

REPORT NUMBER: SINCAP-KAR-13-038

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

**HONDA OF AMERICA MFG., INC.
2013 HONDA ACCORD EX 2-DOOR COUPE**

NHTSA No: MD5302

**PREPARED BY:
KARCO ENGINEERING, LLC.
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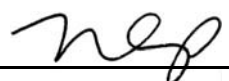
JANUARY 24, 2013

FINAL REPORT

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Approval Date: January 24, 2013

FINAL REPORT ACCEPTANCE BY OCWS:


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

Date: 


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

Date: 

TECHNICAL REPORT DOCUMENTATION PAGE

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12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NVS-111) 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		13. Type of Report and Period Covered Final Test Report, January 10 - 24, 2012
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16. Abstract

A 55/28 km/h 90 deg. Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2013 Honda Accord EX 2-door coupe 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 January 10, 2012.

The impact velocity of the Moving Deformable Barrier was 61.95 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 5.8 deg. C. The target vehicle's maximum post-test static crush was 156 mm located at level 3. The test vehicle's occupant performance data is as follows:

Measurement Description	Driver ATD (ES-2re)		
	Units	IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	225.0
Maximum Thorax Rib Deflection	mm	44	12
Total Abdominal Force	N	2500	719
Pubic Symphysis Force	N	6000	1309

Measurement Description	Passenger ATD (SID-IIs)		
	Units	IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	350.2
Resultant Lower Spine Acceleration	g	82	57
Total Pelvic Force (Sum of Acetubular and Iliac Forces)	N	5525	3832
Maximum Thoracic Rib Deflection	mm	38*	19
Maximum Abdominal Rib Deflection	mm	45*	22

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches, and 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 MY 2013 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 2013 Honda Accord EX 2-door coupe. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated September 2012.

SECTION 2

SUMMARY OF TEST RESULTS

A 2013 Honda Accord EX 2-door coupe 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 61.95 km/h (38.49 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 January 10, 2013. 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 2012. The side impact event was documented by 11 cameras. Camera locations are included in Data Sheet No. 5 of this report.

The dummies were instrumented in the following manner:

DRIVER ATD (ES-2re)

Primary and redundant head CG tri-axial accelerometers

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

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

Lower spine (12) tri-axial accelerometers

Pubic symphysis y-axis load cell

PASSENGER ATD (SID-IIs)

Primary and redundant head CG tri-axial accelerometers

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

Abdomen upper rib and lower rib y-axis displacement potentiometers

Lower spine (12) tri-axial accelerometers

Acetabulum and iliac wing y-axis load cells

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

Dummy injury readings were recorded as follows:

Measurement Description	Units	Driver ATD (ES-2re)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	225.0
Maximum Thorax Rib Deflection	mm	44	12
Combined Abdominal Force	N	2500	719
Pubic Symphysis Force	N	6000	1309

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	350.2
Lower Spine (T12) Resultant Acceleration	g	82	57
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3832
Maximum Thoracic Rib Deflection	mm	38*	19
Maximum Abdominal Rib Deflection	mm	45*	22

*Proposed IARV

Supplemental restraint information is given below:

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

GENERAL COMMENTS

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

SECTION 3

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13

CONVERSION FACTORS

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

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MD5302
Model Year	2013
Make	Honda
Model	Accord EX
Body Style	2-Door Coupe
VIN	1HGCT1B77DA001460
Body Color	Tiger Eye P.
Odometer Reading (km / mi)	103 / 64
Engine Displacement (L)	2.4
Type / No. of Cylinders	Inline 4
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	CVT
Overdrive	Yes
Final Drive	Front
Roof Rack	No
Sunroof / T-Top	Yes
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes

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

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

Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda of America Mfg., Inc.
Date of Manufacture	Oct-12
Vehicle Type	Passenger Car

GVWR (kg)	1930
GAWR Front (kg)	1050
GAWR Rear (kg)	910

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

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

A

B

A-B

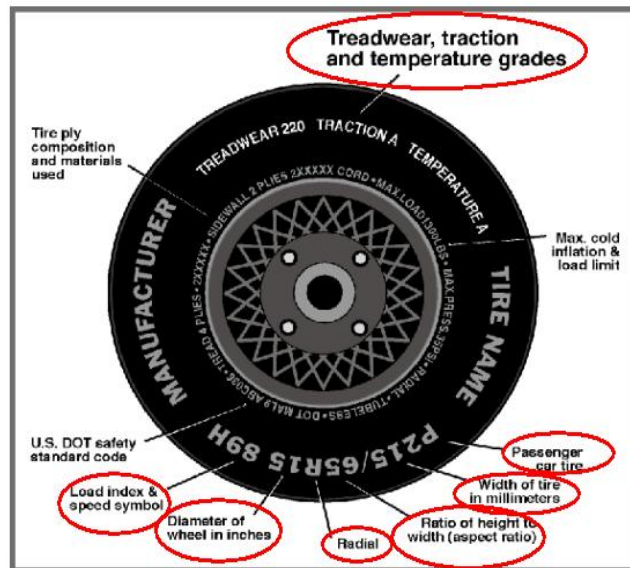
VEHICLE SEAT TYPE

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

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	300	300
Cold Pressure (kPa)	225	225
Recommended Tire Size	P215/55R17	P215/55R17
Tire Size on Vehicle	P215/55R17	P215/55R17
Tire Manufacturer	Michelin	Michelin
Tire Model	Primacy MXV4	Primacy MXV4
Treadware	500	500
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	94V	94V
Tire Material	Polyester, Polyamide, Steel	Polyester, Polyamide, Steel
DOT Safety Code Left	B93F 01UX 3912	B93F 01UX 3912
DOT Safety Code Right	B93F 01UX 3912	B93F 01UX 3912

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	220	220	220	220
Tire Placard	kPa	225	225	225	225
Owner's Manual	kPa	225	225	225	225
As Tested	kPa	225	225	225	225

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	466.5	296.5		503.5	362.0		503.0	372.5	
Right	kg	449.5	282.0		462.5	328.0		458.5	329.5	
Ratio	%	61.3%	38.7%	100.0%	58.3%	41.7%	100.0%	57.8%	42.2%	100.0%
Total	kg	916.0	578.5	1494.5	966.0	690.0	1656.0	961.5	702.0	1663.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1494.5	A
Actual Weight of 2 P572 ATDs Used	kg	125.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	44.8	C
Calculated Vehicle Target Wt (TVTW)	kg	1664.3	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	698	703	Yes
RF	mm	718	711	Yes
RR	mm	696	695	Yes
LR	mm	700	701	Yes
Vehicle CG (Aft of Front Axle)	mm	1152	1138	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	42	36	

***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: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302

Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Rear Side Panel	2.5
Non-Struck Side Window	3.5
Trunk Trim	7.5
Non-Struck Side Outboard Mirror	1.0
Spare Tire and Tools	14.5
Ballast / Equipment Added	54.4

DATA SHEET NO. 2**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA**Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13**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 rear-most, lowest, mid-angle position.

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	1.4	0.0	0.7
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	0.7	489	Max	478	489	502
			Mid	478	489	502
			Min	478	489	502
Front Passenger Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

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

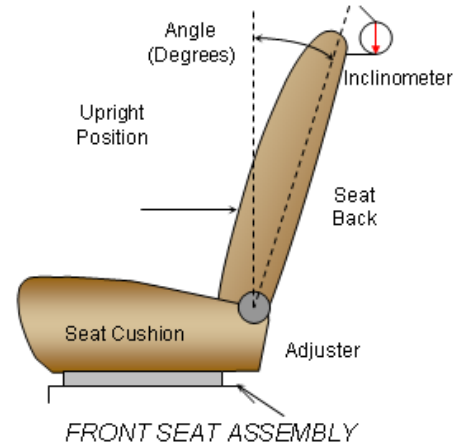
Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13

SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	239	25	119	12
Front Passenger Seat	240	25	120	12
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

SEAT BACK ADJUSTMENT

The driver's seat back is positioned to the manufacturer's designated design angle. The right front passenger's seat back is positioned in a similar manner as the driver's seat back. The struck side rear seat back is positioned such that the dummy's head is level. The rear center and non-struck side rear outboard seat backs are positioned in a similar manner as the struck side rear seat back. Seat Back angle is measured at the headrest post.

**SEAT BACK POSITION**

Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/Seated Dummy	47.4	25	2.3	4
Front Passenger Seat	48.2	25	2.3	4
Front Center Seat				
Struck Side Rear Seat w/Seated Dummy	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

DATA SHEET NO. 2 ... (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13

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	Fixed	Fixed
Rear Seat	Fixed	Fixed

HEAD RESTRAINT ADJUSTMENT

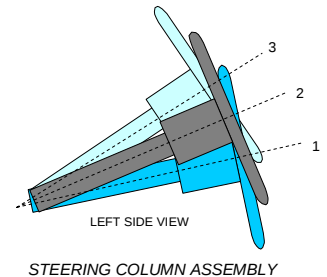
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total No. of Positions	Placed in Position
Driver Seat	6	Full Up
Rear Seat	3	Full Down

STEERING COLUMN ADJUSTMENT

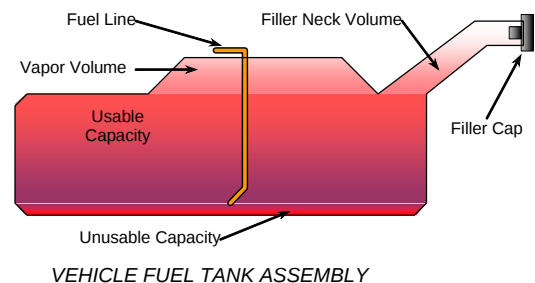
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of the geometric locus it describes when it moves through its full range of motion.

	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	24.3	121
Geometric Center - Position 2	21.1	140
Uppermost - Position 3	17.9	159
Telescoping Steering Wheel Travel		38
Test Position	21.1	140



FUEL PUMP

The vehicle is equipped with an electric fuel pump. The fuel pump is filled up for two seconds after the ignition key is turned from the "LOCK" to the "ON" position, and then the pressure is maintained.



DATA SHEET NO. 2 ... (CONTINUED)**SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA**Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13**FUEL TANK CAPACITY**

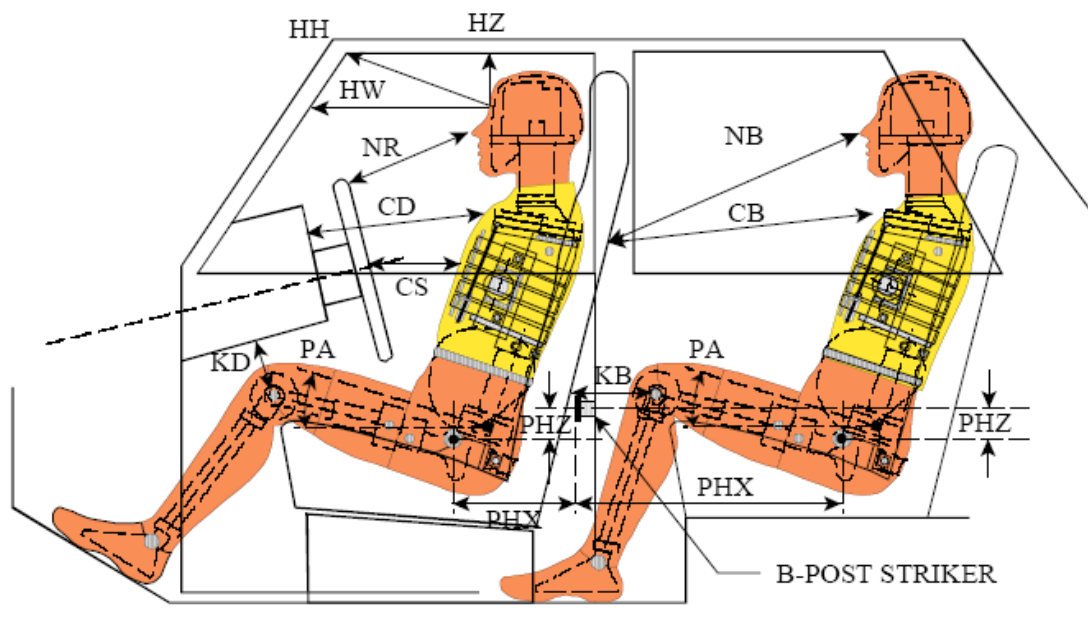
Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	65.10
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	60.56
Actual amount of Solvent Used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

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

DATA SHEET NO. 3

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



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

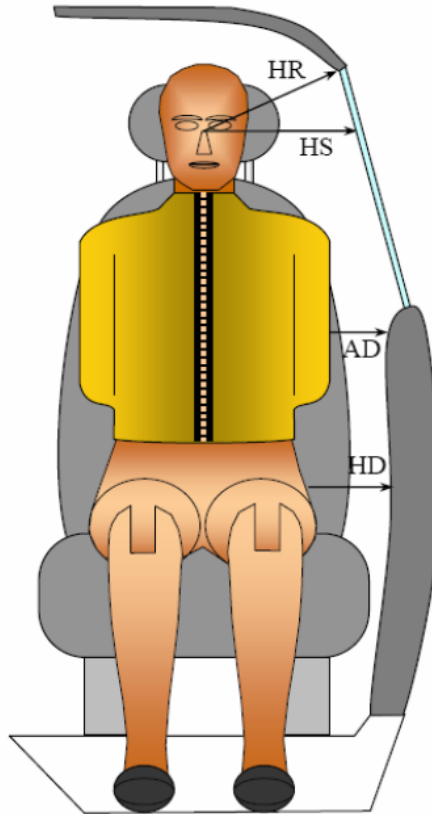
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	356			
HW		Head to Windshield	555			
HZ	HZ	Head to Roof	122		223	
NR	NB	Nose to Rim/Seat Back	416		542	
CD	CB	Chest to Dash/Seat Back	574		523	
CS		Chest to Steering Wheel	322			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	142	46.7	277	25.5
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	146	48.9	278	24.3
PAX°	PAX°	Pelvic Tilt Angle X		12.5		22.3
	PAY°	Pelvic Tilt Angle Y				0.4
PHX	PHX	Hip Point to Striker (x-axis)	418		451	
PHZ	PHZ	Hip Point to Striker (z-axis)	277		165	

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



FRONT VIEW OF DUMMY

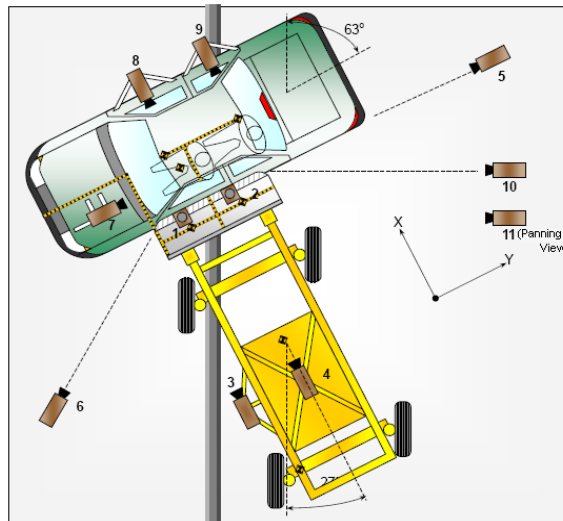
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	185	269
HS	Head to Side Window	mm	322	424
AD	Arm to Door	mm	85	206
HD	H-Point to Door	mm	153	149

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



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)	479	-494	-744	35	1000
8	Driver Side (On-Board)	1703	857	-506	14	1000
9	Passenger Side (On-Board)	1641	1726	-565	14	1000
10	Real Time Overall				Zoom	30
11	Real Time Inrun				Zoom	30

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

*All measurements accurate to ± 6 mm

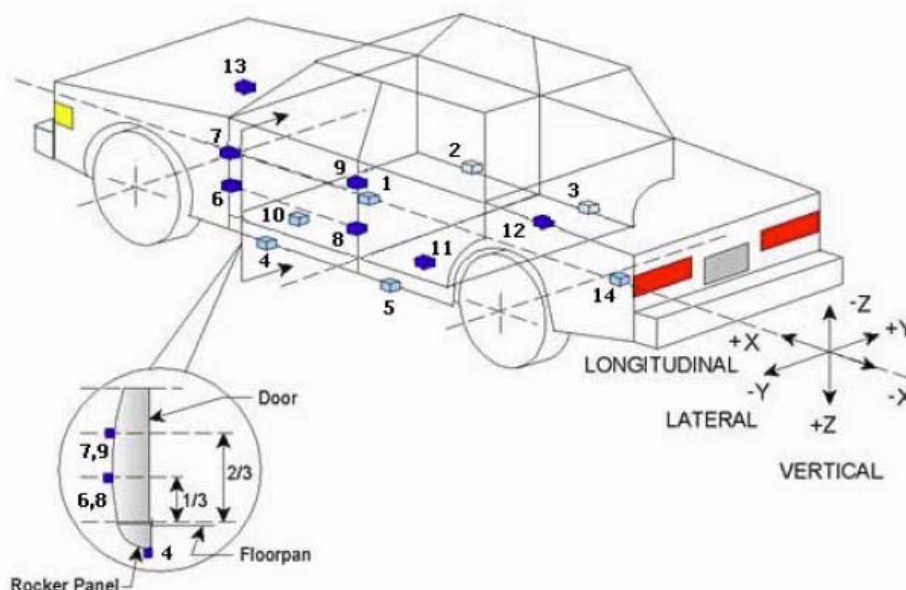
INSTRUMENTATION

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

DATA SHEET NO. 6

TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

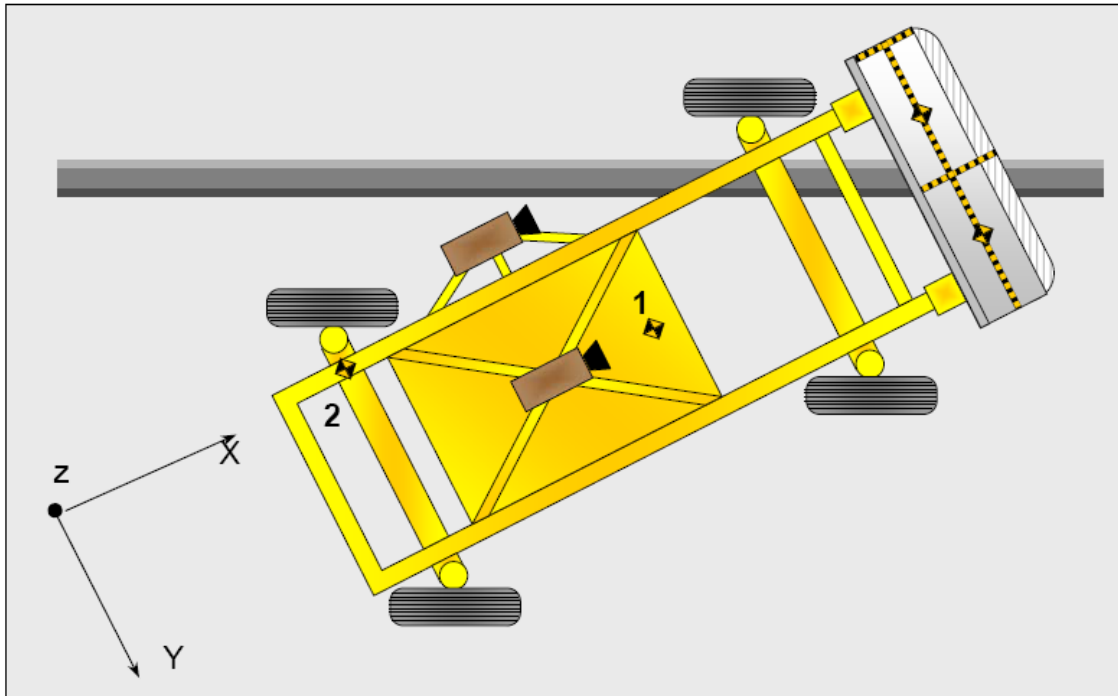
Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2054	0	-339
2	Right Sill at Front Seat	2915	737	-355
3	Right Sill at Rear Seat	1753	786	-321
4	Left Sill at Front Door	2735	-737	-183
5	Left Sill at Rear Door	1676	-786	-183
6	A-Pillar Lower	3292	-834	-544
7	A-Pillar Middle	3292	-834	-764
8	B-Pillar Lower			
9	B-Pillar Middle			
10	Front Seat Track	2498	-554	-295
11	Rear Seat Structure			
12	Right Rear Occupant Compartment	2155	385	-221
13	Engine Block	3996	0	-863
14	Rear Floorpan Above Axle	1214	0	-467

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: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



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: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13**TEST DUMMY INFORMATION AND CONTACT POINTS**

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

POST-TEST DOOR PERFORMANCE

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

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	No	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	Left front window broken
Other Notable Effects	None

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

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2730
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		425
Actual Impact Point (Aft of Front Axle)	mm		447
Horizontal Offset (+ forward / - rearward)	mm	± 50 of Intended Impact Point	-22
Vertical Offset (+ down / - up)	mm	± 20 of Intended Impact Point	13

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

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13

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	61.95
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.94
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.4
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	62.6
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.8

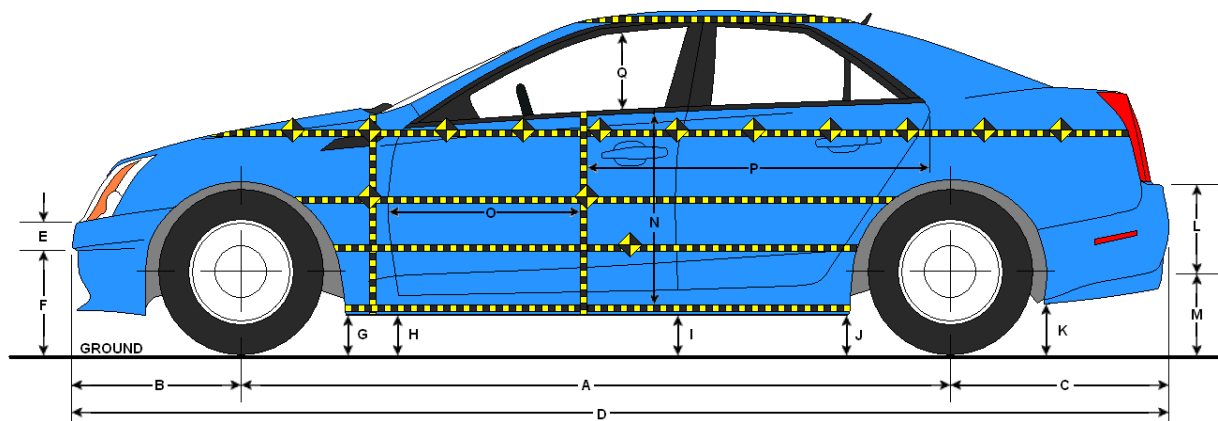
MAXIMUM STATIC CRUSH OF HONEYCOMB FACE

Vertical Location			From Centerline		Max. Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	500	Right	297
B	Top of Bumper	533	500	Right	210
C	Mid Level	686	500	Right	145
D	Top of Stack	813	500	Right	163

DATA SHEET NO. 10

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

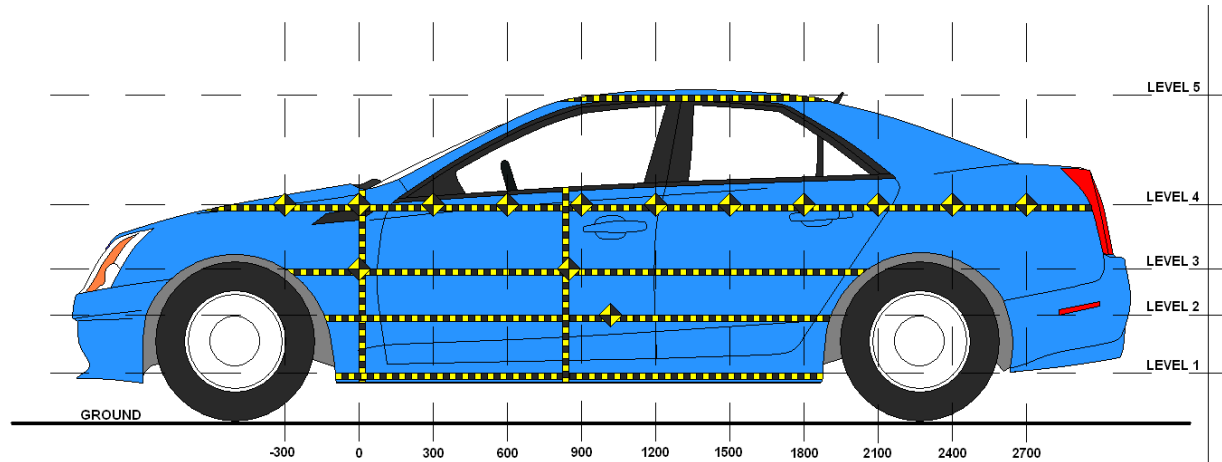
Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2730	2719	-11
B	Front Axle to FSOV	969	974	5
C	Rear Axle to RSOV	1093	1094	1
D	Total Length at Centerline	4792	4787	-5
E	Front Bumper Thickness	87	87	0
F	Front Bumper Bottom to Ground	435	437	2
G	Sill Height at Front Wheel Well	181	191	10
H	Sill Height at Front Door Leading Edge	183	195	12
I	Sill Height at B-Pillar	189	223	34
J1	Sill Height at Rear Wheel Well	185	216	31
J2	Pinch Weld Height at Rear Wheel Well	155	171	16
K	Sill Height Aft of Rear Wheel Well	265	286	21
L	Rear Bumper Thickness	279	280	1
M	Rear Bumper Bottom to Ground	401	419	18
N	Sill Height to Bottom of Front Window Sill	681	620	-61
O	Front Door Leading Edge to Impact CL	796	730	-66
P	Rear Door Trailing Edge to Impact CL	1343	1196	-147
Q	Front Window Opening	387	404	17
R	Right Side Length	3261	3264	3
S	Left Side Length	3262	3246	-16
T	Vehicle Width at B-Pillar	1845	1792	-53

All measurements in mm with tolerance of ± 3 mm

DATA SHEET NO. 11

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	220	29	150
2	Occupant H-Point	485	128	1650
3	Mid-Door	604	156	1800
4	Window Sill	902	104	900
5	Window Top	1366	44	1800

DATA SHEET NO. 11 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13

EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

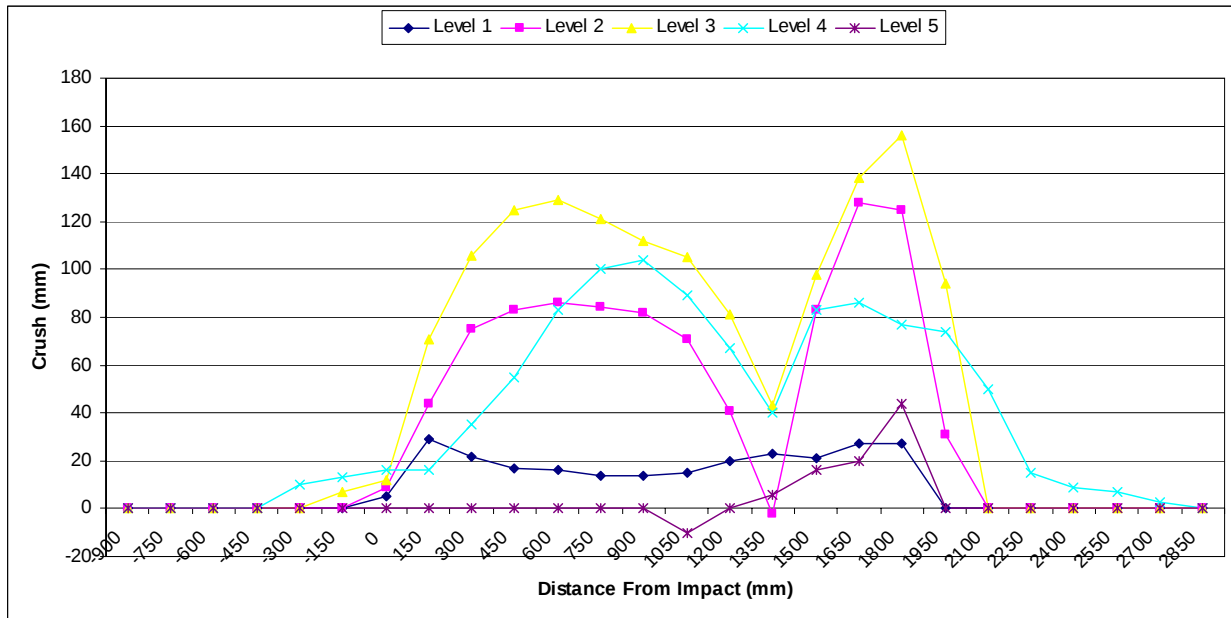
	Pre-Test (mm)					Post-Test (mm)					Difference (mm)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300				709					719					10	
-150			574	696				581	709				7	13	
0	619	590	583	685		624	599	595	701		5	9	12	16	
150	615	591	585	679		644	635	656	695		29	44	71	16	
300	613	589	583	662		635	664	689	697		22	75	106	35	
450	611	587	580	655		628	670	705	710		17	83	125	55	
600	609	585	577	643		625	671	706	726		16	86	129	83	
750	609	584	576	637		623	668	697	737		14	84	121	100	
900	609	582	574	630		623	664	686	734	938	14	82	112	104	
1050	609	582	574	626	923	624	653	679	715	913	15	71	105	89	-10
1200	609	583	574	624	901	629	624	655	691	901	20	41	81	67	0
1350	606	584	576	626	890	629	582	619	666	896	23	-2	43	40	6
1500	604	586	577	625	882	625	669	675	708	898	21	83	98	83	16
1650	601	585	579	627	884	628	713	717	713	904	27	128	138	86	20
1800	598	583	579	627	891	625	708	735	704	935	27	125	156	77	44
1950		581	575	629			612	669	703			31	94	74	
2100				624					674					50	
2250				626					641					15	
2400				636					645					9	
2550				656					663					7	
2700				681					684					3	
2850															

DATA SHEET NO. 11 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302

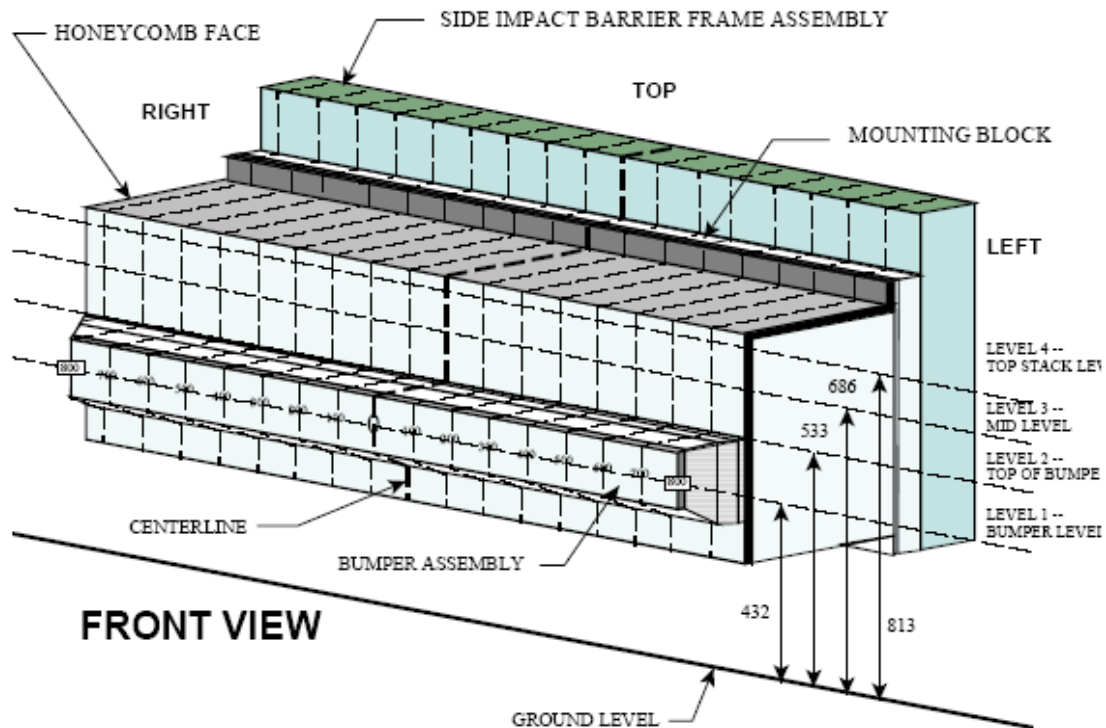
Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



DATA SHEET NO. 12

MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



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	261	263	283	297	273	237	211	183	174	175	177	181	182	188	221	201	219
2	172	177	194	210	190	150	122	107	101	101	102	106	109	112	117	123	136
3	110	113	134	145	139	106	78	61	48	45	40	43	49	60	77	102	117
4	101	100	125	163	153	121	94	72	47	37	30	30	37	55	79	98	119

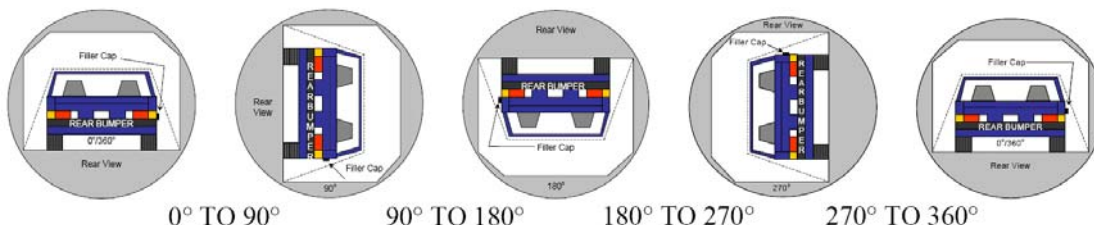
All dimensions in millimeters.

