

REPORT NUMBER: SPNCAP-KAR-13-025

**NEW CAR ASSESSMENT PROGRAM (NCAP)
SIDE IMPACT POLE TEST**

**TOYOTA MOTOR CORPORATION
2013 LEXUS IS250 4-DOOR SEDAN**

NHTSA No: MD5107

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



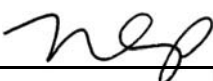
NOVEMBER 28, 2012

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE: NVS-111
1200 NEW JERSEY AVE, SE, ROOM W43-410
WASHINGTON, D.C. 20590**

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By: 
Mr. Kelsey A. Chiu, Engineering Department Supervisor
KARCO Engineering, LLC.

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

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

Approval Date: November 28, 2012

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

1. Report No. SPNCAP-KAR-13-025	2. Government Accession No.	3. Recipient's Catalog No.																												
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Pole Testing of 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107		5. Report Date November 28, 2012																												
		6. Performing Organization Code KAR																												
7. Authors Mr. Kelsey A. Chiu, Engineering Department Supervisor, KARCO Mr. Frank Richardson, Program Manager, KARCO		8. Performing Organization Report No. TR-P32002-15-NC																												
9. Performing Organization Name and Address KARCO Engineering, LLC. 9270 Holly Rd. Adelanto, CA 92301		10. Work Unit No.																												
		11. Contract or Grant No. DTNH22-09-D-00122																												
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, Nov. 14 - 28, 2012																												
		14. Sponsoring Agency Code NVS-111																												
15. Supplementary Notes																														
16. Abstract A 32.2 km/h (20 mph) 75 deg. oblique impact Side NCAP Test was conducted on the subject 2013 Lexus IS250 4-door sedan in accordance with the specifications of the Office of Crash Worthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on November 14, 2012. The impact velocity was 31.7 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 18.4 deg. C. The target vehicle's maximum post-test static crush was 506 mm located at level 3. The test vehicle's occupant performance data is as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Driver ATD (ES-2re)</th> </tr> <tr> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>418.1</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82</td> <td>50.7</td> </tr> <tr> <td>Total Pelvic Force (Sum of Acetabular and Iliac Forces)</td> <td>N</td> <td>5525</td> <td>4199</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38</td> <td>33</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45</td> <td>21</td> </tr> </tbody> </table> The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches. The opposite doors did not open during the side impact event.				Measurement Description	Driver ATD (ES-2re)			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	418.1	Resultant Lower Spine Acceleration	g	82	50.7	Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	4199	Maximum Thoracic Rib Deflection	mm	38	33	Maximum Abdominal Rib Deflection	mm	45	21
Measurement Description	Driver ATD (ES-2re)																													
	Units	Threshold	Result																											
Head Injury Criteria (HIC ₃₆)		1000	418.1																											
Resultant Lower Spine Acceleration	g	82	50.7																											
Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	4199																											
Maximum Thoracic Rib Deflection	mm	38	33																											
Maximum Abdominal Rib Deflection	mm	45	21																											
17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. Technical Info. Services Division, NPO-411 1200 New Jersey Ave., SE Washington, DC 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																												
19. Security Classification of this report UNCLASSIFIED	20. Security Classification of this page UNCLASSIFIED	21. No. of Pages 102	22. Price																											

TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1	Test Purpose and Procedure	1
2	Summary of Test Results	2
3	Occupant and Vehicle Information	4
<u>Data Sheet</u>		<u>Page</u>
1	General Test and Vehicle Parameter Data	5
2	Seat, Seat Belt, Steering Wheel Adjustment and Fuel System Data	9
3	Dummy Longitudinal Clearance Dimensions	13
4	Dummy Lateral Clearance Dimensions	14
5	Camera and Instrumentation Data	15
6	Test Vehicle Accelerometer Locations	16
7	Rigid Pole Load Cell Data	17
8	Post-Test Observations	18
9	Test Vehicle Profile Measurements	20
10	Test Vehicle Exterior Crush Measurements	21
11	FMVSS No. 301 Static Rollover Results	24
12	Dummy/Vehicle Temperature and Humidity Stabilization	25
<u>Appendix</u>		<u>Page</u>
A	Photographs	A
B	Vehicle and Dummy Response Data Plots	B
C	Dummy Configuration and Performance Verification Data	C
D	Test Equipment and Instrumentation Calibration Data	D

SECTION 1

TEST PURPOSE AND PROCEDURE

This 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 Lexus IS250 4-door sedan. 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 rigid pole side impact test was conducted on a 2013 Lexus IS250 4-door sedan. The subject vehicle was towed into the rigid pole at an angle of 75.2° and a velocity of 31.7 km/h. The test was conducted by KARCO Engineering, LLC. in Adelanto, California on November 14, 2012. Pre- and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated September 2012. Camera locations and other pertinent camera information are included in this report.

The Part 572V (SID-IIs) was instrumented accordingly:

- Primary and Redundant Head CG tri-axial accelerometers
- Thorax upper, middle and lower rib displacement potentiometers
- Abdomen upper and lower rib displacement potentiometers
- Lower spine (12) tri-axial accelerometers
- Iliac load cell
- Acetabulum load cell

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

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

Measurement Description	Units	Passenger ATD (SID-IIs)	
		IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	418.1
Lower Spine (T12) Resultant Acceleration	g	82	51
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4199
Maximum Thoracic Rib Deflection	mm	38*	33
Maximum Abdominal Rib Deflection	mm	45*	21

*Proposed IARV

Supplemental restraint information is given below:

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

GENERAL COMMENTS

Both the front and rear doors on the struck side of the vehicle remained closed and latched. There was no separation at the hinges or latches. Both 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 Lexus IS250 4-Door Sedan NHTSA No. MD5107
Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12

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 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MD5107
Model Year	2013
Make	Lexus
Model	IS250
Body Style	4-Door Sedan
VIN	JTHBF5C24D5185209
Body Color	Nebula Gray Pearl
Odometer Reading (km / mi)	56 / 35
Engine Displacement (L)	2.5
Type / No. of Cylinders	V6
Engine Placement	Longitudinal
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	Rear
Roof Rack	No
Sunroof / T-Top	Yes
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes

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

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

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Toyota Motor Corporation
Date of Manufacture	Aug-12
Vehicle Type	Sedan

GVWR (kg)	2007
GAWR Front (kg)	1120
GAWR Rear (kg)	1102

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity	2	3		5	
Capacity Weight (VCW) (kg)				372.0	A
DSC x 68.04 (kg)				340.2	B
Cargo Weight (RCLW) (kg)				31.8	A-B

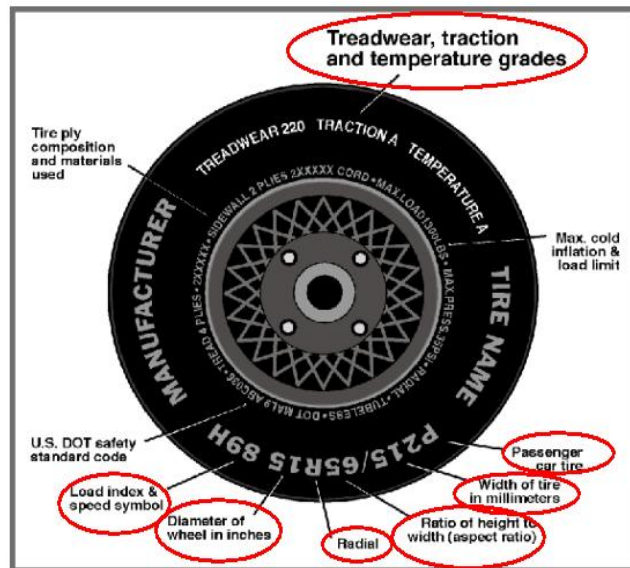
VEHICLE SEAT TYPE

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 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12



VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	275	275
Cold Pressure (kPa)	240	240
Recommended Tire Size	225/45R17	225/45R17
Tire Size on Vehicle	225/45R17	225/45R17
Tire Manufacturer	Bridgestone	Bridgestone
Tire Model	Potenza RE92	Potenza RE92
Treadware	160	160
Traction Grade	A	A
Temperature Grade	A	A
Tire Plies Sidewall	2 Steel	2 Steel
Tire Plies Body	2 Steel, 2 Polyester	2 Steel, 2 Polyester
Load Index/Speed Symbol	91V	91V
Tire Material	Polyester, Steel	Polyester, Steel
DOT Safety Code Left		
DOT Safety Code Right		

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	250	240	260	250
Tire Placard	kPa	240	240	260	260
Owner's Manual	kPa	240	240	260	260
As Tested	kPa	240	240	260	260

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	422.5	391.0		429.5	421.5		436.0	419.0	
Right	kg	414.0	360.0		419.5	393.0		421.5	390.0	
Ratio	%	52.7%	47.3%	100.0%	51.0%	49.0%	100.0%	51.5%	48.5%	100.0%
Total	kg	836.5	751.0	1587.5	849.0	814.5	1663.5	857.5	809.0	1666.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1587.5	A
Actual Weight of 1 P572 O ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	31.8	C
Calculated Vehicle Target Wt (TVTW)	kg	1668.3	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	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	°	-0.8	-0.6	-0.6	Yes
Front Passenger Sill Angle (front-to-rear)*	°	-0.8	-0.4	-0.3	Yes
Front Bumper-Line Angle (left-to-right)**	°	-0.2	-0.3	-0.4	Yes
Rear Bumper-Line Angle (left-to-right)**	°	-0.3	0.0	0.0	Yes
Vehicle CG (Aft of Front Axle)	mm	1644	1741	1788	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	28	37	40	

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

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

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

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Rear Bumper Arm	7.5
Tail Lights	2.0
Rear Bumper Cover	4.5
Door Panels	5.0
Tire	13.5
Spare Tire Tools	4.0
Outboard Mirrors	1.5
Trunk Soft Trim	7.0
Front Bumper Cover	4.5
Front Bumper Absorber	1.5
Headlights	7.0
Front Bumper Arm	4.5
Speakers	2.5
Ballast / Equipment Added	89.5

DATA SHEET NO. 2

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

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12

SEAT POSITIONING

The driver's seat is set to the forward most position where the ATD will not contact any interior panels at the mid-height and mid-angle position. The front center seat (if applicable) and right front passenger's seat should be set in a similar manner as the driver's seat. The struck side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rearmost, lowest, mid-angle position.

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	7.0	0.0	3.5
Front Passenger Seat	7.4	0	3.7
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

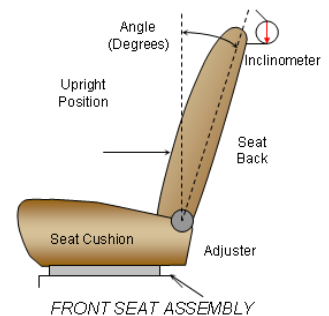
Seat	As Tested SCRL Angle	As Tested SCRP Height	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid Fore/Aft	Forwardmost
Driver Seat	3.5	530	Max	518	533	548
			Mid	500	515	530
			Min	482	497	512
Front Passenger Seat	3.7	518	Max	511	525	539
			Mid	490	504	518
			Min	469	493	497
Front Center Seat			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 Lexus IS250 4-Door Sedan NHTSA No. MD5107Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12**SEAT FORE/AFT POSITION**

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	238		0	
Front Passenger Seat	238		0	
Front Center Seat				
Struck Side Rear Seat	Fixed		Fixed	
Non-Struck Side Rear Seat	Fixed		Fixed	
Rear Center Seat	Fixed		Fixed	

SEAT BACK ADJUSTMENT

The driver's seat back is positioned such that the dummy's head is level.
The right front passenger seat back is set to the same angle as the driver's seat.



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/Seated Dummy	51.9		4.0	
Front Passenger Seat	51.8		4.0	
Front Center Seat				
Struck Side Rear Seat w/Seated Dummy	Fixed		Fixed	
Non-Struck Side Rear Seat	Fixed		Fixed	
Rear Center Seat	Fixed		Fixed	

SEAT BELT ANCHORAGE ADJUSTMENT

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

	Total No. of Positions	Placed in Position
Driver Seat	4	M1

HEAD RESTRAINT ADJUSTMENT

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

	Total No. of Positions	Placed in Position
Driver Seat	4	Full Down

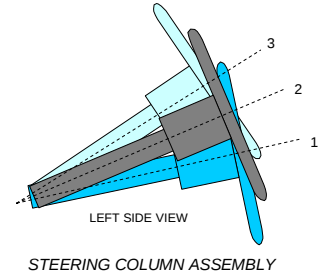
DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12

STEERING COLUMN ADJUSTMENT

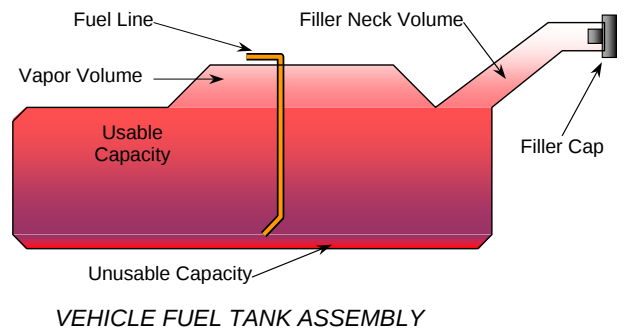
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of the geometric locus it describes when it moves through its full range of motion.



	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	21.4	92
Geometric Center - Position 2	23.1	111
Uppermost - Position 3	24.9	30
Telescoping Steering Wheel Travel		62
Test Position	23.1	111

FUEL PUMP

The vehicle is equipped with an electric fuel pump. The fuel pump is activated when the ignition is turned on.



FUEL TANK CAPACITY

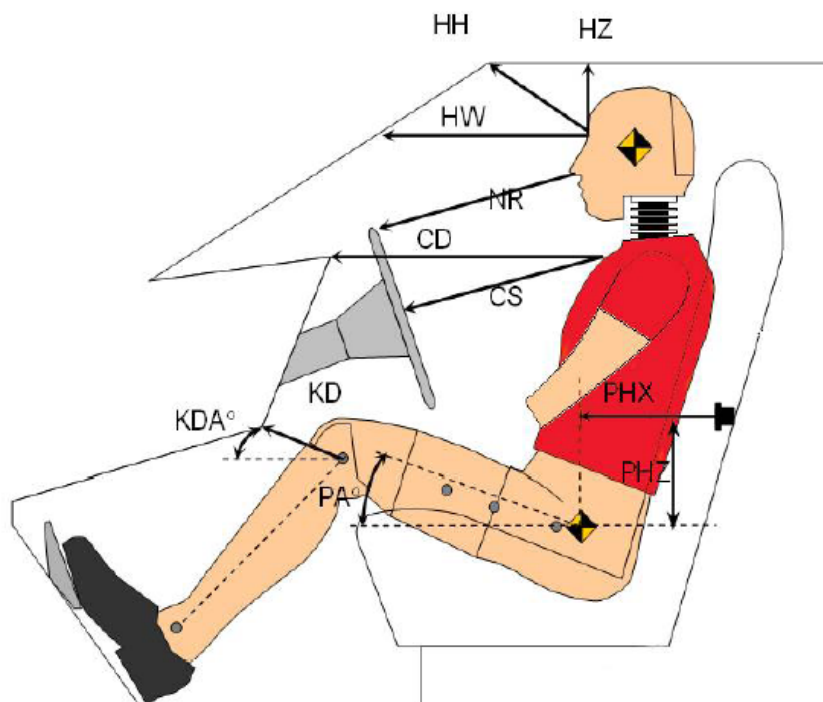
Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	65.10
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	60.54
Actual amount of Solvent Used in Test	60.54
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 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12



