

REPORT NUMBER: SINCAP-KAR-15-004

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

**NISSAN MOTOR CO., LTD.
2015 NISSAN ALTIMA 2.5 S 4-DOOR SEDAN**

NHTSA No: M20155201

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



SEPTEMBER 25, 2014

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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Prepared By: Matthew S. Hubbard
Mr. Matthew S. Hubbard, Test Engineer
KARCO Engineering, LLC.

Reviewed By: WLP
Mr. Michael L. Dunlap, Director of Operations
KARCO Engineering, LLC.

Approved By: Frank D. Richardson
Mr. Frank D. Richardson, Program Manager
KARCO Engineering, LLC.

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FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

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16. Abstract

A 55/28 km/h 90 deg. Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2015 Nissan Altima 2.5 S 4-door sedan in accordance with the specifications of the Office of Crash Worthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on September 11, 2014.

The impact velocity of the Moving Deformable Barrier was 62.38 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 35.6° C. The target vehicle's maximum post-test static crush was 269 mm located at level 3. The test vehicle's occupant performance data is as follows:

Measurement Description	Driver ATD (ES-2re)		
	Units	IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	216.2
Maximum Thoracic Rib Deflection	mm	44	40
Total Abdominal Force	N	2500	1153
Pubic Symphysis Force	N	6000	2135

Measurement Description	Passenger ATD (SID-II's)		
	Units	IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	408.7
Resultant Lower Spine Acceleration	g	82	66
Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	2503
Maximum Thoracic Rib Deflection	mm	38*	34
Maximum Abdominal Rib Deflection	mm	45*	27

The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches. The opposite side doors did not open during the side impact event.

* Proposed IARV

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SECTION 1

TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test is part of the MY2015 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number DTNH22-09-D-00122. The purpose of this test is to generate comparative side impact performance in a 2015 Nissan Altima 2.5 S 4-door sedan. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated September 2013.

SECTION 2

SUMMARY OF TEST RESULTS

A 2015 Nissan Altima 2.5 S 4-door sedan was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.38 km/h (38.76 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by KARCO Engineering, LLC. in Adelanto, California, on September 11, 2014. Pre- and post-test photographs of the test vehicle, the MDB and the dummies (ES-2re and SID-IIs) are included in Appendix A of 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 September 2013. The side impact event was documented by 11 cameras. Camera locations are included in Data Sheet No. 5 of this report.

The dummy was instrumented in the following manner:

DRIVER ATD (ES-2re)

Primary and redundant head CG tri-axial accelerometers

Chest upper rib, middle rib and lower rib y-axis displacement potentiometers

Abdomen forward, middle, and rear y-axis load cells

Lower spine (12) tri-axial accelerometers

Pubic symphysis y-axis load cell

PASSENGER ATD (SID-IIs)

Primary and redundant head CG tri-axial accelerometers

Chest upper rib, middle rib and lower rib y-axis displacement potentiometers

Abdomen upper rib and lower rib y-axis displacement potentiometers

Lower spine (12) tri-axial accelerometers

Acetabulum and iliac wing y-axis load cells

Appendix B contains the vehicle and dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report. Appendix D of this report contains the test equipment and instrumentation calibration data.

Dummy injury readings were recorded as follows:

Measurement Description	Units	Driver ATD (ES-2re)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	216.2
Maximum Thoracic Rib Deflection	mm	44	40
Combined Abdominal Force	N	2500	1153
Pubic Symphysis Force	N	6000	2135

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	408.7
Lower Spine (T12) Resultant Acceleration	g	82	66
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2503
Maximum Thoracic Rib Deflection	mm	38*	34
Maximum Abdominal Rib Deflection	mm	45*	27

*Proposed IARV

Supplemental restraint information is given below:

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No		No	
Side Airbag 1 (Curtain)	Yes	Yes	Yes	Yes
Side Airbag 2 (Torso/Pelvis)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	
Other	No		No	

GENERAL COMMENTS

The two doors on the struck side of the vehicle remained closed and latched. There was no separation at the hinges or latches. The doors on the non-struck side remained closed and latched. There were no ATD values that exceeded limits.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14

CONVERSION FACTORS

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

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	M20155201
Model Year	2015
Make	Nissan
Model	Altima 2.5 S
Body Style	4-Door Sedan
VIN	1N4AL3AP0FN304343
Body Color	Cayenne Red
Odometer Reading (km / mi)	216 / 134
Engine Displacement (L)	2.5
Type / No. of Cylinders	Inline 4
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	CVT
Overdrive	Yes
Final Drive	Front
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes

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

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

Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Co., LTD.
Date of Manufacture	May-14
Vehicle Type	Passenger Car

GVWR (kg)	1910
GAWR Front (kg)	1005
GAWR Rear (kg)	940

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity	2	3		5
Capacity Weight (VCW) (kg)				408.0
DSC x 68.04 (kg)				340.2
Cargo Weight (RCLW) (kg)				67.8

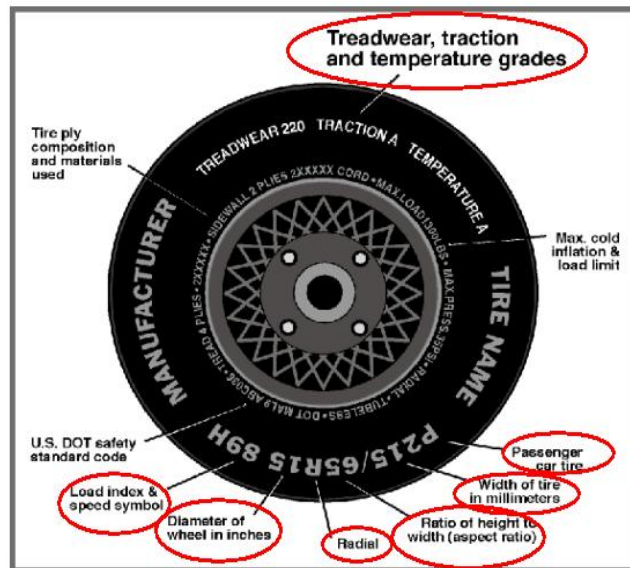
VEHICLE SEAT TYPE

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

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	300	300
Cold Pressure (kPa)	220	220
Recommended Tire Size	P215/60R16	P215/60R16
Tire Size on Vehicle	P215/60R16	P215/60R16
Tire Manufacturer	Hankook	Hankook
Tire Model	Optimo	Optimo
Treadware	640	640
Traction Grade	B	B
Temperature Grade	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Nylon	1 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	94T	94T
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Left	T7UP DLH 5013	T7UP DLH 5013
DOT Safety Code Right	T7UP DLH 5013	T7UP DLH 5013

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	290	290	290	290
Tire Placard	kPa	220	220	220	220
Owner's Manual	kPa	220	220	220	220
As Tested	kPa	220	220	220	220

MDB TIRE SPECIFICATIONS

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

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	443.0	292.0		477.5	373.5		482.5	383.5	
Right	kg	426.0	287.0		436.5	344.5		425.0	348.5	
Ratio	%	60.0%	40.0%	100.0%	56.0%	44.0%	100.0%	55.4%	44.6%	100.0%
Total	kg	869.0	579.0	1448.0	914.0	718.0	1632.0	907.5	732.0	1639.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1448.0	A
Actual Weight of 2 P572 ATDs Used	kg	125.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	67.8	C
Calculated Vehicle Target Wt (TVTW)	kg	1640.8	A+B+C

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight -4.5 kg to -9.0 kg)? ☒ Yes ☐ No

TEST VEHICLE ATTITUDE AND CG

Measurement Description	Units	Fully Loaded	As Tested	Meets Requirement***
LF	mm	701	699	Yes
RF	mm	712	704	Yes
LR	mm	683	684	Yes
RR	mm	699	690	Yes
Vehicle CG (Aft of Front Axle)	mm	1239	1220	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	45	34	

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

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Spare Tire and Tools	16.0
Trunk Trim	1.0
Hood Trim	1.0
Ballast / Equipment Added	68.0

Test Height Adjustable Setting (If Applicable)	
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DATA SHEET NO. 2**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14**SEAT POSITIONING**

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

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	4.2	0.0	2.1
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle	As Tested SCRP Height	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid Fore/Aft	Forwardmost
Driver Seat	2.1	522	Max	504	522	539
			Mid	504	522	539
			Min	504	522	539
Front Passenger Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

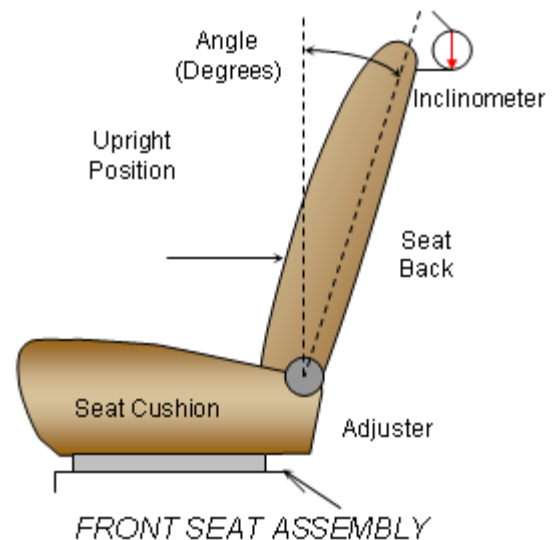
DATA SHEET NO. 2 ... (CONTINUED)**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14**SEAT FORE/AFT POSITION**

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

*Detent zero (0) is the forward most detent

SEAT BACK ADJUSTMENT

The driver's seat back is positioned to the manufacturer's designated design angle. The right front passenger's seat back is positioned in a similar manner as the driver's seat back. The struck side rear seat back is 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 back angle is measured at the headrest post.

**SEAT BACK POSITION**

Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/Seated Dummy	58.5	32	-0.2	5
Front Passenger Seat	62.7	32	-0.2	5
Front Center Seat				
Struck Side Rear Seat w/Seated Dummy	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

*Detent zero (0) is the forward most detent

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

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14

SEAT BELT ANCHORAGE ADJUSTMENT

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

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

HEAD RESTRAINT ADJUSTMENT

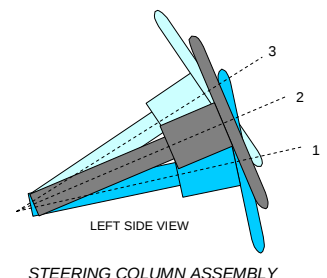
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total No. of Positions	Placed in Position
Driver Seat	5	Full Up
Rear Seat	Fixed	Fixed

STEERING COLUMN ADJUSTMENT

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

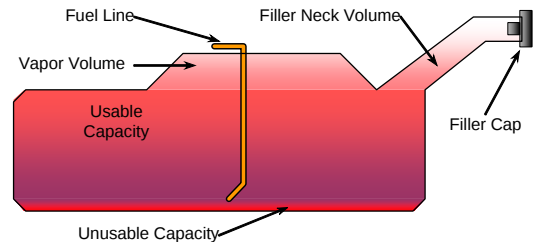
	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	21.1	90
Geometric Center - Position 2	23.8	120
Uppermost - Position 3	26.5	150
Telescoping Steering Wheel Travel		60
Test Position	23.8	120



DATA SHEET NO. 2 ... (CONTINUED)**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14**FUEL PUMP**

The vehicle is equipped with an electric fuel pump.

The fuel pump is activated when the ignition is turned on.



VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY

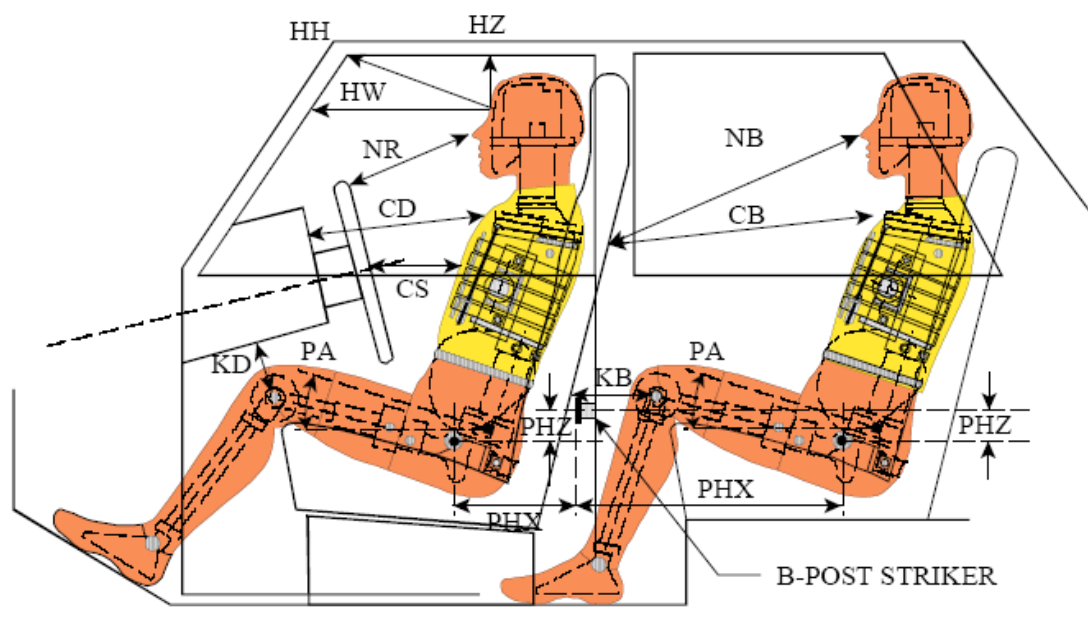
Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	67.98
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	63.22
Actual amount of Solvent Used in Test	63.21
1/3 of Usable Capacity	22.66

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

DATA SHEET NO. 3

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



LEFT SIDE VIEW

NOTE: 2-DOOR VEHICLE SHOWN.
 REAR DUMMY PHX & PHZ
 MEASUREMENTS FOR A 4-DOOR
 VEHICLE WOULD USE THE C-POST
 STRIKER AS A REFERENCE POINT

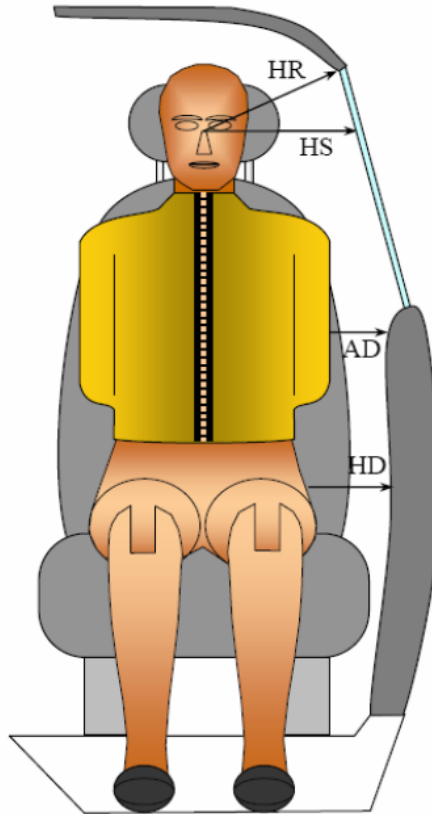
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	370			
HW		Head to Windshield	645			
HZ	HZ	Head to Roof	163		236	
NR	NB	Nose to Rim/Seat Back	445		637	
CD	CB	Chest to Dash/Seat Back	595		590	
CS		Chest to Steering Wheel	302			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	158	34.8	314	17.3
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	119	34.5	325	12.7
PAX°	PAX°	Pelvic Tilt Angle X		20.7		22.3
	PAY°	Pelvic Tilt Angle Y		0.1		0.2
PHX	PHX	Hip Point to Striker (x-axis)	213		262	
PHZ	PHZ	Hip Point to Striker (z-axis)	139		287	

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



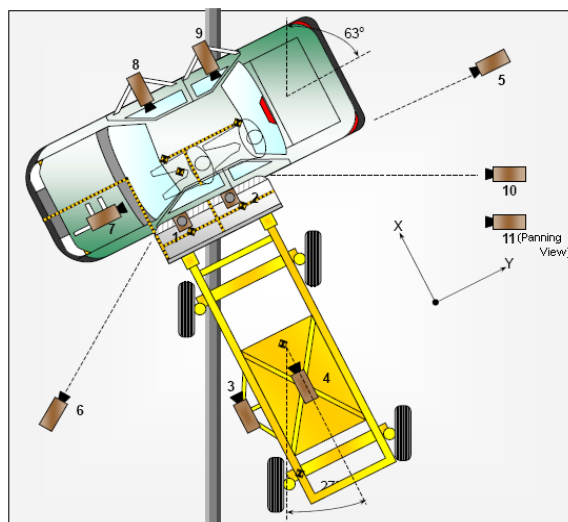
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	235	221
HS	Head to Side Window	mm	311	344
AD	Arm to Door	mm	89	147
HD	H-Point to Door	mm	148	182

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



CAMERA LOCATIONS AND DATA

No.	View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	1220	2287	-5486	14	1000
2	Overhead Close-Up	609	2287	-5102	35	1000
3	Left Impact Point (MDB)	-2134	0	-1143	25	1000
4	Side Overall (MDB)	-3912	838	-1829	12.5	1000
5	Rear	-64	2485	-1348	85	1000
6	Left Front	-2266	-3564	-1475	24	1000
7	Driver Front (On-Board)	564	-704	795	24	1000
8	Driver Side (On-Board)	1689	758	425	12	1000
9	Passenger Side (On-Board)	1689	1694	462	12	1000
10	Real Time Overall				Zoom	30
11	Real Time Inrun				Zoom	30

Reference: Impact Point Projected to Ground; +X = To Front of MDB, +Y = To Right of MDB, +Z = Down

*All measurements accurate to ± 6 mm

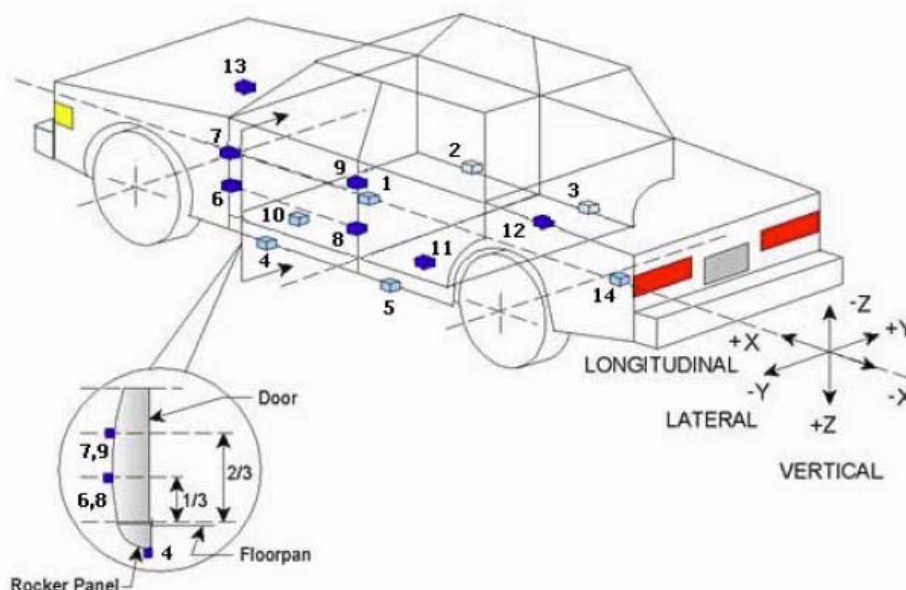
INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	16
Vehicle Structure Accelerometers	23
MDB Accelerometers	5
Total	60

DATA SHEET NO. 6

TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2010	0	-279
2	Right Sill at Front Seat	2679	340	-710
3	Right Sill at Rear Seat	1881	337	-710
4	Left Sill at Front Door	2786	-780	-201
5	Left Sill at Rear Door	1704	-780	-202
6	A-Pillar Lower	3397	-809	-517
7	A-Pillar Middle	3397	-809	-756
8	B-Pillar Lower	2246	-743	-545
9	B-Pillar Middle	2246	-743	-796
10	Front Seat Track	2512	-188	-229
11	Rear Seat Structure			
12	Right Rear Occupant Compartment	2014	374	-211
13	Engine Block	4105	40	-747
14	Rear Floorpan Above Axle	1097	-35	-424

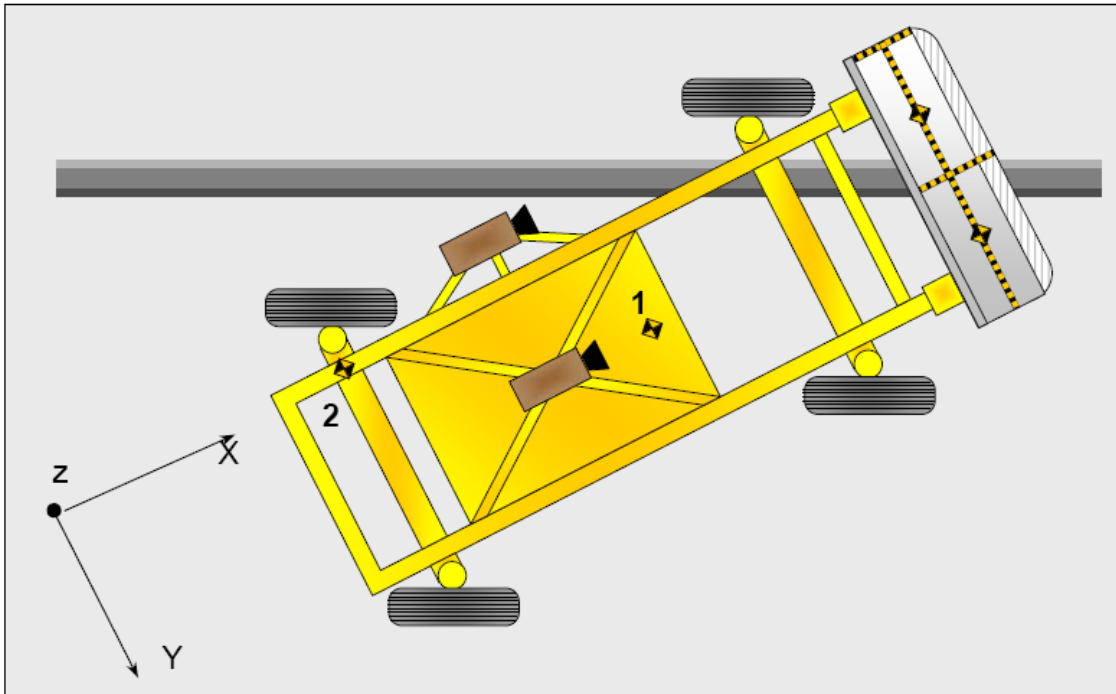
Reference: X – Rear surface of vehicle (+ forward)
 Y – Vehicle centerline (+ to right)
 Z – Ground plane (+ down)

DATA SHEET NO. 7

MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201

Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



MDB ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Location	Measurement		
		X	Y	Z
1	MDB CG	-1195	0	-430
2	MDB Rear	-2642	-593	-608

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

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14

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, Side Header, Center Seat Headrest
Left Side of Head	Curtain Airbag, Side Header	Curtain Airbag
Back of Head	Curtain Airbag, Side Header, Headrest	Curtain Airbag, Side Header, Headrest, Seat Back, Center Seat Headrest
Left Shoulder	Torso/Pelvis Airbag	Door Panel, Curtain Airbag
Upper Torso	Seat, Torso/Pelvis Airbag	Seat
Lower Torso	Seat, Torso/Pelvis Airbag	Seat, Door Panel
Left Hip	Seat, Torso/Pelvis Airbag	Seat, Door Panel
Left Knee	Door Panel, Right Knee	Door Panel, Right Knee

POST-TEST DOOR PERFORMANCE

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

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

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14

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	No separation
Sill Separation	No separation
Windshield Damage	None
Side Window Damage	None
Other Notable Effects	None

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

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2774
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		444
Actual Impact Point (Aft of Front Axle)	mm		443
Horizontal Offset (+ forward / - rearward)	mm	± 50 of Intended Impact Point	1
Vertical Offset (+ down / - up)	mm	± 20 of Intended Impact Point	10

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

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1251
Overall Length including Honeycomb Face	4023
Wheel Base of Framework Carriage	2595
CG location aft of Front Axle	1118

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	401.8	298.0	699.8
Right	kg	376.9	291.6	668.5
Ratio	%	56.9%	43.1%	100.0%
Totals	kg	778.7	589.6	1368.3

SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.38
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.37
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.6
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	62.6
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.0

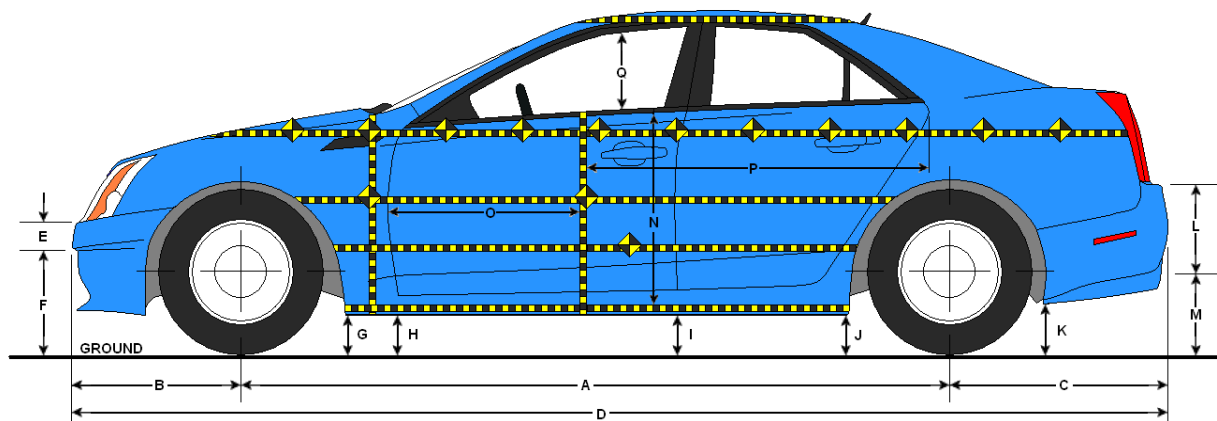
MAXIMUM STATIC CRUSH OF HONEYCOMB FACE

Vertical Location			From Centerline		Max. Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	800	Right	232
B	Top of Bumper	533	800	Right	123
C	Mid Level	686	200	Right	92
D	Top of Stack	813	800	Left	117

DATA SHEET NO. 10

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2774	2779	5
B	Front Axle to FSOV	976	982	6
C	Rear Axle to RSOV	1111	1119	8
D	Total Length at Centerline	4860	4880	20
E	Front Bumper Thickness	127	128	1
F	Front Bumper Bottom to Ground	387	401	14
G	Sill Height at Front Wheel Well	182	189	7
H	Sill Height at Front Door Leading Edge	181	194	13
I	Sill Height at B-Pillar	201	241	40
J1	Sill Height at Rear Wheel Well	201	259	58
J2	Pinch Weld Height at Rear Wheel Well	196	216	20
K	Sill Height Aft of Rear Wheel Well	225	239	14
L	Rear Bumper Thickness	178	180	2
M	Rear Bumper Bottom to Ground	416	429	13
N	Sill Height to Bottom of Front Window Sill	672	623	-49
O	Front Door Leading Edge to Impact CL	800	756	-44
P	Rear Door Trailing Edge to Impact CL	1397	1363	-34
Q	Front Window Opening	411	411	0
R	Right Side Length	3250	3254	4
S	Left Side Length	3248	3251	3
T	Vehicle Width at B-Pillar	1817	1637	-180

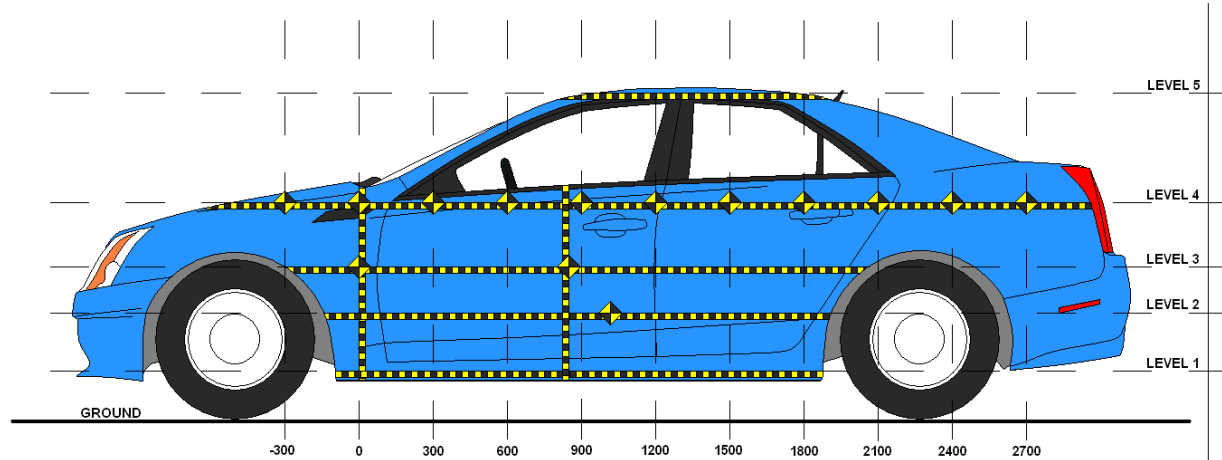
All measurements in mm with tolerance of ± 3 mm

DATA SHEET NO. 11

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201

Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	213	20	1800
2	Occupant H-Point	512	259	1350
3	Mid-Door	618	269	1650
4	Window Sill	901	207	1800
5	Window Top	1388	33	1650

DATA SHEET NO. 11 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201

Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14

EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

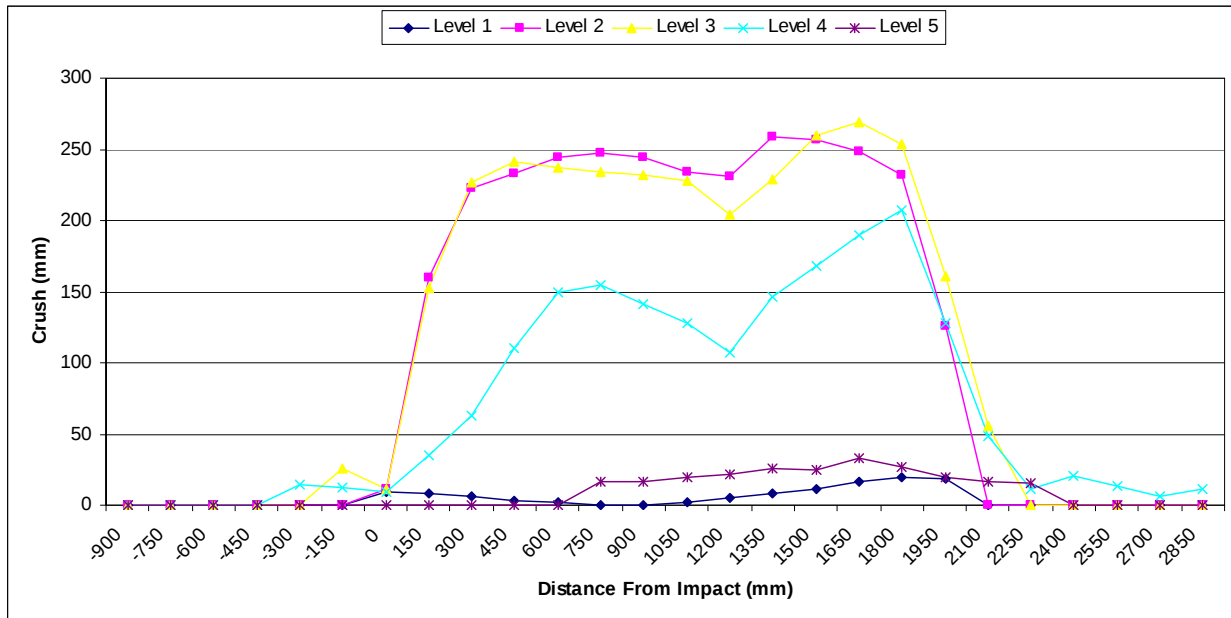
	Pre-Test (mm)					Post-Test (mm)					Difference (mm)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300				707					721					14	
-150			583	695				609	707				26	12	
0	619	590	593	690		628	601	604	699		9	11	11	9	
150	633	602	603	684		641	762	756	719		8	160	153	35	
300	638	606	601	679		644	829	828	742		6	223	227	63	
450	640	605	598	674		643	838	839	784		3	233	241	110	
600	640	603	595	666		642	847	832	816		2	244	237	150	
750	641	602	593	660	895	641	849	827	815	911	0	247	234	155	16
900	640	601	592	651	897	640	845	824	792	913	0	244	232	141	16
1050	639	600	591	645	895	641	834	819	773	915	2	234	228	128	20
1200	638	601	591	639	899	643	832	795	746	921	5	231	204	107	22
1350	635	600	591	633	901	643	859	820	779	927	8	259	229	146	26
1500	630	599	591	634	905	641	856	851	802	930	11	257	260	168	25
1650	622	598	591	635	902	638	846	860	825	935	16	248	269	190	33
1800	612	595	591	638	901	632	827	845	845	928	20	232	254	207	27
1950	603	588	587	643	904	622	714	748	771	924	19	126	161	128	20
2100			584	647	913			640	695	929			56	48	16
2250				649	919				660	934				11	15
2400				658					679					21	
2550				667					680					13	
2700				680					686					6	
2850				691					702					11	

DATA SHEET NO. 11 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201

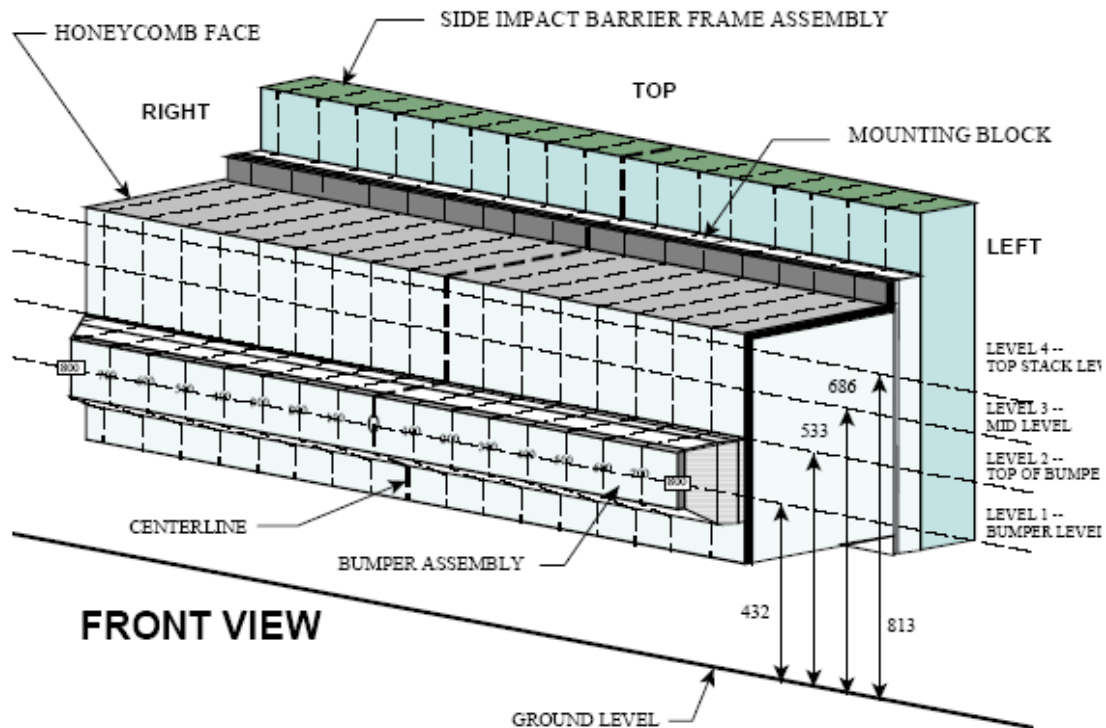
Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



DATA SHEET NO. 12

MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



NOTE: Dimensions are shown in millimeters, mm

DEFORMABLE BARRIER STATIC CRUSH

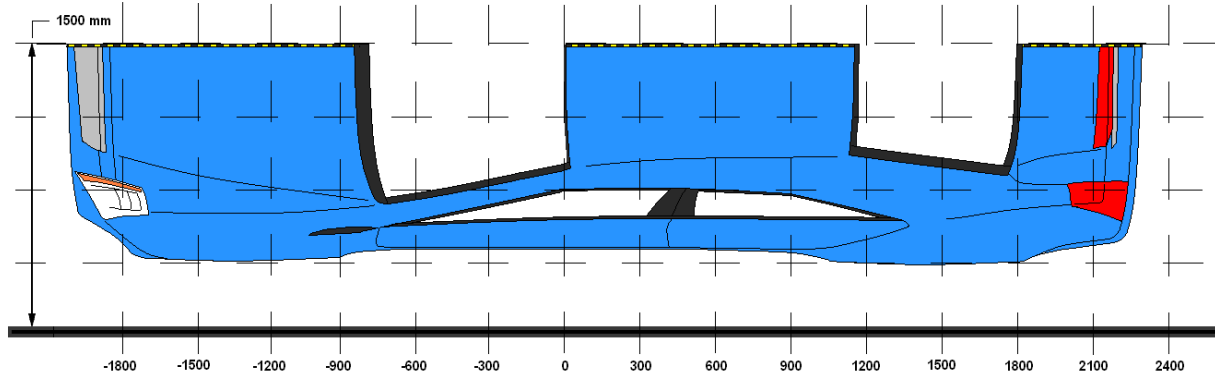
Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	232	207	189	194	194	189	184	179	172	169	164	162	156	157	159	163	186
2	123	107	93	82	72	77	90	92	80	70	66	67	67	72	75	79	87
3	47	32	30	41	54	84	92	77	49	32	22	20	19	22	27	43	87
4	29	22	28	38	57	92	112	102	87	47	27	17	9	27	57	82	117

All dimensions in millimeters.