DATA SHEET NO. 13

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
 Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13
 Temperature at Time of Impact: 5.8° C Test Time: 12:35 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: No spillage occurred



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	89	300	389
90° To 180°	85	300	385
180° To 270°	84	300	384
270° To 360°	86	300	386

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			

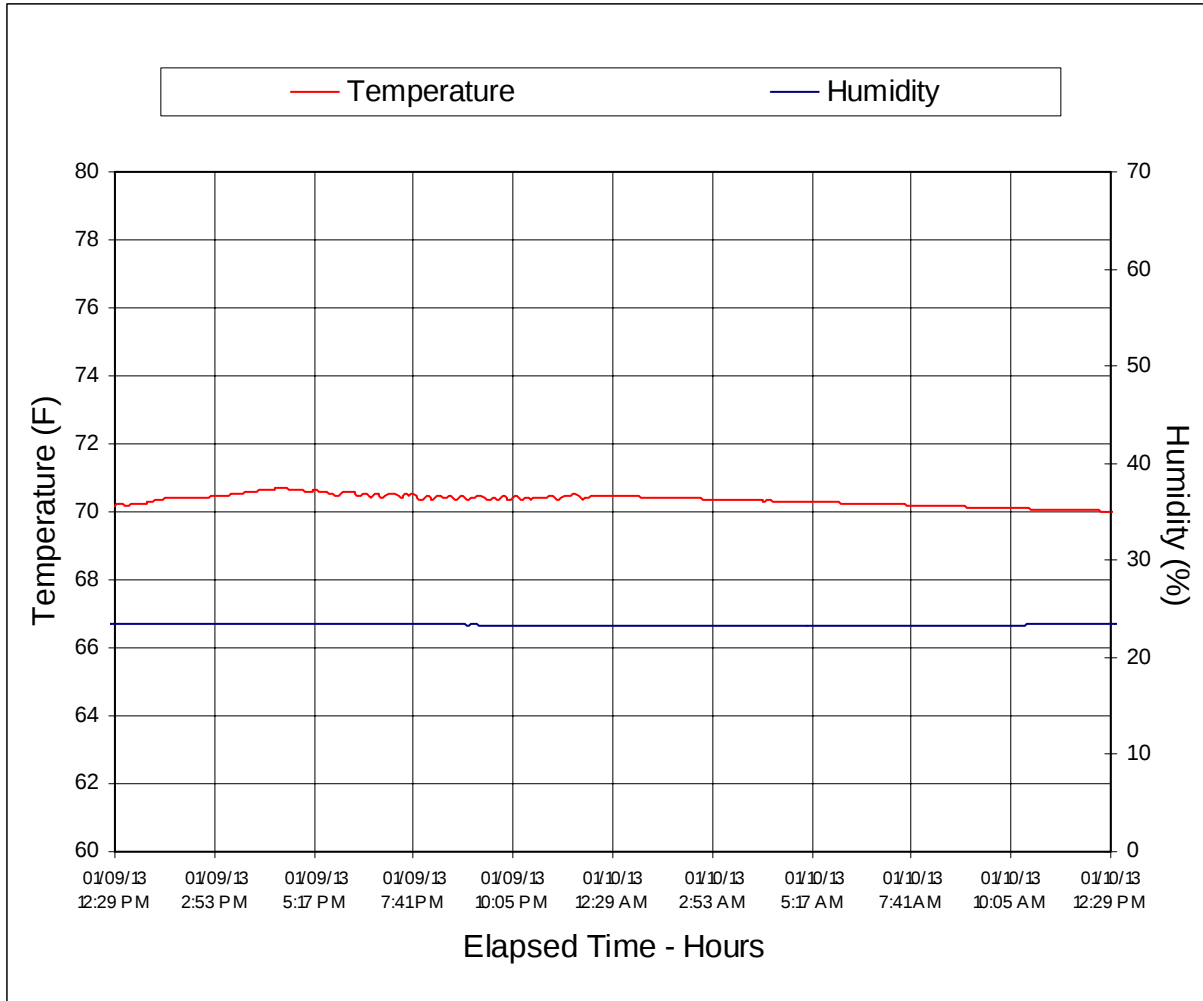
SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° To 90°	No Spillage Occurred
90° To 180°	No Spillage Occurred
180° To 270°	No Spillage Occurred
270° To 360°	No Spillage Occurred

DATA SHEET NO. 14

DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe NHTSA No. MD5302
Test Program: NCAP MDB Side Impact Test Test Date: 01/10/13



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

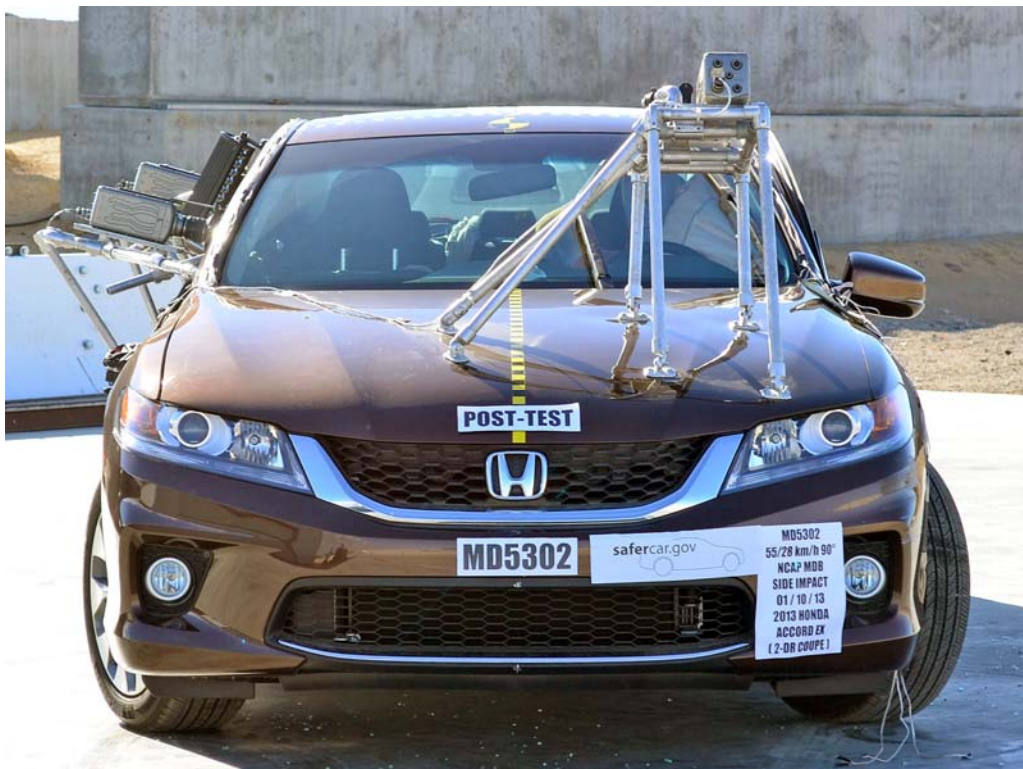


FIGURE 4. Post-Test Frontal View of Test Vehicle



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

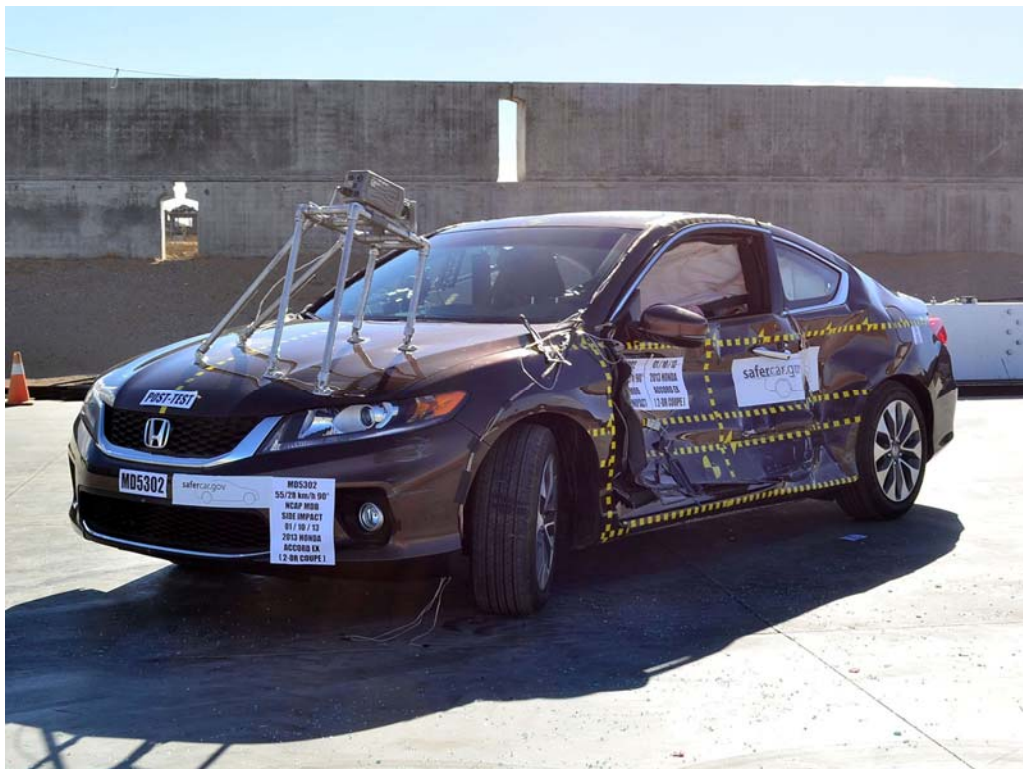


FIGURE 6. Post-Test Left Front $\frac{3}{4}$ View of the Test Vehicle



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

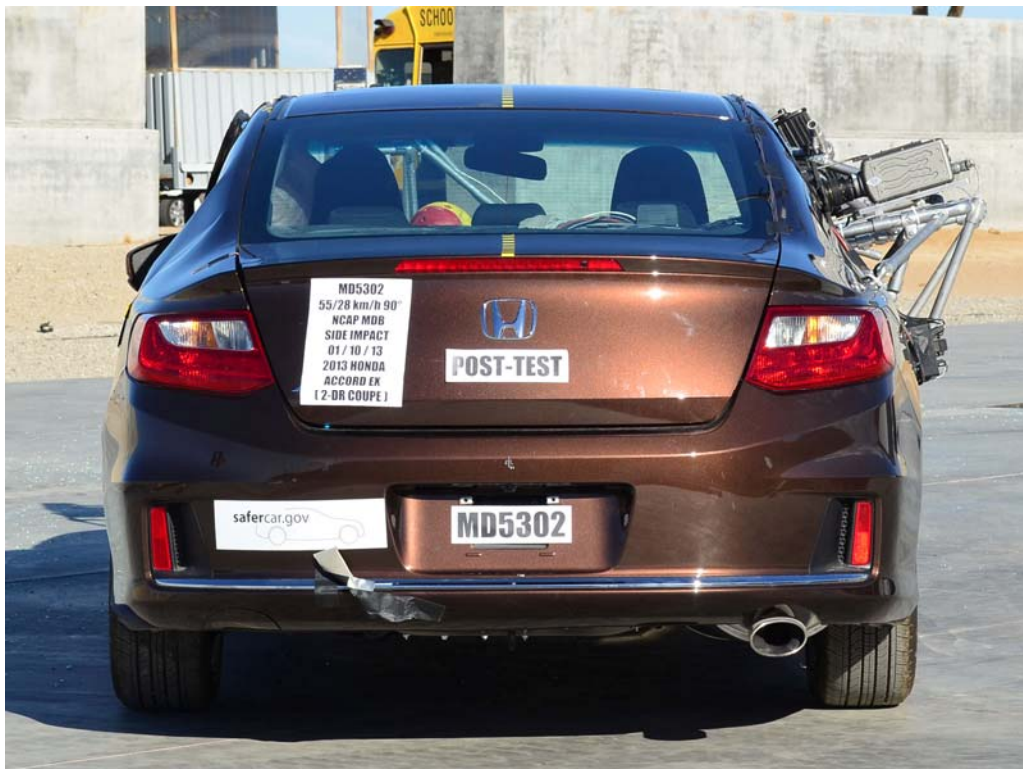


FIGURE 12. Post-Test Rear View of Test Vehicle



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



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

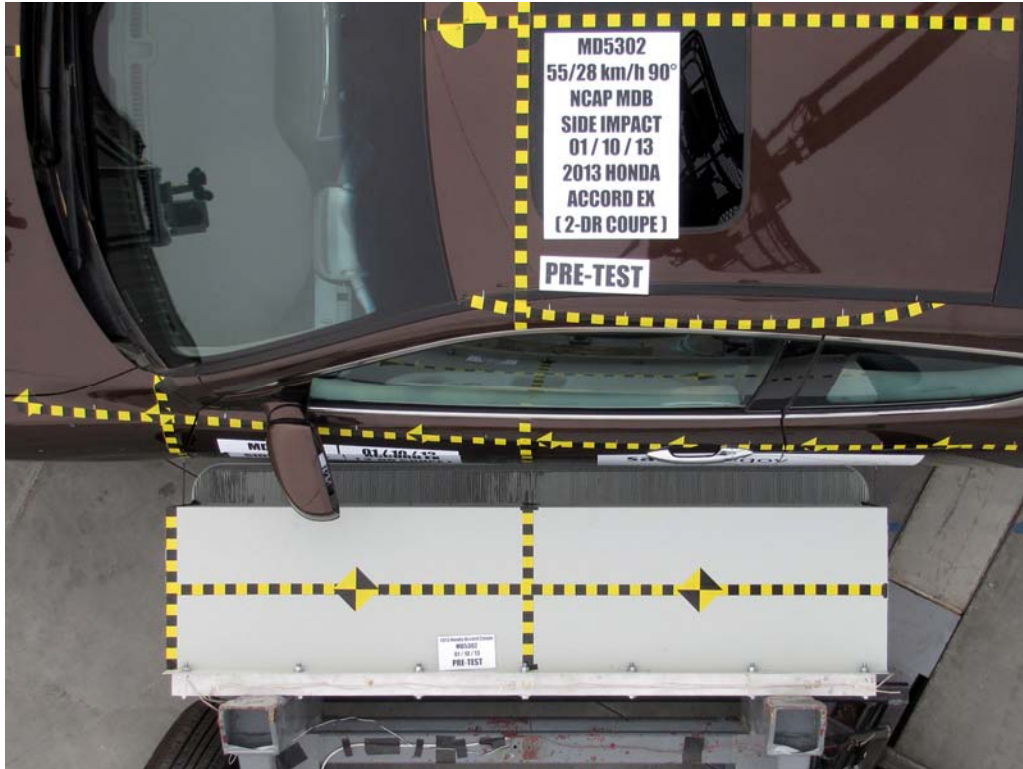


FIGURE 15. Pre-Test Overhead View of Test Area



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

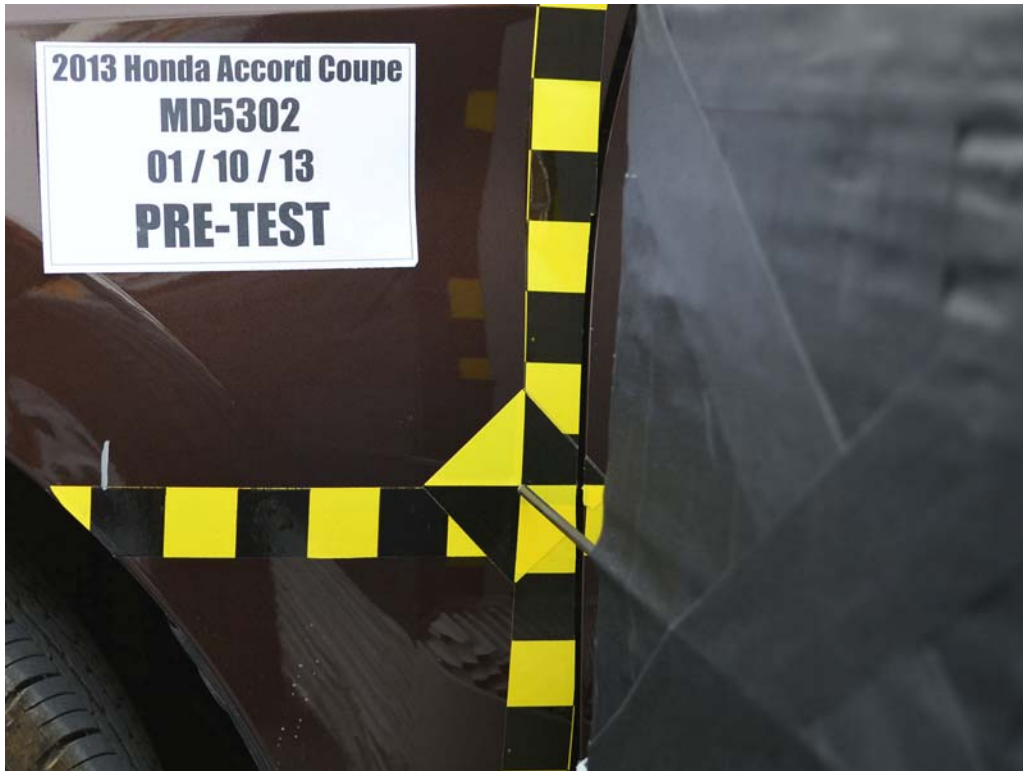


FIGURE 19. Pre-Test Close-Up View of Impact Point Target



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

Photograph Not Applicable

Vehicle Not Equipped With
Rear Passenger Door

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

Photograph Not Applicable

Vehicle Not Equipped With
Rear Passenger Door

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

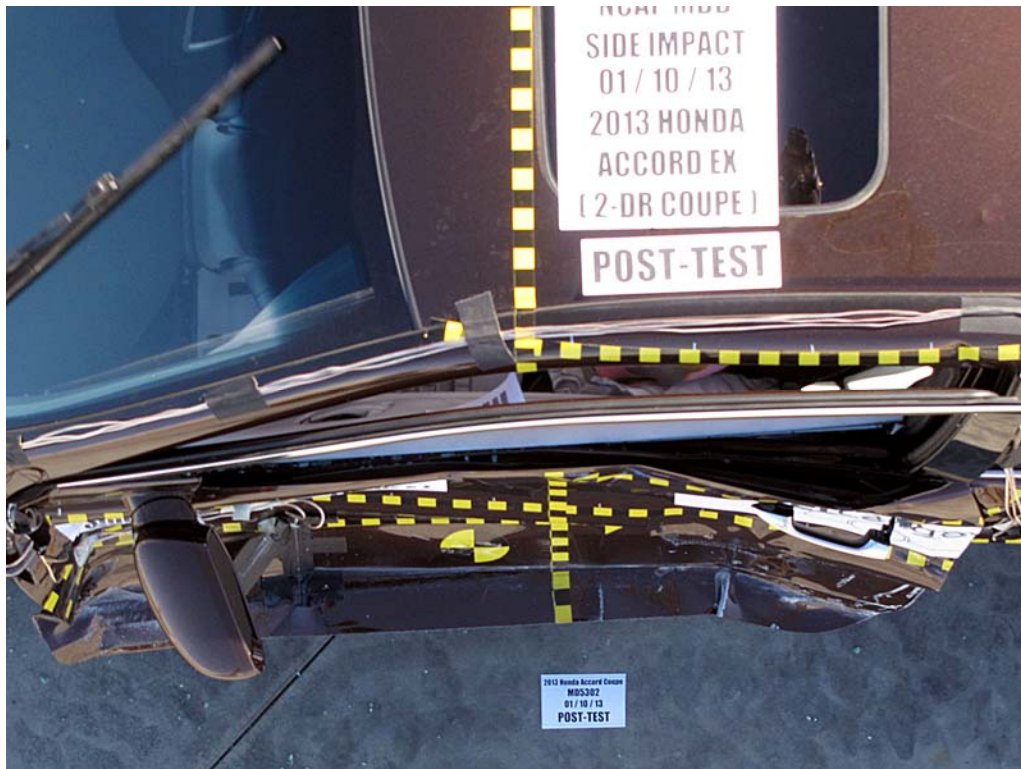


FIGURE 43. Post-Test Driver Dummy and Door Clearance View



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

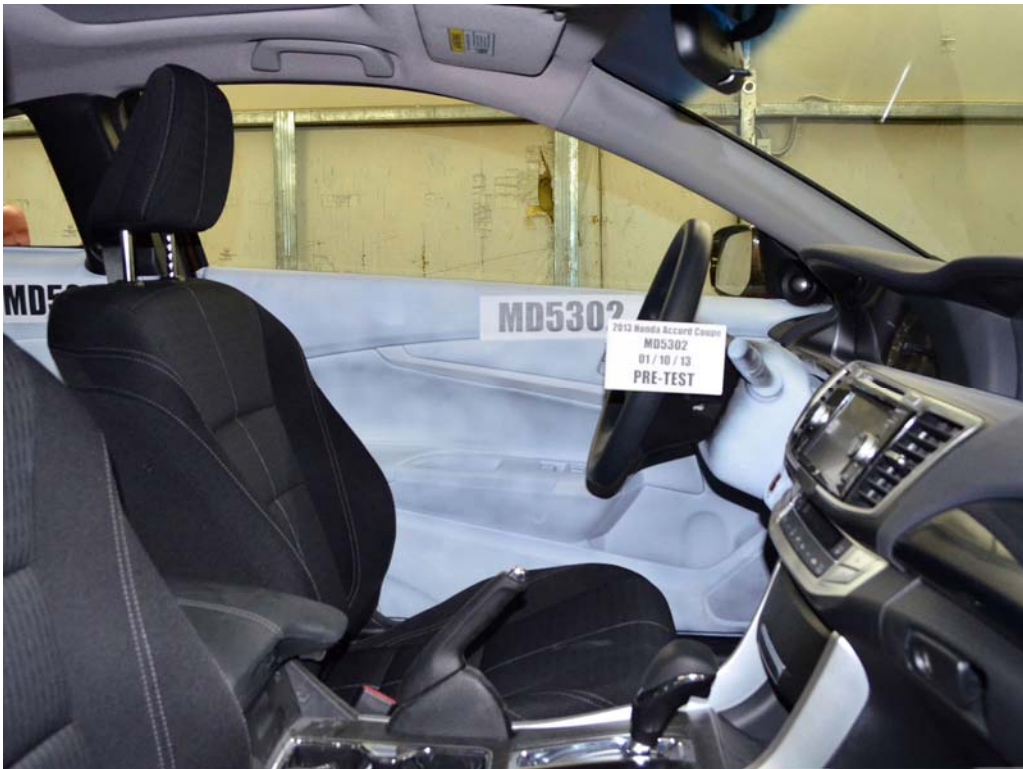


FIGURE 46. Pre-Test Driver Inner Door Panel View



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 View

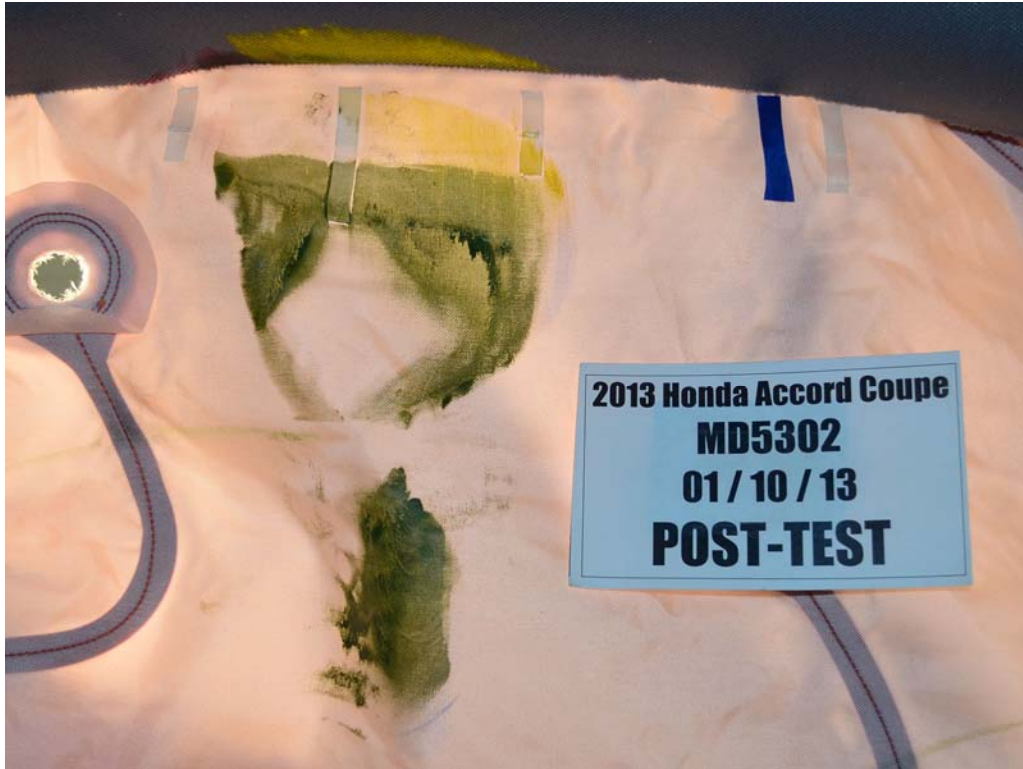


FIGURE 49. Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View



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



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

Photograph Not Applicable

No Dummy Pelvis Contact
with Vehicle Interior

FIGURE 52. Post-Test Driver Dummy Close-Up Pelvis Contact 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

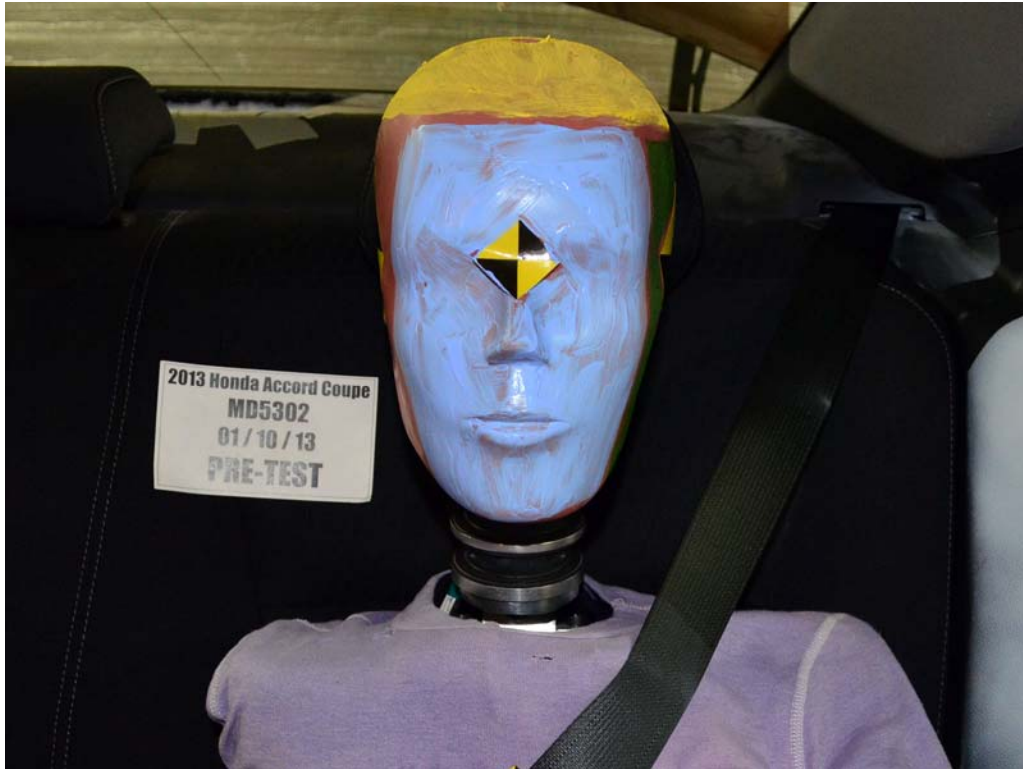


FIGURE 59. Pre-Test Frontal View of Rear Passenger Dummy
Head and Shoulders in Relation to Head Restraint



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 View

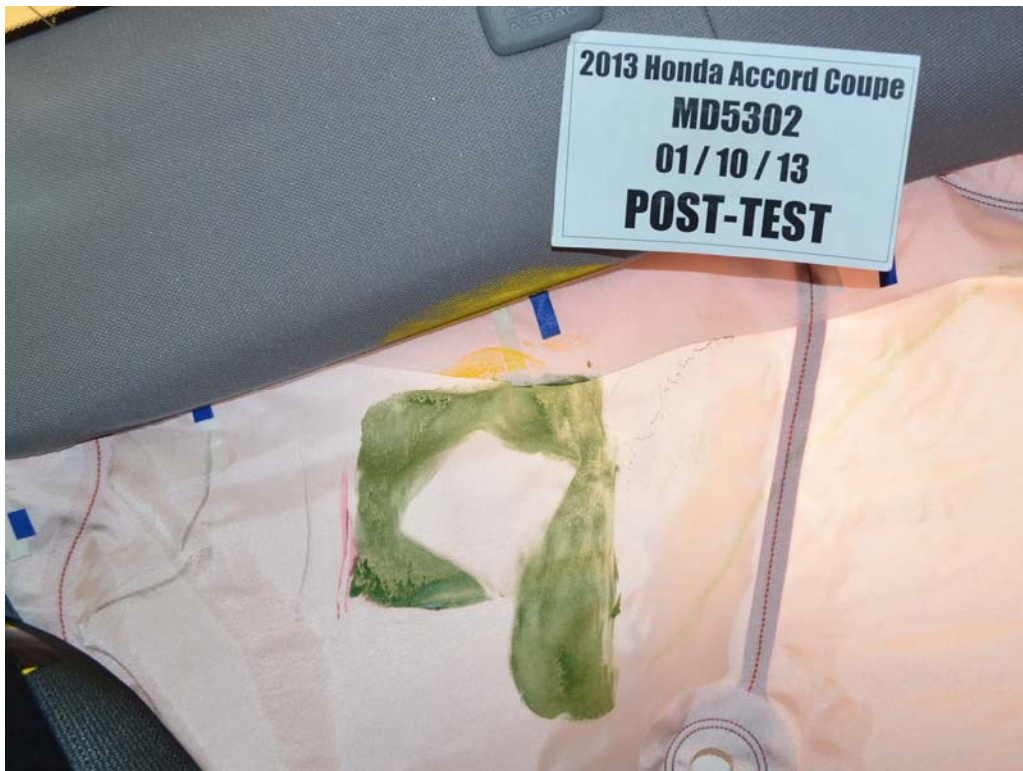


FIGURE 76. Post-Test Rear Passenger Dummy Close-Up
Head Contact with Side Airbag View

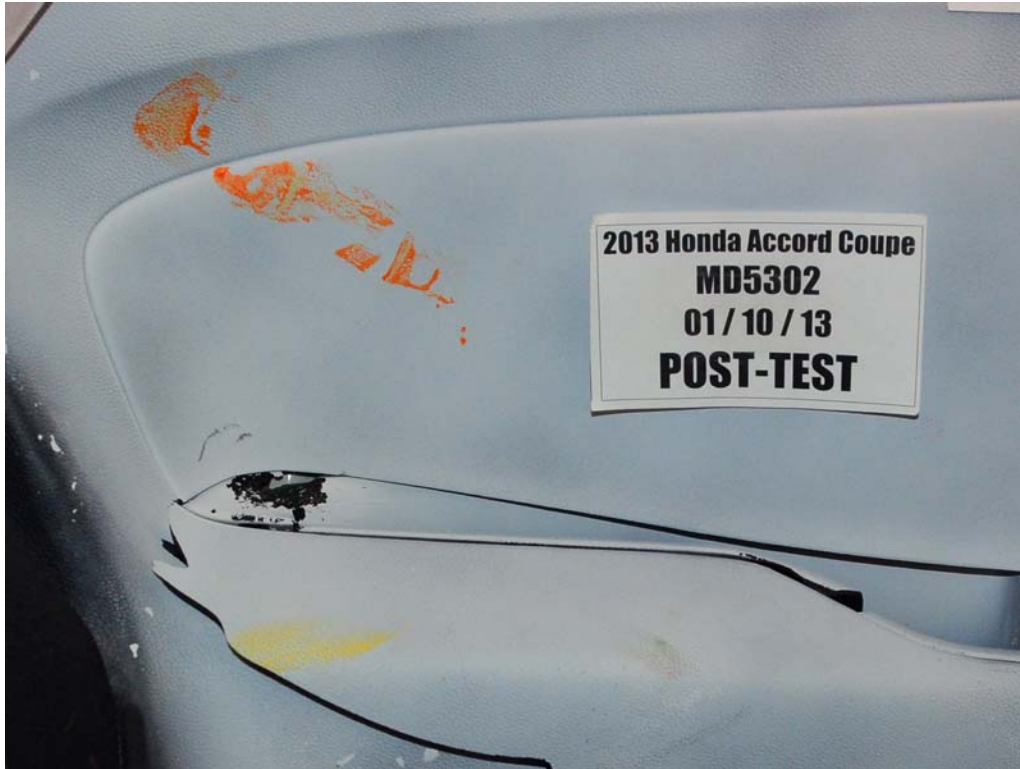


FIGURE 77. Post-Test Rear Passenger Dummy Close-Up
Torso Contact with Vehicle Interior View

Photograph Not Applicable

Vehicle Not Equipped with
Rear Passenger Side Airbags

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 View

Photograph Not Applicable

Vehicle Not Equipped with
Rear Passenger Side Airbags

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 Neck¹



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

¹Photograph was taken with the incorrect NHTSA Number on the Post-Test label.



