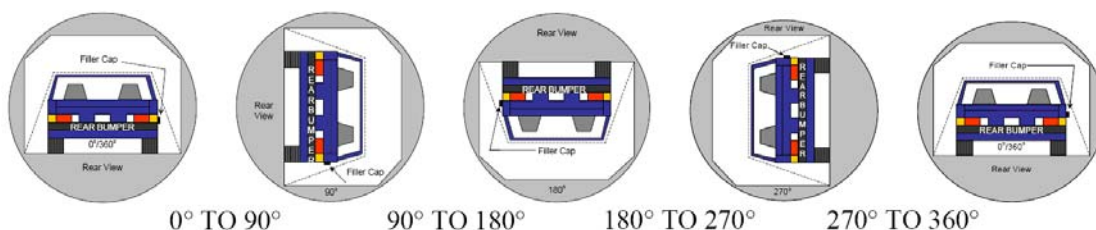
DATA SHEET NO. 14

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208
 Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19

Temperature at Time of Impact: 18.8 °C Test Time: 12:27 P.M.

- A. From impact until vehicle motion ceases: 0 oz.
 (Maximum allowable = 1 oz.)
- B. For the 5 minute period after motion ceases: 0 oz.
 (Maximum allowable = 5 oz.)
- C. For the following 25 minutes: 0 oz.
 (Maximum allowable = 1 oz./minute)
- D. Spillage Details: There was no Stoddard solvent spillage.



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	83	300	383
90° To 180°	80	300	380
180° To 270°	81	300	381
270° To 360°	81	300	381

FMVSS 301 SPILLAGE TABLE

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

SOLVENT SPILLAGE LOCATION TABLE

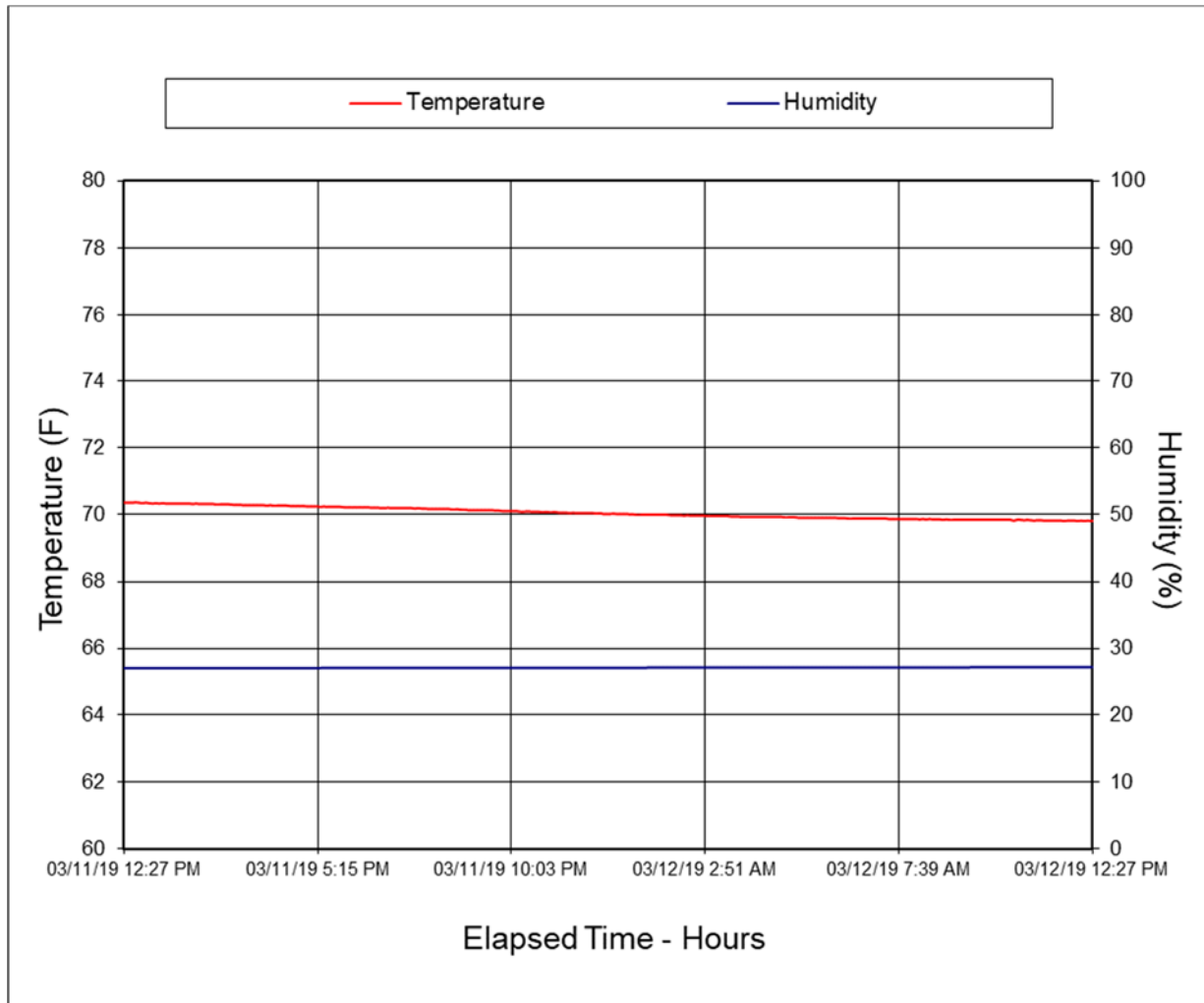
Test Phase	Spillage Location
0° To 90°	N/A
90° To 180°	N/A
180° To 270°	N/A
270° To 360°	N/A

DATA SHEET NO. 15

DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV NHTSA No. M20195208

Test Program: NCAP MDB Side Impact Test Test Date: 03/12/19



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

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

TABLE OF PHOTOGRAPHS ... (CONTINUED)

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

TABLE OF PHOTOGRAPHS ... (CONTINUED)

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



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



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



FIGURE 3. Pre-Test Frontal View of Test Vehicle



FIGURE 4. Post-Test Frontal View of Test Vehicle



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



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



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



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



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



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



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



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



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



FIGURE 15. Pre-Test Overhead View of Test Area

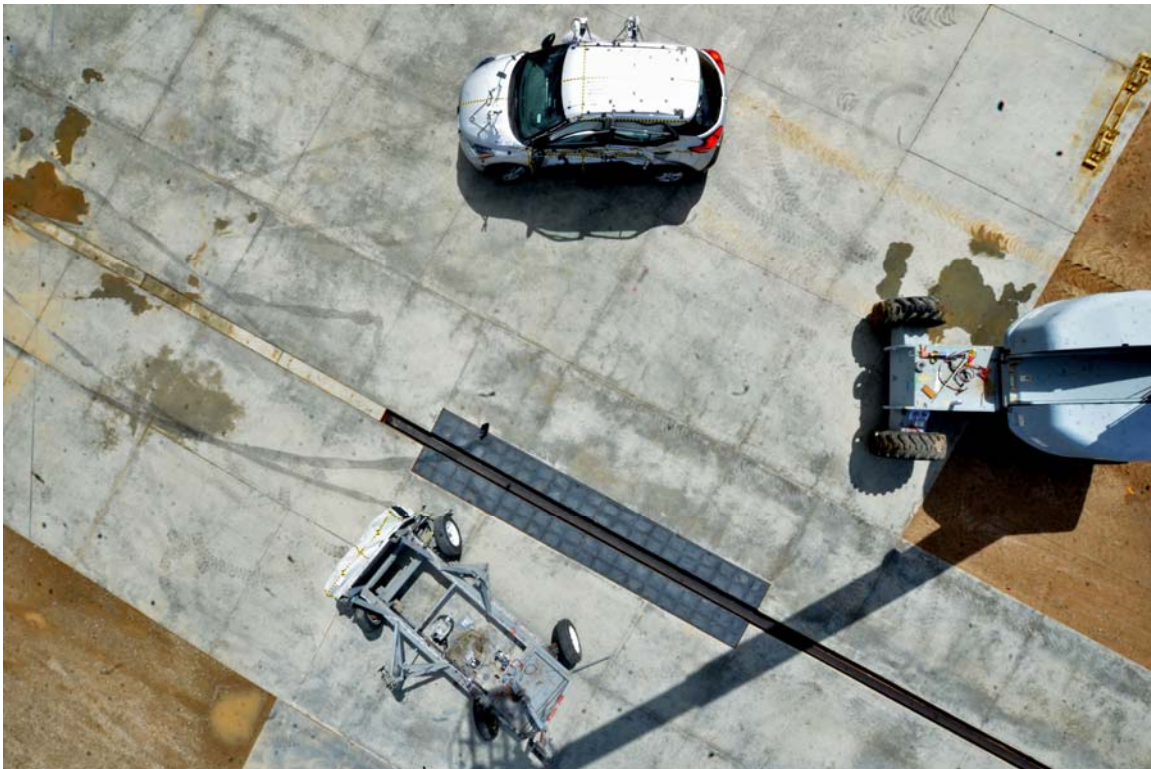


FIGURE 16. Post-Test Overhead View of Test Area



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



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



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

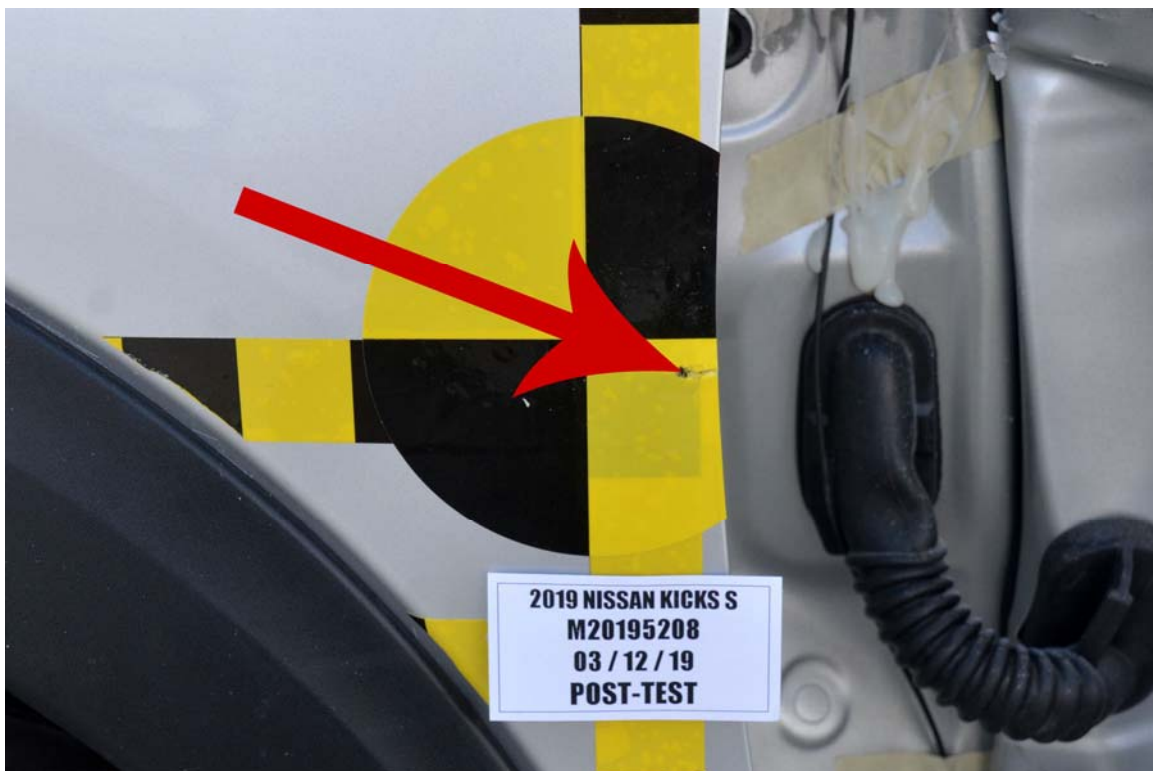


FIGURE 20. Post-Test Close-Up View of Impact Point Target



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



FIGURE 37. View of Disengaged Parking Brake



FIGURE 38. Pre-Test View of Parking Brake



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



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



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



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



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



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



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



FIGURE 46. Pre-Test Driver Inner Door Panel View



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



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



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



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



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

Photograph Not Applicable

No Driver Dummy Pelvis
Contact with
Vehicle Interior

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

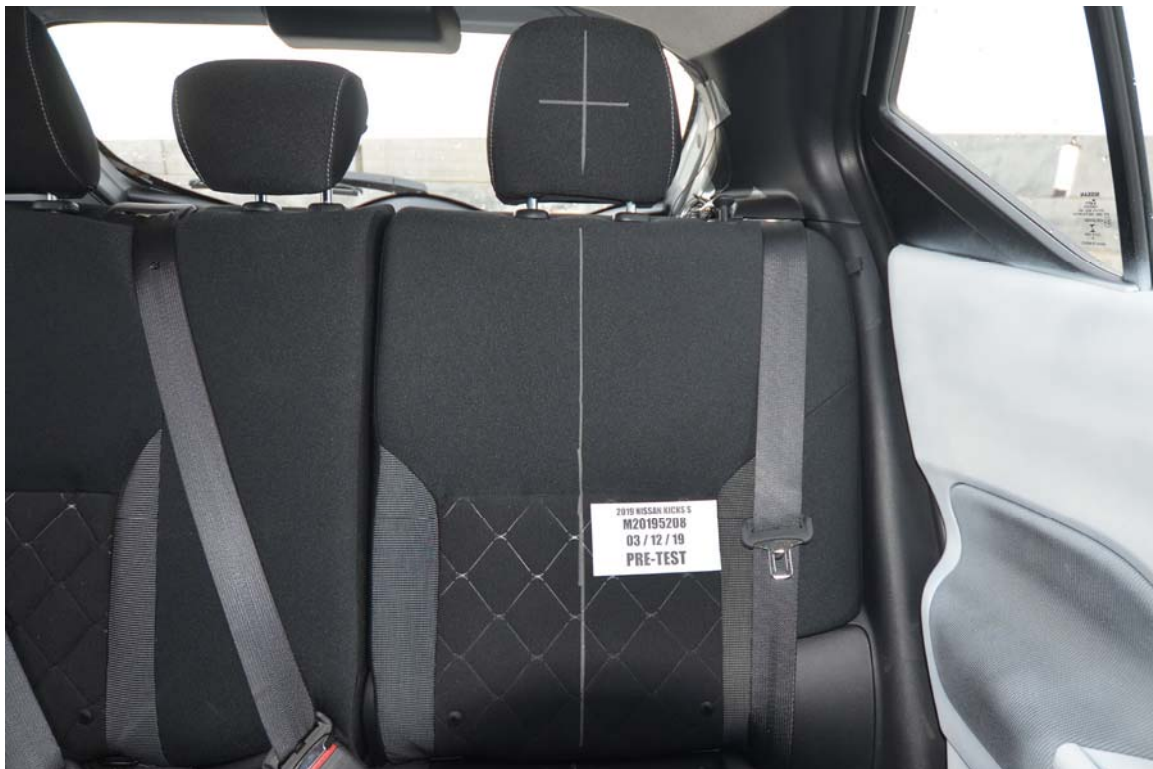


FIGURE 58. Pre-Test Frontal View of Rear Passenger Seat Back
Prior to Dummy Positioning



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

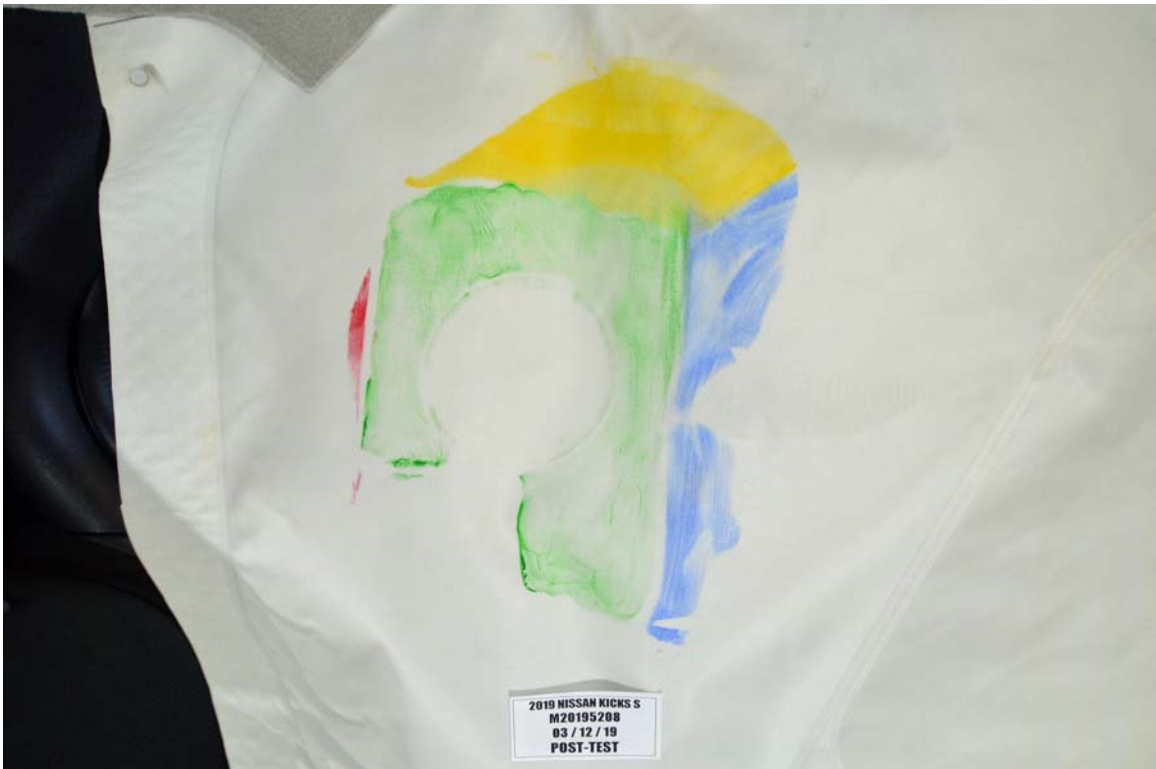


FIGURE 76. Post-Test Rear Passenger Dummy Close-Up
Head Contact with Side Airbag View



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

Vehicle Not Equipped with
Rear Passenger Side Airbag

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

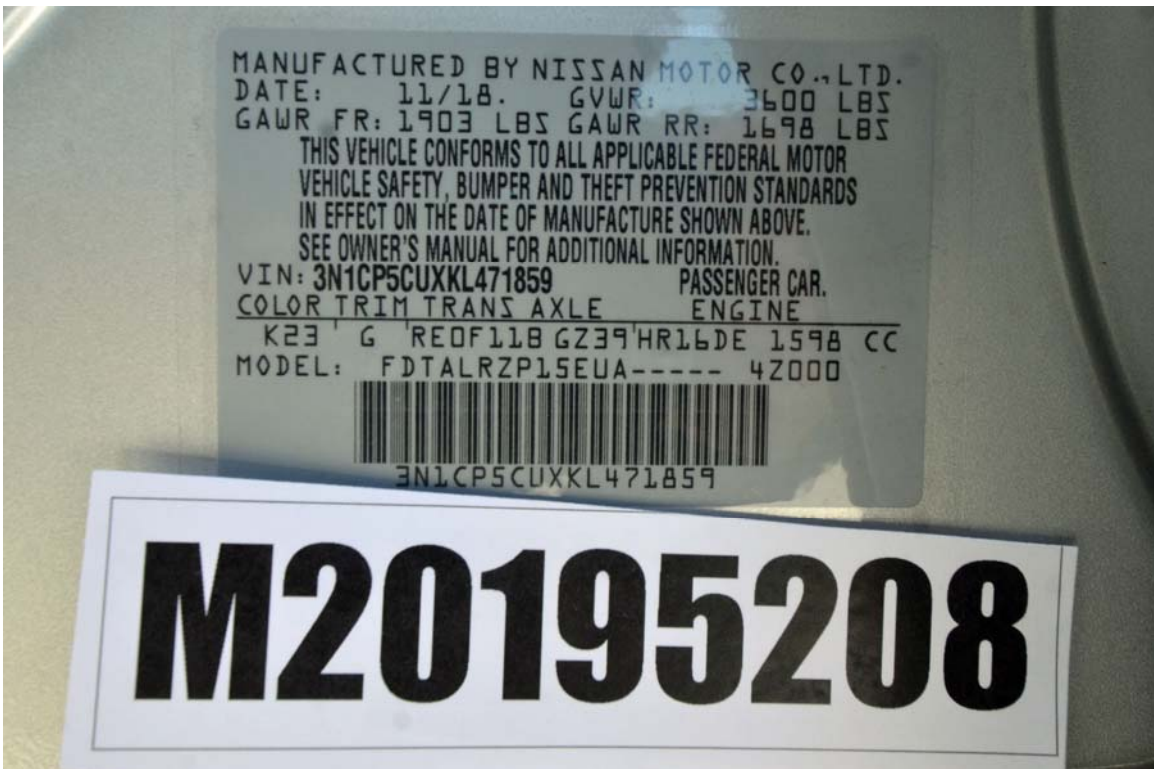


FIGURE 92. Close-Up View of Vehicle's Certification Label

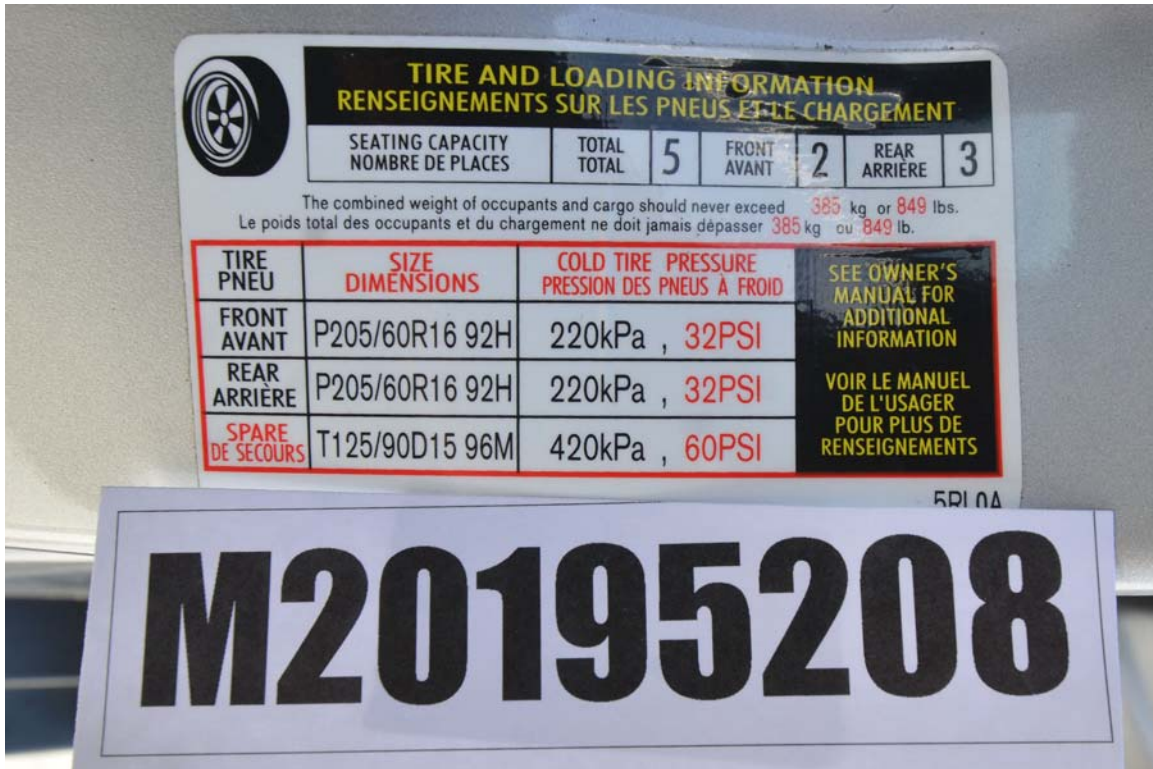


FIGURE 93. Close-Up View of Vehicle's Tire Information Placard or Label

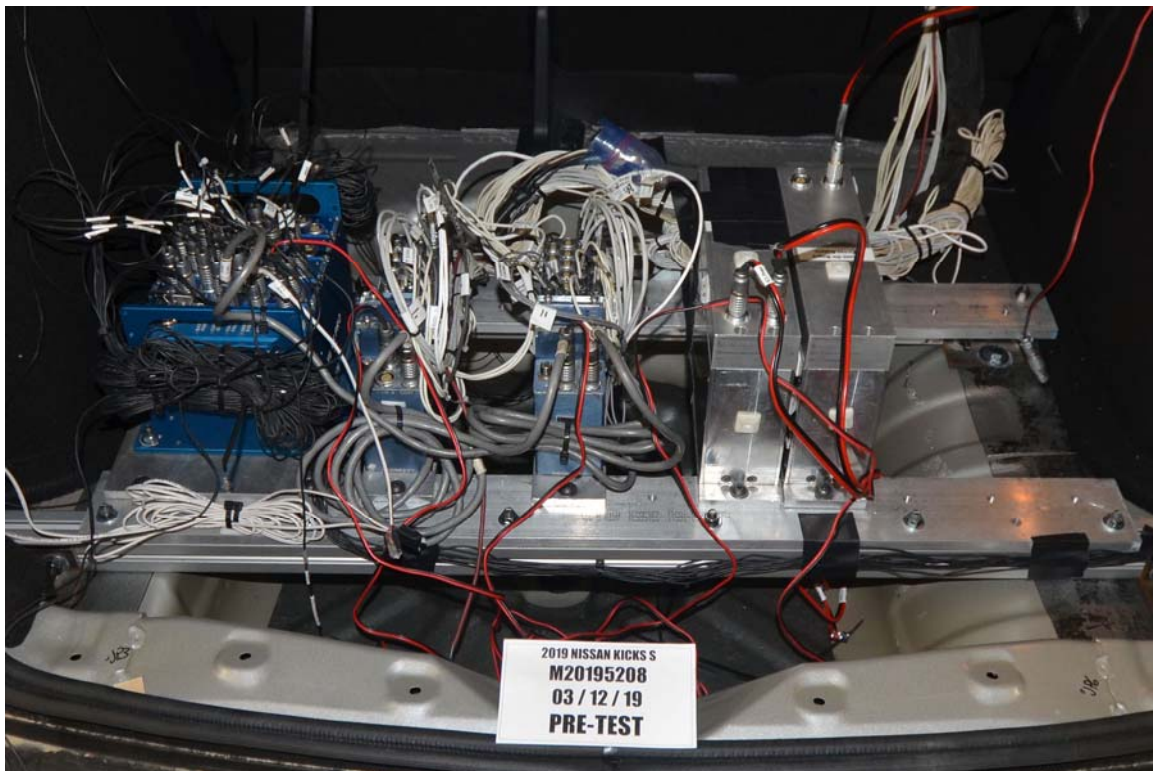


FIGURE 94. Pre-Test Ballast View



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

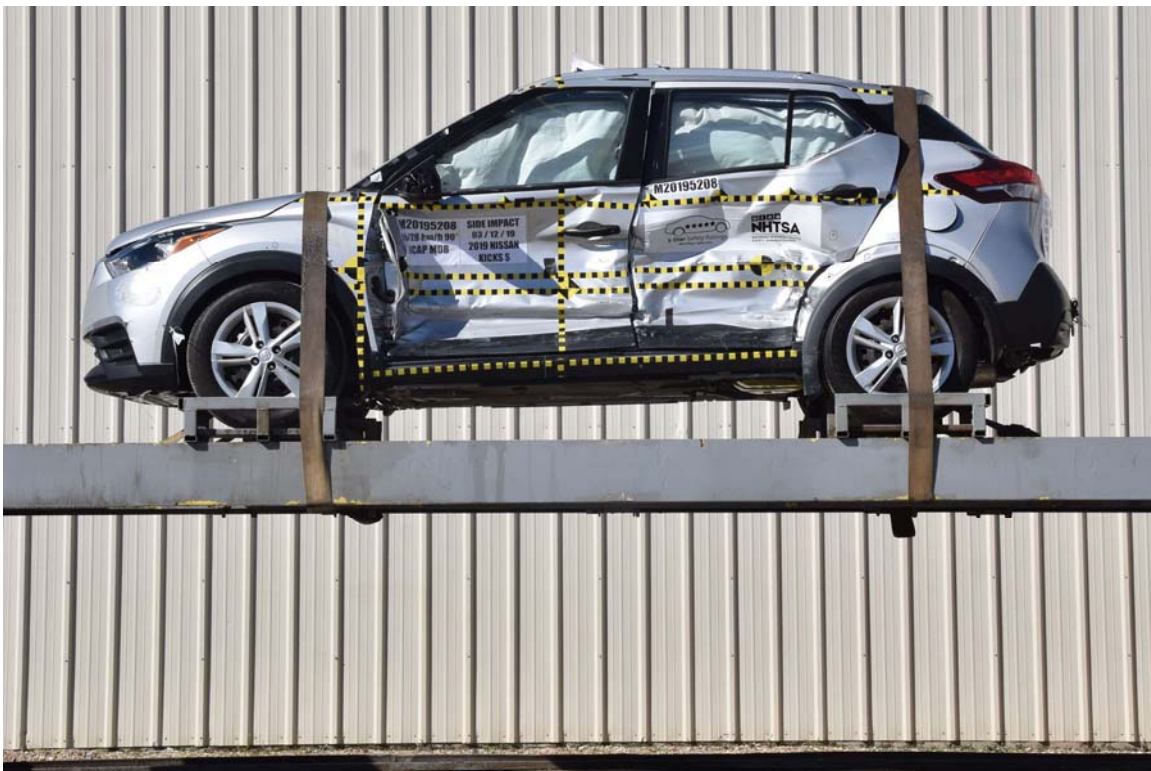


FIGURE 96. FMVSS No. 301 Static Rollover 0 Degrees



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

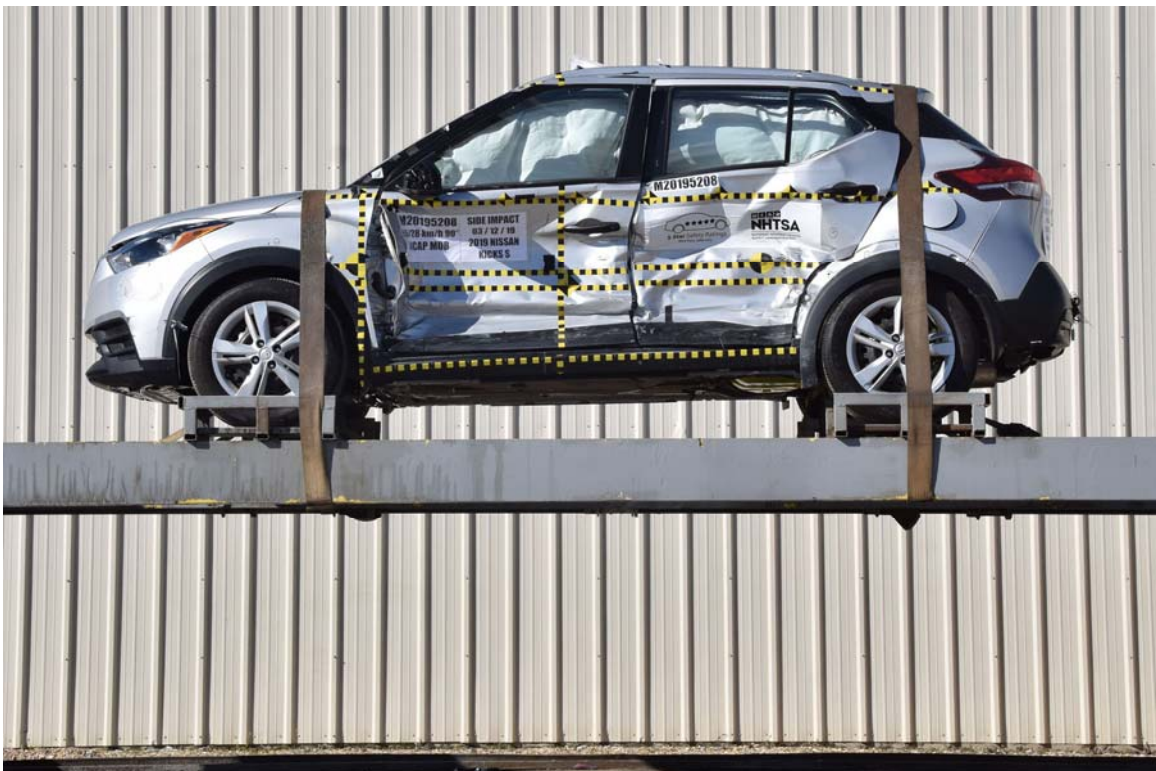


FIGURE 100. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 101. Impact Event

2019 NISSAN KICKS S CVT

Scan QR code for general model information & options

Standard Equipment Included at No Extra Charge

MECHANICAL & PERFORMANCE
 1.6L DCMC 16-Valve 4-Cylinder Engine
 Xtronic CVT (Continuously Variable Transmission)
 Power-Assisted Vented Front Disc / Rear Drum Brakes
 16" Steel Wheels w/ Full Wheel Covers
 Hill Start Assist

SAFETY & SECURITY
 Dual-Stage Supplemental Driver and Front Passenger Air Bags
 Front Seat-Mounted Side Impact Supplemental Air Bags
 Side Impact Supplemental Curtain Air Bags w/ Rollover Sensor
 Driver Knee Supplemental Air Bag
 Anti-Lock Braking System (ABS)
 Traction Control System (TCS)
 Vehicle Dynamic Control (VDC)
 Electronic Brake Force Distribution (EBSD)
 Tire Pressure Monitoring System (TPMS) w/ Entry Fill Line Alert
 Nissan Vehicle Immobilizer System
 Automatic Emergency Braking (AEB)

COMFORT & CONVENIENCE
 Cruise Control with Steering Wheel Mounted Controls
 Manual Air Conditioning
 Remote Keyless Entry w/ Push Button Start
 7" Color Touchscreen Display Audio System w/ 6 Speakers
 Bluetooth® Hands-free Phone System + Streaming audio via Bluetooth®
 Siri® Eyes Free®
 Audio and Bluetooth® Steering Wheel Switches
 3 USB Ports (2 charge only)
 RearView Monitor (RVM)
 16" Telescoping Steering Wheel
 Power Windows
 1 Touch Up/Down (Driver & Front Passenger)
 4-Way Adjustable Cloth Front Bucket Seats
 Power Door Locks w/ Auto-Locking Feature
 Driver Seat Armrest and Seat Lift
 60/40 Split Rear Seats

EXTERIOR
 Hood Rails w/ Silver Paint
 Manual Folding Power Outside Mirrors
 Front and Rear Bumper with Black Plastic Accent
 Variable Intermittent Wipers w/ Mist Hold Wiper
 Intelligent Auto Headlights (IAH)

*For more information, see dealer, see dealer, owner's manual, or www.Nissan-USA.com/connections for important information.

