

**REPORT NUMBER: SINCAP-KAR-15-034**

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

**FORD MOTOR CO.  
2015 FORD EDGE SEL FWD 5-DOOR MPV**

**NHTSA No: M20150208**

**PREPARED BY:  
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**MAY 5, 2015**

**FINAL REPORT**

**PREPARED FOR:  
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
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NHTSA, Office of Crashworthiness Standards

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### 16. Abstract

A 55/28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2015 Ford Edge SEL FWD 5-door MPV 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 April 21, 2015.

The impact velocity of the Moving Deformable Barrier was 61.30 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 16.7° C. The target vehicle's maximum post-test static crush was 208 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 (HC <sub>36</sub> )		1000	71.2
Maximum Thoracic Rib Deflection	mm	44	14
Total Abdominal Force	N	2500	525
Pubic Symphysis Force	N	6000	1249

Measurement Description	Passenger ATD (SID-IIs)		
	Units	IARV	Result
Head Injury Criteria (HC <sub>36</sub> )		1000	113.5
Resultant Lower Spine Acceleration	g	82	45
Total Pelvic Force (Sum of Acetubular and Iliac Forces)	N	5525	2878
Maximum Thoracic Rib Deflection	mm	38*	11
Maximum Abdominal Rib Deflection	mm	45*	32

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

\* 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 Ford Edge SEL FWD 5-door MPV. 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 Ford Edge SEL FWD 5-door MPV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.30 km/h (38.09 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 April 21, 2015. 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 <sub>36</sub> )		1000	71.2
Maximum Thoracic Rib Deflection	mm	44	14
Combined Abdominal Force	N	2500	525
Pubic Symphysis Force	N	6000	1249

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC <sub>36</sub> )		1000	113.5
Lower Spine (T12) Resultant Acceleration	g	82	45
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2878
Maximum Thoracic Rib Deflection	mm	38*	11
Maximum Abdominal Rib Deflection	mm	45*	32

\*Proposed IARV

Supplemental restraint information is given below:

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

### GENERAL COMMENTS

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

### SECTION 3

#### OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208

Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

#### 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 <sup>2</sup>	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 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

**TEST VEHICLE INFORMATION AND OPTIONS**

NHTSA Number	M20150208
Model Year	2015
Make	Ford
Model	Edge SEL FWD
Body Style	5-Door MPV
VIN	2FMTK3J99FBB08139
Body Color	Ingot Silver Metallic
Odometer Reading (km / mi)	29 / 18
Engine Displacement (L)	2.0
Type / No. of Cylinders	Inline 4
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	Front
Roof Rack	Yes
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes

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

Does Owner's Manual provide instructions to turn off automatic door locks? No

**DATA FROM CERTIFICATION LABEL**

Manufactured By	Ford Motor Co.
Date of Manufacture	Feb-15
Vehicle Type	MPV

GVWR (kg)	2413
GAWR Front (kg)	1297
GAWR Rear (kg)	1134

**VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION**

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity	2	3		5
Capacity Weight (VCW) (kg)				430.0
DSC x 68.04 (kg)				340.2
Cargo Weight (RCLW) (kg)				89.8

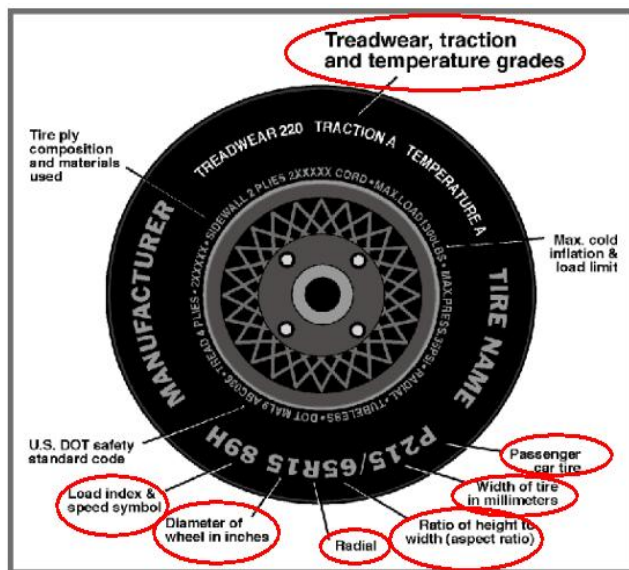
**VEHICLE SEAT TYPE**

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 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15



Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	300	300
Cold Pressure (kPa)	240	240
Recommended Tire Size	P245/60R18	P245/60R18
Tire Size on Vehicle	P245/60R18	P245/60R18
Tire Manufacturer	Michelin	Michelin
Tire Model	Latitude Tour HP	Latitude Tour HP
Treadware	440	440
Traction Grade	A	A
Temperature Grade	A	A
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 1 Polyamide, 2 Steel	2 Polyester, 1 Polyamide, 2 Steel
Load Index/Speed Symbol	104 H	104 H
Tire Material	Polyester, Polyamide, Steel	Polyester, Polyamide, Steel
DOT Safety Code Left	B94A 00AX 0515	B94A 00AX 0515
DOT Safety Code Right	B94A 00AX 0515	B94A 00AX 0515

**DATA SHEET NO. 1 ... (CONTINUED)**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

**TIRE PRESSURES**

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

**MDB TIRE SPECIFICATIONS**

	Units	Requirement	LF	RF	LR	RR
Tire Size		P205/75R15	P205/75R15	P205/75R15	P205/75R15	P205/75R15
Tire Pressure	kPa	200 ± 21	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	553.5	375.5		585.5	473.5		598.5	471.5	
Right	kg	513.0	350.5		514.0	429.5		519.0	417.5	
Ratio	%	59.5%	40.5%	100.0%	54.9%	45.1%	100.0%	55.7%	44.3%	100.0%
Total	kg	1066.5	726.0	1792.5	1099.5	903.0	2002.5	1117.5	889.0	2006.5

**TARGET TEST WEIGHT CALCULATION**

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1792.5	A
Actual Weight of 2 P572 ATDs Used	kg	125.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	89.8	C
Calculated Vehicle Target Wt (TVT <sub>W</sub> )	kg	2007.3	A+B+C

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

**TEST VEHICLE ATTITUDE AND CG**

Measurement Description	Units	Fully Loaded	As Tested	Meets Requirement***
LF	mm	809	809	Yes
RF	mm	823	819	Yes
LR	mm	807	799	Yes
RR	mm	819	809	Yes
Vehicle CG (Aft of Front Axle)	mm	1264	1286	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	55	48	

\*\*\*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 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

**WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW**

Component Description	Weight (kg)
Spare Tire	19.5
Tools	3.0
Rear Trunk Trim	6.0
Ballast / Equipment Added	132.5

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 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

**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	7.9	0.0	3.9
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	3.9	687	Max	716	719	723
			Mid	698	703	708
			Min	679	687	692
Front Passenger Seat	Fixed	636	Max	632	636	641
			Mid	632	636	641
			Min	632	636	641
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 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

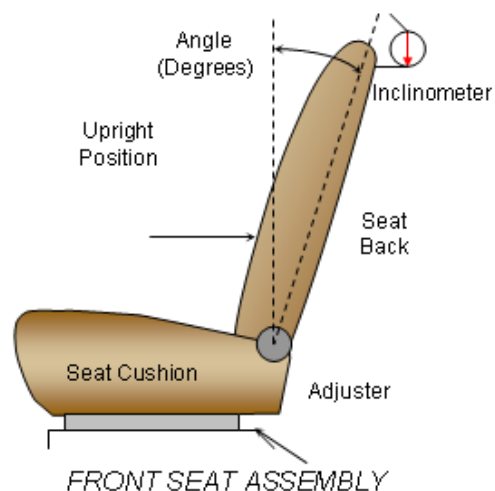
**SEAT FORE/AFT POSITION**

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	256		128	
Front Passenger Seat	240	36	120	17
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 head rest post.



**SEAT BACK POSITION**

Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/Seated Dummy	58.0		2.5	
Front Passenger Seat	50.0		2.5	
Front Center Seat				
Struck Side Rear Seat w/Seated Dummy	18.0	10	4.4	0
Non-Struck Side Rear Seat	18.0	10	4.4	0
Rear Center Seat	Fixed to LR	Fixed to LR	Fixed to LR	Fixed to LR

\*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 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

#### 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

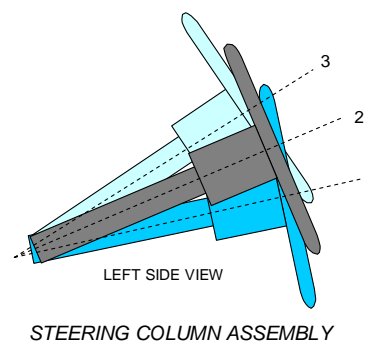
#### HEAD RESTRAINT ADJUSTMENT

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	3 (0-2) Vertical Adjustment 12 (0-11) detents Horizontal	Full Up Full Forward
Rear Seat	2 (0-1) Vertical Adjustment	Full Down

#### 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	24.9	93
Geometric Center - Position 2	27.6	94
Uppermost - Position 3	30.4	134
Telescoping Steering Wheel Travel		41
Test Position	27.6	94

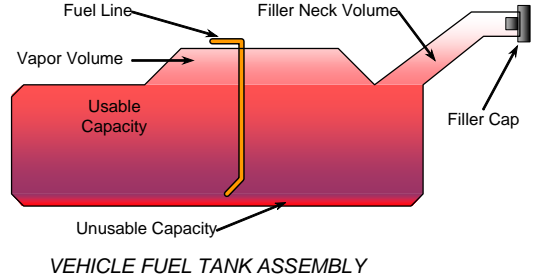
**DATA SHEET NO. 2 ... (CONTINUED)**

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

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

**FUEL PUMP**

The vehicle is equipped with an electric fuel pump. Fuel pump cycles for a brief period when the key is moved to the "ON" position, but does not pump fuel unless engine is running.



**FUEL TANK CAPACITY**

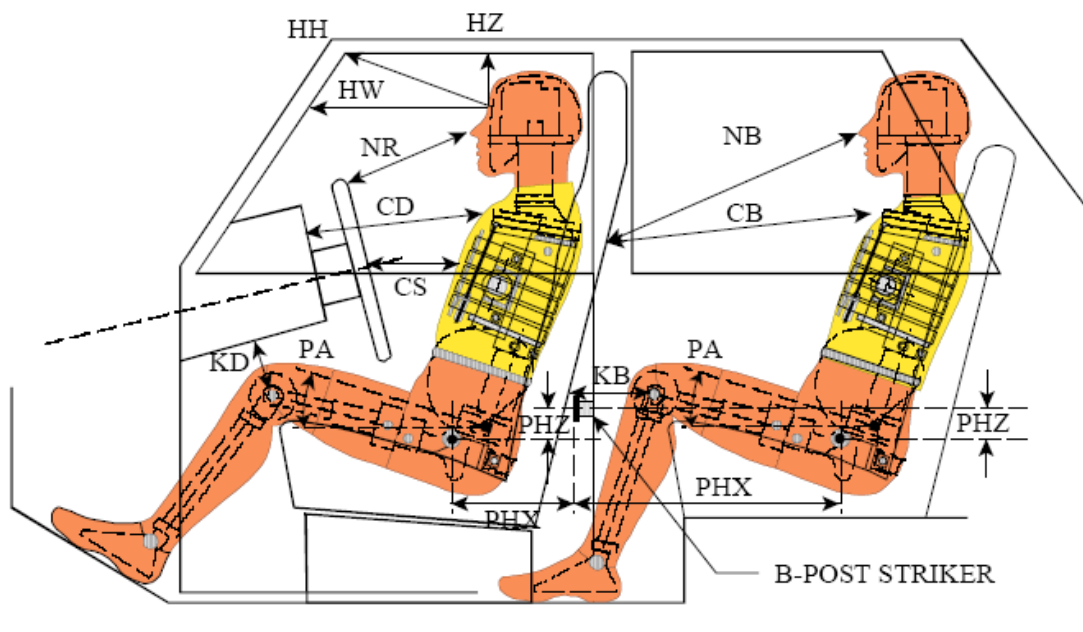
Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	69.65
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	64.76
Actual amount of Solvent Used in Test	64.76
1/3 of Usable Capacity	23.22

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

### DATA SHEET NO. 3

#### DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15



**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

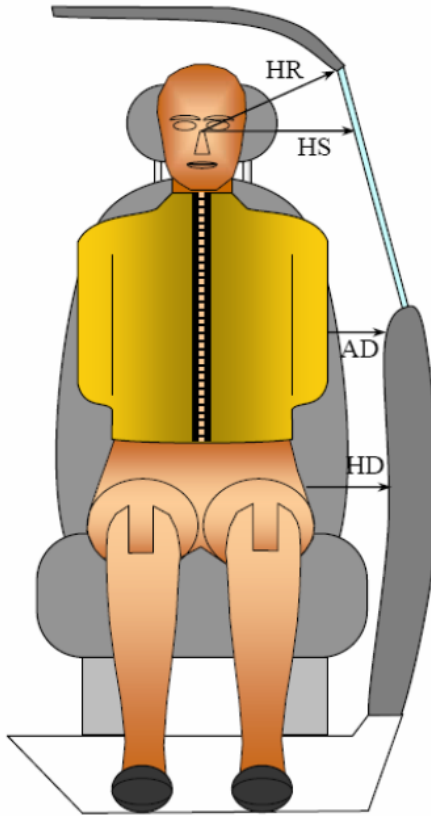
#### DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	344			
HW		Head to Windshield	784			
HZ	HZ	Head to Roof	215		308	
NR	NB	Nose to Rim/Seat Back	452		567	
CD	CB	Chest to Dash/Seat Back	600		577	
CS		Chest to Steering Wheel	335			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	210	21.0	308	15.4
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	214	21.3	314	14.8
PAX°	PAX°	Pelvic Tilt Angle X		16.0		20.8
	PAY°	Pelvic Tilt Angle Y		0.4		0.1
PHX	PHX	Hip Point to Striker (x-axis)	200		297	
PHZ	PHZ	Hip Point to Striker (z-axis)	169		237	

## DATA SHEET NO. 4

### DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15



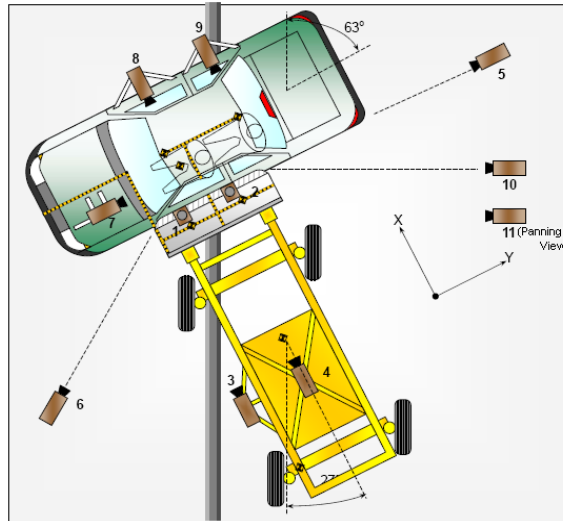
### DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	234	290
HS	Head to Side Window	mm	385	410
AD	Arm to Door	mm	162	183
HD	H-Point to Door	mm	155	176

**DATA SHEET NO. 5**

**CAMERA AND INSTRUMENTATION DATA**

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15



**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)	504	-841	843	12.5	1000
8	Driver Side (On-Board)	1861	634	528	12	1000
9	Passenger Side (On-Board)	1805	1611	667	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	22
MDB Accelerometers	5
<b>Total</b>	<b>59</b>

**DATA SHEET NO. 6**

**TEST VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15



**VEHICLE ACCELEROMETER PRE-TEST LOCATIONS**

Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	1884	0	-405
2	Right Sill at Front Seat	2722	717	-407
3	Right Sill at Rear Seat	1925	722	-407
4	Left Sill at Front Door	2709	770	-263
5	Left Sill at Rear Door	1795	770	-260
6	A-Pillar Lower	3088	-836	-570
7	A-Pillar Middle	3088	-836	-886
8	B-Pillar Lower	2121	-764	-621
9	B-Pillar Middle	2121	-764	-1064
10	Front Seat Track	2274	-210	-477
11	Rear Seat Structure			
12	Right Rear Occupant Compartment	1930	452	-295
13	Engine Block	3920	200	-861
14	Rear Floorpan Above Axle	892	0	-525

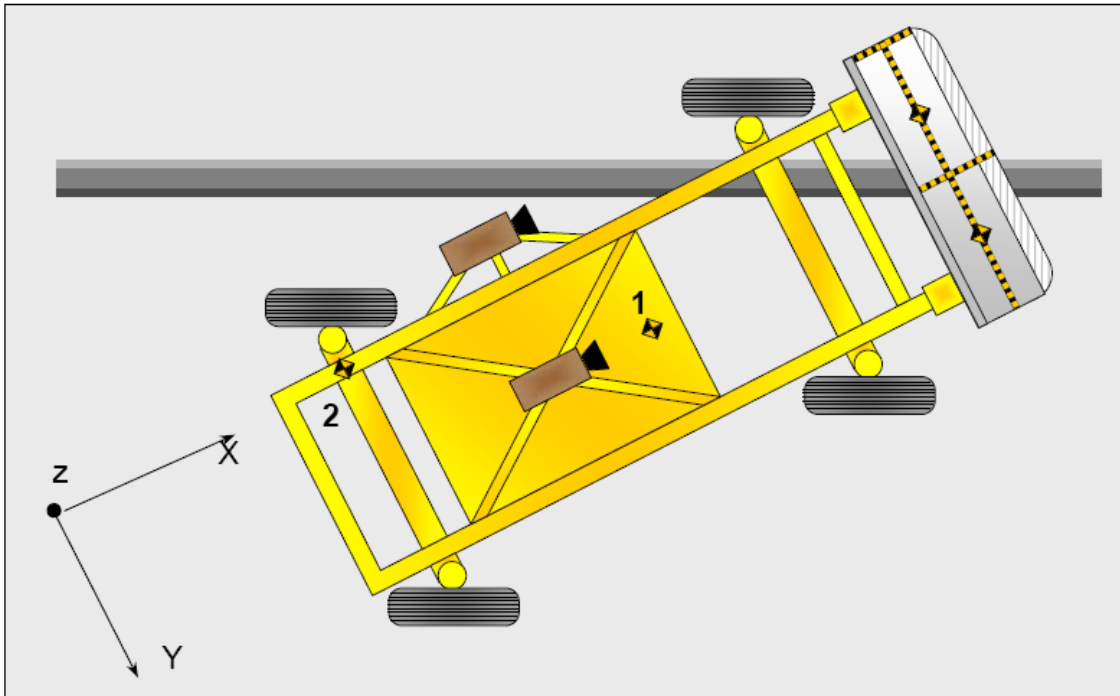
Reference: X – Rear surface of vehicle (+ forward)  
 Y – Vehicle centerline (+ to right)  
 Z – Ground plane (+ down)

**DATA SHEET NO. 7**

**MDB ACCELEROMETER LOCATIONS**

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208

Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15



**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 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

**TEST DUMMY INFORMATION AND CONTACT POINTS**

Dummy Body Part	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	Curtain Airbag	None
Top of Head	Curtain Airbag	Curtain Airbag
Left Side of Head	Curtain Airbag	Curtain Airbag
Back of Head	Curtain Airbag, Side Header, Headrest	Curtain Airbag, Headrest
Left Shoulder	Curtain Airbag, Torso/Pelvis Airbag	Door Panel
Upper Torso	Seat, Torso/Pelvis Airbag	None
Lower Torso	Seat, Torso/Pelvis Airbag	None
Left Hip	Seat, Torso/Pelvis Airbag	Door Panel
Left Knee	Door Panel	Door Panel

**POST-TEST DOOR PERFORMANCE**

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

**DATA SHEET NO. 8 ... (CONTINUED)**

**POST-TEST OBSERVATIONS**

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

**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 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

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

**IMPACT POINT LOCATION DATA**

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2852
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		484
Actual Impact Point (Aft of Front Axle)	mm		484
Horizontal Offset (+ forward / - rearward)	mm	± 50 of Intended Impact Point	0
Vertical Offset (+ down / - up)	mm	± 20 of Intended Impact Point	10

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

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

**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	61.30
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.32
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.0
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	62.5
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.5

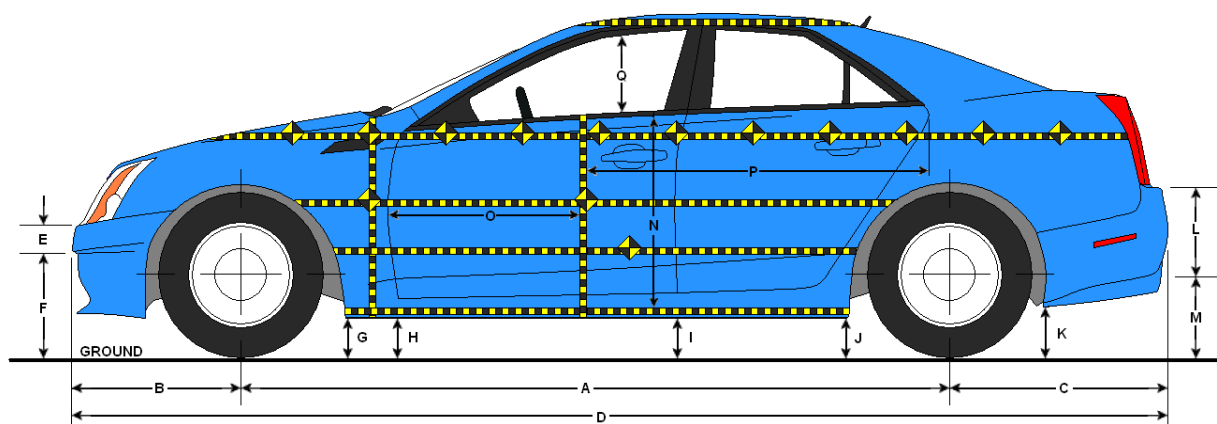
**MAXIMUM STATIC CRUSH OF HONEYCOMB FACE**

Vertical Location			From Centerline		Max. Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	800	Right	282
B	Top of Bumper	533	800	Right	178
C	Mid Level	686	800	Left	139
D	Top of Stack	813	800	Left	155

## DATA SHEET NO. 10

### TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV      NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test      Test Date: 04/21/15



**LEFT SIDE VIEW**

#### VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2852	2853	1
B	Front Axle to FSOV	960	960	0
C	Rear Axle to RSOV	972	971	-1
D	Total Length at Centerline	4784	4783	-1
E	Front Bumper Thickness	95	94	-1
F	Front Bumper Bottom to Ground	544	545	1
G	Sill Height at Front Wheel Well	289	288	-1
H	Sill Height at Front Door Leading Edge	285	283	-2
I	Sill Height at B-Pillar	286	361	75
J1	Sill Height at Rear Wheel Well	289	340	51
J2	Pinch Weld Height at Rear Wheel Well	270	250	-20
K	Sill Height Aft of Rear Wheel Well	351	327	-24
L	Rear Bumper Thickness	202	203	1
M	Rear Bumper Bottom to Ground	481	456	-25
N	Sill Height to Bottom of Front Window Sill	626	599	-27
O	Front Door Leading Edge to Impact CL	824	801	-23
P	Rear Door Trailing Edge to Impact CL	1369	1360	-9
Q	Front Window Opening	482	486	4
R	Right Side Length	3358	3359	1
S	Left Side Length	3358	3353	-5
T	Vehicle Width at B-Pillar	1921	1838	-83

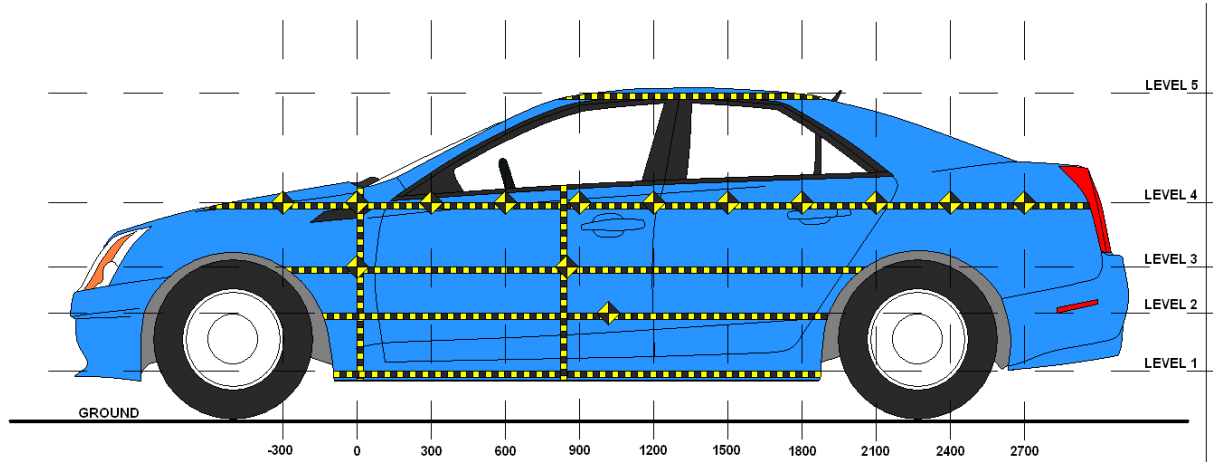
All measurements in mm with tolerance of  $\pm 3$ mm

**DATA SHEET NO. 11**

**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208

Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15



**LEFT SIDE VIEW**

**MAXIMUM EXTERIOR CRUSH MEASUREMENTS**

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	376	59	1050
2	Occupant H-Point	706	203	750
3	Mid-Door	720	208	750
4	Window Sill	1085	52	1200
5	Window Top	1642	7	1050

**DATA SHEET NO. 11 ... (CONTINUED)**

**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208

Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15

**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				641					647					6	
-150		534	534	630			537	537	637			3	3	7	
0	560	544	545	622		561	550	550	630		1	6	5	8	
150	563	554	553	615		567	677	670	607		4	123	117	-8	
300	565	554	552	605		581	698	704	604		16	144	152	-1	
450	565	553	551	597		590	736	743	609		25	183	192	12	
600	565	553	550	590	856	599	751	756	610	861	34	198	206	20	5
750	565	552	550	585	846	606	755	758	596	852	41	203	208	11	6
900	565	553	550	581	846	614	754	752	596	852	49	201	202	15	6
1050	565	554	551	578	846	624	723	724	607	853	59	169	173	29	7
1200	566	556	553	576	848	603	734	729	628	854	37	178	176	52	6
1350	566	558	555	575	849	598	715	725	623	854	32	157	170	48	5
1500	566	561	558	574	847	591	749	755	622	853	25	188	197	48	6
1650	567	561	559	574	846	586	760	763	624	851	19	199	204	50	5
1800	566	557	556	576	846	577	757	759	619	850	11	200	203	43	4
1950		546	547	582	846		650	661	614	850		104	114	32	4
2100				584	851				596	853				12	2
2250				586	862				606	865				20	3
2400				592	883				601	884				9	1
2550				601	896				605	897				4	1
2700				608					610					2	
2850															

DATA SHEET NO. 11 ... (CONTINUED)

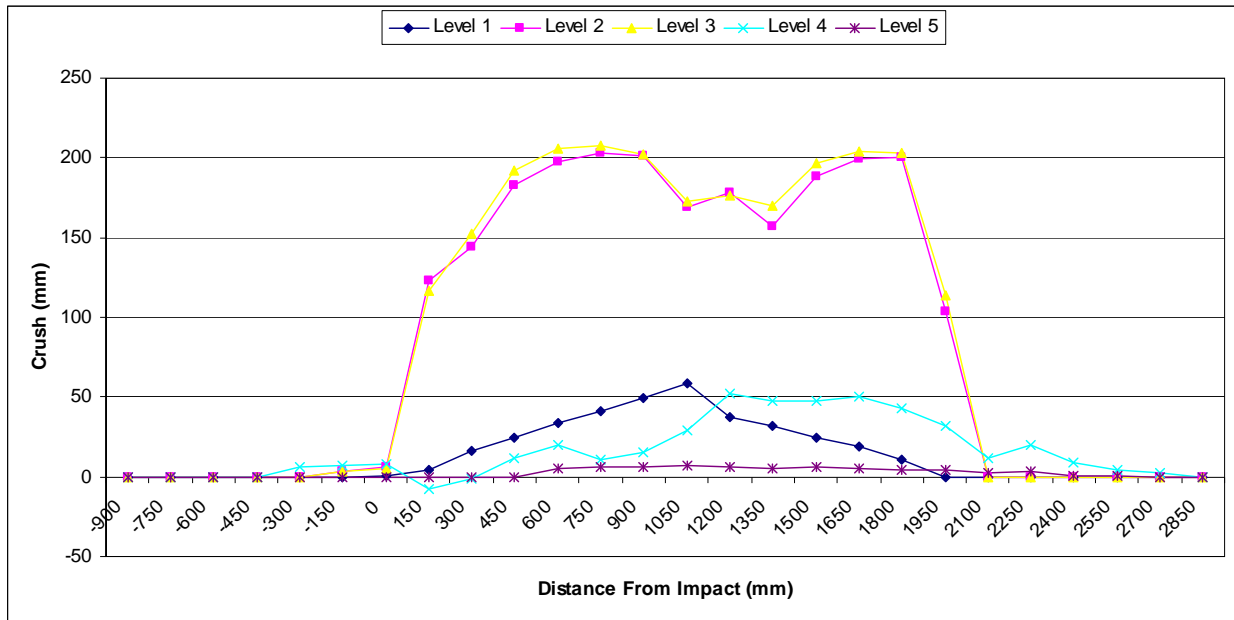
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV

NHTSA No. M20150208

Test Program: NCAP MDB Side Impact Test

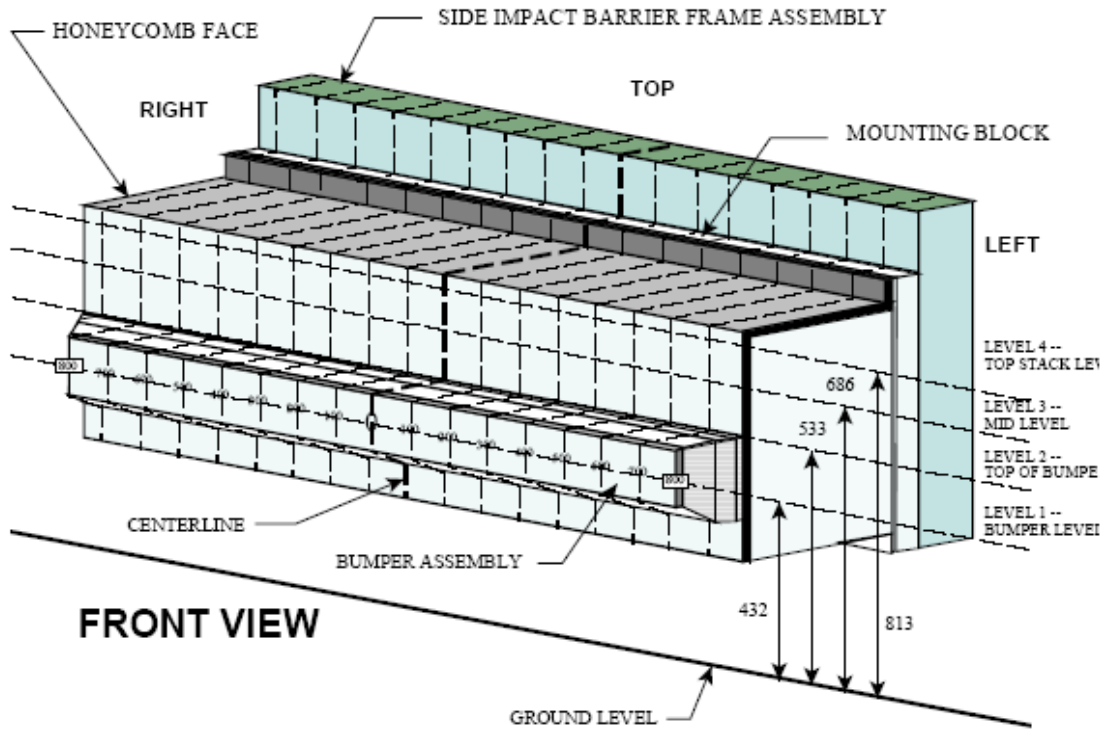
Test Date: 04/21/15



**DATA SHEET NO. 12**

**MDB EXTERIOR STATIC CRUSH MEASUREMENTS**

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15



NOTE: Dimensions are shown in millimeters, mm

**DEFORMABLE BARRIER STATIC CRUSH**

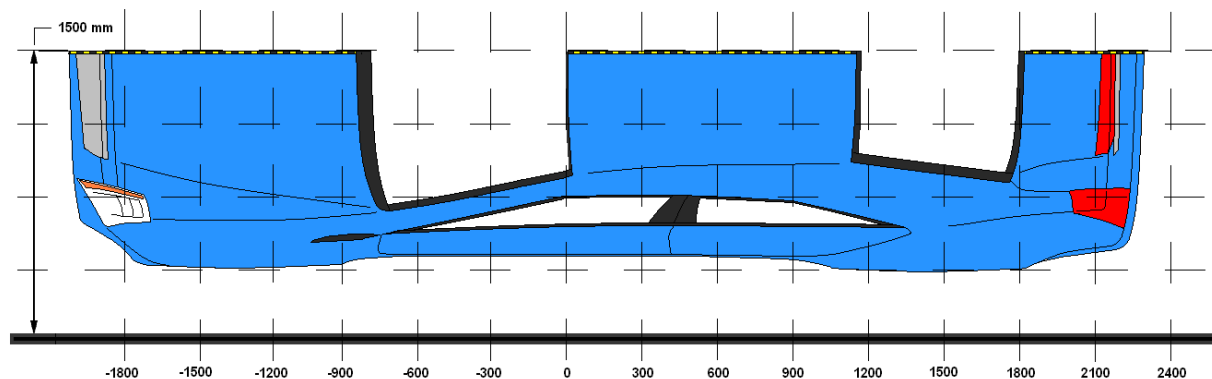
Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	282	256	251	253	254	249	248	249	254	246	244	239	236	234	235	234	256
2	178	175	172	170	170	167	171	166	161	157	149	144	141	141	138	138	146
3	85	80	85	87	88	72	68	77	62	57	59	59	62	69	82	104	139
4	78	70	65	63	66	74	91	116	105	78	66	65	70	78	99	138	155

All dimensions in millimeters.