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

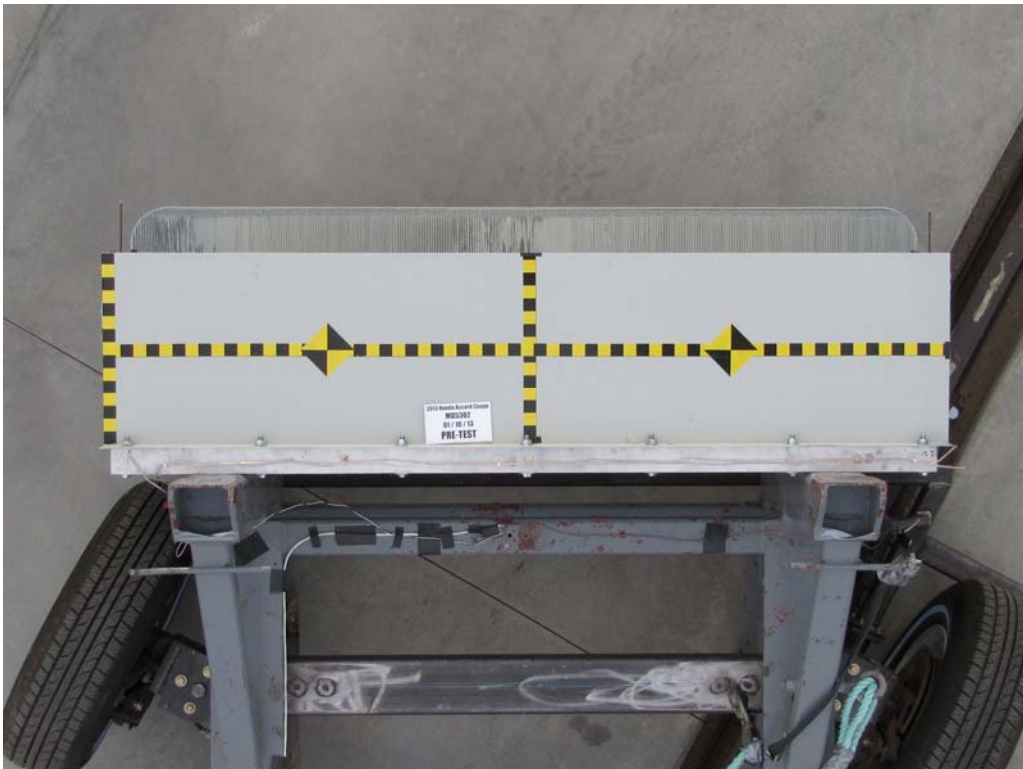


FIGURE 86. Pre-Test Top View of MDB Impactor Face



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

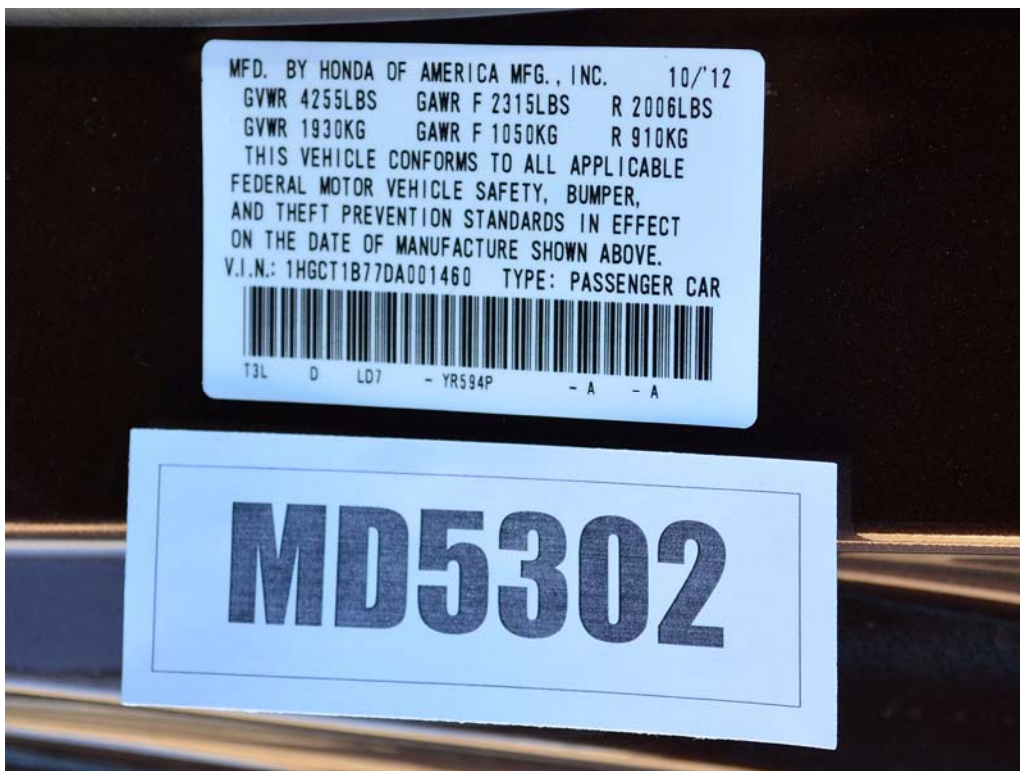


FIGURE 92. Close-Up View of Vehicle's Certification Label

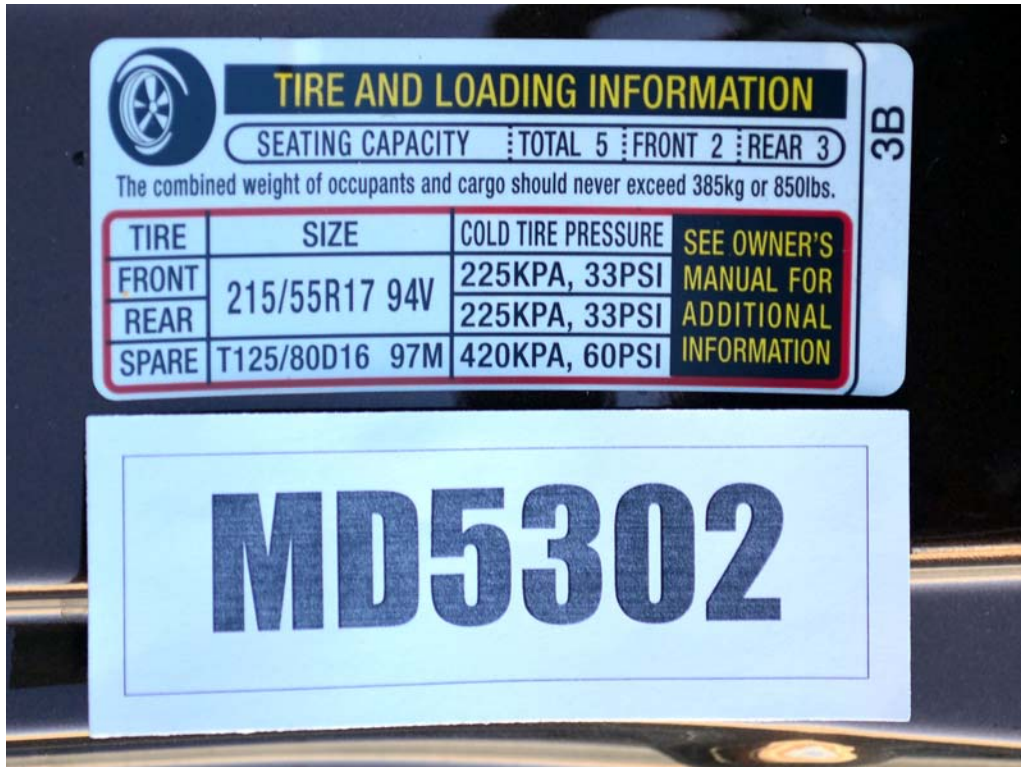


FIGURE 93. Close-Up View of Vehicle's Tire Information Placard or Label

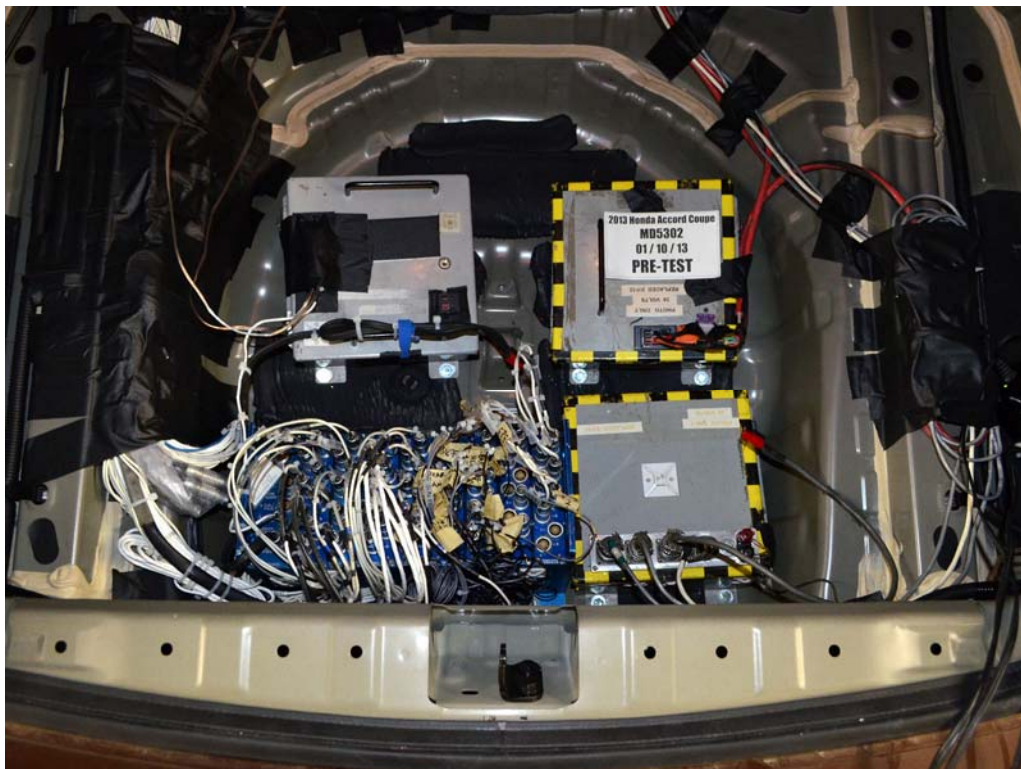


FIGURE 94. Pre-Test Ballast View



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

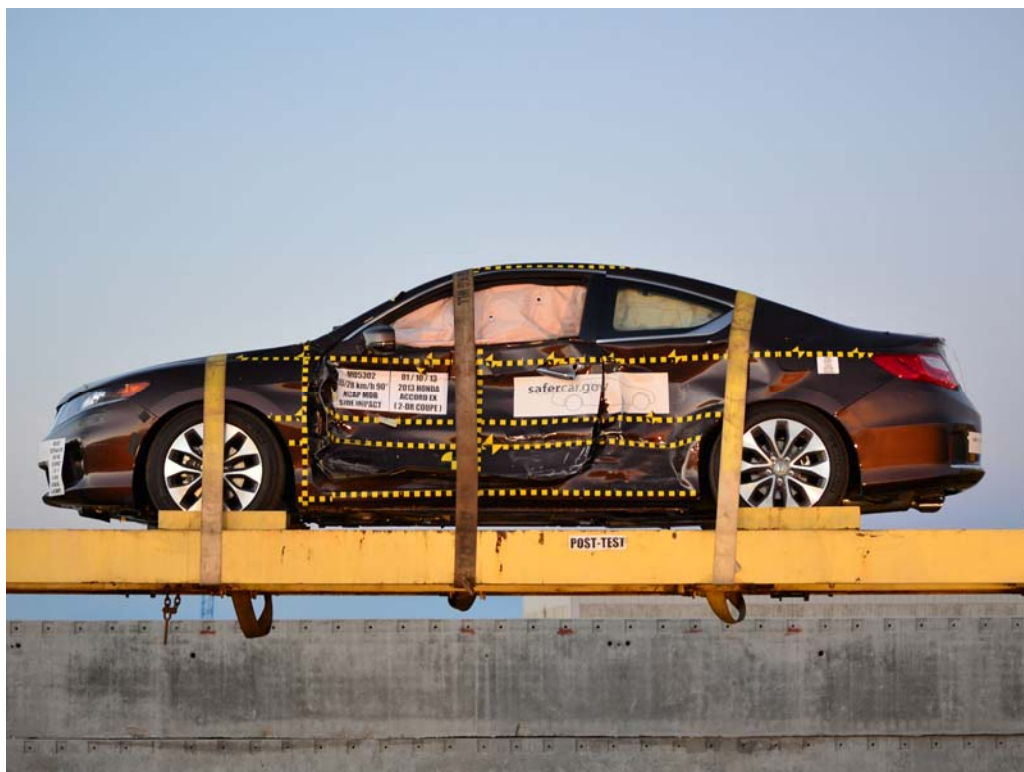


FIGURE 96. FMVSS No. 301 Static Rollover 0 Degrees

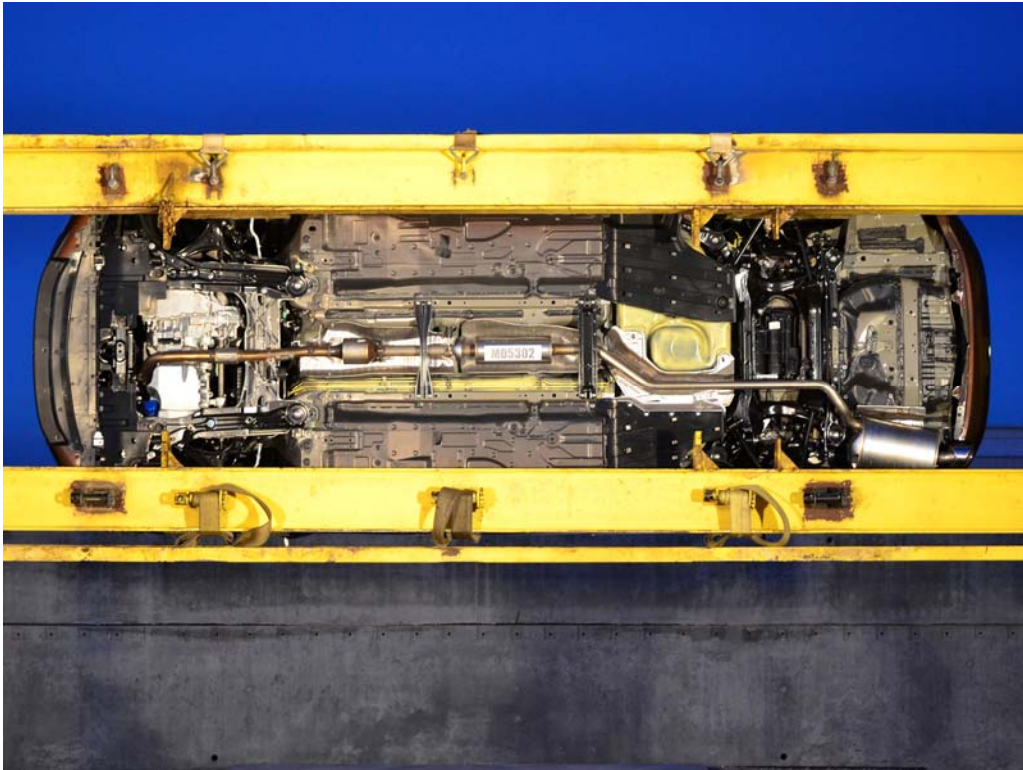


FIGURE 99. FMVSS No. 301 Static Rollover 270 Degrees

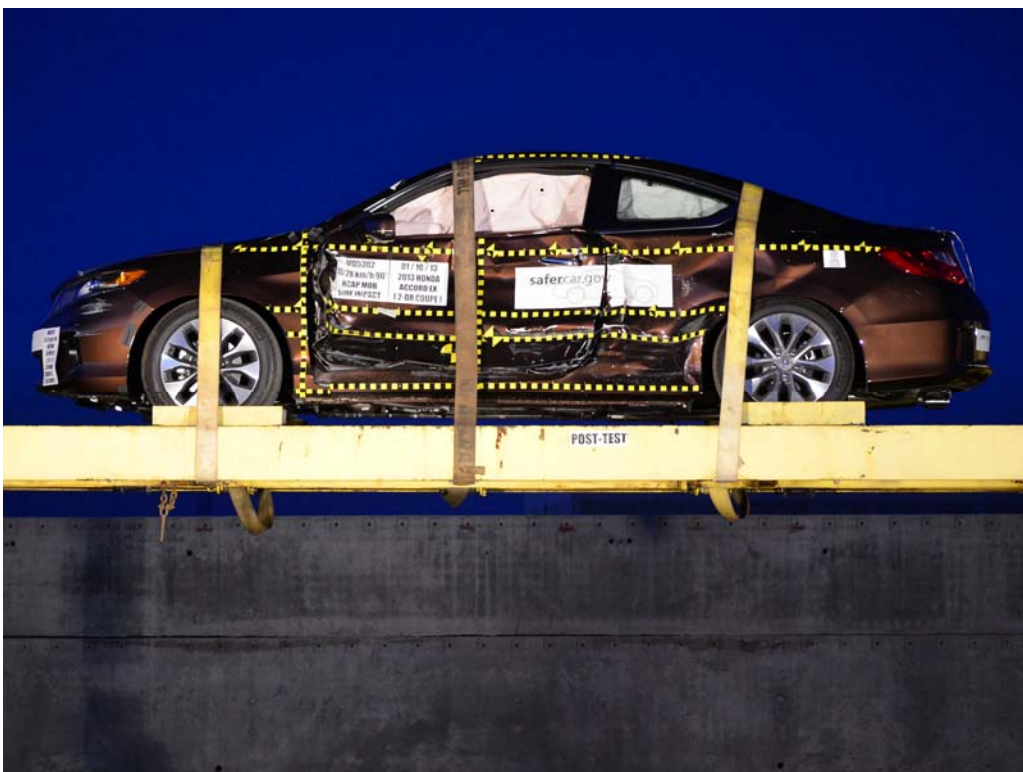


FIGURE 100. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 101. Impact Event

[illegible]

FIGURE 102. Monroney Label

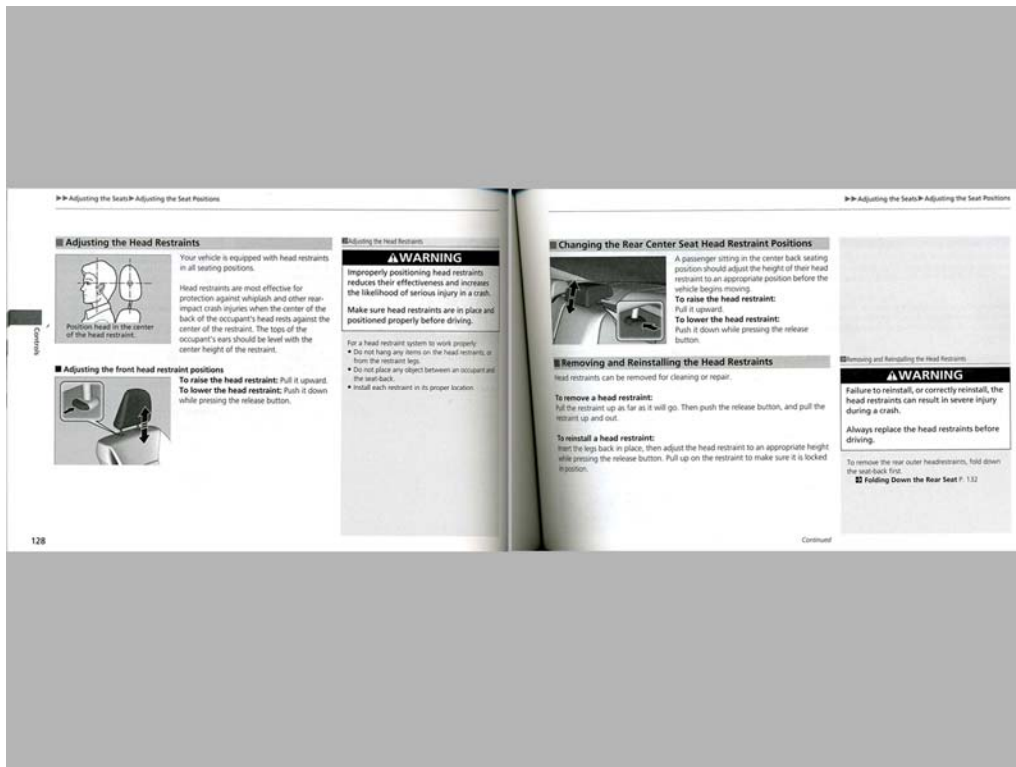


FIGURE 103. Driver Head Restraint Use and Adjustment
Information from Vehicle Owner's Manual

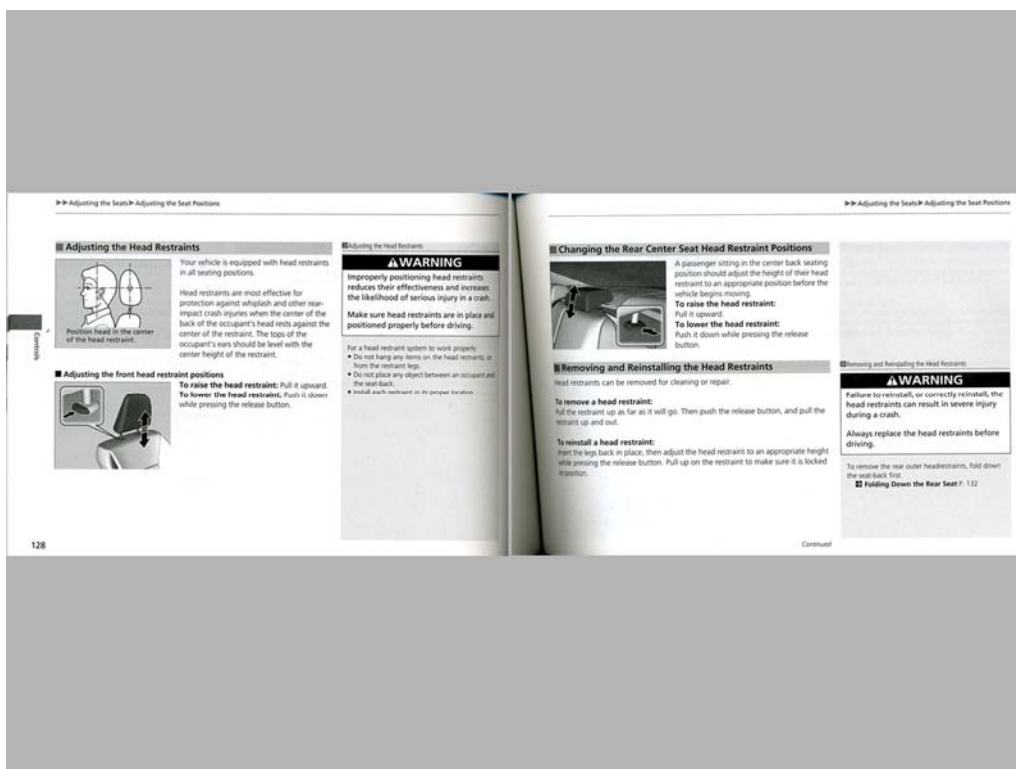


FIGURE 104. Left Rear Passenger Head Restraint
Use and Adjustment Information from Vehicle Owner's Manual

APPENDIX B
DUMMY RESPONSE DATA

TABLE OF DATA PLOTS

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

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

Additional Driver & Passenger Dummy Instrumentation Data

Driver Lower Spine T12 Acceleration (X)

Driver Lower Spine T12 Acceleration (Y)

Driver Lower Spine T12 Acceleration (Z)

Passenger Upper Thorax Rib Deflection (Y)

Passenger Middle Thorax Rib Deflection (Y)

Passenger Lower Thorax Rib Deflection (Y)

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

Vehicle Instrumentation Data

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

MDB Instrumentation Data

MDB Center of Gravity Acceleration (X)

MDB Center of Gravity Acceleration (Y)

MDB Center of Gravity Acceleration (Z)

MDB Rear Acceleration (X)

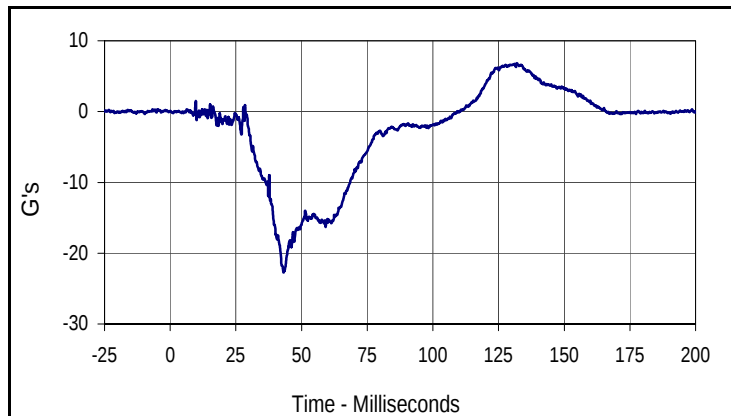
MDB Rear Acceleration (Y)

Left MDB Contact Switch

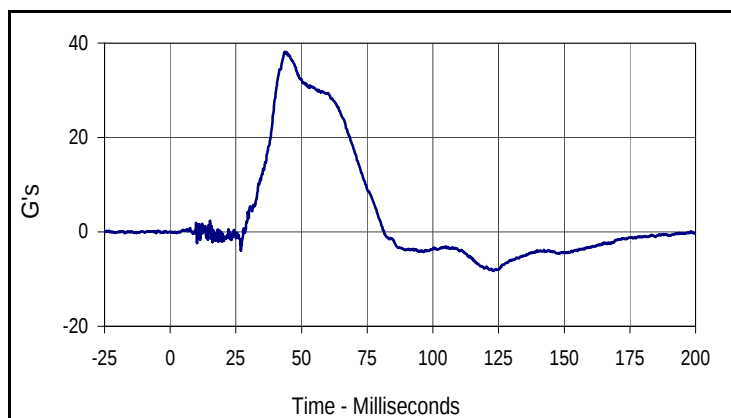
Right MDB Contact Switch

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

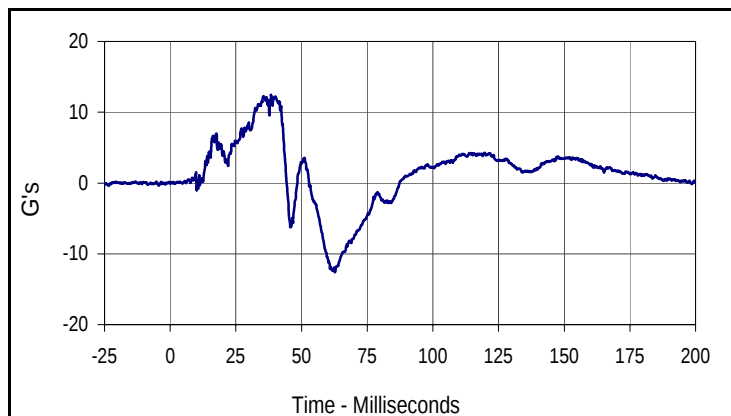
NHTSA No.: MD5302
 Test Date: 1/10/13



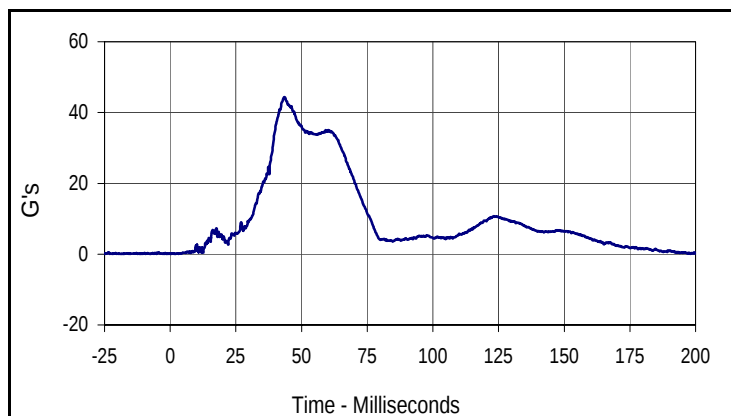
Curve Description			
Driver Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
6.8	131.9	-22.7	43.2



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
38.2	43.8	-8.3	123.1



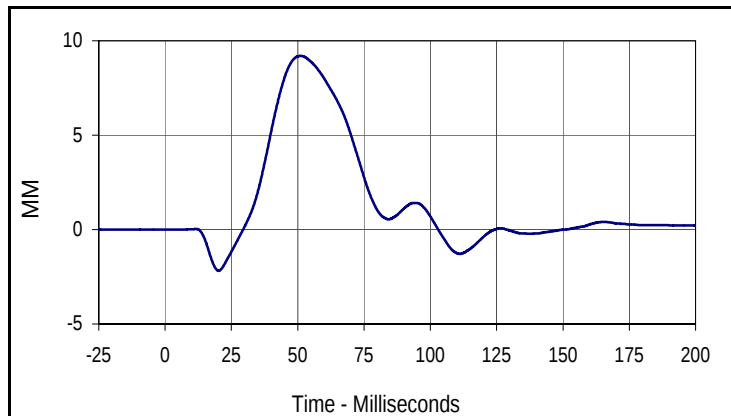
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
12.5	38.4	-12.6	62.7



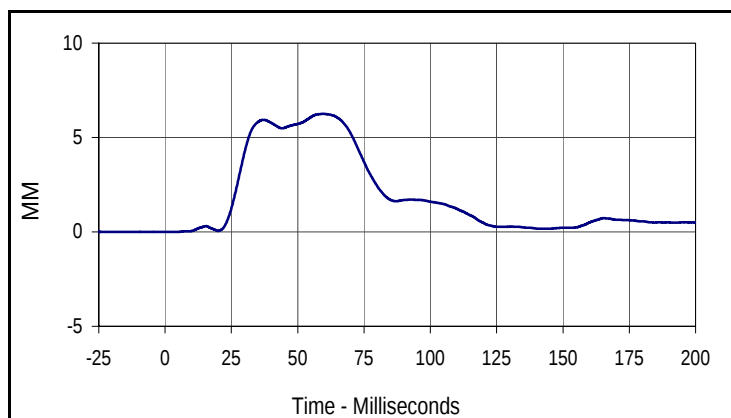
Curve Description			
Driver Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
44.4	43.6	0.0	2.0

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

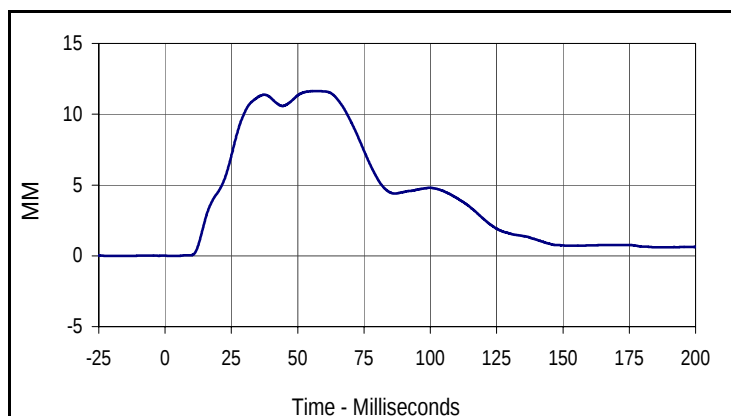
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 Test Date: 1/10/13



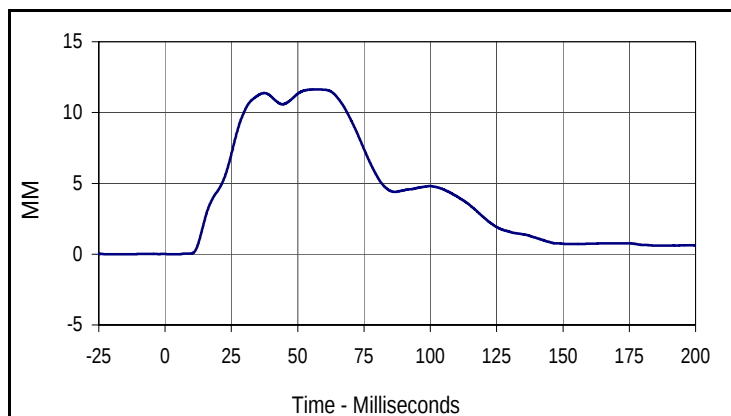
Curve Description			
Driver Upper Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
005	FIL	180	MM
Max	Time	Min	Time
9.2	51.0	-2.2	20.1



Curve Description			
Driver Middle Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
006	FIL	180	MM
Max	Time	Min	Time
6.3	59.6	0.0	0.3



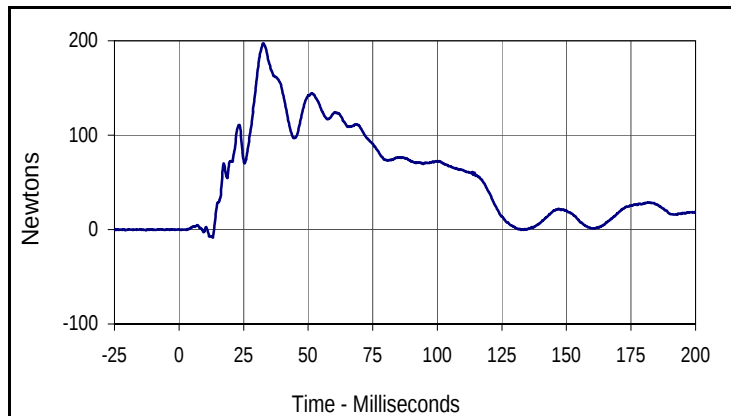
Curve Description			
Driver Lower Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
007	FIL	180	MM
Max	Time	Min	Time
11.6	57.5	0.0	2.5