DATA SHEET NO. 13

VEHICLE AND MDB DAMAGE PROFILE DISTANCES

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	2850	4	691	702	11
2	2250	5	919	934	15
3	1650	3	591	860	269
4	900	2	601	845	244
5	300	3	601	828	227
6	-300	4	707	721	14

MDB DAMAGE PROFILE DISTANCES

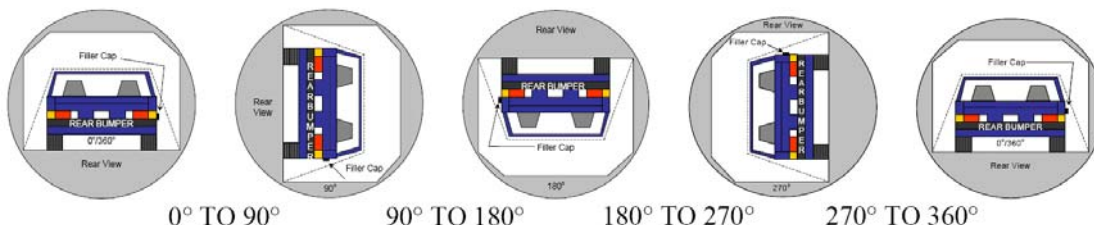
DPD	From MDB Centerline		Level	Crush (mm)
	Distance (mm)	Direction		
1	800	Left	1	232
2	500	Left	1	194
3	200	Left	1	184
4	200	Right	1	164
5	500	Right	1	157
6	800	Right	1	186

DATA SHEET NO. 14

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan NHTSA No. M20155201
 Test Program: NCAP MDB Side Impact Test Test Date: 09/11/14
 Temperature at Time of Impact: 35.6° C Test Time: 12:24 PM

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



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	84	300	384
90° To 180°	82	300	382
180° To 270°	79	300	379
270° To 360°	82	300	382

FMVSS 301 SPILLAGE TABLE

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

SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 15

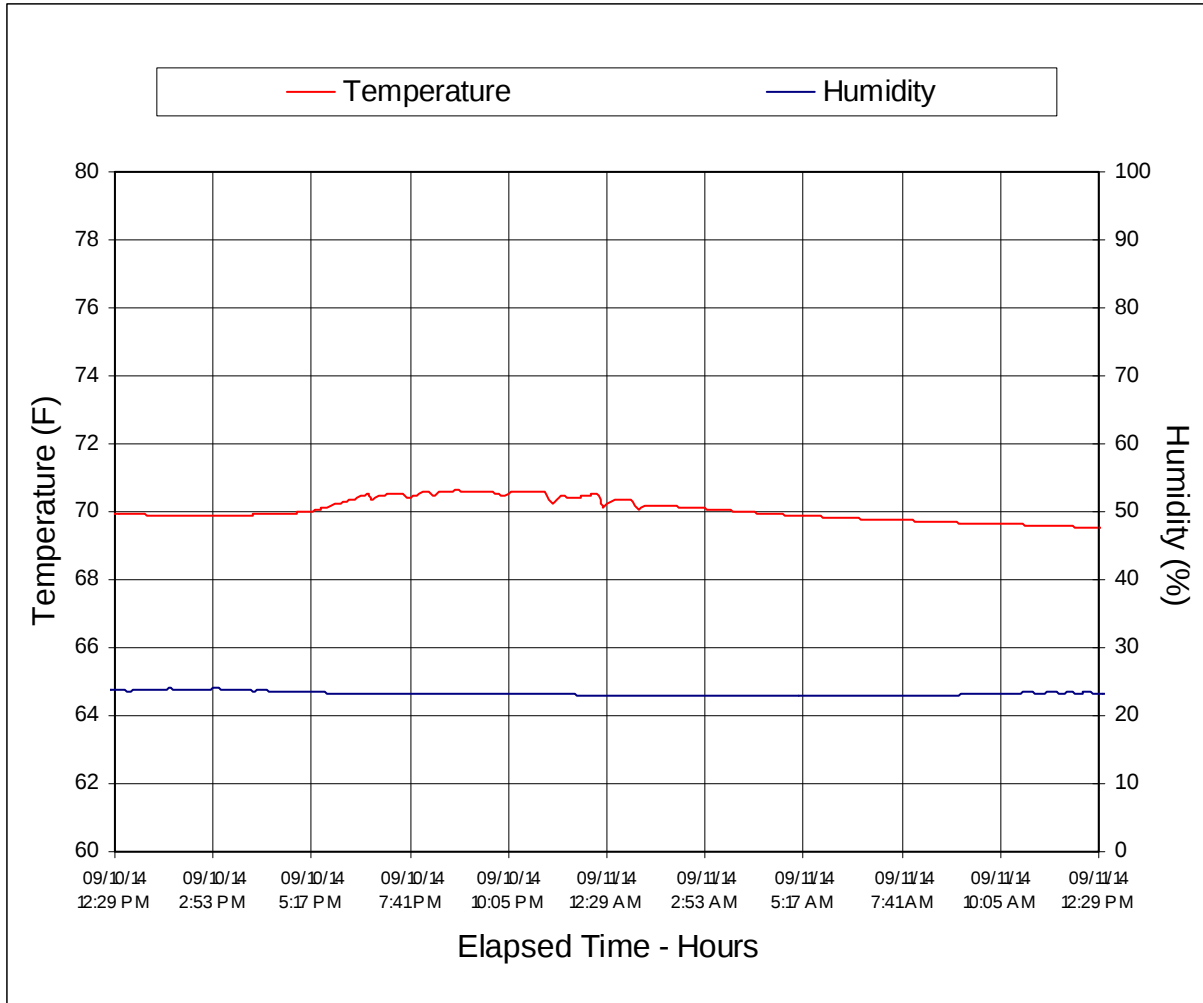
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan

NHTSA No. M20155201

Test Program: NCAP MDB Side Impact Test

Test Date: 09/11/14



APPENDIX A
PHOTOGRAPHS

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



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



FIGURE 3. Pre-Test Frontal View of Test Vehicle



FIGURE 4. Post-Test Frontal View of Test Vehicle



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



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



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



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



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



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



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



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



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



FIGURE 15. Pre-Test Overhead View of Test Area

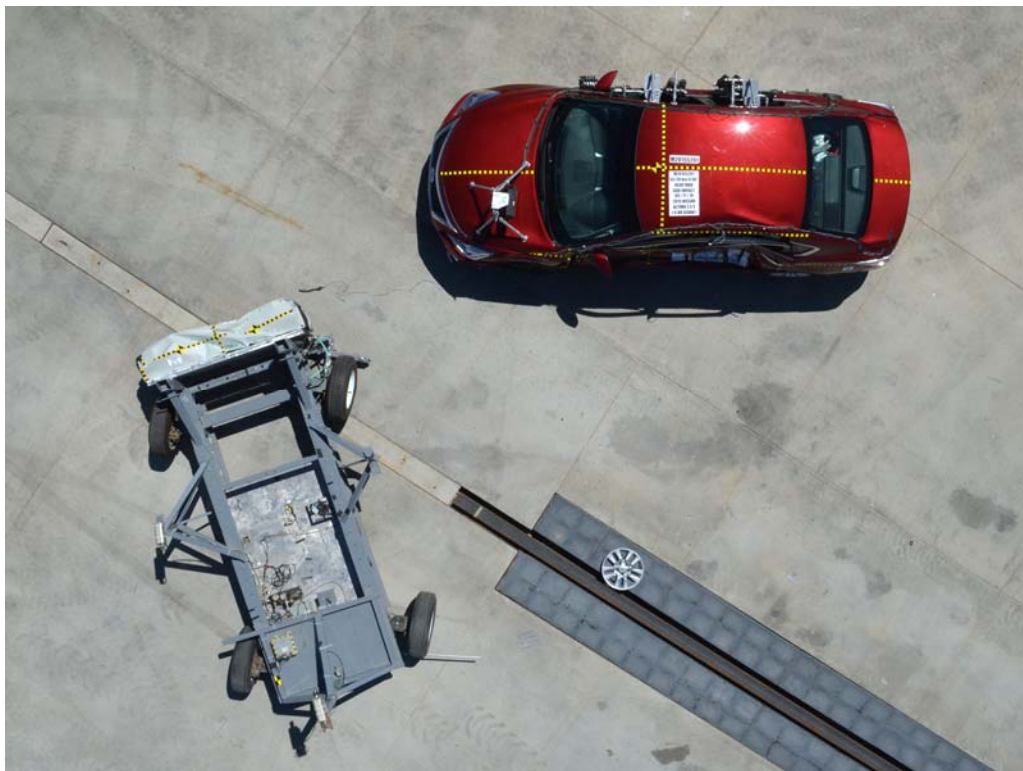


FIGURE 16. Post-Test Overhead View of Test Area



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



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



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



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



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

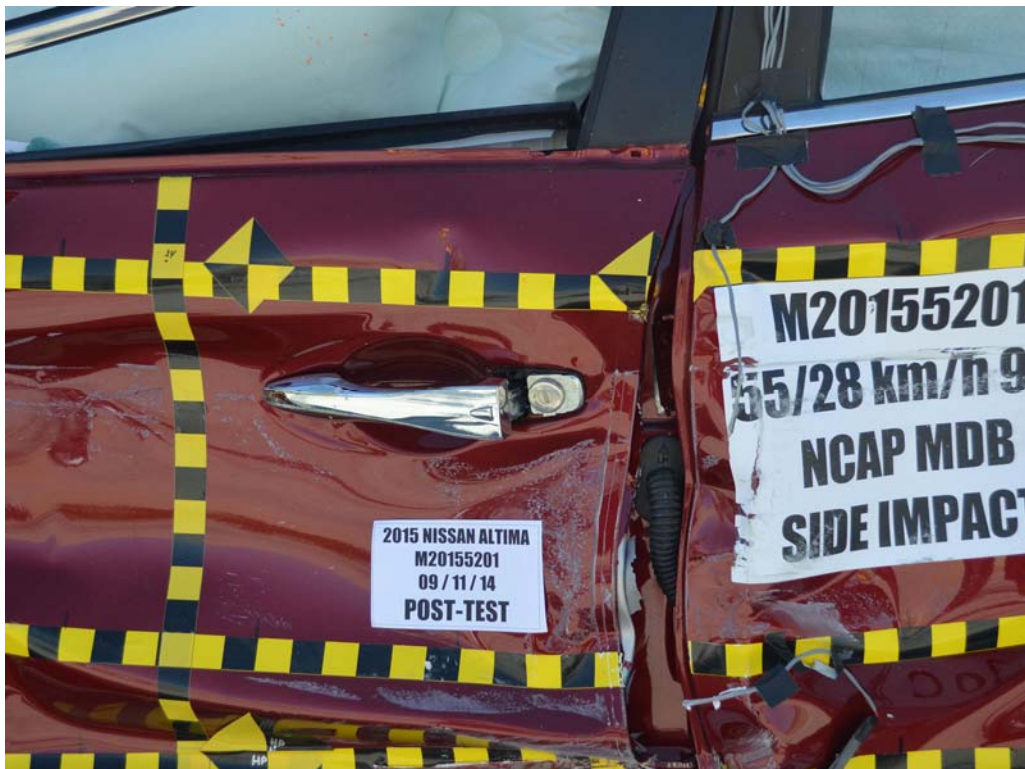


FIGURE 22. Post-Test Left Front Door Latch Close-Up



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



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



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



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



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



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



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

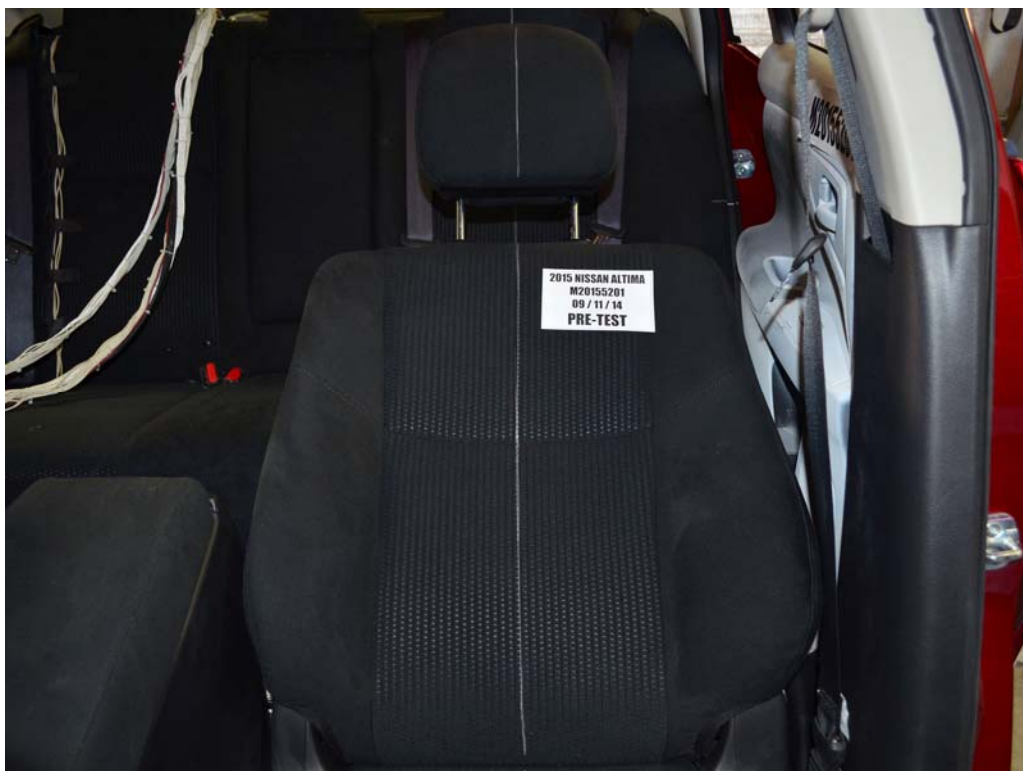


FIGURE 30. Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



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



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



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



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



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

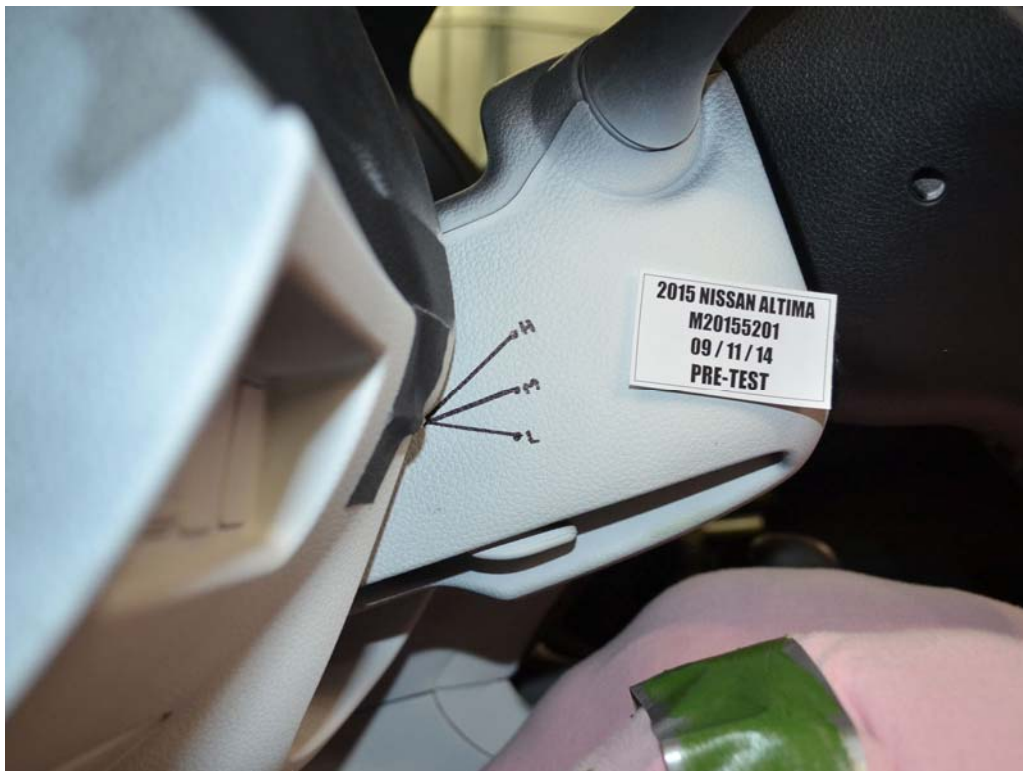


FIGURE 36. Pre-Test Left Side View of Steering Wheel



FIGURE 37. View of Disengaged Parking Brake



FIGURE 38. Pre-Test View of Parking Brake



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



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



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



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



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



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



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



FIGURE 46. Pre-Test Driver Inner Door Panel View



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



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



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



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



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



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



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



FIGURE 54. Post-Test Driver Dummy Close-Up Knee Contact View



FIGURE 55. Pre-Test Left Side View of Rear Passenger Dummy
Showing Belt and Chalking



FIGURE 56. Pre-Test Left Side View of Rear Passenger Dummy
Shoulder and Door Top View



FIGURE 57. Post-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View



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



FIGURE 59. Pre-Test Frontal View of Rear Passenger Dummy
Head and Shoulders in Relation to Head Restraint



FIGURE 60. Pre-Test Overhead View of Rear Passenger
Seat Pan Prior to Dummy Positioning



FIGURE 61. Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



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



FIGURE 63. Pre-Test View of Rear Passenger Dummy's Head
Showing Dummy's Head is Level



FIGURE 64. Pre-Test Placement of Rear Passenger Dummy's Feet

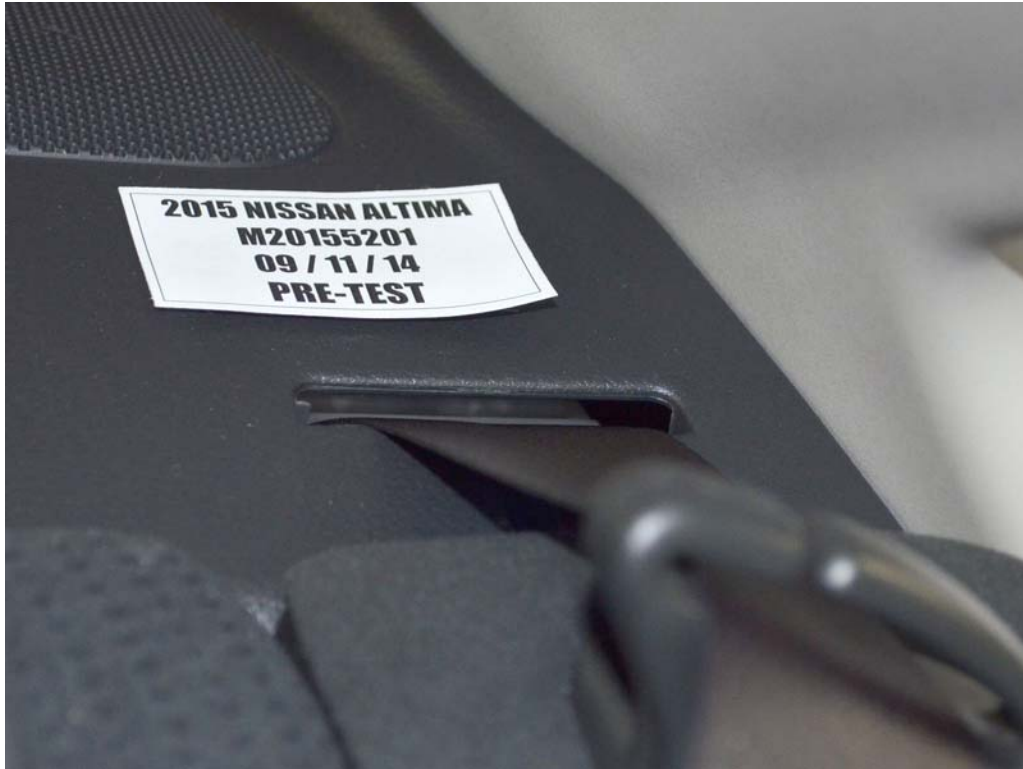


FIGURE 65. Pre-Test View of Belt Anchorage for Rear Passenger Dummy



FIGURE 66. Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



FIGURE 67. Pre-Test Close-Up Left Side View of Rear Passenger Seat Back



FIGURE 68. Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint



FIGURE 69. Pre-Test Rear Passenger Dummy and Door Clearance View



FIGURE 70. Post-Test Rear Passenger Dummy and Door Clearance View



FIGURE 71. Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



FIGURE 72. Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



FIGURE 73. Pre-Test Rear Passenger Inner Door Panel View



FIGURE 74. Post-Test Rear Passenger Inner Door Panel View
Showing Rear Passenger Dummy Contact Locations



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

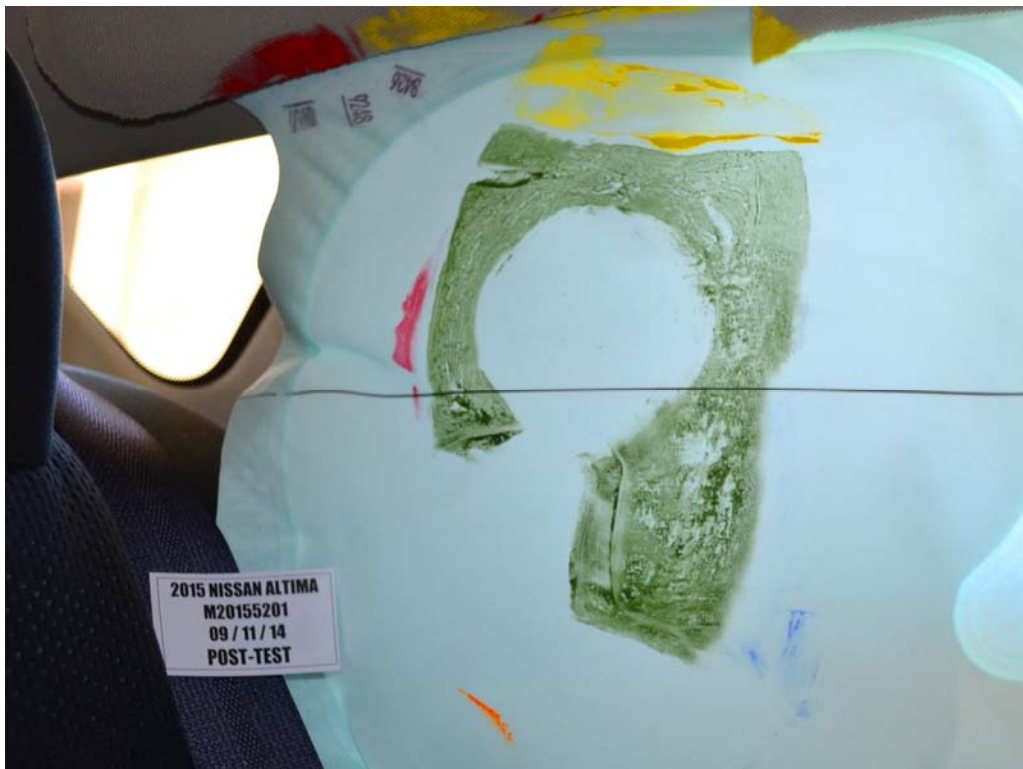


FIGURE 76. Post-Test Rear Passenger Dummy Close-Up
Head Contact with Side Airbag View



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

Photograph Not Applicable

Vehicle Not Equipped with
Rear Passenger Side Airbag

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



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

Photograph Not Applicable

Vehicle Not Equipped with Rear Passenger Side Airbag

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



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



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



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



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



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



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



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



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



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



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



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



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



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



FIGURE 94. Pre-Test Ballast View



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



FIGURE 96. FMVSS No. 301 Static Rollover 0 Degrees



FIGURE 97. FMVSS No. 301 Static Rollover 90 Degrees



FIGURE 98. FMVSS No. 301 Static Rollover 180 Degrees



FIGURE 99. FMVSS No. 301 Static Rollover 270 Degrees



FIGURE 100. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 101. Impact Event



2015 ALTIMA 2.5 S



Scan QR code for general model information & options

Fuel Economy and Environment Gasoline Vehicle

Fuel Economy 31 MPG combined city/hwy, 27 city, 38 highway. 3.2 gallons per 100 miles.

You save \$2,500 in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost \$1,700

Fuel Economy & Greenhouse Gas Rating 8 (out of 10)

Smog Rating 8 (out of 10)

Actual results may vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 24 MPG and costs \$11,000 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.50 per gallon. MPG is miles per gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fuel economy.gov Calculate personalized estimates and compare vehicles

Standard Equipment Included at No Extra Charge

MECHANICAL & PERFORMANCE
2.5-Liter DDCI 16-Valve 4-Cylinder Engine
Xtronic CVT® (Continuously Variable Transmission)
Active Understeer Control (AUC)
18" Steel Wheels w/Full Wheel Covers

SAFETY & SECURITY
Driver & Front Passenger Side-Impact & Curtain Air Bags
Lower Anchors & Tethers for Children (LATCH)
4-Wheel Anti-Lock Braking System (ABS)
Traction Control System (TCS)
Vehicle Dynamic Control (VDC)
Tire Pressure Monitoring System (TPMS) with Easy-Fill Tire Alert
Electronic Brake Force Distribution (EBD)
Vehicle Security System (VSS)
Nissan Vehicle Immobilizer System

COMFORT & CONVENIENCE
Zero Gravity Front Seats
Advanced Drive-Assist® Display
Cruise Control
Bluetooth® Hands-free Phone System
Streaming Audio via Bluetooth®
Nissan Intelligent Key®
Push Button Ignition
Power Door Locks w/Auto Locking Feature
Power Windows w/Driver's Window Auto-Up/Down and Auto Reverse Feature
Dual Illuminated Visor Vanity Mirrors w/ Rod Extensions
Individual Tire Pressure Display
Two 12-Volt DC Power Outlets
60/40 Split Fold-Down Rear Seats
Air Conditioning
Passenger's Seatback Pocket

EXTERIOR
Auto On/Off Headlights
Chrome Exhaust Finishers

**SiriusXM includes activation & 3 months of service only; subscription sold separately. SiriusXM services are not available in AK, HI and some markets.
***Optional Equipment Replaces Standard Where Applicable

Manufacturer's Suggested Retail Base Price: \$22,560.00

Options Included by Manufacturer:
SPLASH GUARDS \$190.00
CARPETED FLOOR MATS \$135.00

DESTINATION CHARGES: \$10.00

Total: \$23,895.00

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: ★★★★★
Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.

Side Crash
Front seat: Not Rated
Rear seat: Not Rated
Based on the risk of injury in a side impact.

Rollover ★★★★★
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 1-888-327-4226

DELIVERY

VEHICLE COLORS:
EXT: CAYENNE RED
INT: CHARCOAL CLOTH

FINAL ASSEMBLY POINT:
CANTON

TRANSPORT METHOD:
TRUCK

DEALER:
FUENTE HILLS NISSAN
17320 E GALE AVENUE
CITY OF INDUSTRY CA 91748

Security+Plus Vehicle Protection Plan
The only service agreement backed by Nissan! Ask your dealer for details, or call 1-800-NISSAN-1 for more information.

VIN: 1N4AL3AP0FN304343
EMS: CALIFORNIA EMISSIONS
MDL: 13115-304343 N4H-G
OPT: 8-610021132

*Does not include dealer installed options and accessories, local taxes or license fees. This label has been applied pursuant to Federal law. Do not remove prior to delivery to the ultimate purchaser.