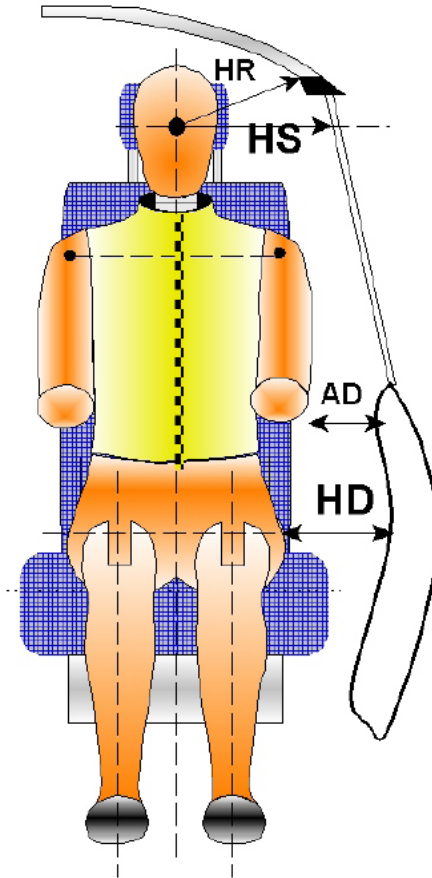
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	235	
HW	Head to Windshield	487	
HZ	Head to Roof	143	
NR	Nose to Rim	259	
CD	Chest to Dash	416	
CS	Chest to Steering Wheel	204	
KD(L)/KDA(L)°	Left Knee to Dash	133	45.2
KD(R)/KDA(R)°	Right Knee to Dash	135	39.5
PAX°	Pelvic Tilt Angle (x-axis)		18.1
PAY°	Pelvic Tilt Angle (y-axis)		0.1
PHX	Hip Point to Striker (x-axis)	305	
PHZ	Hip Point to Striker (z-axis)	219	

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12



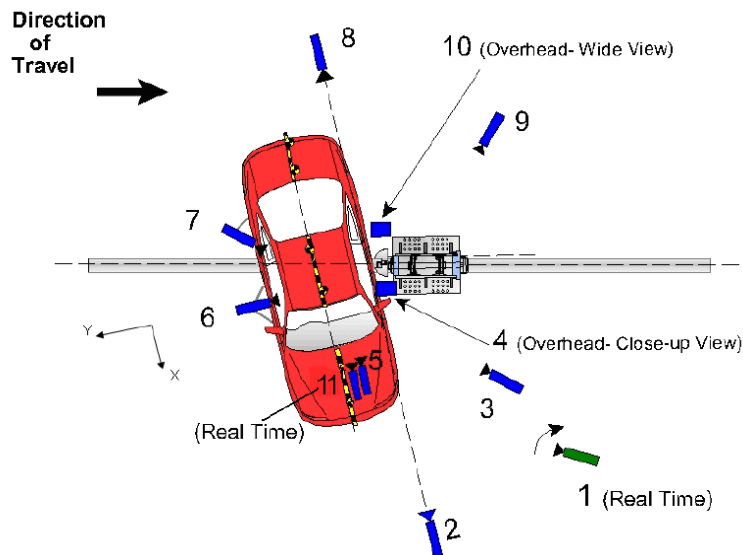
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	191
HS	Head to Side Window	mm	318
AD	Arm to Door	mm	157
HD	H-Point to Door	mm	229

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12



CAMERA LOCATIONS AND DATA

Camera No.	View	Coordinates (m)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real Time Pan View of Impact	8.89	46.57	-3.04		30
2	Front Ground Level - Impact View	8.34	-0.05	-0.93	24	1000
3	Impact Side 45° - Forward Pole View	4.10	-2.15	-1.15	8.5	1000
4	Overhead Close-Up View of Impact	0.00	0.00	-5.79	12.5	1000
5	On-Board - Dummy Front View	1.37	0.41	-1.31	35	1000
6	On-Board - Dummy Side View	0.05	1.57	-1.11	14	1000
7	On-Board - Dummy Rear Oblique View	-0.88	1.53	-1.14	20	1000
8	Rear Ground Level - Impact View	-6.12	-6.23	-0.96	24	1000
9	Impact Side 45° - Rearward Pole View	-8.02	0.04	-1.01	35	1000
10	Overhead Wide View of Impact	-0.06	0.22	-5.79	14	1000
11	Real Time Dummy Front View	1.42	0.47	-1.30		30

Reference from Point of Impact for X and Y; from Ground for Z):

+X = Forward of Vehicle, +Y = Right of Vehicle, +Z = Down

*All measurements accurate to ± 6 mm

Cameras 5, 6 and 7 did not operate correctly during impact.

INSTRUMENTATION

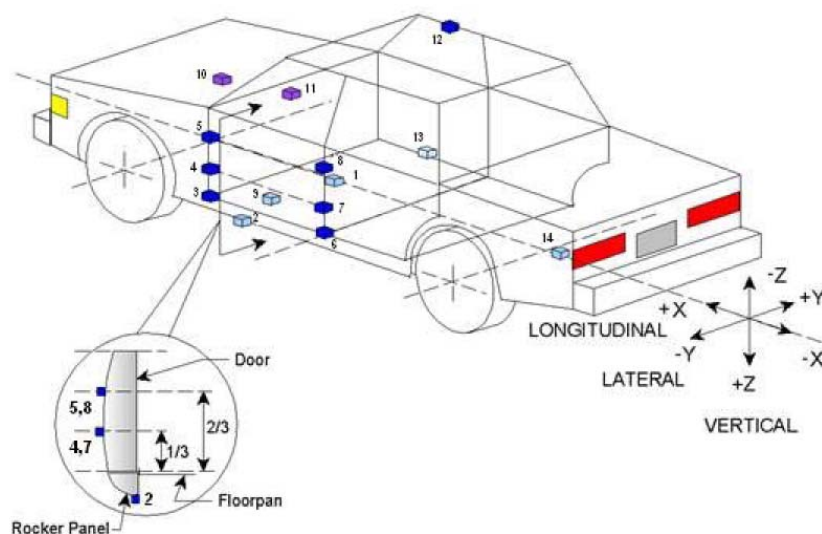
Driver Dummy Channels	16
Vehicle Structure Accelerometers	18
Pole Load Cells	8
Total	42

DATA SHEET NO. 6

TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107

Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

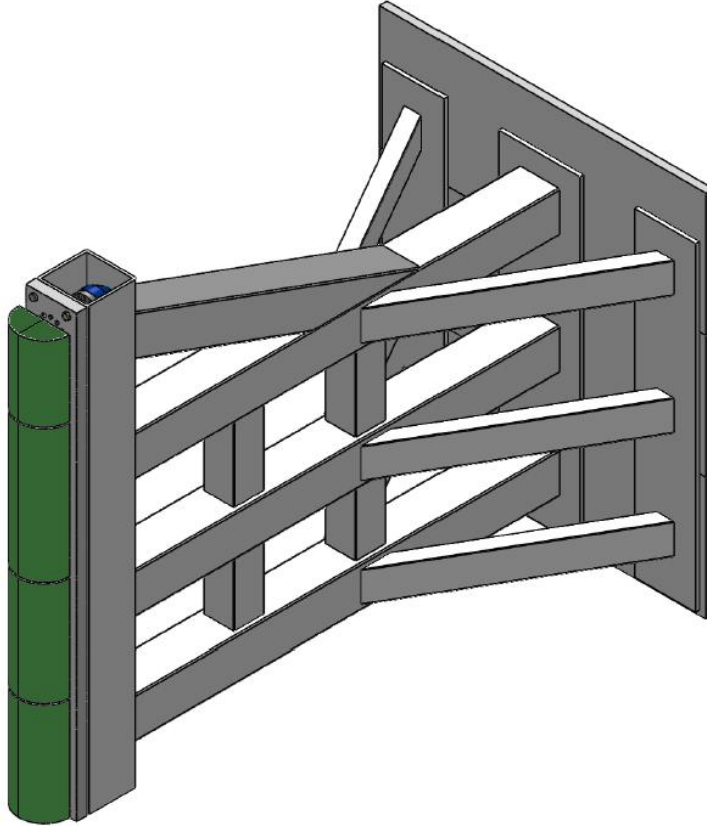
Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	1890	0	-485
2	Left Floor Sill	2360	-700	-220
3	A-Pillar Sill	3080	-810	-385
4	A-Pillar Low	3080	-810	-560
5	A-Pillar Mid	3080	810	-705
6	B-Pillar Sill	1940	-735	-380
7	B-Pillar Low	2050	-735	-540
8	B-Pillar Mid	2050	-735	-845
9	Driver Seat Track	2320	-560	-320
10	Engine Top	3860	160	-790
11	Firewall	3260	90	-910
12	Right Roof	2040	480	-1400
13	Right Floor Sill	2020	720	-380
14	Rear Floorpan	1000	0	-540