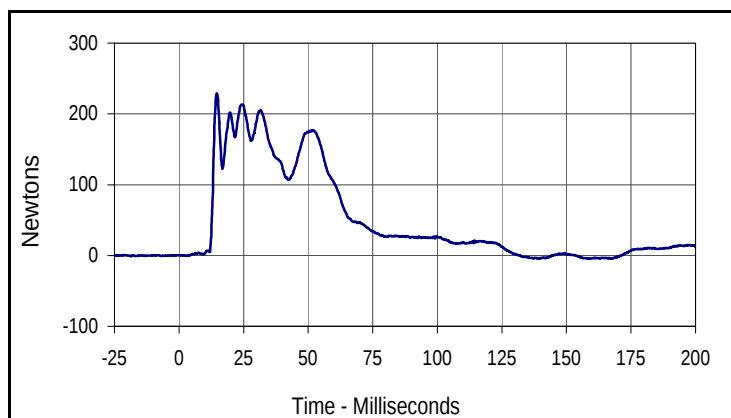
Curve Description			
Driver Thorax Rib Deflection Maximum			
Plot No.	Type	SAE Class	Units
010	FIL	180	MM
Max	Time	Min	Time
11.6	57.5	0.0	2.5

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

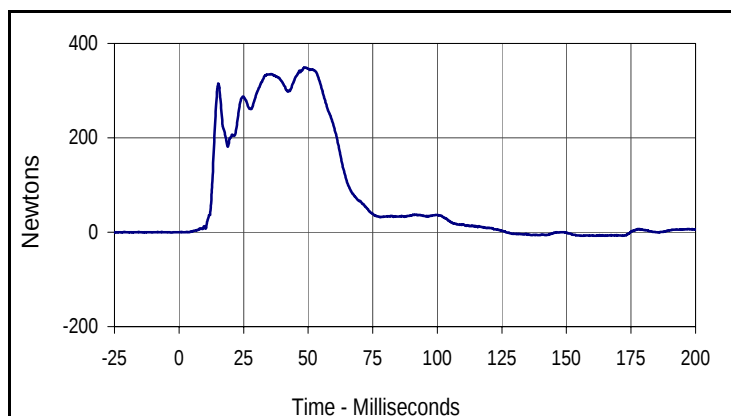
NHTSA No.: MD5302
 Test Date: 1/10/13



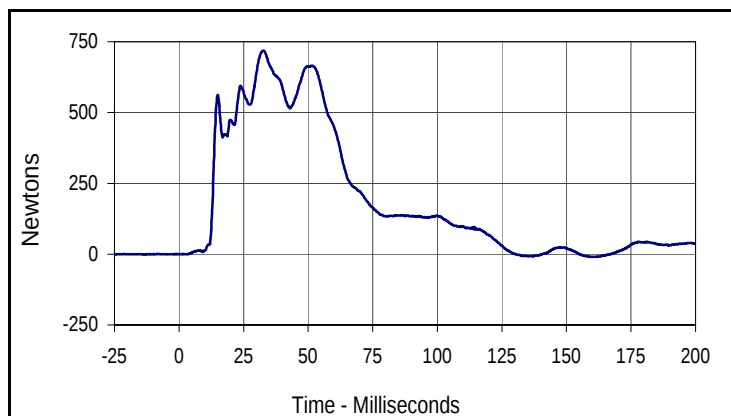
Curve Description			
Driver Anterior Abdominal Force Y			
Plot No.	Type	SAE Class	Units
008	FIL	600	Newtons
Max	Time	Min	Time
197.4	32.6	-8.6	13.0



Curve Description			
Driver Middle Abdominal Force Y			
Plot No.	Type	SAE Class	Units
009	FIL	600	Newtons
Max	Time	Min	Time
229.1	14.6	-4.5	159.1



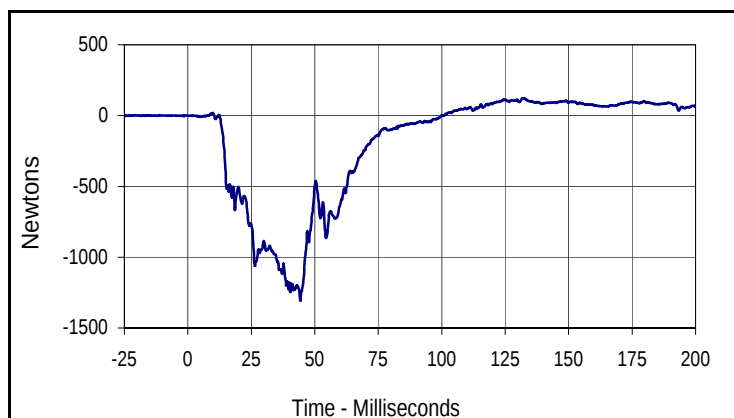
Curve Description			
Driver Posterior Abdominal Force Y			
Plot No.	Type	SAE Class	Units
011	FIL	600	Newtons
Max	Time	Min	Time
349.0	48.8	-7.8	156.6



Curve Description			
Driver Total Abdominal Force			
Plot No.	Type	SAE Class	Units
012	SUM	600	Newtons
Max	Time	Min	Time
718.8	32.5	-9.9	159.2

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

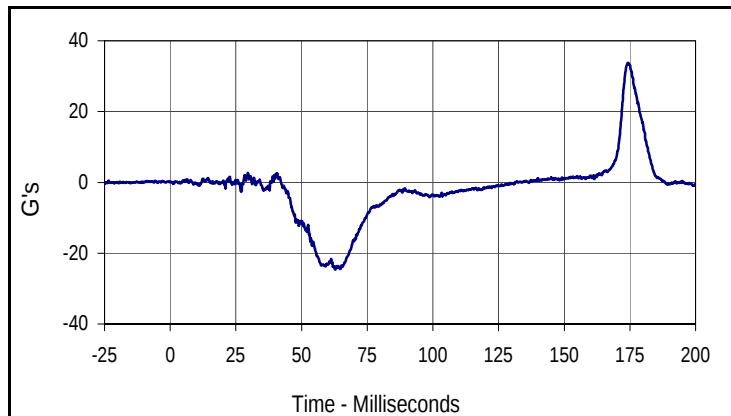
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 Test Date: 1/10/13



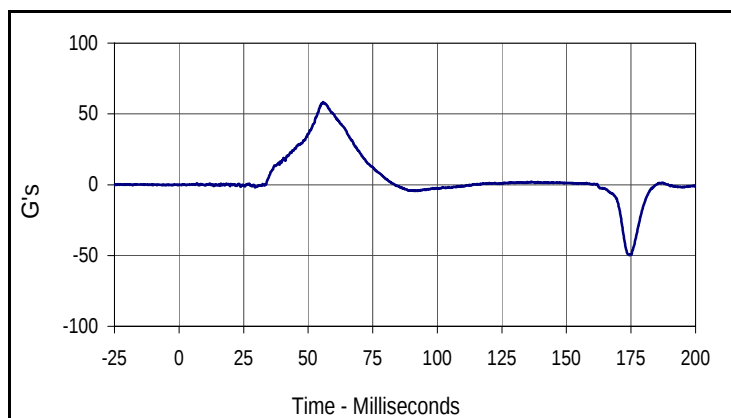
Curve Description			
Driver Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
013	FIL	600	Newtons
Max	Time	Min	Time
123.4	131.8	-1309.0	44.3

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

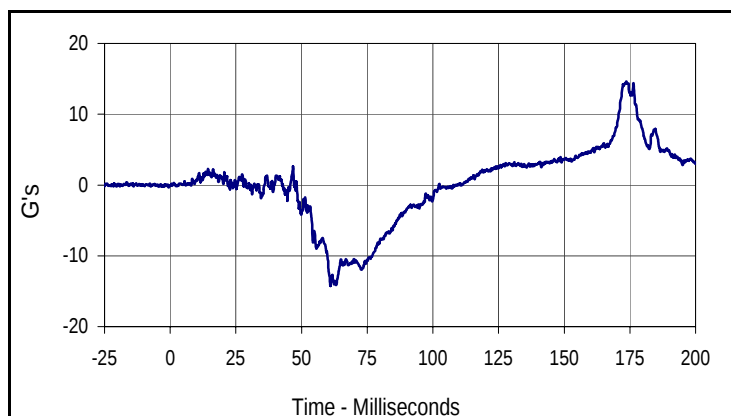
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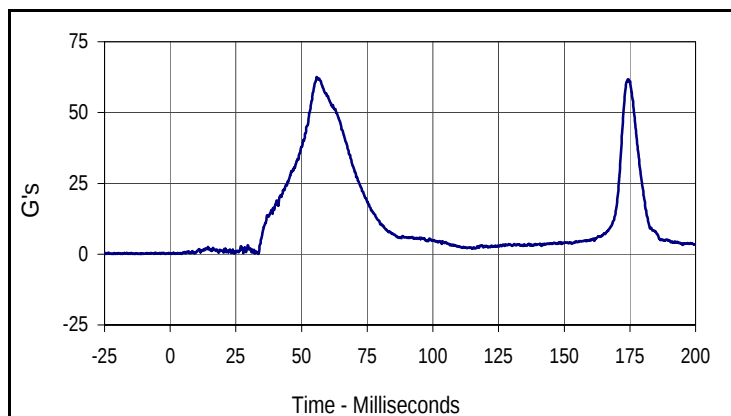
Curve Description			
Passenger Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
014	FIL	1000	G's
Max	Time	Min	Time
33.8	174.3	-24.6	62.8



Curve Description			
Passenger Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
015	FIL	1000	G's
Max	Time	Min	Time
58.4	55.8	-49.7	174.3



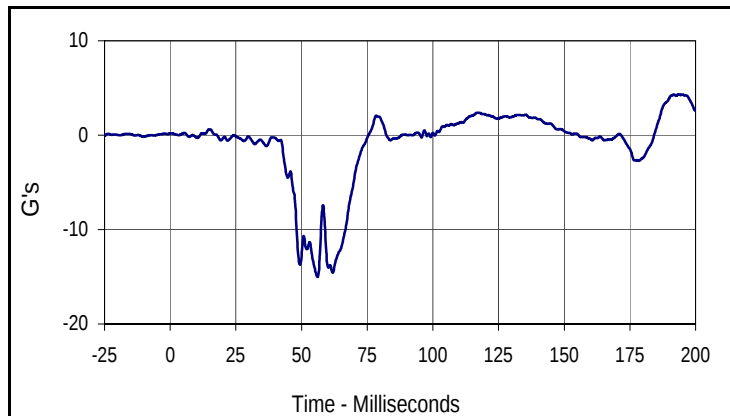
Curve Description			
Passenger Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
016	FIL	1000	G's
Max	Time	Min	Time
14.6	173.7	-14.2	61.0



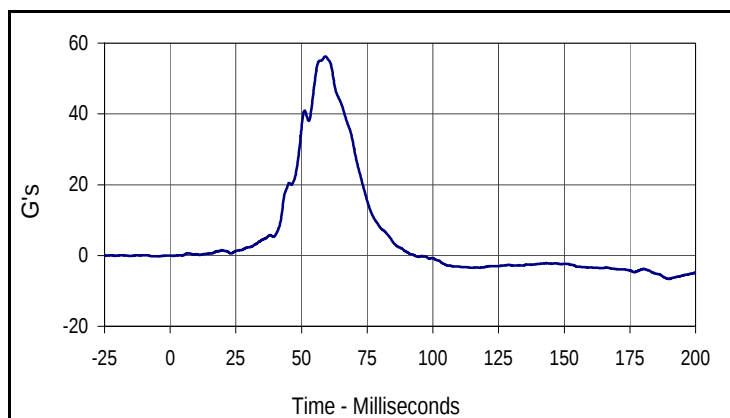
Curve Description			
Passenger Head Acceleration Resultant Primary			
Plot No.	Type	SAE Class	Units
017	RES	1000	G's
Max	Time	Min	Time
62.5	55.8	0.1	0.6

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

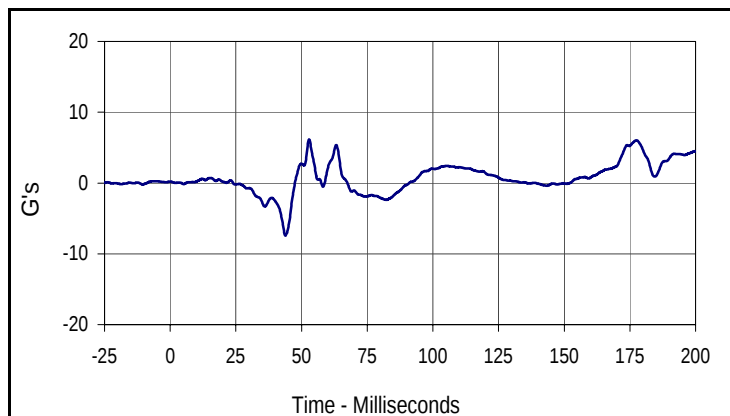
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 Test Date: 1/10/13



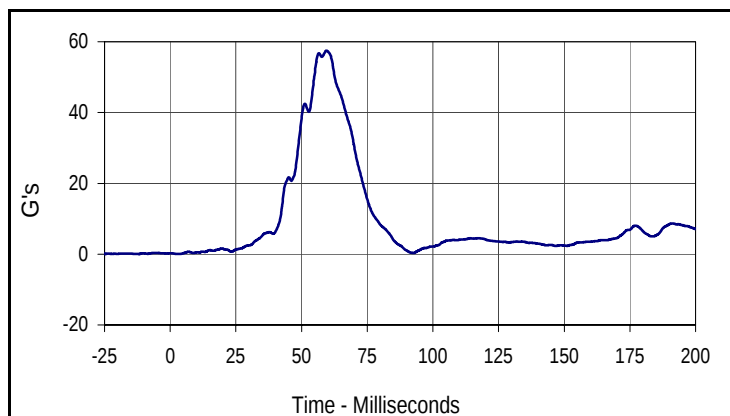
Curve Description			
Passenger Lower Spine T12 Acceleration X			
Plot No.	Type	SAE Class	Units
019	FIL	180	G's
Max	Time	Min	Time
4.3	193.6	-15.0	56.1



Curve Description			
Passenger Lower Spine T12 Acceleration Y			
Plot No.	Type	SAE Class	Units
020	FIL	180	G's
Max	Time	Min	Time
56.2	59.0	-6.6	189.9



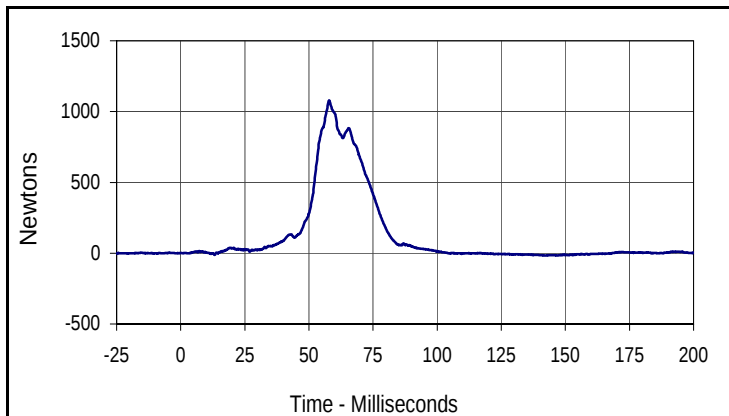
Curve Description			
Passenger Lower Spine T12 Acceleration Z			
Plot No.	Type	SAE Class	Units
021	FIL	180	G's
Max	Time	Min	Time
6.2	52.9	-7.4	43.8



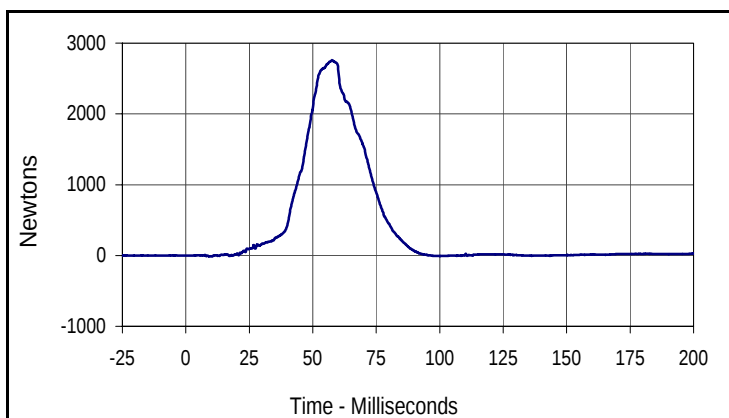
Curve Description			
Passenger Lower Spine T12 Acceleration Res.			
Plot No.	Type	SAE Class	Units
022	RES	180	G's
Max	Time	Min	Time
57.5	59.6	0.1	2.8

Test Vehicle: 2013 Honda Accord EX 2-Door Coupe
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

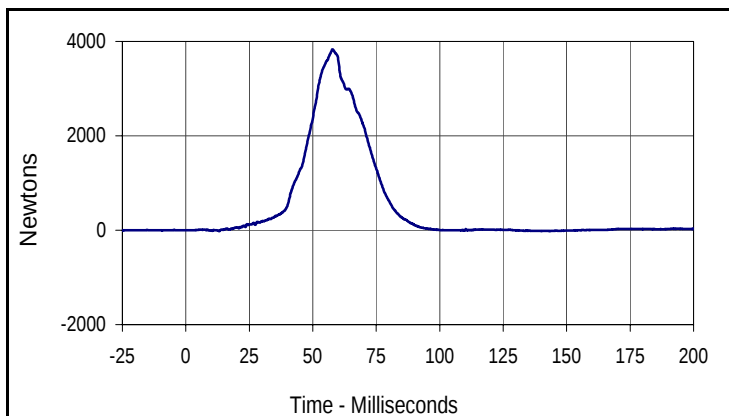
NHTSA No.: MD5302
 Test Date: 1/10/13



Curve Description			
Passenger Iliac Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
023	FIL	600	Newtons
Max	Time	Min	Time
1079.2	57.9	-16.7	141.6



Curve Description			
Passenger Acetabulum Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
024	FIL	600	Newtons
Max	Time	Min	Time
2760.4	57.6	-14.7	9.2



Curve Description			
Passenger Total Pelvic Force			
Plot No.	Type	SAE Class	Units
018	SUM	600	Newtons
Max	Time	Min	Time
3832.4	57.7	-20.7	143.4

APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

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

Test Program: ES2re External Measurements
 ATD Serial No.: F035

Test Date: 12/20/12
 Test I.D.: N/A



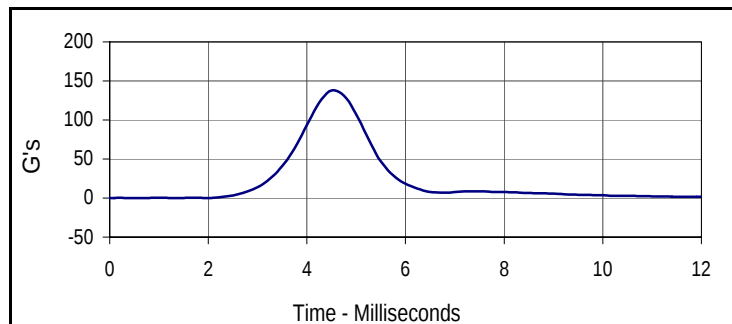
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	30.3	Pass
1	Sitting Height	mm	900 - 918	907	Pass
2	Seat to Shoulder Joint	mm	558 - 572	564	Pass
3	Seat to Lower Face of Thoracic Spine Box	mm	346 - 356	350	Pass
4	Seat to Hip Joint (Center of Bolt)	mm	97 - 103	100	Pass
5	Sole to Seat, Sitting	mm	333 - 451	389	Pass
6	Head Width	mm	152 - 158	155	Pass
7	Shoulder / Arm Width	mm	461 - 479	470	Pass
8	Thorax Width	mm	322 - 332	324	Pass
9	Abdomen Width	mm	273 - 287	280	Pass
10	Pelvis Lap Width	mm	359 - 373	365	Pass
11	Head Depth	mm	196 - 206	202	Pass
12	Thorax Depth	mm	262 - 272	269	Pass
13	Abdomen Width	mm	194 - 204	198	Pass
14	Pelvis Depth	mm	235 - 245	239	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	611	Pass
Overall Test Results					Pass

Test Program: ES2re Head Drop Test
 ATD Serial No.: F035

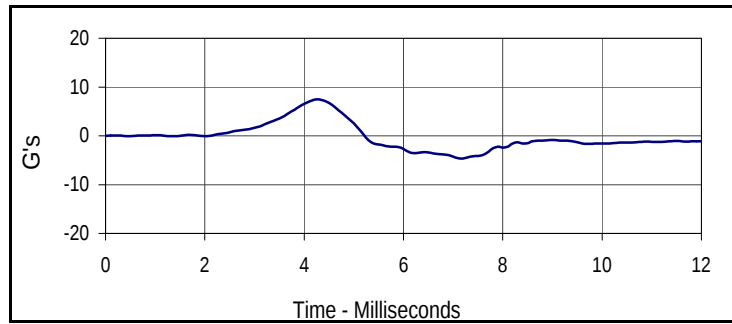
Test Date: 12/20/12
 Test I.D.: F035HD042



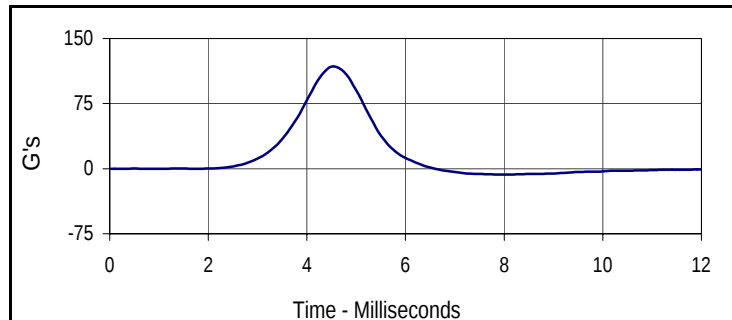
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	300	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.7	Pass
Peak Head Resultant Acceleration	G's	125 to 155	137.5	Pass
Peak Head X Acceleration	G's	≤15	7.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	6.3	Pass
Overall Test Results				Pass



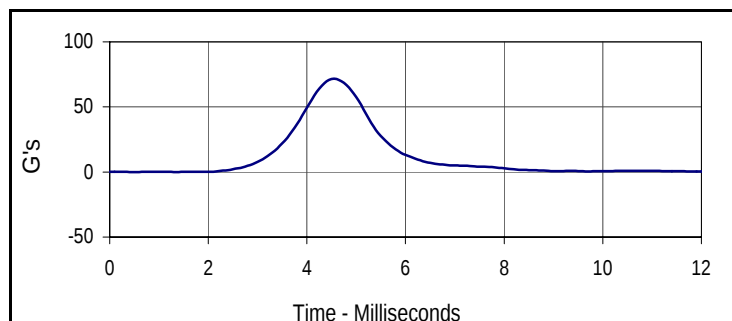
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
137.5	4.5	0.0	0.6



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
7.5	4.3	-4.6	7.2



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
117.4	4.5	-6.8	8.0



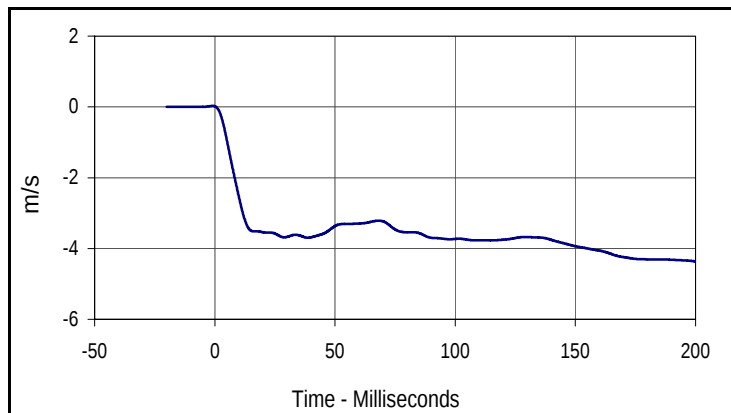
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
71.4	4.6	0.0	0.5

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F035

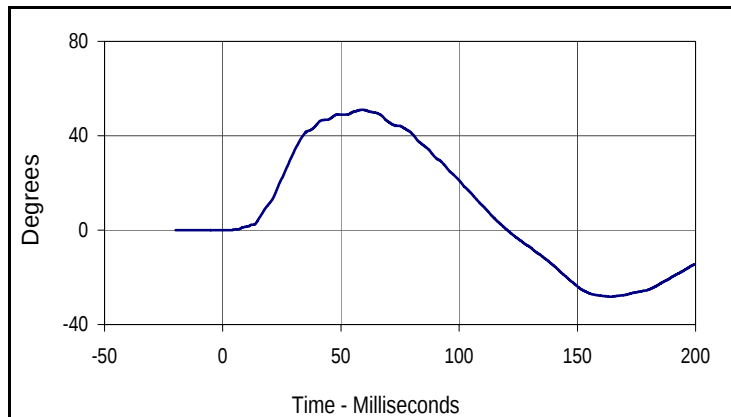
Test Date: 12/20/12
 Test I.D.: F035NB042



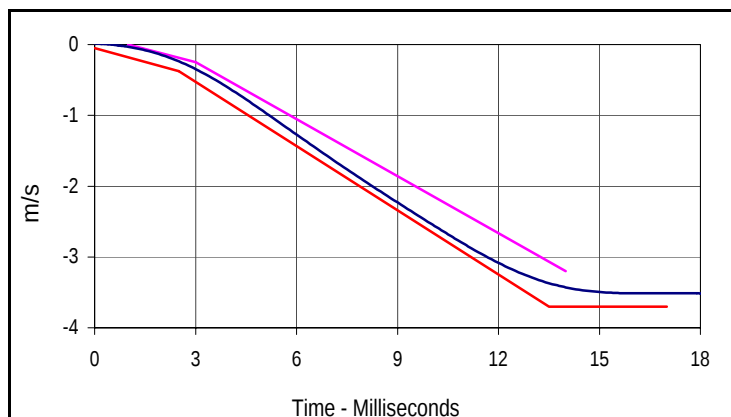
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	340	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.8	Pass
Pendulum Velocity	m/s	3.3 to 3.5	3.44	Pass
Headform Flexion	Max	49 to 59	51.0	Pass
	Time	54 to 66	59.2	Pass
Headform Flexion Decay (Peak to Zero)	msec	53 to 88	61.2	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-4.4	200.0



Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	180	Degrees
Max	Time	Min	Time
51.0	59.2	-28.2	164.2



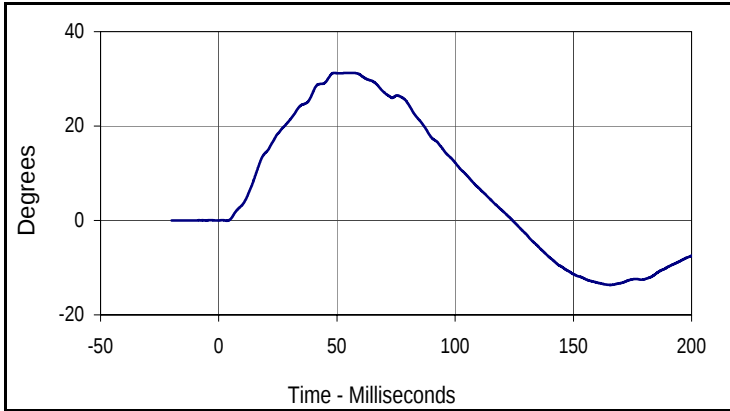
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-4.4	200.0

Velocity Corridors

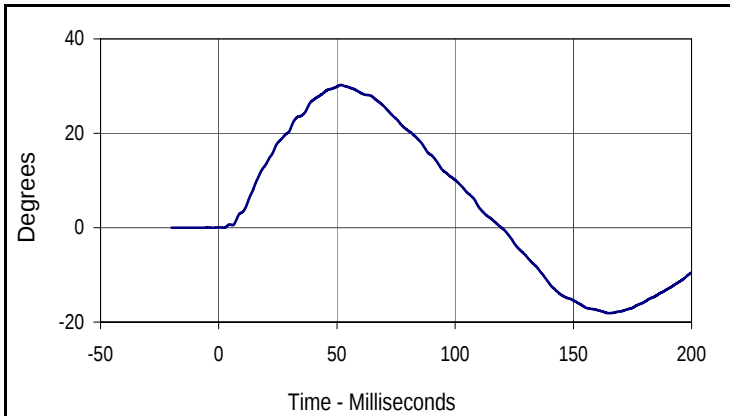
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.03	2.5	-0.375
14.0	-3.20	13.5	-3.70
		17.0	-3.70

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F035

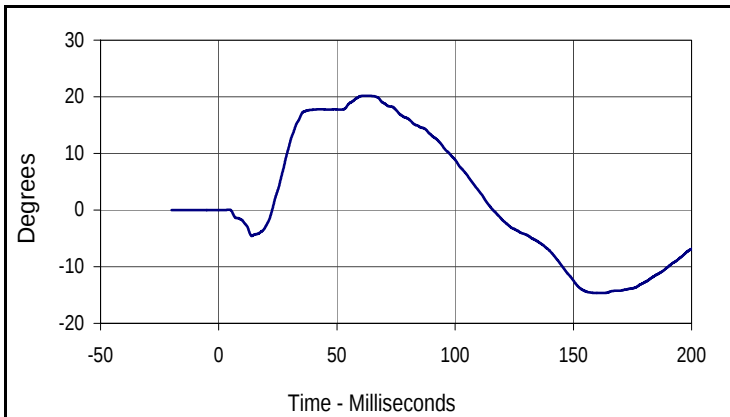
Test Date: 12/20/12
 Test I.D.: F035NB042



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
31.3	56.4	-13.7	165.5



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
30.2	51.7	-18.1	164.9



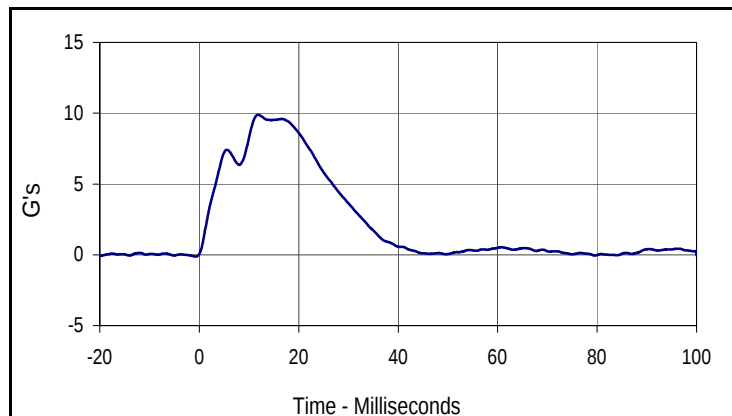
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
20.2	62.8	-14.6	162.7

Test Program: ES2re Shoulder Impact Test
 ATD Serial No.: F035

Test Date: 12/20/12
 Test I.D.: F035SH042



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	375	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.9	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.30	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	9.9	Pass
Overall Test Results				Pass



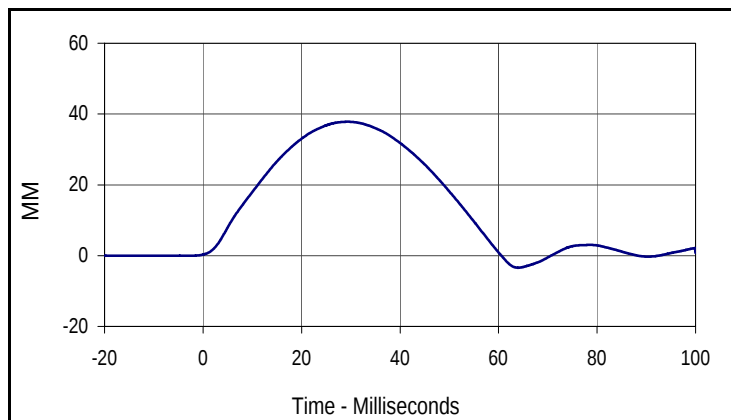
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
9.9	11.8	-0.1	-0.7

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F035 Rib # 1

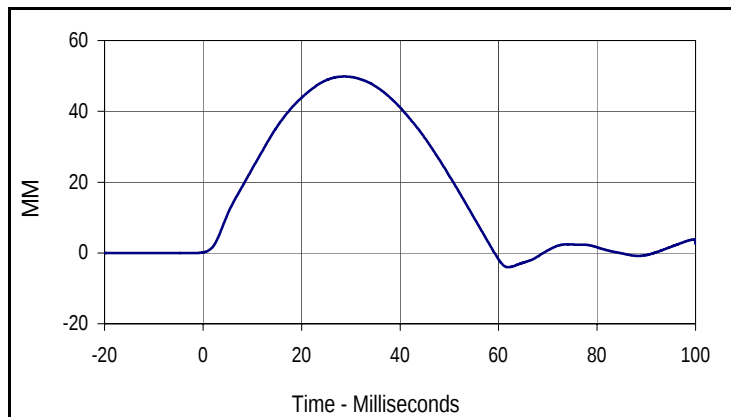
Test Date: 12/20/12
 Test I.D.: F035RB1042



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	400	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.8	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	37.8	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	49.8	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
37.8	29.4	-3.4	64.0



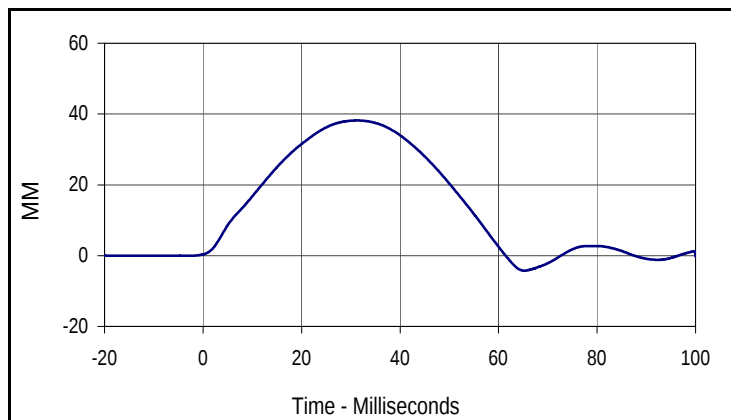
Curve Description			
Upper Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
49.8	28.7	-4.0	62.0