FIGURE 102. Monroney Label

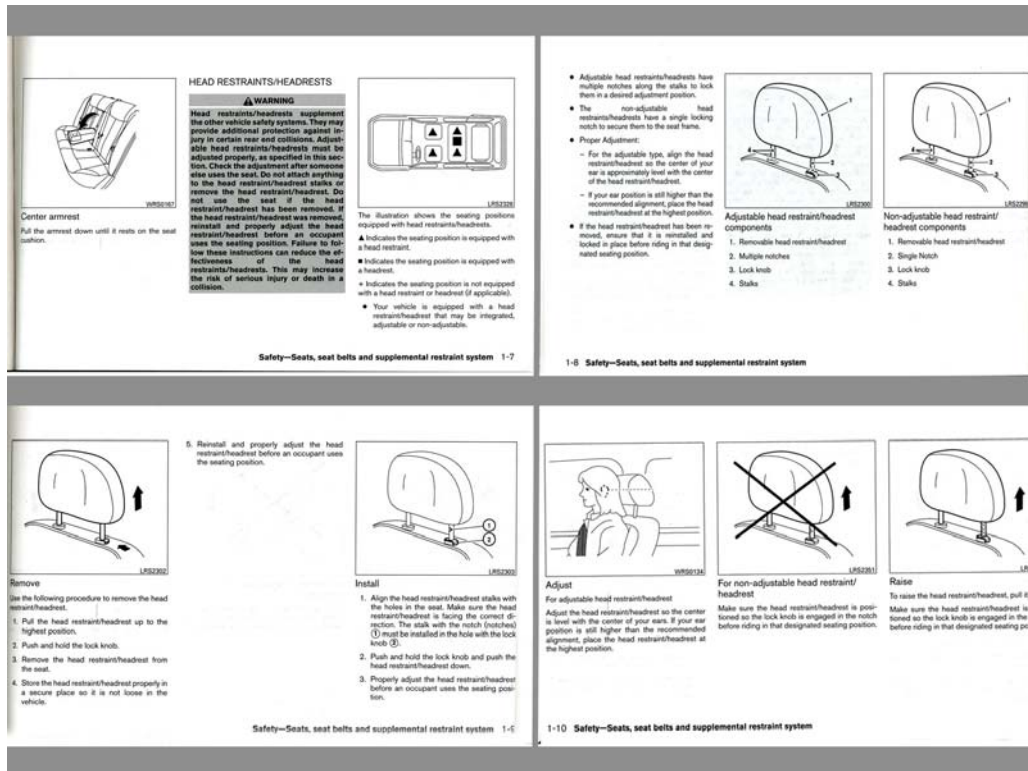


FIGURE 103. Driver Head Restraint Use and Adjustment Information
from Vehicle Owner's Manual

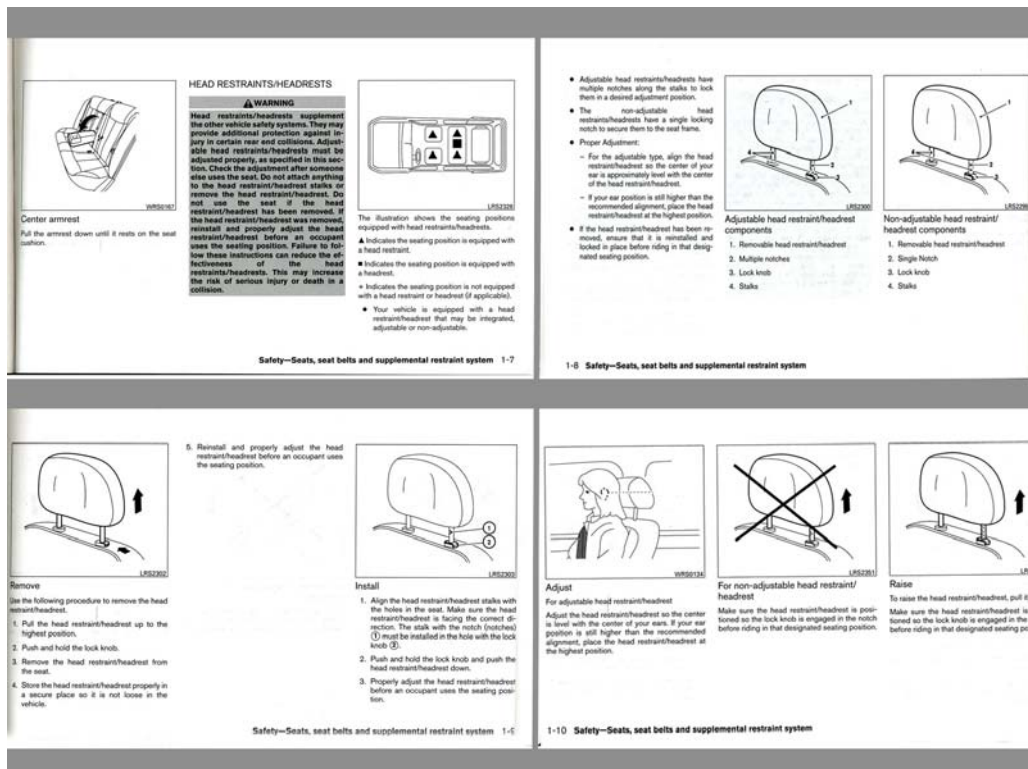


FIGURE 104. Left Rear Passenger Head Restraint Use and Adjustment Information
from Vehicle Owner's Manual

APPENDIX B
DUMMY RESPONSE DATA

TABLE OF DATA PLOTS

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

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

Additional Driver & Passenger Dummy Instrumentation Data

Driver Lower Spine T12 Acceleration (X)

Driver Lower Spine T12 Acceleration (Y)

Driver Lower Spine T12 Acceleration (Z)

Passenger Upper Thorax Rib Deflection (Y)

Passenger Middle Thorax Rib Deflection (Y)

Passenger Lower Thorax Rib Deflection (Y)

Passenger Upper Abdomen Rib Deflection (Y)
Passenger Lower Abdomen Rib Deflection (Y)
Driver Head Acceleration Redundant (X)
Driver Head Acceleration Redundant (Y)
Driver Head Acceleration Redundant (Z)
Passenger Head Acceleration Redundant (X)
Passenger Head Acceleration Redundant (Y)
Passenger Head Acceleration Redundant (Z)

Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Right Side Sill at Front Seat Acceleration (X)
Right Side Sill at Front Seat Acceleration (Y)
Right Side Sill at Front Seat Acceleration (Z)
Right Side Sill at Rear Seat Acceleration (X)
Right Side Sill at Rear Seat Acceleration (Y)
Right Side Sill at Rear Seat Acceleration (Z)
Left Side Sill at Front Seat Acceleration (Y)
Left Side Sill at Rear Seat Acceleration (Y)
Lower A-Post Acceleration (Y)
Middle A-Post Acceleration (Y)
Lower B-Post Acceleration (Y)
Middle B-Post Acceleration (Y)
Front Seat Track Acceleration (Y)
Rear Seat Structure Acceleration (Y)
Right Rear Occupant Compartment Acceleration (Y)
Engine Block (X)
Engine Block (Y)
Rear Floorpan Above Axle Acceleration (X)
Rear Floorpan Above Axle Acceleration (Y)
Rear Floorpan Above Axle Acceleration (Z)

MDB Instrumentation Data

MDB Center of Gravity Acceleration (X)

MDB Center of Gravity Acceleration (Y)

MDB Center of Gravity Acceleration (Z)

MDB Rear Acceleration (X)

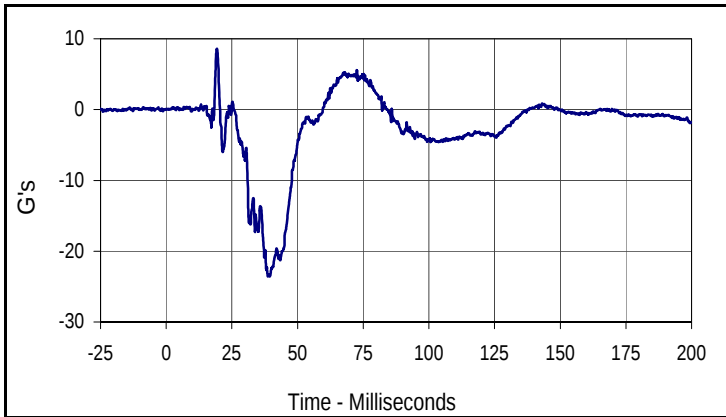
MDB Rear Acceleration (Y)

Left MDB Contact Switch

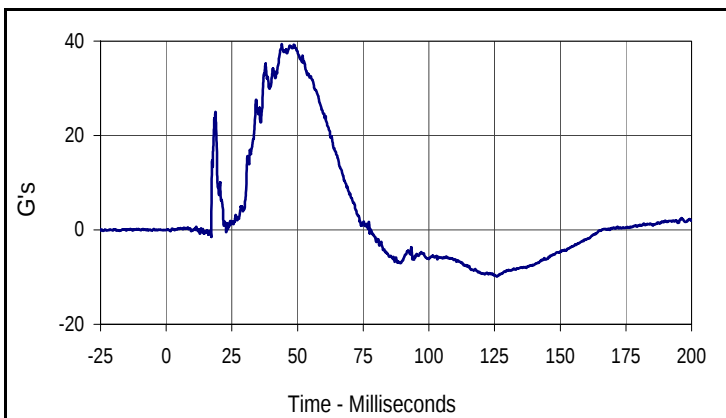
Right MDB Contact Switch

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan
 Test Program: NCAP MDB Side Impact Test

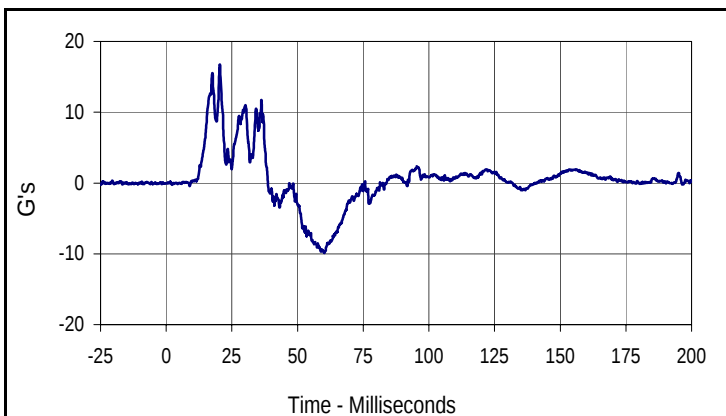
NHTSA No.: M20155201
 Test Date: 9/11/14



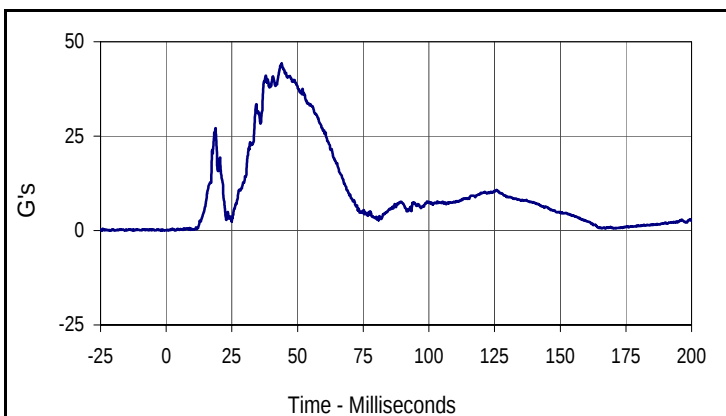
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Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
8.6	19.3	-23.6	38.7



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
39.4	44.0	-9.9	125.8



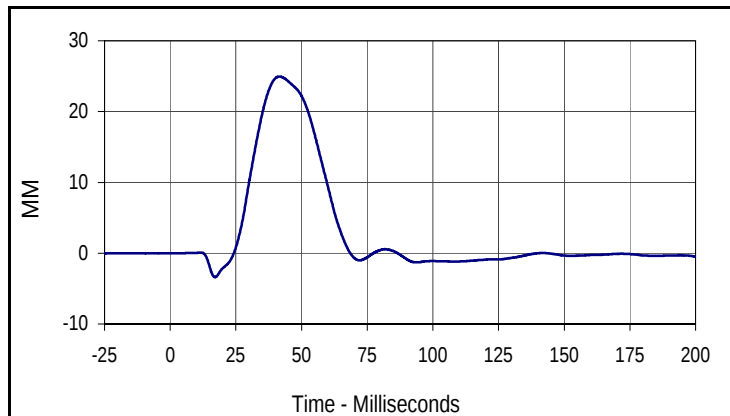
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
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Max	Time	Min	Time
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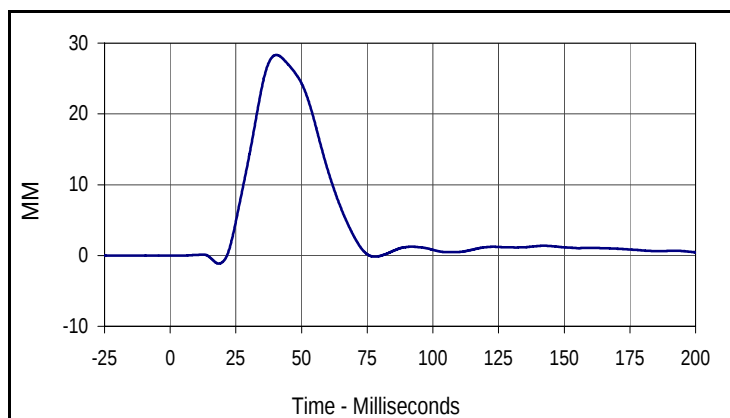
Curve Description			
Driver Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
44.2	44.0	0.0	3.4

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan
 Test Program: NCAP MDB Side Impact Test

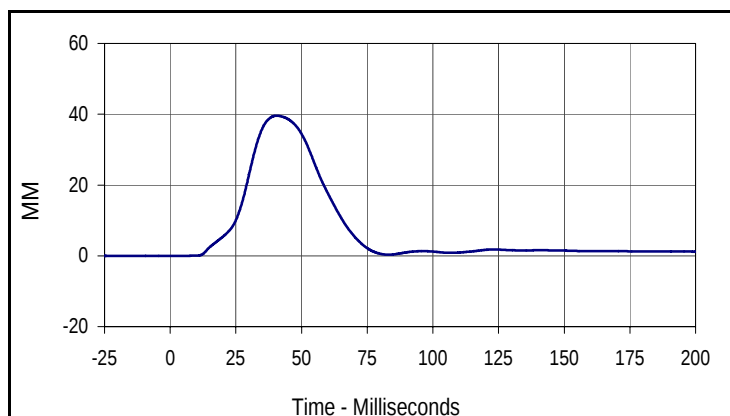
NHTSA No.: M20155201
 Test Date: 9/11/14



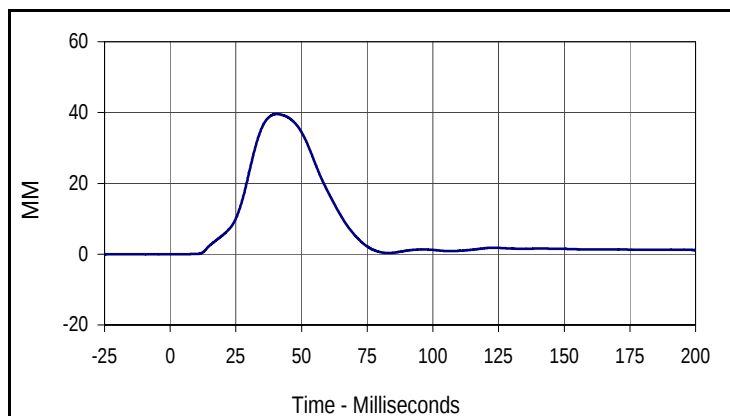
Curve Description			
Driver Upper Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
005	FIL	180	MM
Max	Time	Min	Time
24.9	41.5	-3.4	17.0



Curve Description			
Driver Middle Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
006	FIL	180	MM
Max	Time	Min	Time
28.3	40.4	-1.2	18.5



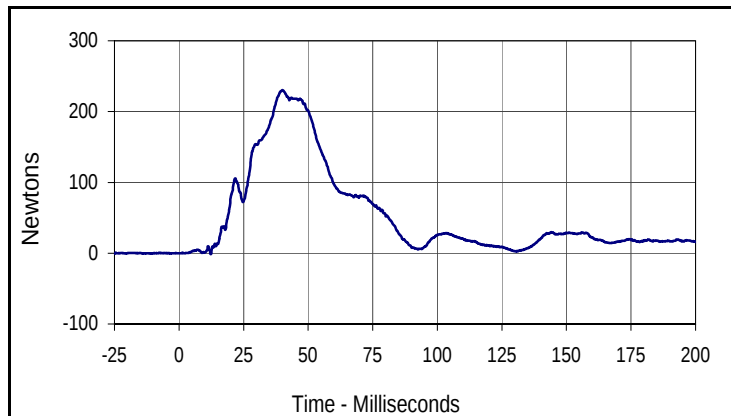
Curve Description			
Driver Lower Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
007	FIL	180	MM
Max	Time	Min	Time
39.6	40.6	0.0	1.9



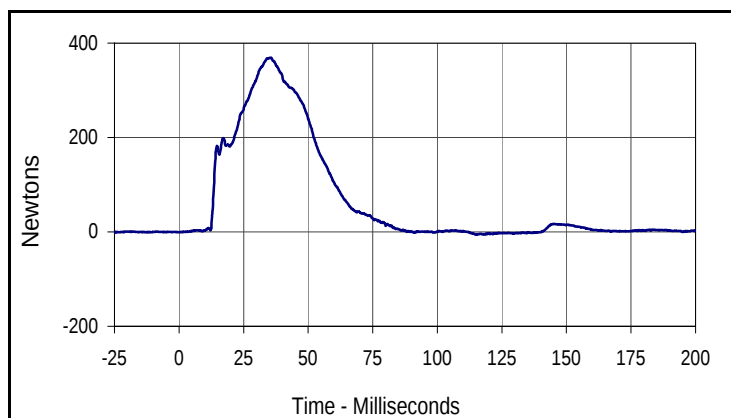
Curve Description			
Driver Thorax Rib Deflection Maximum			
Plot No.	Type	SAE Class	Units
010	FIL	180	MM
Max	Time	Min	Time
39.6	40.6	0.0	1.9

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan
 Test Program: NCAP MDB Side Impact Test

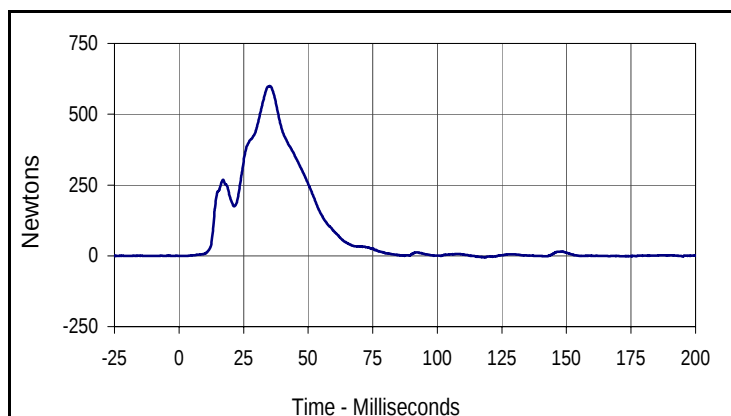
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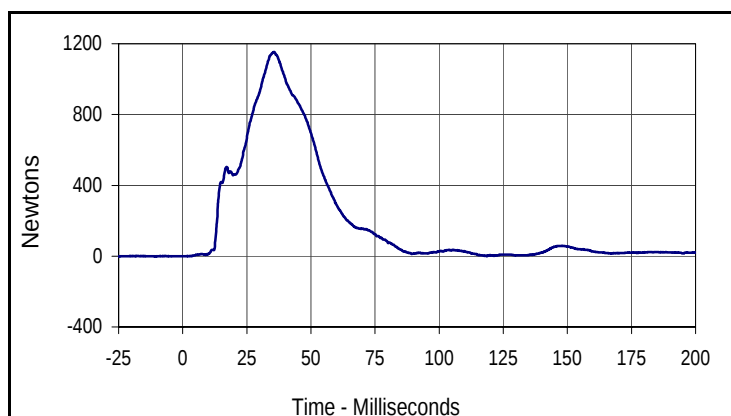
Curve Description			
Driver Anterior Abdominal Force Y			
Plot No.	Type	SAE Class	Units
008	FIL	600	Newtons
Max	Time	Min	Time
230.3	40.0	-1.5	12.3



Curve Description			
Driver Middle Abdominal Force Y			
Plot No.	Type	SAE Class	Units
009	FIL	600	Newtons
Max	Time	Min	Time
368.7	35.6	-5.9	115.2



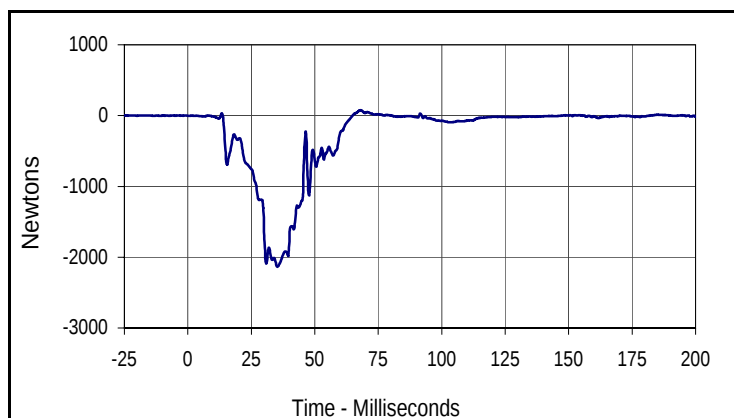
Curve Description			
Driver Posterior Abdominal Force Y			
Plot No.	Type	SAE Class	Units
011	FIL	600	Newtons
Max	Time	Min	Time
599.4	35.1	-6.0	118.5



Curve Description			
Driver Total Abdominal Force			
Plot No.	Type	SAE Class	Units
012	SUM	600	Newtons
Max	Time	Min	Time
1153.2	35.7	-1.2	0.2

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan
Test Program: NCAP MDB Side Impact Test

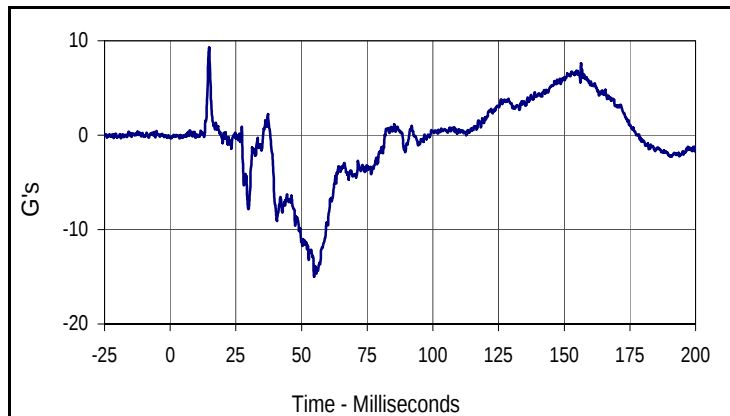
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Test Date: 9/11/14



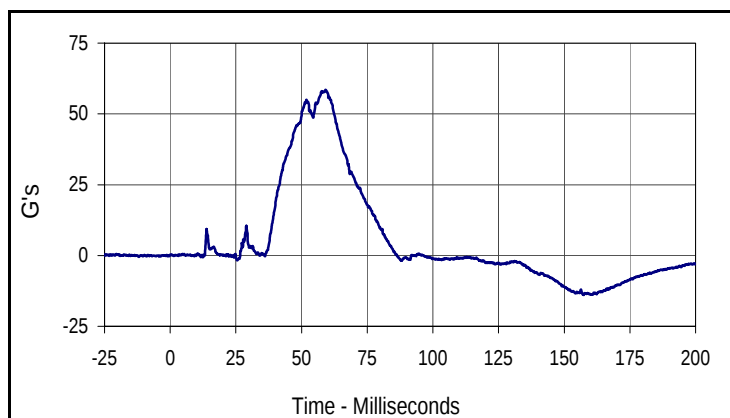
Curve Description			
Driver Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
013	FIL	600	Newtons
Max	Time	Min	Time
75.9	68.1	-2135.0	35.3

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan
 Test Program: NCAP MDB Side Impact Test

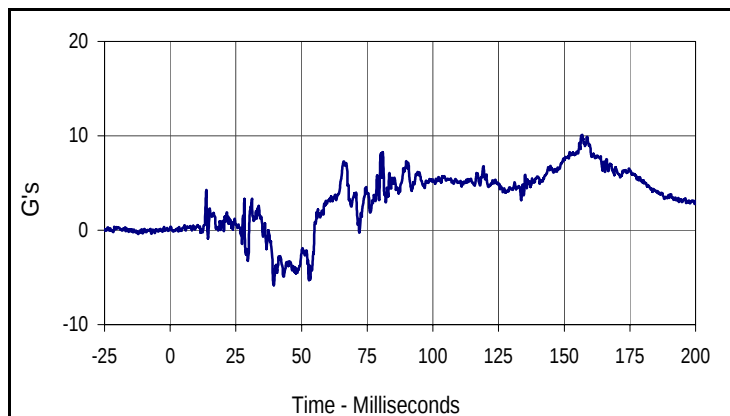
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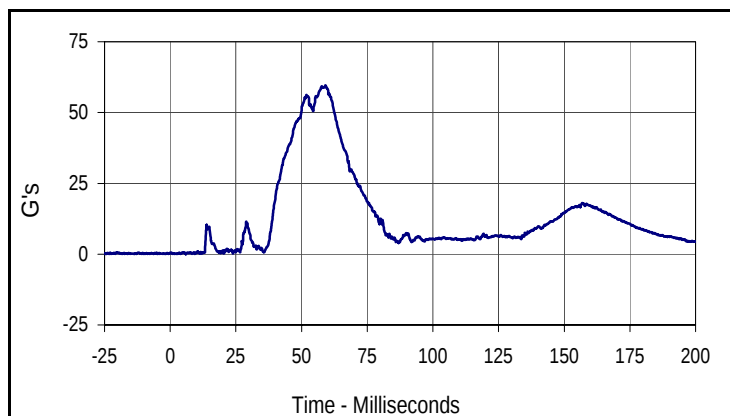
Curve Description			
Passenger Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
014	FIL	1000	G's
Max	Time	Min	Time
9.3	14.8	-15.0	54.8



Curve Description			
Passenger Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
015	FIL	1000	G's
Max	Time	Min	Time
58.5	59.2	-13.9	157.4



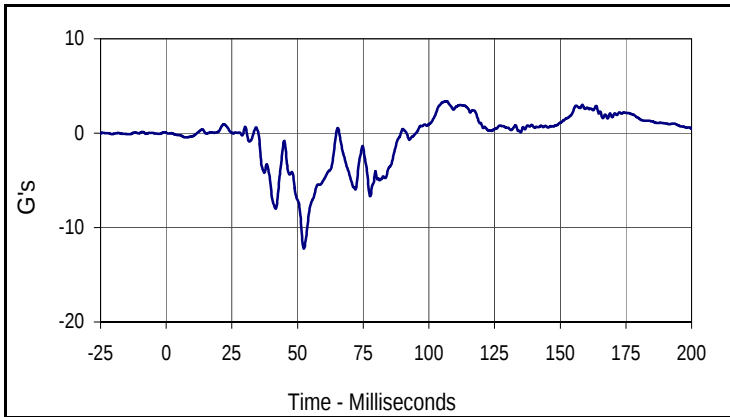
Curve Description			
Passenger Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
016	FIL	1000	G's
Max	Time	Min	Time
10.1	156.9	-5.8	39.5



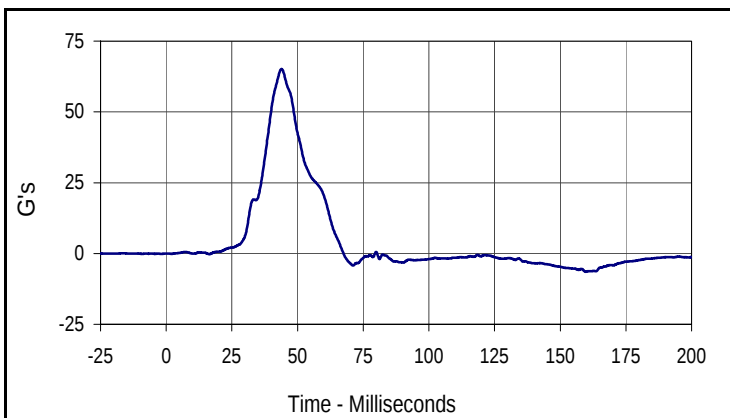
Curve Description			
Passenger Head Acceleration Resultant Primary			
Plot No.	Type	SAE Class	Units
017	RES	1000	G's
Max	Time	Min	Time
59.6	59.1	0.0	6.0

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan
 Test Program: NCAP MDB Side Impact Test

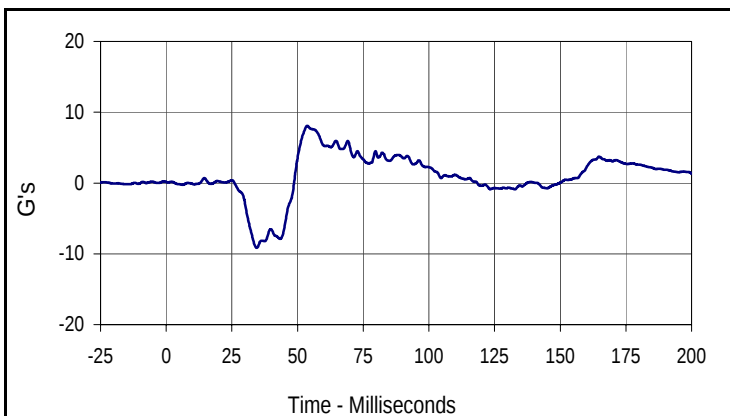
NHTSA No.: M20155201
 Test Date: 9/11/14



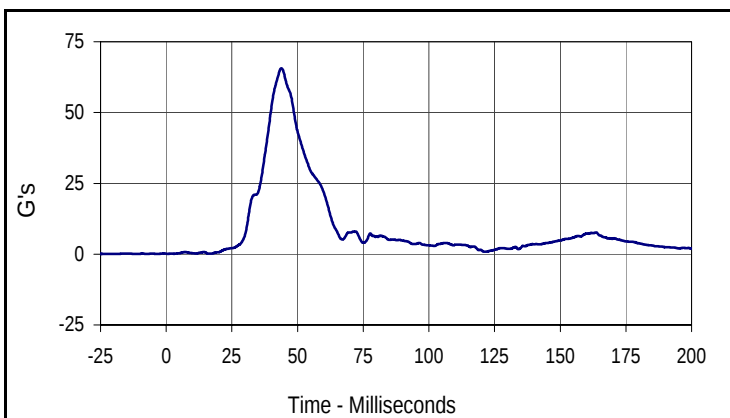
Curve Description			
Passenger Lower Spine T12 Acceleration X			
Plot No.	Type	SAE Class	Units
019	FIL	180	G's
Max	Time	Min	Time
3.4	106.8	-12.2	52.4



Curve Description			
Passenger Lower Spine T12 Acceleration Y			
Plot No.	Type	SAE Class	Units
020	FIL	180	G's
Max	Time	Min	Time
65.1	43.9	-6.4	159.8



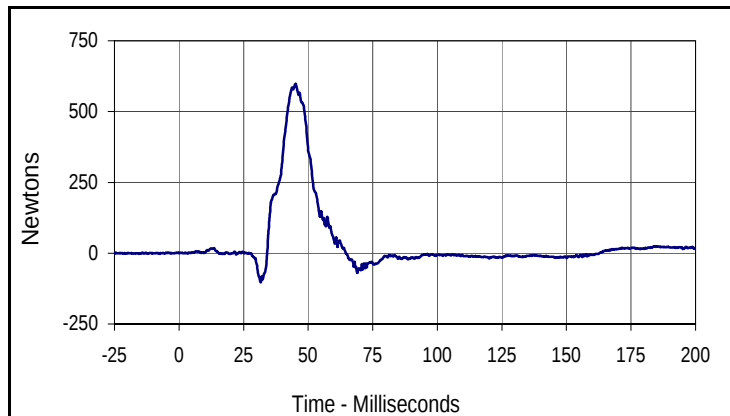
Curve Description			
Passenger Lower Spine T12 Acceleration Z			
Plot No.	Type	SAE Class	Units
021	FIL	180	G's
Max	Time	Min	Time
8.1	53.7	-9.2	34.5



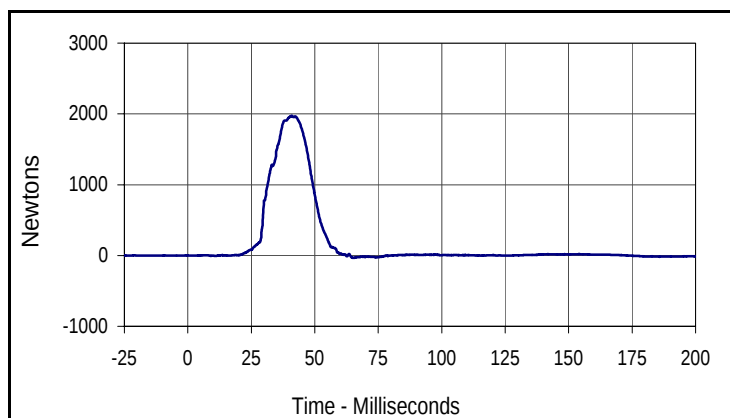
Curve Description			
Passenger Lower Spine T12 Acceleration Res.			
Plot No.	Type	SAE Class	Units
022	RES	180	G's
Max	Time	Min	Time
65.7	43.8	0.1	0.6

Test Vehicle: 2015 Nissan Altima 2.5 S 4-Door Sedan
 Test Program: NCAP MDB Side Impact Test

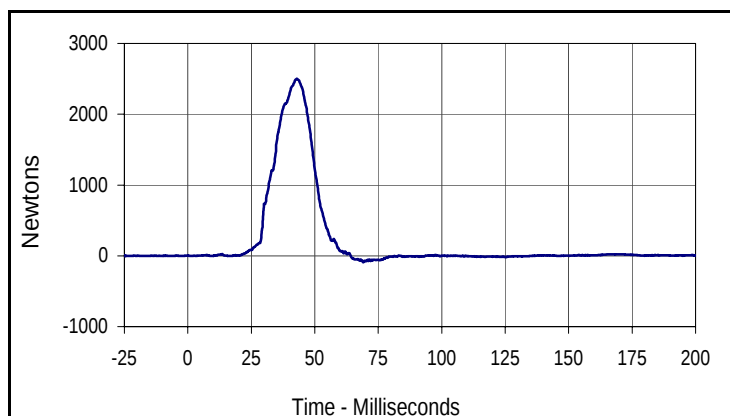
NHTSA No.: M20155201
 Test Date: 9/11/14



Curve Description			
Passenger Iliac Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
023	FIL	600	Newtons
Max	Time	Min	Time
598.2	45.1	-103.3	31.6