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

DATA SHEET NO. 7

RIGID POLE LOAD CELL DATA

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12



RIGID POLE LOAD CELL LOCATIONS

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

DATA SHEET NO. 8**POST-TEST OBSERVATIONS**

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver SID-IIs Dummy
Face	Curtain Airbag
Top of Head	Curtain Airbag
Left Side of Head	Curtain Airbag
Back of Head	Curtain Airbag, Right Front Seat Back
Left Shoulder	Torso/Pelvis Airbag, Door Panel
Upper Torso	Seat
Lower Torso	Seat, Torso/Pelvis Airbag
Left Hip	Seat, Door Panel
Left Knee	Door Panel, Right Knee

POST-TEST DOOR PERFORMANCE

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

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	No	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	Broken
Side Window Damage	Left Front Window Broken
Other Notable Effects	None

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

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

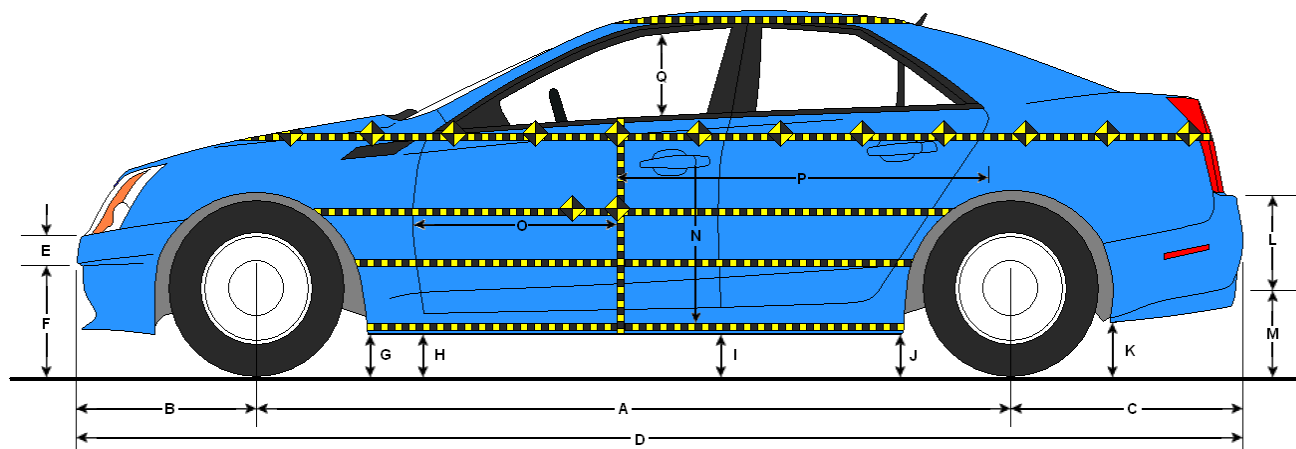
IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		1242
Actual Impact Point (Aft of Front Axle)	mm		1232
Horizontal Offset (+ forward / - rearward)	mm	± 38 of Intended Impact Point	10
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	°	75 ± 3	75.2
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	31.7
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	31.9

DATA SHEET NO. 9

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

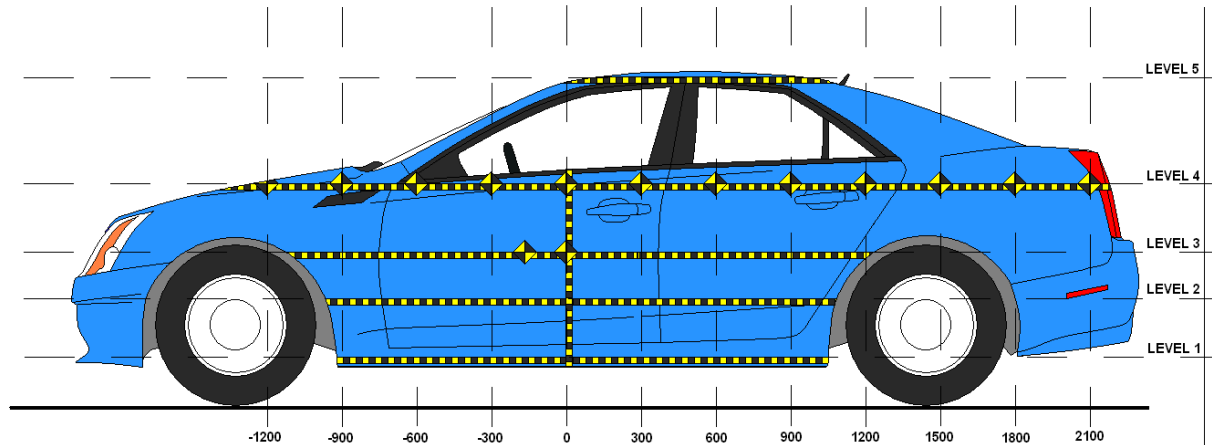
Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2727	2612	-115
B	Front Axle to FSOV	705	733	28
C	Rear Axle to RSOV	945	977	32
D	Total Length at Centerline	4263	4321	58
E	Front Bumper Thickness	111	112	1
F	Front Bumper Bottom to Ground	375	420	45
G	Sill Height at Front Wheel Well	188	198	10
H	Sill Height at Front Door Leading Edge	223	227	4
I	Sill Height at B-Pillar	249	282	33
J1	Sill Height at Rear Wheel Well	216	255	39
J2	Pinch Weld Height at Rear Wheel Well	210	247	37
K	Sill Height Aft of Rear Wheel Well	386	413	27
L	Rear Bumper Thickness	104	104	0
M	Rear Bumper Bottom to Ground	432	456	24
N	Sill Height to Bottom of Front Window Sill	593	668	75
O	Front Door Leading Edge to Impact CL	653	509	-144
P	Rear Door Trailing Edge to Impact CL	1439	1317	-122
Q	Front Window Opening	386	411	25
R	Right Side Length	3101	3112	11
S	Left Side Length	3101	2928	-173
T	Vehicle Width at B-Pillar	1761	1628	-133

All measurements in mm with tolerance of ± 3 mm

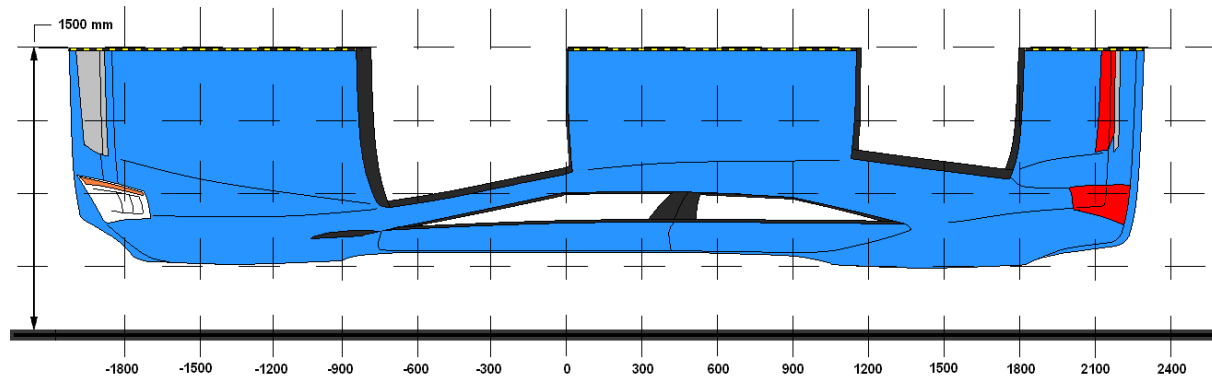
DATA SHEET NO. 10

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12



LEFT SIDE VIEW



OVERHEAD VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	232	465	0
2	Occupant H-Point	541	498	0
3	Mid-Door	656	506	0
4	Window Sill	902	487	0
5	Window Top	1371	239	150