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F035 Rib # 2

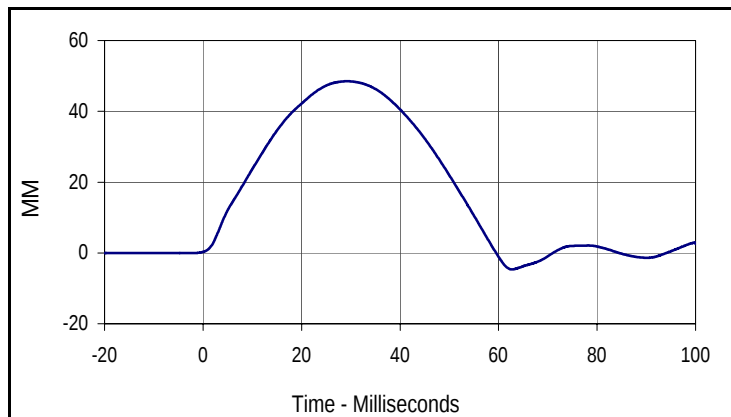
Test Date: 12/20/12
 Test I.D.: F035RB2042



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	415	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.9	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.2	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	48.5	Pass
Overall Test Results				Pass



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



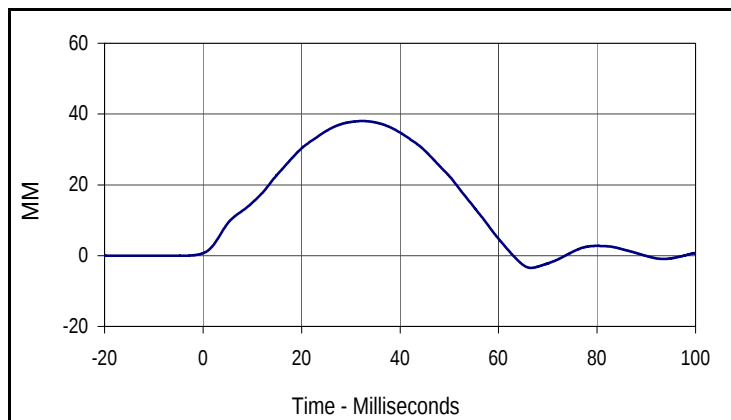
Curve Description			
Middle Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
48.5	29.2	-4.6	62.8

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F035 Rib # 3

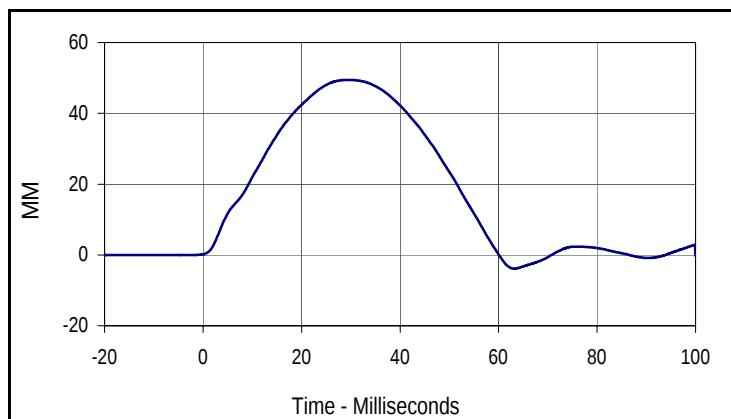
Test Date: 12/20/12
 Test I.D.: F035RB3042



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	430	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.7	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.0	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	49.4	Pass
Overall Test Results				Pass



Curve Description			
Lower Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.0	32.3	-3.5	66.6



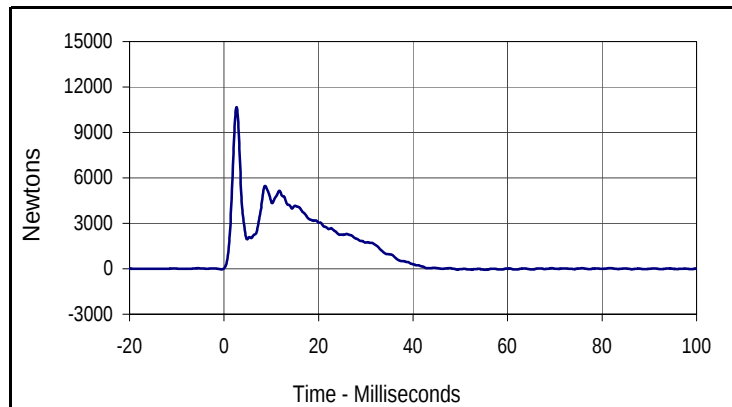
Curve Description			
Lower Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
49.4	29.5	-3.9	63.2

Test Program: ES2re Thorax - Full Body Impact Test
 ATD Serial No.: F035

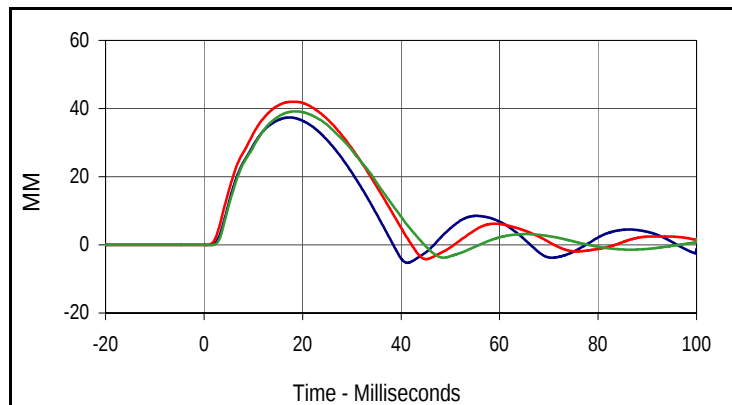
Test Date: 12/20/12
 Test I.D.: F035TH042



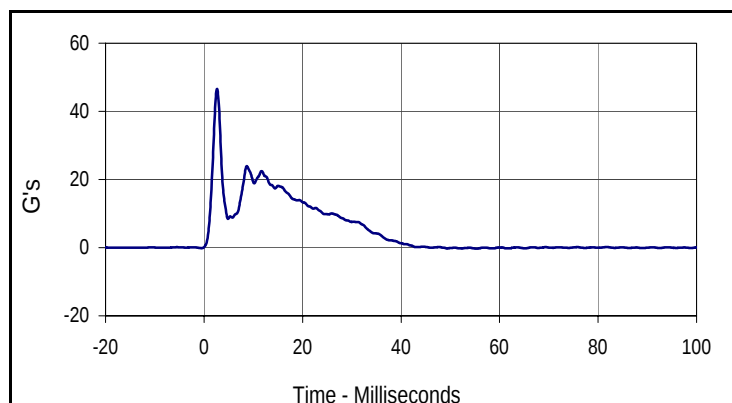
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	470	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.8	Pass
Peak Impactor Velocity	m/s	5.4 to 5.6	5.55	Pass
Peak Impactor Force	N	5100 to 6200	5475.1	Pass
	msec	> 6.0 msec	8.7	Pass
Peak Upper Rib Deflection	mm	34 to 41	37.4	Pass
Peak Middle Rib Deflection	mm	37 to 45	42.0	Pass
Peak Lower Rib Deflection	mm	37 to 44	39.2	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
10662.0	2.6	-61.5	55.4



Curve Description			
Upper, Middle, Lower Rib Deflections			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
37.4	17.3	-5.2	41.3
Max (Middle)	Time	Min (Middle)	Time
42.0	18.2	-4.2	45.1
Max (Lower)	Time	Min (Lower)	Time
39.2	18.6	-3.7	48.7



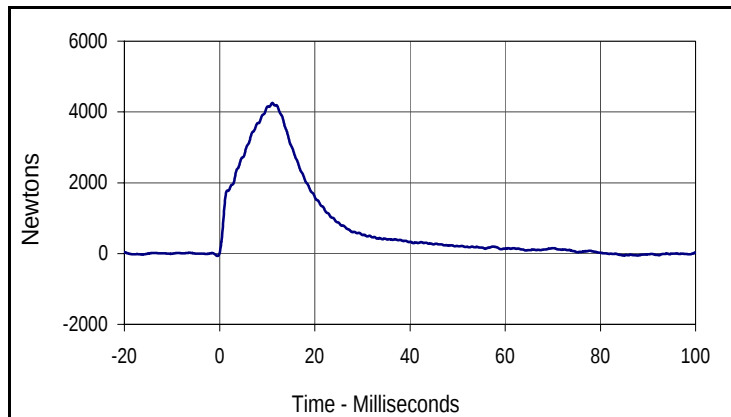
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
46.5	2.6	-0.3	55.4

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F035

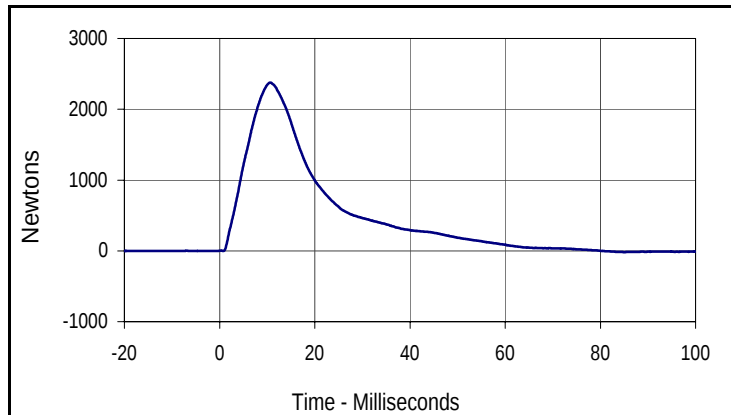
Test Date: 12/20/12
 Test I.D.: F035ABD042



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	490	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.9	Pass
Probe Velocity	m/s	3.9 to 4.1	3.95	Pass
Peak Impactor Force	N	4000 to 4800	4251.9	Pass
	msec	10.6 to 13.0	11.1	Pass
Sum of Abdominal Forces	N	2200 to 2700	2378.5	Pass
	msec	10.0 to 12.3	10.6	Pass
Overall Test Results				Pass



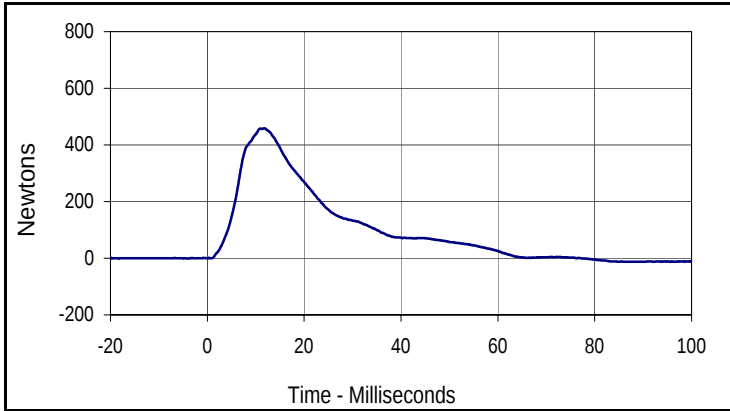
Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4251.9	11.1	-68.9	-0.4



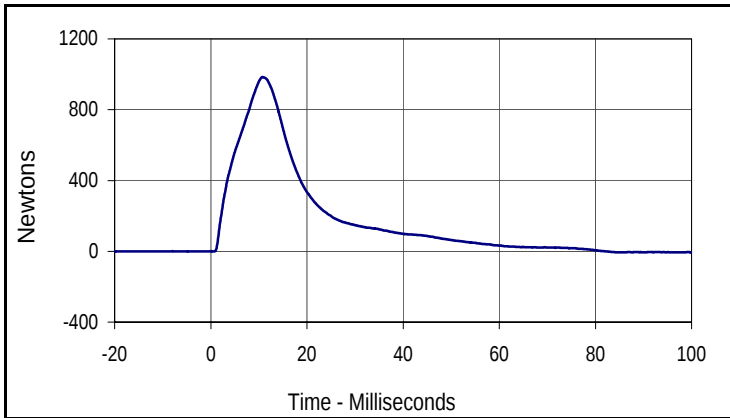
Curve Description			
Abdomen Sum Resultant			
Plot No.	Type	SAE Class	Units
002	RES	600	Newtons
Max	Time	Min	Time
2378.5	10.6	-17.1	85.0

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F035

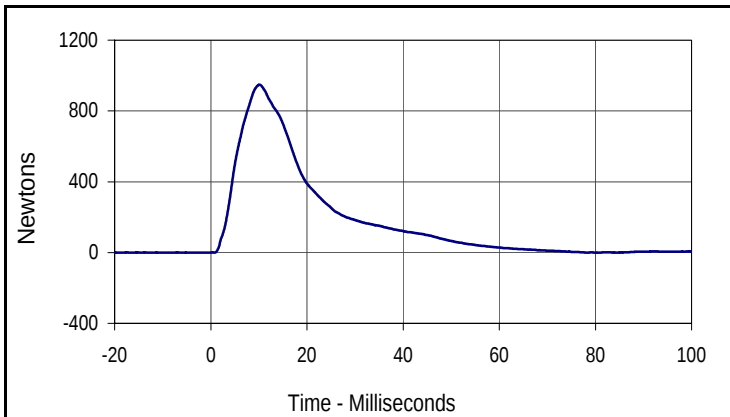
Test Date: 12/20/12
 Test I.D.: F035ABD042



Curve Description			
Front Abdomen Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
458.9	11.8	-12.8	87.8



Curve Description			
Middle Abdomen Force			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtons
Max	Time	Min	Time
984.8	10.7	-6.4	95.6



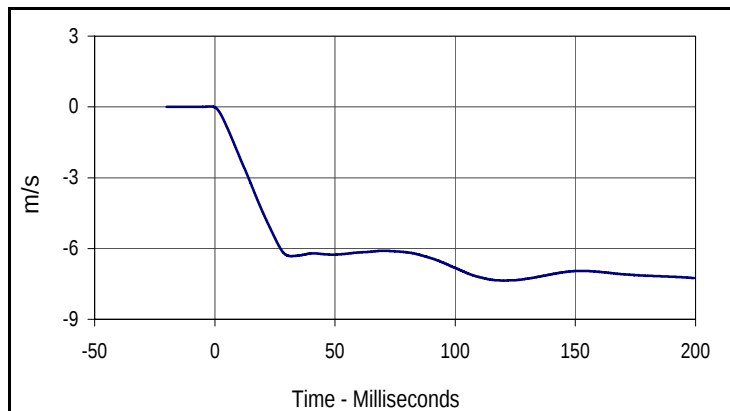
Curve Description			
Rear Abdomen Force			
Plot No.	Type	SAE Class	Units
005	FIL	600	Newtons
Max	Time	Min	Time
947.9	10.1	-0.4	-5.4

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F035

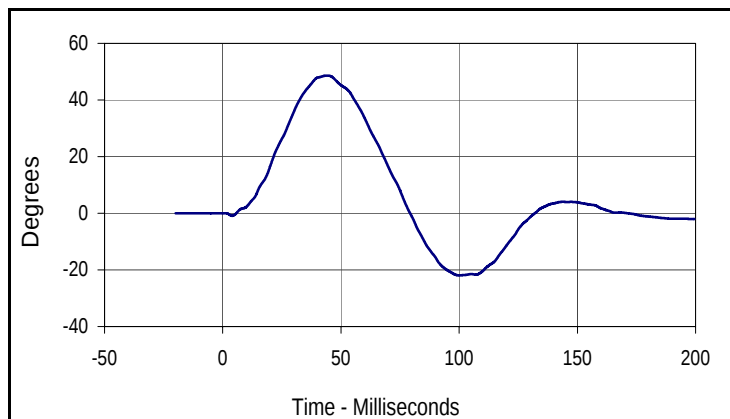
Test Date: 12/20/12
 Test I.D.: F035LB042



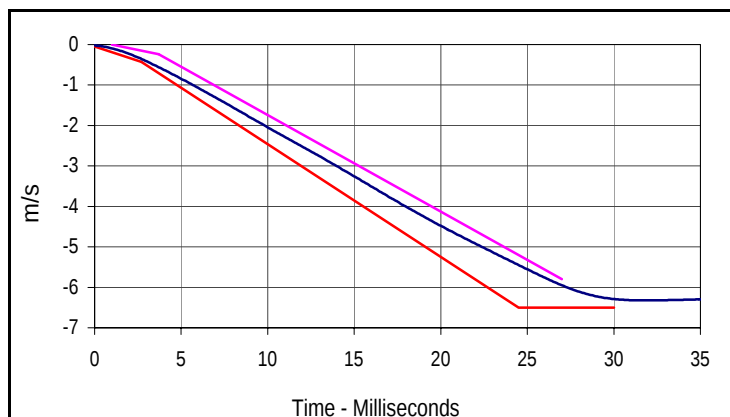
Tested Parameter	Units	Specification	Result	Pass/Fail
Lumbar Spine Assembly Soak Time	Minutes	≥240	545	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.5	Pass
Pendulum Velocity	m/s	5.95 to 6.15	6.07	Pass
Headform Rotation	Max	45 to 55	48.6	Pass
	Time	39 to 53	45.2	Pass
Time of Decay to Zero Angle from Peak	msec	37 to 57	41.1	Pass
Overall Test Results				Pass



Curve Description			
Plot No.	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.2	-7.4	120.6



Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	180	Degrees
Max	Time	Min	Time
48.6	45.2	-22.0	100.6



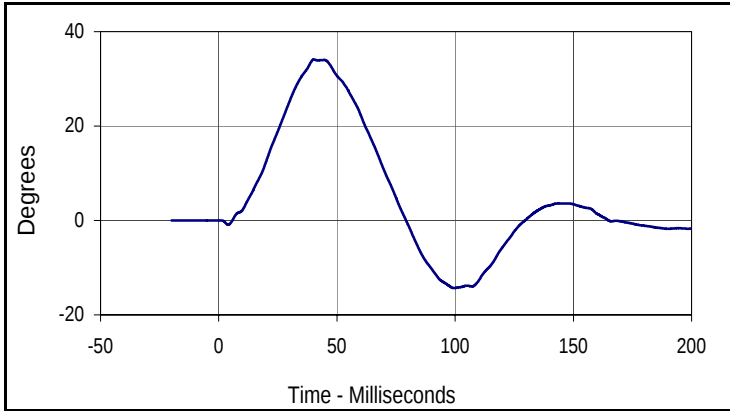
Curve Description			
Plot No.	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.2	-7.4	120.6

Velocity Corridors

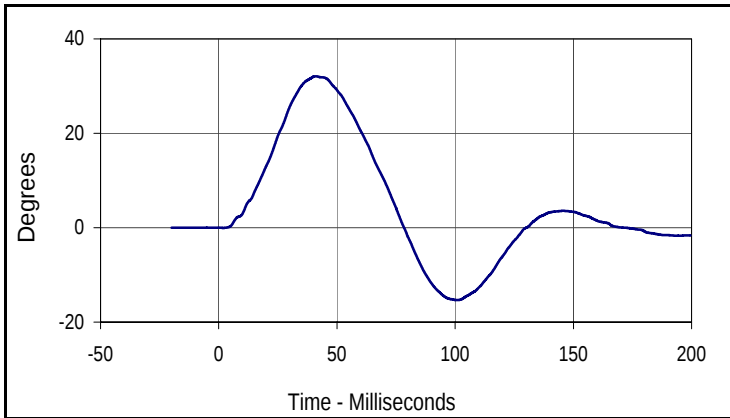
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.50
		30.0	-6.50

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F035

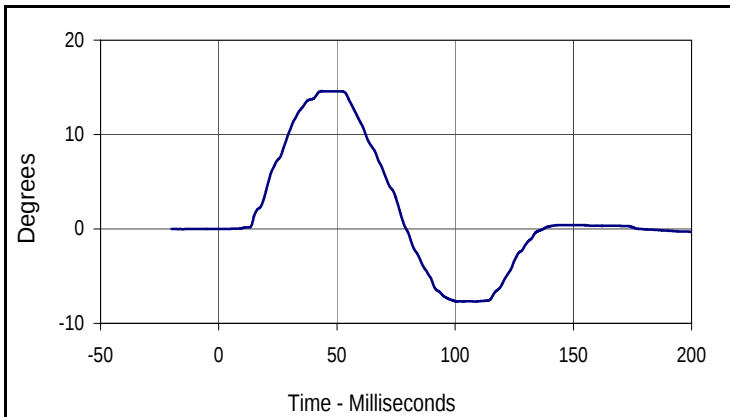
Test Date: 12/20/12
 Test I.D.: F035LB042



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
34.1	40.8	-14.3	100.2



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
32.1	41.6	-15.3	101.6



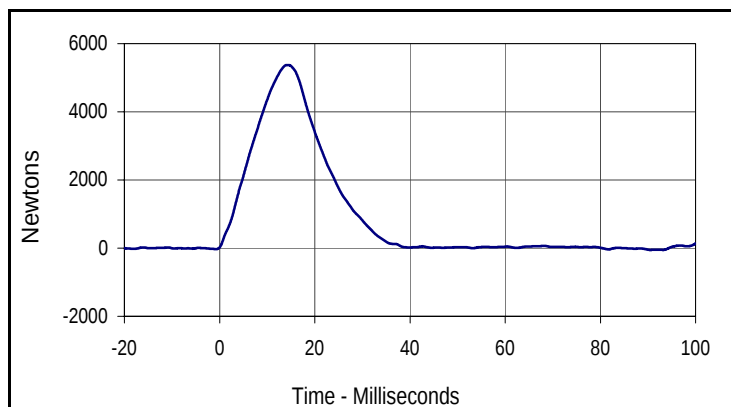
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
14.6	44.2	-7.7	108.8

Test Program: ES2re Pelvis Impact Test
 ATD Serial No.: F035

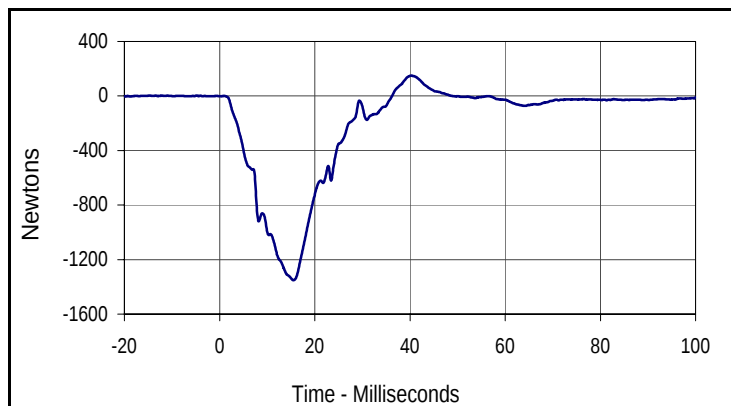
Test Date: 12/20/12
 Test I.D.: F035PL042



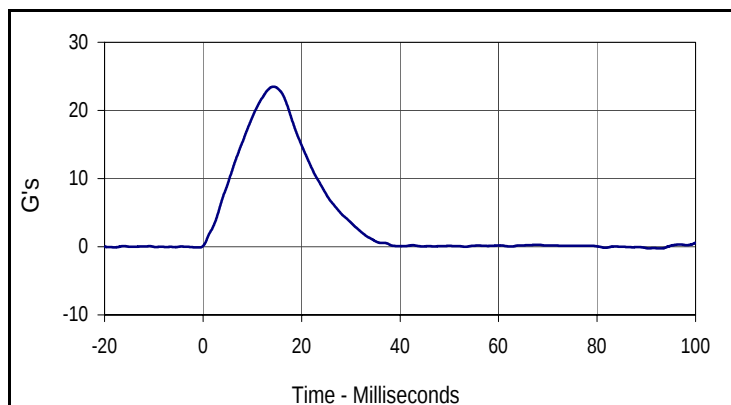
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	605	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.7	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.35	Pass
Peak Impactor Force	N	4700 to 5400	5374.7	Pass
	msec	11.8 to 16.1	14.3	Pass
Peak Pubic Symphysis Load	N	-1230 to -1590	-1351.3	Pass
	msec	12.2 to 17.0	15.5	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
5374.7	14.3	-53.5	90.5



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



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
23.5	14.3	-0.2	90.5

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

Test Date: 12/21/12
 Test I.D.: N/A



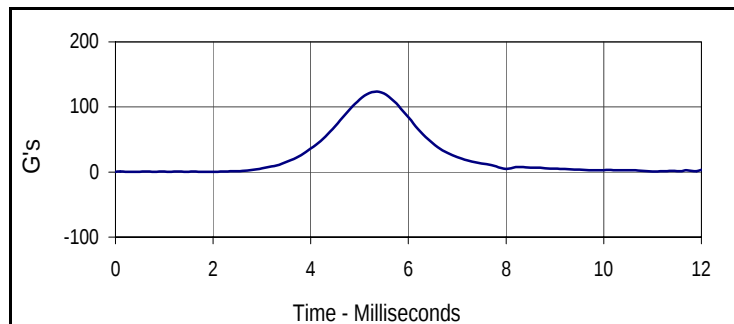
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
A	Sitting Height	mm	772 - 788	778	Pass
B	Shoulder Pivot Height	mm	437 - 453	443	Pass
C	H-Point Height	mm	79 - 89	85	Pass
D	H-Point from Seatback	mm	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

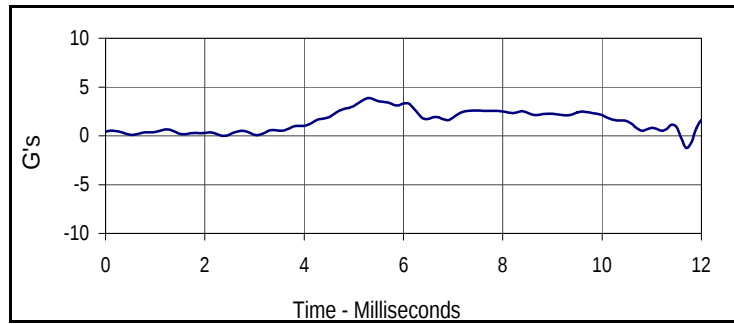
Test Date: 12/21/12
 Test I.D.: 307HD049



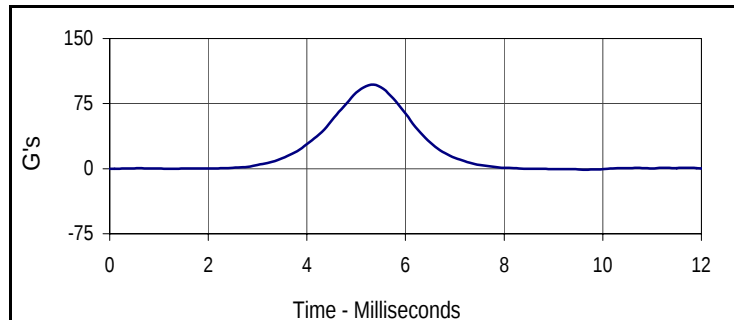
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	345	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.5	Pass
Peak Head Resultant Acceleration	G's	115 to 137	123.4	Pass
Peak Head X Acceleration	G's	<15	3.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	4.1	Pass
Overall Test Results				Pass



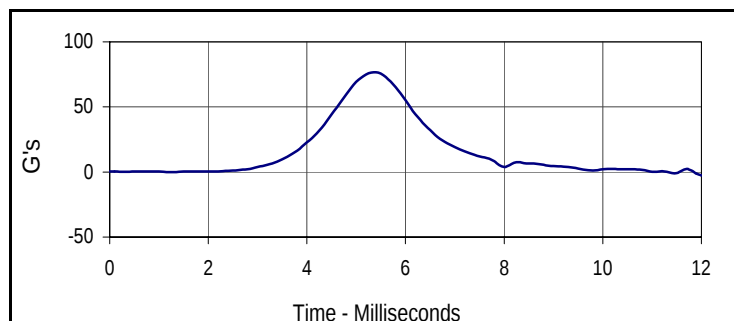
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
123.4	5.3	0.4	0.4



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.9	5.3	0.0	2.4



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
96.8	5.3	-1.2	9.6



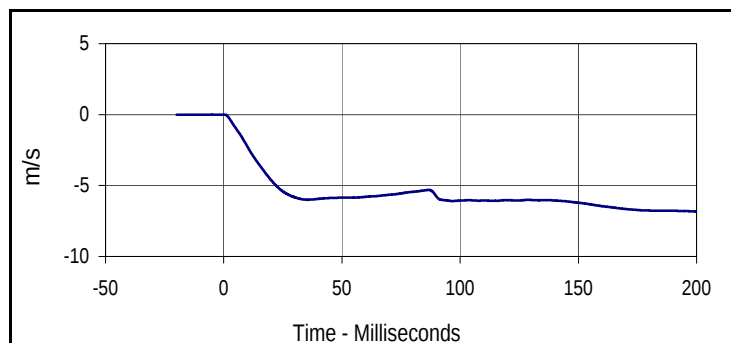
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
76.7	5.4	-2.6	12.0

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

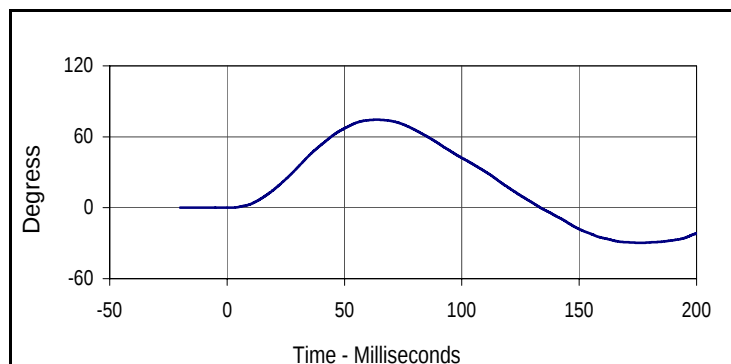
Test Date: 12/21/12
 Test I.D.: 307NB049



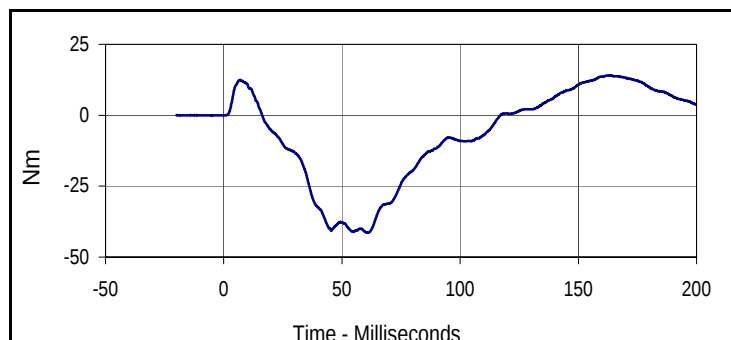
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	400	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	31.0	Pass
	Min	%		29.2	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.6	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.54	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.25	Pass
	15 msec	m/s	-3.30 to -4.10	-3.53	Pass
	20 msec	m/s	-4.40 to -5.40	-4.61	Pass
	25 msec	m/s	-5.40 to -6.10	-5.41	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.09	Pass
D-Plane Rotation	Max	Degrees	71 to 81	74.5	Pass
	Time	msec	50 to 70	63.8	Pass
Peak Occipital Condyle Moment		Nm	-36 to -44	-41.4	Pass
Decaying Moment Time to Cross 0 Nm		msec	102 to 126	117.1	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-16.2	-6.8	200.0



Curve Description			
Maximum Translation Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
74.5	63.8	-29.7	176.1



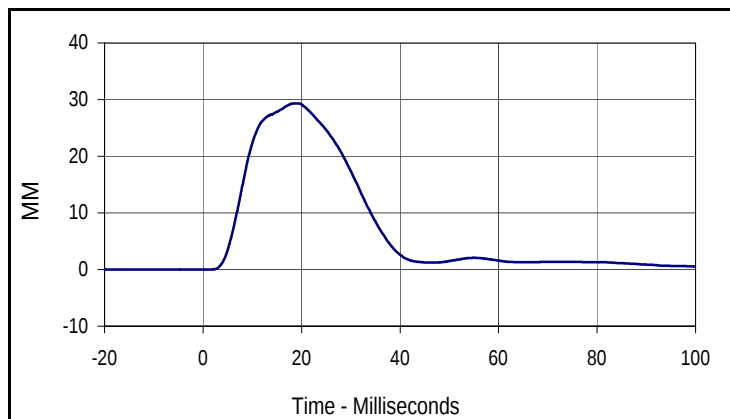
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
14.1	162.7	-41.4	60.8

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

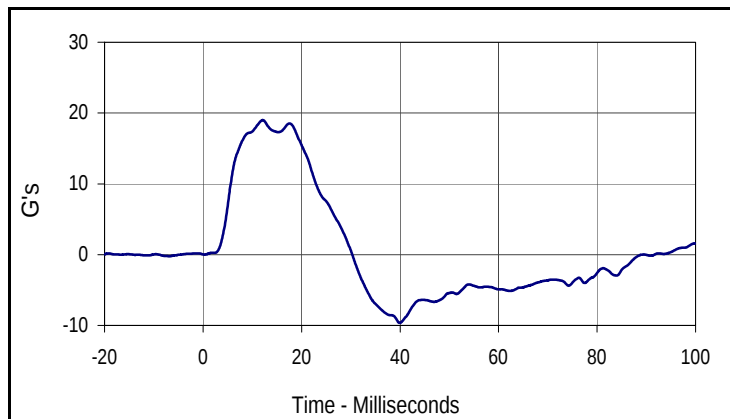
Test Date: 12/21/12
 Test I.D.: 307SH049



