

REPORT NUMBER: SINCAP-CAL-22-004

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

**Ford Motor CO.
2022 Ford Maverick XL
Four Door Truck**

NHTSA No: M20220211

**PREPARED BY:
CALSPAN CORPORATION
P.O. BOX 400
BUFFALO, NEW YORK 14225**



January 19, 2023

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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WASHINGTON, D.C. 20590**

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Manager

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: _____

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15. Supplementary Notes																																																					
16. Abstract A 55/28, (61.90kph / 38.5 mph), 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2022 Ford Maverick XL Truck in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at Calspan Corporation's Transportation Test Operations facility in Buffalo, New York on June 23, 2022. The impact velocity of the Moving Deformable Barrier (MDB) was 61.97 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21°C. The target vehicle's maximum post-test static crush was 170 mm located at level 3. The test vehicle's occupant performance data is as follows: <table border="1" data-bbox="211 1056 1409 1255"> <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>N/A</td> <td>1000</td> <td>87.207</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>44</td> <td>17.680</td> </tr> <tr> <td>Total Abdominal Force</td> <td>N</td> <td>2500</td> <td>667.239</td> </tr> <tr> <td>Pubic Symphysis Force</td> <td>N</td> <td>6000</td> <td>887.438</td> </tr> </tbody> </table> <table border="1" data-bbox="211 1289 1409 1524"> <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>N/A</td> <td>1000</td> <td>174.106</td> </tr> <tr> <td>Lower Spine Resultant Acceleration</td> <td>G</td> <td>82</td> <td>57.382</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td>N</td> <td>5525</td> <td>4317.819</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>15.169</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45*</td> <td>29.944</td> </tr> </tbody> </table> * Proposed IARV The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.				Measurement Description	Driver ATD (ES-2re)			Units	IARV	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	87.207	Maximum Thoracic Rib Deflection	mm	44	17.680	Total Abdominal Force	N	2500	667.239	Pubic Symphysis Force	N	6000	887.438	Measurement Description	Passenger ATD (SID-IIs)			Units	IARV	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	174.106	Lower Spine Resultant Acceleration	G	82	57.382	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4317.819	Maximum Thoracic Rib Deflection	mm	38*	15.169	Maximum Abdominal Rib Deflection	mm	45*	29.944
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SECTION 1

TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test is part of the MY 2022 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number 693JJ920D000016. The purpose of this test is to generate comparative side impact performance in a 2022 Ford Maverick XL Truck. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated March 2020.

SECTION 2

SUMMARY OF TEST RESULTS

A 2022 Ford Maverick XL Truck was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.97 km/h. 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 the Calspan Corporation's Transportation Test Operations Center in Buffalo, New York on June 23, 2022. Pre-test and post-test photographs of the test vehicle, the MDB and the dummies (ES-2re and SID-IIs) are included in this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated March 2020. The side impact event was documented by 9 high-speed and 2 real-time cameras. Camera locations are included in 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 (T12) tri-axial accelerometers

Public 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 (T12) 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 VALUES

Measurement Description	Driver ATD (ES-2re)		
	Units	Threshold	Result
Head Injury Criteria (HIC36)		1000	87.207
Maximum Thorax Rib Deflection	mm	44	17.680
Combined Abdominal Force	N	2500	667.239
Pubic Symphysis Force	N	6000	887.438

Measurement Description	Passenger ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC36)		1000	174.106
Lower Spine (T12) Resultant Acceleration	G	82	57.382
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4317.819
Maximum Thoracic Rib Deflection	mm	38*	15.169
Maximum Abdominal Rib Deflection	mm	45*	29.944

*Proposed IARV

SUPPLEMENTAL RESTRAINT INFORMATION

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 Air bag	Yes	Yes	No	N/A
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes	Yes	Yes	Yes
Other				

GENERAL COMMENTS:

1. P1 serial number – F033
2. P4 serial number – DG8012

Data Anomalies:

The following channel was questionable for

- Left B-Pillar Lower Y, Exceeded calibration range at 10.2 ms
- Left B-Pillar Middle Y, Exceeded calibration range at 10.7 ms
- Left Rear Sill Y, Exceeded calibration range at 7.7 ms 20.8 ms
- Left Rear Seat Track/Structure Y, Exceeded calibration range at 11 ms

SECTION 3

OCCUPANT AND VEHICLE INFORMATION

This section contains information reporting for the following Data Sheets:

Data Sheet No. 1 - General Test and Vehicle Parameter Data

Data Sheet No. 2 – Seat, Seat Belt, Steering Wheel Adjustment and Fuel System Data

Data Sheet No. 3 – Dummy Longitudinal Clearance Dimensions

Data Sheet No. 4 – Dummy Lateral Clearance Dimensions

Data Sheet No. 5 – Camera and Instrumentation Data

Data Sheet No. 6 – Test Vehicle Accelerometer Locations

Data Sheet No. 7 – MDB Accelerometer Locations

Data Sheet No. 8 – Post-Test Observations

Data Sheet No. 9 – MDB Summary of Results

Data Sheet No. 10 – Test Vehicle Profile Measurements

Data Sheet No. 11 – Test Vehicle Exterior Crush Measurements

Data Sheet No. 12 – MDB Exterior Static Crush Measurements

Data Sheet No. 13 – Vehicle and MDB Damage Profile Distances

Data Sheet No. 14 – FMVSS No. 301 Static Rollover Results

Data Sheet No. 15 – Dummy/Vehicle Temperature and Humidity Stabilization Data

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2022 Ford Maverick XL Truck
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20220211
Test Date: 6/23/2022

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20220211	Traction Control System (TCS)	Yes
Model Year	2022	Auto-Leveling System	No
Make	Ford	Automatic Door Locks (ADL)	Yes
Model	Maverick XL	Power Window Auto-Reverse	No
Body Style	Truck	Other Optional Feature	-
VIN	3FTTW8E96NRA55688	Driver Front Air bag	Yes
Body Color	Gray	Driver Curtain Air bag	Yes
Odometer Reading (km/mi)	29.6 miles	Driver Head/Torso Air bag	No
Engine Displacement (L)	2.0	Driver Torso Air bag	No
Type/No. Cylinders	I4	Driver Torso/Pelvis Air bag	Yes
Engine Placement	Transverse	Driver Pelvis Air bag	No
Transmission Type	Automatic	Driver Knee Air bag	Yes
Transmission Speeds	8-Speed	Rear Pass. Curtain Air bag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Air bag	No
Final Drive	Front Wheel Drive	Rear Pass. Torso Air bag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Air bag	No
Sunroof/T-Top	No	Rear Pass. Pelvis Air bag	No
Running Boards	No	Driver Seat Belt Pretensioners	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioners	Yes
Power Seats	No	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	Yes
		Other Safety Restraint	-

Does owner's manual provide instructions to turn off automatic door locks?

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Ford Motor CO.	GVWR (kg)	2304
Date of Manufacture	04/22	GAWR Front (kg)	1188
Vehicle Type	Truck	GAWR Rear (kg)	1252

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3	N/A	5	
Capacity Weight (VCW) (kg)				704	(A)
DSC X 68.04 kg				340.2	(B)
Cargo Weight (RCLW) (kg)				136	(A-B)

VEHICLE SEAT TYPE

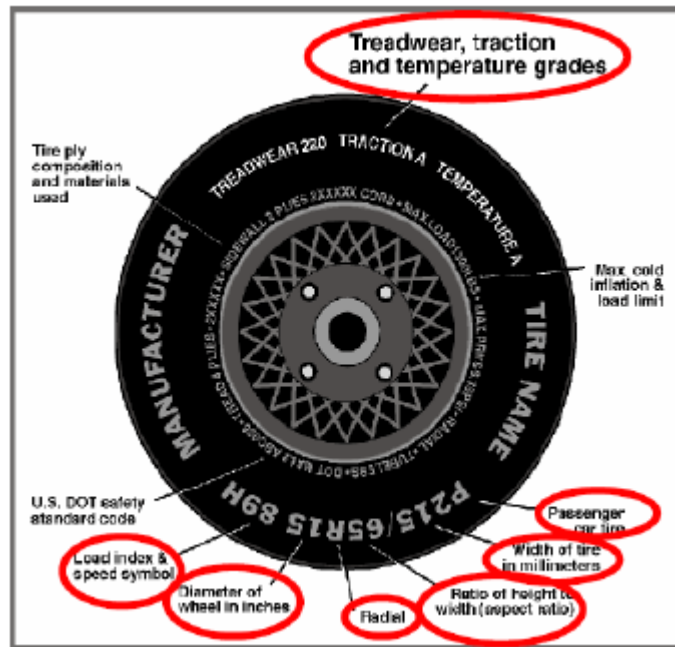
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						W/ Lever	W/ Knob
Front Seat	X					X	
Rear or Second Row Seat		X			X		
Third Row seat							

DATA SHEET NO. 1 ... (CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	<u>2022 Ford Maverick XL Truck</u>	NHTSA No.:	<u>M20220211</u>
Test Program:	<u>NCAP Side MDB Impact Test</u>	Test Date:	<u>6/23/2022</u>

VEHICLE TIRE INFORMATION

Collected for year, make, model, & VIN, all items circled in red, tire manufacturer and tire name.



TIRE SIDEWALL INFORMATION

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	240	240
Recommended Tire Size	225/65R17	225/65R17
Tire Size on Vehicle	225/65R17	225/65R17
Tire Manufacturer	Continental	Continental
Tire Model	Pro Contact	Pro Contact
Treadwear	500	500
Traction	A	A
Temperature Grade	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Polyamide	1 Polyester, 2 Steel, 1 Polyamide
Load Index/Speed Symbol	102H	102H
Tire Material	Rubber	Rubber
DOT Safety Code Left	1P50FBC3K0322	1P50FBC3K0322
DOT Safety Code Right	1P50FBC3K0322	1P50FBC3K0322

DATA SHEET NO. 1 ... (CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2022 Ford Maverick XL Truck	NHTSA No.:	M20220211
Test Program:	NCAP Side MDB Impact Test	Test Date:	6/23/2022

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	240	240	238	238
Tire Placard	kPa	240	240	240	240
Owner's Manual	kPa	240	240	240	240
As Tested	kPa	240	240	240	240

MDB TIRE SPECIFICATIONS

	Units	Requirement	LF	RF	LR	RR
Tire Size		P205/75R15	P205/75R15	P205/75R15	P205/75R15	P205/75R15
Tire Pressure	kPa	200 ± 21	221	221	221	221

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	485	329		527	437		538.5	450.5	
Right	kg	472	314		484	409		479	397.5	
Ratio	%	59.8	40.2		54.4	45.6		54.5	45.5	
Totals	kg	957	643	1600	1011	846	1857	1017.5	848	1865.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1600	(A)
Sum of Actual Weight of 1 ES2re and 1 P572 ATD (SID-IIs)	kg	127	(B)
Rated Cargo / Luggage Weight (RCLW)	kg	136	(C)
Calculated Target Vehicle Test Weight (TVTW)	kg	1863	(A+B+C)

Does the measured As Test Vehicle Weight lie within the required weight range

(i.e. Calculated Test Vehicle Target Weight – 4.5 kg to – 9 kg)? ☒ Yes ☐ No

TEST VEHICLE ATTITUDES AND CG

Measurement Description	Units	Fully Loaded	As Tested	Meets Requirement**
LF	mm	854	844	Yes
RF	mm	860	850	Yes
RR	mm	865	866	Yes
LR	mm	876	868	Yes
Vehicle CG (Aft of Front Axle)	mm	1396	1399	
Vehicle CG (Left+)/Right(-) from Longitudinal Centerline)	mm	48	31	

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

Test height adjustable suspension setting, if applicable:

N/A

DATA SHEET NO. 1 ... (CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2022 Ford Maverick XL Truck	NHTSA No.:	M20220211
Test Program:	NCAP Side MDB Impact Test	Test Date:	6/23/2022

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
None	0
Ballast / Equipment Added	59

TEST SURFACE MARKINGS

	Distance from 63° Impact Angle Line (mm)
Fore 25 mm target	994
Aft 25 mm target	995
Pre-Impact Angle Line	236

Parallel Track Target	X Location (mm)	Y Location (mm)
A	0	0
B	2955	1555
C	2955	4455
D	0	3000

DATA SHEET NO. 2
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA

Test Vehicle:	2022 Ford Maverick XL Truck	NHTSA No.:	M20220211
Test Program:	NCAP Side MDB Impact Test	Test Date:	6/23/2022

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 passengers' seats should be set to the rear-most, lowest, mid-angle position.

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	15.9	10.9	13.4
Front Passenger Seat	Not Adjustable		
Front Center Seat*			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat*	Fixed	Fixed	Fixed

**if applicable*

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	Forward- Most
Driver Seat	13.4	17	Max	-	-	-
			Mid	-	-	-
			Min	12	17	21
Front Passenger Seat	Not Adjustable		Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Front Center Seat*	N/A	N/A	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Struck Side Rear Seat	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Non-Struck Side Rear Seat	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Rear Center Seat*	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-

**if applicable*

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

Test Vehicle:	2022 Ford Maverick XL Truck	NHTSA No.:	M20220211
Test Program:	NCAP Side MDB Impact Test	Test Date:	6/23/2022

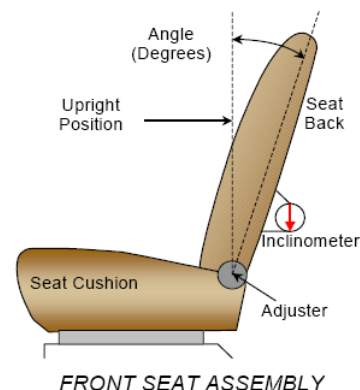
SEAT FORE / AFT POSITION

Seat	Total Fore / Aft Travel		Test Position from Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	242	36 (0 – 35)	117	17
Front Passenger Seat	257	38 (0 – 37)	133	19
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

**if applicable*

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned to the manufacturer's designated design angle. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck side rear seat back is positioned such that the dummy's head is level. 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	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degrees	Detents*
Driver Seat w/ Seated Dummy	50	-	3.0	8
Front Passenger Seat	49.9	-	2.8	8
Front Center Seat*				
Struck Side Rear Seat w/ Seated Dummy	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat*	Fixed	Fixed	Fixed	Fixed

**if applicable*

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

Test Vehicle:	2022 Ford Maverick XL Truck	NHTSA No.:	M20220211
Test Program:	NCAP Side MDB Impact Test	Test Date:	6/23/2022

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1. For this test zero is defined as the uppermost position.

	Total # of Positions	Placed in Position #
Driver Seat	4 (0-3)	0
Rear Seat	Fixed	Fixed

HEAD RESTRAINT ADJUSTMENT

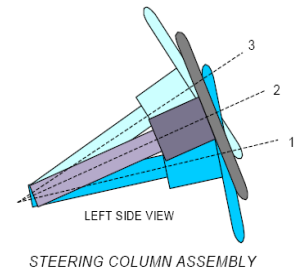
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	3 (0-2)	Uppermost
Rear Seat	1	Lowermost

STEERING COLUMN ADJUSTMENT

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

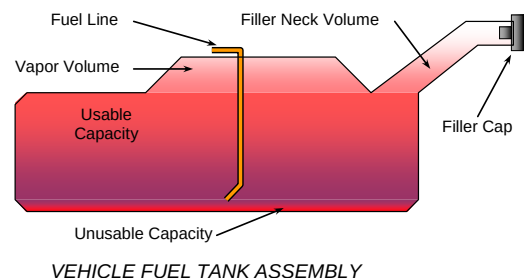
	Degrees	Fore/Aft Position (mm)
Lowermost – Position 1	22.1	
Geometric Center – Position 2	24.5	
Uppermost – Position 3	26.7	
Telescoping Steering Wheel Travel		60
Test Position	25.2	30



FUEL PUMP

Describe the fuel pump type, details about how it operates, and the location of the fuel filler neck.

The vehicle is equipped with an electric fuel pump. The fuel filler neck is on the left side of the vehicle. The pump creates positive pressure in the fuel lines, pushing the gasoline to the engine. See form 1 for more information.



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

Test Vehicle:	<u>2022 Ford Maverick XL Truck</u>	NHTSA No.:	<u>M20220211</u>
Test Program:	<u>NCAP Side MDB Impact Test</u>	Test Date:	<u>6/23/2022</u>

FUEL TANK CAPACITY

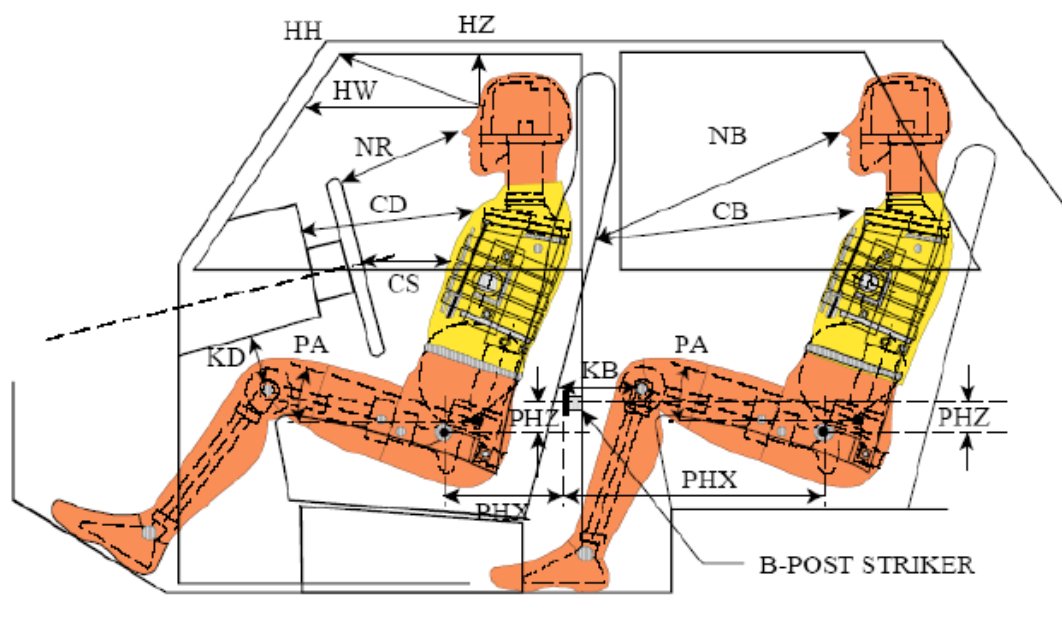
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	62.5
Usable Capacity of "Optional Tank" (see Form No. 1)	N/A
Usable Capacity of Standard Tank (see Owner's Manual)	62.5
Usable Capacity of Optional Tank (see Owner's Manual)	N/A
93% of Usable Capacity	58.1
Actual Amount of Solvent Used in Test	58.1
1/3 of Usable Capacity	20.8

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

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2022 Ford Maverick XL Truck
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20220211
 Test Date: 6/23/2022



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

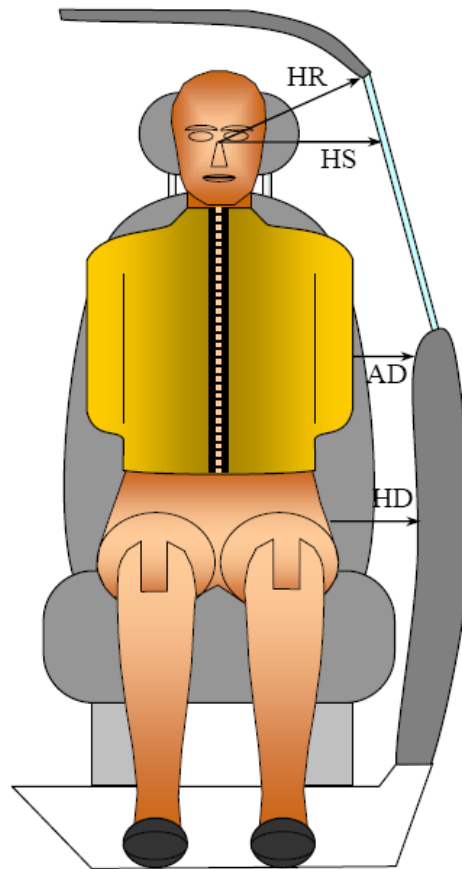
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver (Serial No. F033)		Passenger (Serial No. DG8012)	
			Length (mm)	Angle	Length (mm)	Angle
HH		Header to Header	441			
HW		Header to Windshield	640			
HZ	HZ	Head to Roof Liner	224		322	
NR	NB	Nose to Rim/Seat Back	430		531	
CD	CB	Chest to Dash/Seat Back	579		498	
CS		Chest to Steering Wheel	370			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	205	26.6	265	9.0
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	220	8.4	265	8.6
PAX°	PAX°	Pelvic Tilt Angle X		21.4		21.8
	PAY°	Pelvic Tilt Angle Y				0.3
PHX	PHX	Hip Point to Striker (X-Axis)	183		206	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	121		171	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2022 Ford Maverick XL Truck
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20220211
 Test Date: 6/23/2022



FRONT VIEW OF DUMMY

DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver (Serial No. F033)	Passenger (Serial No. DG8012)
HR	Head to Side Header	mm	228	295
HS	Head to Side Window	mm	352	390
AD	Arm to Door	mm	76	126
HD	Hip Point to Door	mm	160	158

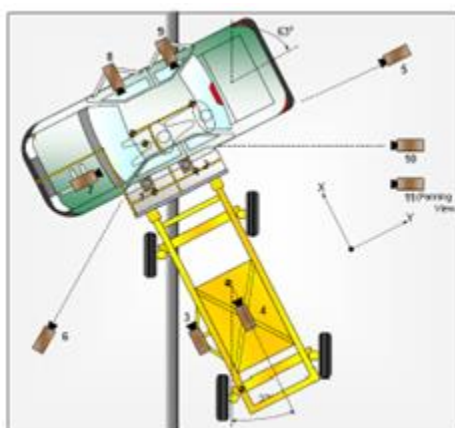
DATA SHEET NO. 5 **CAMERA AND INSTRUMENTATION DATA**

Test Vehicle: 2022 Ford Maverick XL Truck

NHTSA No.: M20220211

Test Program: NCAP Side MDB Impact Test

Test Date: 6/23/2022



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	0	-565	-8353	12.5	1000
2	Overhead Close-up	0	0	-8414	24	1000
3	Left Impact Point (MDB)	-1470	0	-847	25	1000
4	Side Overall (MDB)	-1140	878	-1587	8	1000
5	Rear	0	9201	-1312	28	1000
6	Left Front	-2826	-5966	-1449	24	1000
7	Driver Front (OB)				25	1000
8	Driver Side (OB)				12.5	1000
9	Passenger Side (OB)				12.5	1000
10	Real-time Left Rear				Zoom	60
11	Real-time In run				Zoom	60

Notes: *Reference: Impact Point projected to Ground*
+X = To Front of MDB, +Y = To Right of MDB, +Z = Down
**All measurements accurate to ± 6 mm.*

If applicable, explain why camera(s) did not operate as intended: All cameras operated normally

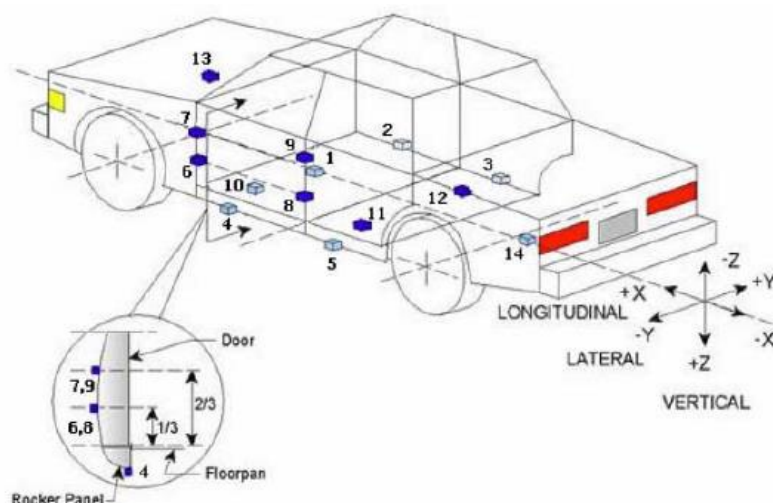
INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	22
Vehicle Structure Accelerometers	24
MDB Accelerometers	7
Total	69

DATA SHEET NO. 6

TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle:	2022 Ford Maverick XL Truck	NHTSA No.:	M20220211
Test Program:	NCAP Side MDB Impact Test	Test Date:	6/23/2022



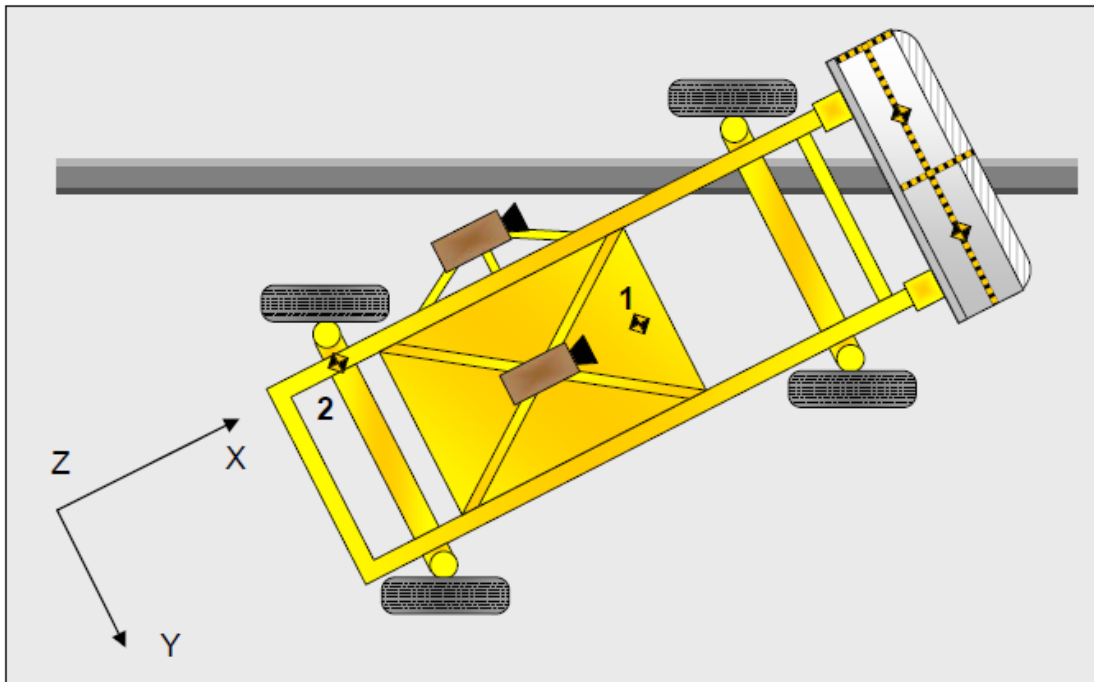
TEST VEHICLE ACCELEROMETER LOCATIONS

No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	3131	2	-86
2	Right Sill at Front Seat	3213	661	135
3	Right Sill at Rear Seat	2492	645	149
4	Left Sill at Front Door	3227	-660	147
5	Left Sill at Rear Door	2505	-647	167
6	A-Post Lower	3735	-630	-40
7	A-Post Middle	3616	-669	-602
8	B-Post Lower	2653	-692	-132
9	B-Post Middle	2605	-676	-525
10	Front Seat Track	2941	-546	100
11	Rear Seat Structure	2368	-322	107
12	Rt. Rear Occ. Compartment	2537	427	268
13	Engine Block	4398	254	-286
14	Rear Above Axle	1360	-4	-156

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

DATA SHEET NO. 7
MDB ACCELEROMETER LOCATIONS

Test Vehicle:	2022 Ford Maverick XL Truck	NHTSA No.:	M20220211
Test Program:	NCAP Side MDB Impact Test	Test Date:	6/23/2022



MDB ACCELEROMETER LOCATIONS

No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	MDB CG	1859	0	-330
2	MDB Rear	386	-660	-660

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

Width between left and right contact switches (mm):

1497

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle:	2022 Ford Maverick XL Truck	NHTSA No.:	M20220211
Test Program:	NCAP Side MDB Impact Test	Test Date:	6/23/2022

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	Curtain Airbag	Curtain Airbag
Top of Head	Side Header & Curtain Airbag	Curtain Airbag
Left Side of Head	Curtain Airbag	Curtain Airbag
Back of Head	Side Header & Headrest	Curtain Airbag & Headrest
Left Shoulder	Driver Door & Curtain Airbag	Seatback & Passenger Door
Upper Torso	Seatback & Torso/Pelvis Airbag	Seatback & Passenger Door
Lower Torso	Seatback & Torso/Pelvis Airbag	Seatback & Passenger Door
Left Hip	Seat pan & Torso/Pelvis Airbag	Passenger Door
Left Knee	Driver Door	Passenger Door

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 Systems 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, Width of Opening at Striker (mm)	0	0	0	0	0

POST-TEST SEAT PERFORMANCE

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

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	B-Pillar & C-Pillar Buckled
Sill Separation	None
Windshield Damage	None
Side Window Damage	None
Other Notable Effects	None

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

Test Vehicle:	<u>2022 Ford Maverick XL Truck</u>	NHTSA No.:	<u>M20220211</u>
Test Program:	<u>NCAP Side MDB Impact Test</u>	Test Date:	<u>6/23/2022</u>

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 Air bag	Yes	Yes	No	N/A
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes	Yes	Yes	Yes
Other				

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		3070
Vertical Impact Reference Line (Aft of Front Axle - Intended Impact Point)	mm		508
Actual Impact Point (Aft of Frontal Axle)	mm		503
Horizontal Offset (+ forward / - rearward)	mm	+/- 50 of Intended Impact Point	+5
Vertical Offset (+ down / - up)	mm	+/- 20 of Intended Impact Point	+2

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2022 Ford Maverick XL Truck
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20220211
Test Date: 6/23/2022

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1250
Overall Length Including Honeycomb Frame	4120
Wheelbase of Framework Carriage	2600
CG Location of Front Axle	1120

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	396	291.5	687.5
Right	kg	377.5	301	678.5
Ratio	%	56.6	43.3	100
Totals	kg	773.5	592.5	1368

SPEED AND ANGLE AT IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.10 to 62.70	61.97
Trap No. 2 Velocity (Redundant)	km/h	61.10 to 62.70	61.85
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63
MDB Crabbed angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.0

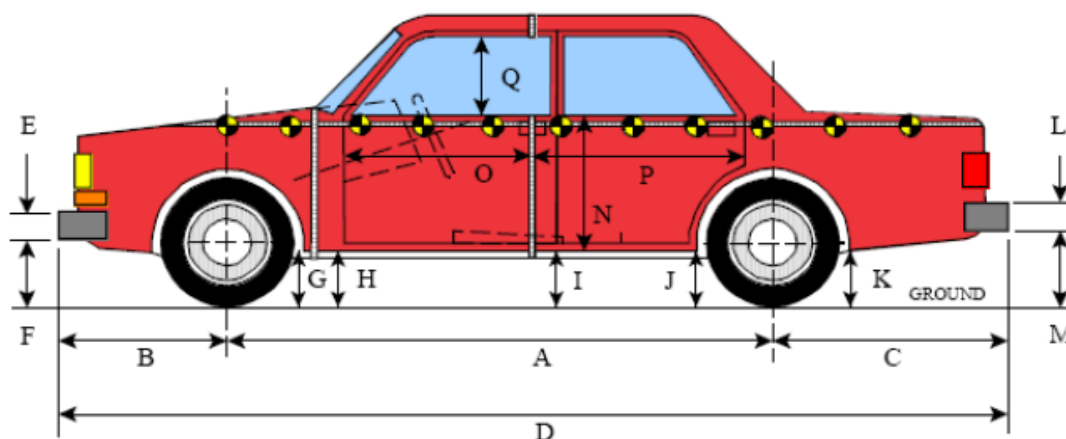
MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

Vertical Location			From Centerline		Maximum Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	800	Right	257
B	Top of Bumper	533	800	Right	187
C	Mid-Level	686	800	Right	123
D	Top of Stack	813	800	Left	118

DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2022 Ford Maverick XL Truck
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20220211
 Test Date: 6/23/2022



LEFT SIDE VIEW

All MEASUREMENTS IN (mm) WITH TOLERANCE OF ± 3 mm

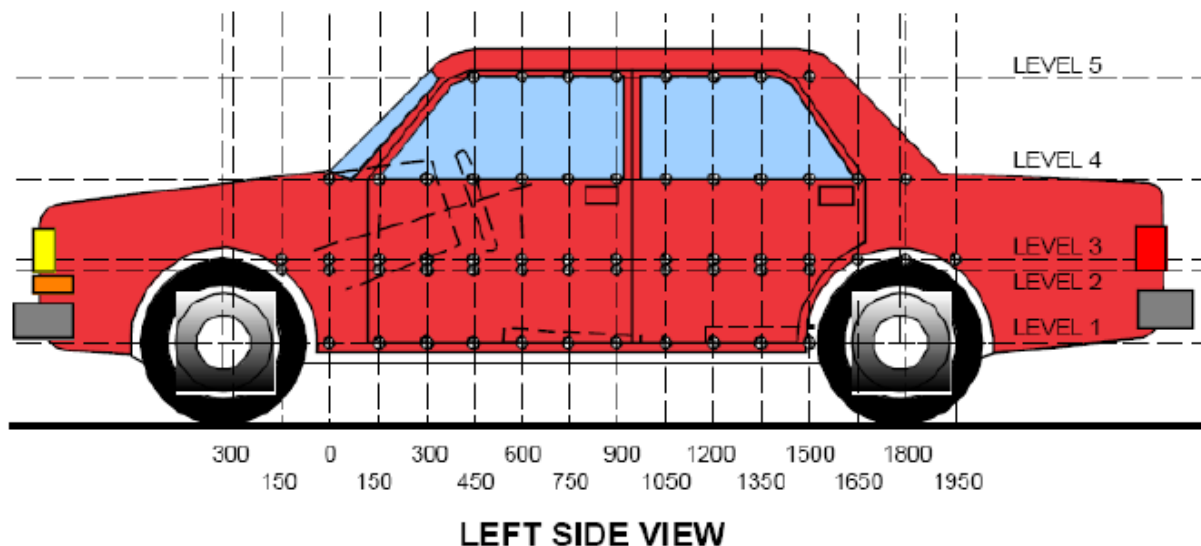
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3070	3075	5
B	Front Axle to FSOV	876	874	-2
C	Rear Axle to RSOV	1136	1130	-6
D	Total Length at Centerline	5081	5079	-2
E	Front Bumper Thickness	109	109	0
F	Front Bumper Bottom to Ground	523	512	-11
G	Sill Height at Front Wheel Well	276	269	-7
H	Sill Height at Front Door Leading Edge	275	271	-4
I	Sill Height at B Pillar	289	272	-17
J1	Sill Height at Rear Wheel Well	300	300	0
J2	Pinch Weld Height at Rear Wheel Well	271	275	4
K	Sill Height Aft of Rear Wheel Well	330	343	13
L	Rear Bumper Thickness	232	232	0
M	Rear Bumper Bottom to Ground	352	372	20
N	Sill Height to Window Bottom of Front Window Sill	746	705	-41
O	Front Door Leading Edge to Impact CL	820	811	-9
P	Rear Door Trailing Edge to Impact CL	1108	1054	-54
Q	Front Window Opening	435	429	-6
R	Right Side Length	5030	5030	0
S	Left Side Length	5027	5024	-3
T	Maximum Vehicle Width	1821	1691	-130
U	Front Wheel Track Width	1614	1612	-2
V	Rear Wheel Track Width	1596	1601	5

DATA SHEET NO. 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2022 Ford Maverick XL Truck
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20220211
 Test Date: 6/23/2022



MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Units	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	mm	422	44	150
2	Driver Hip Point	mm	706	150	1200
3	Mid-Door	mm	771	170	1500
4	Window Sill	mm	1104	53	1200
5	Window Top	mm	1614	3	1800

*window top level bent outward from original position

NOTE: The above measurements should be taken along the vertical impact reference line. Vehicle measurements forward of the vertical impact reference line are negative.

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

Test Vehicle: 2022 Ford Maverick XL Truck
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20220211
 Test Date: 6/23/2022

EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

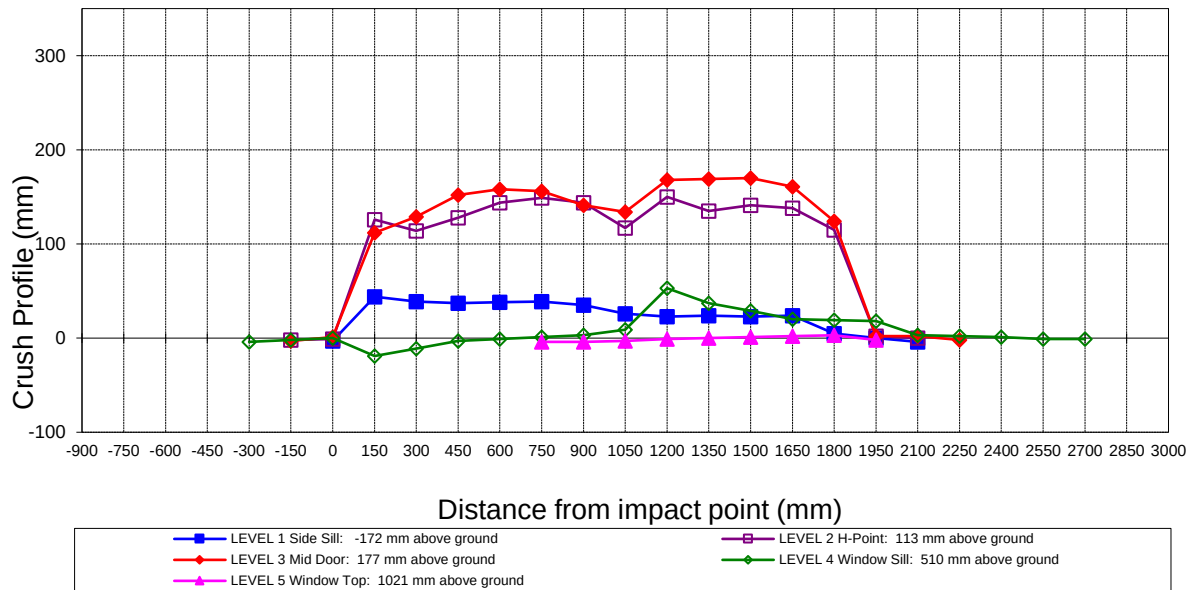
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300				830					834					-4	
-150		912	913	839			914	916	841			-2	-3	-2	
0	890	912	912	842		893	913	910	842		-3	-1	2	0	
150	870	907	906	834		826	781	794	853		44	126	112	-19	
300	859	906	907	842		820	792	778	853		39	114	129	-11	
450	854	907	908	848		817	779	756	851		37	128	152	-3	
600	853	908	909	861		815	764	751	862		38	144	158	-1	
750	853	908	910	865	681	814	759	754	864	685	39	149	156	1	-4
900	851	909	911	868	684	816	765	770	865	688	35	144	141	3	-4
1050	849	909	911	870	687	823	792	777	861	690	26	117	134	9	-3
1200	849	909	911	872	687	826	759	743	819	688	23	150	168	53	-1
1350	848	908	909	872	687	824	773	740	835	687	24	135	169	37	0
1500	846	907	908	874	687	823	766	738	845	686	23	141	170	29	1
1650	844	905	907	874	688	820	767	746	854	686	24	138	161	20	2
1800	852	904	906	876	689	847	789	782	857	686	5	115	124	19	3
1950	866	906	907	873	686	866	904	905	855	688	0	2	2	18	-2
2100	877	915	915	871		881	915	913	868		-4	0	2	3	
2250			921	869				923	867				-2	2	
2400				867					866					1	
2550				865					866					-1	
2700				862					863					-1	
2850															
3000															

NOTE: Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition.
 Vehicle measurements forward of the vertical impact reference line are negative.
 The crush profile grid is established prior to test based on an estimated impact point.

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

Test Vehicle: 2022 Ford Maverick XL Truck
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20220211
 Test Date: 6/23/2022



Vehicle Exterior Crush Measurements - Visual Representation

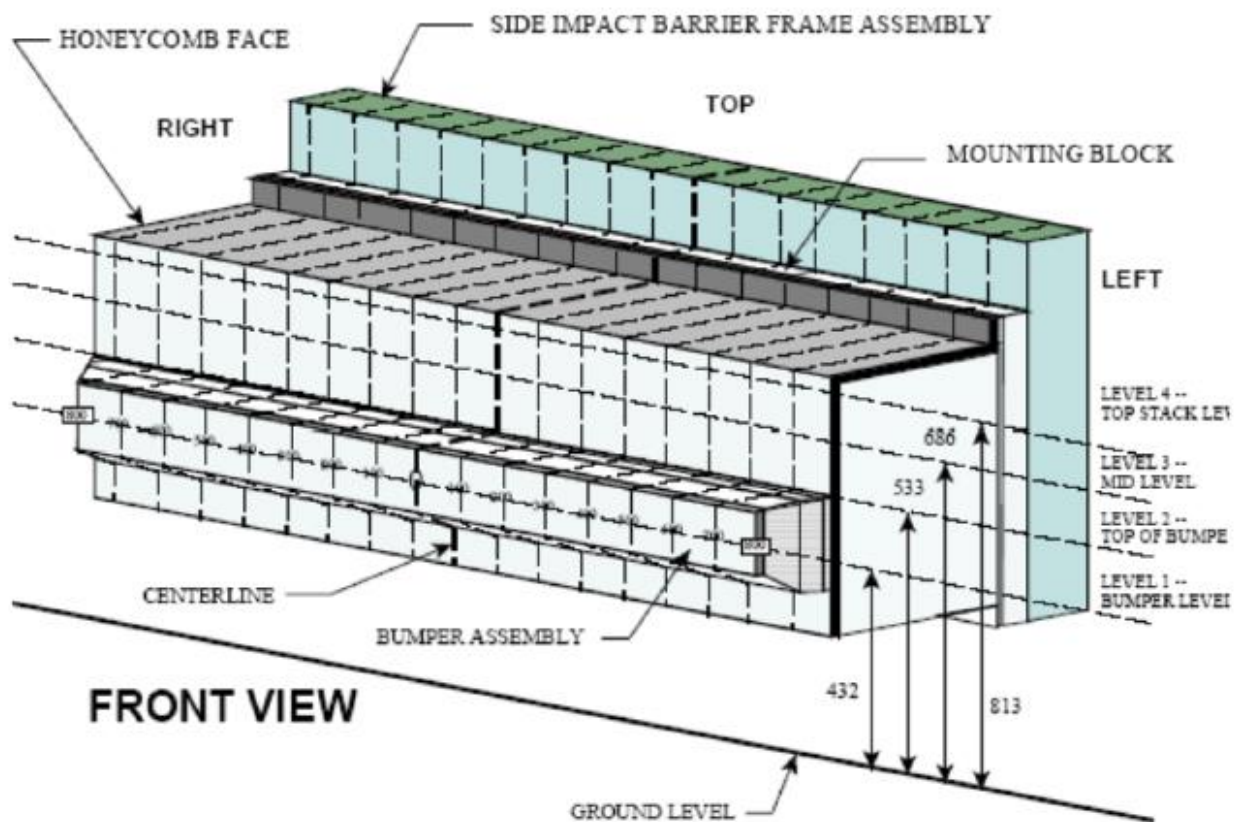
DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2022 Ford Maverick XL Truck

NHTSA No.: M20220211

Test Program: NCAP Side MDB Impact Test

Test Date: 6/23/2022



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	257	251	245	241	237	233	231	225	222	218	214	210	206	202	199	195	199
2	187	177	170	164	158	155	144	135	139	136	130	125	123	119	116	112	111
3	123	107	99	96	80	70	85	108	82	55	49	49	45	46	54	73	93
4	103	84	69	58	48	50	59	88	105	69	63	66	72	79	80	92	118

DATA SHEET NO. 13 **VEHICLE AND MDB DAMAGE PROFILE DISTANCES**

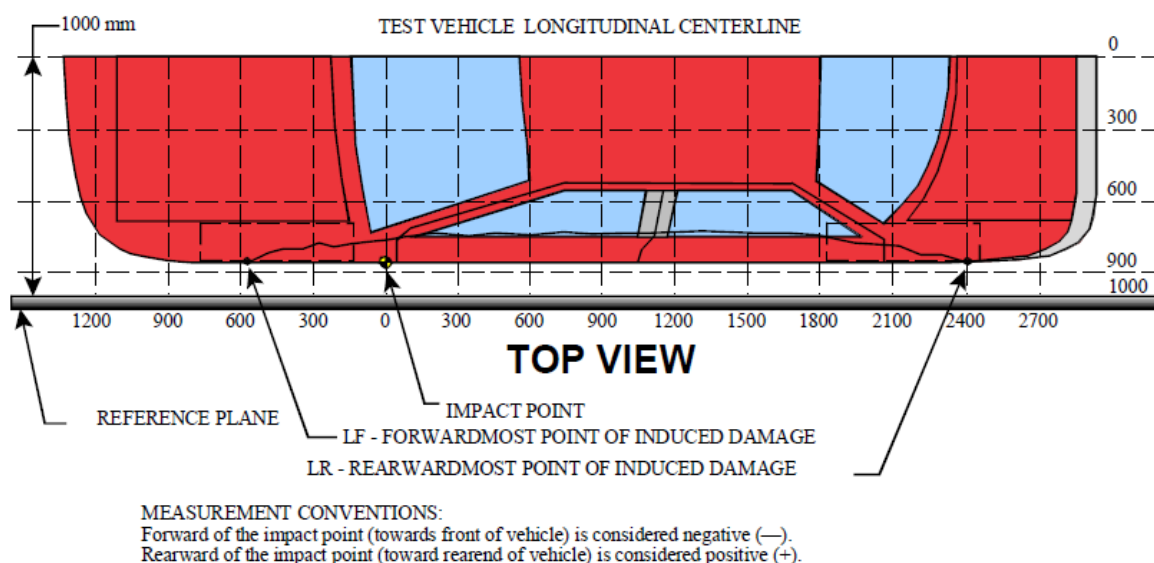
Test Vehicle: 2022 Ford Maverick XL Truck

NHTSA No.: M20220211

Test Program: NCAP Side MDB Impact Test

Test Date: 6/23/2022

For guidance regarding damage profile distance measurements, please refer to the latest version of the *NHTSA Test Reference Guide, Volume 1: Vehicle Tests*.



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	-150	3	84	87	-3
2	330	3	226	93	133
3	810	3	240	90	150
4	1290	3	259	90	169
5	1770	3	225	94	131
6	2250	3	77	79	-2

MDB DAMAGE PROFILE DISTANCES

DPD	Distance From Center of MDB	Level	Post-Test (mm)*
1	800 mm left of center	1	199
2	480 mm left of center	1	203
3	160 mm left of center	1	216
4	160 mm right of center	1	229
5	480 mm right of center	1	240
6	800 mm right of center	1	257

DATA SHEET NO. 14
FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: <u>2022 Ford Maverick XL Truck</u>	NHTSA No.: <u>M20220211</u>
Test Program: <u>NCAP Side MDB Impact Test</u>	Test Date: <u>6/23/2022</u>
Test Time: <u>1:00 PM</u>	Temperature: <u>21°C</u>

- A. From impact until vehicle motion ceases: 0 oz.
(Maximum allowable is 1 oz.)
- B. For the 5-minute period after motion ceases: 0 oz.
(Maximum allowable is 5 oz.)
- C. For the following 25 minutes: 0 oz.
(Maximum allowable is 1 oz./minute)
- D. Spillage Details: No Spillage Occurred

FMVSS NO. 301 STATIC ROLLOVER DATA



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	70	300	370
90° to 180°	69	300	369
180° to 270°	63	300	363
270° to 360°	68	300	368

FMVSS NO. 301 ROLLOVER SPILLAGE TABLE

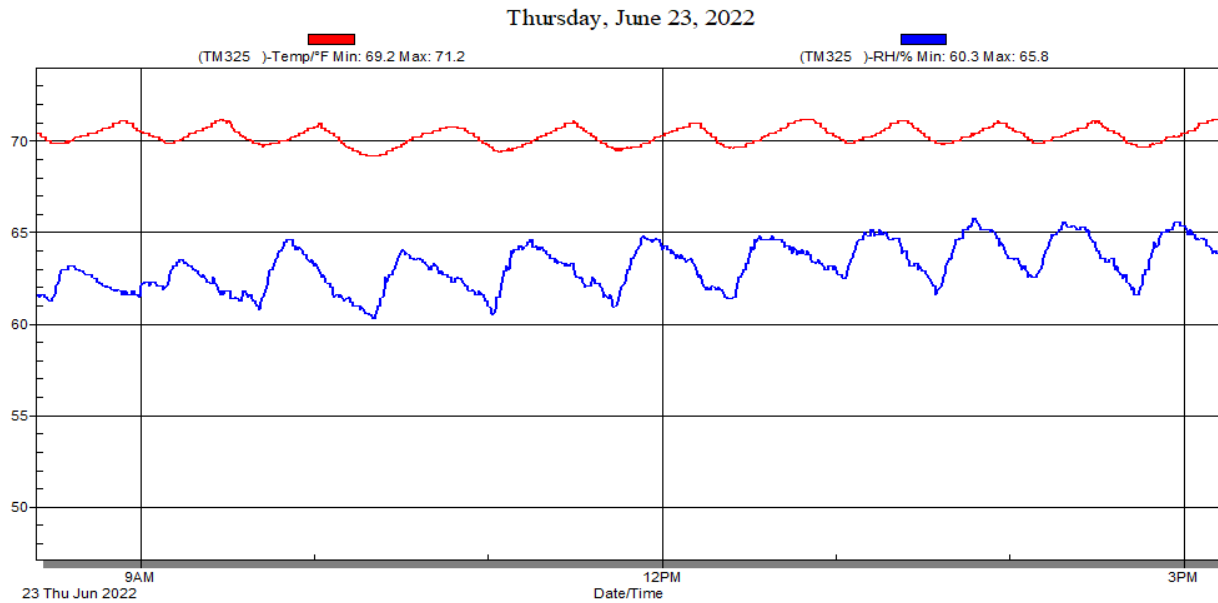
Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	0	0	0	
90° to 180°	0	0	0	
180° to 270°	0	0	0	
270° to 360°	0	0	0	

ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° to 90°	None
90° to 180°	None
180° to 270°	None
270° to 360°	None

DATA SHEET NO. 15
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle:	<u>2022 Ford Maverick XL Truck</u>	NHTSA No.:	<u>M20220211</u>
Test Program:	<u>NCAP Side MDB Impact Test</u>	Test Date:	<u>6/23/2022</u>



Temperature and Humidity Stabilization Chart/Data for Dummies and Test Vehicle

APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

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3	Pre-Test Frontal View of Test Vehicle	A-6
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Figure A-1: As-Delivered Right Front 3/4 View of Test Vehicle