Curve Description			
Passenger Acetabulum Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
024	FIL	600	Newtons
Max	Time	Min	Time
1971.9	40.9	-32.6	64.8



Curve Description			
Passenger Total Pelvic Force			
Plot No.	Type	SAE Class	Units
018	SUM	600	Newtons
Max	Time	Min	Time
2503.0	43.0	-90.3	69.0

APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

APPENDIX C
PRE-TEST / ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: ES2re External Measurements
 ATD Serial No.: F037

Test Date: 9/2/14
 Test I.D.: N/A



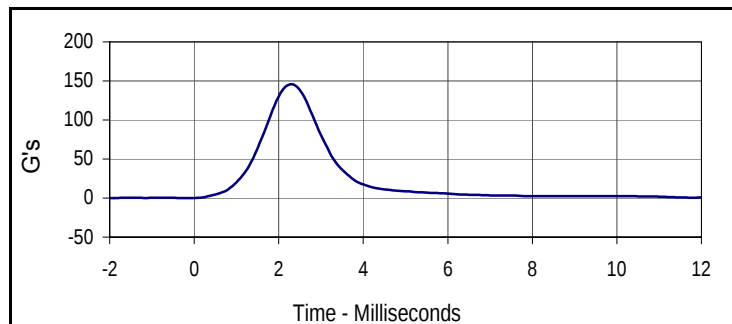
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	30.0	Pass
1	Sitting Height	mm	900 - 918	909	Pass
2	Seat to Shoulder Joint	mm	558 - 572	564	Pass
3	Seat to Lower Face of Thoracic Spine Box	mm	346 - 356	350	Pass
4	Seat to Hip Joint (Center of Bolt)	mm	97 - 103	99	Pass
5	Sole to Seat, Sitting	mm	333 - 451	395	Pass
6	Head Width	mm	152 - 158	156	Pass
7	Shoulder / Arm Width	mm	461 - 479	470	Pass
8	Thorax Width	mm	322 - 332	326	Pass
9	Abdomen Width	mm	273 - 287	280	Pass
10	Pelvis Lap Width	mm	359 - 373	363	Pass
11	Head Depth	mm	196 - 206	201	Pass
12	Thorax Depth	mm	262 - 272	270	Pass
13	Abdomen Width	mm	194 - 204	199	Pass
14	Pelvis Depth	mm	235 - 245	240	Pass
15	Back of Buttocks to Hip Joint (Center of Bolt)	mm	150 - 160	155	Pass
16	Back of Buttocks to Front Knee	mm	597 - 615	608	Pass
Overall Test Results					Pass

Test Program: ES2re Head Drop Test
 ATD Serial No.: F037

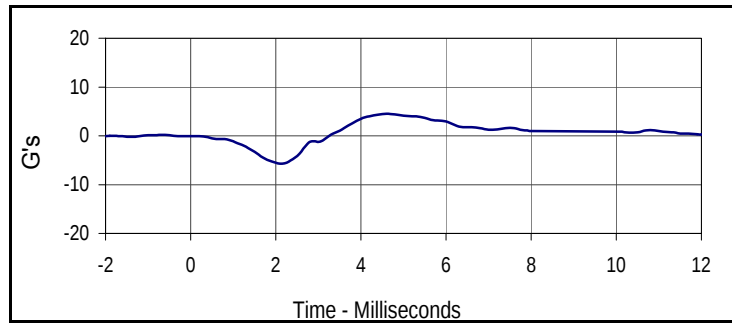
Test Date: 9/2/14
 Test I.D.: F037HD062



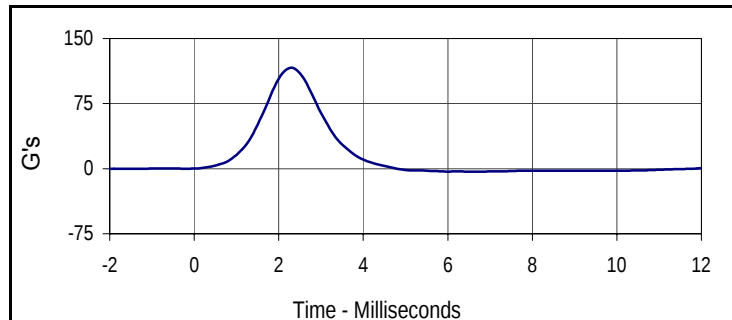
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	271	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.0	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.7	Pass
Peak Head Resultant Acceleration	G's	125 to 155	146.0	Pass
Peak Head X Acceleration	G's	≤15	5.7	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	6.0	Pass
Overall Test Results				Pass



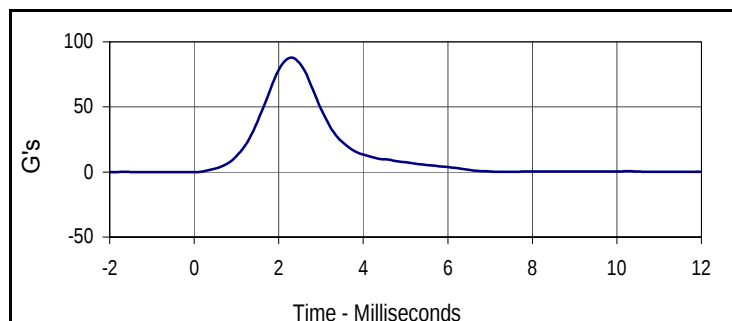
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
146.0	2.3	0.1	-1.9



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
4.5	4.6	-5.7	2.1



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
116.4	2.3	-3.6	6.6



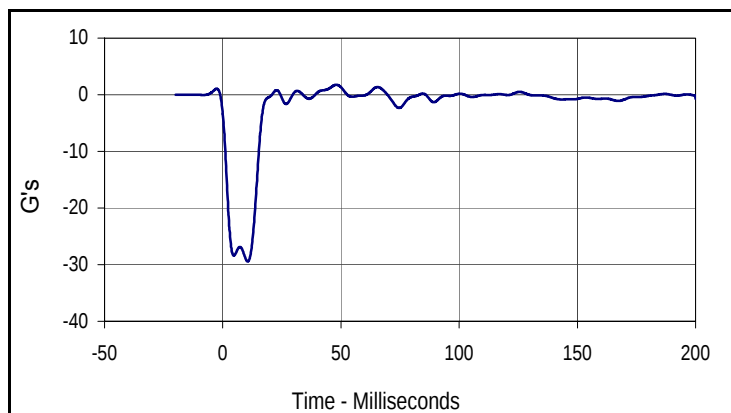
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
87.9	2.3	-0.2	-0.9

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F037

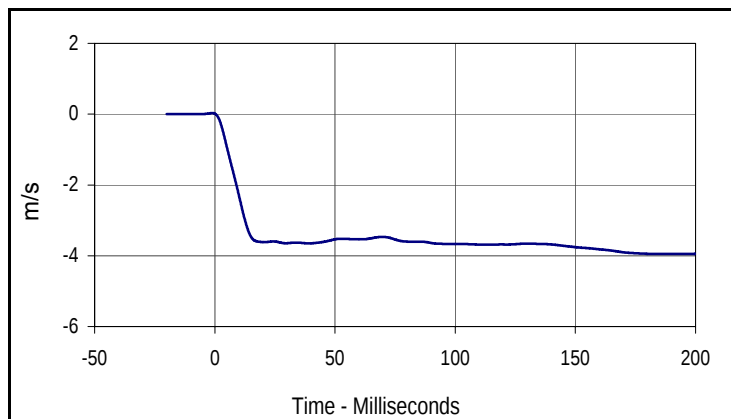
Test Date: 9/2/14
 Test I.D.: F037NB062



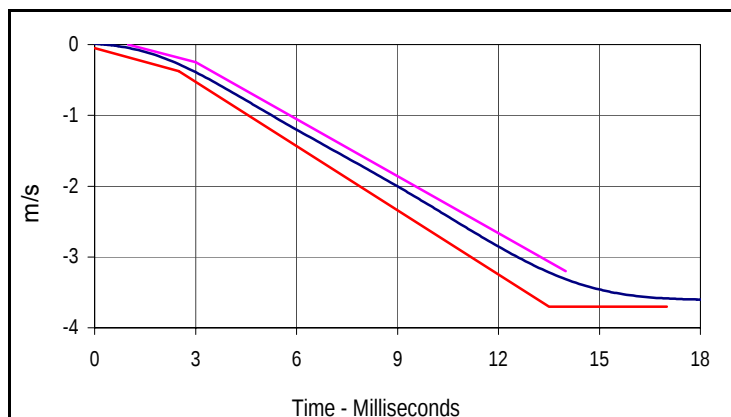
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	306	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.0	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.3	Pass
Pendulum Velocity	m/s	3.3 to 3.5	3.44	Pass
Headform Flexion	Max	49 to 59	54.4	Pass
	Time	54 to 66	55.5	Pass
Headform Flexion Decay (Peak to Zero)	msec	53 to 88	64.4	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
1.8	48.1	-29.4	10.5



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.1	-4.0	199.9



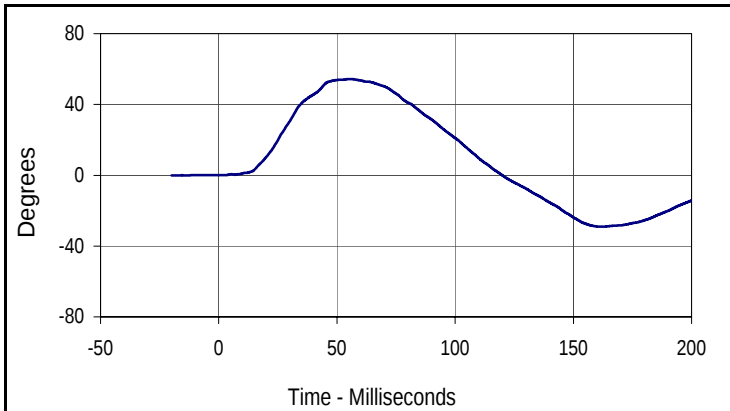
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.1	-4.0	199.9

Velocity Corridors

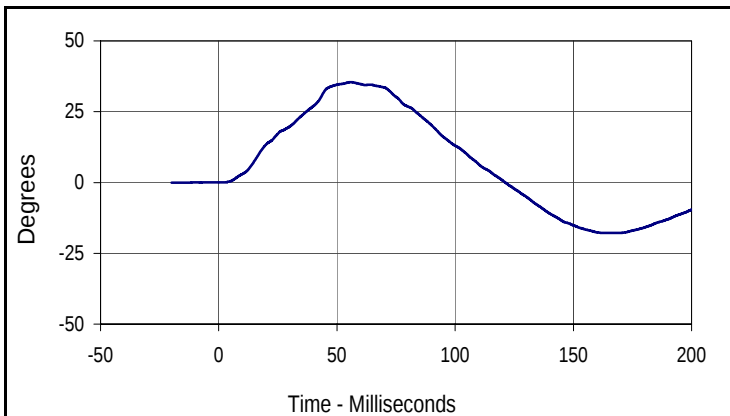
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.03	2.5	-0.375
14.0	-3.20	13.5	-3.70
		17.0	-3.70

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F037

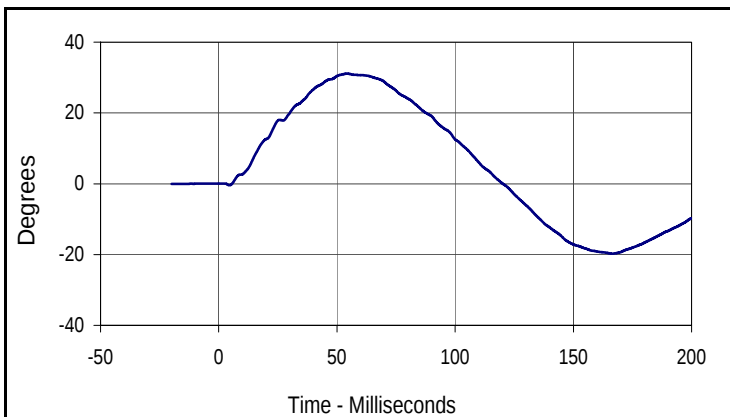
Test Date: 9/2/14
 Test I.D.: F037NB062



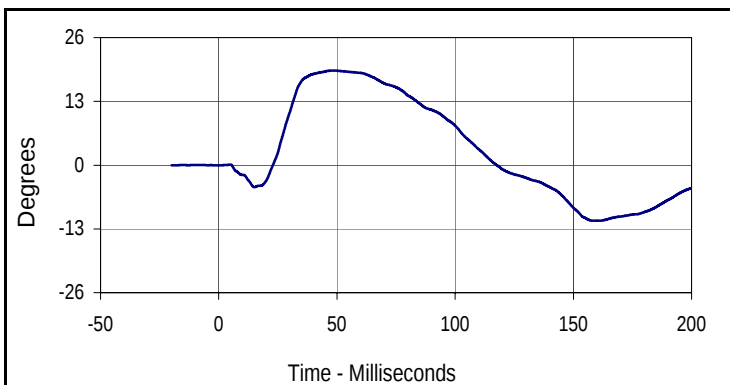
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
54.4	55.5	-29.1	161.7



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
35.4	55.7	-17.8	168.2



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
31.1	54.2	-19.7	166.4



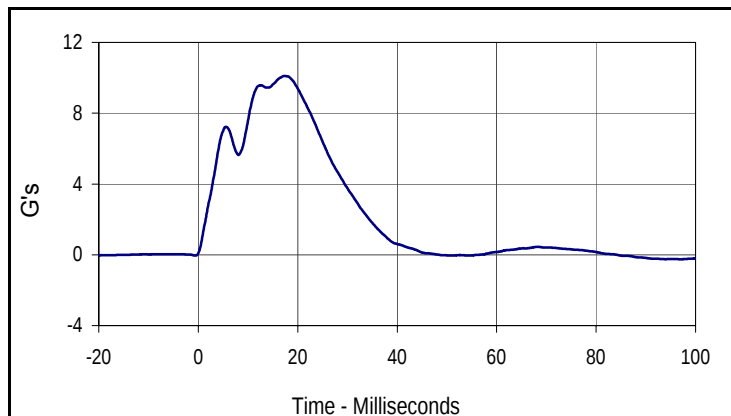
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
19.3	48.8	-11.3	160.4

Test Program: ES2re Shoulder Impact Test
 ATD Serial No.: F037

Test Date: 9/2/14
 Test I.D.: F037SH062



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	371	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.0	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.4	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.30	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	10.1	Pass
Overall Test Results			Pass	



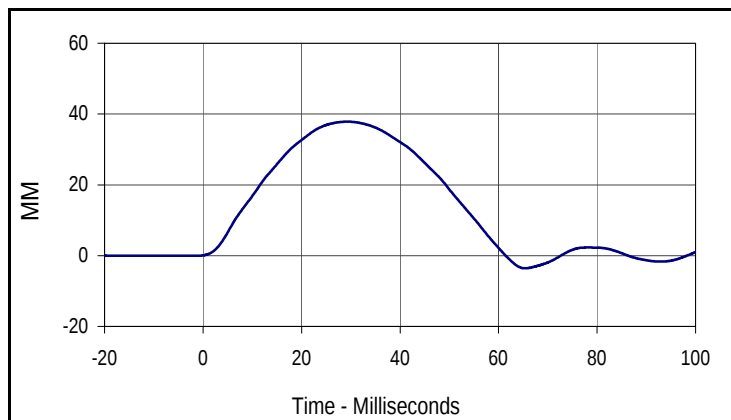
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
10.1	17.3	-0.3	97.0

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 1

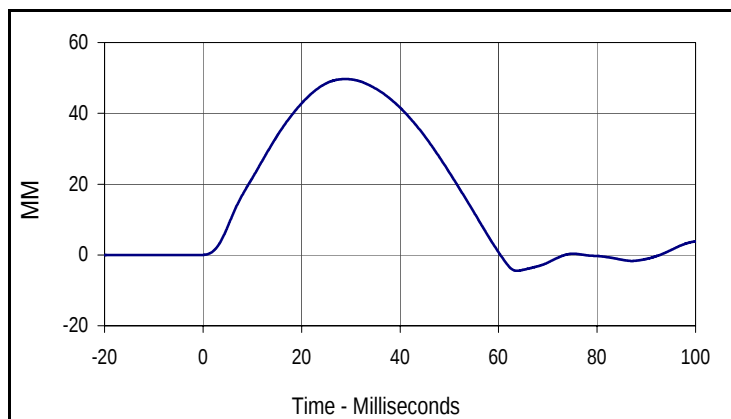
Test Date: 9/2/14
 Test I.D.: F037RB1062



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	426	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.0	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.6	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	37.8	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	49.7	Pass
Overall Test Results				Pass



Curve Description			
Upper Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
37.8	29.3	-3.6	65.4



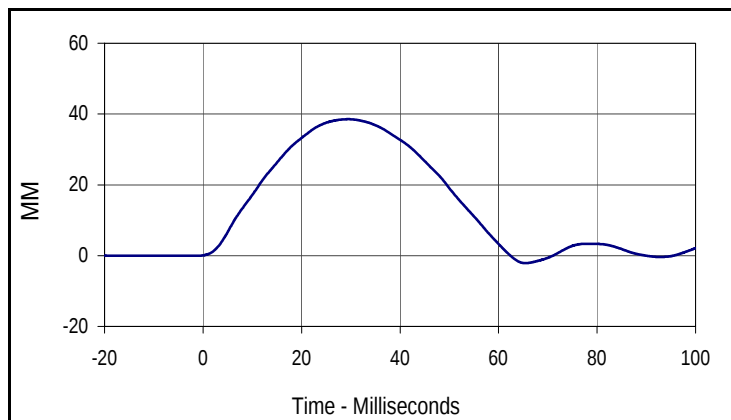
Curve Description			
Upper Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
49.7	28.9	-4.5	63.7

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 2

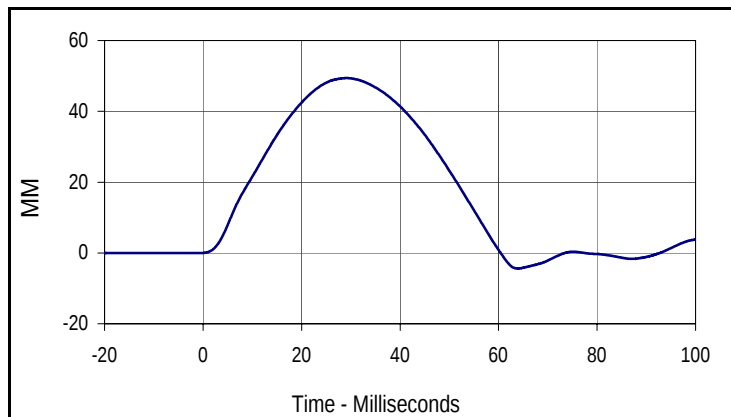
Test Date: 9/2/14
 Test I.D.: F037RB2062



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	471	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.0	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.9	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.5	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	49.4	Pass
Overall Test Results				Pass



Curve Description			
Middle Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.5	29.5	-2.1	65.5



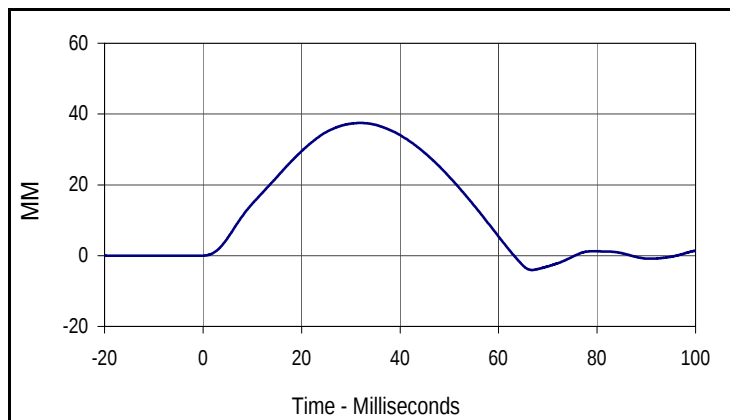
Curve Description			
Middle Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
49.4	29.1	-4.4	63.9

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 3

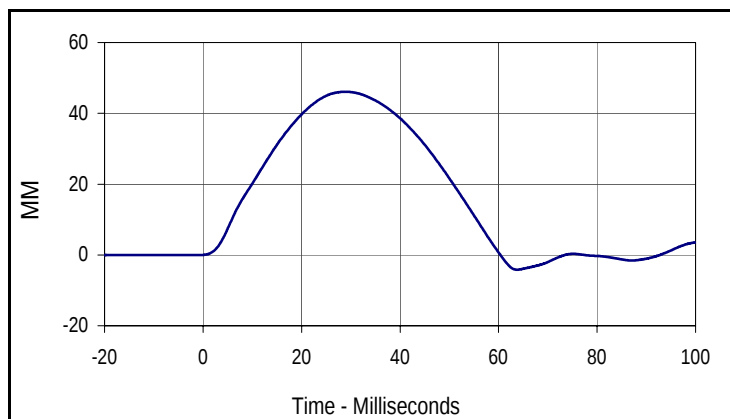
Test Date: 9/2/14
 Test I.D.: F037RB3062



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	516	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.0	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	37.0	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	37.5	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	46.1	Pass
Overall Test Results				Pass



Curve Description			
Lower Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
37.5	32.0	-4.1	66.8



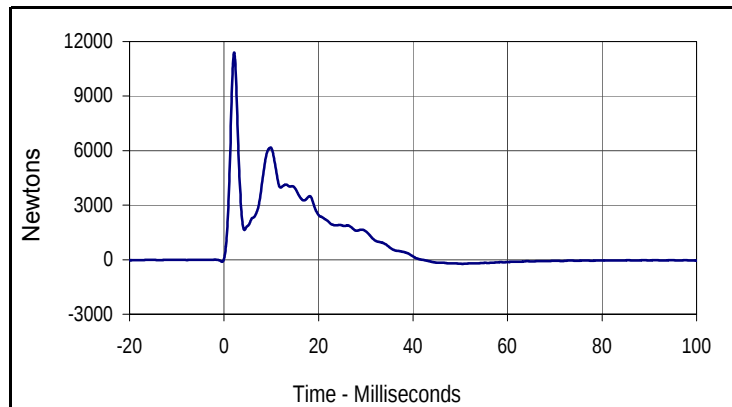
Curve Description			
Lower Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
46.1	28.9	-4.2	63.8

Test Program: ES2re Thorax - Full Body Impact Test
 ATD Serial No.: F037

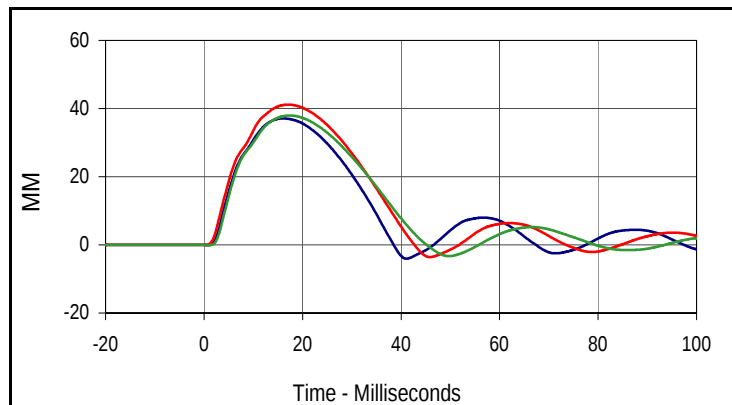
Test Date: 9/2/14
 Test I.D.: F037TH062



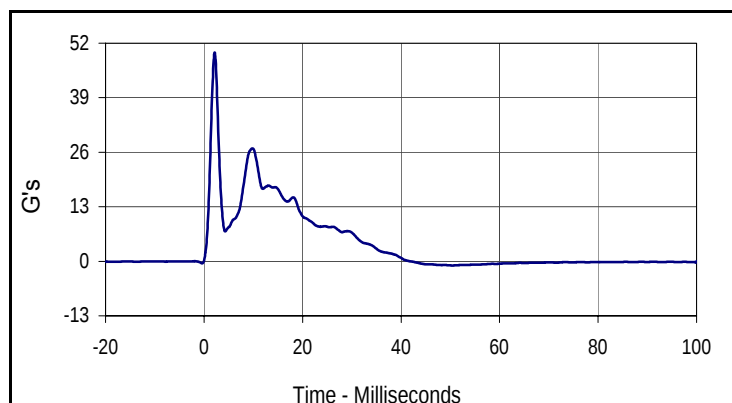
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	561	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.0	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	37.0	Pass
Peak Impactor Velocity	m/s	5.4 to 5.6	5.54	Pass
Peak Impactor Force	N	5100 to 6200	6166.8	Pass
	msec	> 6.0 msec	9.8	Pass
Peak Upper Rib Deflection	mm	34 to 41	37.1	Pass
Peak Middle Rib Deflection	mm	37 to 45	41.1	Pass
Peak Lower Rib Deflection	mm	37 to 44	38.0	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
11382.4	2.1	-229.5	50.5



Curve Description			
Upper, Middle, Lower Rib Deflections			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
37.1	16.0	-4.1	41.1
Max (Middle)	Time	Min (Middle)	Time
41.1	17.1	-3.6	45.9
Max (Lower)	Time	Min (Lower)	Time
38.0	17.4	-3.3	49.7



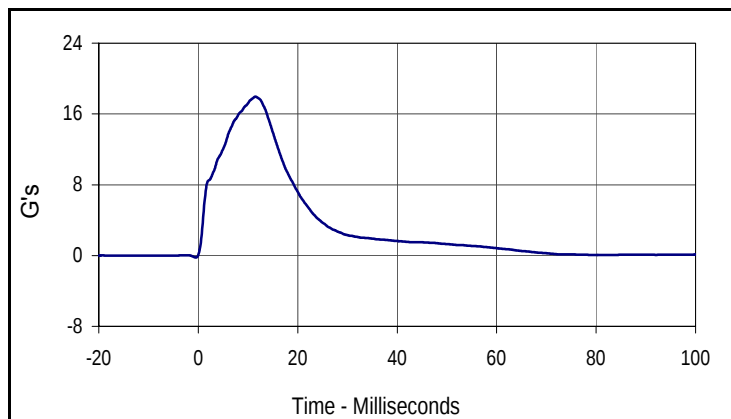
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
49.7	2.1	-1.0	50.5

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F037

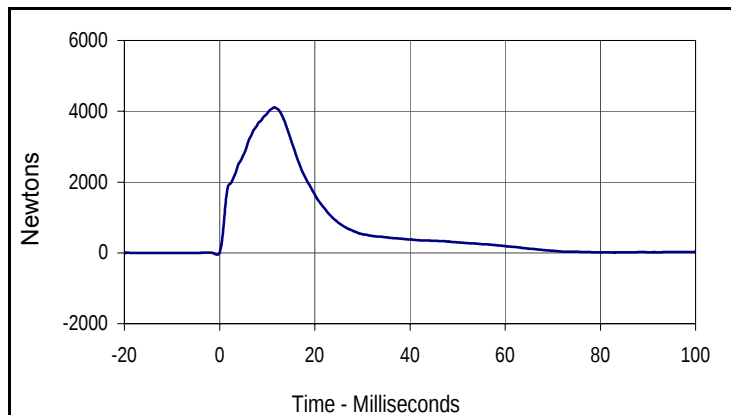
Test Date: 9/2/14
 Test I.D.: F037ABD062



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	631	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.0	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.8	Pass
Probe Velocity	m/s	3.9 to 4.1	4.05	Pass
Peak Impactor Force	N	4000 to 4800	4445.8	Pass
	msec	10.6 to 13.0	11.2	Pass
Sum of Abdominal Forces	N	2200 to 2700	2346.7	Pass
	msec	10.0 to 12.3	10.3	Pass
Overall Test Results				Pass



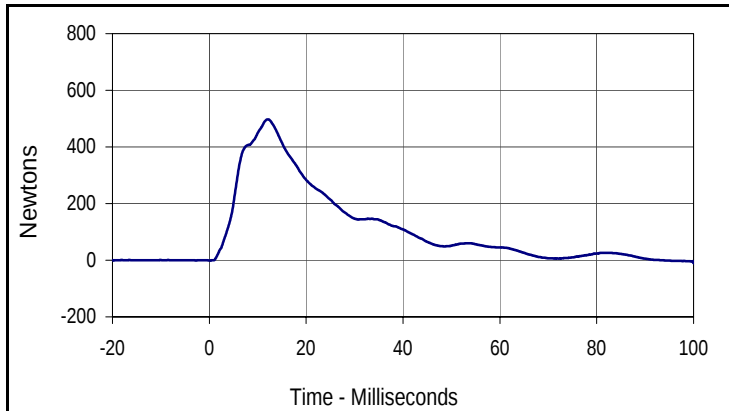
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
19.4	11.2	-0.2	-0.6



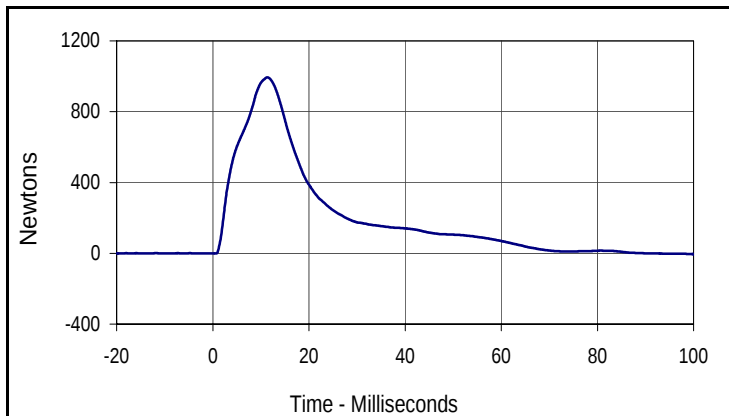
Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4445.8	11.2	-55.2	-0.6

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F037

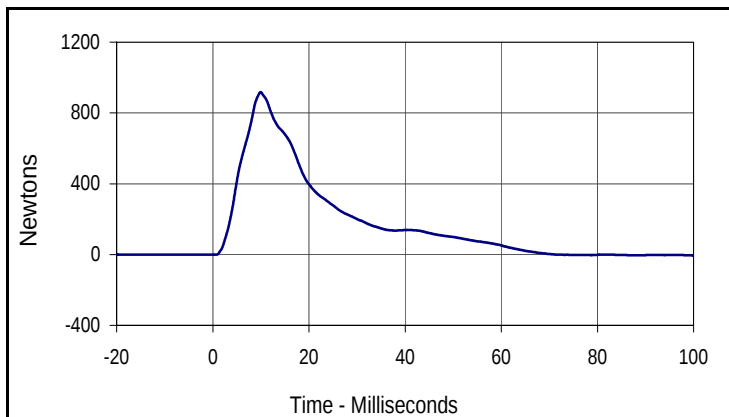
Test Date: 9/2/14
 Test I.D.: F037ABD062



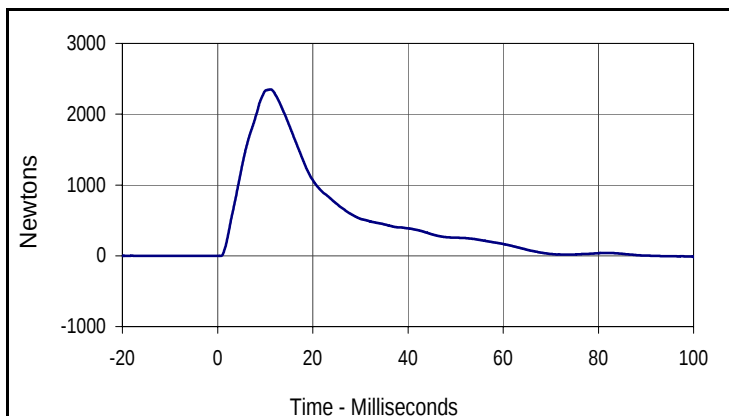
Curve Description			
Front Abdomen Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtontons
Max	Time	Min	Time
527.3	11.4	-14.0	81.4



Curve Description			
Middle Abdomen Force			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtontons
Max	Time	Min	Time
1038.7	10.8	-7.8	81.0



Curve Description			
Rear Abdomen Force			
Plot No.	Type	SAE Class	Units
005	FIL	600	Newtontons
Max	Time	Min	Time
812.0	9.6	-7.1	103.4



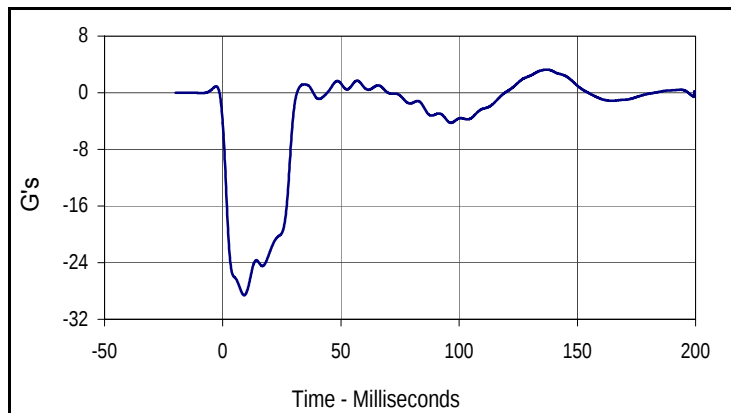
Curve Description			
Abdomen Sum Resultant			
Plot No.	Type	SAE Class	Units
006	RES	600	Newtontons
Max	Time	Min	Time
2346.7	10.3	-22.0	100.6