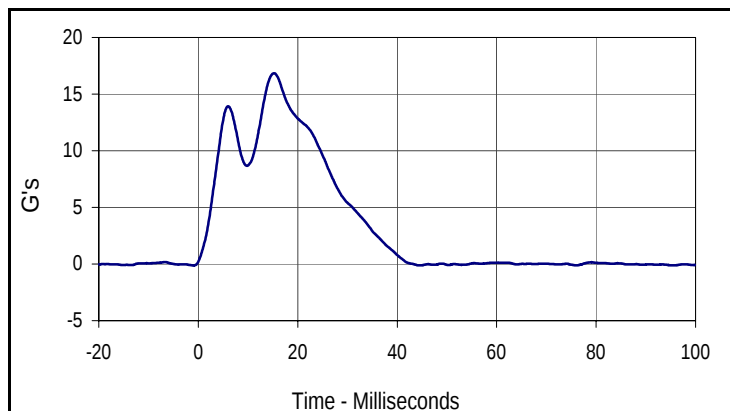
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	435	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	31.0	Pass
	Min	%		29.2	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.5	Pass
Impactor Velocity		m/s	4.20 to 4.40	4.29	Pass
Peak Shoulder Deflection		mm	28 to 37	29.3	Pass
Peak Lateral Spine Acceleration Y		G's	17 to 22	19.0	Pass
Peak Impactor Acceleration		G's	13 to 18	16.8	Pass
Overall Test Results					Pass



Curve Description			
Shoulder Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
29.3	18.8	0.0	-16.8



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.0	12.1	-9.6	39.9



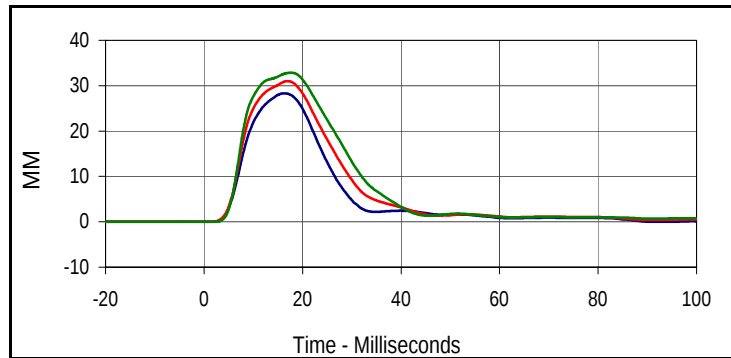
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
16.8	15.2	-0.1	-1.0

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

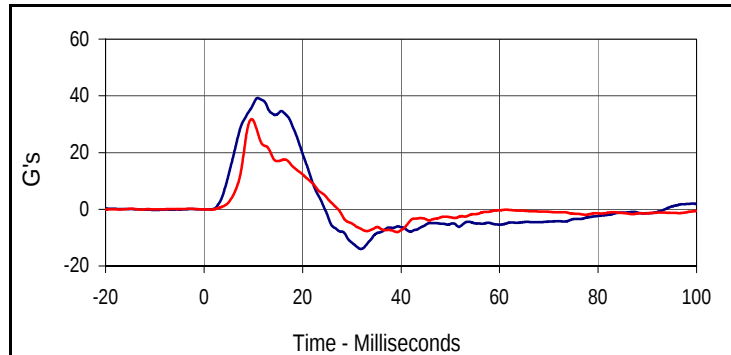
Test Date: 12/21/12
 Test I.D.: 307TWA049



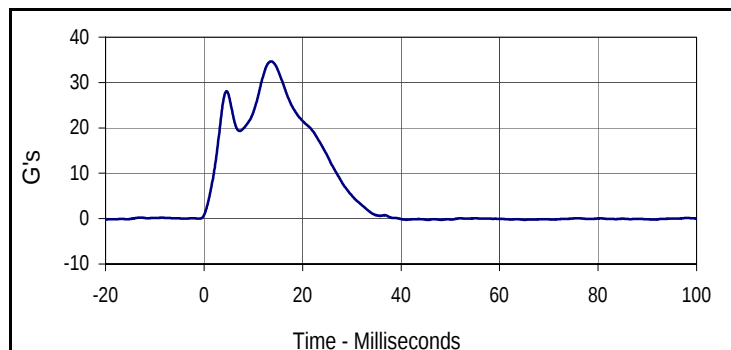
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	455	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.4	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.62	Pass
Peak Shoulder Deflection	mm	31 to 40	36.4	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	28.3	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.0	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	32.9	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	39.2	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	31.8	Pass
Peak Impactor Acceleration	G's	30 to 36	34.7	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
28.3	16.2	0.0	-19.4
Middle Thorax Deflection			
Max	Time	Min	Time
31.0	17.0	0.0	1.4
Lower Thorax Deflection			
Max	Time	Min	Time
32.9	17.6	0.0	2.0



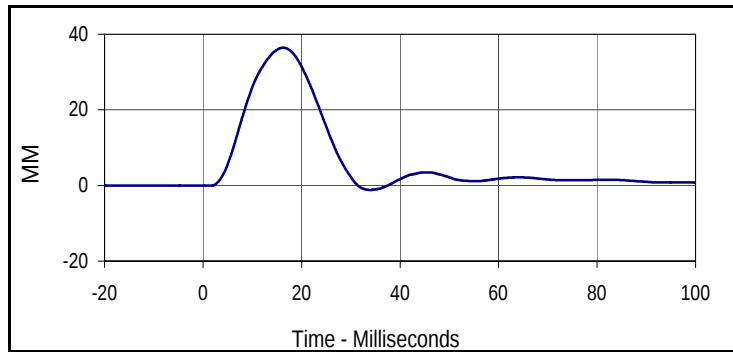
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
39.2	10.9	-14.0	31.9
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
31.8	9.7	-8.1	39.2



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.7	13.6	-0.3	45.4

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

Test Date: 12/21/12
 Test I.D.: 307TWA049



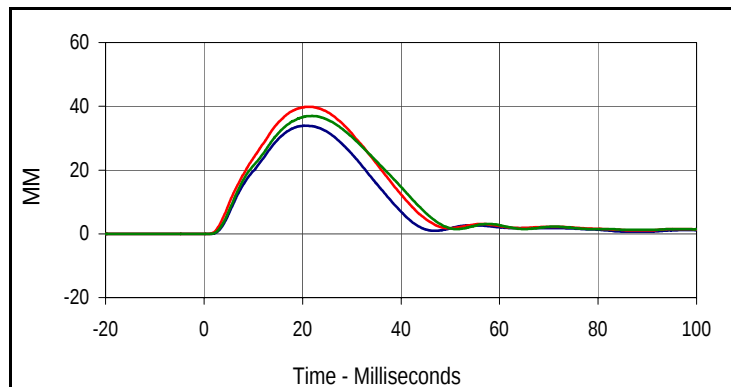
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
36.4	16.3	-1.2	33.9

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

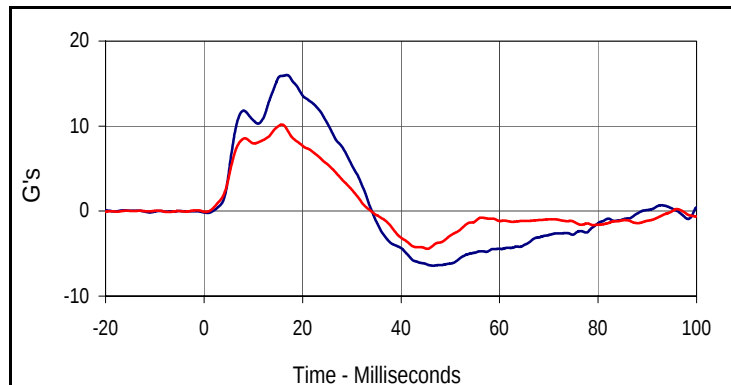
Test Date: 12/21/12
 Test I.D.: 307TWOA049



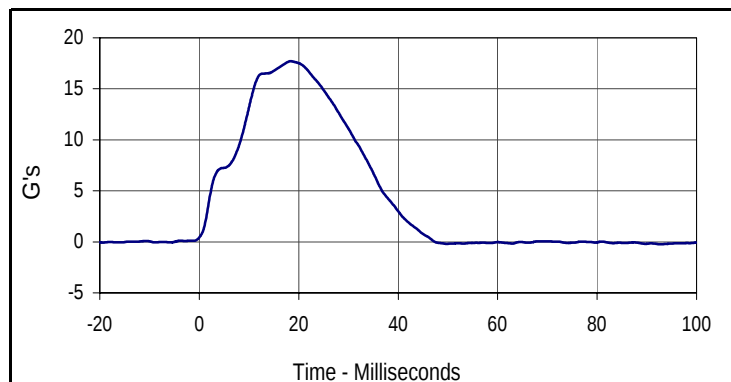
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	480	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	31.0	Pass
	Min	%		29.2	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.5	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.29	Pass
Peak Upper Thorax Rib Deflection		mm	32 to 40	33.9	Pass
Peak Middle Thorax Rib Deflection		mm	39 to 45	39.9	Pass
Peak Lower Thorax Rib Deflection		mm	35 to 43	37.0	Pass
Peak Upper Spine Y Acceleration		G's	13 to 17	16.0	Pass
Peak Lower Spine Y Acceleration		G's	7 to 11	10.2	Pass
Peak Impactor Acceleration		G's	14 to 18	17.7	Pass
Overall Test Results				Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
33.9	20.6	0.0	-9.3
Middle Thorax Deflection			
Max	Time	Min	Time
39.9	21.2	0.0	-9.9
Lower Thorax Deflection			
Max	Time	Min	Time
37.0	22.0	0.0	-16.3



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
16.0	16.8	-6.4	46.5
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
10.2	15.8	-4.4	45.3



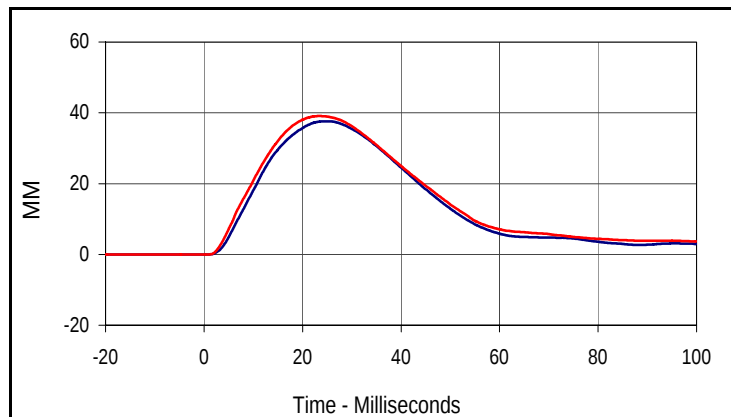
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
17.7	18.4	-0.2	92.7

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

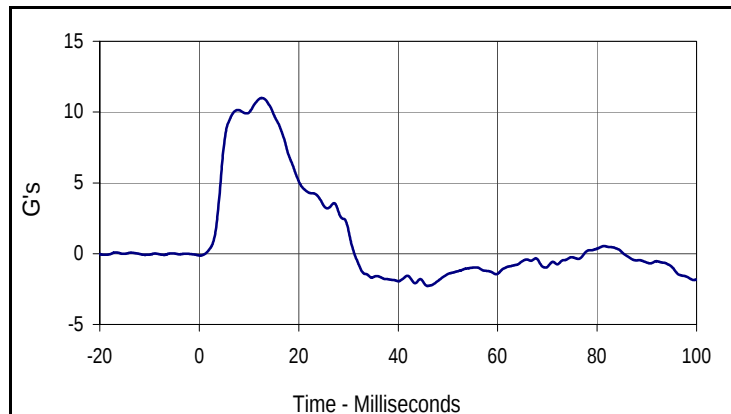
Test Date: 12/21/12
 Test I.D.: 307ABD049



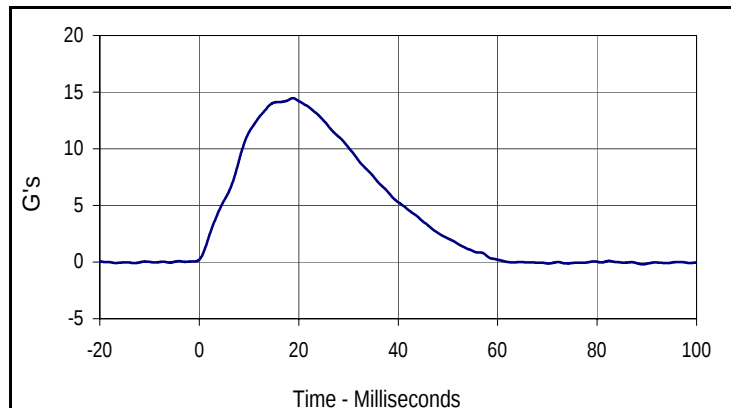
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	500	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.3	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.29	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	37.6	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	39.1	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	11.0	Pass
Peak Impactor Acceleration	G's	12 to 16	14.5	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
37.6	24.6	0.0	-7.9
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
39.1	23.4	0.0	-1.9

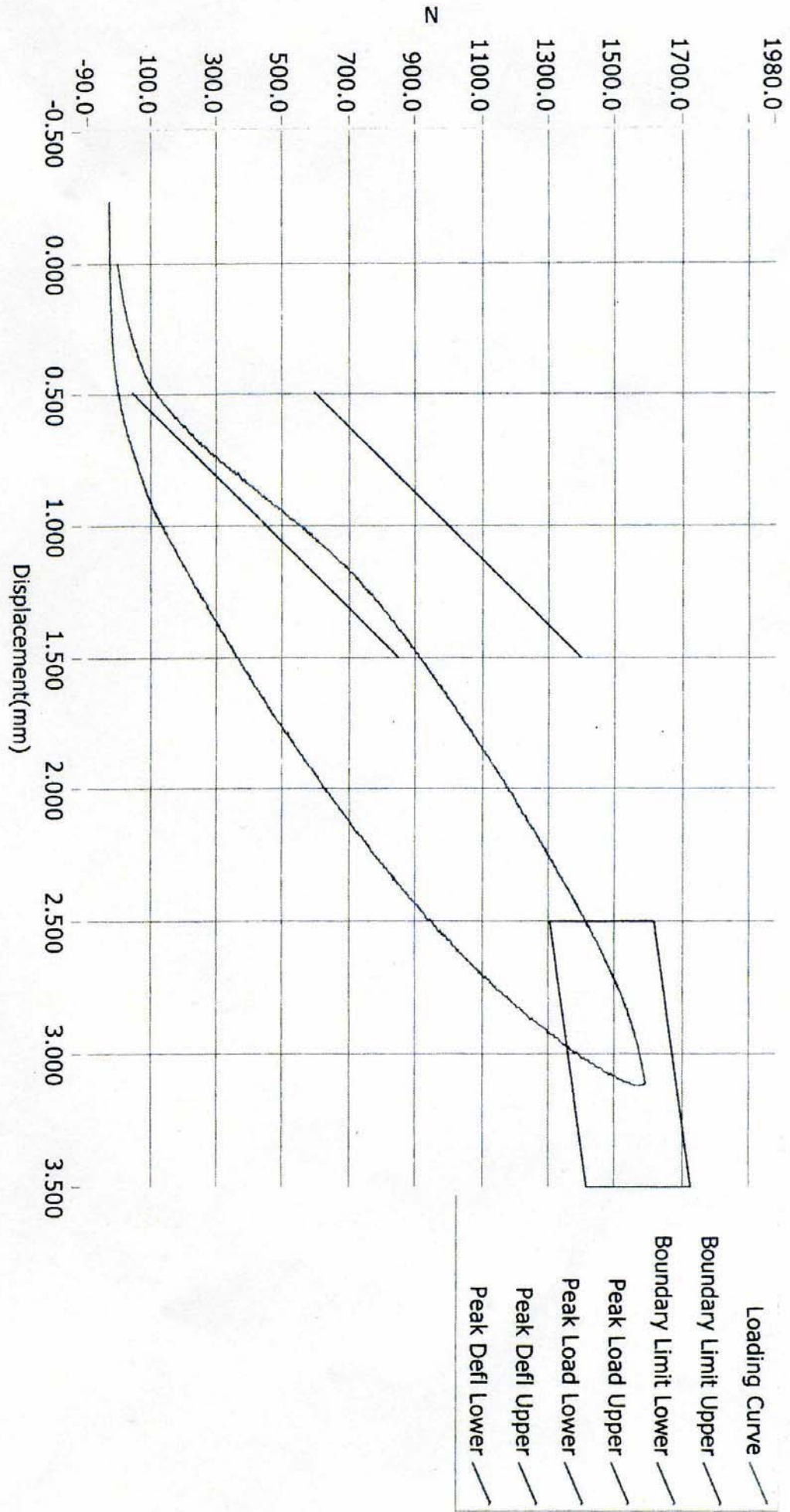


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.0	12.6	-2.3	45.9



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.5	18.8	-0.2	89.2

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID

Part Serial Number

Test Date

Test Time

Cert ID

ATD Serial Number

ATD Type

N/A

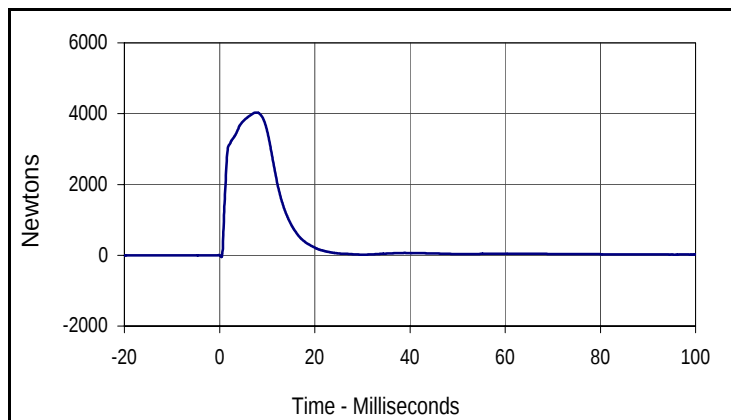
SIDIIs

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

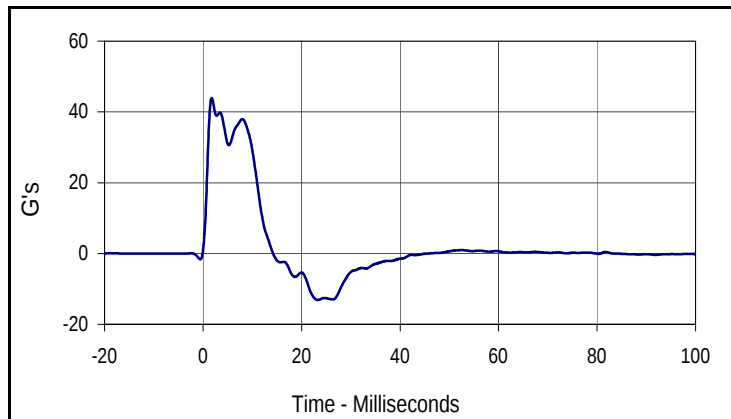
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 Test I.D.: 307ACET049



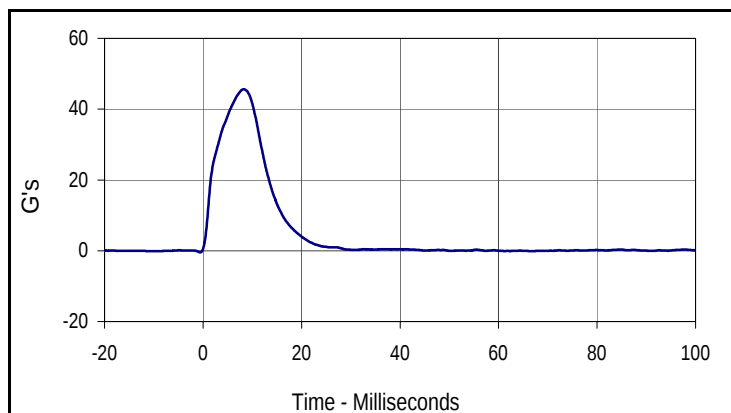
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	535	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.4	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.71	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	4032.3	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	38.0	Pass
Peak Impactor Acceleration	G's	38 to 47	45.6	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4032.3	7.7	-49.1	0.4



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
43.9	1.8	-13.1	23.3



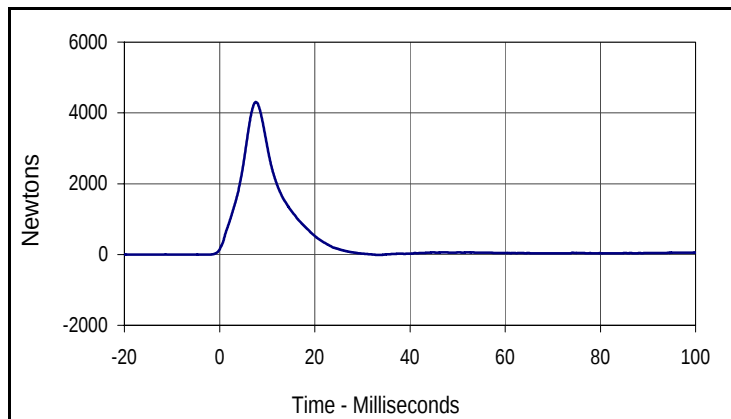
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
45.6	8.2	-0.4	-0.6

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

Test Date: 12/21/12
 Test I.D.: 307PL049



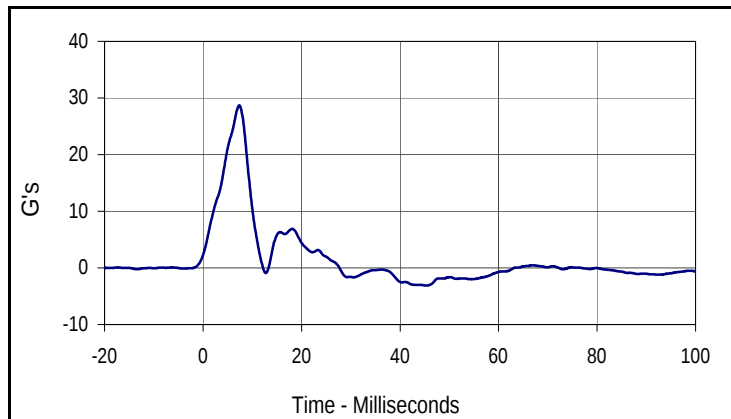
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	590	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.2	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.27	Pass
Peak Iliac Force	Newtons	4100 to 5100	4306.7	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	28.7	Pass
Peak Impactor Acceleration	G's	36 to 45	40.0	Pass
Overall Test Results			Pass	



Curve Description

Pelvis Iliac Force

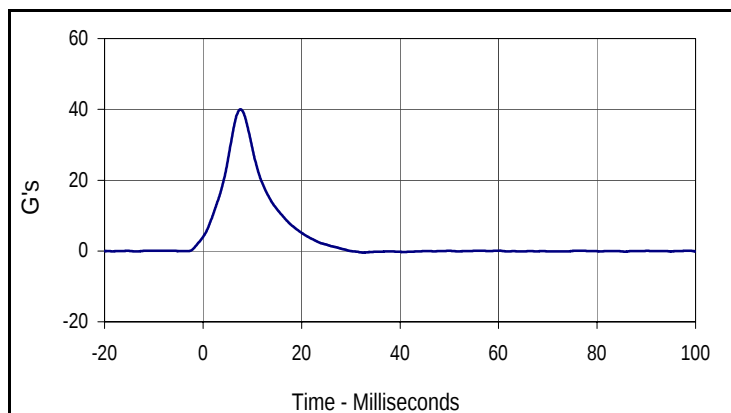
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4306.7	7.6	-10.9	33.0



Curve Description

Pelvis Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
28.7	7.4	-3.1	45.3



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
40.0	7.6	-0.4	32.6

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

Test Program: ES2re External Measurements
 ATD Serial No.: F035

Test Date: 1/11/13
 Test I.D.: N/A



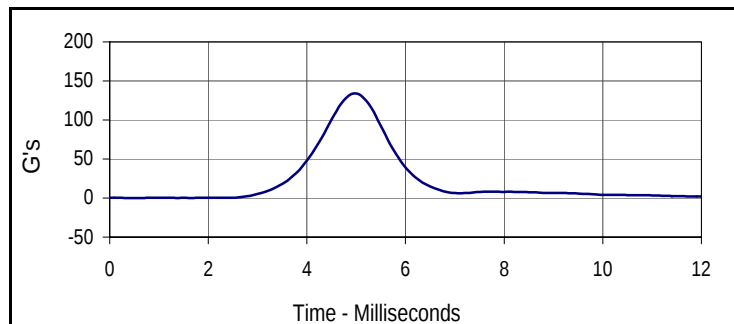
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	30.3	Pass
1	Sitting Height	mm	900 - 918	907	Pass
2	Seat to Shoulder Joint	mm	558 - 572	564	Pass
3	Seat to Lower Face of Thoracic Spine Box	mm	346 - 356	350	Pass
4	Seat to Hip Joint (Center of Bolt)	mm	97 - 103	100	Pass
5	Sole to Seat, Sitting	mm	333 - 451	389	Pass
6	Head Width	mm	152 - 158	155	Pass
7	Shoulder / Arm Width	mm	461 - 479	470	Pass
8	Thorax Width	mm	322 - 332	324	Pass
9	Abdomen Width	mm	273 - 287	280	Pass
10	Pelvis Lap Width	mm	359 - 373	365	Pass
11	Head Depth	mm	196 - 206	202	Pass
12	Thorax Depth	mm	262 - 272	269	Pass
13	Abdomen Width	mm	194 - 204	198	Pass
14	Pelvis Depth	mm	235 - 245	239	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	611	Pass
Overall Test Results					Pass

Test Program: ES2re Head Drop Test
 ATD Serial No.: F035

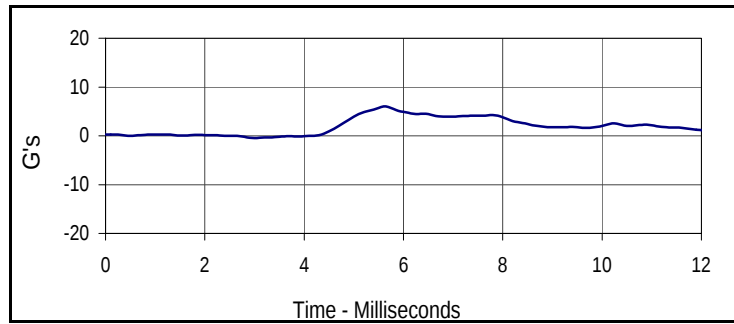
Test Date: 1/11/13
 Test I.D.: F035HD043



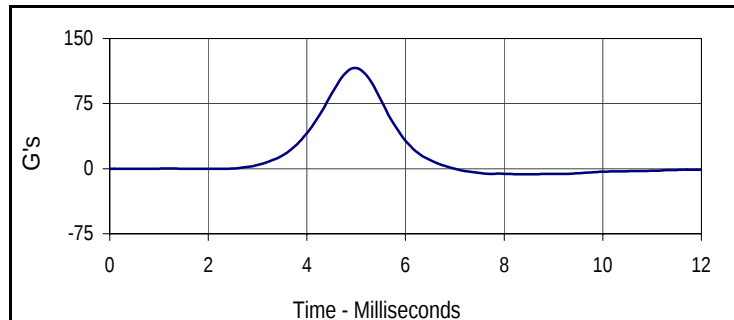
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	425	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.5	Pass
Peak Head Resultant Acceleration	G's	125 to 155	134.0	Pass
Peak Head X Acceleration	G's	≤15	6.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	6.3	Pass
Overall Test Results				Pass



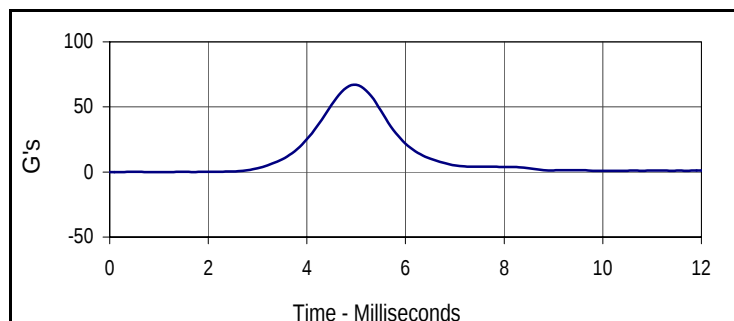
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
134.0	5.0	0.1	0.4



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
6.0	5.6	-0.4	3.0



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
115.9	5.0	-6.4	8.6



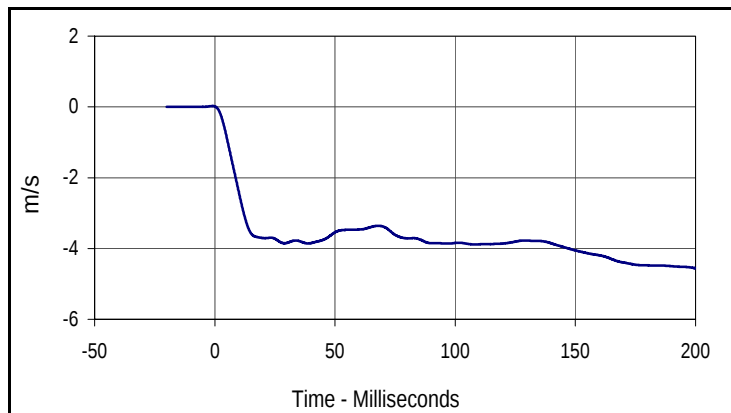
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
67.0	5.0	-0.1	0.8

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F035

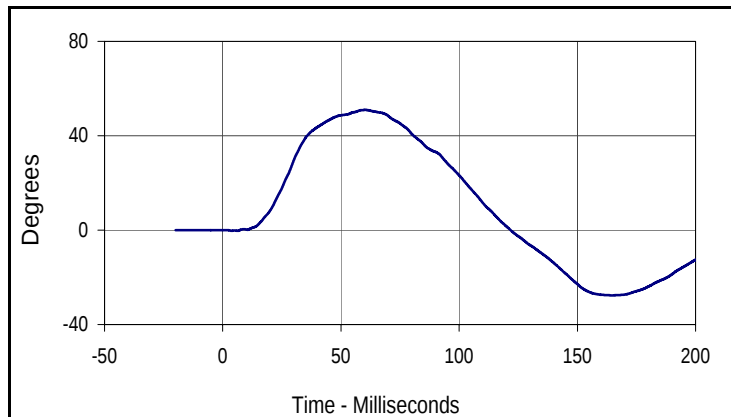
Test Date: 1/11/13
 Test I.D.: F035NB043



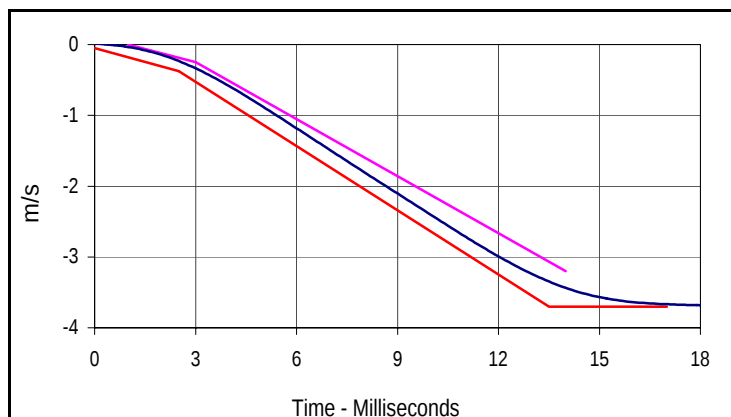
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	465	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.4	Pass
Pendulum Velocity	m/s	3.3 to 3.5	3.43	Pass
Headform Flexion	Max	49 to 59	50.9	Pass
	Time	54 to 66	60.3	Pass
Headform Flexion Decay (Peak to Zero)	msec	53 to 88	61.5	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-4.6	200.0



Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	180	Degrees
Max	Time	Min	Time
50.9	60.3	-27.6	164.6



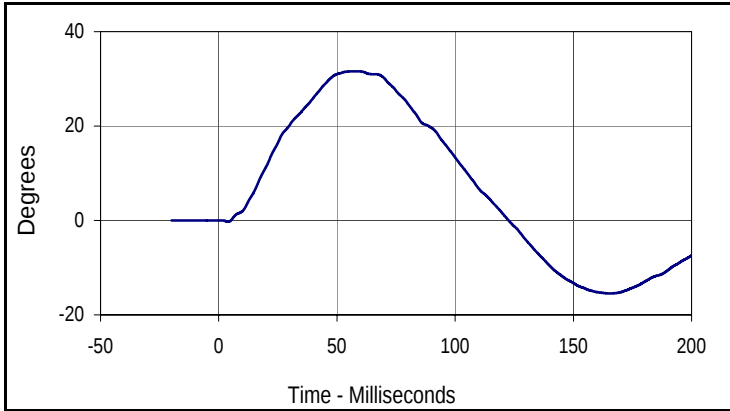
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-4.6	200.0

Velocity Corridors

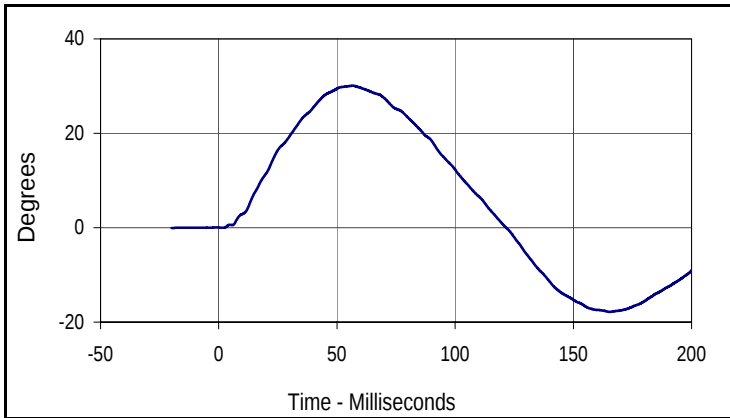
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.03	2.5	-0.375
14.0	-3.20	13.5	-3.70
		17.0	-3.70