DATA SHEET NO. 10 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107

Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12

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	642	619	625	742		752	732	726	834		110	113	101	92	
-600	635	624	627	702		807	765	757	790		172	141	130	88	
-450	634	625	627	654		867	858	841	841		233	233	214	187	
-300	636	625	626	670		937	944	938	947		301	319	312	277	
-150	636	626	626	659		1016	1049	1044	1045		380	423	418	386	
0	636	626	625	652	942	1101	1124	1131	1139	1171	465	498	506	487	229
150	638	627	625	648	935	1020	1062	1074	1092	1174	382	435	449	444	239
300	638	627	625	646	933	918	932	946	967	1138	280	305	321	321	205
450	641	627	625	647	934	839	820	821	848	1104	198	193	196	201	170
600	641	630	627	648	935	777	786	788	819	1070	136	156	161	171	135
750	645	632	629	650	935	730	751	757	792	1041	85	119	128	142	106
900	644	632	630	652	933	692	717	726	764	1018	48	85	96	112	85
1050	632	620	626	654	934	652	675	691	738	1000	20	55	65	84	66
1200			611	640	941			647	693	995			36	53	54
1350			601	651	961			645	673	1016			44	22	55
1500				669					703					34	
1650				681					711					30	
1800				696					723					27	
1950				715					736					21	
2100				737					754					17	
2250															
2400															
2550															
2700															
2850															

DATA SHEET NO. 10 ... (CONTINUED)

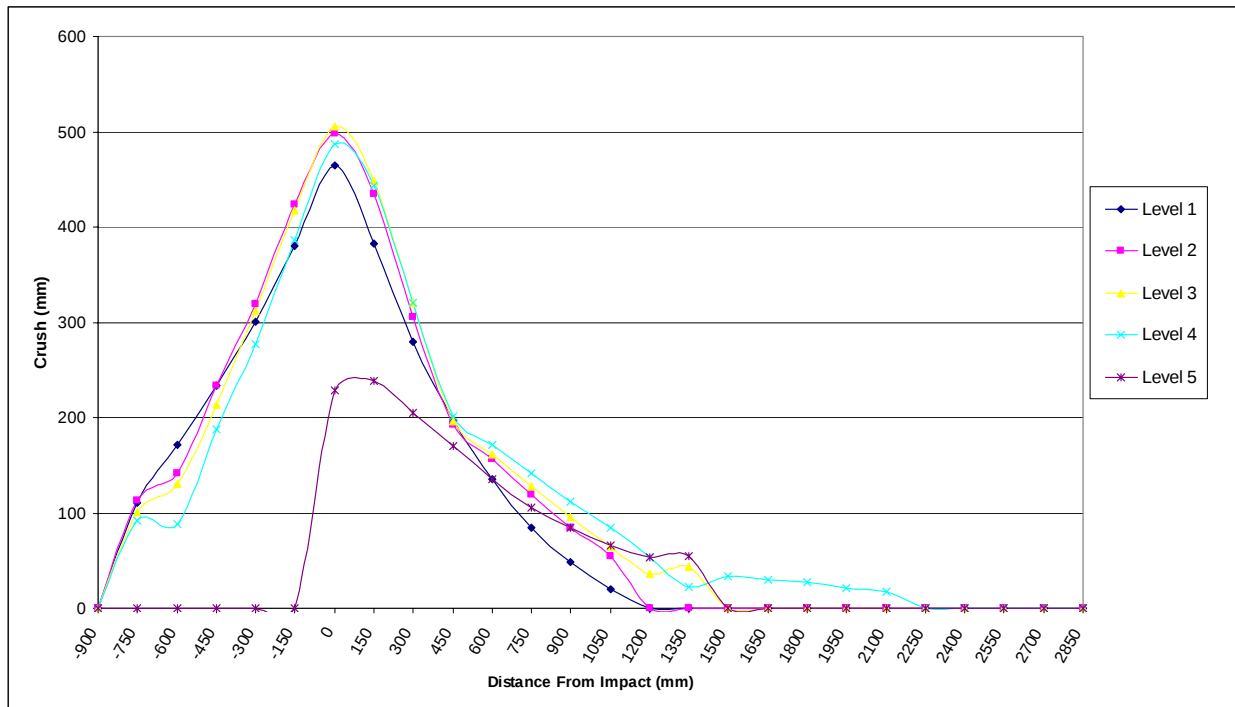
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2013 Lexus IS250 4-Door Sedan

NHTSA No. MD5107

Test Program: NCAP Side Pole Impact Test

Test Date: 11/14/12

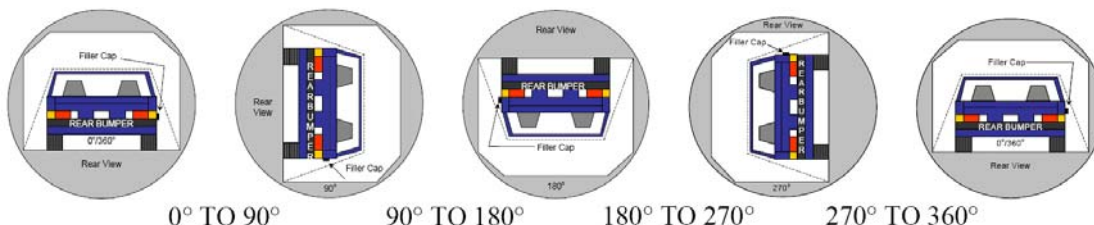


DATA SHEET NO. 11

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2013 Lexus IS250 4-Door Sedan NHTSA No. MD5107
 Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12
 Temperature at Time of Impact: 18.4° C Test Time: 12:03 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°	81	300	381
90° To 180°	82	300	382
180° To 270°	77	300	377
270° To 360°	77	300	377