**Optional equipment replaces standard equipment where applicable.

Manufacturer's Suggested Retail Base Price: \$18,540.00

Options Included by Manufacturer:
 SPLASH GUARDS \$170.00
 CARPETED FLOOR MATS & CARGO MAT \$215.00
 DOOR SILL PLATES \$90.00

DESTINATION CHARGES: 1,045.00

Total* \$20,060.00

EPA DOT Fuel Economy and Environment Gasoline Vehicle

Fuel Economy **33 MPG**
 combined city/hwy 31 city 36 highway
 3.0 gallons per 100 miles

Midsize CARS range from 14 to 136 MPG. The best vehicle rates 136 MPG.

You save \$1,250
 in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost \$1,150

Fuel Economy & Greenhouse Gas Rating (based on 15,000 miles per year)
 1 8 10 1 7 10
 Best

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 27 MPG and emits 37.0 grams CO₂ per mile. The best new vehicle gets 39 mpg and emits 16.0 grams CO₂ per mile. Actual results may vary. For more information, visit fuel-economy.gov.

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score Not Rated
Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.

Frontal Crash	Driver	Passenger	Not Rated
Side Crash	Front seat	Rear seat	Not Rated
Rollover	Not Rated		

Star ratings range from 1 to 5 stars (*****), with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA). www.safercar.gov or 1-888-327-4236

DELIVERY

VEHICLE COLORS:
 EXT: DRILLANT SILVER
 INT: CHARCOAL

FINAL ASSEMBLY POINT:
 AGUAS (ABV) MEX

TRANSPORT METHOD:
 TRUCK

DEALER:
 PUENTE HILLS NISSAN
 17320 E GALE AVENUE
 CITY OF INDUSTRY CA 91746

VIN: 3N1CP0C0XGL471859
EMS: 50 STATE EMISSIONS
MDL: 21019-471859 K23-D
OPT: 2-B10C03L02N63

THIS VEHICLE IS EQUIPPED WITH COMPONENTS THAT CAN REDUCE THE IMPACT OF A CRASH. THE IMPACT OF A CRASH CAN BE REDUCED TO THE VEHICLE'S BODY AND SAFETY SYSTEMS. AS WITH ANY OTHER VEHICLE, THE BROWER SYSTEM ON THIS VEHICLE CONFORMS TO THE CURRENT FEDERAL SAFETY STANDARDS OF 2.5 MILES PER HOUR.

2018120720247A55258

FIGURE 102. Monroney Label

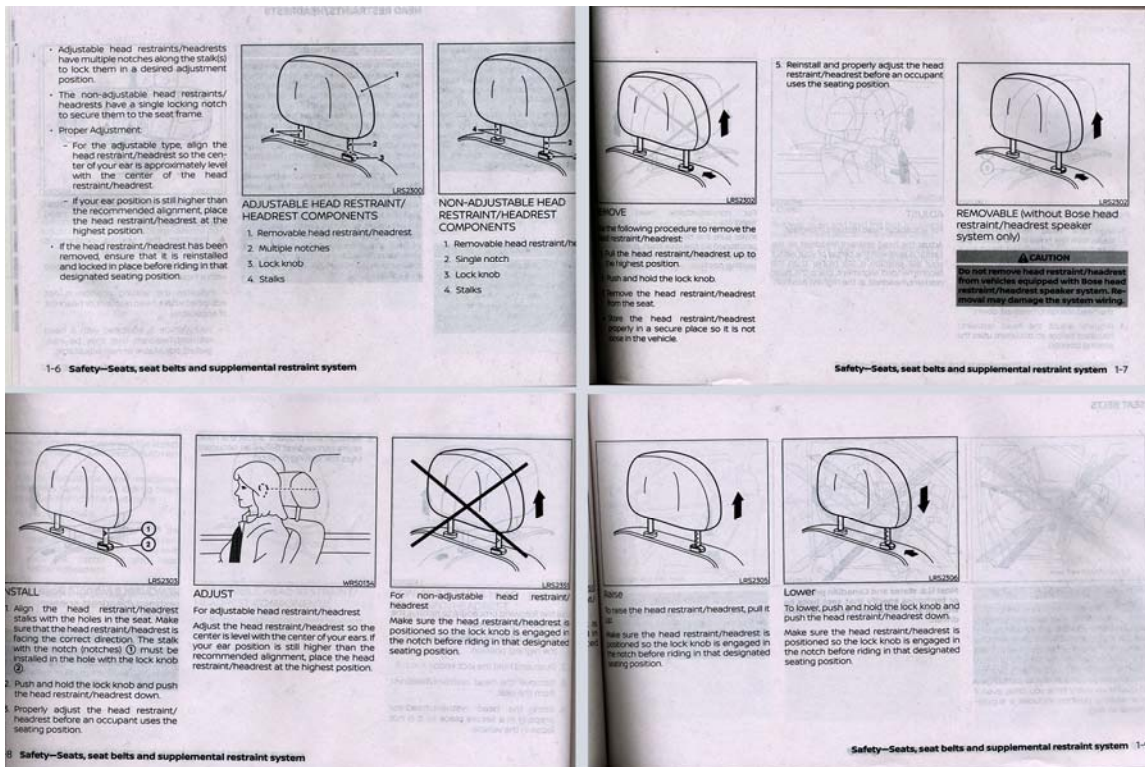


FIGURE 103. Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

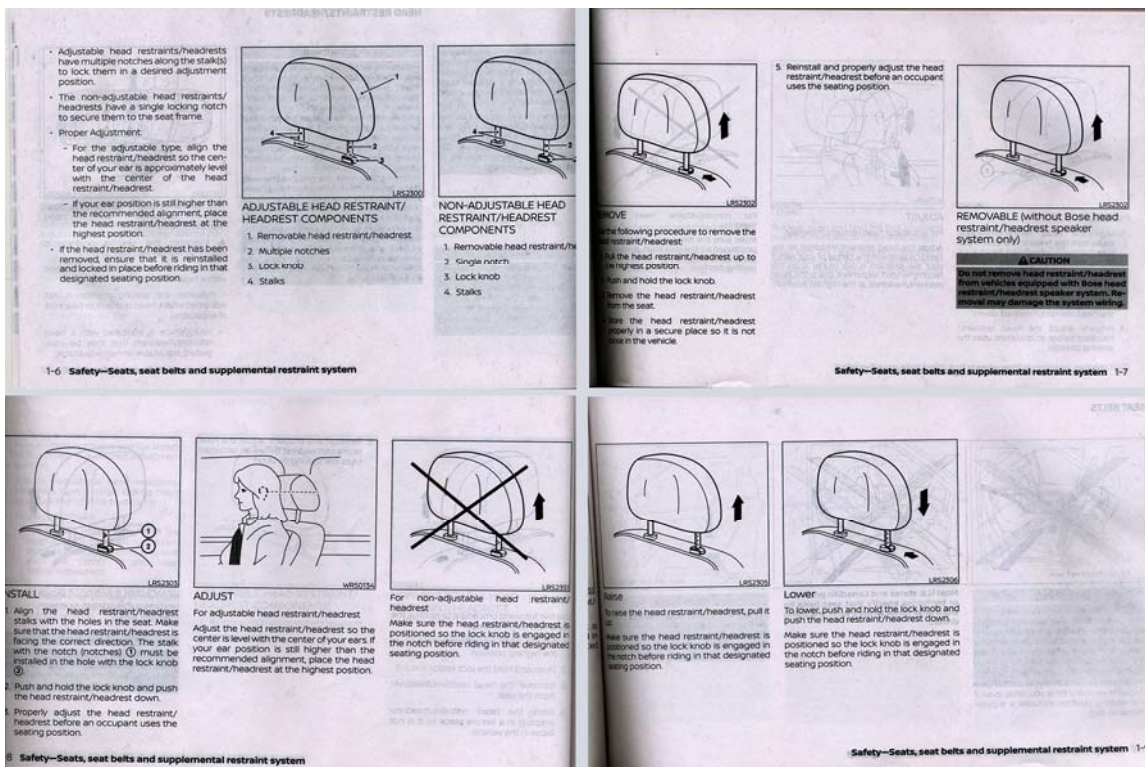


FIGURE 104. Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

APPENDIX B
DUMMY RESPONSE DATA

TABLE OF DATA PLOTS

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

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

Additional Driver & Passenger Dummy Instrumentation Data

Driver Lower Spine T12 Acceleration (X)

Driver Lower Spine T12 Acceleration (Y)

Driver Lower Spine T12 Acceleration (Z)

Passenger Upper Thorax Rib Deflection (Y)

Passenger Middle Thorax Rib Deflection (Y)

Passenger Lower Thorax Rib Deflection (Y)

Passenger Upper Abdomen Rib Deflection (Y)
Passenger Lower Abdomen Rib Deflection (Y)
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)

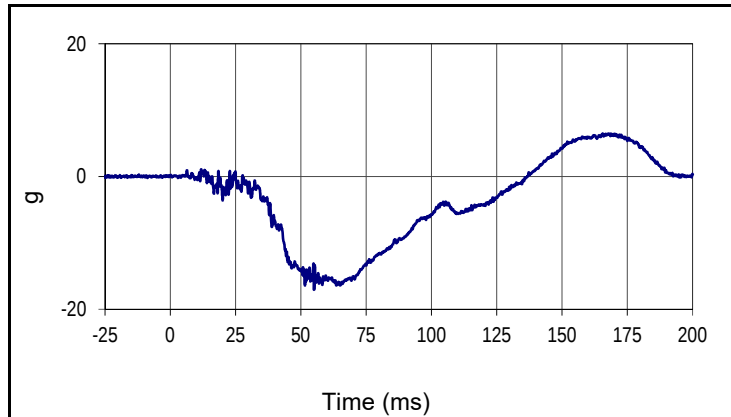
MDB Rear Acceleration (Y)

Left MDB Contact Switch

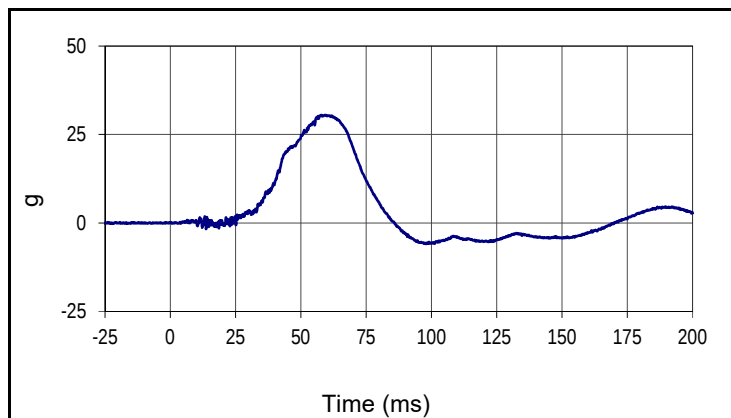
Right MDB Contact Switch

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV
 Test Program: NCAP MDB Side Impact Test

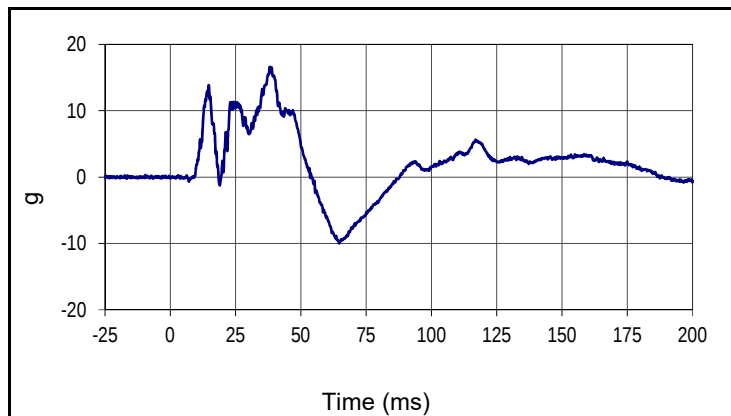
NHTSA No.: M20195208
 Test Date: 3/12/2019



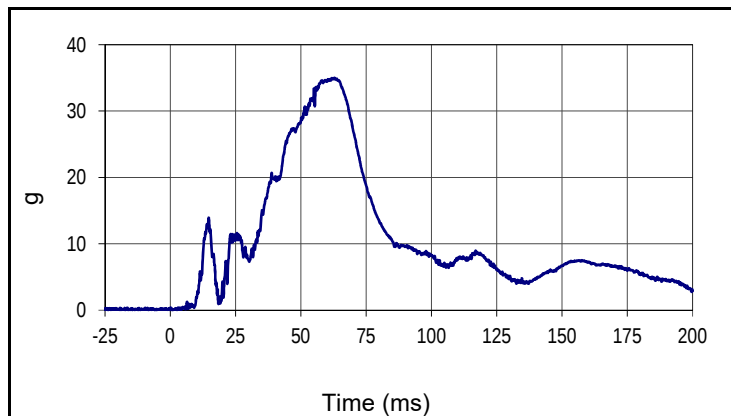
Curve Description			
Driver Head Acceleration X Primary			
Plot No.		SAE Class	Units
001		1000	g
Max	Time	Min	Time
6.4	165.5	-17.1	55.0



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.		SAE Class	Units
002		1000	g
Max	Time	Min	Time
30.5	57.9	-5.9	97.9



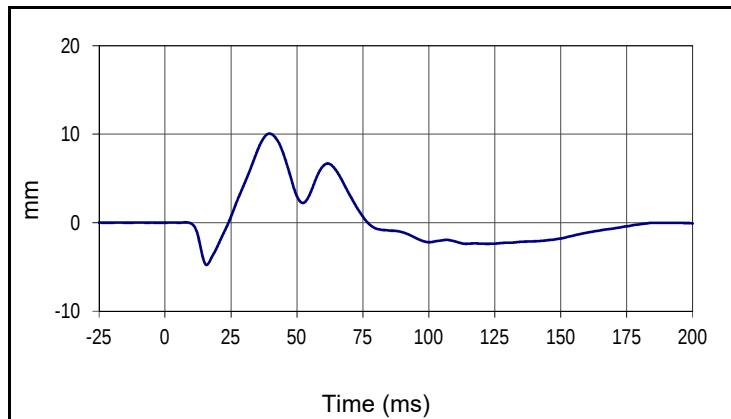
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.		SAE Class	Units
003		1000	g
Max	Time	Min	Time
16.6	38.1	-10.0	64.7



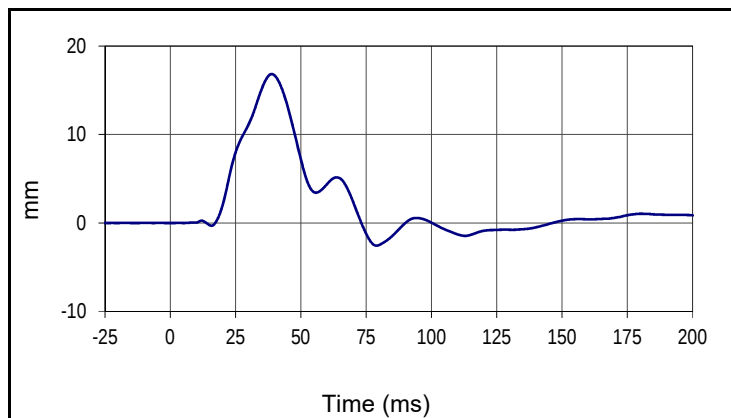
Curve Description			
Driver Head Resultant Acceleration Primary			
Plot No.		SAE Class	Units
004		1000	g
Max	Time	Min	Time
35.0	62.9	0.0	0.8

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV
 Test Program: NCAP MDB Side Impact Test

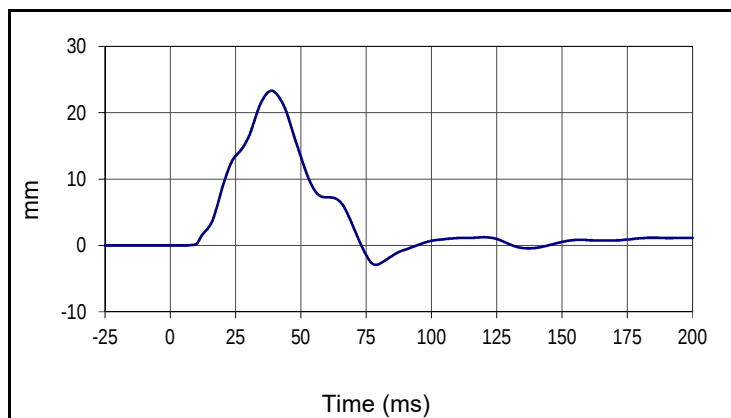
NHTSA No.: M20195208
 Test Date: 3/12/2019



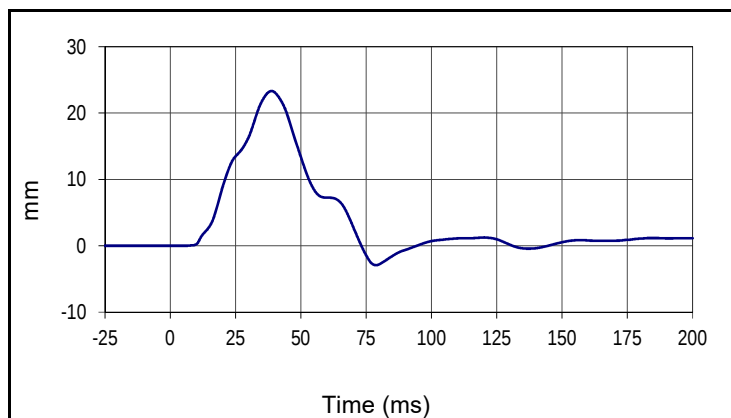
Curve Description			
Driver Upper Thorax Rib Deflection Y			
Plot No.		SAE Class	Units
005		180	mm
Max	Time	Min	Time
10.1	39.6	-4.8	15.8



Curve Description			
Driver Middle Thorax Rib Deflection Y			
Plot No.		SAE Class	Units
006		180	mm
Max	Time	Min	Time
16.8	38.8	-2.6	79.0



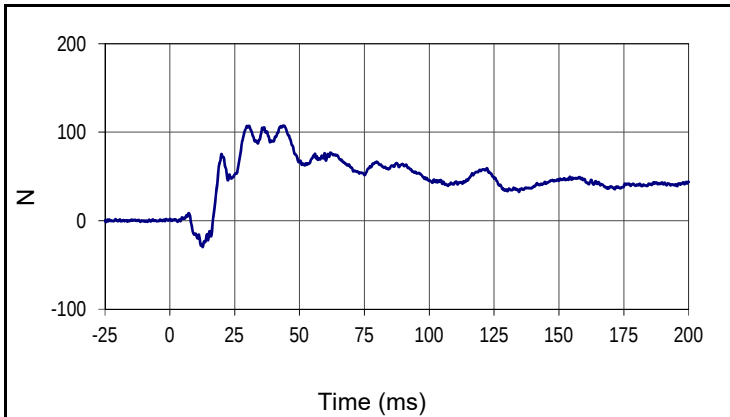
Curve Description			
Driver Lower Thorax Rib Deflection Y			
Plot No.		SAE Class	Units
007		180	mm
Max	Time	Min	Time
23.3	38.7	-2.9	78.7



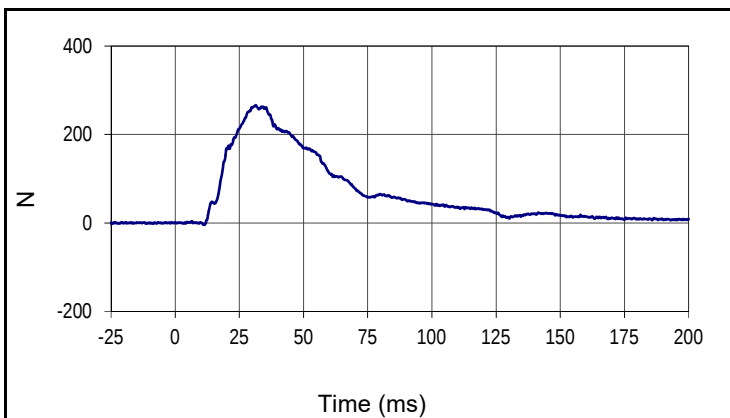
Curve Description			
Driver Thorax Rib Deflection Maximum Y			
Plot No.		SAE Class	Units
008		180	mm
Max	Time	Min	Time
23.3	38.7	-2.9	78.7

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV
 Test Program: NCAP MDB Side Impact Test

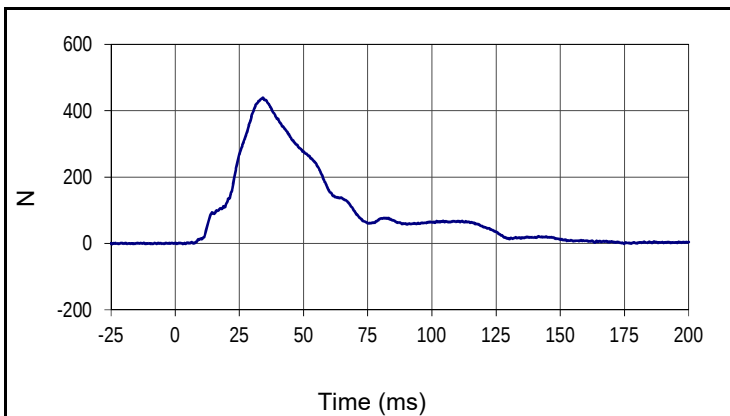
NHTSA No.: M20195208
 Test Date: 3/12/2019



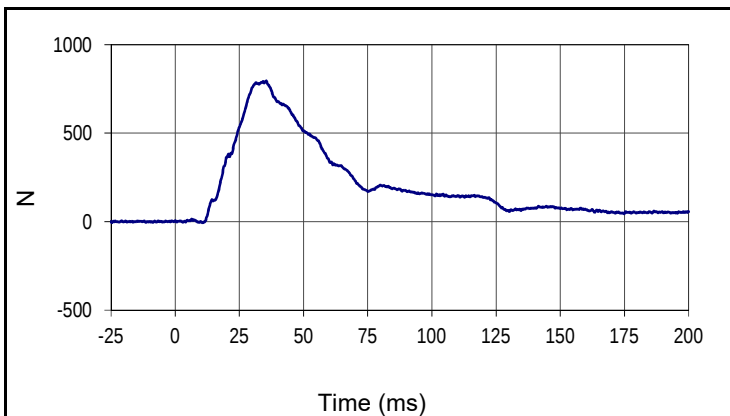
Curve Description			
Driver Anterior Abdominal Force Y			
Plot No.		SAE Class	Units
009		600	N
Max	Time	Min	Time
107.3	43.7	-29.7	12.7



Curve Description			
Driver Middle Abdominal Force Y			
Plot No.		SAE Class	Units
010		600	N
Max	Time	Min	Time
266.3	31.4	-4.2	11.3



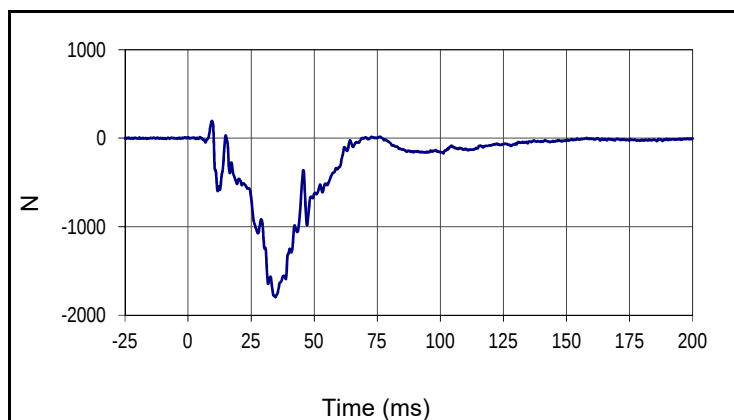
Curve Description			
Driver Posterior Abdominal Force Y			
Plot No.		SAE Class	Units
011		600	N
Max	Time	Min	Time
439.5	34.2	-1.7	3.0



Curve Description			
Driver Total Abdominal Force			
Plot No.		SAE Class	Units
012		600	N
Max	Time	Min	Time
795.5	35.5	-6.3	10.7

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV
 Test Program: NCAP MDB Side Impact Test

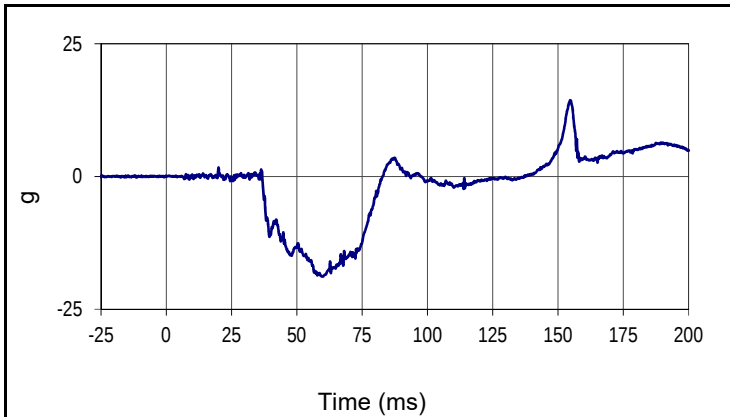
NHTSA No.: M20195208
 Test Date: 3/12/2019



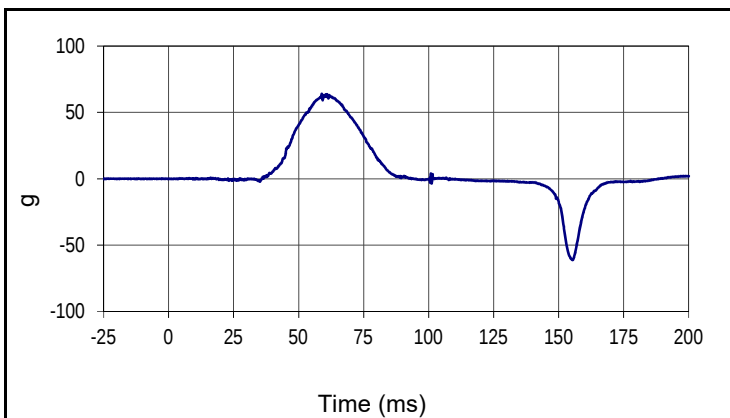
Curve Description			
Driver Pubic Symphysis Force Y			
Plot No.		SAE Class	Units
013		600	N
Max	Time	Min	Time
195.0	9.5	-1796.4	34.6

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV
 Test Program: NCAP MDB Side Impact Test

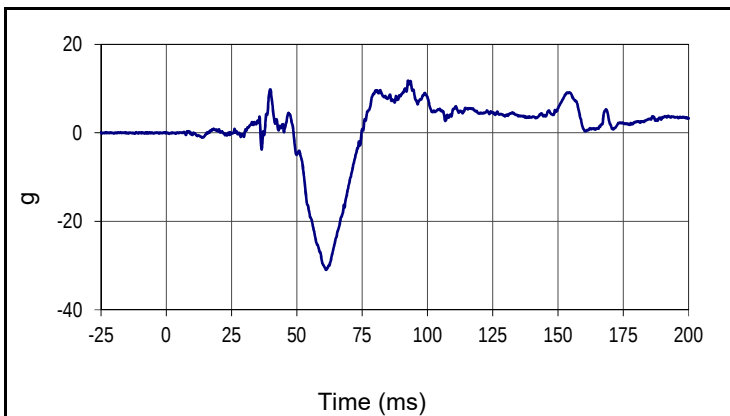
NHTSA No.: M20195208
 Test Date: 3/12/2019



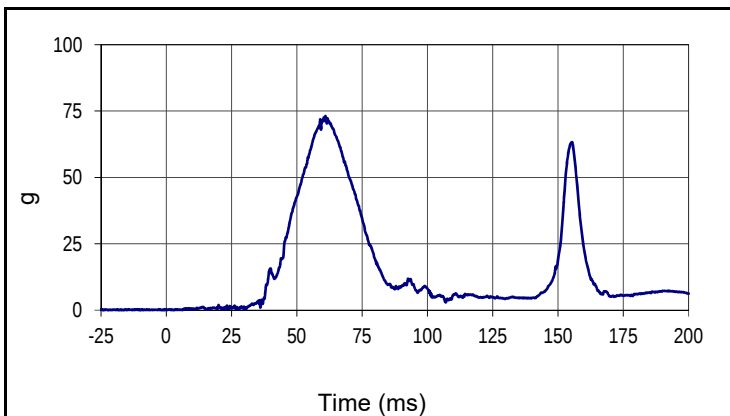
Curve Description			
Passenger Head Acceleration X Primary			
Plot No.		SAE Class	Units
014		1000	g
Max	Time	Min	Time
14.4	154.7	-18.9	59.7



Curve Description			
Passenger Head Acceleration Y Primary			
Plot No.		SAE Class	Units
015		1000	g
Max	Time	Min	Time
64.0	58.9	-61.3	155.4



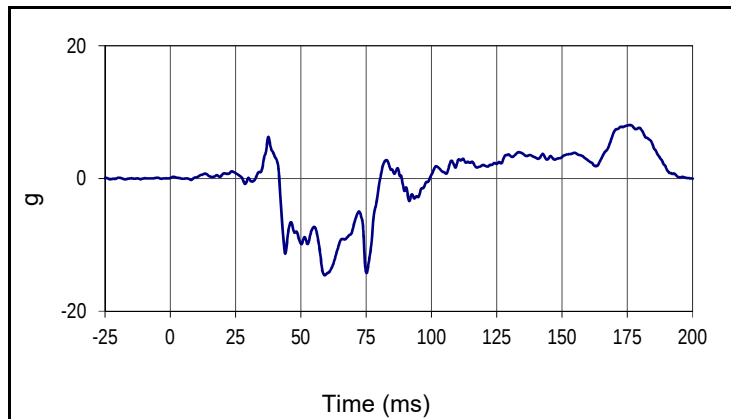
Curve Description			
Passenger Head Acceleration Z Primary			
Plot No.		SAE Class	Units
016		1000	g
Max	Time	Min	Time
11.8	92.5	-31.0	61.1



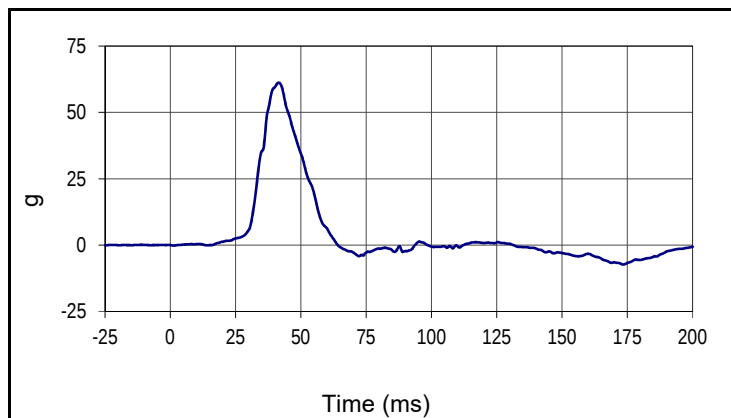
Curve Description			
Passenger Head Acceleration Resultant Primary			
Plot No.		SAE Class	Units
017		1000	g
Max	Time	Min	Time
73.1	60.9	0.0	2.8

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV
 Test Program: NCAP MDB Side Impact Test

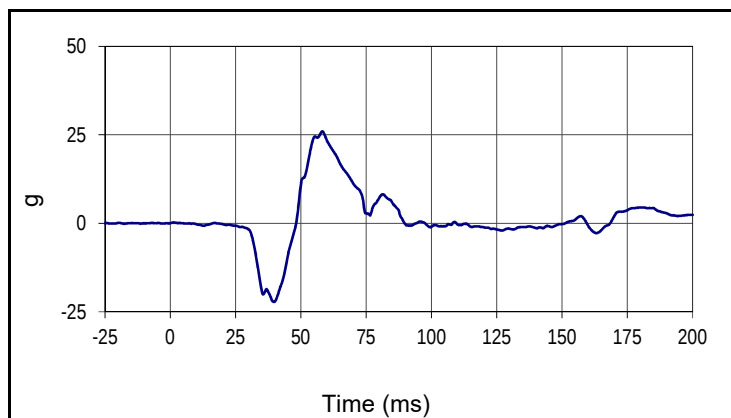
NHTSA No.: M20195208
 Test Date: 3/12/2019



