

REPORT NUMBER: SideNCAPPole-KAR-25-001
NEW CAR ASSESSMENT PROGRAM (NCAP)
SIDE IMPACT POLE TEST

BAYERISCHE MOTOREN WERKE AG
2025 BMW X3 XDRIVE30I 5-DOOR MPV

NHTSA NO. M20254101

PREPARED BY:
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JANUARY 27, 2025

FINAL REPORT

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

Date: _____

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

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TECHNICAL REPORT DOCUMENTATION PAGE

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16. Abstract A 32.2 km/h 75° rigid pole side NCAP impact test was conducted on the subject 2025 BMW X3 xDrive30i 5-Door MPV in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at the Applus IDIADA KARCO Engineering, LLC. facility in Adelanto, California on January 13, 2025. The impact velocity was 32.16 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 5.6°C. The target vehicle's maximum post-test static crush was 322 mm located at level 3. The test vehicle's occupant performance data is as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Driver ATD (SID-IIs)</th> </tr> <tr> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>161.745</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82</td> <td>37.134</td> </tr> <tr> <td>Total Pelvic Force (Sum of Acetabular and Iliac Forces)</td> <td>N</td> <td>5525</td> <td>2099.954</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38</td> <td>18.743</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45</td> <td>19.860</td> </tr> </tbody> </table>				Measurement Description	Driver ATD (SID-IIs)			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	161.745	Resultant Lower Spine Acceleration	g	82	37.134	Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	2099.954	Maximum Thoracic Rib Deflection	mm	38	18.743	Maximum Abdominal Rib Deflection	mm	45	19.860
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17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. Office of Crashworthiness Standards (NRM-110) 1200 New Jersey Ave., SE Washington, DC 20590																												
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SECTION 1

TEST PURPOSE AND SUMMARY OF TEST

PURPOSE

This side impact test is part of the 2025 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number 693JJ920D000015. The purpose of this test is to generate comparative side impact performance in a 2025 BMW X3 xDrive30i 5-Door MPV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure date March 2020.

SUMMARY

A rigid pole side impact test was conducted on a 2025 BMW X3 xDrive30i 5-Door MPV. The subject vehicle was towed into the rigid pole at an angle of 74.4° and a velocity of 32.16 km/h. The test was conducted by Applus IDIADA KARCO Engineering, LLC. in Adelanto, California on January 13, 2025. Pre- and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One 299 (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated March 2020. Camera locations and other pertinent camera information are included in this report.

The 299 (SID-IIs) was instrumented accordingly:

- Primary and redundant head CG tri-axial accelerometers
- Head triaxial angular rate sensors
- Thorax upper, middle and lower rib displacement potentiometers
- Abdomen upper and lower rib displacement potentiometers
- Lower spine (12) tri-axial accelerometers
- Iliac load cell
- Acetabulum load cell

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 contains the test equipment and instrumentation calibration data.

SECTION 1 ...(CONTINUED)
TEST PURPOSE AND SUMMARY OF TEST

Injury readings for the SID-IIs dummy were recorded as follows:

Measurement Description	Units	Driver ATD (SID-IIs)	
		IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	161.745
Lower Spine (T12) Resultant Acceleration	g	82	37.134
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2099.954
Maximum Thoracic Rib Deflection	mm	38*	18.743
Maximum Abdominal Rib Deflection	mm	45*	19.860

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

GENERAL COMMENTS: NONE

SECTION 2

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

CONVERSION FACTORS

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

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2025 BMW X3 xDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	M20254101
Model Year	2025
Make	BMW
Model	X3 xDrive30i
Body Style	5-Door MPV
VIN	5UX53GP02S9Y43383
Body Color	Dark Graphite Metallic
Odometer Reading (km / mi)	5/3
Engine Displacement (L)	2.0
Type / No. of Cylinders	Inline 4
Engine Placement	Longitudinal
Transmission Type	Automatic
Transmission Speeds	8
Overdrive	Yes
Final Drive	AWD
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes

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

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

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Bayersische Motoren Werke AG
Date of Manufacture	Oct-24
Vehicle Type	MPV

GVWR (kg)	2500
GAWR Front (kg)	1175
GAWR Rear (kg)	1465

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity	2	3		5
Capacity Weight (VCW) (kg)				502.0
DSC x 68 (kg)				340.0
Cargo Weight (RCLW) (kg)				136.0

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

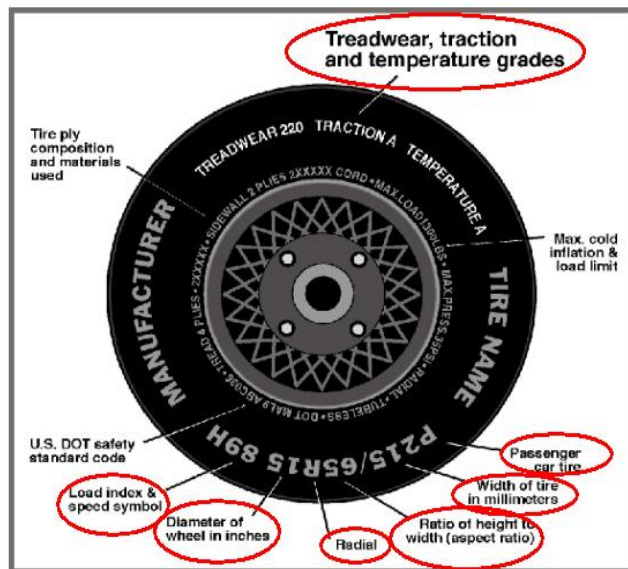
VEHICLE SEAT TYPE

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

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	240	270
Recommended Tire Size	245/50 R19	245/50 R19
Tire Size on Vehicle	245/50 R19	245/50 R19
Tire Manufacturer	Pirelli	Pirelli
Tire Model	P-Zero All Season	P-Zero All Season
Treadware	500	500
Traction Grade	A	A
Temperature Grade	A	A
Tire Plies Sidewall	2 Polyester	Polyester
Tire Plies Body	2 Polyester, 2 Steel, 1 Polyamide	2 Polyester, 2 Steel, 1 Polyamide
Load Index/Speed Symbol	105	105
Tire Material	Rubber	Rubber
DOT Safety Code Left	193 OF483T 2324	193 OF483T 2324
DOT Safety Code Right	193 OF483T 2324	193 OF483T 2324

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	240	240	270	270
Tire Placard	kPa	240	240	270	270
Owner's Manual	kPa	240	240	270	270
As Tested	kPa	240	240	270	270

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	494.5	454.5		502.0	543.0		499.0	542.5	
Right	kg	475.0	480.5		476.0	562.5		483.5	562.0	
Ratio	%	50.9%	49.1%	100.0%	46.9%	53.1%	100.0%	47.1%	52.9%	100.0%
Total	kg	969.5	935.0	1904.5	978.0	1105.5	2083.5	982.5	1104.5	2087.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1904.5	A
Actual Weight of 1 SID II-s ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	136.0	C
Calculated Vehicle Target Wt (TVTW)	kg	2089.5	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	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	°	0.1	0.1	0.2	Yes
Front Passenger Sill Angle (front-to-rear)*	°	1.4	1.2	1.1	Yes
Front Bumper-Line Angle (left-to-right)**	°	0.5	0.5	0.5	Yes
Rear Bumper-Line Angle (left-to-right)**	°	-0.5	-0.5	-0.4	Yes
Vehicle CG (Aft of Front Axle)	mm	1404	1518	1514	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	-3	3	-2	

*ND=Nose Down (-), NU=Nose Up (+) **LD=Left Down (-), LU=Left Up (+)

***The "As Tested" vehicle attitude angle measurements must be within "As Delivered" and the "Fully Loaded" vehicle attitude measurements at each location. Indicate "Yes" or "No" for "Meets Requirement"

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Rear Trim Removed	3.5

TEST SURFACE MARKINGS

	Distance from 75° Impact Location Line (mm)
Fore 25 mm target	0
Aft 25 mm target	0

DATA SHEET NO. 2

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

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

SEAT POSITIONING

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

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	24.4	15.1	19.8
Front Passenger Seat	24.8	17.0	20.9
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	19.8	733	Max	745	747	757
			Mid	716	723	733
			Min	686	698	708
Front Passenger Seat	20.9	719	Max	726	724	742
			Mid	701	704	719
			Min	676	684	696
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: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

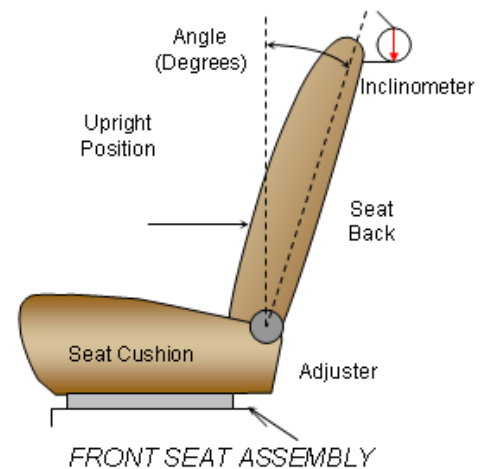
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	248		0	
Front Passenger Seat	219		0	
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 such that the dummy's head is level. The front passenger's seat back is positioned in a similar manner to the driver's seat. The struck side rear passenger seat back is positioned in accordance with the information provided by the manufacturer in Form 1 for the 5th percentile female dummy in a Side NCAP MDB Test. The rear center and non-struck side rear passenger's seat back is set to match the struck side rear seat back. Seat back angle is measured using an inclinometer along a straight edge on the seat back.



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/Seated Dummy	55.7		4.7	
Front Passenger Seat	50.5		4.9	
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: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101

Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

SEAT BELT ANCHORAGE ADJUSTMENT

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

	Total No. of Positions	Placed in Position
Driver Seat	Fixed	Fixed

HEAD RESTRAINT ADJUSTMENT

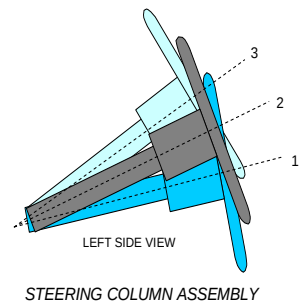
The driver's head restraint is adjusted to the lowest and most full forward in-use position.

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

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.

	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	21.8	0
Geometric Center - Position 2	23.3	41
Uppermost - Position 3	24.8	82
Telescoping Steering Wheel Travel		58
Test Position	23.3	41



DATA SHEET NO. 2 ... (CONTINUED)

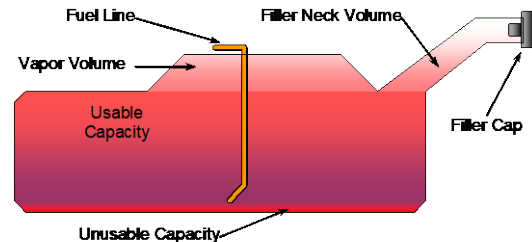
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101

Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

FUEL PUMP

The vehicle is an electric vehicle, does not have a fuel pump.



FUEL TANK CAPACITY

VEHICLE FUEL TANK ASSEMBLY

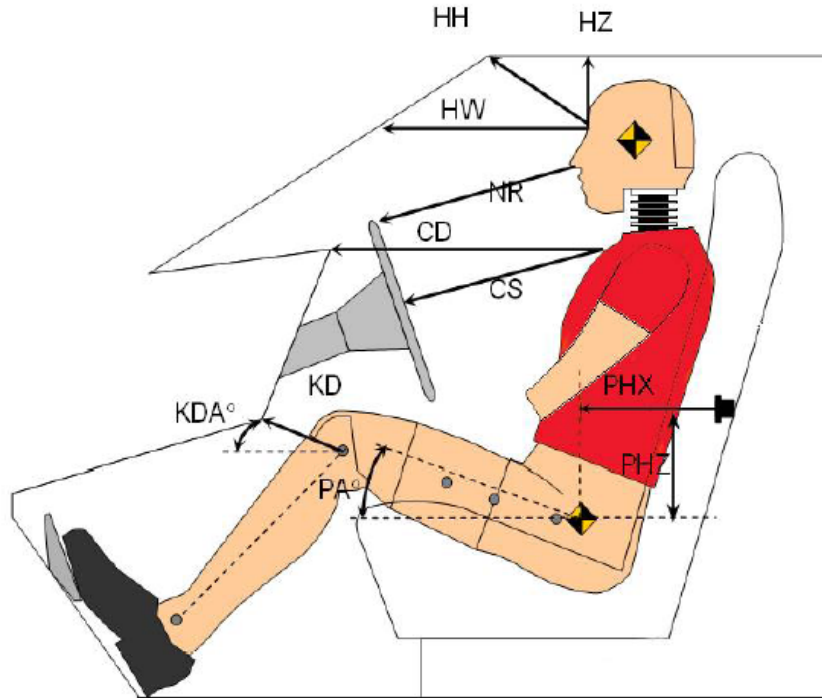
Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	65.10
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)*	65.10
Usable Capacity of "Optional Tank" (see Owner's Manual)*	
93% of Usable Capacity	60.56
Actual amount of Solvent Used in Test	65.10
1/3 of Usable Capacity	21.70

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: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25



Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	338	
HW	Head to Windshield	604	
HZ	Head to Roof	211	
NR	Nose to Rim	255	
CD	Chest to Dash	471	
CS	Chest to Steering Wheel	200	
KD(L)/KDA(L)°	Left Knee to Dash	90	13.4
KD(R)/KDA(R)°	Right Knee to Dash	95	15.8
PAX°	Pelvic Tilt Angle (x-axis)		22.2
PAY°	Pelvic Tilt Angle (y-axis)		0.0
PHX	Hip Point to Striker (x-axis)	286	
PHZ	Hip Point to Striker (z-axis)	173	

DATA SHEET NO. 4

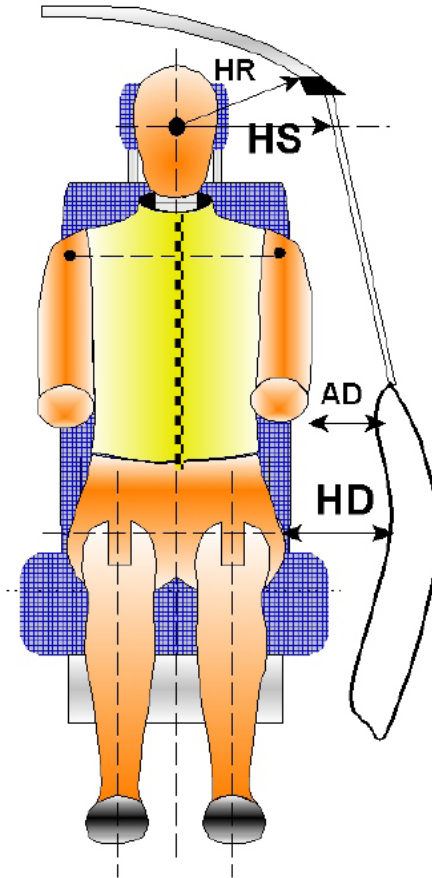
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV

NHTSA No. M20254101

Test Program: NCAP Side Pole Impact Test

Test Date: 1/13/25

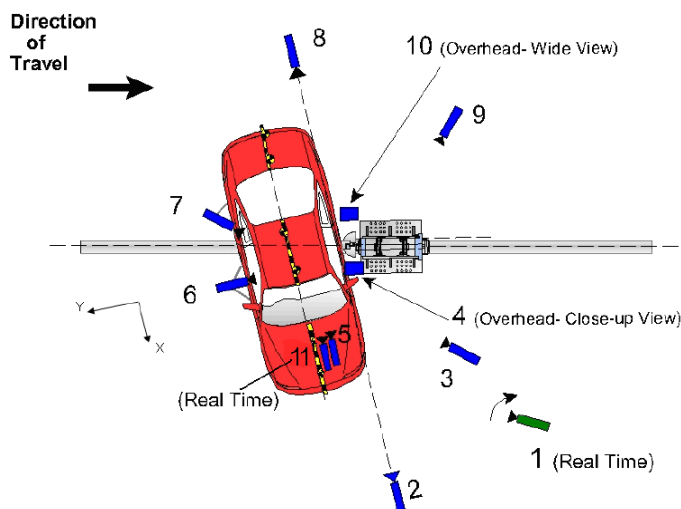


Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	295
HS	Head to Side Window	mm	320
AD	Arm to Door	mm	176
HD	Hip Point to Door	mm	162

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25



Reference from Point of Impact for X and Y; from Ground for Z):
 +X = Forward of Vehicle, +Y = Right of Vehicle, +Z = Down

Camera No.	View	Coordinates (m)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real Time Pan View of Impact	8.89	46.57	-3.04		30
2	Front Ground Level - Impact View	8.34	-0.05	-0.93	35	1000
3	Impact Side 45° - Forward Pole View	4.10	-2.15	-1.15	25	1000
4	Overhead Close-Up View of Impact	0.00	0.00	-5.79	35	1000
5	On-Board - Dummy Front View	-1.18	-0.84	-0.83	8	1000
6	On-Board - Dummy Side View	-1.19	-0.84	-0.82	6	1000
7	On-Board - Dummy Rear Oblique View	0.90	-0.92	-0.55	6	1000
8	Rear Ground Level - Impact View	-1.30	1.68	-1.26	35	1000
9	Impact Side 45° - Rearward Pole View	-8.02	0.04	-1.01	25	1000
10	Overhead Wide View of Impact	-0.06	0.22	-5.79	15	1000
11	Real Time Dummy Front View	0.88	-0.96	-0.54		30

*All measurements accurate to ± 6 mm

NOTE: Vehicle is at a 75 angle to the rigid pole.

If applicable, explain why camera(s) did not operate as intended: N/A

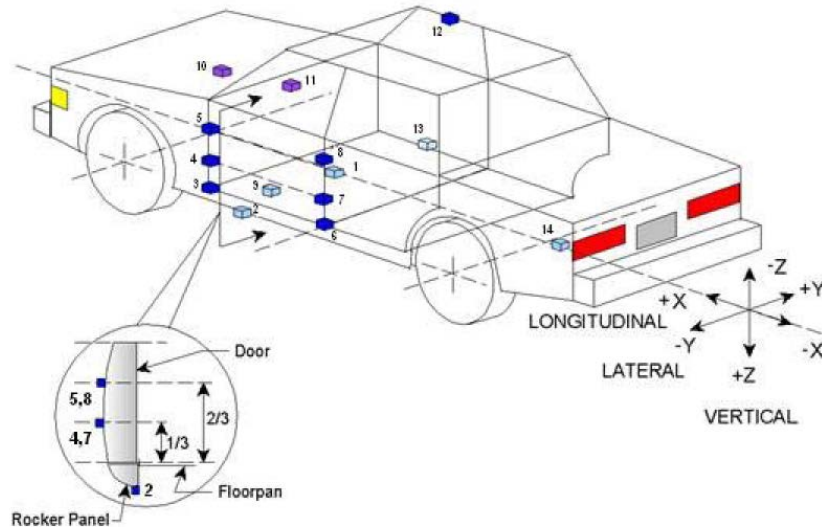
INSTRUMENTATION

Driver Dummy Channels	19
Vehicle Structure Accelerometers	18
Pole Load Cells	8
Total	45

DATA SHEET NO. 6

TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

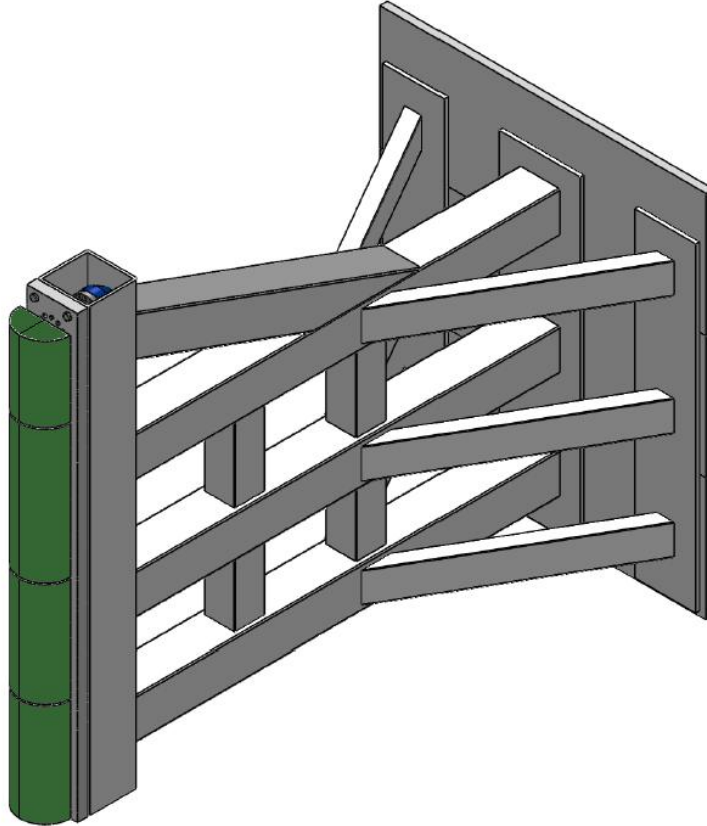


Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	1872	0	-550
2	Left Floor Sill	2309	-847	-415
3	A-Pillar Sill	3042	-893	-510
4	A-Pillar Low	3042	-893	-825
5	A-Pillar Mid	3042	-893	-1070
6	B-Pillar Sill	1919	-757	-510
7	B-Pillar Low	1919	-757	-825
8	B-Pillar Mid	1919	-757	-1070
9	Driver Seat Track	2236	-560	-670
10	Engine Top	3591	-215	-1060
11	Firewall	3354	280	-1035
12	Right Roof	1922	561	-1720
13	Right Floor Sill	2332	-847	-415
14	Rear Floorpan	808	0	-650

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

DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25



ID	Units	Height From Ground
1	mm	87
2	mm	468
3	mm	648
4	mm	978
5	mm	1168
6	mm	1651
7	mm	1816
8	mm	2057

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver SID-IIs Dummy
Face	Curtain Air Bag
Top of Head	Curtain Air Bag
Left Side of Head	Curtain Air Bag
Back of Head	Curtain Air Bag, Headrest
Left Shoulder	Torso/Pelvis Air Bag, Seat Bolster
Upper Torso	Torso/Pelvis Air Bag, Seat Bolster
Lower Torso	Torso/Pelvis Air Bag, Seat Bolster
Left Hip	Torso/Pelvis Air Bag, Seat Bolster, Door Panel
Left Knee	None

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Rear Hatch/Other Door
	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

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	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

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

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Good
Sill Separation	None
Windshield Damage	Shattered
Side Window Damage	Broken
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