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			

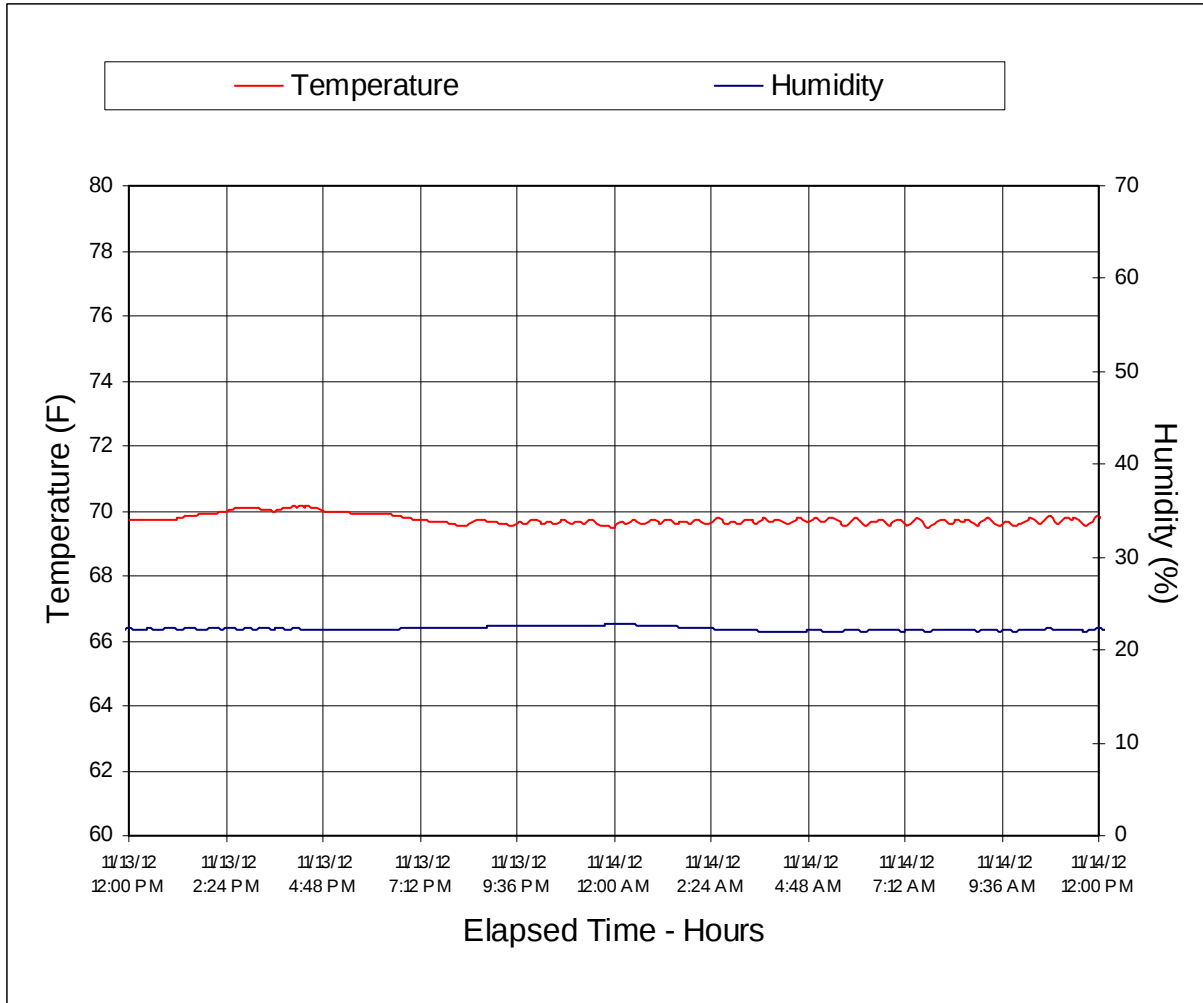
SOLVENT SPILLAGE LOCATION TABLE

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 Lexus IS250 4-Door Sedan NHTSA No. MD5107
Test Program: NCAP Side Pole Impact Test Test Date: 11/14/12



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Figure		Page
1	As Delivered Right Front 3-4 View of Test Vehicle	A-1
2	As Delivered Left Rear 3-4 View of Test Vehicle	A-1
3	Pre-Test Frontal View of Test Vehicle	A-2
4	Post-Test Frontal View of Test Vehicle	A-2
5	Pre-Test Left Front 3-4 View of Test Vehicle	A-3
6	Post-Test Left Front 3-4 View of Test Vehicle	A-3
7	Pre-Test Left Side View of Test Vehicle	A-4
8	Post-Test Left Side View of Test Vehicle	A-4
9	Pre-Test Left Rear 3-4 View of Test Vehicle	A-5
10	Post-Test Left Rear 3-4 View of Test Vehicle	A-5
11	Pre-Test Rear View of Test Vehicle	A-6
12	Post-Test Rear View of Test Vehicle	A-6
13	Pre-Test Right Side View of Test Vehicle	A-7
14	Post-Test Right Side View of Test Vehicle	A-7
15	Pre-Test Overhead View of Test Area	A-8
16	Post-Test Overhead View of Test Area	A-8
17	Pre-Test Left Side View of Pole Positioned Against Side of Test Vehicle	A-9
18	Pre-Test Right Side View of Pole Positioned Against Side of Test Vehicle	A-9
19	Pre-Test Close-Up View of Impact Point Target	A-10
20	Post-Test Close-Up View of Impact Point Target	A-10
21	Pre-Test Front Close-Up View of Dummy Head and Chest	A-11
22	Post-Test Front Close-Up View of Dummy	A-11
23	Pre-Test Left Side View of Dummy Showing Belt and Chalking	A-12
24	Pre-Test Left Side View of Dummy Shoulder and Door Top View	A-12
25	Post-Test Left Side View of Dummy Shoulder and Door Top View	A-13
26	Pre-Test Frontal View of Seat Back Prior to Dummy Positioning	A-13
27	Pre-Test Frontal View of Dummy Head and Shoulders in Relation to Head Restraint	A-14
28	Pre-Test Overhead View of Seat Pan Prior to Dummy Positioning	A-14
29	Pre-Test Overhead View of Dummy Thighs on Seat Pan	A-15
30	Pre-Test View of Dummy's Neck Showing Position of Adjustable Neck Bracket	A-15
31	Pre-Test View of Dummy's Head Showing Dummy's Head is Level	A-16
32	Pre-Test Placement of Dummy's Feet	A-16
33	Pre-Test View of Belt Anchorage for Dummy	A-17
34	Pre-Test Left Side View of Steering Wheel	A-17
35	Pre-Test View of Disengaged Parking Brake	A-18

TABLE OF PHOTOGRAPHS ... (CONTINUED)

Figure		Page
36	Pre-Test View of Parking Brake	A-18
37	Pre-Test Close-Up Left Side View of Driver Seat Track	A-19
38	Pre-Test Close-Up View of Driver Seat Back	A-19
39	Pre-Test Close-Up View of Driver Seat Back or Head Restraint	A-20
40	Pre-Test Driver Dummy and Door Clearance View	A-20
41	Post-Test Driver Dummy and Door Clearance View	A-21
42	Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment	A-21
43	Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment	A-22
44	Pre-Test Inner Door Panel View	A-22
45	Post-Test Inner Door Panel View Showing Dummy Contact Location	A-23
46	Post-Test Dummy Close-Up Head Contact with Vehicle Interior View	A-23
47	Post-Test Dummy Close-Up Head Contact with Side Airbag View	A-24
48	Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View	A-24
49	Post-Test Dummy Close-Up Torso Contact with Side Airbag View	A-25
50	Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View	A-25
51	Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View	A-26
52	Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View	A-26
53	Pre-Test View of Fuel Filler Cap or Fuel Filler Neck	A-27
54	Post-Test View of Fuel Filler Cap or Fuel Filler Neck	A-27
55	Close-Up View of Vehicle's Certification Label	A-28
55a	Close-Up View of Vehicle's Reduced Load Capacity Label	A-28
56	Close-Up View of Vehicle's Tire Information Placard or Label	A-29
57	Pre-Test Pole Barrier Front View	A-29
58	Post-Test Pole Barrier Front View	A-30
59	Pre-Test Pole Barrier Side View	A-30
60	Post-Test Pole Barrier Side View	A-31
61	Pre-Test Ballast View	A-31
62	Post-Test Primary and Redundant Speed Trap Read-Out	A-32
63	FMVSS No. 301 Rollover 0 Degrees	A-32
64	FMVSS No. 301 Rollover 90 Degrees	A-33
65	FMVSS No. 301 Rollover 180 Degrees	A-33
66	FMVSS No. 301 Rollover 270 Degrees	A-34
67	FMVSS No. 301 Rollover 360 Degrees	A-34
68	Impact Event	A-35
69	Monroney Label	A-35

TABLE OF PHOTOGRAPHS ... (CONTINUED)

Figure		Page
70	Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-36
71	Post-Test View of Shattered Vehicle Inner Door Panel	A-36