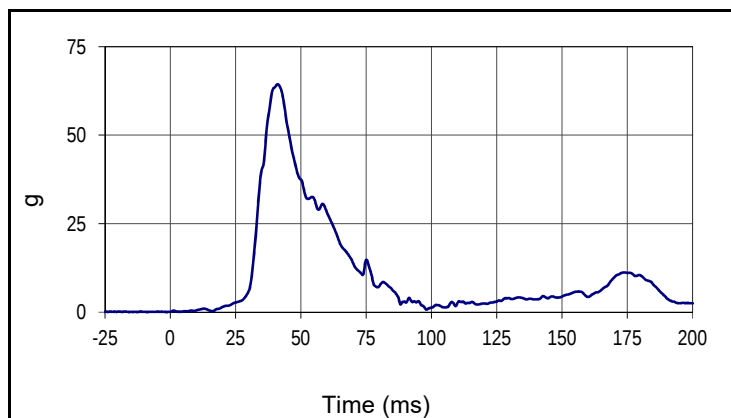
Curve Description			
Passenger Lower Spine T12 Acceleration X			
Plot No.		SAE Class	Units
018		180	g
Max	Time	Min	Time
8.0	176.0	-14.6	59.1



Curve Description			
Passenger Lower Spine T12 Acceleration Y			
Plot No.		SAE Class	Units
019		180	g
Max	Time	Min	Time
61.2	41.5	-7.3	173.4



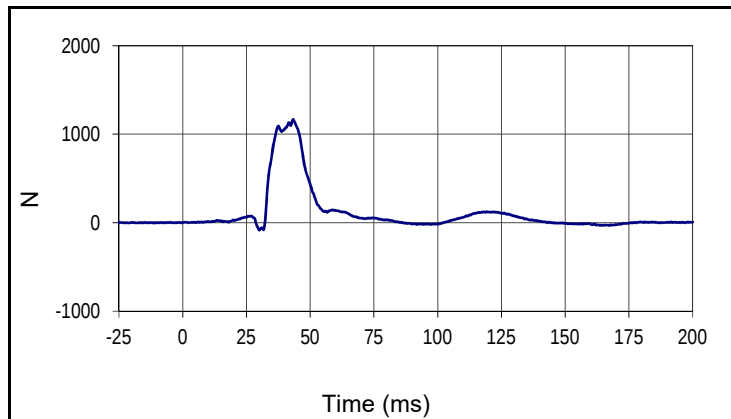
Curve Description			
Passenger Lower Spine T12 Acceleration Z			
Plot No.		SAE Class	Units
020		180	g
Max	Time	Min	Time
26.0	58.2	-22.2	39.6



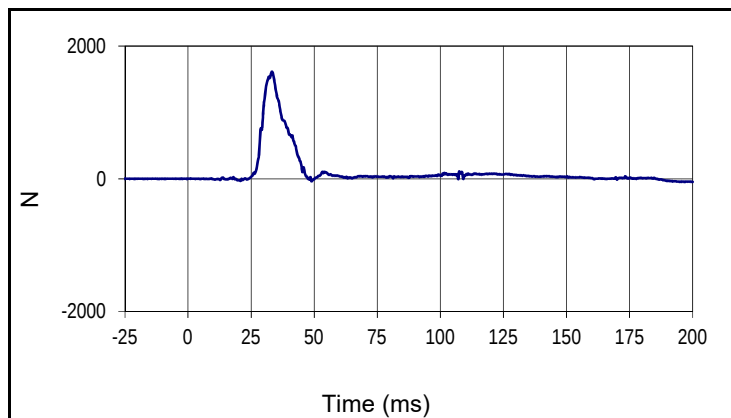
Curve Description			
Passenger Lower Spine T12 Acceleration Res.			
Plot No.		SAE Class	Units
021		180	g
Max	Time	Min	Time
64.4	41.1	0.1	0.0

Test Vehicle: 2019 Nissan Kicks S 5-Door SUV
 Test Program: NCAP MDB Side Impact Test

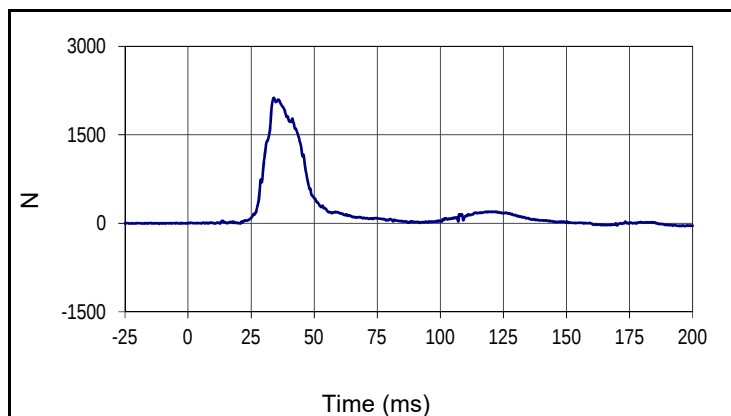
NHTSA No.: M20195208
 Test Date: 3/12/2019



Curve Description			
Passenger Iliac Force on Impact Side Y			
Plot No.		SAE Class	Units
022		600	N
Max	Time	Min	Time
1168.0	43.3	-85.2	30.1



Curve Description			
Passenger Acetabulum Force on Impact Side Y			
Plot No.		SAE Class	Units
023		600	N
Max	Time	Min	Time
1613.5	33.2	-46.8	200.0



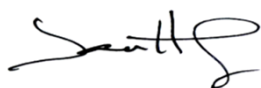
Curve Description			
Passenger Total Pelvic Force			
Plot No.		SAE Class	Units
024		600	N
Max	Time	Min	Time
2127.6	33.9	-46.9	196.8

APPENDIX C
ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

APPENDIX C
Pre-Test ATD Configuration And Performance Verification Data
ES-2re 50th Male Side Impact ATD, Left Side Configuration
S/N: F035

Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Relative Humidity	%	10	70	28	Pass
1 - Sitting Height	mm	900	918	906	Pass
2 - Seat to Shoulder Joint	mm	558	572	564	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	103	Pass
5 - Sole to Seat, Sitting	mm	433	451	446	Pass
6 - Head Width	mm	152	158	155	Pass
7 - Shoulder/Arm Width	mm	461	479	470	Pass
8 - Thorax Width	mm	322	332	329	Pass
9 - Abdomen Width	mm	273	287	278	Pass
10 - Pelvis Lap Width	mm	359	373	366	Pass
11 - Head Depth	mm	196	206	204	Pass
12 - Thorax Depth	mm	262	272	270	Pass
13 - Abdomen Depth	mm	194	204	198	Pass
14 - Pelvis Depth	mm	235	245	237	Pass
15 - Back of Buttocks to Hip Joint (bolt Center)	mm	150	160	154	Pass
16 - Back of Buttocks to Front Knee	mm	597	615	604	Pass
			Overall Test Results		Pass

Technician:



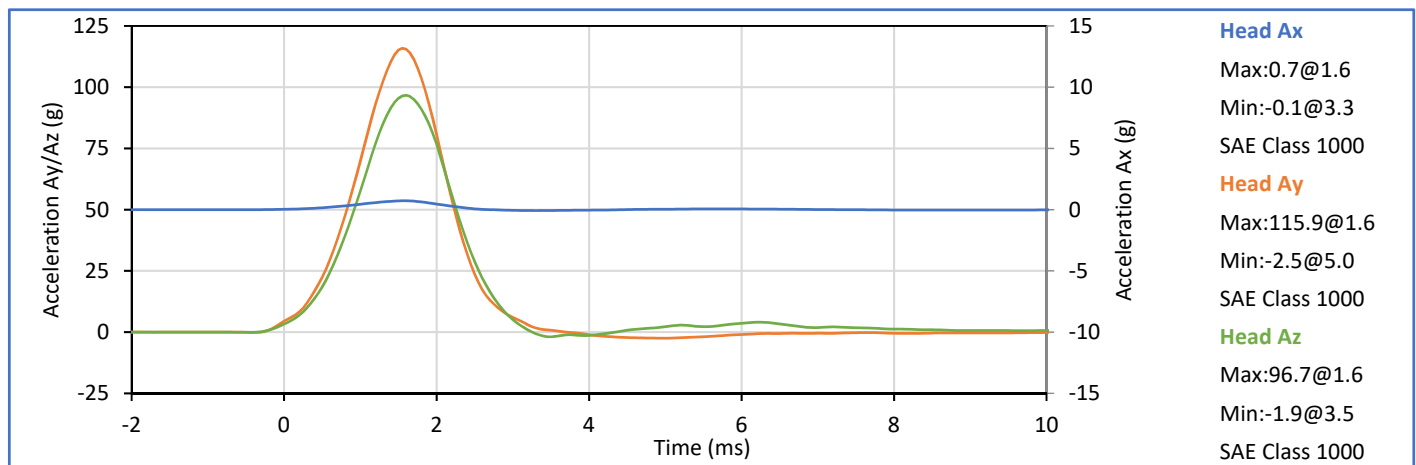
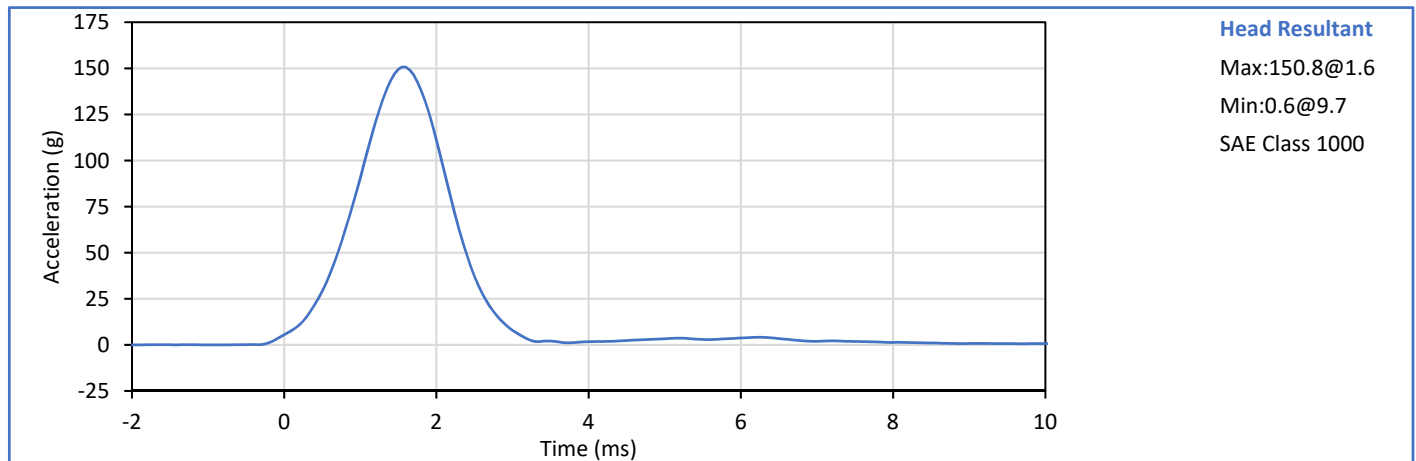
J. Hernandez

Approved By:



P. Puzzuto

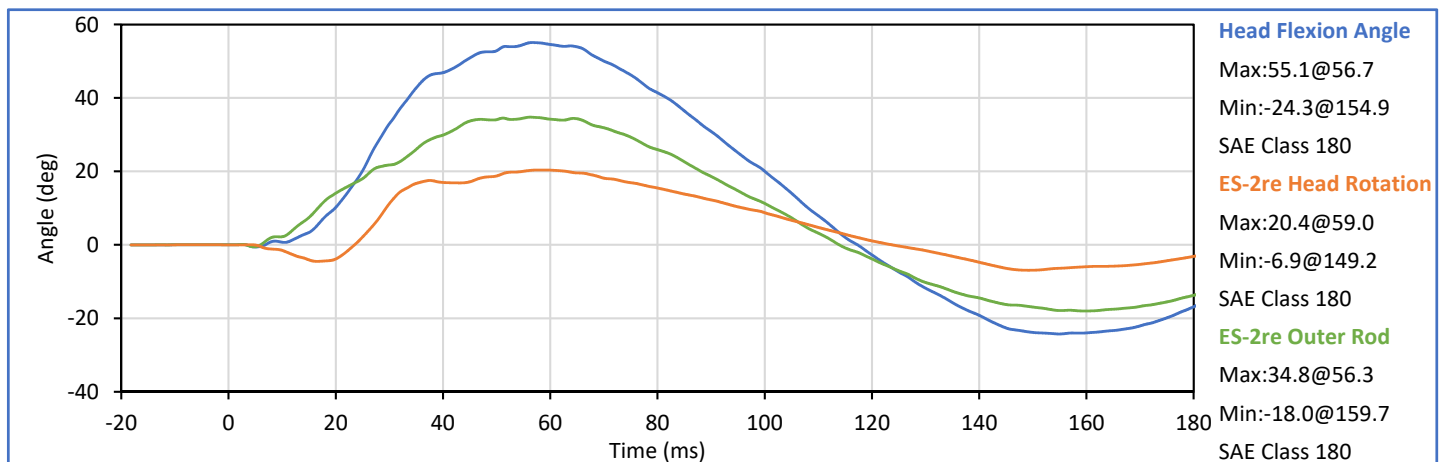
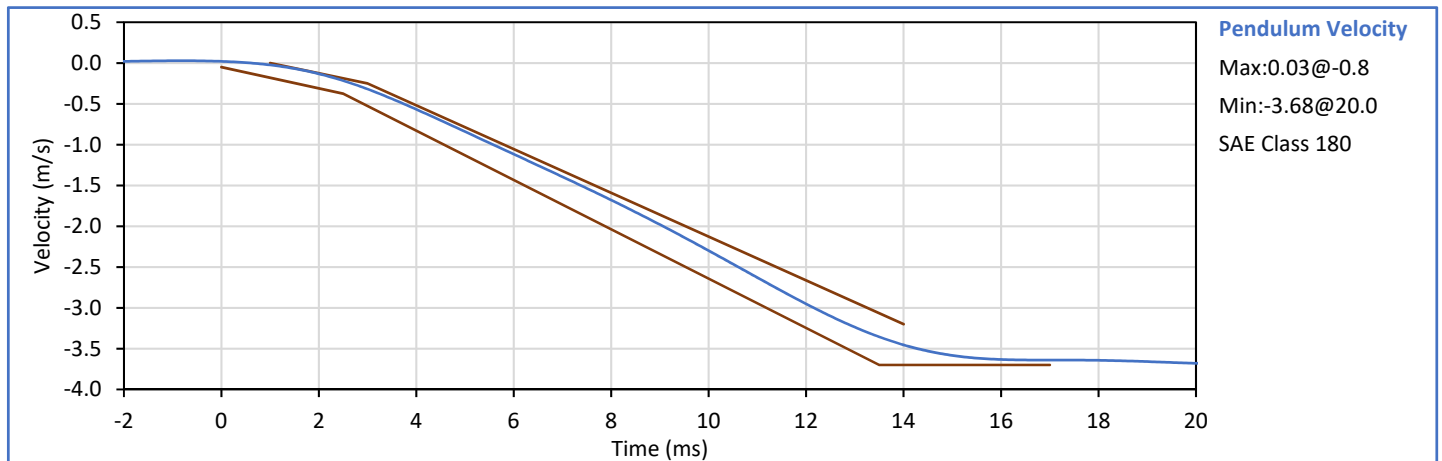
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.9	Pass
Laboratory Humidity	%	10	70	28	Pass
Peak Resultant Acceleration	g	125.0	155.0	150.8	Pass
Peak Head Ax	g	-15.0	15.0	0.7	Pass
Oscillations After Main Pulse	%	0.0	15.0	2.7	Pass
Is Acceleration Unimodal?	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	21.9	Pass
Laboratory Humidity	%	10	70	24	Pass
Pendulum Velocity	m/s	3.30	3.50	3.46	Pass
Peak Headform Flexion	deg	49.0	59.0	55.1	Pass
Time of Peak Headform Flexion	ms	54.0	66.0	56.7	Pass
Flexion Decay (Peak to zero)	ms	53.0	88.0	60.7	Pass
Overall Test Results				Pass	



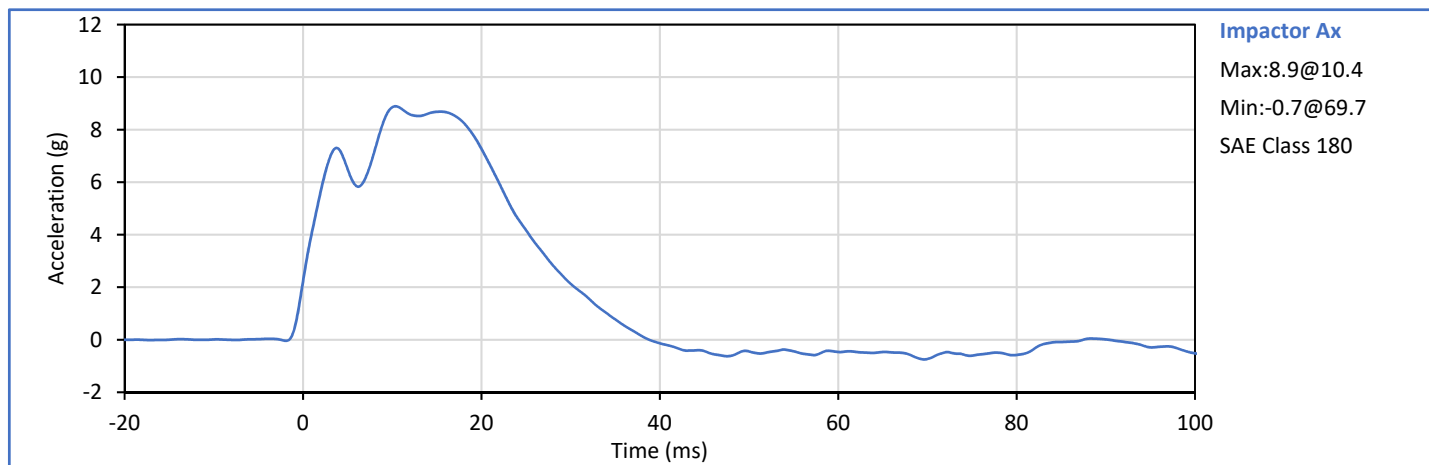
Technician: J. Hernandez

Approved By: P. Puzzuto

ATD Serial No.: F035

Test Date: 2019-02-26

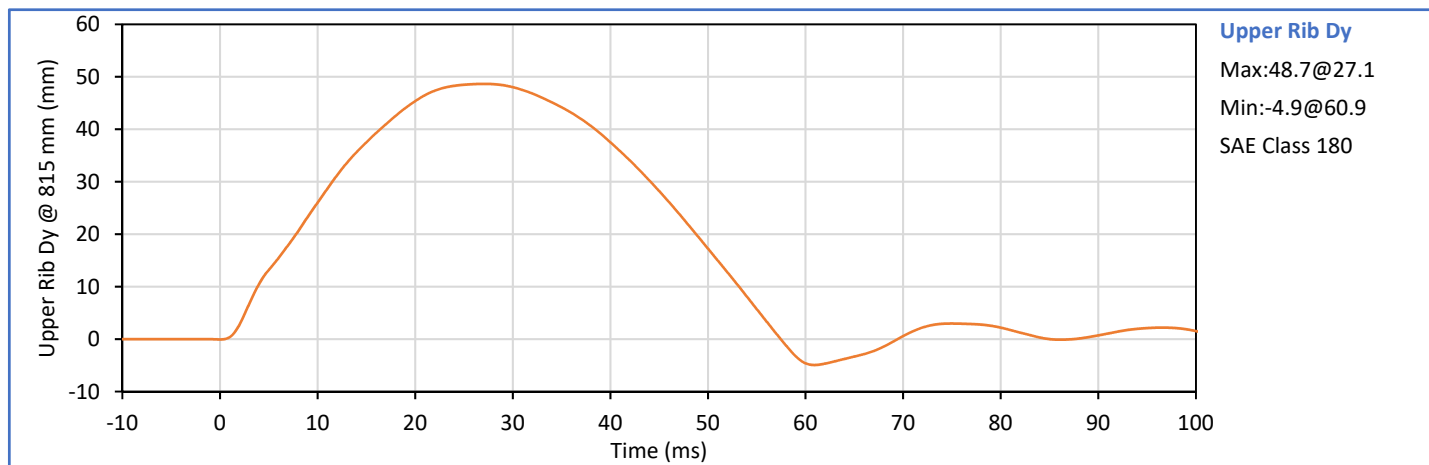
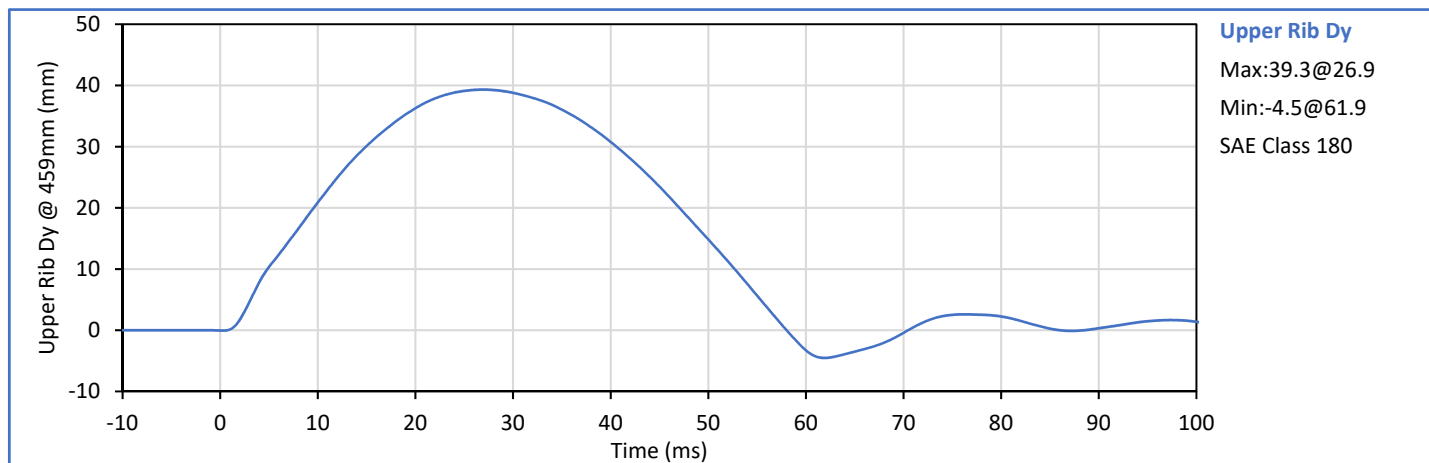
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	4.20	4.40	4.29	Pass
Peak Impactor Ax	g	7.5	10.5	8.9	Pass
Overall Test Results					Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

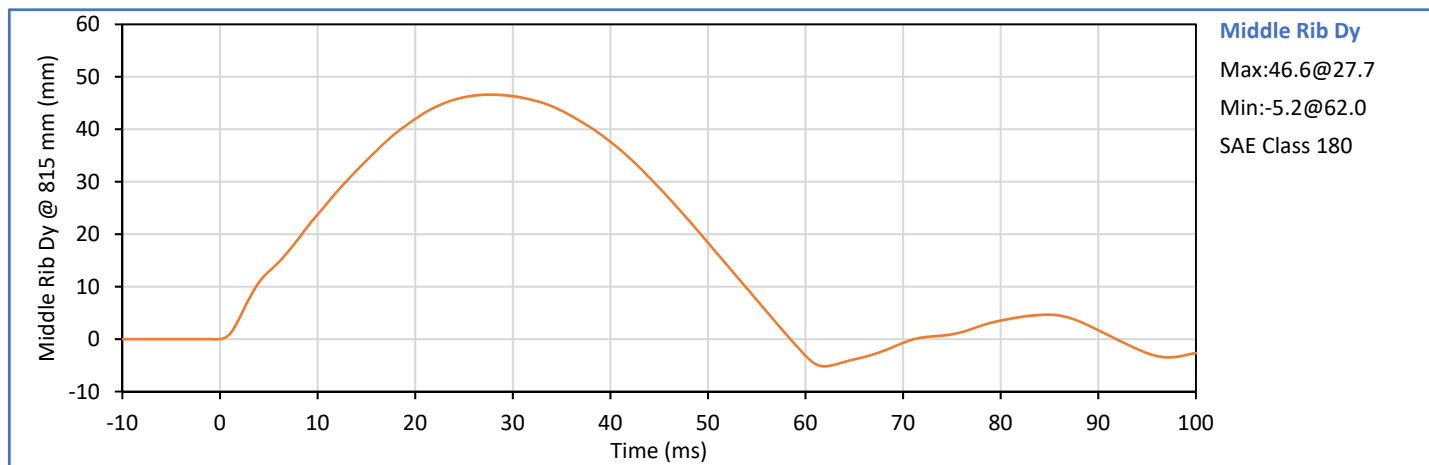
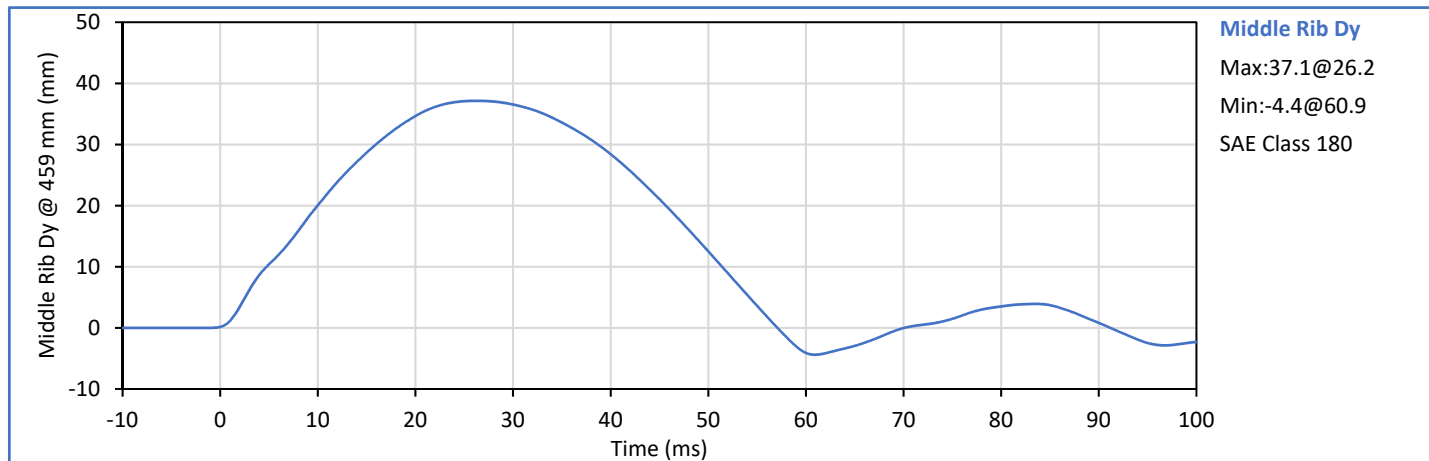
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	28	Pass
Upper Rib Dy @ 459mm	mm	36.0	40.0	39.3	Pass
Upper Rib Dy @ 815mm	mm	46.0	51.0	48.7	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

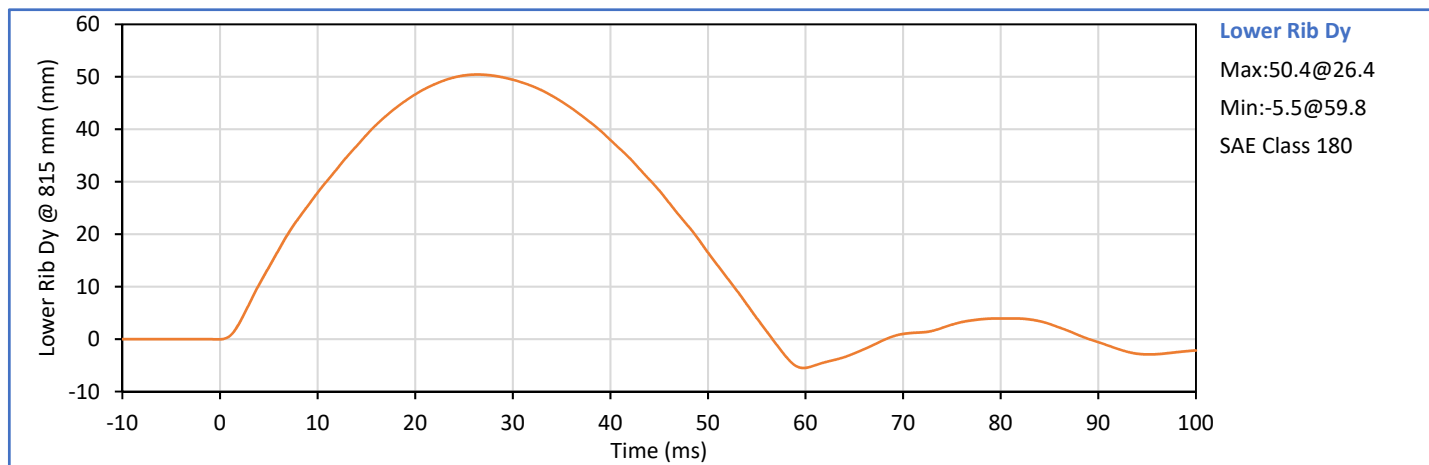
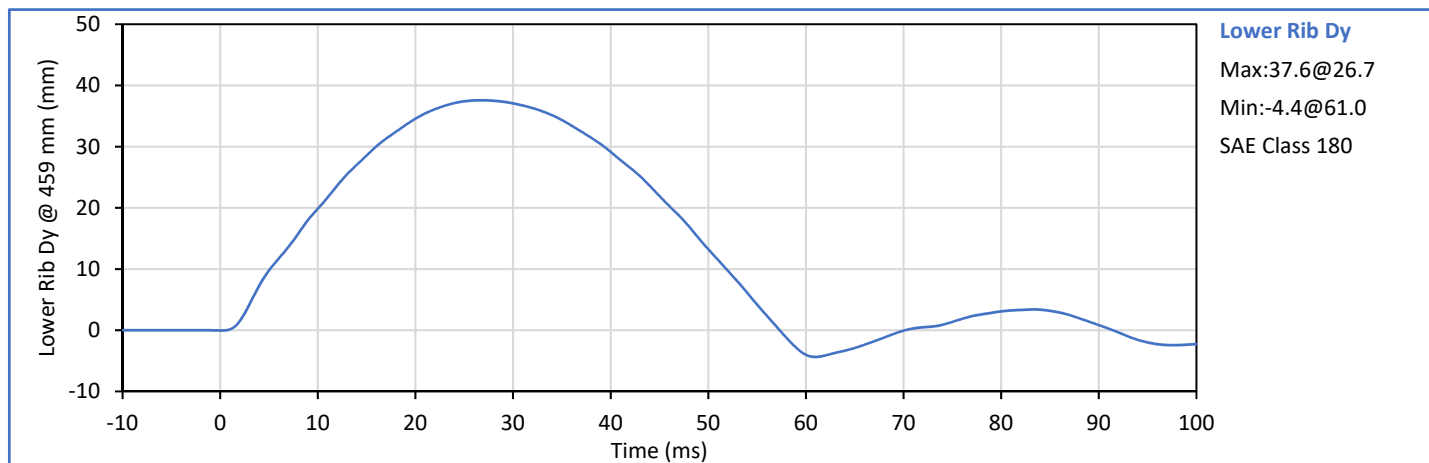
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	28	Pass
Middle Rib Dy @ 459mm	mm	36.0	40.0	37.1	Pass
Middle Rib Dy @ 815mm	mm	46.0	51.0	46.6	Pass
Overall Test Results				Pass	