Test Program: ES2re Neck Flexion Test
 ATD Serial No.: F035

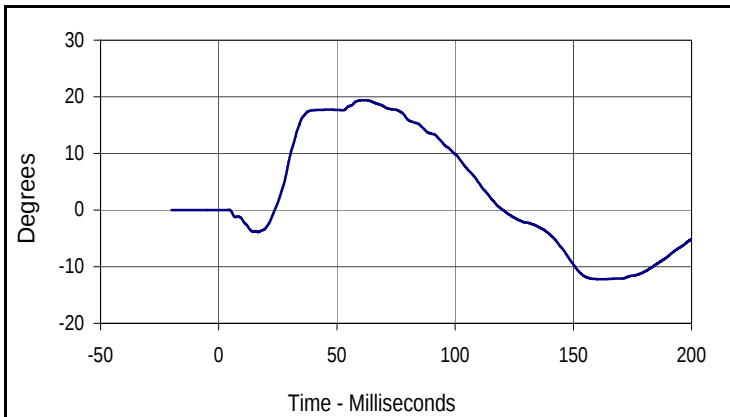
Test Date: 1/11/13
 Test I.D.: F035NB043



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
31.6	56.6	-15.5	164.9



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
30.1	56.8	-17.8	165.3



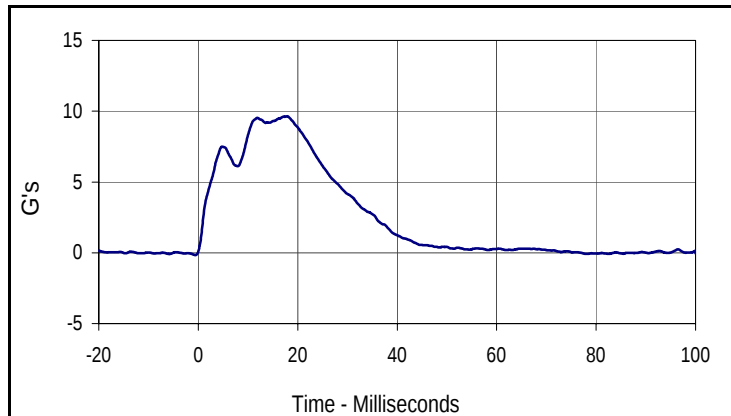
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
19.4	61.3	-12.2	162.1

Test Program: ES2re Shoulder Impact Test
 ATD Serial No.: F035

Test Date: 1/11/13
 Test I.D.: F035SH043



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	500	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.6	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.29	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	9.6	Pass
Overall Test Results				Pass



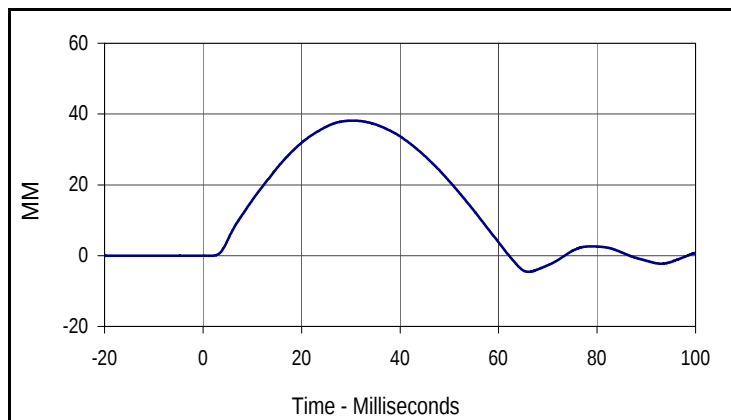
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
9.6	17.9	-0.2	-0.6

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F035 Rib # 1

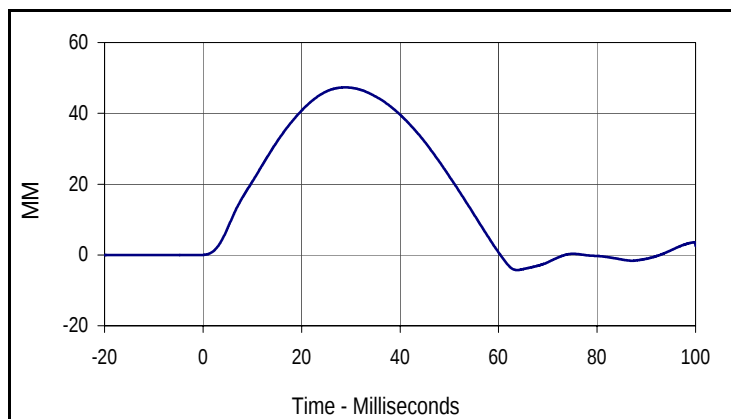
Test Date: 1/11/13
 Test I.D.: F035RB1043



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	525	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.5	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	47.3	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
38.1	30.5	-4.6	66.1



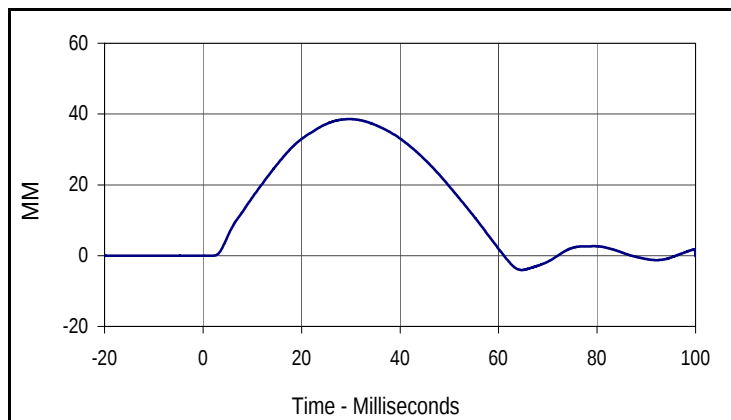
Curve Description			
Upper Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
47.3	28.9	-4.3	63.7

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F035 Rib # 2

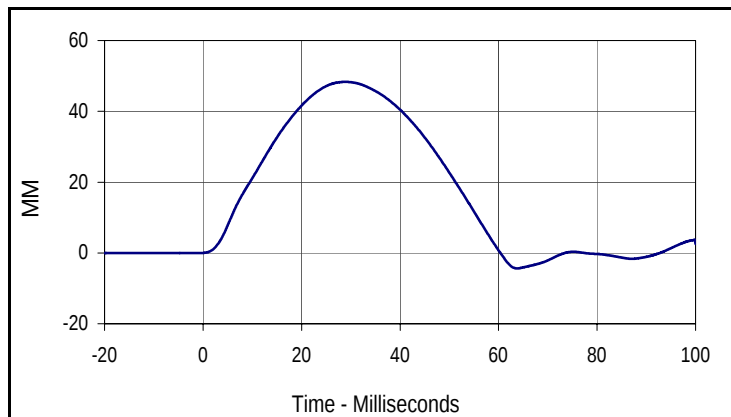
Test Date: 1/11/13
 Test I.D.: F035RB2043



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	540	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.3	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.5	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	48.3	Pass
Overall Test Results				Pass



Curve Description			
Middle Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.5	29.7	-4.1	64.7



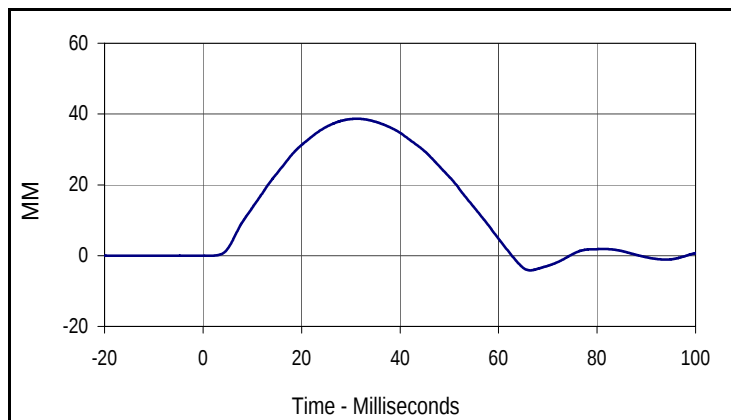
Curve Description			
Middle Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
48.3	28.9	-4.4	63.7

Test Program: ES2re Thorax - Rib Drop Test
 ATD Serial No.: F035 Rib # 3

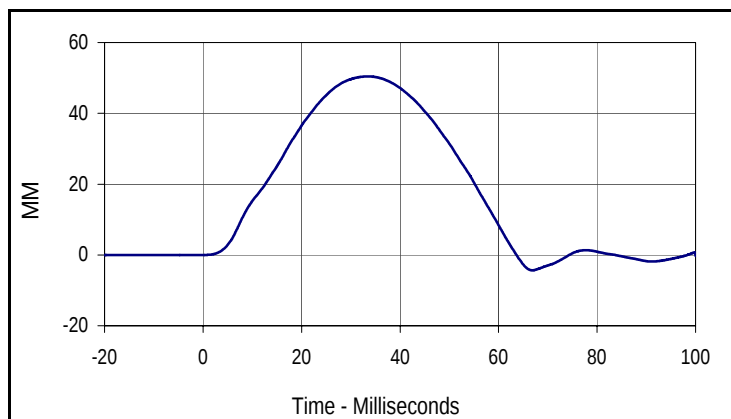
Test Date: 1/11/13
 Test I.D.: F035RB3043



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	555	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.2	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.7	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	50.4	Pass
Overall Test Results				Pass



Curve Description			
Lower Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.7	31.2	-4.2	66.4



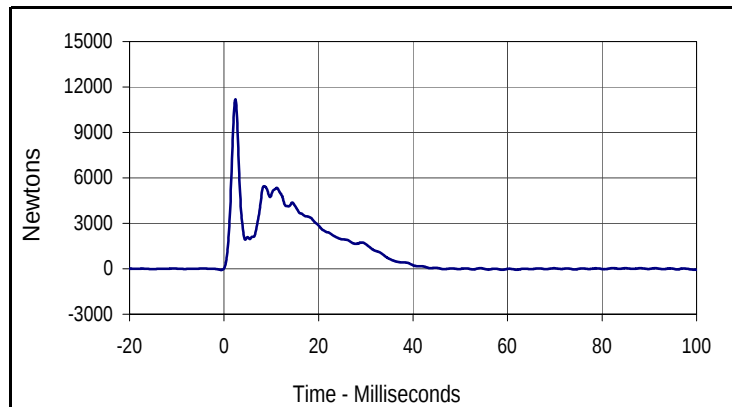
Curve Description			
Lower Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
50.4	33.4	-4.3	66.9

Test Program: ES2re Thorax - Full Body Impact Test
 ATD Serial No.: F035

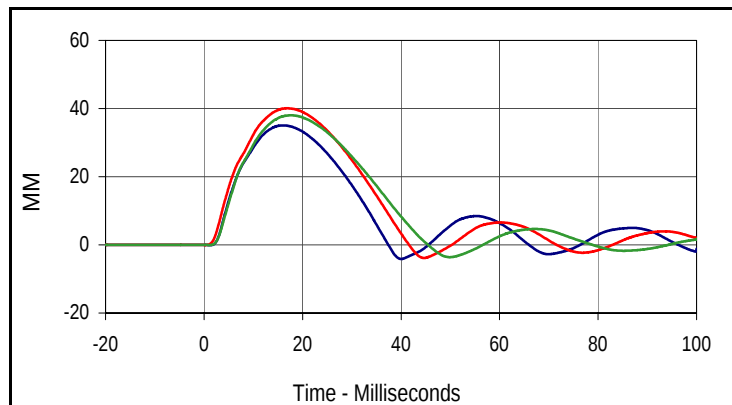
Test Date: 1/11/13
 Test I.D.: F035TH043



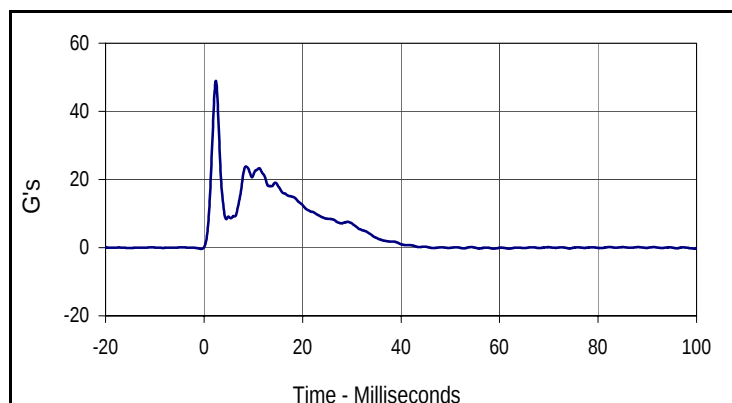
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	595	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.9	Pass
Peak Impactor Velocity	m/s	5.4 to 5.6	5.49	Pass
Peak Impactor Force	N	5100 to 6200	5456.4	Pass
	msec	> 6.0 msec	8.5	Pass
Peak Upper Rib Deflection	mm	34 to 41	35.1	Pass
Peak Middle Rib Deflection	mm	37 to 45	40.1	Pass
Peak Lower Rib Deflection	mm	37 to 44	38.0	Pass
Overall Test Results			Pass	



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
11197.8	2.4	-78.9	-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
35.1	16.0	-4.1	40.0
Max (Middle)	Time	Min (Middle)	Time
40.1	16.9	-3.8	44.7
Max (Lower)	Time	Min (Lower)	Time
38.0	17.6	-3.6	49.9



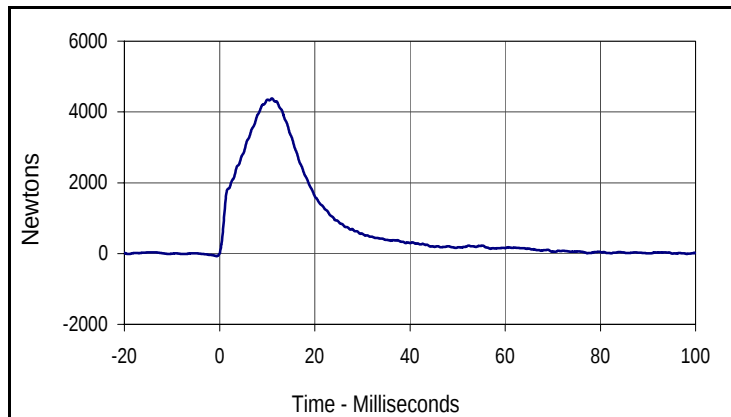
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
48.9	2.4	-0.3	-0.6

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F035

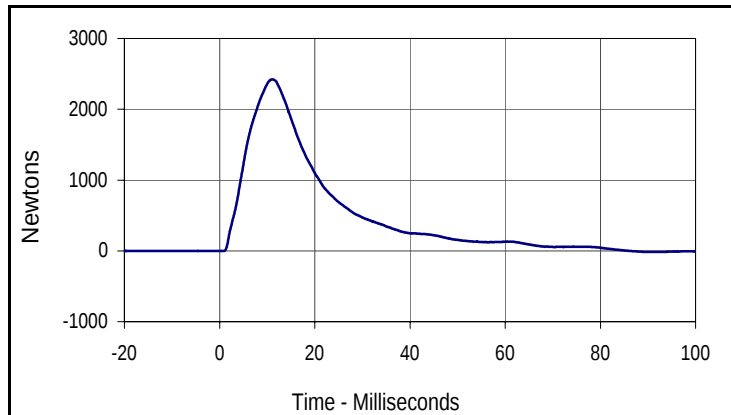
Test Date: 1/11/13
 Test I.D.: F035ABD043



Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	615	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	31.0	Pass
	Min	%		28.9	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.7	Pass
Probe Velocity		m/s	3.9 to 4.1	3.94	Pass
Peak Impactor Force	N		4000 to 4800	4381.2	Pass
	msec		10.6 to 13.0	11.0	Pass
Sum of Abdominal Forces	N		2200 to 2700	2422.2	Pass
	msec		10.0 to 12.3	11.1	Pass
Overall Test Results					Pass



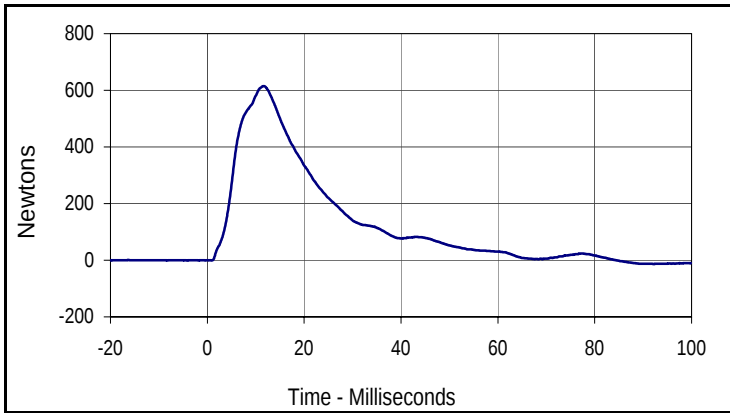
Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4381.2	11.0	-71.1	-0.6



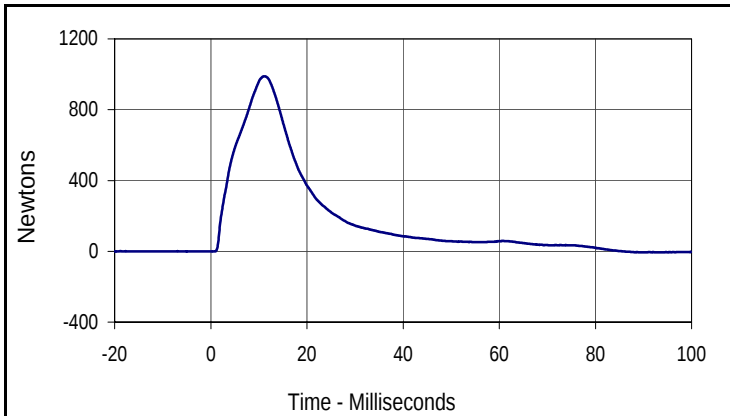
Curve Description			
Abdomen Sum Resultant			
Plot No.	Type	SAE Class	Units
002	RES	600	Newtons
Max	Time	Min	Time
2422.2	11.1	-15.3	90.0

Test Program: ES2re Abdomen Impact Test
 ATD Serial No.: F035

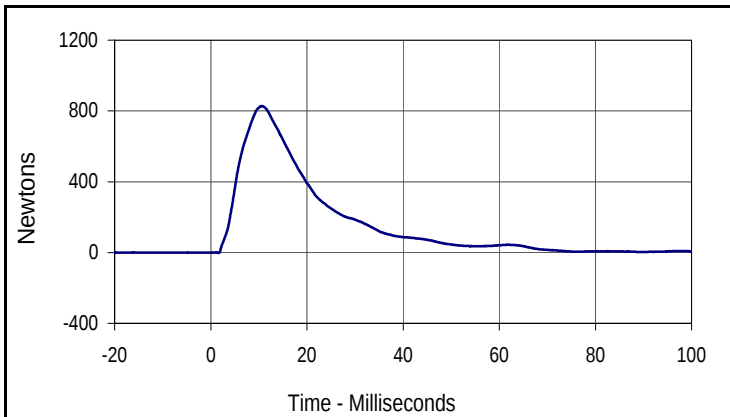
Test Date: 1/11/13
 Test I.D.: F035ABD043



Curve Description			
Front Abdomen Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
615.2	11.7	-13.5	92.2



Curve Description			
Middle Abdomen Force			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtons
Max	Time	Min	Time
989.1	11.2	-5.8	93.0



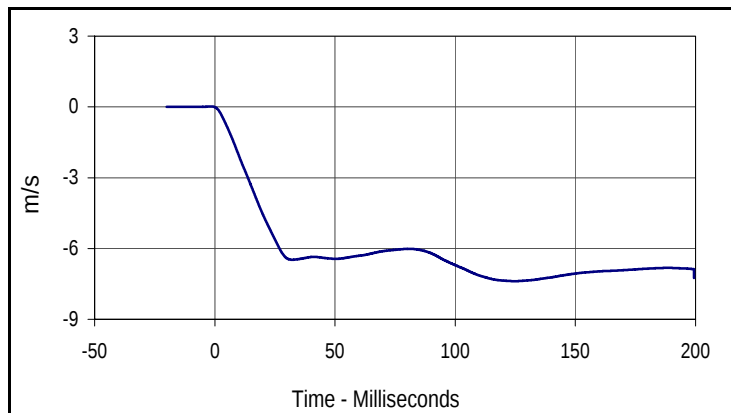
Curve Description			
Rear Abdomen Force			
Plot No.	Type	SAE Class	Units
005	FIL	600	Newtons
Max	Time	Min	Time
827.3	10.6	-3.0	1.6

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F035

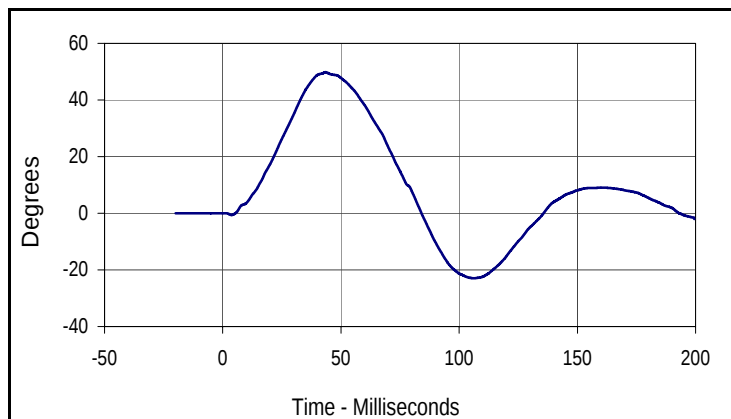
Test Date: 1/11/13
 Test I.D.: F035LB043



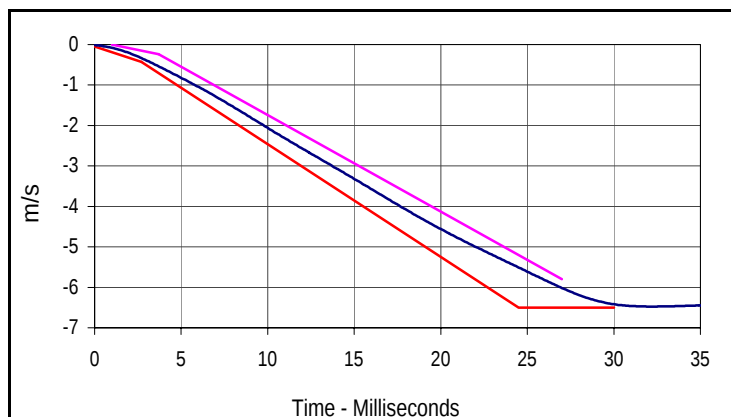
Tested Parameter	Units	Specification	Result	Pass/Fail
Lumbar Spine Assembly Soak Time	Minutes	≥240	670	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.7	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.5	Pass
Pendulum Velocity	m/s	5.95 to 6.15	6.09	Pass
Headform Rotation	Max	45 to 55	49.8	Pass
	Time	39 to 53	44.1	Pass
Time of Decay to Zero Angle from Peak	msec	37 to 57	42.2	Pass
Overall Test Results				Pass



Curve Description			
Plot No.	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-7.4	125.4



Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	180	Degrees
Max	Time	Min	Time
49.8	44.1	-22.9	106.7



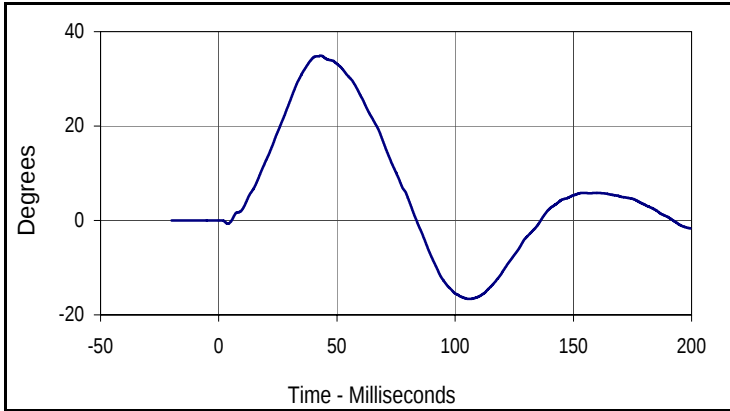
Curve Description			
Plot No.	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-7.4	125.4

Velocity Corridors

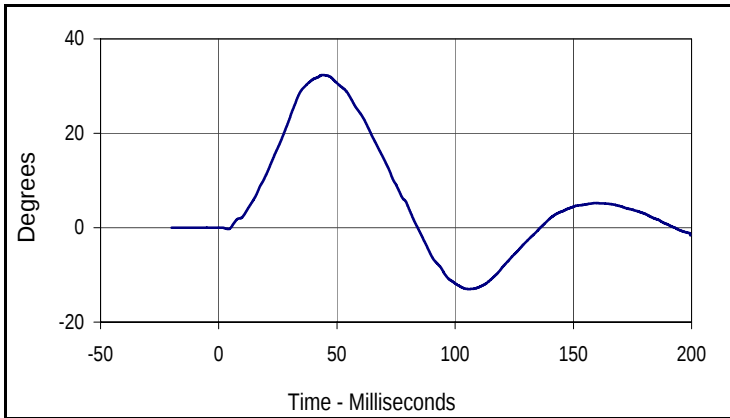
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.50
		30.0	-6.50

Test Program: ES2re Lumbar Flexion Test
 ATD Serial No.: F035

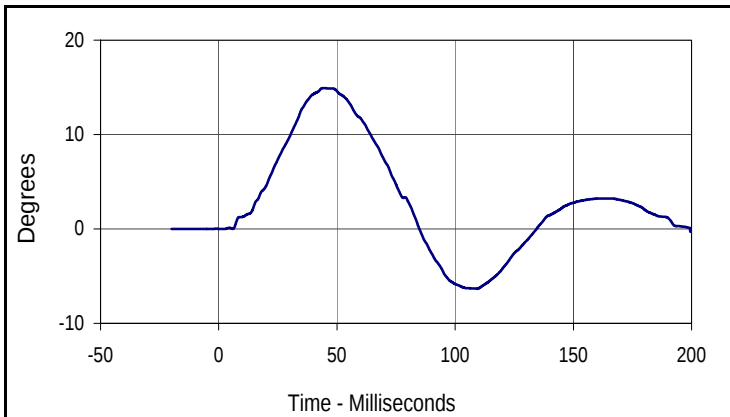
Test Date: 1/11/13
 Test I.D.: F035LB043



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
34.9	43.8	-16.6	106.6



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
32.4	44.6	-13.0	106.4



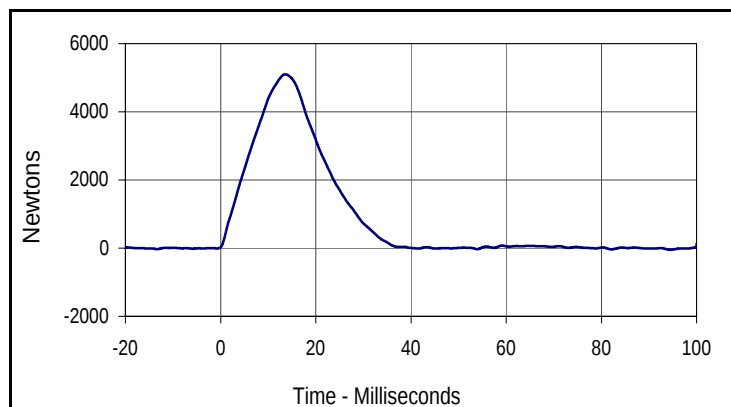
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
14.9	44.7	-6.3	109.8

Test Program: ES2re Pelvis Impact Test
 ATD Serial No.: F035

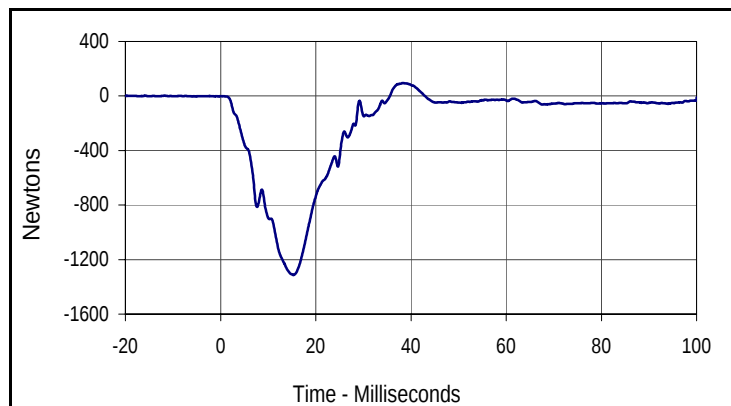
Test Date: 1/11/13
 Test I.D.: F035PL043



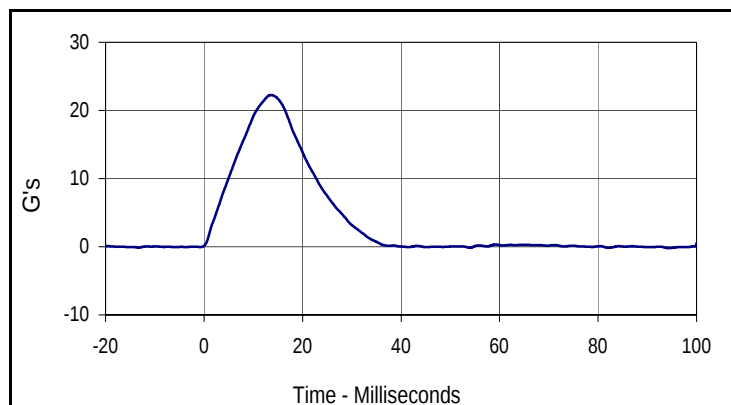
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	730	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		28.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.8	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.33	Pass
Peak Impactor Force	N	4700 to 5400	5098.4	Pass
	msec	11.8 to 16.1	13.6	Pass
Peak Pubic Symphysis Load	N	-1230 to -1590	-1312.7	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
5098.4	13.6	-47.0	94.5



Curve Description			
Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
95.6	38.2	-1312.7	15.3



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
22.3	13.6	-0.2	94.5

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

Test Date: 1/14/13
 Test I.D.: N/A



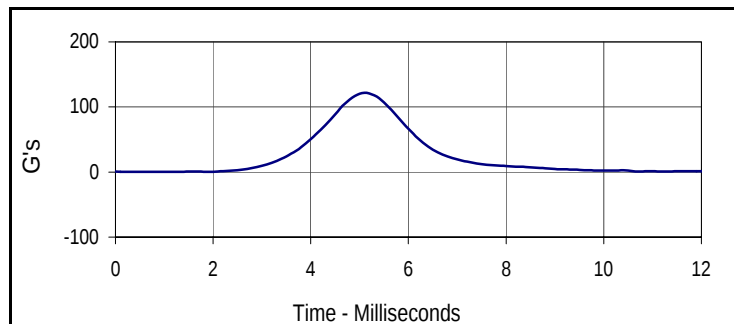
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
A	Sitting Height	mm	772 - 788	778	Pass
B	Shoulder Pivot Height	mm	437 - 453	443	Pass
C	H-Point Height	mm	79 - 89	85	Pass
D	H-Point from Seatback	mm	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

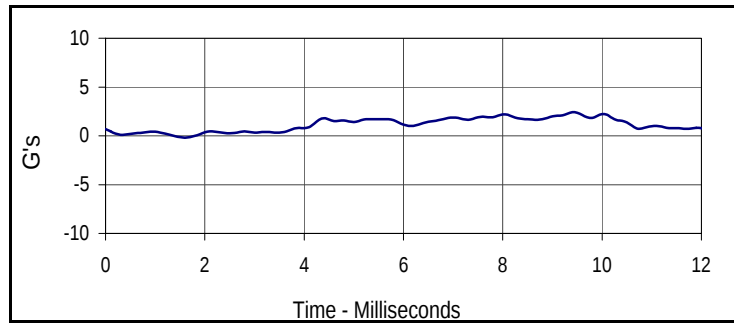
Test Date: 1/14/13
 Test I.D.: 307HD050



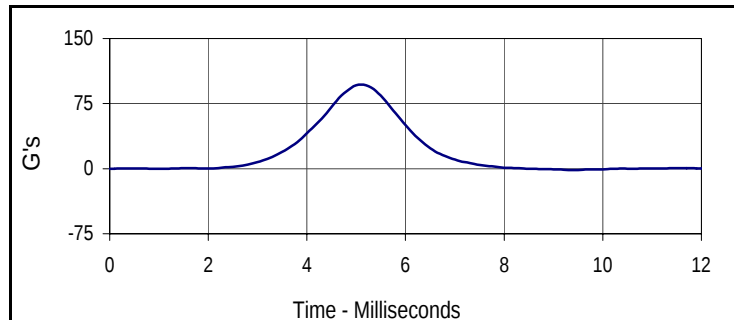
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	250	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.3	Pass
Peak Head Resultant Acceleration	G's	115 to 137	121.9	Pass
Peak Head X Acceleration	G's	<15	2.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	4.0	Pass
Overall Test Results				Pass



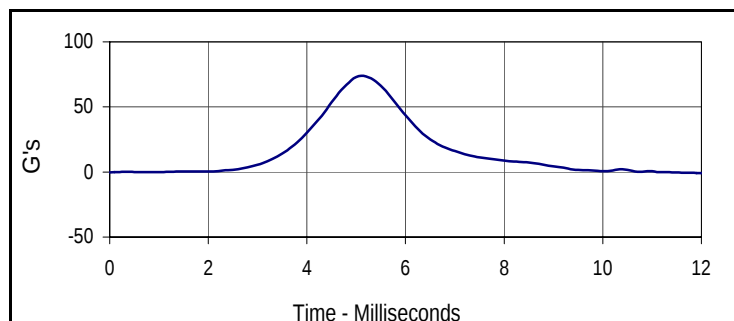
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
121.9	5.1	0.2	1.2