### DATA SHEET NO. 13

#### VEHICLE AND MDB DAMAGE PROFILE DISTANCES

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV      NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test      Test Date: 04/21/15



#### VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	2850	4	694	696	2
2	2250	5	989	994	5
3	1650	3	613	737	124
4	1050	3	601	705	104
5	450	3	603	721	118
6	-150	3	610	619	9

#### MDB DAMAGE PROFILE DISTANCES

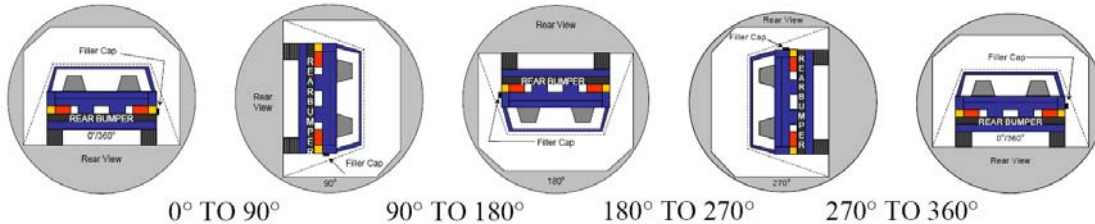
DPD	From MDB Centerline		Level	Crush (mm)
	Distance (mm)	Direction		
1	800	Left	1	256
2	500	Left	1	234
3	200	Left	1	244
4	200	Right	1	248
5	500	Right	1	253
6	800	Right	1	282

**DATA SHEET NO. 14**

**FMVSS NO. 301 STATIC ROLLOVER RESULTS**

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208  
 Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15  
 Temperature at Time of Impact: 16.7 C Test Time: 3:00 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°	83	300	383
90° To 180°	81	300	381
180° To 270°	77	300	377
270° To 360°	83	300	383

**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**

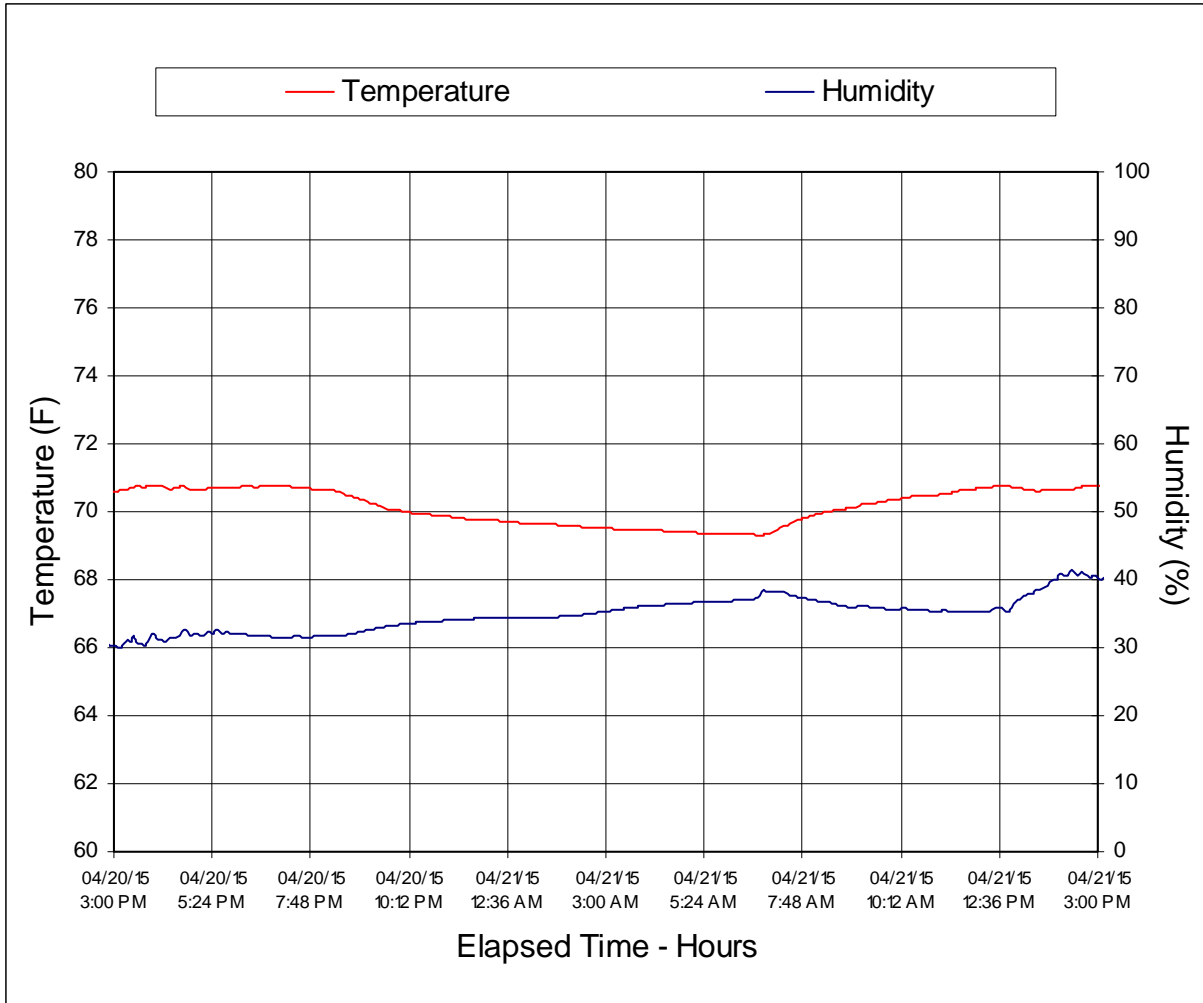
Test Phase	Spillage Location
0° To 90°	N/A
90° To 180°	N/A
180° To 270°	N/A
270° To 360°	N/A

**DATA SHEET NO. 15**

**DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION**

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV NHTSA No. M20150208

Test Program: NCAP MDB Side Impact Test Test Date: 04/21/15



**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

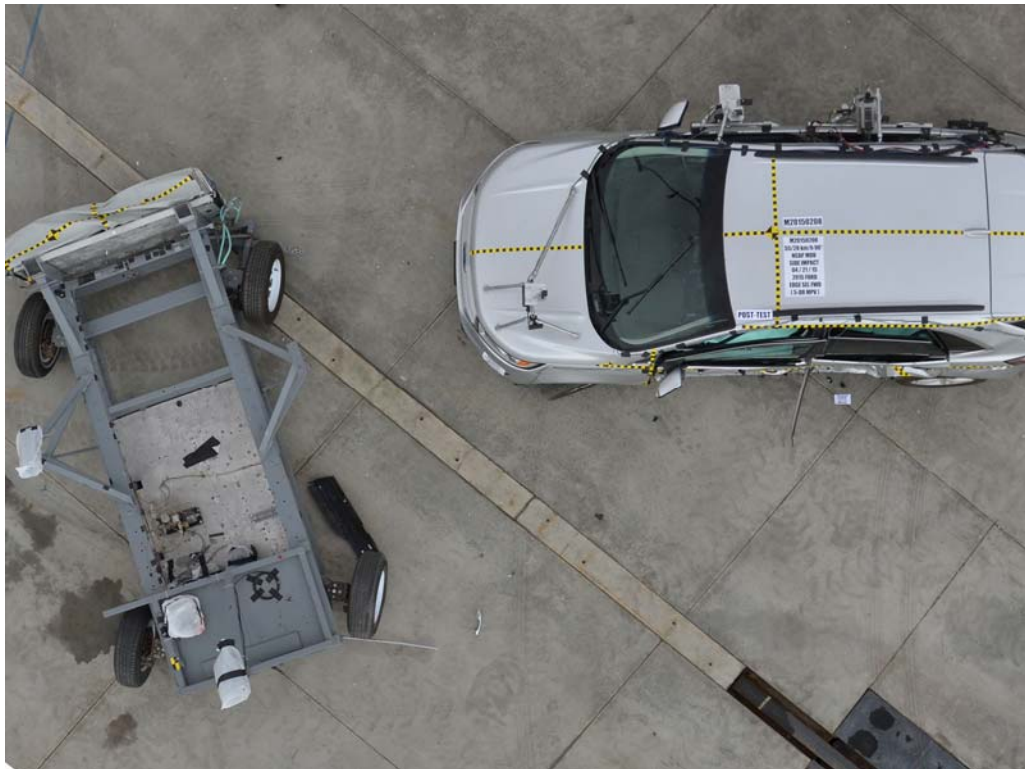


FIGURE 16. Post-Test Overhead View of Test Area



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

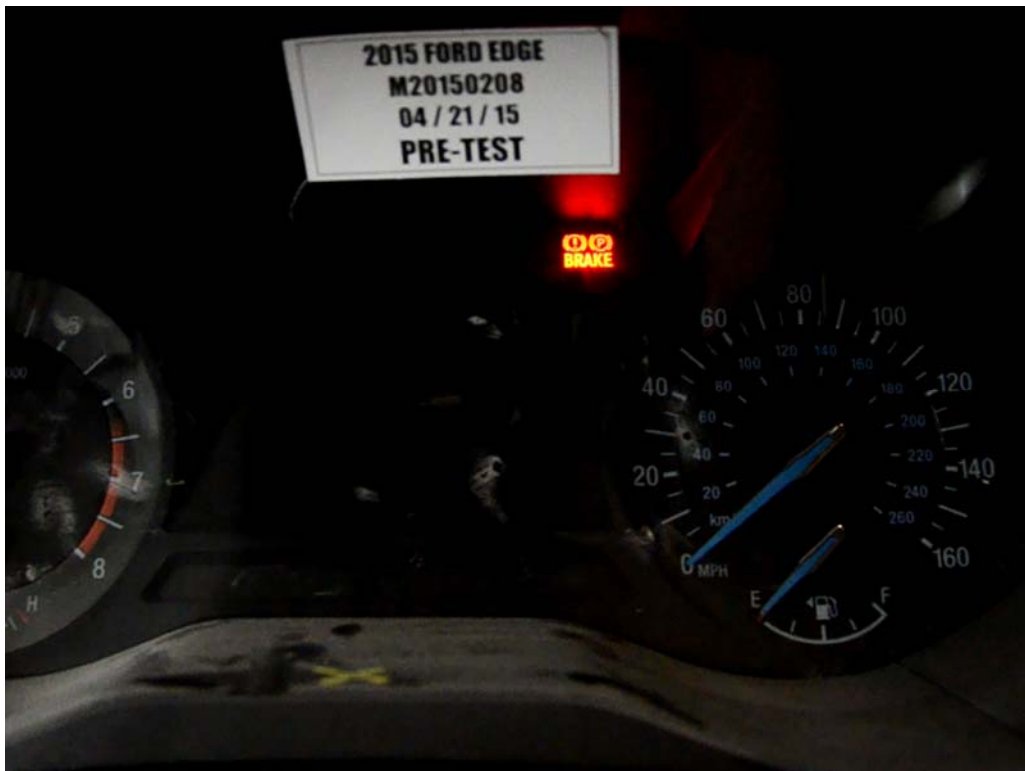


FIGURE 38. Pre-Test View of Parking Brake



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

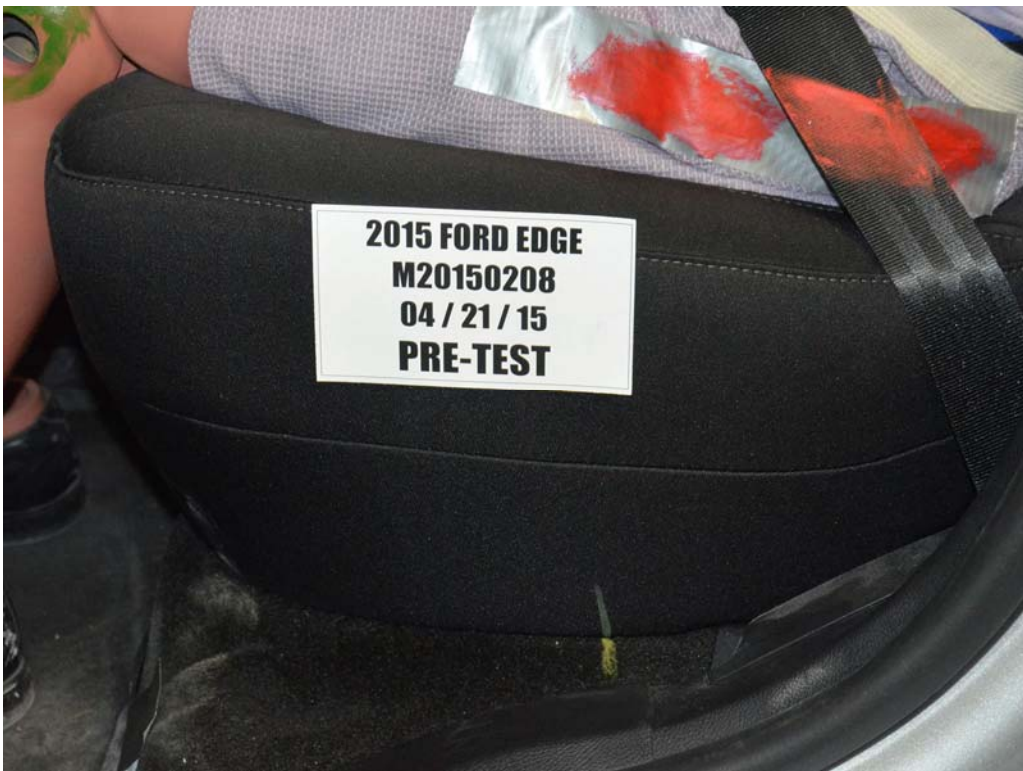


FIGURE 66. Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



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

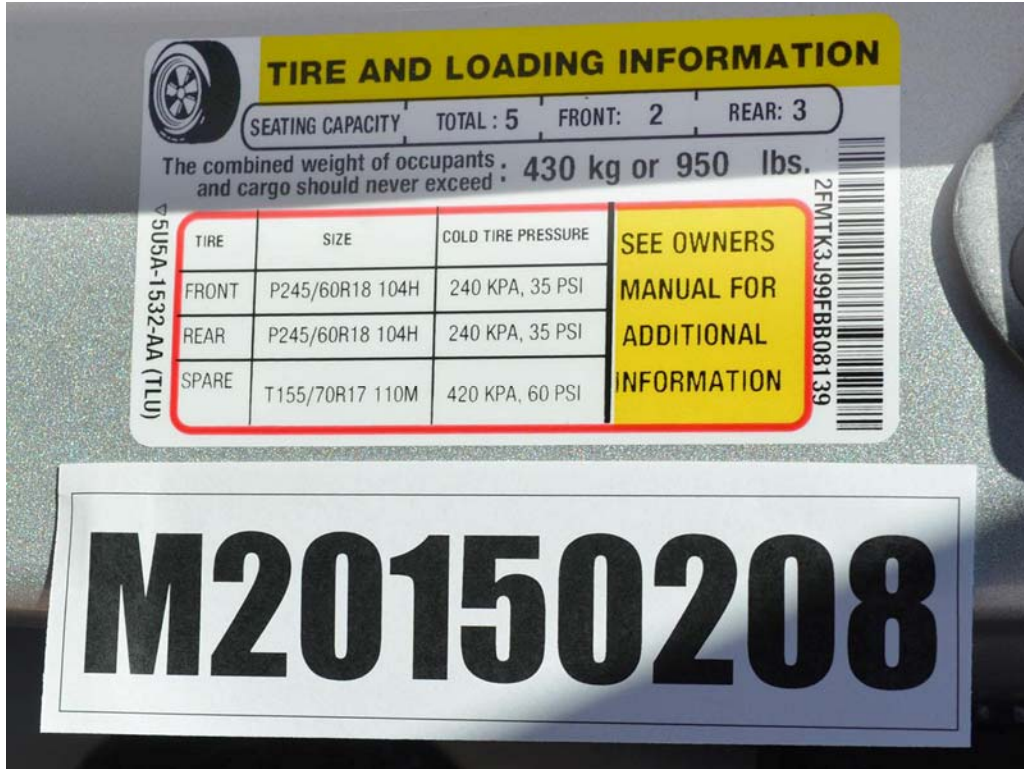


FIGURE 93. Close-Up View of Vehicle's Tire Information Placard or Label



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

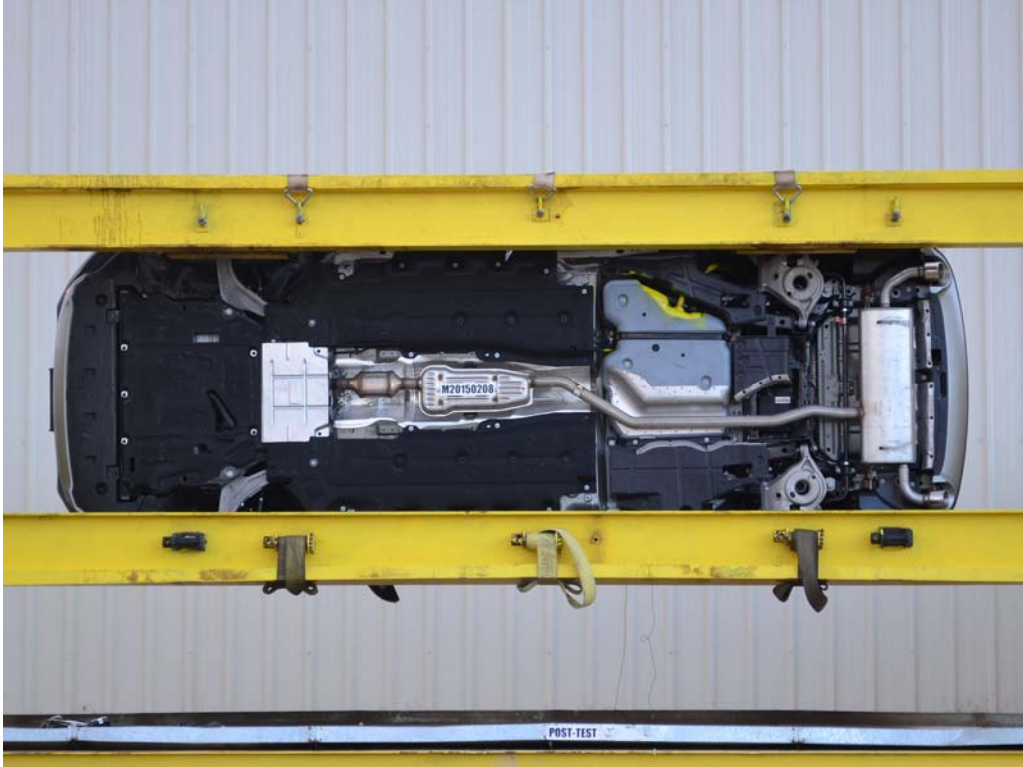


FIGURE 99. FMVSS No. 301 Static Rollover 270 Degrees

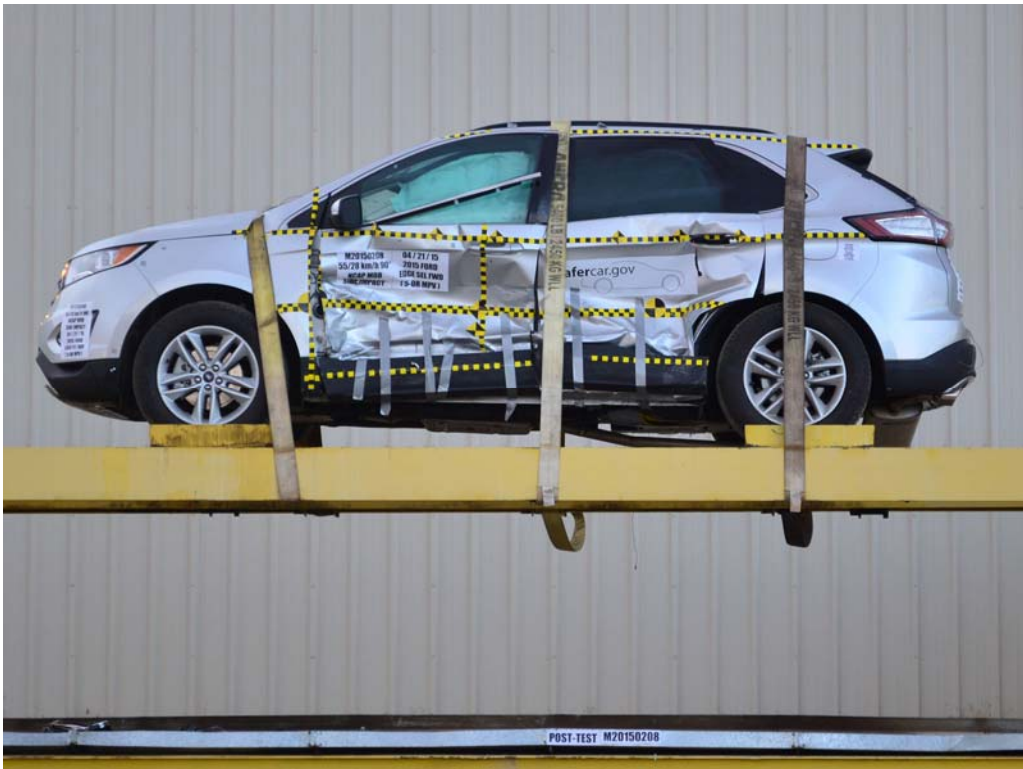


FIGURE 100. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 101. Impact Event

VEHICLE DESCRIPTION		FB B08139		EPA DOT Fuel Economy and Environment		Gasoline Vehicle	
<b>EDGE</b> 2015 FORD EDGE-SEL FWD 2-DRIVE FWD 2.5L I4 ECOBOOST ENGINE 6-SPD AUTOMATIC TRANS		<b>EXTERIOR</b> SILVER METALLIC <b>INTERIOR</b> Ebony Cloth		<b>Fuel Economy</b> <b>24</b> MPG <small>combined city/hwy</small> 20 city 30 highway 4.2 gallons per 100 miles		<b>You save \$0</b> in fuel costs over 5 years compared to the average new vehicle.	
<b>STANDARD EQUIPMENT INCLUDED AT NO EXTRA CHARGE</b>				<b>Annual fuel cost \$2,200</b> <small>Based on 15,000 miles per year at \$3.50 per gallon. MSRP is miles per gallon at similar vehicle. Vehicle emissions and a significant source of climate change and smog.</small>		<b>Fuel Economy &amp; Greenhouse Gas Rating</b> 6 (Best)	
<b>EXTERIOR</b> • 18" PAINTED ALUM WHEELS • BRIGHT BELTLINE MOLDING • DOOR HANDLES - BODY COLOR • DUAL EXHAUST TIPS • GRILLE - PAINTED BRIGHT • INTEGRATED SPOTTER MIRRORS • LED TAIL LAMPS • MIRRORS - PWR/HEATED/FOLD • WELLED 50" APPROACH LAMP • REAR SPOILER, BODY COLOR		<b>INTERIOR</b> • TOUCH UP/DOWN DRESS W/IN • 60/40 EASYFOLD REAR BENCH • A/C W/OOL CLIMATE CONTROL • AUTO DIM REARVIEW MIRROR • CARGO MANAGEMENT SYSTEM • CLOTH SEATING SURFACES • CUPHOLDERS - 8 • DUAL 8.1L/M VANTY MIRRORS • FLOORMATS-1ST AND 2ND ROW • GLOBAL OPEN WINDOWS • LEATHER WRAPPED STR WHEEL • W/CRUISE AND A/C/D CONTROL • SEATS-10-WAY PWR DR & 8-WAY MANUAL PASS • TELESCOPE STR COLUMN		<b>FUNCTIONAL</b> • 6-SPEED 501 W/PADDLE SHIFT • AM/FM SINGLE CD/MP3/ESP/CRUISE CONTROL • SATELLITE CAPLESS FILLER • HILL START ASSIST • INTELLIGENT ACCESS W/PUSH BUTTON START • MEDIA PAD WITH AUX INPUT • MYKEY • POWERPOINTS 4G • REAR VIEW CAMERA • REAR WIPER/WASHER/DEFROST • REVERSE SENSING SYSTEM • SIRIUS SAT 5FC NAV/ASIM • SYNC		<b>SAFETY/SECURITY</b> • ADMINSTRIC WITH RSC • AIRBAGS - DUAL STAGE FRONT • AIRBAGS - FRONT SEAT MOUNTED SIDE IMPACT • AIRBAGS - SAFETY CANOPY • AUTO/LAMP/PAV/BLAMP • LATCH CHILD SAFETY SYSTEM • REAR CROSS TRAFFIC ALERT • SOE PRET CRASH ALERT SYS • TIRE PRESSURE MONITOR SYS	
<b>INCLUDED ON THIS VEHICLE</b> EQUIPMENT GROUP 300A PWR/HEATED A/C SEATS FRONT LICENSE PLATE BRACKET CALIFORNIA/GREEN STATES EMBRS ROOF RACK SIDE Rails		<b>PRICE INFORMATION</b> BASE PRICE \$31,000.00 TOTAL OPTIONS/OTHER 195.00 TOTAL VEHICLE & OPTIONS/OTHER 31,195.00 DESTINATION & DELIVERY 895.00		<b>WARRANTY</b> • 3YR/50,000 BUMPER / BUMPER • 5YR/100,000 POWERTRAIN • 5YR/100,000 ROADSIDE ASSIST		<b>GOVERNMENT 5-STAR SAFETY RATINGS</b> <b>Overall Vehicle Score To Be Rated</b> <small>Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.</small> <b>Frontal Crash To Be Rated</b> <small>Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.</small> <b>Side Crash To Be Rated</b> <small>Based on the risk of injury in a side impact.</small> <b>Rollover To Be Rated</b> <small>Based on the risk of rollover in a single-vehicle crash.</small> Star ratings range from 1 to 5 stars (*****), with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA). www.safercar.gov or 1-888-327-4236	
<b>BUY TO</b> Place Ford Inc P.O. BOX 380 Mt Airy MD 21094		<b>DEALER NO.</b> 27C 419		<b>TOTAL MSRP</b> \$32,590.00		<b>Go Further</b>	
<b>DEALER INFO</b> 27C 419 CM60 OAKVILLE		<b>FINAL ASSEMBLY PLANT</b> OAKVILLE		<small>This label is affixed pursuant to the Federal Automobile Information Disclosure Act, Clean Air, License, and Title Fees, State and Local taxes are not included. Dealer installed options or accessories are not included unless listed above.</small>		Scan this code to experience the vehicle or text #FFB08139 to 48008 or visit ford.com/whichever	
<b>SHIP TO/ORDER</b> CONVOY		<b>METHOD OF TRANSFER</b> 27-Z400 OUT 2		<b>ITEM #</b> FB181 N RB 2X 820 000481 02 16 15		Ford EPA's the only extended service plan honored at every Ford dealership in the U.S. and Canada. See your dealer for additional details or visit www.FordDirect.com for more information. Choose the vehicle you want. Whether you decide to lease or finance, you'll find the choice that's right for you. See your Ford Dealer for details or visit www.FordDirect.com	