Figure A-2: As-Delivered Left Rear 3/4 View of Test Vehicle



Figure A-3: Pre-Test Frontal View of Test Vehicle

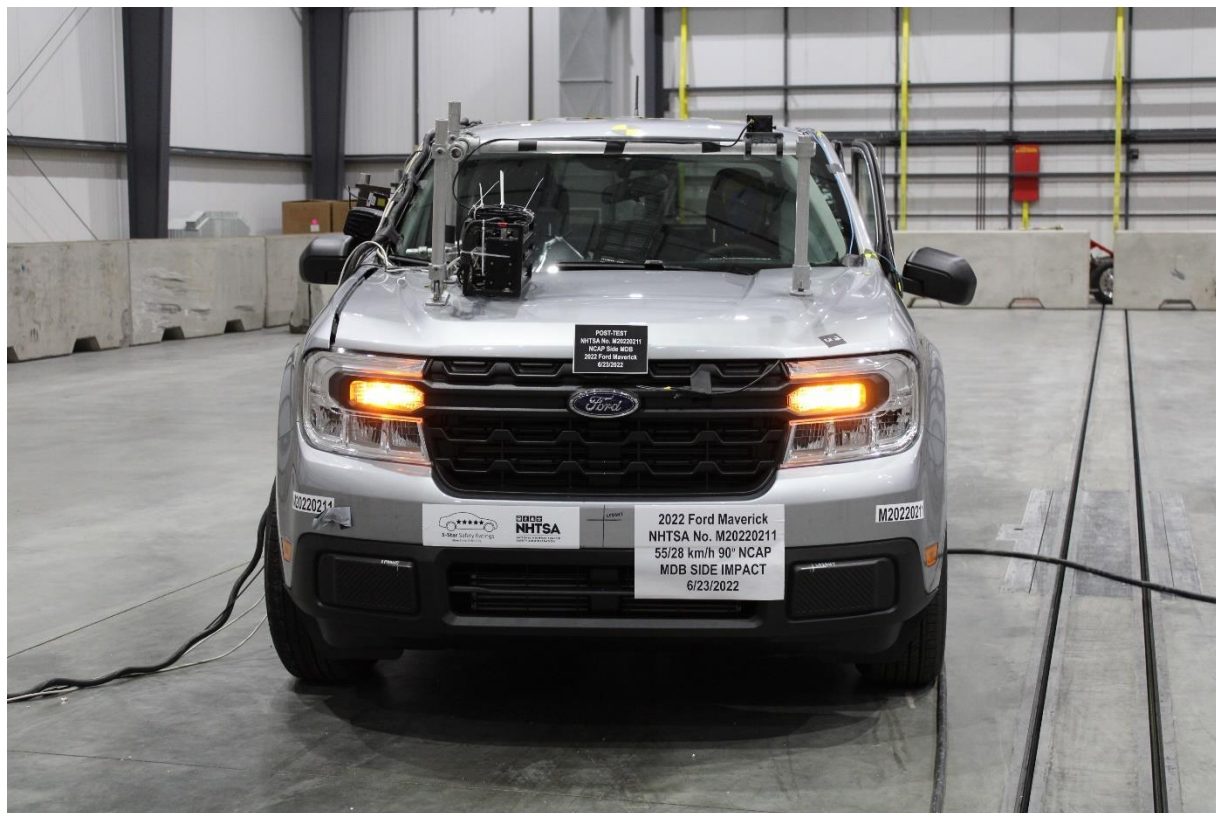


Figure A-4: Post-Test Frontal View of Test Vehicle



Figure A-5: Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle



Figure A-6: Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle



Figure A-7: Pre-Test Left Side View of Test Vehicle



Figure A-8: Post-Test Left Side View of Test Vehicle



Figure A-9: Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



Figure A-10: Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



Figure A-11: Pre-Test Rear View of Test Vehicle



Figure A-12: Post-Test Rear Side View of Test Vehicle

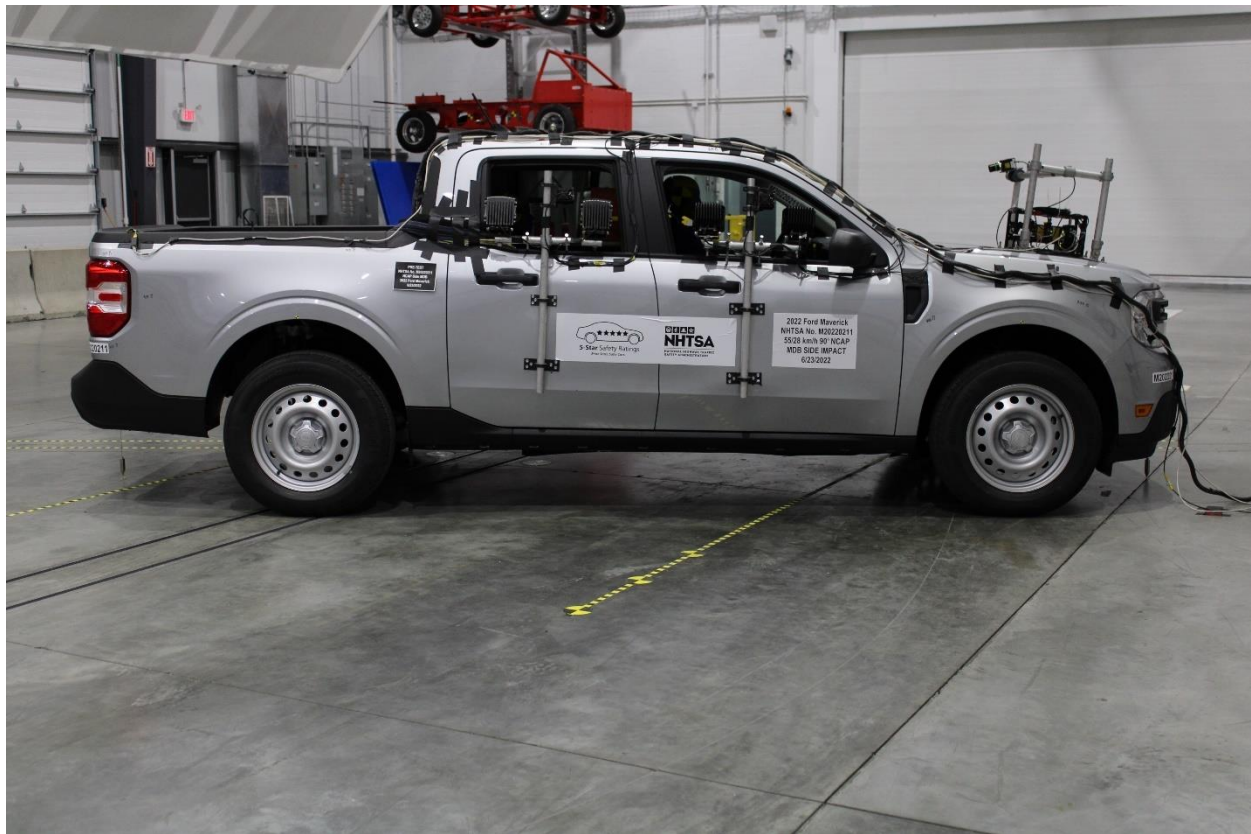


Figure A-13: Pre-Test Right Side View of Test Vehicle

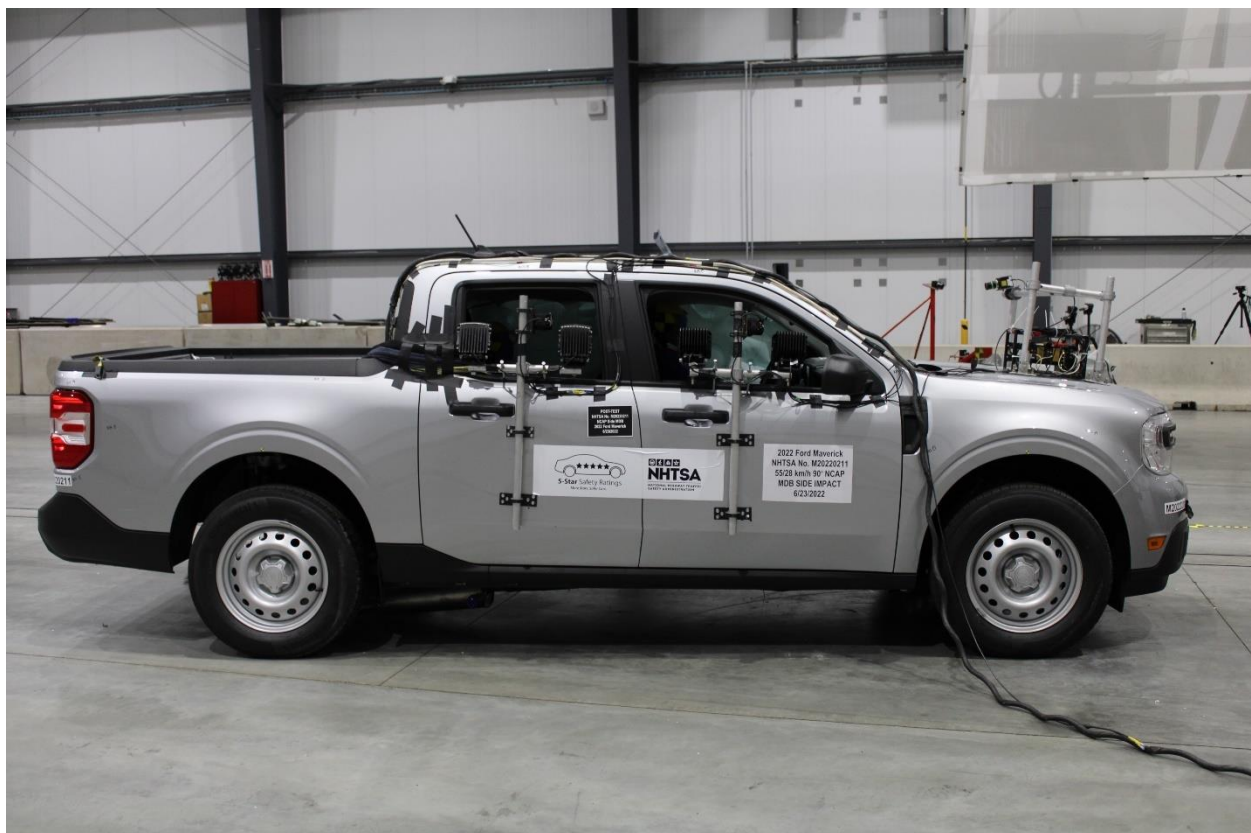


Figure A-14: Post-Test Right Side View of Test Vehicle

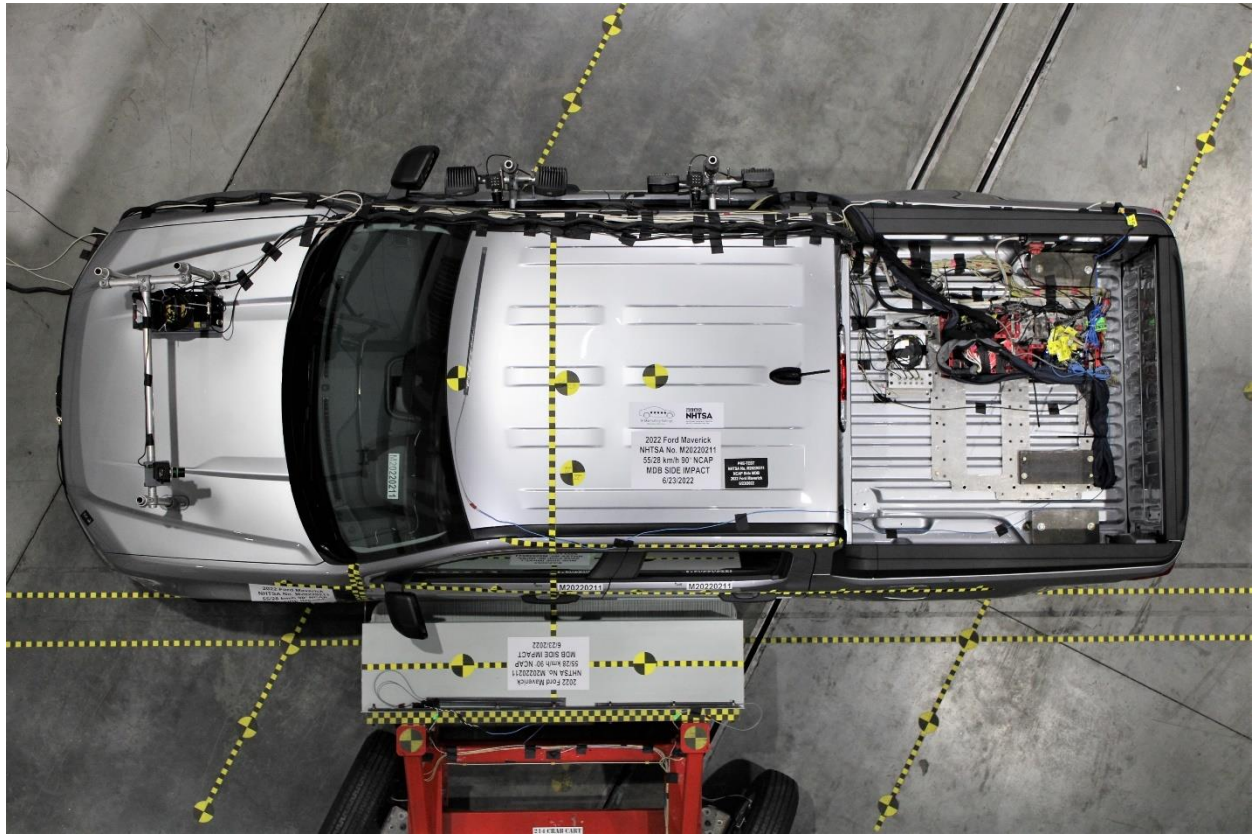


Figure A-15: Pre-Test Overhead View of the Test Area

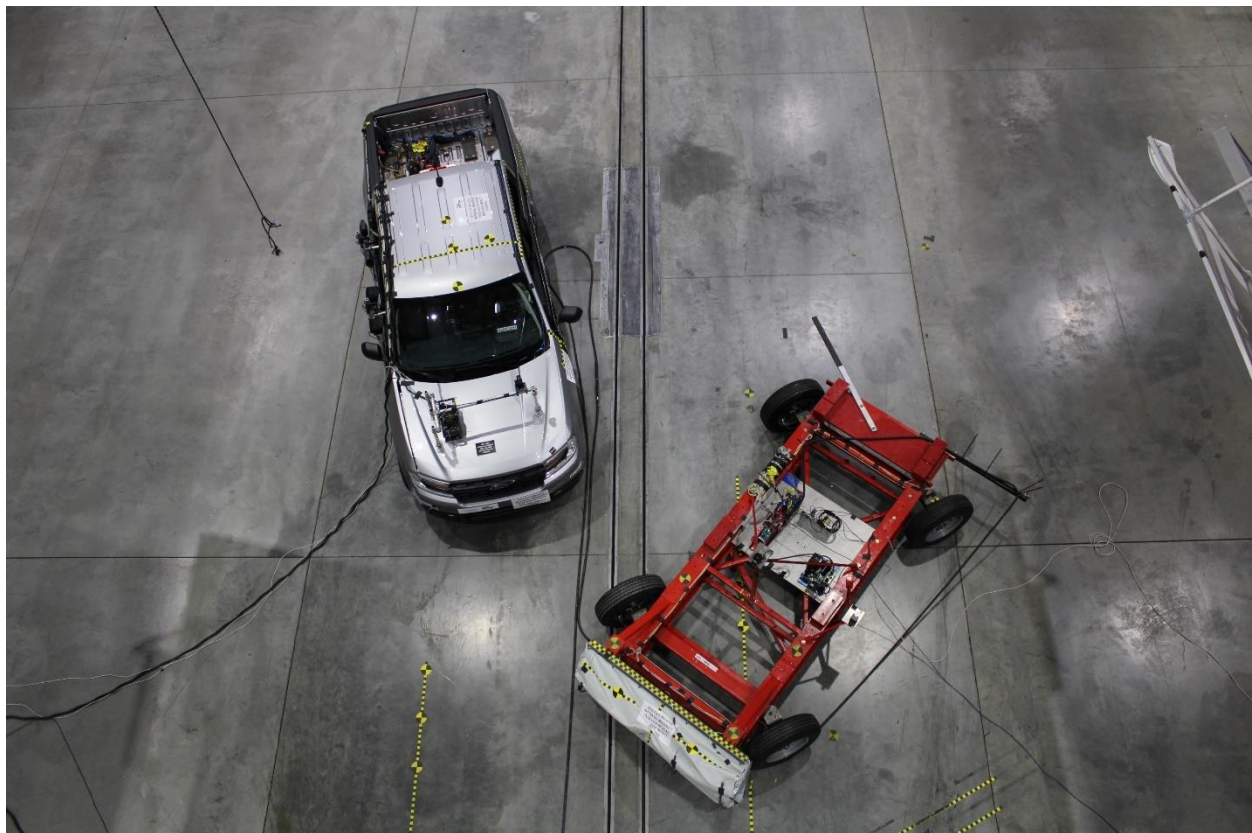


Figure A-16: Post-Test Overhead View of Test Area



Figure A-17: Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle



Figure A-18: Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle



Figure A-19: Pre-Test Close-up View of Impact Point Target



Figure A-20: Post-Test Close-up View of Impact Point Target



Figure A-21: Pre-Test Left Front Door Latch Close-Up

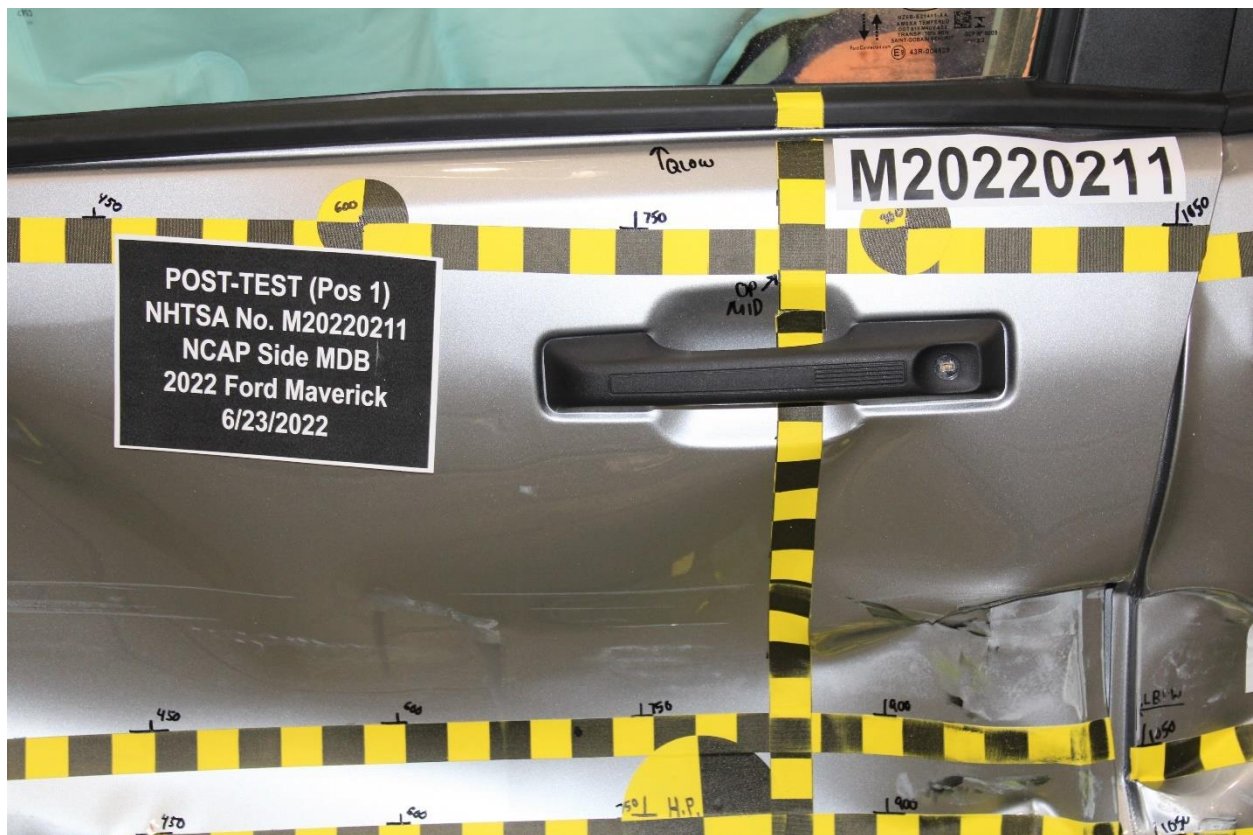


Figure A-22: Post-Test Left Front Door Latch Close-Up



Figure A-23: Pre-Test Left Rear Door Latch Close-Up



Figure A-24: Post-Test Left Rear Door Latch Close-Up



Figure A-25: Pre-Test Front Close-up View of Driver Dummy



Figure A-26: Post-Test Front Close-up View of Driver Dummy



Figure A-27: Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking



Figure A-28: Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View



Figure A-29: Post-Test Left Side View of Driver Dummy Shoulder and Door Top View



Figure A-30: Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



Figure A-31: Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



Figure A-32: Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning



Figure A-33: Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan



Figure A-34: Pre-Test Placement of Driver Dummy's Feet



Figure A-35: Pre-Test View of Belt Anchorage for Driver Dummy



Figure A-36: Pre-Test Left Side View of Steering Wheel



Figure A-37: View of Disengaged Parking Brake



Figure A-38: Pre-Test View of Parking Brake

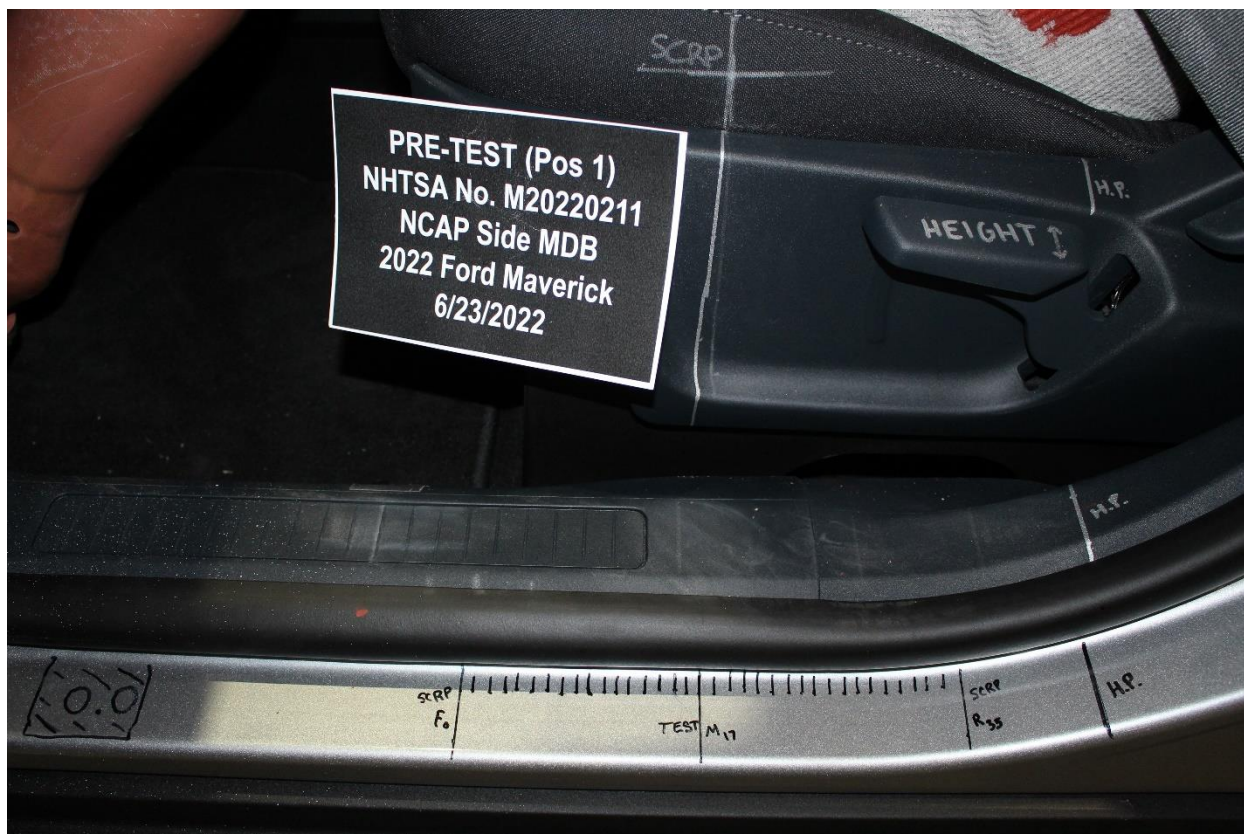


Figure A-39: Pre-test Close-Up Left Side View of Driver Seat Track



Figure A-40: Pre-Test Close-Up Left Side View of Driver Seat Back



Figure A-41: Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Figure A-42: Pre-Test Driver Dummy and Door Clearance View



Figure A-43: Post-Test Driver Dummy and Door Clearance View



Figure A-44: Pre-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment



Figure A-45: Post-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment



Figure A-46: Pre-Test Driver Inner Door Panel View



Figure A-47: Post-Test Driver Inner Door Panel View Showing Driver Dummy Contact Locations



Figure A-48: Post-Test Driver Dummy Close-Up Head Contact with Vehicle View



Figure A-49: Post-Test Driver Dummy Close-Up Head Contact with Side Air bag View

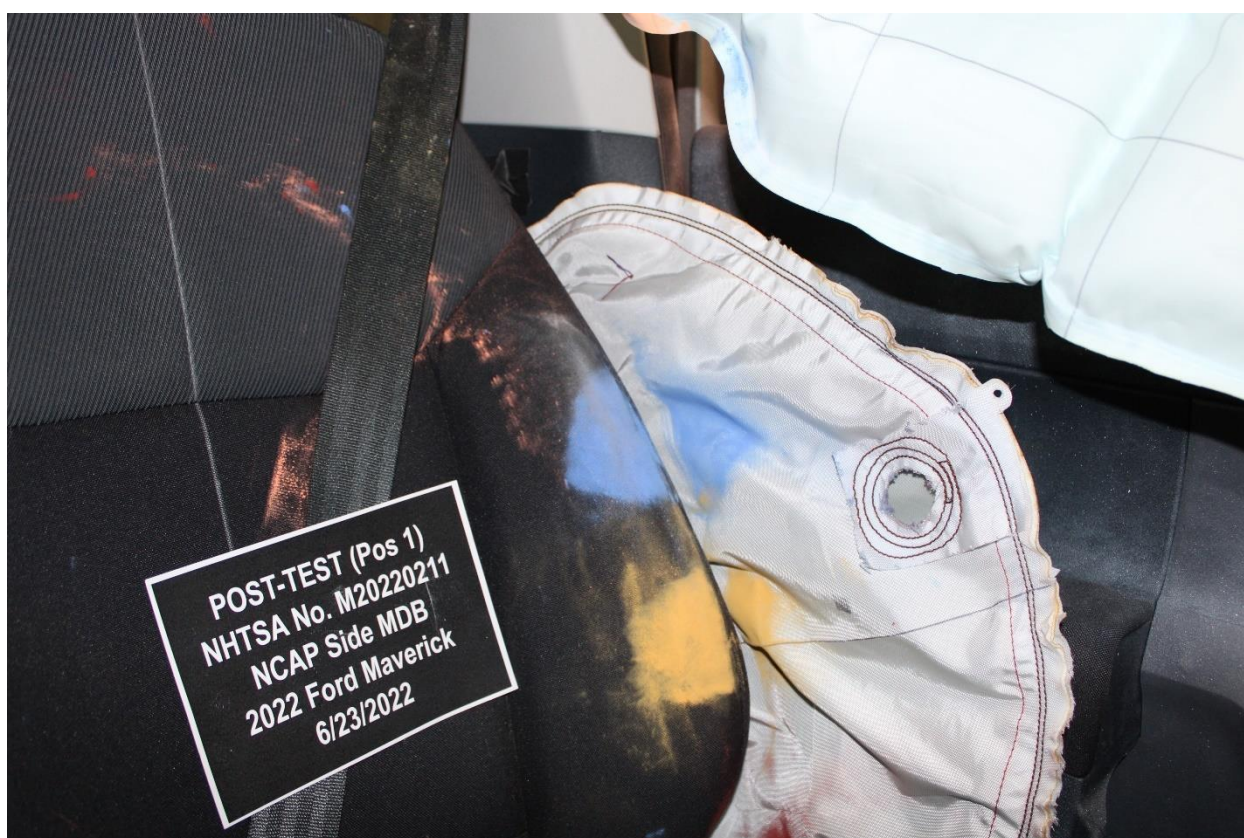


Figure A-50: Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View

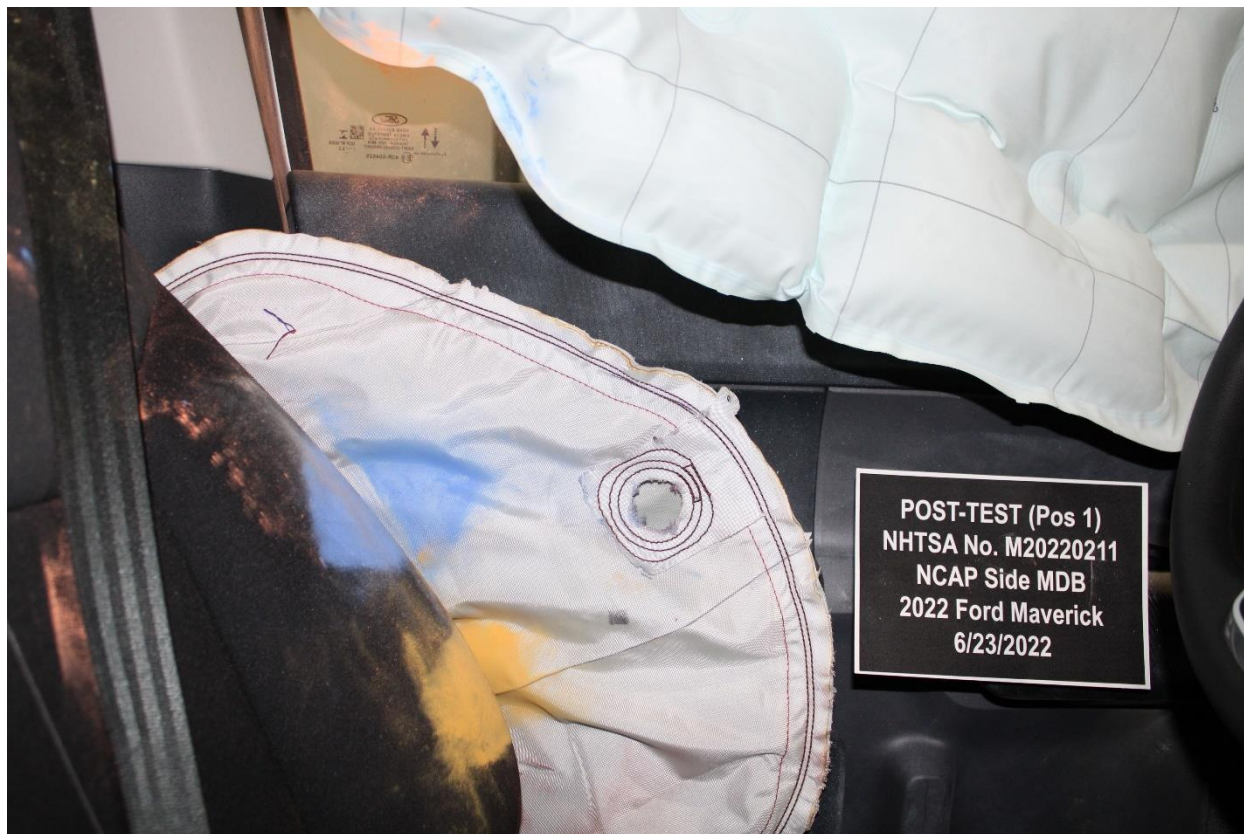


Figure A-51: Post-Test Driver Dummy Close-Up Torso Contact with Side Air bag View



Figure A-52: Post-Test Driver Dummy Close-Up Pelvis Contact View



Figure A-53: Post-Test Driver Dummy Close-Up Pelvis Contact with Side Air bag View



Figure A-54: Post-Test Driver Dummy Close-Up Knee Contact View



Figure A-55: Pre-Test Left Side View of Rear Passenger Dummy Showing Belt and Chalking



Figure A-56: Pre-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View



Figure A-57: Post-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View

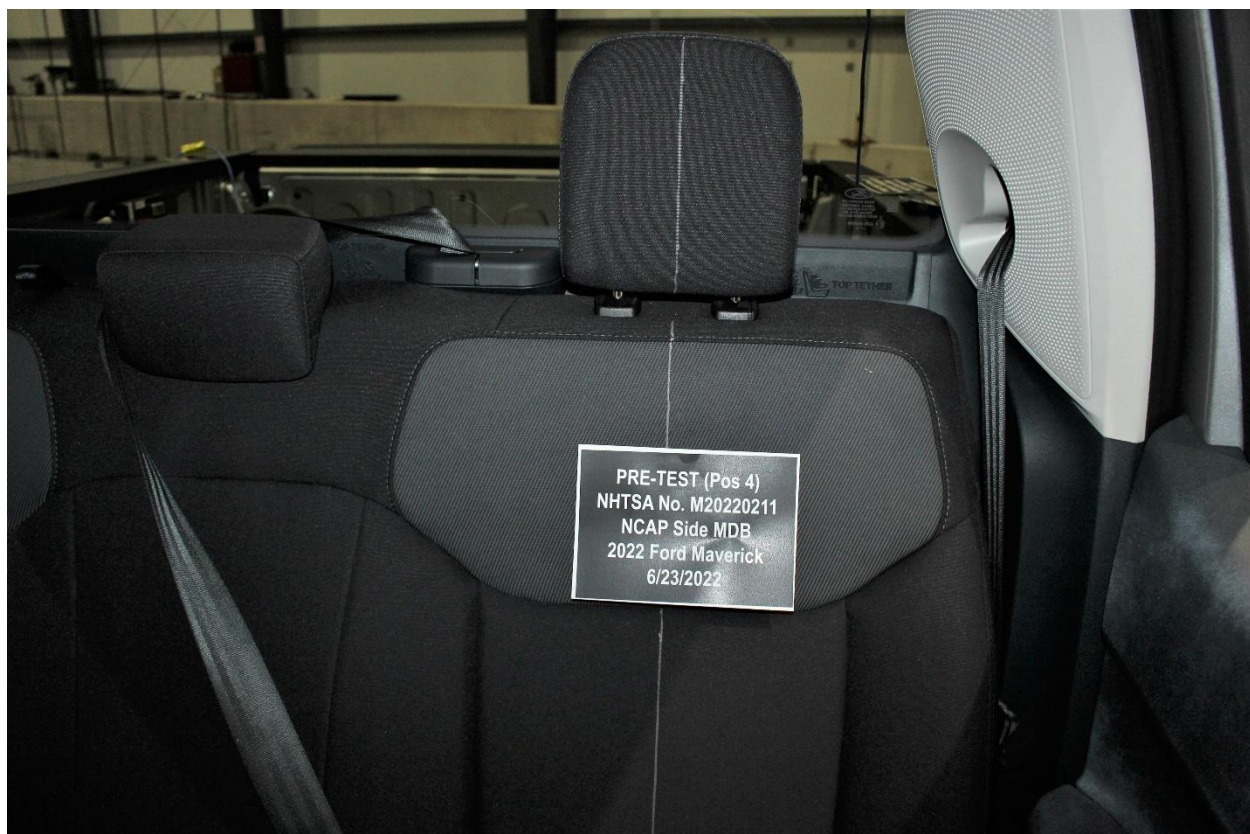


Figure A-58: Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning

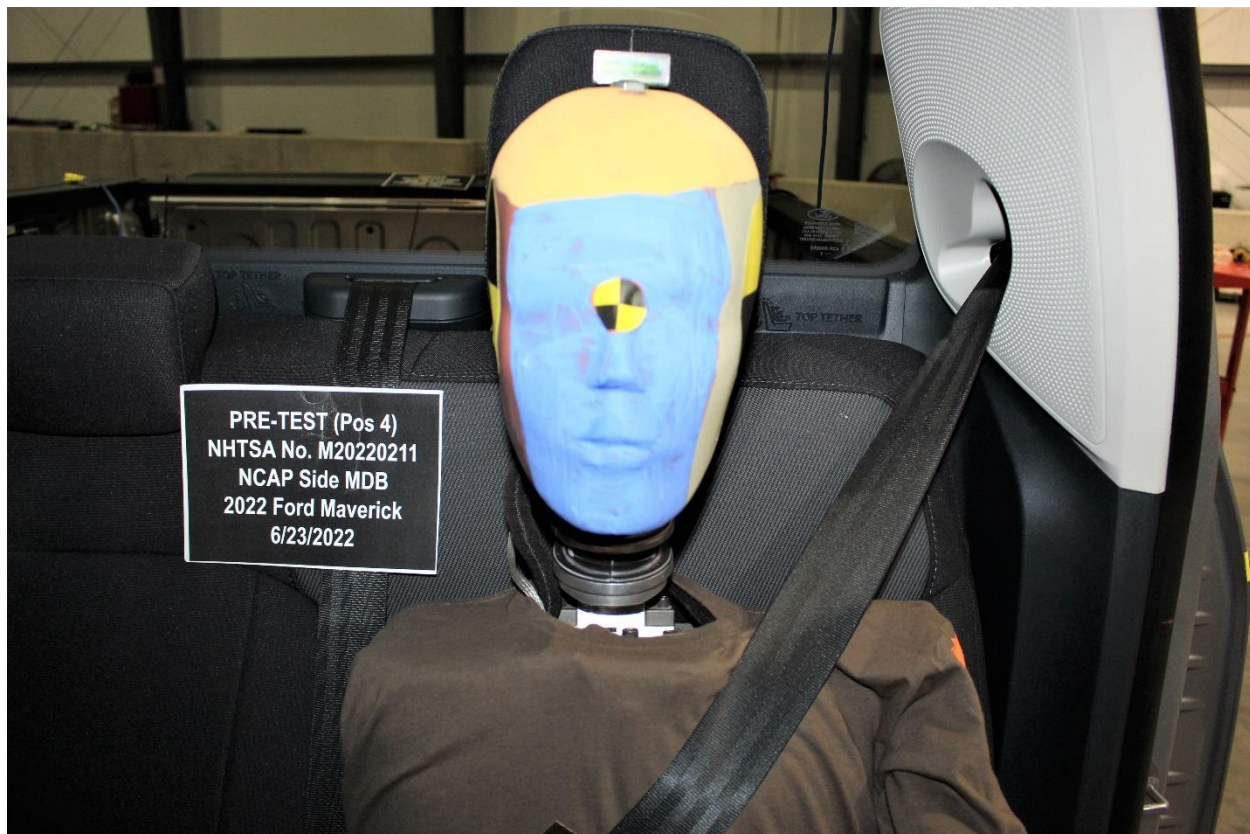


Figure A-59: Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint



Figure A-60: Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning

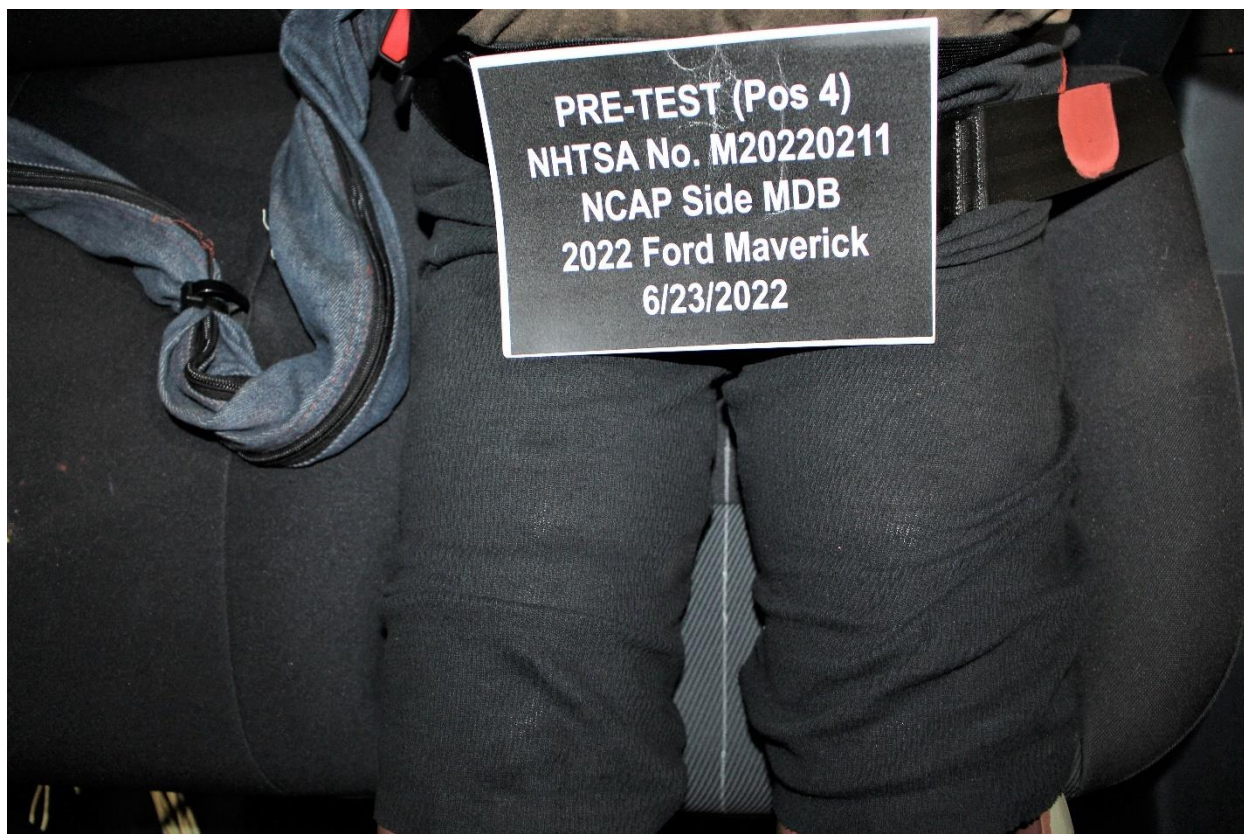


Figure A-61: Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



Figure A-62: Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck Bracket



Figure A-63: Pre-Test View of Rear Passenger Dummy's Head Showing Dummy's Head is Level



Figure A-64: Pre-Test Placement of Rear Passenger Dummy's Feet



Figure A-65: Pre-Test View of Belt Anchorage for Rear Passenger Dummy



Figure A-66: Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



Figure A-67: Pre-Test Close-Up Left Side View of Rear Passenger Seat Back



Figure A-68: Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint



Figure A-69: Pre-Test Rear Passenger Dummy and Door Clearance View



Figure A-70: Post-Test Rear Passenger Dummy and Door Clearance View



Figure A-71: Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



Figure A-72: Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



Figure A-73: Pre-Test Rear Passenger Inner Door Panel View



Figure A-74: Post-Test Rear Passenger Inner Door Panel View Showing Rear Passenger Dummy Contact Locations



Figure A-75: Post-Test Rear Passenger Dummy Close-Up Head Contact with Vehicle View



Figure A-76: Post-Test Rear Passenger Dummy Close-Up Head Contact with Side Air bag View



Figure A-77: Post-Test Rear Passenger Dummy Close-Up Torso Contact with Vehicle Interior View

Photo Not Applicable

Figure A-78: Post-Test Rear Passenger Dummy Close-Up Torso Contact with Side Air bag View



Figure A-79: Post-Test Rear Passenger Dummy Close-Up Pelvis Contact View

Photo Not Applicable

Figure A-80: Post-Test Rear Passenger Dummy Close-Up Pelvis Contact with Side Air bag View



Figure A-81: Post-Test Rear Passenger Dummy Close-Up Knee Contact View



Figure A-82: Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



Figure A-83: Post-Test View of Fuel Filler Cap or Fuel Filler Neck



Figure A-84: Pre-Test Front View of MDB Impactor Face



Figure A-85: Post-Test Front View of MDB Impactor Face



Figure A-86: Pre-Test Top View of MDB Impactor Face



Figure A-87: Post-Test Top View of MDB Impactor Face



Figure A-88: Pre-Test Left Side View of MDB Impactor Face



Figure A-89: Post-Test Left Side View of MDB Impactor Face

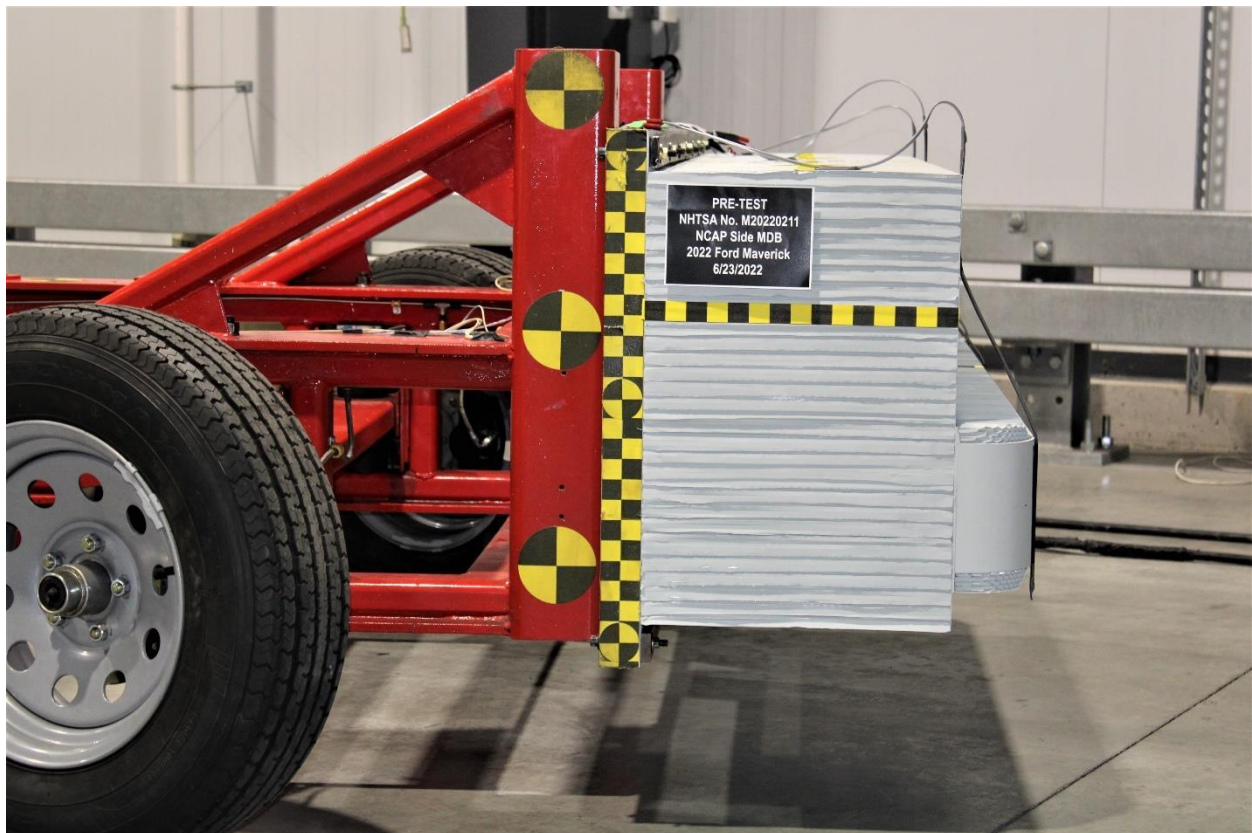


Figure A-90: Pre-Test Right Side View of MDB Impactor Face

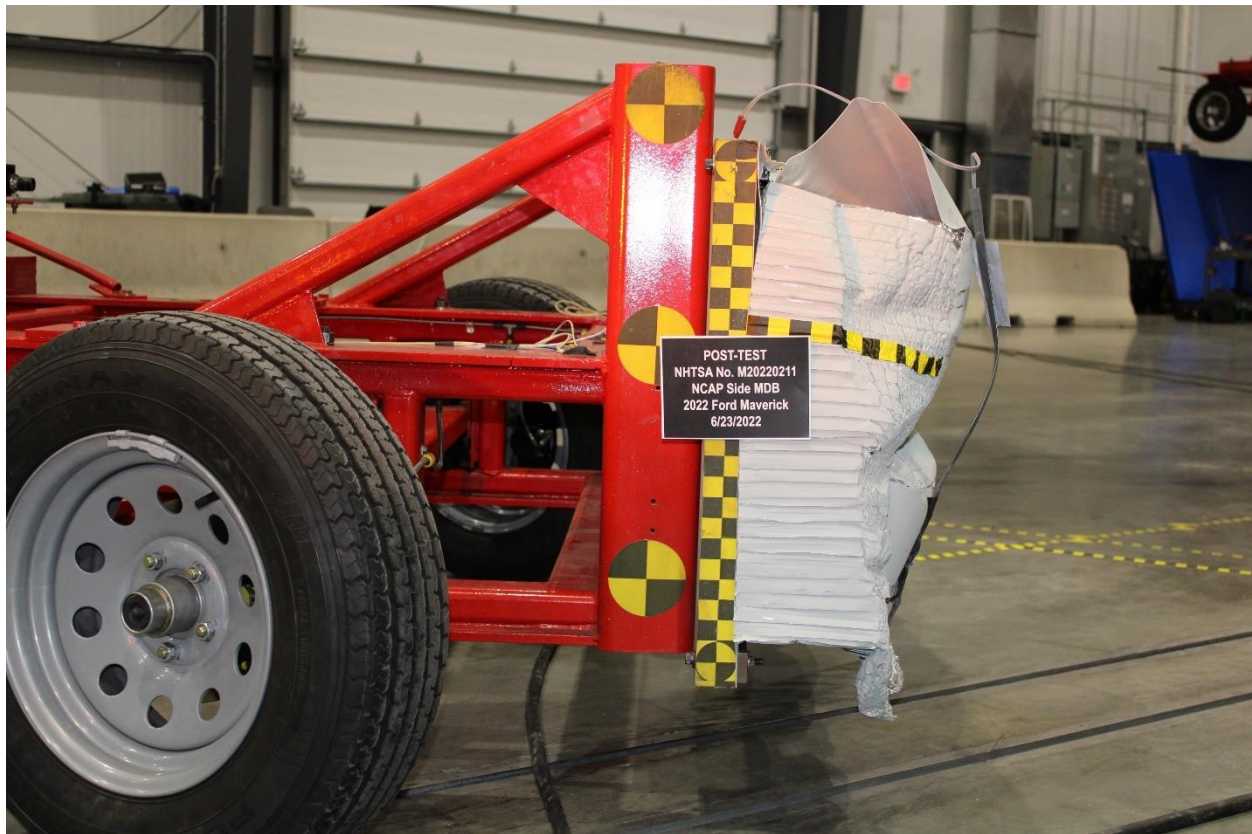


Figure A-91: Post-Test Right Side View of MDB Impactor Face

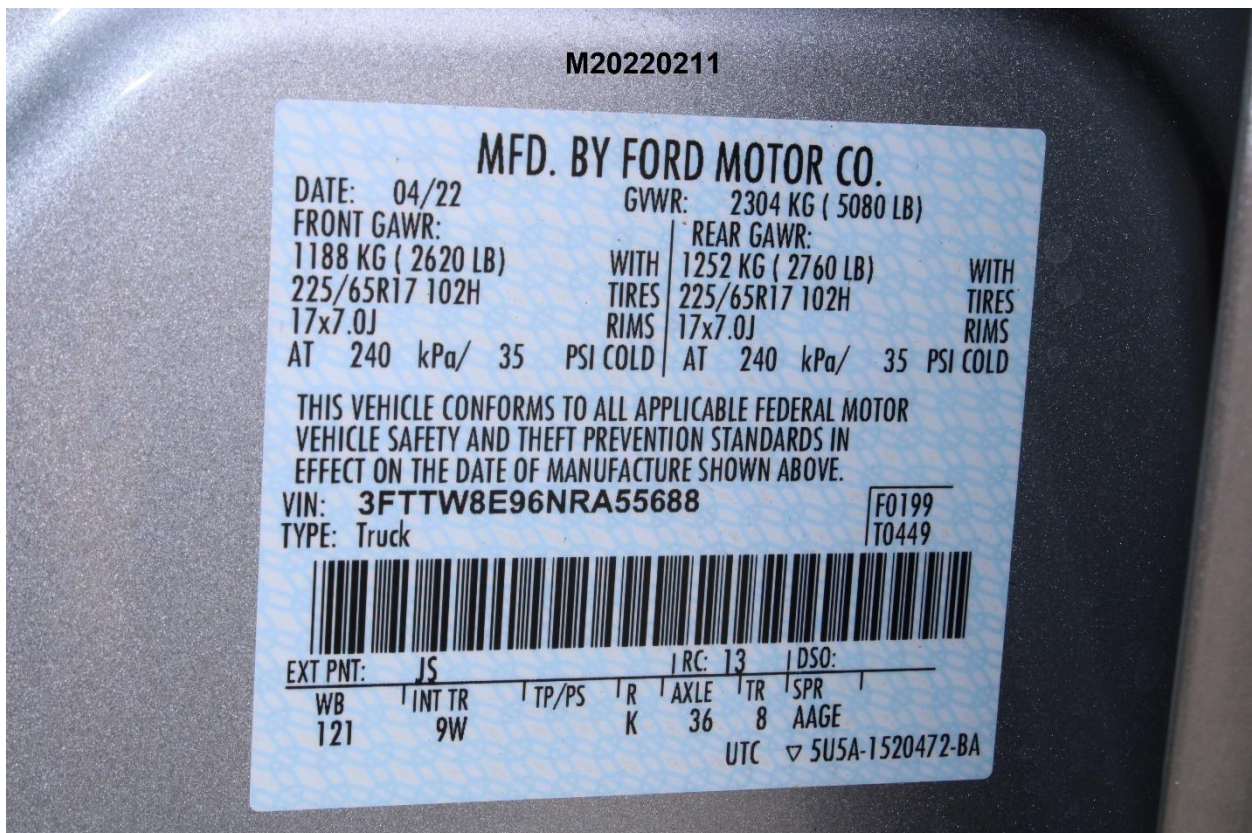


Figure A-92: Close-Up View of Vehicle's Certification Label



Figure A-93: Close-Up View of Vehicle's Tire Information Placard or Label

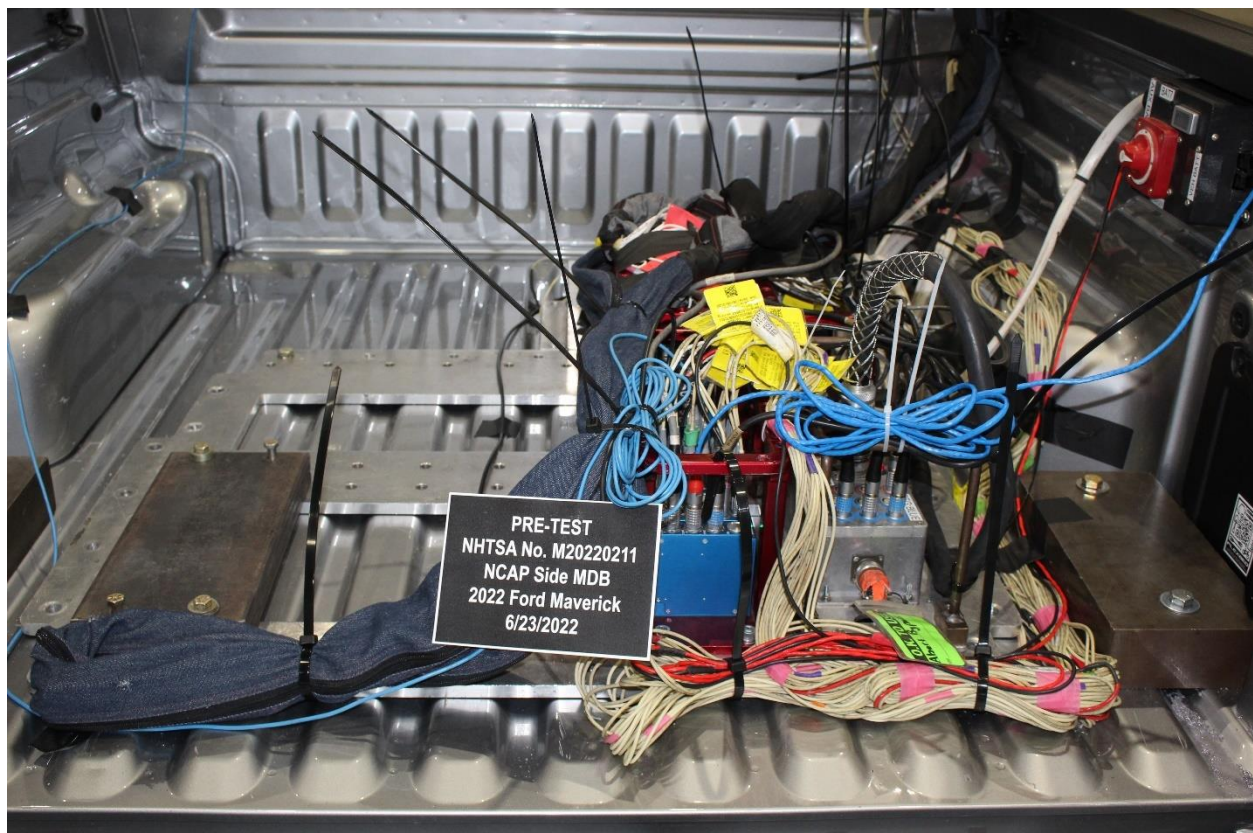


Figure A-94: Pre-Test Ballast View



Figure A-95: Post-Test Primary and Redundant Speed Trap Read-Out

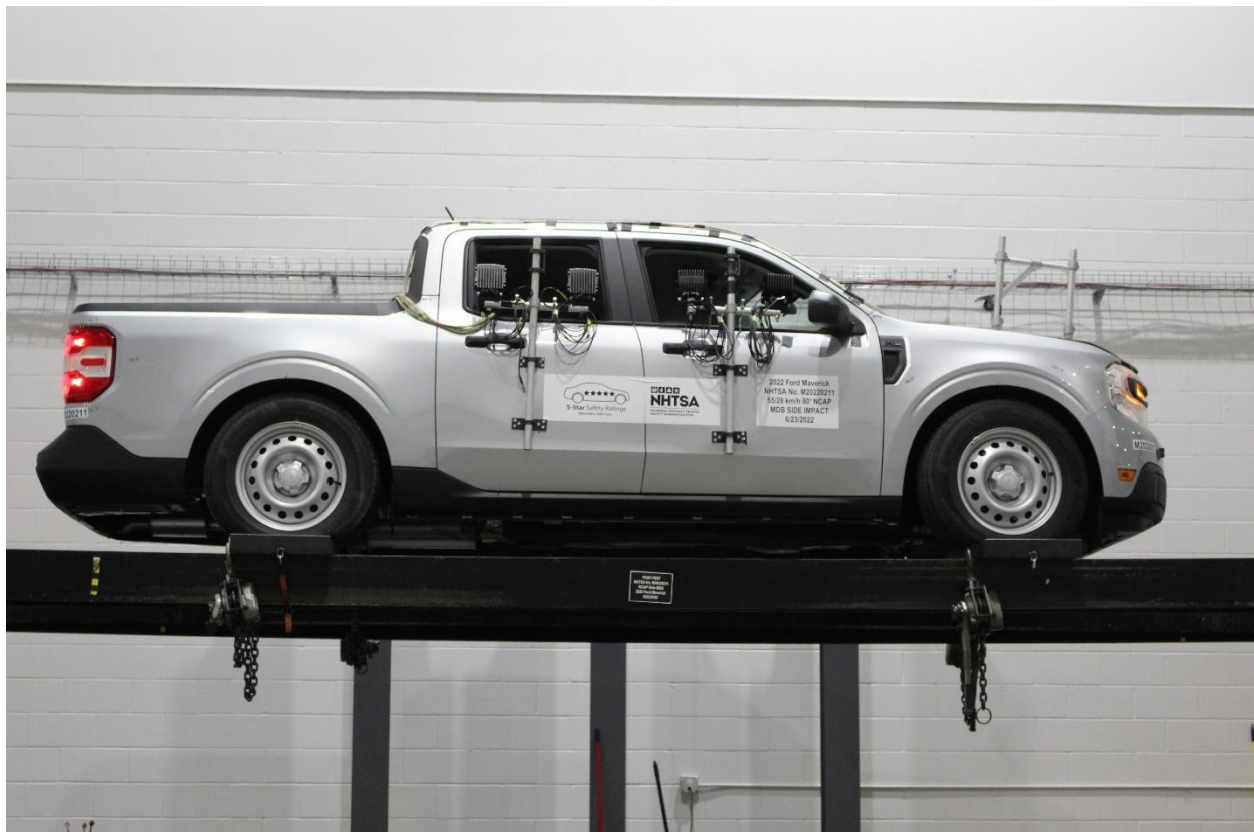


Figure A-96: FMVSS No. 301 Static Rollover 0 Degrees



Figure A-97: FMVSS No. 301 Static Rollover 90 Degrees

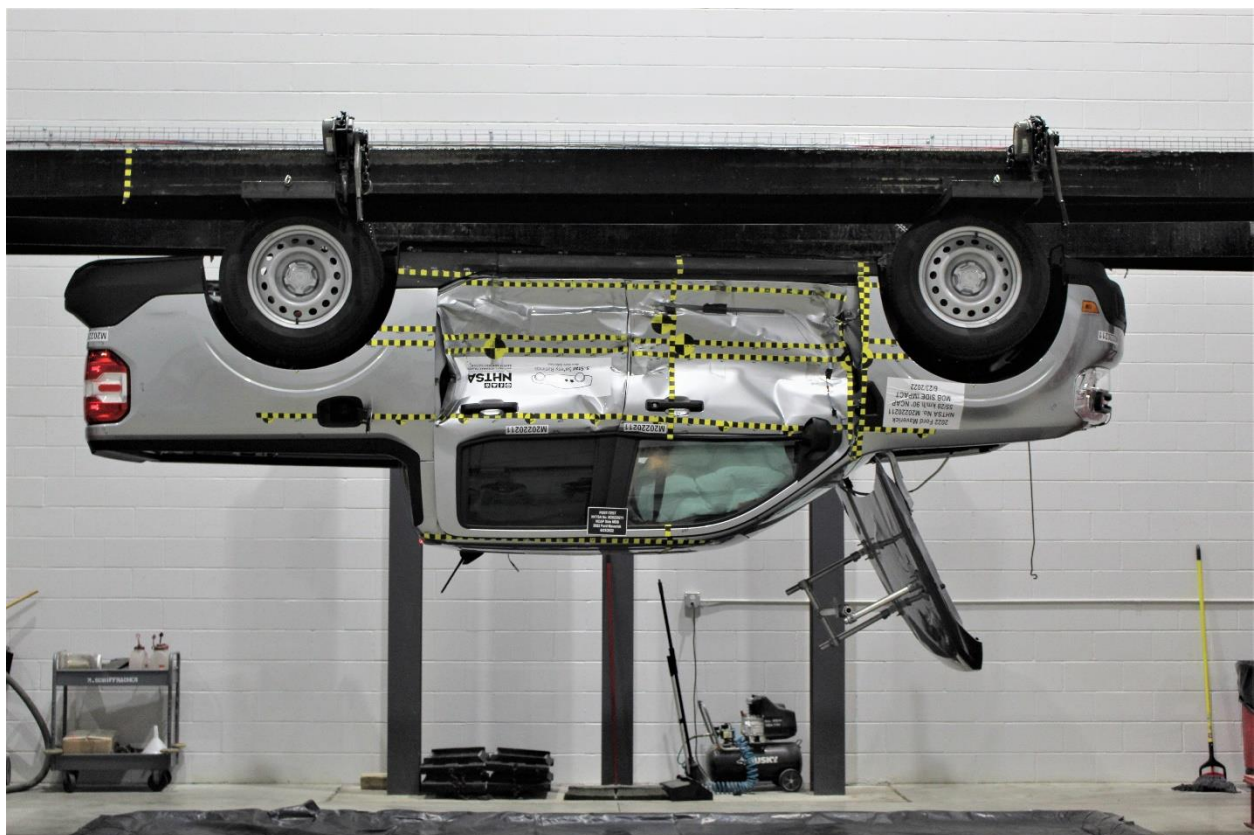


Figure A-98: FMVSS No. 301 Static Rollover 180 Degrees



Figure A-99: FMVSS No. 301 Static Rollover 270 Degrees

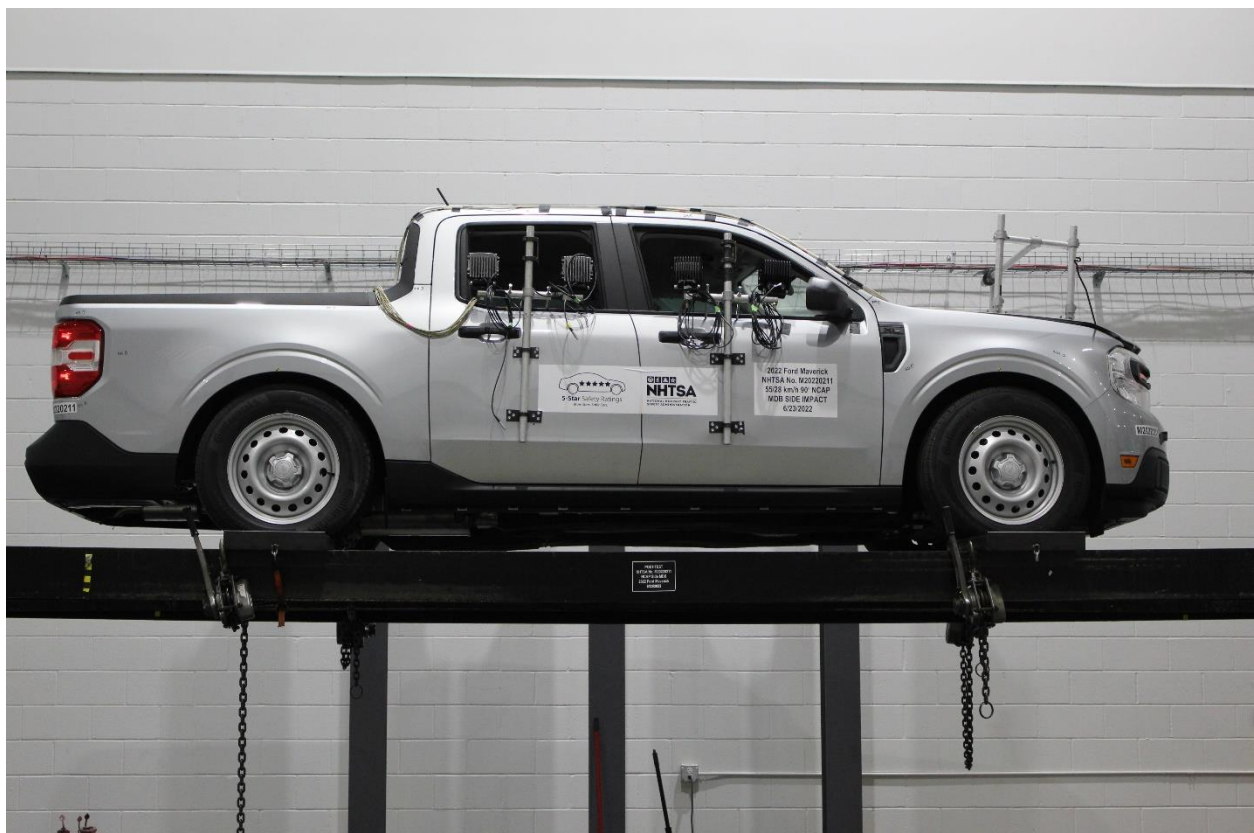


Figure A-100: FMVSS No. 301 Static Rollover 360 Degrees



Figure A-101: Impact Event

VEHICLE DESCRIPTION

Go Further
ford.com

MAVERICK

2022 XL FWD
2.0L ECOBOOST ENGINE
8-SPD AUTO TRANSMISSION

NR A55688

EXTERIOR
ICONIC SILVER METALLIC
INTERIOR
BLACK ONYX-MED CK SLATE TRI

STANDARD EQUIPMENT INCLUDED AT NO EXTRA CHARGE

EXTERIOR

- 6-TIE-DOWNS
- CONFIGURABLE DAYTIME RUNNING LAMPS
- DOOR HANDLES - BLACK
- EASY FUEL CAPLESS FILLER
- GRILLE - BLACK MESH
- HEADLAMPS-LED AUTO H-BEAM
- HEADLAMPS-LED AUTO DIMMER
- MANUAL LOCKING TAILGATE
- WIPERS - INTERMITTENT

INTERIOR

- 1-TOUCH DOWN DRIVER WINDOW
- 2ND ROW BENCH FOLD-UP W/ UNDER-SEAT STORAGE
- 4.2" PRODUCTIVITY SCREEN
- CLOTH BENCH REAR SEAT
- MANUAL, A/C, SINGLE ZONE
- MAP POCKETS-PASSENGER
- PARTICULATE AIR FILTER
- POWER LOCKS AND WINDOWS
- POWERPOINTS - 12V (2)
- ROTARY GEAR SHIFT DIAL W/ SELECTABLE DRIVE MODES
- TELETYPE/SCOPE STR COLLAR
- USB A (1) AND (1)
- VINYL SOFT CONSOLE LID

FUNCTIONAL

- 4-WHEEL ANTILOCK BRAKE SYS
- 8.0" CTR STACK TOUCHSCREEN
- AM/FM STEREO W/ SPEAKERS
- APPLE CARPLAY™ AND ANDROID AUTO™
- BATTERY SAVER FEATURE
- ELECTRIC PARKING BRAKE
- ELECTRONIC PARK ASSIST
- FORPASS® CONNECT 4GW-FI
- HOTSPOT TELEMETRICS MODEM
- PRE-COLLISION ASSIST W/AEB
- REAR VIEW CAMERA
- REFRIGERATOR
- REMOTE KEYLESS ENTRY
- REMOTE START- FORPASS APP

SAFETY/SECURITY

- AIRBAGS - SAFETY CANOPY®
- BELT-MINDER CHIME
- LATCH CHILD SAFETY SYSTEM
- SECURLOCK ANTI-THEFT SYS
- TIRE PRESSURE MONIT SYS

WARRANTY

- 3YR/50,000 MILEW/ BUMPER
- 5YR/60,000 POWERTRAIN
- 5YR/60,000 ROADSIDE ASSIST
- 8YR/100,000 HYBRID UNLIMITED - COMPONENTS IF EQUIPPED

INCLUDED ON THIS VEHICLE EQUIPMENT GROUP 100A

(MSRP)

OPTIONAL EQUIPMENT/OTHER

1,085.00
2.0L ECOBOOST ENGINE
8-SPD AUTO TRANSMISSION
REAR UNDERSEAT BINS
90 STATE EMISSIONS
FRONT LICENSE PLATE BRACKET

NO CHARGE
NO CHARGE
NO CHARGE
NO CHARGE

PRICE INFORMATION

BASE PRICE \$19,985.00
TOTAL OPTIONS/OTHER 1,085.00

(MSRP)

TOTAL VEHICLE & OPTIONS/OTHER
DESTINATION & DELIVERY 1,485.00

EPA
DOT

Fuel Economy

26 MPG
combined city/hwy

23 MPG
city

30 MPG
highway

3.8 gallons per 100 miles

Small Pickup Trucks range from 17 to 26 MPG. The best vehicle rates 142 MPGe.