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.2	8.0	-0.2	1.6



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
97.0	5.1	-1.8	9.4



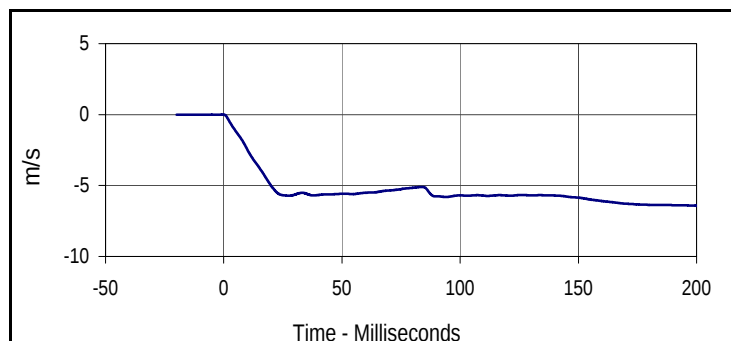
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
73.9	5.1	-0.8	12.0

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

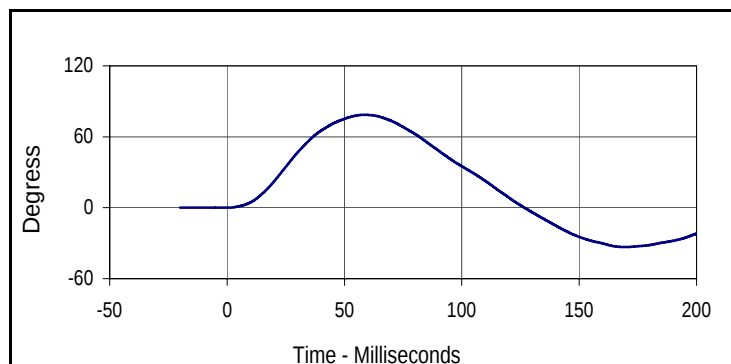
Test Date: 1/14/13
 Test I.D.: 307NB050



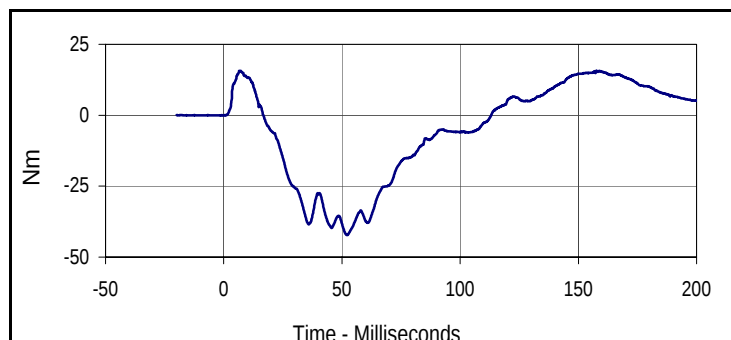
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	305	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	31.0	Pass
	Min	%		29.2	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.2	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.55	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.47	Pass
	15 msec	m/s	-3.30 to -4.10	-3.74	Pass
	20 msec	m/s	-4.40 to -5.40	-5.01	Pass
	25 msec	m/s	-5.40 to -6.10	-5.68	Pass
	25-100 msec	m/s	-5.50 to -6.20	-5.81	Pass
D-Plane Rotation	Max	Degrees	71 to 81	78.6	Pass
	Time	msec	50 to 70	58.3	Pass
Peak Occipital Condyle Moment		Nm	-36 to -44	-42.3	Pass
Decaying Moment Time to Cross 0 Nm		msec	102 to 126	113.2	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.4	-6.4	200.0



Curve Description			
Maximum Translation Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
78.6	58.3	-33.3	169.5



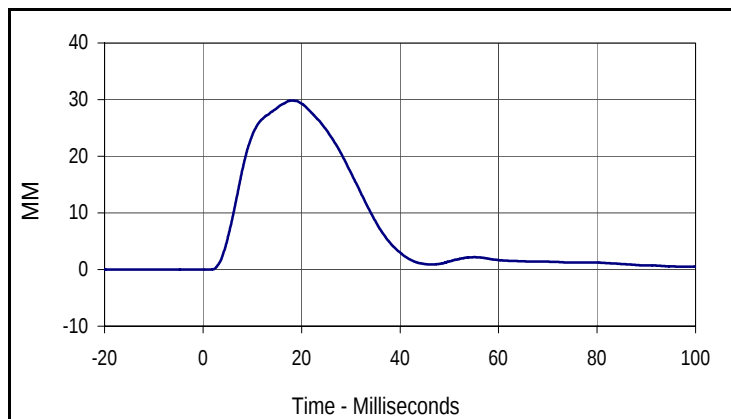
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
15.8	157.7	-42.3	52.1

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

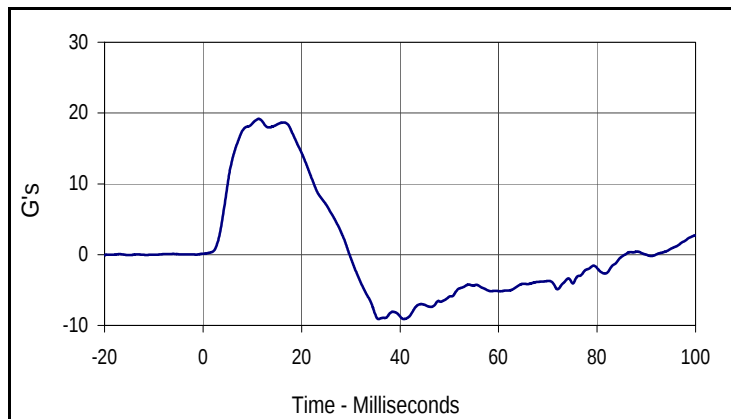
Test Date: 1/14/13
 Test I.D.: 307SH050



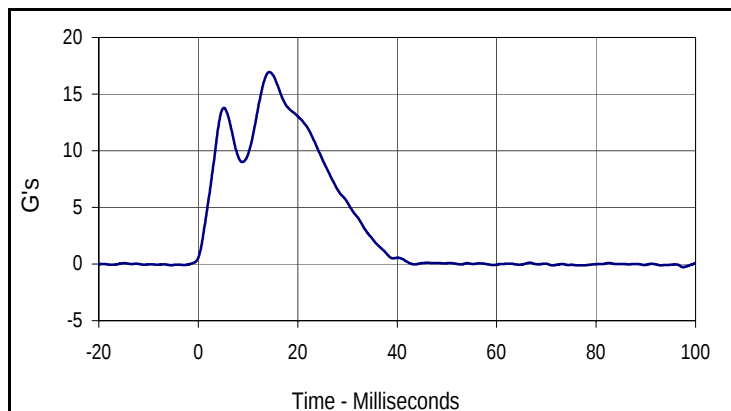
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	340	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	31.0	Pass
	Min	%		29.2	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.1	Pass
Impactor Velocity		m/s	4.20 to 4.40	4.33	Pass
Peak Shoulder Deflection		mm	28 to 37	29.9	Pass
Peak Lateral Spine Acceleration Y		G's	17 to 22	19.2	Pass
Peak Impactor Acceleration		G's	13 to 18	17.0	Pass
Overall Test Results				Pass	



Curve Description			
Shoulder Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
29.9	18.0	0.0	-7.1



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.2	11.3	-9.1	35.6



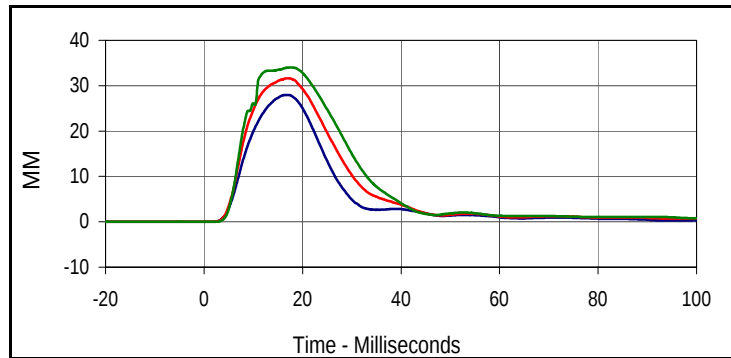
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
17.0	14.3	-0.3	97.5

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

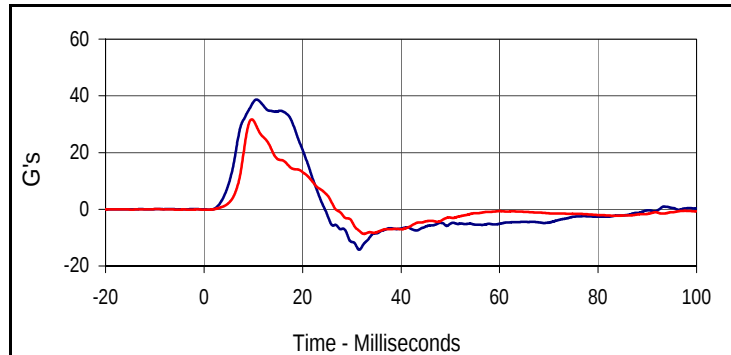
Test Date: 1/14/13
 Test I.D.: 307TWA050



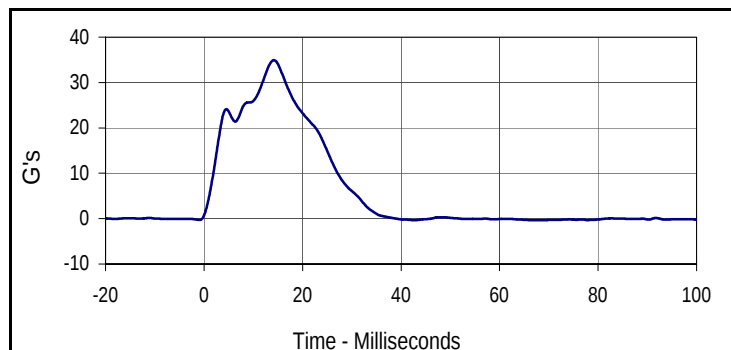
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	360	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.5	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.73	Pass
Peak Shoulder Deflection	mm	31 to 40	34.6	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	28.0	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.6	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	34.0	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	38.7	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	31.7	Pass
Peak Impactor Acceleration	G's	30 to 36	34.9	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
28.0	16.8	0.0	-4.1
Middle Thorax Deflection			
Max	Time	Min	Time
31.6	17.1	0.0	-1.7
Lower Thorax Deflection			
Max	Time	Min	Time
34.0	17.4	0.0	-4.7



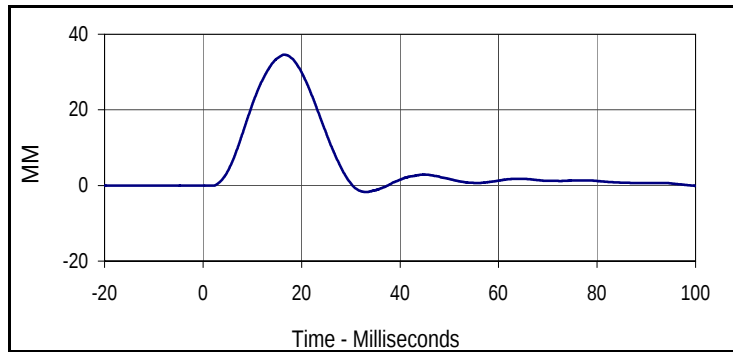
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
38.7	10.7	-14.3	31.5
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
31.7	9.7	-8.7	32.5



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.9	14.2	-0.4	67.0

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

Test Date: 1/14/13
 Test I.D.: 307TWA050



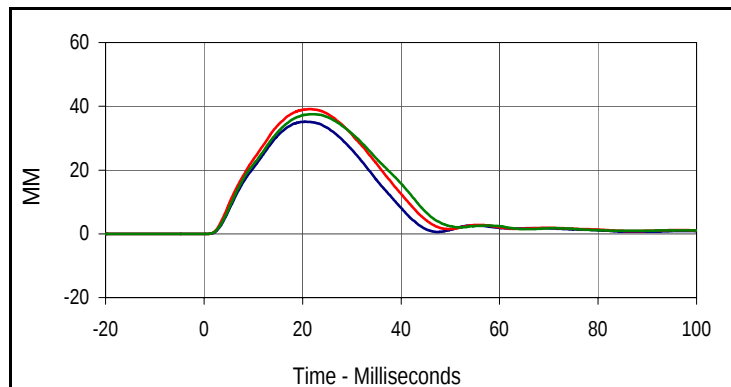
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
34.6	16.5	-1.8	33.1

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

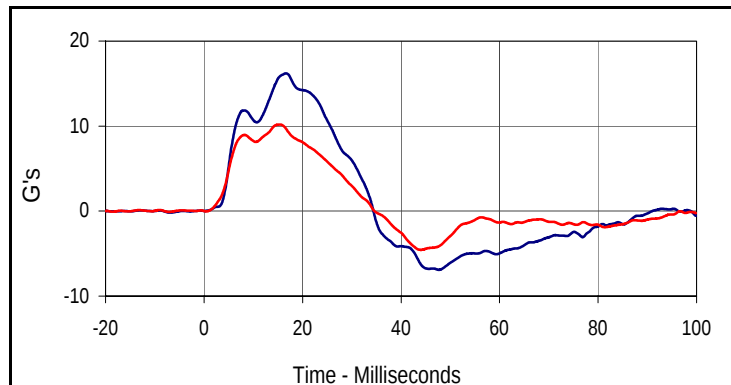
Test Date: 1/14/13
 Test I.D.: 307TWOA050



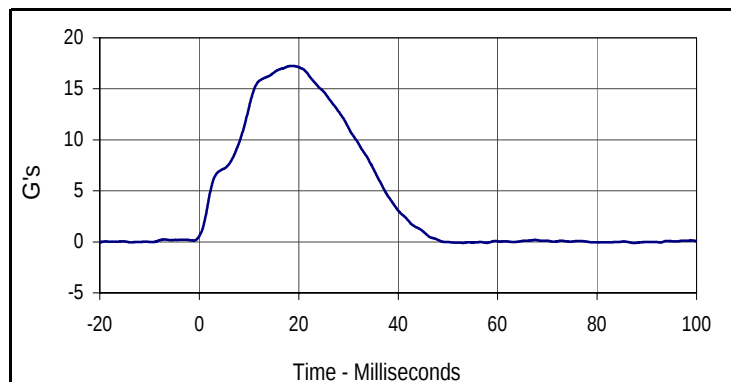
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	385	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.6	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.31	Pass
Peak Upper Thorax Rib Deflection	mm	32 to 40	35.2	Pass
Peak Middle Thorax Rib Deflection	mm	39 to 45	39.1	Pass
Peak Lower Thorax Rib Deflection	mm	35 to 43	37.5	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	16.2	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	10.2	Pass
Peak Impactor Acceleration	G's	14 to 18	17.2	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
35.2	20.6	0.0	-15.2
Middle Thorax Deflection			
Max	Time	Min	Time
39.1	21.4	0.0	-16.3
Lower Thorax Deflection			
Max	Time	Min	Time
37.5	22.1	0.0	-13.8



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
16.2	16.6	-6.9	47.7
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
10.2	15.4	-4.6	44.0



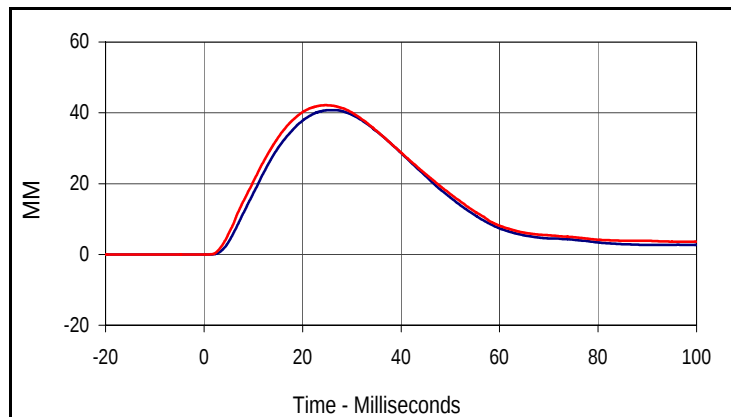
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
17.2	18.5	-0.1	87.5

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

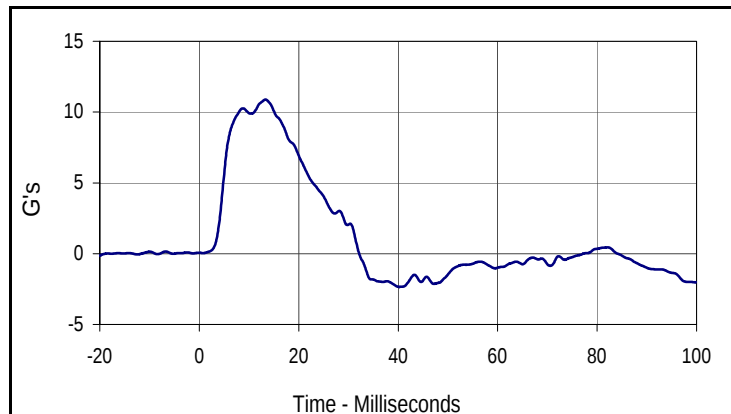
Test Date: 1/14/13
 Test I.D.: 307ABD050



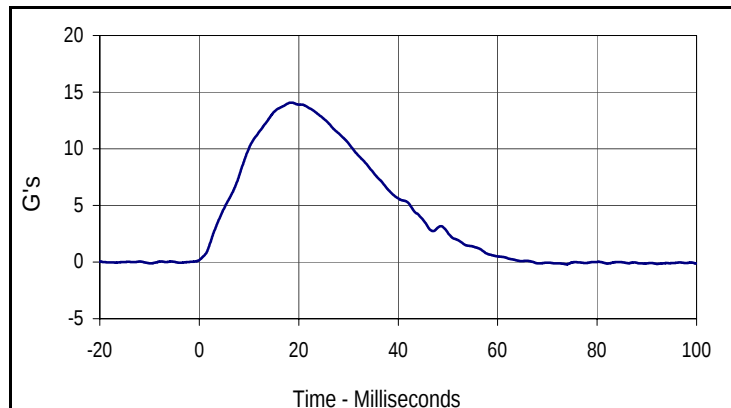
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	405	Pass
Temperature During Soak	Max °C	20.6 to 22.2	21.7	Pass
	Min °C		20.8	Pass
Humidity During Soak	Max %	10.0 to 70.0	31.0	Pass
	Min %		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.8	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.39	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	40.8	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	42.2	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	10.9	Pass
Peak Impactor Acceleration	G's	12 to 16	14.1	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
40.8	25.8	0.0	-10.1
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
42.2	24.7	0.0	-6.6



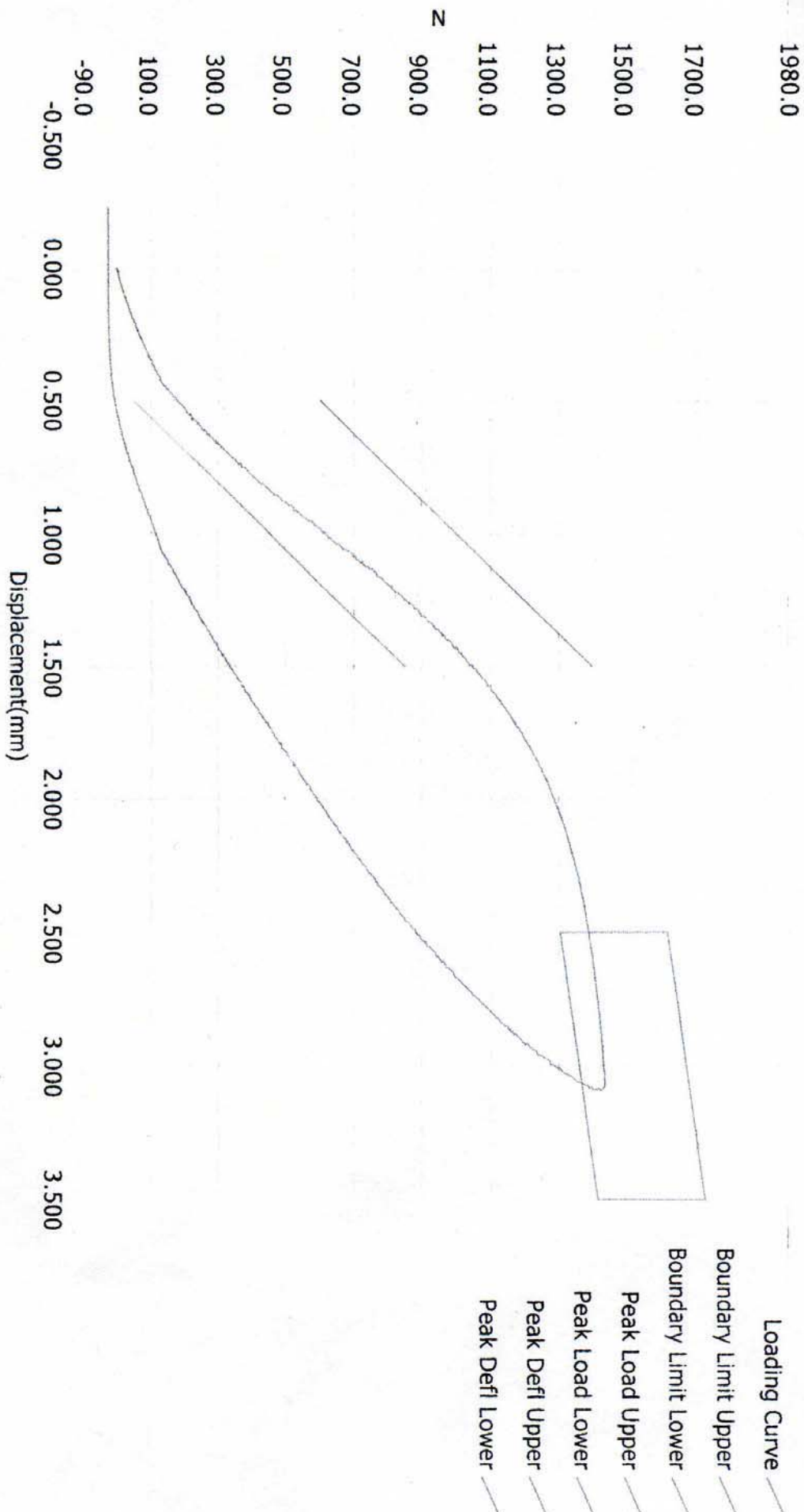
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
10.9	13.3	-2.3	40.2



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.1	18.5	-0.2	73.8

MD5302 POST TEST

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
46071		9/20/2011	11:57 PM
Cert ID	ATD Serial Number	ATD Type	
N/A		SIDIIs	

Current Date : 9/20/2011

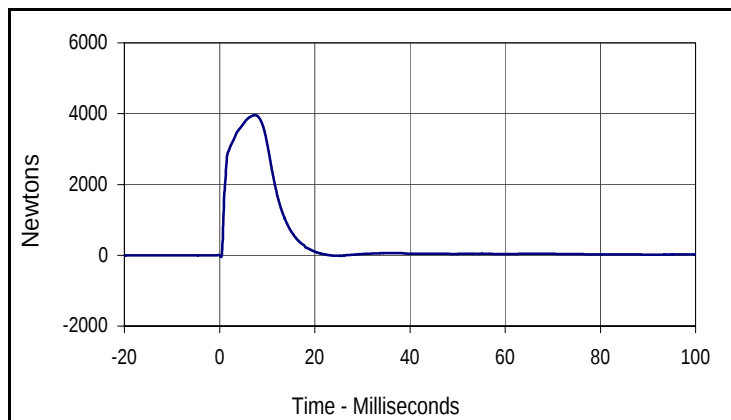
Current Time : 23:58:14

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

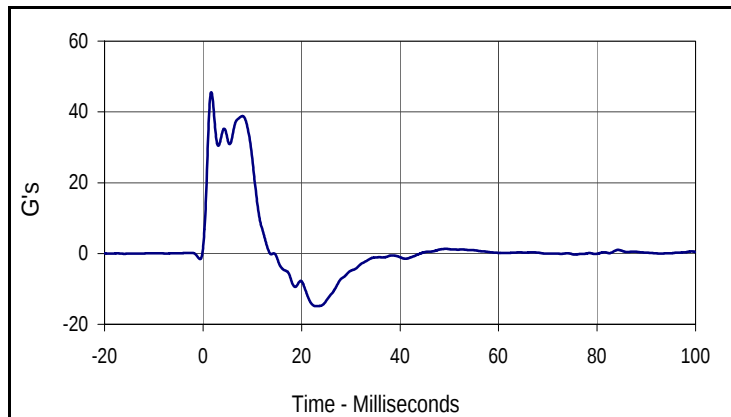
Test Date: 1/14/13
 Test I.D.: 307ACET050



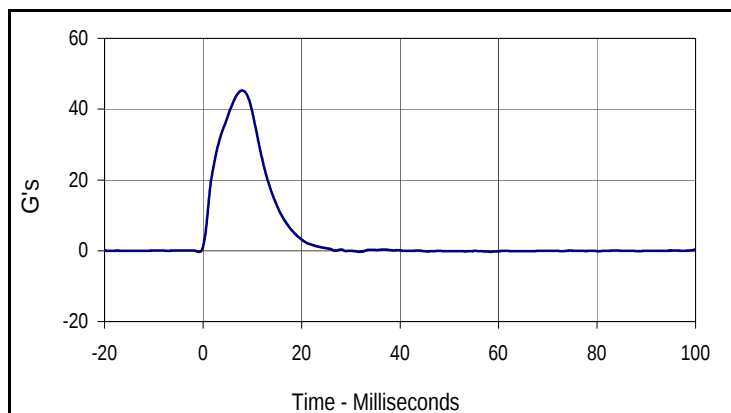
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	440	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.9	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.68	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	3959.2	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	38.8	Pass
Peak Impactor Acceleration	G's	38 to 47	45.3	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3959.2	7.4	-48.3	0.3



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
45.5	1.7	-14.9	23.0



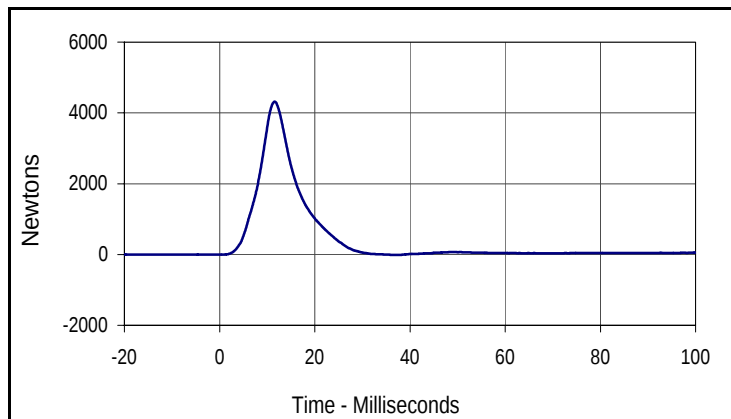
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
45.3	7.9	-0.3	-0.8

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

Test Date: 1/14/13
 Test I.D.: 307PL050



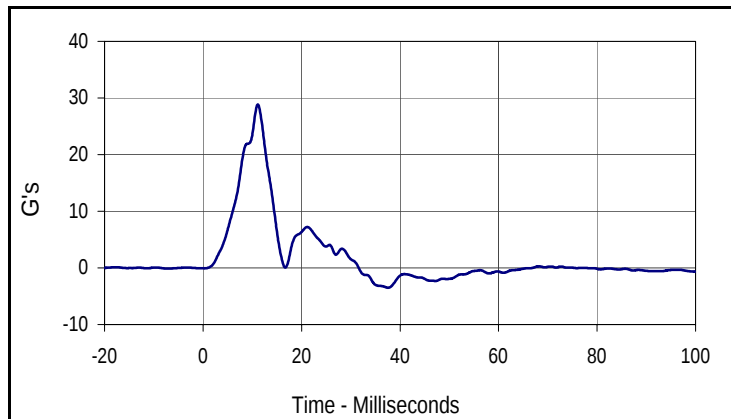
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	495	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	31.0	Pass
	Min		29.2	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.7	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.25	Pass
Peak Iliac Force	Newtons	4100 to 5100	4318.9	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	28.9	Pass
Peak Impactor Acceleration	G's	36 to 45	39.1	Pass
Overall Test Results			Pass	



Curve Description

Pelvis Iliac Force

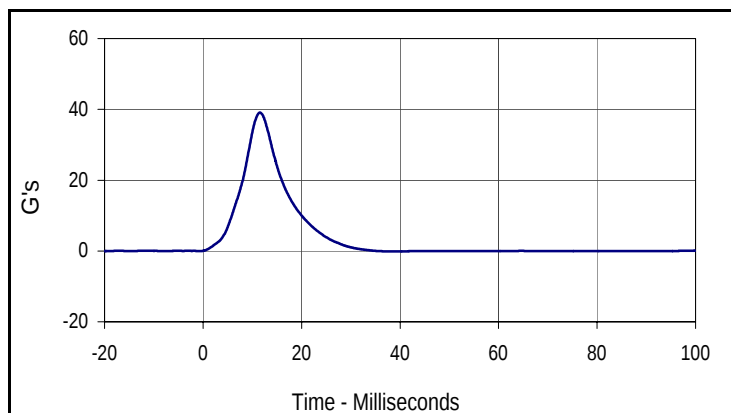
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4318.9	11.6	-11.8	37.0



Curve Description

Pelvis Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
28.9	11.1	-3.5	37.6



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
39.1	11.6	-0.1	37.4

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N F035		
			Serial Number	Manufacturer	Calibration
Head Accelerometers		X	P58760	Endevco	8/30/12
		Y	P58763	Endevco	8/31/12
		Z	P52093	Endevco	8/31/12
Thorax Rib Displacement Potentiometers	Upper	Y	180	FTSS	6/22/12
	Middle	Y	177	FTSS	6/22/12
	Lower	Y	186	FTSS	6/22/12
Abdomen Load Cells	Forward	Y	1514	Denton	6/7/12
	Middle	Y	1510	Denton	6/7/12
	Rear	Y	1515	Denton	6/7/12
Lower Spine Accelerometers (T12)		X	P49165	Endevco	6/21/12
		Y	P49212	Endevco	6/21/12
		Z	P52113	Endevco	6/21/12
Pubic Symphysis Load Cell		Y	506	Denton	6/21/12

TABLE 2 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N 307		
				Serial Number	Manufacturer	Calibration
Head Accelerometers			X	P58900	Endevco	8/15/12
			Y	P58902	Endevco	8/15/12
			Z	P58983	Endevco	8/15/12
Displacement Potentiometers	Shoulder		Y	1244	FTSS	8/17/12
	Thoracic Rib	Upper	Y	1249	FTSS	8/17/12
		Middle	Y	1265	FTSS	8/17/12
		Lower	Y	1277	FTSS	8/17/12
	Abdominal Rib	Upper	Y	1286	FTSS	8/17/12
		Lower	Y	1290	FTSS	8/17/12
Lower Spine Accelerometers (T12)			X	P59007	Endevco	8/16/12
			Y	P59015	Endevco	8/16/12
			Z	P59016	Endevco	8/16/12
Acetabulum Load Cell			Y	277	Denton	5/24/12
Iliac Wing Load Cell			Y	289	Denton	5/24/12
Pelvis Plug (Struck Side)				46076	FTSS	9/21/11
Pelvis Plug (Non-Struck Side)				48930	FTSS	12/5/11

TABLE 3 – Vehicle Instrumentation

Vehicle Instrumentation			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	Ketx11a	ICSensor	8/17/12
	Vehicle Center of Gravity	Y	Ketx11b	ICSensor	8/17/12
	Vehicle Center of Gravity	Z	Ketx11c	ICSensor	8/17/12
2	Right Sill at Front Seat	X	13331	Endevco	6/18/12
	Right Sill at Front Seat	Y	13469	Endevco	12/11/12
	Right Sill at Front Seat	Z	13346	Endevco	6/18/12
3	Right Sill at Rear Seat	X	13665	Endevco	10/20/12
	Right Sill at Rear Seat	Y	13673	Endevco	10/20/12
	Right Sill at Rear Seat	Z	13676	Endevco	10/20/12
4	Left Sill at Front Door	Y	13680	Endevco	10/20/12
5	Left Sill at Rear Door	Y	13713	Endevco	10/22/12
6	Left A-Post Lower	Y	13681	Endevco	10/20/12
7	Left A-Post Middle	Y	13716	Endevco	10/22/12
8	Left B-Post Lower	Y	N/A	N/A	N/A
9	Left B-Post Middle	Y	N/A	N/A	N/A
10	Front Seat Track	Y	13354	Endevco	6/18/12
11	Rear Seat Structure	Y	N/A	N/A	N/A
12	Right Rear Occ. Compartment	Y	13720	Endevco	10/22/12
13	Engine Block	X	13718	Endevco	10/22/12
	Engine Block	Y	13663	Endevco	10/20/12
14	Rear Floorpan Above Axle	X	12903	Endevco	1/11/12
	Rear Floorpan Above Axle	Y	13723	Endevco	10/22/12
	Rear Floorpan Above Axle	Z	13348	Endevco	6/18/12

TABLE 4 – MDB Instrumentation

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	13682	Endevco	11/14/12
MDB Center of Gravity	Y	13706	Endevco	11/14/12
MDB Center of Gravity	Z	13715	Endevco	11/14/12
Left Frame at Rear Axle Centerline	X	13705	Endevco	11/14/12
Left Frame at Rear Axle Centerline	Y	13711	Endevco	11/14/12