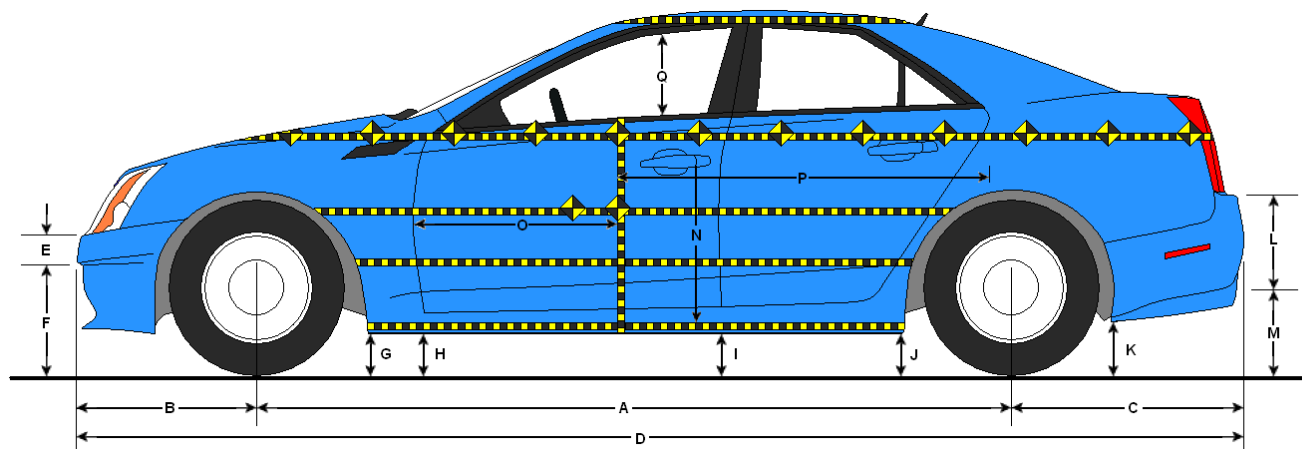
IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		1335
Actual Impact Point (Aft of Front Axle)	mm		1335
Horizontal Offset (+ forward / - rearward)	mm	± 38 of Intended Impact Point	0
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	°	75 ± 3	74.4
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.16
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.27

DATA SHEET NO. 9

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25



LEFT SIDE VIEW

All measurements in mm with tolerance of $\pm 3\text{mm}$

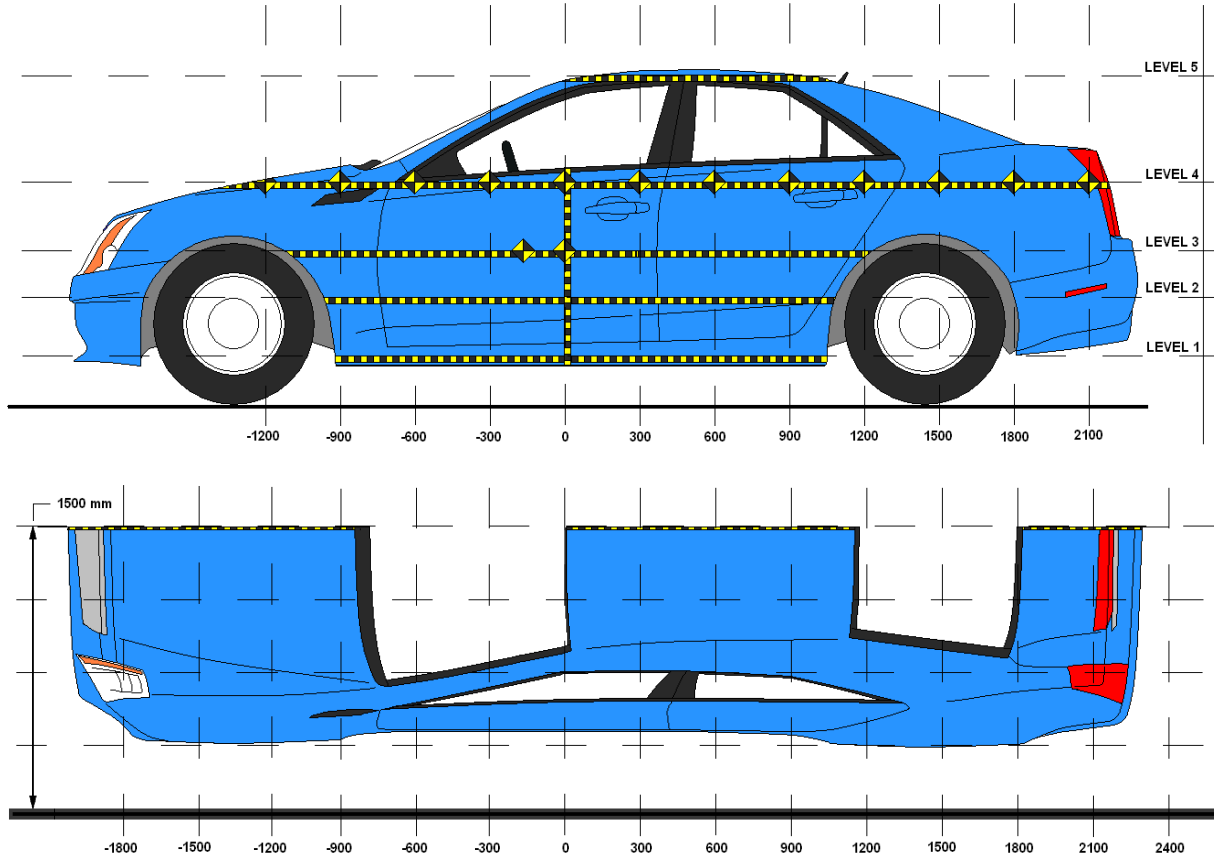
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Change
A	Wheelbase	2860	2801	-59
B	Front Axle to FSOV	851	833	-18
C	Rear Axle to RSOV	927	1001	74
D	Total Length at Centerline	4639	4635	-4
E	Front Bumper Thickness	147	147	0
F	Front Bumper Bottom to Ground	477	471	-6
G	Sill Height at Front Wheel Well	269	273	4
H	Sill Height at Front Door Leading Edge	357	362	5
I	Sill Height at B-Pillar	398	411	13
J1	Sill Height at Rear Wheel Well	272	253	-19
J2	Pinch Weld Height at Rear Wheel Well	257	278	21
K	Sill Height Aft of Rear Wheel Well	299	303	4
L	Rear Bumper Thickness	379	382	3
M	Rear Bumper Bottom to Ground	355	355	0
N	Sill Height to Bottom of Front Window Sill	693	711	18
O	Front Door Leading Edge to Impact CL	638	568	-70
P	Rear Door Trailing Edge to Impact CL	1426	1346	-80
Q	Front Window Opening	452	442	-10
R	Right Side Length	3986	3987	1
S	Left Side Length	3985	3983	-2
T	Vehicle Width at B-Pillar	1683	1615	-68

DATA SHEET NO. 10

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25



NOTE: All measurements in mm with tolerance of $\pm 3\text{mm}$

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	389	254	0
2	Occupant H-Point	703	317	0
3	Mid-Door	763	322	0
4	Window Sill	1084	289	0
5	Window Top	1561	117	150

DATA SHEET NO. 10 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101
 Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

	Pre-Test (mm)					Post-Test (mm)					Crush (mm)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900	575	551	552	656		580	550	552	659		5	-1	0	3	
-750	573	552	553	653		574	555	556	661		1	3	3	8	
-600	572	553	555	651		584	582	578	651		12	29	23	0	
-450	592	557	559	643		663	647	643	693		71	90	84	50	
-300	601	560	562	634		723	725	730	743		122	165	168	109	
-150	604	565	566	628		783	806	814	811		179	241	248	183	
0	611	569	568	622	848	865	886	890	911	961	254	317	322	289	113
150	614	572	569	615	868	815	855	860	898	985	201	283	291	283	117
300	616	574	570	612	875	701	724	727	783	962	85	150	157	171	87
450	621	575	572	608	881	658	635	635	685	947	37	60	63	77	66
600	621	577	574	605	885	630	603	606	653	933	9	26	32	48	48
750	612	576	575	605	888	588	564	569	626	919	-24	-12	-6	21	31
900	601	572	571	606	890	545	529	532	603	904	-56	-43	-39	-3	14
1050	590	566	565	612	895	495	498	497	585	891	-95	-68	-68	-27	-4
1200		564	561	617	896		473	470	564	877		-91	-91	-53	-19
1350				622	900				548	862				-74	-38
1500				628	906				548	852				-80	-54
1650															
1800															
1950															
2100															
2250															
2400															
2550															
2700															
2850															

DATA SHEET NO. 10 ... (CONTINUED)

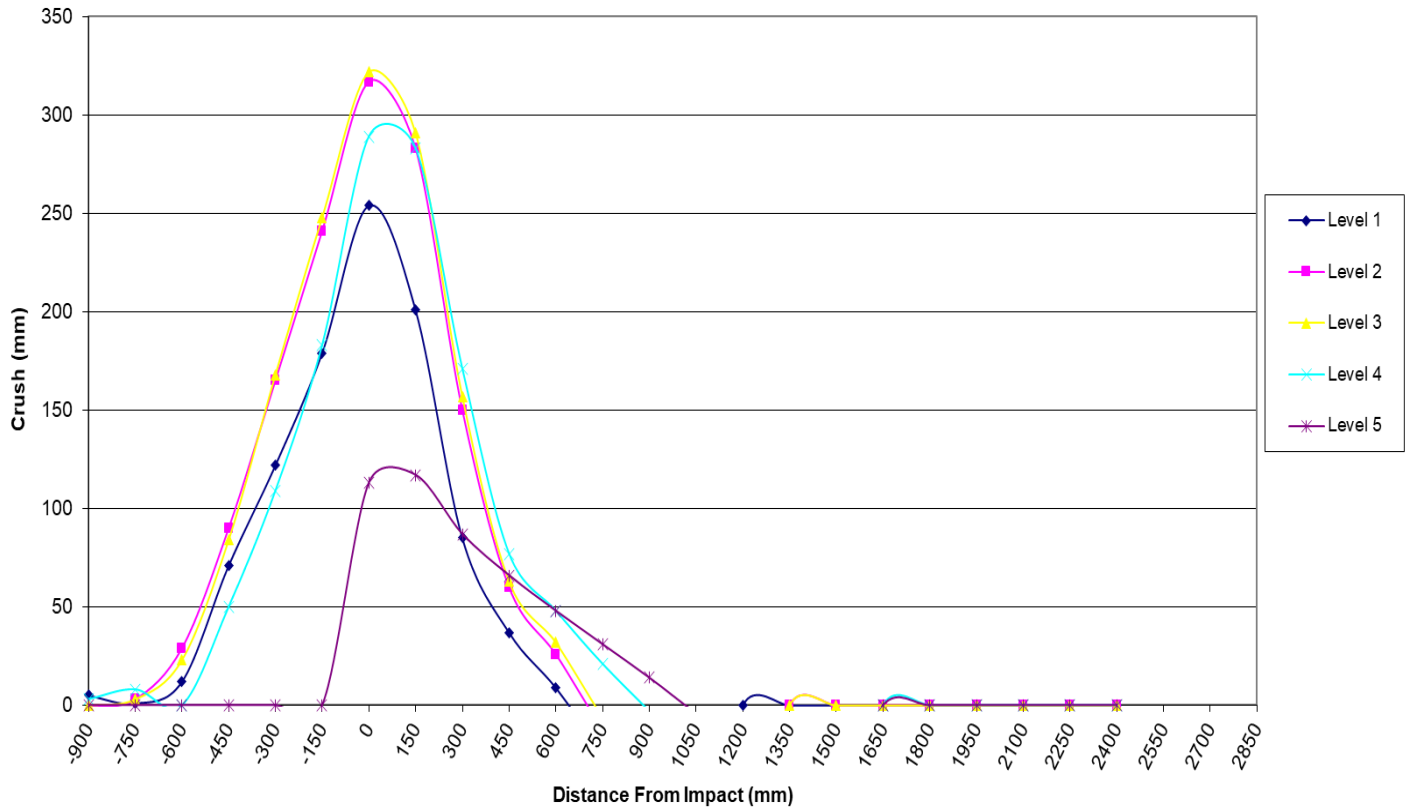
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV

NHTSA No. M20254101

Test Program: NCAP Side Pole Impact Test

Test Date: 1/13/25

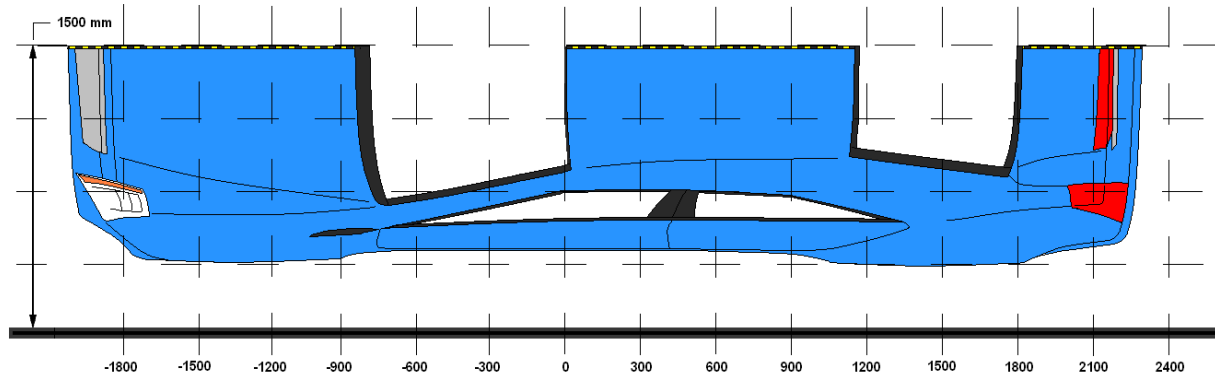


DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101

Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25



DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	1500	4	628	548	-80
2	900	1	601	545	-56
3	450	4	608	685	77
4	0	3	568	890	322
5	-450	2	557	647	90
6	-900	1	575	580	5

DATA SHEET NO. 12

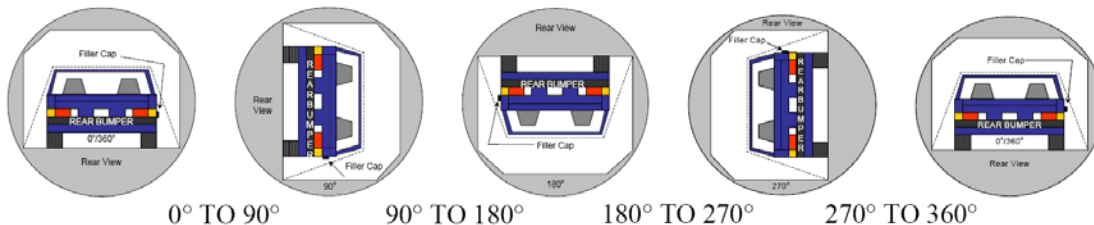
FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV NHTSA No. M20254101

Test Program: NCAP Side Pole Impact Test Test Date: 1/13/25

Temperature at Time of Impact: 5.6° C Test Time: 1:10 PM

- 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°	82	300	382
90° To 180°	80	300	380
180° To 270°	83	300	383
270° To 360°	83	300	383

FMVSS 301 SPILLAGE TABLE

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

SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 13

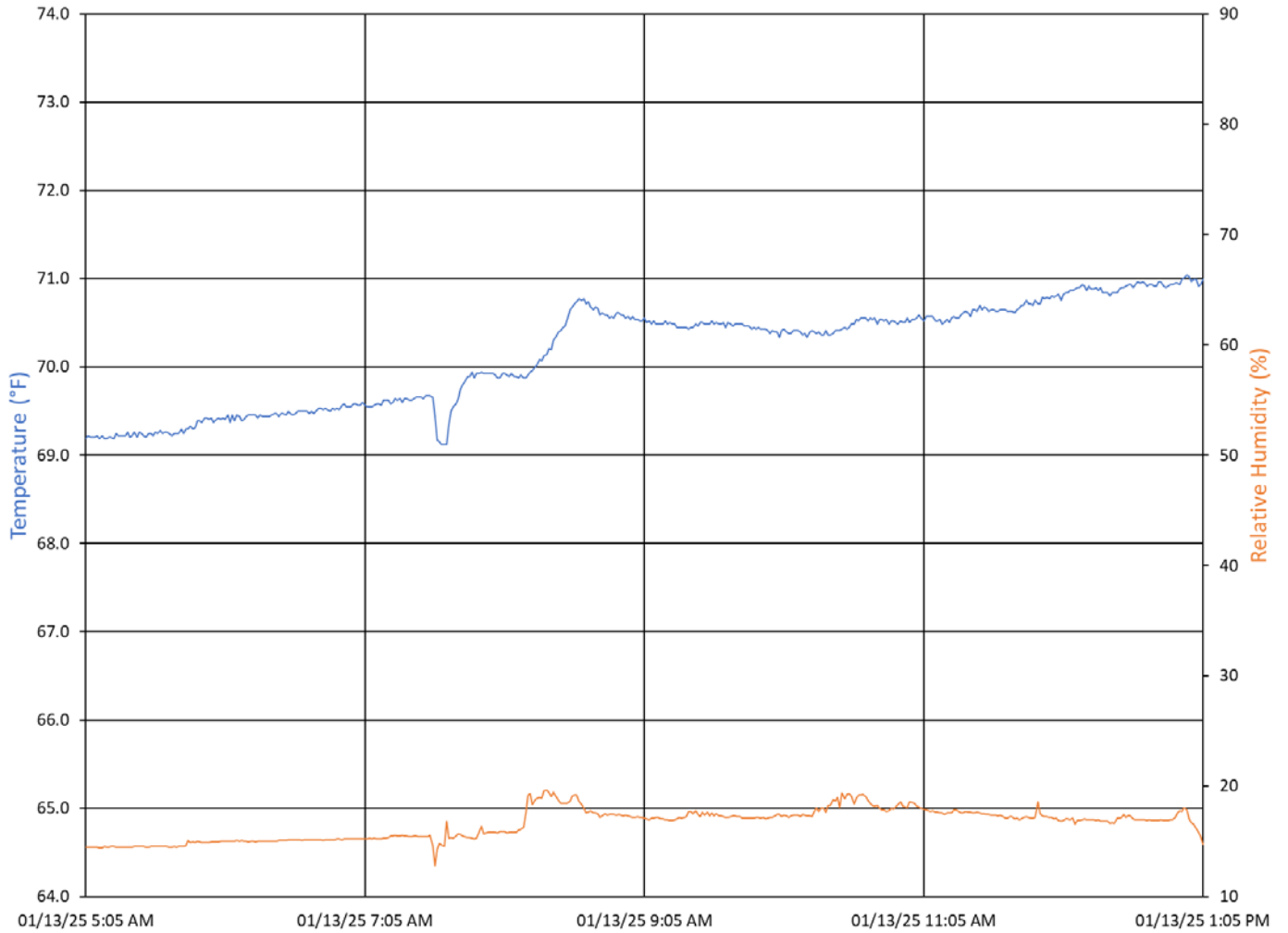
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2025 BMW X3 XDrive30i 5-Door MPV

NHTSA No. M20254101

Test Program: NCAP Side Pole Impact Test

Test Date: 1/13/25



APPENDIX A
PHOTOGRAPHS

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FIGURE 1. As-Delivered Right Front 3/4 View of Test Vehicle



FIGURE 2. As-Delivered Left Rear 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 3/4 View of Test Vehicle



FIGURE 6. Post-Test Left Front 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 3/4 View of Test Vehicle



FIGURE 10. Post-Test Left Rear 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 Pole Positioned Against Side of Vehicle

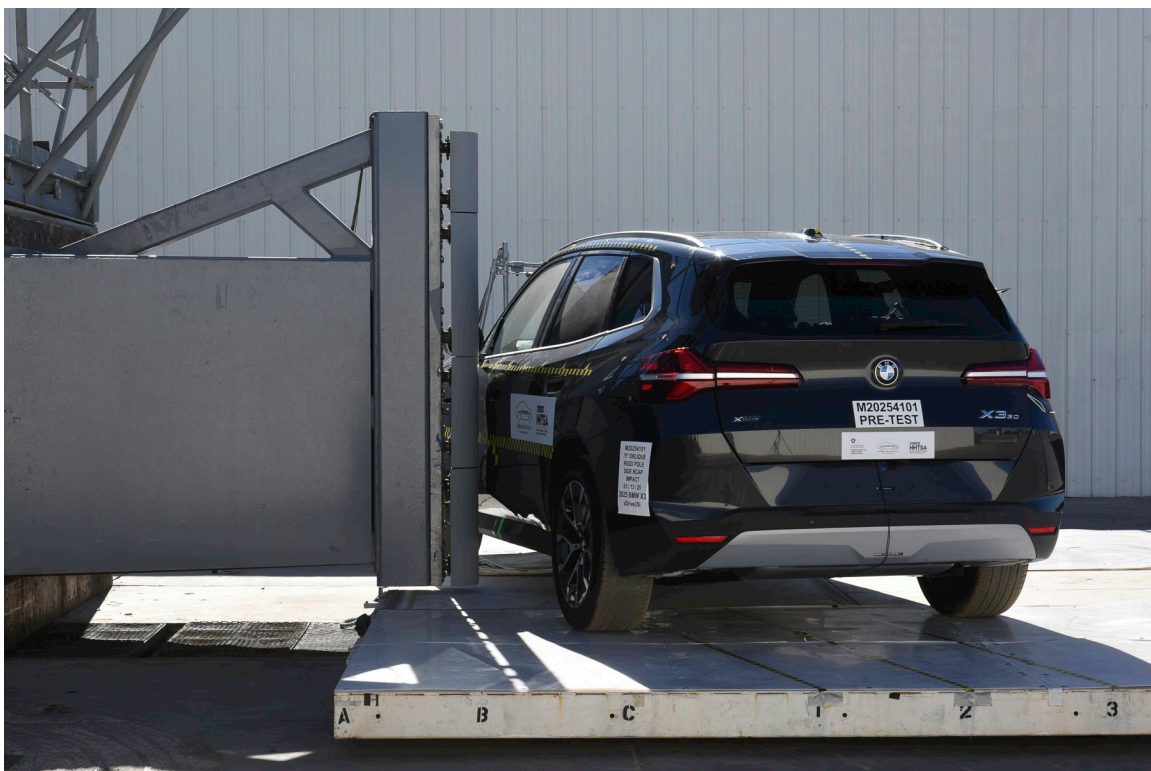


FIGURE 18. Pre-Test Right Side View of Pole Positioned Against Side of Vehicle



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



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



FIGURE 21. Pre-Test Front Close-Up View of Dummy Head and Chest



FIGURE 22. Post-Test Front Close-Up View of Dummy



FIGURE 23. Pre-Test Left Side View of Dummy Showing Belt and Chalking



FIGURE 24. Pre-Test Left Side View of Dummy Shoulder and Door Top View



FIGURE 25. Post-Test Left Side View of Dummy Shoulder and Door Top View



FIGURE 26. Pre-Test Frontal View of Seat Back Prior to Dummy Positioning



FIGURE 27. Pre-Test Frontal View of Dummy Head and Shoulders in Relation to Head Restraint