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F037

Test Date: 9/2/14
 Test I.D.: F037LB062



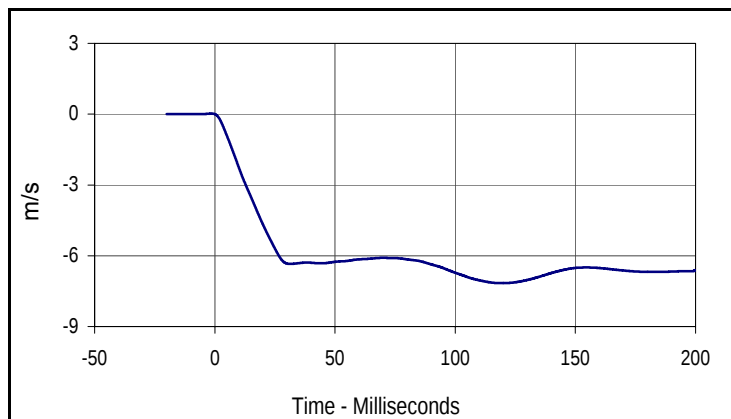
Tested Parameter	Units	Specification	Result	Pass/Fail
Lumbar Spine Assembly Soak Time	Minutes	≥240	706	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.0	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.3	Pass
Pendulum Velocity	m/s	5.95 to 6.15	6.00	Pass
Headform Rotation	Max	45 to 55	51.1	Pass
	Time	39 to 53	40.4	Pass
Time of Decay to Zero Angle from Peak	msec	37 to 57	45.9	Pass
Overall Test Results				Pass



Curve Description

Pendulum Deceleration

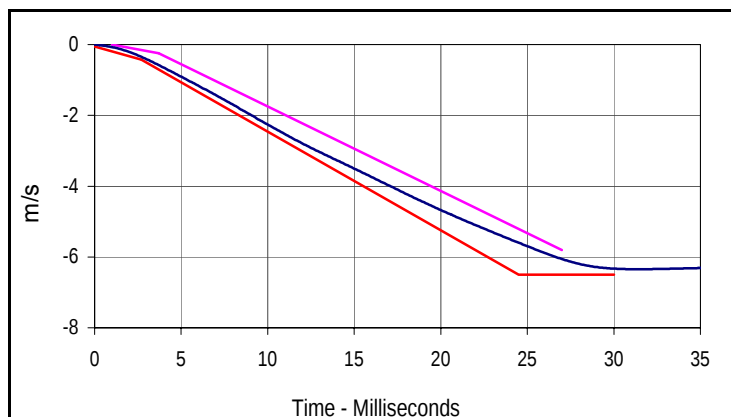
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
3.3	137.8	-28.6	9.7



Curve Description

Pendulum Velocity

Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.8	-7.2	119.9



Curve Description

Pendulum Velocity

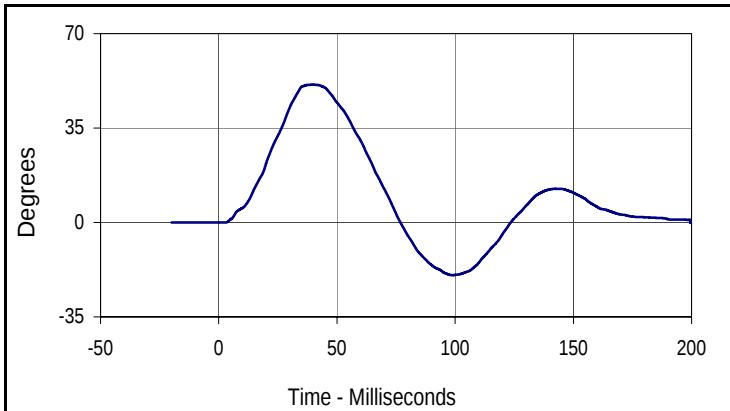
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.8	-7.2	119.9

Velocity Corridors

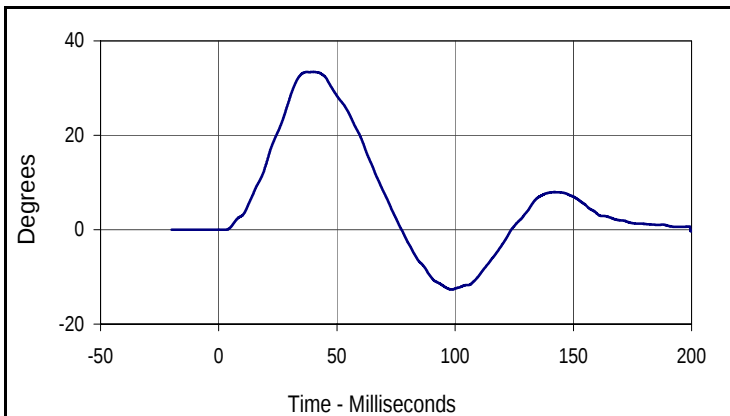
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.50
		30.0	-6.50

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F037

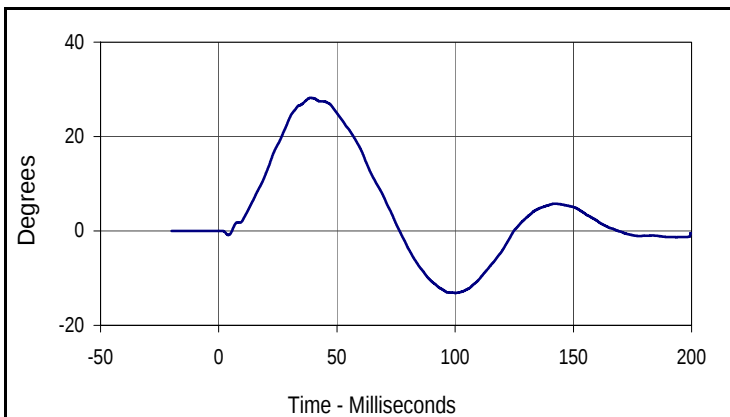
Test Date: 9/2/14
 Test I.D.: F037LB062



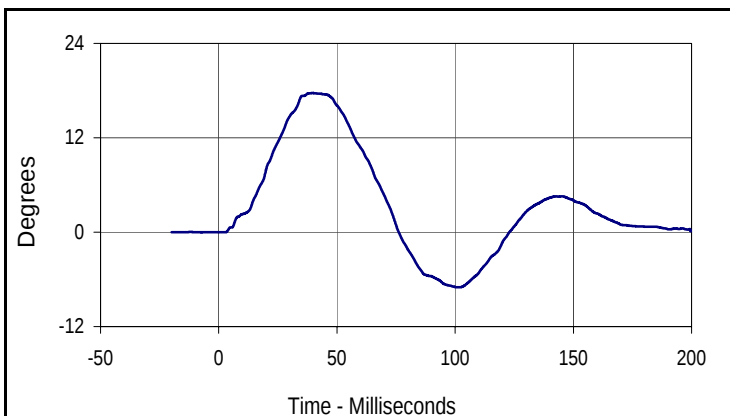
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
51.1	40.4	-19.5	99.5



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
33.4	40.5	-12.7	99.0



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
28.2	39.4	-13.1	100.8



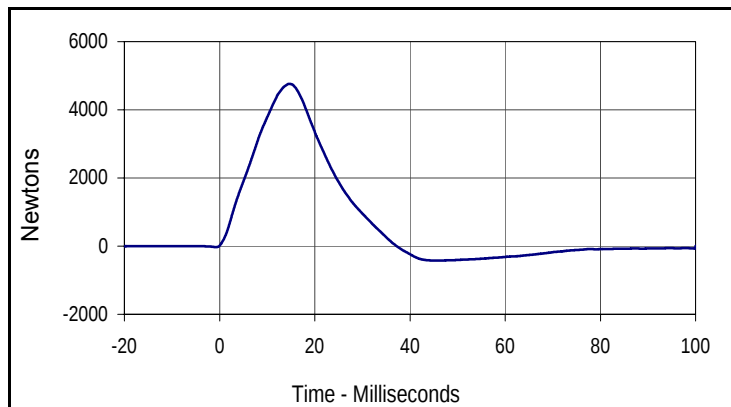
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
17.7	40.3	-7.0	102.3

Test Program: ES2re Pelvis Impact Test
 ATD Serial No.: F037

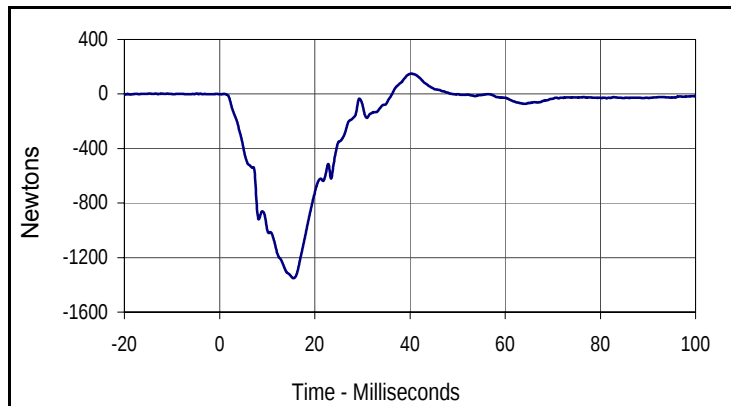
Test Date: 9/2/14
 Test I.D.: F037PL062



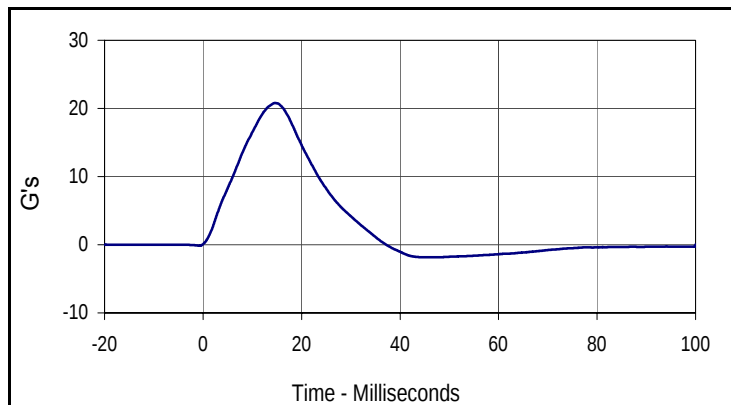
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	761	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.0	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.6	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.31	Pass
Peak Impactor Force	N	4700 to 5400	4762.2	Pass
	msec	11.8 to 16.1	14.6	Pass
Peak Pubic Symphysis Load	N	-1230 to -1590	-1351.3	Pass
	msec	12.2 to 17.0	15.5	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4762.2	14.6	-422.4	46.1



Curve Description			
Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
149.5	40.2	-1351.3	15.5



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
20.8	14.6	-1.8	46.1

Test Program: SID IIs External Measurements
 ATD Serial No.: 307

Test Date: 9/5/14
 Test I.D.: N/A



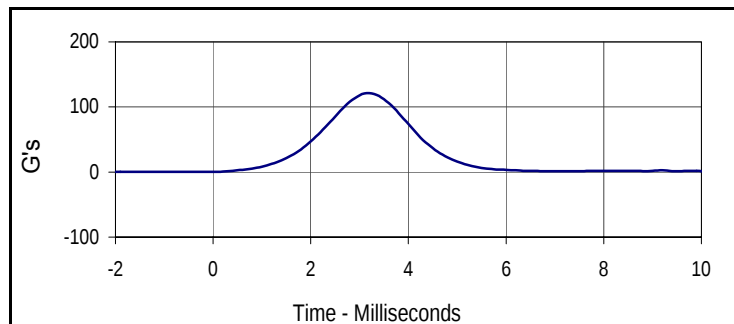
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	37	Pass
A	Sitting Height	mm	772 - 788	778	Pass
B	Shoulder Pivot Height	mm	437 - 453	443	Pass
C	H-Point Height	mm	79 - 89	85	Pass
D	H-Point from Seatback	mm	141 - 151	144	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	102	Pass
F	Thigh Clearance	mm	119 - 135	128	Pass
G	Head Breadth	mm	140 - 148	145	Pass
H	Head Back from Backline	mm	40 - 46	43	Pass
I	Head Depth	mm	178 - 188	185	Pass
J	Head Circumference	mm	541 - 551	546	Pass
K	Buttock to Knee Length	mm	514 - 540	525	Pass
L	Popliteal Height	mm	343 - 369	351	Pass
M	Knee Pivot to Floor Height	mm	392 - 409	400	Pass
N	Buttock Popliteal Length	mm	416 - 442	432	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	205	Pass
P	Foot Length	mm	216 - 232	223	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	319	Pass
R	Arm Length	mm	249 - 259	254	Pass
S	Knee Joint to Seatback	mm	477 - 493	483	Pass
V	Shoulder Width	mm	341 - 357	351	Pass
W	Foot Width	mm	78 - 94	89	Pass
Y	Chest Circumference with Jacket	mm	851 - 881	872	Pass
Z	Waist Circumference	mm	760 - 791	774	Pass
Overall Test Results					Pass

Test Program: SID IIs Head Drop Test
 ATD Serial No.: 307

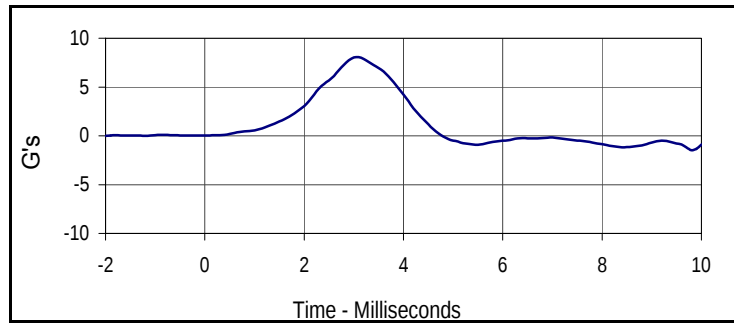
Test Date: 9/5/14
 Test I.D.: 307HD070



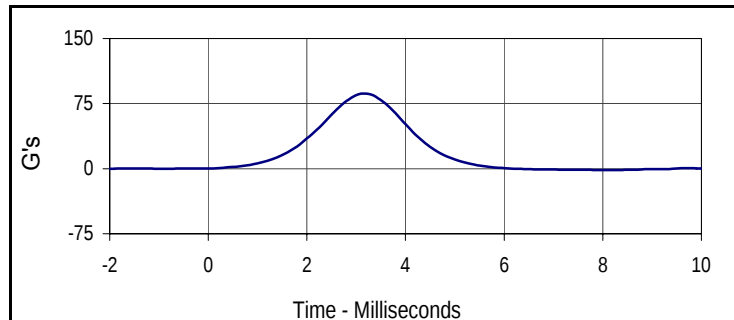
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	314	Pass
Temperature During Soak	Max	18.9 to 25.6	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	37.1	Pass
Peak Head Resultant Acceleration	G's	115 to 137	121.5	Pass
Peak Head X Acceleration	G's	<15	8.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	2.9	Pass
Overall Test Results				Pass



Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
121.5	3.2	0.1	-0.7



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
8.1	3.1	-0.9	5.5



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
86.6	3.2	-1.5	7.9



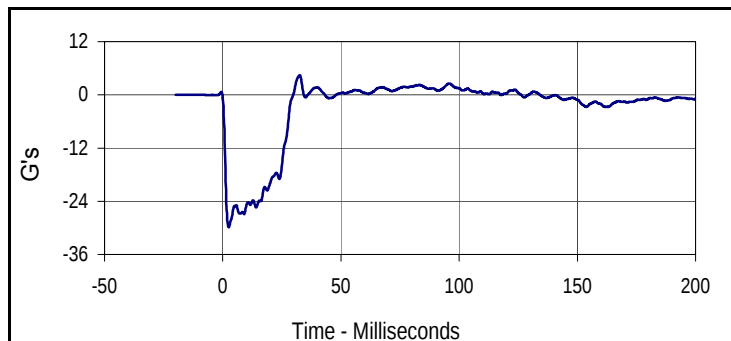
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
84.8	3.2	-0.7	7.9

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 307

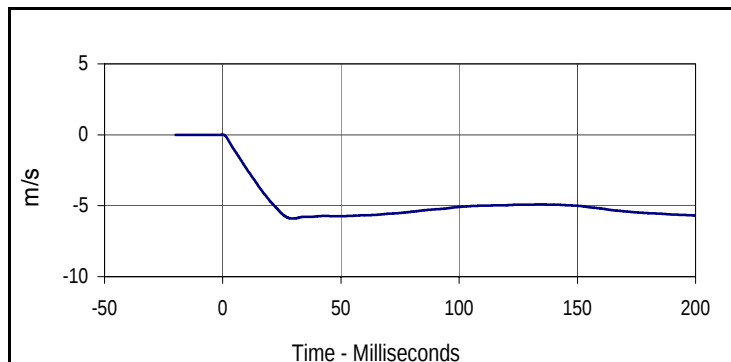
Test Date: 9/5/14
 Test I.D.: 307NB070



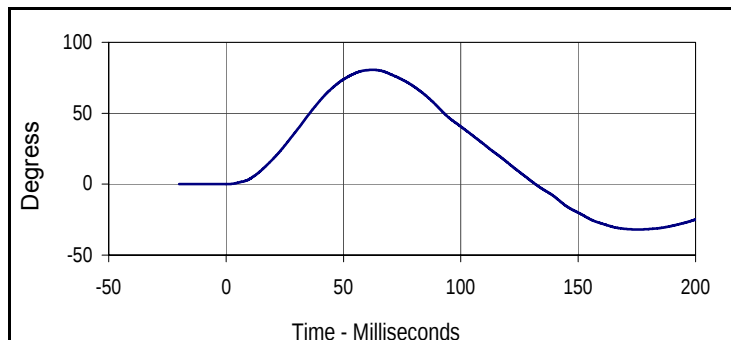
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	389	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	37.0	Pass
Pendulum Velocity	m/s	5.51 to 5.63	5.58	Pass
Pendulum Deceleration	10 msec	-2.20 to -2.80	-2.38	Pass
	15 msec	-3.30 to -4.10	-3.58	Pass
	20 msec	-4.40 to -5.40	-4.67	Pass
	25 msec	-5.40 to -6.10	-5.57	Pass
	25-100 msec	-5.50 to -6.20	-5.90	Pass
D-Plane Rotation	Max	71 to 81	80.6	Pass
	Time	50 to 70	62.4	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-40.5	Pass
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	112.0	Pass
Overall Test Results			Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
4.4	0.0	-29.8	0.0



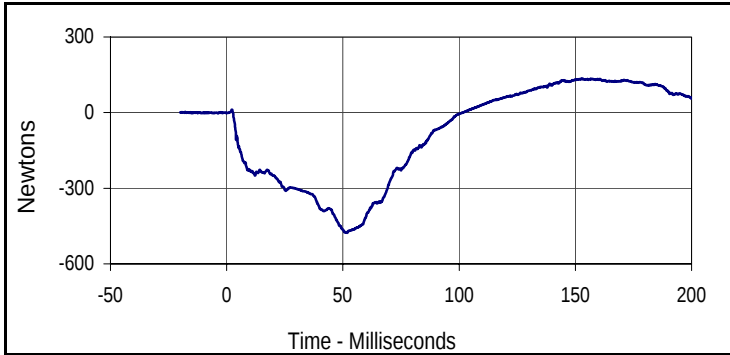
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.2	-5.9	29.8



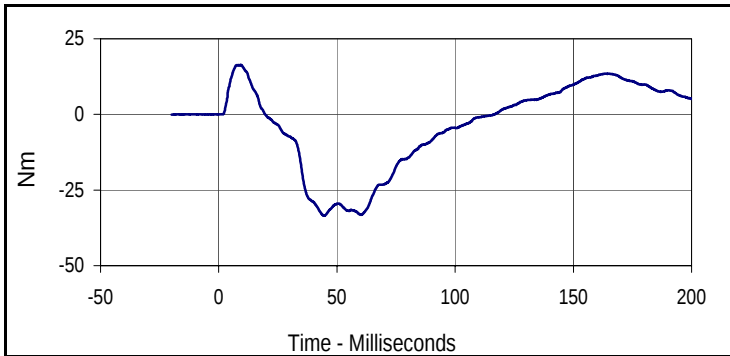
Curve Description			
D-Plane Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degress
Max	Time	Min	Time
80.6	62.4	-32.0	175.2

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 307

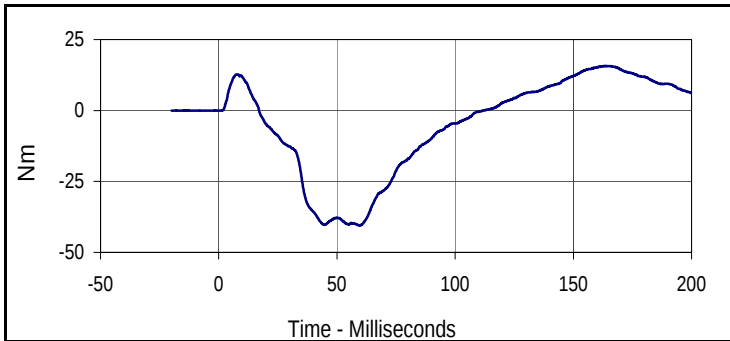
Test Date: 9/5/14
 Test I.D.: 307NB070



Curve Description			
Neck Force Y			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
134.8	152.9	-476.9	51.8



Curve Description			
Neck Moment X			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
16.4	9.3	-33.5	44.6



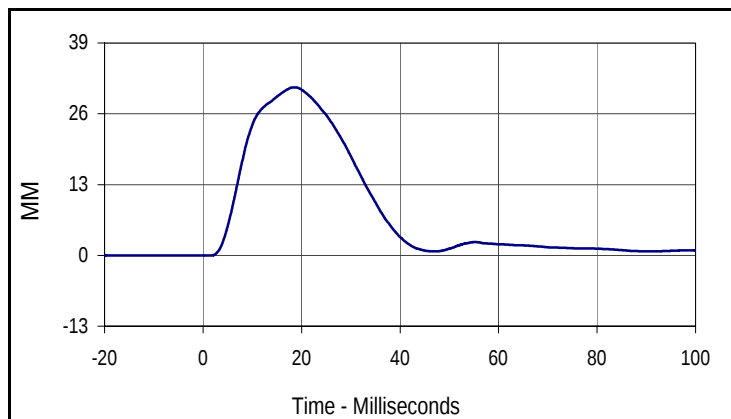
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
006	FIL	600	Nm
Max	Time	Min	Time
15.7	163.0	-40.5	59.3

Test Program: SID IIs Shoulder Impact Test
 ATD Serial No.: 307

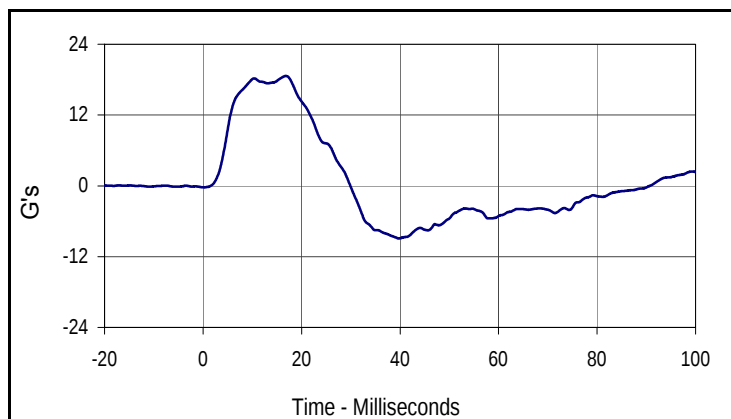
Test Date: 9/5/14
 Test I.D.: 307SH070



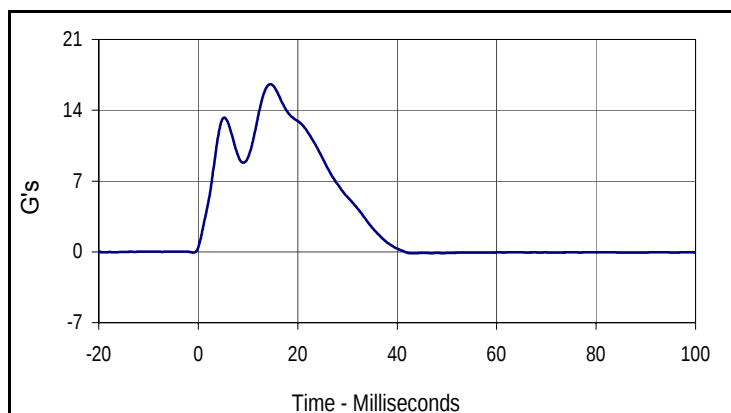
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	444	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.3	Pass
	Min	°C		21.1	Pass
Humidity During Soak	Max	%	10.0 to 70.0	37.1	Pass
	Min	%		36.5	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	36.5	Pass
Impactor Velocity		m/s	4.20 to 4.40	4.34	Pass
Peak Shoulder Deflection		mm	28 to 37	30.9	Pass
Peak Lateral Spine Acceleration Y		G's	17 to 22	18.6	Pass
Peak Impactor Acceleration		G's	13 to 18	16.6	Pass
Overall Test Results				Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
30.9	18.6	0.0	-0.4



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.6	16.8	-8.9	39.8



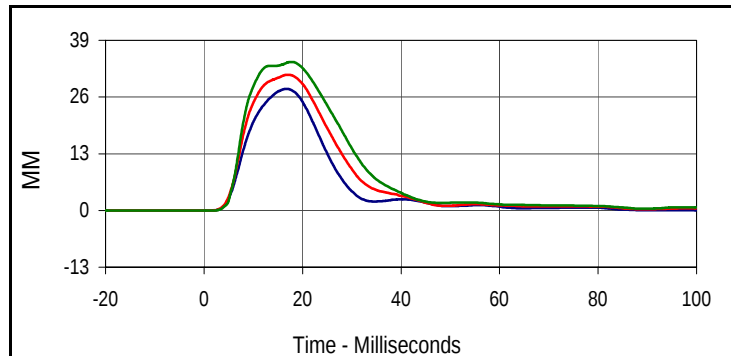
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
16.6	14.5	-0.1	42.8

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 307

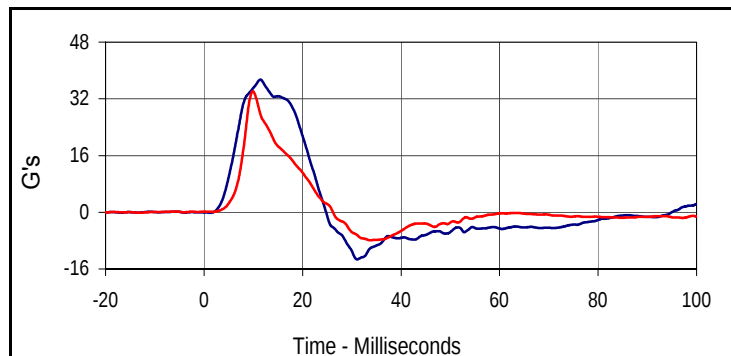
Test Date: 9/5/14
 Test I.D.: 307TWA070



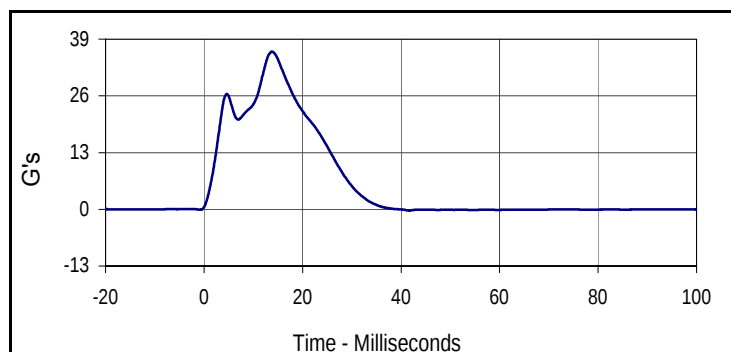
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	489	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.7	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.72	Pass
Peak Shoulder Deflection	mm	31 to 40	34.3	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.3	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.0	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	33.9	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	36.1	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	33.9	Pass
Peak Impactor Acceleration	G's	30 to 36	34.4	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.3	16.6	0.0	-2.0
Middle Thorax Deflection			
Max	Time	Min	Time
31.0	17.0	0.0	0.1
Lower Thorax Deflection			
Max	Time	Min	Time
33.9	17.5	0.0	-5.8



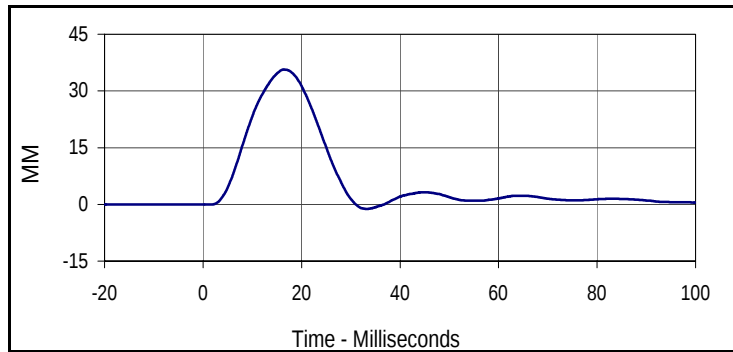
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
36.1	10.9	-13.5	31.8
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
33.9	9.7	-7.6	33.1



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.4	13.8	-0.5	39.1

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 307

Test Date: 9/5/14
 Test I.D.: 307TWA070



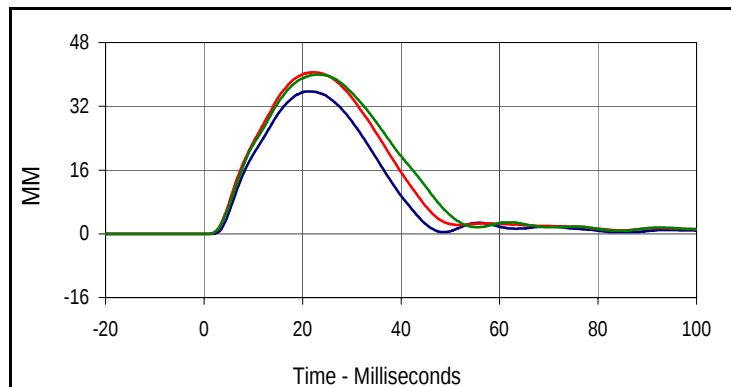
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
34.3	16.5	-1.7	32.5

Test Program: SID IIs Thorax without Arm Impact Test
 ATD Serial No.: 307

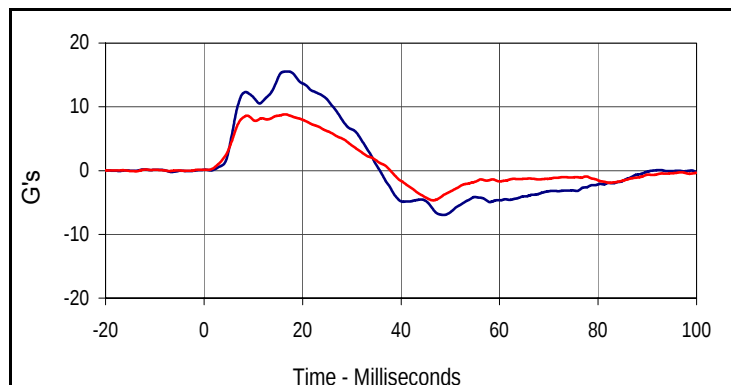
Test Date: 9/5/14
 Test I.D.: 307TWOA070



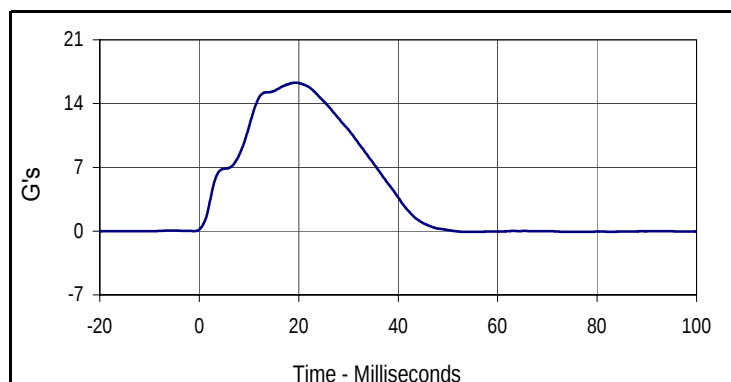
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	539	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.3	Pass
	Min	°C		21.1	Pass
Humidity During Soak	Max	%	10.0 to 70.0	37.1	Pass
	Min	%		36.5	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	37.1	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.34	Pass
Peak Upper Thorax Rib Deflection		mm	32 to 40	35.7	Pass
Peak Middle Thorax Rib Deflection		mm	39 to 45	40.5	Pass
Peak Lower Thorax Rib Deflection		mm	35 to 43	40.0	Pass
Peak Upper Spine Y Acceleration		G's	13 to 17	15.5	Pass
Peak Lower Spine Y Acceleration		G's	7 to 11	8.8	Pass
Peak Impactor Acceleration		G's	14 to 18	16.3	Pass
Overall Test Results				Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
35.7	21.7	0.0	-10.3
Middle Thorax Deflection			
Max	Time	Min	Time
40.5	22.2	0.0	-11.7
Lower Thorax Deflection			
Max	Time	Min	Time
40.0	23.1	0.0	-11.3



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.5	17.2	-7.0	48.7
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.8	16.5	-4.7	46.5