FIGURE 102. Monroney Label

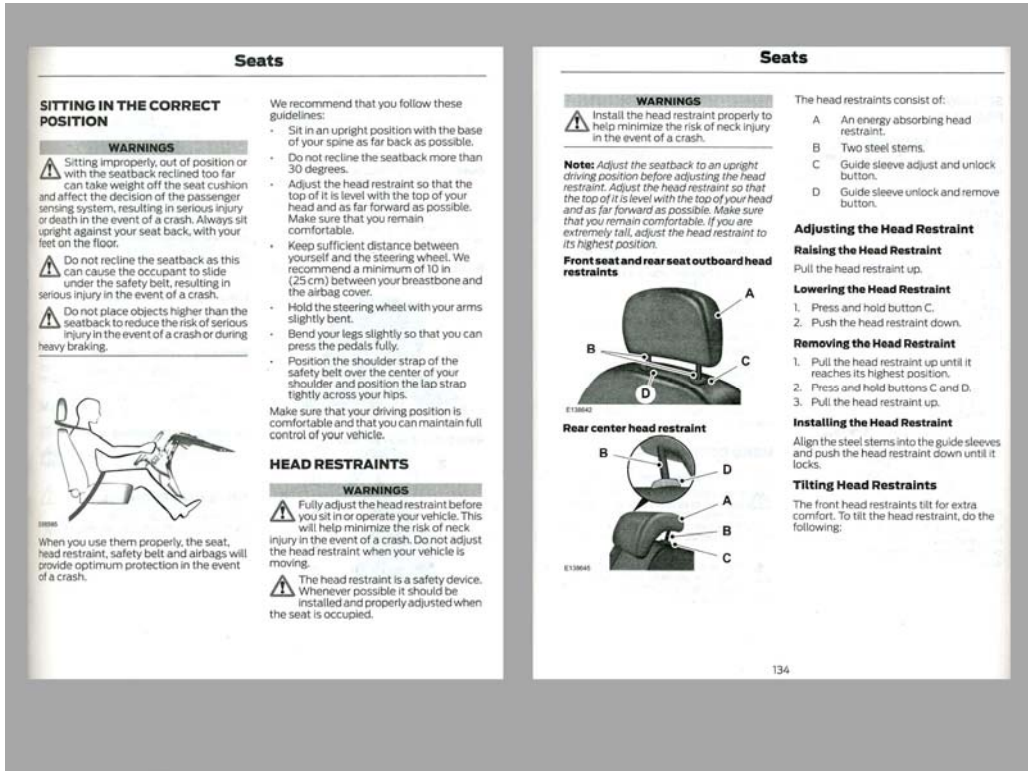


FIGURE 103. Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

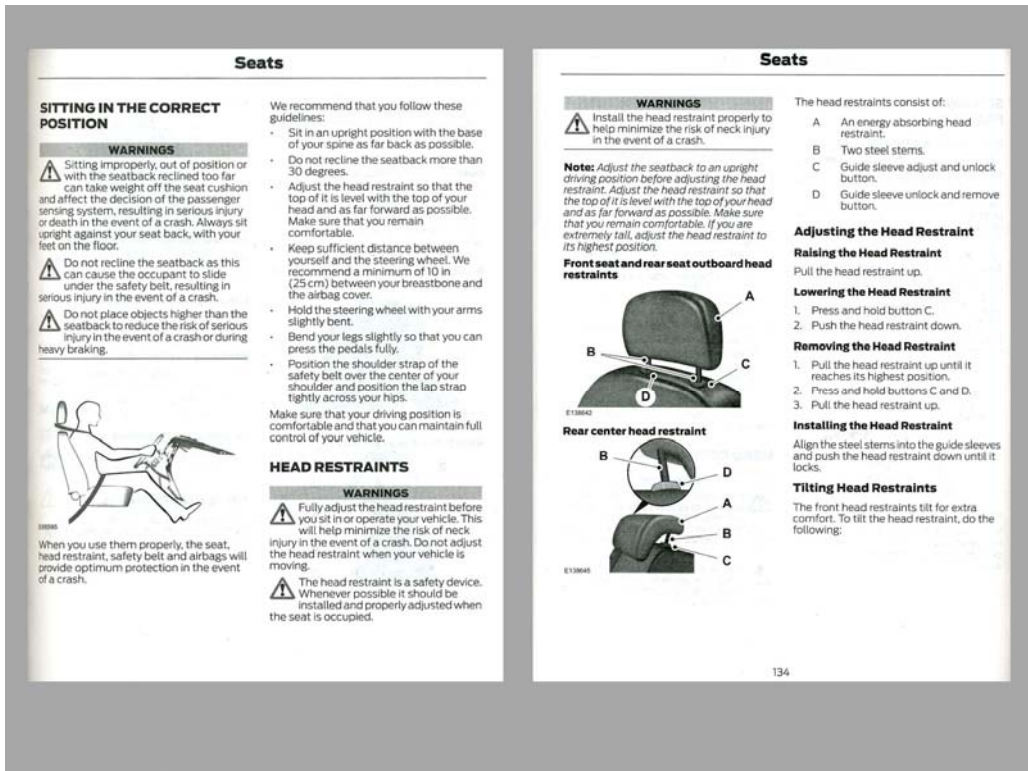


FIGURE 104. Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

**APPENDIX B**  
**DUMMY RESPONSE DATA**

## TABLE OF DATA PLOTS

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

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

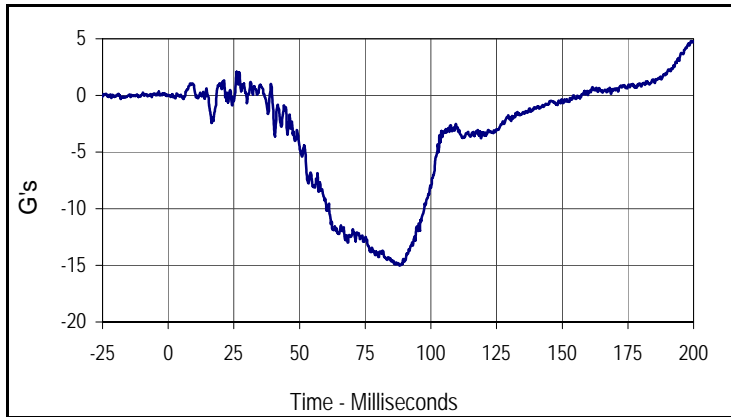
MDB Rear Acceleration (Y)

Left MDB Contact Switch

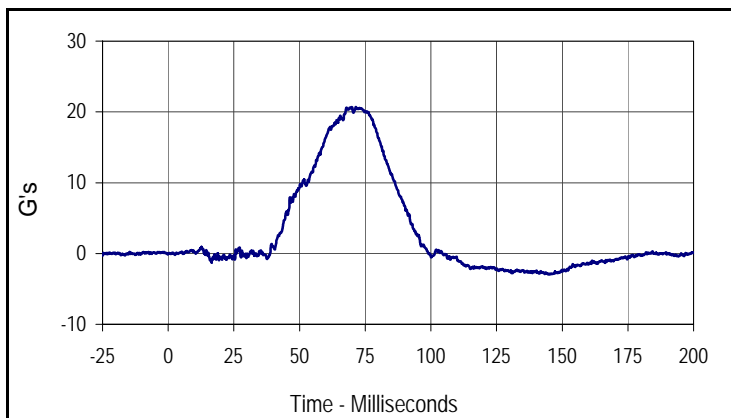
Right MDB Contact Switch

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV  
 Test Program: NCAP MDB Side Impact Test

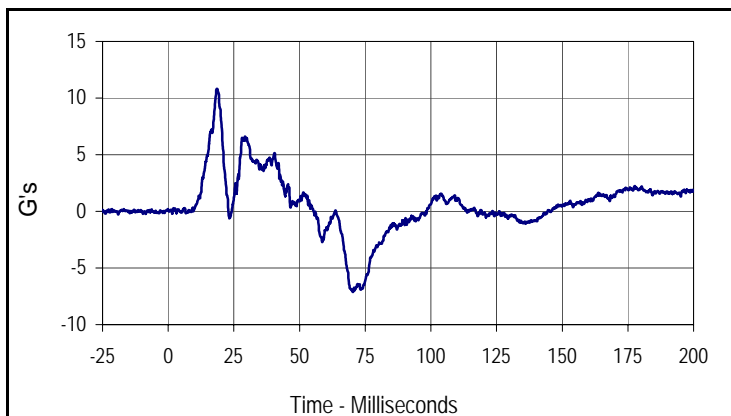
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 Test Date: 4/21/15



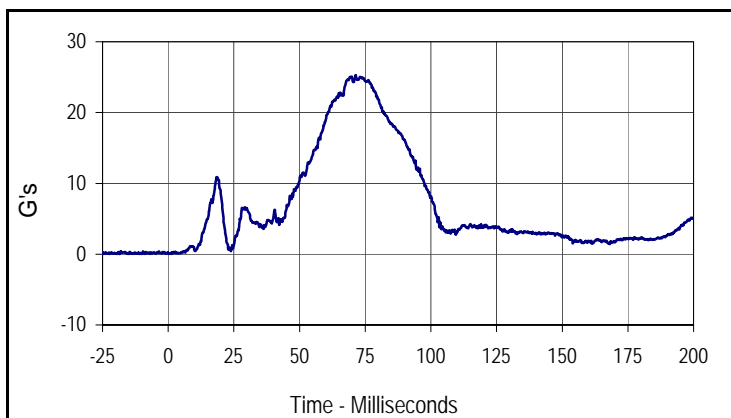
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Driver Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
4.8	199.1	-15.0	88.1



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
20.7	69.9	-3.0	144.6



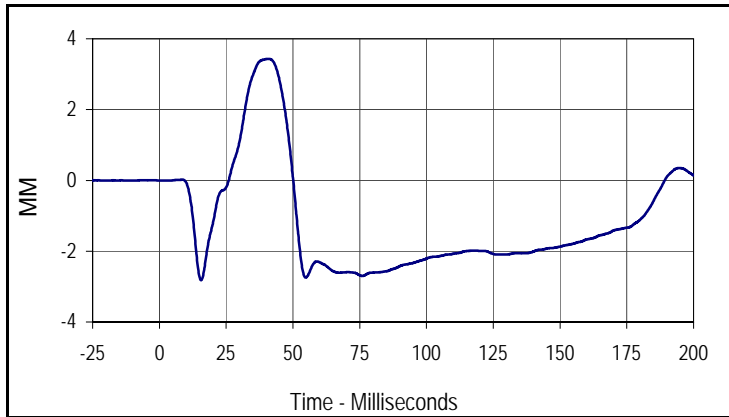
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
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Max	Time	Min	Time
10.8	18.6	-7.1	70.4



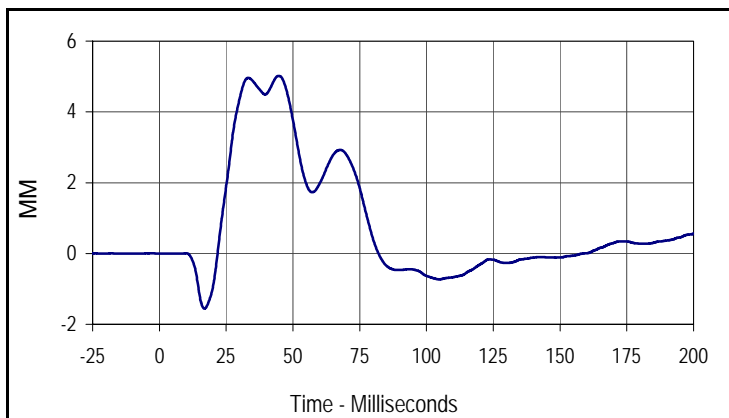
Curve Description			
Driver Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
25.2	71.4	0.0	0.2

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV  
 Test Program: NCAP MDB Side Impact Test

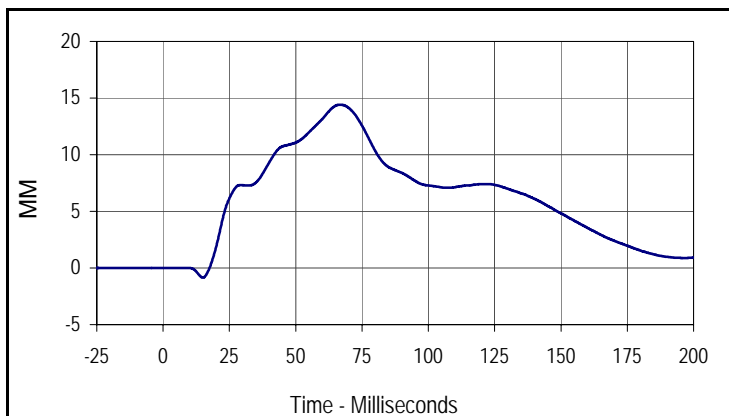
NHTSA No.: M20150208  
 Test Date: 4/21/15



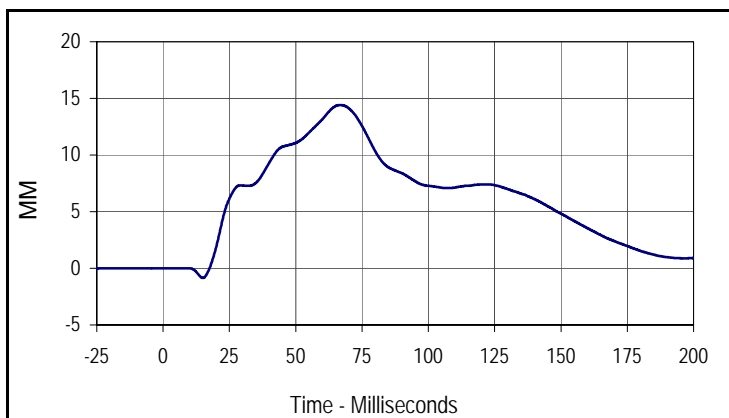
Curve Description			
Driver Upper Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
005	FIL	180	MM
Max	Time	Min	Time
3.4	40.8	-2.8	15.6



Curve Description			
Driver Middle Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
006	FIL	180	MM
Max	Time	Min	Time
5.0	44.7	-1.6	16.9



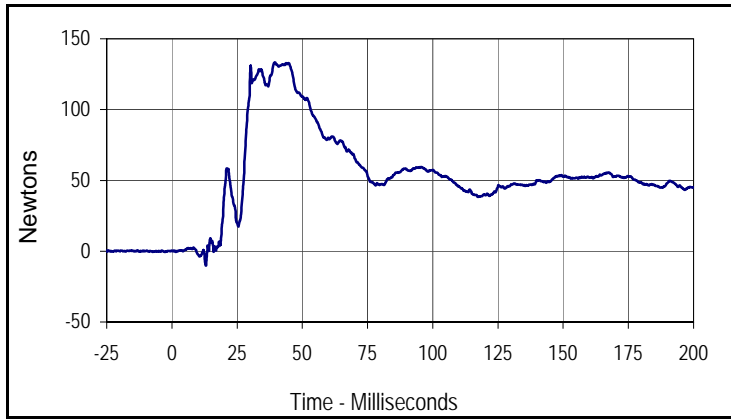
Curve Description			
Driver Lower Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
007	FIL	180	MM
Max	Time	Min	Time
14.4	66.7	-0.9	15.0



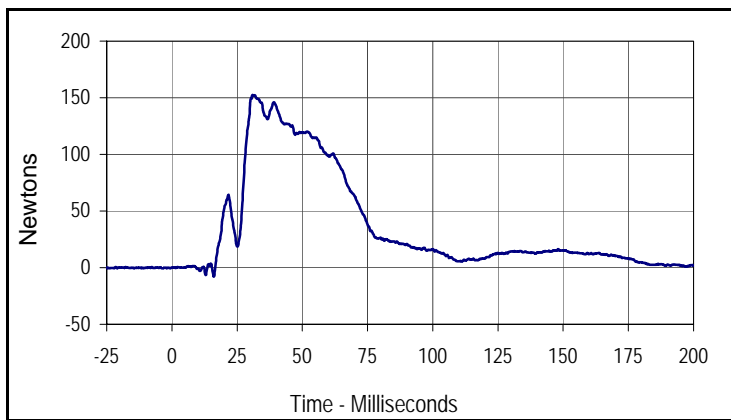
Curve Description			
Driver Thorax Rib Deflection Maximum			
Plot No.	Type	SAE Class	Units
010	FIL	180	MM
Max	Time	Min	Time
14.4	66.7	-0.9	15.0

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV  
 Test Program: NCAP MDB Side Impact Test

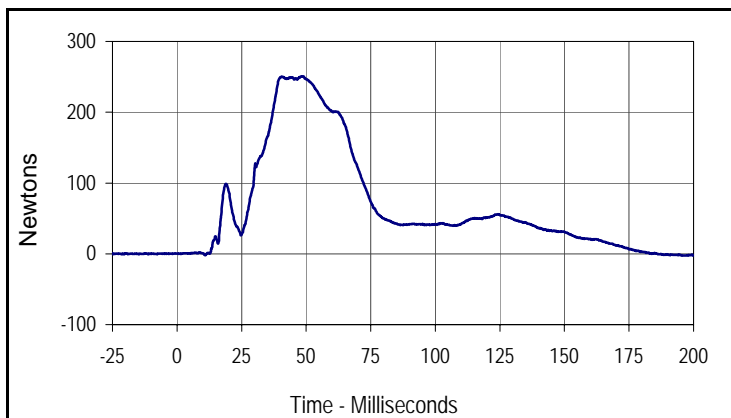
NHTSA No.: M20150208  
 Test Date: 4/21/15



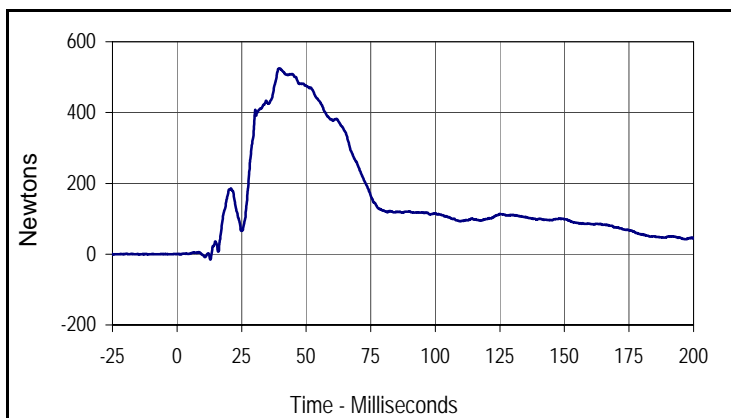
Curve Description			
Driver Anterior Abdominal Force Y			
Plot No.	Type	SAE Class	Units
008	FIL	600	Newtons
Max	Time	Min	Time
133.2	39.5	-10.2	13.0



Curve Description			
Driver Middle Abdominal Force Y			
Plot No.	Type	SAE Class	Units
009	FIL	600	Newtons
Max	Time	Min	Time
152.6	30.9	-7.9	16.0



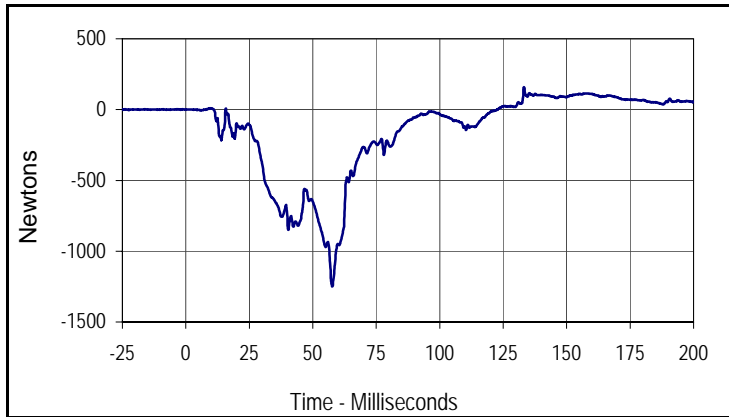
Curve Description			
Driver Posterior Abdominal Force Y			
Plot No.	Type	SAE Class	Units
011	FIL	600	Newtons
Max	Time	Min	Time
250.8	48.9	-2.6	195.6



Curve Description			
Driver Total Abdominal Force			
Plot No.	Type	SAE Class	Units
012	SUM	600	Newtons
Max	Time	Min	Time
524.9	39.5	-15.2	12.9

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV  
 Test Program: NCAP MDB Side Impact Test

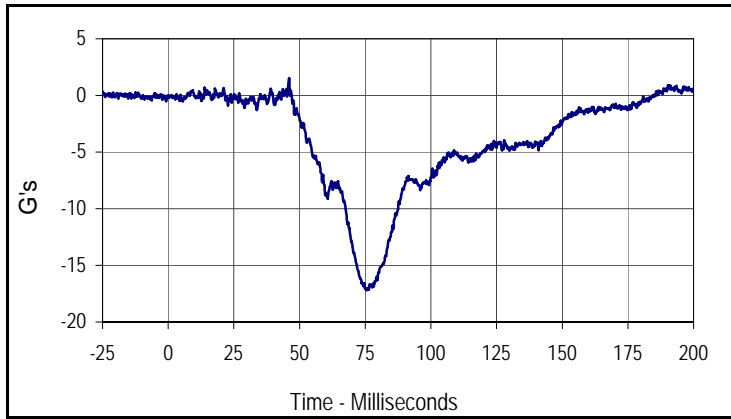
NHTSA No.: M20150208  
 Test Date: 4/21/15



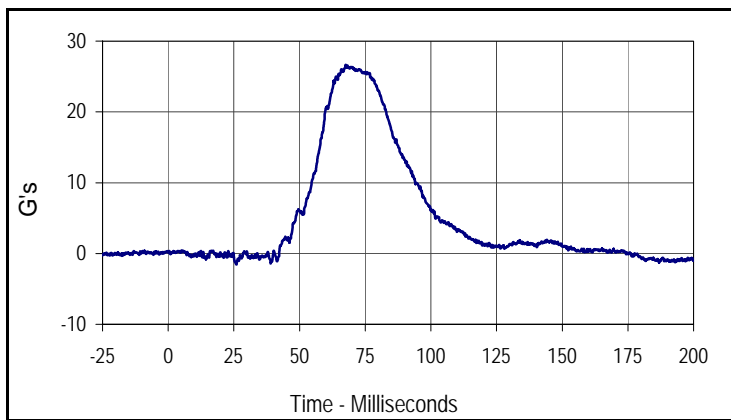
Curve Description			
Driver Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
013	FIL	600	Newtons
Max	Time	Min	Time
158.0	133.2	-1249.2	57.6

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV  
 Test Program: NCAP MDB Side Impact Test

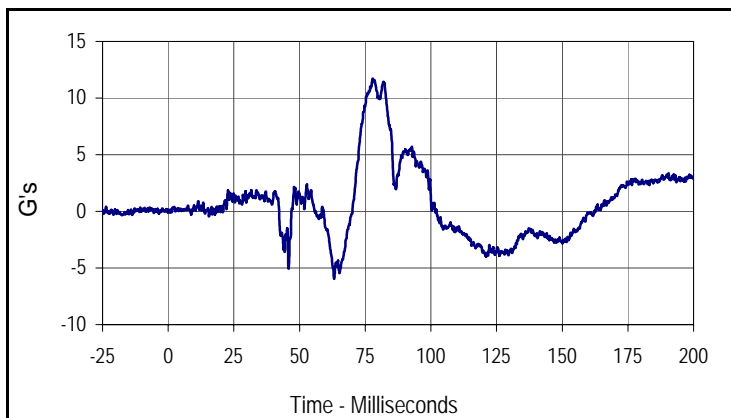
NHTSA No.: M20150208  
 Test Date: 4/21/15



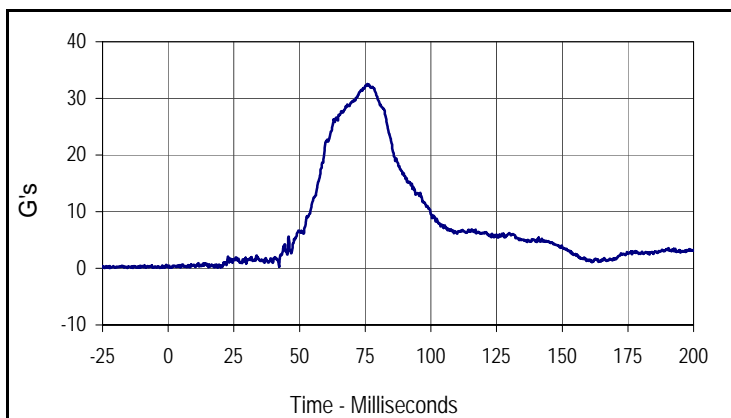
Curve Description			
Passenger Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
014	FIL	1000	G's
Max	Time	Min	Time
1.5	46.1	-17.2	75.5



Curve Description			
Passenger Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
015	FIL	1000	G's
Max	Time	Min	Time
26.6	67.6	-1.6	25.9



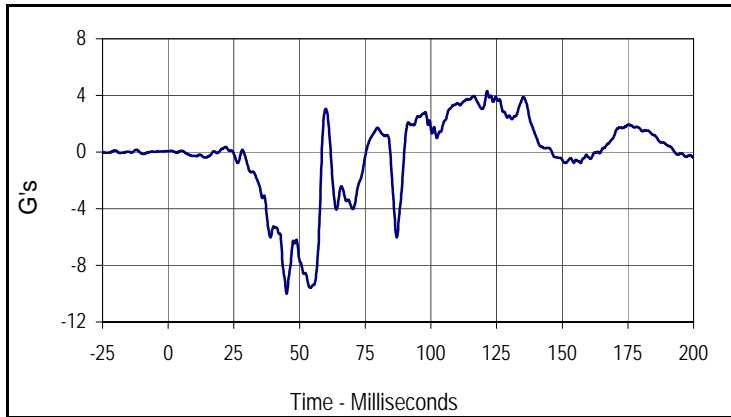
Curve Description			
Passenger Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
016	FIL	1000	G's
Max	Time	Min	Time
11.7	77.8	-6.0	63.2



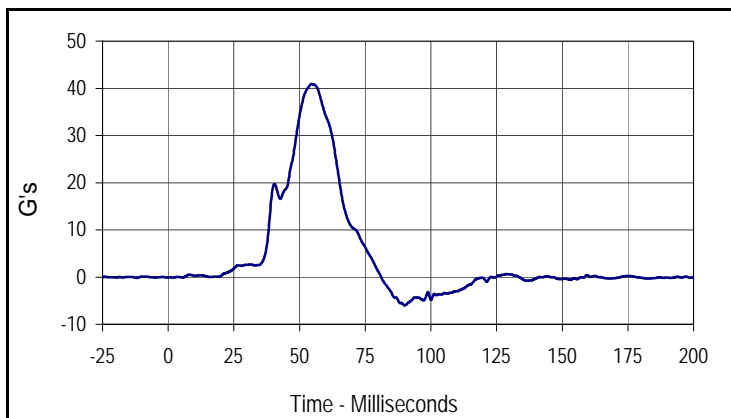
Curve Description			
Passenger Head Acceleration Resultant Primary			
Plot No.	Type	SAE Class	Units
017	RES	1000	G's
Max	Time	Min	Time
32.5	75.9	0.1	1.4

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV  
 Test Program: NCAP MDB Side Impact Test

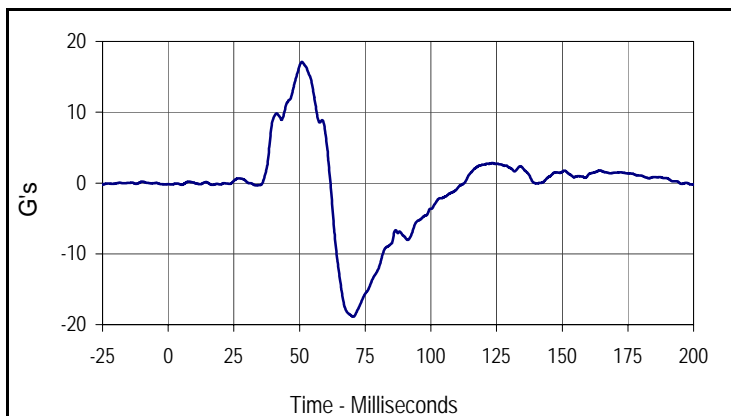
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 Test Date: 4/21/15



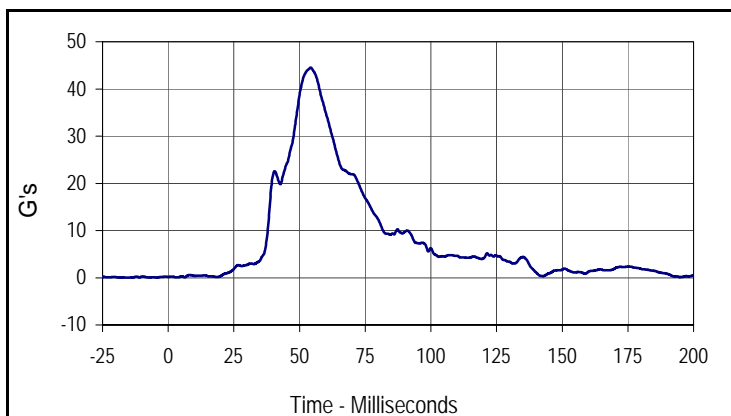
Curve Description			
Passenger Lower Spine T12 Acceleration X			
Plot No.	Type	SAE Class	Units
019	FIL	180	G's
Max	Time	Min	Time
4.3	121.4	-10.0	45.1



Curve Description			
Passenger Lower Spine T12 Acceleration Y			
Plot No.	Type	SAE Class	Units
020	FIL	180	G's
Max	Time	Min	Time
40.9	54.6	-6.0	90.1



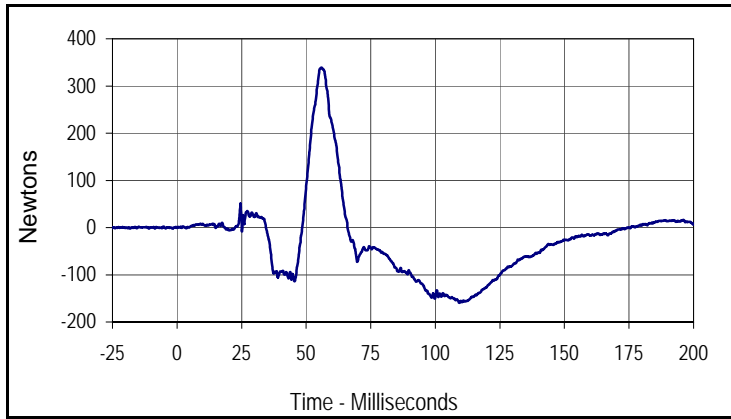
Curve Description			
Passenger Lower Spine T12 Acceleration Z			
Plot No.	Type	SAE Class	Units
021	FIL	180	G's
Max	Time	Min	Time
17.1	50.9	-18.9	70.4



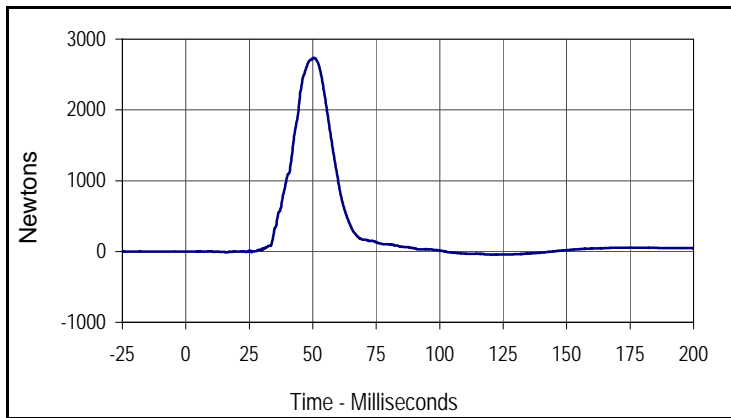
Curve Description			
Passenger Lower Spine T12 Acceleration Res.			
Plot No.	Type	SAE Class	Units
022	RES	180	G's
Max	Time	Min	Time
44.5	54.2	0.1	6.3

Test Vehicle: 2015 Ford Edge SEL FWD 5-Door MPV  
 Test Program: NCAP MDB Side Impact Test

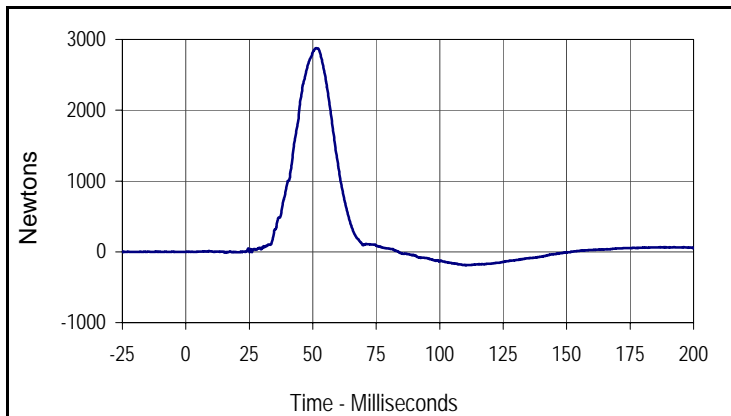
NHTSA No.: M20150208  
 Test Date: 4/21/15



Curve Description			
Passenger Iliac Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
023	FIL	600	Newtons
Max	Time	Min	Time
338.7	55.9	-159.3	109.3



Curve Description			
Passenger Acetabulum Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
024	FIL	600	Newtons
Max	Time	Min	Time
2736.8	50.2	-44.8	122.0



Curve Description			
Passenger Total Pelvic Force			
Plot No.	Type	SAE Class	Units
018	SUM	600	Newtons
Max	Time	Min	Time
2878.1	51.3	-188.8	110.4

**APPENDIX C**  
**DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

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

Test Program: ES2re External Measurements

Test Date: 4/15/15



ATD Serial No.: F037

Test I.D.: N/A

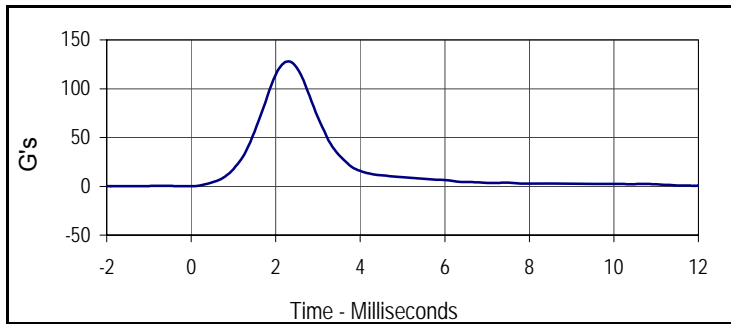
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	30.0	Pass
1 Sitting Height	mm	900 - 918	909	Pass
2 Seat to Shoulder Joint	mm	558 - 572	564	Pass
3 Seat to Lower Face of Thoracic Spine Box	mm	346 - 356	350	Pass
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