FIGURE 28. Pre-Test Front View of Seat Pan Prior to Dummy Positioning



FIGURE 29. Pre-Test Overhead View of Dummy Thighs on Seat Pan



FIGURE 30. Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket



FIGURE 31. Pre-Test Left Side View of Dummy's Head Showing Head is Level



FIGURE 32. Pre-Test Placement of Dummy's Feet



FIGURE 33. Pre-Test View of Belt Anchorage for Dummy



FIGURE 34. Pre-Test Left Side View of Steering Wheel



FIGURE 35. View of Disengaged Parking Brake



FIGURE 36. Pre-Test View of Parking Brake



FIGURE 37. Pre-Test Close-Up Left Side View of Driver Seat Track



FIGURE 38. Pre-Test Close-Up Left Side View of Driver Seat Back



FIGURE 39. Pre-Test Close-Up View of Driver Seat Back or Head Restraint



FIGURE 40. Pre-Test Dummy and Door Clearance View



FIGURE 41. Post-Test Dummy and Door Clearance View



FIGURE 42. Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



FIGURE 43. Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



FIGURE 44. Pre-Test Inner Door Panel View



FIGURE 45. Post-Test Inner Door Panel View Showing Dummy Contact Locations



FIGURE 46. Post-Test Dummy Close-Up Head Contact With Vehicle Interior View



FIGURE 47. Post-Test Dummy Close-Up Head Contact With Side Air Bag View



FIGURE 48. Post-Test Dummy Close-Up Torso Contact With Vehicle Interior View



FIGURE 49. Post-Test Dummy Close-Up Torso Contact With Side Air Bag View



FIGURE 50. Post-Test Dummy Close-Up Pelvis Contact With Vehicle Interior View



FIGURE 51. Post-Test Dummy Close-Up Pelvis Contact With Side Air Bag View

Photograph Not Applicable

No Dummy Close-Up Knee Contact

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



FIGURE 53. Post-Test Right Side View of Dummy and Rear Seat of Occupant Compartment



FIGURE 54. Pre-Test Inner Rear Passenger Torso Air Bag Deployment View



FIGURE 55. Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 56. Post-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 57. Close-Up View of Vehicle's Certification Label

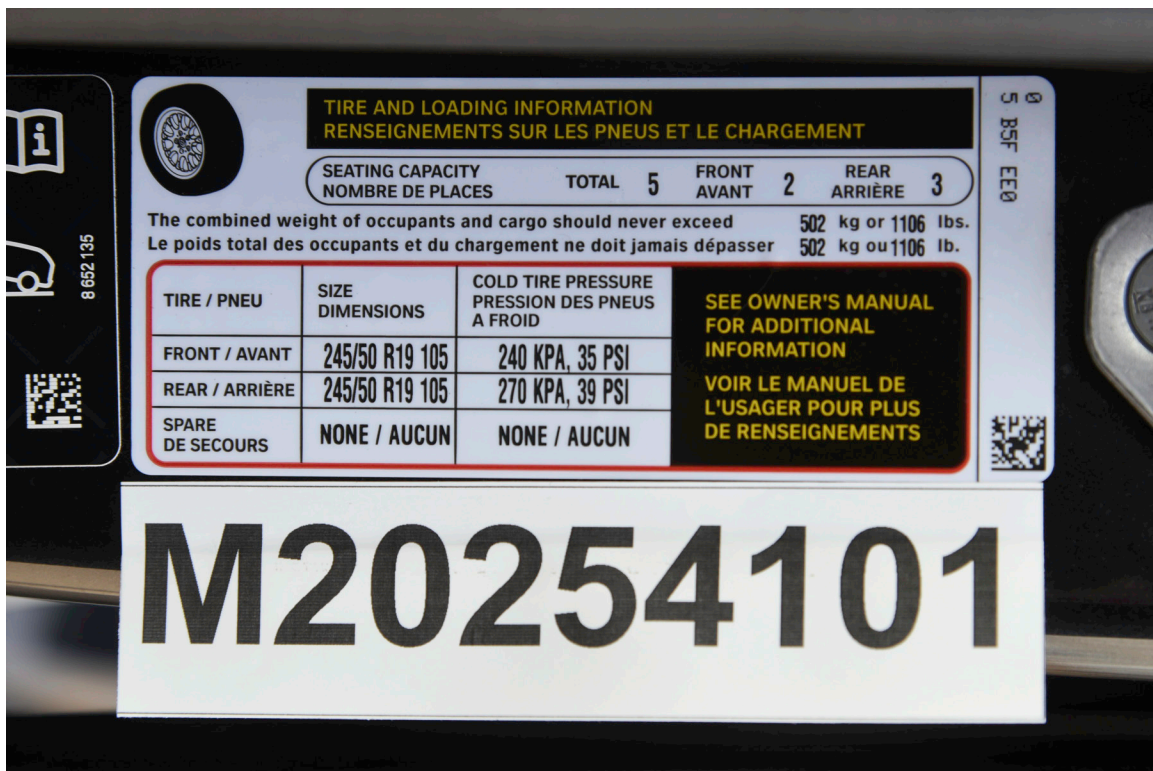


FIGURE 58. Close-Up View of Vehicle's Tire Information Placard or Label



FIGURE 59. Pre-Test Pole Barrier Front View



FIGURE 60. Post-Test Pole Barrier Front View



FIGURE 61. Pre-Test Pole Barrier Side View



FIGURE 62. Post-Test Pole Barrier Side View



FIGURE 63. Pre-Test Ballast View



FIGURE 64. Post-Test Primary and Redundant Speed Trap Read-Out



FIGURE 65. FMVSS No. 301 Static Rollover 0 Degrees

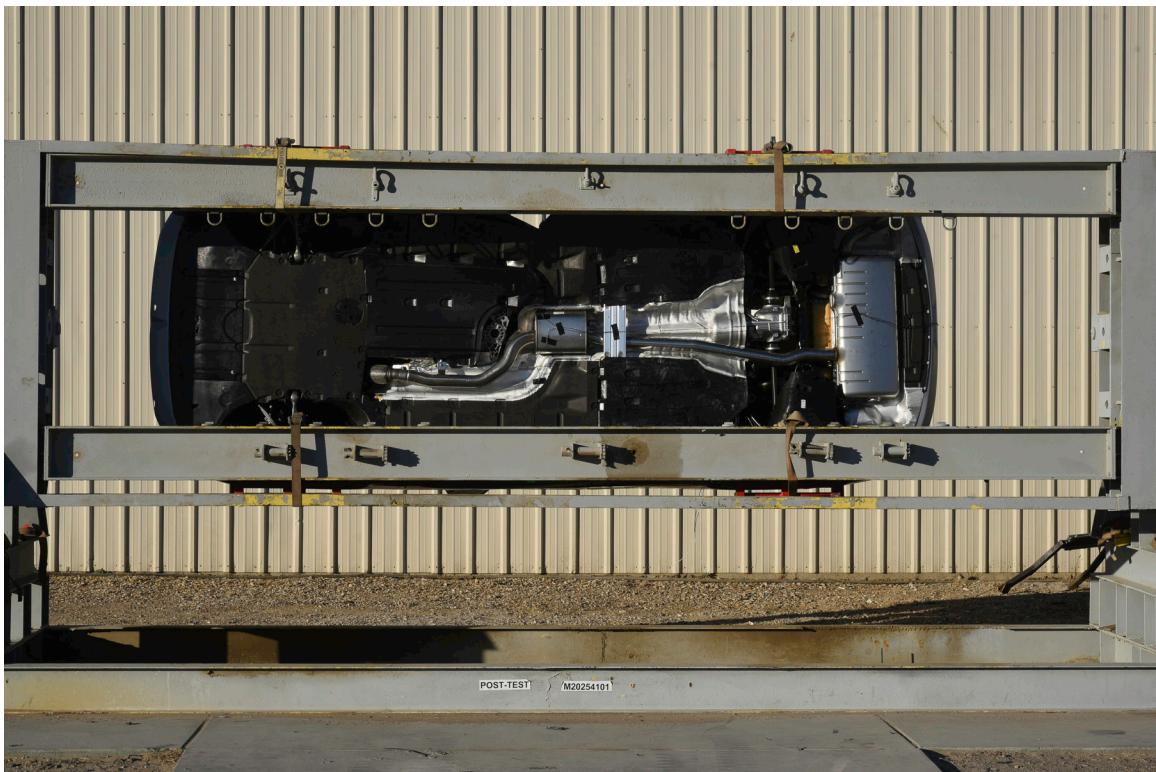


FIGURE 66. FMVSS No. 301 Static Rollover 90 Degrees



FIGURE 67. FMVSS No. 301 Static Rollover 180 Degrees



FIGURE 68. FMVSS No. 301 Static Rollover 270 Degrees



FIGURE 69. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 70. Impact Event

The Ultimate Driving Machine® 2025 BMW X3 xDrive30i

Manufacturer's Suggested Retail Price	\$ 49,500.00
Options and Additional Charges: Optional equipment may vary by region. See dealer for details. Check with your authorized BMW center.	
Dark Graphite Metallic	\$ 650.00
Black Perforated Veganza	Included
Convenience Package	\$ 1,400.00
Heated Steering Wheel	Included
Remote Engine Start	Included
Trunk and Comfort System	Included
Speed Limit Info	Included
AG Standard Trim	Included
45V Mid Hybrid System	Included
Exhaust tech SULEV20 PM	Included
STEPTONIC auto w/shift paddle	Included
Mobility Kit	Included
Standard suspension	Included
19" Aero Midnight Grey Bicolor	Included
Satin aluminum exterior trim	Included
Comfort Access keyless entry	Included
Ambient Lighting	Included
Dark Graphite Interior Trim	Included
Sport seats	Included
Lumbar support	Included
Heated front seats	Included
Active Driving Assistant	Included
Parking Assistant	Included
BMW Assist eCall	Included
Wireless Device Charging	Included
Personal eSIM 5G	Included
SiriusXM Satellite Radio with	Included
Hifi sound system	Included
Antirattle headliner	Included
Refrigerant	Included
SAT Preparation for FOD	Included
Destination Charge	\$ 1,175.00
Total Suggested Retail Price	\$ 52,725.00

VIN: 5UX53GP02S9Y43383

Standard Features	Performance and efficiency	Instrumentation and controls
2.0-liter BMW TwinPower Turbo inline 4-cylinder, 16-valve engine with variable valve control (Double-VANOS and Valvetronic) and high-revving direct injection	45V mild hybrid system	BMW Curved Display features navigation operated by voice, touchscreens, or Drive Controller
Driving Dynamics Control with selectable drive modes	8-speed STEPTONIC Automatic transmission	Sport steering wheel
Handling, ride and braking	Dynamic Stability Control (DSC) with Dynamic Traction Control (DTC)	My Modes includes Personal, Sport, and Efficient
Front and rear anti-roll (stabilizer) bars	Active all-wheel-drive system	Comfort and convenience
Connectivity	ConnectedDrive Services with My BMW App	Dual Zone Automatic Climate Control
Apple CarPlay and Android Auto compatibility	Remote Software Upgrade capability	Rain-sensing windshield wipers
Wireless Device Charging	Wireless Device Charging	Comfort Access keyless entry
Satin Aluminum line exterior trim	Power-folding, heated side mirrors	Heated, power front sport seats with lumbar support
Audio system	HIFI Sound System	Front and rear Head Protection System (HPS)
19" Sound System	SiriusXM with 360L + 1 year Platinum Plan subscription	Parking Assistant with trailer and reversing assist
		Seat-mounted front side-impact airbags
		LATCH attachments for child-safety seat installation
		BMW Assist eCall notification
		Forward Collision Mitigation, Active Blind Spot Detection, and Lane Keeping Assistant
		Warranty
		4-year/50,000-mile New Vehicle Limited Warranty for Passenger Cars and Light Trucks 2025 Models
		12-year Unlimited Mileage Rust Perforation Limited Warranty
		4-year Unlimited Mileage Roadside Assistance Program

BMW Ultimate Care™	Your Maintenance Costs.
\$0	Engine Oil Services: \$0
Maintenance Program	Air Filter: \$0
For the first 3 years or 36,000 miles, whichever comes first on scheduled maintenance.	Cabin Microfilter: \$0
	Spark Plugs: \$0
	Vehicle Checks: \$0
	Brake Fluid: \$0

EPA DOT Fuel Economy and Environment

Fuel Economy

29 MPG combined city/hwy

27 MPG city

33 MPG highway

3.4 gallons per 100 miles

Small SUVs range from 14 to 118 MPG. The best vehicle rates 140 MPG.

You spend \$1,500 more in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost \$2,200

Fuel Economy & Greenhouse Gas Rating (tailpipe only)

Smog Rating (tailpipe only)

Best 10

This vehicle emits 269 grams CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also creates emissions; learn more at [fueleconomy.gov](https://www.fueleconomy.gov).

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 28 MPG and cost \$9,500 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$4.35 per gallon. 1 MPG is miles per gallon (tailpipe only). Vehicle emissions are a significant cause of climate change and smog.

fueleconomy.gov

Calculate personalized estimates and compare vehicles.

Gasoline Vehicle

Star ratings range from 1 to 5 stars (★★★★★) with 5 being the highest.

Source: National Highway Traffic Safety Administration (NHTSA)

www.safercar.gov or 1-888-327-4225

This vehicle is equipped with bumpers that can withstand an impact of 2.5 miles per hour with no damage to the vehicle's body and safety systems, although the bumper and related components may sustain damage. The bumper system on this vehicle conforms to the current federal bumper standard of 2.5 miles per hour.

BMW of North America, LLC
Woodcliff Lake, NJ 07677

VPC Location: Plant Spartanburg

Port of Entry: GREENVILLE-SPARTANBURG

Sold To:
Century West BMW
PO Box 978
North Hollywood CA
(818) 432-5800

Ship To:
Century West BMW
4245 Lankershim Blvd
North Hollywood CA
(818) 432-5800

91603-0978

PN 01 00 0 039 673

PARTS CONTENT INFORMATION
For Vehicles in this Car Line:
US/Canadian Parts Content: 9%
Major Source of Foreign Parts Content: 15%
GERMANY: 15%
Note: Parts content does not include final assembly, distribution, or other non-parts costs.
For this Vehicle:
Final Assembly Point: SPARTANBURG, SC, USA
Country of Origin: UNITED KINGDOM
Engine: GERMANY
Transmission: GERMANY

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
Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.
Side Crash
Front seat Rear seat
Not Rated
Based on the risk of injury in a side impact.
Rollover
Not Rated
Based on the risk of rollover in a single-vehicle crash.

FIGURE 71. Monroney Label

CONTROLS

Seats, mirrors and steering wheel

Adjust the distance so that the head restraint is as close as possible to the back of the head. Adjust the distance via the backrest tilt as needed.

For manually adjustable head restraints: After adjusting, make sure that the head restraint is correctly engaged.

Warning

Body parts can be jammed when moving the head restraint. There is a risk of injury. Make sure that the area of movement is clear when moving the head restraint.

Warning

Objects on the head restraint reduce the protective effect in the head and neck area. There is a risk of injury.

Do not use seat or head restraint covers.

Do not hang objects, for instance clothes hangers, directly on the head restraint.

Only use accessories that have been determined to be safe for attachment to a head restraint.

Do not use any accessories, for instance pillows, while driving.

Adjusting the height

To lower the height of the head restraint, press the release button on the backrest,

Seats, mirrors and steering wheel

arrow 1, then push the head restraint downward.

To raise the height of the head restraint, push the head restraint upward.

Adjusting the distance

To move the head restraint backward, press the button on the side of the head restraint, then push the head restraint backward.

To move the head restraint forward, press the button on the side of the head restraint, then pull the head restraint forward.

Removing/attaching head restraints

Only remove the head restraint if no one will be sitting in the seat in question.

1. Raise the head restraint to the resistance point.

2. Press the release button on the backrest, arrow 1, then pull the head restraint completely out.

Proceed in the reverse order to install the head restraint.

CONTROLS

Rear head restraints

Safety information

Warning

Removal or incorrect adjustment of head restraints can cause injuries in the head and neck area. There is a risk of injury.

Before driving, install the removed head restraints on the occupied seats.

Adjust the head restraint so its center supports the back of the head at as close to eye level as possible.

Adjust the distance so that the head restraint is as close as possible to the back of the head. Adjust the distance via the backrest tilt as needed.

For manually adjustable head restraints: After adjusting, make sure that the head restraint is correctly engaged.

Warning

Body parts can be jammed when moving the head restraint. There is a risk of injury. Make sure that the area of movement is clear when moving the head restraint.

Warning

Objects on the head restraint reduce the protective effect in the head and neck area. There is a risk of injury.

Do not use seat or head restraint covers.

Do not hang objects, for instance clothes hangers, directly on the head restraint.

Only use accessories that have been determined to be safe for attachment to a head restraint.

Do not use any accessories, for instance pillows, while driving.

FIGURE 72. Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

Photograph Not Applicable

Inner Door Panel Was Not Shattered

FIGURE 73. Post-Test View of Shattered Vehicle Inner Door Panel

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

Plot		Page
1	Driver Head Acceleration (X) Primary	B-1
2	Driver Head Acceleration (Y) Primary	B-1
3	Driver Head Acceleration (Z) Primary	B-1
4	Driver Head Acceleration Primary Resultant	B-1
5	Driver Lower Spine T12 Acceleration (X)	B-2
6	Driver Lower Spine T12 Acceleration (Y)	B-2
7	Driver Lower Spine T12 Acceleration (Z)	B-2
8	Driver Lower Spine T12 Acceleration Resultant	B-2
9	Driver Acetabulum Force on Impact Side (Y)	B-3
10	Driver Iliac Wing Force on Impact Side (Y)	B-3
11	Driver Total Pelvis Force on Impact Side (Y)	B-3

The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at

www.NHTSA.gov

Additional Driver Dummy Instrumentation Data

Driver Head Acceleration Redundant (X)

Driver Head Acceleration Redundant (Y)

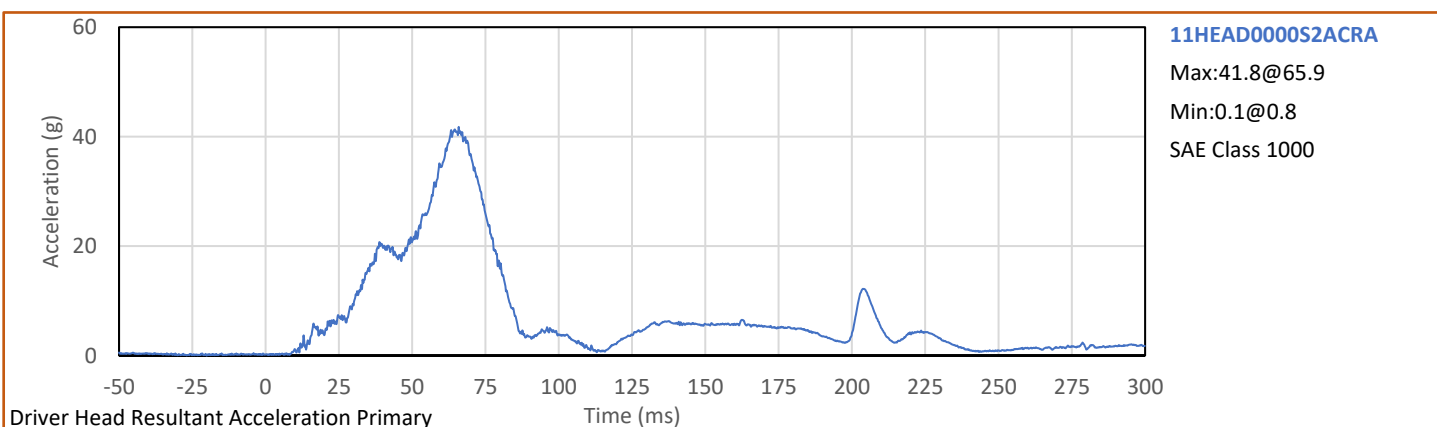
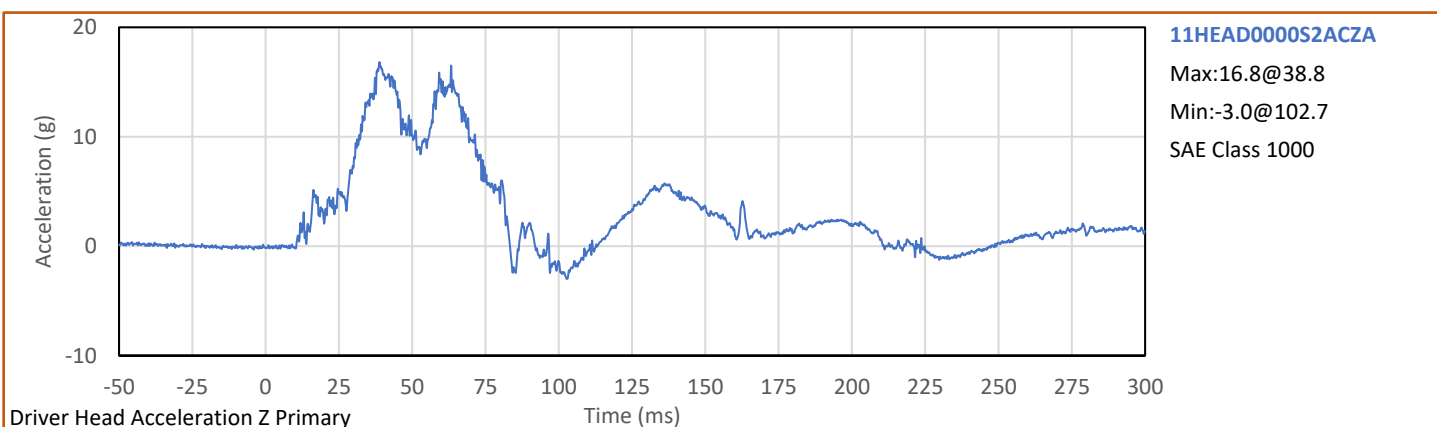
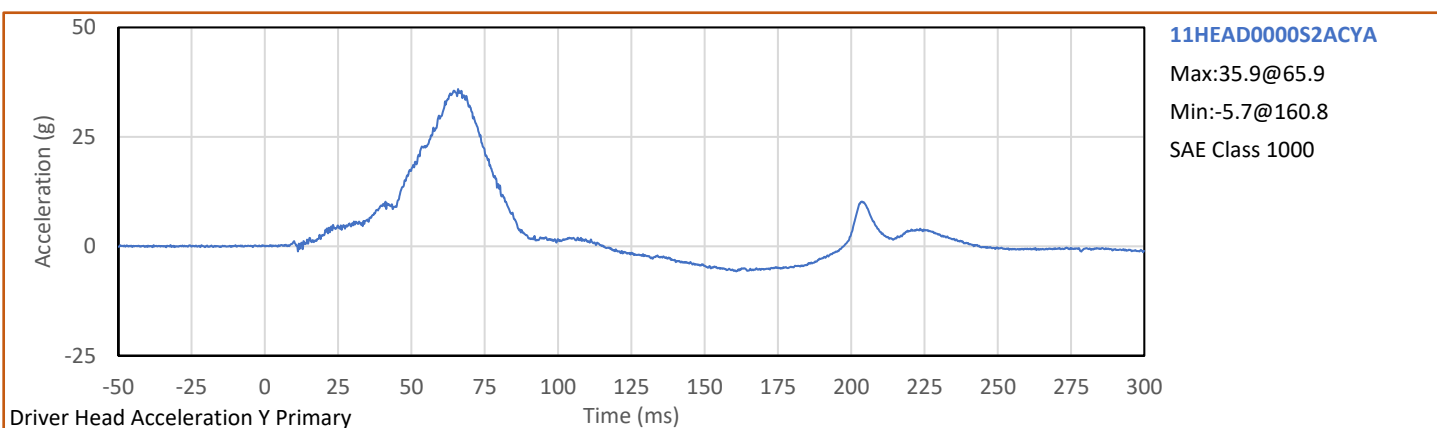
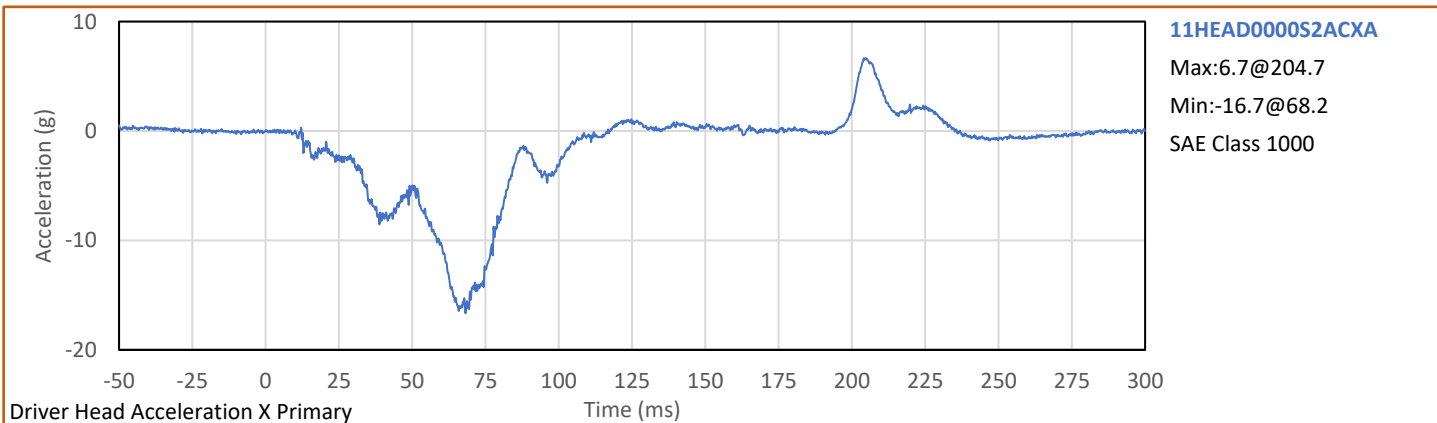
Driver Head Acceleration Redundant (Z)