**You spend
over 5 years
compared to the
average new vehicle.**

\$250

Annual fuel cost

\$1,350

Fuel Economy & Greenhouse Gas Rating (tailpipe only)

5 Best
10 Best
15 Best

This vehicle emits 342 grams CO₂ per mile. The best emits 0 grams CO₂ per mile (tailpipe only). Producing and distributing fuel also create emissions, from mine to fuel economy.gov.

fuelconomy.gov

Calculate personalized estimates and compare vehicles

Smog Rating (tailpipe only)

5 Best
10 Best
15 Best

This vehicle emits 342 grams CO₂ per mile. The best emits 0 grams CO₂ per mile (tailpipe only). Producing and distributing fuel also create emissions, from mine to 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

Based on the risk of rollover in a single-vehicle crash.

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

FordPass Connect™

Download the FordPass™ app* and you can:

Access Vehicle Control Features

- Remotely start, lock and unlock your vehicle
- Locate your vehicle and check approximate fuel range
- Receive vehicle health alerts

Activate 4G LTE Wi-Fi Hotspot

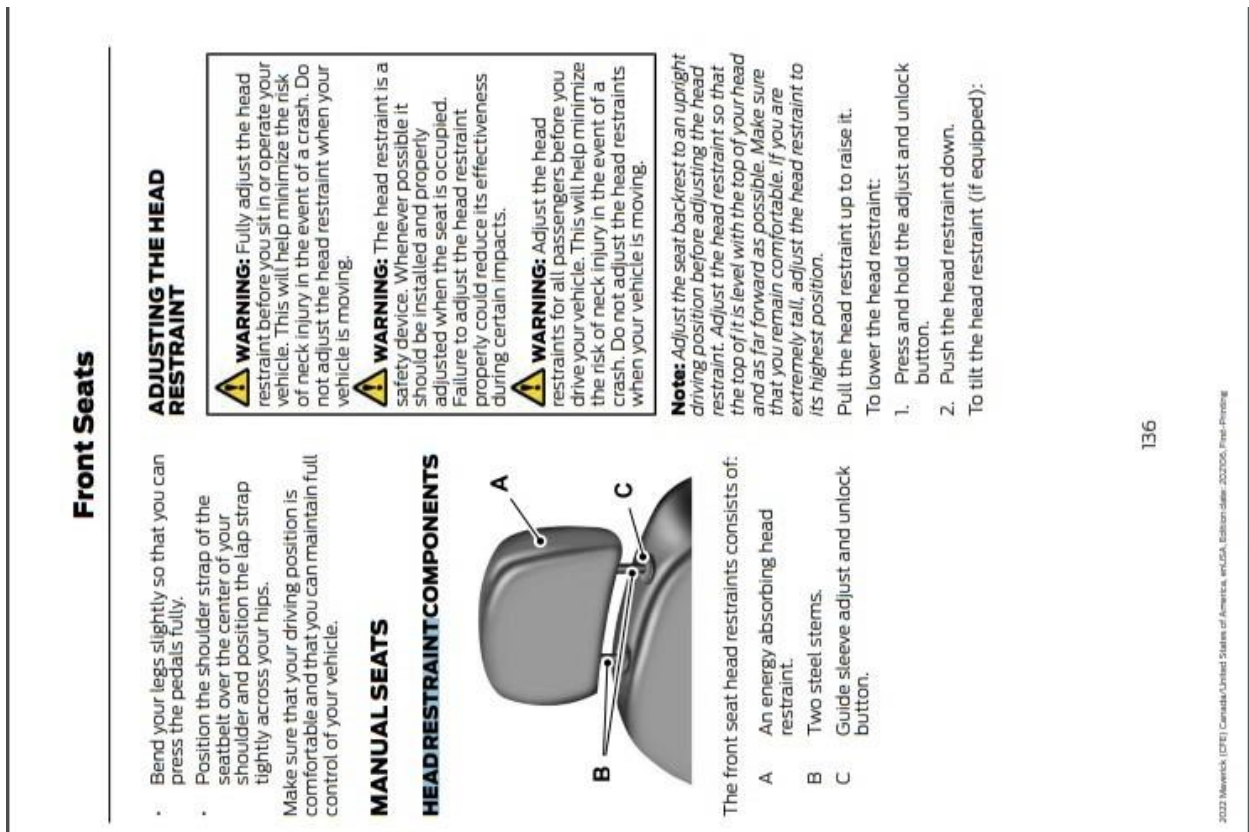
New vehicles include a 3 month or 3GB data (whichever comes first) Wi-Fi hot spot.

Connect up to ten Wi-Fi-enabled devices.

*Available on select vehicles. See dealer for details.

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The FordPass Connect™ modem is active and sending vehicle data (e.g., diagnostic trouble codes) to the cloud. See in-vehicle Settings for connectivity options.



APPENDIX B

VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

Driver & Passenger Dummy Instrumentation Plots

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1	Driver Head Acceleration (X) Primary vs. Time	B-5
2	Driver Head Acceleration (Y) Primary vs. Time	B-5
3	Driver Head Acceleration (Z) Primary vs. Time	B-5
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19	Passenger Lower Spine T12 Acceleration (Y) vs. Time	B-9
20	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-9
21	Passenger Lower Spine T12 Resultant Acceleration vs. Time	B-10
22	Passenger Iliac Force on Impact Side (Y) vs. Time	B-10
23	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-10
24	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-10

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 & 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

APPENDIX C

DUMMY PERFORMANCE CALIBRATION TEST DATA

CALIBRATION TEST RESULTS

PRE-TEST

EUROSID 2 (ES-2RE) MALE – DRIVER ATD

SERIAL NO: F033

(CONFIGURED FOR LEFT SIDE IMPACT)

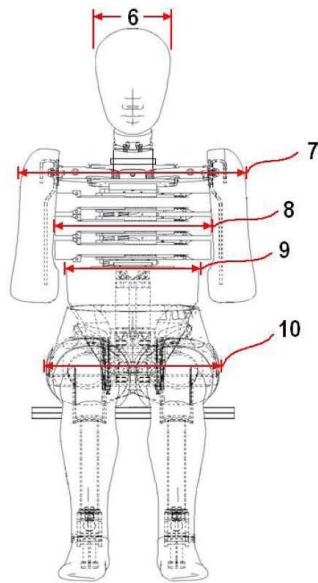


External Measurements - EuroSID-2re

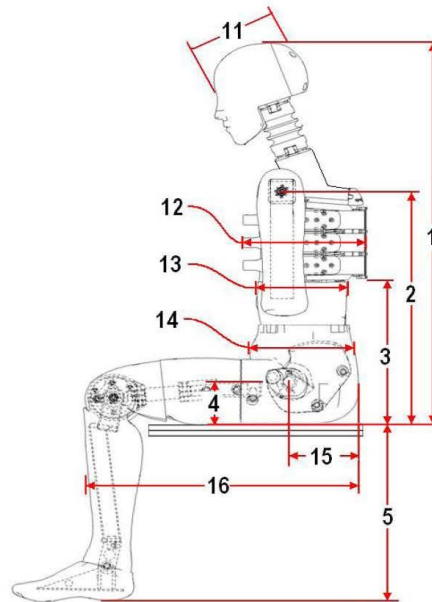
Technician: K. Brogan

Date: 05/26/2022

Dummy Serial Number: F033



FRONT VIEW



SIDE VIEW

Dim. No.	Description	Specification (mm)		Result (mm)	Pass/Fail
1	Sitting Height	900	918	911	Pass
2	Seat to Shoulder Joint	558	572	565	Pass
3	Seat to Lower Face of Thoracic Spine Box	346	356	350	Pass
4	Seat to Hip Joint (center of bolt)	97	103	100	Pass
5	Sole to Seat, Sitting	333	451	420	Pass
6	Head Width	152	158	155	Pass
7	Shoulder/Arm Width	461	479	469	Pass
8	Thorax Width	322	332	329	Pass
9	Abdomen Width	273	287	280	Pass
10	Pelvis Lap Width	359	373	365	Pass
11	Head Depth	196	206	200	Pass
12	Thorax Depth	262	272	265	Pass
13	Abdomen Depth	194	204	200	Pass
14	Pelvis Depth	235	245	240	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150	160	156	Pass
16	Back of Buttocks to Front Knee	597	615	608	Pass

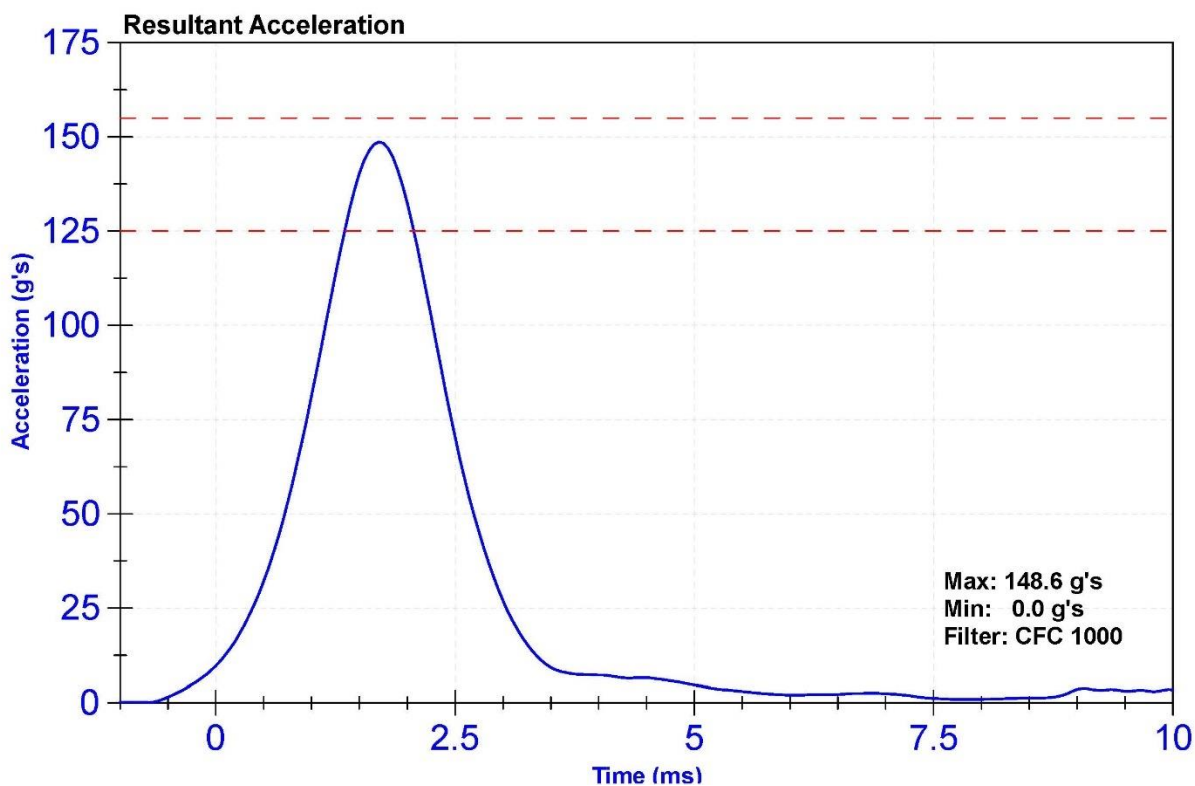
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

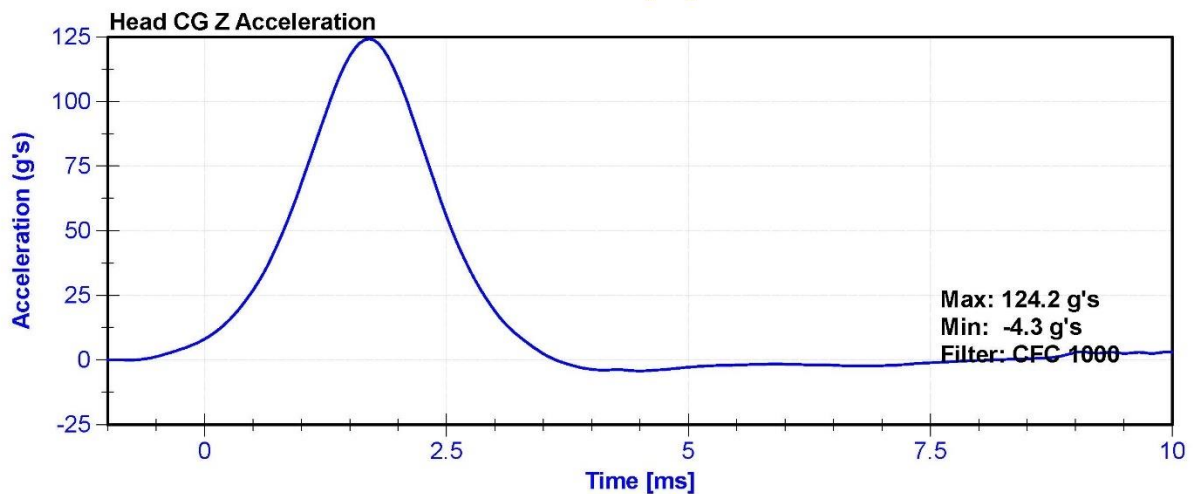
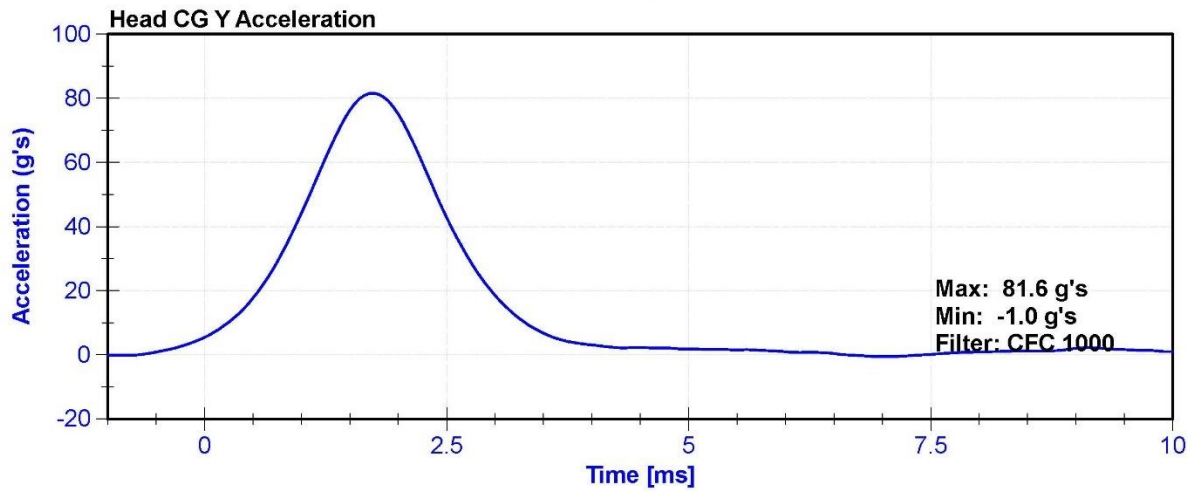
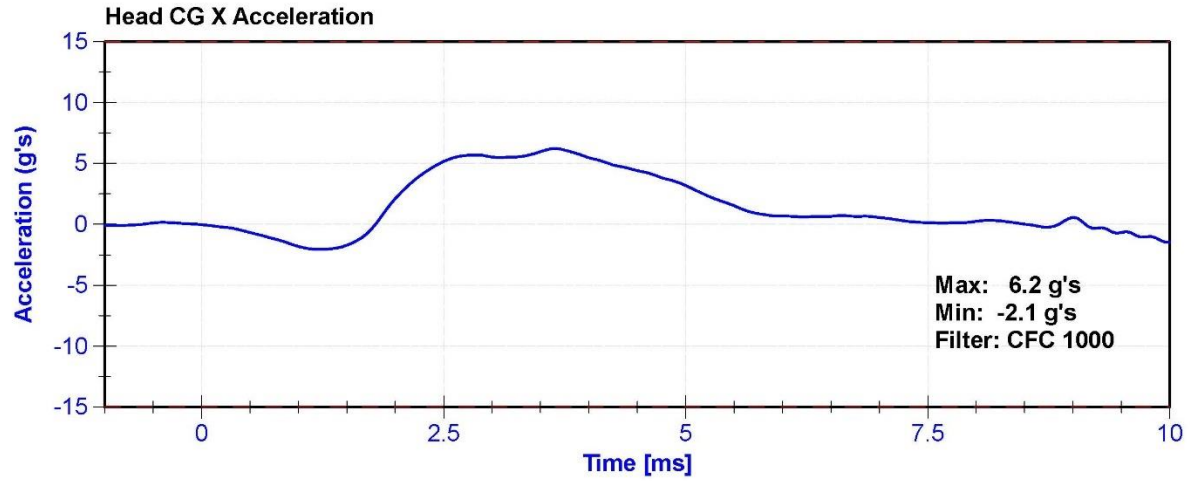
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	59	Pass
Resultant Acceleration	125	155	g's	148.6	Pass
Oscillation	0	15	%	4.47	Pass
Fore-Aft Acceleration	-15	15	g's	6.2	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
X Accelerometer	Endevco	P63861	1/31/2022	7/30/2022
Y Accelerometer	Endevco	P51303	1/31/2022	7/30/2022
Z Accelerometer	Endevco	P49216	1/31/2022	7/30/2022





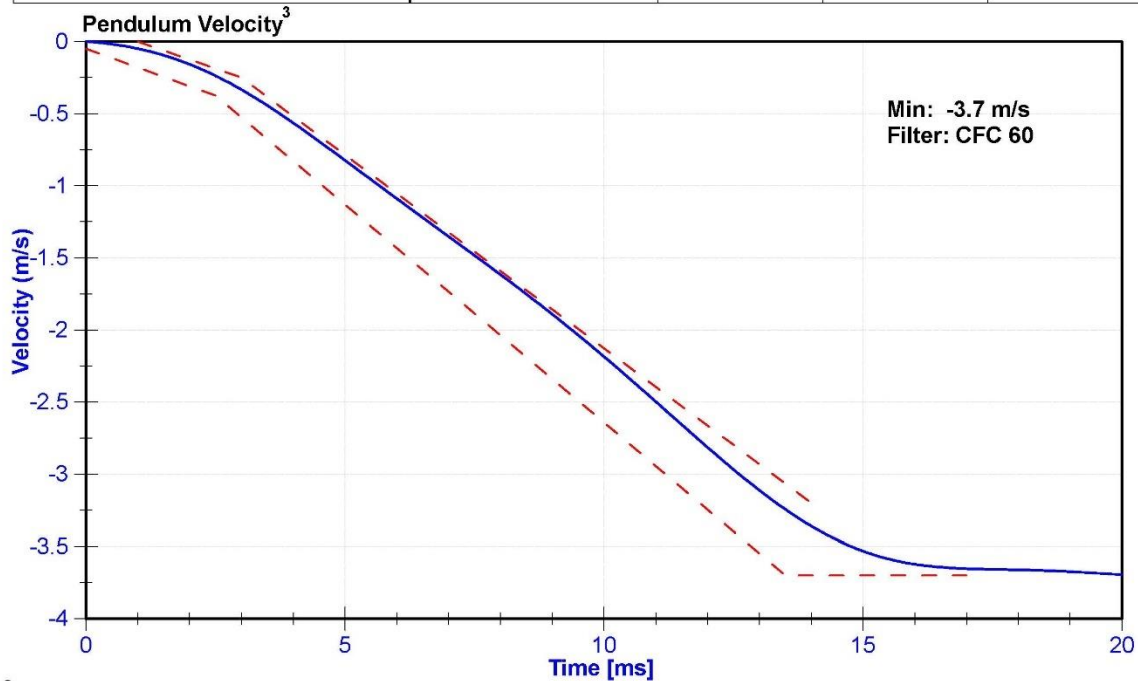
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

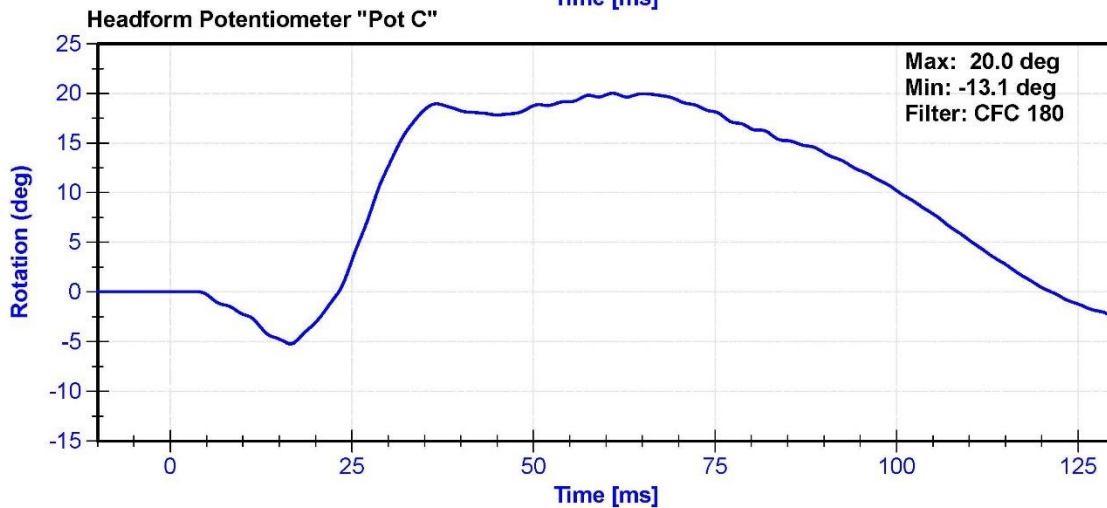
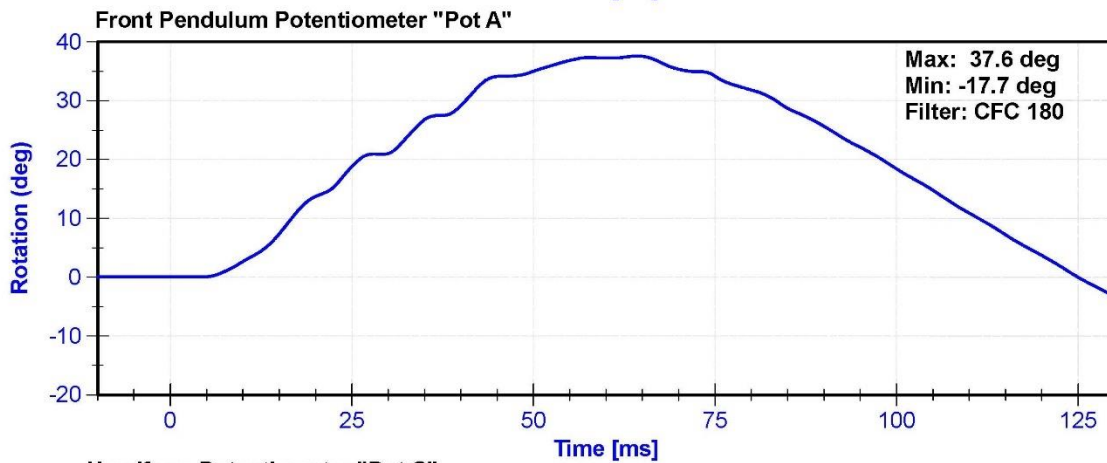
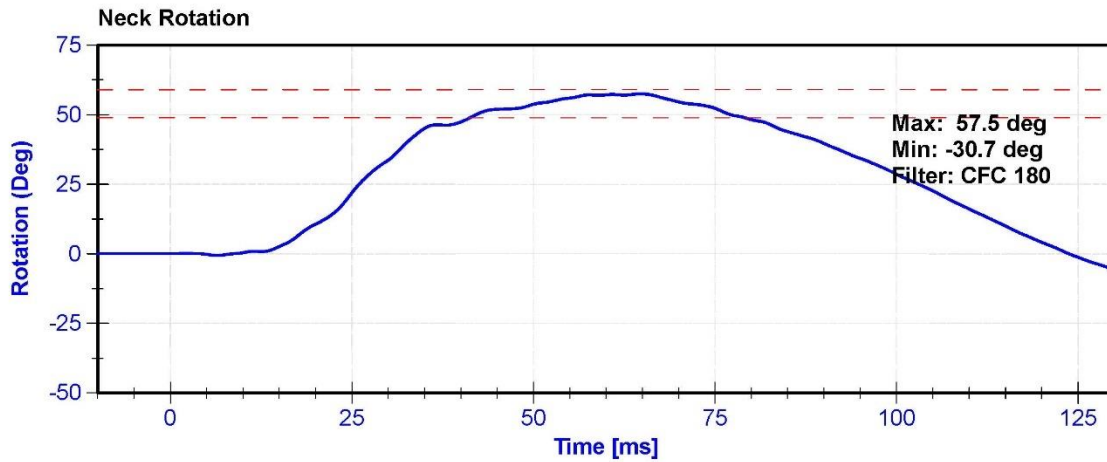
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.4	Pass
Humidity	10	70	%	54.9	Pass
Velocity	3.3	3.5	m/s	3.42	Pass
Lateral Neck Rotation	49	59	deg	57.5	Pass
Time at Maximum Rotation	54	66	ms	64.7	Pass
Time of Rotation Decay from Maximum	53	88	ms	59.1	Pass
Pendulum Velocity Overall Corridor	Lower Boundary ¹	Upper Boundary ²	m/s	See Plot ³	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	C16503	10/28/2021	10/28/2022
Front Pendulum Potentiometer	Sfernice	094	10/1/2021	10/1/2022
Headform Potentiometer	Sfernice	095	10/1/2021	10/1/2022



^{1,2} Upper and lower boundaries specified in Appendix I



Appendix I

² Upper Boundary Corridor		¹ Lower Boundary Corridor	
Time (ms)	Velocity (m/s)	Time (ms)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.25	2.5	-0.375
14.0	-3.20	13.5	-3.7
		17.0	-3.7

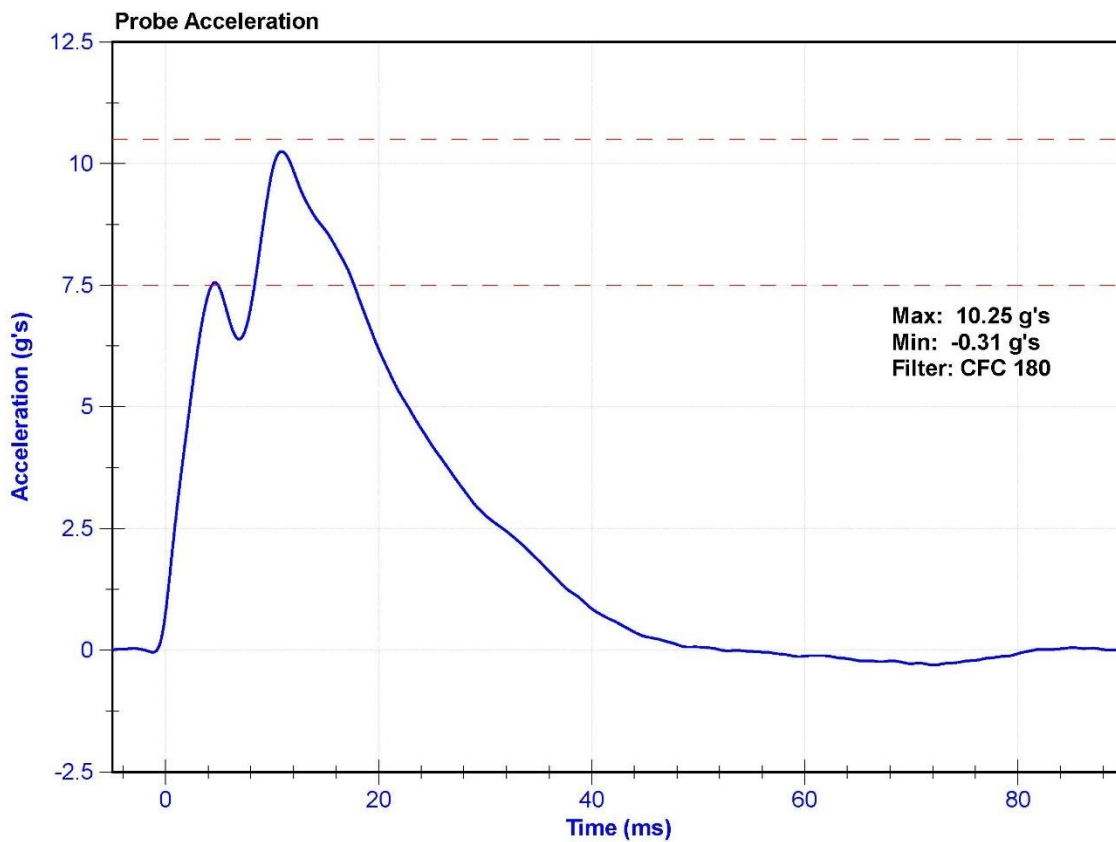
ATD Manufacturer	FTSS	Test Technician	C. Mantell
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	53.2	Pass
Velocity	4.2	4.4	m/s	4.37	Pass
Probe Acceleration	7.5	10.5	g's	10.25	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	Endevco	T25885	10/25/2021	10/25/2022



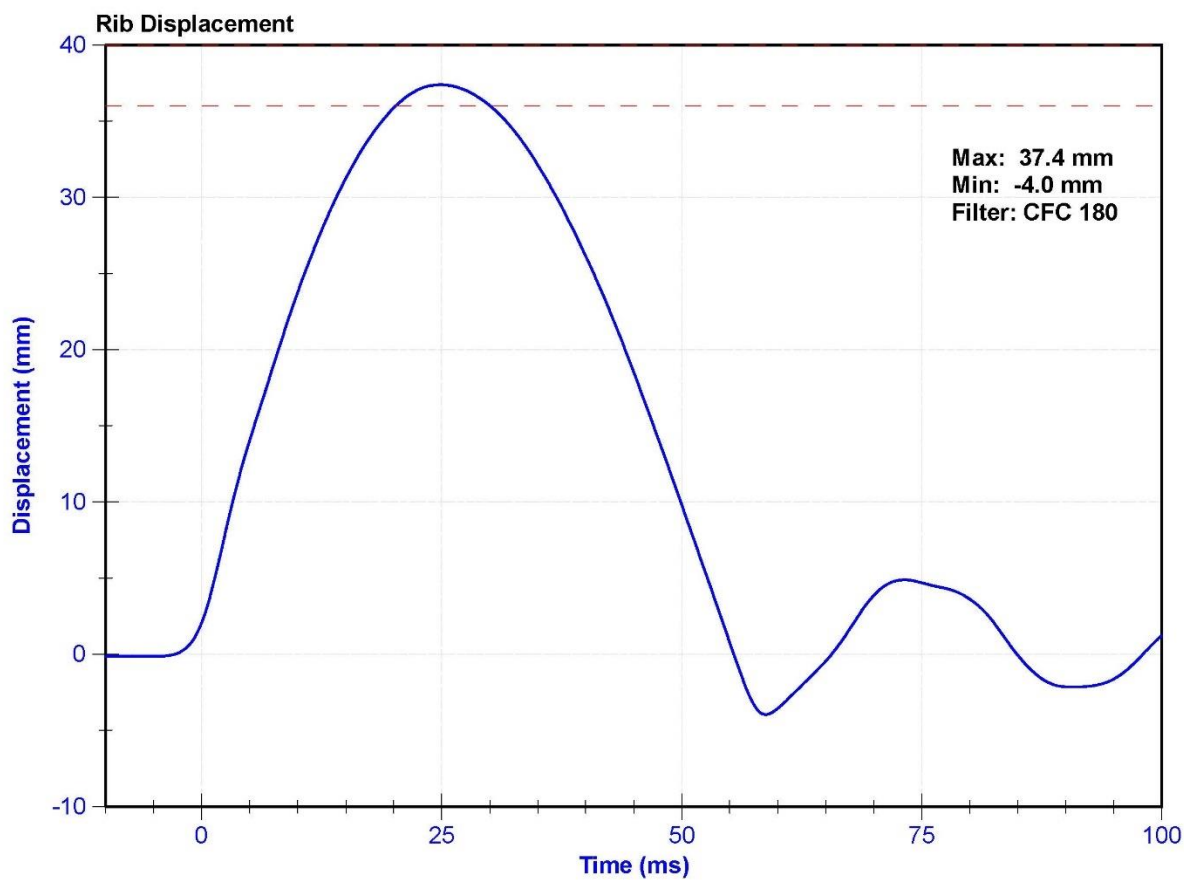
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.0	Pass
Humidity	10	70	%	51	Pass
Rib Displacement	36	40	mm	37.4	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	179GFE	2/1/2022	8/2/2022



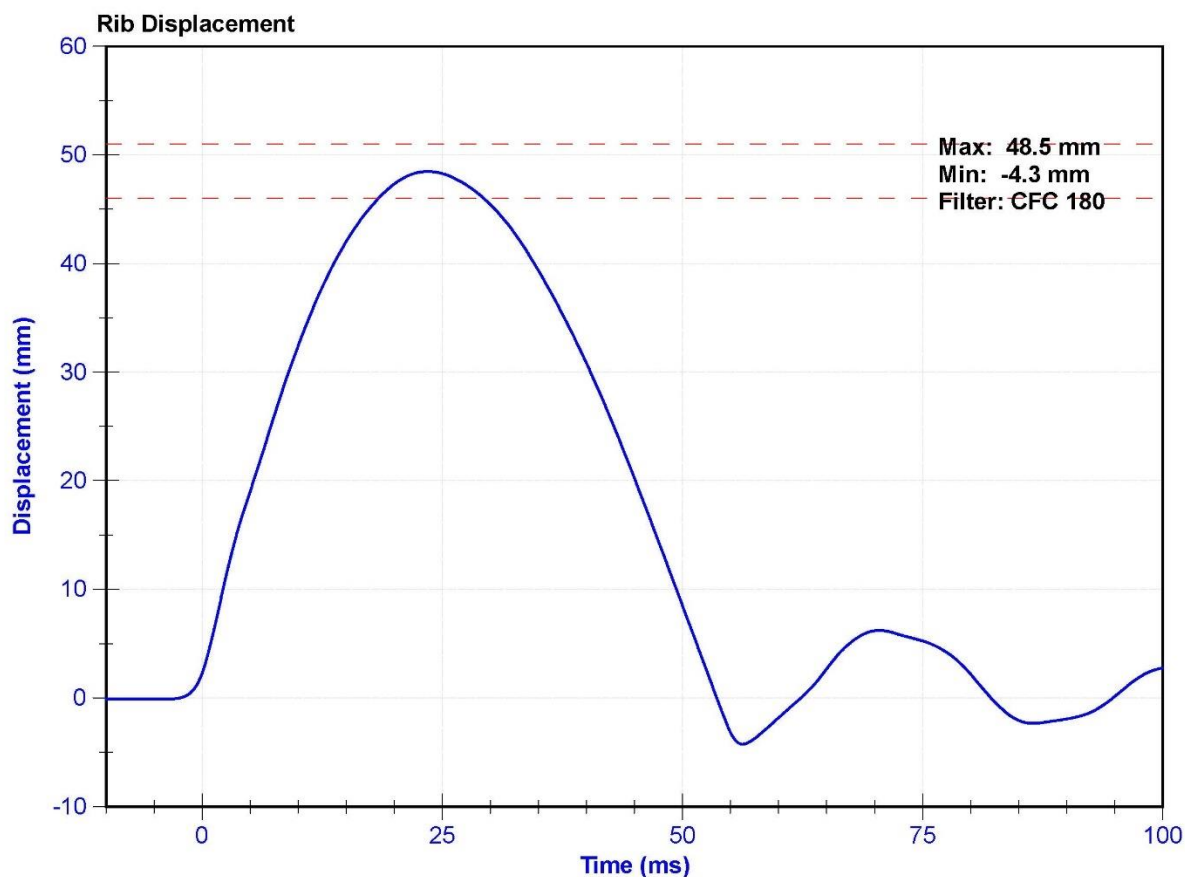
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.0	Pass
Humidity	10	70	%	51	Pass
Rib Displacement	46	51	mm	48.5	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	179GFE	2/1/2022	8/2/2022



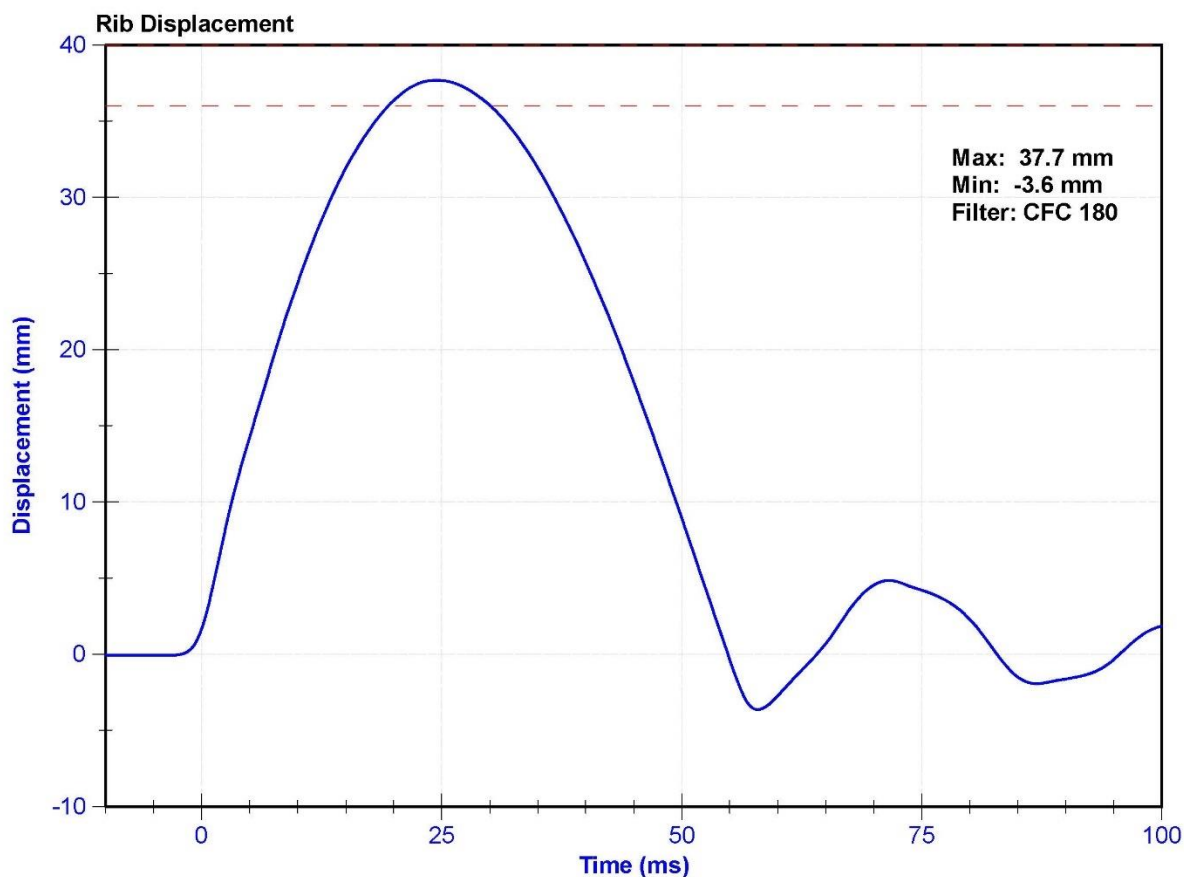
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.0	Pass
Humidity	10	70	%	51	Pass
Rib Displacement	36	40	mm	37.7	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	185GFE	2/1/2022	8/2/2022



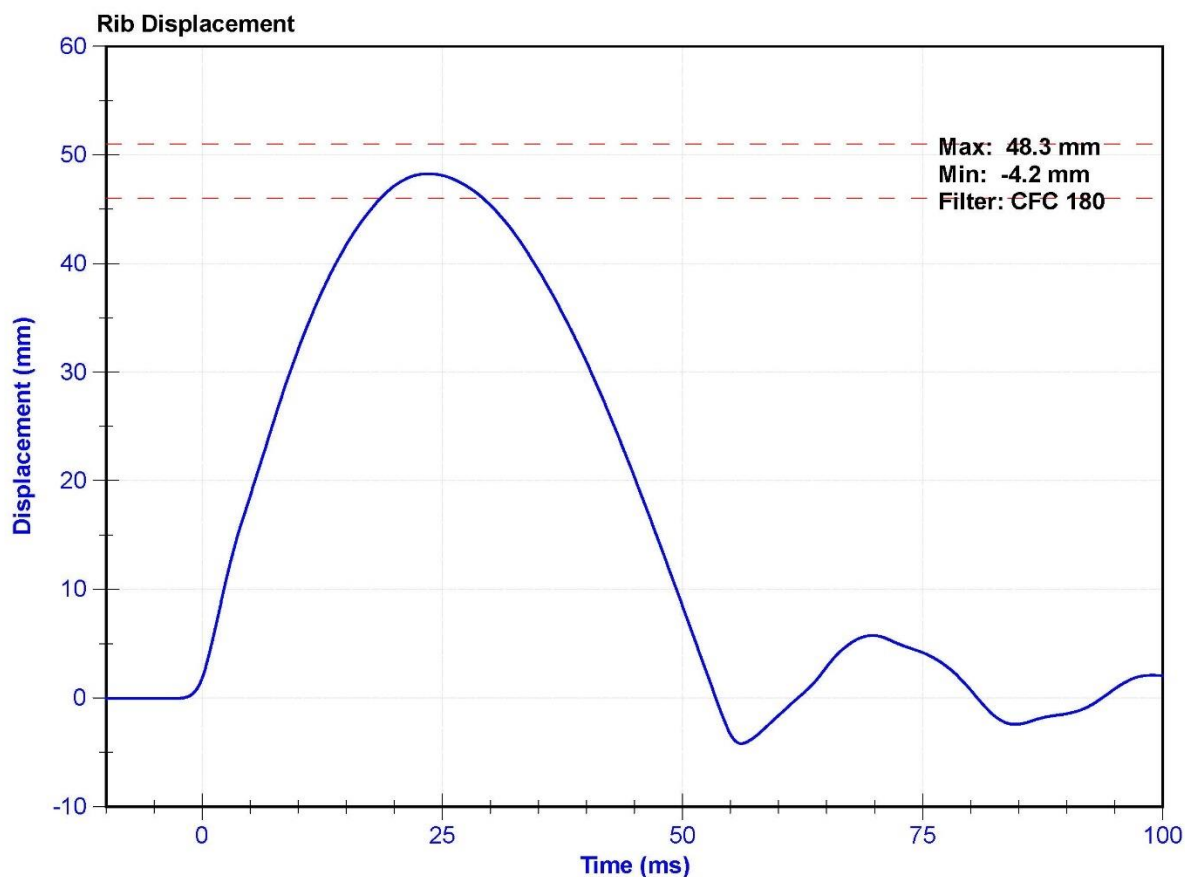
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.0	Pass
Humidity	10	70	%	51	Pass
Rib Displacement	46	51	mm	48.3	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	185GFE	2/1/2022	8/2/2022



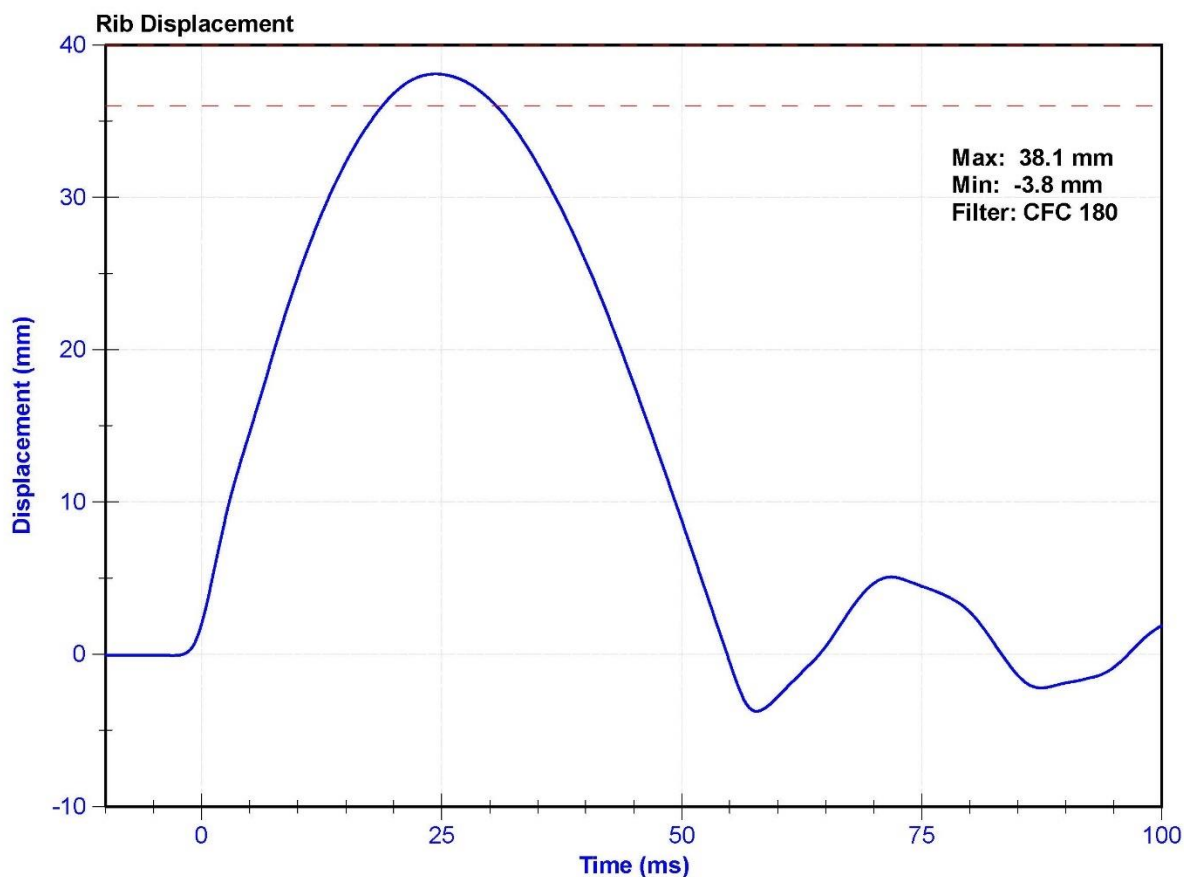
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.0	Pass
Humidity	10	70	%	51	Pass
Rib Displacement	36	40	mm	38.1	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	178GFE	2/1/2022	8/2/2022



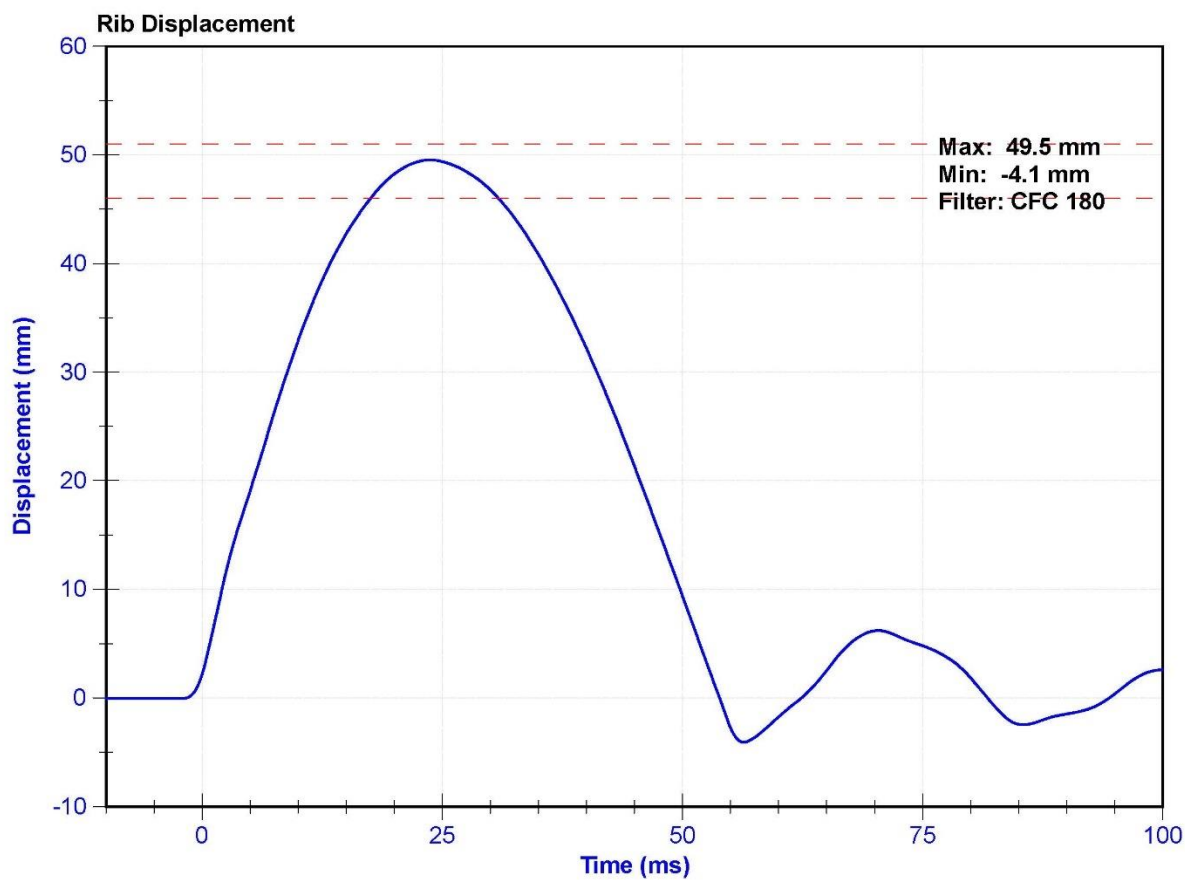
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.0	Pass
Humidity	10	70	%	51	Pass
Rib Displacement	46	51	mm	49.5	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	178GFE	2/1/2022	8/2/2022



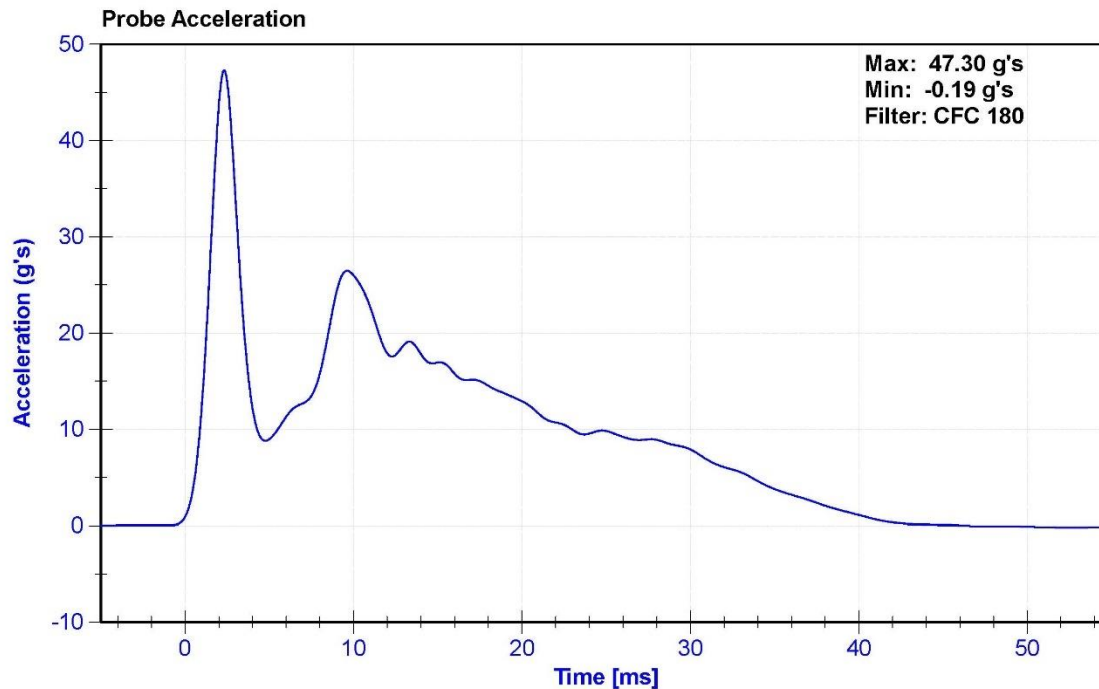
ATD Manufacturer	FTSS	Test Technician	C. Mantell
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