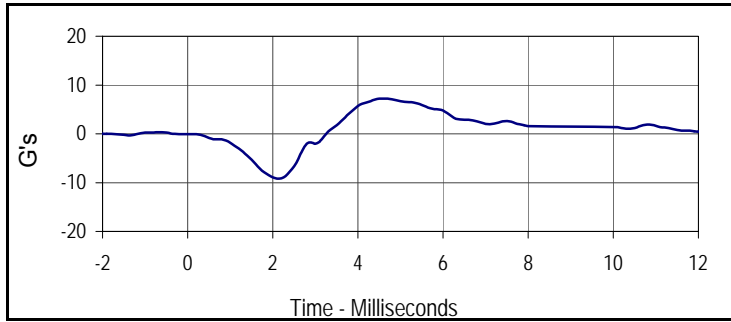
Test Date: 4/15/15  
 Test I.D.: F037HD072



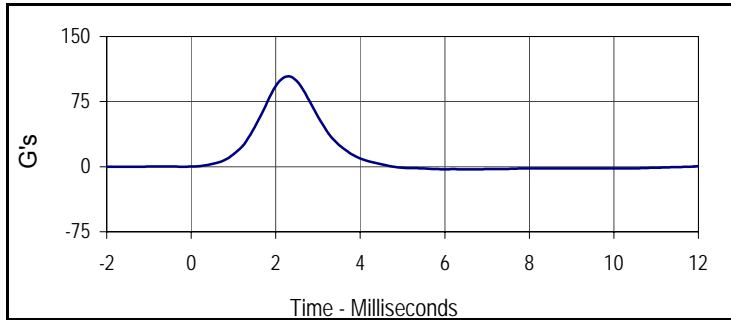
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	371	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.8	Pass
	Min		27.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.8	Pass
Peak Head Resultant Acceleration	G's	125 to 155	128.2	Pass
Peak Head X Acceleration	G's	≤15	9.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	0.3	Pass
Overall Test Results				Pass



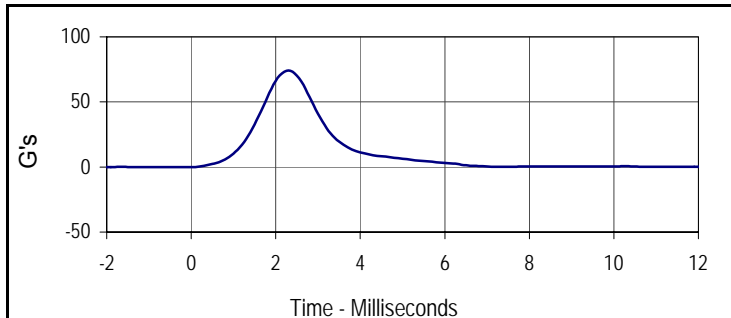
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
128.2	2.3	0.0	-9.1



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
7.2	4.6	-9.2	2.1



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
104.2	2.3	-3.2	6.6



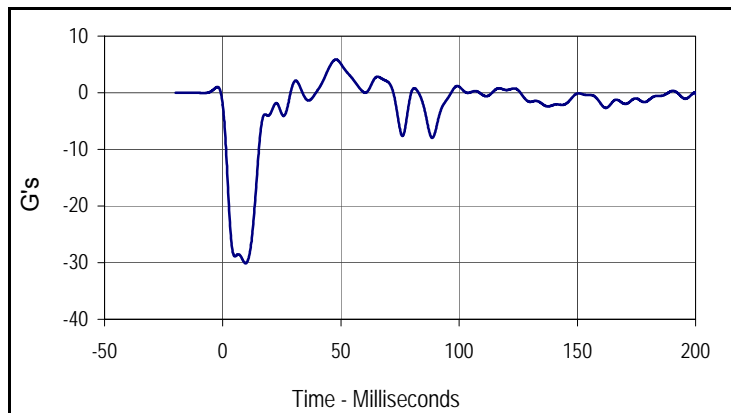
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
74.1	2.3	-0.3	-7.1

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

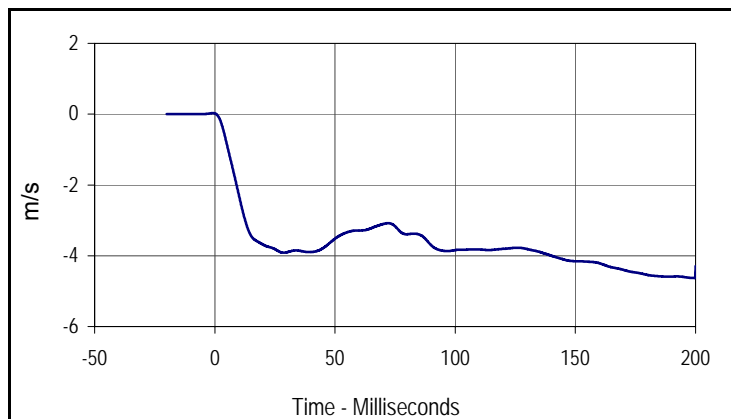
Test Date: 4/15/15  
 Test I.D.: F037NB072



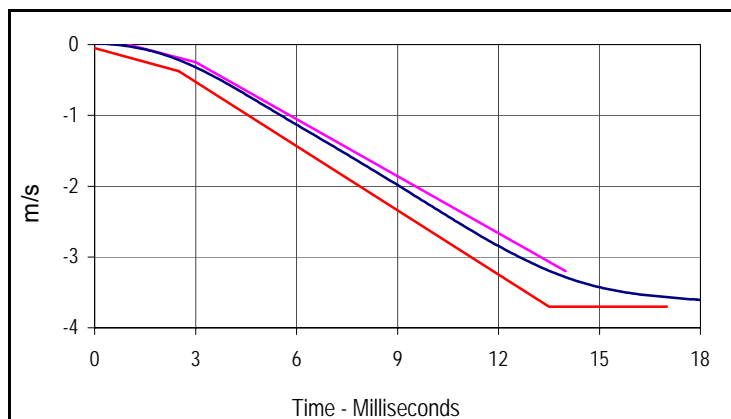
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	406	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.1	Pass	
Humidity During Soak	Max	10.0 to 70.0	27.8	Pass	
	Min		27.4	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	27.4	Pass	
Pendulum Velocity	m/s	3.3 to 3.5	3.36	Pass	
Headform Flexion	Max	Degrees	49 to 59	53.3	Pass
	Time	msec	54 to 66	55.2	Pass
Headform Flexion Decay (Peak to Zero)	msec	53 to 88	64.9	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
5.9	47.9	-30.1	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	-4.6	199.4



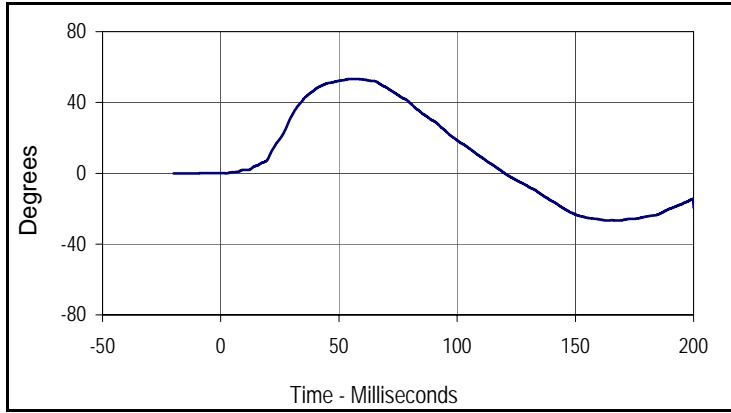
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.8	-4.6	199.4

Velocity Corridors

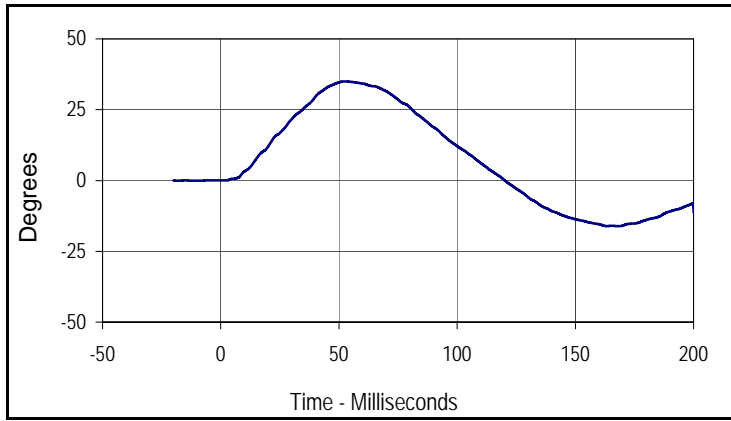
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.03	2.5	-0.375
14.0	-3.20	13.5	-3.70
		17.0	-3.70

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

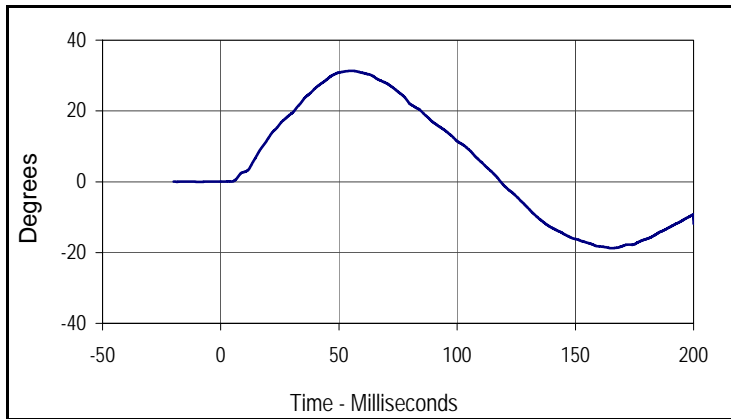
Test Date: 4/15/15  
 Test I.D.: F037NB072



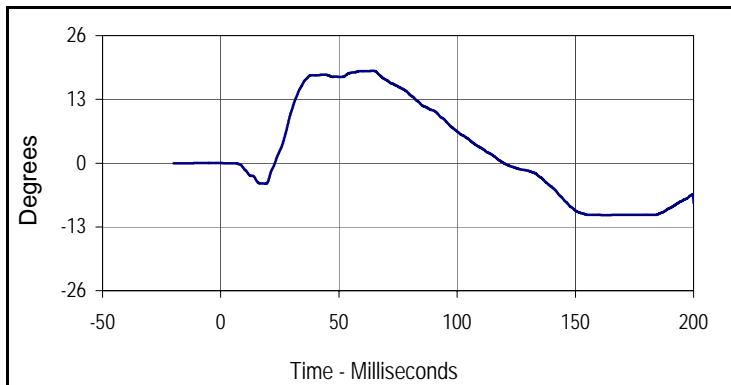
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
53.3	55.2	-26.7	163.4



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
35.0	52.3	-16.2	163.4



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
31.3	55.6	-18.8	165.3



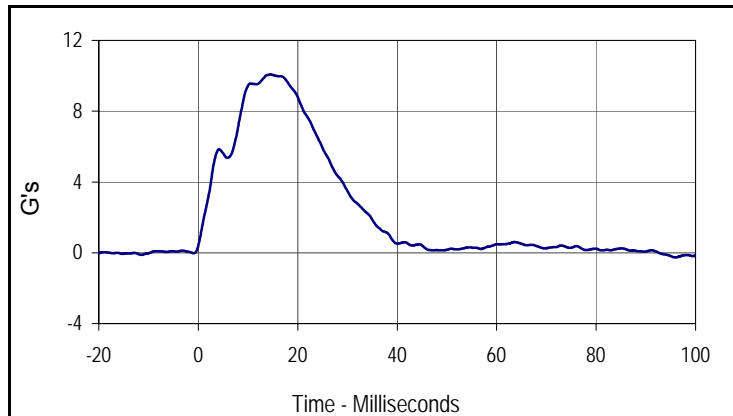
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
18.8	64.6	-10.6	161.9

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

Test Date: 4/15/15  
 Test I.D.: F037SH072



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	471	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.8	Pass
	Min		27.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.4	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.33	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	10.1	Pass
Overall Test Results				Pass



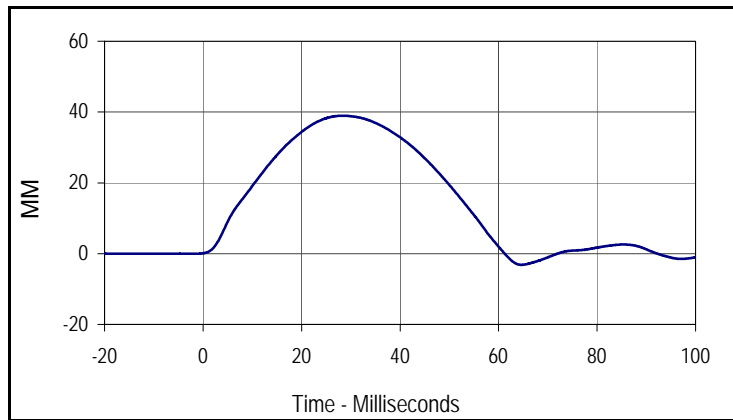
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
10.1	14.5	-0.3	96.0

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

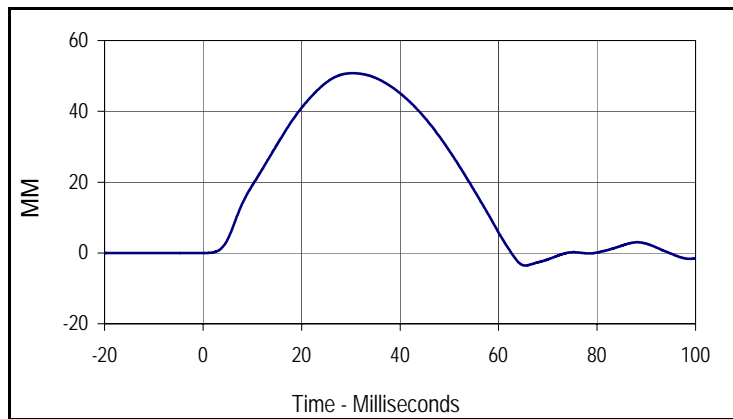
Test Date: 4/15/15  
 Test I.D.: F037RB1072



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	526	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.8	Pass
	Min		27.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.4	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.9	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	50.8	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
38.9	28.4	-3.2	64.6



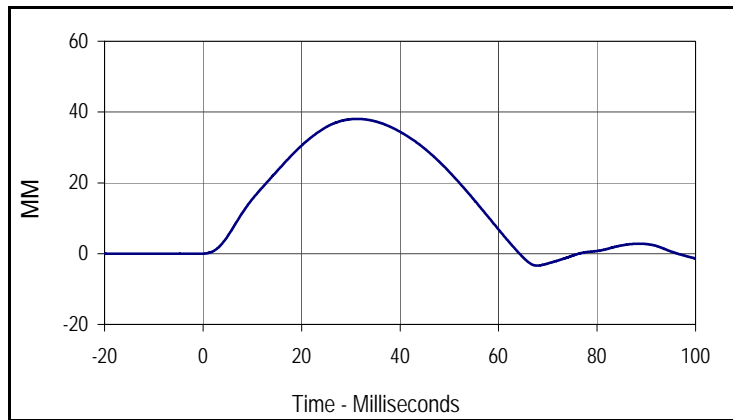
Curve Description			
Upper Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
50.8	30.4	-3.6	65.4

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

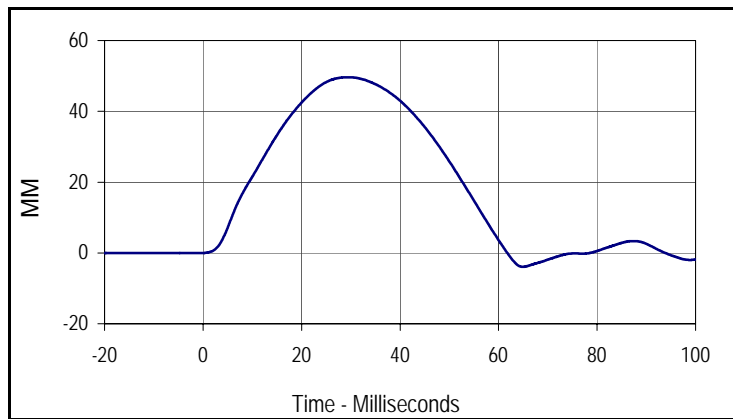
Test Date: 4/15/15  
 Test I.D.: F037RB2072



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	571	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.8	Pass
	Min		27.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.5	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.1	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	49.6	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
38.1	31.4	-3.4	67.9



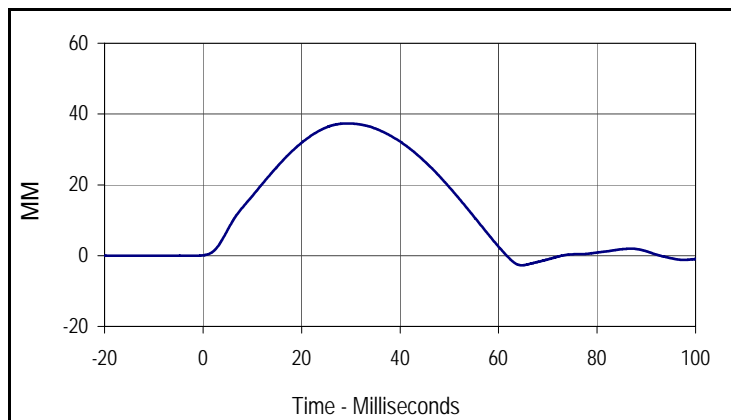
Curve Description			
Middle Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
49.6	29.5	-3.9	64.9

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

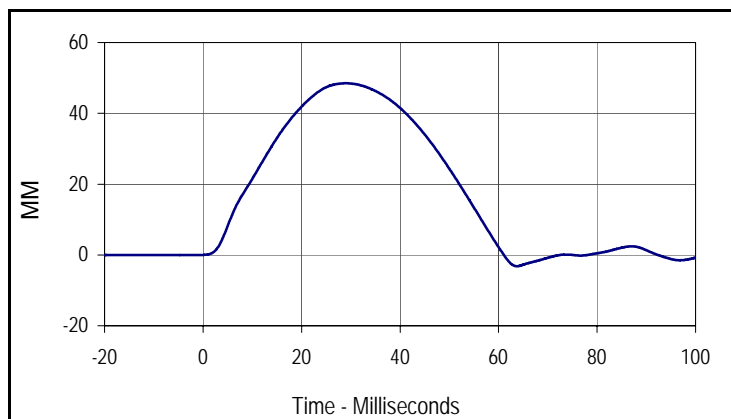
Test Date: 4/15/15  
 Test I.D.: F037RB3072



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	616	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.8	Pass
	Min		27.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.5	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	37.3	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	48.5	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
37.3	29.3	-2.7	64.7



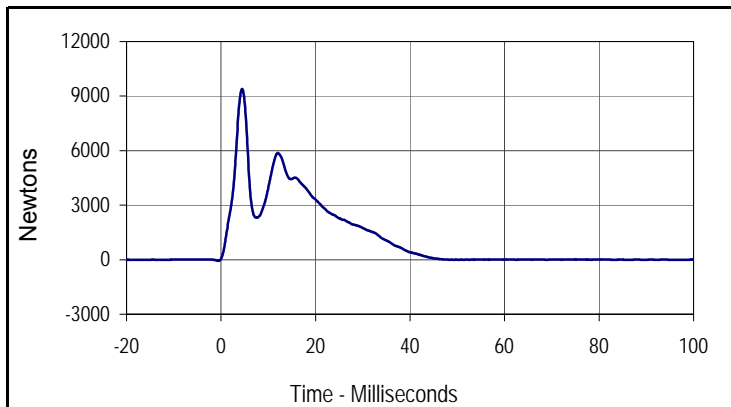
Curve Description			
Lower Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
48.5	29.1	-3.2	63.7

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

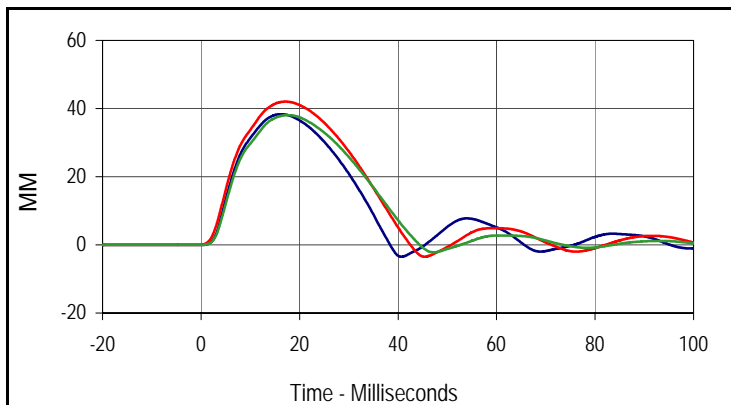
Test Date: 4/15/15  
 Test I.D.: F037TH072



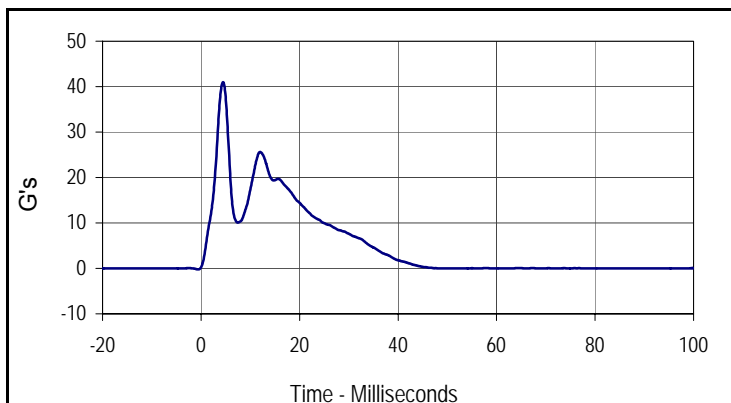
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	661	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.8	Pass
	Min		27.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.5	Pass
Peak Impactor Velocity	m/s	5.4 to 5.6	5.58	Pass
Peak Impactor Force	N	5100 to 6200	5868.8	Pass
	msec	> 6.0 msec	12	Pass
Peak Upper Rib Deflection	mm	34 to 41	38.3	Pass
Peak Middle Rib Deflection	mm	37 to 45	42.0	Pass
Peak Lower Rib Deflection	mm	37 to 44	38.1	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
9388.8	4.5	-53.0	-0.6



Curve Description			
Upper, Middle, Lower Rib Deflections			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
38.3	16.2	-3.5	40.7
Max (Middle)	Time	Min (Middle)	Time
42.0	17.2	-3.5	45.4
Max (Lower)	Time	Min (Lower)	Time
38.1	17.7	-2.2	47.2



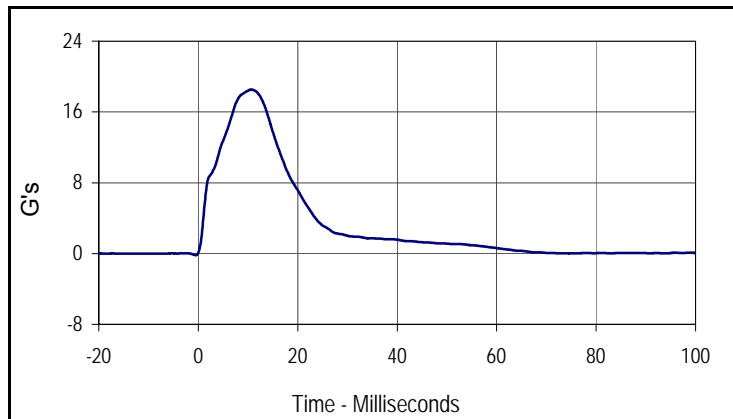
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
41.0	4.5	-0.2	-0.6

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

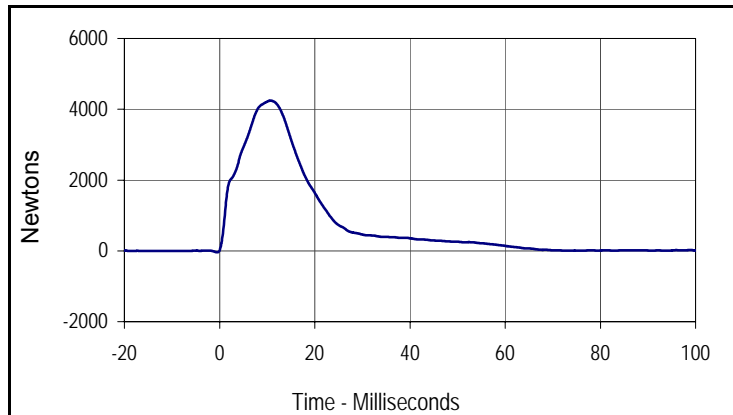
Test Date: 4/15/15  
 Test I.D.: F037ABD072



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	731	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.8	Pass
	Min		27.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.4	Pass
Probe Velocity	m/s	3.9 to 4.1	4.03	Pass
Peak Impactor Force	N	4000 to 4800	4244.5	Pass
	msec	10.6 to 13.0	10.7	Pass
Sum of Abdominal Forces	N	2200 to 2700	2414.2	Pass
	msec	10.0 to 12.3	10.9	Pass
Overall Test Results				Pass



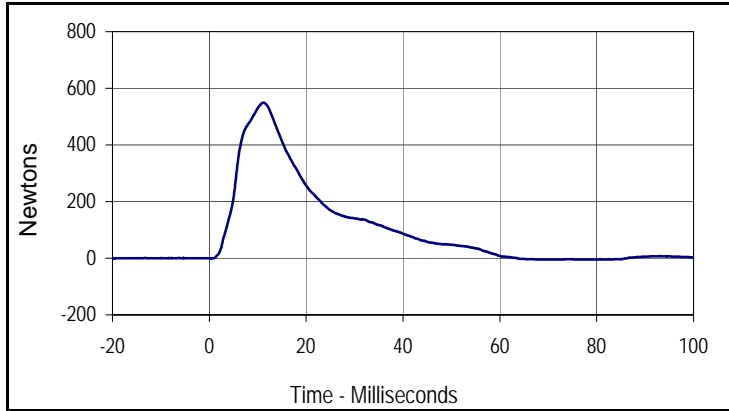
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
18.5	10.7	-0.2	-0.5



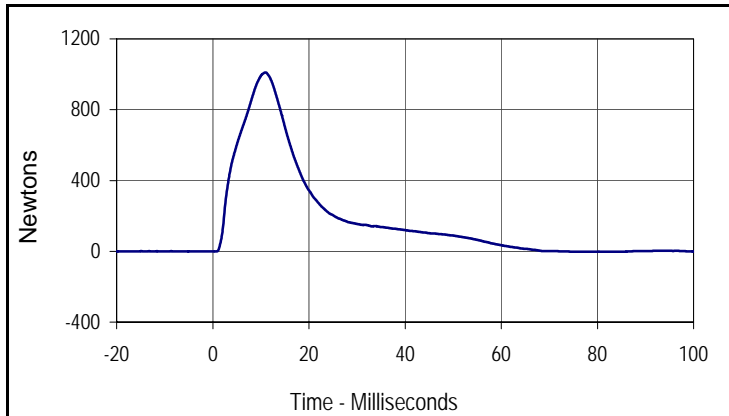
Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4244.5	10.7	-42.7	-0.5

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

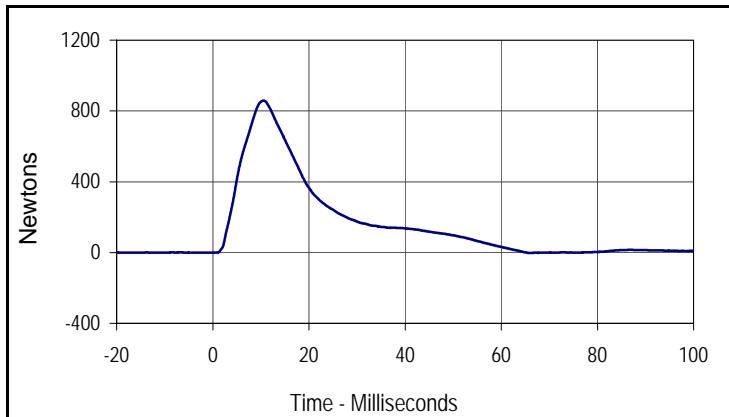
Test Date: 4/15/15  
 Test I.D.: F037ABD072



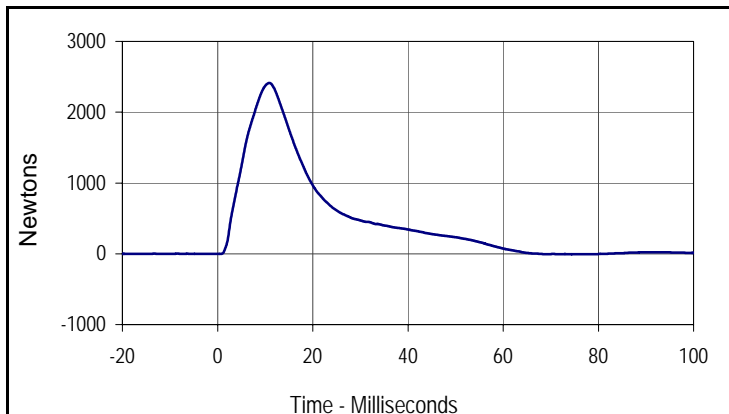
Curve Description			
Front Abdomen Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
549.3	11.1	-5.1	68.2



Curve Description			
Middle Abdomen Force			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtons
Max	Time	Min	Time
1010.8	10.9	-2.7	79.8



Curve Description			
Rear Abdomen Force			
Plot No.	Type	SAE Class	Units
005	FIL	600	Newtons
Max	Time	Min	Time
858.4	10.6	-2.1	65.8



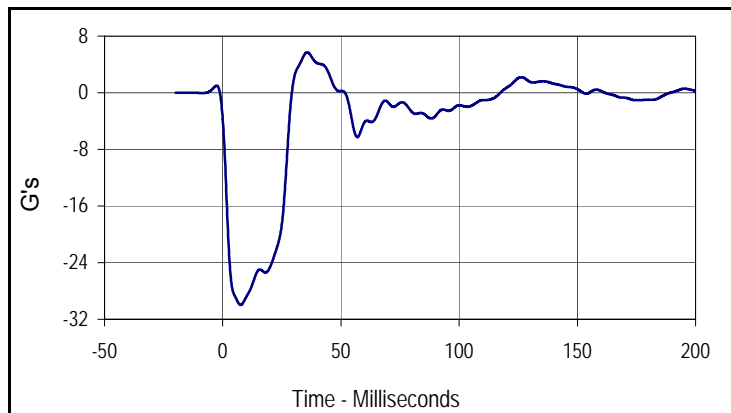
Curve Description			
Abdomen Sum Resultant			
Plot No.	Type	SAE Class	Units
006	RES	600	Newtons
Max	Time	Min	Time
2414.2	10.9	-7.4	75.9

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

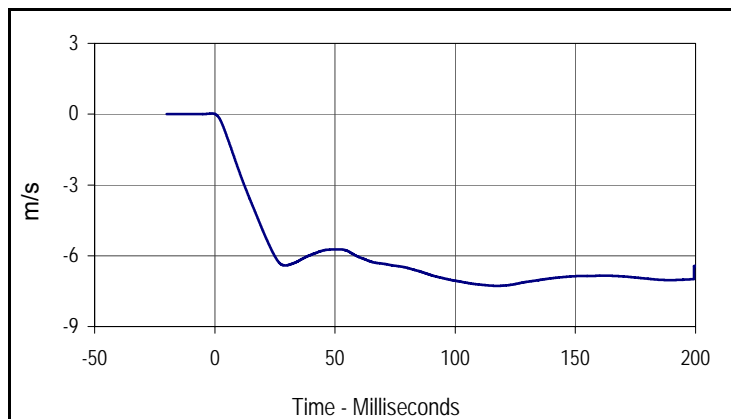
Test Date: 4/15/15  
 Test I.D.: F037LB072