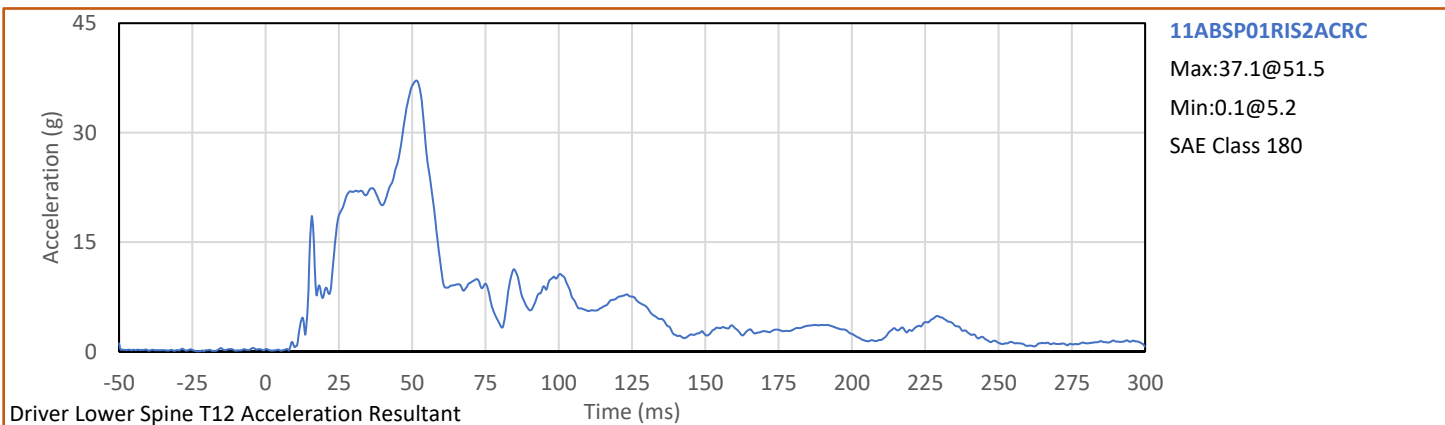
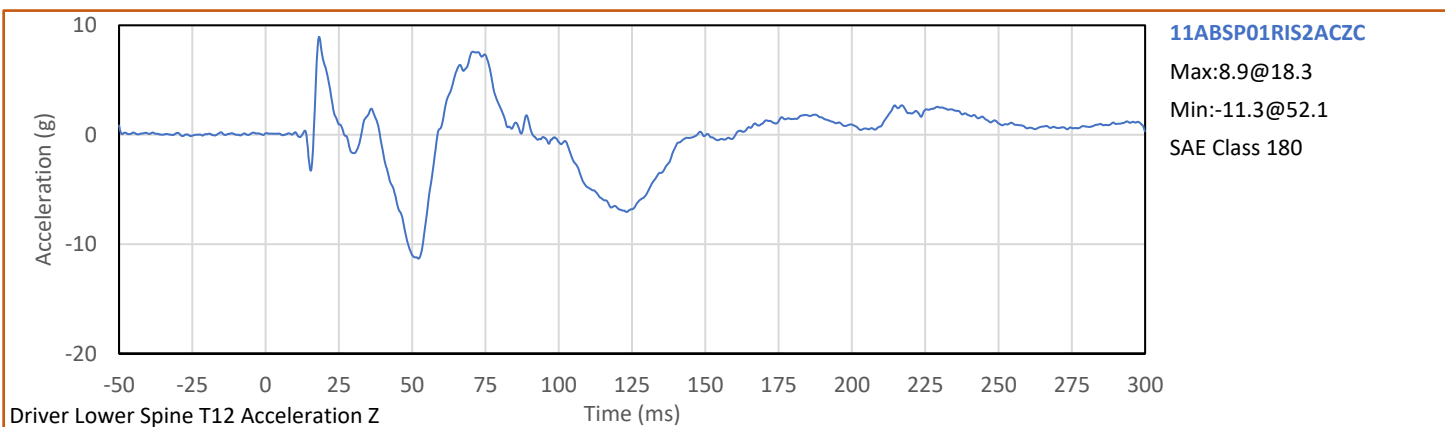
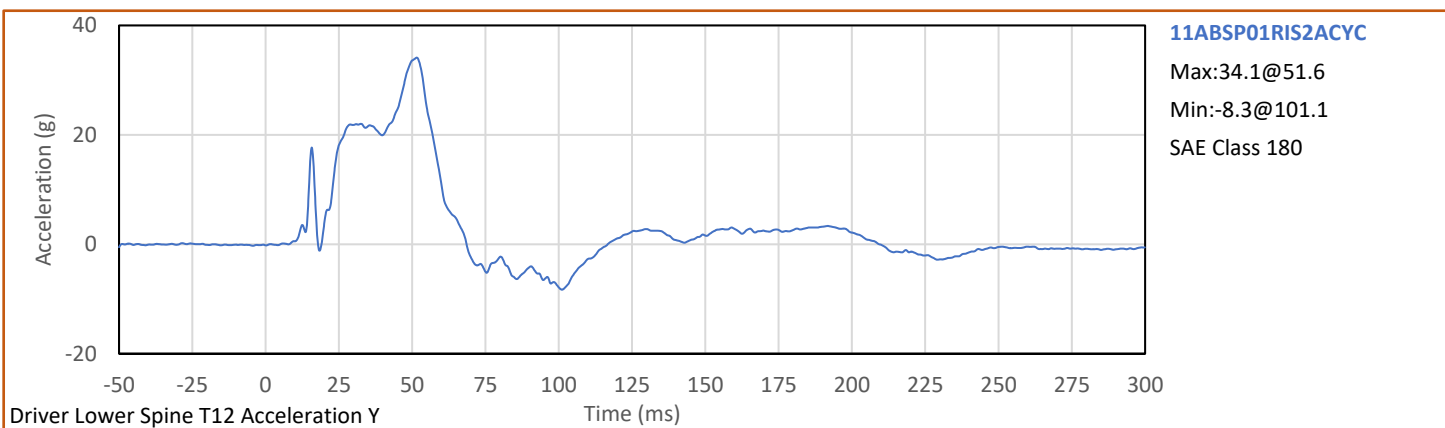
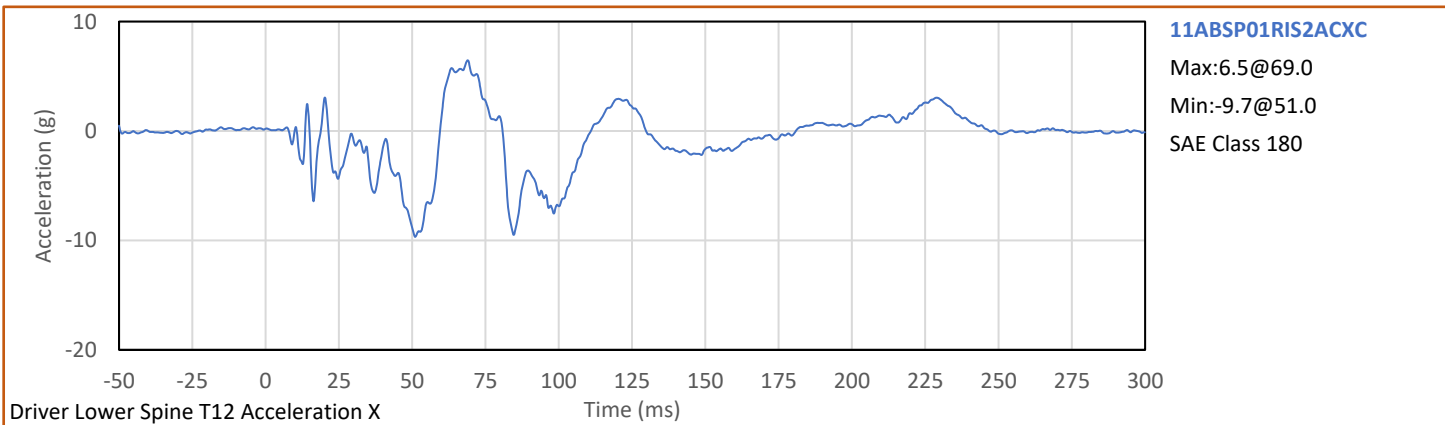
Vehicle Instrumentation Data

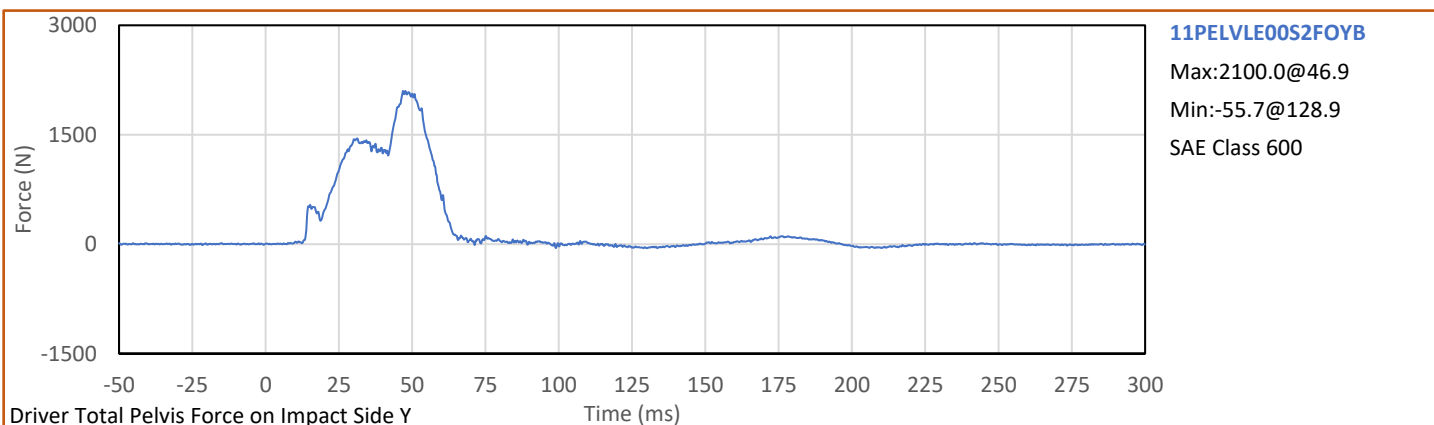
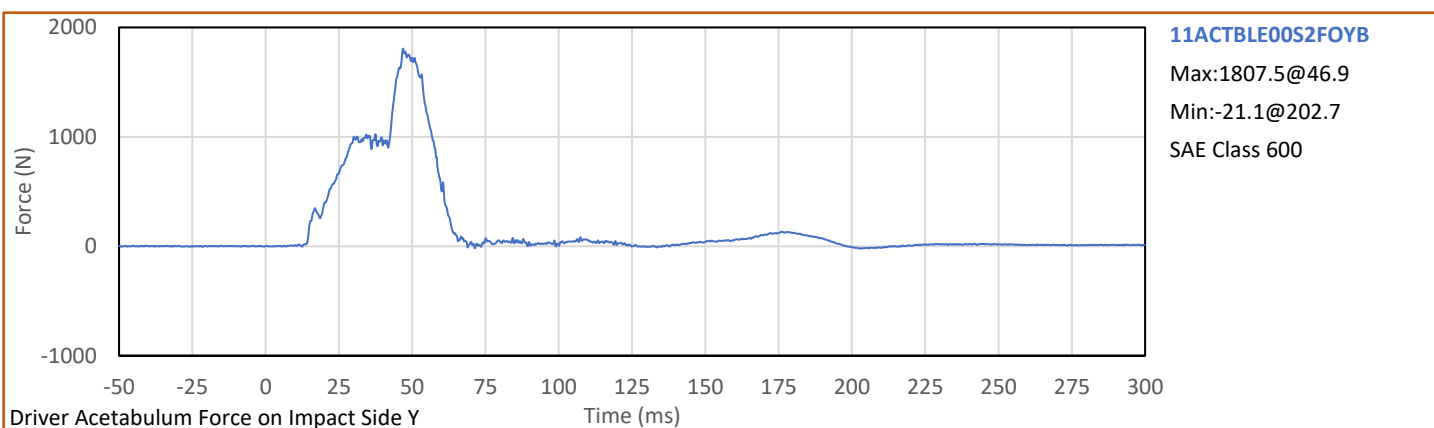
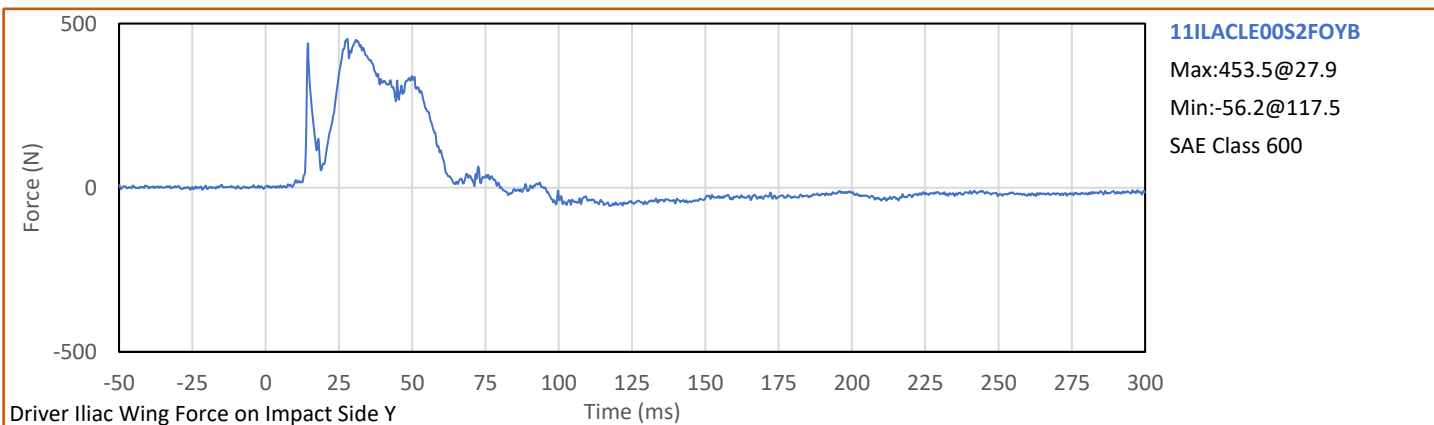
Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Left Floor Sill Acceleration (Y)
Left A-Pillar Sill Acceleration (Y)
Left Lower A-Pillar Acceleration (Y)
Left Mid A-Pillar Acceleration (Y)
Left B-Pillar Sill Acceleration
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy Hip Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration (Y)
Right Sill at Vertical Impact Reference Line Acceleration (Y)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)

Pole Instrumentation Data

Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)







APPENDIX C
ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

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

ATD Serial No.: 299

Test Date: 2025-01-06

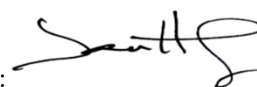
Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.3	Pass
Laboratory Relative Humidity	%	10	70	28	Pass
A - Sitting Height	mm	772	788	781	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	85	Pass
D - H Point From Seatback	mm	141	151	143	Pass
E - Shoulder Pivot From Backline	mm	97	107	104	Pass
F - Thigh Clearance	mm	119	135	125	Pass
G - Head Breadth	mm	140	148	146	Pass
H - Head Back From Backline	mm	40	46	42	Pass
I - Head Depth	mm	178	188	181	Pass
J - Head Circumference	mm	541	551	546	Pass
K - Buttock To Knee Length	mm	514	540	523	Pass
L - Popliteal Height	mm	343	369	357	Pass
K - Knee Pivot To Floor Height	mm	392	409	404	Pass
N - Buttock Popliteal Length	mm	416	442	432	Pass
O - Chest Depth W/O Jacket	mm	195	211	201	Pass
P - Foot Length	mm	216	232	223	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	318	Pass
R - Arm Length	mm	249	259	251	Pass
S - Knee Joint To Seatback	mm	477	493	492	Pass
V - Shoulder Width	mm	341	357	348	Pass
W - Foot Width	mm	78	94	87	Pass
Y - Chest Circumference W/Jacket	mm	851	881	864	Pass
Z - Waist Circumference	mm	761	791	782	Pass
				Overall Test Results	Pass

Technician:



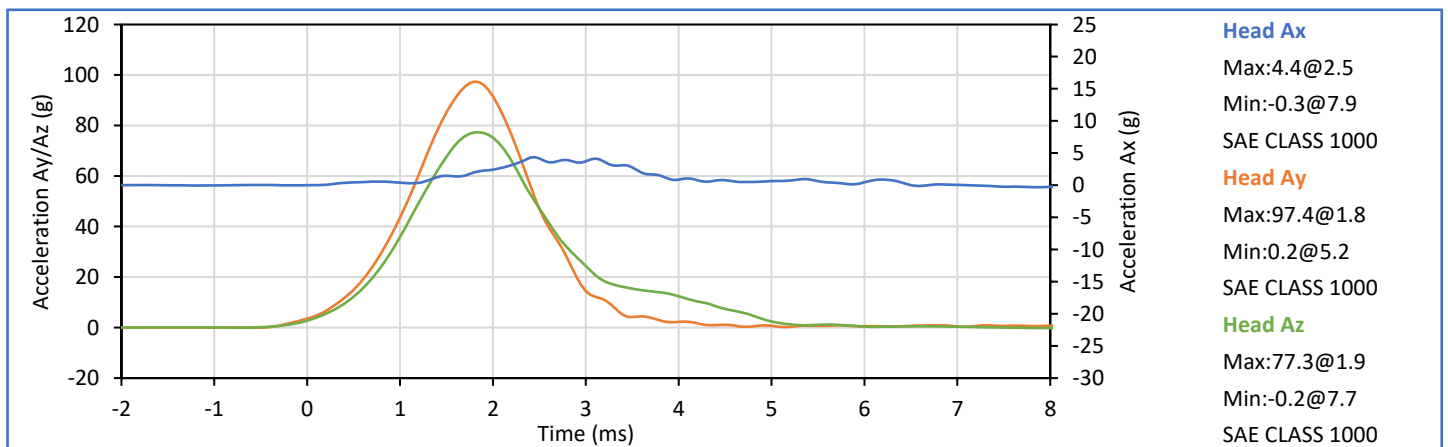
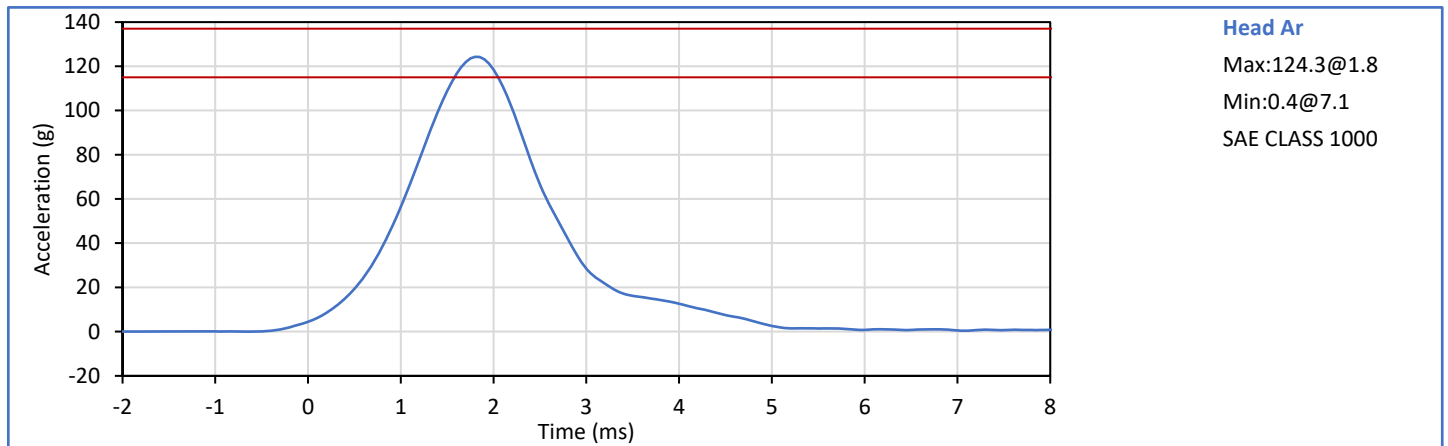
J. Coronel

Approved By:



J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.4	Pass
Laboratory Relative Humidity	%	10	70	22	Pass
Peak Resultant Acceleration	g	115.0	137.0	124.3	Pass
Peak Head Ax	g	-15.0	15.0	4.4	Pass
Oscillations After Main Pulse	%	0.0	15.0	0.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results	Pass	



Technician:

J. Coronel

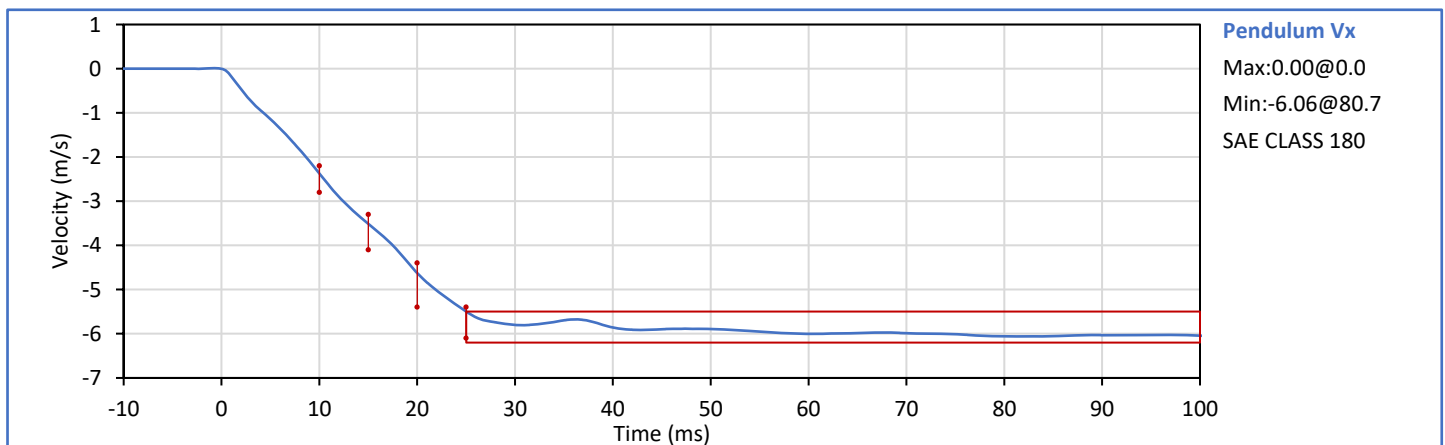
J. Coronel

Approved By:

J. Hernandez

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	43	Pass
Pendulum Velocity	m/s	5.51	5.63	5.58	Pass
Pendulum Decel at 10 ms	m/s	-2.80	-2.20	-2.37	Pass
Pendulum Decel at 15 ms	m/s	-4.10	-3.30	-3.51	Pass
Pendulum Decel at 20 ms	m/s	-5.40	-4.40	-4.63	Pass
Pendulum Decel at 25 ms	m/s	-6.10	-5.40	-5.50	Pass
Pendulum Decel from 25-100 ms	m/s	-6.20	-5.50	-6.06/-5.5	Pass
Peak "D" Plane Rotation	deg	-81.0	-71.0	-75.7	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	60.6	Pass
Peak Occ. Condyle Moment	Nm	36.0	44.0	41.9	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	111.9	Pass
				Overall Test Results	Pass

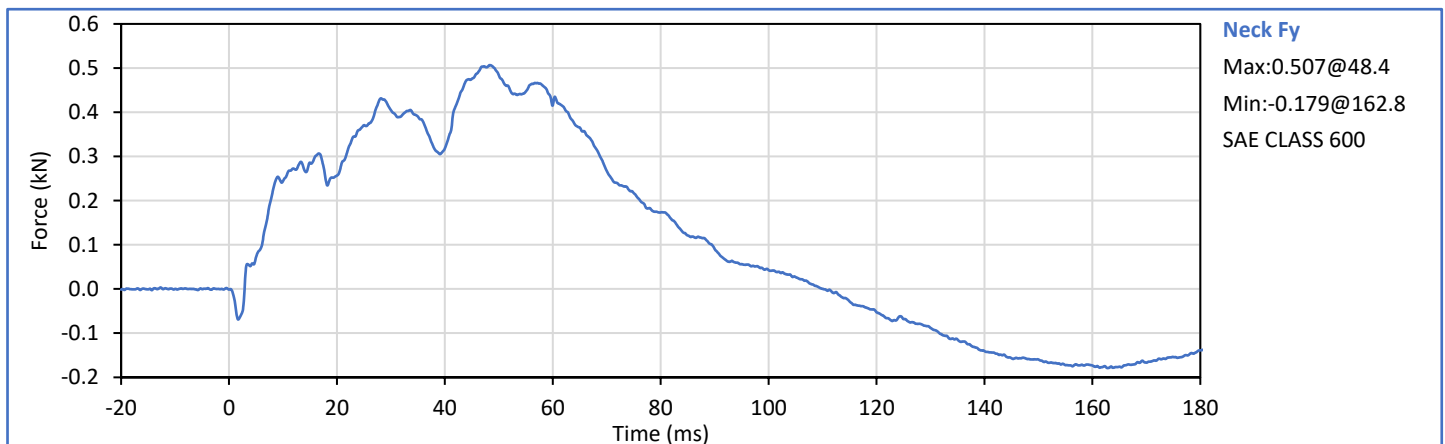
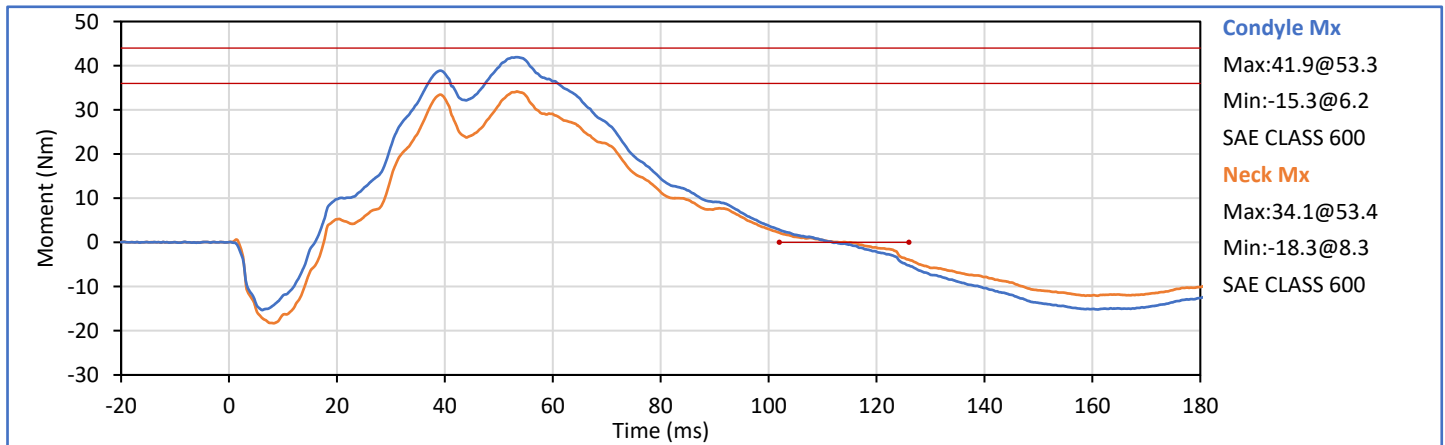
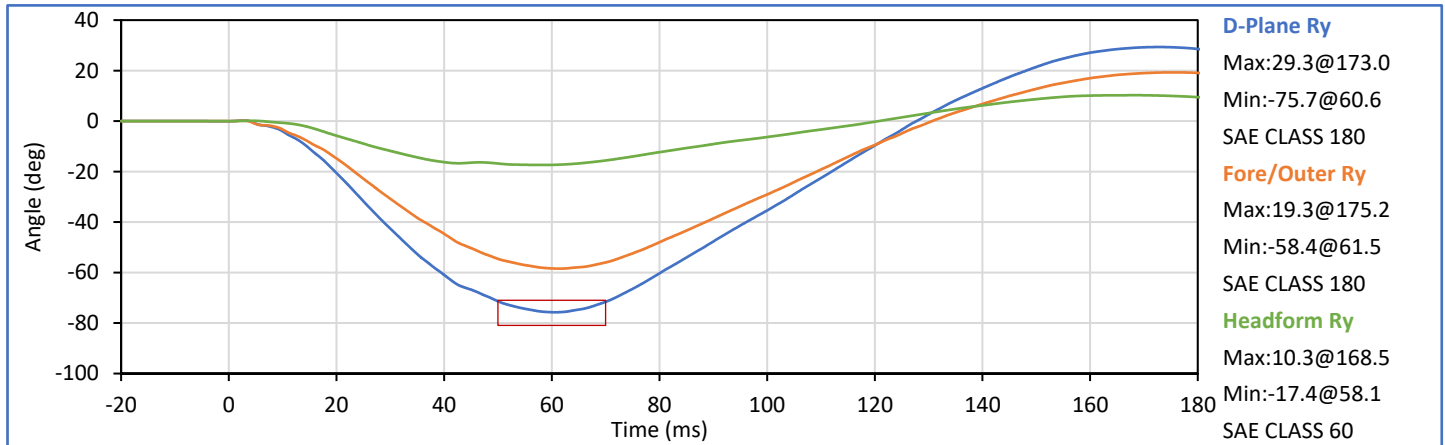


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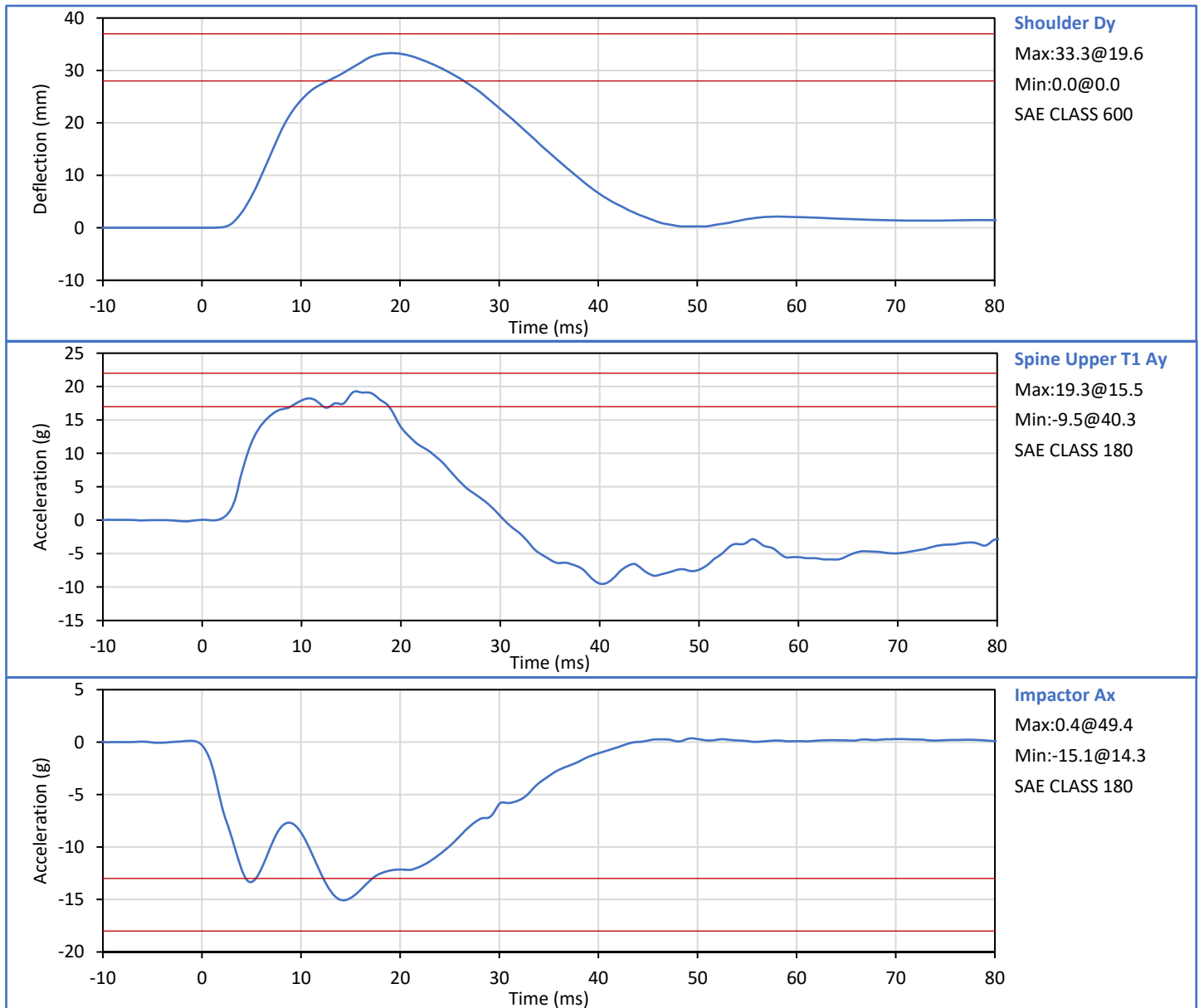
J. Coronel

Approved By:

J. Hernandez



Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.3	Pass
Laboratory Relative Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Shoulder Dy	mm	28.0	37.0	33.3	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	19.3	Pass
Peak Impactor Ax	g	-18.0	-13.0	-15.1	Pass
Overall Test Results					Pass



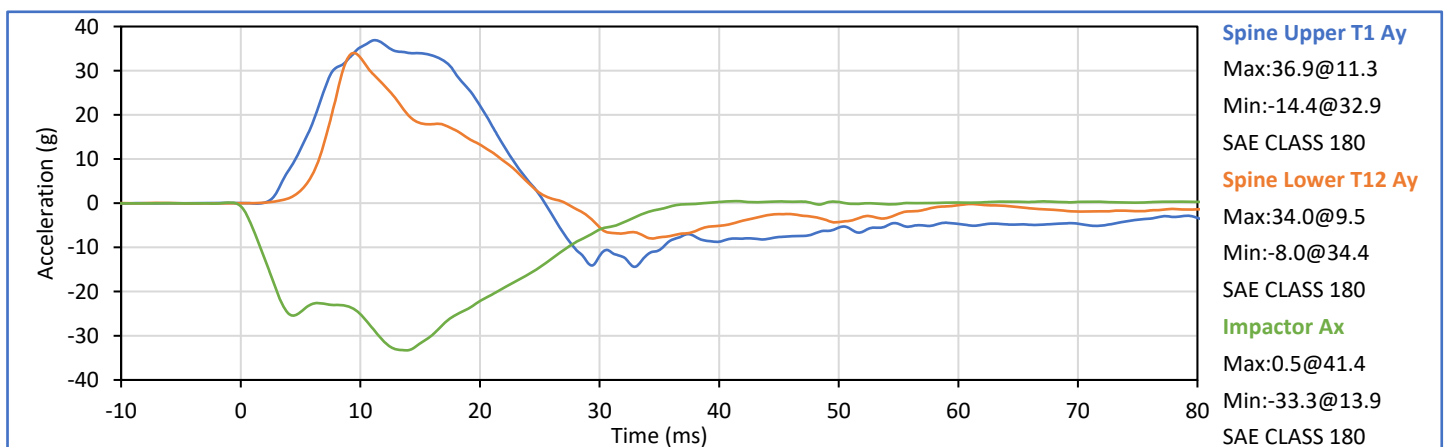
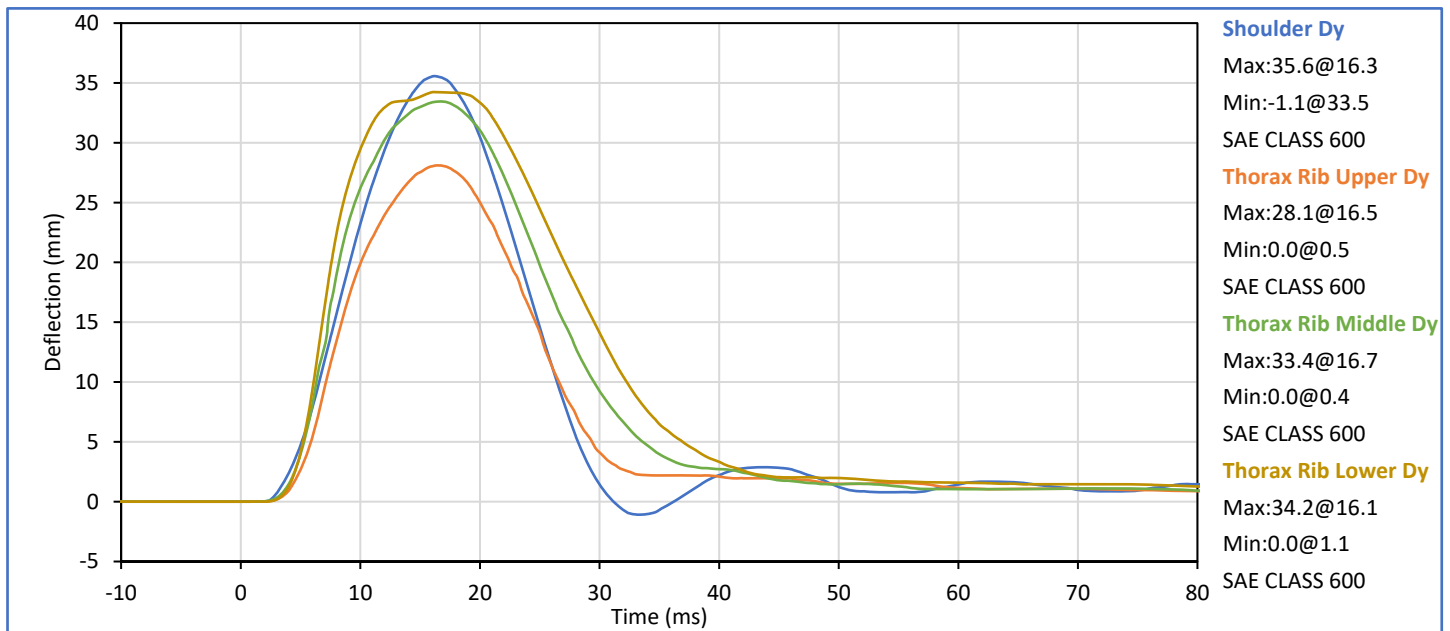
Technician:

J. Coronel

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	6.60	6.80	6.72	Pass
Peak Shoulder Dy	mm	31.0	40.0	35.6	Pass
Peak Upper Rib Dy	mm	25.0	32.0	28.1	Pass
Peak Middle Rib Dy	mm	30.0	36.0	33.4	Pass
Peak Lower Rib Dy	mm	32.0	38.0	34.2	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	36.9	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	34.0	Pass
Peak Impactor Ax	g	-36.0	-30.0	-33.3	Pass
Overall Test Results				Pass	Pass



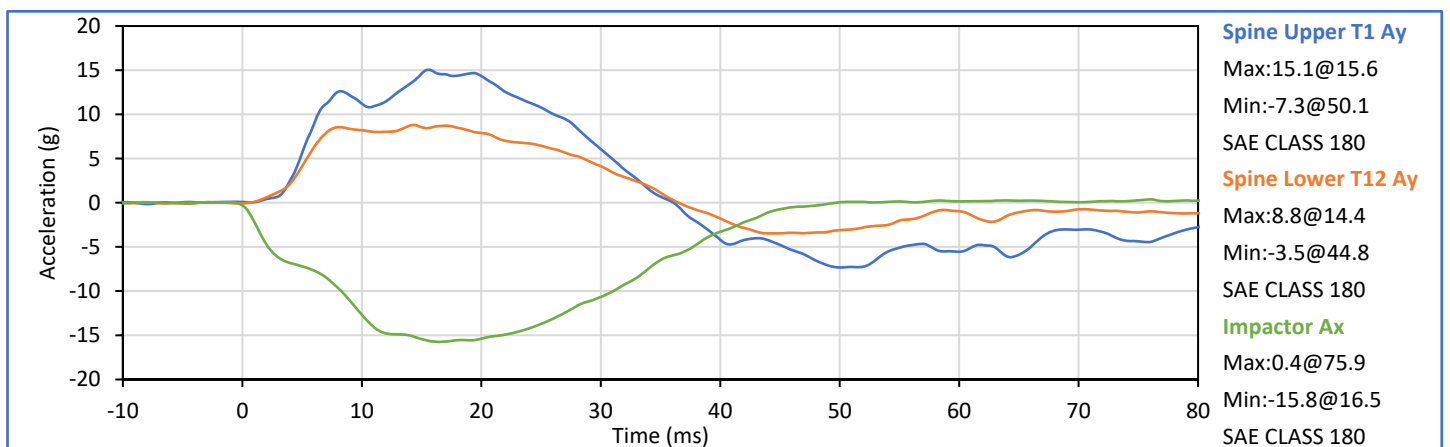
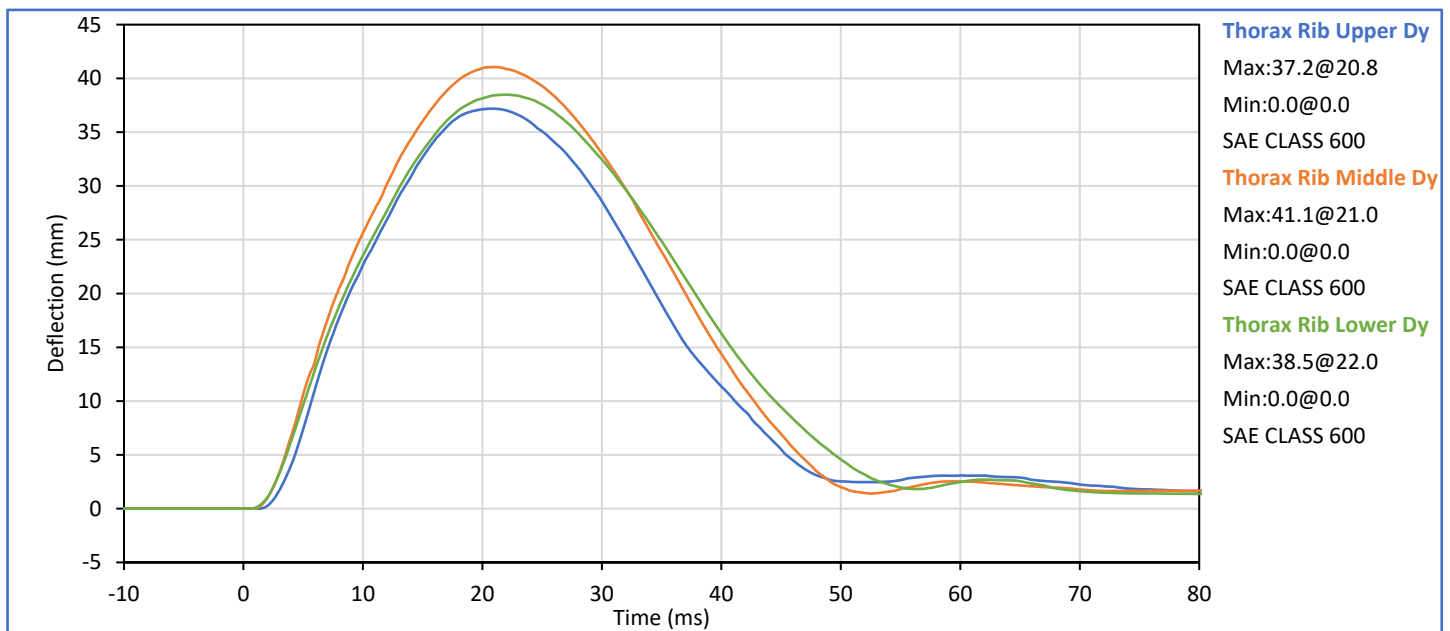
Technician:

J. Coronel

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Relative Humidity	%	10	70	26	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Thorax Rib Upper Dy	mm	32.0	40.0	37.2	Pass
Peak Thorax Rib Middle Dy	mm	39.0	45.0	41.1	Pass
Peak Thorax Rib Lower Dy	mm	35.0	43.0	38.5	Pass
Peak Spine Upper T1 Ay	g	13.0	17.0	15.1	Pass
Peak Spine Lower T12 Ay	g	7.0	11.0	8.8	Pass
Peak Impactor Ax	g	-18.0	-14.0	-15.8	Pass
Overall Test Results				Pass	



Technician:

J. Coronel

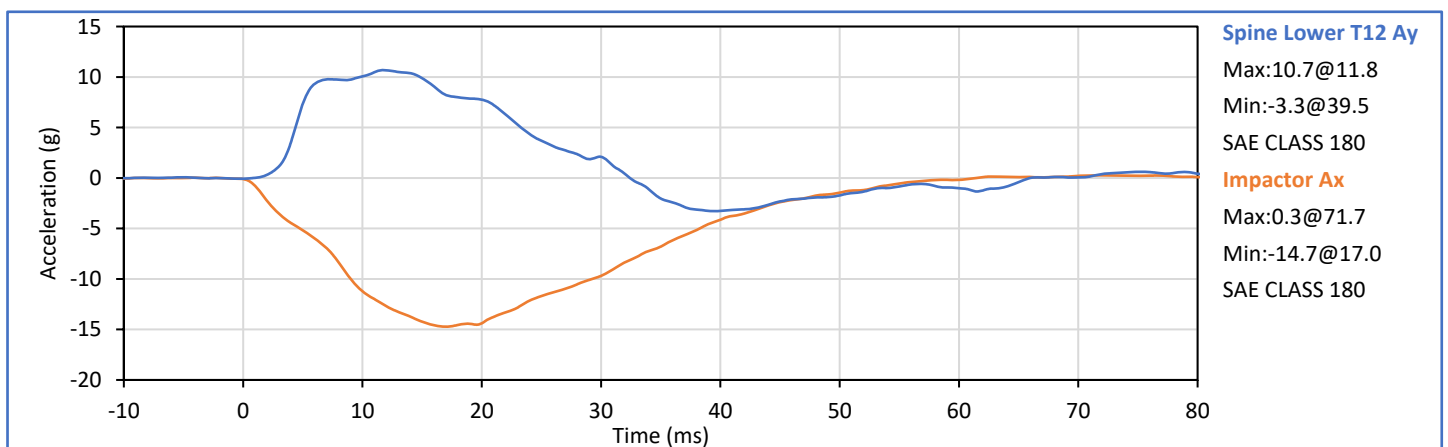
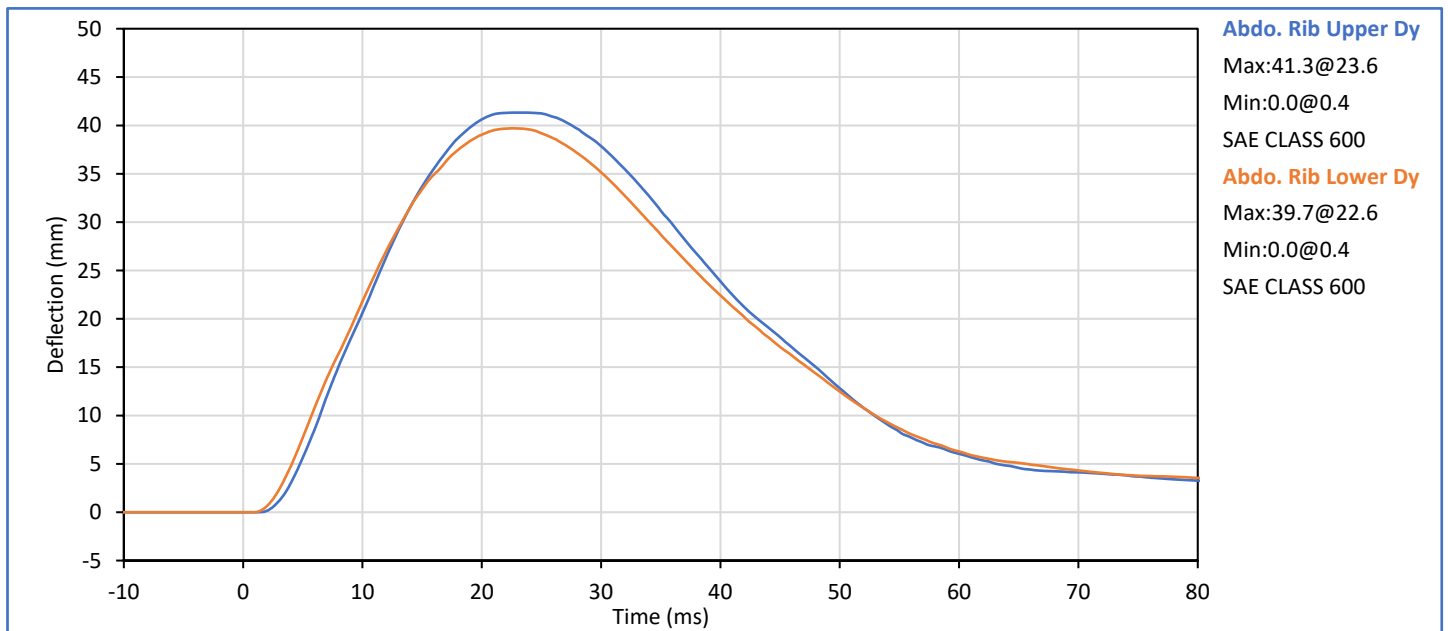
J. Coronel

Approved By:

J. Hernandez

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Relative Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	41.3	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	39.7	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	10.7	Pass
Peak Impactor Ax	g	-16.0	-12.0	-14.7	Pass
Overall Test Results					Pass



Technician:

J. Coronel

J. Coronel

Approved By:

J. Hernandez

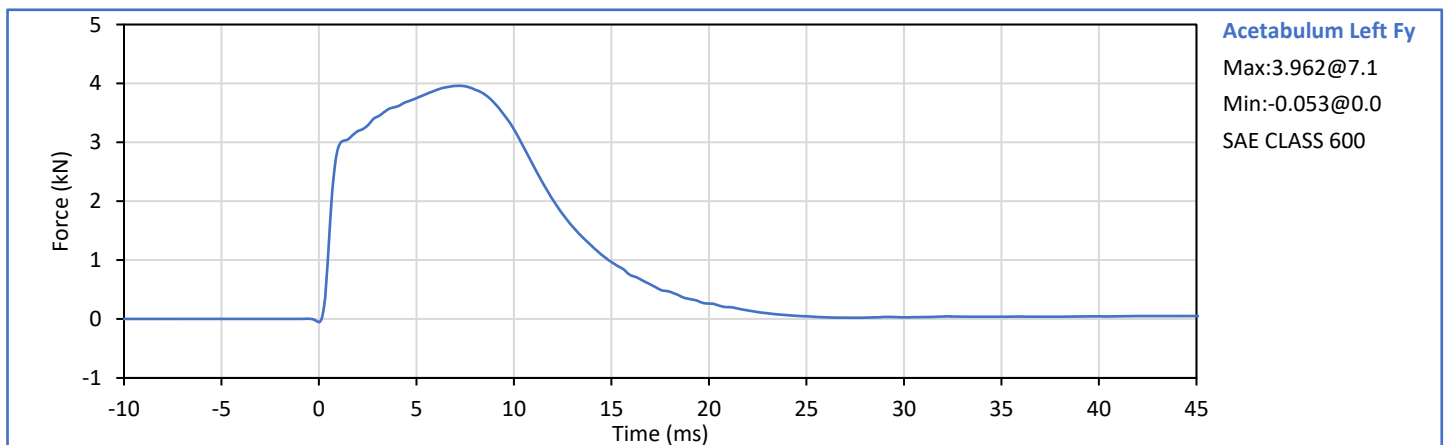
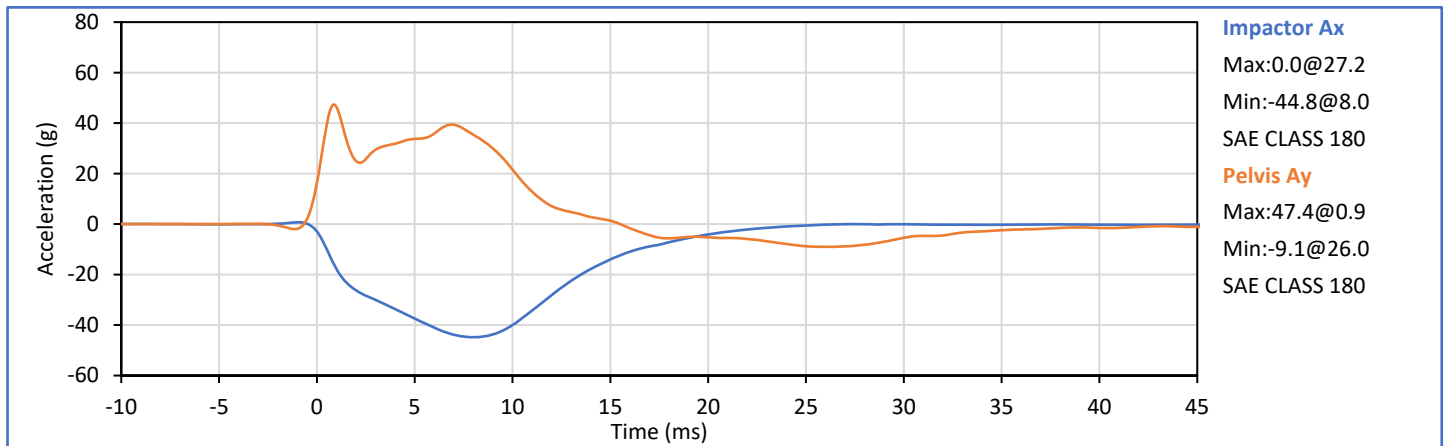
J. Hernandez

ATD Serial No.: 299

Test Date: 2025-01-07

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.4	Pass
Laboratory Relative Humidity	%	10	70	29	Pass
Impactor Velocity	m/s	6.60	6.80	6.71	Pass
Peak Acetabulum Fy	kN	3.60	4.30	3.96	Pass
Pelvis Ay after 6ms	g	34.0	42.0	39.4	Pass
Peak Impactor Ax	g	-47.0	-38.0	-44.8	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 14770



Technician:

J. Coronel

J. Coronel

Approved By:

J. Hernandez

J. Hernandez

ATD Serial No.: 299

Test Date: 2025-01-07

Pelvis Plug S/N: 14770



SID-IIs Pelvis Plug Certification Test

Plug S/N 14770

Test Number 16743

Report Number 16789

Test Date 12/29/2020 10:26:02 AM

	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	281.65	50.00	600.00
Force @ 1.5 mm (N)	1,216.95	850.00	1,400.00
Force @ 2.5 mm (N)	1,508.97	1,306.00	1,618.00
Force @ 3.0 mm (N)	1,545.47	1,361.00	1,673.00

Testing Machine STM-20 5965542

Load Cell S/N (FI360947), Units (LBS) 1000

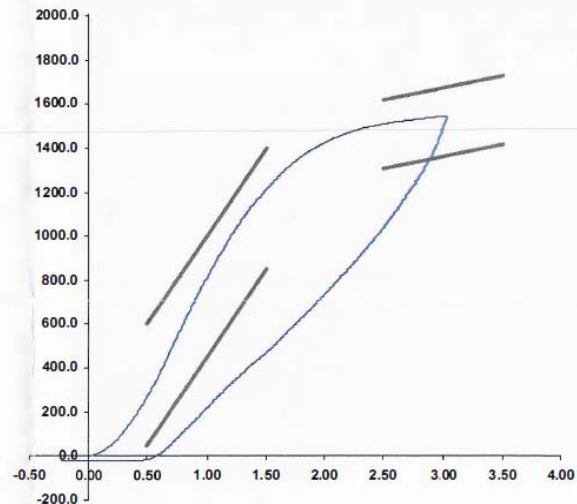
Preload Value (-N) 22.24

Crosshead Speed (mm / min) or Rate 12.7

Extension or Position Measured by XHD_100 (XHD100)

Notes:

Force (-N) vs Extension (-mm)



Operator

Part Number 180-4450

Template No 107 29-Dec-20

SACO Research

By: DC Date: 12/29/20

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

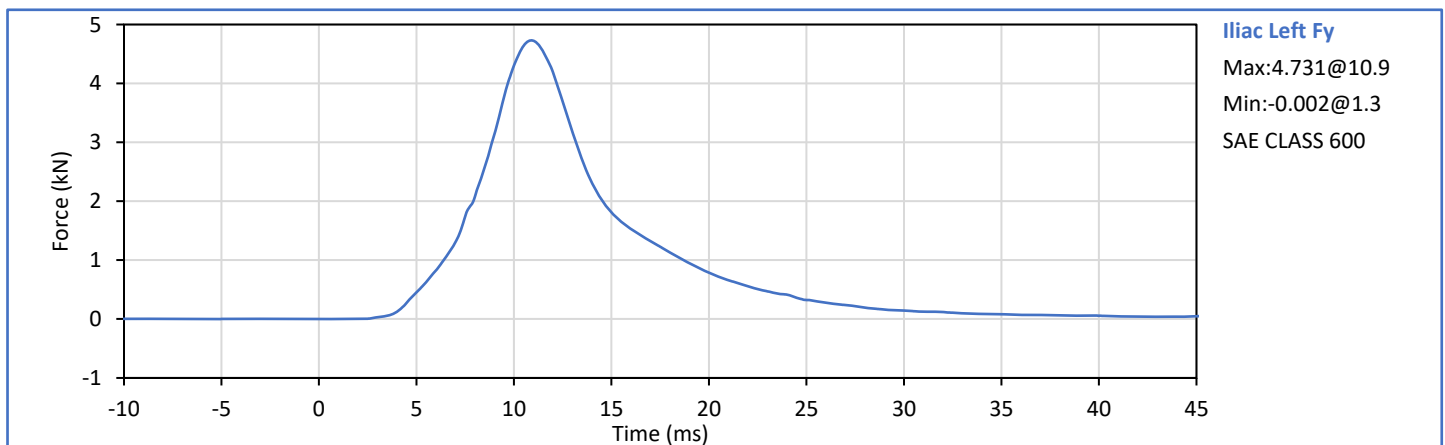
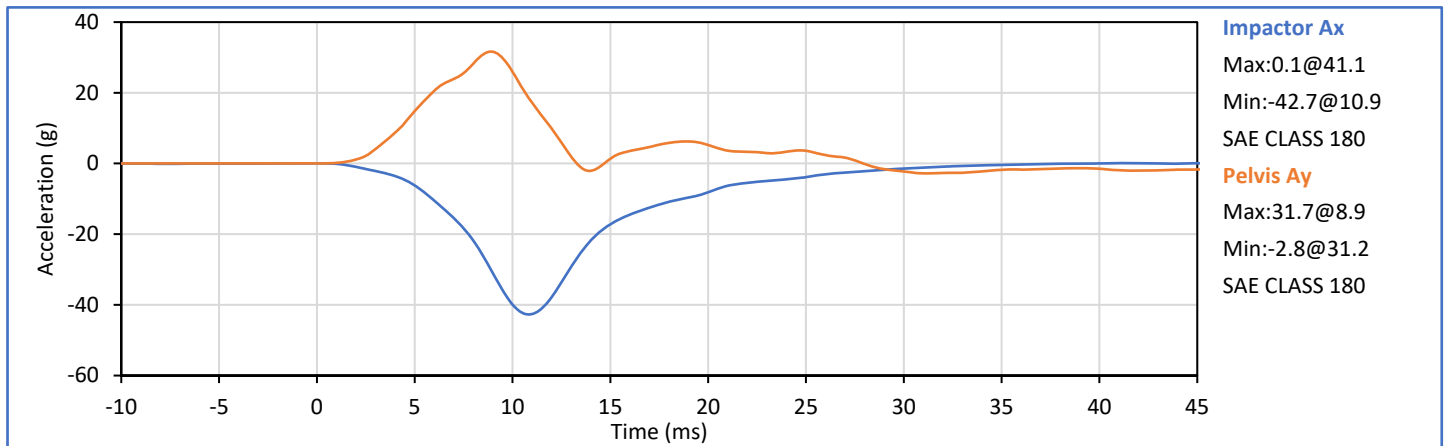
ATD Serial No.: 299

Test Date: 2025-01-09

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.1	Pass
Laboratory Relative Humidity	%	10	70	28	Pass
Impactor Velocity	m/s	4.20	4.40	4.28	Pass
Peak Iliac Fy	kN	4.10	5.10	4.73	Pass
Peak Pelvis Ay	g	28.0	39.0	34.7	Pass
Peak Impactor Ax	g	-45.0	-36.0	-42.7	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 16490 *

* Plug is not impacted and remains certified



Technician:

J. Coronel

J. Coronel

Approved By:

J. Hernandez

J. Hernandez

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

ATD Serial No.: 299

Test Date: 2025-01-14

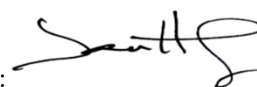
Tested Parameter	Units	Spec Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.0	Pass
Laboratory Relative Humidity	%	10	70	20	Pass
A - Sitting Height	mm	772	788	781	Pass
B - Shoulder Pivot Height	mm	437	453	450	Pass
C - Hpoint Height	mm	79	89	87	Pass
D - H Point From Seatback	mm	141	151	149	Pass
E - Shoulder Pivot From Backline	mm	97	107	104	Pass
F - Thigh Clearance	mm	119	135	128	Pass
G - Head Breadth	mm	140	148	145	Pass
H - Head Back From Backline	mm	40	46	42	Pass
I - Head Depth	mm	178	188	183	Pass
J - Head Circumference	mm	541	551	547	Pass
K - Buttock To Knee Length	mm	514	540	533	Pass
L - Popliteal Height	mm	343	369	356	Pass
K - Knee Pivot To Floor Height	mm	392	409	401	Pass
N - Buttock Popliteal Length	mm	416	442	428	Pass
O - Chest Depth W/O Jacket	mm	195	211	204	Pass
P - Foot Length	mm	216	232	223	Pass
Q - Hip Breadth (W/Pelvic Plugs)	mm	313	323	320	Pass
R - Arm Length	mm	249	259	253	Pass
S - Knee Joint To Seatback	mm	477	493	490	Pass
V - Shoulder Width	mm	341	357	350	Pass
W - Foot Width	mm	78	94	89	Pass
Y - Chest Circumference W/Jacket	mm	851	881	878	Pass
Z - Waist Circumference	mm	761	791	772	Pass
				Overall Test Results	Pass

Technician:



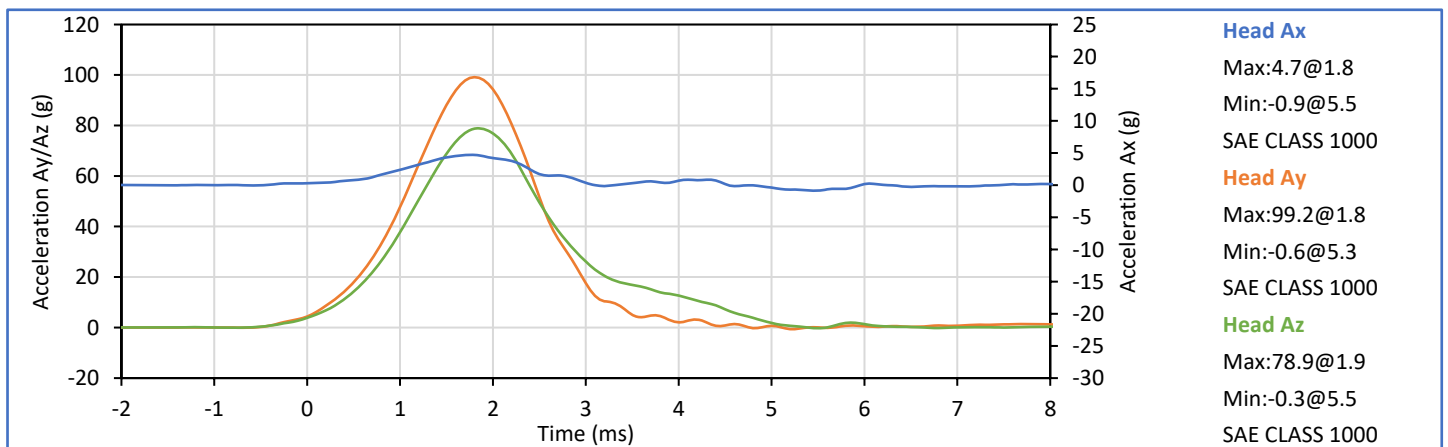
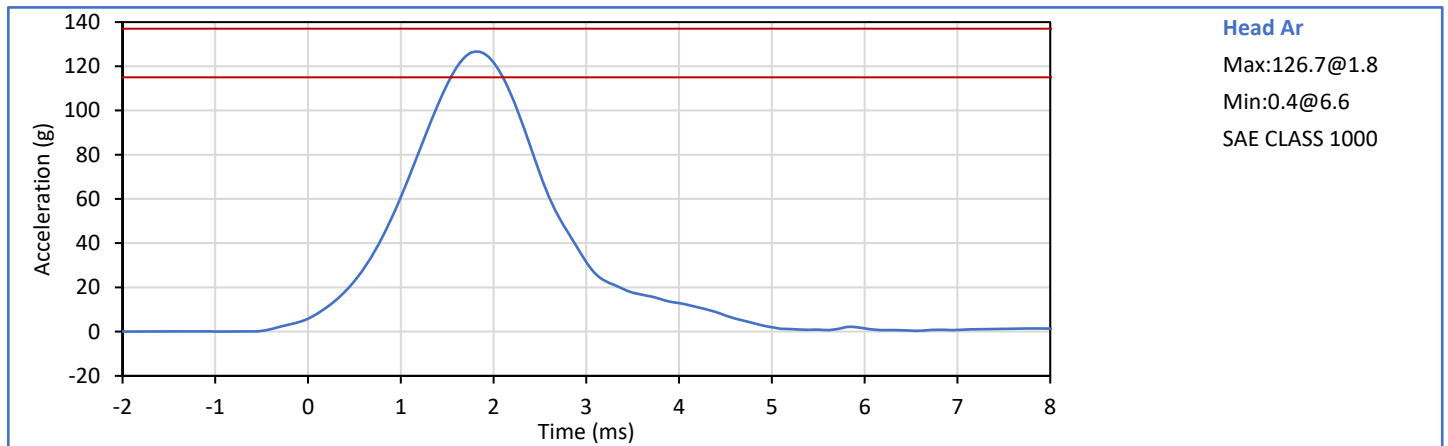
J. Coronel