Technician: J. Hernandez

Approved By: P. Puzzuto

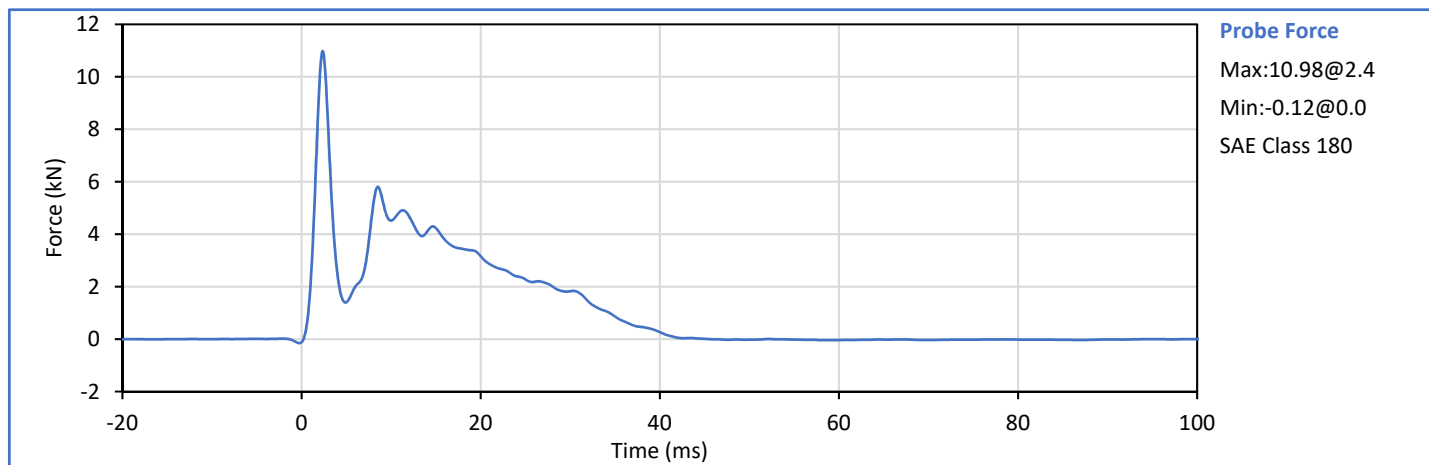
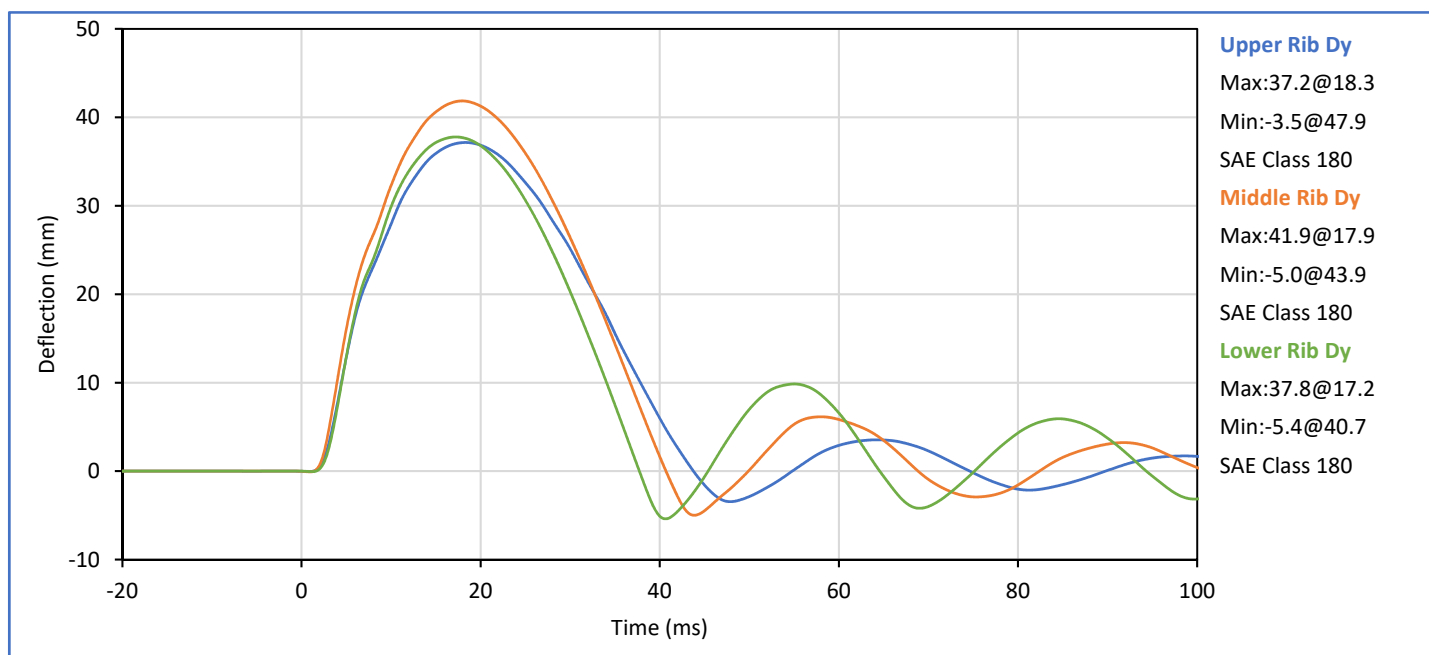
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	28	Pass
Lower Rib Dy @ 459mm	mm	36.0	40.0	37.6	Pass
Lower Rib Dy @ 815mm	mm	46.0	51.0	50.4	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

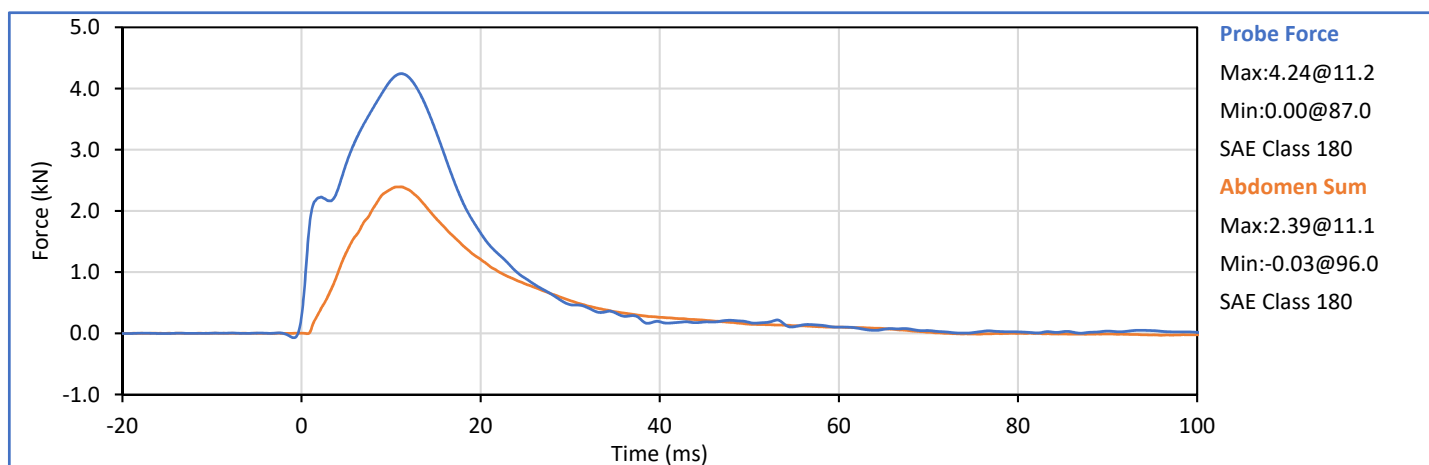
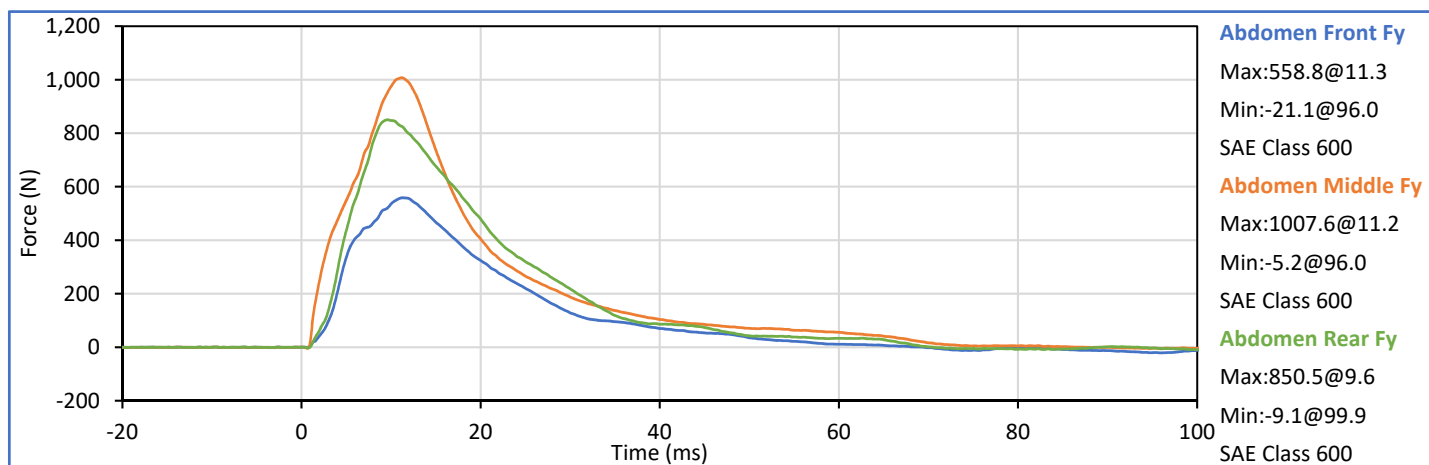
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	5.40	5.60	5.47	Pass
Peak Upper Rib Dy	mm	34.0	41.0	37.2	Pass
Peak Middle Rib Dy	mm	37.0	45.0	41.9	Pass
Peak Lower Rib Dy	mm	37.0	44.0	37.8	Pass
Peak Impactor Force After 6 ms	kN	5.10	6.20	5.81	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

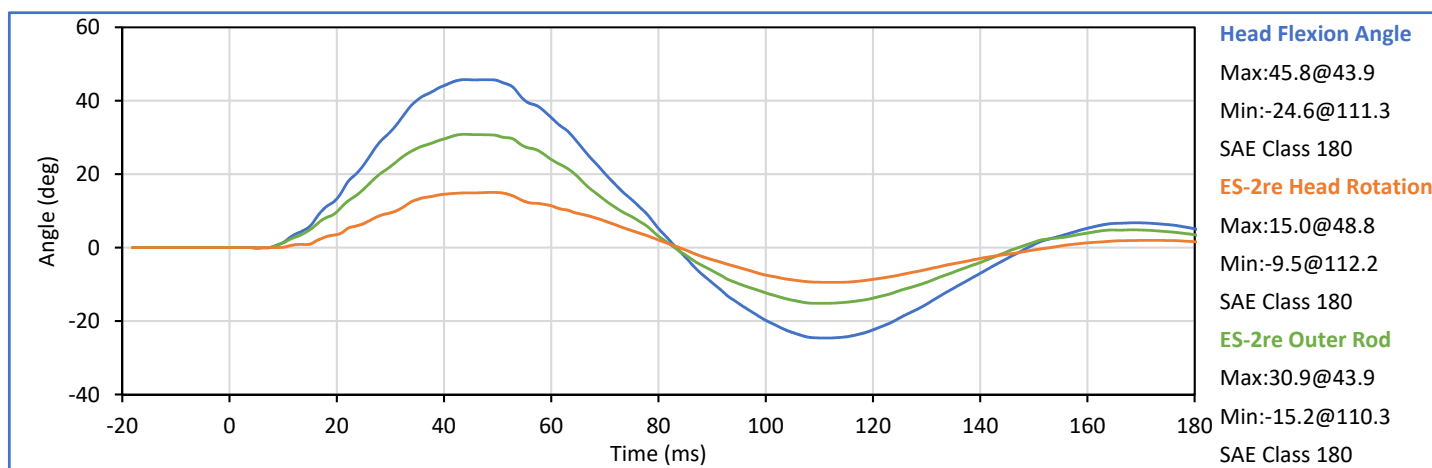
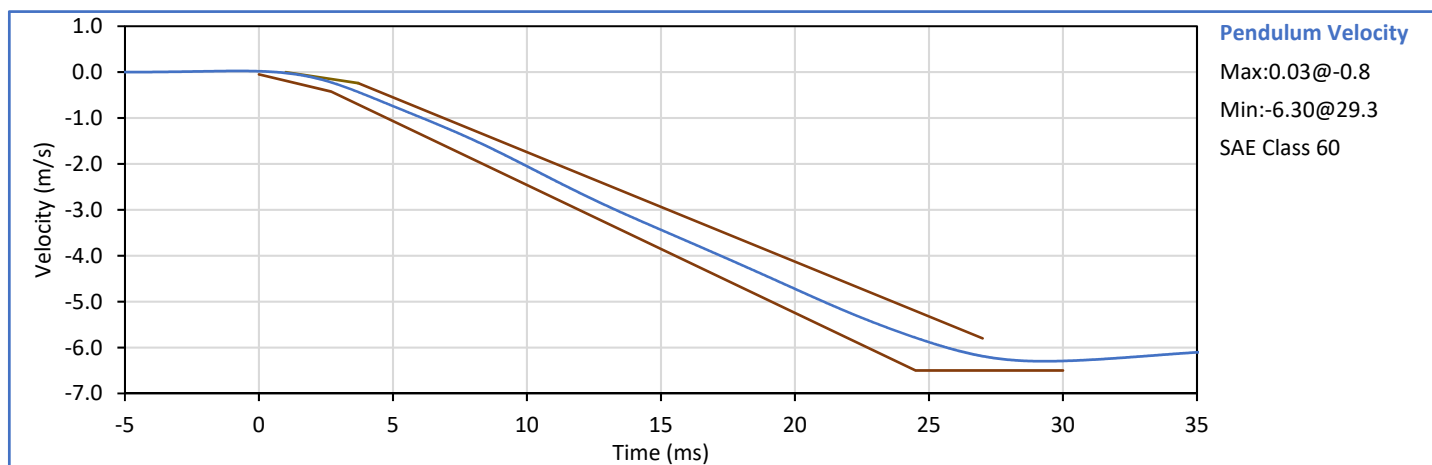
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	3.90	4.10	3.95	Pass
Peak Impactor Force	kN	4.00	4.80	4.24	Pass
Time of Peak Impactor Force	ms	10.6	13.0	11.2	Pass
Sum of Abdomen Forces	kN	2.20	2.70	2.39	Pass
Time of Peak Sum Abdomen Force	ms	10.0	12.3	11.1	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

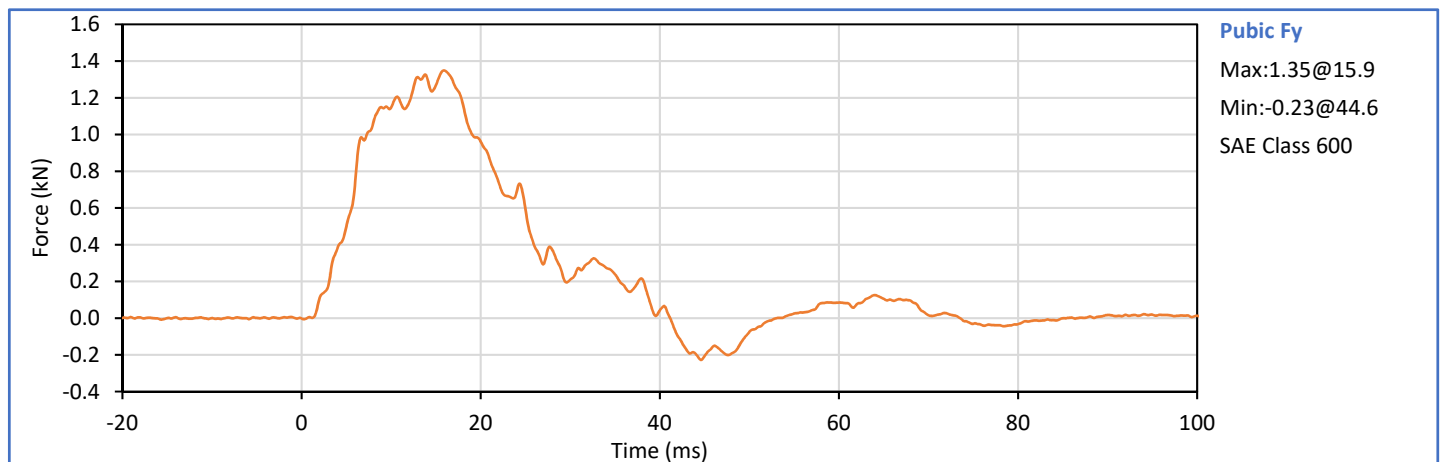
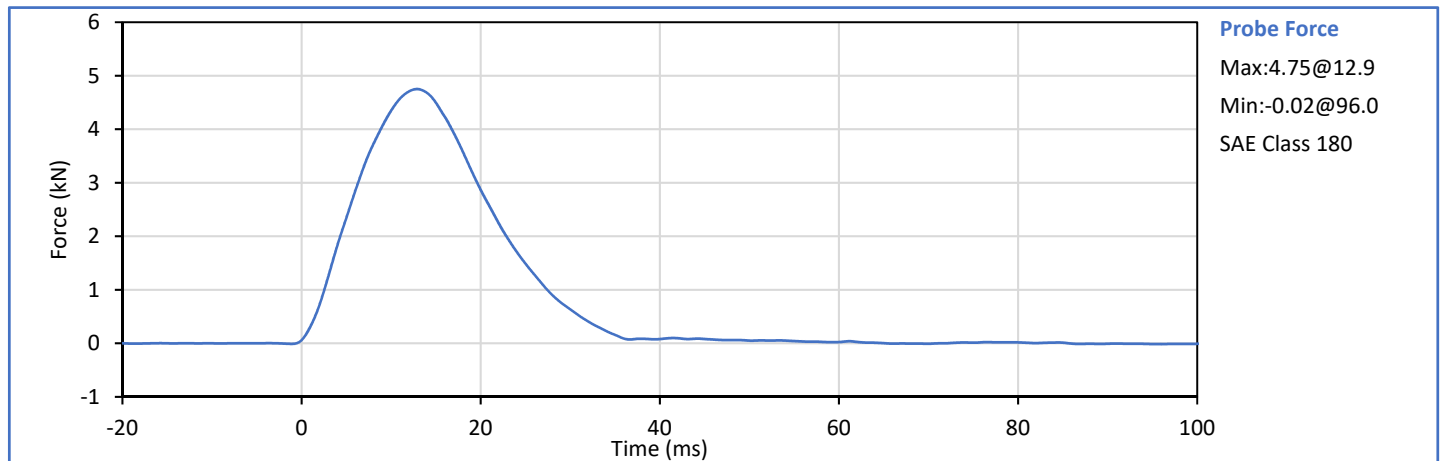
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Humidity	%	10	70	24	Pass
Pendulum Velocity	m/s	5.95	6.15	6.06	Pass
Peak Headform Flexion	deg	45.0	55.0	45.8	Pass
Time of Peak Headform Flexion	ms	39.0	53.0	43.9	Pass
Flexion Decay (Peak to zero)	ms	37.0	57.0	39.4	Pass
Overall Test Results				Pass	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	21.2	Pass
Laboratory Humidity	%	10	70	30	Pass
Impactor Velocity	m/s	4.20	4.40	4.24	Pass
Peak Impactor Force	kN	4.70	5.40	4.75	Pass
Time of Peak Impactor Force	ms	11.8	16.1	12.9	Pass
Pubic Symphysis Fy	kN	1.23	1.59	1.35	Pass
Time of Peak Pubic Symphysis Fy	ms	12.2	17.0	15.9	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

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

ATD Serial No.: 308

Test Date: 2019-02-22

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	44	Pass
A - Sitting Height	mm	772	788	785	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	147	Pass
E - Shoulder Pivot From Backline	mm	97	107	104	Pass
F - Thigh Clearance	mm	119	135	129	Pass
G - Head Breadth	mm	140	148	143	Pass
H - Head Back From Backline	mm	40	46	41	Pass
I - Head Depth	mm	178	188	187	Pass
J - Head Circumference	mm	541	551	545	Pass
K - Buttock To Knee Length	mm	514	540	525	Pass
L - Popliteal Height	mm	343	369	351	Pass
K - Knee Pivot To Floor Height	mm	392	409	401	Pass
N - Buttock Popliteal Length	mm	416	442	438	Pass
O - Chest Depth W/O Jacket	mm	195	211	206	Pass
P - Foot Length	mm	216	232	224	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	320	Pass
R - Arm Length	mm	249	259	254	Pass
S - Knee Joint To Seatback	mm	477	493	490	Pass
V - Shoulder Width	mm	341	357	348	Pass
W - Foot Width	mm	78	94	85	Pass
Y - Chest Circumference W/Jacket	mm	851	881	867	Pass
Z - Waist Circumference	mm	761	791	782	Pass
			Overall Test Results		Pass

Technician:



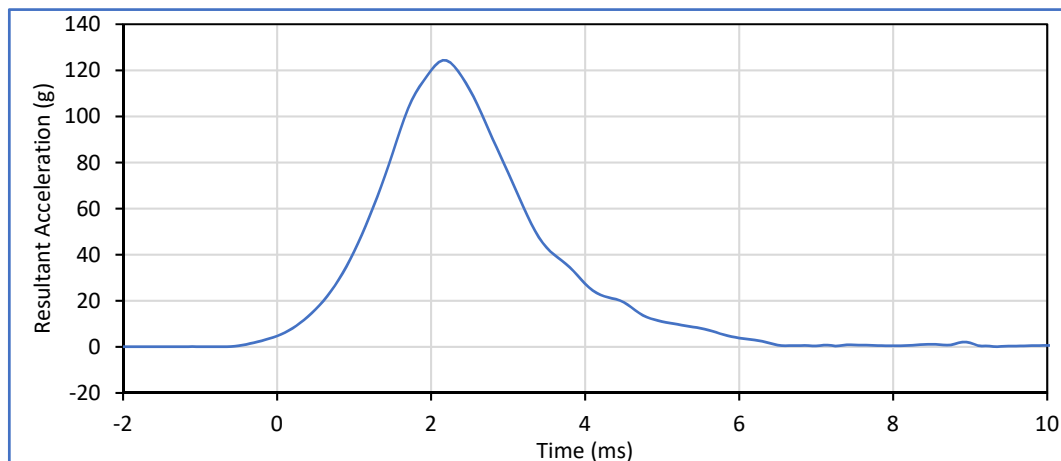
J. Hernandez

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 Humidity	%	10	70	20	Pass
Peak Resultant Acceleration	g	115.0	137.0	124.4	Pass
Peak Head Ax	g	-15.0	15.0	-2.3	Pass
Oscillations After Main Pulse	%	0.0	15.0	2.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results		Pass

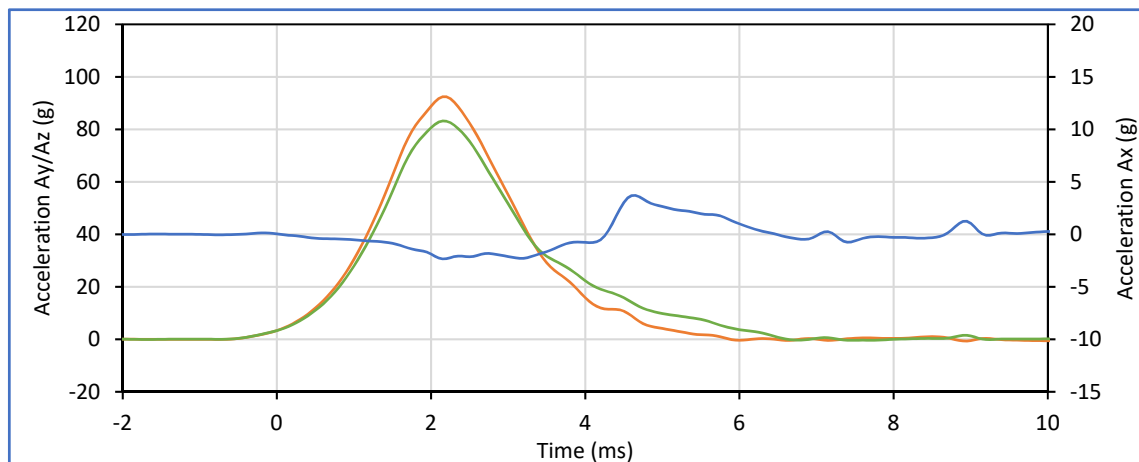


Head Resultant

Max:124.4@2.2

Min:0.1@9.4

SAE Class 1000



Head Ax

Max:3.7@4.7

Min:-2.3@2.2

SAE Class 1000

Head Ay

Max:92.4@2.2

Min:-0.7@9.0

SAE Class 1000

Head Az

Max:83.2@2.2

Min:-0.4@7.5

SAE Class 1000

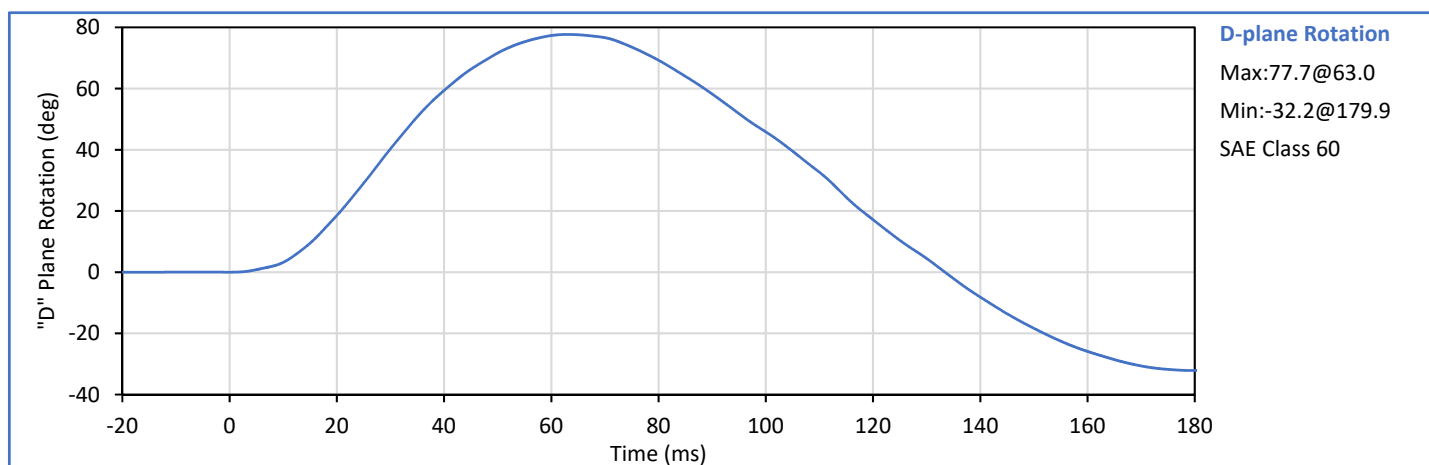
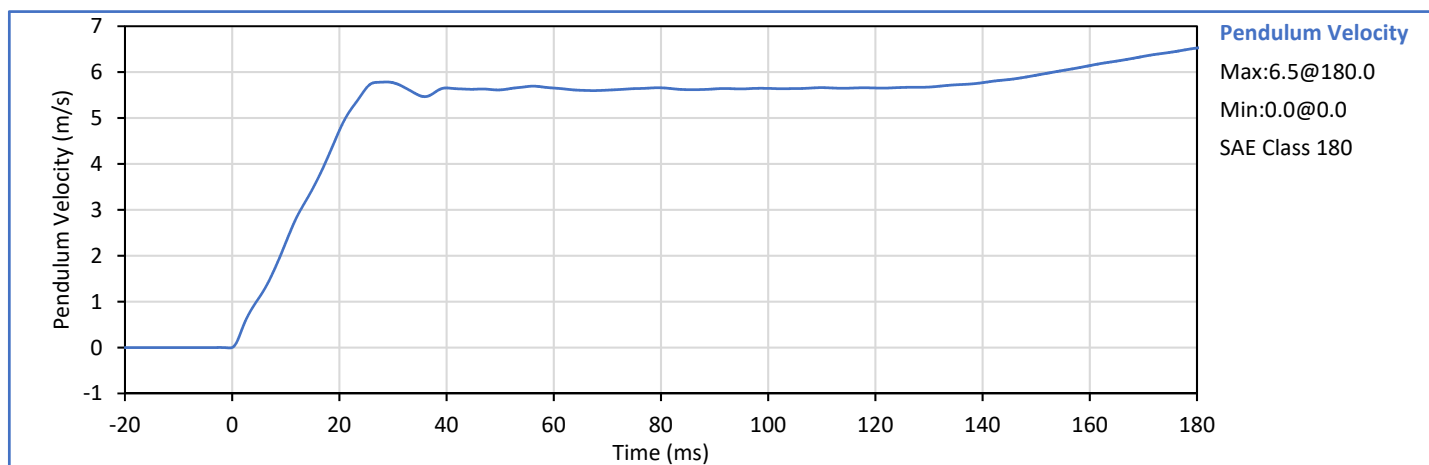
Technician:

J. Hernandez

Approved By:

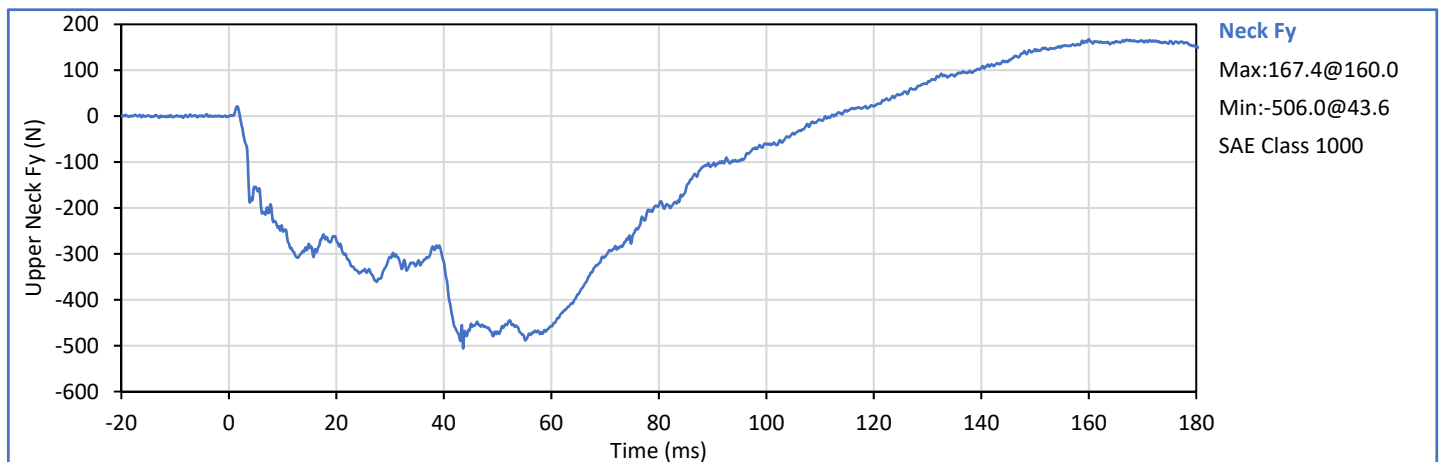
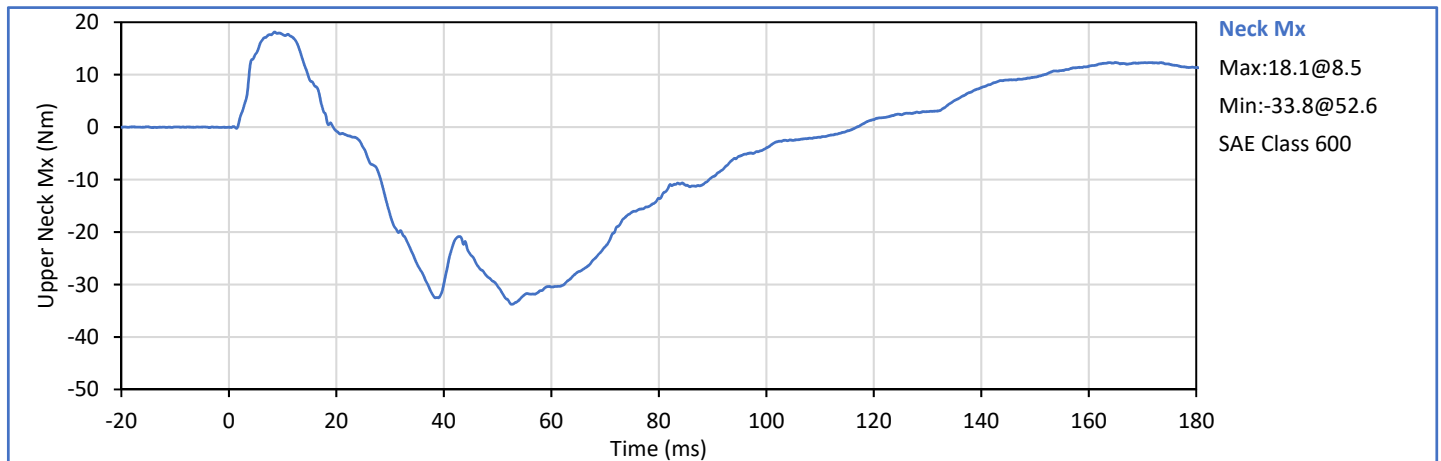
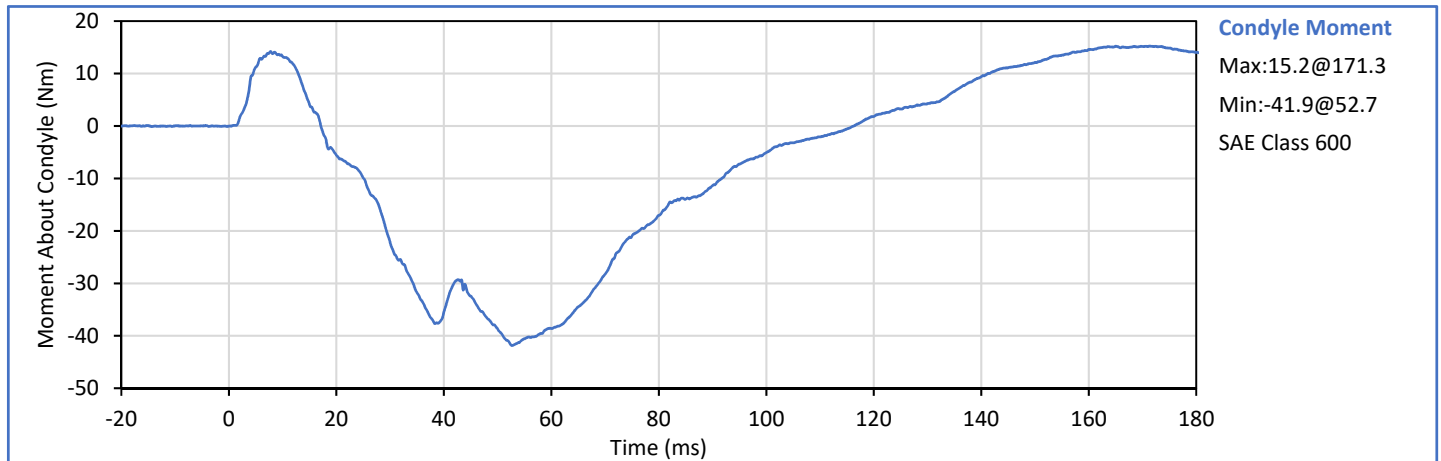
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	23	Pass
Pendulum Velocity	m/s	5.51	5.63	5.61	Pass
Pendulum Decel at 10 ms	m/s	2.20	2.80	2.29	Pass
Pendulum Decel at 15 ms	m/s	3.30	4.10	3.46	Pass
Pendulum Decel at 20 ms	m/s	4.40	5.40	4.73	Pass
Pendulum Decel at 25 ms	m/s	5.40	6.10	5.65	Pass
Pendulum Decel from 25-100 ms	m/s	5.50	6.20	5.79	Pass
Peak "D" Plane Rotation	deg	71.0	81.0	77.7	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	63.0	Pass
Peak Occ. Condyle Moment	Nm	-44.0	-36.0	-41.9	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	116.3	Pass
Overall Test Results				Pass	