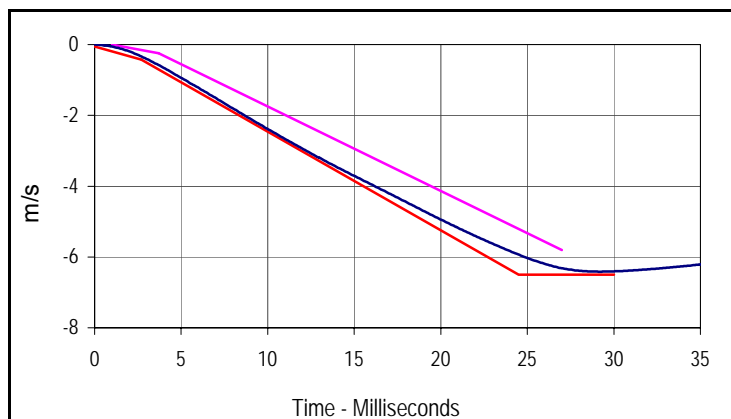
Tested Parameter	Units	Specification	Result	Pass/Fail
Lumbar Spine Assembly Soak Time	Minutes	≥240	806	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.8	Pass
	Min		27.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.6	Pass
Pendulum Velocity	m/s	5.95 to 6.15	5.99	Pass
Headform Rotation	Max	45 to 55	48.5	Pass
	Time	39 to 53	39.9	Pass
Time of Decay to Zero Angle from Peak	msec	37 to 57	46.4	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
5.7	36.3	-30.0	8.1



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.6	-7.3	118.0



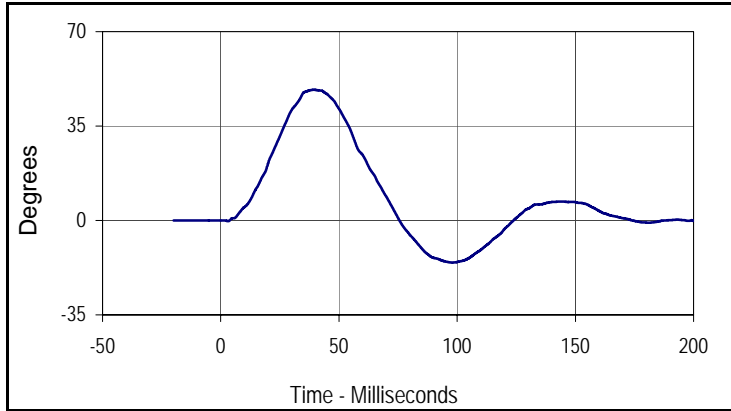
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.6	-7.3	118.0

Velocity Corridors

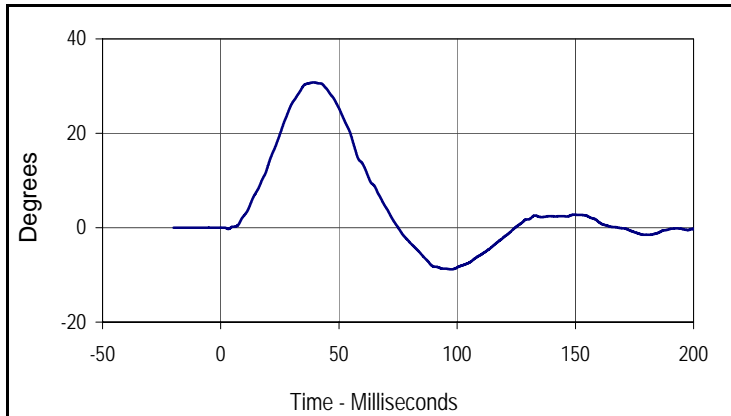
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.50
		30.0	-6.50

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

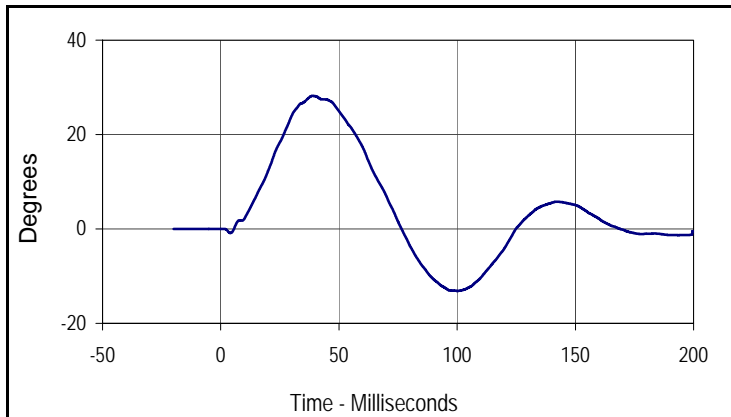
Test Date: 4/15/15  
 Test I.D.: F037LB072



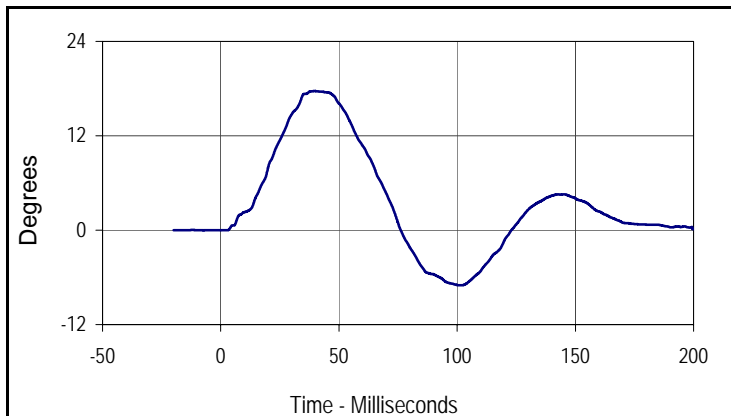
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
48.5	39.9	-15.6	98.5



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
30.8	39.9	-8.8	98.2



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



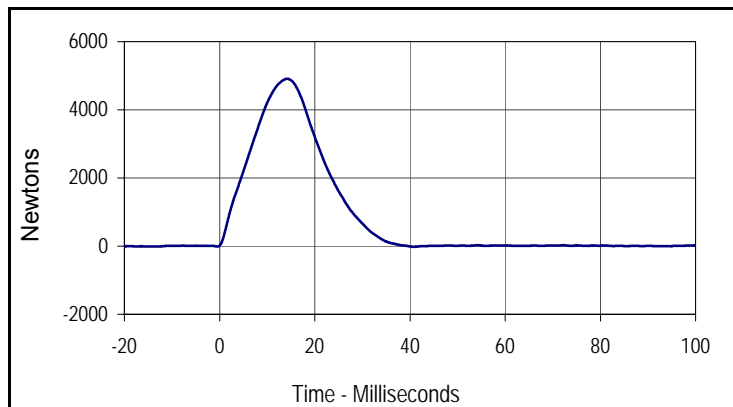
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
17.7	40.3	-7.0	102.3

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

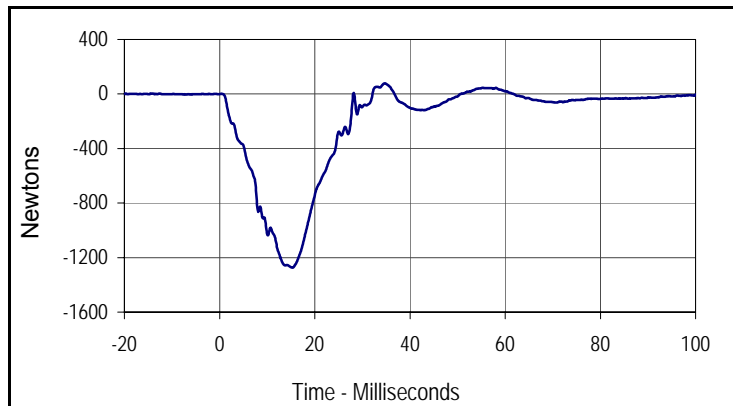
Test Date: 4/15/15  
 Test I.D.: F037PL072



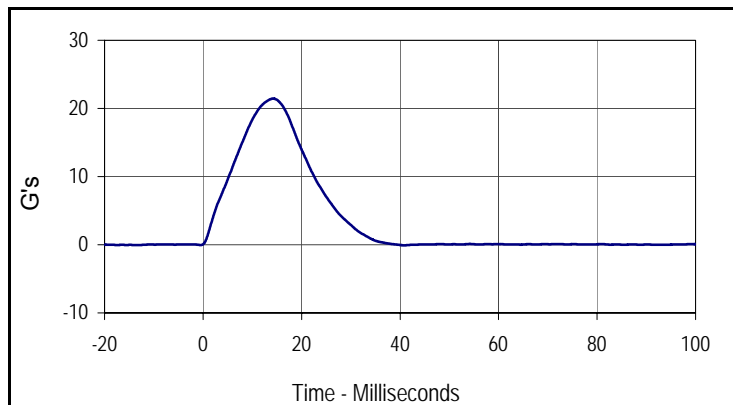
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	861	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.8	Pass
	Min		27.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.6	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.33	Pass
Peak Impactor Force	N	4700 to 5400	4911.3	Pass
	msec	11.8 to 16.1	14.2	Pass
Peak Pubic Symphysis Load	N	-1230 to -1590	-1273.5	Pass
	msec	12.2 to 17.0	15.3	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4911.3	14.2	-18.5	40.8



Curve Description			
Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
77.9	34.7	-1273.5	15.3



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
21.4	14.2	-0.1	40.8

Test Program: SID IIs External Measurements

Test Date: 4/16/15



ATD Serial No.: 307

Test I.D.: N/A

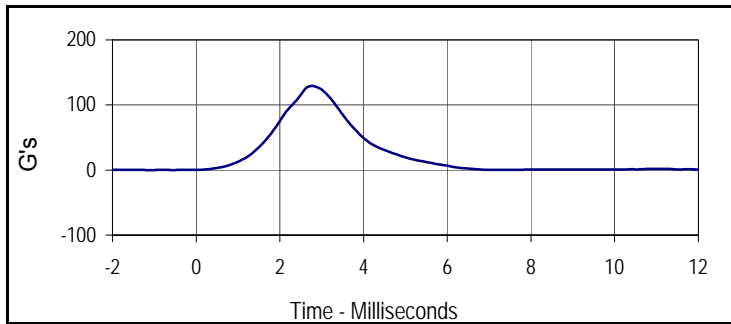
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
A Sitting Height	mm	772 - 788	778	Pass
B Shoulder Pivot Height	mm	437 - 453	443	Pass
C H-Point Height	mm	79 - 89	85	Pass
D H-Point from Seatback	mm	141 - 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

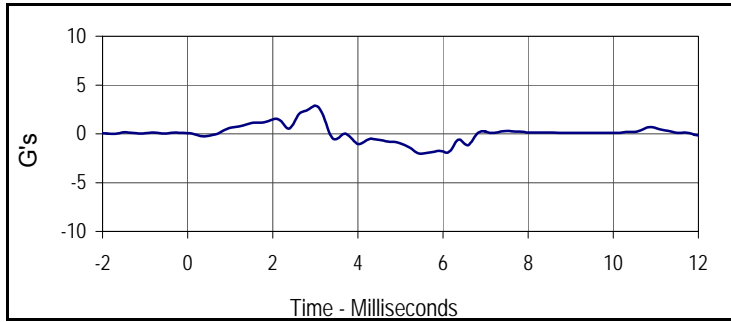
Test Date: 4/16/15  
 Test I.D.: 307HD081



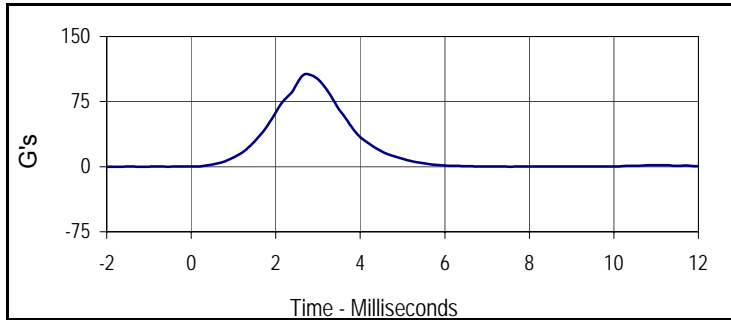
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	395	Pass
Temperature During Soak	Max	18.9 to 25.6	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.9	Pass
	Min		26.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.9	Pass
Peak Head Resultant Acceleration	G's	115 to 137	129.1	Pass
Peak Head X Acceleration	G's	<15	2.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	0.3	Pass
<b>Overall Test Results</b>				<b>Pass</b>



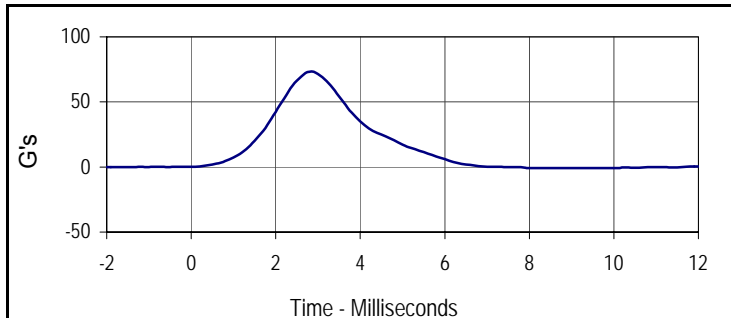
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
129.1	2.8	0.0	-10.8



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.9	3.0	-2.0	5.5



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
106.8	2.7	-0.4	-18.6



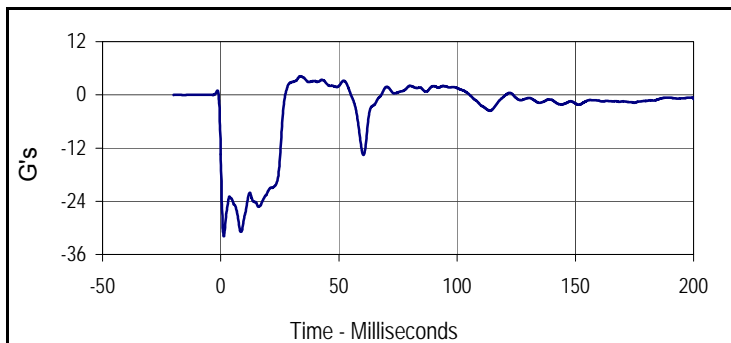
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
73.3	2.8	-0.8	8.0

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

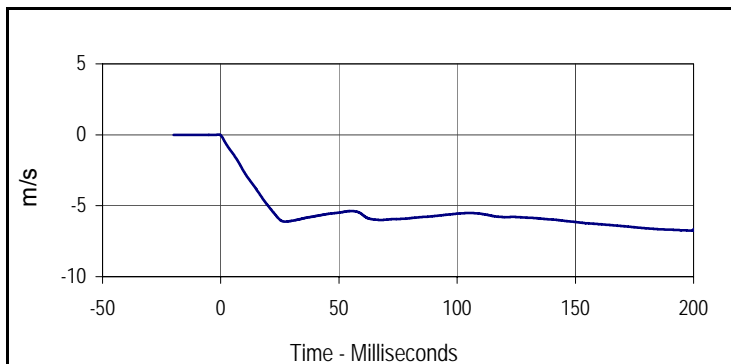
Test Date: 4/16/15  
 Test I.D.: 307NB081



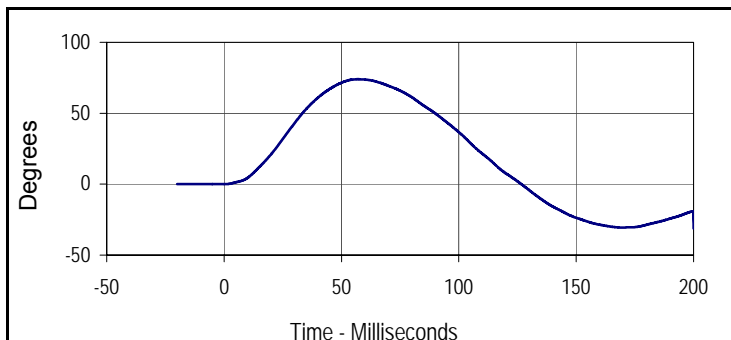
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	440	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass	
	Min		21.1	Pass	
Humidity During Soak	Max	10.0 to 70.0	27.9	Pass	
	Min		26.4	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	27.8	Pass	
Pendulum Velocity	m/s	5.51 to 5.63	5.54	Pass	
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.65	Pass
	15 msec	m/s	-3.30 to -4.10	-3.83	Pass
	20 msec	m/s	-4.40 to -5.40	-5.00	Pass
	25 msec	m/s	-5.40 to -6.10	-5.98	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.12	Pass
D-Plane Rotation	Max	Degrees	71 to 81	74.0	Pass
	Time	msec	50 to 70	57.0	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-38.5	Pass	
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	106.6	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
4.2	0.0	-31.9	0.0



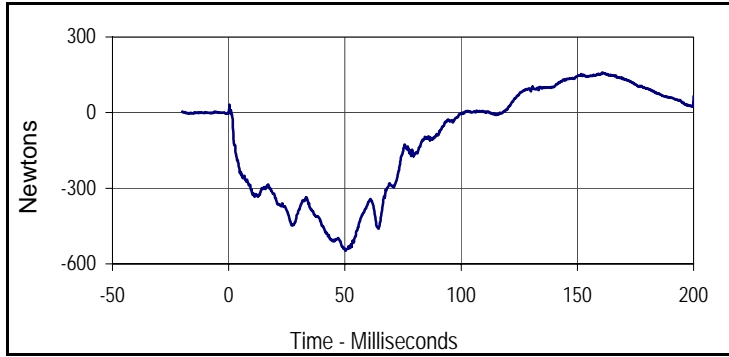
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.9	-6.8	199.9



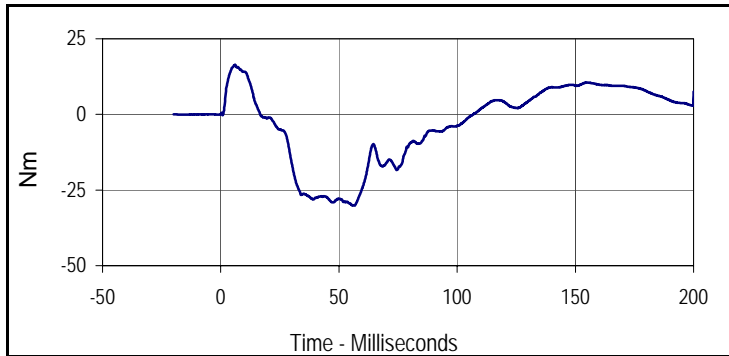
Curve Description			
D-Plane Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
74.0	57.0	-31.2	200.0

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

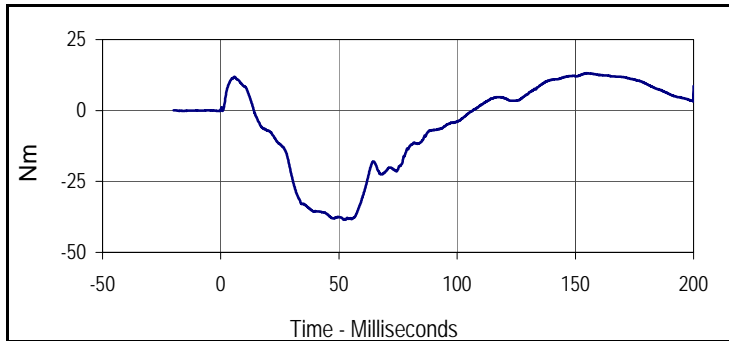
Test Date: 4/16/15  
 Test I.D.: 307NB081



Curve Description			
Neck Force Y			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
157.7	160.5	-547.7	50.2



Curve Description			
Neck Moment X			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
16.4	6.0	-30.1	56.0



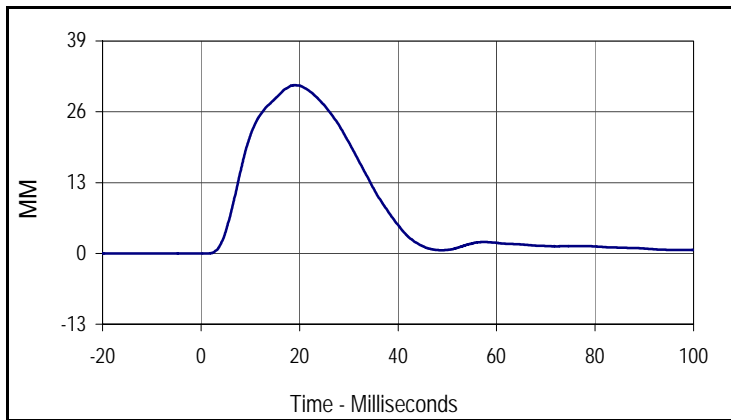
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
006	FIL	600	Nm
Max	Time	Min	Time
13.1	154.7	-38.5	52.8

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

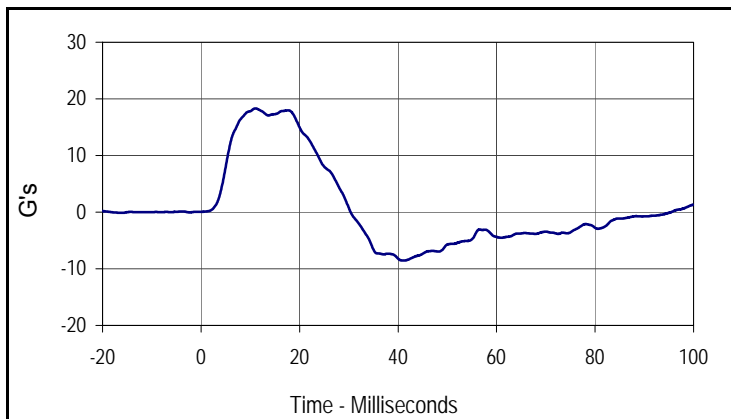
Test Date: 4/16/15  
 Test I.D.: 307SH081



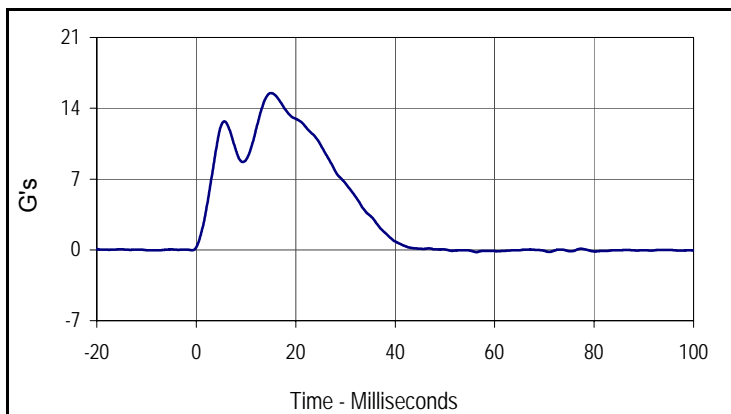
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	495	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.9	Pass
	Min		26.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	27.8	Pass
Impactor Velocity	m/s	4.20 to 4.40	4.36	Pass
Peak Shoulder Deflection	mm	28 to 37	30.9	Pass
Peak Lateral Spine Acceleration Y	G's	17 to 22	18.3	Pass
Peak Impactor Acceleration	G's	13 to 18	15.5	Pass
Overall Test Results				Pass



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
30.9	18.9	0.0	-1.6



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.3	11.1	-8.5	41.1



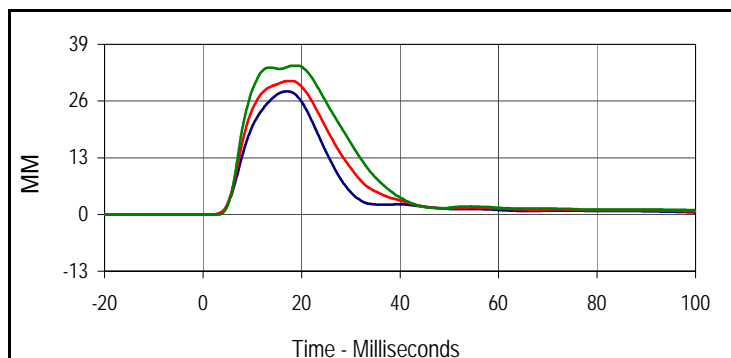
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.5	15.0	-0.2	56.4

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

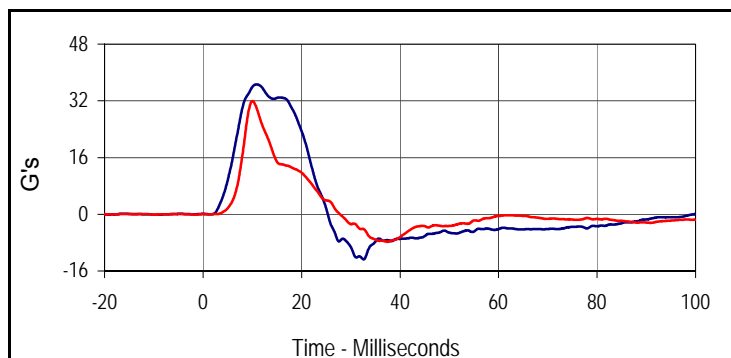
Test Date: 4/16/15  
 Test I.D.: 307TWA081



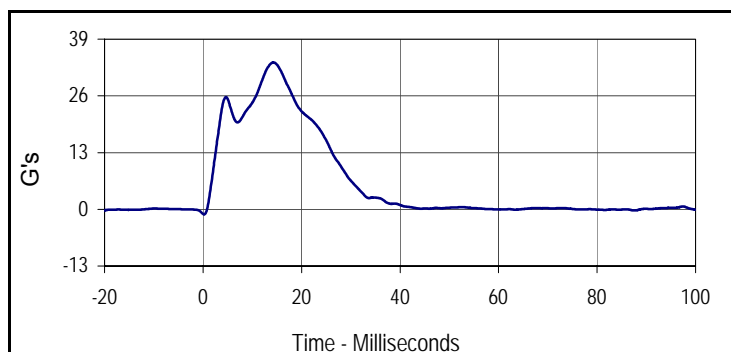
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	540	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.9	Pass
	Min		26.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	26.9	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.64	Pass
Peak Shoulder Deflection	mm	31 to 40	36.9	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	28.2	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	30.6	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	34.1	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	36.6	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	31.9	Pass
Peak Impactor Acceleration	G's	30 to 36	33.7	Pass
<b>Overall Test Results</b>				<b>Pass</b>



Curve Description			
<b>Upper Thorax Deflection</b>			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
28.2	17.1	0.0	-16.9
<b>Middle Thorax Deflection</b>			
Max	Time	Min	Time
30.6	17.5	0.0	-15.1
<b>Lower Thorax Deflection</b>			
Max	Time	Min	Time
34.1	18.7	0.0	-18.8



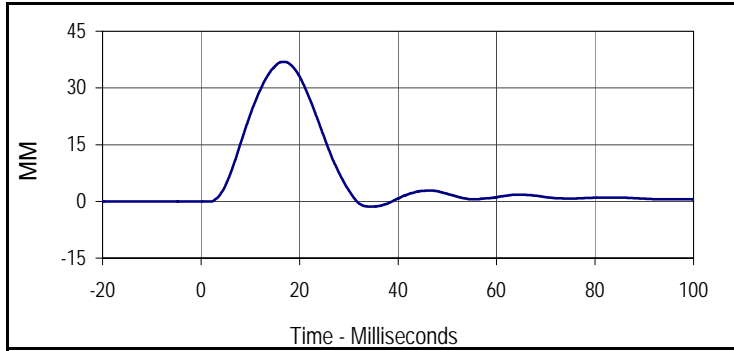
Curve Description			
<b>Upper Spine Y Acceleration</b>			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
36.6	10.9	-12.7	32.6
<b>Lower Spine Y Acceleration</b>			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
31.9	10.0	-7.8	37.5



Curve Description			
<b>Impactor Acceleration</b>			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
33.7	14.2	-1.2	0.2

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

Test Date: 4/16/15  
 Test I.D.: 307TWA081



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
36.9	16.5	-1.4	34.9

Test Program: SID IIs Thorax without Arm Impact Test

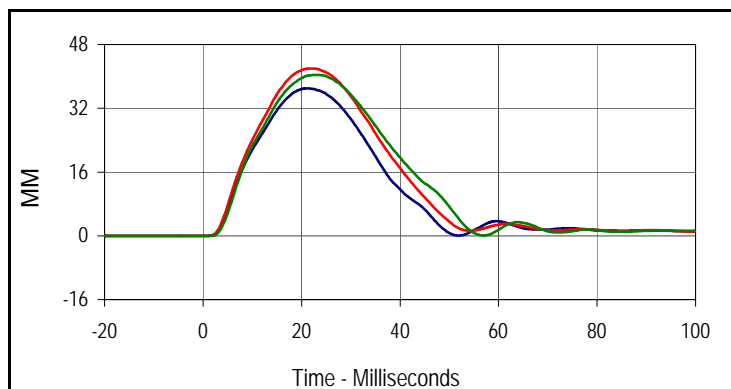
Test Date: 4/16/15



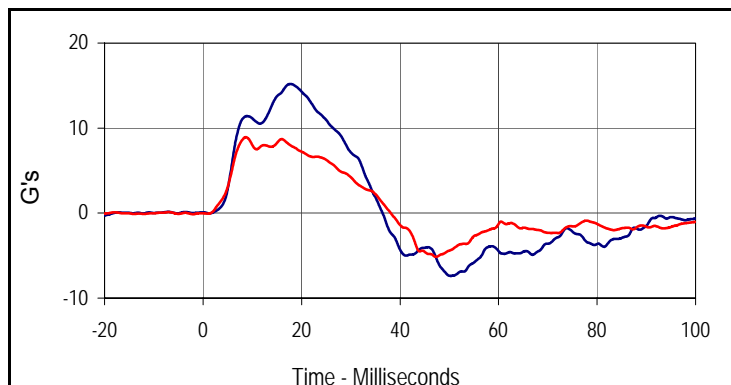
ATD Serial No.: 307

Test I.D.: 307TWOA081

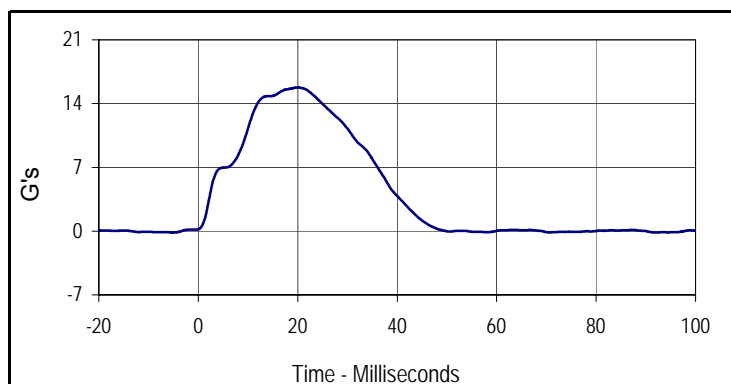
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	595	Pass
Temperature During Soak	Max	18.9 to 25.6	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.9	Pass
	Min		26.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	26.5	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.33	Pass
Peak Upper Thorax Rib Deflection	mm	32 to 40	37.0	Pass
Peak Middle Thorax Rib Deflection	mm	39 to 45	42.0	Pass
Peak Lower Thorax Rib Deflection	mm	35 to 43	40.4	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.2	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	8.9	Pass
Peak Impactor Acceleration	G's	14 to 18	15.8	Pass
Overall Test Results				Pass



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
37.0	21.2	0.0	-7.4
Middle Thorax Deflection			
Max	Time	Min	Time
42.0	22.0	0.0	-6.5
Lower Thorax Deflection			
Max	Time	Min	Time
40.4	23.2	0.0	-7.6



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.2	17.8	-7.4	50.3
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.9	8.7	-5.2	47.3



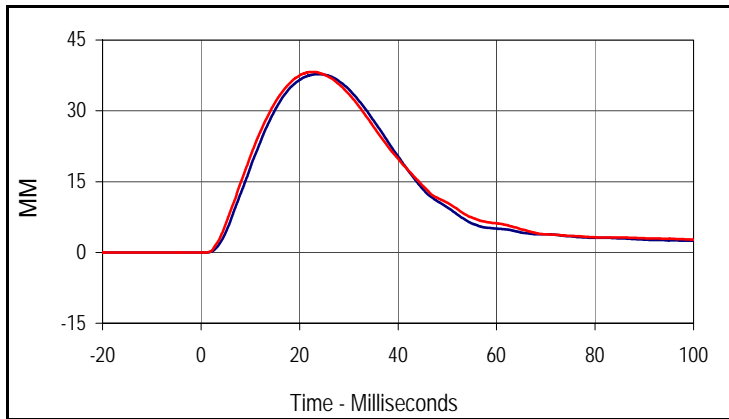
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
15.8	20.0	-0.2	91.7