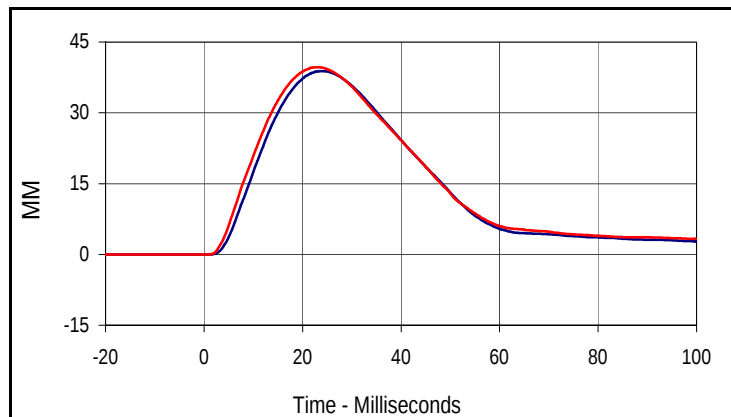
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.3	19.4	-0.1	56.2

Test Program: SID IIs Abdomen Impact Test
 ATD Serial No.: 307

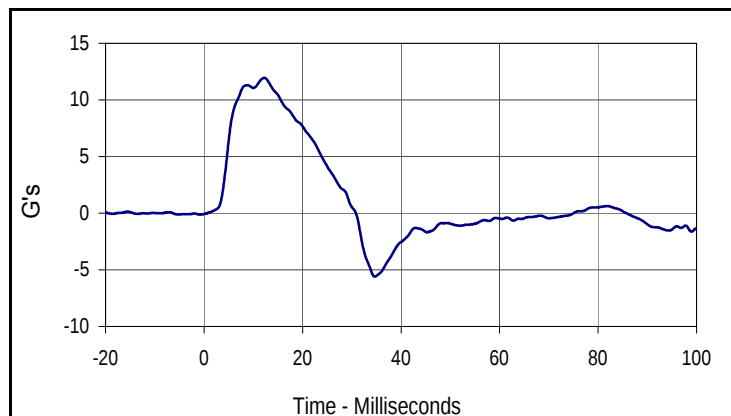
Test Date: 9/5/14
 Test I.D.: 307ABD070



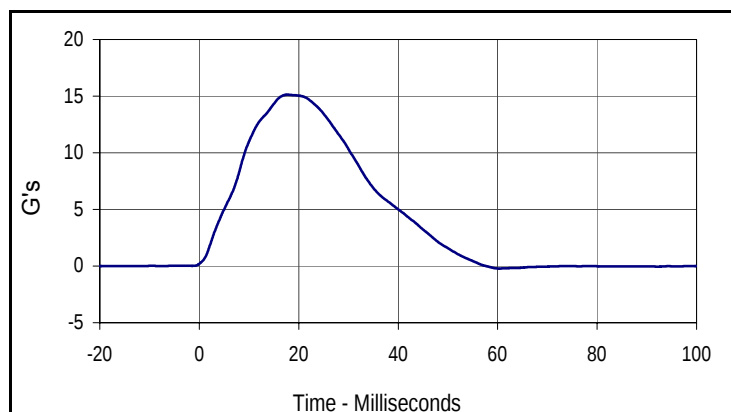
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	574	Pass
Temperature During Soak	Max °C	20.6 to 22.2	21.3	Pass
	Min °C		21.1	Pass
Humidity During Soak	Max %	10.0 to 70.0	37.1	Pass
	Min %		36.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	37.1	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.36	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	38.8	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	39.6	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.0	Pass
Peak Impactor Acceleration	G's	12 to 16	15.1	Pass
Overall Test Results			Pass	



Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
38.8	23.8	0.0	-16.4
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
39.6	23.0	0.0	-6.5

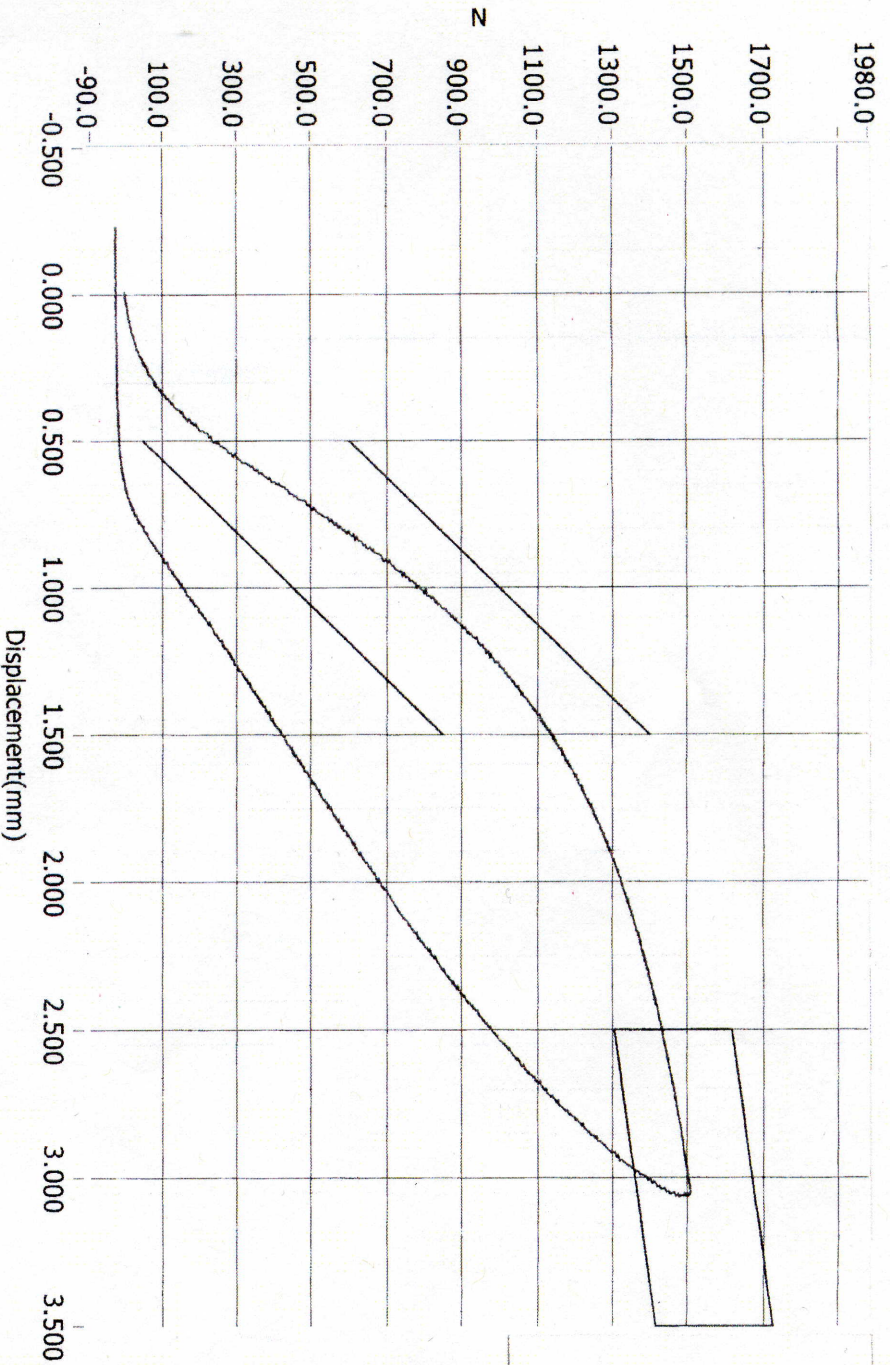


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.0	12.2	-5.6	34.7



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.1	17.7	-0.2	60.3

Resultant Data - SIDIIs Plug Compression



Loading Curve
 Boundary Limit Upper
 Boundary Limit Lower
 Peak Load Upper
 Peak Load Lower
 Peak Defl Upper
 Peak Defl Lower

1503N

ATD Calibration Lab

Test ID

Part Serial Number

Test Date

Test Time

M201455201 PRE TEST

ert ID

ATD Serial Number

ATD Type

N/A

SIDIIs

Current Date : 1/18/2013

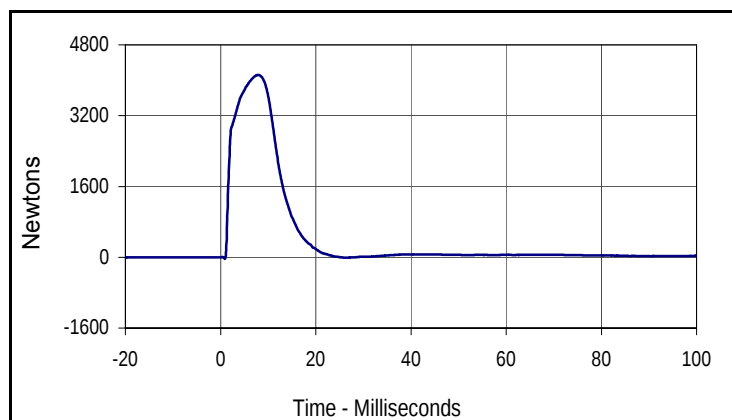
Current Time : 23:52:03

Test Program: SID IIs Pelvis Acetabulum Impact Test
 ATD Serial No.: 307

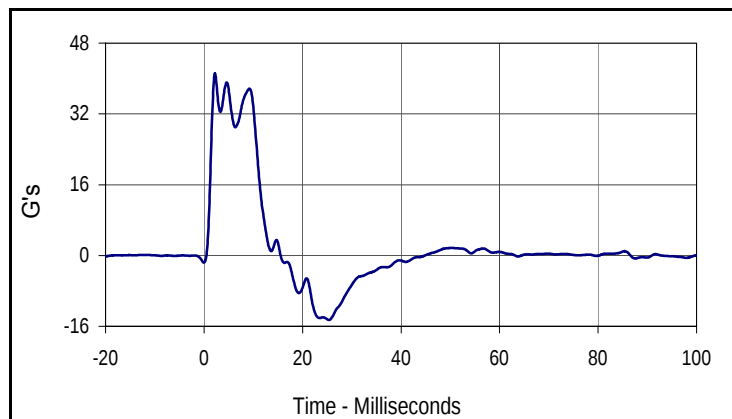
Test Date: 9/5/14
 Test I.D.: 307ACET070



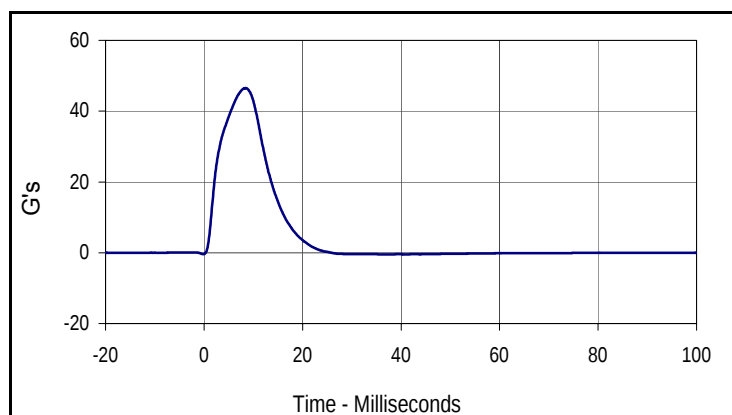
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	619	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	37.1	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.65	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	4120.8	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	37.7	Pass
Peak Impactor Acceleration	G's	38 to 47	46.5	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4120.8	8.0	-35.9	0.9



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
41.1	2.2	-14.6	25.4



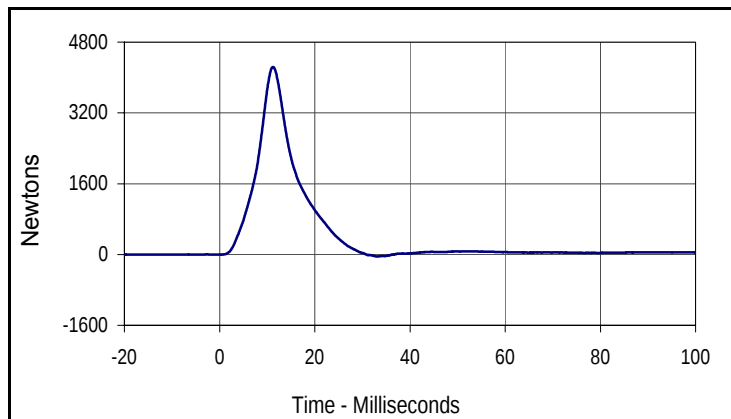
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
46.5	8.4	-0.5	41.2

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 307

Test Date: 9/5/14
 Test I.D.: 307PL070



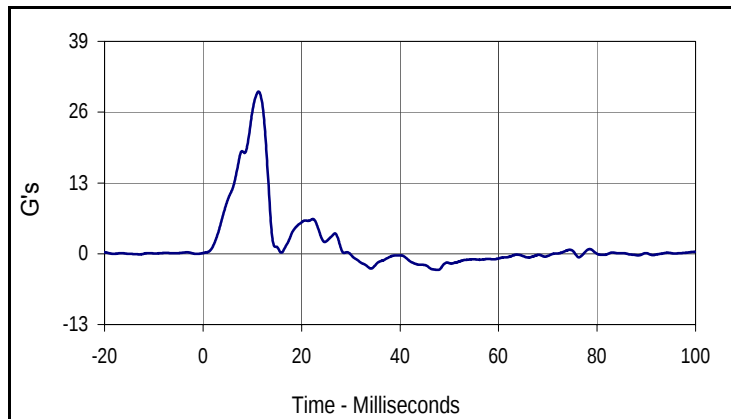
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	689	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.8	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.33	Pass
Peak Iliac Force	Newtons	4100 to 5100	4239.1	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	29.8	Pass
Peak Impactor Acceleration	G's	36 to 45	39.9	Pass
Overall Test Results			Pass	



Curve Description

Pelvis Iliac Force

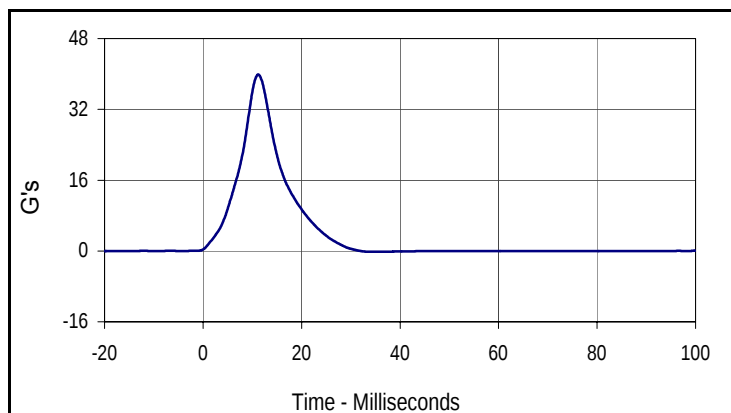
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4239.1	11.2	-48.6	33.2



Curve Description

Pelvis Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
29.8	11.3	-3.0	47.6



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
39.9	11.2	-0.2	35.9

APPENDIX C
POST-TEST / ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: ES2re External Measurements
 ATD Serial No.: F037

Test Date: 9/15/14
 Test I.D.: N/A



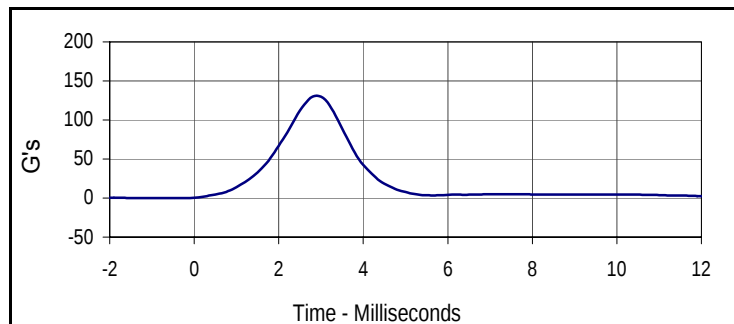
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	30.0	Pass
1	Sitting Height	mm	900 - 918	909	Pass
2	Seat to Shoulder Joint	mm	558 - 572	564	Pass
3	Seat to Lower Face of Thoracic Spine Box	mm	346 - 356	350	Pass
4	Seat to Hip Joint (Center of Bolt)	mm	97 - 103	99	Pass
5	Sole to Seat, Sitting	mm	333 - 451	395	Pass
6	Head Width	mm	152 - 158	156	Pass
7	Shoulder / Arm Width	mm	461 - 479	470	Pass
8	Thorax Width	mm	322 - 332	326	Pass
9	Abdomen Width	mm	273 - 287	280	Pass
10	Pelvis Lap Width	mm	359 - 373	363	Pass
11	Head Depth	mm	196 - 206	201	Pass
12	Thorax Depth	mm	262 - 272	270	Pass
13	Abdomen Width	mm	194 - 204	199	Pass
14	Pelvis Depth	mm	235 - 245	240	Pass
15	Back of Buttocks to Hip Joint (Center of Bolt)	mm	150 - 160	155	Pass
16	Back of Buttocks to Front Knee	mm	597 - 615	608	Pass
Overall Test Results					Pass

Test Program: ES2re Head Drop Test
 ATD Serial No.: F037

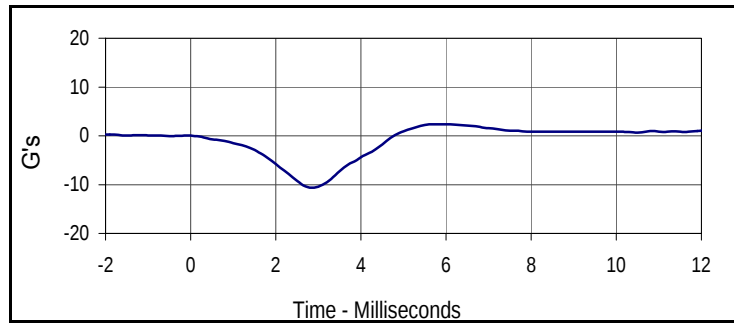
Test Date: 9/15/14
 Test I.D.: F037HD063



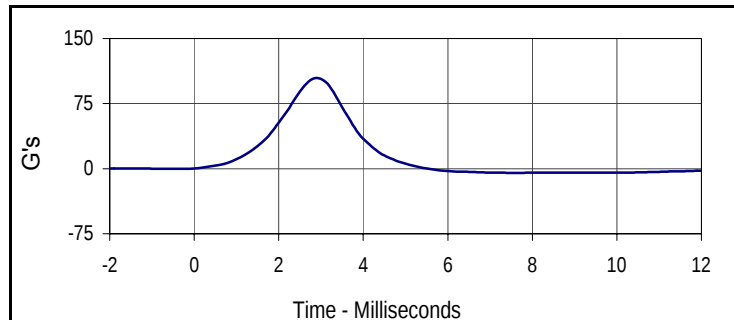
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	342	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.6	Pass
Peak Head Resultant Acceleration	G's	125 to 155	131.2	Pass
Peak Head X Acceleration	G's	≤15	10.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	5.8	Pass
Overall Test Results				Pass



Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
131.2	2.9	0.0	-0.6



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.4	5.9	-10.6	2.8



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
104.8	2.9	-4.8	7.7



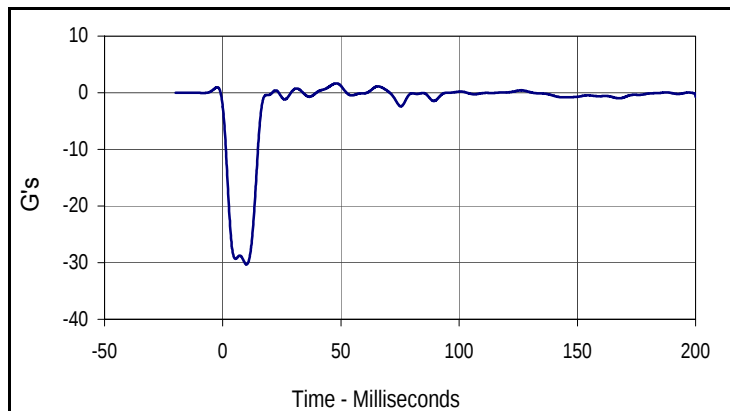
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
78.2	2.9	-0.2	-2.0

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F037

Test Date: 9/15/14
 Test I.D.: F037NB063



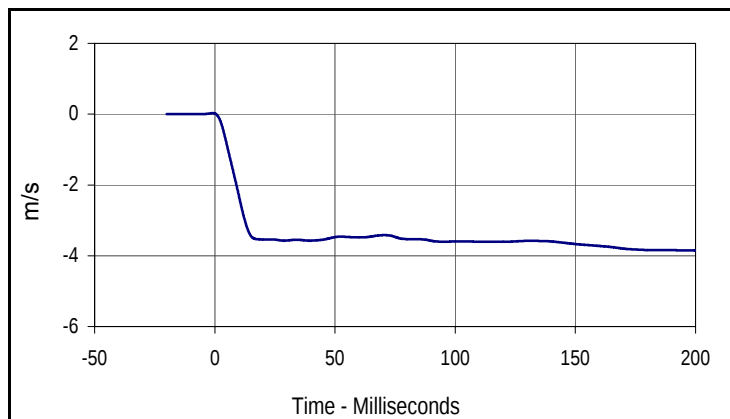
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	377	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	37.1	Pass
Pendulum Velocity	m/s	3.3 to 3.5	3.44	Pass
Headform Flexion	Max	49 to 59	56.3	Pass
	Time	54 to 66	54.9	Pass
Headform Flexion Decay (Peak to Zero)	msec	53 to 88	67.1	Pass
Overall Test Results				Pass



Curve Description

Pendulum Deceleration

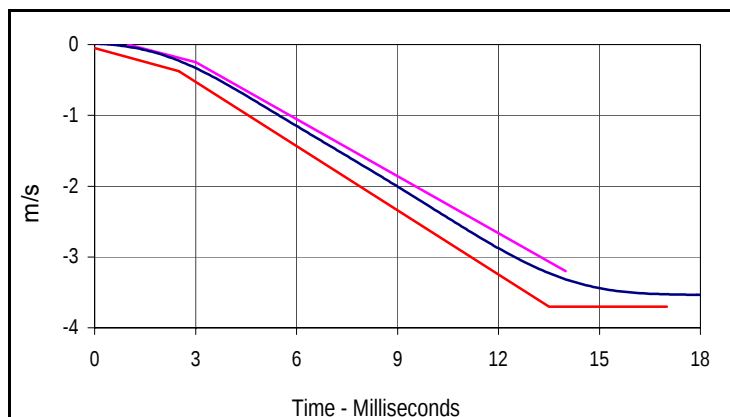
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
1.7	48.0	-30.3	10.0



Curve Description

Pendulum Velocity

Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.9	-3.8	199.9



Curve Description

Pendulum Velocity

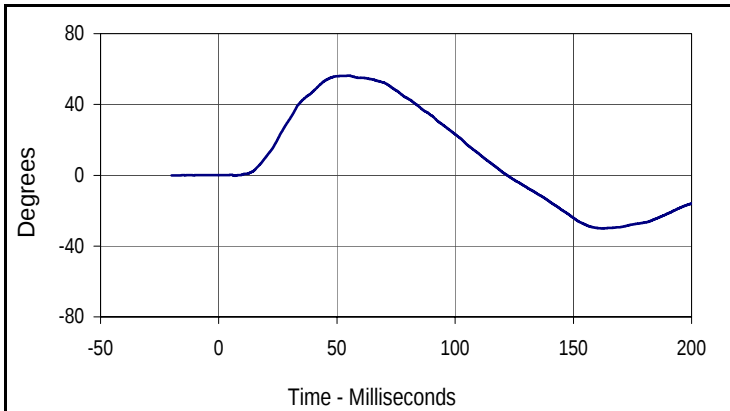
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.9	-3.8	199.9

Velocity Corridors

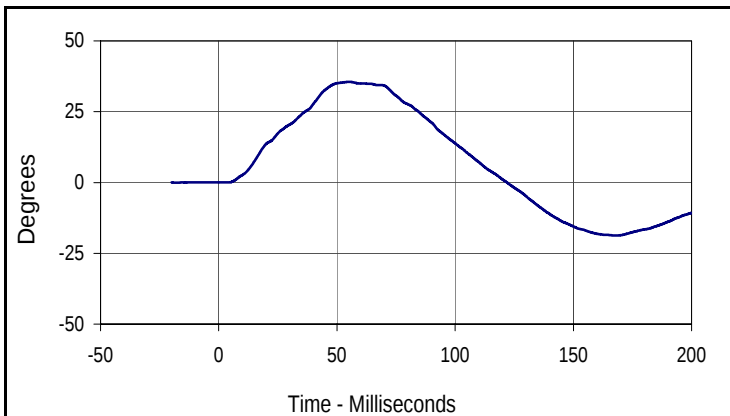
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.03	2.5	-0.375
14.0	-3.20	13.5	-3.70
		17.0	-3.70

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F037

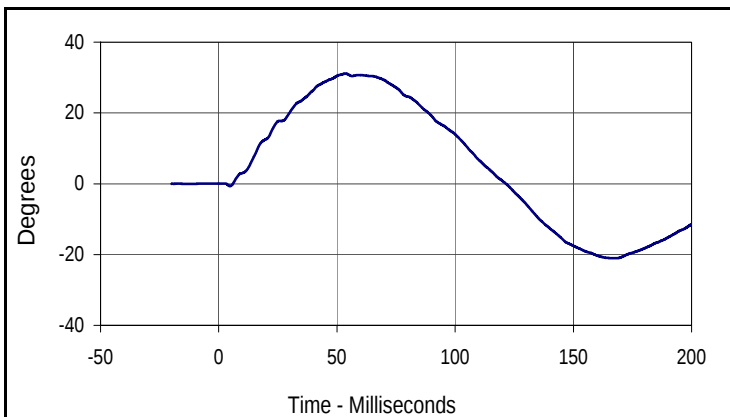
Test Date: 9/15/14
 Test I.D.: F037NB063



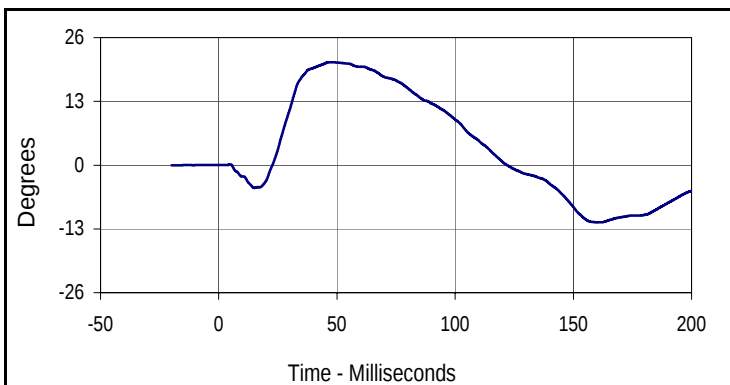
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
56.3	54.9	-30.0	162.3



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
35.6	55.1	-18.7	169.0



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
31.1	53.6	-21.0	167.5



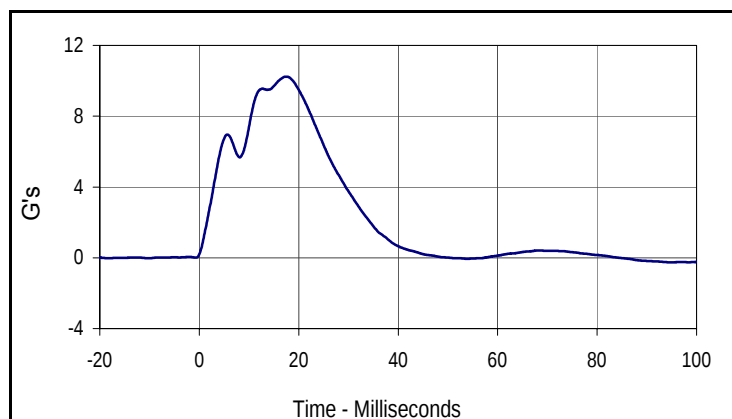
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
21.0	46.6	-11.7	161.5

Test Program: ES2re Shoulder Impact Test
 ATD Serial No.: F037

Test Date: 9/15/14
 Test I.D.: F037SH063



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	442	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.7	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.32	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	10.2	Pass
Overall Test Results				Pass



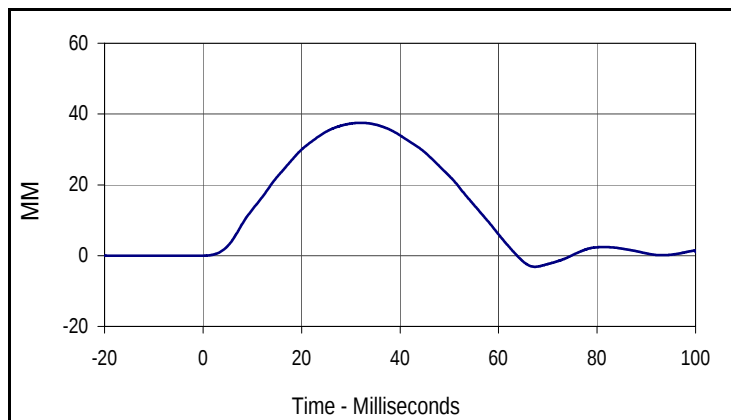
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
10.2	17.4	-0.3	94.9

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 1

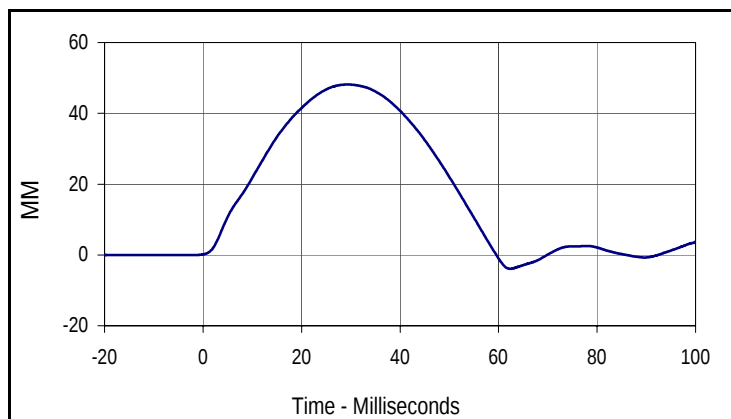
Test Date: 9/15/14
 Test I.D.: F037RB1063



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	497	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.3	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	37.5	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	48.1	Pass
Overall Test Results				Pass



Curve Description			
Upper Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
37.5	32.1	-3.2	67.4



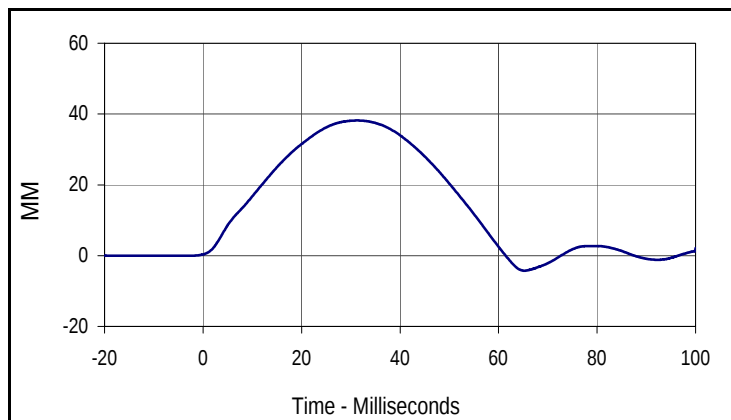
Curve Description			
Upper Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
48.1	29.4	-3.9	62.4

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 2

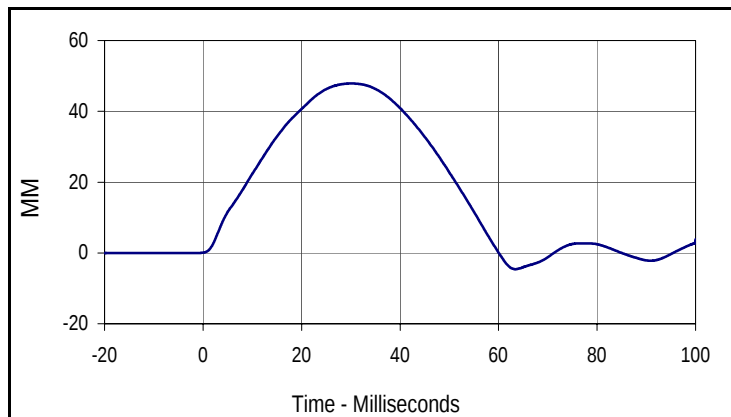
Test Date: 9/15/14
 Test I.D.: F037RB2063



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	542	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.3	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.2	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	47.9	Pass
Overall Test Results				Pass



Curve Description			
Middle Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.2	31.3	-4.3	65.3



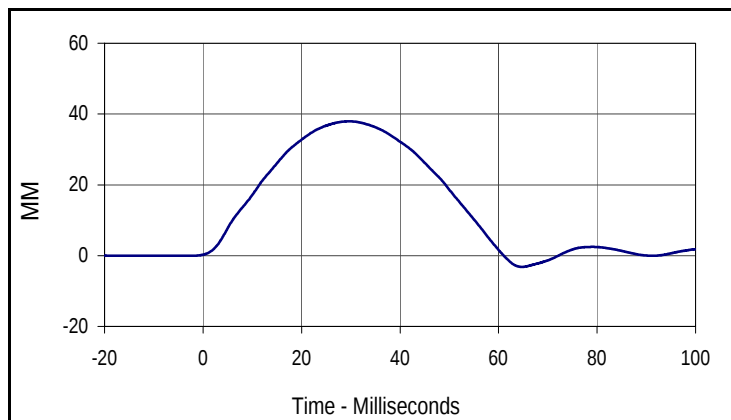
Curve Description			
Middle Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
47.9	30.1	-4.6	63.4