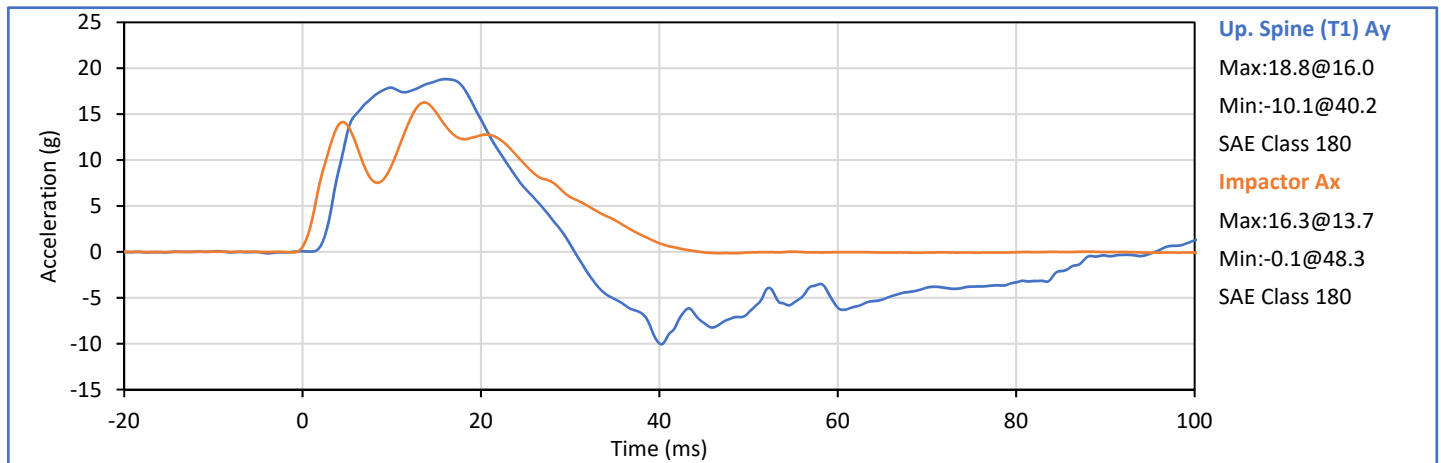
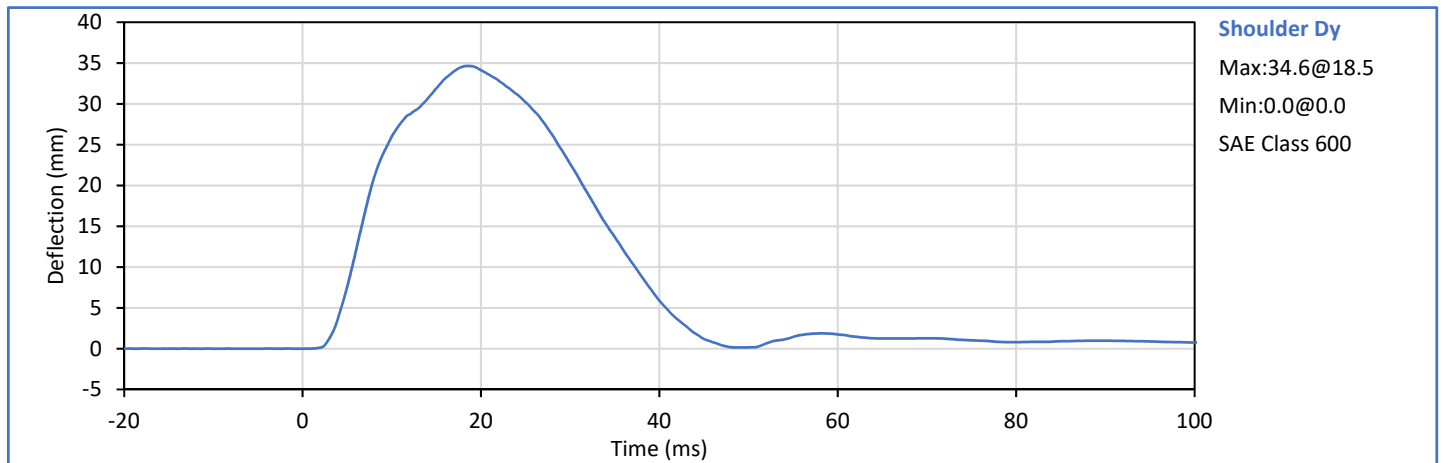


Technician: J. Hernandez

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 Humidity	%	10	70	39	Pass
Impactor Velocity	m/s	4.20	4.40	4.38	Pass
Peak Shoulder Dy	mm	28.0	37.0	34.6	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	18.8	Pass
Peak Impactor Ax	g	13.0	18.0	16.3	Pass
Overall Test Results					Pass



Technician:

J. Hernandez

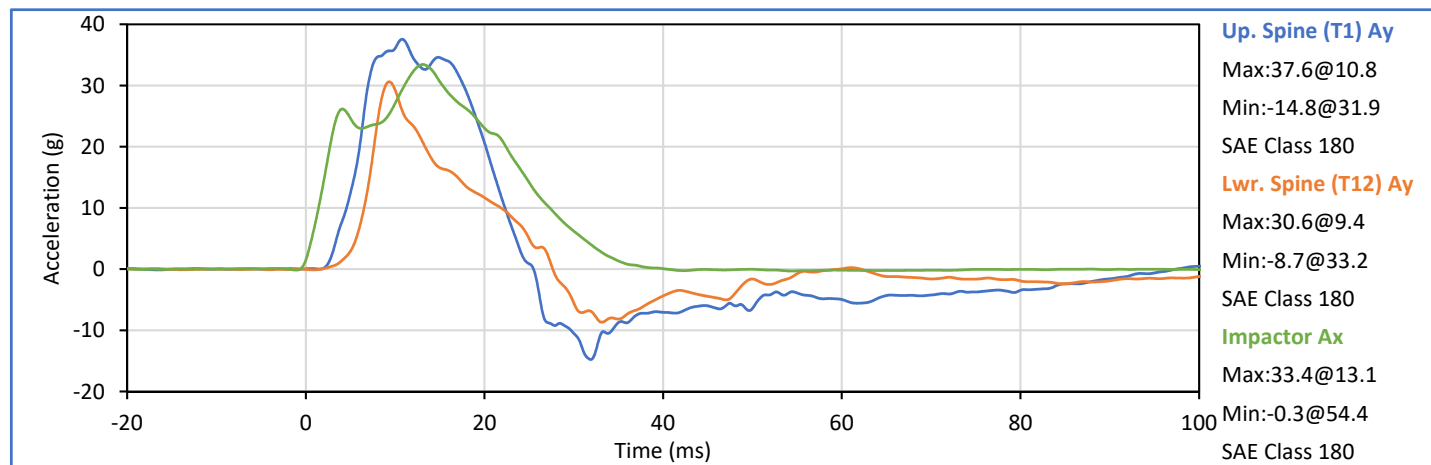
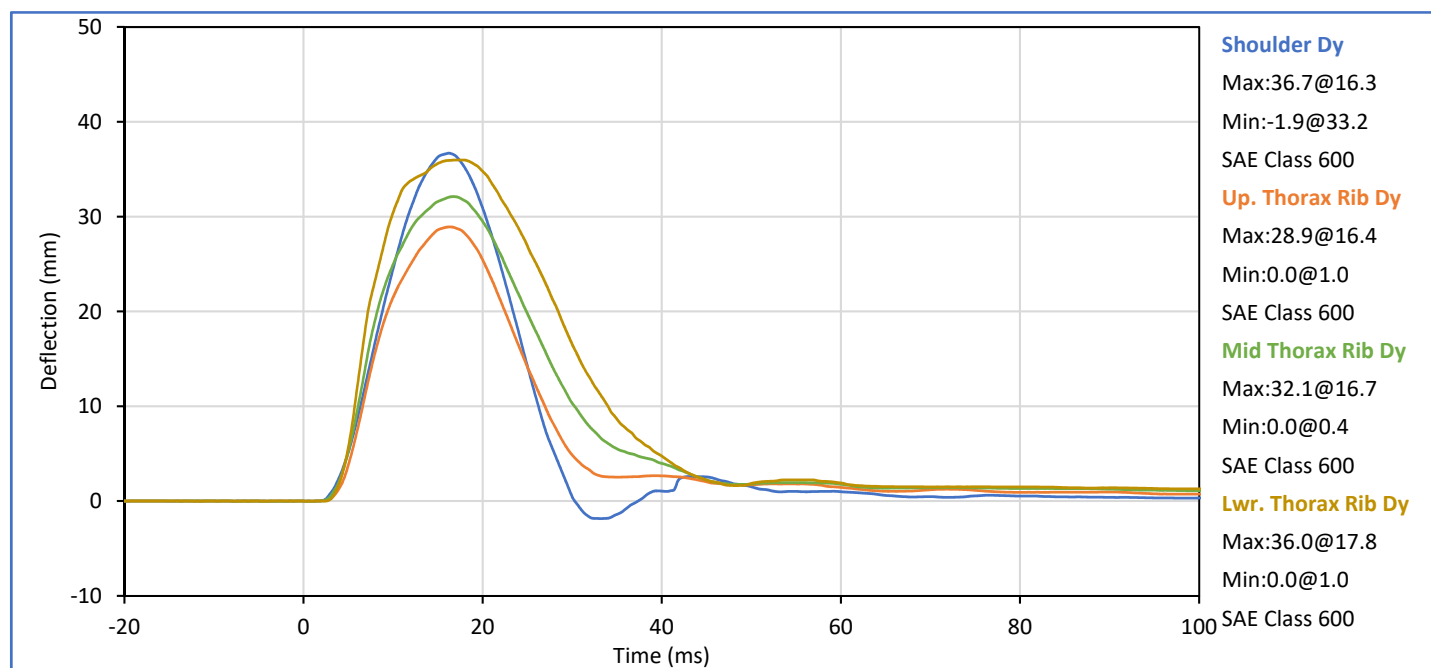
J. Hernandez

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 Humidity	%	10	70	42	Pass
Impactor Velocity	m/s	6.60	6.80	6.65	Pass
Peak Shoulder Dy	mm	31.0	40.0	36.7	Pass
Peak Upper Rib Dy	mm	25.0	32.0	28.9	Pass
Peak Middle Rib Dy	mm	30.0	36.0	32.1	Pass
Peak Lower Rib Dy	mm	32.0	38.0	36.0	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	37.6	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	30.6	Pass
Peak Impactor Ax	g	30.0	36.0	33.4	Pass
Overall Test Results					Pass



Technician:

J. Hernandez

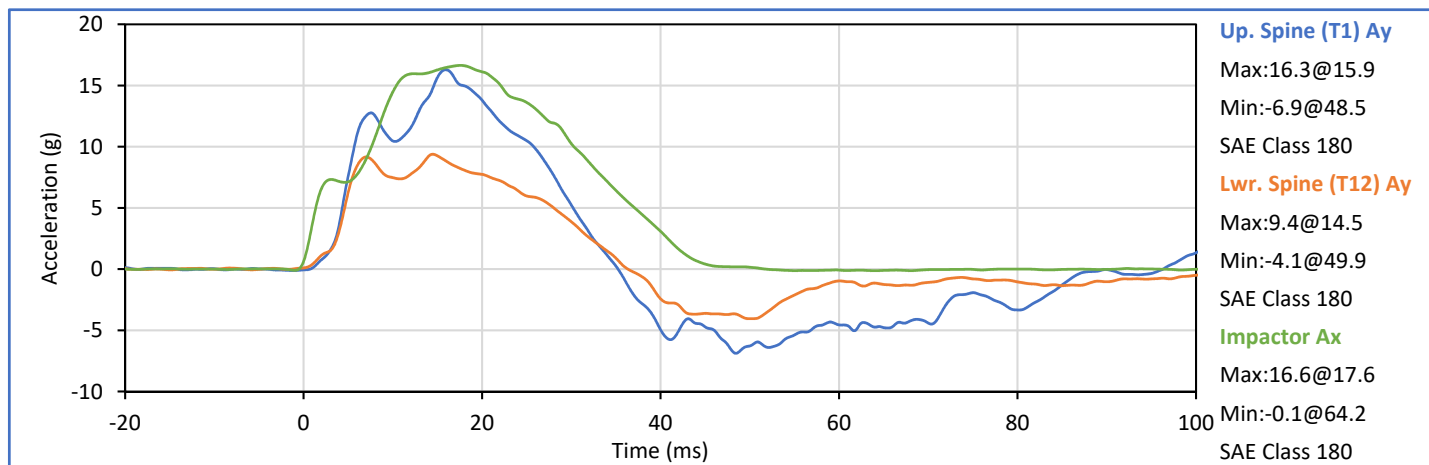
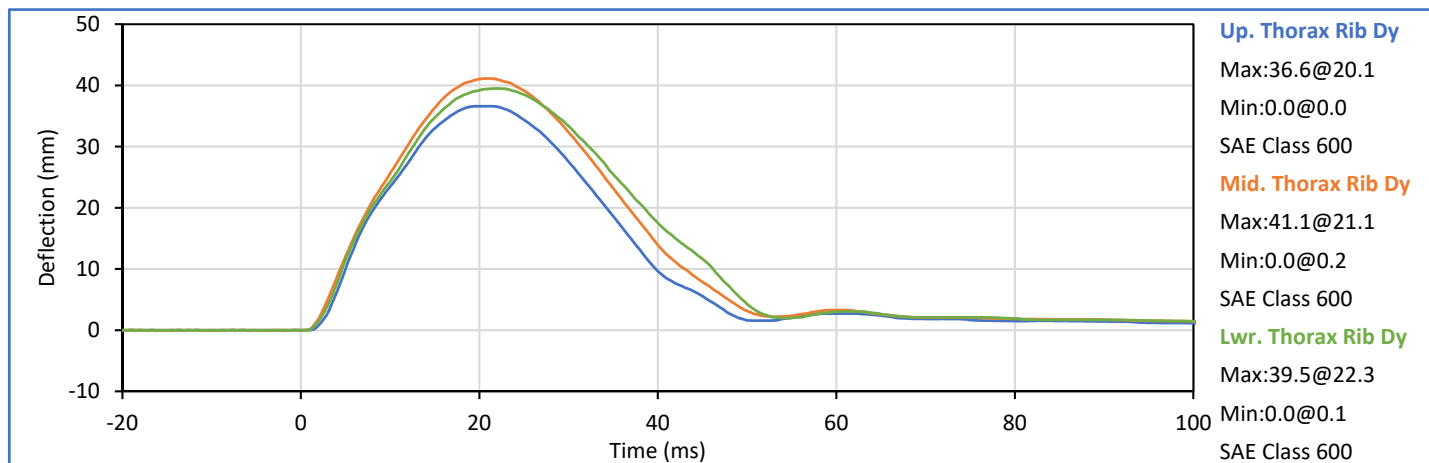
J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	23	Pass
Impactor Velocity	m/s	4.20	4.40	4.34	Pass
Peak Upper Rib Dy	mm	32.0	40.0	36.6	Pass
Peak Middle Rib Dy	mm	39.0	45.0	41.1	Pass
Peak Lower Rib Dy	mm	35.0	43.0	39.5	Pass
Peak Upper Spine (T1) Ay	g	13.0	17.0	16.3	Pass
Peak Lower Spine (T12) Ay	g	7.0	11.0	9.4	Pass
Peak Impactor Ax	g	14.0	18.0	16.6	Pass
Overall Test Results				Pass	Pass



Technician:

J. Hernandez

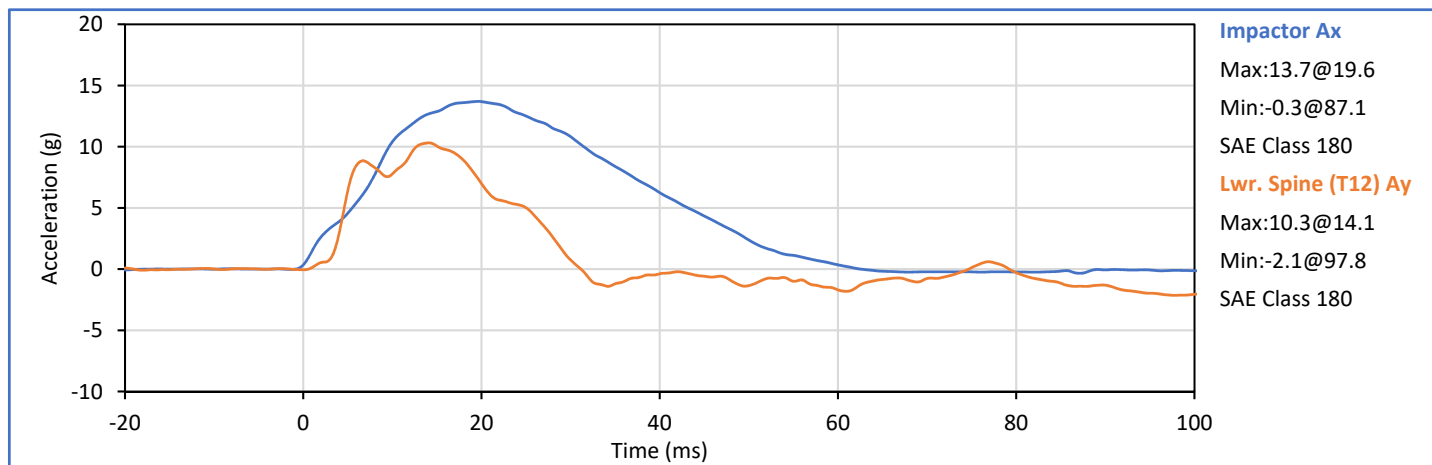
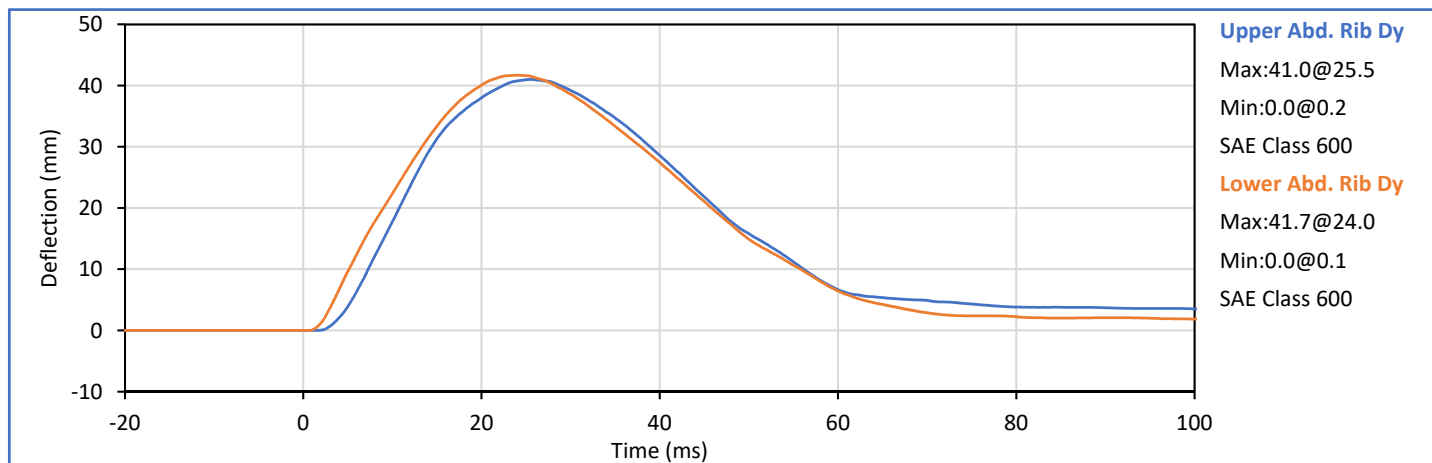
J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	23	Pass
Impactor Velocity	m/s	4.20	4.40	4.23	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	41.0	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	41.7	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	10.3	Pass
Peak Impactor Ax	g	12.0	16.0	13.7	Pass
Overall Test Results					Pass



Technician:

J. Hernandez

J. Hernandez

Approved By:

P. Puzzuto

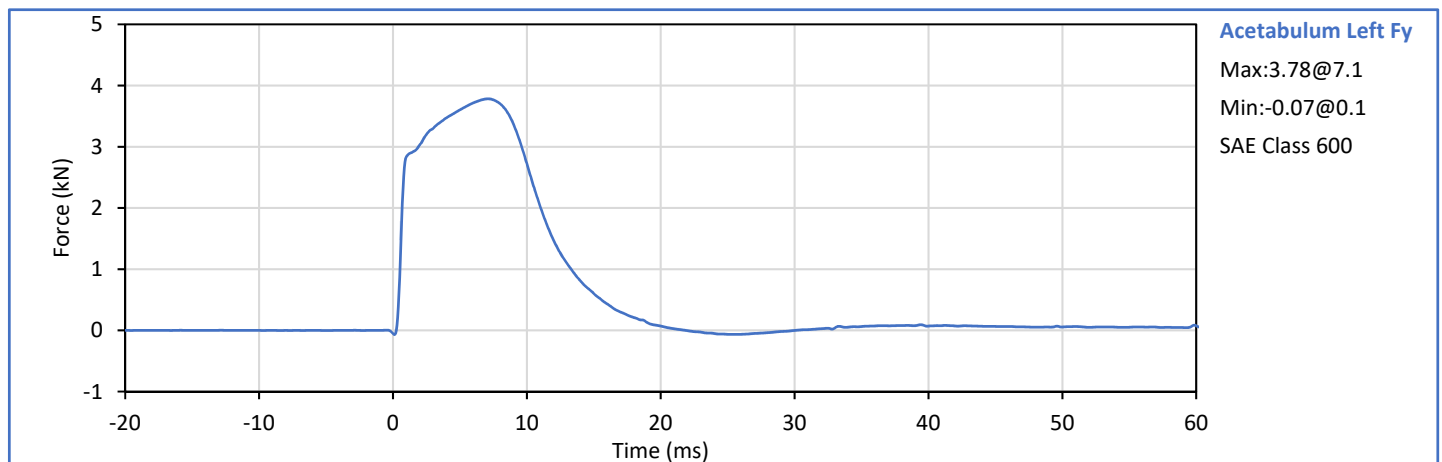
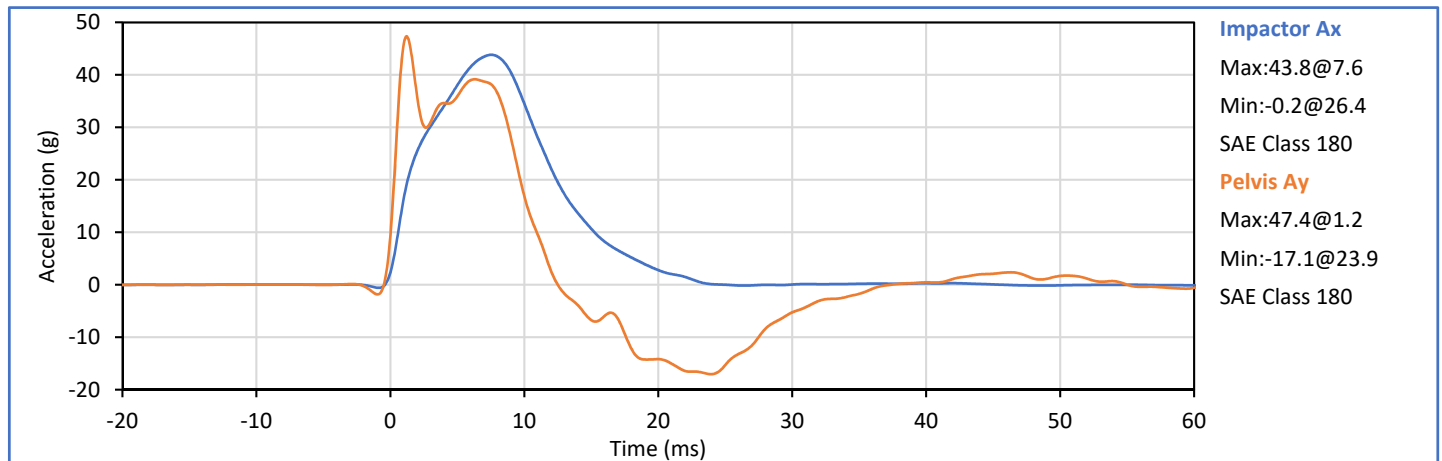
P. Puzzuto

ATD Serial No.: 308

Test Date: 2019-02-22

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Humidity	%	10	70	42	Pass
Impactor Velocity	m/s	6.60	6.80	6.72	Pass
Peak Acetabulum Fy	kN	3.60	4.30	3.78	Pass
Pelvis Ay after 6ms	g	34.0	42.0	39.2	Pass
Peak Impactor Ax	g	38.0	47.0	43.8	Pass
Overall Test Results				Pass	Pass

Pelvis Plug S/N: 11438 (SACO)



Technician:

J. Hernandez

J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto



SID-IIs Pelvis Plug Certification Test

Plug S/N 11438

Test Number 2938

Report Number 2935

Test Date 8/30/2016 9:37:27 AM

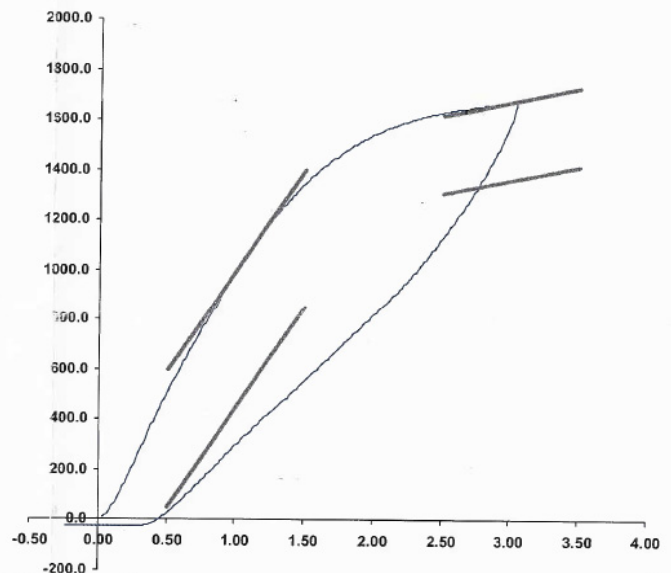
	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	294.59	50.00	600.00
Force @ 1.5 mm (N)	1,138.60	850.00	1,400.00
Force @ 2.5 mm (N)	1,470.91	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,563.00	1,361.00	1,673.00

Testing Machine STM-20 5965542
Load Cell S/N (TI240813), Units (LBS) 1000

Crosshead Speed (mm / min) or Rate 12.7
Extension or Position Measured by XHD_100 (XHD100)

Notes:

Force (-N) vs Extension (-mm)



Operator DC

Part Number 180-4450

Template No 107 30-Aug-16

SACO Research

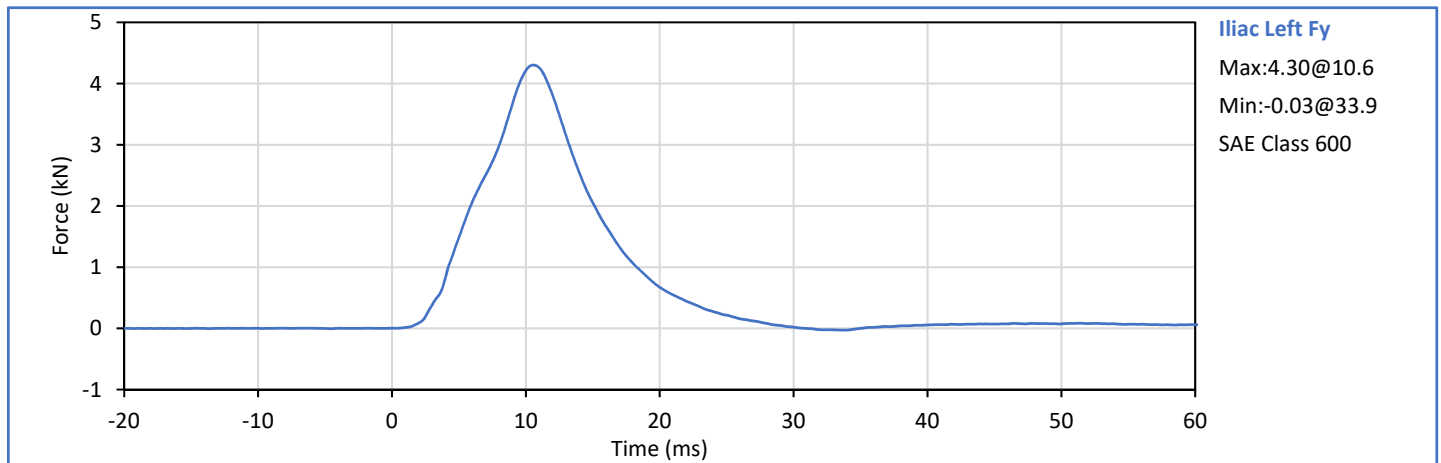
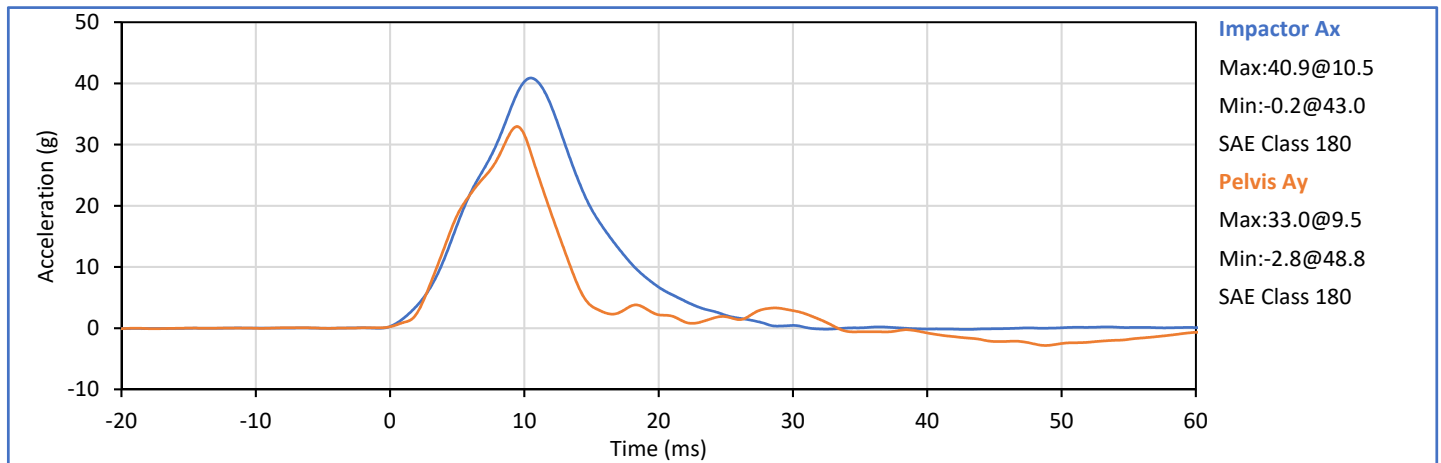
By: DC Date: 8/30/16

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	21.7	Pass
Laboratory Humidity	%	10	70	20	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Iliac Fy	kN	4.10	5.10	4.30	Pass
Pelvis Ay after 6ms	g	28.0	39.0	33.0	Pass
Peak Impactor Ax	g	36.0	45.0	40.9	Pass
Overall Test Results				Pass	Pass

Pelvis Plug S/N: 12228 (SACO) *

* Plug is not impacted and remains certified



Technician:

J. Hernandez

J. Hernandez

Approved By:

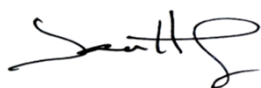
P. Puzzuto

P. Puzzuto

APPENDIX C
Post-Test ATD Configuration And Performance Verification Data
ES-2re 50th Male Side Impact ATD, Left Side Configuration
S/N: F035

Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Relative Humidity	%	10	70	25	Pass
1 - Sitting Height	mm	900	918	912	Pass
2 - Seat to Shoulder Joint	mm	558	572	565	Pass
3 - Seat to Lower Face of Thoracic Spine Box	mm	346	356	354	Pass
4 - Seat to Hip Joint (bolt center)	mm	97	103	101	Pass
5 - Sole to Seat, Sitting	mm	433	451	436	Pass
6 - Head Width	mm	152	158	155	Pass
7 - Shoulder/Arm Width	mm	461	479	476	Pass
8 - Thorax Width	mm	322	332	328	Pass
9 - Abdomen Width	mm	273	287	282	Pass
10 - Pelvis Lap Width	mm	359	373	372	Pass
11 - Head Depth	mm	196	206	201	Pass
12 - Thorax Depth	mm	262	272	266	Pass
13 - Abdomen Depth	mm	194	204	200	Pass
14 - Pelvis Depth	mm	235	245	239	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	610	Pass
			Overall Test Results		Pass

Technician:



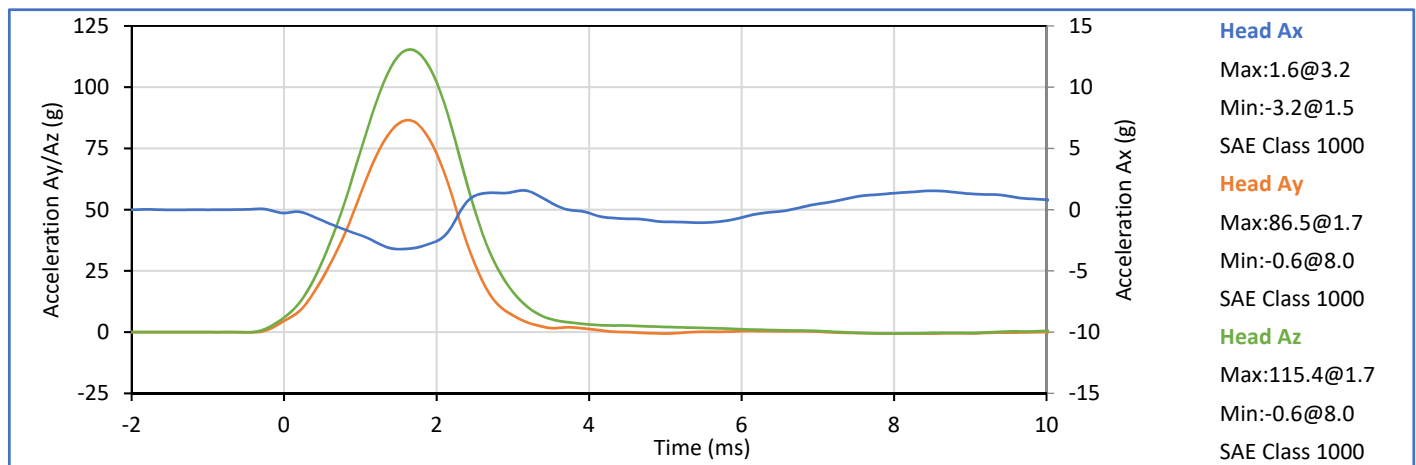
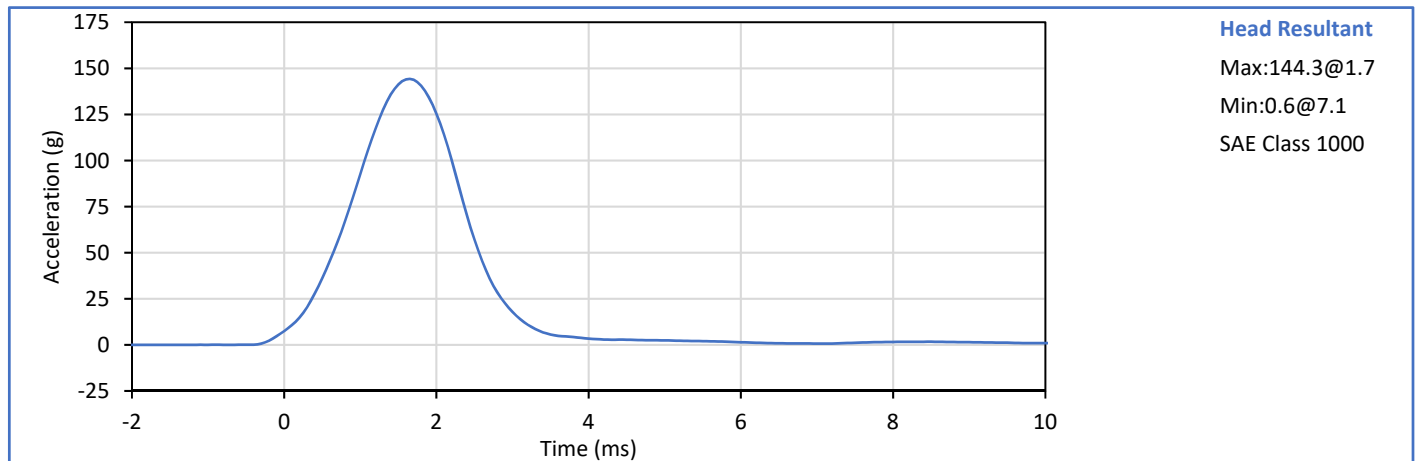
J. Hernandez

Approved By:



P. Puzzuto

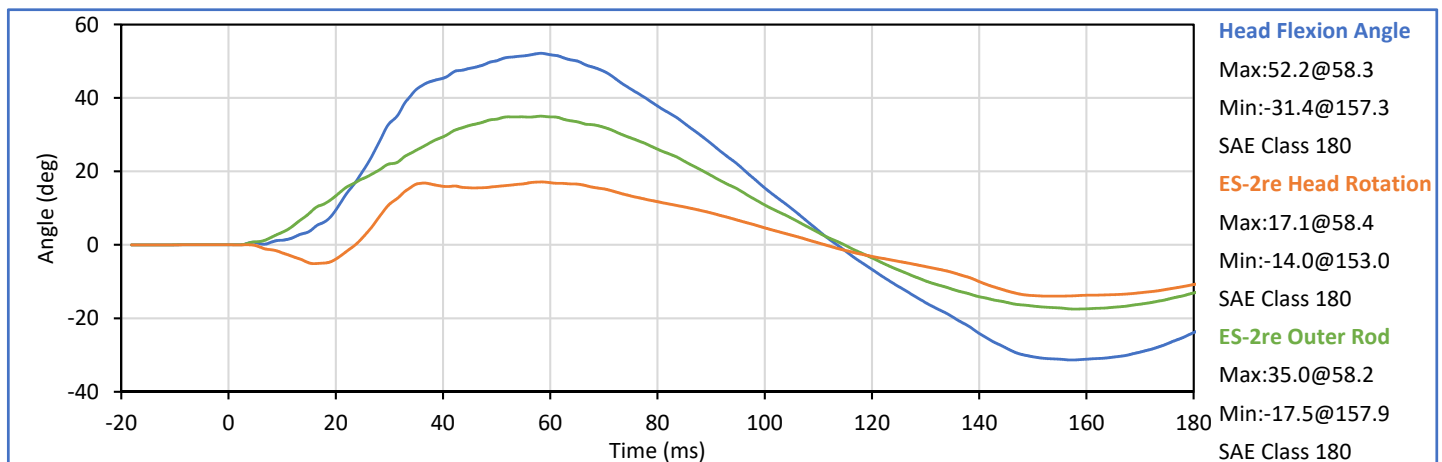
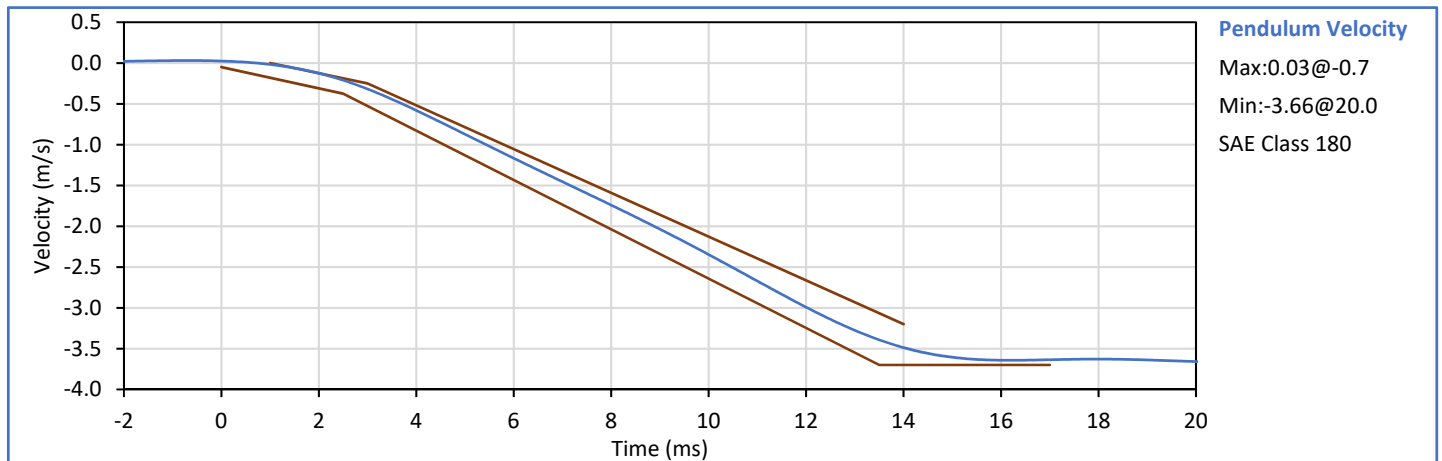
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.6	Pass
Laboratory Humidity	%	10	70	28	Pass
Peak Resultant Acceleration	g	125.0	155.0	144.3	Pass
Peak Head Ax	g	-15.0	15.0	1.6	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.3	Pass
Is Acceleration Unimodal?	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	21.2	Pass
Laboratory Humidity	%	10	70	30	Pass
Pendulum Velocity	m/s	3.30	3.50	3.45	Pass
Peak Headform Flexion	deg	49.0	59.0	52.2	Pass
Time of Peak Headform Flexion	ms	54.0	66.0	58.3	Pass
Flexion Decay (Peak to zero)	ms	53.0	88.0	55.3	Pass
Overall Test Results				Pass	



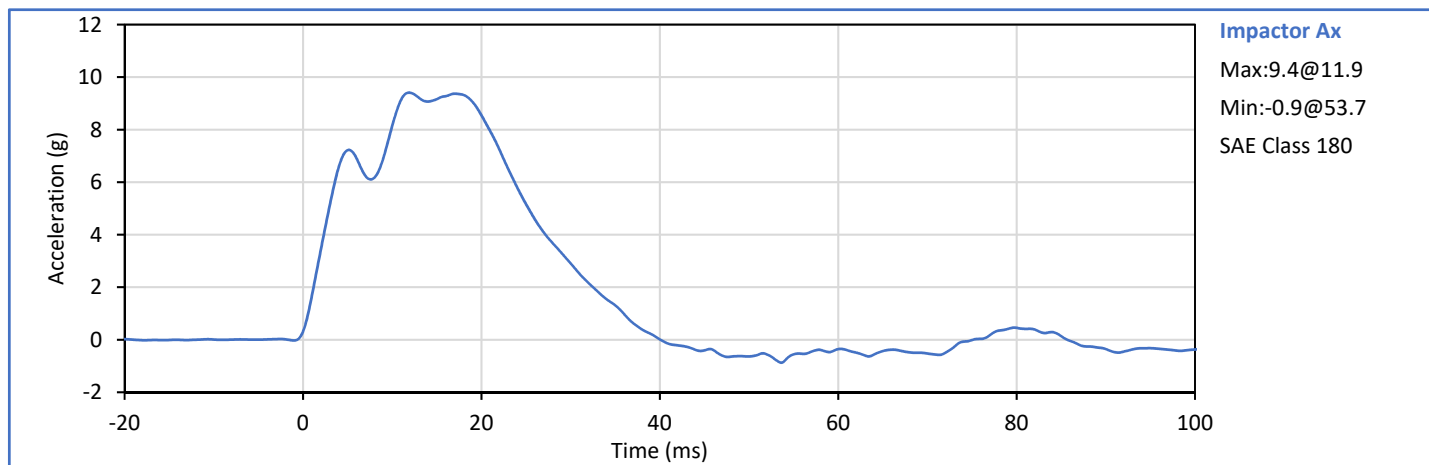
Technician: J. Hernandez

Approved By: P. Puzzuto

ATD Serial No.: F035

Test Date: 2019-03-15

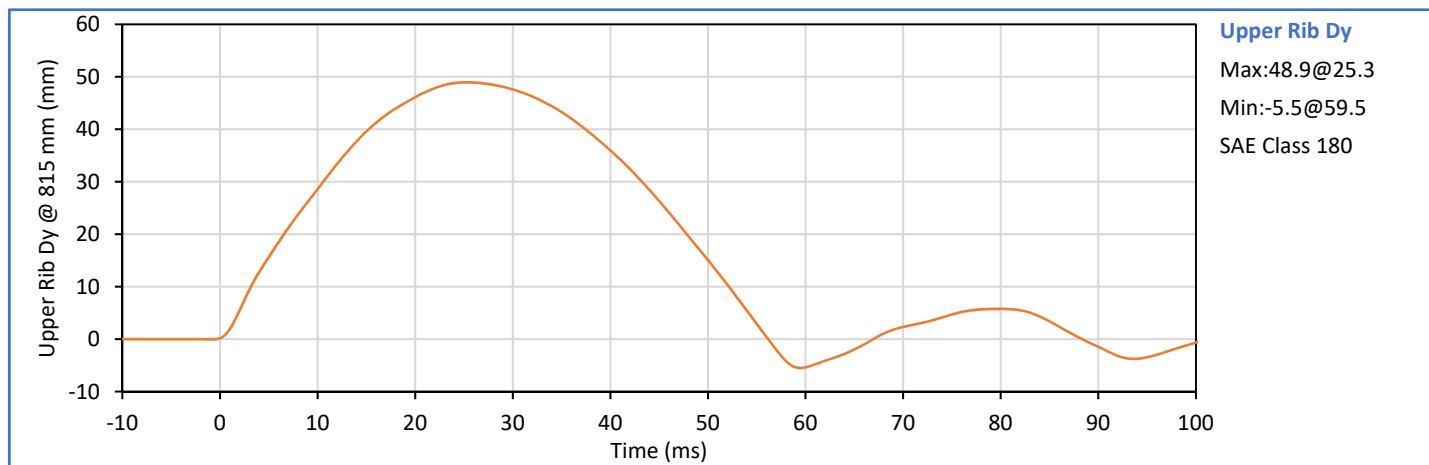
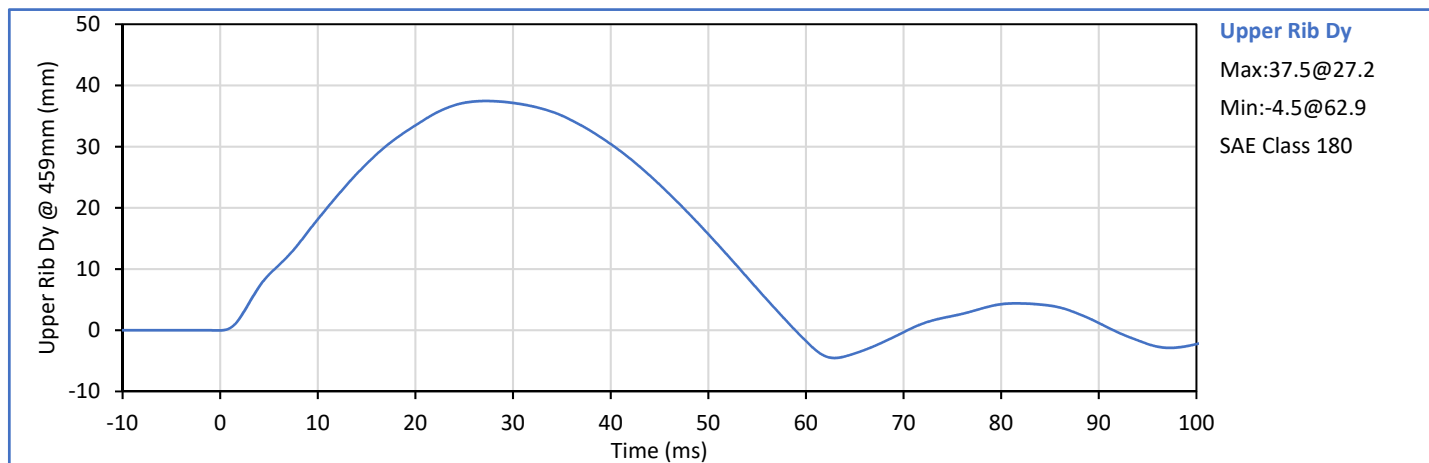
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Humidity	%	10	70	24	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Impactor Ax	g	7.5	10.5	9.4	Pass
Overall Test Results					Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

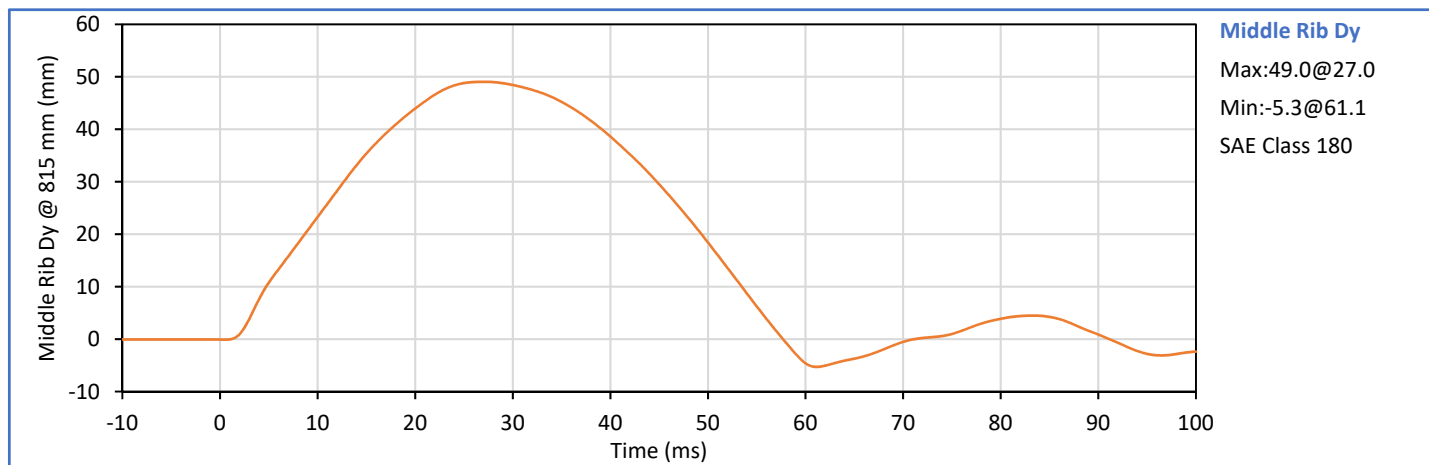
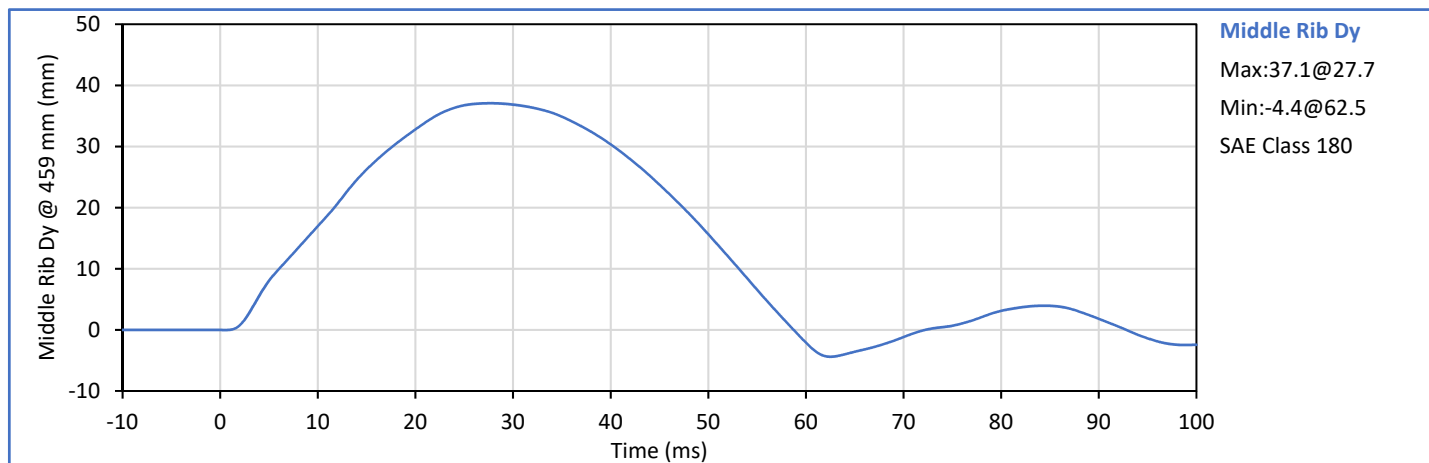
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	34	Pass
Upper Rib Dy @ 459mm	mm	36.0	40.0	37.5	Pass
Upper Rib Dy @ 815mm	mm	46.0	51.0	48.9	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

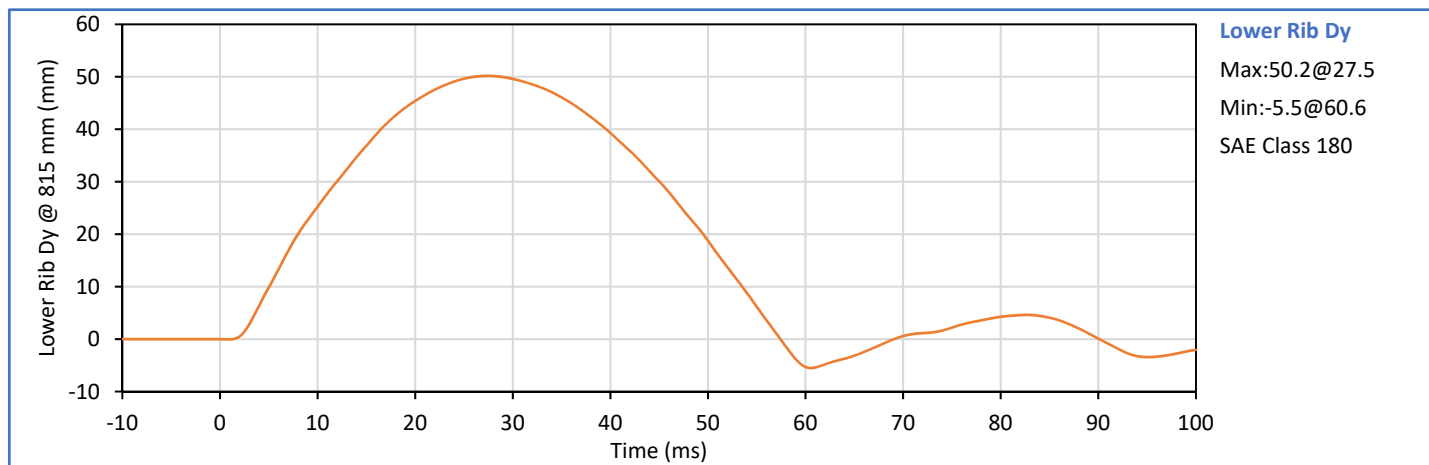
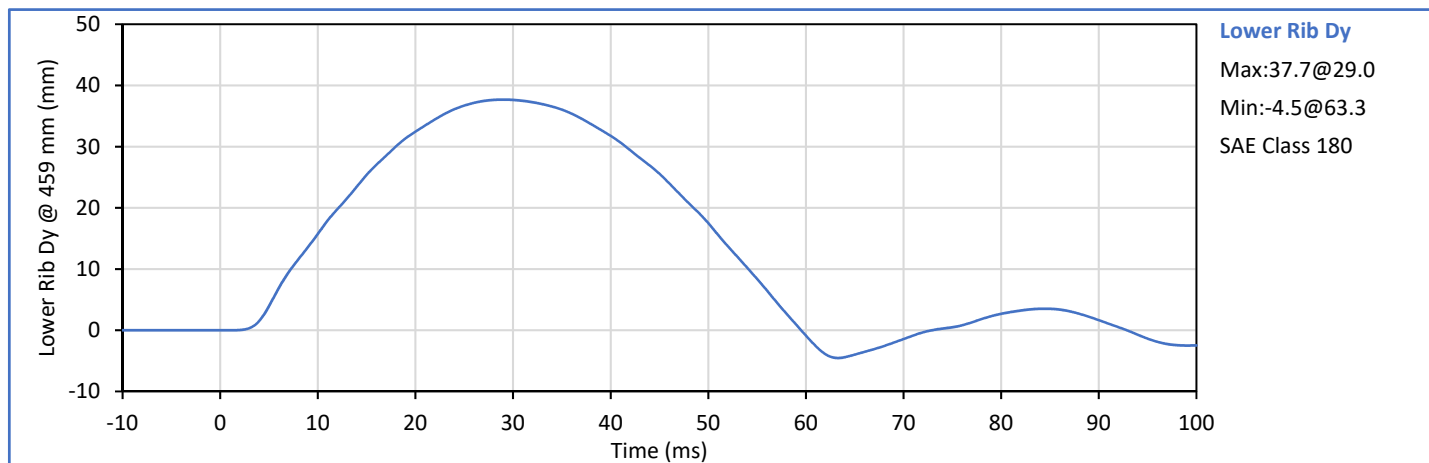
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.8	Pass
Laboratory Humidity	%	10	70	34	Pass
Middle Rib Dy @ 459mm	mm	36.0	40.0	37.1	Pass
Middle Rib Dy @ 815mm	mm	46.0	51.0	49.0	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

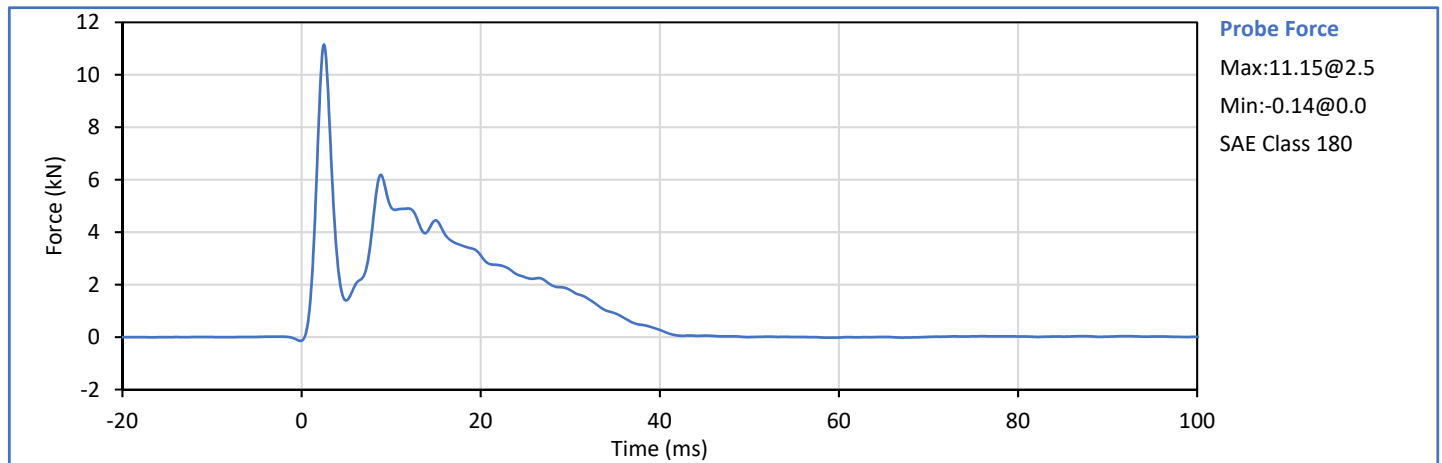
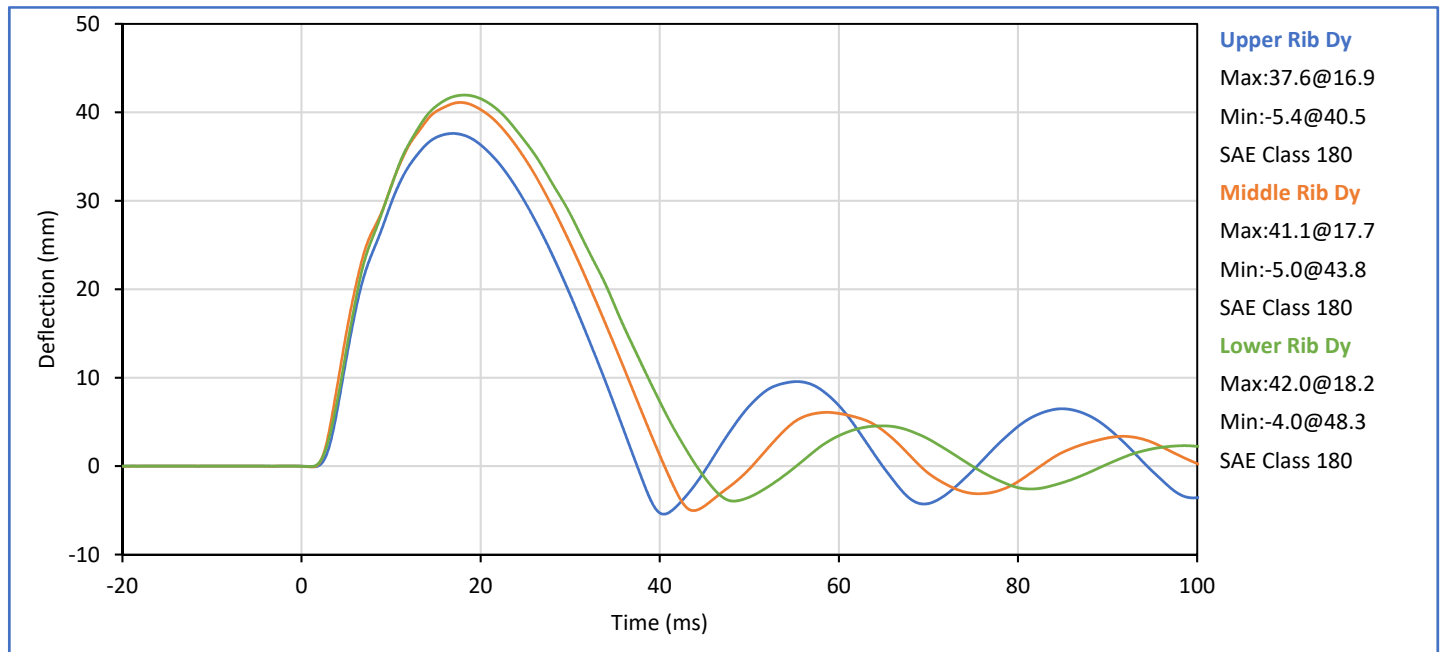
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	34	Pass
Lower Rib Dy @ 459mm	mm	36.0	40.0	37.7	Pass
Lower Rib Dy @ 815mm	mm	46.0	51.0	50.2	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