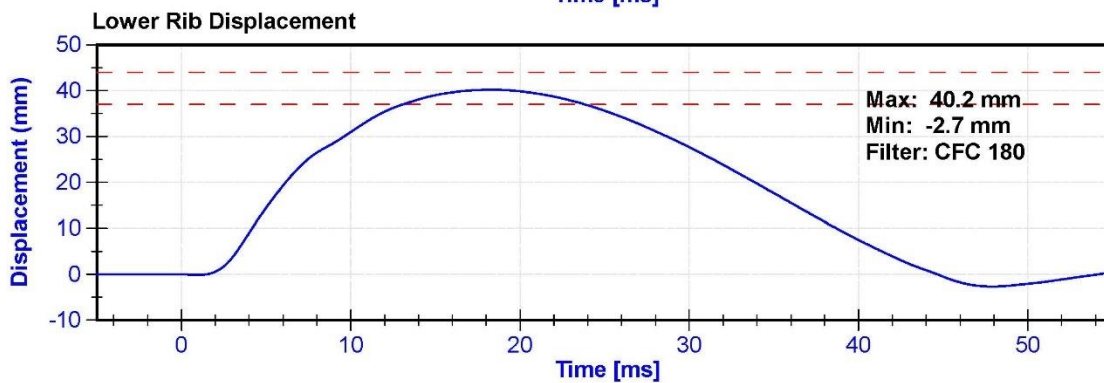
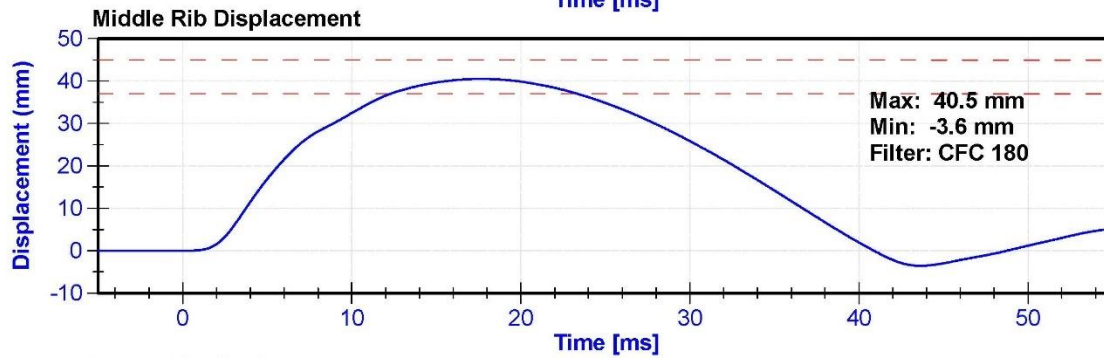
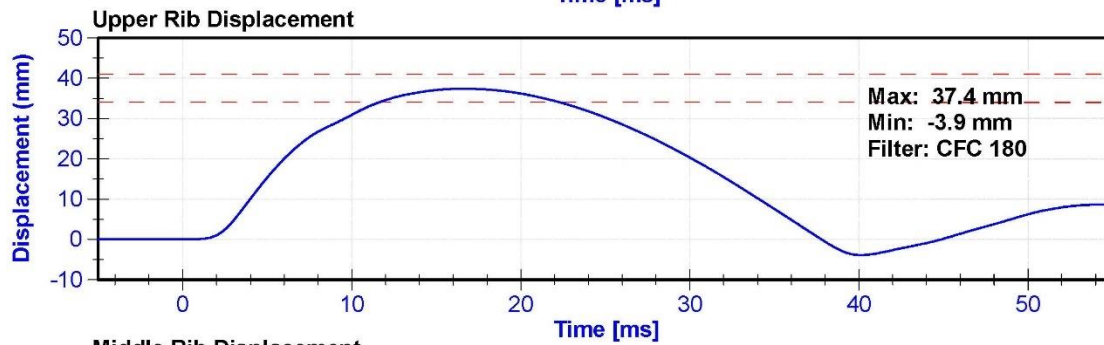
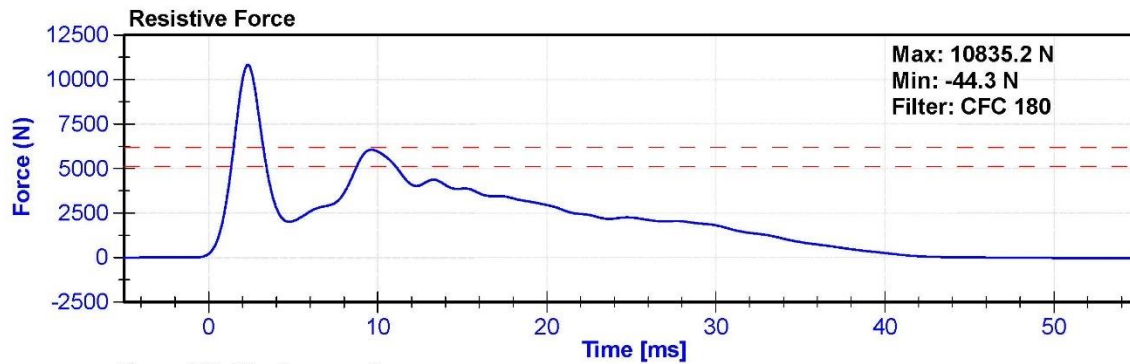
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	53.2	Pass
Velocity	5.4	5.6	m/s	5.50	Pass
Resistive Force after 6ms	5100	6200	N	6059.7	Pass
Upper Thorax Rib Deflection	34	41	mm	37.4	Pass
Mid Thorax Rib Deflection	37	45	mm	40.5	Pass
Lower Thorax Rib Deflection	37	44	mm	40.2	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	Endevco	T25885	10/25/2021	10/25/2022
Upper Thorax Rib Potentiometer	Honeywell	179GFE	2/1/2022	8/2/2022
Middle Thorax Rib Potentiometer	Honeywell	185GFE	2/1/2022	8/2/2022
Lower Thorax Rib Potentiometer	Honeywell	178GFE	2/1/2022	8/2/2022





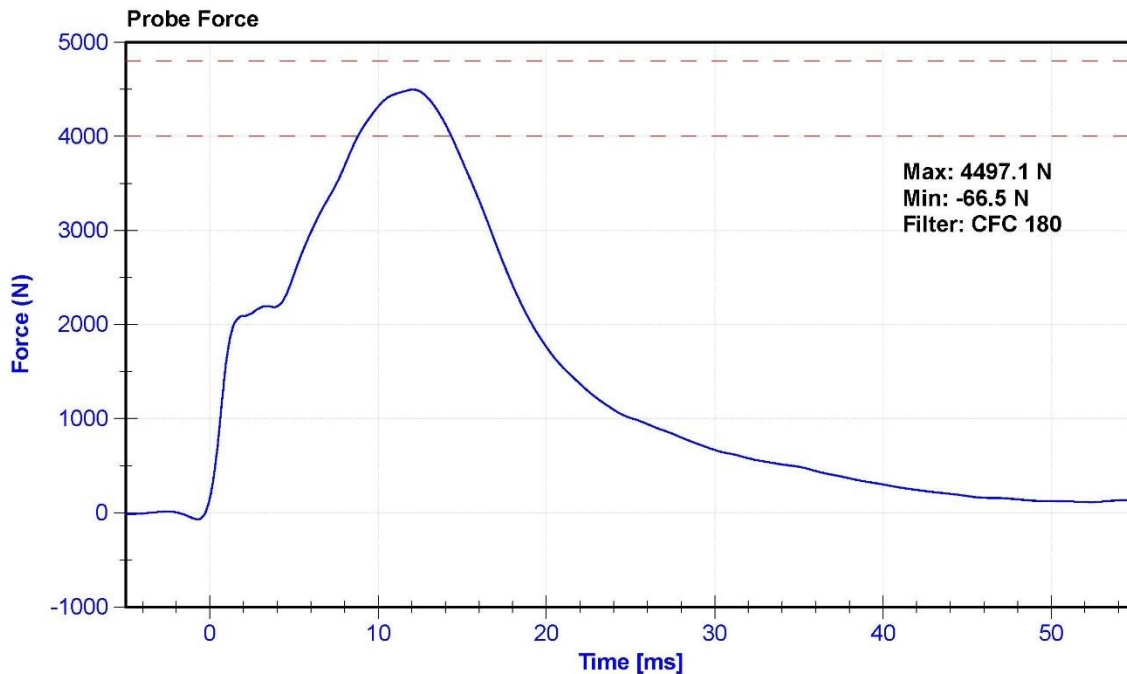
ATD Manufacturer	FTSS	Test Technician	C. Mantell
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

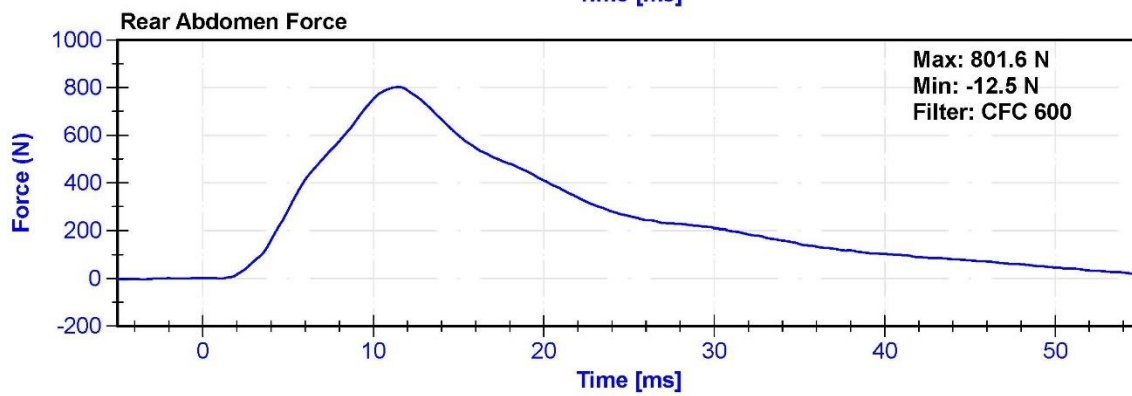
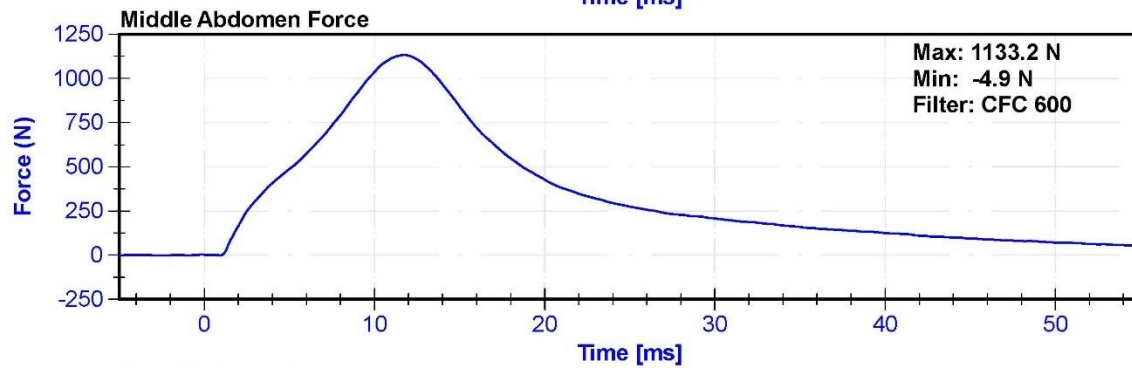
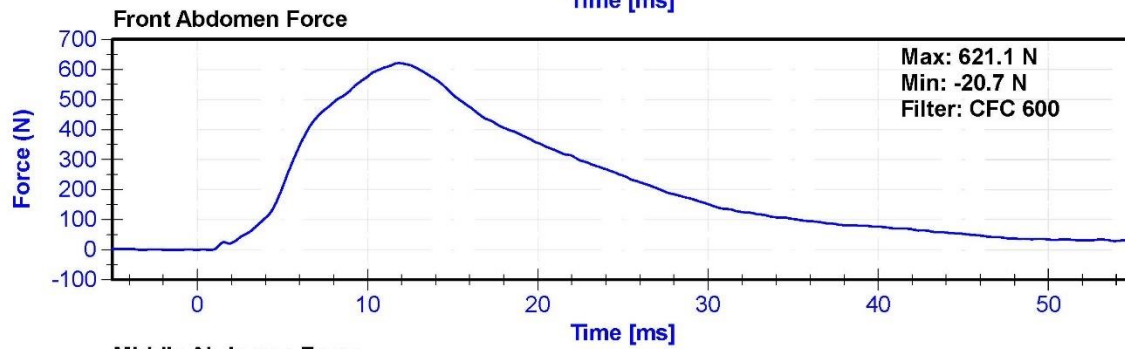
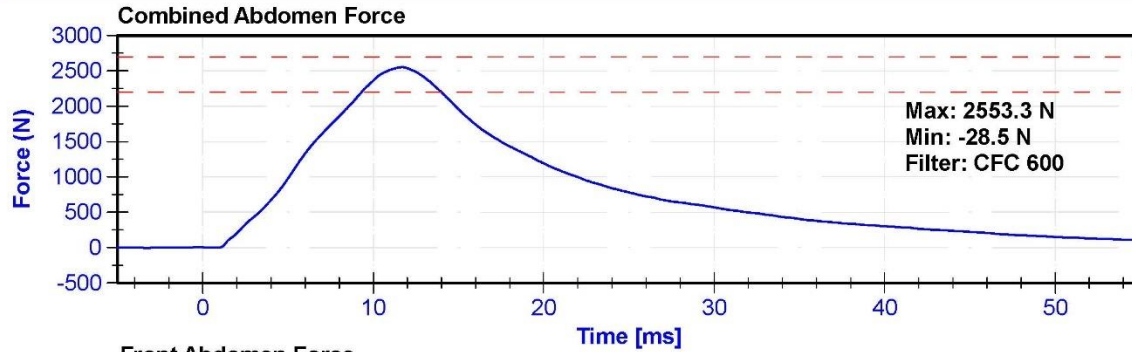
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.2	Pass
Humidity	10	70	%	49.9	Pass
Velocity	3.9	4.1	m/s	4.03	Pass
Combined Abdomen Force	2200	2700	N	2553.3	Pass
Time at Peak Abdomen Force	10.0	12.3	ms	11.70	Pass
Resistive Probe Force	4000	4800	N	4497.1	Pass
Time at Peak Resistive Force	10.6	13.0	ms	12.05	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	T25885	10/25/2021	10/25/2022
Front Abdomen Load Cell	Denton	1512	8/2/2021	8/2/2022
Middle Abdomen Load Cell	Denton	1526	8/2/2021	8/2/2022
Rear Abdomen Load Cell	Denton	1516	8/2/2021	8/2/2022





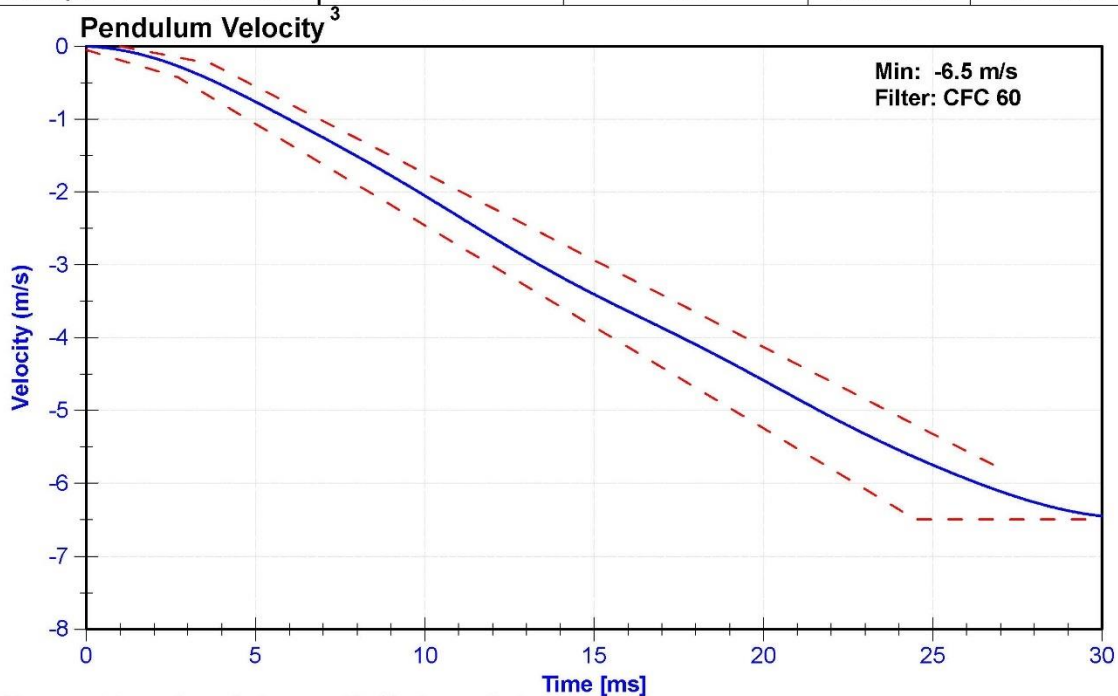
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

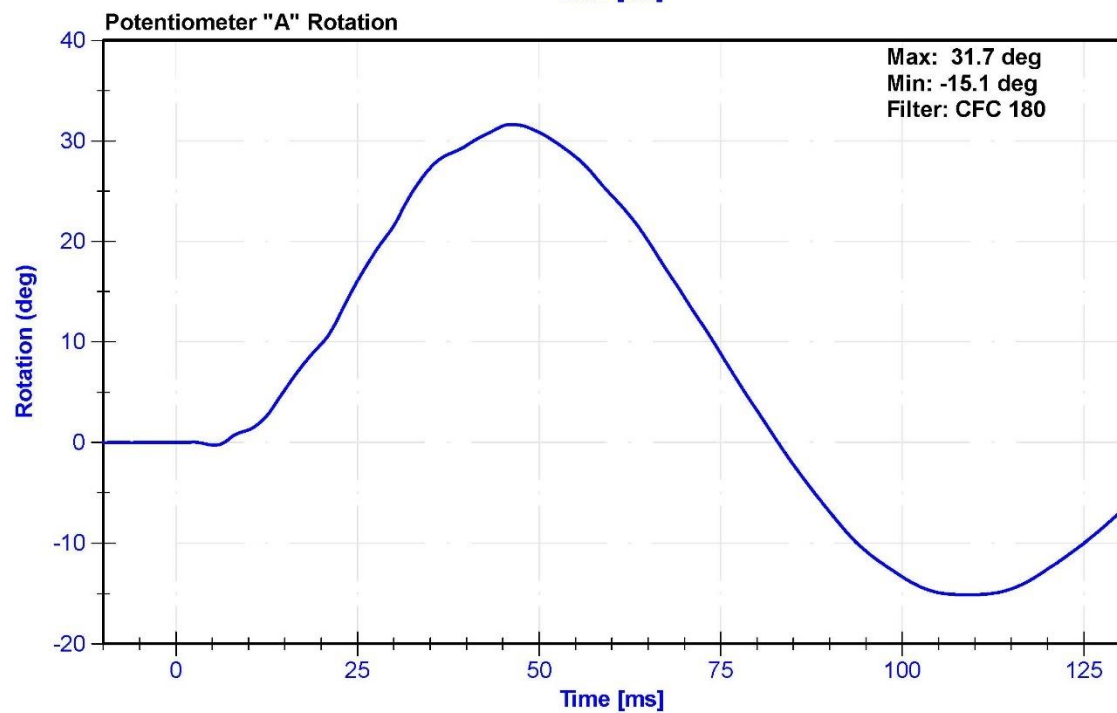
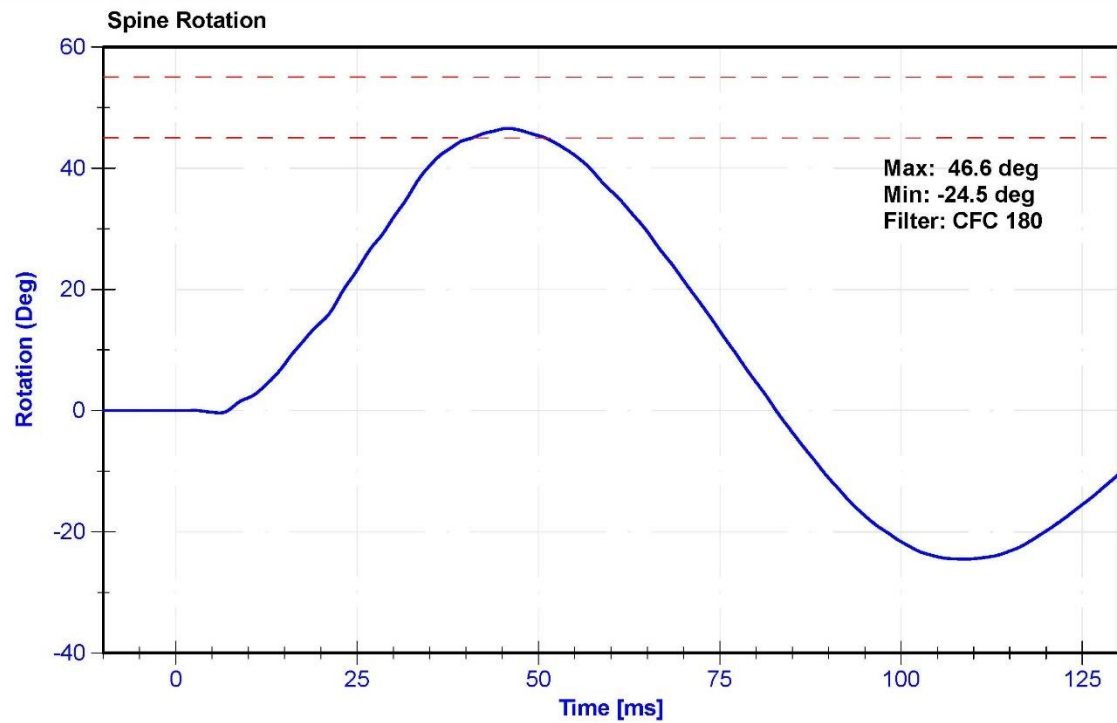
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.0	Pass
Humidity	10	70	%	50.2	Pass
Velocity	5.95	6.15	m/s	6.023	Pass
Lateral Spine Rotation	45	55	deg	46.6	Pass
Time at Maximum Rotation	39	53	ms	45.8	Pass
Time of Decay to Zero Degrees	37	57	ms	37.1	Pass
Pendulum Velocity Overall Corridor	Lower Boundary ¹	Upper Boundary ²	m/s	See Plot ³	Pass

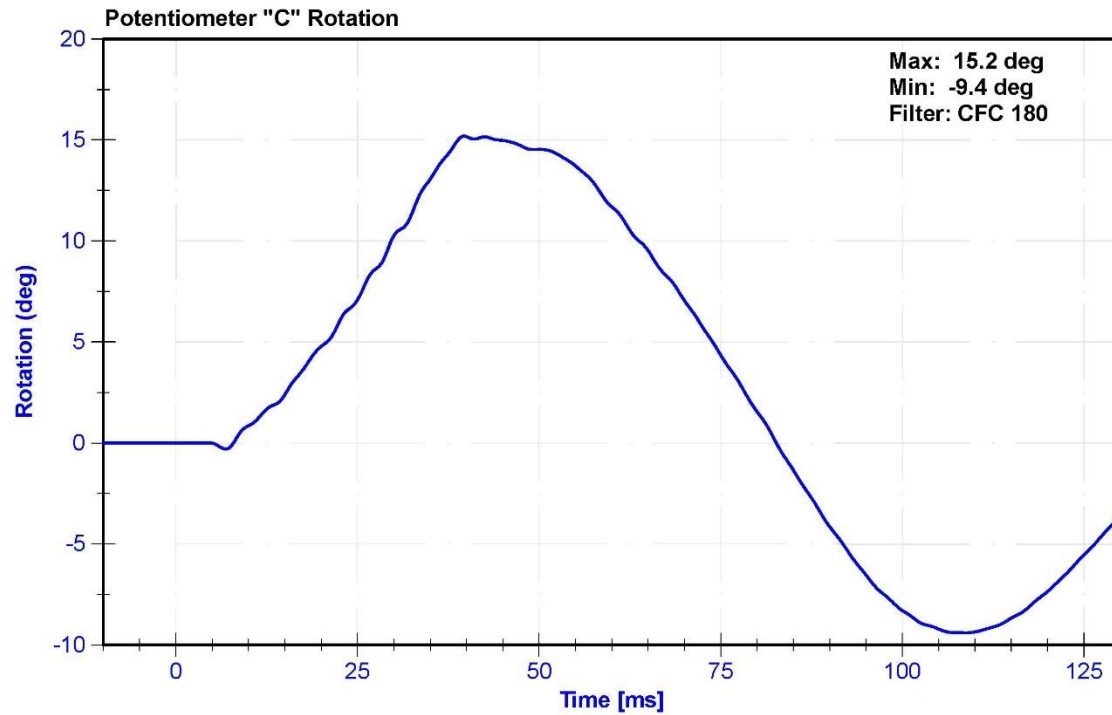
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	C16503	10/28/2021	10/28/2022
Pendulum "A" Potentiometer	Sfernice	094	10/1/2021	10/1/2022
Condyle "B" Potentiometer	Sfernice	095	10/1/2021	10/1/2022



^{1,2} Upper and lower boundaries specified in Appendix I





Appendix I

² Upper Boundary Corridor		¹ Lower Boundary Corridor	
Time (ms)	Velocity (m/s)	Time (ms)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.5
		30.0	-6.5

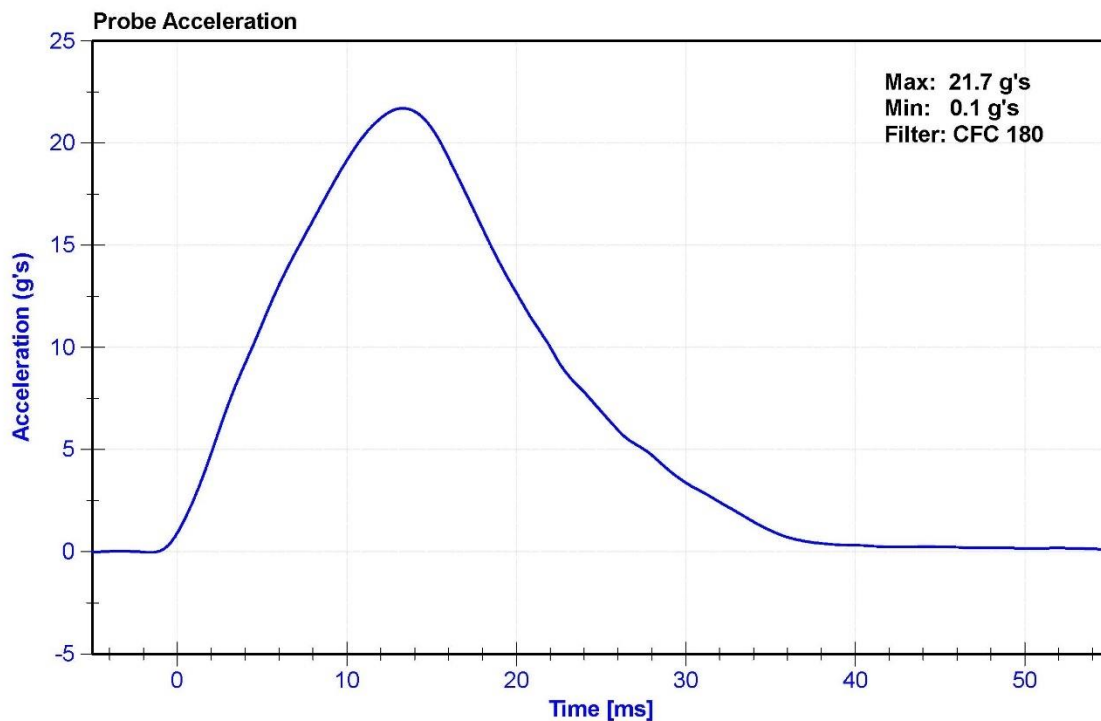
ATD Manufacturer	FTSS	Test Technician	C. Mantell
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

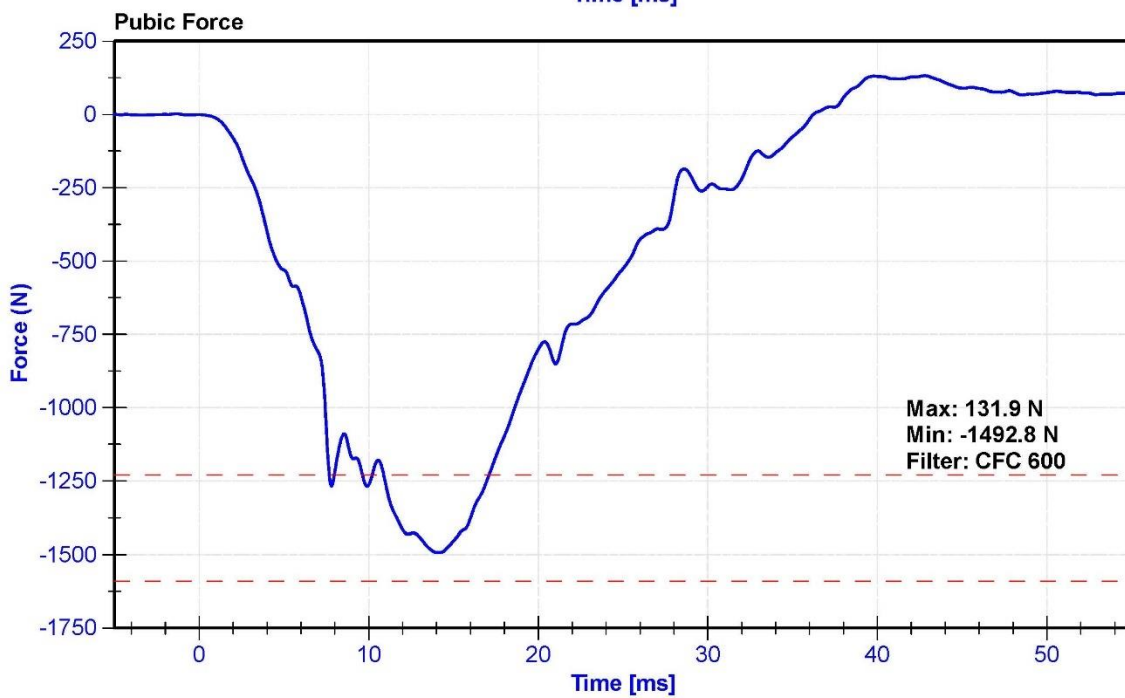
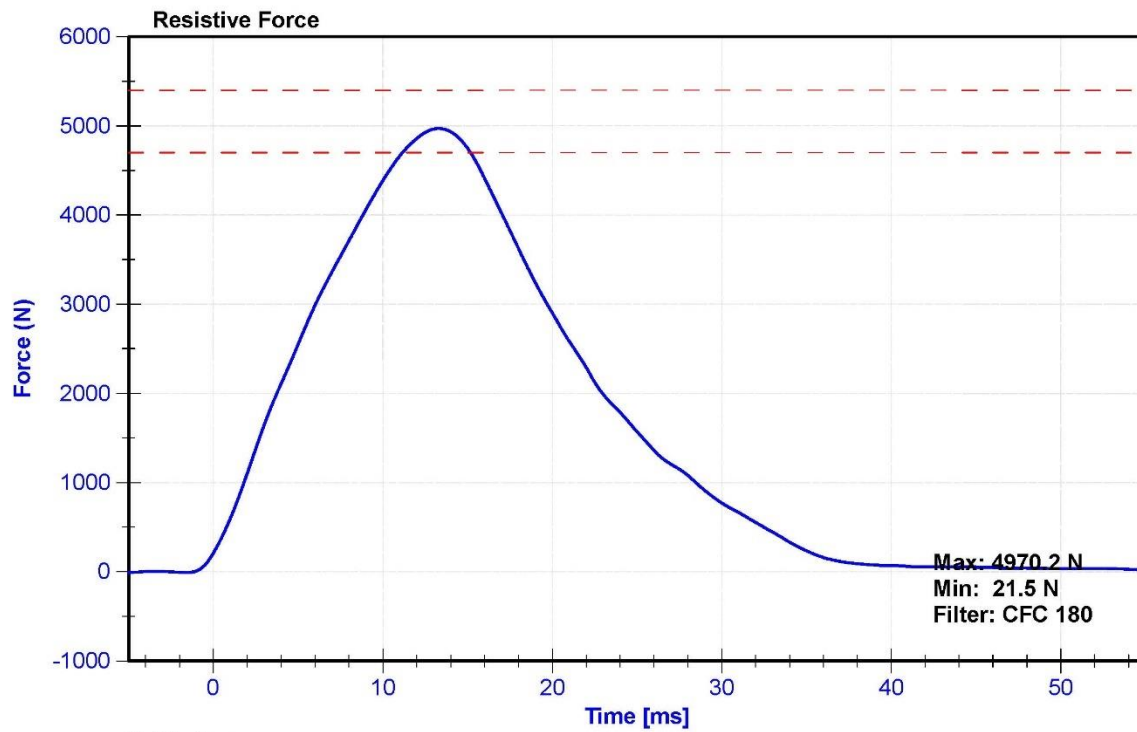
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	53.2	Pass
Velocity	4.2	4.4	m/s	4.36	Pass
Resistive Force	4700	5400	N	4970.2	Pass
Time at Peak Resistive Force	11.8	16.1	ms	13.30	Pass
Pubic Force	-1590	-1230	N	-1492.8	Pass
Time at Peak Pubic Force	12.2	17.0	ms	14.05	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	T25885	10/25/2021	10/25/2022
Pubic Load Cell	Denton	464-FY	8/2/2021	8/2/2022





CALIBRATION TEST RESULTS

PRE-TEST

SID-IIS 5TH PERCENTILE FEMALE - PASSENGER ATD

SERIAL No: DG8012

(CONFIGURED FOR LEFT SIDE IMPACT)

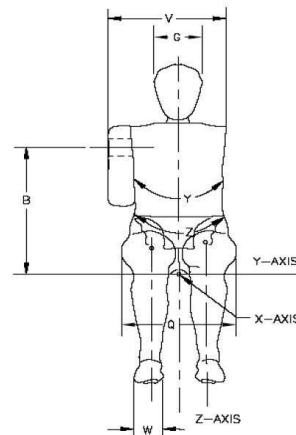
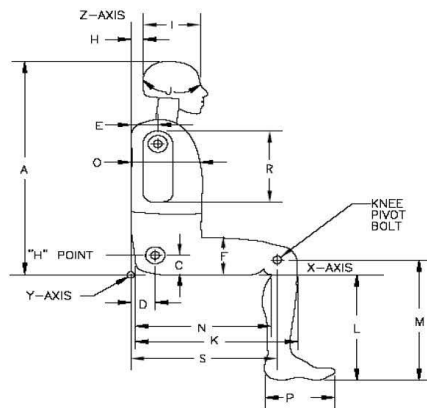


External Measurements - SID-IIs

Technician: **K. Brogan**

Date: **05/26/2022**

Dummy Serial Number: **DG8012**



Symbol	Description	Specification (mm)		Result (mm)	Pass/Fail
A	Sitting Height	772	788	780	Pass
B	Shoulder Pivot Height	437	453	445	Pass
C	H-point Height	79	89	85	Pass
D	H-point from seatback	141	151	146	Pass
E	Shoulder Pivot from Backline	97	107	105	Pass
F	Thigh Clearance	119	135	125	Pass
G	Head Breadth	140	148	145	Pass
H	Head Back from Backline	40	46	43	Pass
I	Head Depth	178	188	183	Pass
J	Head Circumference	541	551	545	Pass
K	Buttock to Knee Length	514	540	536	Pass
L	Popliteal Height	343	369	356	Pass
M	Knee Pivot to floor height	392	409	400	Pass
N	Buttock Popliteal Length	416	442	432	Pass
O	Chest Depth w/o jacket	195	211	207	Pass
P	Foot Length	216	232	225	Pass
Q	Hip Breadth (w/pelvic plugs)	313	323	320	Pass
R	Arm Length	249	259	250	Pass
S	Knee Joint to seatback	477	493	485	Pass
V	Shoulder Width	341	357	348	Pass
W	Foot Width	78	94	85	Pass
Y	Chest Circumference w/jacket	851	881	870	Pass
Z	Waist Circumference	761	791	780	Pass

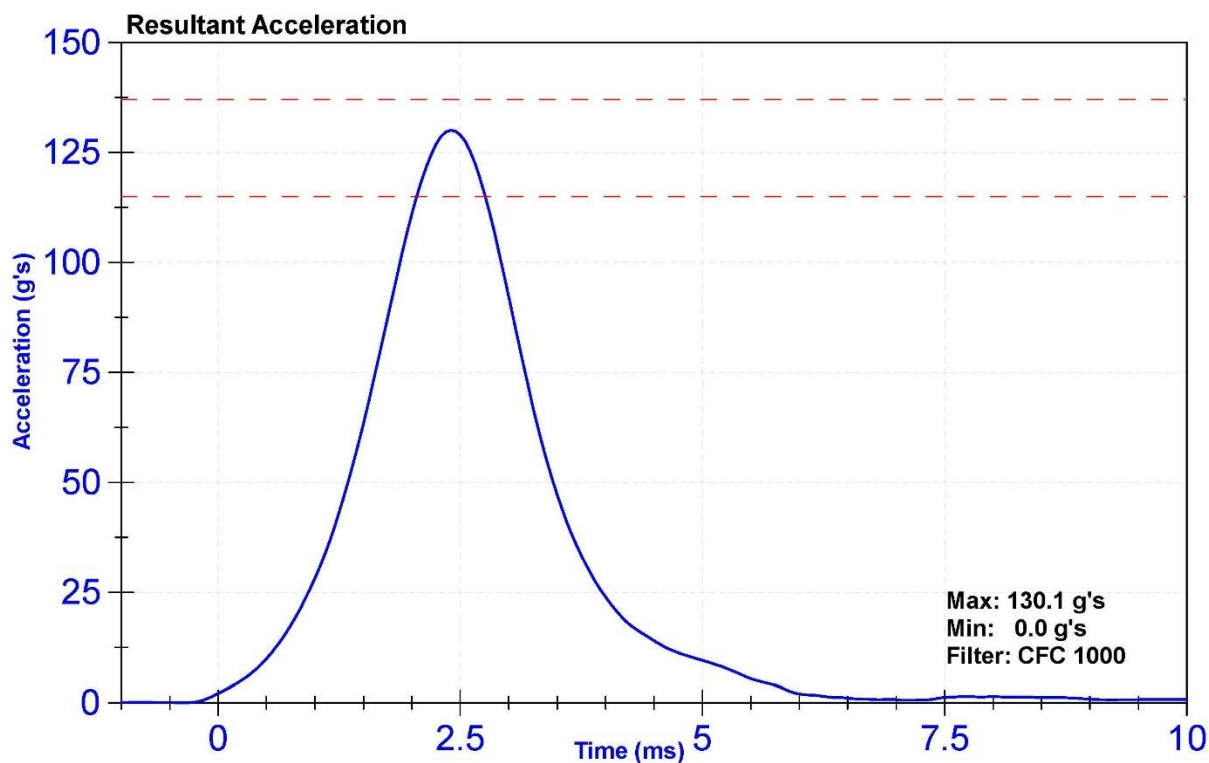
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

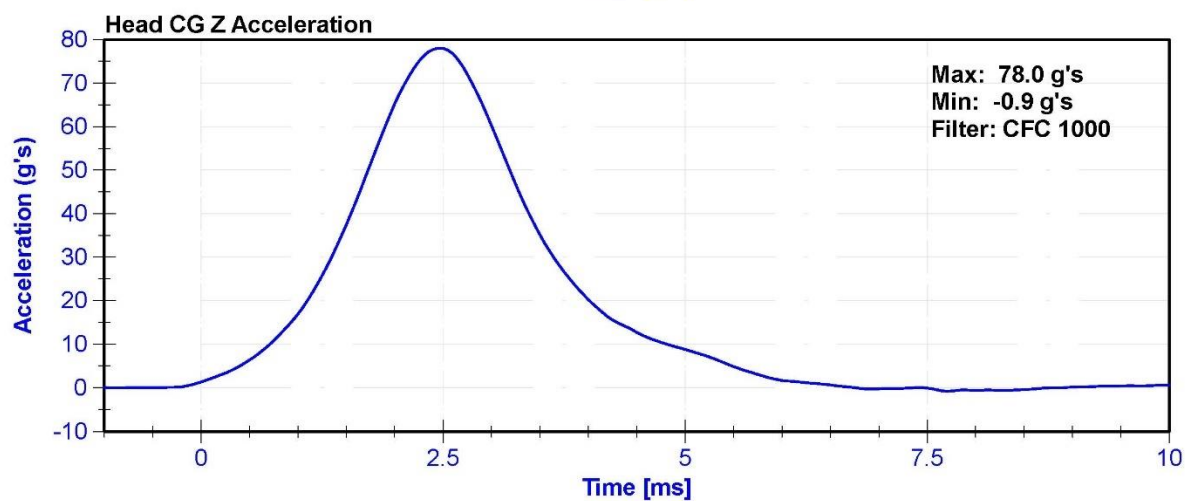
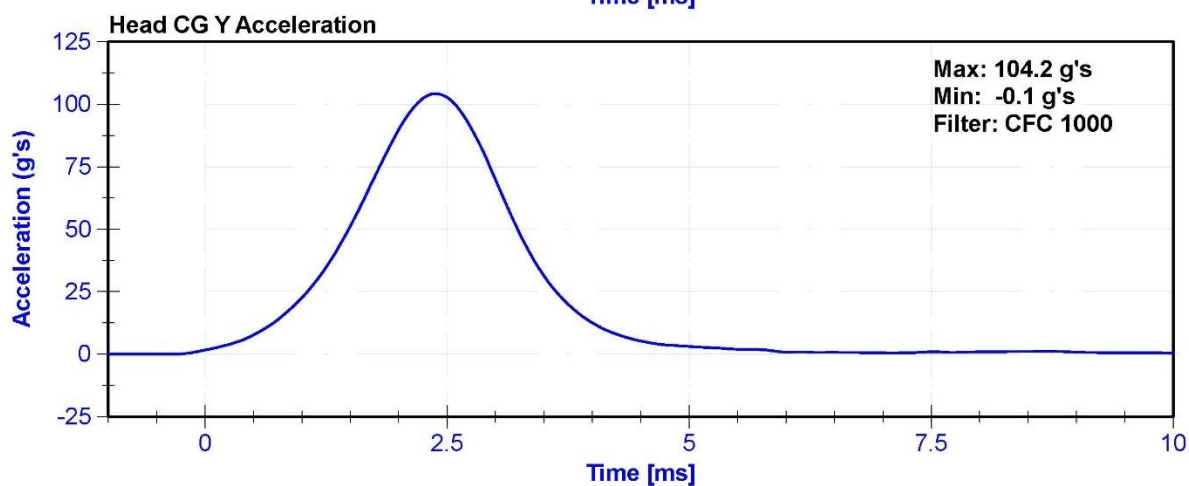
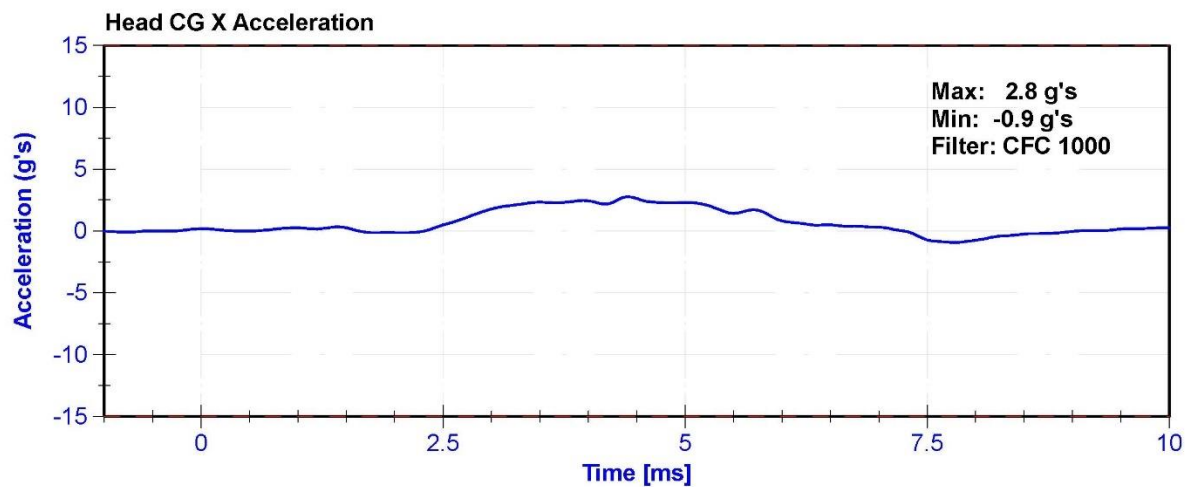
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	42.3	Pass
Resultant Acceleration	115	137	g's	130.1	Pass
Oscillation	0	15	%	1.1	Pass
Fore-Aft Acceleration	-15	15	g's	2.8	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
X Accelerometer	Endevco	P74788	6/17/2022	12/14/2022
Y Accelerometer	Endevco	P83432	6/17/2022	12/14/2022
Z Accelerometer	Endevco	P83319	6/17/2022	12/14/2022





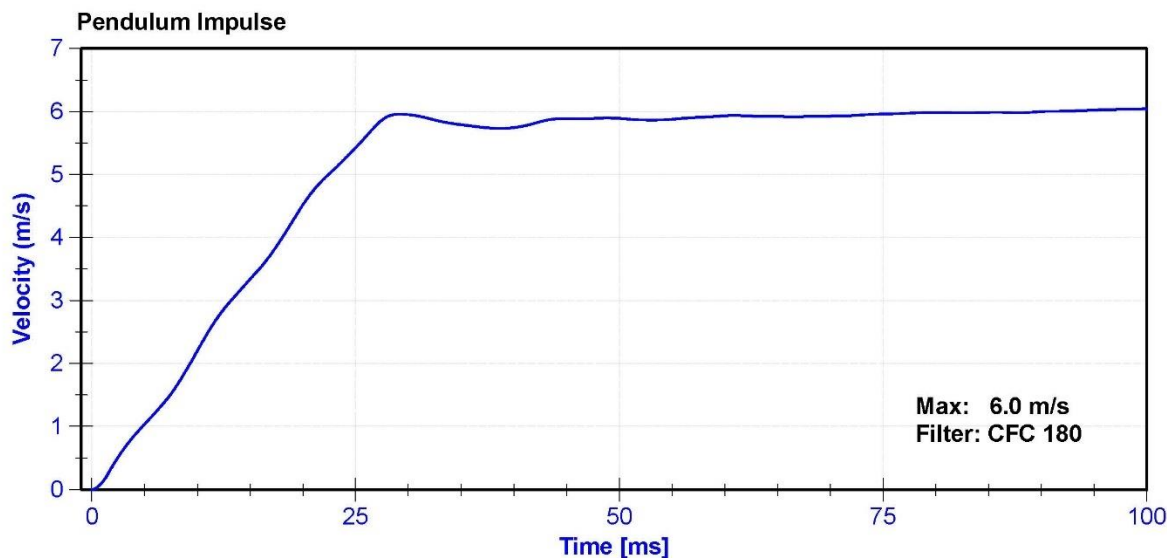
ATD Manufacturer	FTSS	Test Technician	S. Vacanti
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

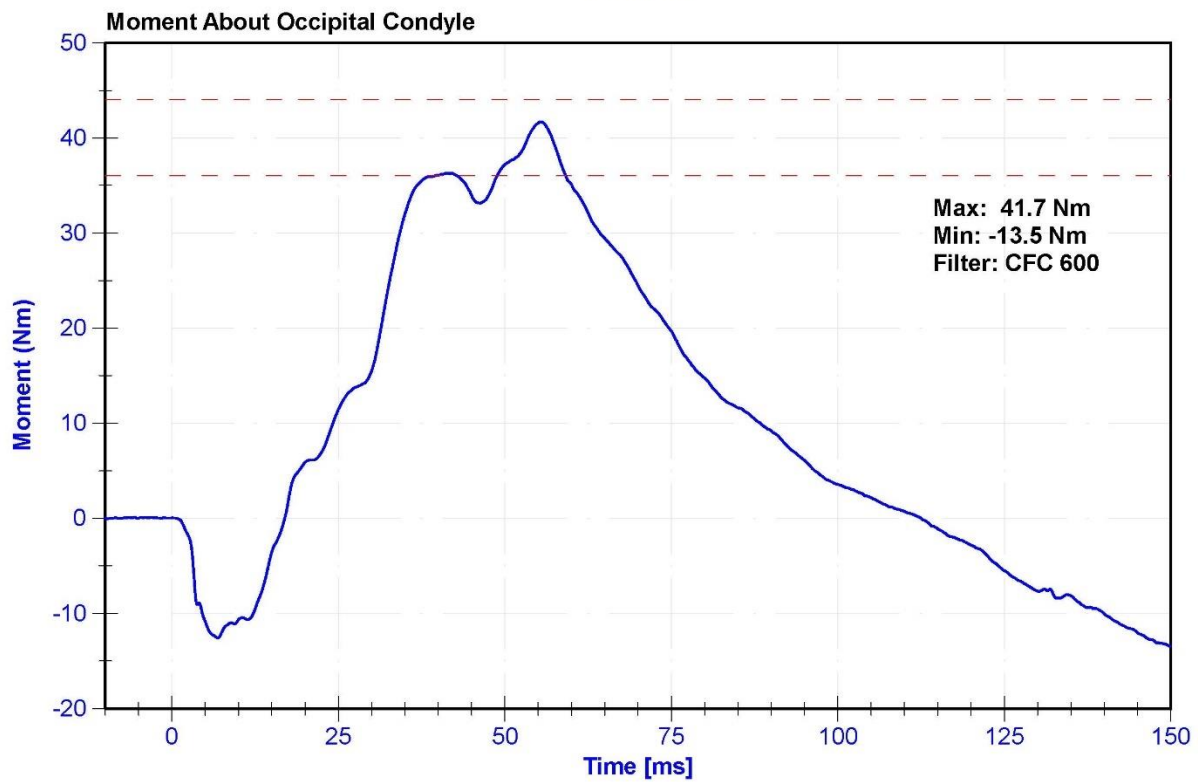
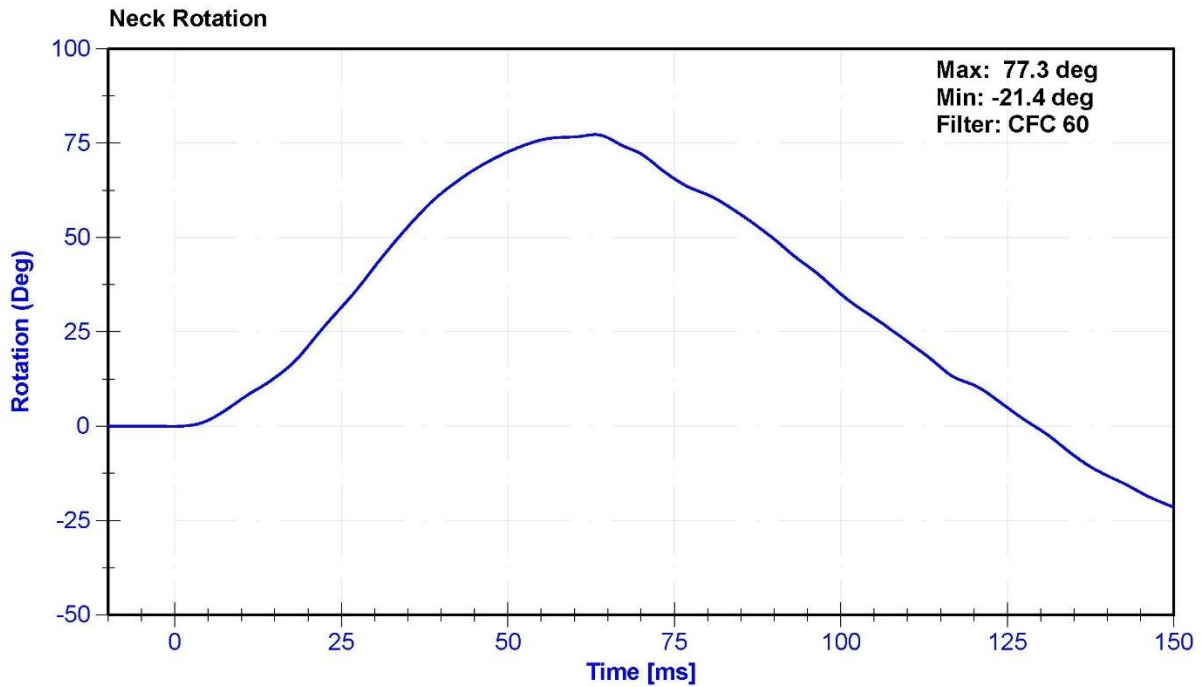
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	59	Pass
Velocity	5.51	5.63	m/s	5.569	Pass
Pendulum Impulse at 10ms	2.2	2.8	m/s	2.20	Pass
Pendulum Impulse at 15ms	3.3	4.1	m/s	3.34	Pass
Pendulum Impulse at 20ms	4.4	5.4	m/s	4.52	Pass
Pendulum Impulse at 25ms	5.4	6.1	m/s	5.42	Pass
Pendulum Impulse from 25 to 100ms	5.5	6.2	m/s	6.04	Pass
Neck Rotation	71	81	deg	77.3	Pass
Time at Maximum Rotation	50	70	ms	63.1	Pass
Moment about the OC	36	44	Nm	41.7	Pass
Moment Decay to 0 Nm	102	126	ms	112.5	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	7231CT	10/28/2021	10/28/2022
Pendulum Potentiometer	Servo	4961	2/23/2022	2/23/2023
Condyle Potentiometer	Servo	DS185	11/12/2021	11/12/2022
Upper Neck Load Cell	Denton	1716A-1037-FY	6/29/2021	6/29/2022





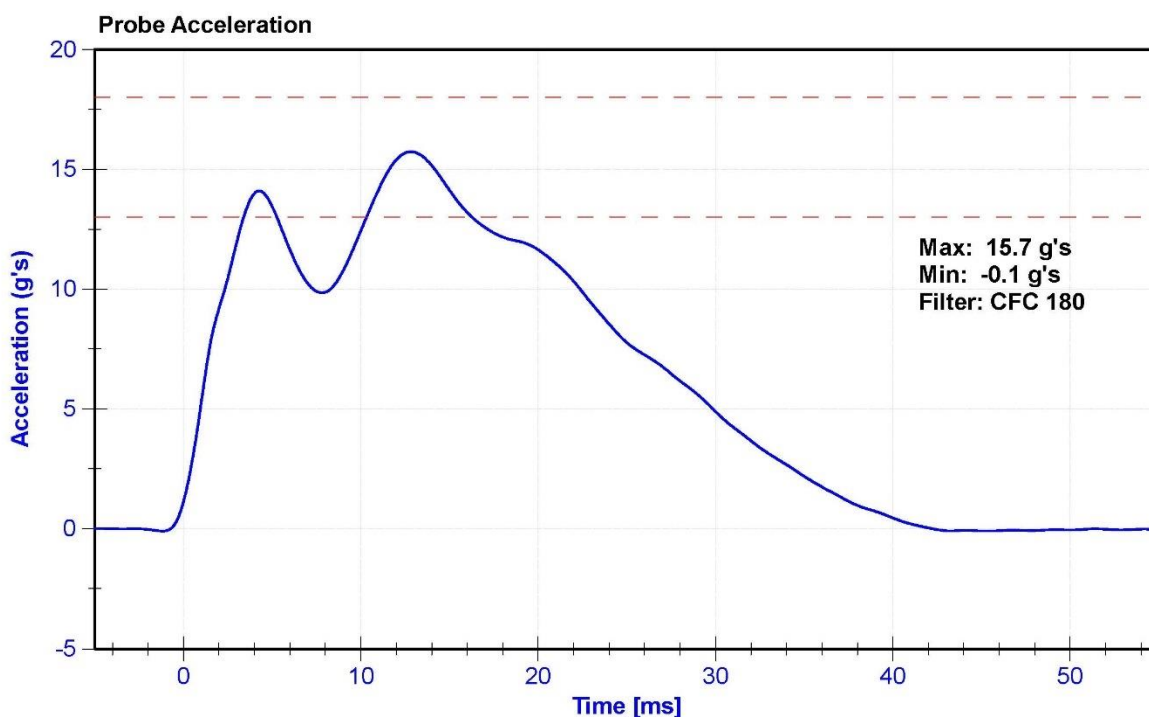
ATD Manufacturer	FTSS	Test Technician	D. Sakona, S. Vacanti
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