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

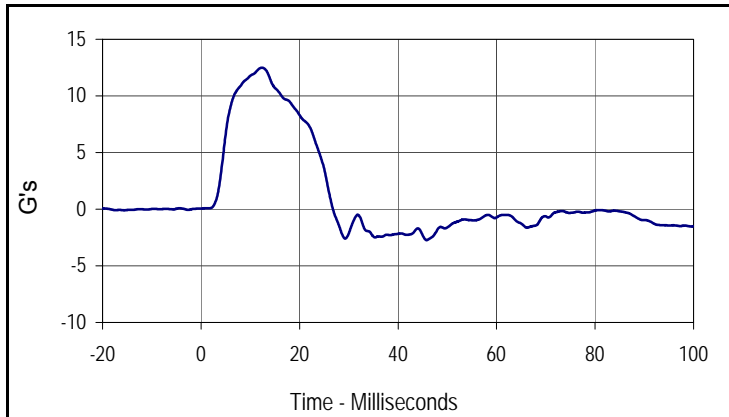
Test Date: 4/16/15  
 Test I.D.: 307ABD081



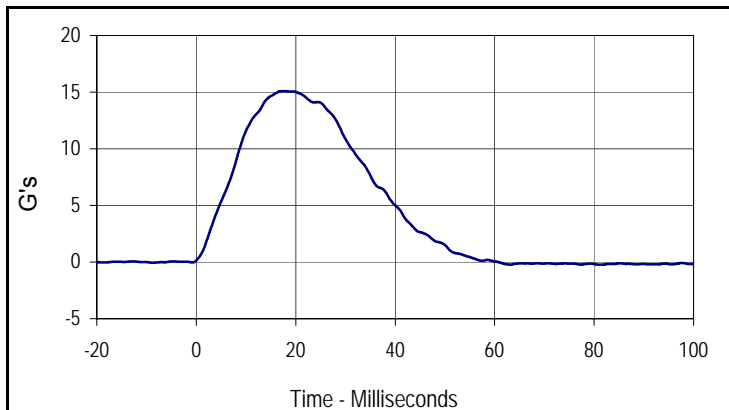
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	650	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.9	Pass
	Min		26.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	26.4	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.36	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	37.8	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	38.2	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.5	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
37.8	23.9	0.0	-0.2



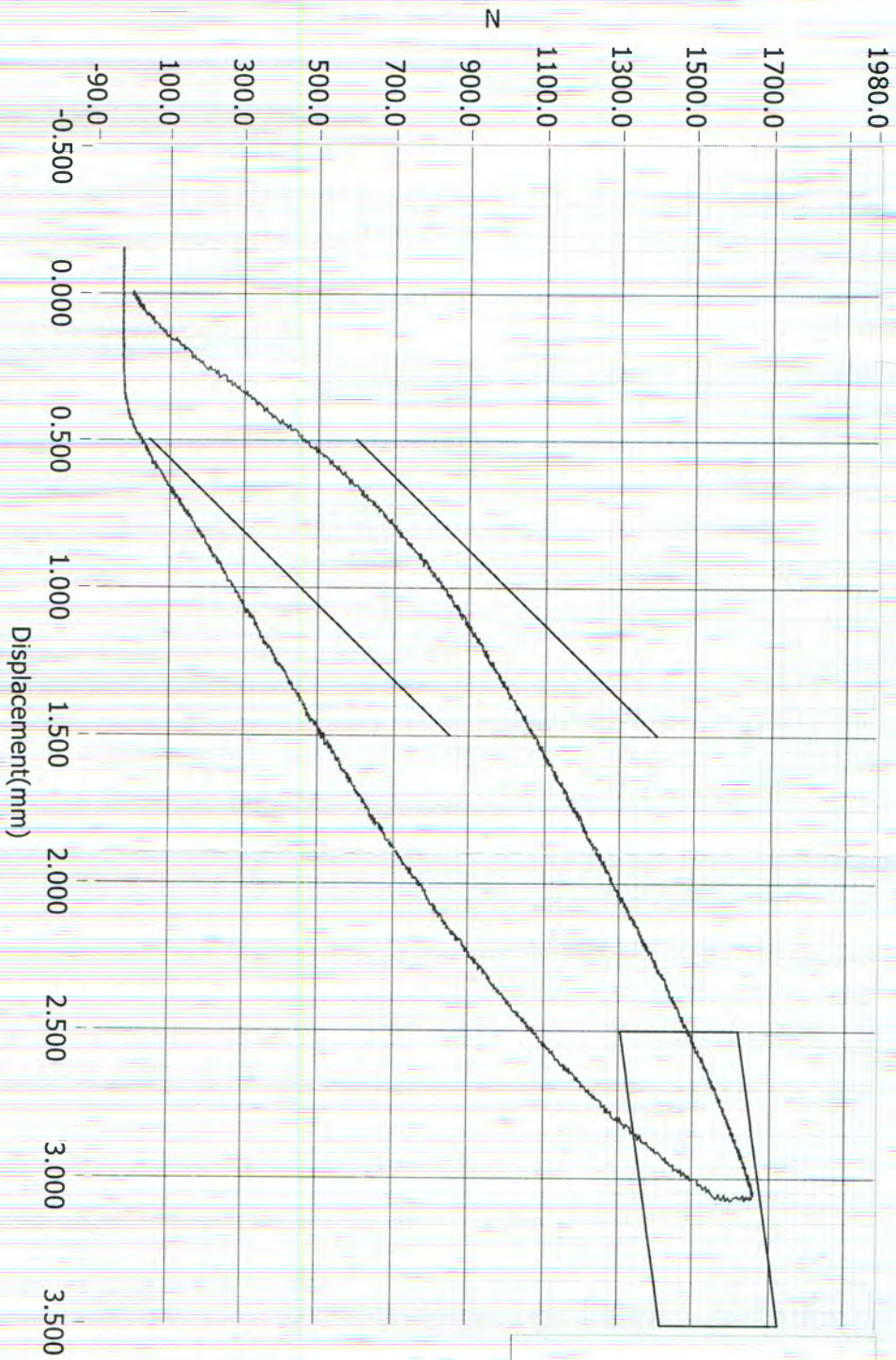
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
38.2	22.7	0.0	0.0



Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.5	12.4	-2.7	45.8

Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.1	17.4	-0.2	81.5

# 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

1645N

## ATD Calibration Lab

M20150208 Pre Test

Test ID	Part Serial Number	Test Date	Test Time
	70693	12/12/2013	9:29 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 12/12/2013

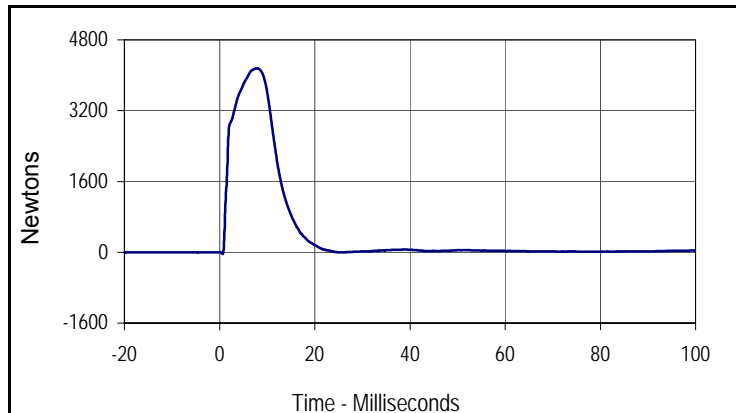
Current Time : 21:29:49

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

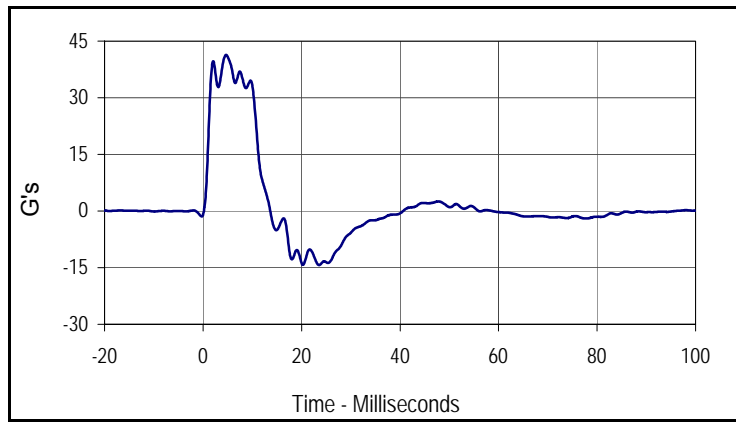
Test Date: 4/16/15  
 Test I.D.: 307ACET081



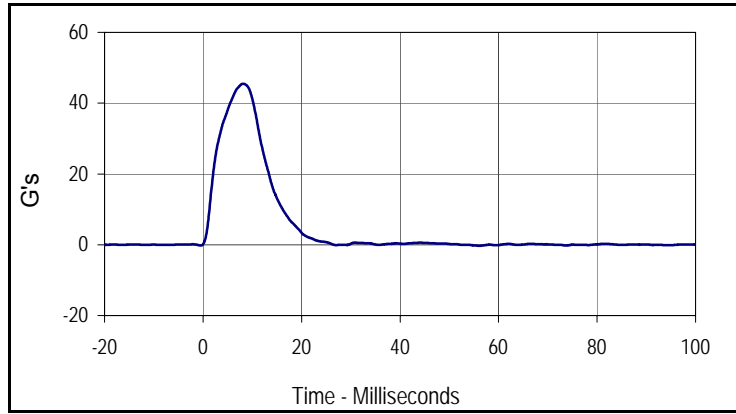
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	700	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.9	Pass
	Min		26.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	26.5	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.71	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	4158.3	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	37.0	Pass
Peak Impactor Acceleration	G's	38 to 47	45.5	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4158.3	7.7	-38.1	0.7



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
41.3	4.7	-14.3	23.6



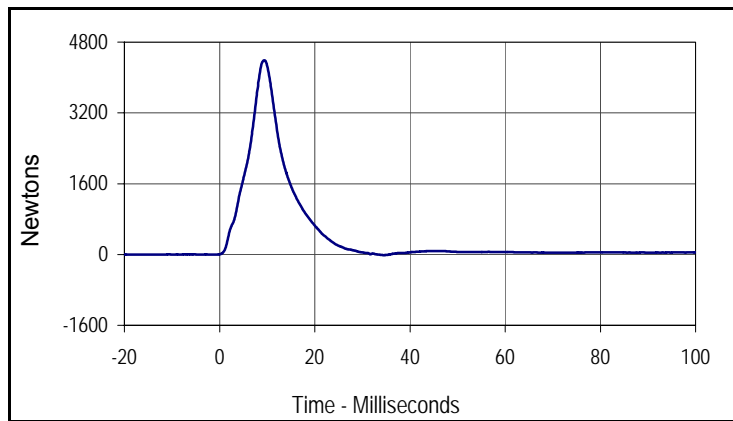
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
45.5	8.1	-0.3	56.2

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

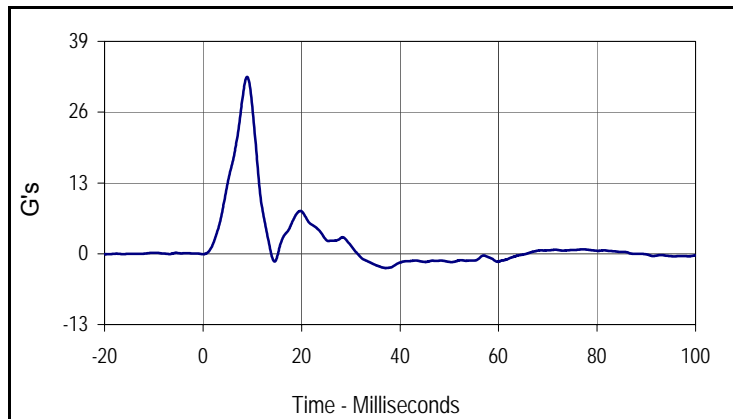
Test Date: 4/16/15  
 Test I.D.: 307PL081



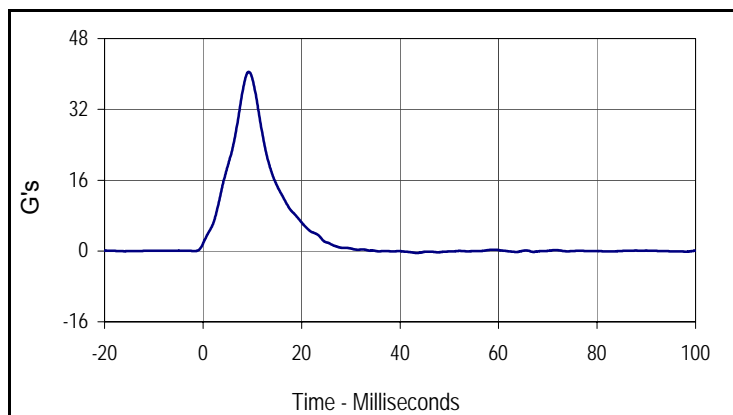
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	755	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	27.9	Pass
	Min		26.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	26.8	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.36	Pass
Peak Iliac Force	Newtons	4100 to 5100	4390.9	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	32.5	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
4390.9	9.4	-13.9	34.5



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
32.5	8.9	-2.6	37.1



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
40.5	9.3	-0.4	43.4

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

Test Program: ES2re External Measurements

Test Date: 4/27/15



ATD Serial No.: F037

Test I.D.: N/A

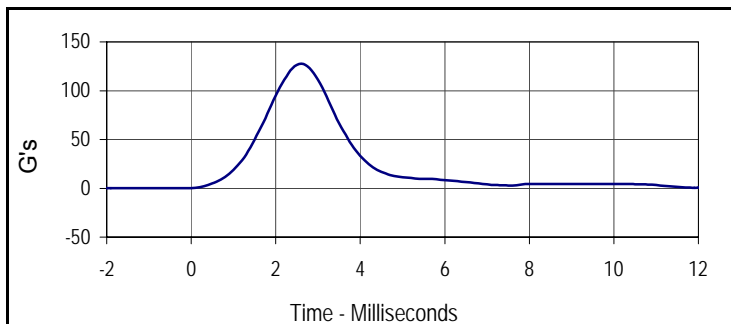
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	30.0	Pass
1 Sitting Height	mm	900 - 918	909	Pass
2 Seat to Shoulder Joint	mm	558 - 572	564	Pass
3 Seat to Lower Face of Thoracic Spine Box	mm	346 - 356	350	Pass
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

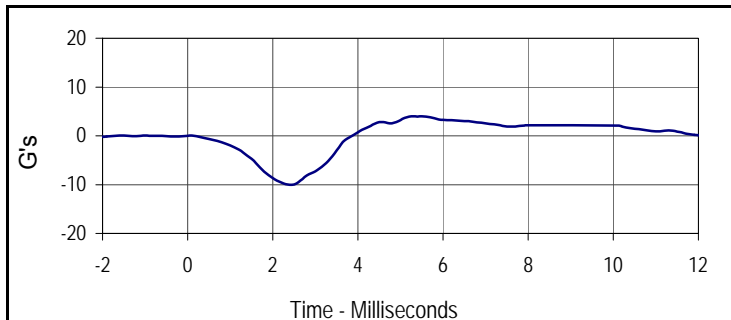
Test Date: 4/27/15  
 Test I.D.: F037HD073



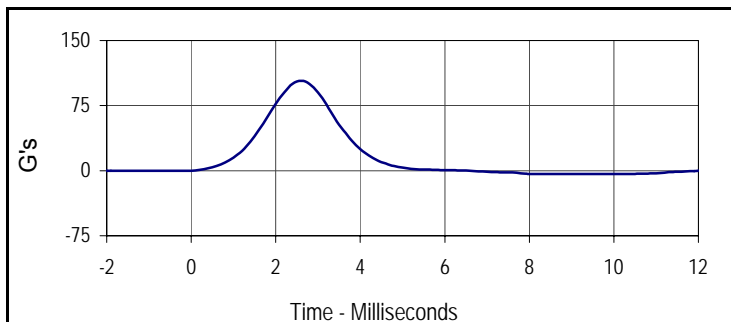
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	361	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	30.0	Pass
	Min		29.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.7	Pass
Peak Head Resultant Acceleration	G's	125 to 155	127.5	Pass
Peak Head X Acceleration	G's	≤15	10.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	0.3	Pass
Overall Test Results				Pass



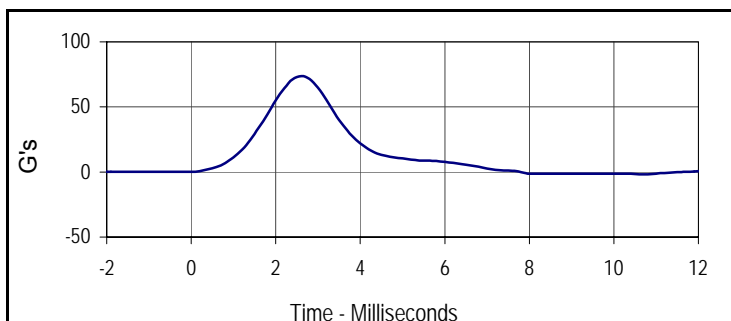
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
127.5	2.6	0.0	-10.1



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
4.0	5.3	-10.0	2.4



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
103.6	2.6	-3.9	10.3



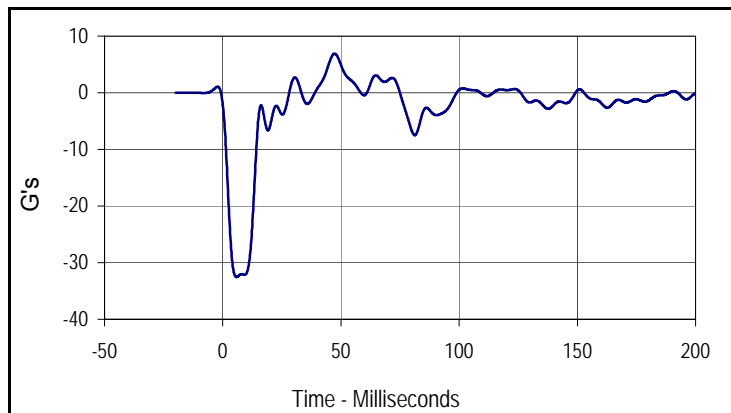
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
73.7	2.6	-1.8	10.7

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

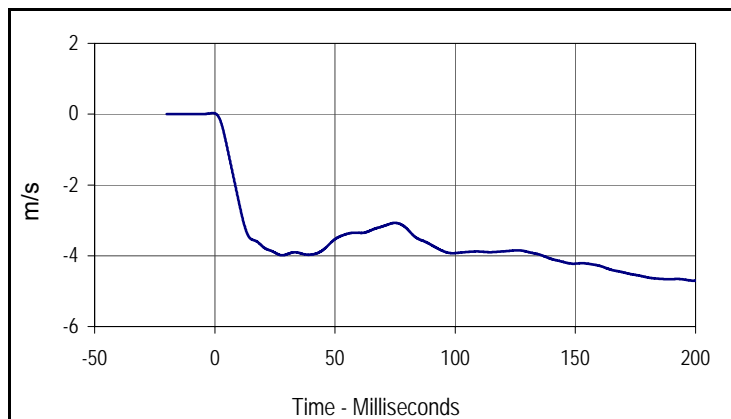
Test Date: 4/27/15  
 Test I.D.: F037NB073



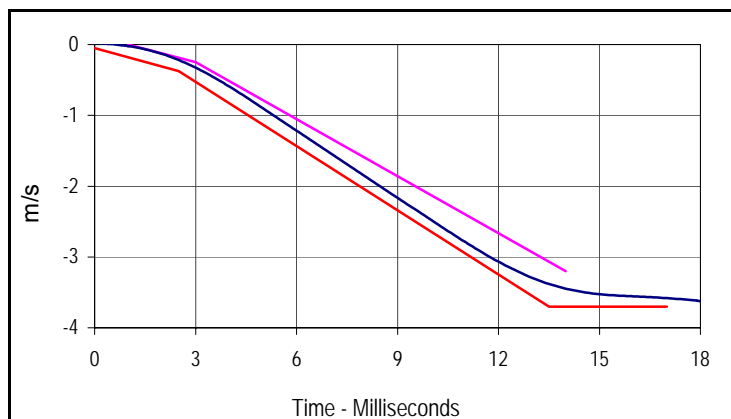
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	396	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	30.0	Pass
	Min		29.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.8	Pass
Pendulum Velocity	m/s	3.3 to 3.5	3.41	Pass
Headform Flexion	Max	49 to 59	55.4	Pass
	Time	54 to 66	58.2	Pass
Headform Flexion Decay (Peak to Zero)	msec	53 to 88	62.3	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
6.9	47.3	-32.5	5.8



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.8	-4.7	200.0



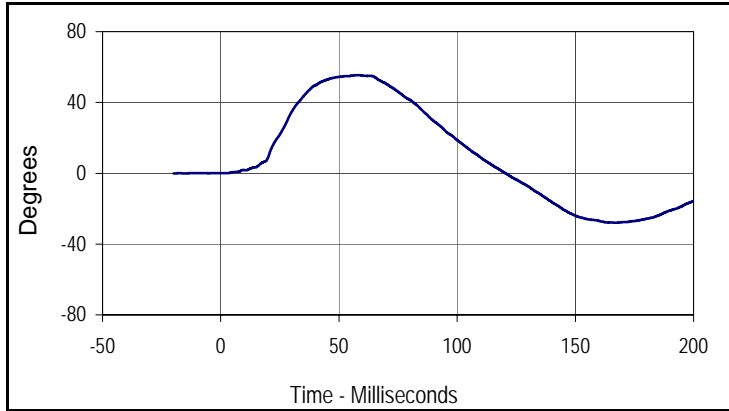
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.8	-4.7	200.0

Velocity Corridors

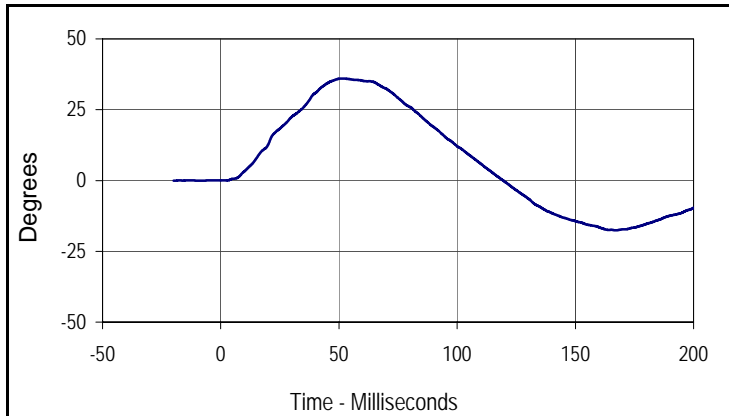
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.03	2.5	-0.375
14.0	-3.20	13.5	-3.70
		17.0	-3.70

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

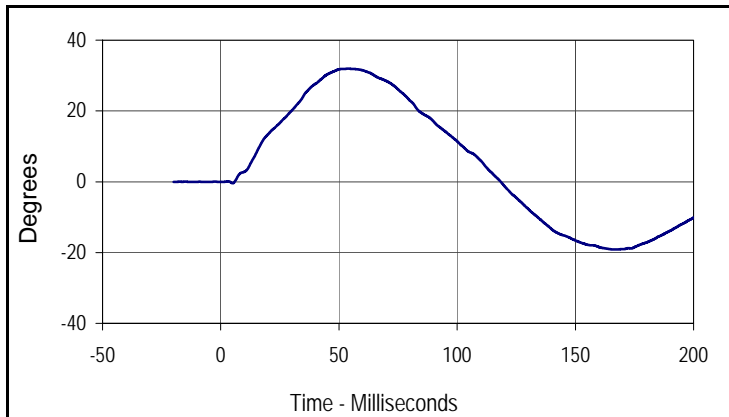
Test Date: 4/27/15  
 Test I.D.: F037NB073



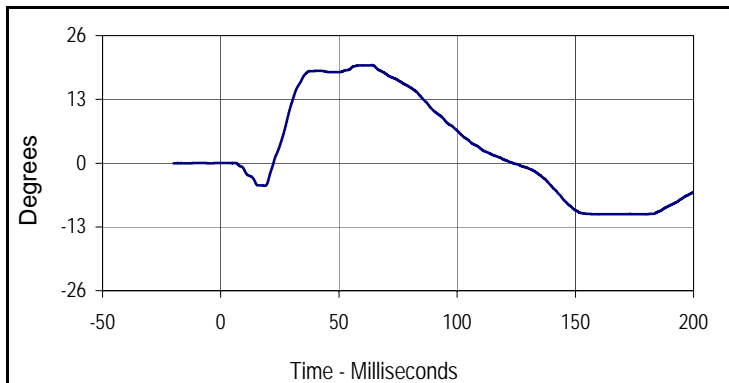
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
55.4	58.2	-28.0	167.1



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
36.0	51.5	-17.6	167.1



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
31.9	53.9	-19.1	166.6



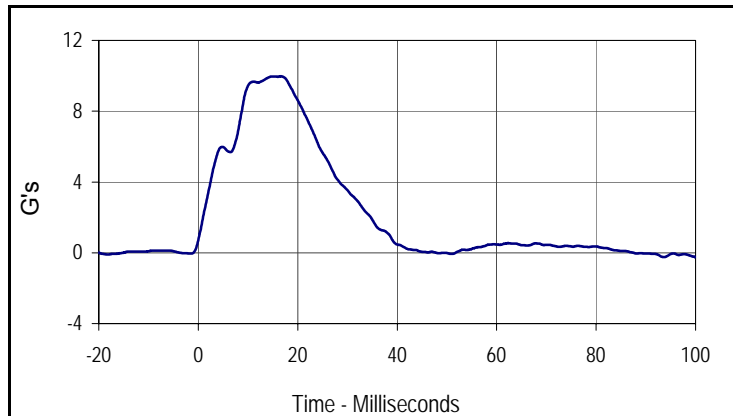
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
20.0	63.9	-10.4	163.2

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

Test Date: 4/27/15  
 Test I.D.: F037SH073



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	461	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	30.0	Pass
	Min		29.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.8	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.31	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	10.0	Pass
Overall Test Results				Pass



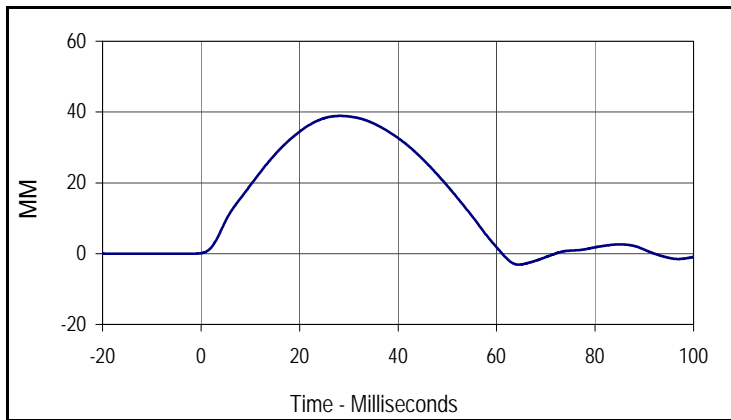
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
10.0	16.6	-0.2	93.6

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

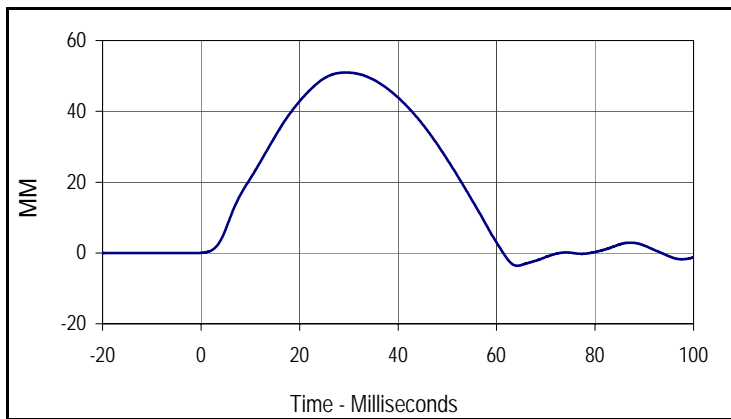
Test Date: 4/27/15  
 Test I.D.: F037RB1073



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	516	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	30.0	Pass
	Min		29.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.8	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.9	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	51.0	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
38.9	28.2	-3.1	64.5



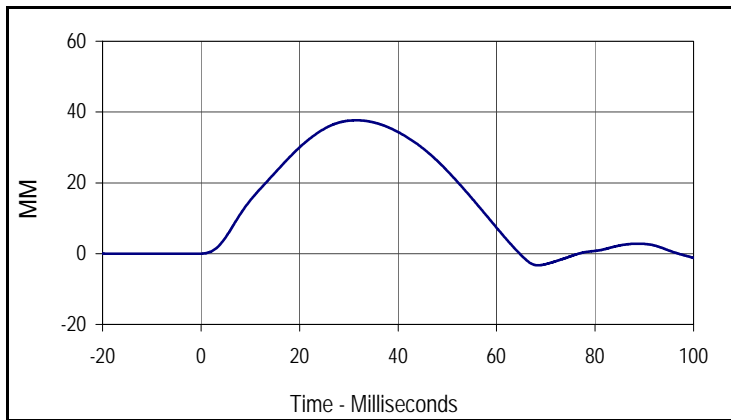
Curve Description			
Upper Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
51.0	29.4	-3.6	64.2

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

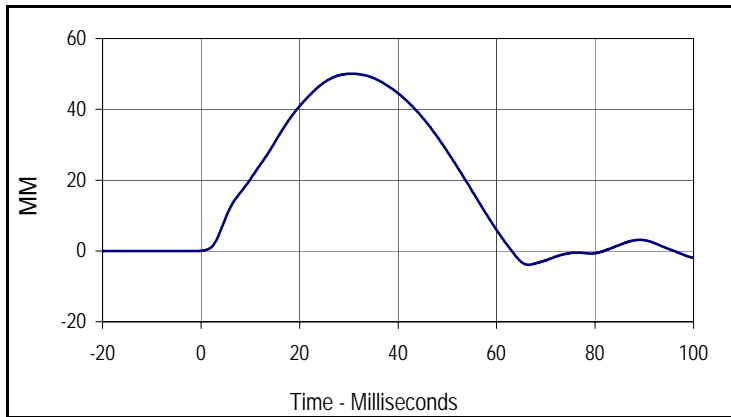
Test Date: 4/27/15  
 Test I.D.: F037RB2073



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	561	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	30.0	Pass
	Min		29.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.9	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	37.6	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	50.1	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
37.6	31.6	-3.3	68.4



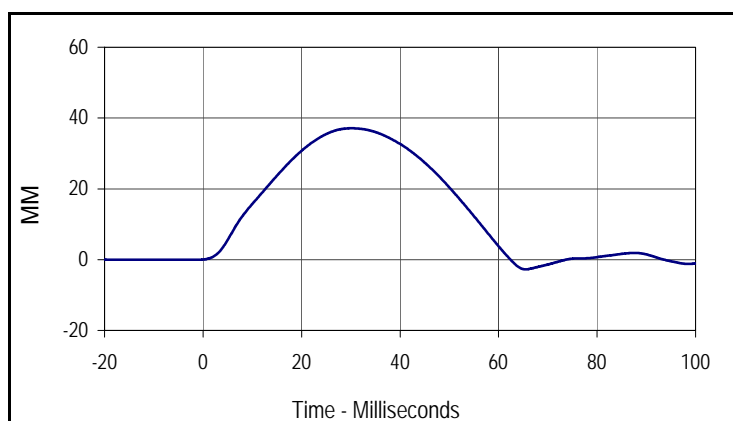
Curve Description			
Middle Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
50.1	30.7	-3.9	66.5