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F037 Rib # 3

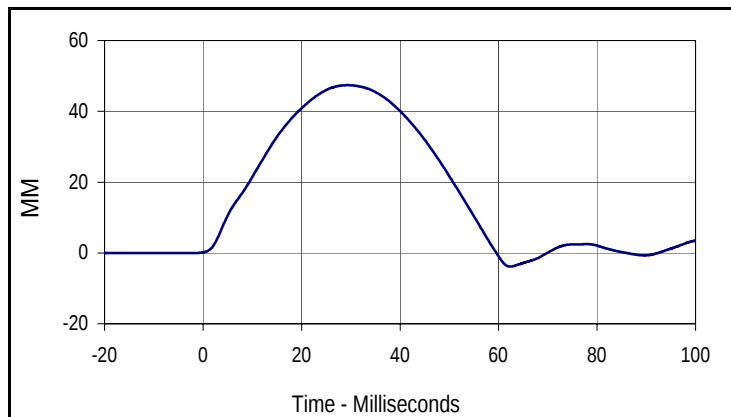
Test Date: 9/15/14
 Test I.D.: F037RB3063



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	587	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.5	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	37.9	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	47.4	Pass
Overall Test Results				Pass



Curve Description			
Lower Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
37.9	29.6	-3.2	64.7



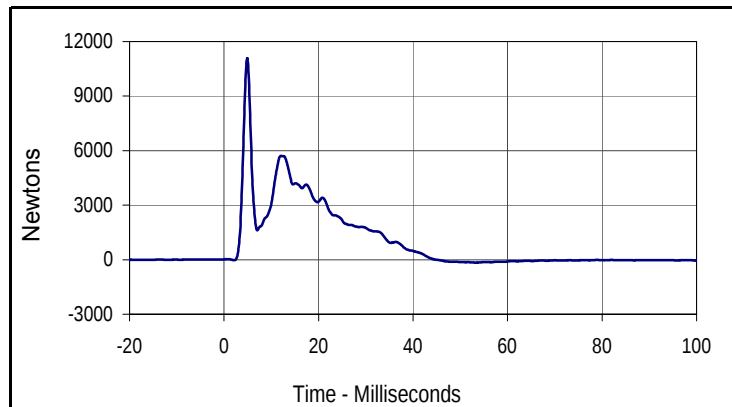
Curve Description			
Lower Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
47.4	29.4	-3.9	62.4

Test Program: ES2re Thorax - Full Body Impact Test
 ATD Serial No.: F037

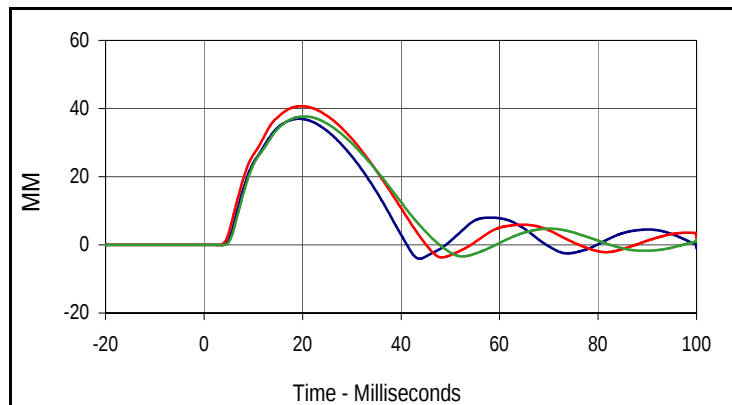
Test Date: 9/15/14
 Test I.D.: F037TH063



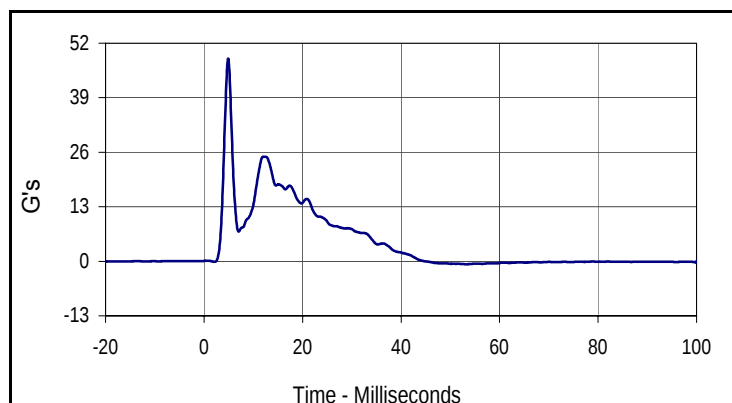
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	632	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.7	Pass
Peak Impactor Velocity	m/s	5.4 to 5.6	5.55	Pass
Peak Impactor Force	N	5100 to 6200	5711.8	Pass
	msec	> 6.0 msec	12	Pass
Peak Upper Rib Deflection	mm	34 to 41	37.0	Pass
Peak Middle Rib Deflection	mm	37 to 45	40.7	Pass
Peak Lower Rib Deflection	mm	37 to 44	37.7	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
11078.8	4.9	-163.3	53.3



Curve Description			
Upper, Middle, Lower Rib Deflections			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
37.0	19.2	-4.1	43.7
Max (Middle)	Time	Min (Middle)	Time
40.7	19.7	-3.7	48.3
Max (Lower)	Time	Min (Lower)	Time
37.7	20.3	-3.4	52.5



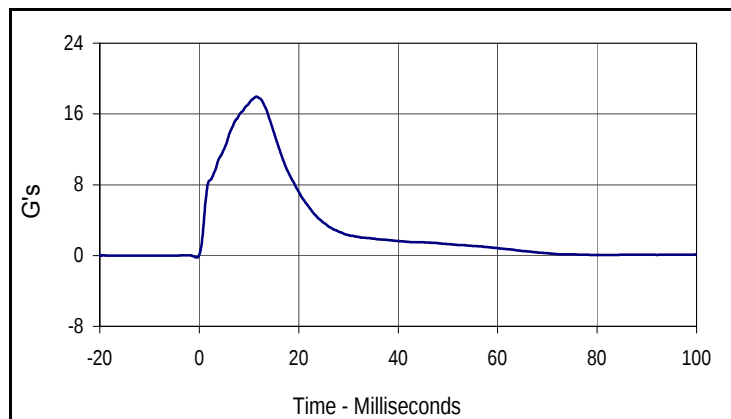
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
48.4	4.9	-0.7	53.3

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F037

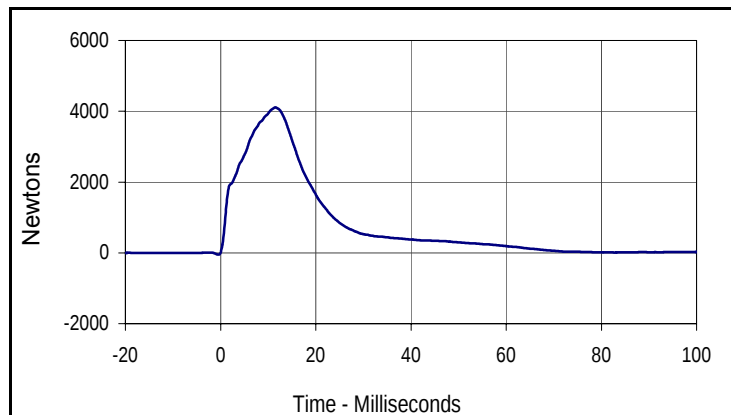
Test Date: 9/15/14
 Test I.D.: F037ABD063



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	702	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.3	Pass
Probe Velocity	m/s	3.9 to 4.1	3.93	Pass
Peak Impactor Force	N	4000 to 4800	4110.4	Pass
	msec	10.6 to 13.0	11.5	Pass
Sum of Abdominal Forces	N	2200 to 2700	2350.2	Pass
	msec	10.0 to 12.3	11.1	Pass
Overall Test Results				Pass



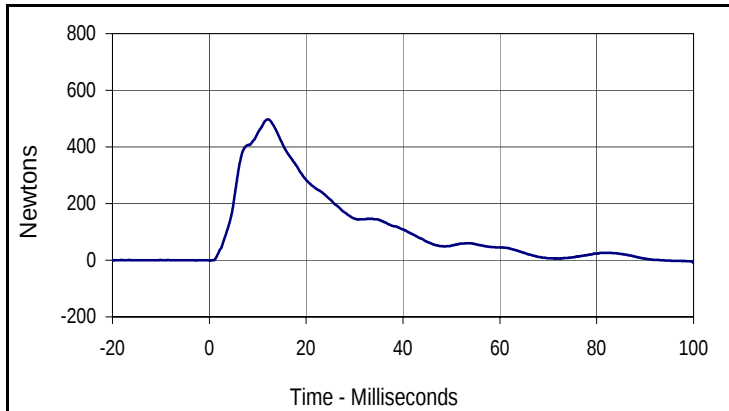
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
17.9	11.5	-0.2	-0.5



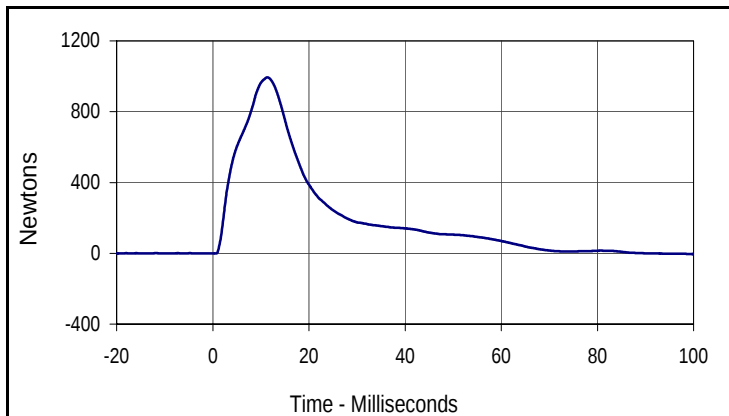
Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4110.4	11.5	-51.8	-0.5

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F037

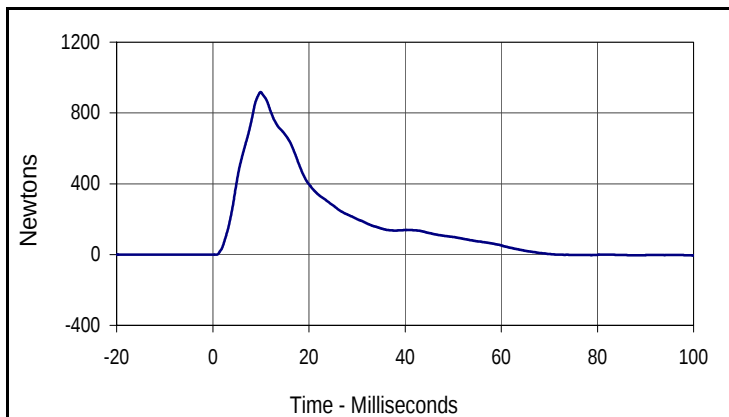
Test Date: 9/15/14
 Test I.D.: F037ABD063



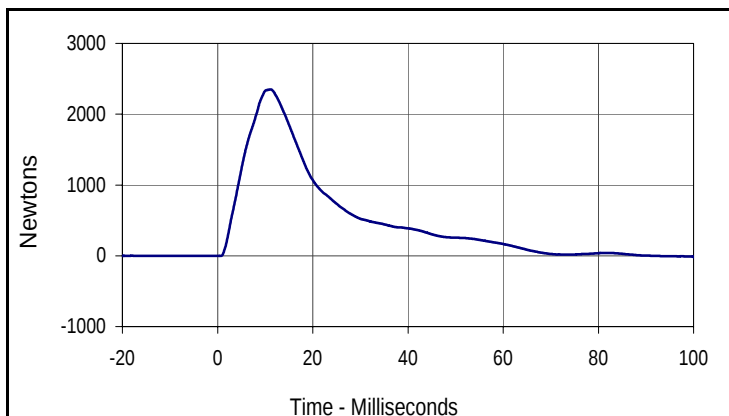
Curve Description			
Front Abdomen Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtontons
Max	Time	Min	Time
497.6	12.1	-10.3	100.7



Curve Description			
Middle Abdomen Force			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtontons
Max	Time	Min	Time
994.5	11.3	-6.4	100.6



Curve Description			
Rear Abdomen Force			
Plot No.	Type	SAE Class	Units
005	FIL	600	Newtontons
Max	Time	Min	Time
918.1	9.9	-7.1	103.4



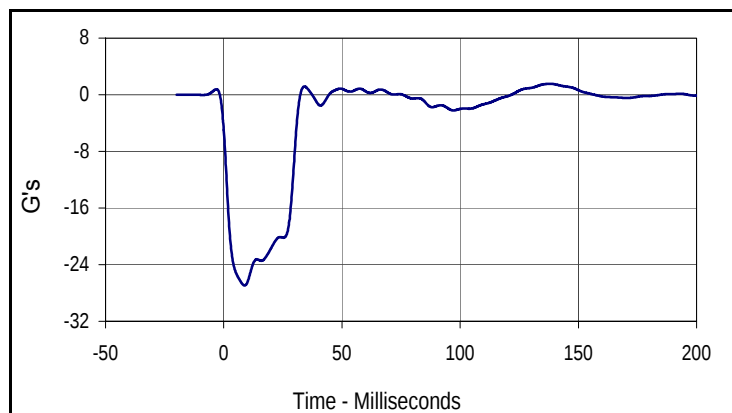
Curve Description			
Abdomen Sum Resultant			
Plot No.	Type	SAE Class	Units
006	RES	600	Newtontons
Max	Time	Min	Time
2350.2	11.1	-22.0	100.6

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F037

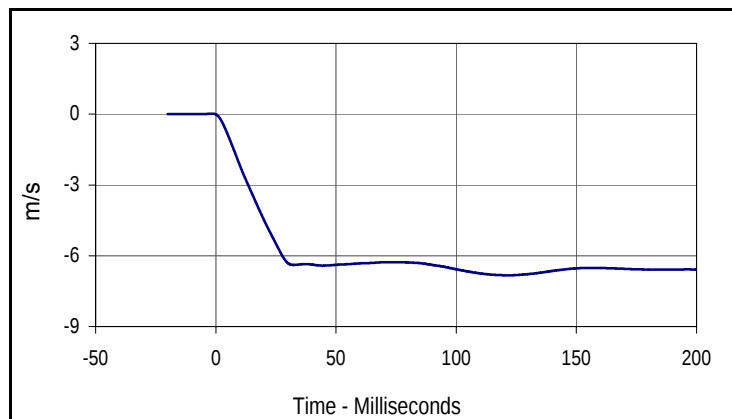
Test Date: 9/15/14
 Test I.D.: F037LB063



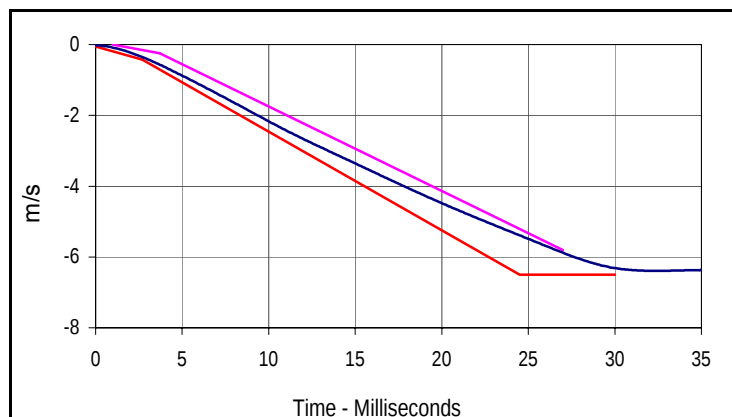
Tested Parameter	Units	Specification	Result	Pass/Fail
Lumbar Spine Assembly Soak Time	Minutes	≥240	777	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.4	Pass
Pendulum Velocity	m/s	5.95 to 6.15	6.10	Pass
Headform Rotation	Max	45 to 55	51.3	Pass
	Time	39 to 53	41.6	Pass
Time of Decay to Zero Angle from Peak	msec	37 to 57	44.7	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
1.5	138.6	-26.9	9.4



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.1	-6.8	122.3



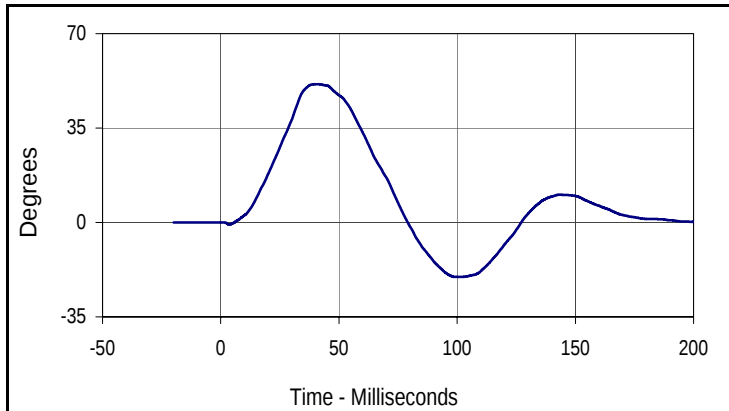
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.1	-6.8	122.3

Velocity Corridors

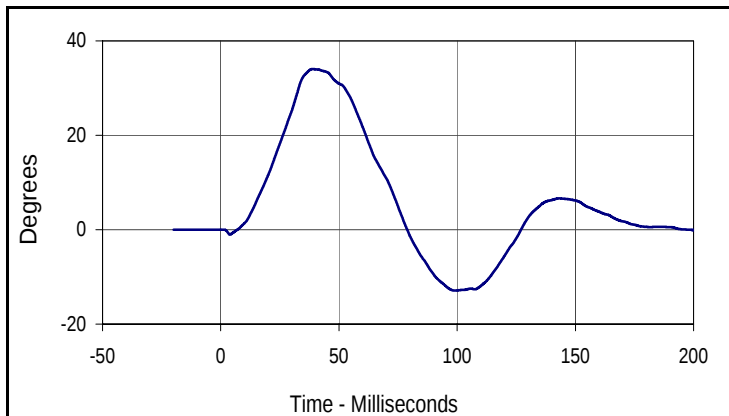
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.50
		30.0	-6.50

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F037

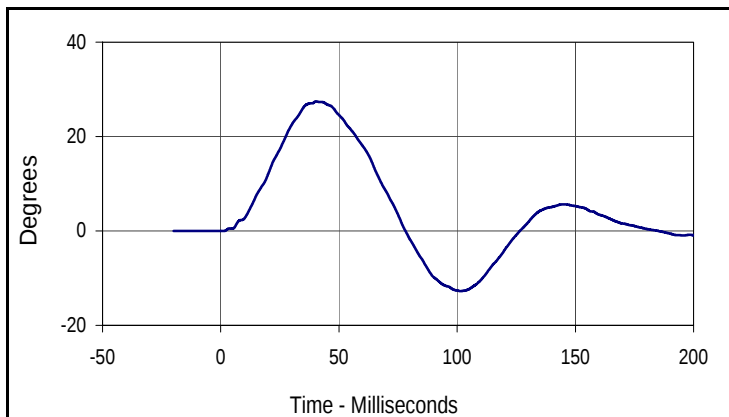
Test Date: 9/15/14
 Test I.D.: F037LB063



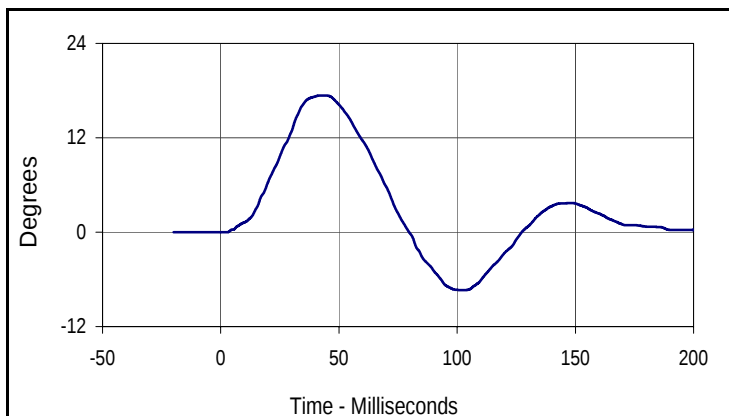
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
51.3	41.6	-20.2	99.8



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
34.0	39.5	-12.9	99.6



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
27.5	40.9	-12.7	102.1



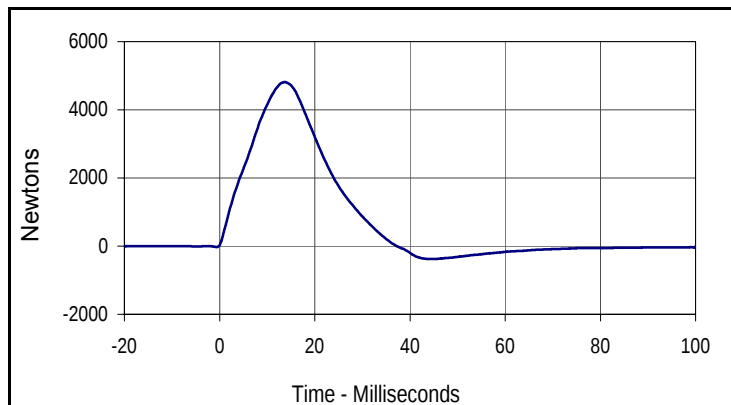
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
17.4	43.0	-7.4	103.1

Test Program: ES2re Pelvis Impact Test
 ATD Serial No.: F037

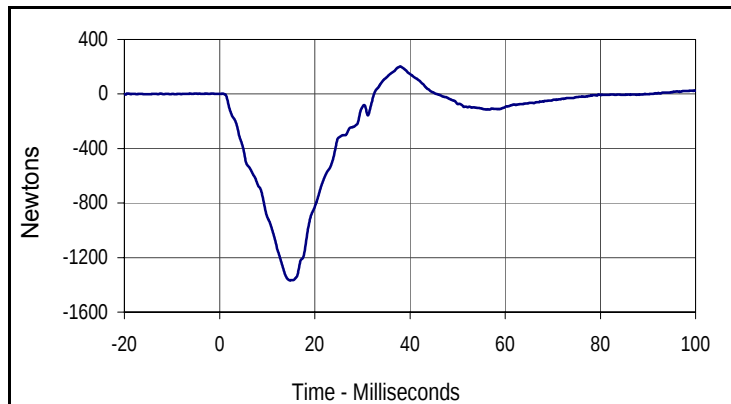
Test Date: 9/15/14
 Test I.D.: F037PL063



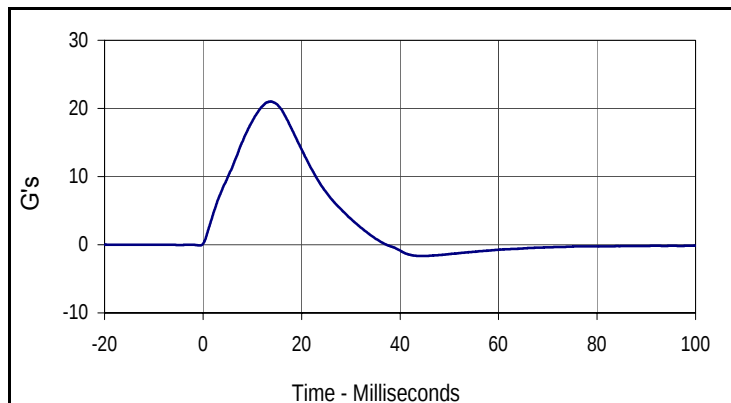
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	832	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	37.1	Pass
	Min		36.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.6	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.32	Pass
Peak Impactor Force	N	4700 to 5400	4814.3	Pass
	msec	11.8 to 16.1	13.7	Pass
Peak Pubic Symphysis Load	N	-1230 to -1590	-1366.7	Pass
	msec	12.2 to 17.0	14.8	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4814.3	13.7	-380.1	44.6



Curve Description			
Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
201.7	38.0	-1366.7	14.8



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
21.0	13.7	-1.7	44.6

Test Program: SID IIs External Measurements
 ATD Serial No.: 307

Test Date: 9/16/14
 Test I.D.: N/A



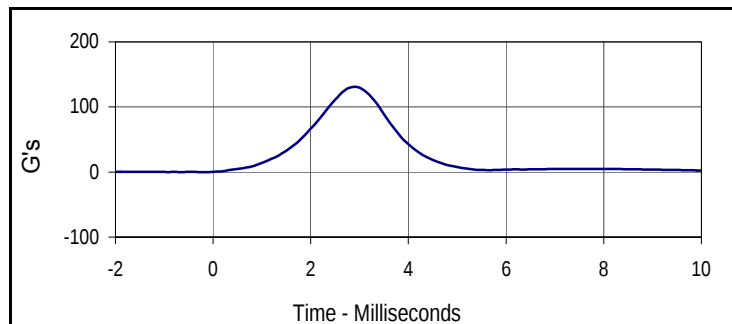
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity		%	10 to 70	43	Pass
A	Sitting Height	mm	772 - 788	778	Pass
B	Shoulder Pivot Height	mm	437 - 453	443	Pass
C	H-Point Height	mm	79 - 89	85	Pass
D	H-Point from Seatback	mm	141 - 151	144	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	102	Pass
F	Thigh Clearance	mm	119 - 135	128	Pass
G	Head Breadth	mm	140 - 148	145	Pass
H	Head Back from Backline	mm	40 - 46	43	Pass
I	Head Depth	mm	178 - 188	185	Pass
J	Head Circumference	mm	541 - 551	546	Pass
K	Buttock to Knee Length	mm	514 - 540	525	Pass
L	Popliteal Height	mm	343 - 369	351	Pass
M	Knee Pivot to Floor Height	mm	392 - 409	400	Pass
N	Buttock Popliteal Length	mm	416 - 442	432	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	205	Pass
P	Foot Length	mm	216 - 232	223	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	319	Pass
R	Arm Length	mm	249 - 259	254	Pass
S	Knee Joint to Seatback	mm	477 - 493	483	Pass
V	Shoulder Width	mm	341 - 357	351	Pass
W	Foot Width	mm	78 - 94	89	Pass
Y	Chest Circumference with Jacket	mm	851 - 881	872	Pass
Z	Waist Circumference	mm	760 - 791	774	Pass
Overall Test Results					Pass

Test Program: SID IIs Head Drop Test
 ATD Serial No.: 307

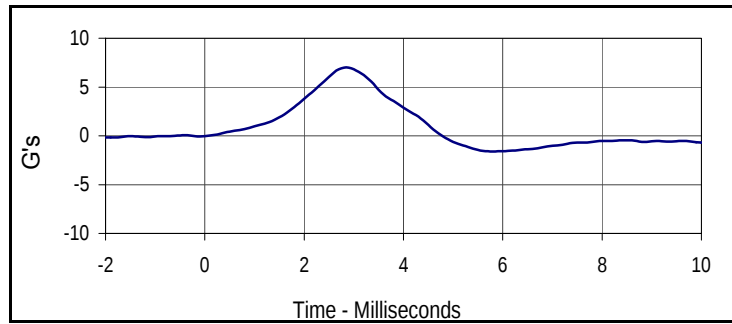
Test Date: 9/16/14
 Test I.D.: 307HD071



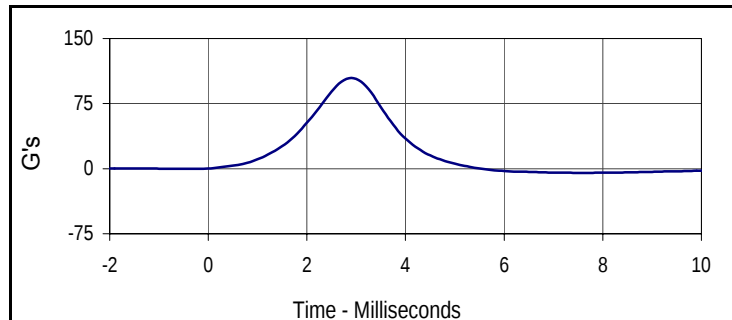
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	415	Pass
Temperature During Soak	Max	18.9 to 25.6	21.6	Pass
	Min		21.4	Pass
Humidity During Soak	Max	10.0 to 70.0	43.1	Pass
	Min		42.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.9	Pass
Peak Head Resultant Acceleration	G's	115 to 137	131.0	Pass
Peak Head X Acceleration	G's	<15	7.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.7	Pass
Overall Test Results				Pass



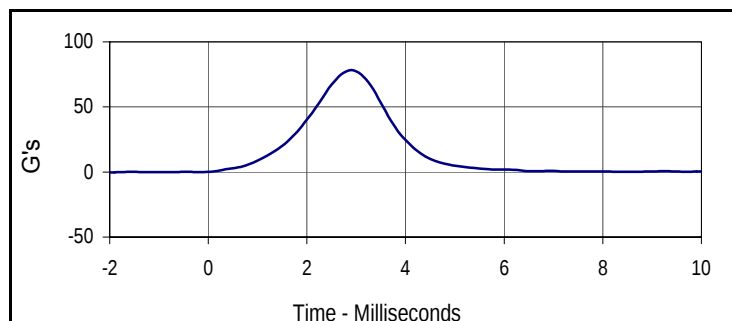
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
131.0	2.9	0.0	-0.6



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
7.0	2.8	-1.6	5.8



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
104.8	2.9	-4.8	7.7



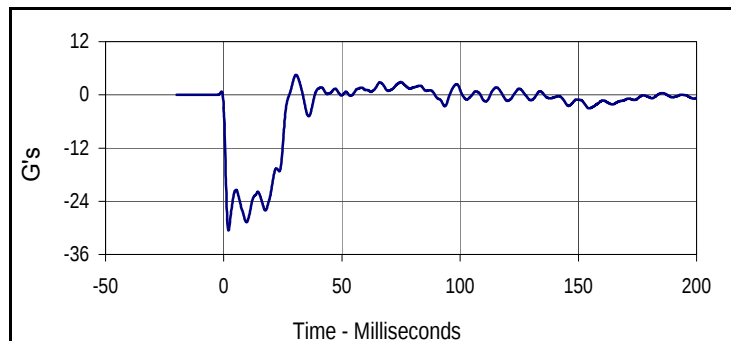
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
78.2	2.9	-0.2	-2.0

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 307

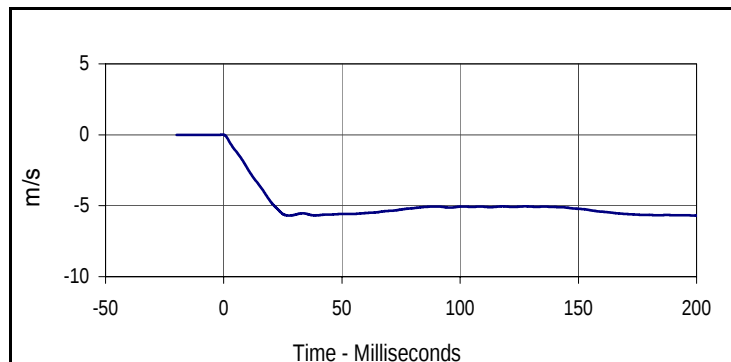
Test Date: 9/16/14
 Test I.D.: 307NB071



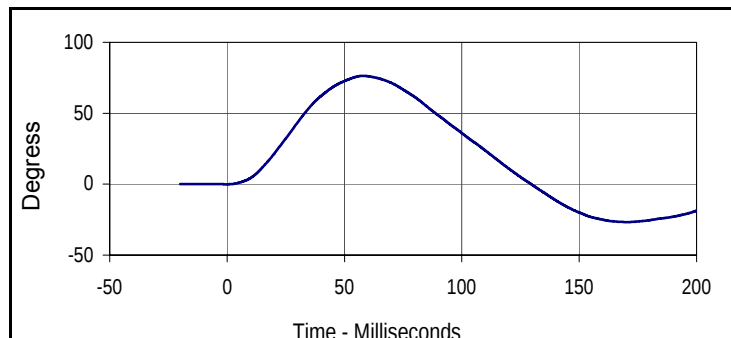
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	490	Pass
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass
	Min		21.4	Pass
Humidity During Soak	Max	10.0 to 70.0	43.1	Pass
	Min		42.2	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.7	Pass
Pendulum Velocity	m/s	5.51 to 5.63	5.52	Pass
Pendulum Deceleration	10 msec	-2.20 to -2.80	-2.36	Pass
	15 msec	-3.30 to -4.10	-3.55	Pass
	20 msec	-4.40 to -5.40	-4.74	Pass
	25 msec	-5.40 to -6.10	-5.58	Pass
	25-100 msec	-5.50 to -6.20	-5.69	Pass
D-Plane Rotation	Max	71 to 81	76.3	Pass
	Time	50 to 70	58.0	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-43.6	Pass
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	110.1	Pass
Overall Test Results			Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
4.5	0.0	-30.6	0.0



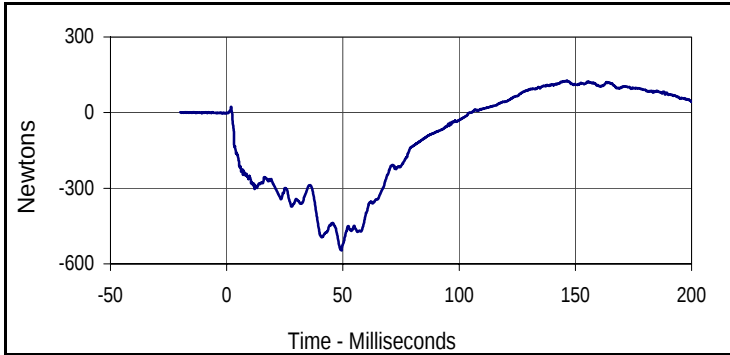
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.4	-5.7	200.0