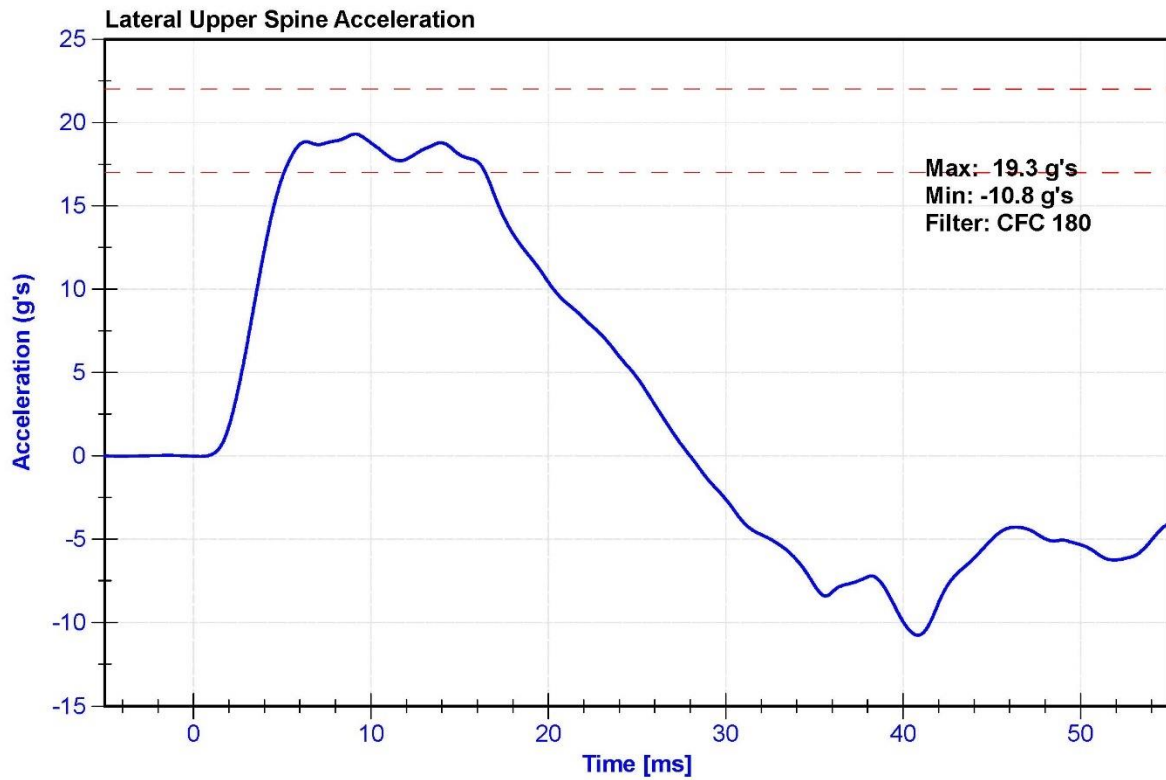
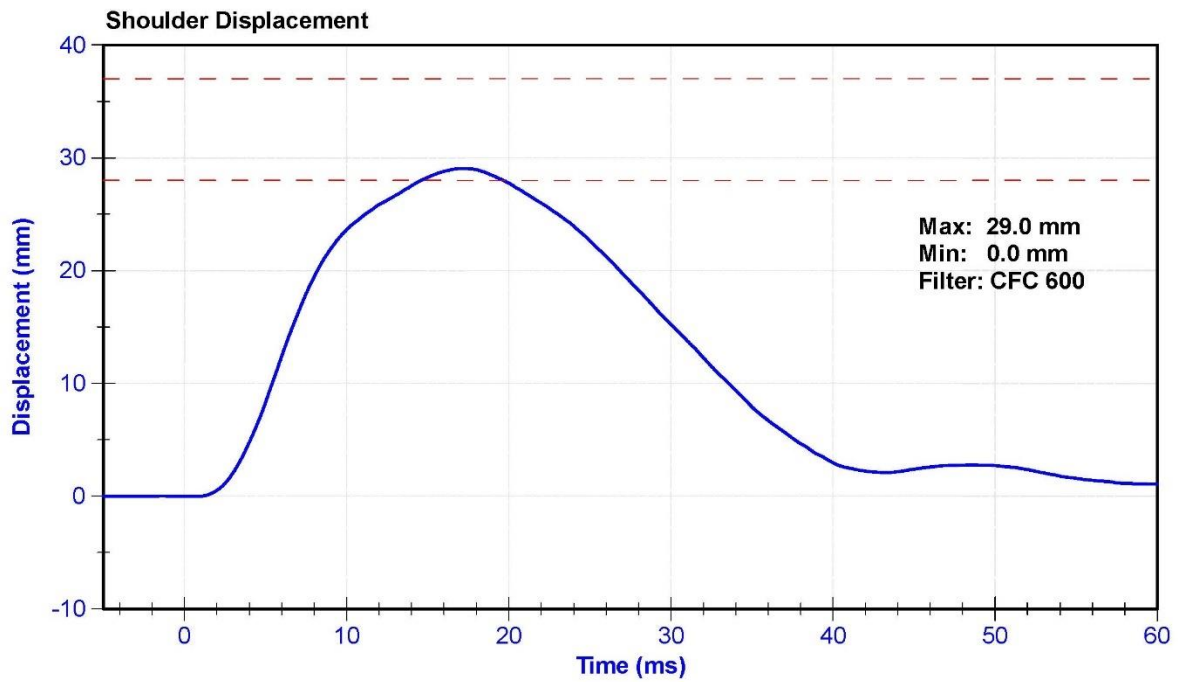
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	59	Pass
Velocity	4.2	4.4	m/s	4.34	Pass
Probe Acceleration	13	18	g's	15.7	Pass
Shoulder Deflection	28	37	mm	29.0	Pass
Lateral Upper Spine Acceleration	17	22	g's	19.3	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	P51736	10/25/2021	10/25/2022
Shoulder Potentiometer	Servo	1274GFE	6/20/2022	12/19/2022
Upper Spine Y Accelerometer	Endevco	P64148	6/17/2022	12/14/2022





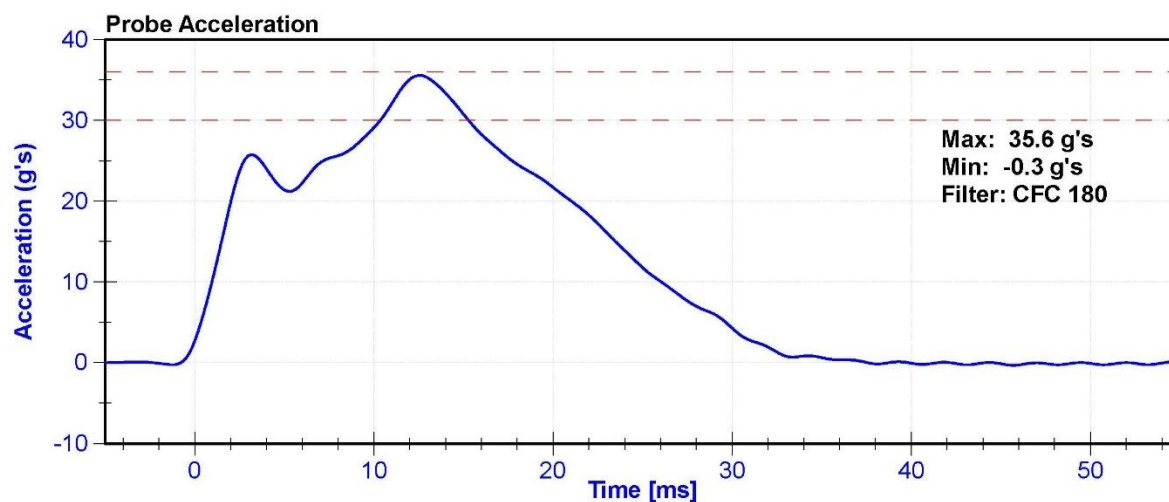
ATD Manufacturer	FTSS	Test Technician	D. Sakona, S. Vacanti
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

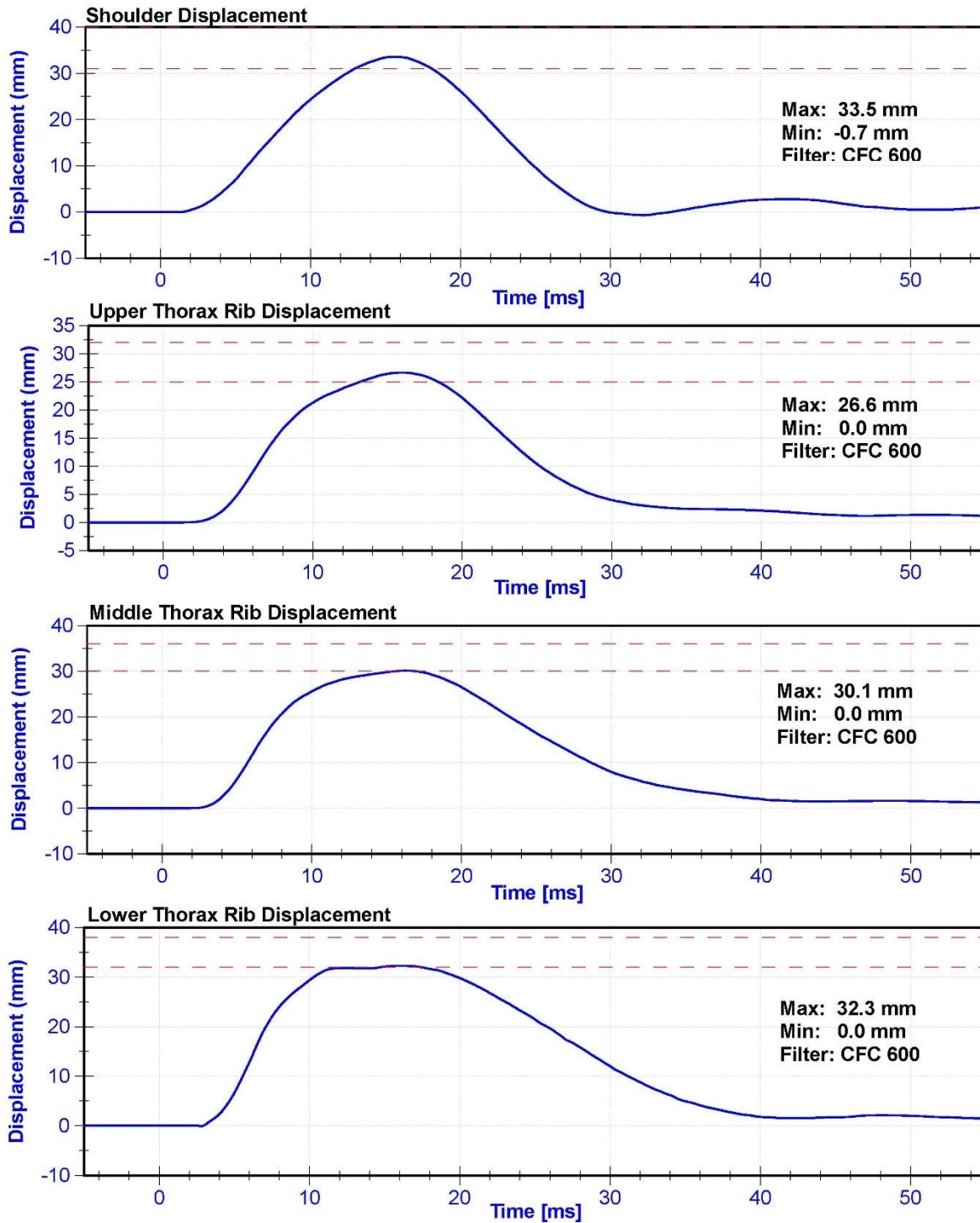
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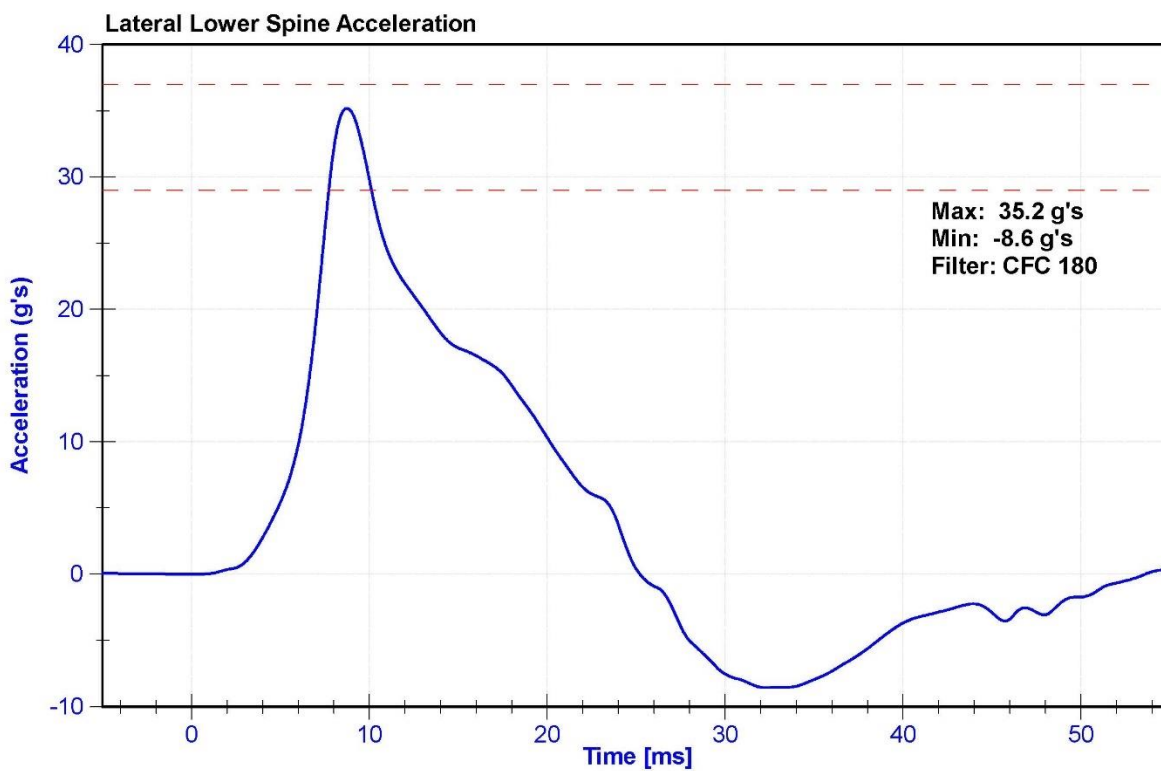
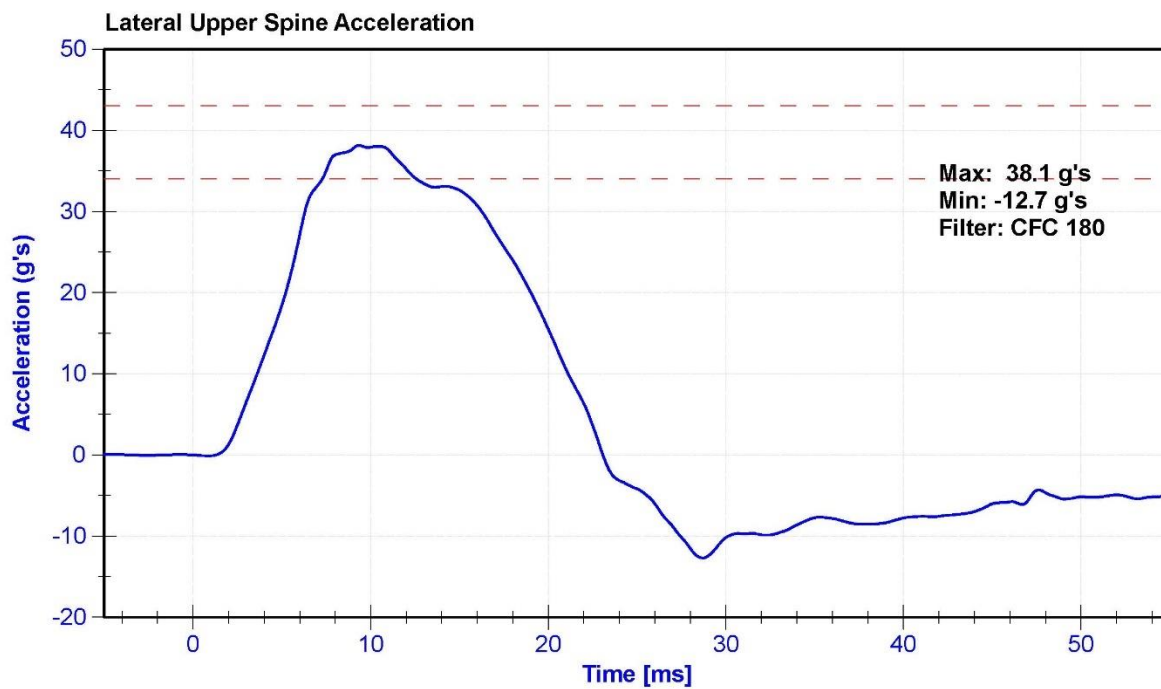
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	59	Pass
Velocity	6.6	6.8	m/s	6.68	Pass
Probe Acceleration after 5 ms	30	36	g's	35.6	Pass
Lateral Upper Spine Acceleration	34	43	g's	38.1	Pass
Lateral Lower Spine Acceleration	29	37	g's	35.2	Pass
Shoulder Deflection	31	40	mm	33.5	Pass
Upper Thorax Rib Deflection	25	32	mm	26.6	Pass
Mid Thorax Rib Deflection	30	36	mm	30.1	Pass
Lower Thorax Rib Deflection	32	38	mm	32.3	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	P51736	10/25/2021	10/25/2022
Upper Spine T1 Y Accelerometer	Endevco	P64148	6/17/2022	12/14/2022
Upper Spine T12 Y Accelerometer	Endevco	P51327	6/17/2022	12/14/2022
Shoulder Potentiometer	Servo	1274GFE	6/20/2022	12/19/2022
Upper Thorax Rib Potentiometer	Servo	1199GFE	6/17/2022	12/16/2022
Middle Thorax Rib Potentiometer	Servo	1246GFE	6/17/2022	12/16/2022
Lower Thorax Rib Potentiometer	Servo	011GFE	6/17/2022	12/16/2022







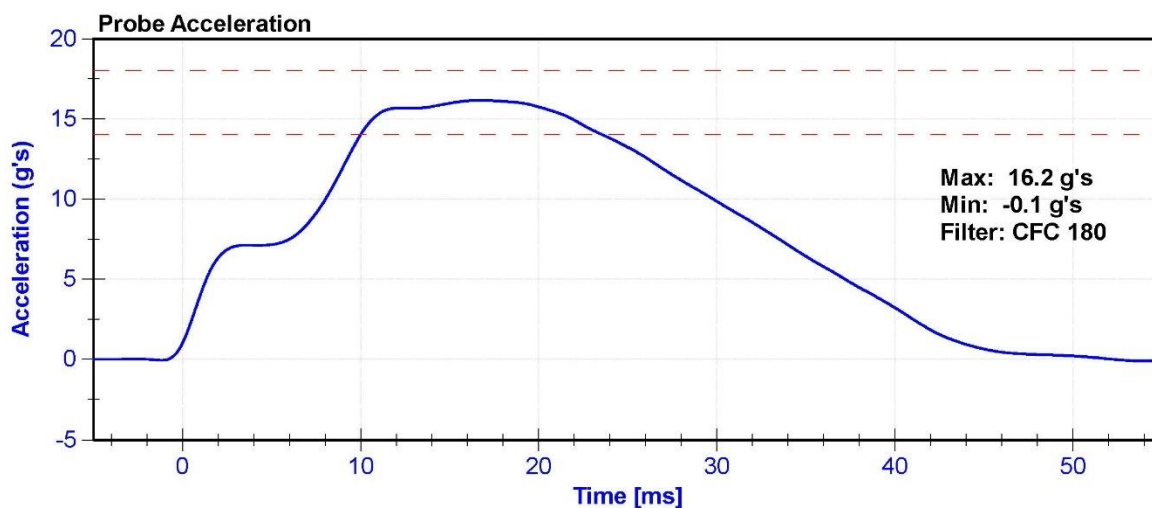
ATD Manufacturer	FTSS	Test Technician	D. Sakona, S. Vacanti
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

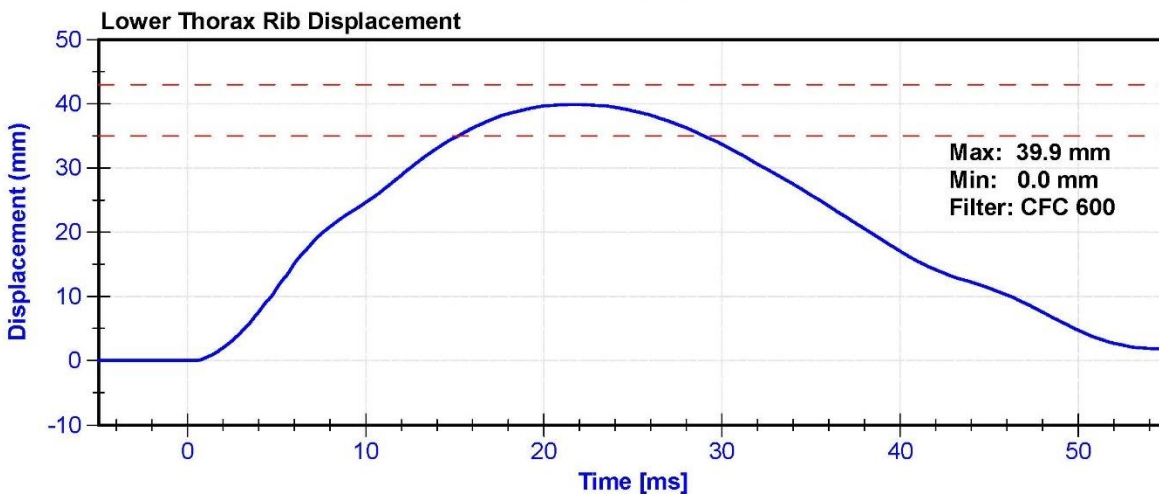
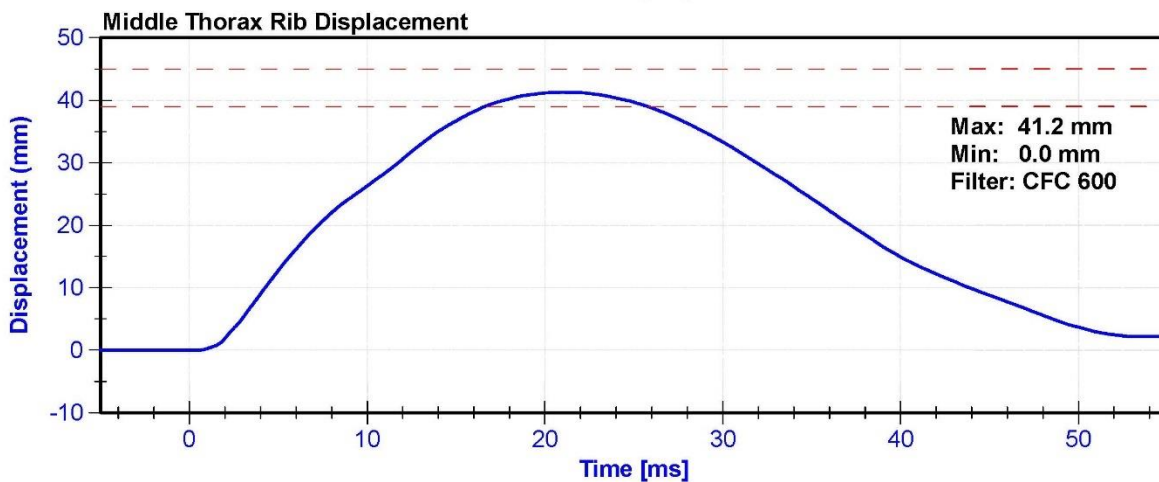
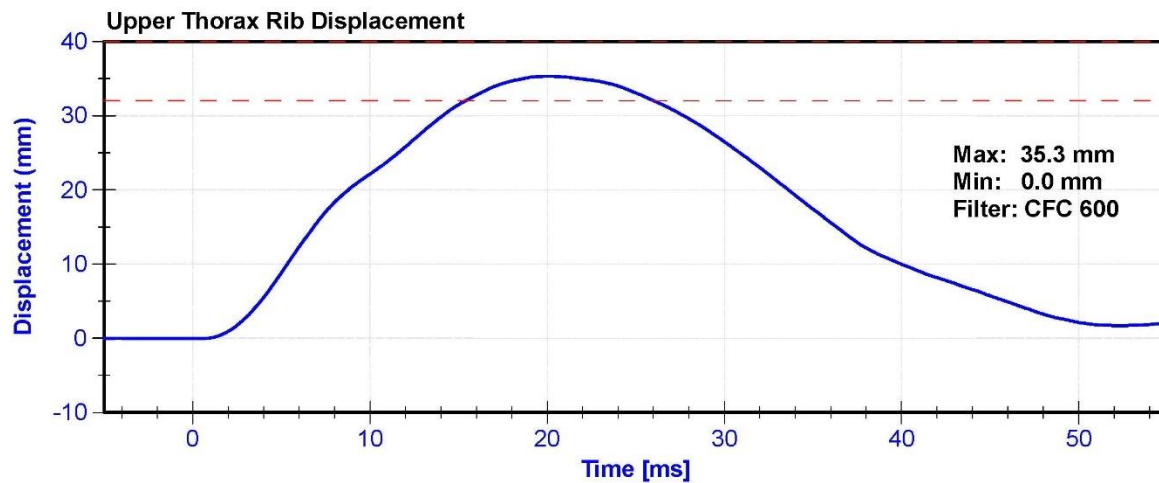
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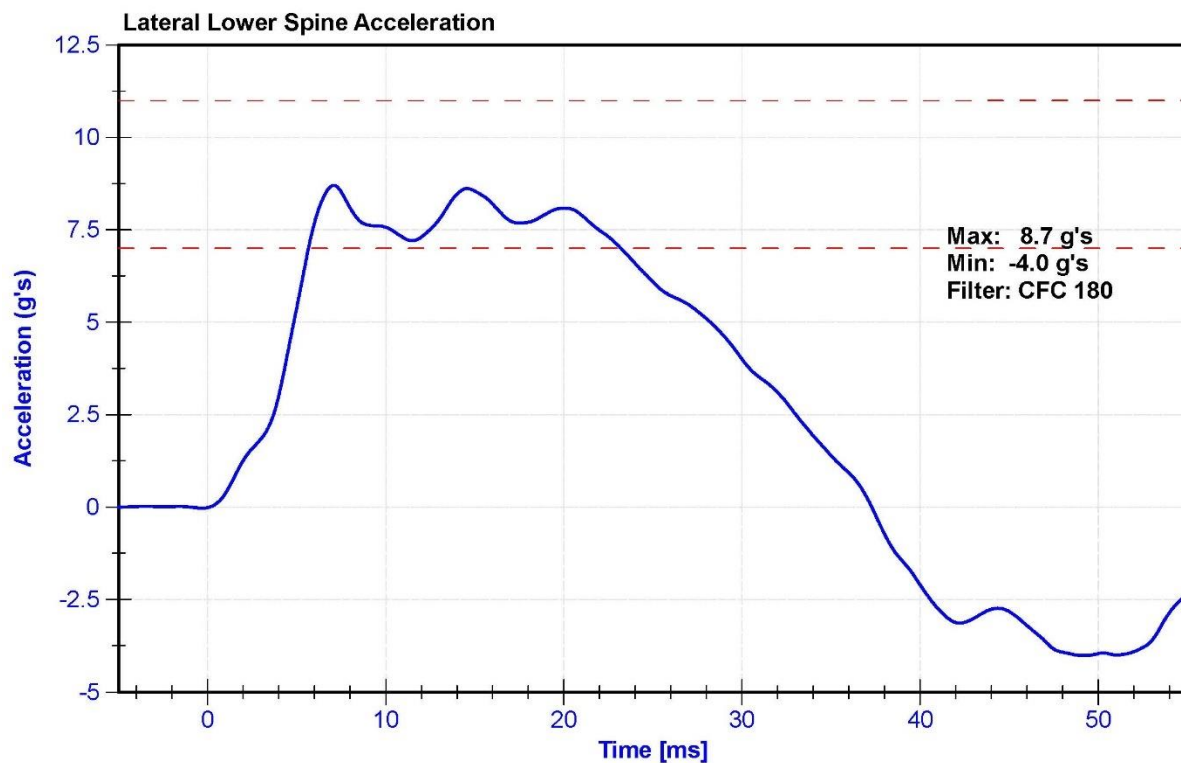
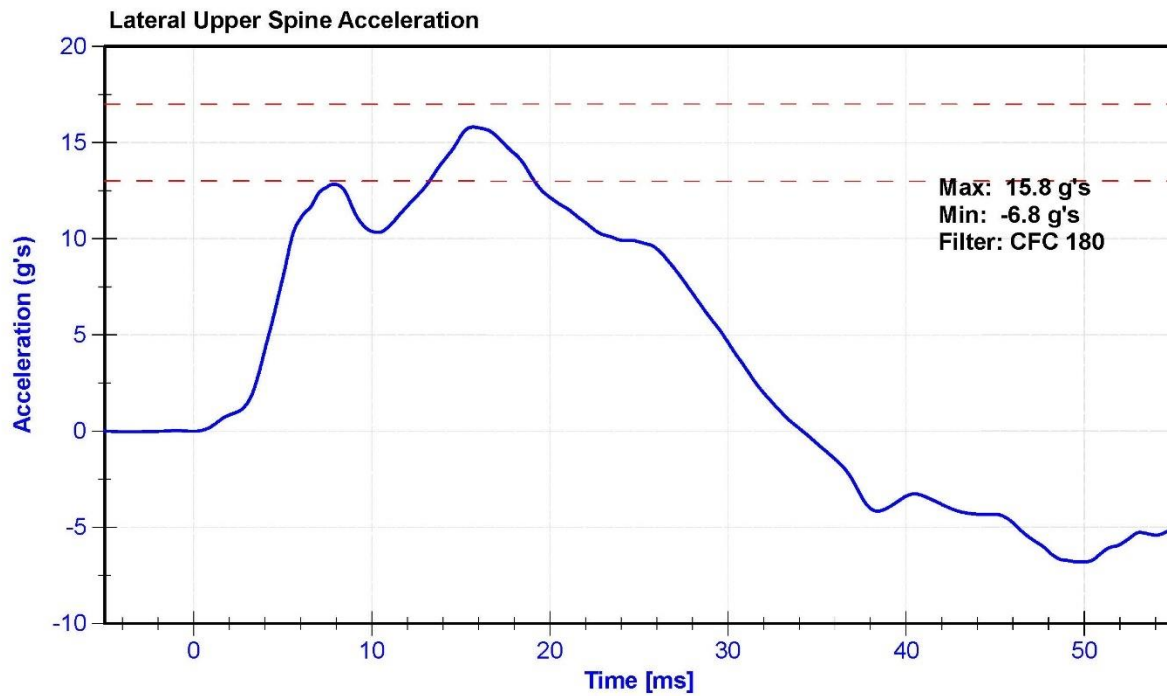
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	59	Pass
Velocity	4.2	4.4	m/s	4.34	Pass
Probe Acceleration	14	18	g's	16.2	Pass
Lateral Upper Spine Acceleration	13	17	g's	15.8	Pass
Lateral Lower Spine Acceleration	7	11	g's	8.7	Pass
Upper Thorax Rib Deflection	32	40	mm	35.3	Pass
Middle Thorax Rib Deflection	39	45	mm	41.2	Pass
Lower Thorax Rib Deflection	35	43	mm	39.9	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	P51736	10/25/2021	10/25/2022
Upper Spine Y Accelerometer	Endevco	P64148	6/17/2022	12/14/2022
Lower Spine Y Accelerometer	Endevco	P51327	6/17/2022	12/14/2022
Upper Thorax Rib Potentiometer	Servo	1199GFE	6/17/2022	12/16/2022
Middle Thorax Rib Potentiometer	Servo	1246GFE	6/17/2022	12/16/2022
Lower Thorax Rib Potentiometer	Servo	011GFE	6/17/2022	12/16/2022







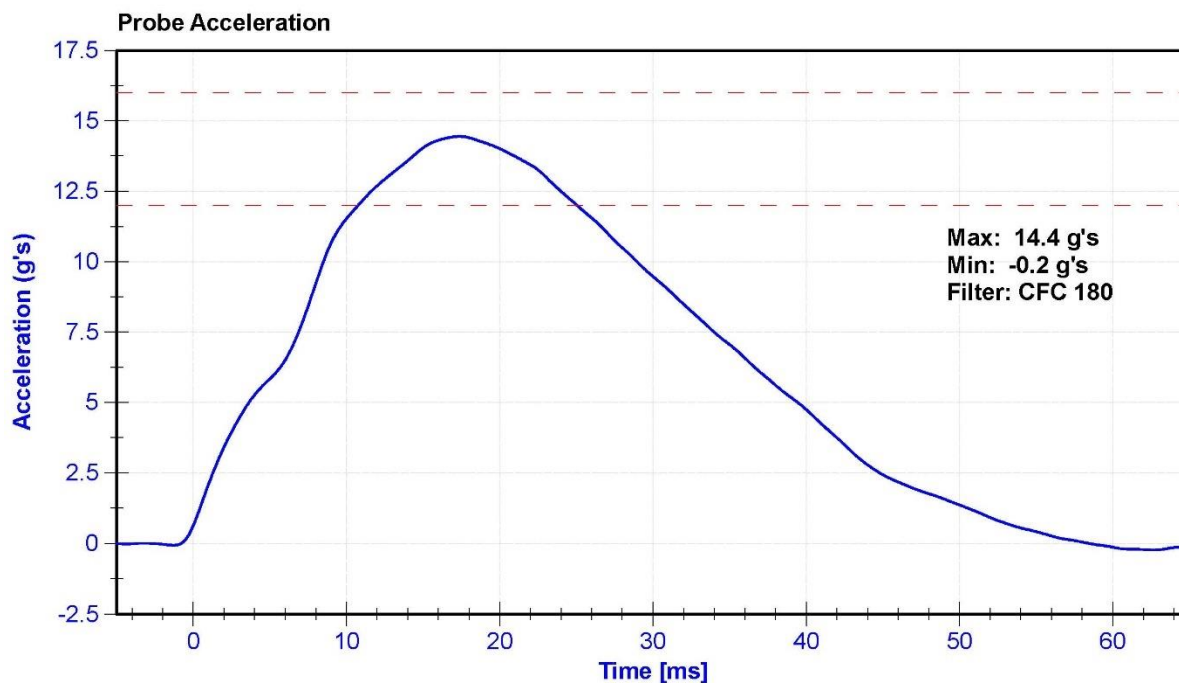
ATD Manufacturer	FTSS	Test Technician	D. Sakona, S. Vacanti
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

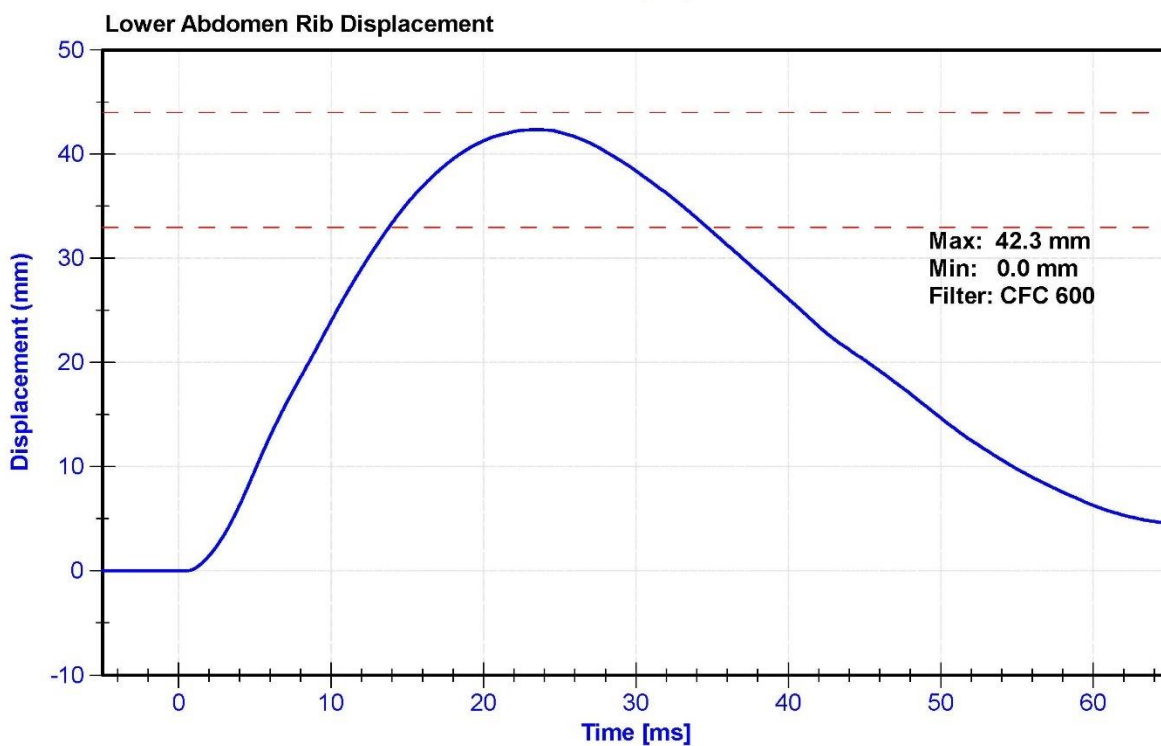
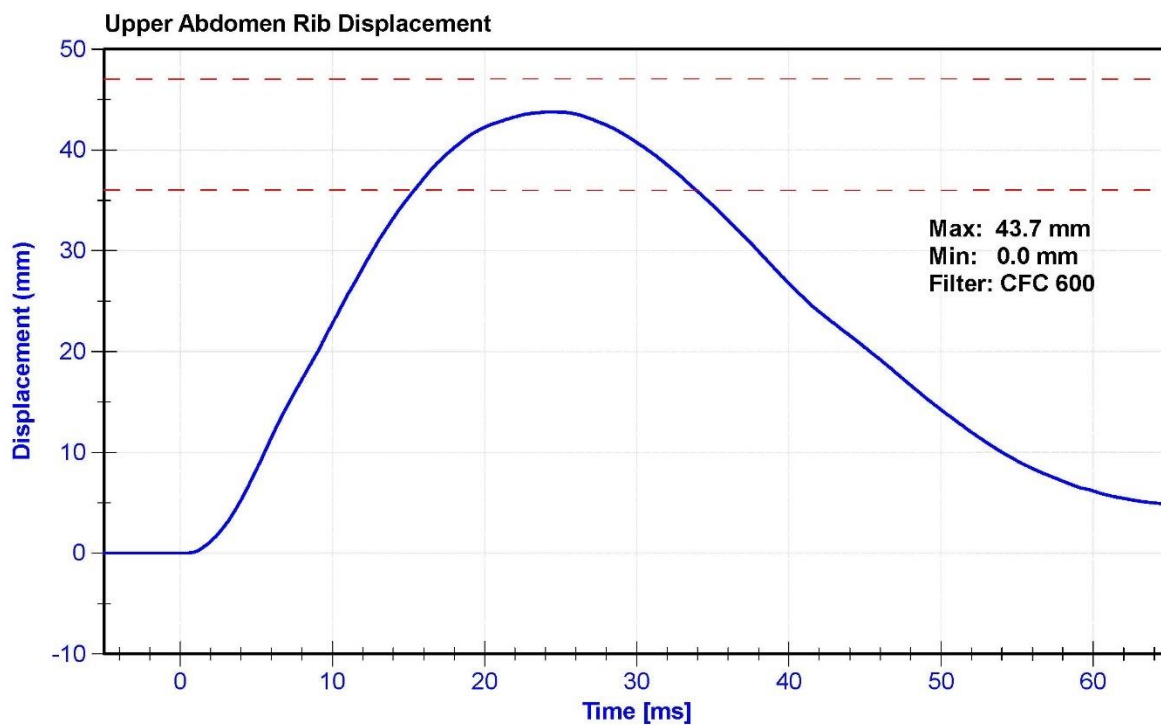
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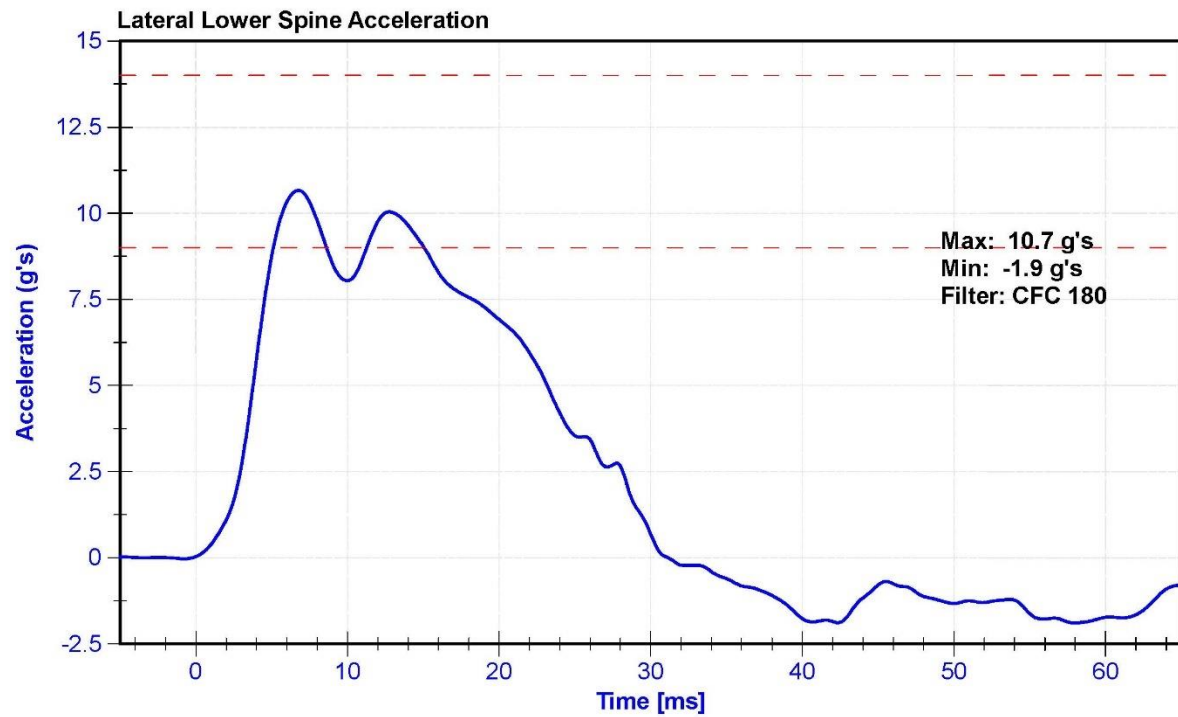
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	59	Pass
Velocity	4.2	4.4	m/s	4.33	Pass
Probe Acceleration	12	16	g's	14.4	Pass
Lateral Lower Spine Acceleration	9	14	g's	10.7	Pass
Upper Abdomen Rib Deflection	36	47	mm	43.7	Pass
Lower Abdomen Rib Deflection	33	44	mm	42.3	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	Endevco	P51736	10/25/2021	10/25/2022
Lower Spine Y Accelerometer	Endevco	P51327	6/17/2022	12/14/2022
Upper Abdomen Rib Potentiometer	Servo	008GFE	6/17/2022	12/16/2022
Lower Abdomen Rib Potentiometer	Servo	041 GFE	6/17/2022	12/16/2022







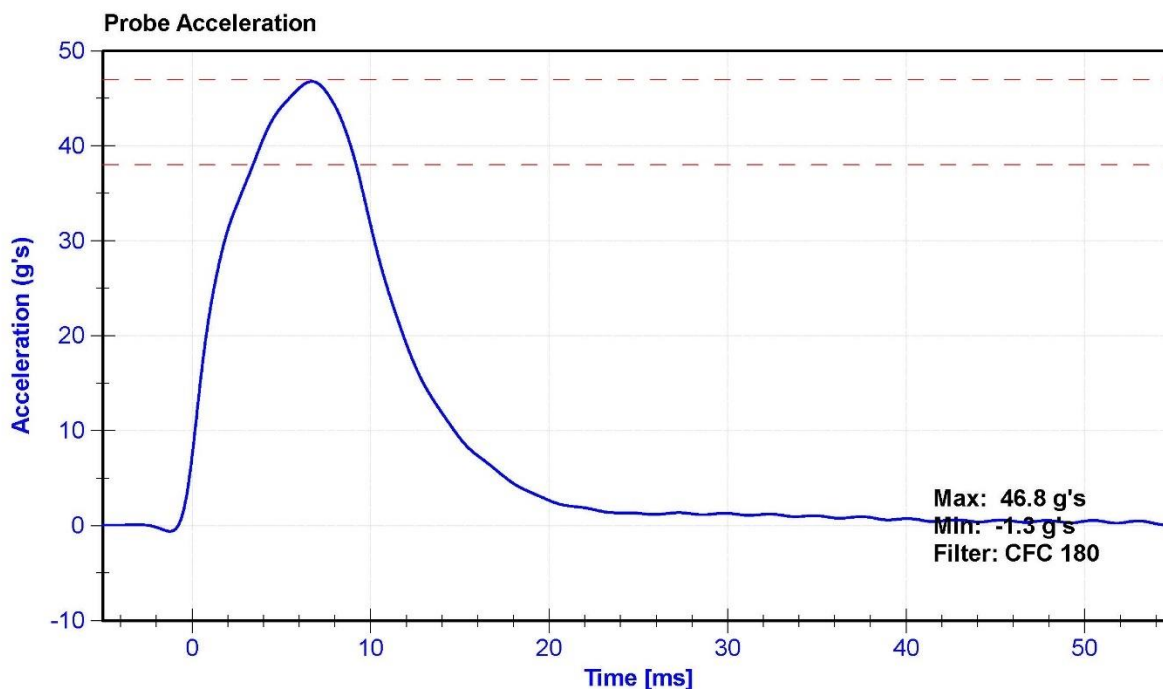
ATD Manufacturer	FTSS	Test Technician	D. Sakona, S. Vacanti
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

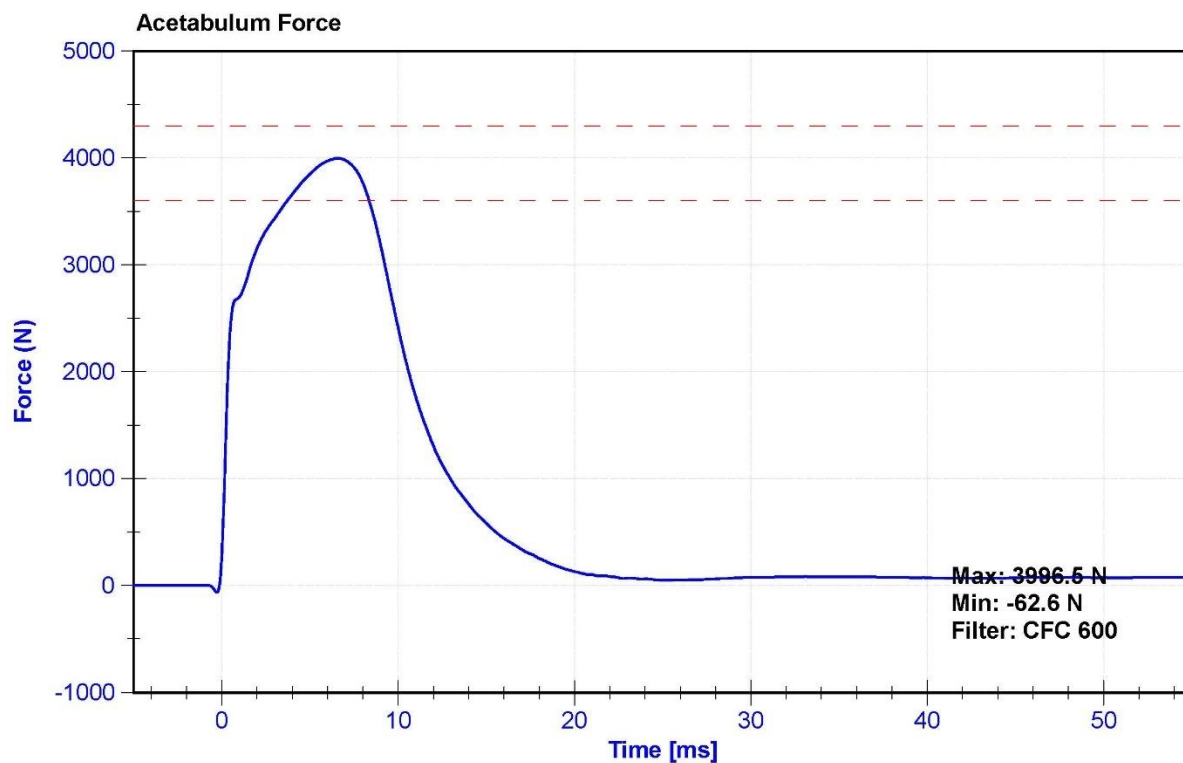
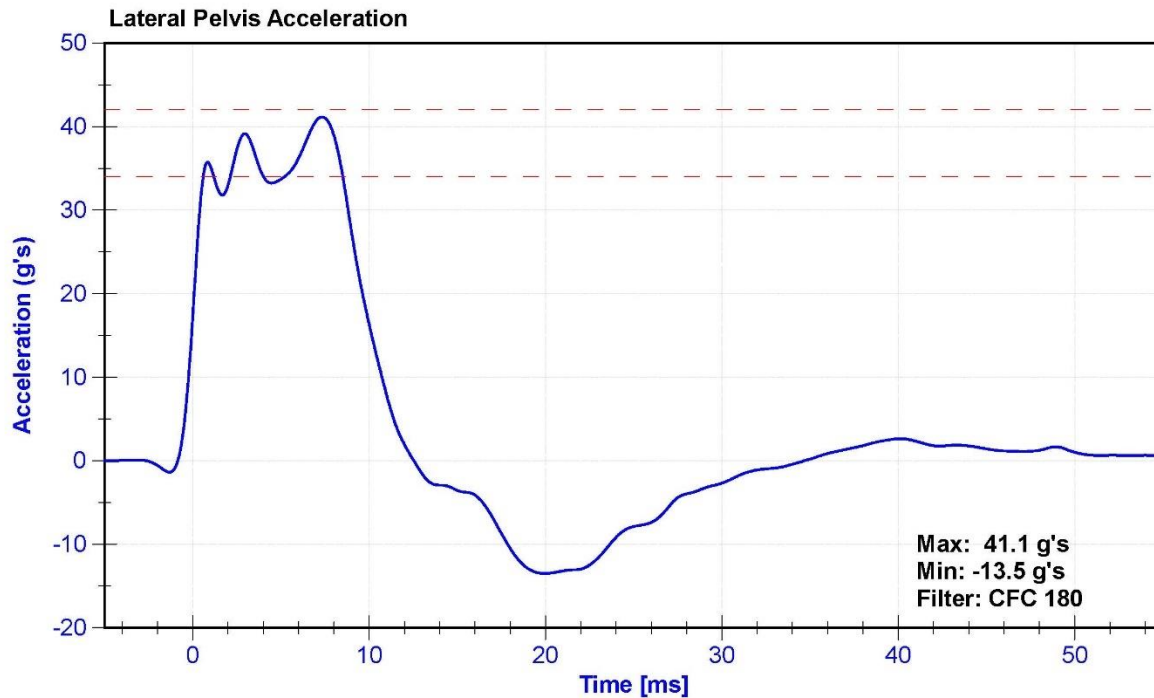
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	59	Pass
Velocity	6.6	6.8	m/s	6.60	Pass
Probe Acceleration	38	47	g's	46.8	Pass
Lateral Pelvis Acceleration after 6ms	34	42	g's	41.1	Pass
Acetabulum Force	3600	4300	N	3996.5	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	P51736	10/25/2021	10/25/2022
Pelvis Y Accelerometer	Endevco	P51875	6/17/2022	12/14/2022
Acetabulum Load Cell	Denton	276-FY	9/14/2021	9/14/2022
Certification Plug	SACO			N/A
Crash Test Plug	SACO			N/A







SID-11s Pelvis Plug Certification Test

Plug S/N 13976

Test Number 13450

Report Number 13495

Test Date 5/22/2020 9:17:33 AM

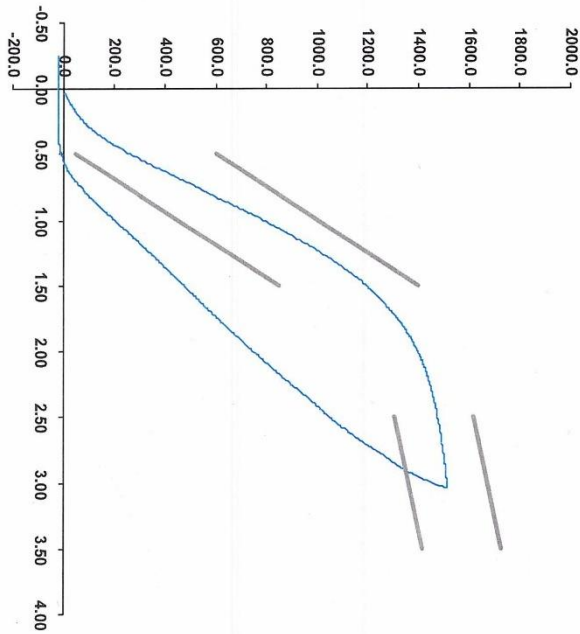
Cert #3
D68012
6/24/22

Force (-N) vs Extension (-mm)

Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	270	600
Force @ 1.5 mm (N)	1,197	1,400
Force @ 2.5 mm (N)	1,477	1,618
Force @ 3.0 mm (N)	1,514	1,673

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

Notes:



Operator

Part Number 180-4450

Template No 107 08-Jul-21
SACO Research

By: _____ Date: _____

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



Cash - Impact Side

SID-IIS Pelvis Plug Certification Test

Plug S/N 13075

Test Number 10395

Report Number 10430

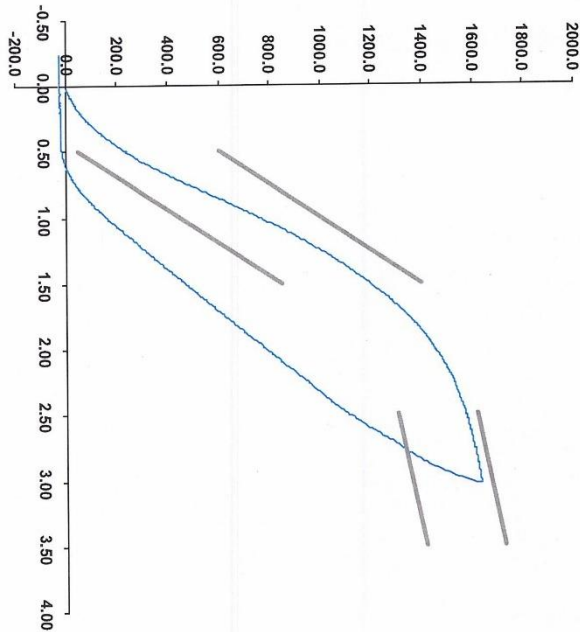
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Force (-N) vs Extension (-mm)

Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	235	600
Force @ 1.5 mm (N)	1,196	1,400
Force @ 2.5 mm (N)	1,574	1,618
Force @ 3.0 mm (N)	1,634	1,673

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

Notes:



Operator

Part Number 180-4450

Template No 107

08-Jul-21

SACO Research

By : _____ Date : _____

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



Crash - Non Impact Side

SID-Ils Pelvis Plug Certification Test

Plug S/N 12972

Test Number 8306

Report Number 8336

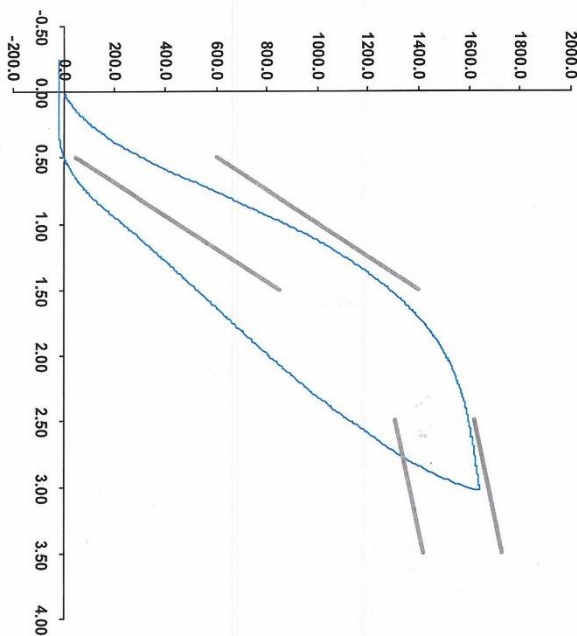
Test Date 1/22/2019 12:51:55 PM

Force (-N) vs Extension (-mm)

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

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

Notes:



Operator

Part Number 180-4450

Template No 107 08-Jul-21

SACO Research

By: _____ Date: _____

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

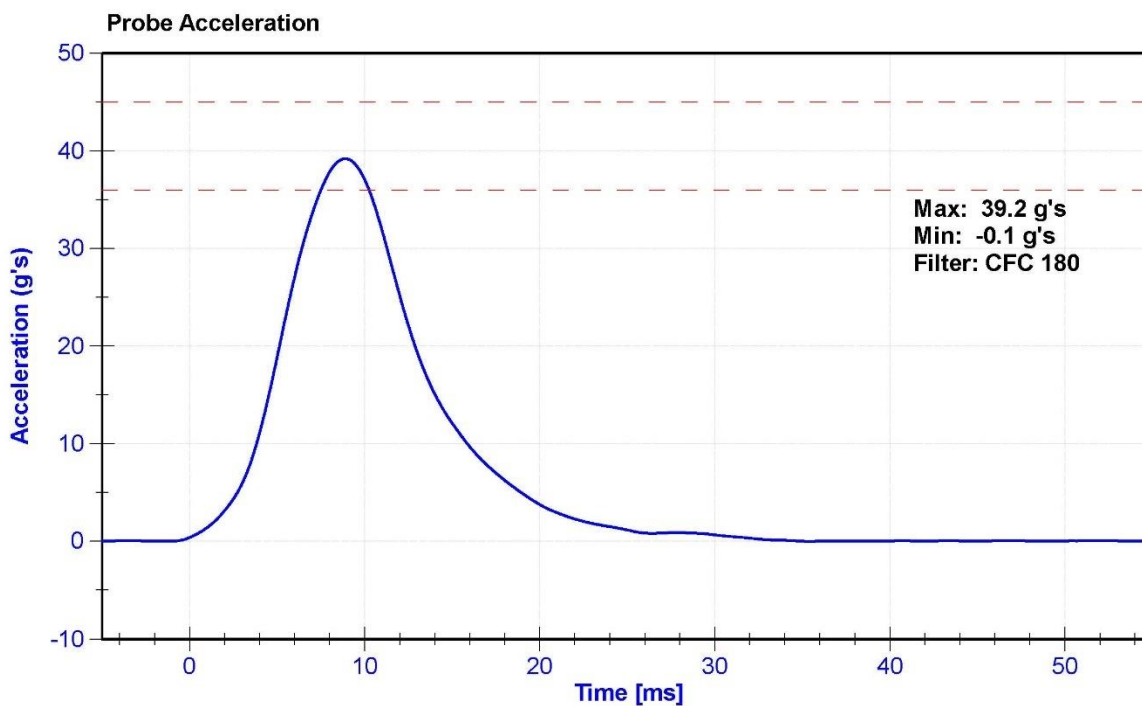
ATD Manufacturer	FTSS	Test Technician	D. Sakona, S. Vacanti
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