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



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



FIGURE 3. Pre-Test Frontal View of Test Vehicle

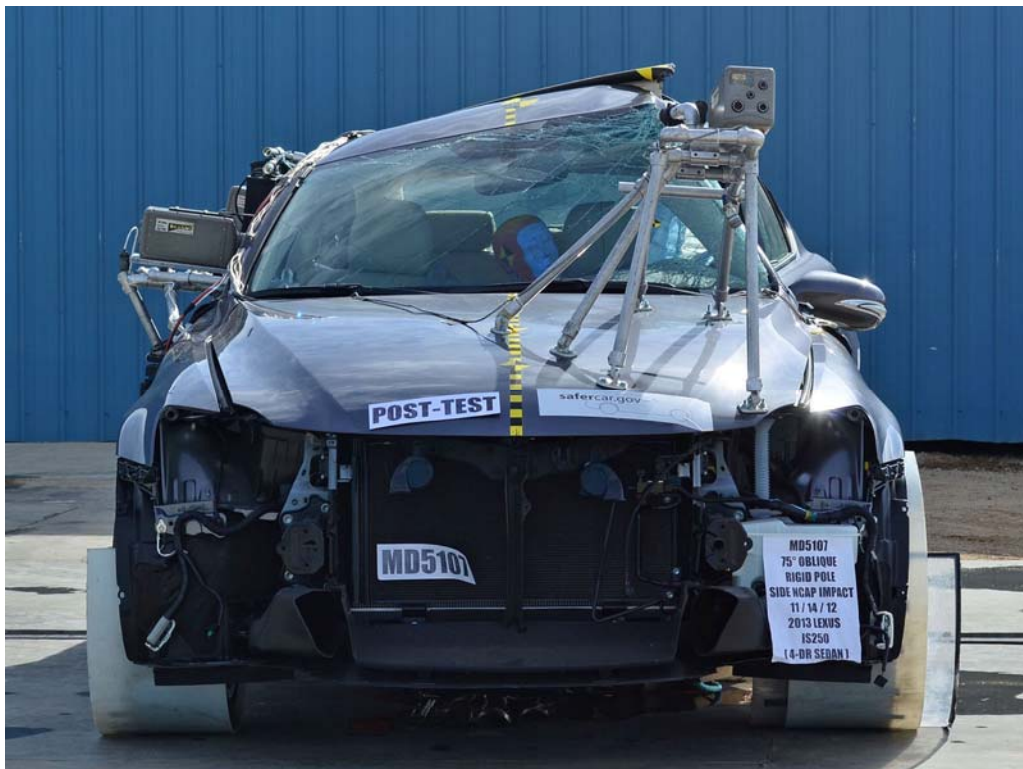


FIGURE 4. Post-Test Frontal View of Test Vehicle



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



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



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



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



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



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



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



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



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



FIGURE 15. Pre-Test Overhead View of Test Area

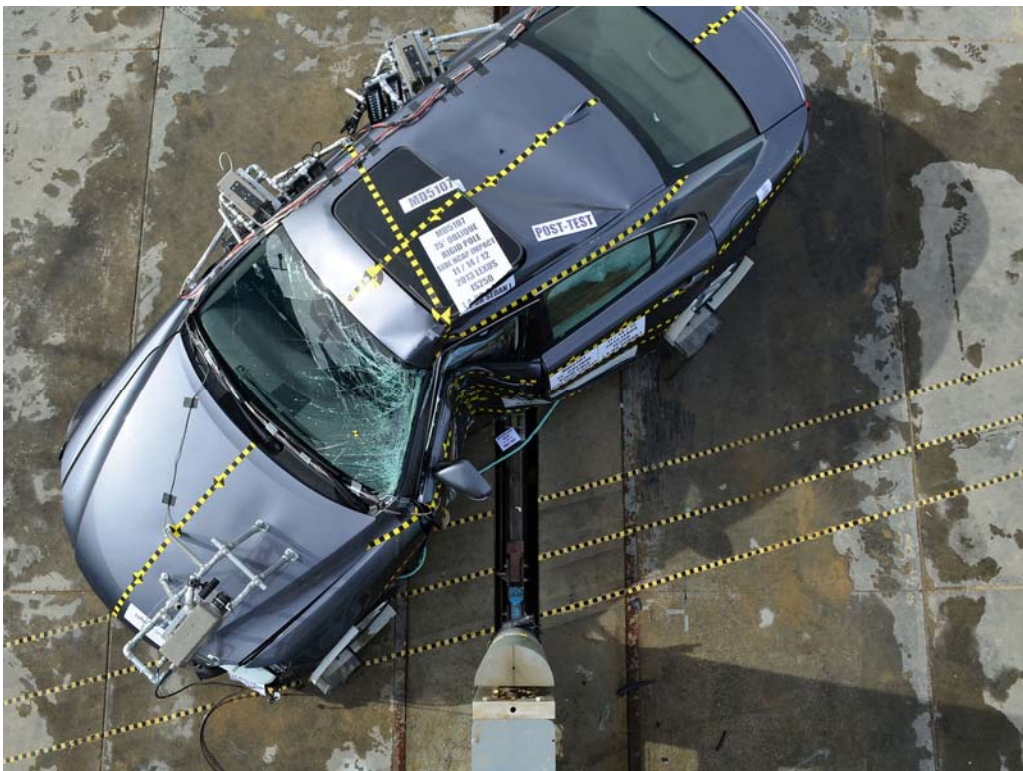


FIGURE 16. Post-Test Overhead View of Test Area