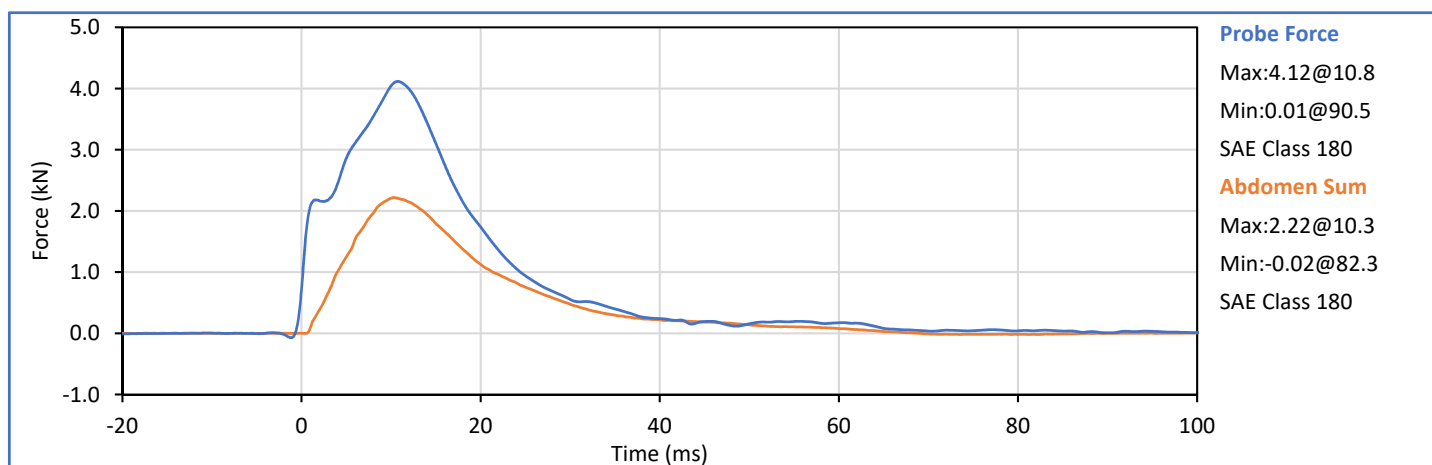
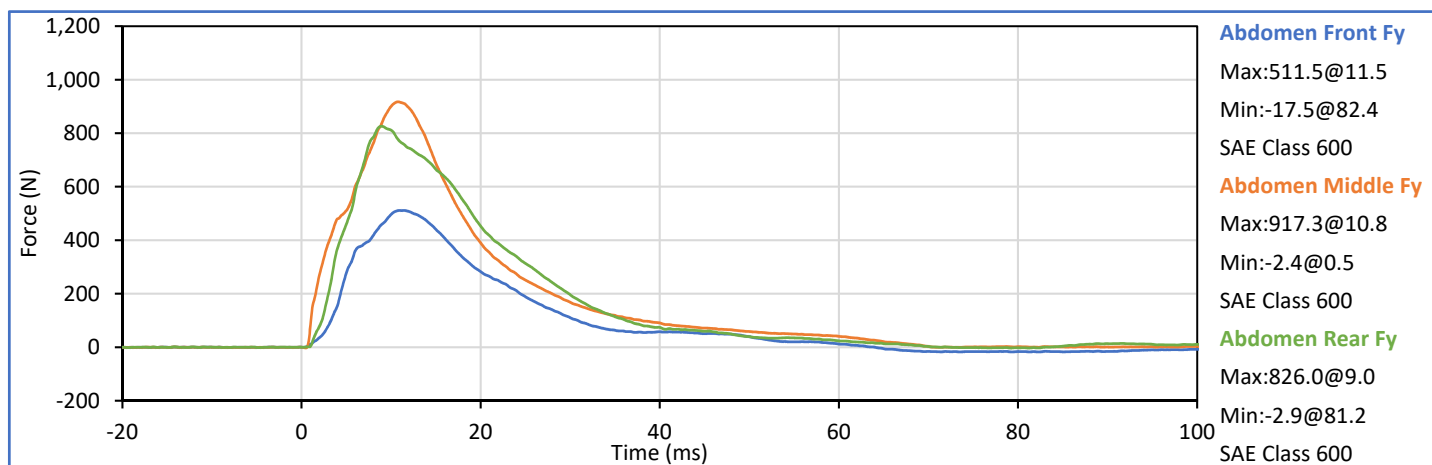
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.7	Pass
Laboratory Humidity	%	10	70	24	Pass
Impactor Velocity	m/s	5.40	5.60	5.44	Pass
Peak Upper Rib Dy	mm	34.0	41.0	37.6	Pass
Peak Middle Rib Dy	mm	37.0	45.0	41.1	Pass
Peak Lower Rib Dy	mm	37.0	44.0	42.0	Pass
Peak Impactor Force After 6 ms	kN	5.10	6.20	6.19	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

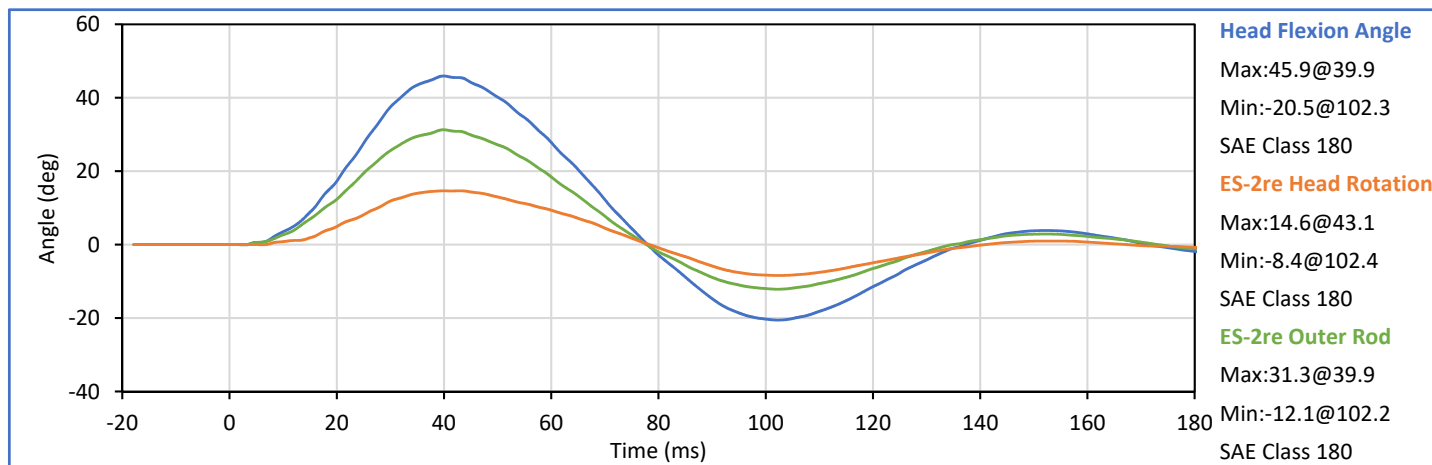
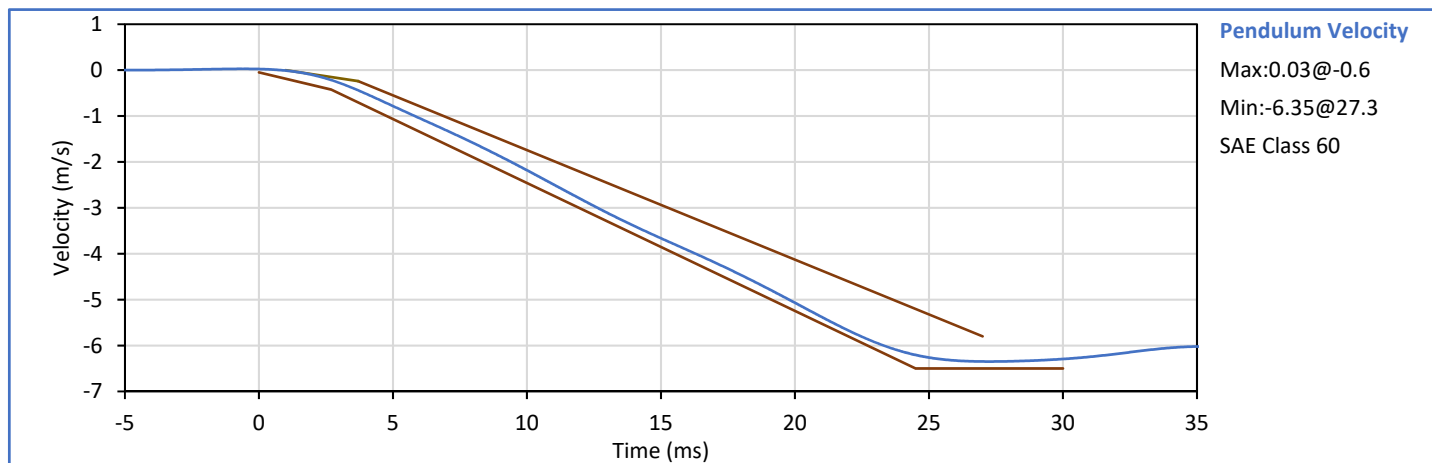
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.8	Pass
Laboratory Humidity	%	10	70	25	Pass
Impactor Velocity	m/s	3.90	4.10	4.01	Pass
Peak Impactor Force	kN	4.00	4.80	4.12	Pass
Time of Peak Impactor Force	ms	10.6	13.0	10.8	Pass
Sum of Abdomen Forces	kN	2.20	2.70	2.22	Pass
Time of Peak Sum Abdomen Force	ms	10.0	12.3	10.3	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

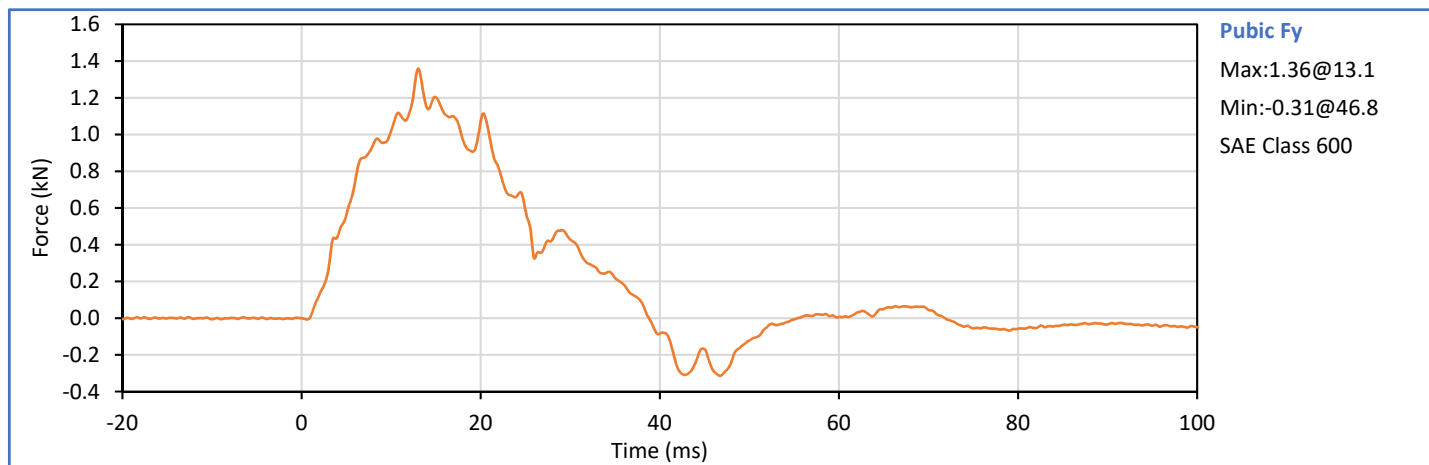
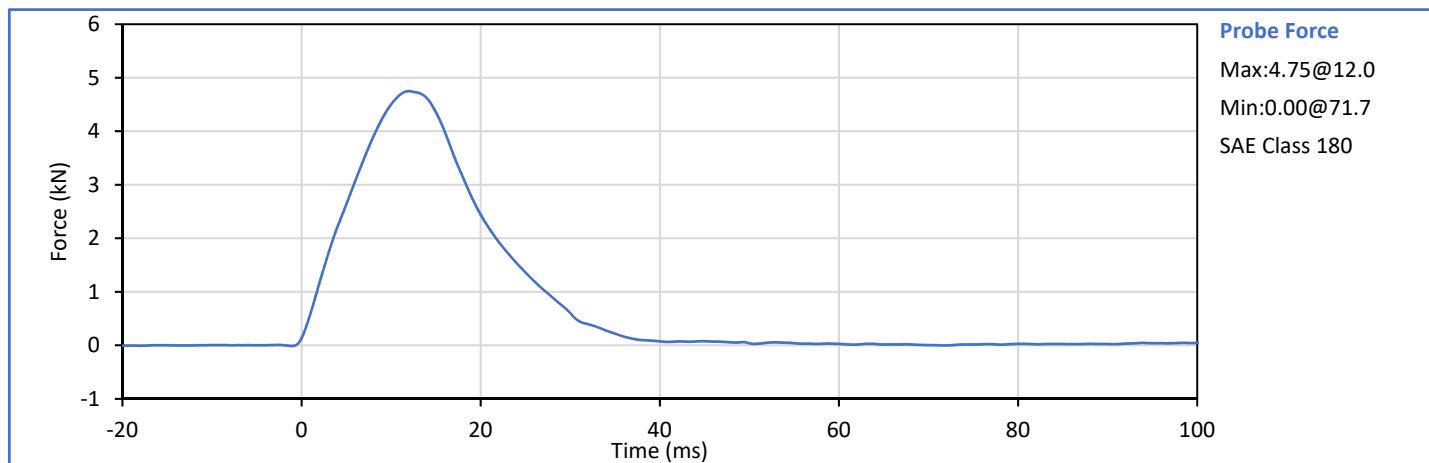
Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Humidity	%	10	70	30	Pass
Pendulum Velocity	m/s	5.95	6.15	6.14	Pass
Peak Headform Flexion	deg	45.0	55.0	45.9	Pass
Time of Peak Headform Flexion	ms	39.0	53.0	39.9	Pass
Flexion Decay (Peak to zero)	ms	37.0	57.0	38.1	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	21.7	Pass
Laboratory Humidity	%	10	70	25	Pass
Impactor Velocity	m/s	4.20	4.40	4.35	Pass
Peak Impactor Force	kN	4.70	5.40	4.75	Pass
Time of Peak Impactor Force	ms	11.8	16.1	12.0	Pass
Pubic Symphysis Fy	kN	1.23	1.59	1.36	Pass
Time of Peak Pubic Symphysis Fy	ms	12.2	17.0	13.1	Pass
Overall Test Results				Pass	Pass



Technician: J. Hernandez

Approved By: P. Puzzuto

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

ATD Serial No.: 308

Test Date: 2019-03-18

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	44	Pass
A - Sitting Height	mm	772	788	782	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	149	Pass
E - Shoulder Pivot From Backline	mm	97	107	105	Pass
F - Thigh Clearance	mm	119	135	126	Pass
G - Head Breadth	mm	140	148	143	Pass
H - Head Back From Backline	mm	40	46	42	Pass
I - Head Depth	mm	178	188	186	Pass
J - Head Circumference	mm	541	551	547	Pass
K - Buttock To Knee Length	mm	514	540	524	Pass
L - Popliteal Height	mm	343	369	350	Pass
K - Knee Pivot To Floor Height	mm	392	409	398	Pass
N - Buttock Popliteal Length	mm	416	442	437	Pass
O - Chest Depth W/O Jacket	mm	195	211	207	Pass
P - Foot Length	mm	216	232	221	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	318	Pass
R - Arm Length	mm	249	259	256	Pass
S - Knee Joint To Seatback	mm	477	493	486	Pass
V - Shoulder Width	mm	341	357	345	Pass
W - Foot Width	mm	78	94	84	Pass
Y - Chest Circumference W/Jacket	mm	851	881	862	Pass
Z - Waist Circumference	mm	761	791	779	Pass
			Overall Test Results		Pass

Technician:



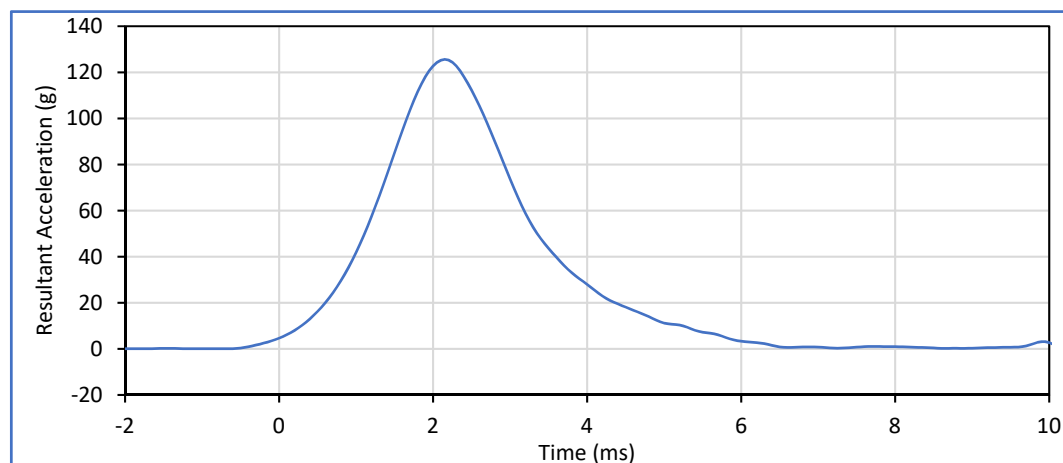
J. Hernandez

Approved By:



P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.4	Pass
Laboratory Humidity	%	10	70	28	Pass
Peak Resultant Acceleration	g	115.0	137.0	125.6	Pass
Peak Head Ax	g	-15.0	15.0	-0.2	Pass
Oscillations After Main Pulse	%	0.0	15.0	2.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results		Pass

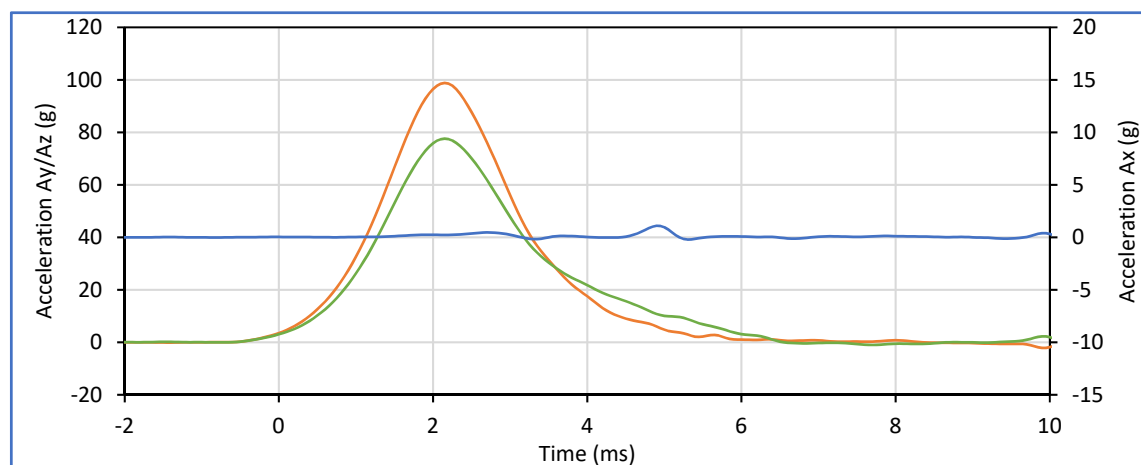


Head Resultant

Max:125.6@2.2

Min:0.2@8.7

SAE Class 1000



Head Ax

Max:1.1@4.9

Min:-0.2@5.3

SAE Class 1000

Head Ay

Max:98.8@2.2

Min:-2.1@9.9

SAE Class 1000

Head Az

Max:77.6@2.2

Min:-1.0@7.7

SAE Class 1000

Technician:

J. Hernandez

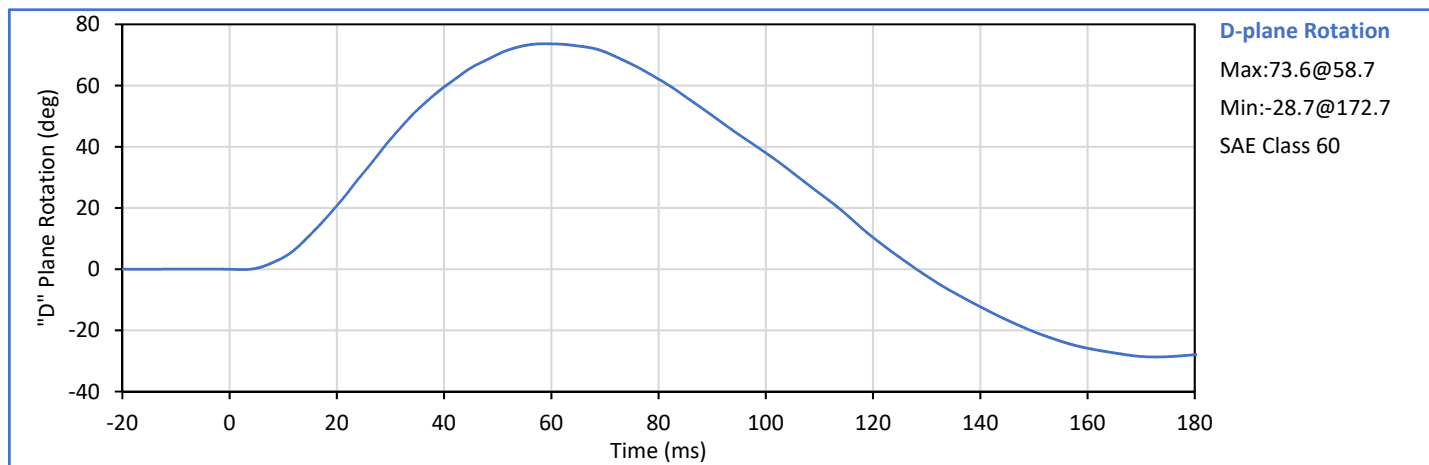
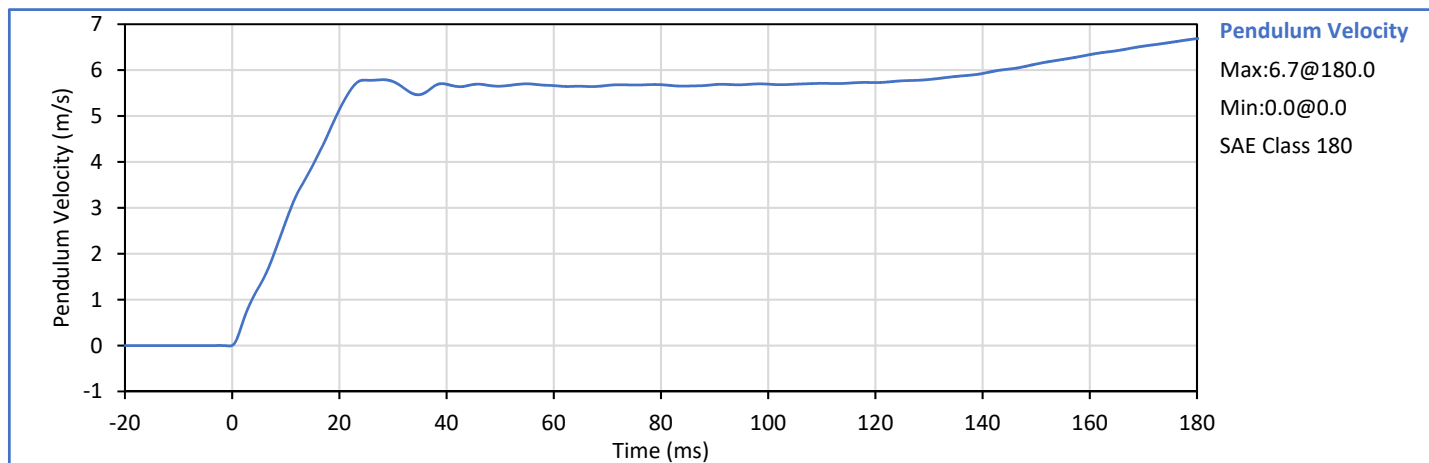
J. Hernandez

Approved By:

P. Puzzuto

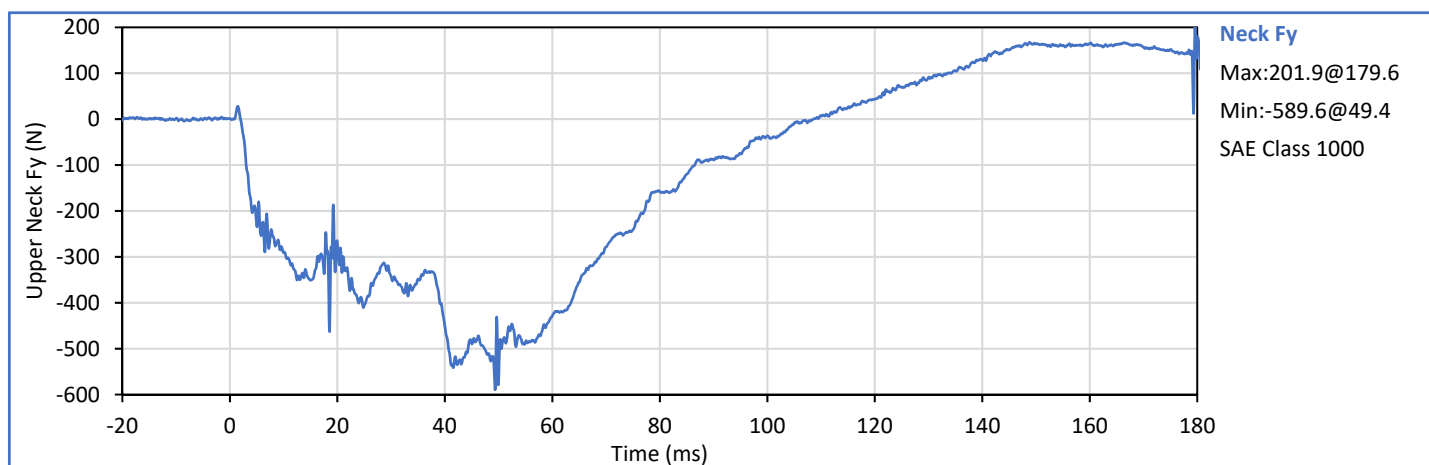
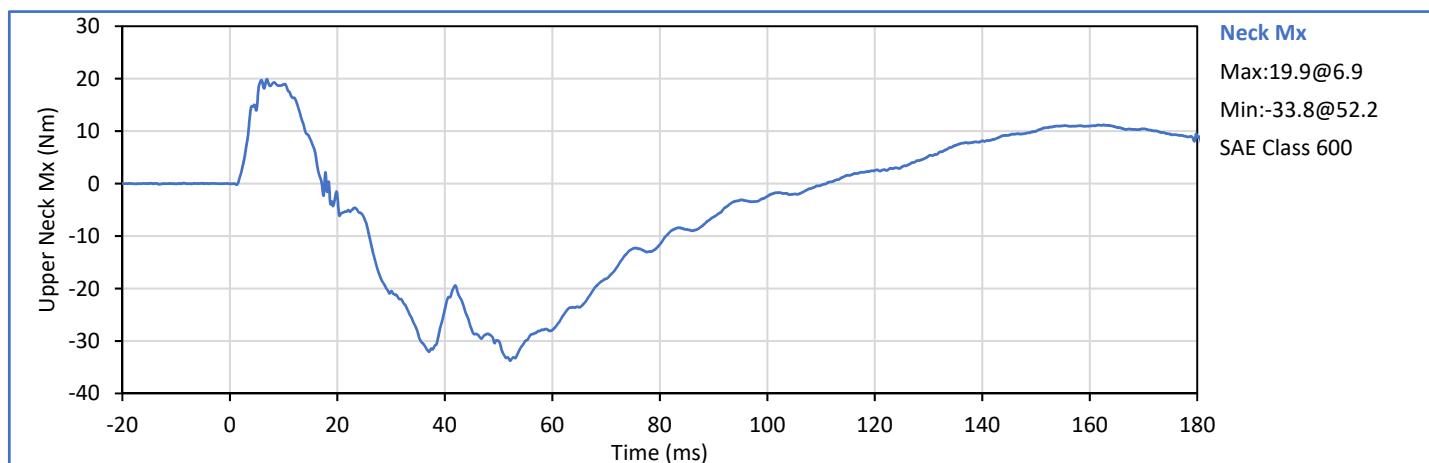
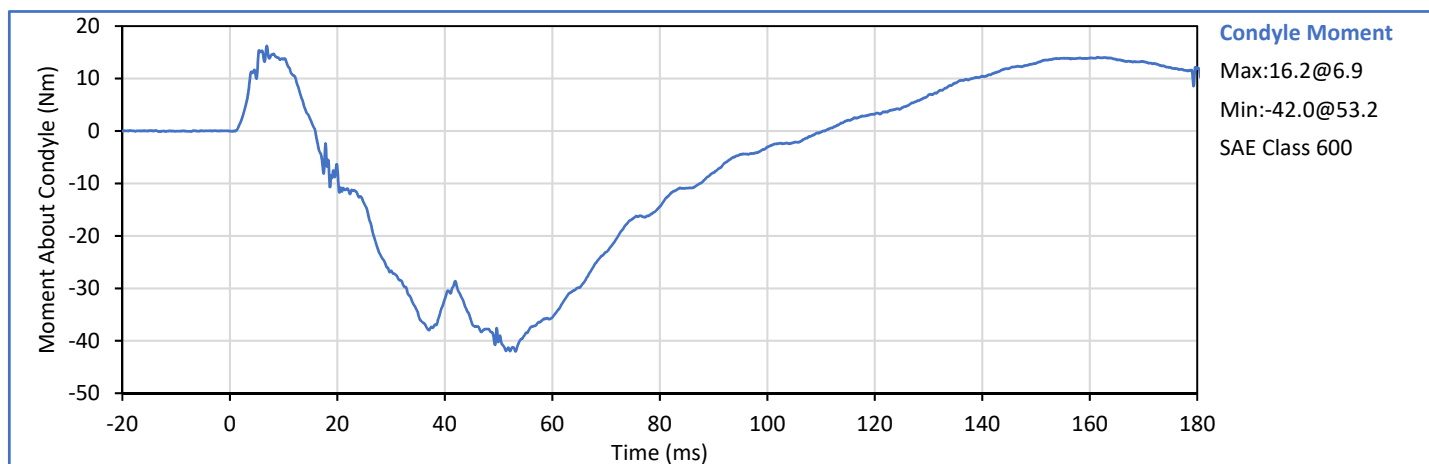
P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Humidity	%	10	70	29	Pass
Pendulum Velocity	m/s	5.51	5.63	5.62	Pass
Pendulum Decel at 10 ms	m/s	2.20	2.80	2.70	Pass
Pendulum Decel at 15 ms	m/s	3.30	4.10	3.92	Pass
Pendulum Decel at 20 ms	m/s	4.40	5.40	5.14	Pass
Pendulum Decel at 25 ms	m/s	5.40	6.10	5.78	Pass
Pendulum Decel from 25-100 ms	m/s	5.50	6.20	5.79	Pass
Peak "D" Plane Rotation	deg	71.0	81.0	73.6	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	58.7	Pass
Peak Occ. Condyle Moment	Nm	-44.0	-36.0	-42.0	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	110.4	Pass
Overall Test Results				Pass	

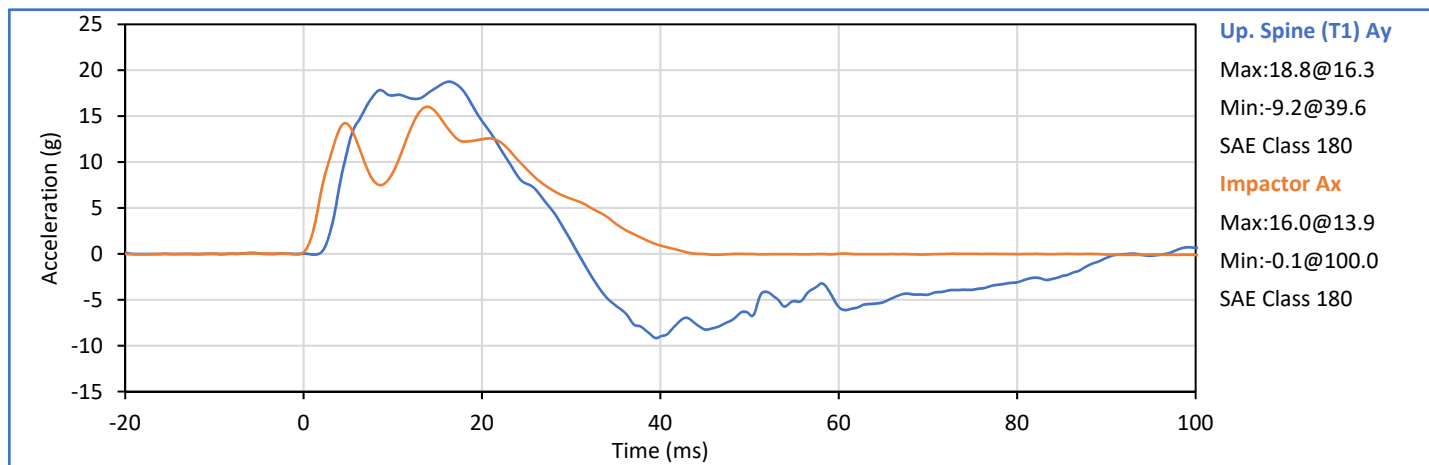
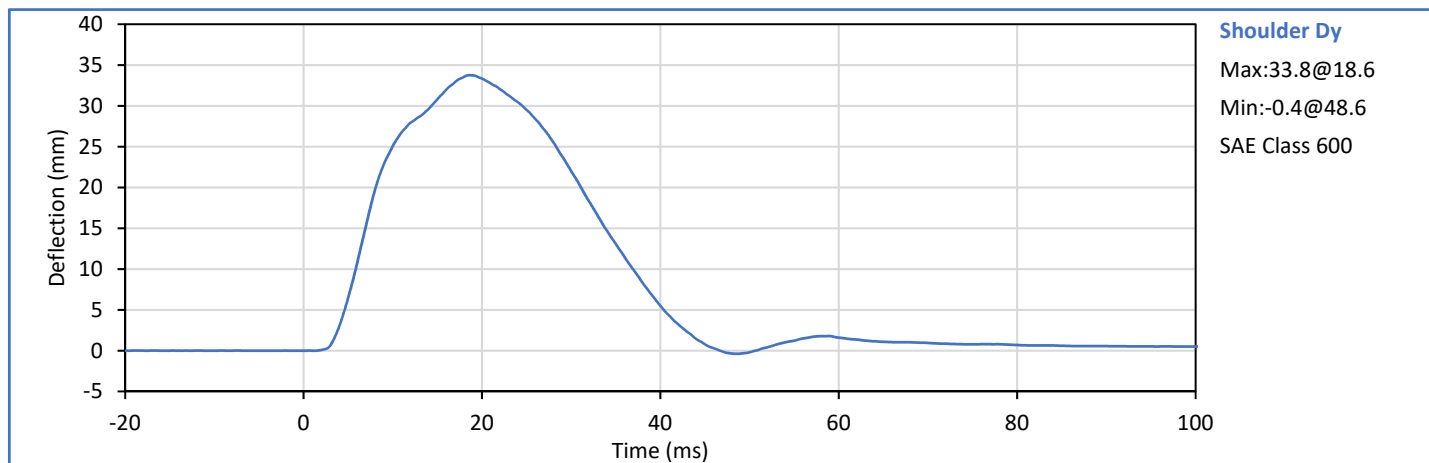