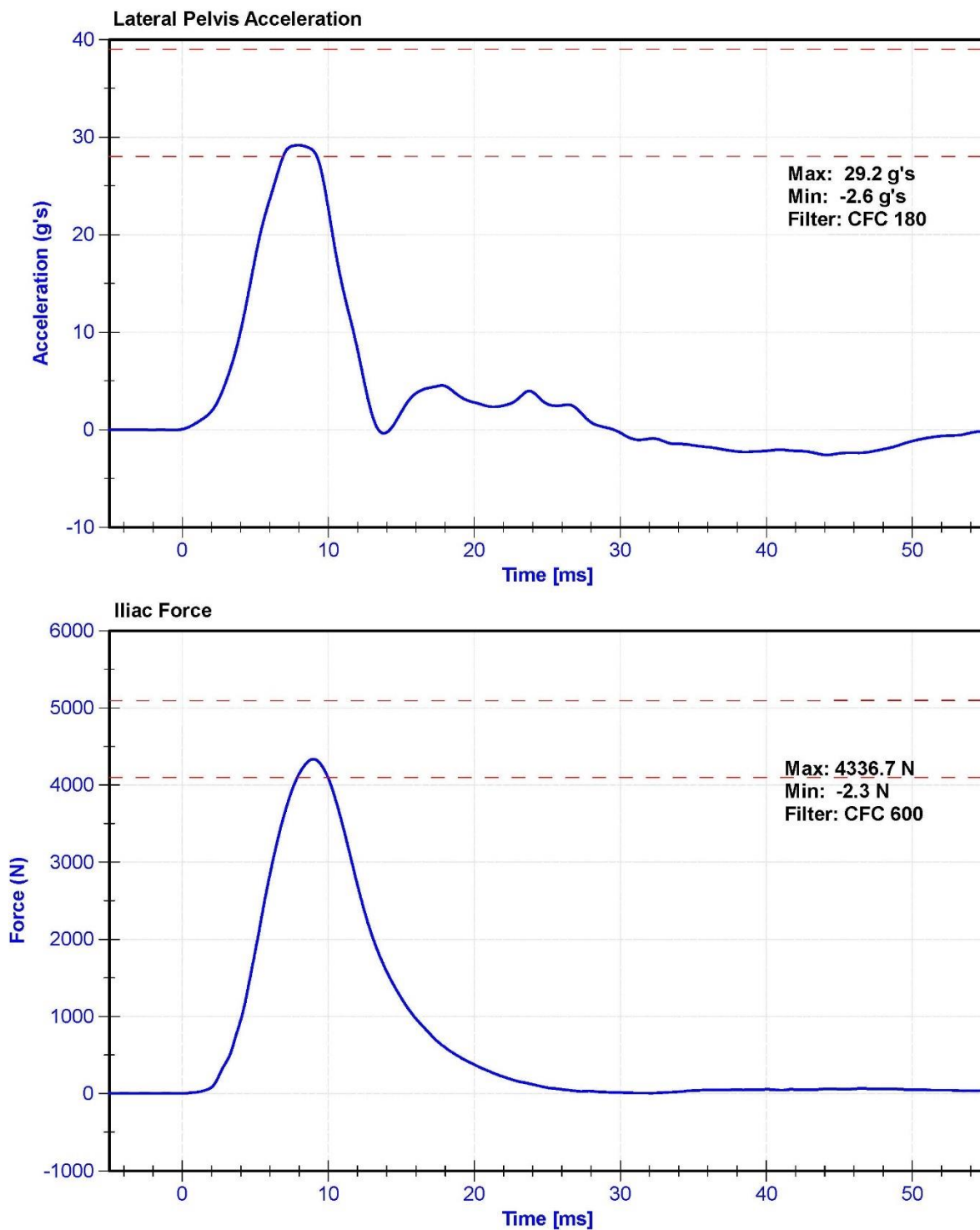
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	59	Pass
Velocity	4.2	4.4	m/s	4.33	Pass
Probe Acceleration	36	45	g's	39.2	Pass
Lateral Pelvis Acceleration	28	39	g's	29.2	Pass
Iliac Force	4100	5100	N	4336.7	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	P51736	10/25/2021	10/25/2022
Pelvis Y Accelerometer	Endevco	P51875	6/17/2022	12/14/2022
Iliac Load Cell	Denton	290-FY	9/14/2021	9/14/2022





CALIBRATION TEST RESULTS

POST-TEST

EUROSID 2 (ES-2RE) MALE – DRIVER ATD

SERIAL NO: F033

(CONFIGURED FOR LEFT SIDE IMPACT)

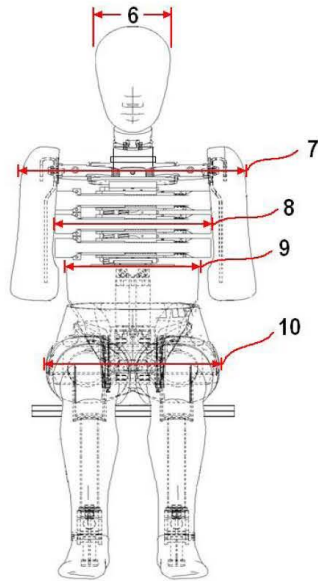


External Measurements - EuroSID-2re

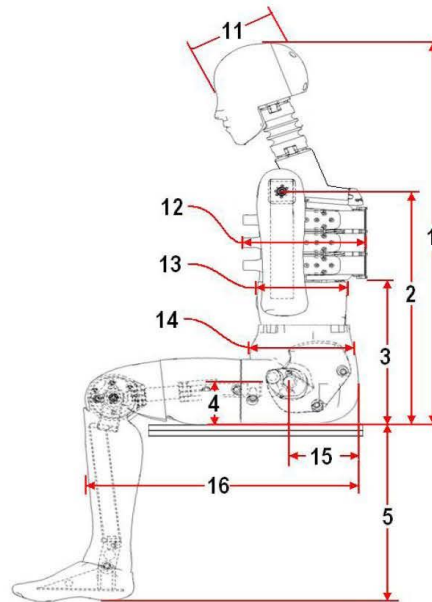
Technician: K. Brogan

Date: 06/27/2022

Dummy Serial Number: F033



FRONT VIEW



SIDE VIEW

Dim. No.	Description	Specification (mm)		Result (mm)	Pass/Fail
1	Sitting Height	900	918	910	Pass
2	Seat to Shoulder Joint	558	572	565	Pass
3	Seat to Lower Face of Thoracic Spine Box	346	356	350	Pass
4	Seat to Hip Joint (center of bolt)	97	103	100	Pass
5	Sole to Seat, Sitting	333	451	415	Pass
6	Head Width	152	158	155	Pass
7	Shoulder/Arm Width	461	479	469	Pass
8	Thorax Width	322	332	328	Pass
9	Abdomen Width	273	287	280	Pass
10	Pelvis Lap Width	359	373	365	Pass
11	Head Depth	196	206	200	Pass
12	Thorax Depth	262	272	265	Pass
13	Abdomen Depth	194	204	200	Pass
14	Pelvis Depth	235	245	240	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150	160	156	Pass
16	Back of Buttocks to Front Knee	597	615	607	Pass

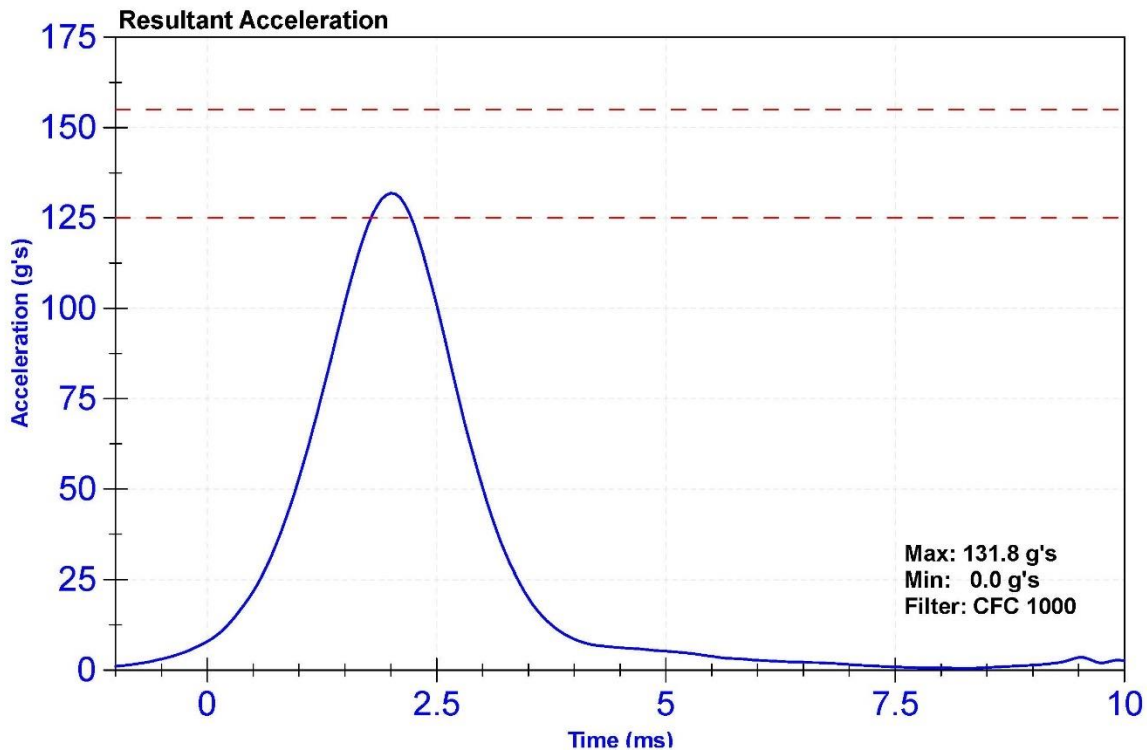
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

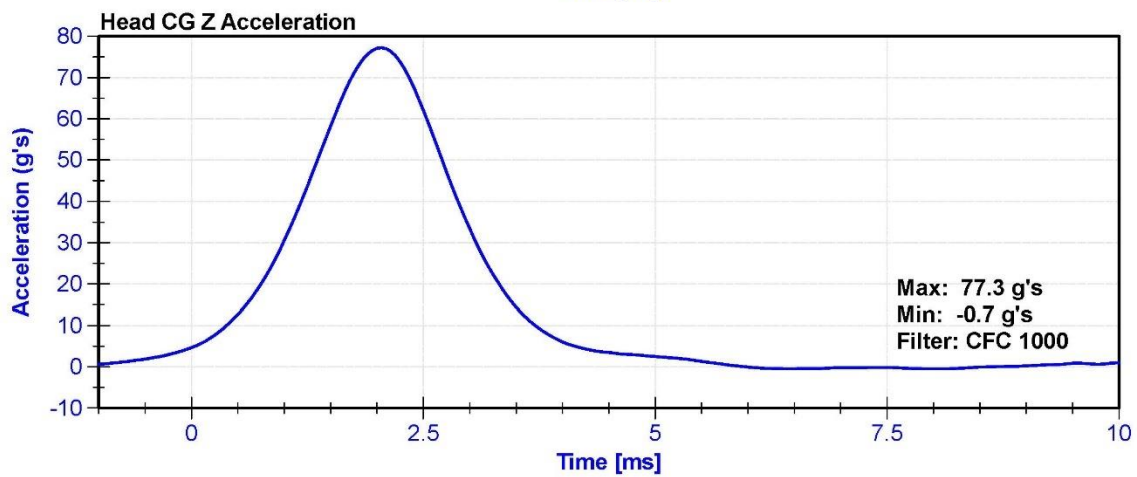
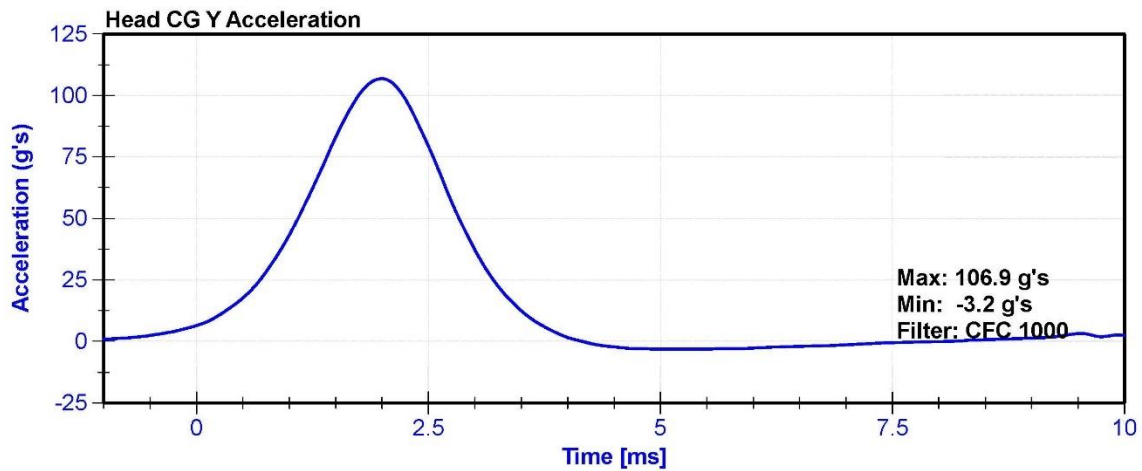
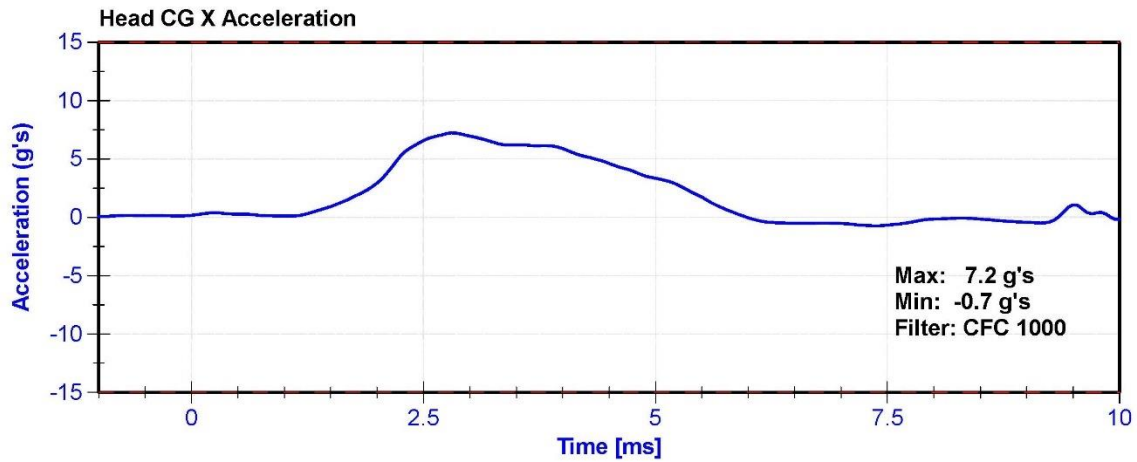
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	52.0	Pass
Resultant Acceleration	125	155	g's	131.8	Pass
Oscillation	0	15	%	2.63	Pass
Fore-Aft Acceleration	-15	15	g's	7.2	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
X Accelerometer	Endevco	P63861	1/31/2022	7/30/2022
Y Accelerometer	Endevco	P49216	1/31/2022	7/30/2022
Z Accelerometer	Endevco	P51303	1/31/2022	7/30/2022

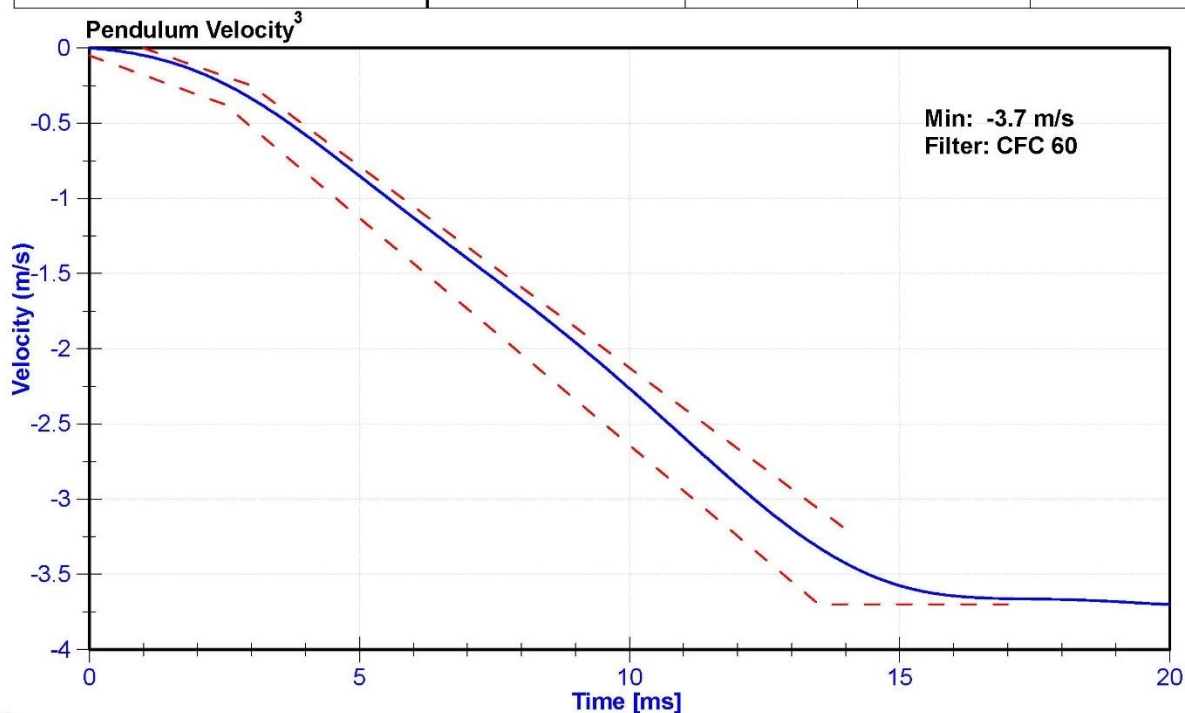




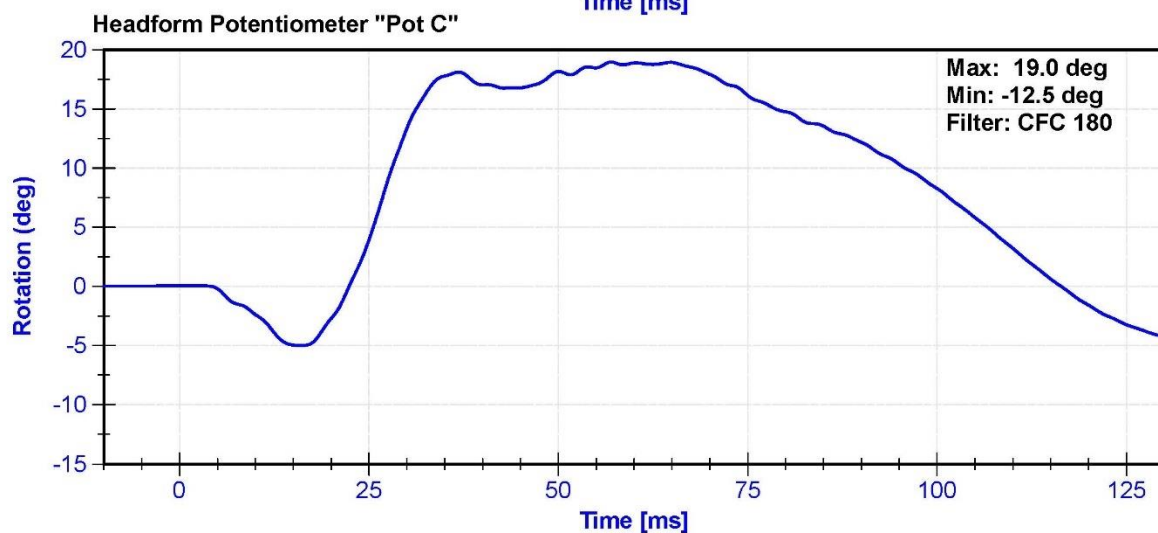
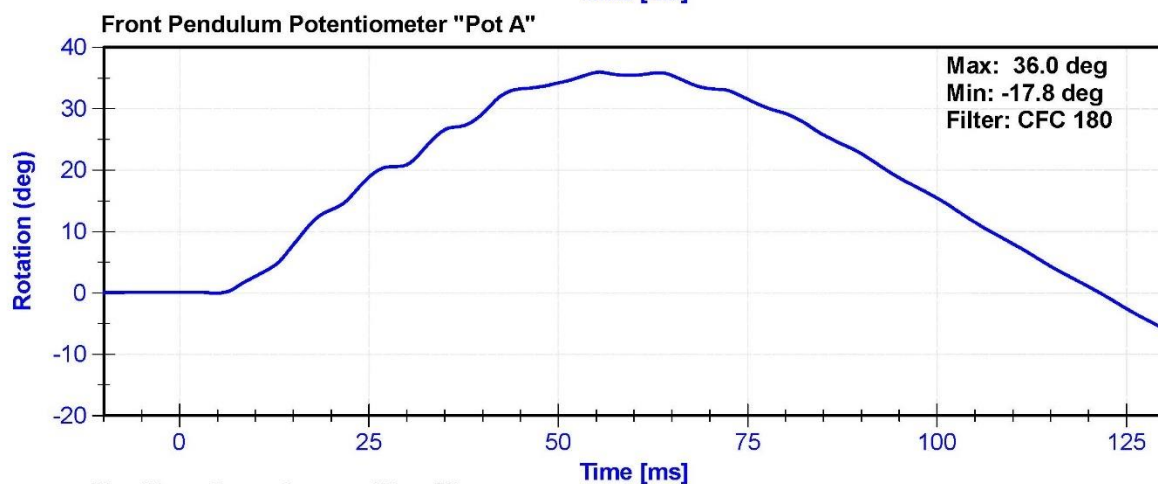
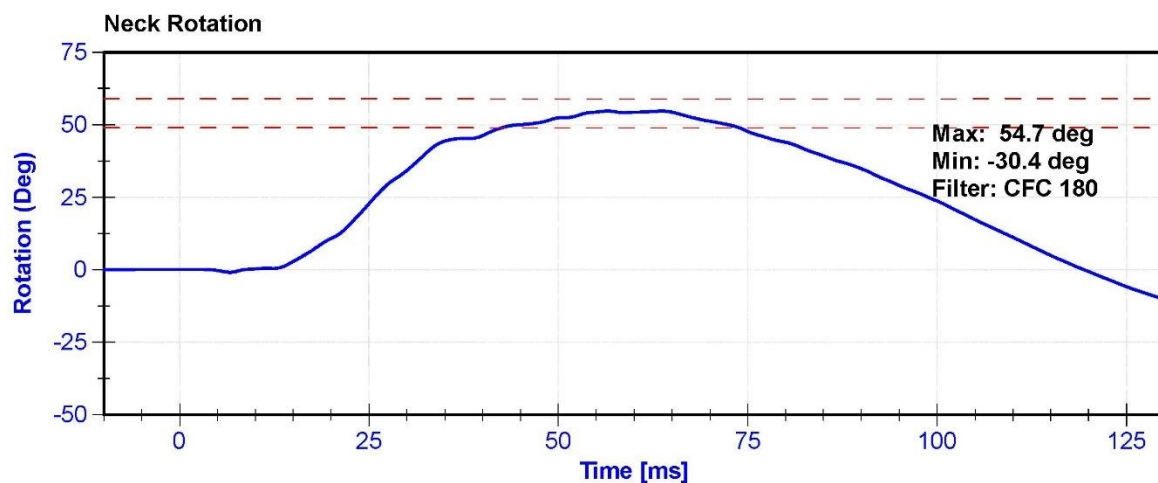
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results					
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.3	Pass
Humidity	10	70	%	49.1	Pass
Velocity	3.3	3.5	m/s	3.42	Pass
Lateral Neck Rotation	49	59	deg	54.7	Pass
Time at Maximum Rotation	54	66	ms	56.5	Pass
Time of Rotation Decay from Maximum	53	88	ms	63.0	Pass
Pendulum Velocity Overall Corridor	Lower Boundary ¹	Upper Boundary ²	m/s	See Plot ³	Pass

Transducer Calibrations				
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	C16503	10/28/2021	10/28/2022
Front Pendulum Potentiometer	Sfernice	094	10/1/2021	10/1/2022
Headform Potentiometer	Sfernice	095	10/1/2021	10/1/2022



^{1,2} Upper and lower boundaries specified in Appendix I



Appendix I

² Upper Boundary Corridor		¹ Lower Boundary Corridor	
Time (ms)	Velocity (m/s)	Time (ms)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.25	2.5	-0.375
14.0	-3.20	13.5	-3.7
		17.0	-3.7

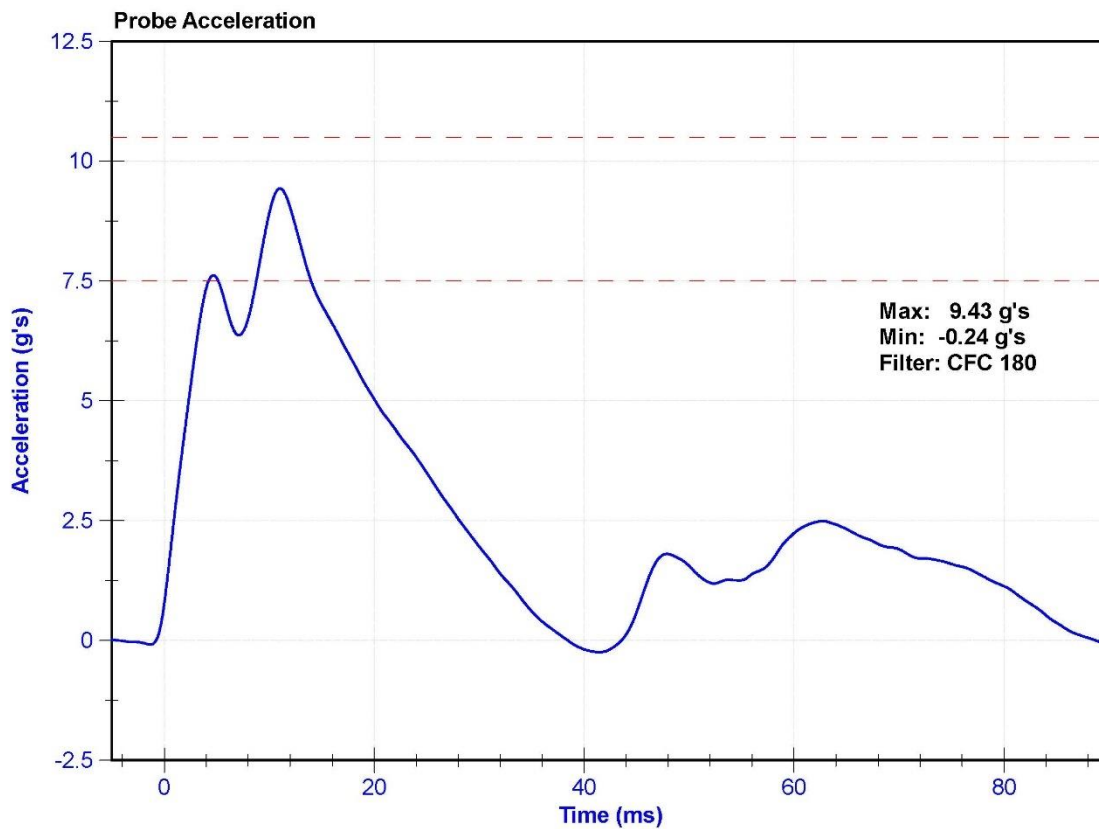
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	54.1	Pass
Velocity	4.2	4.4	m/s	4.35	Pass
Probe Acceleration	7.5	10.5	g's	9.43	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	Endevco	P51736	10/25/2021	10/25/2022



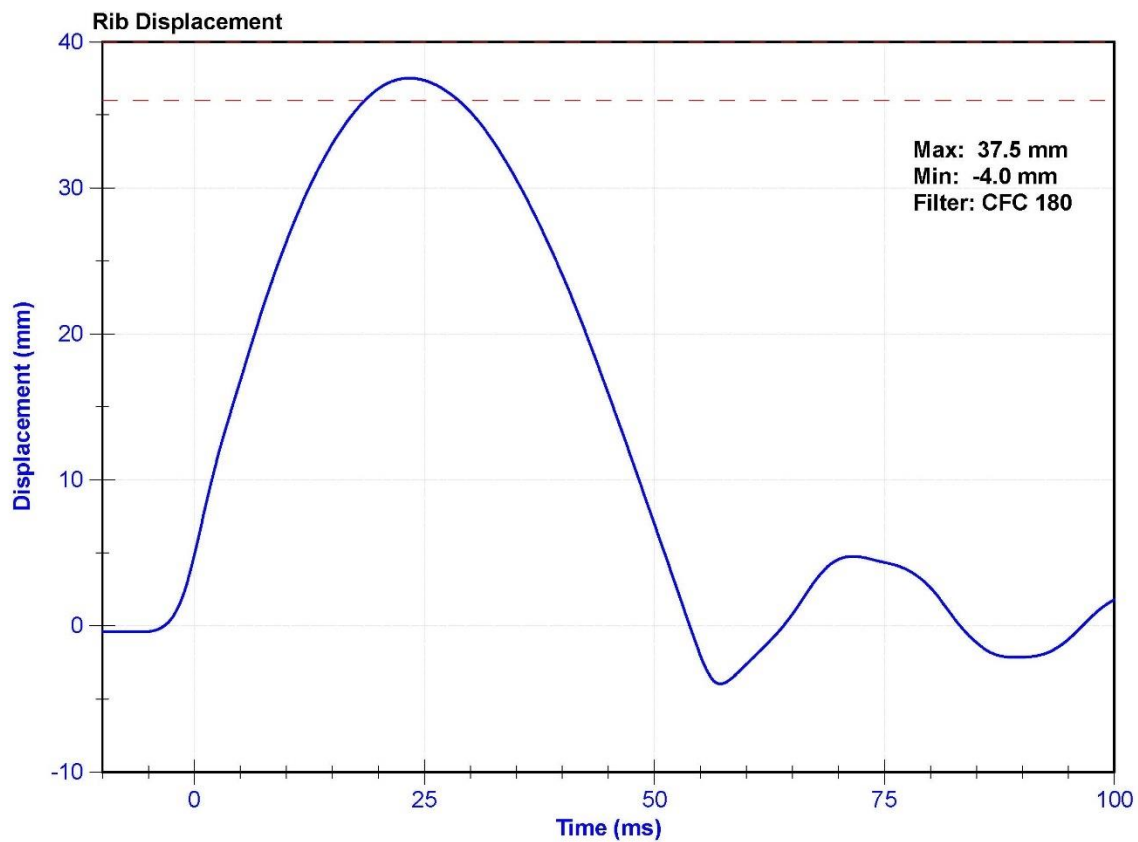
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	52.0	Pass
Rib Displacement	36	40	mm	37.5	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	179GFE	2/1/2022	8/2/2022



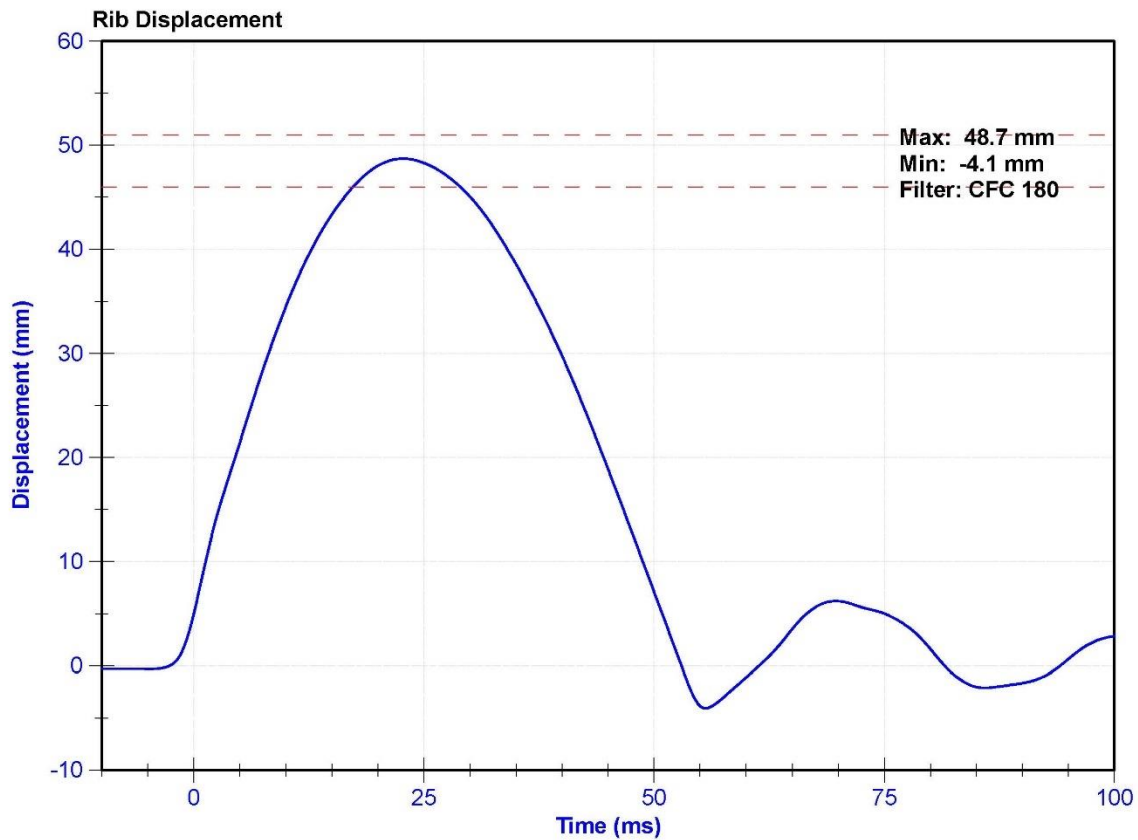
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	52.0	Pass
Rib Displacement	46	51	mm	48.7	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	179GFE	2/1/2022	8/2/2022



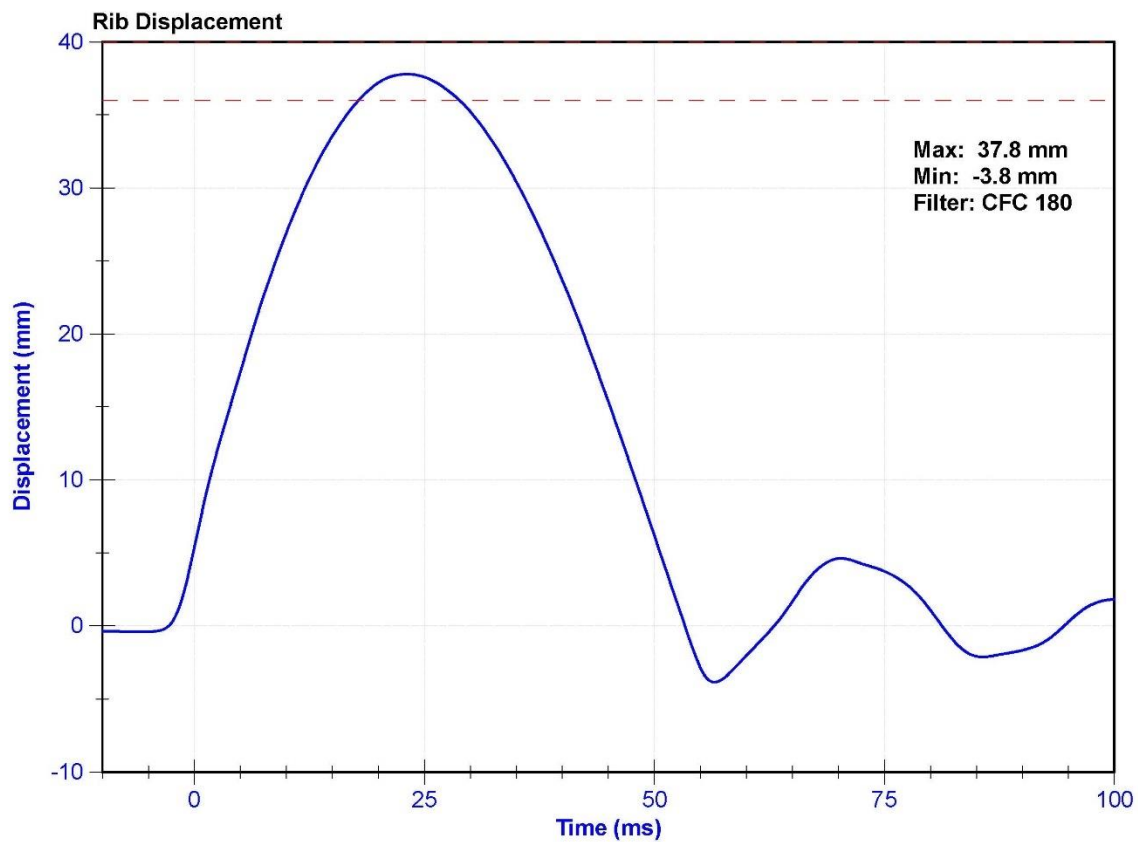
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	52.0	Pass
Rib Displacement	36	40	mm	37.8	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	185GFE	2/1/2022	8/2/2022



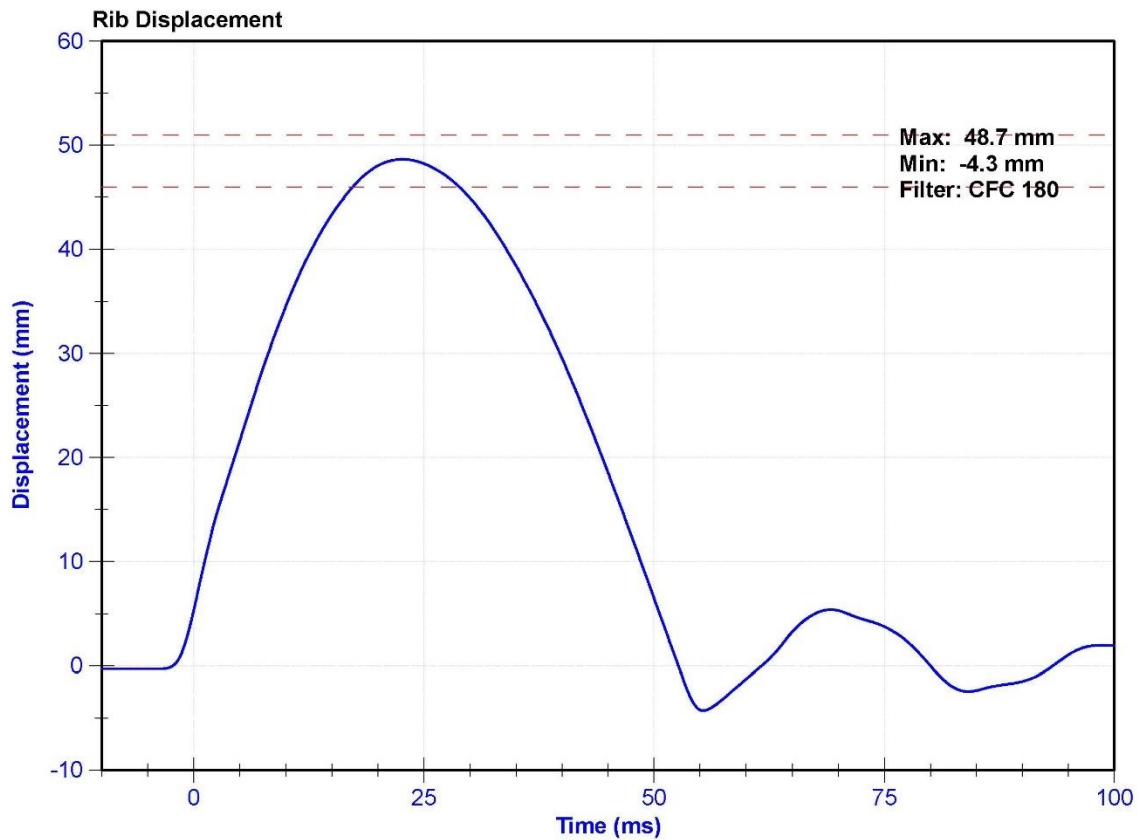
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	52.0	Pass
Rib Displacement	46	51	mm	48.7	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	185GFE	2/1/2022	8/2/2022



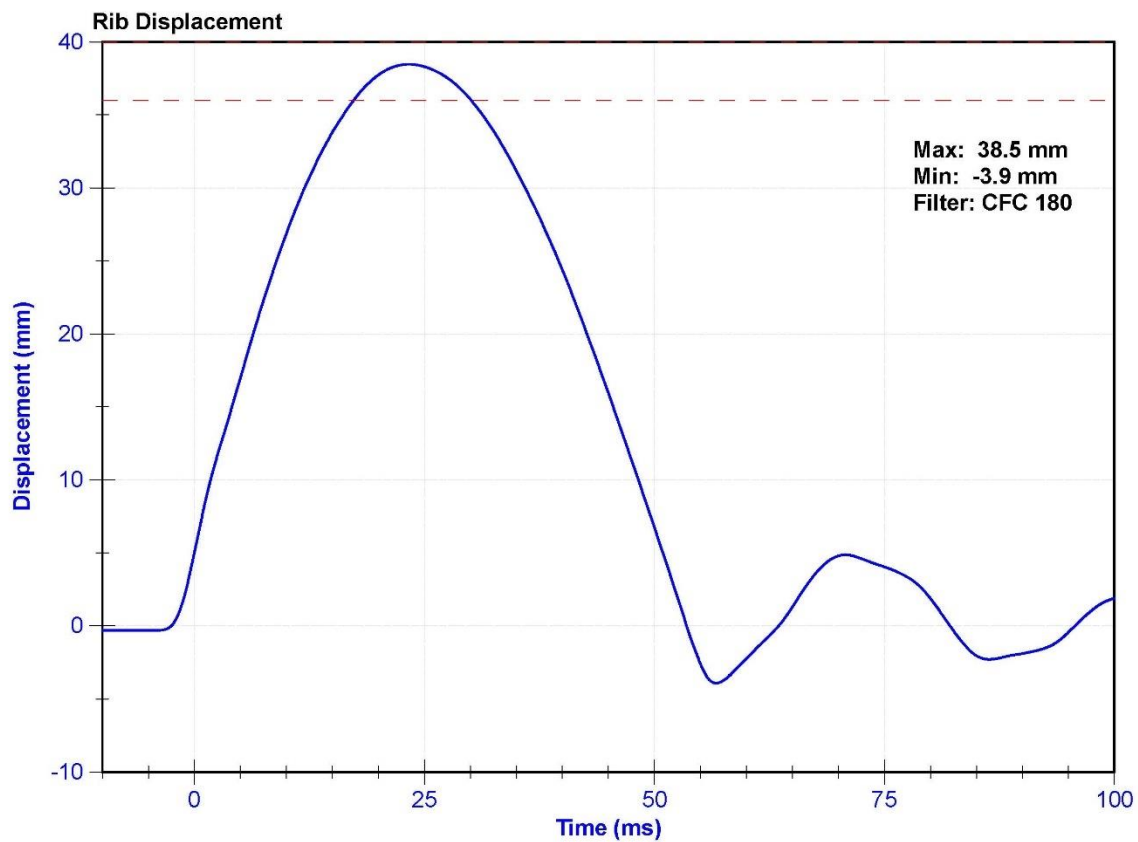
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	52.0	Pass
Rib Displacement	36	40	mm	38.5	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	178GFE	2/1/2022	8/2/2022



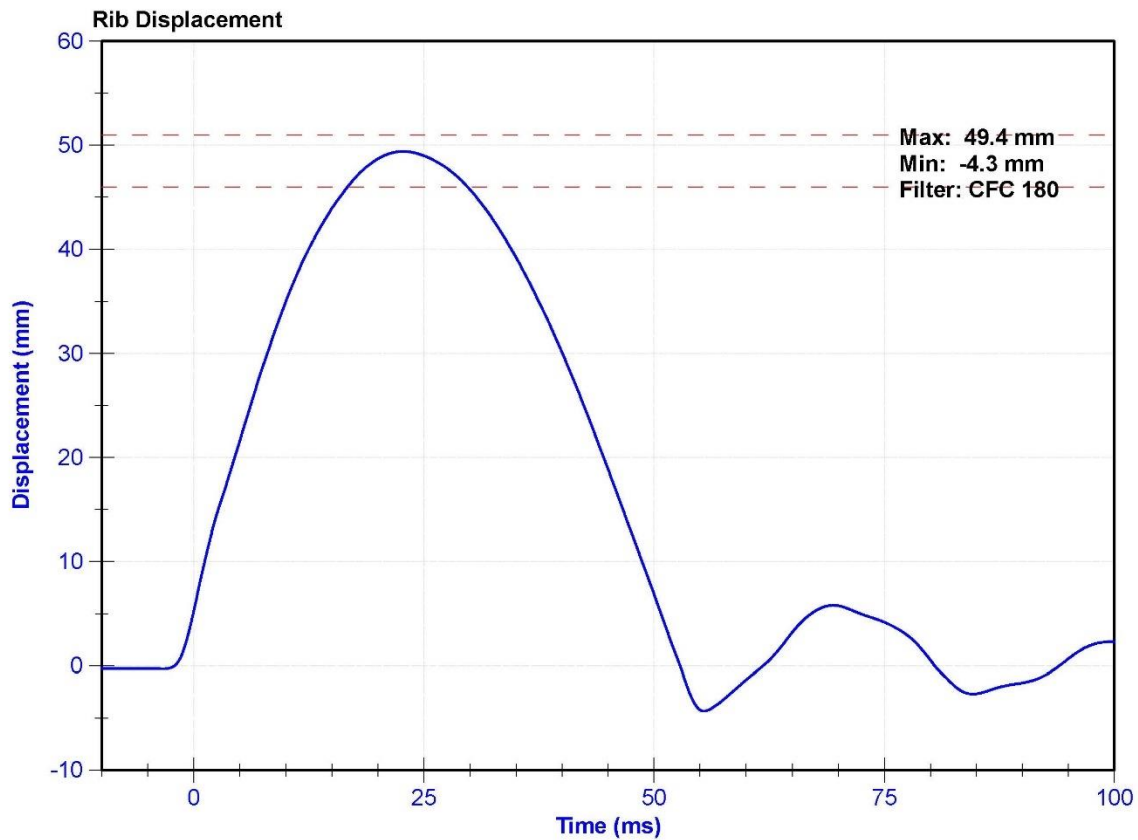
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	52.0	Pass
Rib Displacement	46	51	mm	49.4	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Rib Potentiometer	Honeywell	178GFE	2/1/2022	8/2/2022



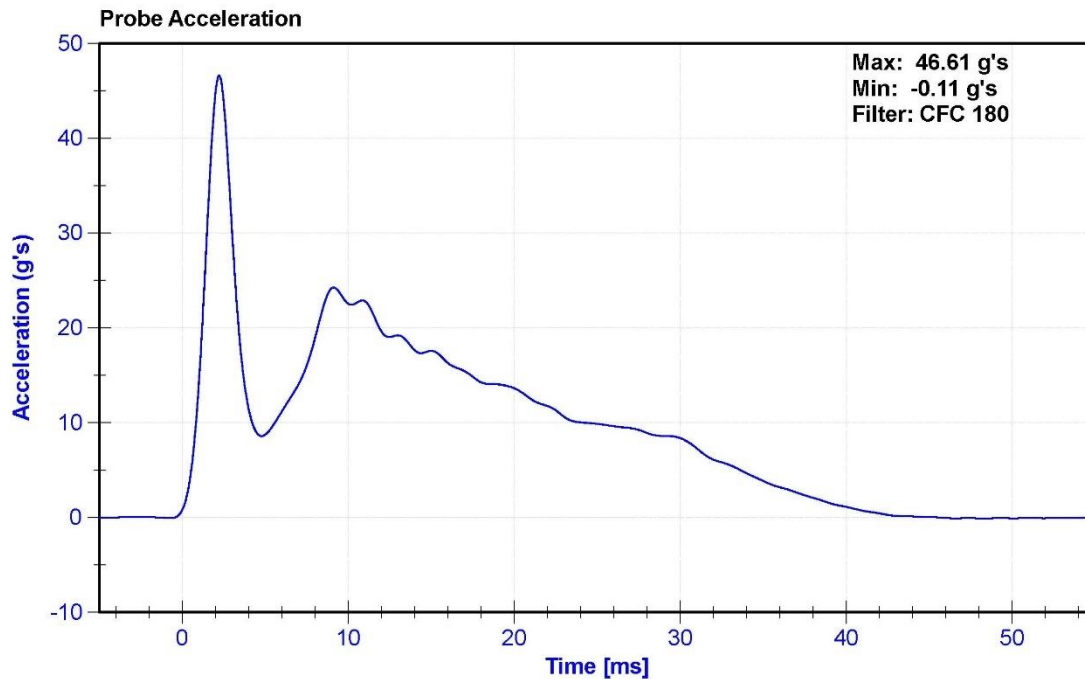
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

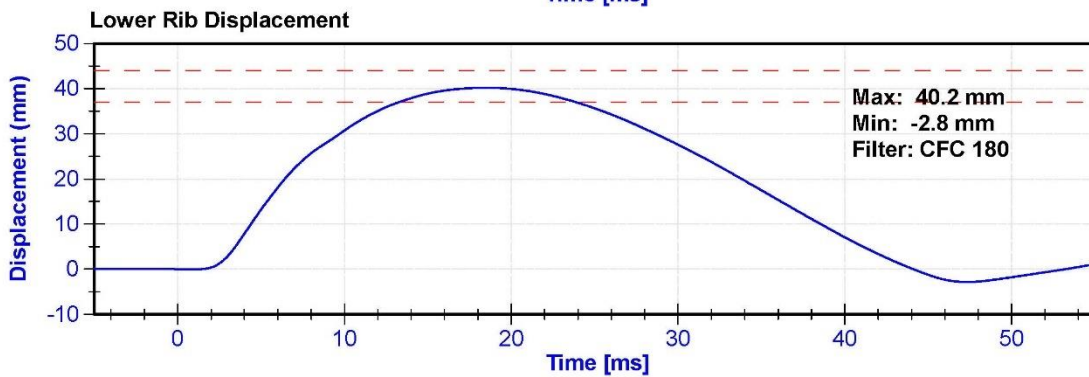
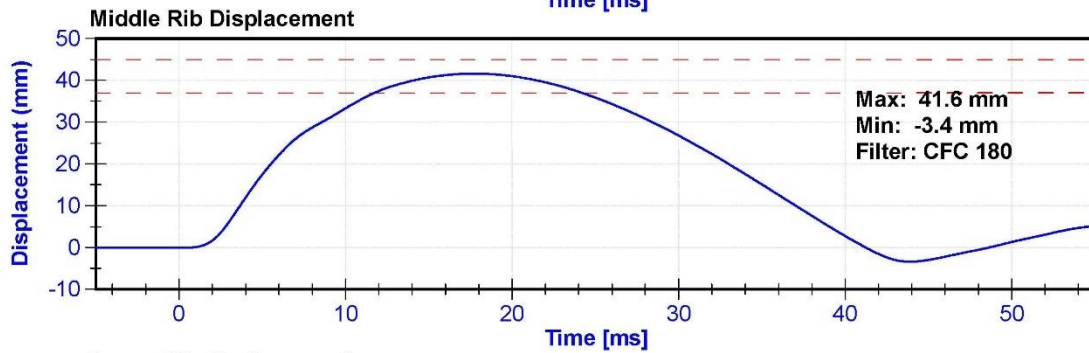
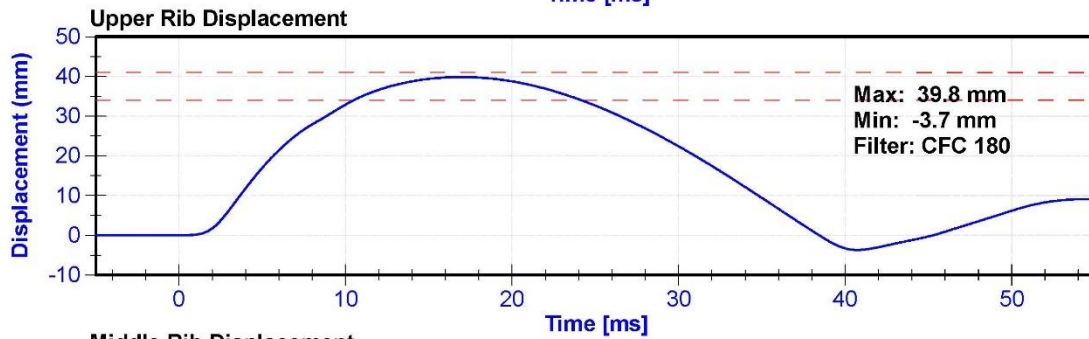
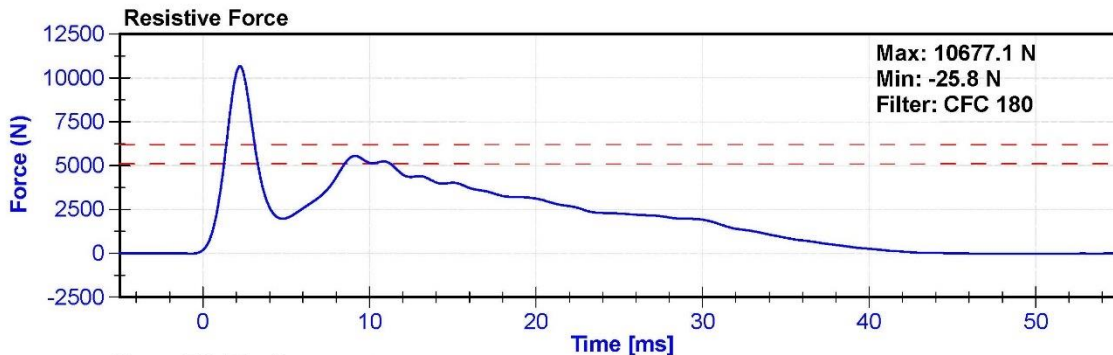
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	54.1	Pass
Velocity	5.4	5.6	m/s	5.53	Pass
Resistive Force after 6ms	5100	6200	N	5554.6	Pass
Upper Thorax Rib Deflection	34	41	mm	39.8	Pass
Mid Thorax Rib Deflection	37	45	mm	41.6	Pass
Lower Thorax Rib Deflection	37	44	mm	40.2	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	Endevco	P51736	10/25/2021	10/25/2022
Upper Thorax Rib Potentiometer	Honeywell	179GFE	2/1/2022	8/2/2022
Middle Thorax Rib Potentiometer	Honeywell	185GFE	2/1/2022	8/2/2022
Lower Thorax Rib Potentiometer	Honeywell	178GFE	2/1/2022	8/2/2022





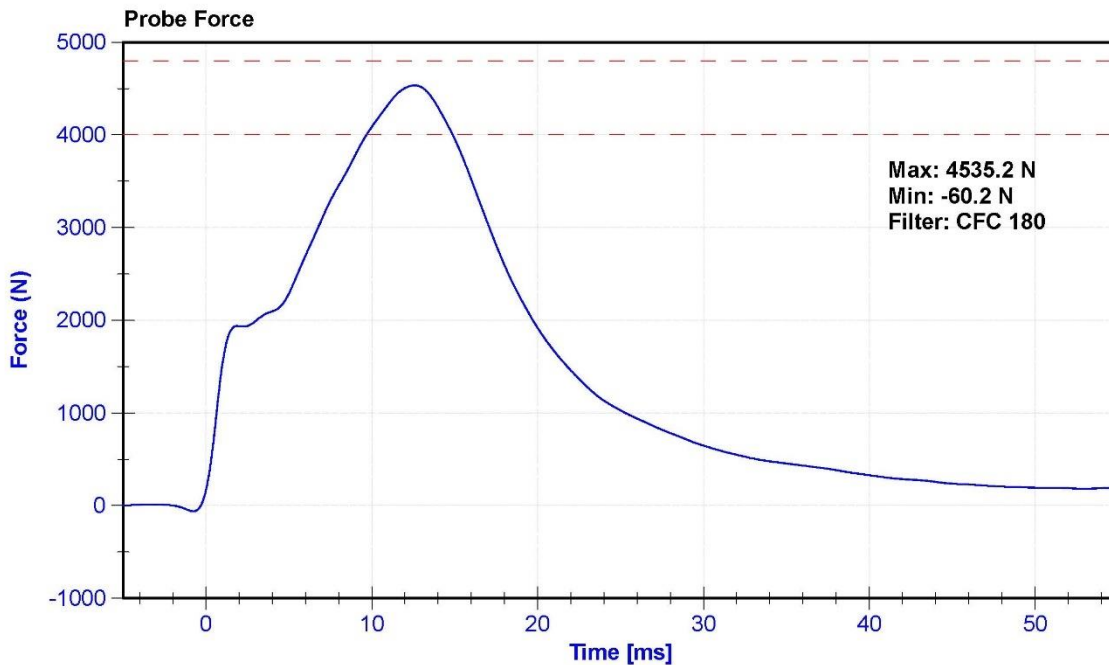
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