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

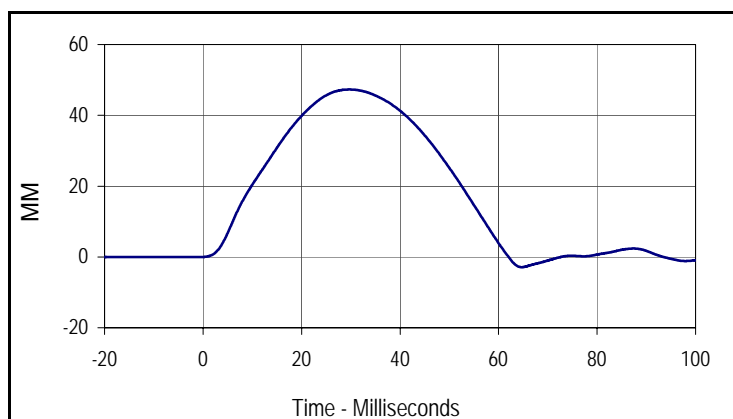
Test Date: 4/27/15  
 Test I.D.: F037RB3073



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	606	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	30.0	Pass
	Min		29.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.0	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	37.1	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	47.3	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
37.1	30.2	-2.8	65.5



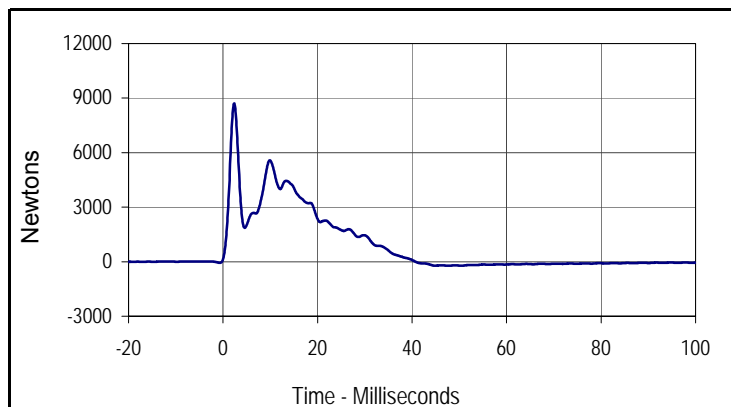
Curve Description			
Lower Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
47.3	29.7	-2.9	64.7

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

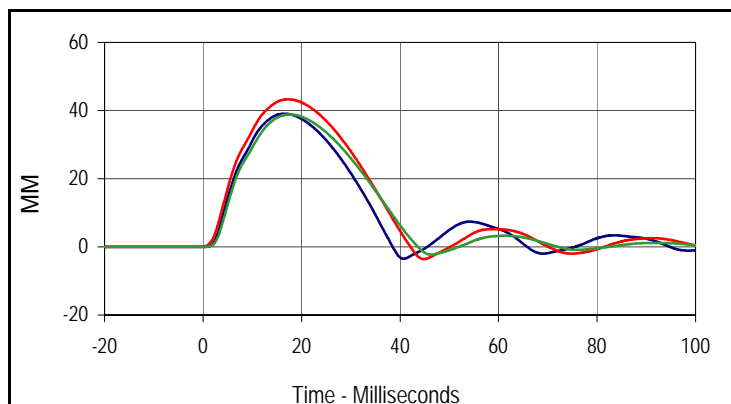
Test Date: 4/27/15  
 Test I.D.: F037TH073



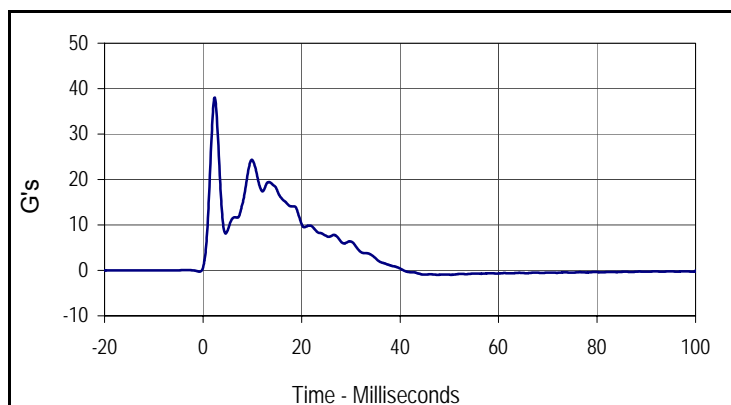
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	651	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	30.0	Pass
	Min		29.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.9	Pass
Peak Impactor Velocity	m/s	5.4 to 5.6	5.52	Pass
Peak Impactor Force	N	5100 to 6200	5581.6	Pass
	msec	> 6.0 msec	9.9	Pass
Peak Upper Rib Deflection	mm	34 to 41	39.1	Pass
Peak Middle Rib Deflection	mm	37 to 45	43.3	Pass
Peak Lower Rib Deflection	mm	37 to 44	38.8	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
8705.0	2.4	-221.4	47.6



Curve Description			
Upper, Middle, Lower Rib Deflections			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
39.1	16.6	-3.5	40.7
Max (Middle)	Time	Min (Middle)	Time
43.3	17.2	-3.6	44.8
Max (Lower)	Time	Min (Lower)	Time
38.8	17.7	-2.3	46.3



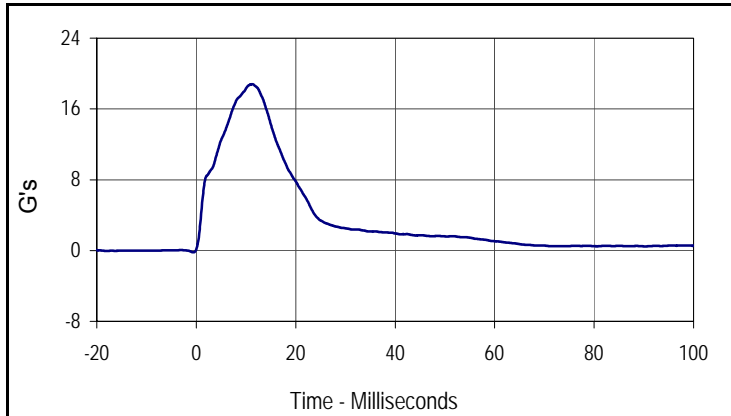
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
38.0	2.4	-1.0	47.6

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

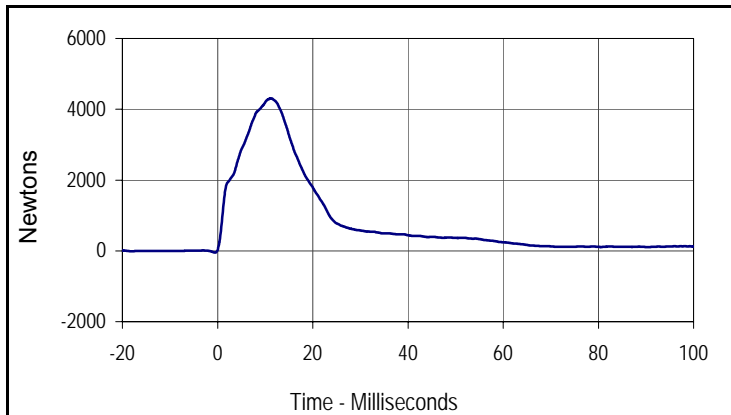
Test Date: 4/27/15  
 Test I.D.: F037ABD073



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	721	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	30.0	Pass
	Min		29.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.7	Pass
Probe Velocity	m/s	3.9 to 4.1	4.01	Pass
Peak Impactor Force	N	4000 to 4800	4306.3	Pass
	msec	10.6 to 13.0	11.3	Pass
Sum of Abdominal Forces	N	2200 to 2700	2431.7	Pass
	msec	10.0 to 12.3	10.9	Pass
Overall Test Results				Pass



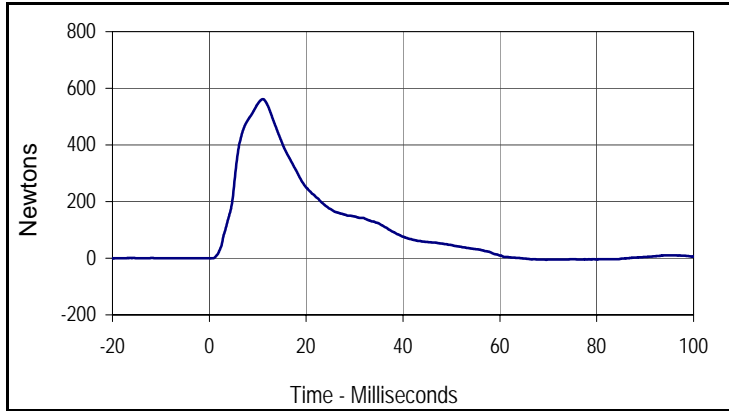
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
18.8	11.3	-0.2	-0.6



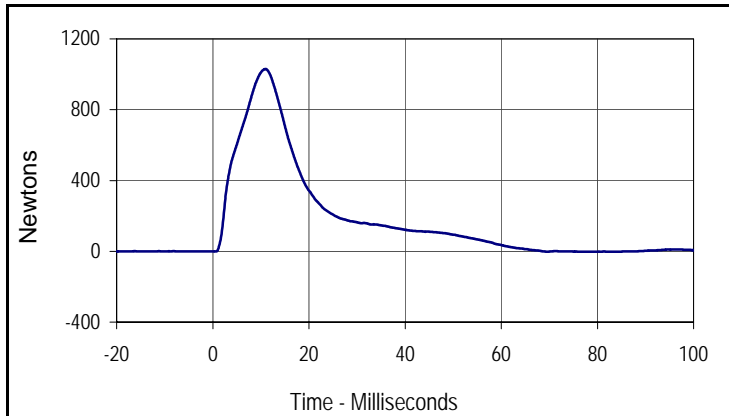
Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4306.3	11.3	-47.1	-0.6

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

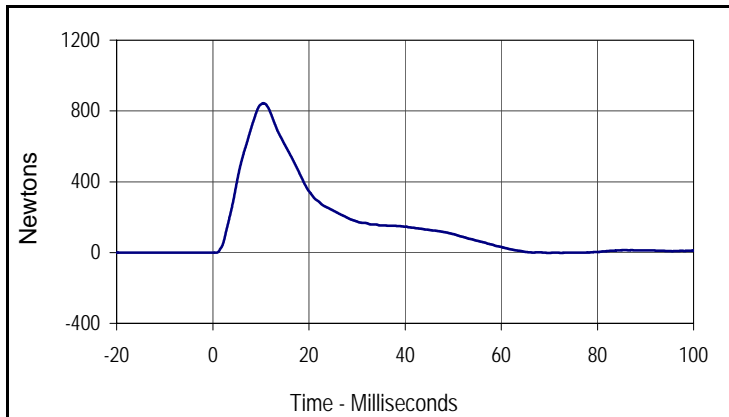
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 Test I.D.: F037ABD073



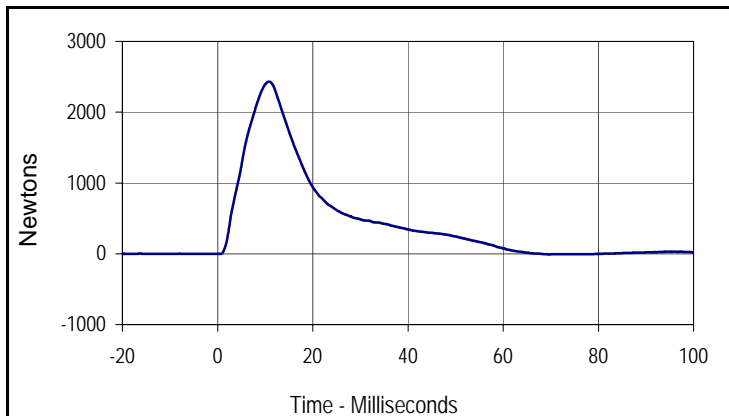
Curve Description			
Front Abdomen Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
562.0	11.1	-5.2	69.6



Curve Description			
Middle Abdomen Force			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtons
Max	Time	Min	Time
1030.3	11.0	-2.5	80.6



Curve Description			
Rear Abdomen Force			
Plot No.	Type	SAE Class	Units
005	FIL	600	Newtons
Max	Time	Min	Time
843.2	10.5	-2.3	120.1



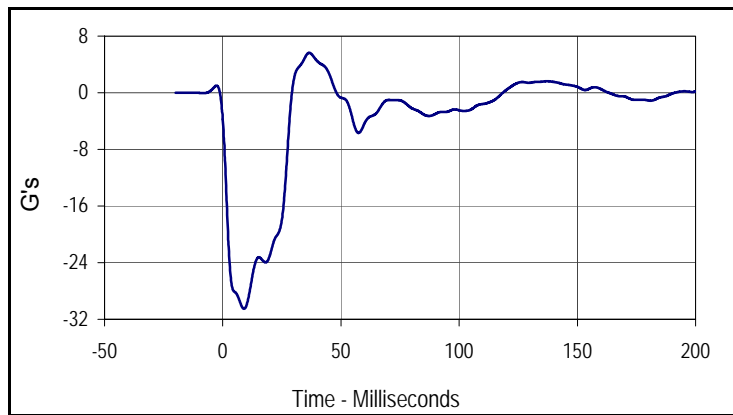
Curve Description			
Abdomen Sum Resultant			
Plot No.	Type	SAE Class	Units
006	RES	600	Newtons
Max	Time	Min	Time
2431.7	10.9	-8.6	69.7

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

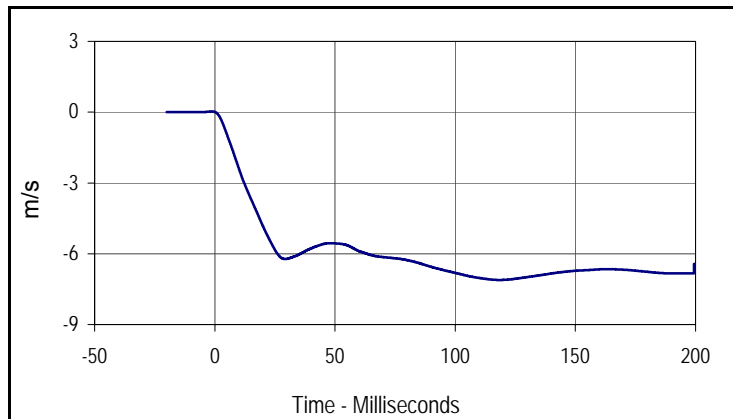
Test Date: 4/27/15  
 Test I.D.: F037LB073



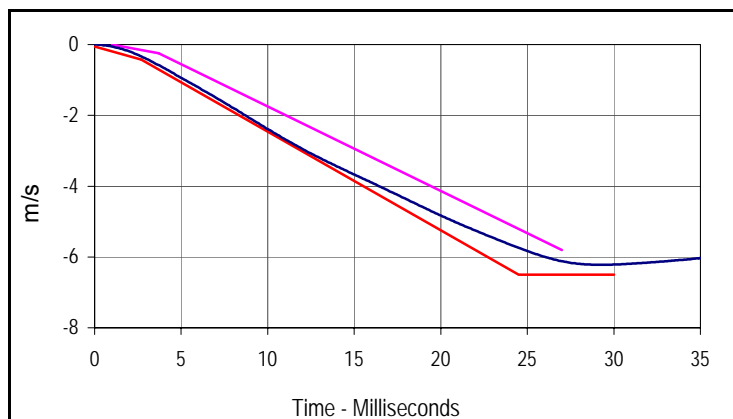
Tested Parameter	Units	Specification	Result	Pass/Fail
Lumbar Spine Assembly Soak Time	Minutes	≥240	796	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	30.0	Pass
	Min		29.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.8	Pass
Pendulum Velocity	m/s	5.95 to 6.15	6.01	Pass
Headform Rotation	Max	45 to 55	48.5	Pass
	Time	39 to 53	40.7	Pass
Time of Decay to Zero Angle from Peak	msec	37 to 57	45.6	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
5.6	37.2	-30.5	9.6



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.6	-7.1	119.1



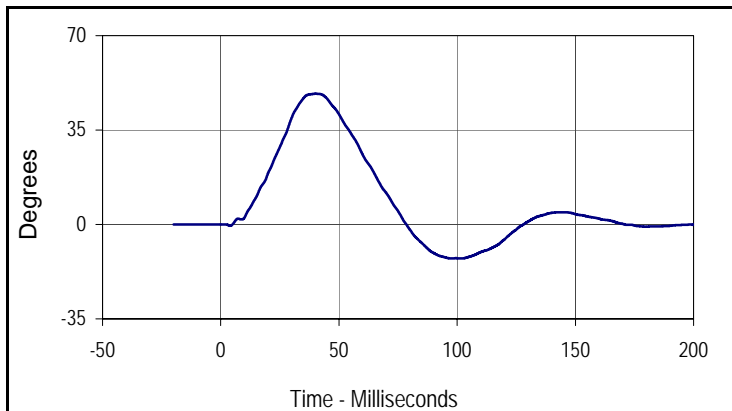
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-0.6	-7.1	119.1

Velocity Corridors

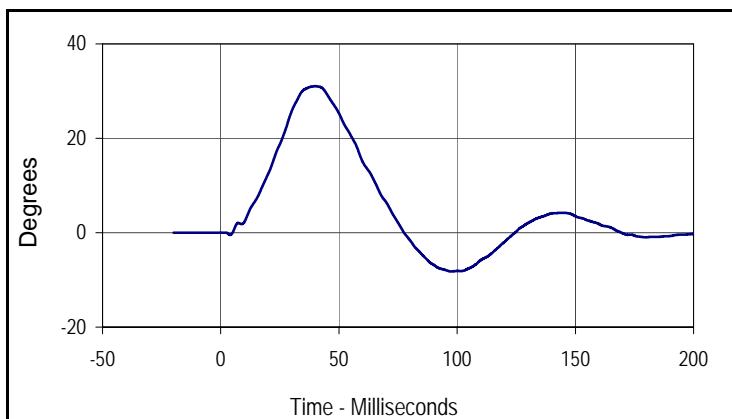
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.50
		30.0	-6.50

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

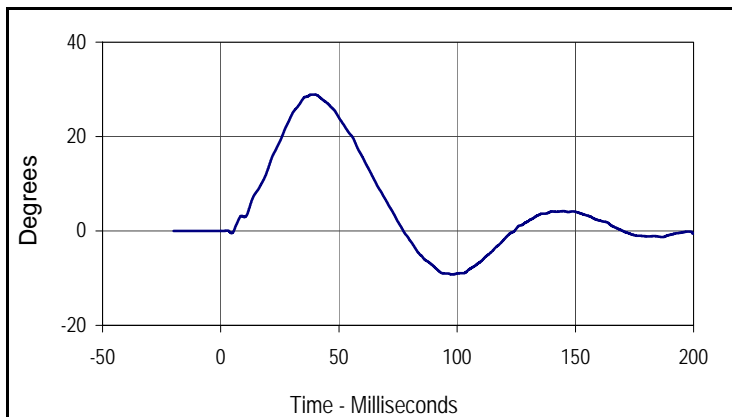
Test Date: 4/27/15  
 Test I.D.: F037LB073



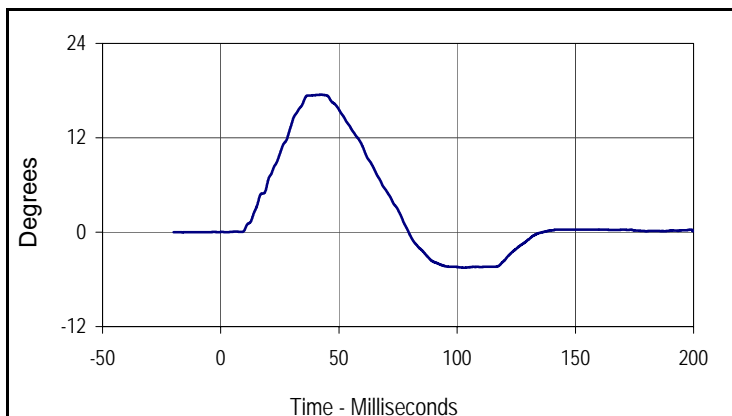
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
48.5	40.7	-12.6	98.1



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
31.0	40.5	-8.2	98.1



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
28.9	39.2	-9.2	98.4



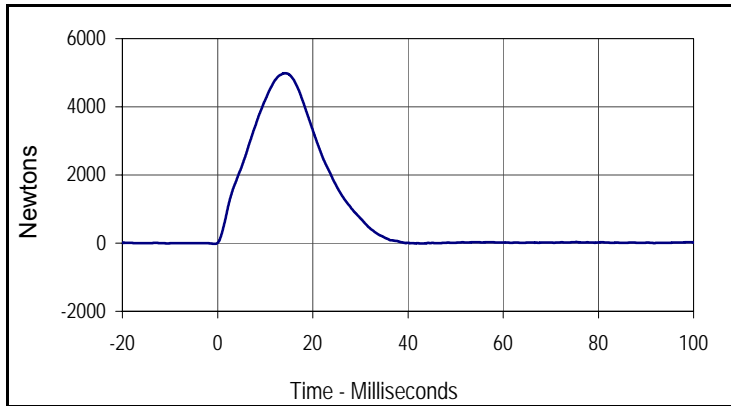
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
17.5	43.1	-4.5	103.5

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

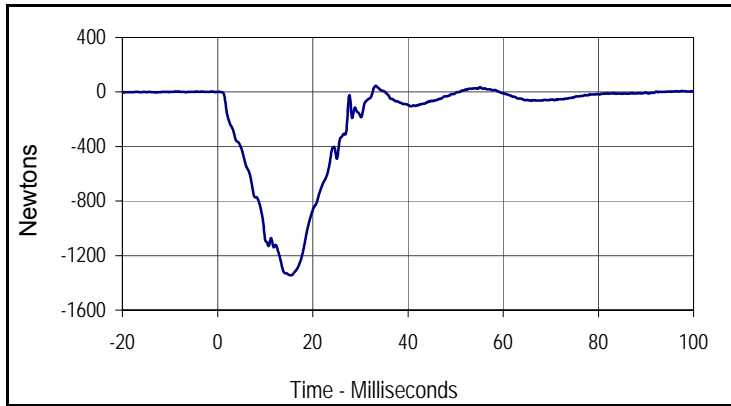
Test Date: 4/27/15  
 Test I.D.: F037PL073



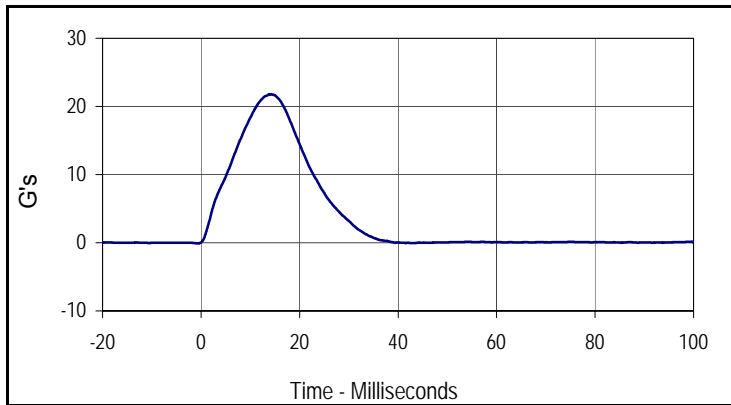
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	851	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	30.0	Pass
	Min		29.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.9	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.32	Pass
Peak Impactor Force	N	4700 to 5400	4987.8	Pass
	msec	11.8 to 16.1	14.1	Pass
Peak Pubic Symphysis Load	N	-1230 to -1590	-1345.0	Pass
	msec	12.2 to 17.0	15.4	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4987.8	14.1	-20.2	-0.6



Curve Description			
Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
44.6	33.2	-1345.0	15.4



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
21.8	14.1	-0.1	-0.6

Test Program: SID IIs External Measurements

Test Date: 4/28/15



ATD Serial No.: 307

Test I.D.: N/A

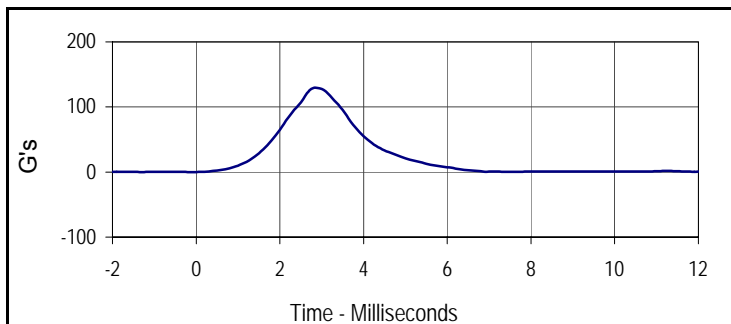
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	29	Pass
A Sitting Height	mm	772 - 788	778	Pass
B Shoulder Pivot Height	mm	437 - 453	443	Pass
C H-Point Height	mm	79 - 89	85	Pass
D H-Point from Seatback	mm	141 - 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

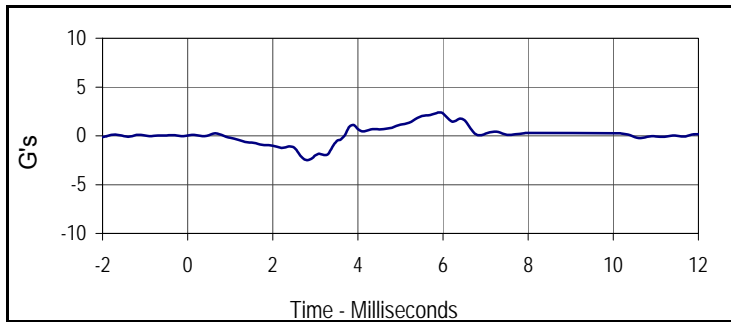
Test Date: 4/28/15  
 Test I.D.: 307HD082



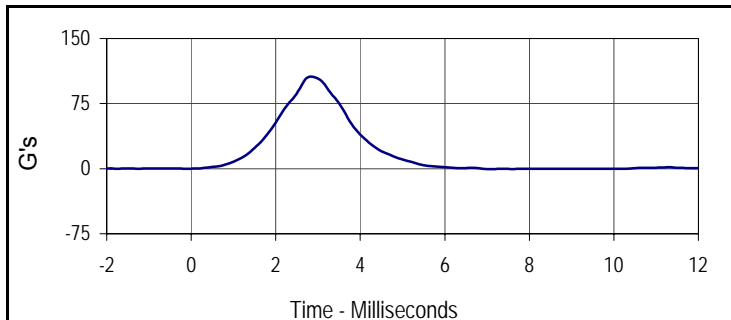
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	375	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	29.9	Pass
	Min		29.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.5	Pass
Peak Head Resultant Acceleration	G's	115 to 137	129.3	Pass
Peak Head X Acceleration	G's	<15	2.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	0.5	Pass
Overall Test Results				Pass



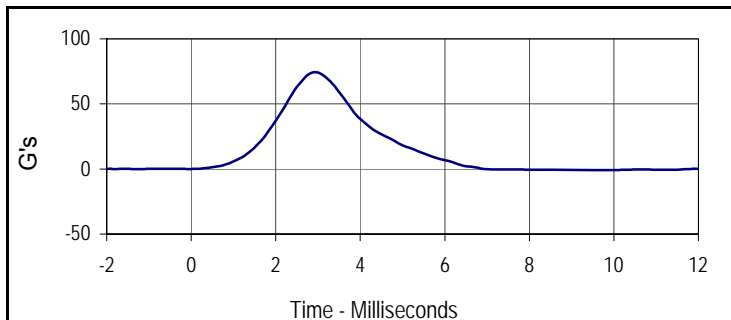
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
129.3	2.9	0.0	-0.1



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.4	5.9	-2.5	2.8



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
106.2	2.8	-0.6	7.1



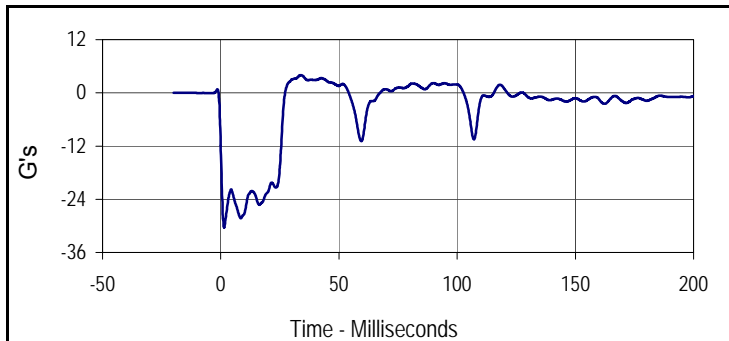
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
74.5	2.9	-0.7	10.1

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

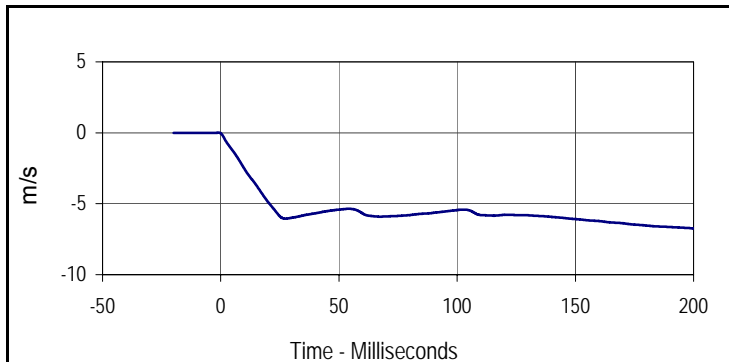
Test Date: 4/28/15  
 Test I.D.: 307NB082



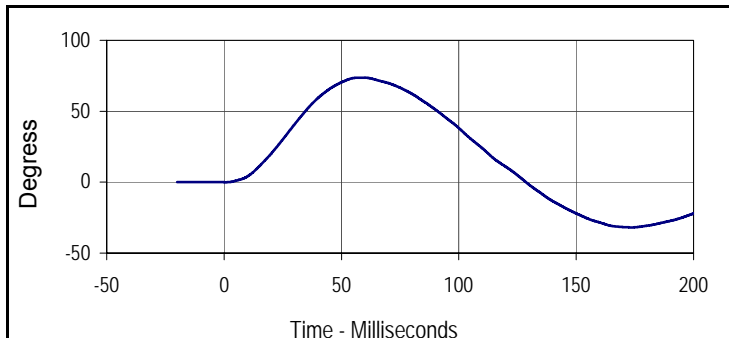
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	420	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	29.9	Pass	
	Min		29.4	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	29.7	Pass	
Pendulum Velocity	m/s	5.51 to 5.63	5.56	Pass	
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.54	Pass
	15 msec	m/s	-3.30 to -4.10	-3.69	Pass
	20 msec	m/s	-4.40 to -5.40	-4.87	Pass
	25 msec	m/s	-5.40 to -6.10	-5.89	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.05	Pass
D-Plane Rotation	Max	Degrees	71 to 81	73.7	Pass
	Time	msec	50 to 70	59.5	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-37.8	Pass	
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	107.1	Pass	
Overall Test Results			Pass	Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
4.0	0.0	-30.3	0.0



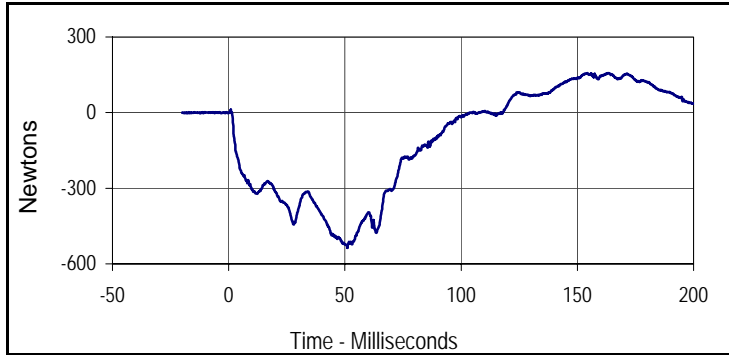
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.9	-6.7	200.0