Technician: J. Hernandez

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 Humidity	%	10	70	39	Pass
Impactor Velocity	m/s	4.20	4.40	4.28	Pass
Peak Shoulder Dy	mm	28.0	37.0	33.8	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	18.8	Pass
Peak Impactor Ax	g	13.0	18.0	16.0	Pass
Overall Test Results					Pass



Technician:

J. Hernandez

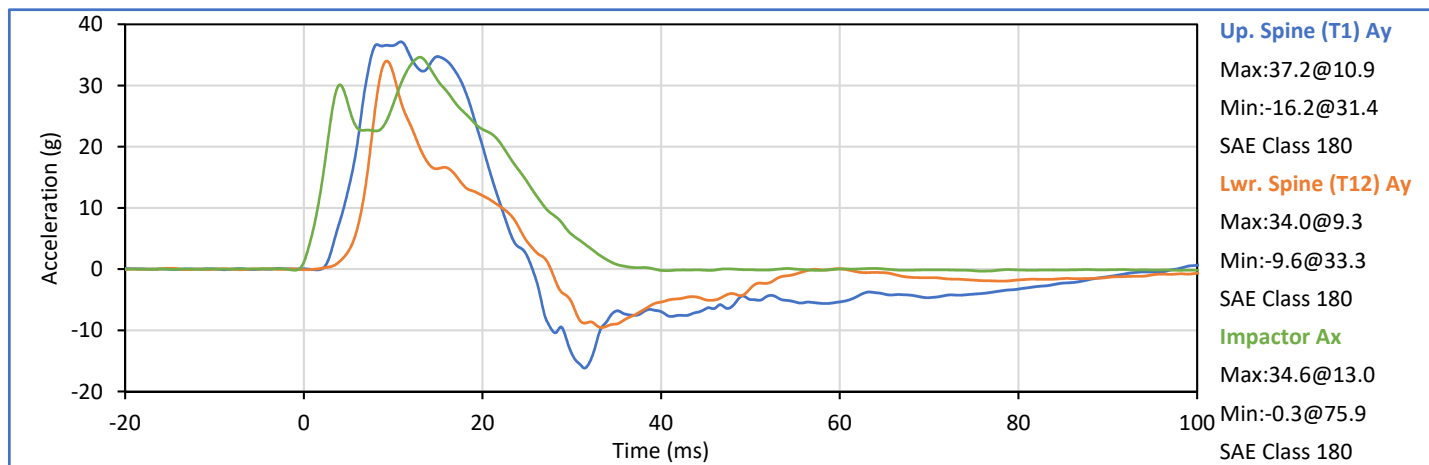
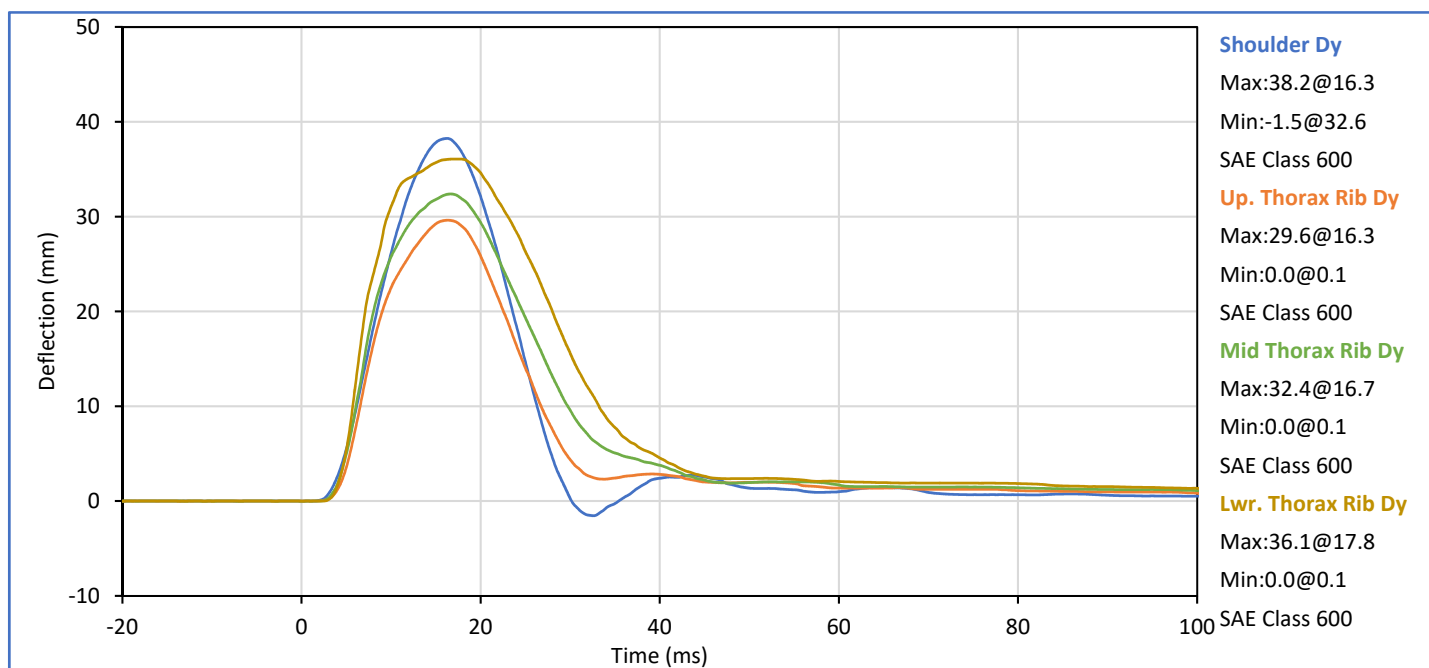
J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	6.60	6.80	6.66	Pass
Peak Shoulder Dy	mm	31.0	40.0	38.2	Pass
Peak Upper Rib Dy	mm	25.0	32.0	29.6	Pass
Peak Middle Rib Dy	mm	30.0	36.0	32.4	Pass
Peak Lower Rib Dy	mm	32.0	38.0	36.1	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	37.2	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	34.0	Pass
Peak Impactor Ax	g	30.0	36.0	34.6	Pass
Overall Test Results				Pass	Pass



Technician:

J. Hernandez

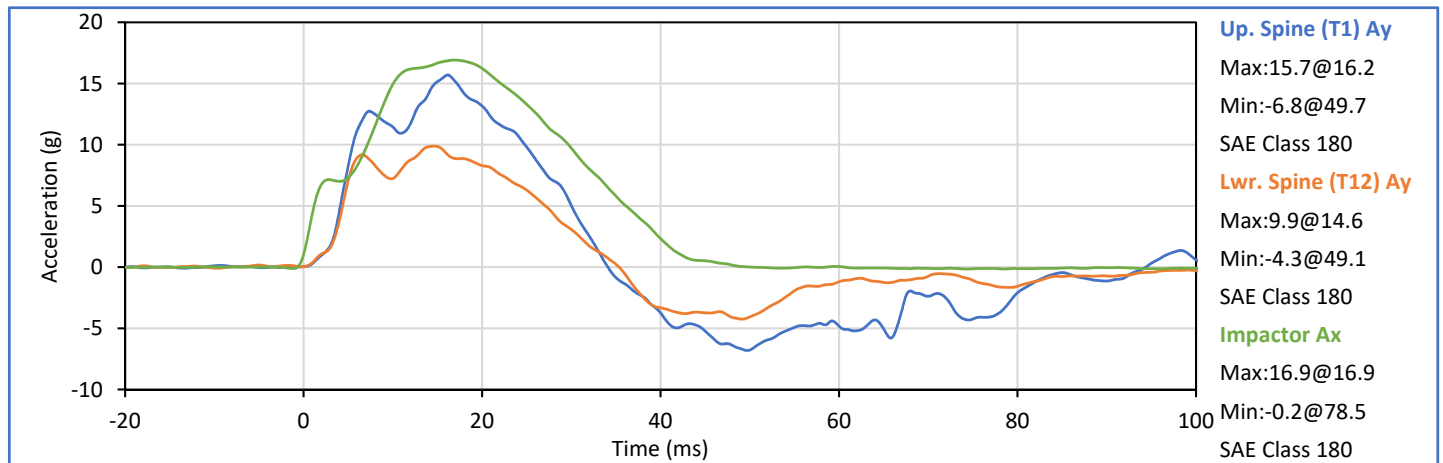
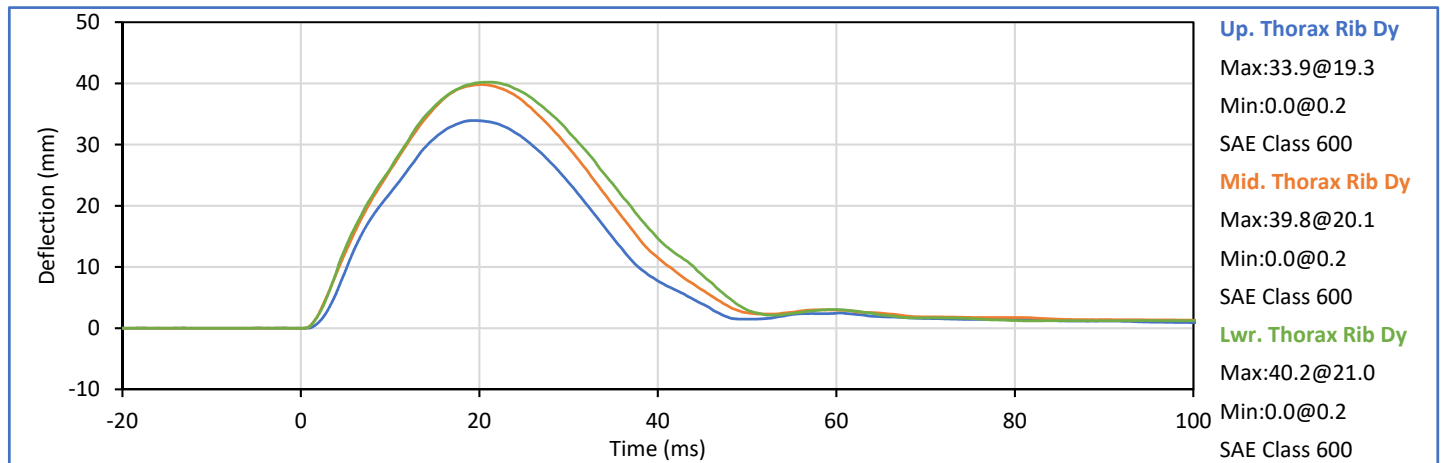
J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	4.20	4.40	4.24	Pass
Peak Upper Rib Dy	mm	32.0	40.0	33.9	Pass
Peak Middle Rib Dy	mm	39.0	45.0	39.8	Pass
Peak Lower Rib Dy	mm	35.0	43.0	40.2	Pass
Peak Upper Spine (T1) Ay	g	13.0	17.0	15.7	Pass
Peak Lower Spine (T12) Ay	g	7.0	11.0	9.9	Pass
Peak Impactor Ax	g	14.0	18.0	16.9	Pass
Overall Test Results				Pass	Pass



Technician:

J. Hernandez

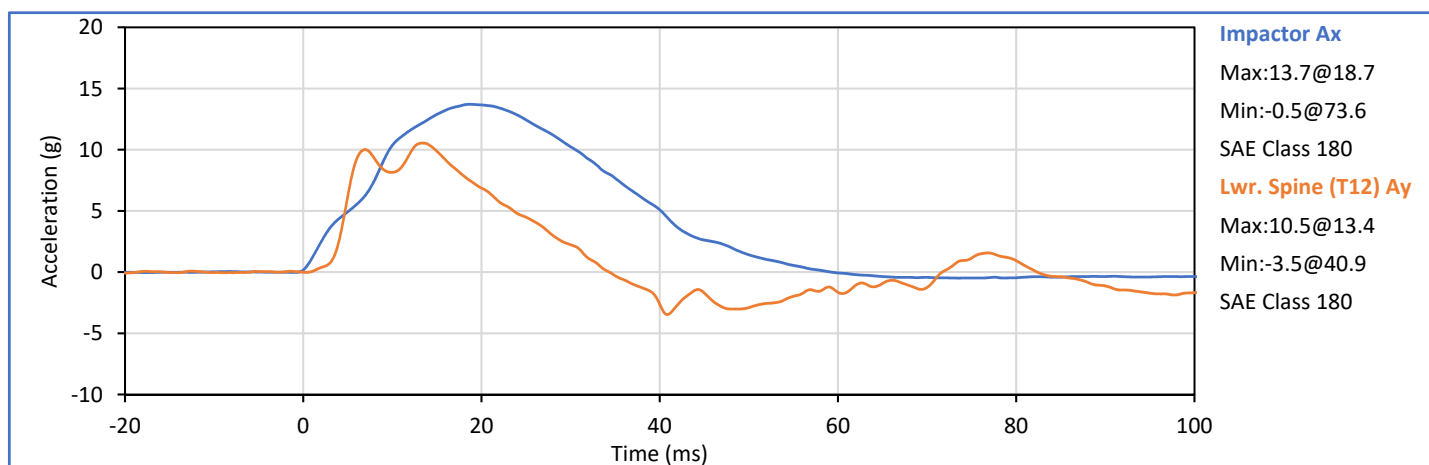
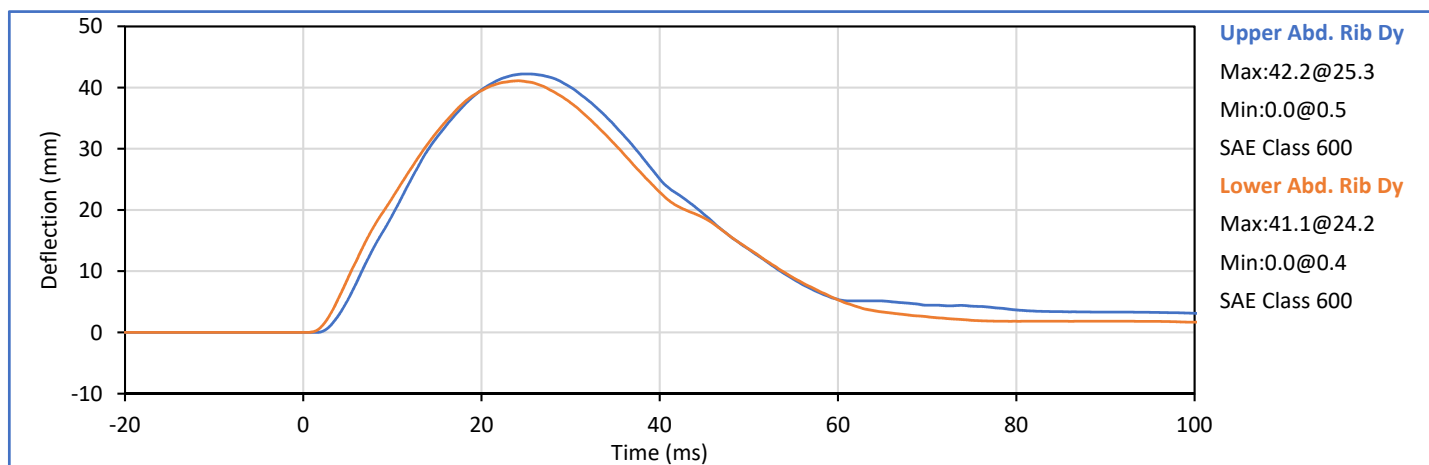
J. Hernandez

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 Humidity	%	10	70	40	Pass
Impactor Velocity	m/s	4.20	4.40	4.25	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	42.2	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	41.1	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	10.5	Pass
Peak Impactor Ax	g	12.0	16.0	13.7	Pass
Overall Test Results					Pass



Technician:

J. Hernandez

J. Hernandez

Approved By:

P. Puzzuto

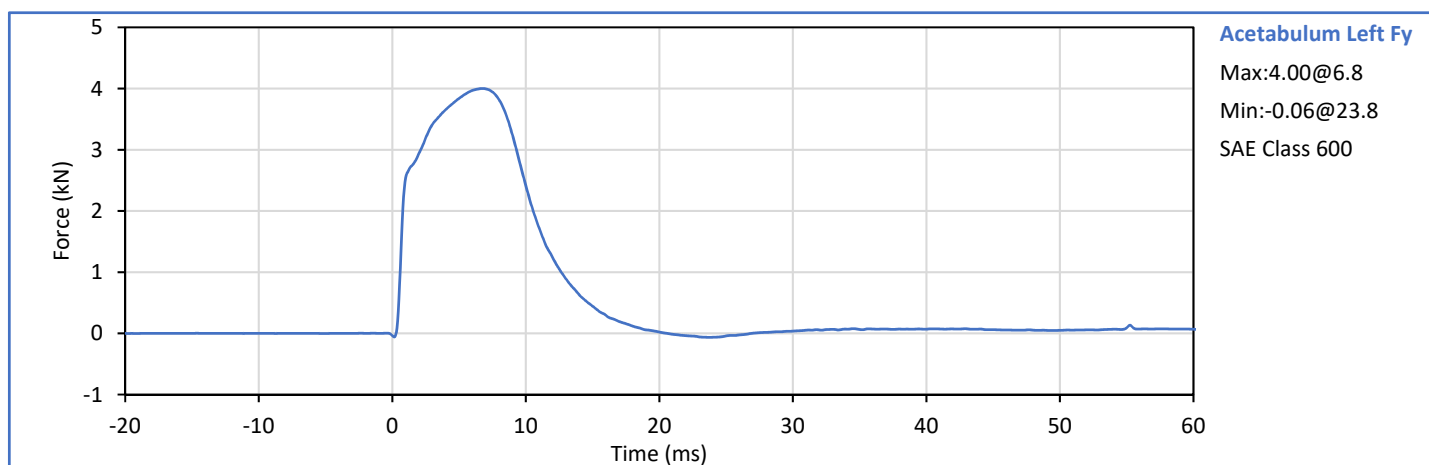
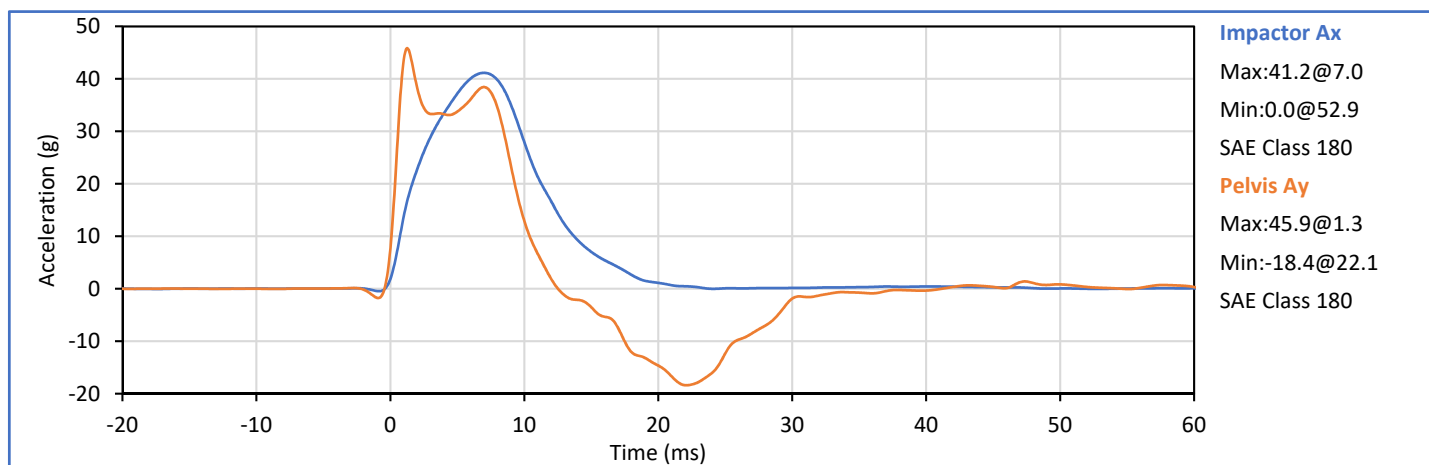
P. Puzzuto

ATD Serial No.: 308

Test Date: 2019-03-18

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	6.60	6.80	6.72	Pass
Peak Acetabulum Fy	kN	3.60	4.30	4.00	Pass
Pelvis Ay after 6ms	g	34.0	42.0	38.4	Pass
Peak Impactor Ax	g	38.0	47.0	41.2	Pass
Overall Test Results				Pass	Pass

Pelvis Plug S/N: 12077 (SACO)



Technician:

J. Hernandez

J. Hernandez

Approved By:

P. Puzzuto

P. Puzzuto



SID-IIs Pelvis Plug Certification Test

Plug S/N 12077

Test Number 6435

Report Number 6450

Test Date 2/27/2018 10:34:05 AM

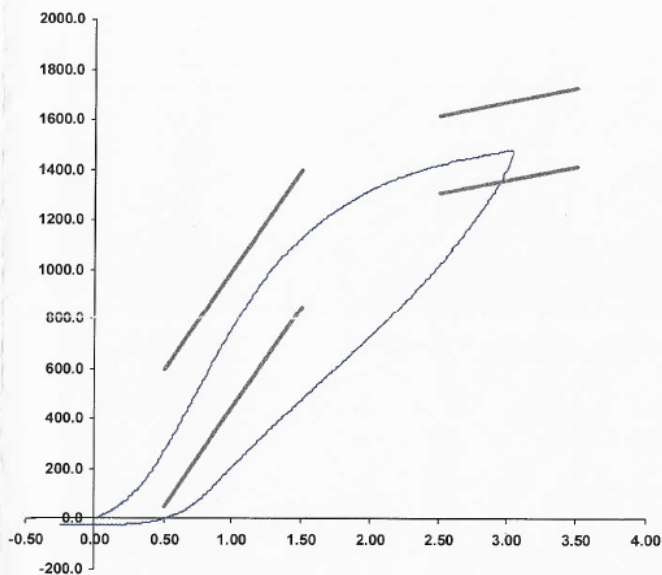
	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	273.30	50.00	600.00
Force @ 1.5 mm (N)	1,128.24	850.00	1,400.00
Force @ 2.5 mm (N)	1,421.02	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,477.91	1,361.00	1,673.00

Testing Machine STM-20 5965542
Load Cell S/N (FI360947), Units (LBS) 1000

Crosshead Speed (mm / min) or Rate 12.7
Extension or Position Measured by XHD_100 (XHD100)

Notes:

Force (-N) vs Extension (-mm)



Operator

Part Number 180-4450

Template No 107 27-Feb-18
SACO Research

By: DC Date: 2/27/18

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

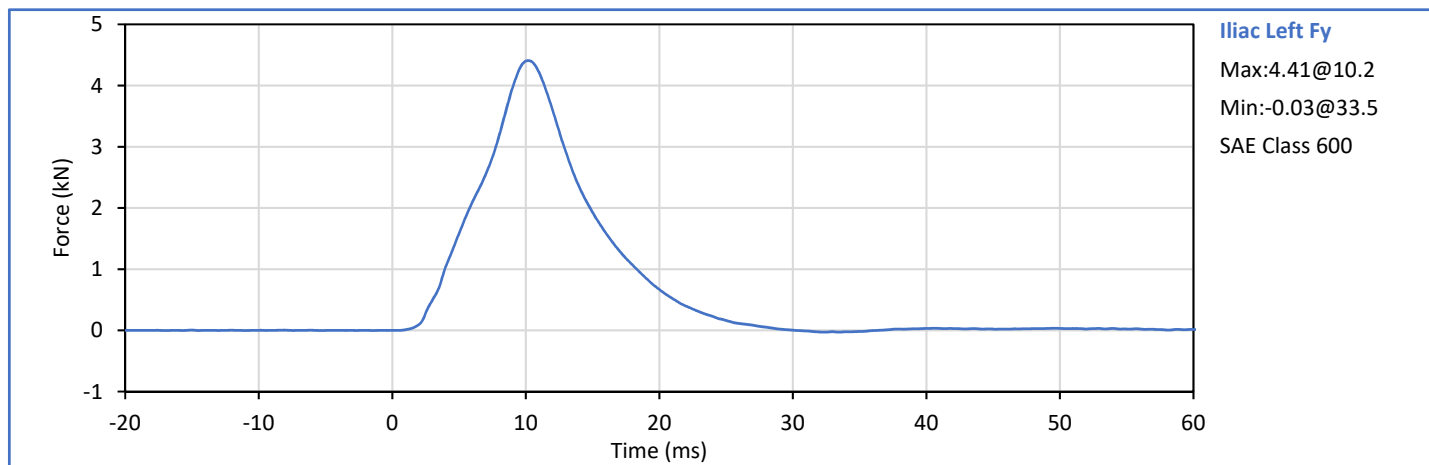
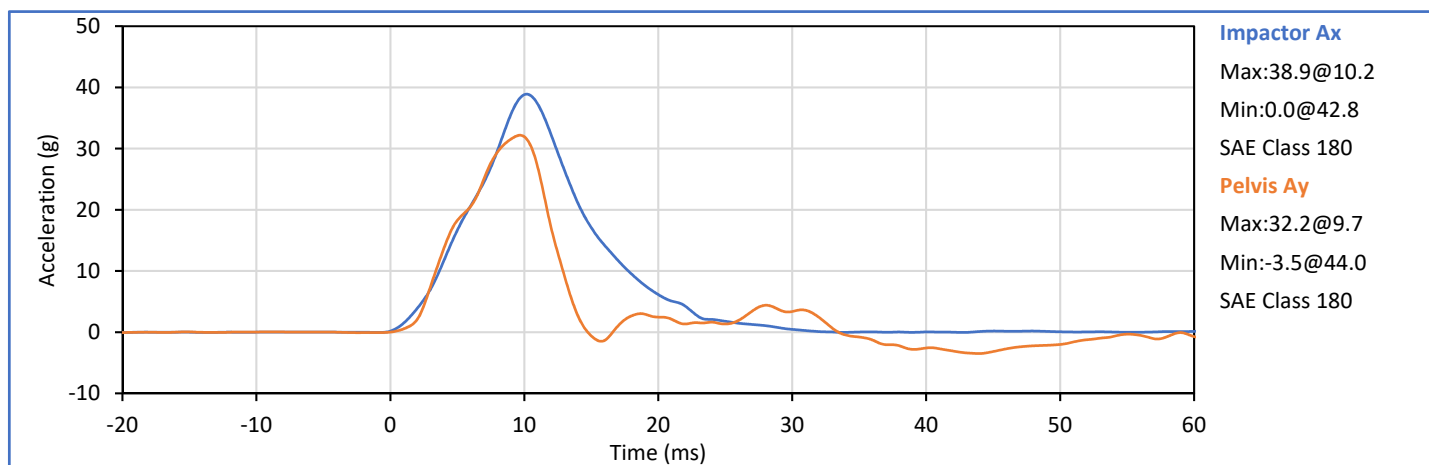
ATD Serial No.: 308

Test Date: 2019-03-18

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Iliac Fy	kN	4.10	5.10	4.41	Pass
Pelvis Ay after 6ms	g	28.0	39.0	32.2	Pass
Peak Impactor Ax	g	36.0	45.0	38.9	Pass
Overall Test Results				Pass	Pass

Pelvis Plug S/N: 12228 (SACO) *

* Plug is not impacted and remains certified



Technician: _____

J. Hernandez

Approved By: _____

P. Puzzuto

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Position: Driver
 ATD Type: ES-2re
 ATD S\N: F035

Table 1 - Driver ATD Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Due
Head Acceleration X Primary	P58760	Endevco	7264C-2k	2019-07-25
Head Acceleration Y Primary	P58763	Endevco	7264C-2k	2019-07-25
Head Acceleration Z Primary	P52093	Endevco	7264C-2k	2019-07-25
Head Acceleration X Redundant	P52072	Endevco	7264C-2k	2019-07-25
Head Acceleration Y Redundant	P58768	Endevco	7264C-2k	2019-07-25
Head Acceleration Z Redundant	P52074	Endevco	7264C-2k	2019-07-25
Upper Thorax Rib Deflection Y	180 (ES-2 Rib)	Honeywell	F38000203	2019-07-24
Middle Thorax Rib Deflection Y	177 (ES-2 Rib)	Honeywell	F38000203	2019-07-24
Lower Thorax Rib Deflection Y	186 (ES-2 Rib)	Honeywell	F38000203	2019-07-24
Anterior Abdominal Force Y	1504 Fy	R.A. Denton	2631J	2019-10-11
Middle Abdominal Force Y	1505 Fy	R.A. Denton	2631J	2019-10-11
Posterior Abdominal Force Y	1506 Fy	R.A. Denton	2631J	2019-10-11
Lower Spine T12 Acceleration X	P45011	Endevco	7264C-2k	2019-07-25
Lower Spine T12 Acceleration Y	P58992	Endevco	7264C-2k	2019-07-25
Lower Spine T12 Acceleration Z	P51700	Endevco	7264C-2k	2019-07-25
Pubic Symphysis Force Y	DG6784 Fy	FTSS	IF-556	2019-10-11

Position: Rear Pass.
 ATD Type: SID-IIs
 ATD S\N: 308

Table 2a - Passenger ATD Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Due
Head Acceleration X Primary	P63980	Endevco	7264C-2k	2019-09-14
Head Acceleration Y Primary	P58861	Endevco	7264C-2k	2019-09-14
Head Acceleration Z Primary	P51261	Endevco	7264C-2k	2019-09-14
Head Acceleration X Redundant	P58808	Endevco	7264C-2k	2019-09-14
Head Acceleration Y Redundant	P63310	Endevco	7264C-2k	2019-09-14
Head Acceleration Z Redundant	P49189	Endevco	7264C-2k	2019-09-14
Upper Thorax Rib Deflection Y	1172	Servo	08TCI-3725	2019-09-13
Middle Thorax Rib Deflection Y	1219	Servo	08TCI-3725	2019-09-13
Lower Thorax Rib Deflection Y	1221	Servo	08TCI-3725	2019-09-13
Upper Abdomen Rib Deflection Y	1252	Servo	08TCI-3725	2019-09-13
Lower Abdomen Rib Deflection Y	1283	Servo	08TCI-3725	2019-09-13
Lower Spine T12 Acceleration X	P52108	Endevco	7264C-2k	2019-09-14
Lower Spine T12 Acceleration Y	P63970	Endevco	7264C-2k	2019-09-14
Lower Spine T12 Acceleration Z	P51712	Endevco	7264C-2k	2019-09-14
Iliac Wing Impact Side Force Y	284 Fy (Iliac)	R.A. Denton	3228J	2019-06-21
Acetabulum Impact Side Force Y	272 Fy (Acetabulum)	R.A. Denton	3249J	2019-06-21

Table 2b - Passenger ATD Optional Instrumentation (Research Data Only)

Sensor Location	Sensor S\N	Mfr	Model	Cal Due
Head Rotation Rate X	ARS7498	DTS	ARS PRO-8k (2000Hz)	2019-07-25
Head Rotation Rate Y	ARS7367	DTS	ARS PRO-8k (2000Hz)	2019-07-25
Head Rotation Rate Z	ARS7377	DTS	ARS PRO-8k (2000Hz)	2019-07-25

Table 3 - Vehicle Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Due
Vehicle CG Ax	A267277	MSI	52F-2000	2019-08-02
Vehicle CG Ay	A267280	MSI	52F-2000	2019-08-02
Vehicle CG Az	A267306	MSI	52F-2000	2019-08-02
Right Side Sill at Front Seat Ax	10417	Endevco	757F-2k	2019-09-04
Right Side Sill at Front Seat Ay	10422	Endevco	757F-2k	2019-09-04
Right Side Sill at Front Seat Az	10431	Endevco	757F-2k	2019-09-04
Right Side Sill at Rear Seat Ax	10432	Endevco	757F-2k	2019-09-04
Right Side Sill at Rear Seat Ay	10396	Endevco	757F-2k	2019-09-04
Right Side Sill at Rear Seat Az	10438	Endevco	757F-2k	2019-09-04
Left Side Sill at Front Seat Ay	A224486	MSI	52F-2000	2019-09-28
Left Side Sill at Rear Seat Ay	A145933	MSI	52F-2000	2019-11-06
Left Lower A-Pillar Ay	A267307	MSI	52F-2000	2019-08-02
Left Middle A-Pillar Ay	A227290	MSI	52F-2000	2019-09-26
Left Lower B-Pillar Ay	Not installed			
Left Middle B-Pillar Ay				
Driver Seat Track at H-Point Ay	10253	Endevco	757F-2k	2020-01-29
Rear Seat Structure Ay	A185600	MSI	52F-2000	2019-11-06
Right Rear Occupant Comp. Ay	A145925	MSI	52F-2000	2019-11-28
Engine Block Top Ax	A248858	MSI	52F-2000	2019-09-18
Engine Block Top Ay	A185683	MSI	52F-2000	2019-11-07
Rear Floopan Above Axle Ax	10419	Endevco	757F-2k	2019-09-05
Rear Floopan Above Axle Ay	10423	Endevco	757F-2k	2019-09-04
Rear Floopan Above Axle Az	10413	Endevco	757F-2k	2019-09-05

Table 4 - Moving Deformable Barrier (MDB) Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Due
MDB CG Ax	10390	Endevco	757F-2k	2019-09-04
MDB CG Ay	10405	Endevco	757F-2k	2019-09-04
MDB CG Az	10421	Endevco	757F-2k	2019-09-05
MDB Left Side at Rear Axle Ax	A224516	MSI	52F-2000	2019-09-21
MDB Left Side at Rear Axle Ay	A160734	MSI	52F-2000	2019-11-28