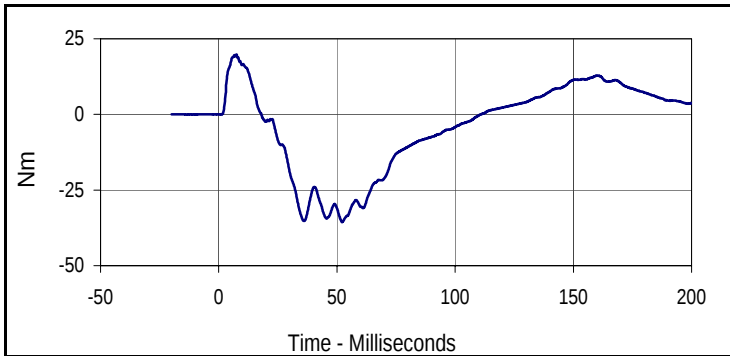
Curve Description			
D-Plane Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degress
Max	Time	Min	Time
76.3	58.0	-26.7	170.4

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 307

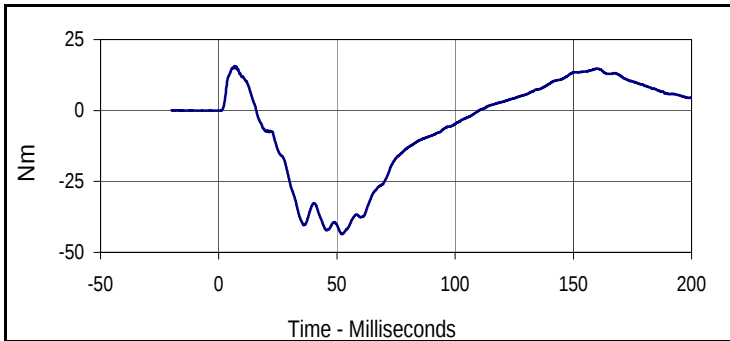
Test Date: 9/16/14
 Test I.D.: 307NB071



Curve Description			
Neck Force Y			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
126.9	146.3	-546.7	49.4



Curve Description			
Neck Moment X			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
19.8	7.5	-35.6	52.2



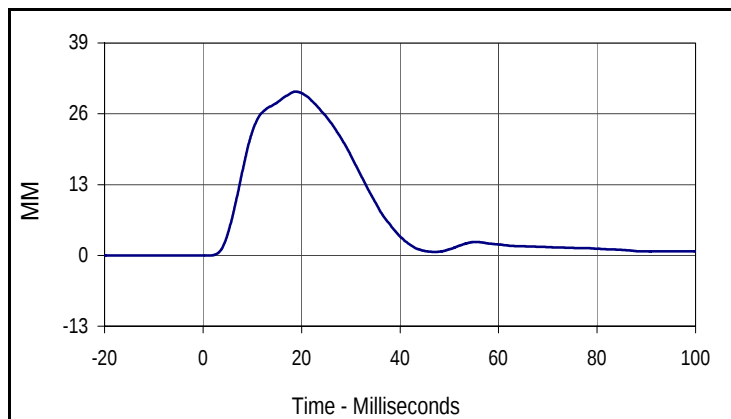
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
006	FIL	600	Nm
Max	Time	Min	Time
15.6	6.7	-43.6	52.1

Test Program: SID IIs Shoulder Impact Test
 ATD Serial No.: 307

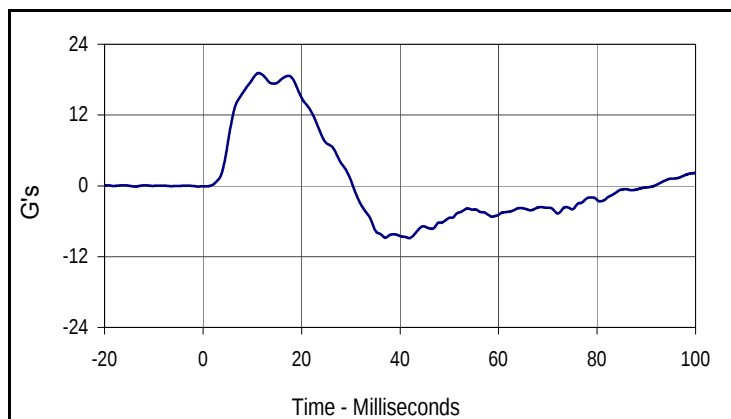
Test Date: 9/16/14
 Test I.D.: 307SH071



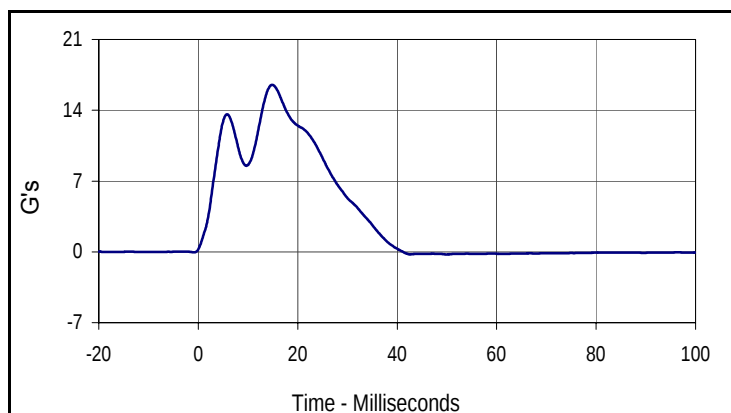
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	545	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.6	Pass
	Min	°C		21.4	Pass
Humidity During Soak	Max	%	10.0 to 70.0	43.1	Pass
	Min	%		42.2	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	42.6	Pass
Impactor Velocity		m/s	4.20 to 4.40	4.32	Pass
Peak Shoulder Deflection		mm	28 to 37	30.1	Pass
Peak Lateral Spine Acceleration Y		G's	17 to 22	19.1	Pass
Peak Impactor Acceleration		G's	13 to 18	16.5	Pass
Overall Test Results				Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
30.1	18.8	0.0	-3.8



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.1	11.3	-8.9	41.9



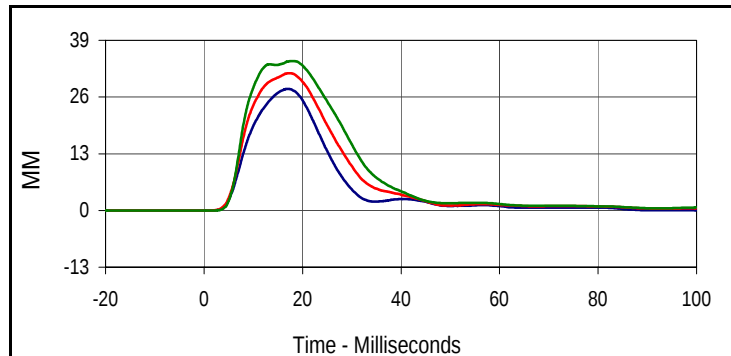
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
16.5	14.9	-0.3	49.9

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 307

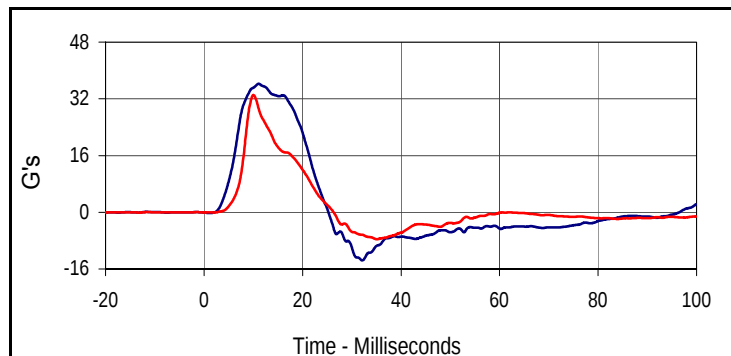
Test Date: 9/16/14
 Test I.D.: 307TWA071



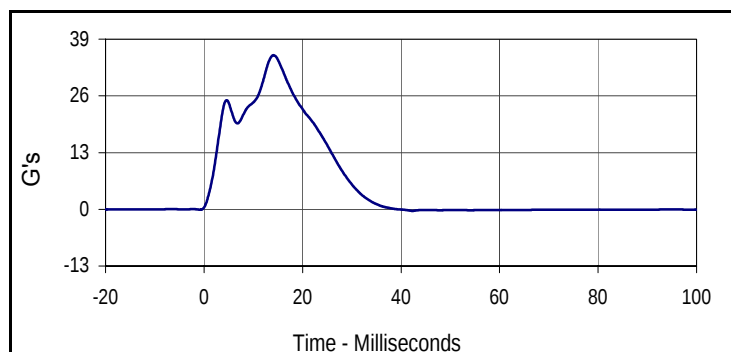
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	590	Pass
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass
	Min		21.4	Pass
Humidity During Soak	Max	10.0 to 70.0	43.1	Pass
	Min		42.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.5	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.71	Pass
Peak Shoulder Deflection	mm	31 to 40	35.1	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.8	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.4	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	34.2	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	36.2	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	33.1	Pass
Peak Impactor Acceleration	G's	30 to 36	35.3	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.8	16.9	0.0	-10.6
Middle Thorax Deflection			
Max	Time	Min	Time
31.4	17.4	0.0	-7.3
Lower Thorax Deflection			
Max	Time	Min	Time
34.2	17.8	0.0	-11.7



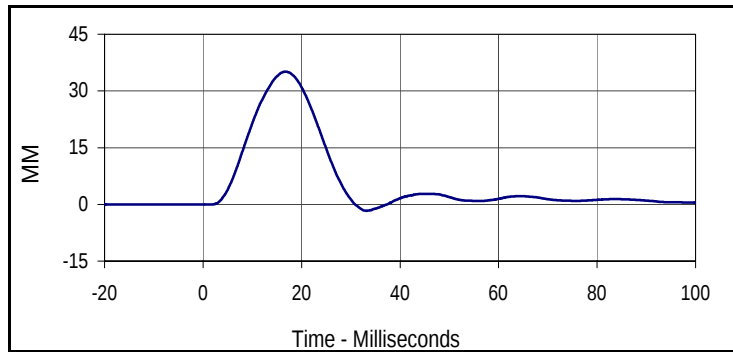
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
36.2	11.1	-13.6	32.1
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
33.1	10.0	-7.6	35.1



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
35.3	14.1	-0.4	42.3

Test Program: SID IIs Thorax with Arm Impact Test
ATD Serial No.: 307

Test Date: 9/16/14
Test I.D.: 307TWA071



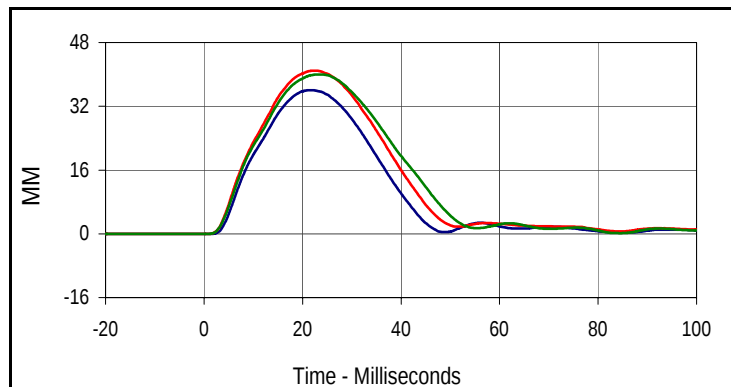
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
35.1	16.7	-1.7	33.2

Test Program: SID IIs Thorax without Arm Impact Test
 ATD Serial No.: 307

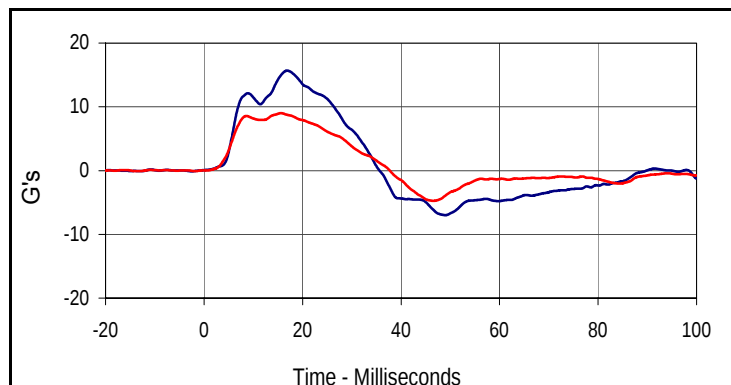
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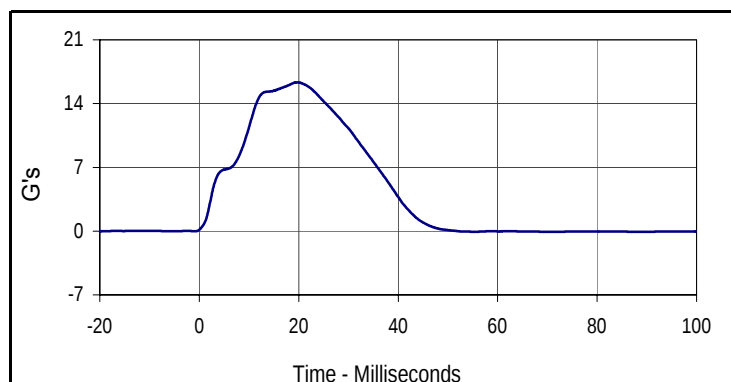
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	640	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.6	Pass
	Min	°C		21.4	Pass
Humidity During Soak	Max	%	10.0 to 70.0	43.1	Pass
	Min	%		42.2	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.6	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	42.4	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.33	Pass
Peak Upper Thorax Rib Deflection		mm	32 to 40	36.0	Pass
Peak Middle Thorax Rib Deflection		mm	39 to 45	40.9	Pass
Peak Lower Thorax Rib Deflection		mm	35 to 43	40.0	Pass
Peak Upper Spine Y Acceleration		G's	13 to 17	15.7	Pass
Peak Lower Spine Y Acceleration		G's	7 to 11	9.0	Pass
Peak Impactor Acceleration		G's	14 to 18	16.3	Pass
Overall Test Results				Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
36.0	21.4	0.0	-18.2
Middle Thorax Deflection			
Max	Time	Min	Time
40.9	22.4	0.0	-0.1
Lower Thorax Deflection			
Max	Time	Min	Time
40.0	23.4	0.0	-19.7



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.7	16.9	-7.0	49.0
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.0	15.6	-4.7	46.6



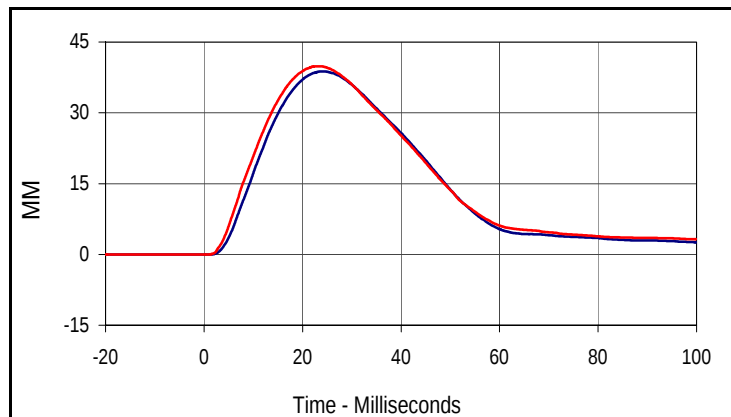
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.3	19.7	-0.1	87.6

Test Program: SID IIs Abdomen Impact Test
 ATD Serial No.: 307

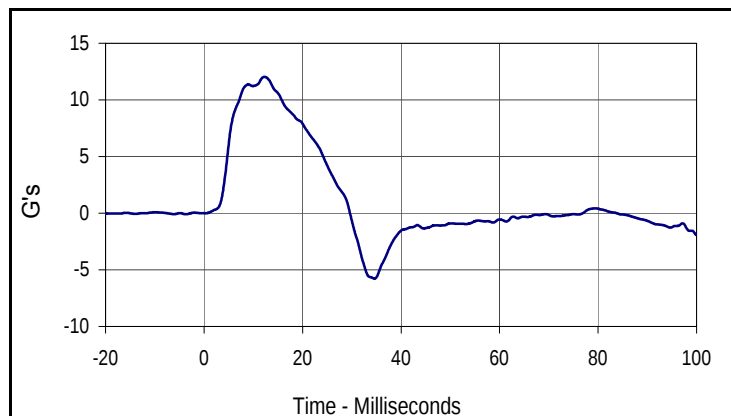
Test Date: 9/16/14
 Test I.D.: 307ABD071



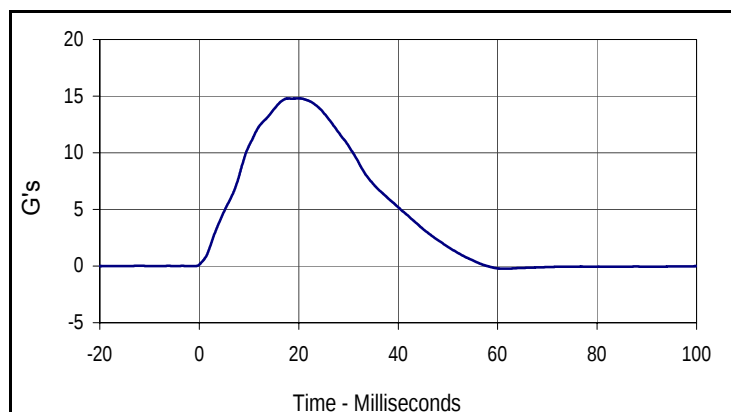
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	675	Pass
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass
	Min		21.4	Pass
Humidity During Soak	Max	10.0 to 70.0	43.1	Pass
	Min		42.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.3	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.35	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	38.8	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	39.9	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.0	Pass
Peak Impactor Acceleration	G's	12 to 16	14.8	Pass
Overall Test Results			Pass	



Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
38.8	24.1	0.0	-1.6
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
39.9	23.2	0.0	-12.1

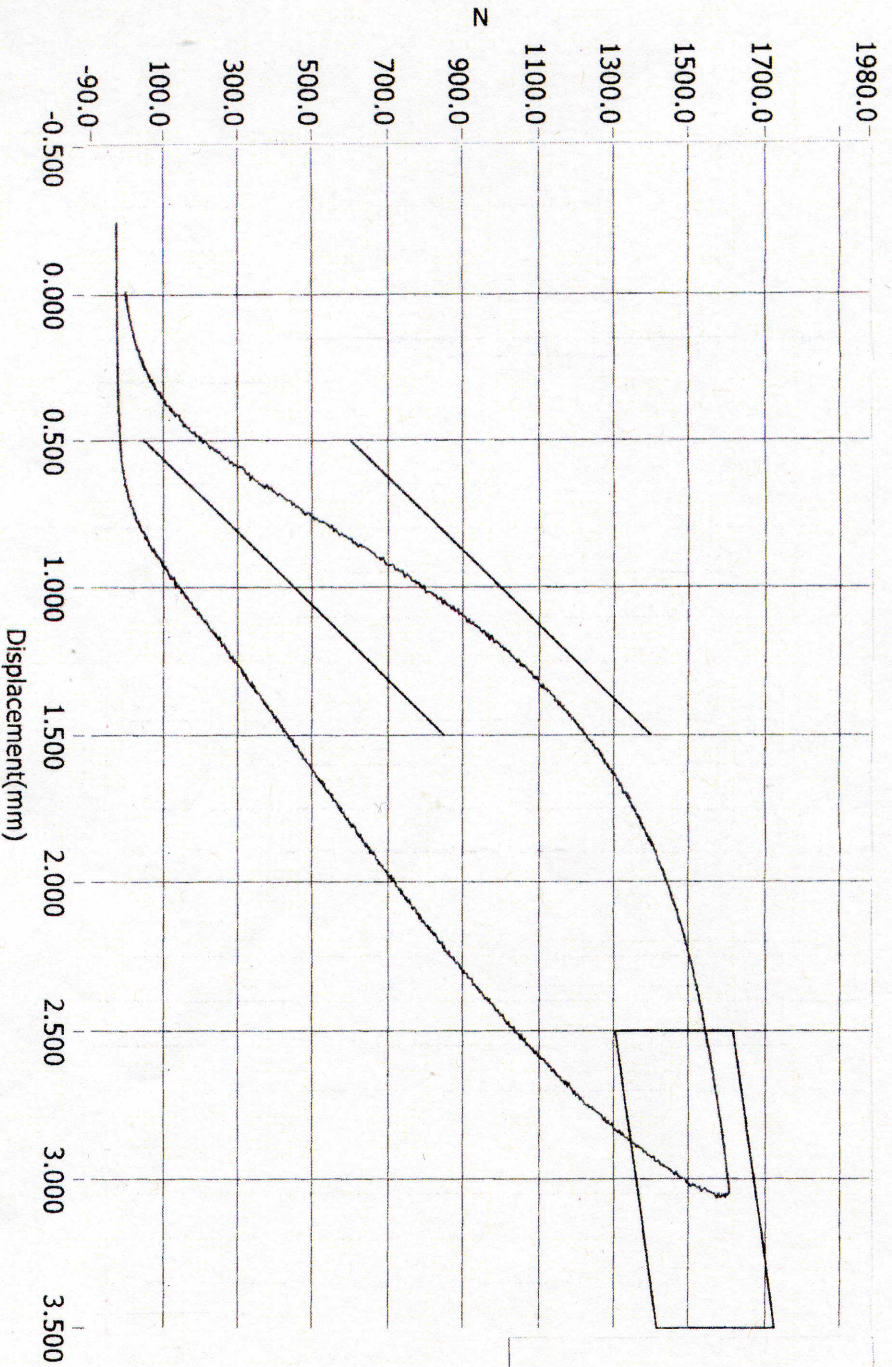


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.0	12.2	-5.8	34.6



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.8	20.0	-0.2	61.3

Resultant Data - SIDIIs Plug Compression



Loading Curve
 Boundary Limit Upper
 Boundary Limit Lower
 Peak Load Upper
 Peak Load Lower
 Peak Defl Upper
 Peak Defl Lower

1604N

ATD Calibration Lab

Test ID

Part Serial Number

Test Date

Test Time

M201455201 POST TEST

Test ID

ATD Serial Number

ATD Type

N/A

SIDIIs

Current Date : 1/23/2013

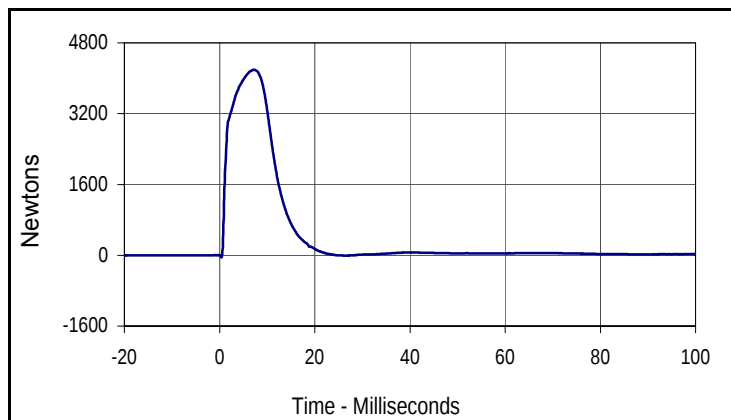
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Test Program: SID IIs Pelvis Acetabulum Impact Test
 ATD Serial No.: 307

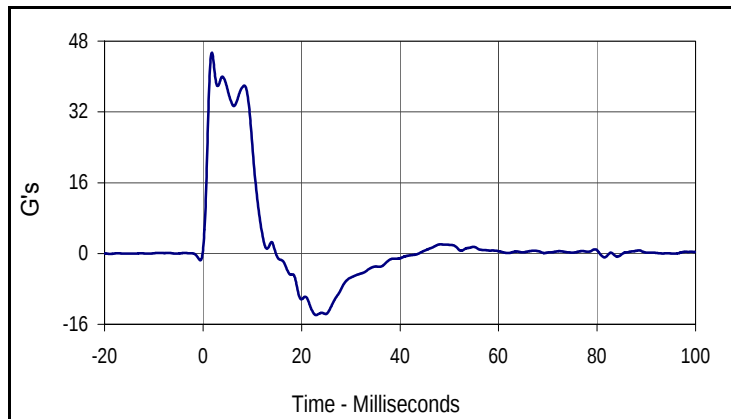
Test Date: 9/16/14
 Test I.D.: 307ACET071



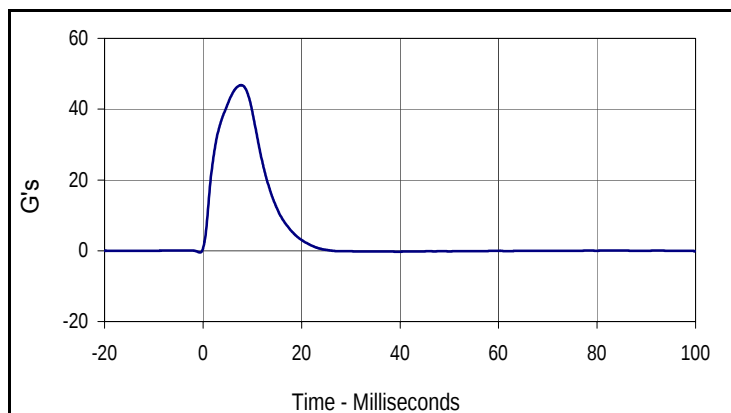
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	720	Pass
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass
	Min		21.4	Pass
Humidity During Soak	Max	10.0 to 70.0	43.1	Pass
	Min		42.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.3	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.63	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	4193.2	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	37.9	Pass
Peak Impactor Acceleration	G's	38 to 47	46.8	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4193.2	7.2	-42.1	0.4



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
45.4	1.8	-13.9	23.0



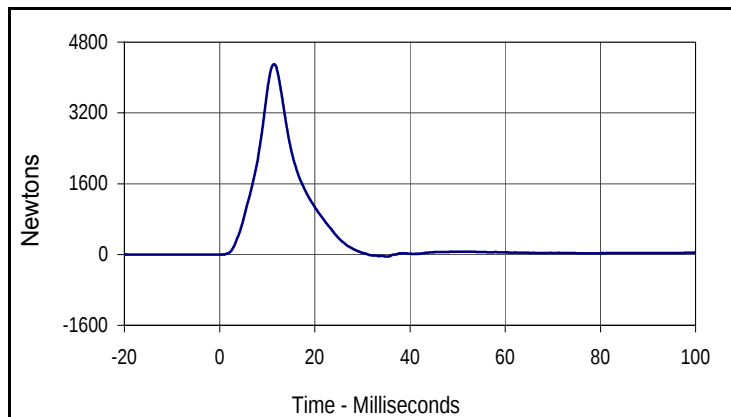
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
46.8	7.7	-0.5	-0.6

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 307

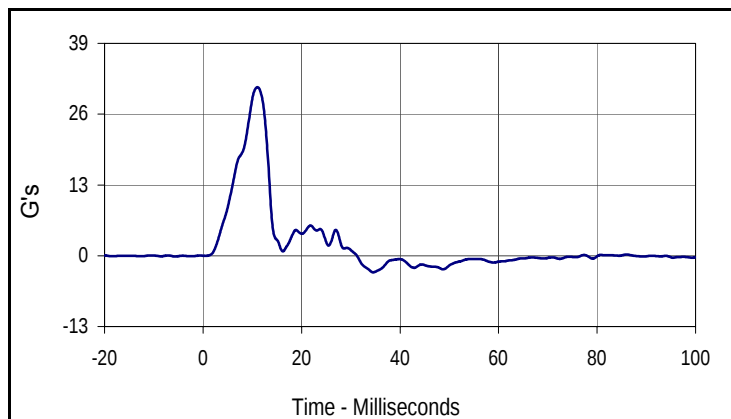
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 Test I.D.: 307PL071



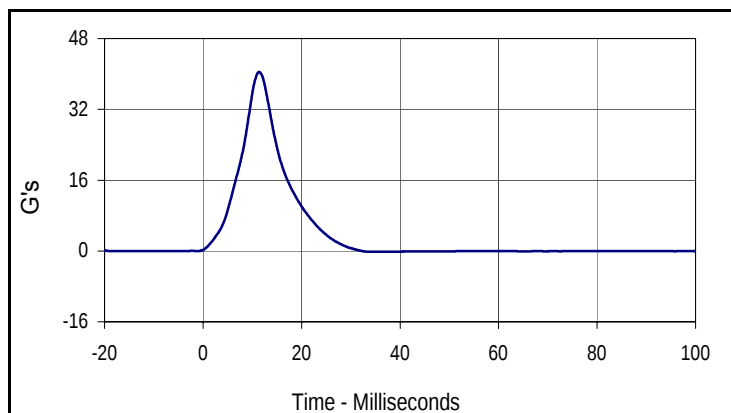
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	790	Pass
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass
	Min		21.4	Pass
Humidity During Soak	Max	10.0 to 70.0	43.1	Pass
	Min		42.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	42.2	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.37	Pass
Peak Iliac Force	Newtons	4100 to 5100	4301.8	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	31.0	Pass
Peak Impactor Acceleration	G's	36 to 45	40.5	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4301.8	11.4	-47.1	34.9



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
31.0	11.0	-3.1	34.6



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
40.5	11.4	-0.2	35.5

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N F037		
			Serial Number	Manufacturer	Calibration
Head Accelerometers	Primary	X	P58858	Endevco	4/9/14
		Y	P58865	Endevco	4/9/14
		Z	P58867	Endevco	4/9/14
	Redundant	X	P58859	Endevco	4/9/14
		Y	P58866	Endevco	4/9/14
		Z	P58873	Endevco	4/9/14
Thorax Rib Displacement Potentiometers	Upper	Y	209	FTSS	4/10/14
	Middle	Y	210	FTSS	4/10/14
	Lower	Y	207	FTSS	4/10/14
Abdomen Load Cells	Forward	Y	1504	Denton	5/1/14
	Middle	Y	1505	Denton	5/1/14
	Rear	Y	1506	Denton	5/1/14
Lower Spine Accelerometers (T12)		X	P16336	Endevco	4/9/14
		Y	P58876	Endevco	4/10/14
		Z	P58877	Endevco	4/10/14
Pubic Symphysis Load Cell		Y	DG6834	Denton	5/3/14

TABLE 2 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N 307		
				Serial Number	Manufacturer	Calibration
Head Accelerometers		Primary	X	P58900	Endevco	8/28/14
			Y	P58902	Endevco	8/28/14
			Z	P58983	Endevco	8/28/14
		Redundant	X	P58901	Endevco	8/28/14
			Y	P58906	Endevco	8/28/14
			Z	P58989	Endevco	8/29/14
Displacement Potentiometers	Thoracic Rib	Upper	Y	1249	FTSS	8/29/14
		Middle	Y	1265	FTSS	8/29/14
		Lower	Y	1277	FTSS	8/29/14
	Abdominal Rib	Upper	Y	1286	FTSS	8/29/14
		Lower	Y	1290	FTSS	8/29/14
Lower Spine Accelerometers (T12)			X	P59007	Endevco	8/27/14
			Y	P59015	Endevco	8/27/14
			Z	P58995	Endevco	8/27/14
Acetabulum Load Cell			Y	260	Denton	5/8/14
Iliac Wing Load Cell			Y	272	Denton	4/4/14
Pelvis Plug (Struck Side)				63382	FTSS	1/28/13
Pelvis Plug (Non-Struck Side)				63053	FTSS	1/19/14

TABLE 3 – Vehicle Instrumentation

Vehicle Instrumentation			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	J36629	Endevco	8/19/14
	Vehicle Center of Gravity	Y	ACCF3	Endevco	8/19/14
	Vehicle Center of Gravity	Z	J24567	Endevco	8/19/14
2	Right Sill at Front Seat	X	A136715	MSI	3/20/14
	Right Sill at Front Seat	Y	A136726	MSI	3/20/14
	Right Sill at Front Seat	Z	A136731	MSI	3/20/14
3	Right Sill at Rear Seat	X	A136706	MSI	3/20/14
	Right Sill at Rear Seat	Y	A136663	MSI	3/20/14
	Right Sill at Rear Seat	Z	A136736	MSI	3/22/14
4	Left Sill at Front Door	Y	A136683	MSI	3/20/14
5	Left Sill at Rear Door	Y	A136672	MSi	3/20/14
6	Left A-Post Lower	Y	A136675	MSI	3/20/14
7	Left A-Post Middle	Y	A136711	MSI	3/20/14
8	Left B-Post Lower	Y	A136710	MSI	3/20/14
9	Left B-Post Middle	Y	A136671	MSI	3/20/14
10	Front Seat Track	Y	A136676	MSI	3/20/14
11	Rear Seat Structure	Y	N/A	N/A	N/A
12	Right Rear Occ. Compartment	Y	A140418	MSI	5/7/14
13	Engine Block	X	A136717	MSI	3/20/14
	Engine Block	Y	A136697	MSI	3/20/14
14	Rear Floorpan Above Axle	X	A135436	MSI	8/20/14
	Rear Floorpan Above Axle	Y	A128037	MSI	8/20/14
	Rear Floorpan Above Axle	Z	AAKE2	Endevco	8/19/14

TABLE 4 – MDB Instrumentation

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	A124098	MSI	3/20/14
MDB Center of Gravity	Y	A128039	MSI	3/20/14
MDB Center of Gravity	Z	A124104	MSI	3/20/14
Left Frame at Rear Axle Centerline	X	A128036	MSI	3/20/14
Left Frame at Rear Axle Centerline	Y	A127957	MSI	3/20/14