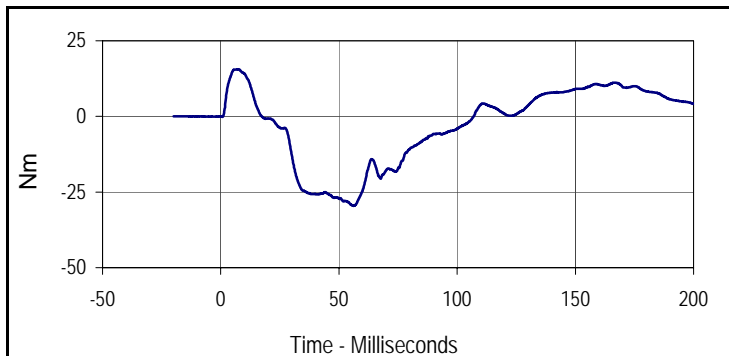
Curve Description			
D-Plane Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degress
Max	Time	Min	Time
73.7	59.5	-31.9	173.6

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

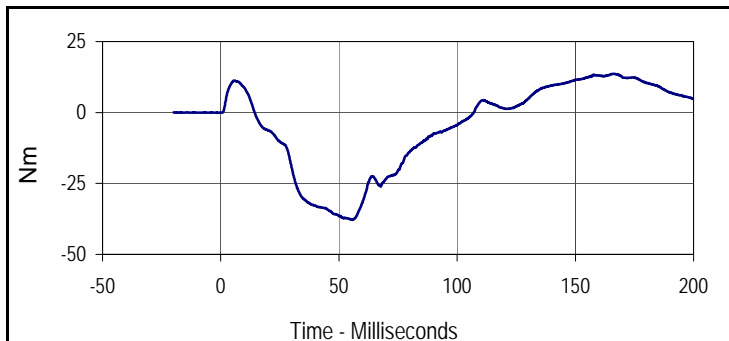
Test Date: 4/28/15  
 Test I.D.: 307NB082



Curve Description			
Neck Force Y			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
157.0	163.3	-536.2	51.1



Curve Description			
Neck Moment X			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
15.6	7.4	-29.5	56.2



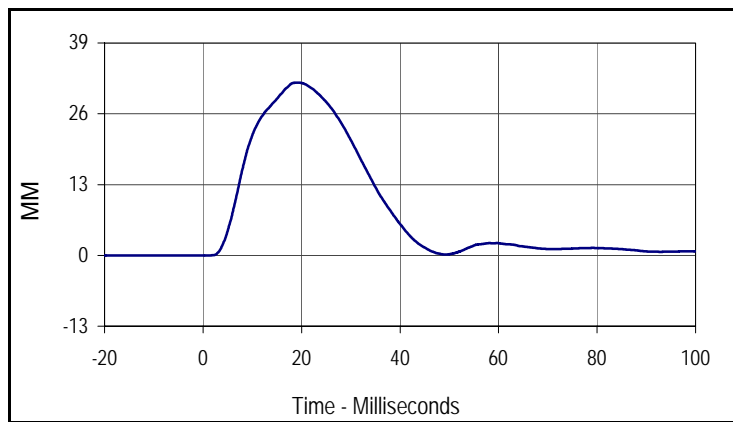
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
006	FIL	600	Nm
Max	Time	Min	Time
13.6	166.7	-37.8	55.4

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

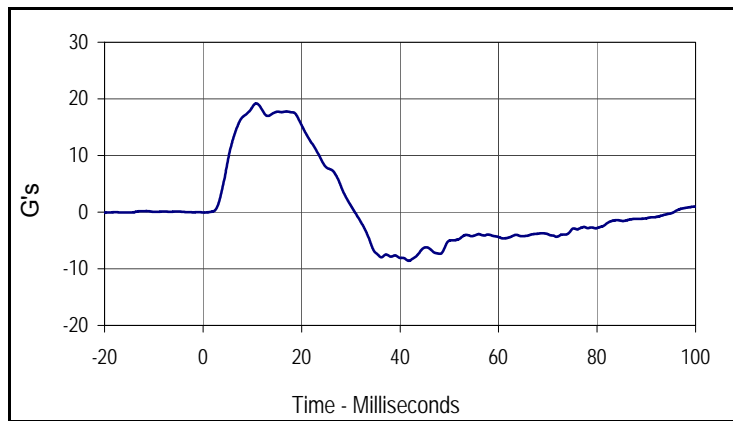
Test Date: 4/28/15  
 Test I.D.: 307SH082



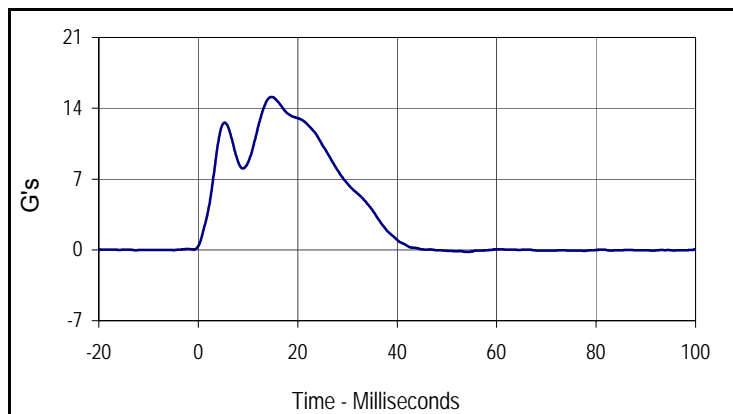
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	475	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	29.9	Pass
	Min		29.4	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.9	Pass
Impactor Velocity	m/s	4.20 to 4.40	4.31	Pass
Peak Shoulder Deflection	mm	28 to 37	31.7	Pass
Peak Lateral Spine Acceleration Y	G's	17 to 22	19.2	Pass
Peak Impactor Acceleration	G's	13 to 18	15.1	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
31.7	19.3	0.0	-7.5



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.2	10.8	-8.6	41.8



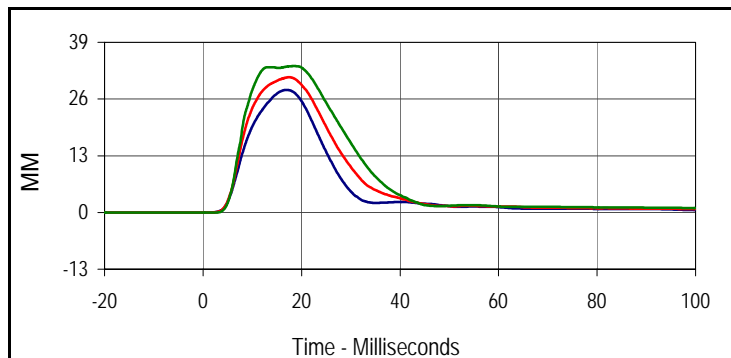
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.1	14.7	-0.2	54.2

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

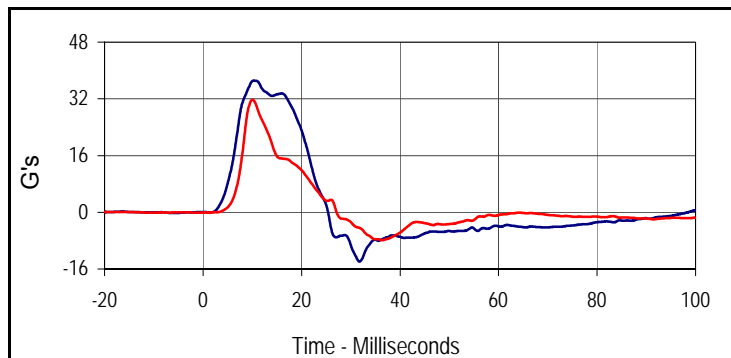
Test Date: 4/28/15  
 Test I.D.: 307TWA082



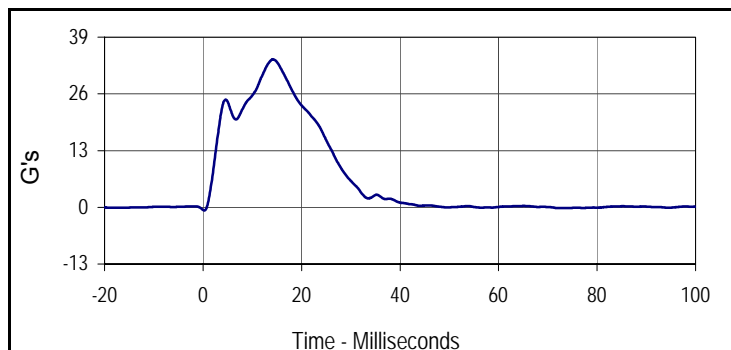
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	520	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	29.9	Pass
	Min		29.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.7	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.71	Pass
Peak Shoulder Deflection	mm	31 to 40	35.3	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	28.1	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.0	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	33.5	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	37.2	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	31.8	Pass
Peak Impactor Acceleration	G's	30 to 36	33.9	Pass
<b>Overall Test Results</b>				<b>Pass</b>



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
28.1	17.0	0.0	-12.9
Middle Thorax Deflection			
Max	Time	Min	Time
31.0	17.5	0.0	-12.1
Lower Thorax Deflection			
Max	Time	Min	Time
33.5	18.5	0.0	-19.7



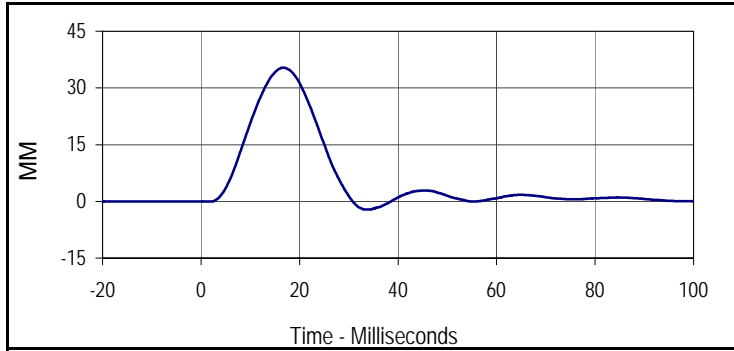
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
37.2	10.3	-13.9	31.8
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
31.8	10.0	-7.9	36.4



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
33.9	14.2	-0.7	0.3

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

Test Date: 4/28/15  
 Test I.D.: 307TWA082



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
35.3	16.6	-2.2	33.5

Test Program: SID IIs Thorax without Arm Impact Test

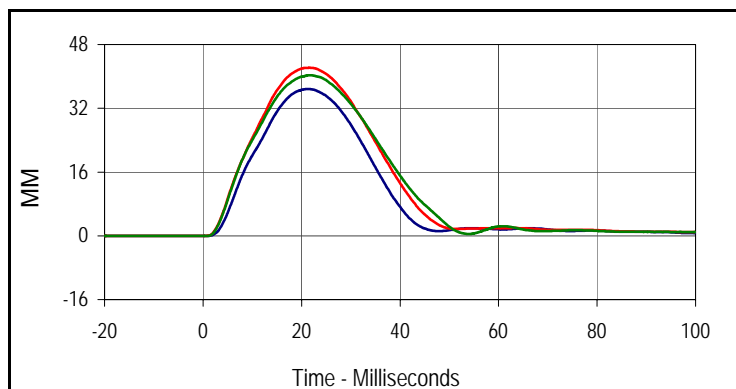
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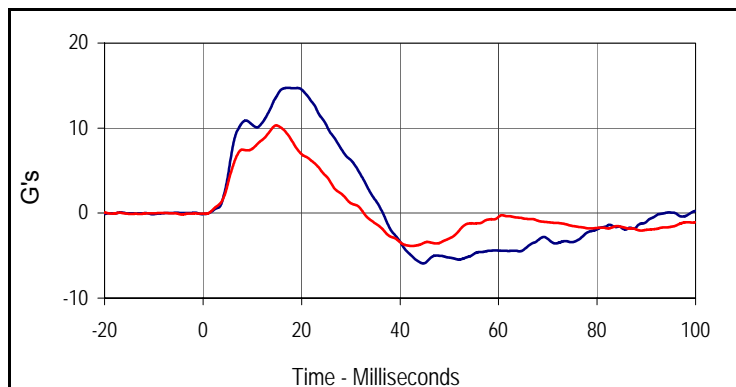
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Test I.D.: 307TWOA082

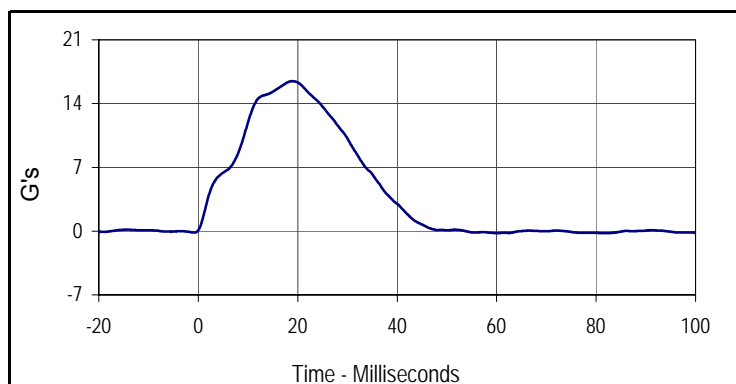
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	575	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	29.9	Pass
	Min		29.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.4	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.30	Pass
Peak Upper Thorax Rib Deflection	mm	32 to 40	36.8	Pass
Peak Middle Thorax Rib Deflection	mm	39 to 45	42.2	Pass
Peak Lower Thorax Rib Deflection	mm	35 to 43	40.3	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	14.7	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	10.3	Pass
Peak Impactor Acceleration	G's	14 to 18	16.5	Pass
Overall Test Results				Pass



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
36.8	21.3	0.0	-18.5
Middle Thorax Deflection			
Max	Time	Min	Time
42.2	21.6	0.0	-19.2
Lower Thorax Deflection			
Max	Time	Min	Time
40.3	21.6	0.0	-0.9



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.7	17.2	-5.9	44.7
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
10.3	14.9	-3.9	42.4



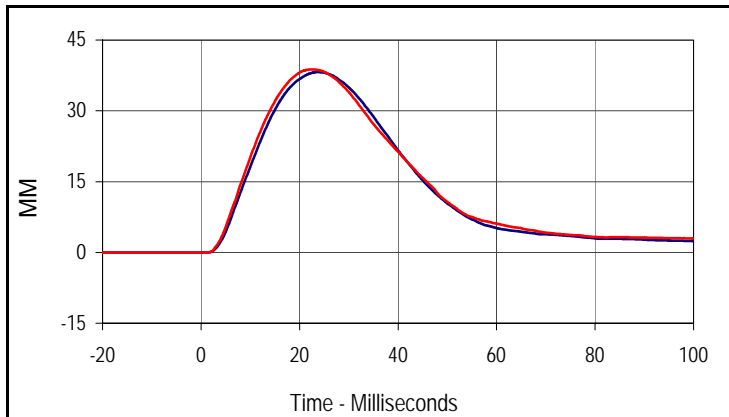
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.5	19.0	-0.2	81.0

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

Test Date: 4/28/15  
 Test I.D.: 307ABD082



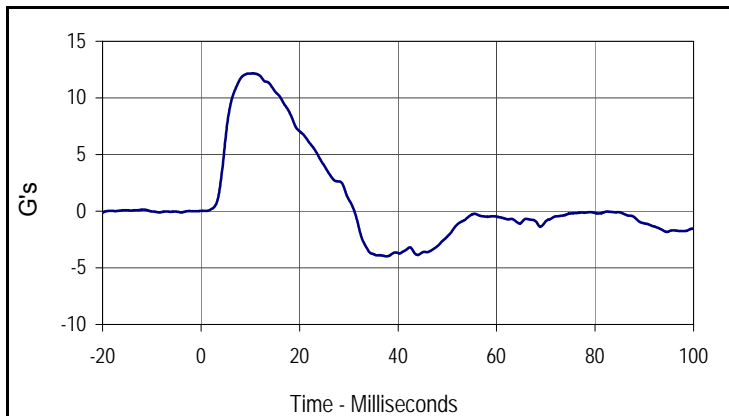
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	630	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	29.9	Pass
	Min		29.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.7	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.31	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	38.2	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	38.8	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.2	Pass
Peak Impactor Acceleration	G's	12 to 16	15.7	Pass
Overall Test Results				Pass



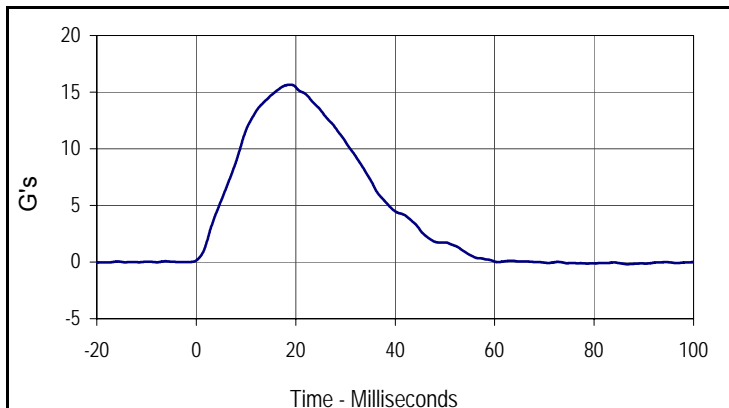
Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
38.2	23.7	0.0	-18.5

Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
38.8	22.4	0.0	-19.2

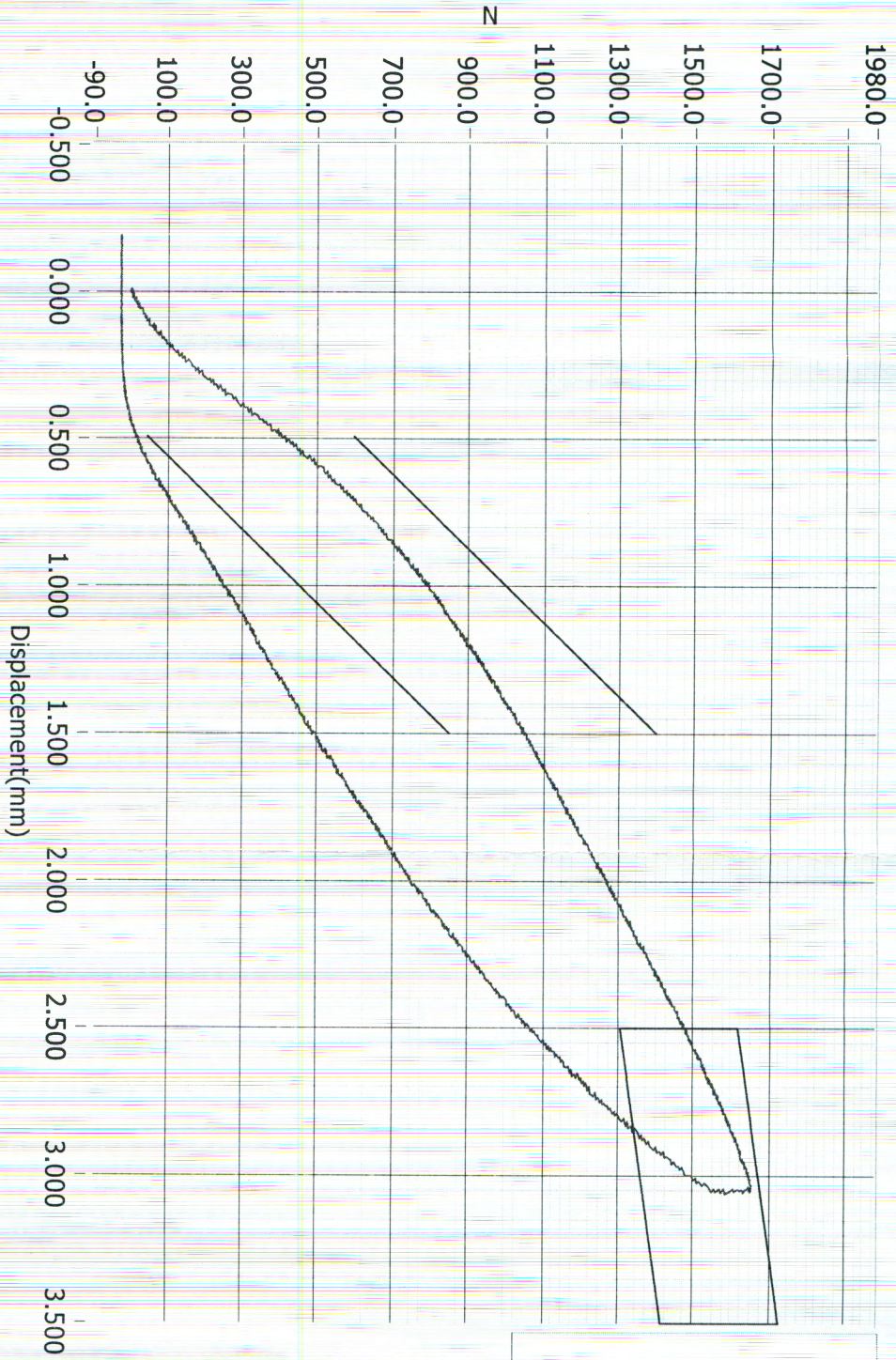


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.2	10.5	-4.0	37.6



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.7	19.0	-0.2	86.6

# Resultant Data - SIDIIS Plug Compression



1646N

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

## ATD Calibration Lab

M20150208 Post Test

Test ID	Part Serial Number	Test Date	Test Time
<u>Cert ID</u>	70677	12/12/2013	9:16 PM
	ATD Serial Number	ATD Type	
	N/A	SIDIIS	

Current Date : 12/12/2013

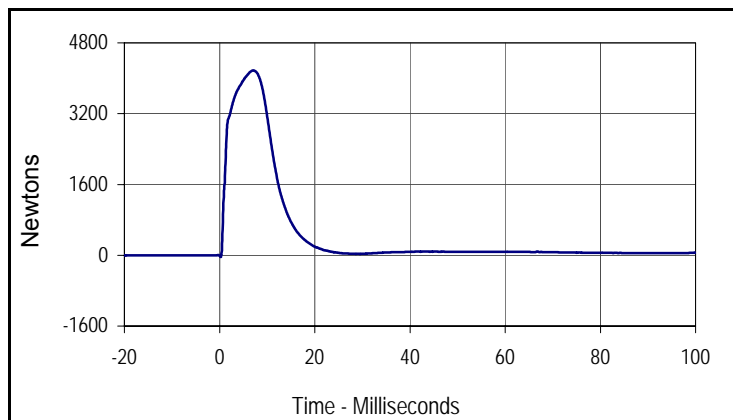
Current Time : 21:16:37

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

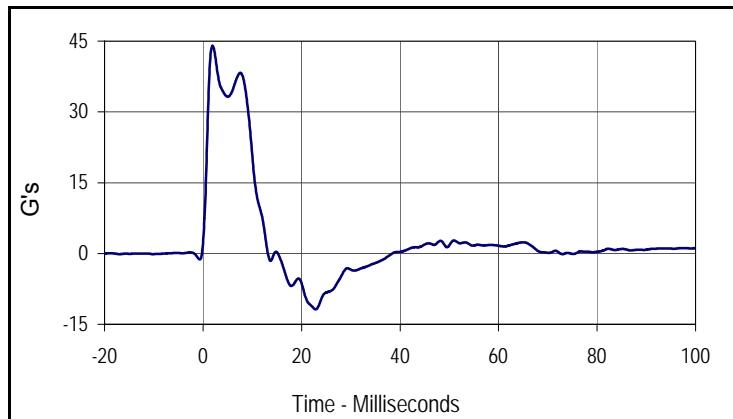
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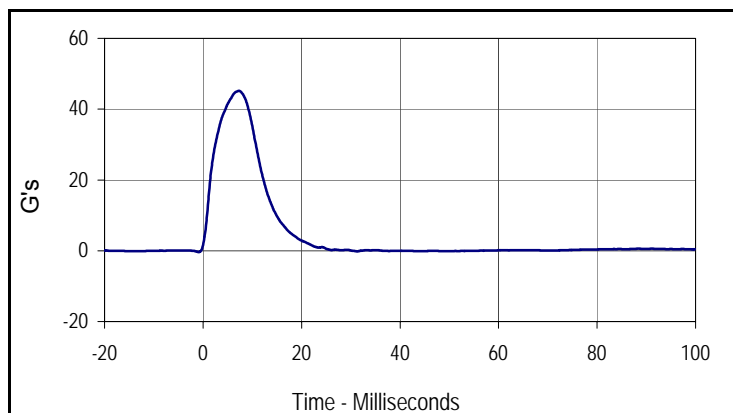
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	680	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	29.9	Pass
	Min		29.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.7	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.72	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	4177.2	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	38.3	Pass
Peak Impactor Acceleration	G's	38 to 47	45.2	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4177.2	7.1	-37.4	0.2



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
44.0	1.9	-11.8	22.9



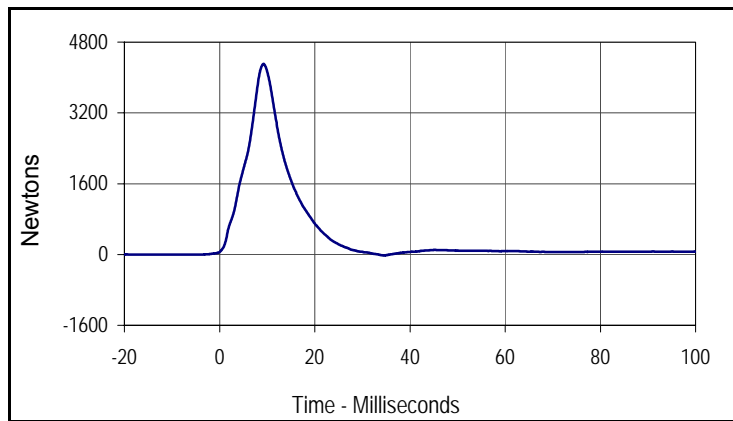
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
45.2	7.3	-0.4	-0.9

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

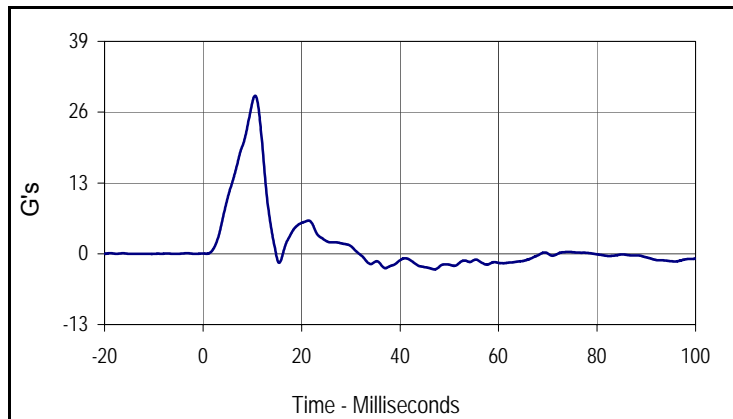
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 Test I.D.: 307PL082



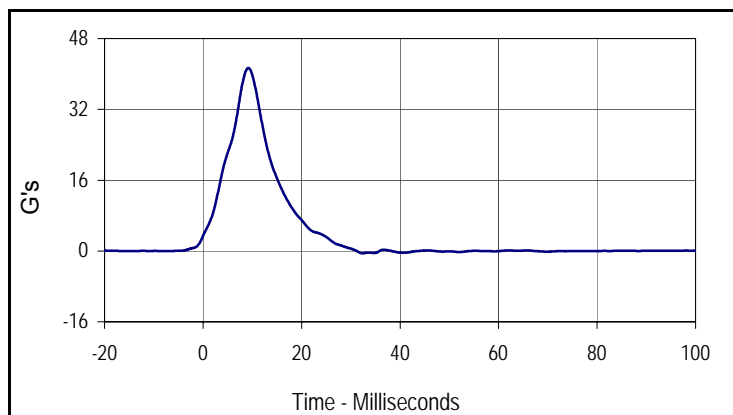
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	735	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	29.9	Pass
	Min		29.4	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.6	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.31	Pass
Peak Iliac Force	Newtons	4100 to 5100	4307.9	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	29.0	Pass
Peak Impactor Acceleration	G's	36 to 45	41.3	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Iliac Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4307.9	9.2	-21.2	34.5



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
29.0	10.6	-2.9	47.0



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
41.3	9.2	-0.5	32.4

**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	4/6/15
		Y	P58865	Endevco	4/6/15
		Z	P58867	Endevco	4/6/15
	Redundant	X	P58859	Endevco	4/6/15
		Y	P58866	Endevco	4/6/15
		Z	P58873	Endevco	4/7/15
Thorax Rib Displacement Potentiometers	Upper	Y	209	FTSS	4/7/15
	Middle	Y	210	FTSS	4/7/15
	Lower	Y	207	FTSS	4/7/15
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	4/7/15
		Y	P52027	Endevco	4/7/15
		Z	P58877	Endevco	4/8/15
Pubic Symphysis Load Cell		Y	DG6784	Denton	5/15/14

**TABLE 2 – Dummy Instrumentation (SID-IIs)**

			SID-IIs S/N 307			
			Serial Number	Manufacturer	Calibration	
Head Accelerometers	Primary	X	P58900	Endevco	4/8/15	
		Y	P58902	Endevco	4/8/15	
		Z	P58983	Endevco	4/8/15	
	Redundant	X	P58901	Endevco	4/8/15	
		Y	P58906	Endevco	4/8/15	
		Z	P58989	Endevco	4/8/15	
Displacement Potentiometers	Thoracic Rib	Upper	Y	1249	FTSS	4/8/15
		Middle	Y	1265	FTSS	4/8/15
		Lower	Y	1277	FTSS	4/8/15
	Abdominal Rib	Upper	Y	1286	FTSS	4/8/15
		Lower	Y	1290	FTSS	4/8/15
Lower Spine Accelerometers (T12)		X	P59007	Endevco	4/9/15	
		Y	P59015	Endevco	4/9/15	
		Z	P58995	Endevco	4/9/15	
Acetabulum Load Cell		Y	260	Denton	5/8/14	
Iliac Wing Load Cell		Y	272	Denton	4/4/14	
Pelvis Plug (Struck Side)			70738	FTSS	12/12/13	
Pelvis Plug (Non-Struck Side)			70950	FTSS	12/12/13	

**TABLE 3 – Vehicle Instrumentation**

Vehicle Instrumentation			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	A145492	MSI	3/25/15
	Vehicle Center of Gravity	Y	A145500	MSI	3/25/15
	Vehicle Center of Gravity	Z	A147470	MSI	3/25/15
2	Right Sill at Front Seat	X	A147429	MSI	3/25/15
	Right Sill at Front Seat	Y	A152868	MSI	3/25/15
	Right Sill at Front Seat	Z	A147427	MSI	3/25/15
3	Right Sill at Rear Seat	X	A147414	MSI	3/25/15
	Right Sill at Rear Seat	Y	A152870	MSI	3/25/15
	Right Sill at Rear Seat	Z	A148321	MSI	3/25/15
4	Left Sill at Front Door	Y	A148190	MSI	3/24/15
5	Left Sill at Rear Door	Y	A152838	MSI	3/24/15
6	Left A-Post Lower	Y	A148313	MSI	3/26/15
7	Left A-Post Middle	Y	A152872	MSI	3/26/15
8	Left B-Post Lower	Y	A148203	MSI	3/26/15
9	Left B-Post Middle	Y	A148207	MSI	3/26/15
10	Front Seat Track	Y	A148252	MSI	3/24/15
11	Rear Seat Structure	Y	N/A	N/A	N/A
12	Right Rear Occ. Compartment	Y	A146000	MSI	3/24/15
13	Engine Block	X	A148235	MSI	3/26/15
	Engine Block	Y	A147432	MSI	3/26/15
14	Rear Floorpan Above Axle	X	A147473	MSI	3/24/15
	Rear Floorpan Above Axle	Y	A147419	MSI	3/24/15
	Rear Floorpan Above Axle	Z	A147453	MSI	3/24/15

**TABLE 4 – MDB Instrumentation**

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	A128040	MSI	3/30/15
MDB Center of Gravity	Y	A124105	MSI	3/30/15
MDB Center of Gravity	Z	A104832	MSI	3/30/15
Left Frame at Rear Axle Centerline	X	A148320	MSI	3/30/15
Left Frame at Rear Axle Centerline	Y	A148316	MSI	3/30/15