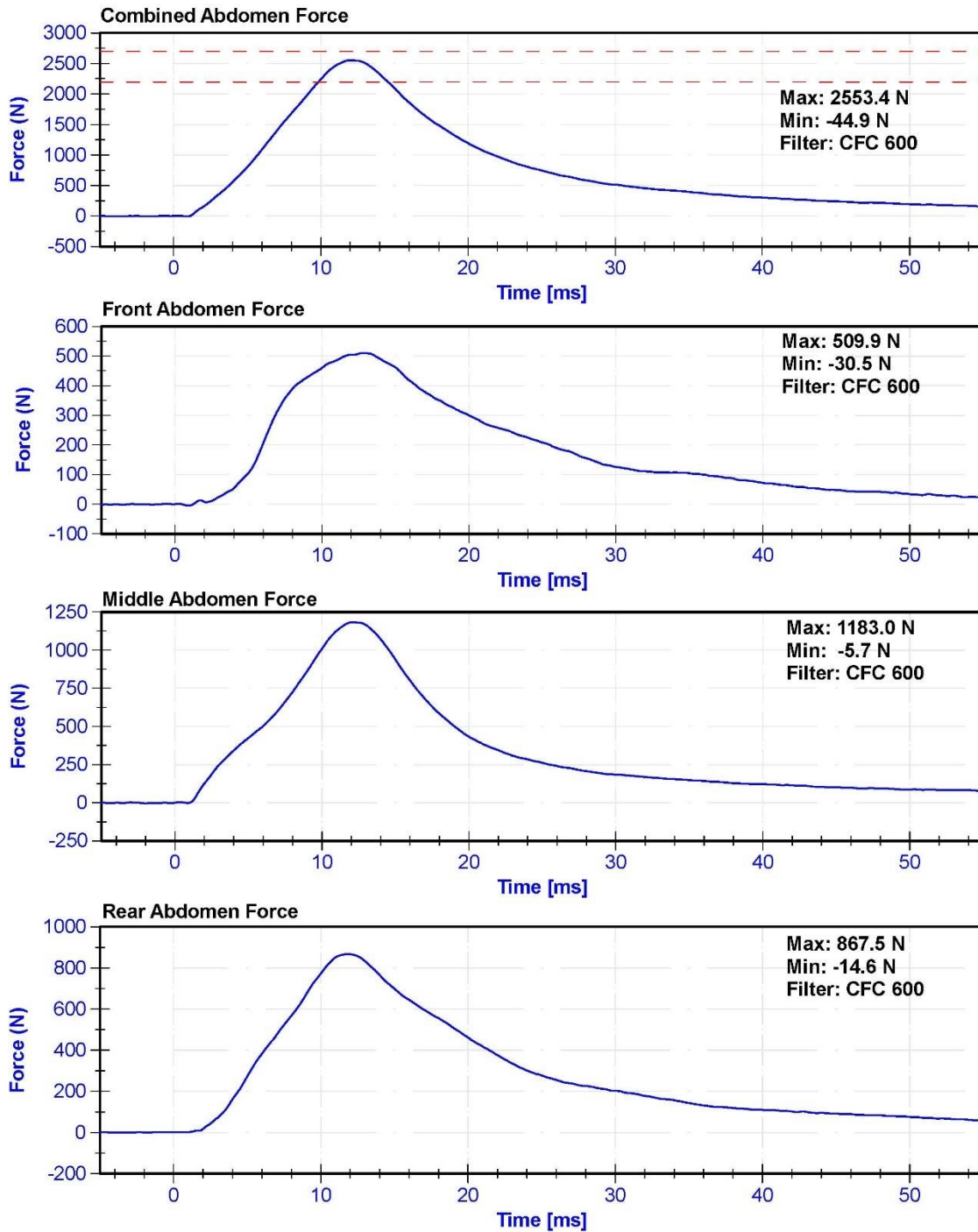
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	54.1	Pass
Velocity	3.9	4.1	m/s	4.04	Pass
Combined Abdomen Force	2200	2700	N	2553.4	Pass
Time at Peak Abdomen Force	10.0	12.3	ms	12.00	Pass
Resistive Probe Force	4000	4800	N	4535.2	Pass
Time at Peak Resistive Force	10.6	13.0	ms	12.60	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	P51736	10/25/2021	10/25/2022
Front Abdomen Load Cell	Denton	1512	8/2/2021	8/2/2022
Middle Abdomen Load Cell	Denton	1526	8/2/2021	8/2/2022
Rear Abdomen Load Cell	Denton	1516	8/2/2021	8/2/2022





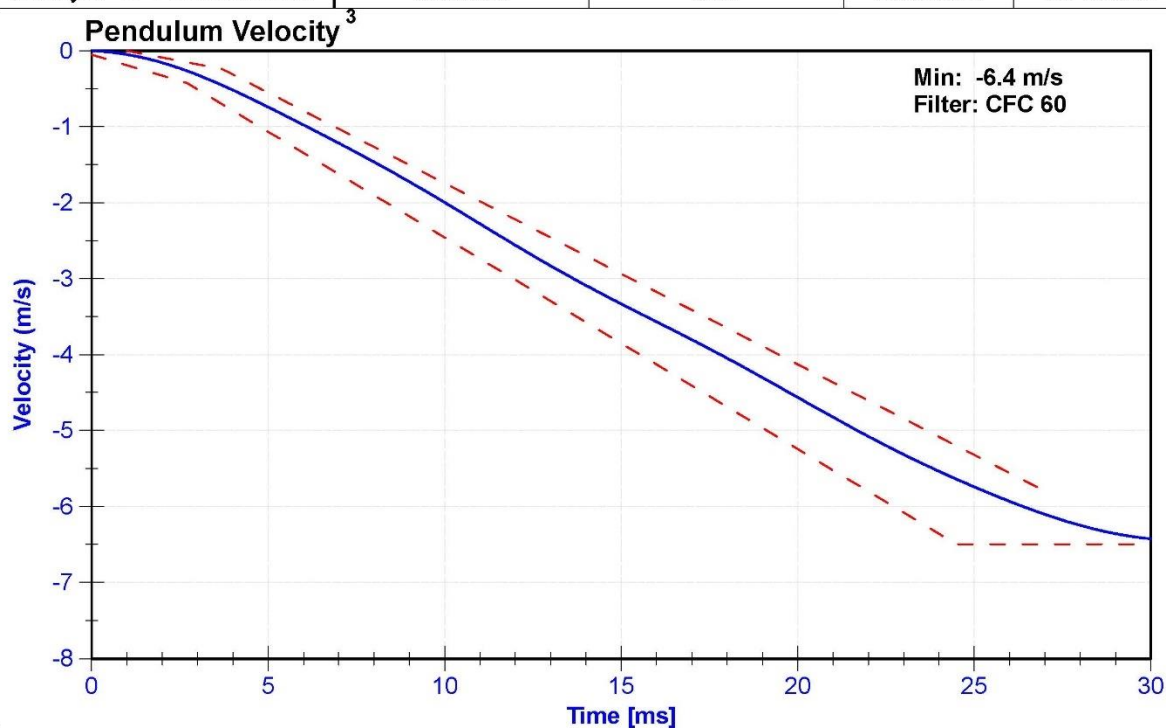
ATD Manufacturer	FTSS	Test Technician	D. Sakona
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

Results

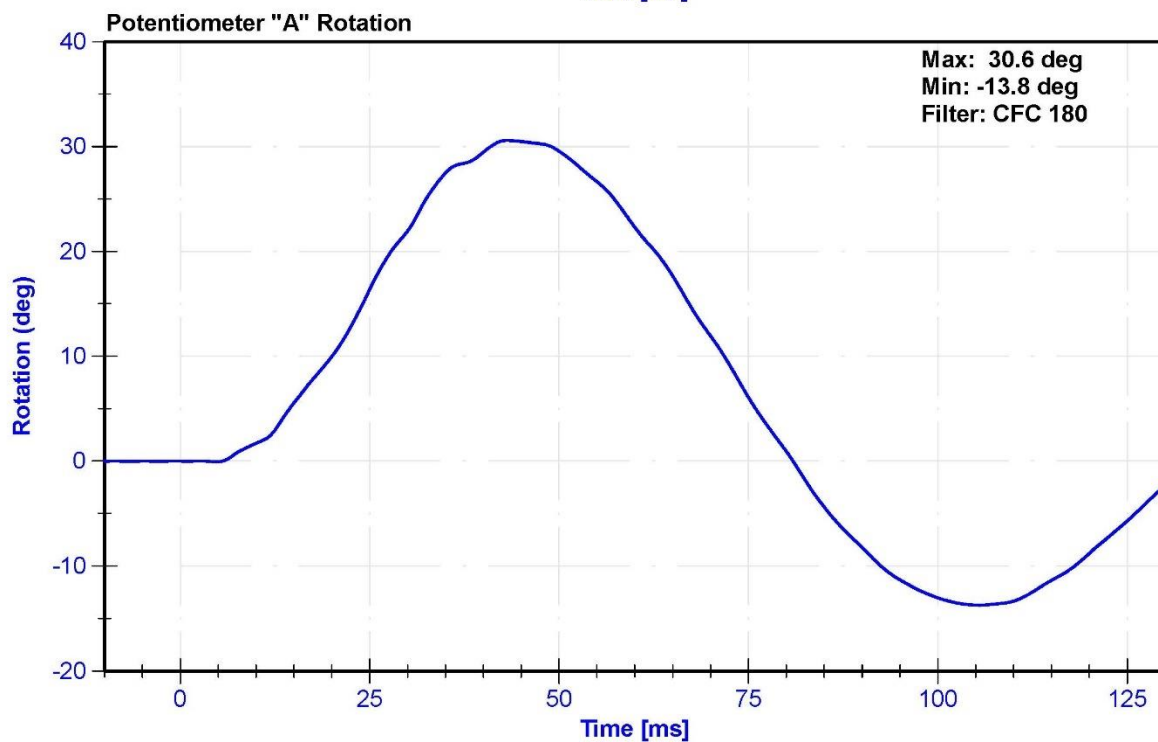
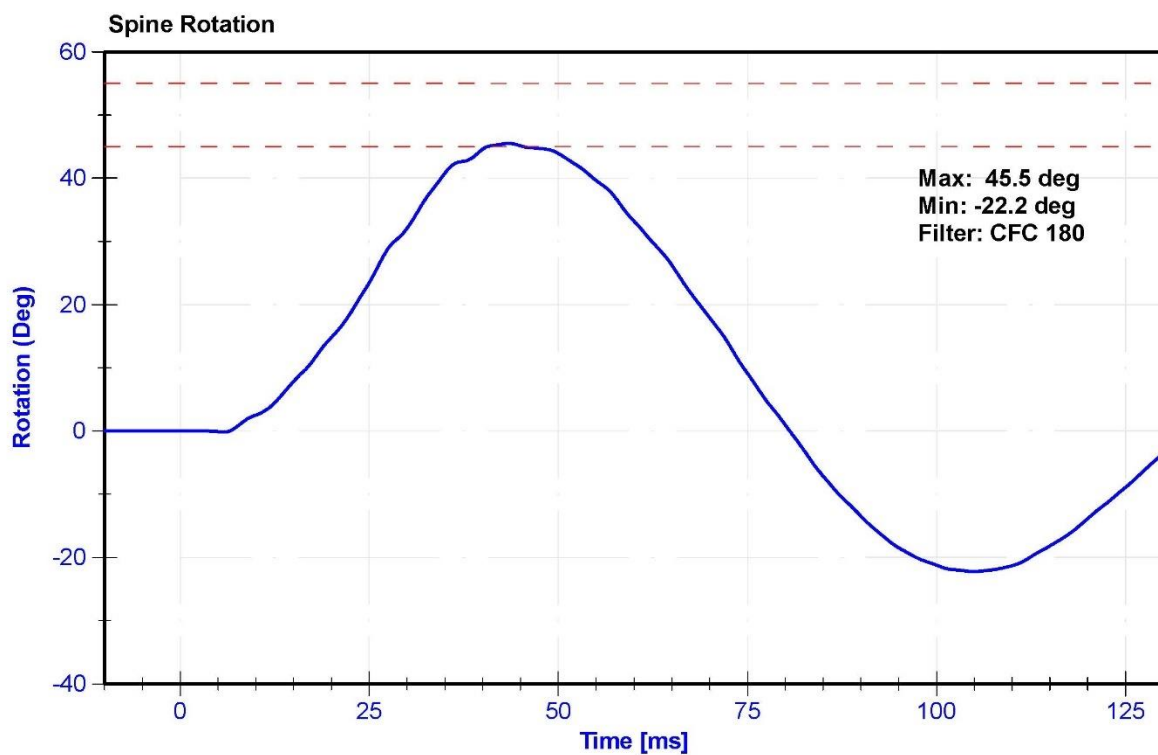
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.3	Pass
Humidity	10	70	%	49.1	Pass
Velocity	5.95	6.15	m/s	6.026	Pass
Lateral Spine Rotation	45	55	deg	45.5	Pass
Time at Maximum Rotation	39	53	ms	43.4	Pass
Time of Decay to Zero Degrees	37	57	ms	37.2	Pass
Pendulum Velocity Overall Corridor	Lower Boundary ¹	Upper Boundary ²	m/s	See Plot ³	Pass

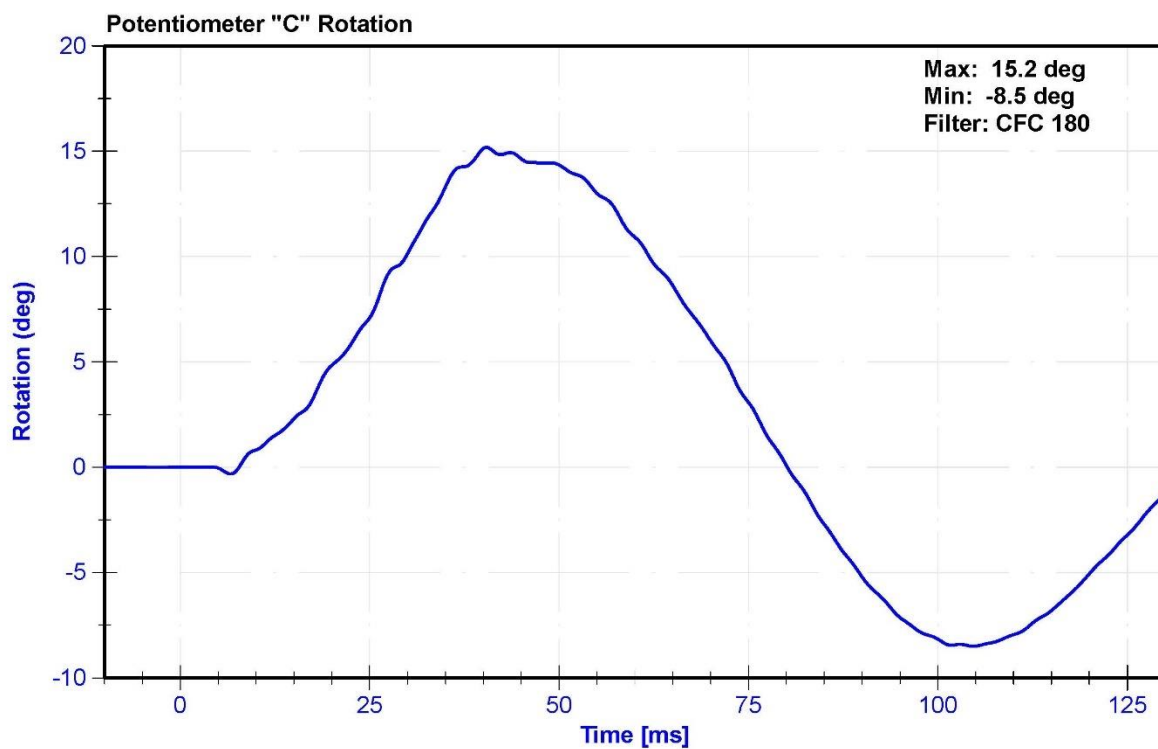
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	C16503	10/28/2021	10/28/2022
Pendulum "A" Potentiometer	Sfernice	094	10/1/2021	10/1/2022
Condyle "B" Potentiometer	Sfernice	095	10/1/2021	10/1/2022



^{1,2} Upper and lower boundaries specified in Appendix I





Appendix I

² Upper Boundary Corridor		¹ Lower Boundary Corridor	
Time (ms)	Velocity (m/s)	Time (ms)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.5
		30.0	-6.5

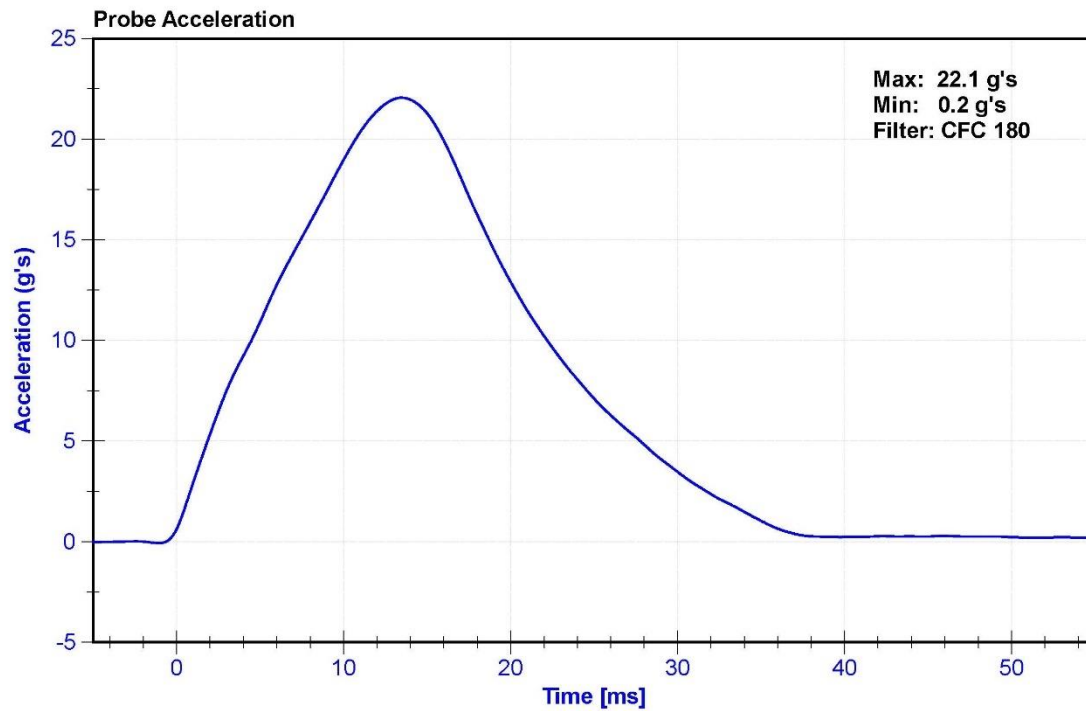
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	F033	Laboratory Supervisor	K. Brogan

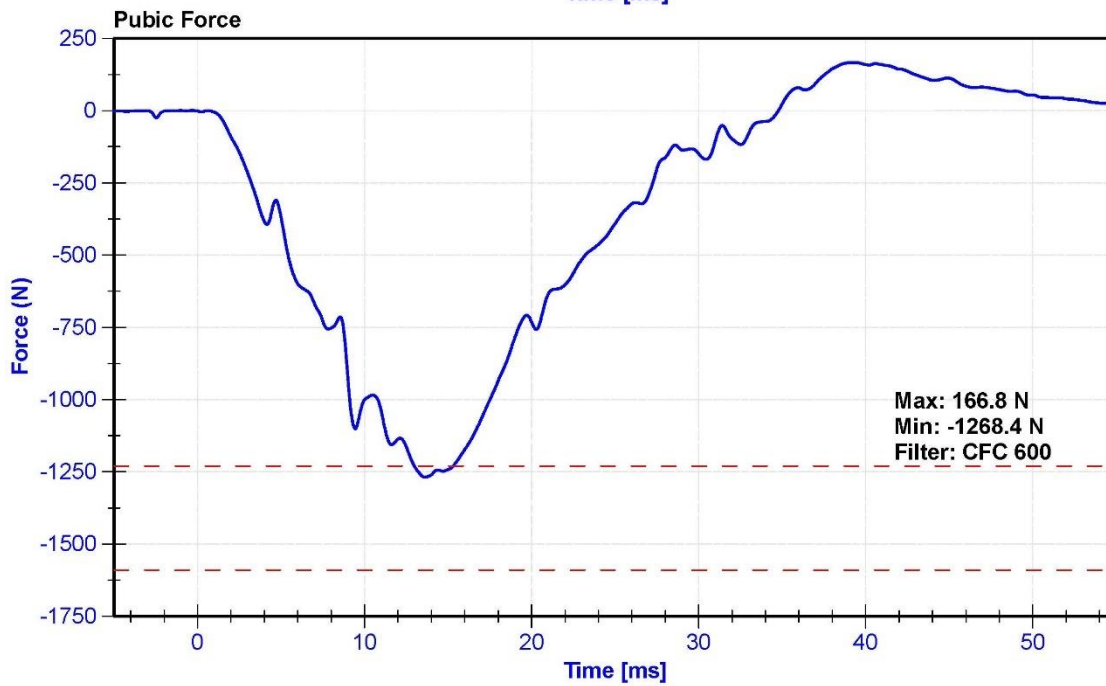
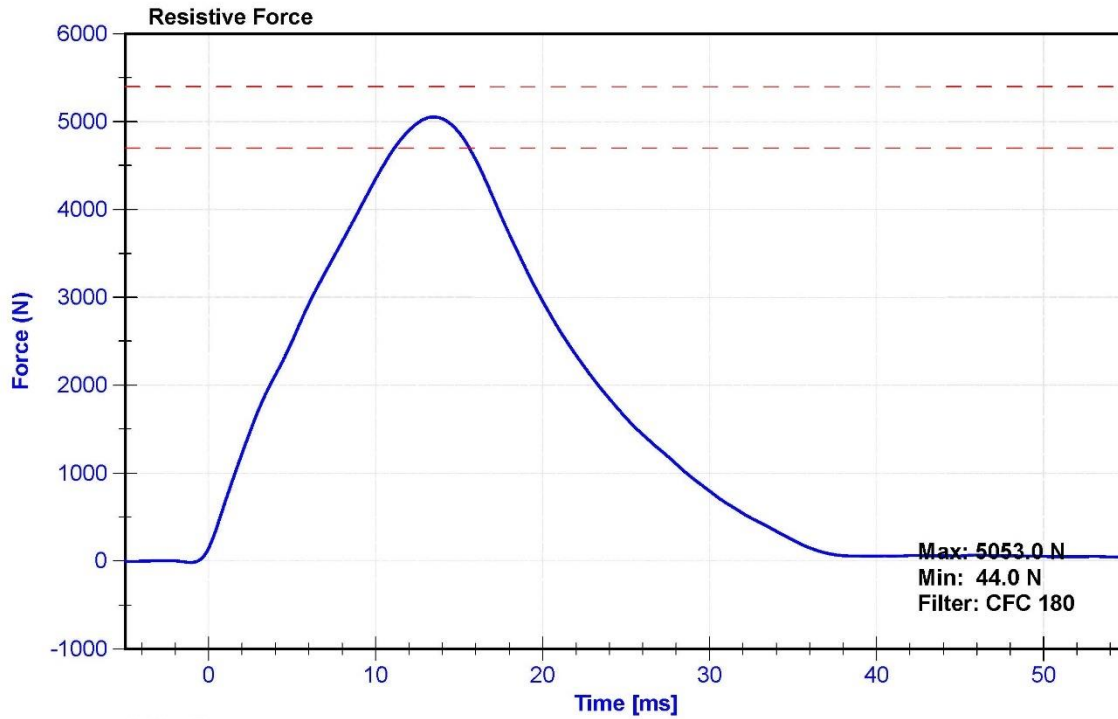
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	54.1	Pass
Velocity	4.2	4.4	m/s	4.35	Pass
Resistive Force	4700	5400	N	5053.0	Pass
Time at Peak Resistive Force	11.8	16.1	ms	13.45	Pass
Pubic Force	-1590	-1230	N	-1268.4	Pass
Time at Peak Pubic Force	12.2	17.0	ms	13.60	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	P51736	10/25/2021	10/25/2022
Pubic Load Cell	Denton	464-FY	8/2/2021	8/2/2022





CALIBRATION TEST RESULTS

POST-TEST

SID-IIS 5TH PERCENTILE FEMALE - PASSENGER ATD

SERIAL No: DG8012

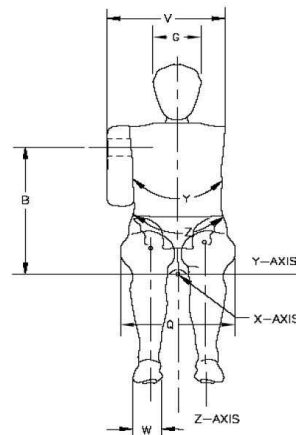
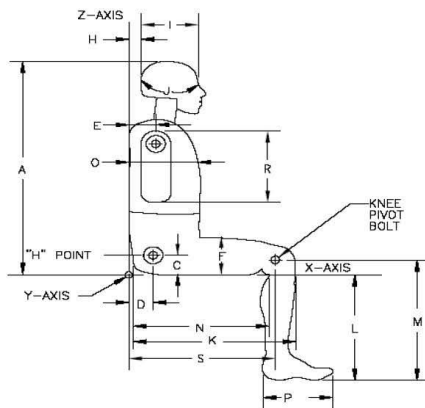


External Measurements - SID-IIs

Technician: **K. Brogan**

Date: **06/28/2022**

Dummy Serial Number: **DG8012**



Symbol	Description	Specification (mm)		Result (mm)	Pass/Fail
A	Sitting Height	772	788	780	Pass
B	Shoulder Pivot Height	437	453	445	Pass
C	H-point Height	79	89	85	Pass
D	H-point from seatback	141	151	145	Pass
E	Shoulder Pivot from Backline	97	107	102	Pass
F	Thigh Clearance	119	135	125	Pass
G	Head Breadth	140	148	145	Pass
H	Head Back from Backline	40	46	43	Pass
I	Head Depth	178	188	185	Pass
J	Head Circumference	541	551	545	Pass
K	Buttock to Knee Length	514	540	530	Pass
L	Popliteal Height	343	369	356	Pass
M	Knee Pivot to floor height	392	409	400	Pass
N	Buttock Popliteal Length	416	442	432	Pass
O	Chest Depth w/o jacket	195	211	207	Pass
P	Foot Length	216	232	225	Pass
Q	Hip Breadth (w/pelvic plugs)	313	323	320	Pass
R	Arm Length	249	259	250	Pass
S	Knee Joint to seatback	477	493	485	Pass
V	Shoulder Width	341	357	348	Pass
W	Foot Width	78	94	85	Pass
Y	Chest Circumference w/jacket	851	881	870	Pass
Z	Waist Circumference	761	791	780	Pass

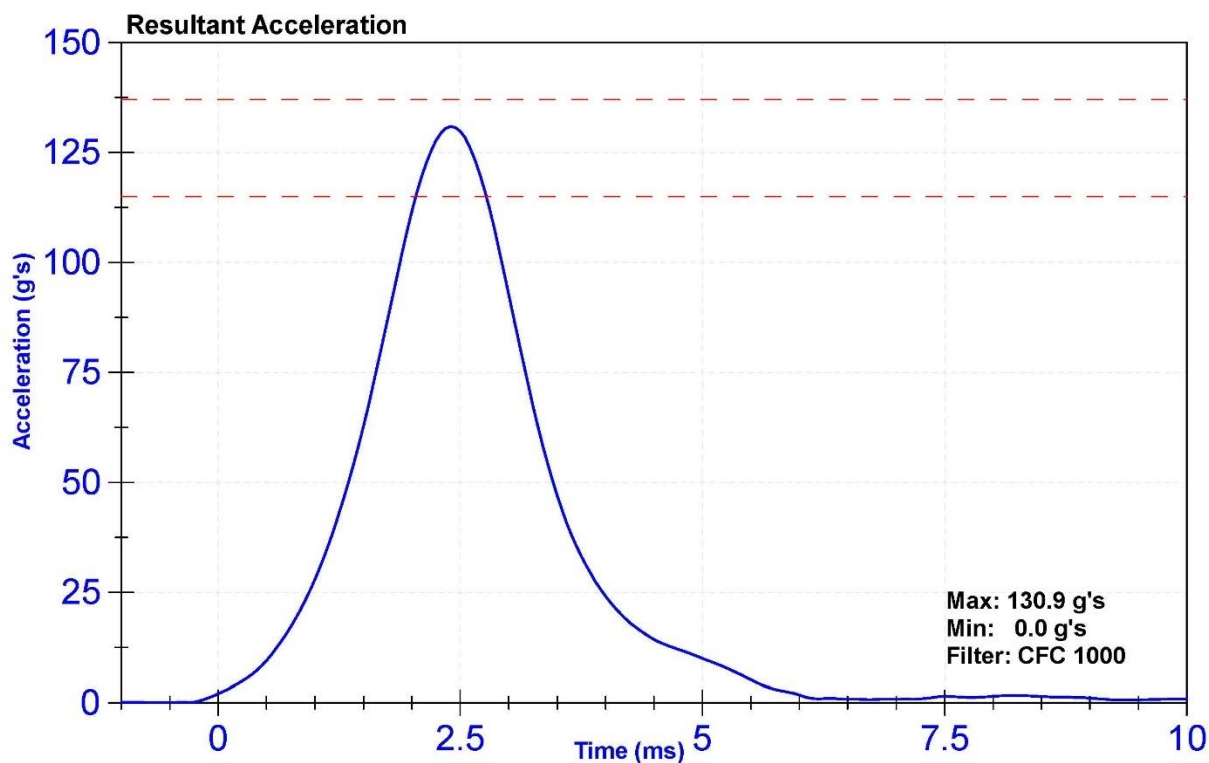
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

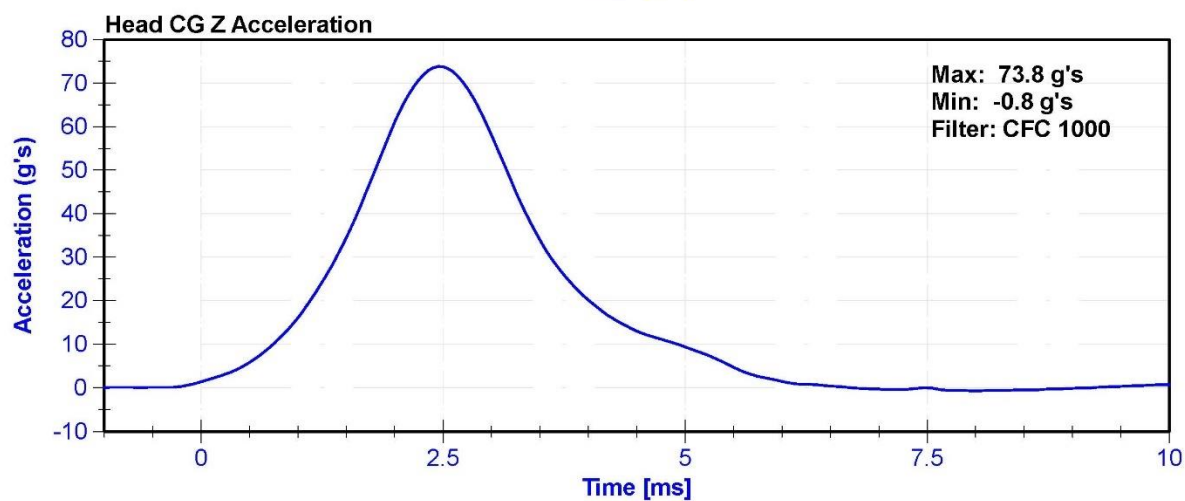
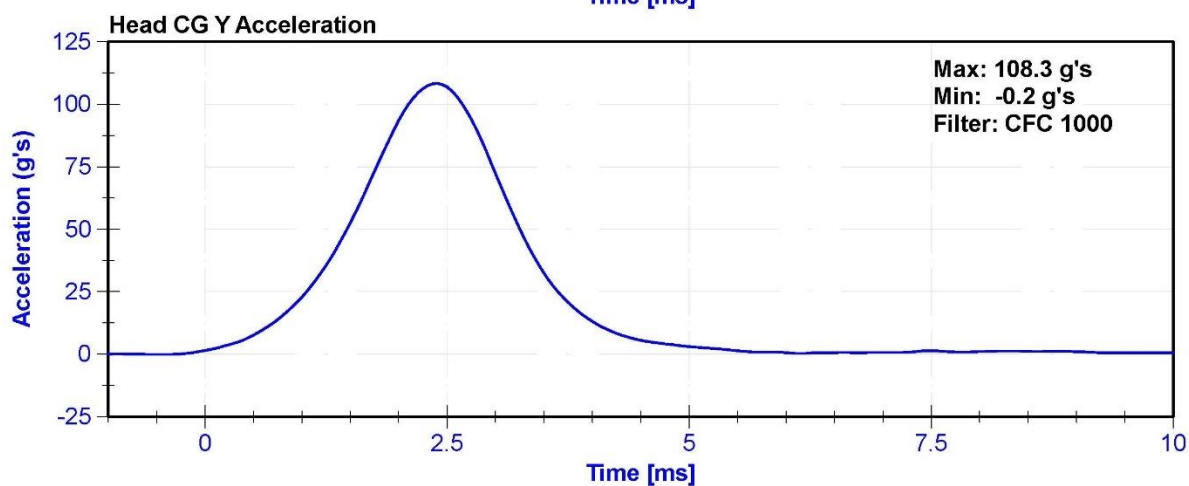
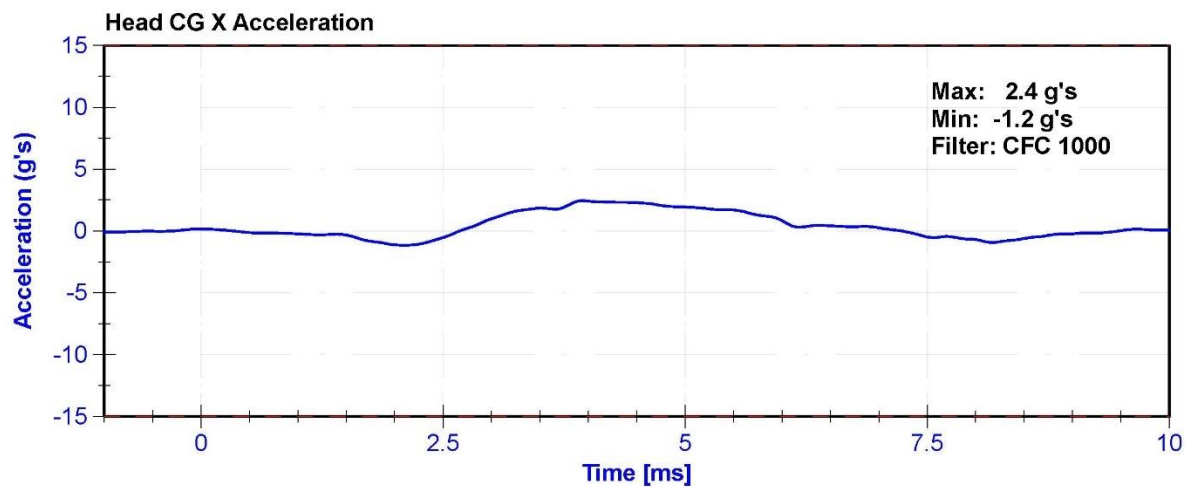
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	52.0	Pass
Resultant Acceleration	115	137	g's	130.9	Pass
Oscillation	0	15	%	1.2	Pass
Fore-Aft Acceleration	-15	15	g's	2.4	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
X Accelerometer	Endevco	P74788	6/17/2022	12/14/2022
Y Accelerometer	Endevco	P83432	6/17/2022	12/14/2022
Z Accelerometer	Endevco	P83319	6/17/2022	12/14/2022





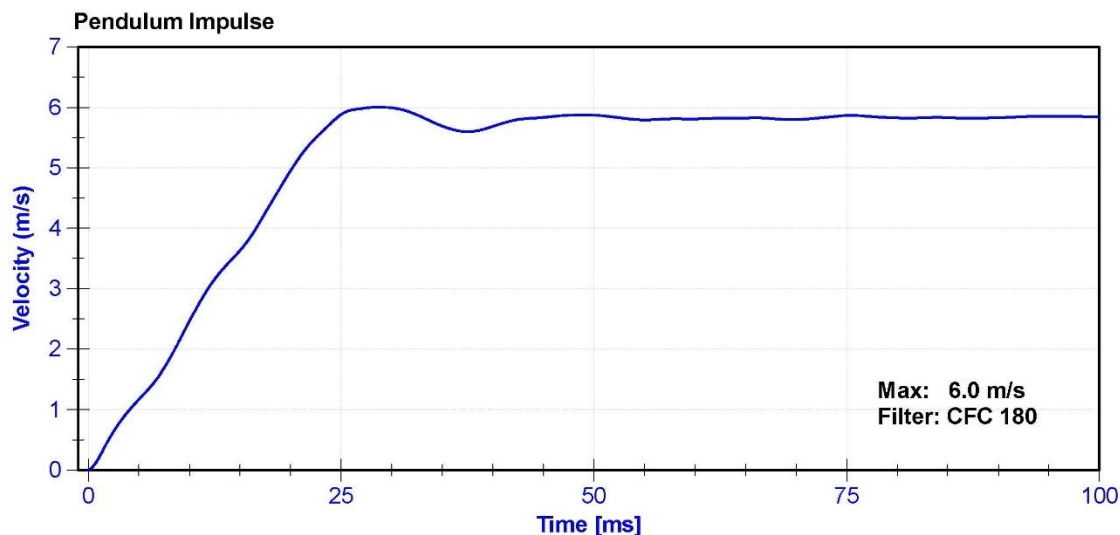
ATD Manufacturer	FTSS	Test Technician	T. Roseman
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

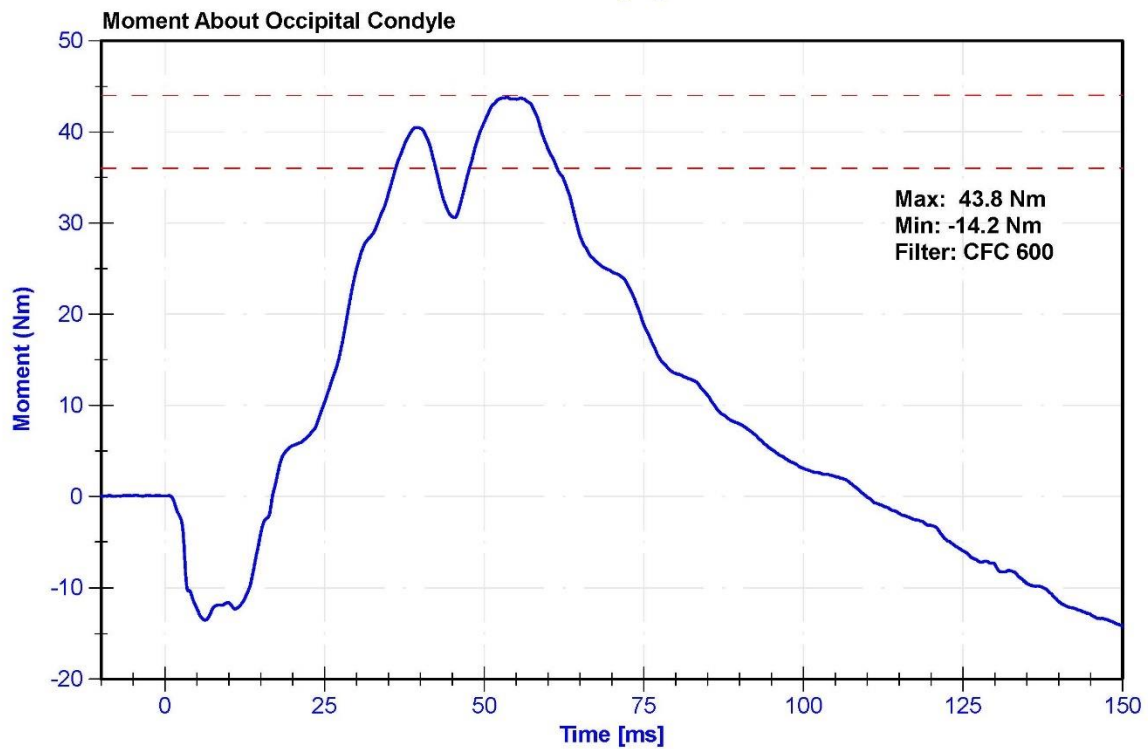
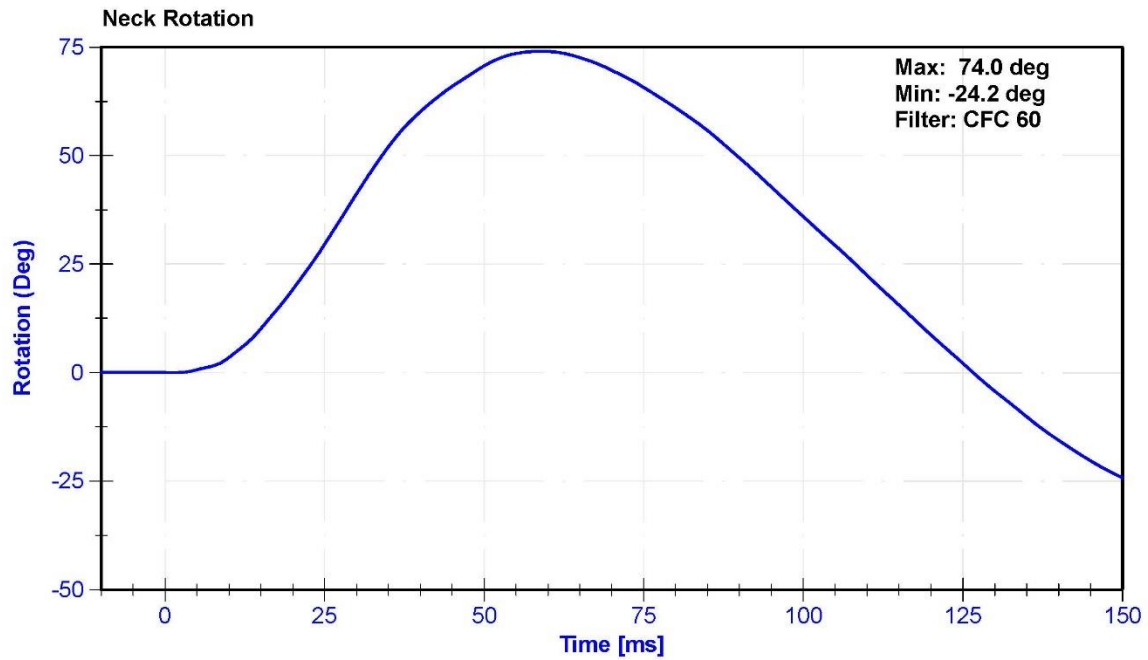
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	52.0	Pass
Velocity	5.51	5.63	m/s	5.618	Pass
Pendulum Impulse at 10ms	2.2	2.8	m/s	2.46	Pass
Pendulum Impulse at 15ms	3.3	4.1	m/s	3.63	Pass
Pendulum Impulse at 20ms	4.4	5.4	m/s	4.95	Pass
Pendulum Impulse at 25ms	5.4	6.1	m/s	5.88	Pass
Pendulum Impulse from 25 to 100ms	5.5	6.2	m/s	6.00	Pass
Neck Rotation	71	81	deg	74.0	Pass
Time at Maximum Rotation	50	70	ms	58.9	Pass
Moment about the OC	36	44	Nm	43.8	Pass
Moment Decay to 0 Nm	102	126	ms	109.9	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	7231C-750	1/31/2022	7/30/2022
Pendulum Potentiometer	Servo	4961	2/23/2022	2/23/2023
Condyle Potentiometer	Servo	DS185	11/12/2021	11/12/2022
Upper Neck Load Cell	Denton	1716A-1037-FY	6/29/2021	6/29/2022





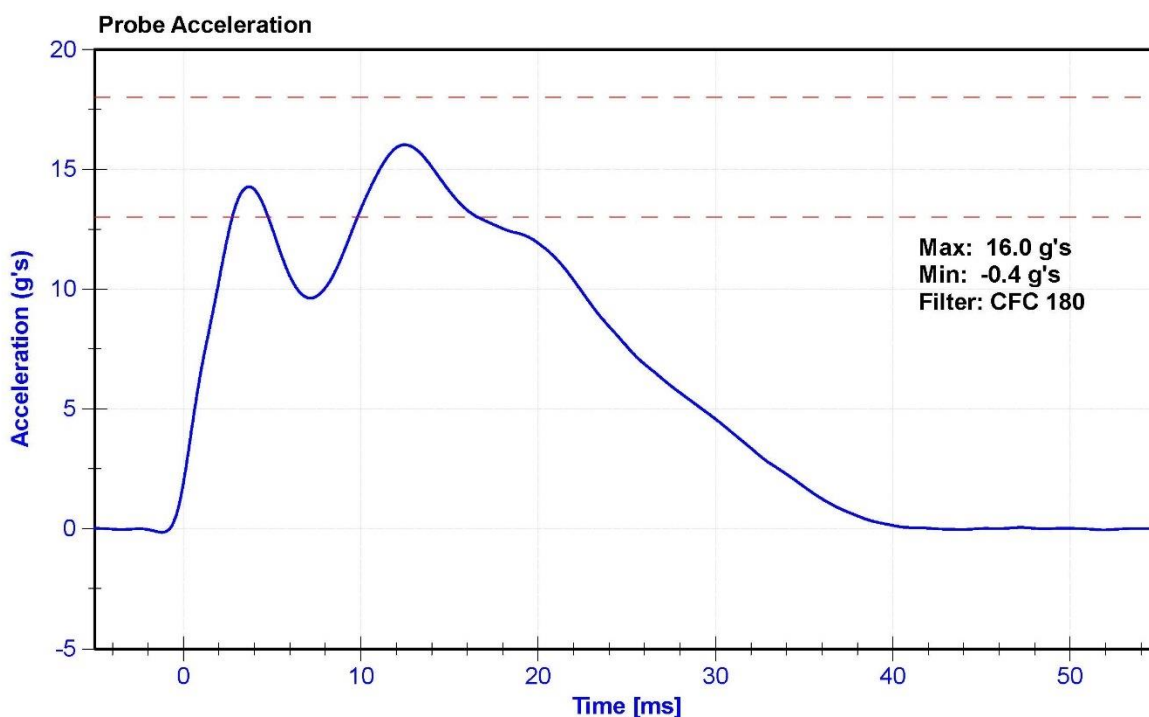
ATD Manufacturer	FTSS	Test Technician	B. Kirchner
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

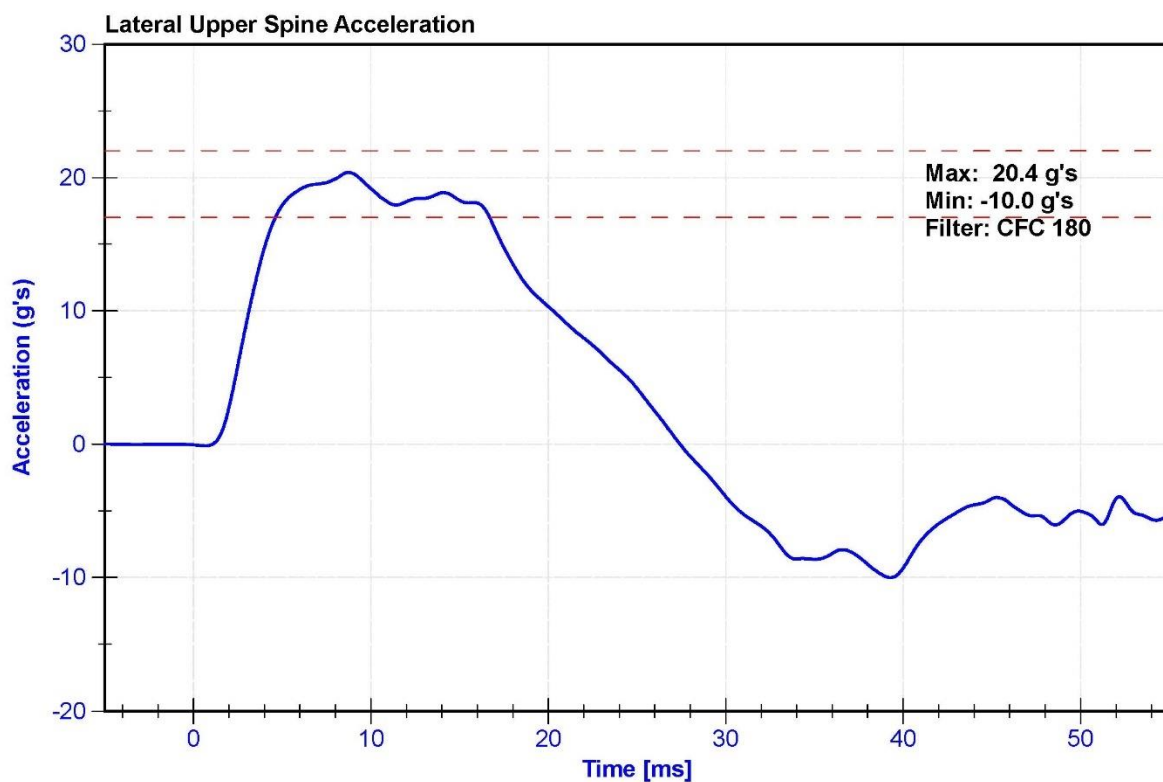
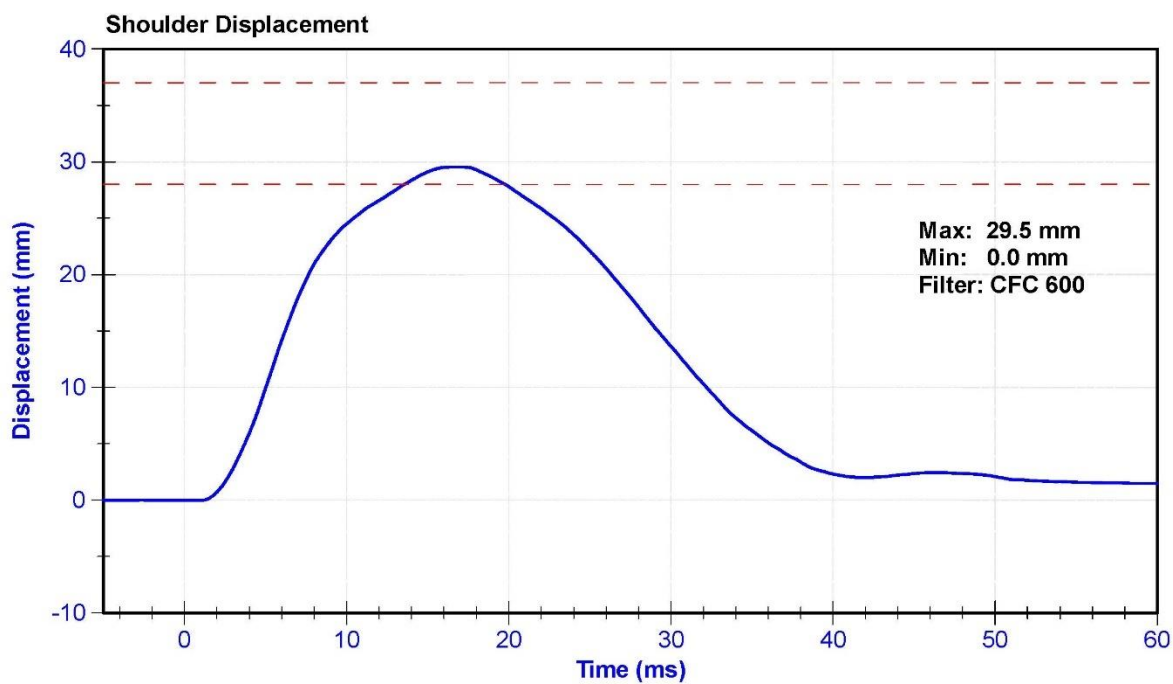
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	52.8	Pass
Velocity	4.2	4.4	m/s	4.34	Pass
Probe Acceleration	13	18	g's	16.0	Pass
Shoulder Deflection	28	37	mm	29.5	Pass
Lateral Upper Spine Acceleration	17	22	g's	20.4	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	T25885	10/25/2021	10/25/2022
Shoulder Potentiometer	Servo	1274GFE	6/20/2022	12/19/2022
Upper Spine Y Accelerometer	Endevco	P64148	6/17/2022	12/14/2022





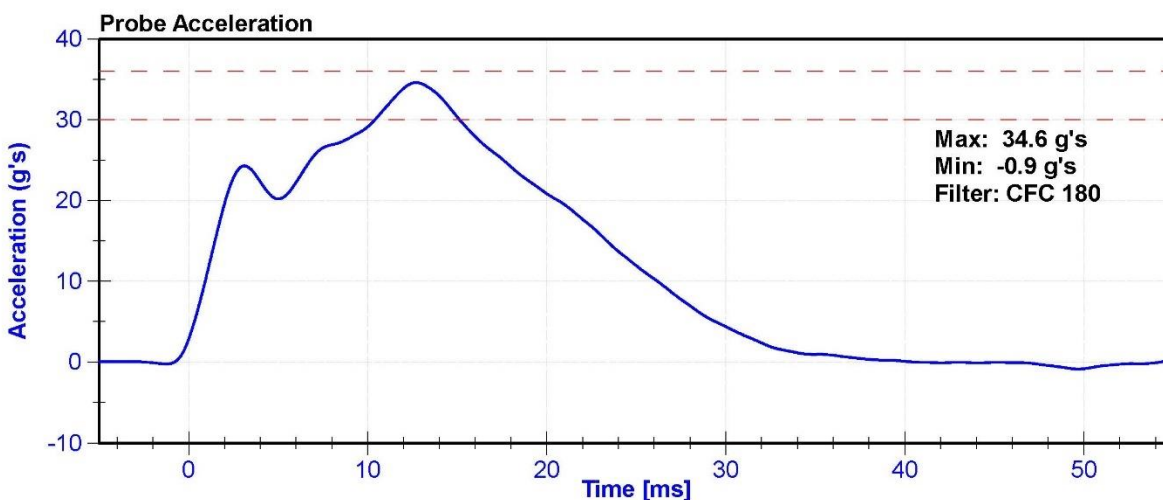
ATD Manufacturer	FTSS	Test Technician	B. Kirchner
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