Approved By:



J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	18.9	25.6	21.2	Pass
Laboratory Relative Humidity	%	10	70	21	Pass
Peak Resultant Acceleration	g	115.0	137.0	126.7	Pass
Peak Head Ax	g	-15.0	15.0	4.7	Pass
Oscillations After Main Pulse	%	0.0	15.0	1.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes		Yes	Pass
			Overall Test Results	Pass	



Technician:

J. Coronel

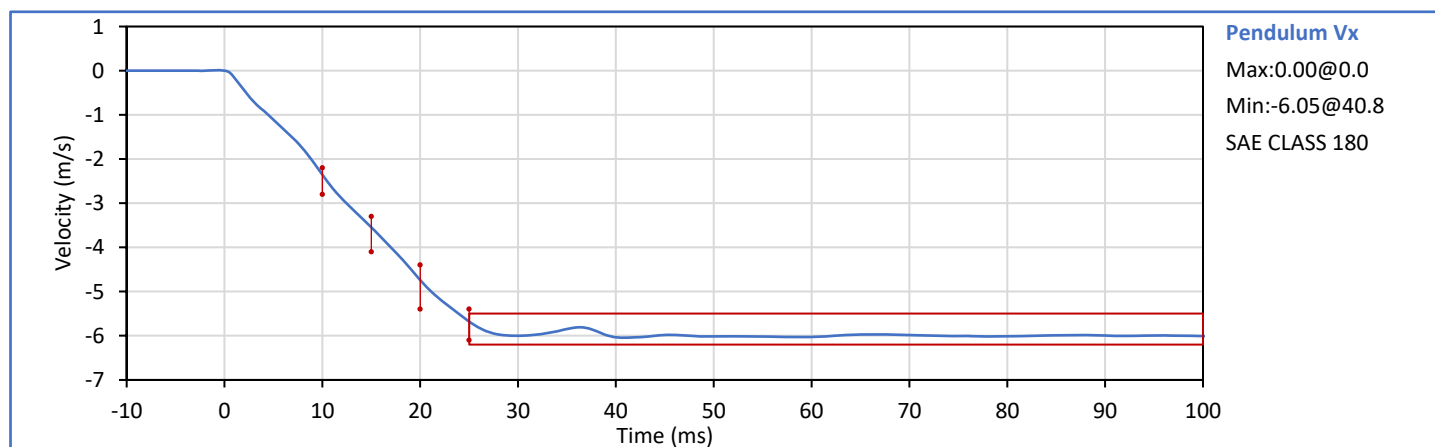
J. Coronel

Approved By:

J. Hernandez

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.3	Pass
Laboratory Relative Humidity	%	10	70	20	Pass
Pendulum Velocity	m/s	5.51	5.63	5.57	Pass
Pendulum Decel at 10 ms	m/s	-2.80	-2.20	-2.35	Pass
Pendulum Decel at 15 ms	m/s	-4.10	-3.30	-3.55	Pass
Pendulum Decel at 20 ms	m/s	-5.40	-4.40	-4.74	Pass
Pendulum Decel at 25 ms	m/s	-6.10	-5.40	-5.68	Pass
Pendulum Decel from 25-100 ms	m/s	-6.20	-5.50	-6.05/-5.68	Pass
Peak "D" Plane Rotation	deg	-81.0	-71.0	-76.7	Pass
Time of Peak "D" Plane Rotation	ms	50.0	70.0	62.1	Pass
Peak Occ. Condyle Moment	Nm	36.0	44.0	42.9	Pass
Time of Moment Decay to 0 Nm	ms	102.0	126.0	112.5	Pass
				Overall Test Results	Pass

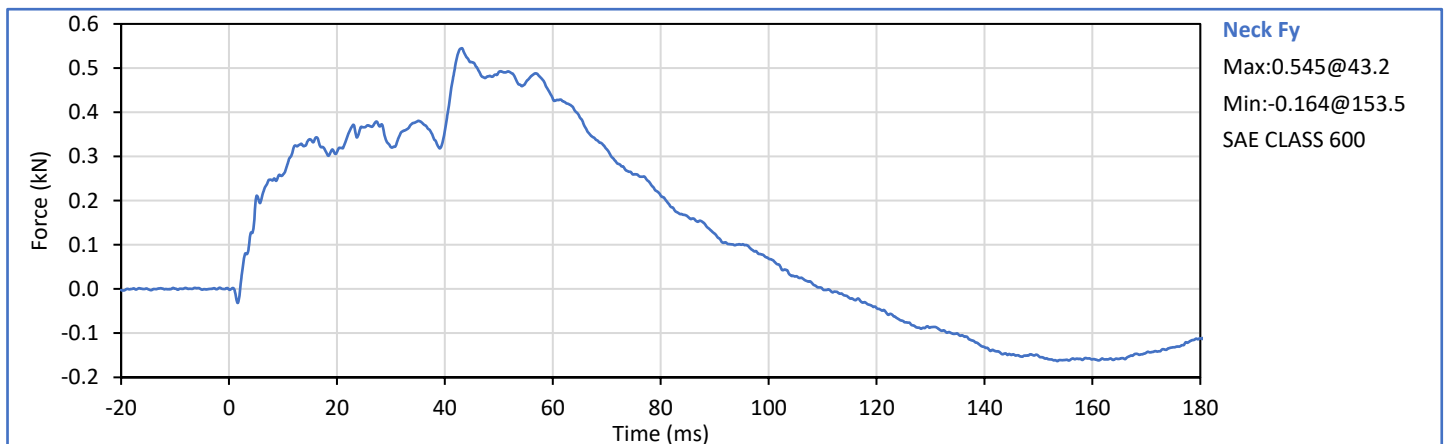
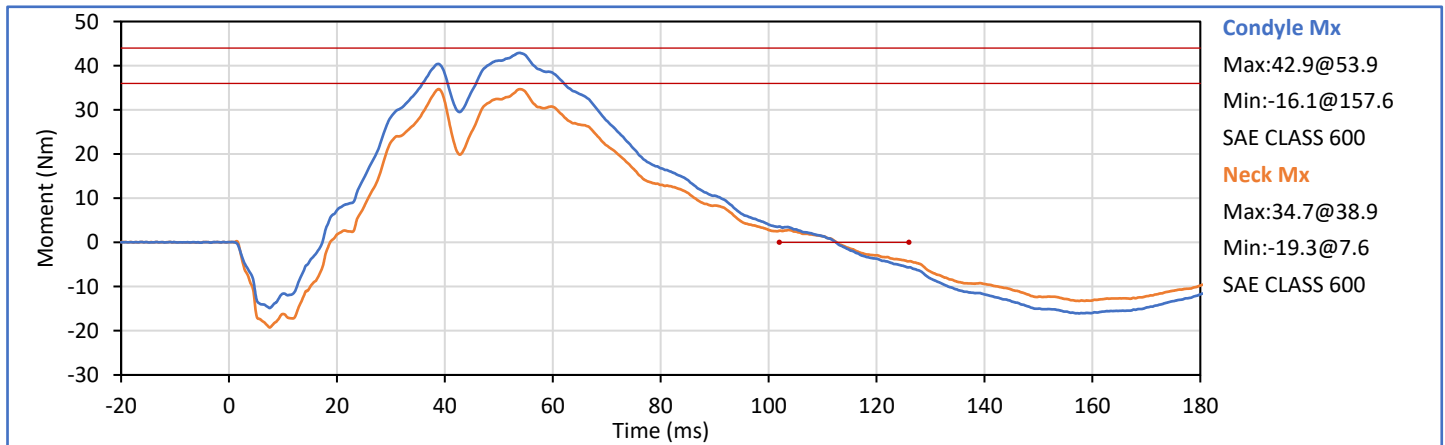
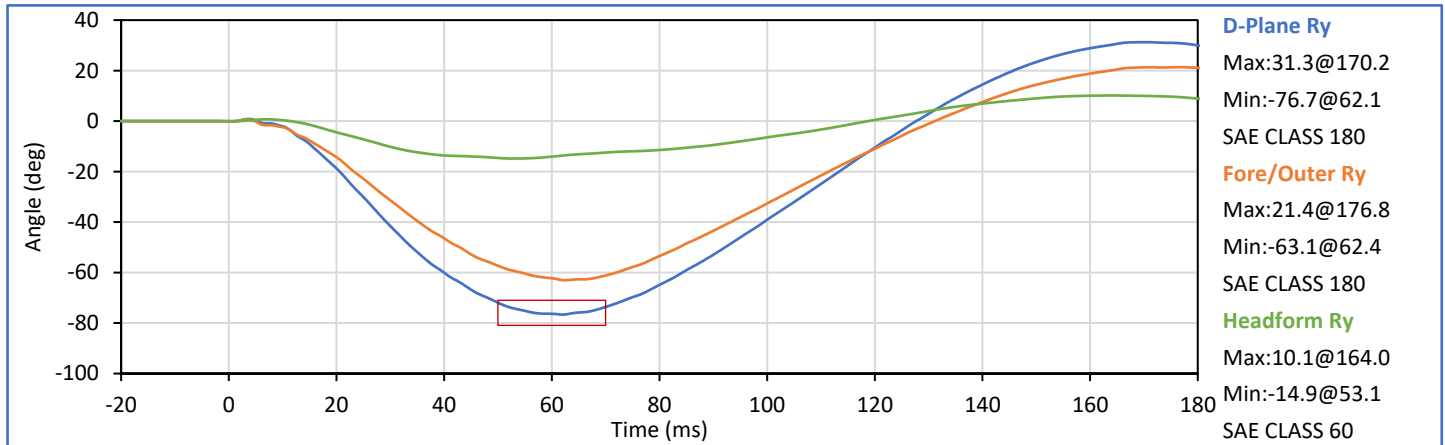


Technician:

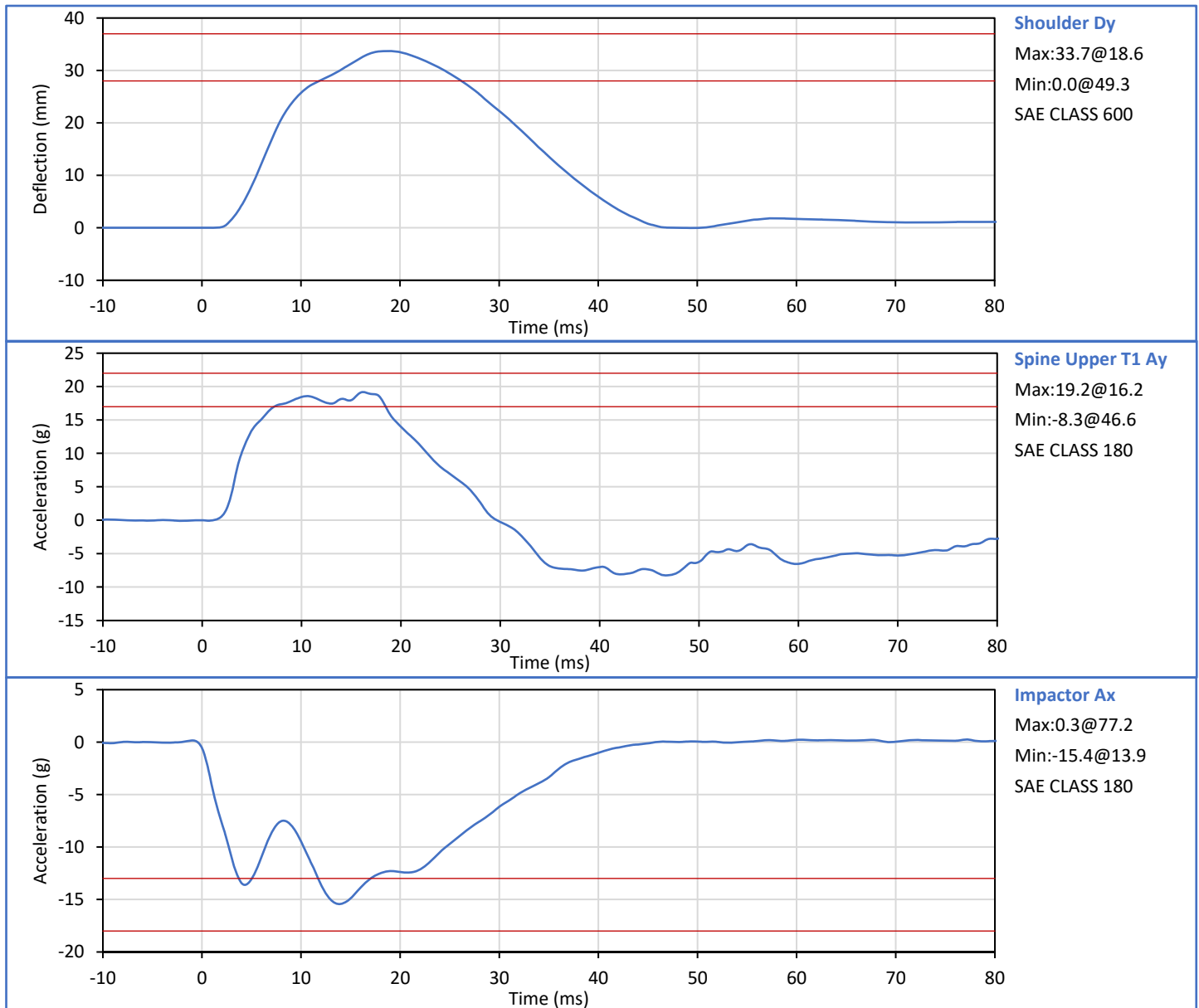
J. Coronel

Approved By:

J. Hernandez



Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	21	Pass
Impactor Velocity	m/s	4.20	4.40	4.36	Pass
Peak Shoulder Dy	mm	28.0	37.0	33.7	Pass
Peak Upper Spine (T1) Ay	g	17.0	22.0	19.2	Pass
Peak Impactor Ax	g	-18.0	-13.0	-15.4	Pass
Overall Test Results					Pass



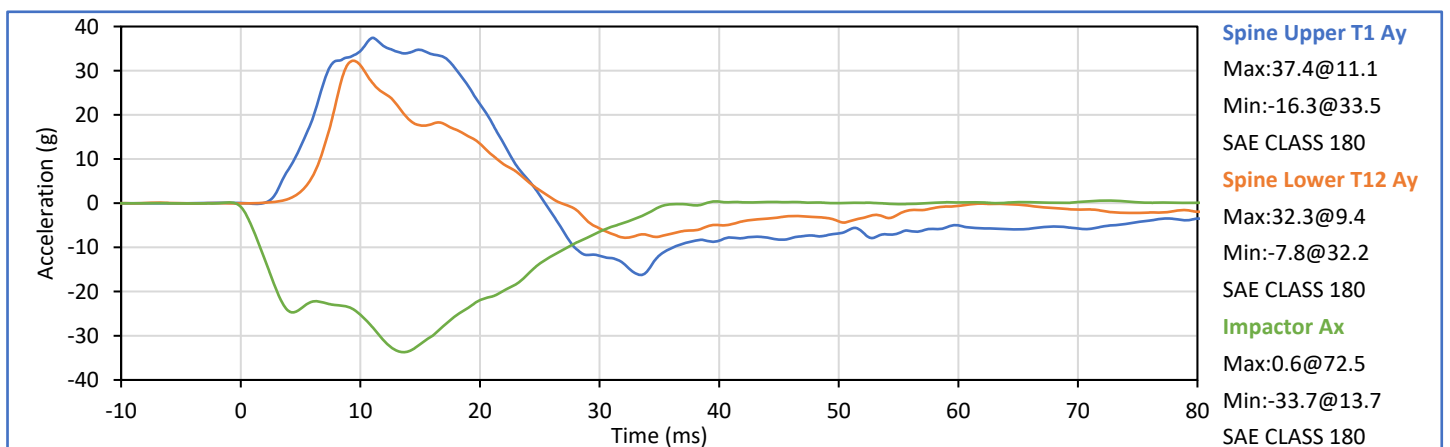
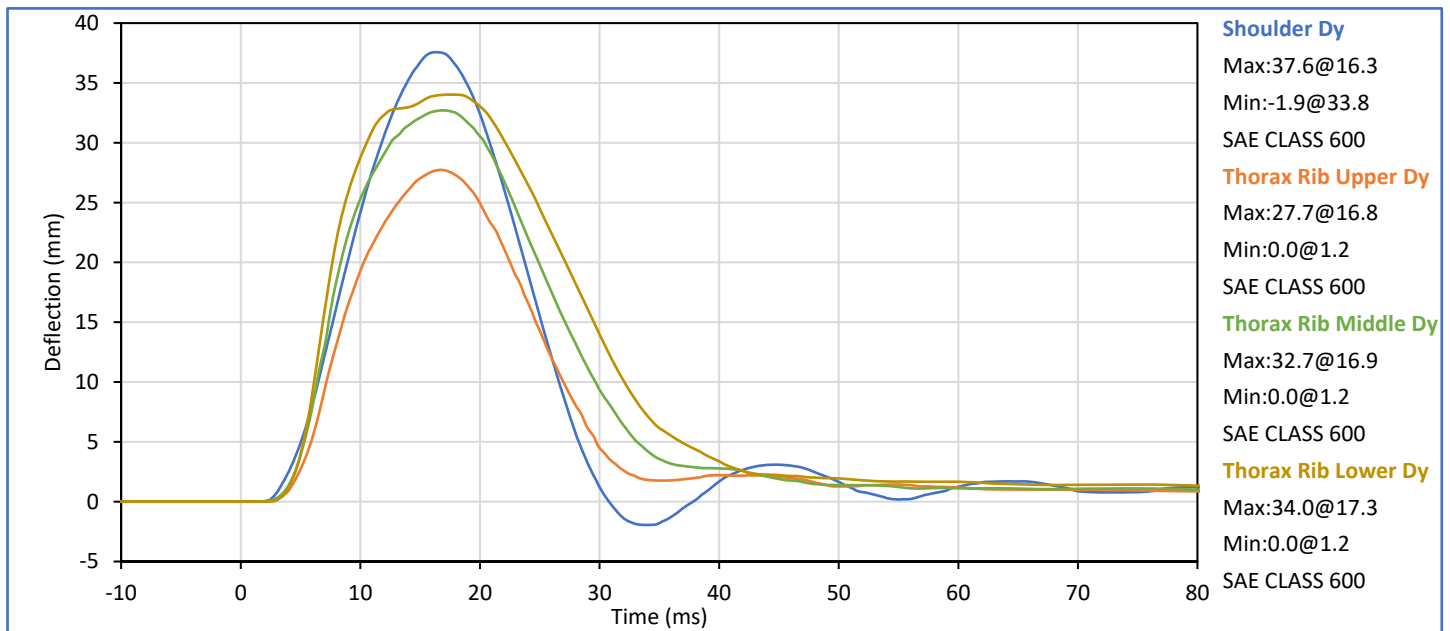
Technician:

J. Coronel

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	22	Pass
Impactor Velocity	m/s	6.60	6.80	6.71	Pass
Peak Shoulder Dy	mm	31.0	40.0	37.6	Pass
Peak Upper Rib Dy	mm	25.0	32.0	27.7	Pass
Peak Middle Rib Dy	mm	30.0	36.0	32.7	Pass
Peak Lower Rib Dy	mm	32.0	38.0	34.0	Pass
Peak Upper Spine (T1) Ay	g	34.0	43.0	37.4	Pass
Peak Lower Spine (T12) Ay	g	29.0	37.0	32.3	Pass
Peak Impactor Ax	g	-36.0	-30.0	-33.7	Pass
Overall Test Results				Pass	Pass



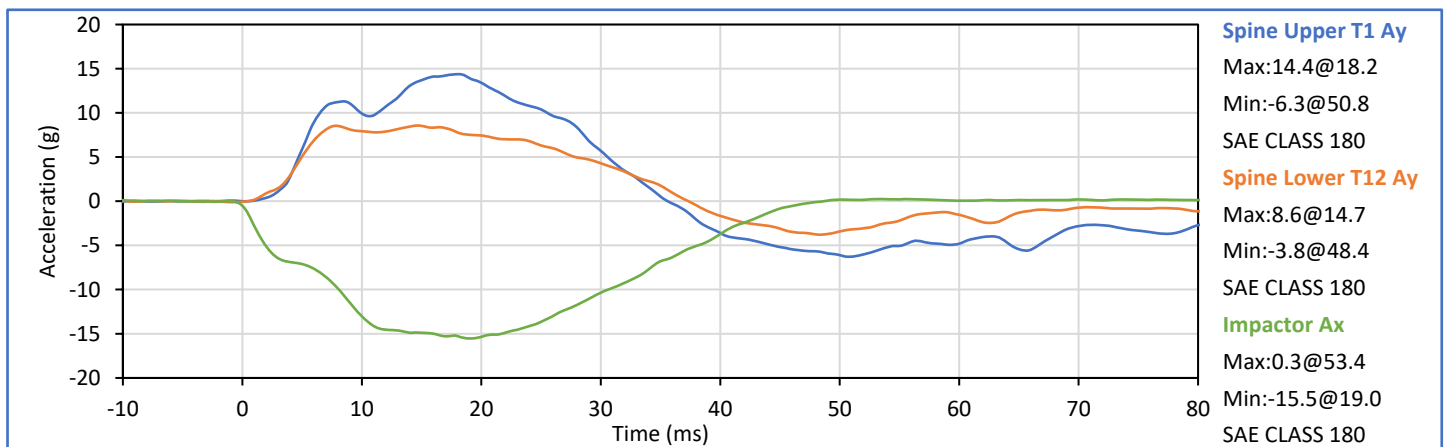
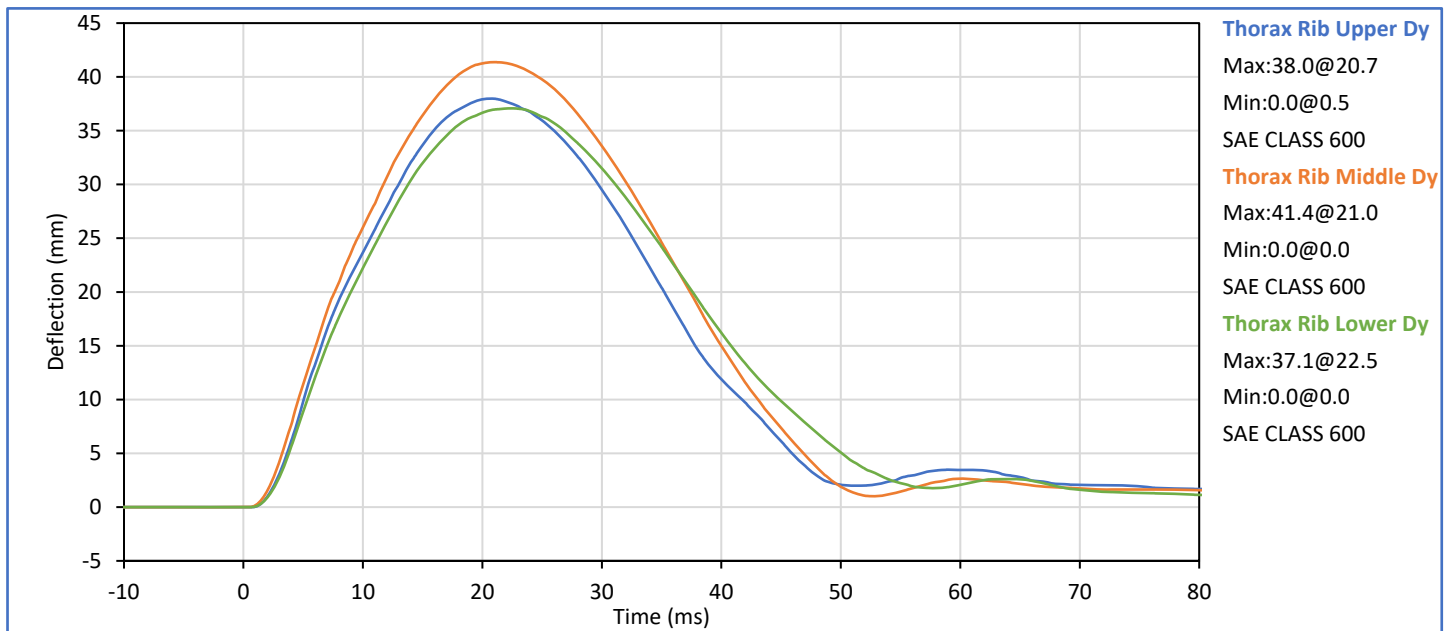
Technician:

J. Coronel

Approved By:

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Relative Humidity	%	10	70	21	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Thorax Rib Upper Dy	mm	32.0	40.0	38.0	Pass
Peak Thorax Rib Middle Dy	mm	39.0	45.0	41.4	Pass
Peak Thorax Rib Lower Dy	mm	35.0	43.0	37.1	Pass
Peak Spine Upper T1 Ay	g	13.0	17.0	14.4	Pass
Peak Spine Lower T12 Ay	g	7.0	11.0	8.6	Pass
Peak Impactor Ax	g	-18.0	-14.0	-15.5	Pass
Overall Test Results					Pass



Technician:

J. Coronel

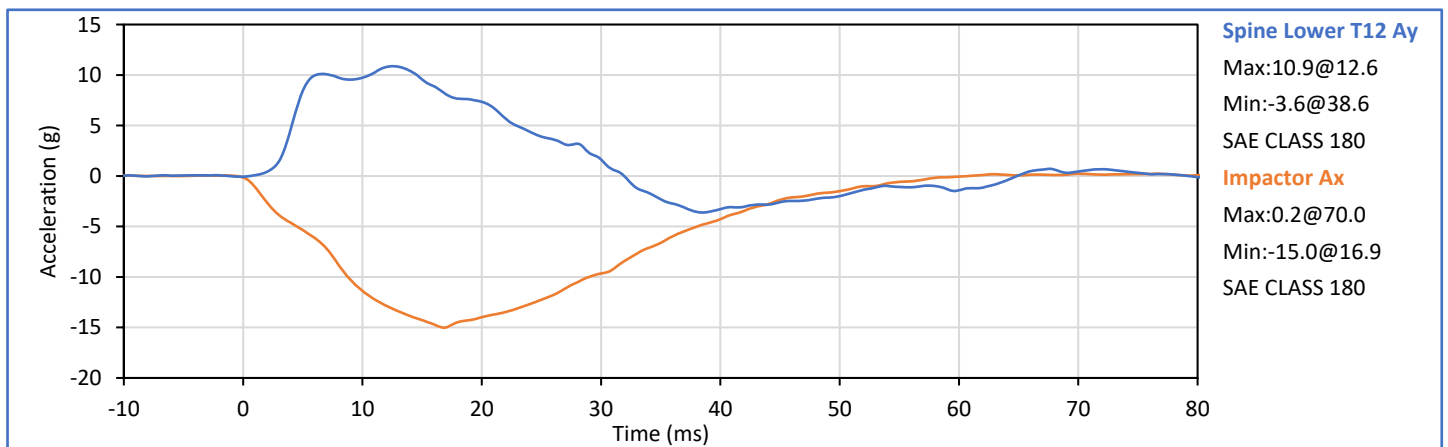
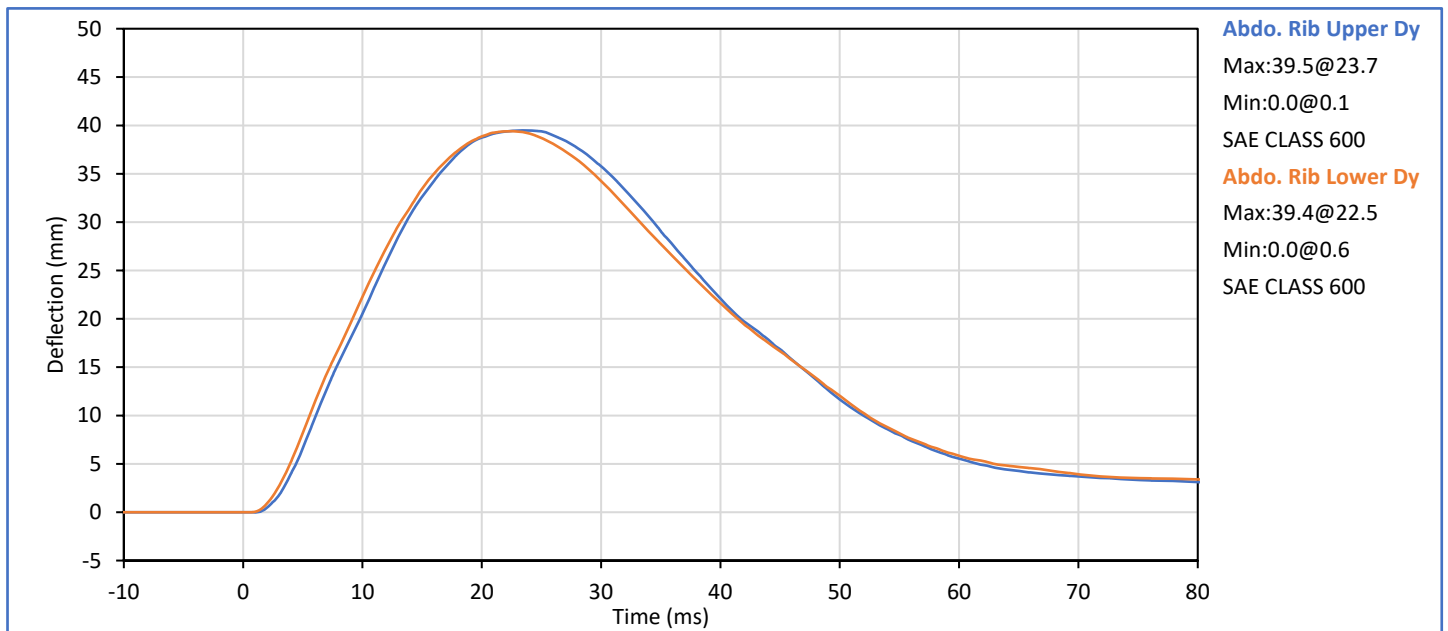
J. Coronel

Approved By:

J. Hernandez

J. Hernandez

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.2	Pass
Laboratory Relative Humidity	%	10	70	20	Pass
Impactor Velocity	m/s	4.20	4.40	4.32	Pass
Peak Upper Abdomen Rib Dy	mm	36.0	47.0	39.5	Pass
Peak Lower Abdomen Rib Dy	mm	33.0	44.0	39.4	Pass
Peak Lower Spine T12 Ay	mm	9.0	14.0	10.9	Pass
Peak Impactor Ax	g	-16.0	-12.0	-15.0	Pass
Overall Test Results					Pass



Technician:

J. Coronel

J. Coronel

Approved By:

J. Hernandez

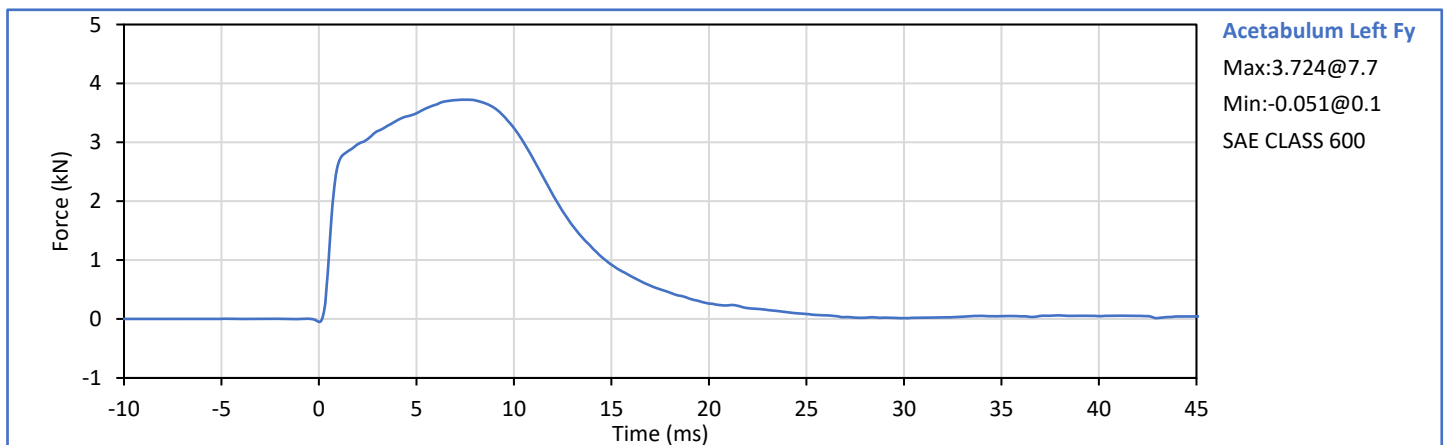
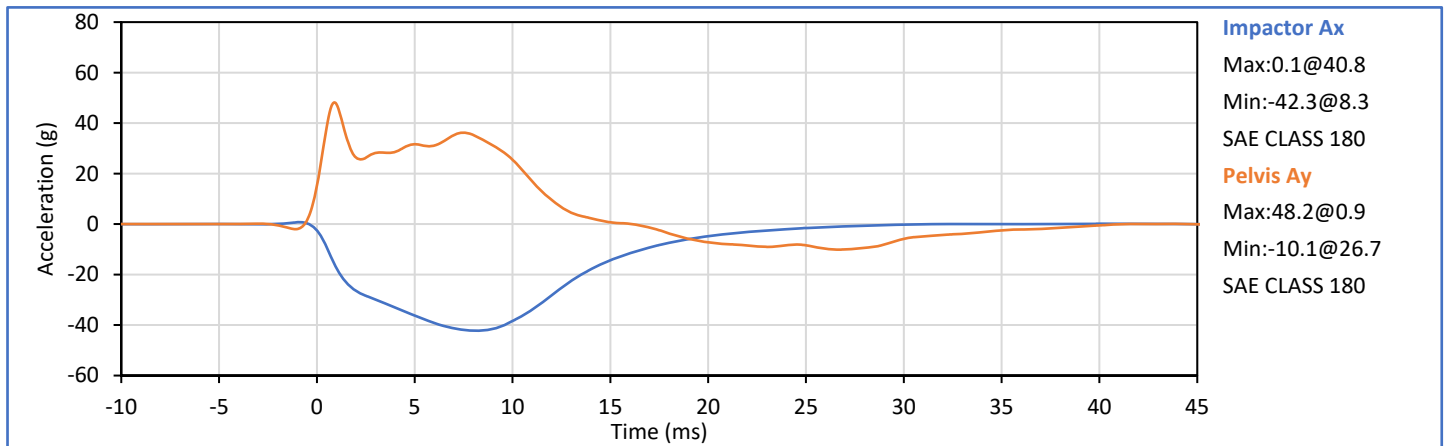
J. Hernandez

ATD Serial No.: 299

Test Date: 2025-01-14

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.6	Pass
Laboratory Relative Humidity	%	10	70	31	Pass
Impactor Velocity	m/s	6.60	6.80	6.67	Pass
Peak Acetabulum Fy	kN	3.60	4.30	3.72	Pass
Pelvis Ay after 6ms	g	34.0	42.0	36.2	Pass
Peak Impactor Ax	g	-47.0	-38.0	-42.3	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 17780



Technician:

J. Coronel

J. Coronel

Approved By:

J. Hernandez

J. Hernandez

ATD Serial No.: 299

**SID-IIs Small Side Impact ATD
Pelvis Acetabulum Impact**

Test Date: 2025-01-14

Pelvis Plug S/N: 17780



SID-IIs Pelvis Plug Certification Test

Plug S/N 17780

Test Number 25068

Report Number 25125

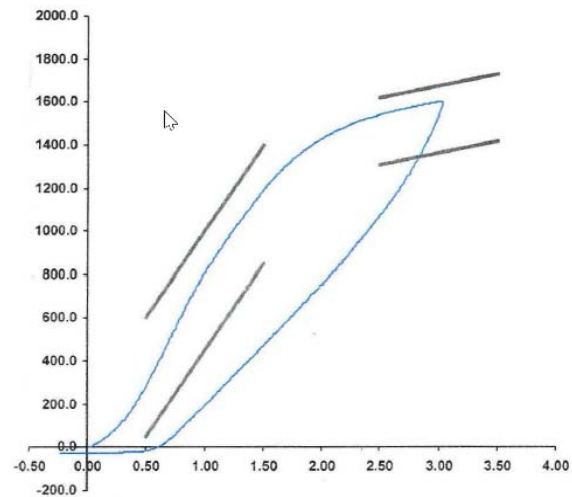
Test Date 12/11/2022 11:24:40 AM

	Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	295	50	600
Force @ 1.5 mm (N)	1,199	850	1,400
Force @ 2.5 mm (N)	1,543	1,306	1,618
Force @ 3.0 mm (N)	1,601	1,361	1,673

Testing Machine STM-20 5965542
Load Cell S/N (F1360947), Units (LBS) 1000
Preload Value (-N) 22.24
Crosshead Speed (mm / min) or Rate 12.7
Extension or Position Measured by XHD_100 (XHD100)

Notes:

Force (-N) vs Extension (-mm)



Operator

Part Number 180-4450

Template No 107 11-Dec-22

SACO Research

By: DC Date: 12/11/22

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

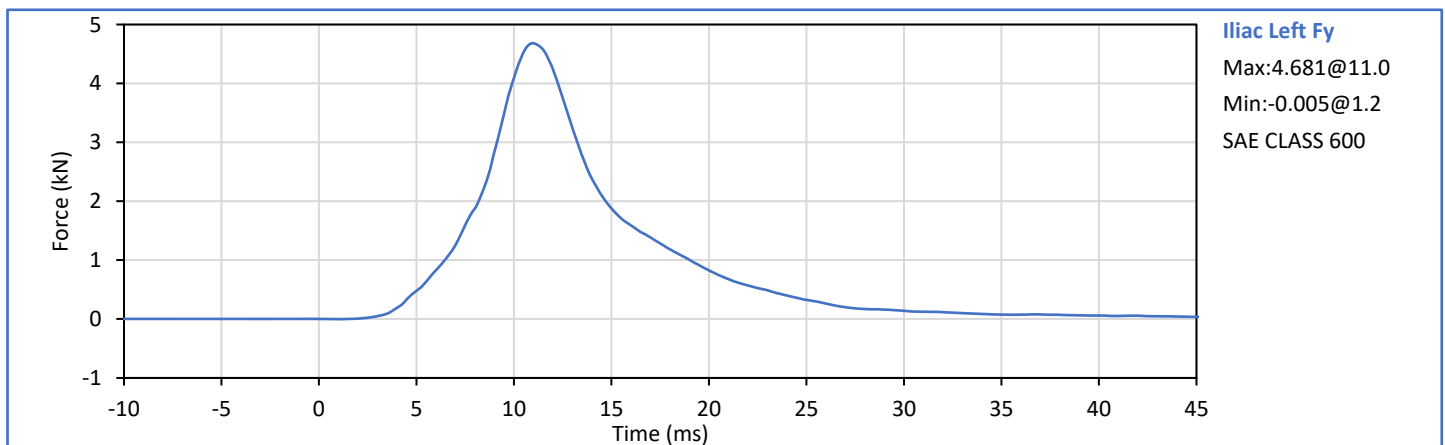
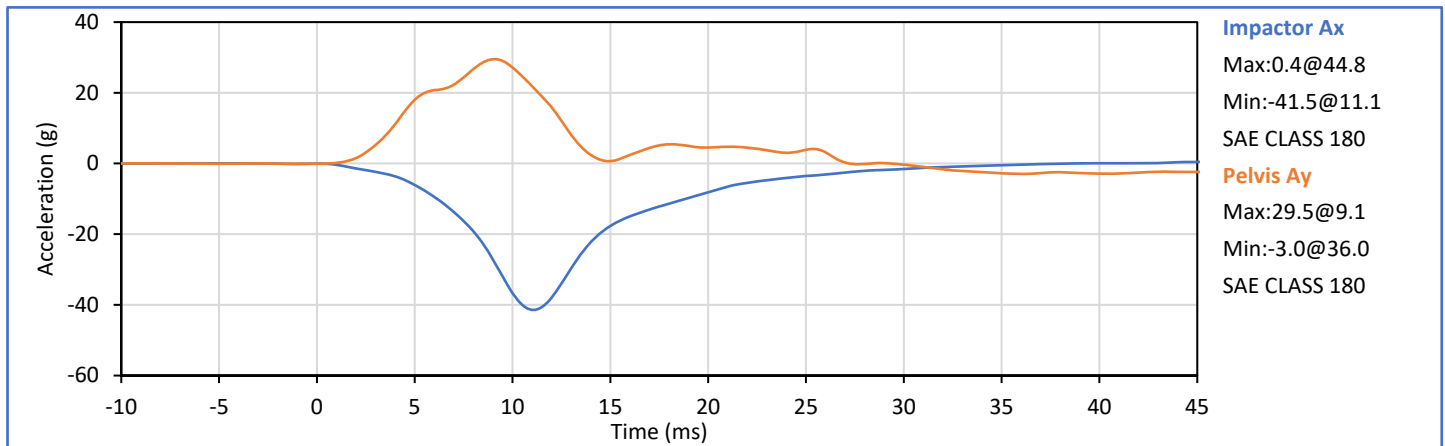
ATD Serial No.: 299

Test Date: 2025-01-15

Tested Parameter	Units	Spec. Low	Spec. High	Result	Pass/Fail
Laboratory Temperature	°C	20.6	22.2	21.3	Pass
Laboratory Relative Humidity	%	10	70	21	Pass
Impactor Velocity	m/s	4.20	4.40	4.30	Pass
Peak Iliac Fy	kN	4.10	5.10	4.68	Pass
Peak Pelvis Ay	g	28.0	39.0	34.7	Pass
Peak Impactor Ax	g	-45.0	-36.0	-41.5	Pass
Overall Test Results					Pass

Pelvis Plug S/N: 16490 *

* Plug is not impacted and remains certified



Technician:

J. Coronel

J. Coronel

Approved By:

J. Hernandez

J. Hernandez

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 - Driver ATD Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Head Acceleration X Primary	P51929	Endevco	7264C-2k	2024-12-11
Head Acceleration Y Primary	P50086	Endevco	7264C-2k	2024-12-11
Head Acceleration Z Primary	P51931	Endevco	7264C-2k	2024-12-11
Head Acceleration X Redundant	P68604	Endevco	7264C-2k	2024-12-11
Head Acceleration Y Redundant	P51934	Endevco	7264C-2k	2024-12-11
Head Acceleration Z Redundant	P58736	Endevco	7264C-2k	2024-12-11
Head Rotation Rate X	ARS7342	DTS	ARS PRO-8k (2kHz)	2024-07-31
Head Rotation Rate Y	ARS7473	DTS	ARS PRO-8k (2kHz)	2024-07-31
Head Rotation Rate Z	ARS7598	DTS	ARS PRO-8k (2kHz)	2024-07-31
Upper Thorax Rib Deflection Y	1143	Servo	08TCI-3725	2024-12-12
Middle Thorax Rib Deflection Y	1075	Servo	08TCI-3725	2024-12-12
Lower Thorax Rib Deflection Y	1213	Servo	08TCI-3725	2024-12-12
Upper Abdomen Rib Deflection Y	1218	Servo	08TCI-3725	2024-12-12
Lower Abdomen Rib Deflection Y	1177	Servo	08TCI-3725	2024-12-12
Lower Spine T12 Acceleration X	P58761	Endevco	7264C-2k	2024-12-11
Lower Spine T12 Acceleration Y	P50077	Endevco	7264C-2k	2024-12-11
Lower Spine T12 Acceleration Z	P58795	Endevco	7264C-2k	2024-12-11
Iliac Wing Impact Side Force Y	278 (Iliac)	R.A. Denton	3228J	2024-05-10
Acetabulum Impact Side Force Y	260 (Acetabulum)	R.A. Denton	3249J	2024-05-10

Table 2 - Vehicle Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Vehicle CG Ax	M14433	Endevco	7264HM6-2k-360	2024-08-10
Vehicle CG Ay	M14414	Endevco	7264HM6-2k-360	2024-08-10
Vehicle CG Az	M14430	Endevco	758H-2k	2024-08-10
Left Floor Sill Ay	A356492	MSI	52F-2k	2024-10-02
A-Pillar Sill Ay	220278	BST	11CF-2k	2024-08-27
A-Pillar Low Ay	223091	BST	11CF-2k	2024-08-15
A-Pillar Mid Ay	223138	BST	11CF-2k	2024-08-24
B-Pillar Sill Ay	223282	BST	11CF-2k	2024-08-24
B-Pillar Low Ay	220270	BST	11CF-2k	2024-08-14
B-Pillar Mid Ay	223291	BST	11CF-2k	2024-08-24
Driver Seat Track at H-Point Ay	A331783	MSI	52F-2k	2024-10-23
Engine Top Ax	M14571	Endevco	758H-2k	2024-08-15
Engine Top Ay	M14566	Endevco	7264HM6-2k-360	2024-08-15
Firewall Ay	M13729	Endevco	758H-2k	2024-08-12
Right Roof Ay	M14420	Endevco	7264HM6-2k-360	2024-08-10
Right Floor Sill Ay	A356266	MSI	52F-2k	2024-10-02
Rear Floorpan Ax	M14410	Endevco	758H-2k	2024-08-10
Rear Floorpan Ay	M14573	Endevco	7264C-2KTZ-2-360	2024-08-15

Table 3 - Barrier Pole Instrumentation

Sensor Location	Sensor S\N	Mfr	Model	Cal Date
Barrier Pole 01 Fx	46760	Interface	1220FS-50k	2023-11-15
Barrier Pole 02 Fx	132304A	Interface	1220-FS	2023-11-15
Barrier Pole 03 Fx	131211A	Interface	1220-FS	2023-11-15
Barrier Pole 04 Fx	19346	Interface	1220FS-50k	2023-11-15
Barrier Pole 05 Fx	131827A	Interface	1220AF-50k	2023-11-15
Barrier Pole 06 Fx	19322	Interface	1220FS-50k	2023-11-15
Barrier Pole 07 Fx	132302A	Interface	1220-FS	2023-11-15
Barrier Pole 08 Fx	19345	Interface	1220FS-50k	2023-11-15