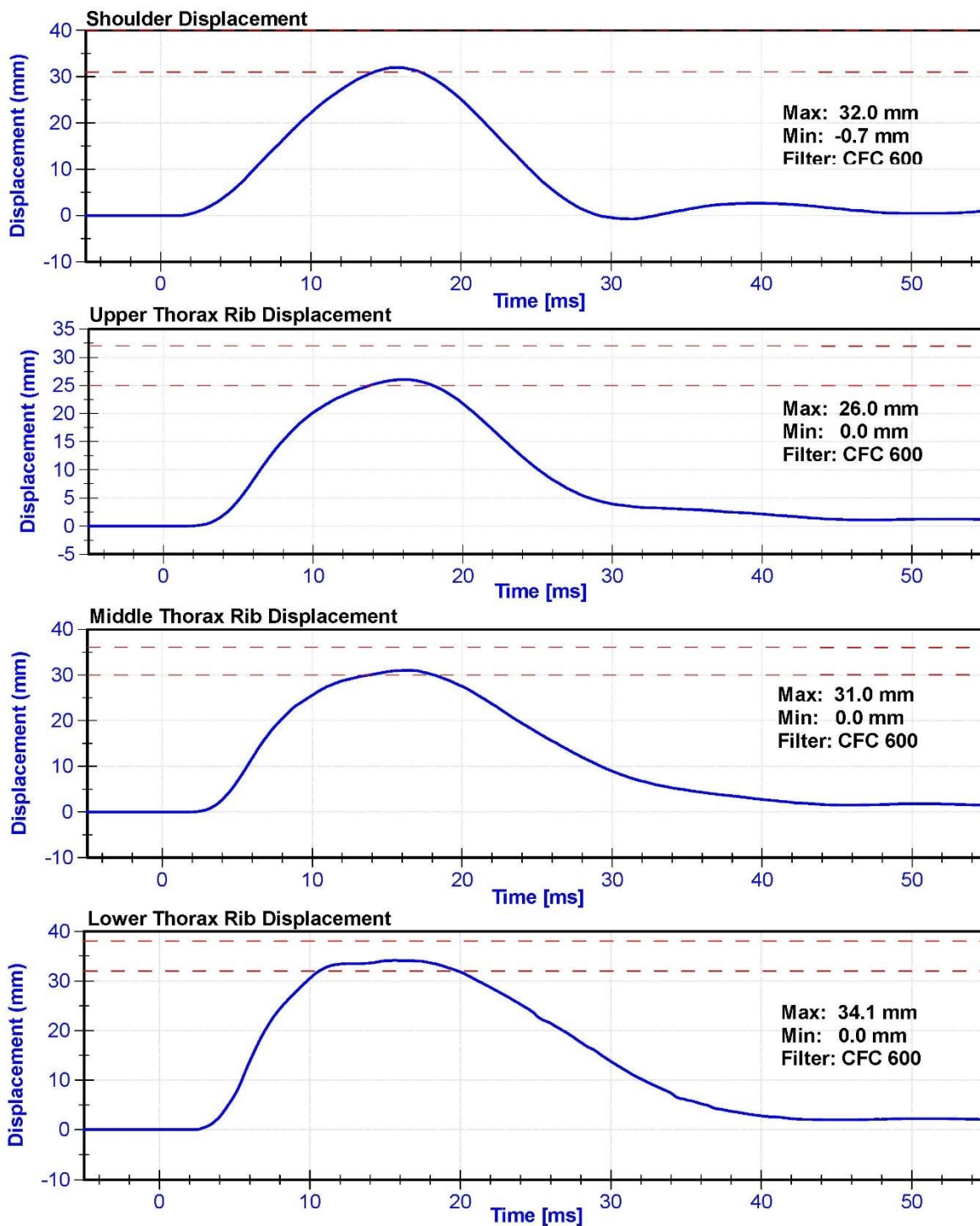
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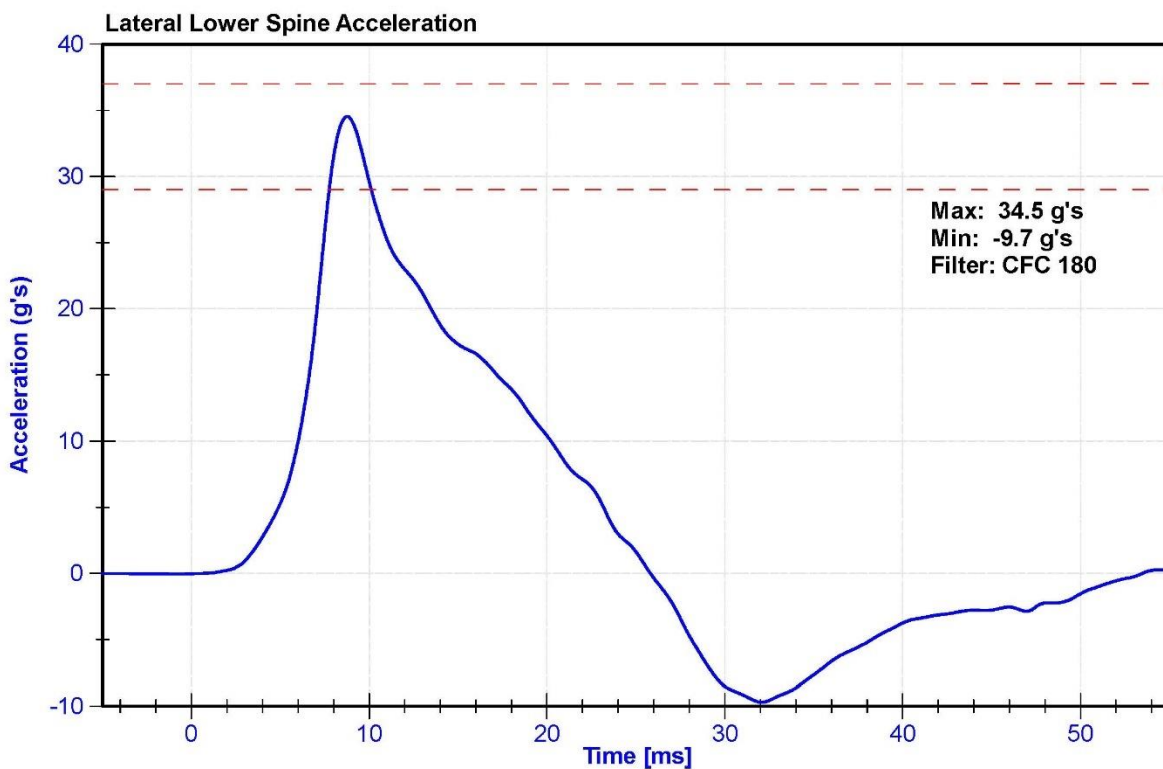
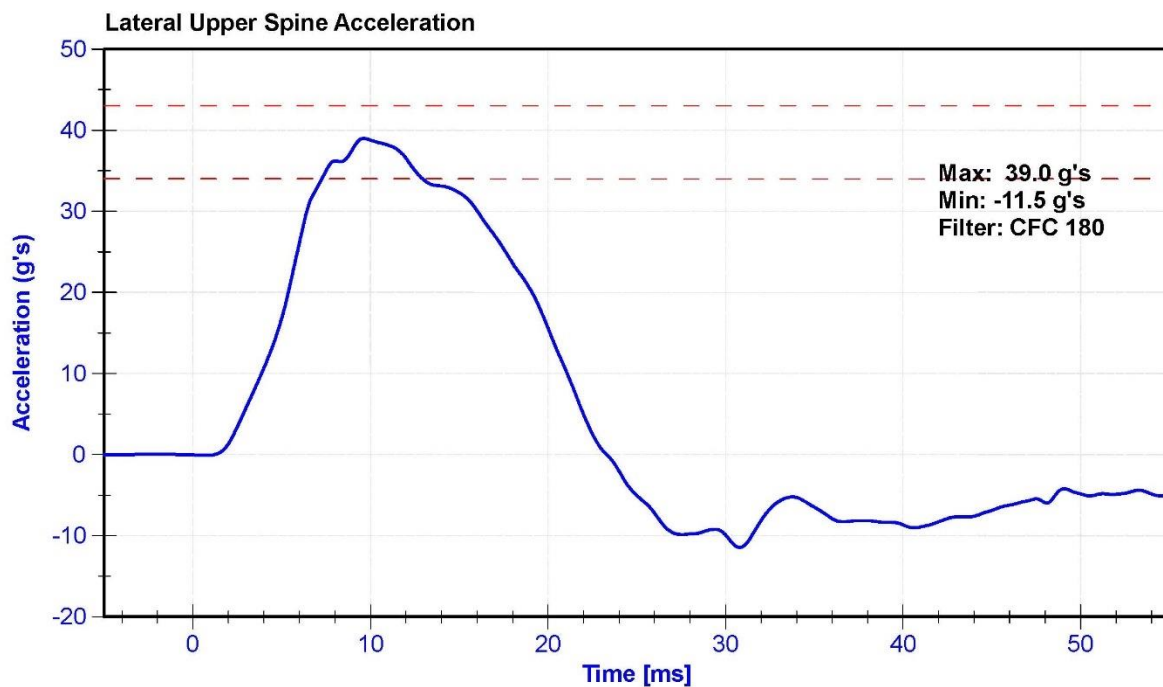
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	52.8	Pass
Velocity	6.6	6.8	m/s	6.68	Pass
Probe Acceleration after 5 ms	30	36	g's	34.6	Pass
Lateral Upper Spine Acceleration	34	43	g's	39.0	Pass
Lateral Lower Spine Acceleration	29	37	g's	34.5	Pass
Shoulder Deflection	31	40	mm	32.0	Pass
Upper Thorax Rib Deflection	25	32	mm	26.0	Pass
Mid Thorax Rib Deflection	30	36	mm	31.0	Pass
Lower Thorax Rib Deflection	32	38	mm	34.1	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	T25885	10/25/2021	10/25/2022
Upper Spine T1 Y Accelerometer	Endevco	P64148	6/17/2022	12/14/2022
Upper Spine T12 Y Accelerometer	Endevco	P51327	6/17/2022	12/14/2022
Shoulder Potentiometer	Servo	1274GFE	6/20/2022	12/19/2022
Upper Thorax Rib Potentiometer	Servo	1199GFE	6/17/2022	12/16/2022
Middle Thorax Rib Potentiometer	Servo	1246GFE	6/17/2022	12/16/2022
Lower Thorax Rib Potentiometer	Servo	011GFE	6/17/2022	12/16/2022







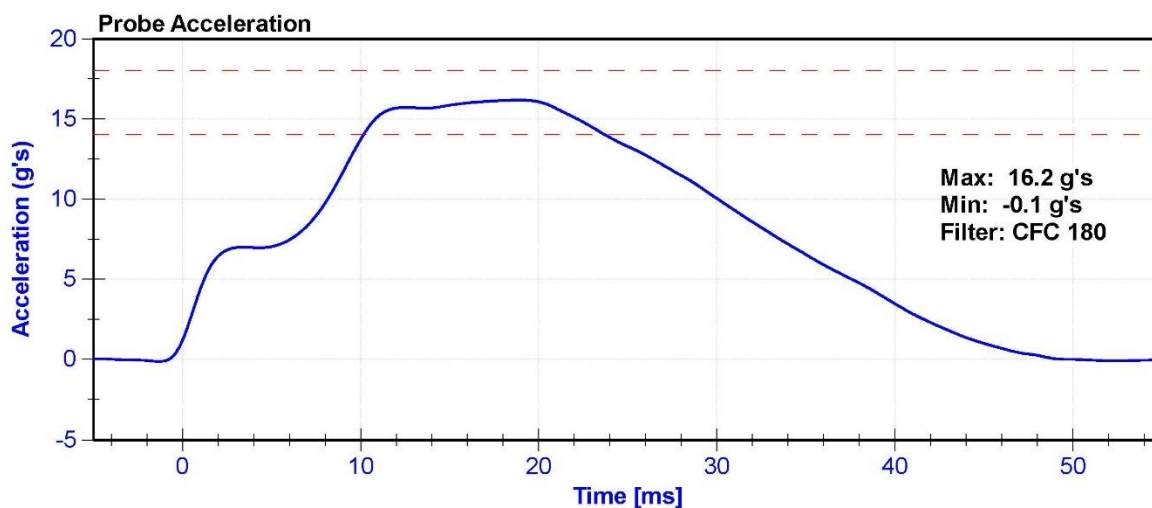
ATD Manufacturer	FTSS	Test Technician	B. Kirchner
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

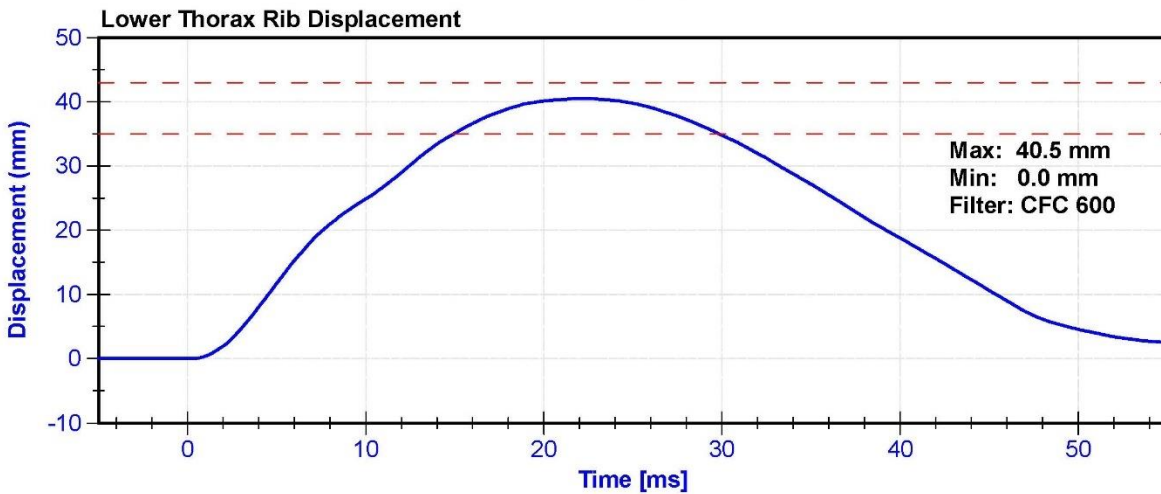
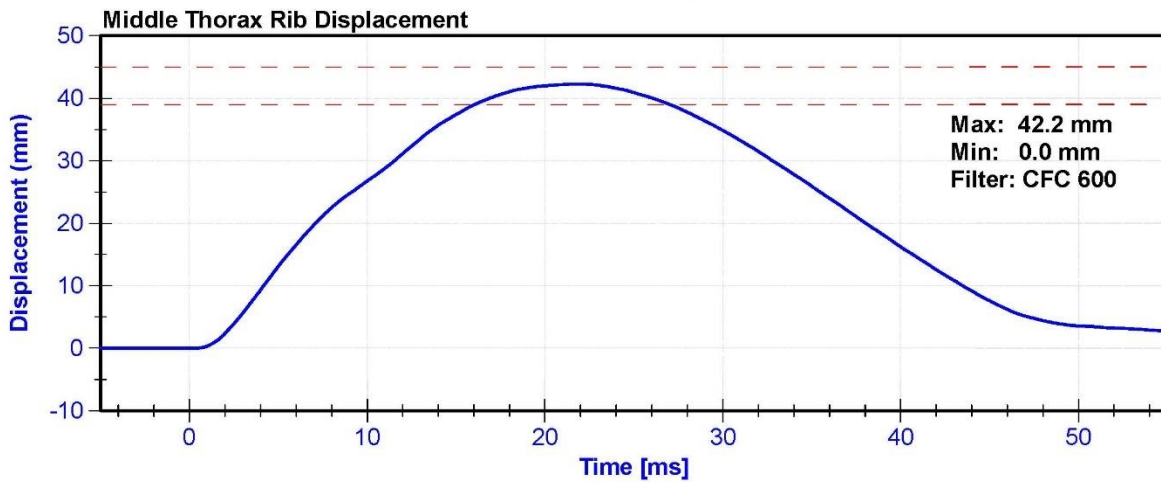
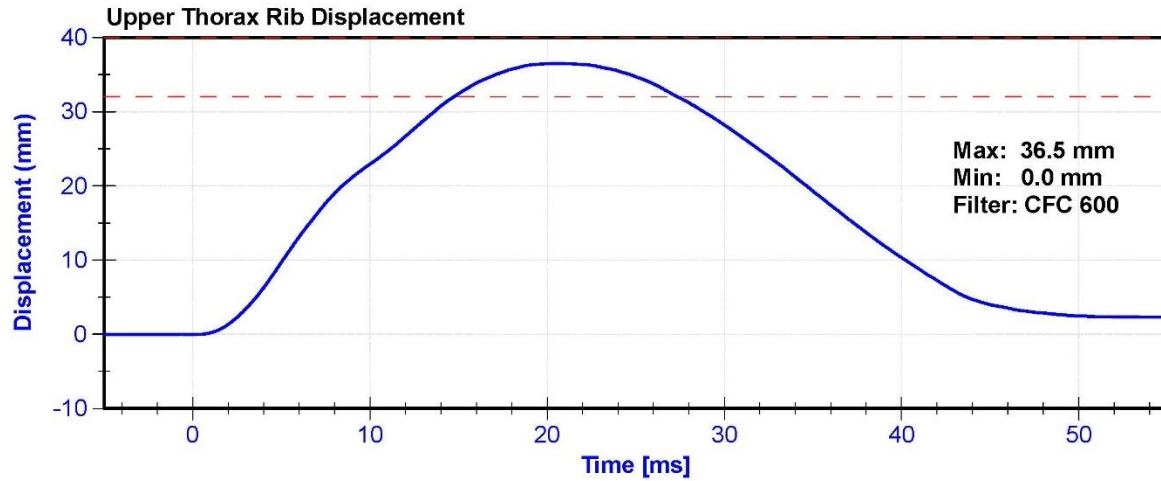
Results

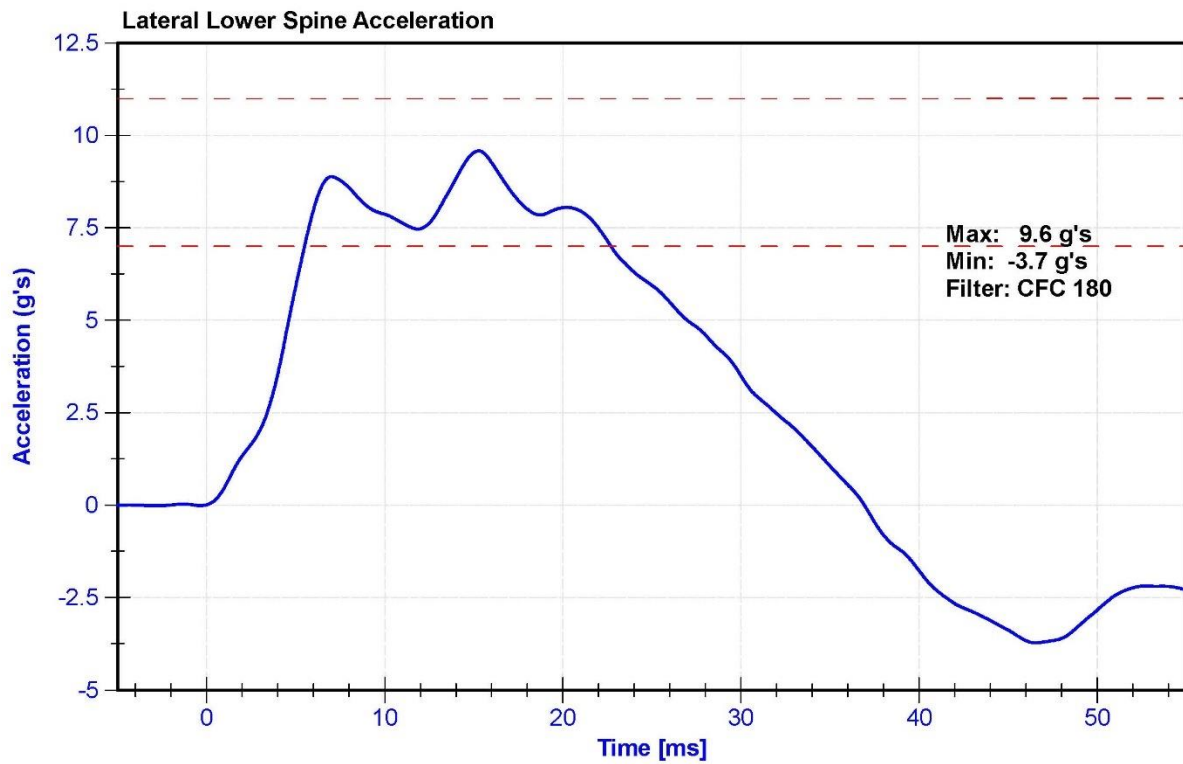
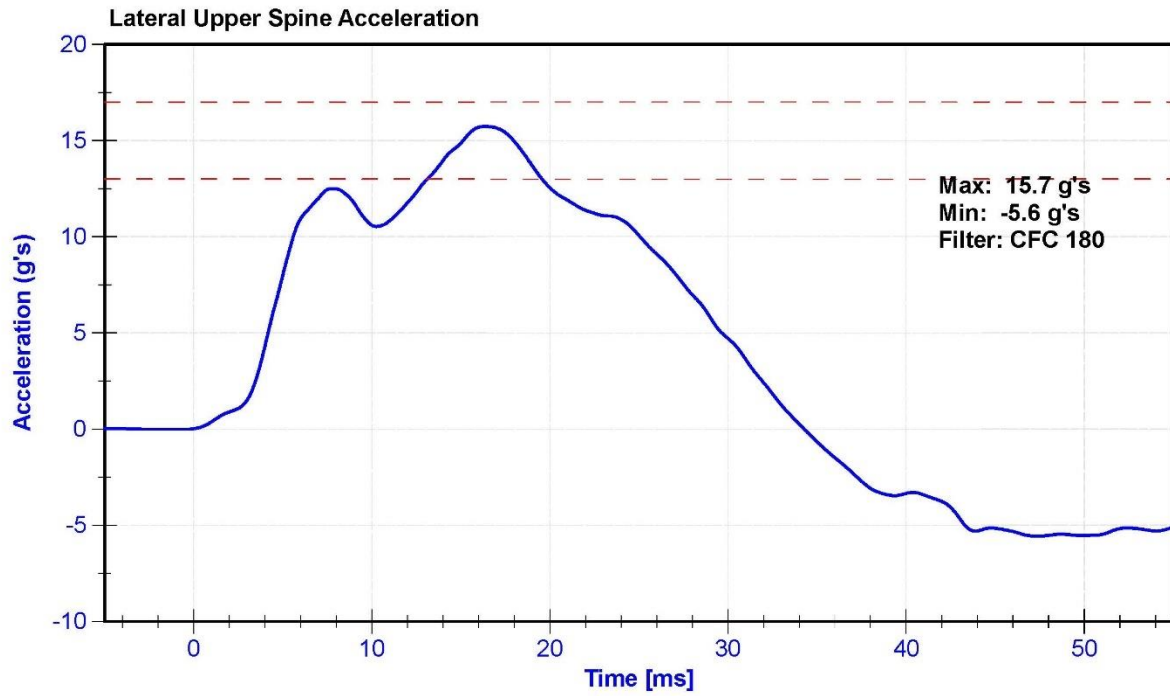
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	52.8	Pass
Velocity	4.2	4.4	m/s	4.34	Pass
Probe Acceleration	14	18	g's	16.2	Pass
Lateral Upper Spine Acceleration	13	17	g's	15.7	Pass
Lateral Lower Spine Acceleration	7	11	g's	9.6	Pass
Upper Thorax Rib Deflection	32	40	mm	36.5	Pass
Middle Thorax Rib Deflection	39	45	mm	42.2	Pass
Lower Thorax Rib Deflection	35	43	mm	40.5	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	T25885	10/25/2021	10/25/2022
Upper Spine Y Accelerometer	Endevco	P64148	6/17/2022	12/14/2022
Lower Spine Y Accelerometer	Endevco	P51327	6/17/2022	12/14/2022
Upper Thorax Rib Potentiometer	Servo	1199GFE	6/17/2022	12/16/2022
Middle Thorax Rib Potentiometer	Servo	1246GFE	6/17/2022	12/16/2022
Lower Thorax Rib Potentiometer	Servo	011GFE	6/17/2022	12/16/2022







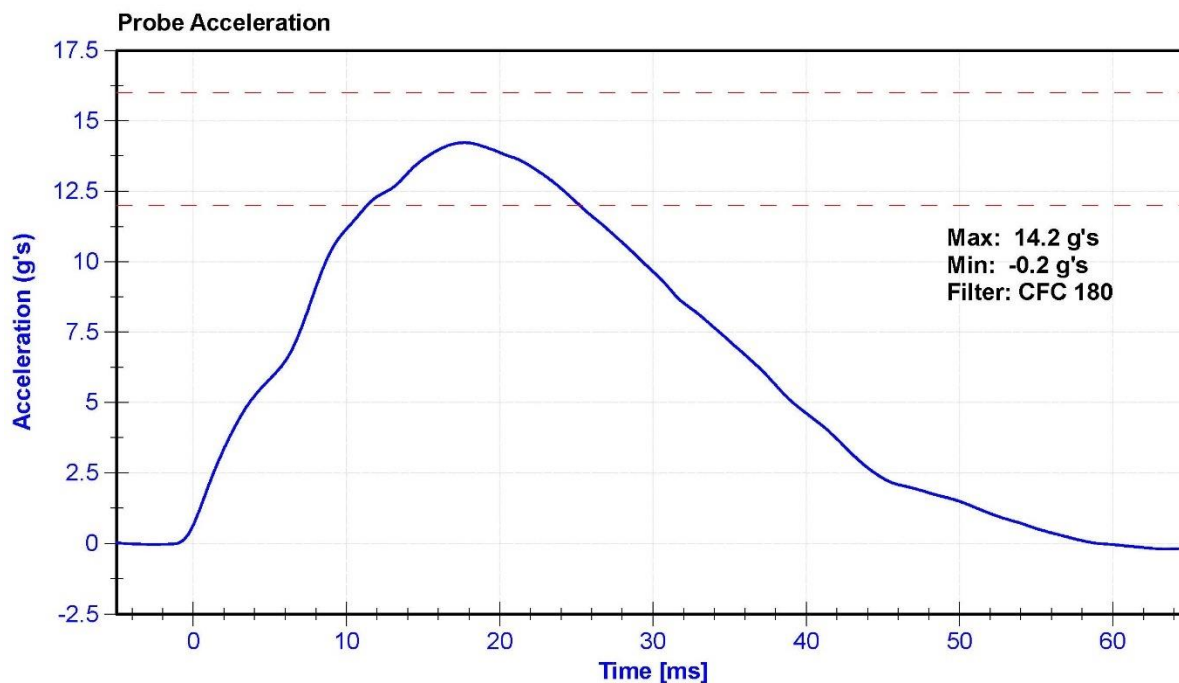
ATD Manufacturer	FTSS	Test Technician	B. Kirchner
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

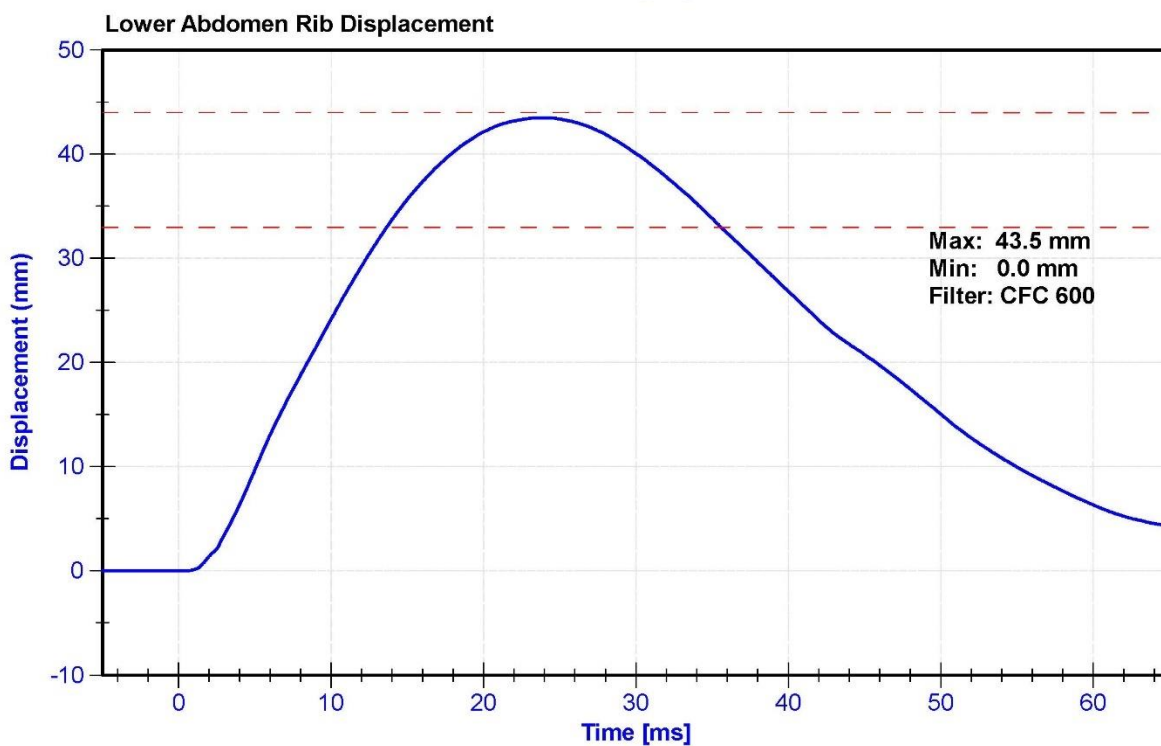
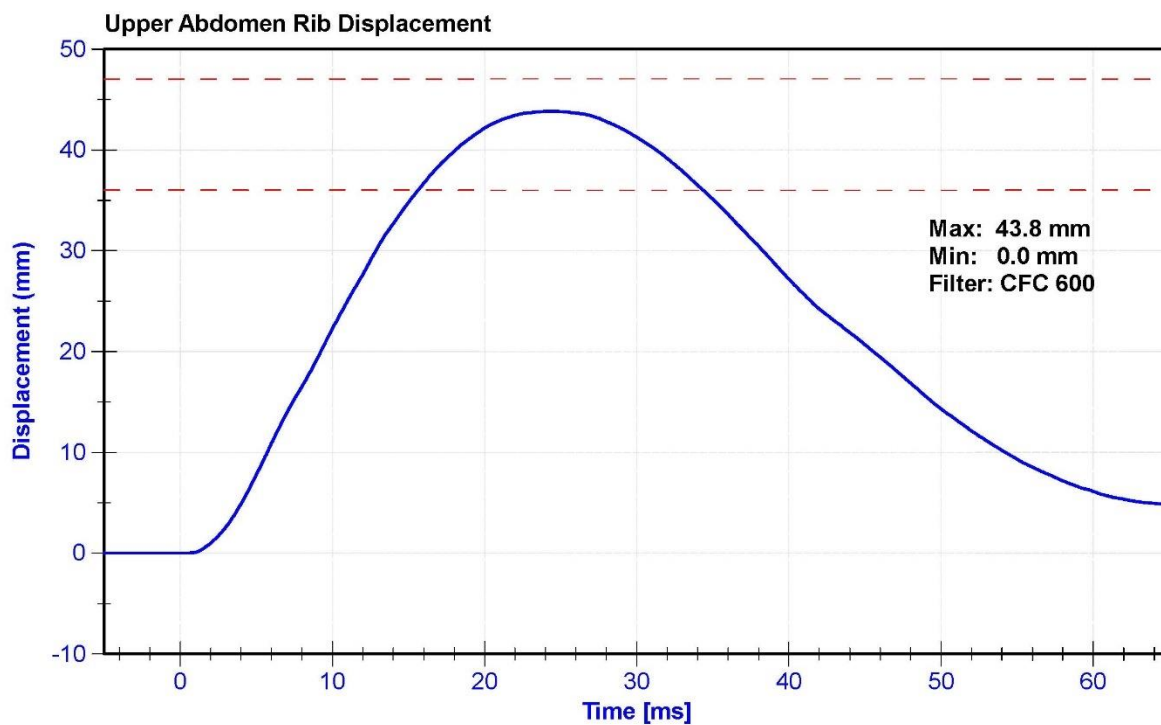
Results

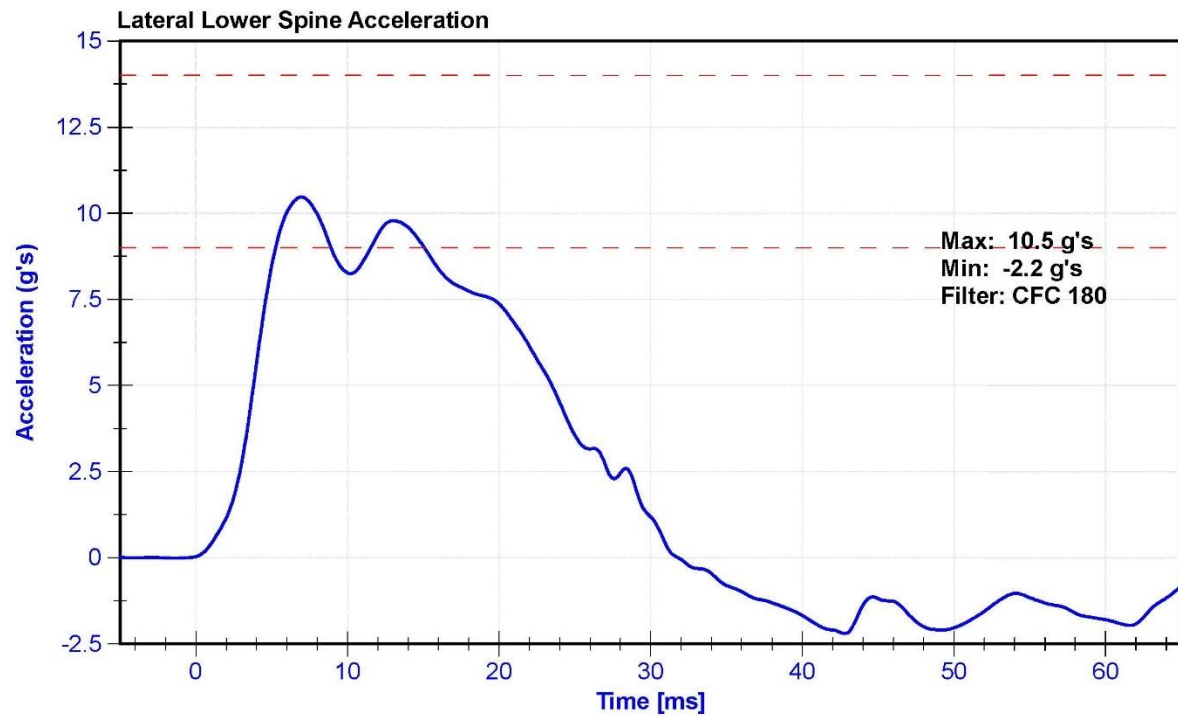
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	52.8	Pass
Velocity	4.2	4.4	m/s	4.34	Pass
Probe Acceleration	12	16	g's	14.2	Pass
Lateral Lower Spine Acceleration	9	14	g's	10.5	Pass
Upper Abdomen Rib Deflection	36	47	mm	43.8	Pass
Lower Abdomen Rib Deflection	33	44	mm	43.5	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	Endevco	T25885	10/25/2021	10/25/2022
Lower Spine Y Accelerometer	Endevco	P51327	6/17/2022	12/14/2022
Upper Abdomen Rib Potentiometer	Servo	008GFE	6/17/2022	12/16/2022
Lower Abdomen Rib Potentiometer	Servo	041 GFE	6/17/2022	12/16/2022







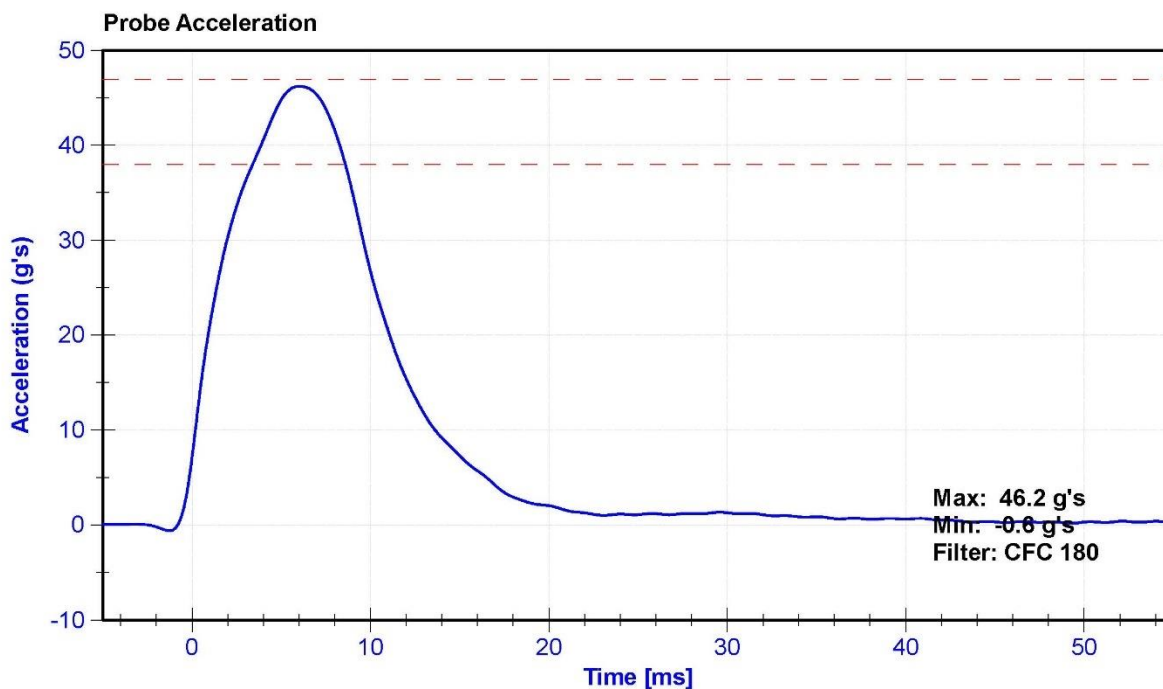
ATD Manufacturer	FTSS	Test Technician	B. Kirchner
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

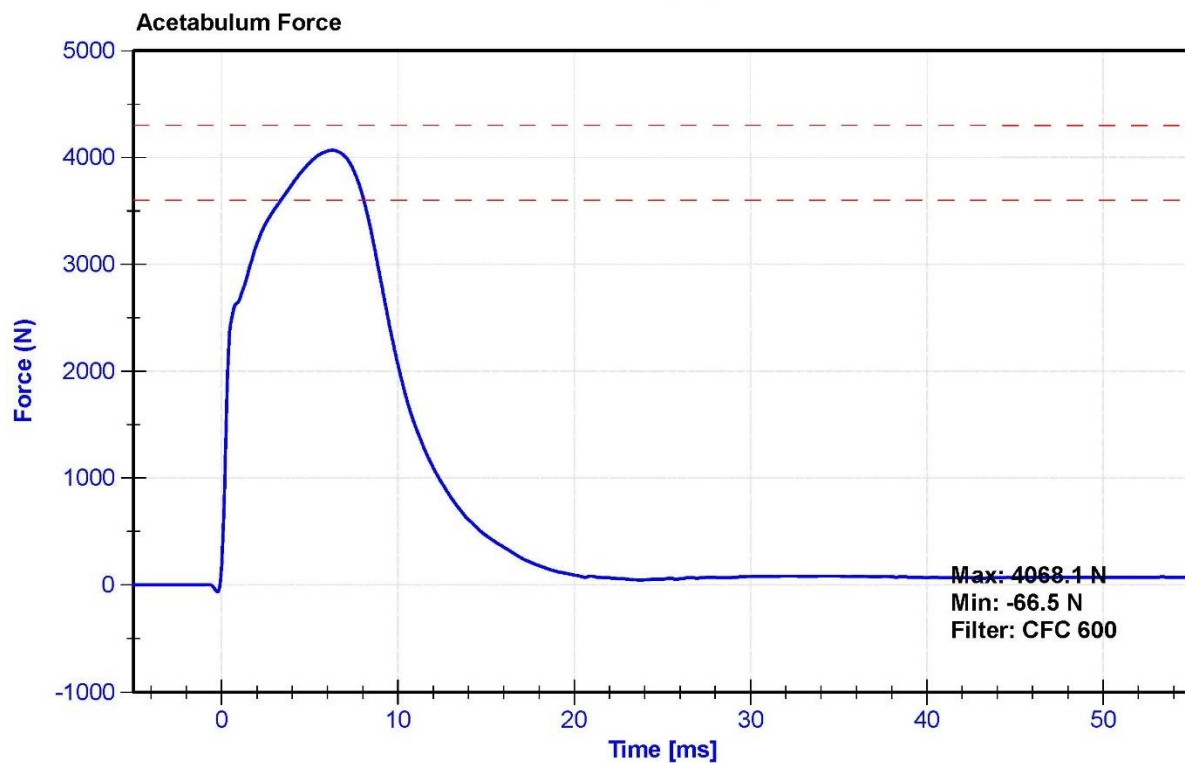
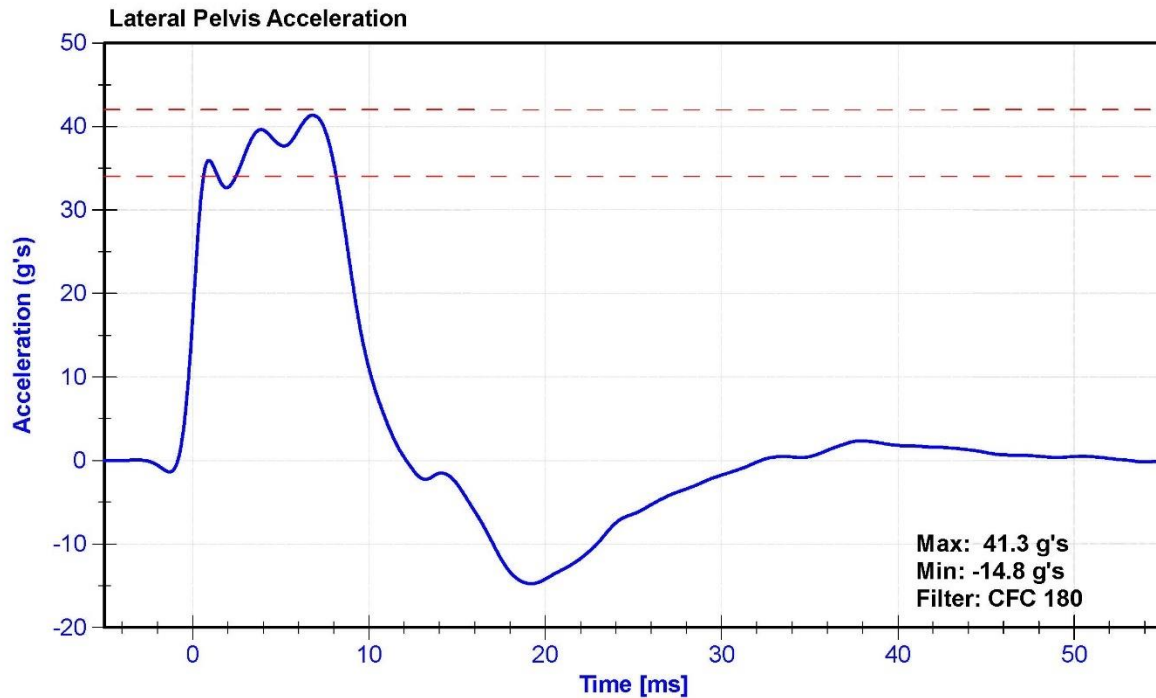
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	42.5	Pass
Velocity	6.6	6.8	m/s	6.61	Pass
Probe Acceleration	38	47	g's	46.2	Pass
Lateral Pelvis Acceleration after 6ms	34	42	g's	41.3	Pass
Acetabulum Force	3600	4300	N	4068.1	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	T25885	10/25/2021	10/25/2022
Pelvis Y Accelerometer	Endevco	P51875	6/17/2022	12/14/2022
Acetabulum Load Cell	Denton	276-FY	9/14/2021	9/14/2022
Certification Plug	SACO			N/A
Crash Test Plug	SACO			N/A







Test 1

Pass - 6/28/22

SID-11s Pelvis Plug Certification Test

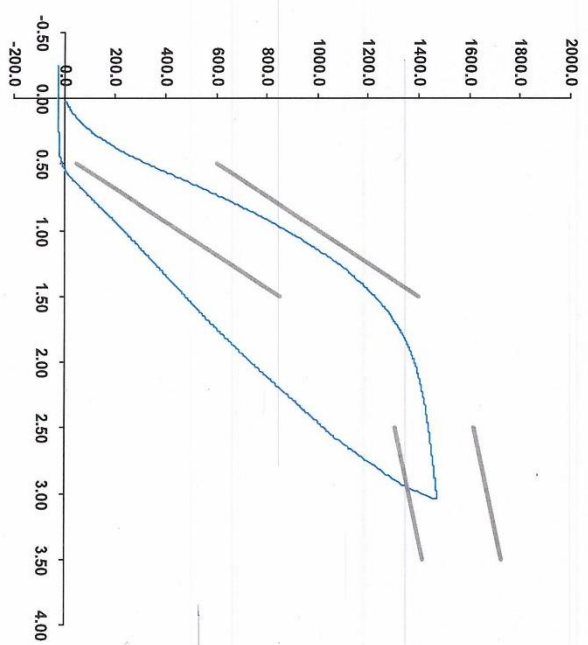
Force (-N) vs Extension (-mm)

Plug S/N 13985
Test Number 13459
Report Number 13504
Test Date 5/22/2020 10:38:09 AM

Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	336	600
Force @ 1.5 mm (N)	1,228	1,400
Force @ 2.5 mm (N)	1,440	1,618
Force @ 3.0 mm (N)	1,473	1,673

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

Notes:



Operator

Part Number 180-4450

Template No 107 08-Jul-21
SACO Research

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



Crash - Impact

SID-11s Pelvis Plug Certification Test

Plug S/N 13105

Test Number 10425

Report Number 10460

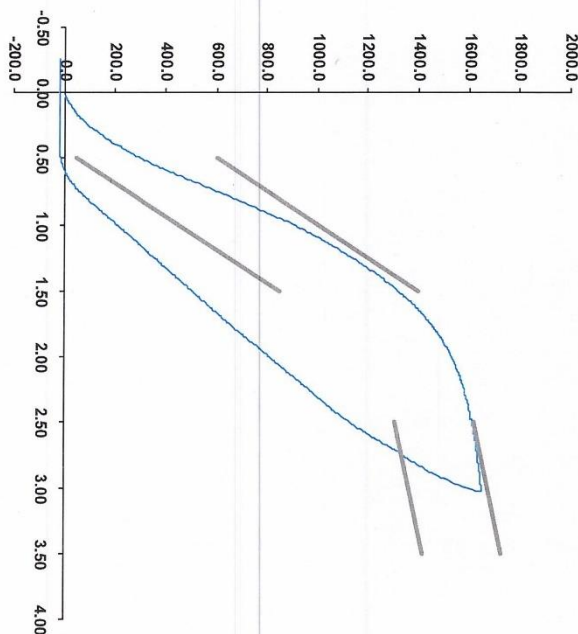
Test Date 7/30/2019 4:59:55 PM

Force (-N) vs Extension (-mm)

Test Results	Spec Min	Spec Max
Force @ 0.5 mm (N)	50	800
Force @ 1.5 mm (N)	850	1,400
Force @ 2.5 mm (N)	1,306	1,618
Force @ 3.0 mm (N)	1,361	1,673

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

Notes:



Operator

Part Number 180-4450

Template No 107 08-Jul-21

SACO Research

By: _____ Date: _____

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



Cash - Non Impact

SID-11s Pelvis Plug Certification Test

Plug S/N 14064

Test Number 13538

Report Number 13583

Test Date 5/25/2020 11:20:38 AM

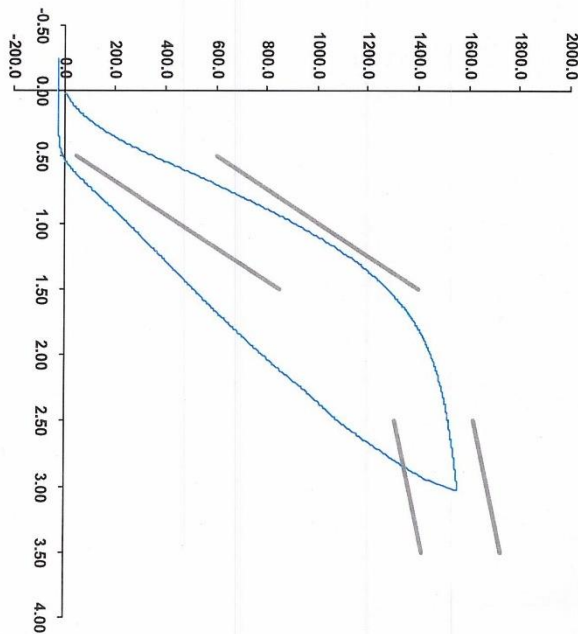
Force (-N) vs Extension (-mm)

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

Testing Machine STM-20 5965542
Load Cell S/N (F1360947), Units (LBS) 1000

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

Notes:



Operator 14061

Part Number 180-4450

Template No 107 08-Jul-21
SACO Research

By : _____ Date : _____

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

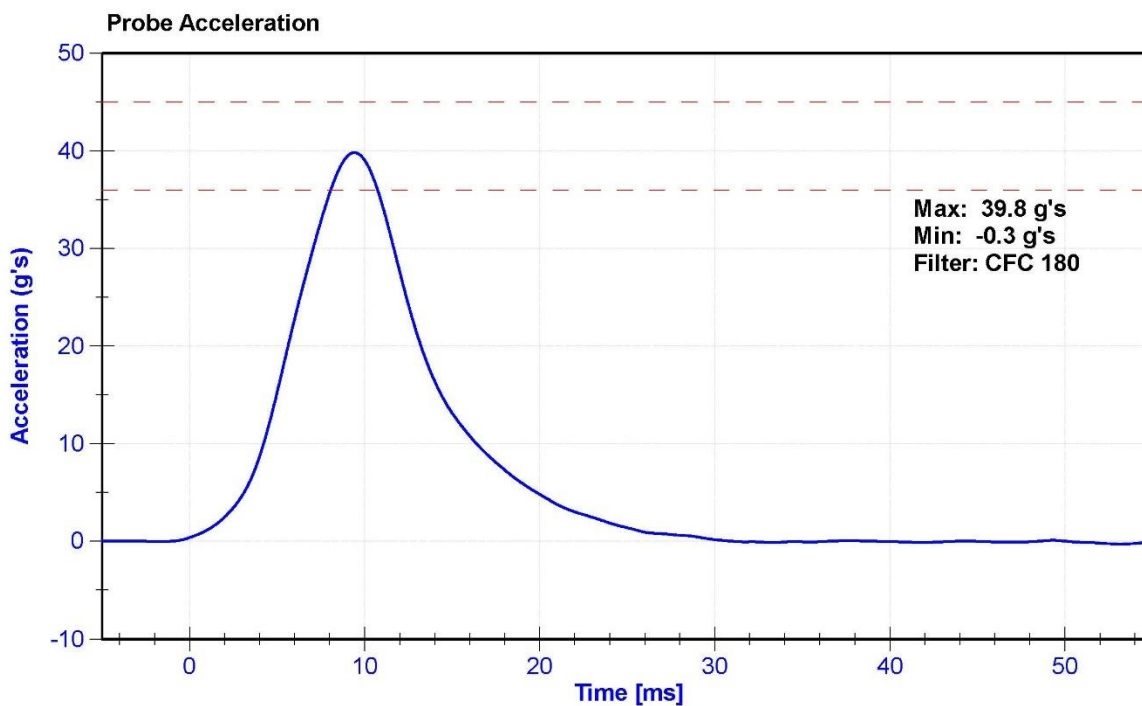
ATD Manufacturer	FTSS	Test Technician	B. Kirchner
ATD Serial Number	DG8012	Laboratory Supervisor	K. Brogan

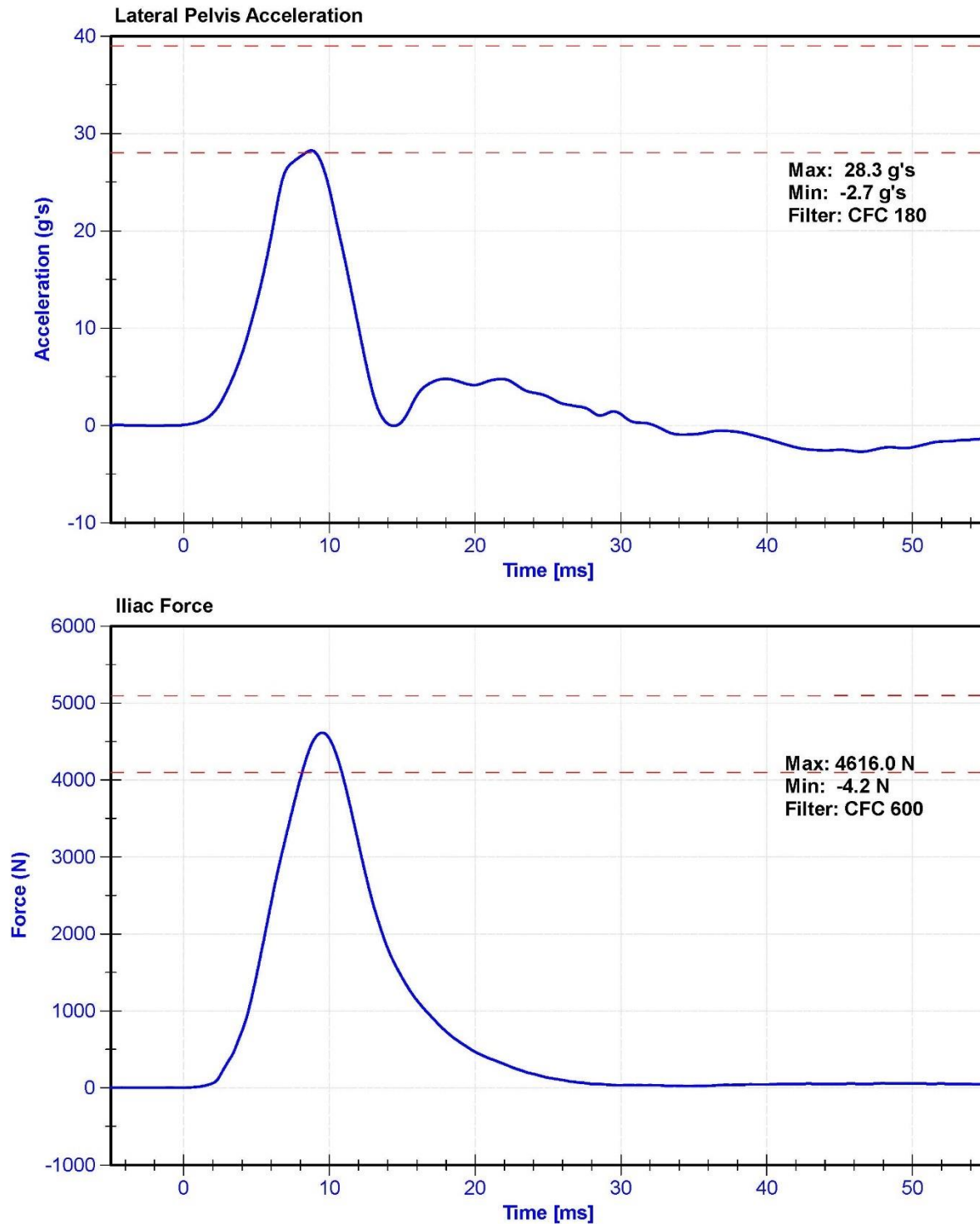
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	42.5	Pass
Velocity	4.2	4.4	m/s	4.40	Pass
Probe Acceleration	36	45	g's	39.8	Pass
Lateral Pelvis Acceleration	28	39	g's	28.3	Pass
Iliac Force	4100	5100	N	4616.0	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	Endevco	T25885	10/25/2021	10/25/2022
Pelvis Y Accelerometer	Endevco	P51875	6/17/2022	12/14/2022
Iliac Load Cell	Denton	290-FY	9/14/2021	9/14/2022





APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N: F033		
			Serial Number	Manufacturer	Calibration Date
Head Accelerometers	Primary	X	P63861	Endevco	1/31/2022
		Y	P49216	Endevco	1/31/2022
		Z	P51303	Endevco	1/31/2022
	Redundant	X	P58868	Endevco	1/31/2022
		Y	P16755	Endevco	1/31/2022
		Z	P52132	Endevco	1/31/2022
Thorax Rib Displacement Potentiometers	Upper	Y	179GFE	Honeywell	2/1/2022
	Middle	Y	185GFE	Honeywell	2/1/2022
	Lower	Y	178GFE	Honeywell	2/1/2022
Abdomen Load Cells	Forward	Y	1512	Denton	8/2/2021
	Middle	Y	1526	Denton	8/2/2021
	Rear	Y	1516	Denton	8/2/2021
Lower Spine Accelerometers (T12)		X	P52009	Endevco	1/31/2022
		Y	P69803	Endevco	1/31/2022
		Z	P52033	Endevco	1/31/2022
Pubic Symphysis Load Cell		Y	464-FY	Denton	8/2/2021

TABLE 2 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N: DG8012		
				Serial Number	Manufacturer	Calibration Date
Head Accelerometers		Primary	X	P74788	Endevco	6/17/2022
			Y	P83432	Endevco	6/17/2022
			Z	P83319	Endevco	6/17/2022
		Redundant	X	P80334	Endevco	6/17/2022
			Y	P52155	Endevco	6/17/2022
			Z	P83322	Endevco	6/17/2022
Displacement Potentiometers	Thoracic Rib	Upper	Y	1199GFE	Servo	6/17/2022
		Middle	Y	1246GFE	Servo	6/17/2022
		Lower	Y	011GFE	Servo	6/17/2022
	Abdominal Rib	Upper	Y	008GFE	Servo	6/17/2022
		Lower	Y	041 GFE	Servo	6/17/2022
Lower Spine Accelerometers (T12)			X	P71272	Endevco	6/17/2022
			Y	P51327	Endevco	6/17/2022
			Z	P52067	Endevco	6/17/2022
Acetabulum Load Cell			Y	276-FY	Denton	9/14/2021
Iliac Wing Load Cell			Y	290-FY	Denton	9/14/2021
Pelvis Plug (struck side)				13075	SACO	7/30/2019
Pelvis Plug (non-struck side)				12972	SACO	1/22/2019

TABLE 3 – Vehicle Instrumentation

Vehicle Instrumentation			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	A283630	Measurement Specialties	2/11/2022
	Vehicle Center of Gravity	Y	A374215	Measurement Specialties	2/11/2022
	Vehicle Center of Gravity	Z	A399941	Measurement Specialties	4/21/2022
2	Right Sill at Front Seat	X	A197009	Measurement Specialties	4/26/2022
	Right Sill at Front Seat	Y	A217566	Measurement Specialties	4/26/2022
	Right Sill at Front Seat	Z	A284985	Measurement Specialties	4/26/2022
3	Right Sill at Rear Seat	X	A315967	Measurement Specialties	5/31/2022
	Right Sill at Rear Seat	Y	A315973	Measurement Specialties	5/31/2022
	Right Sill at Rear Seat	Z	A315975	Measurement Specialties	5/31/2022
4	Left Sill at Front Door	Y	A255877	Measurement Specialties	4/27/2022
5	Left Sill at Rear Door	Y	A315921	Measurement Specialties	5/11/2022
6	Left A-Post Lower	Y	A280970	Measurement Specialties	5/11/2022
7	Left A-Post Middle	Y	A315800	Measurement Specialties	5/2/2022
8	Left B-Post Lower	Y	A431203	Measurement Specialties	3/12/2022
9	Left B-Post Middle	Y	A431210	Measurement Specialties	3/21/2022
10	Front Seat Track	Y	A280364	Measurement Specialties	4/25/2022
11	Rear Seat Track or Structure	Y	A280900	Measurement Specialties	4/26/2022
12	Right Rear Occ. Compartment	Y	A405536	Measurement Specialties	3/10/2022
13	Engine Block	X	A315126	Measurement Specialties	2/9/2022
	Engine Block	Y	A315192	Measurement Specialties	2/9/2022
14	Rear Floorpan Above Axle	X	A431377	Measurement Specialties	3/22/2022
	Rear Floorpan Above Axle	Y	A431383	Measurement Specialties	3/22/2022
	Rear Floorpan Above Axle	Z	A280018	Measurement Specialties	4/18/2022

TABLE 4 – MDB Instrumentation

MDB Instrumentation		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	A405546	Measurement Specialties	6/16/2022
MDB Center of Gravity	Y	A413593	Measurement Specialties	6/16/2022
MDB Center of Gravity	Z	A413602	Measurement Specialties	6/16/2022
Left Frame at Rear Axle Centerline	X	A372813	Measurement Specialties	6/16/2022
Left Frame at Rear Axle Centerline	Y	A372809	Measurement Specialties	6/16/2022