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

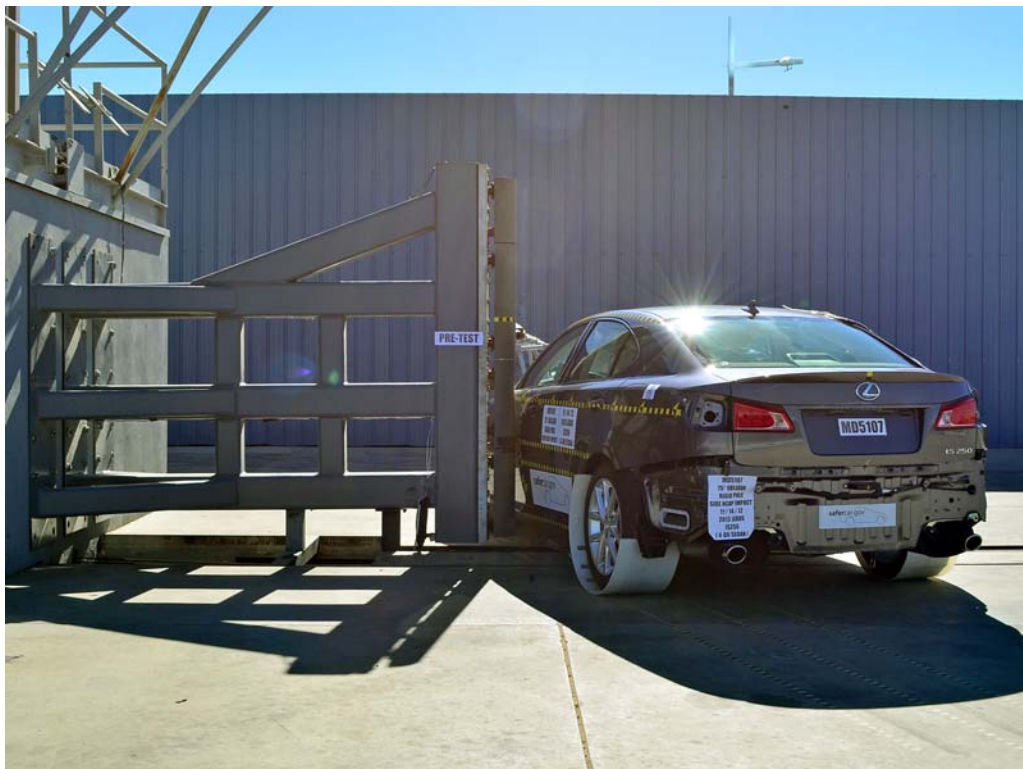


FIGURE 18. Pre-Test Right Side View of Pole
Positioned Against Side of Vehicle

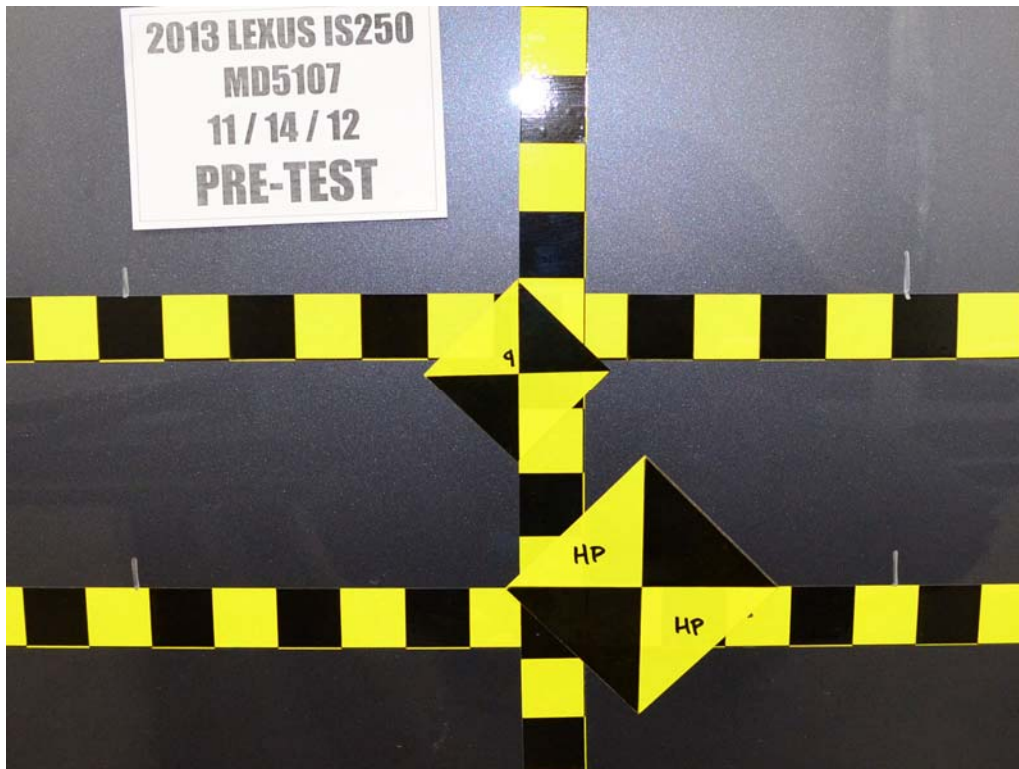


FIGURE 19. Pre-Test Close-Up View of Impact Point Target



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



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



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



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

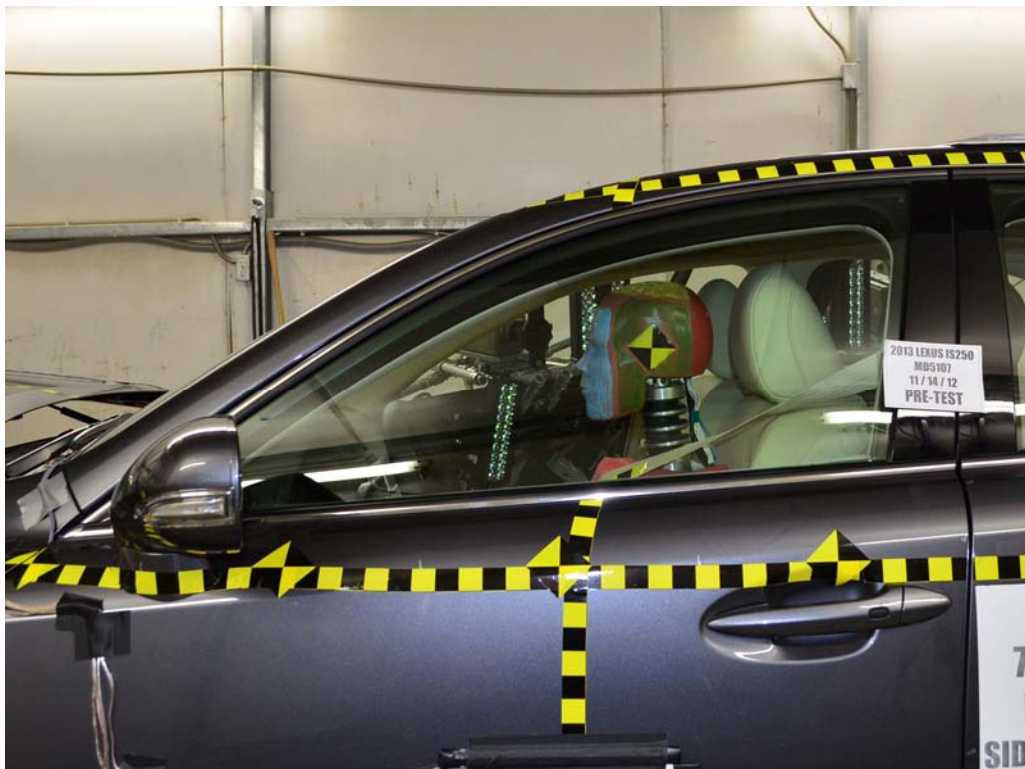


FIGURE 24. Pre-Test Left Side View of Dummy Shoulder and Door Top View



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



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



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



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

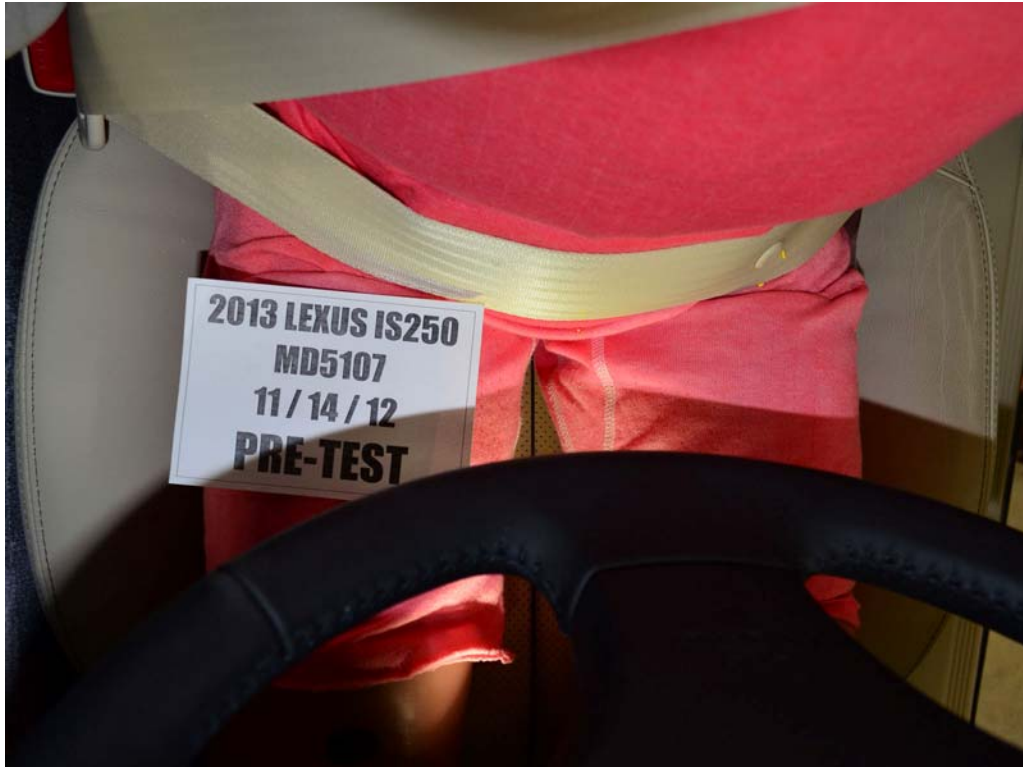


FIGURE 29. Pre-Test Overhead View of Dummy Thighs on Seat Pan

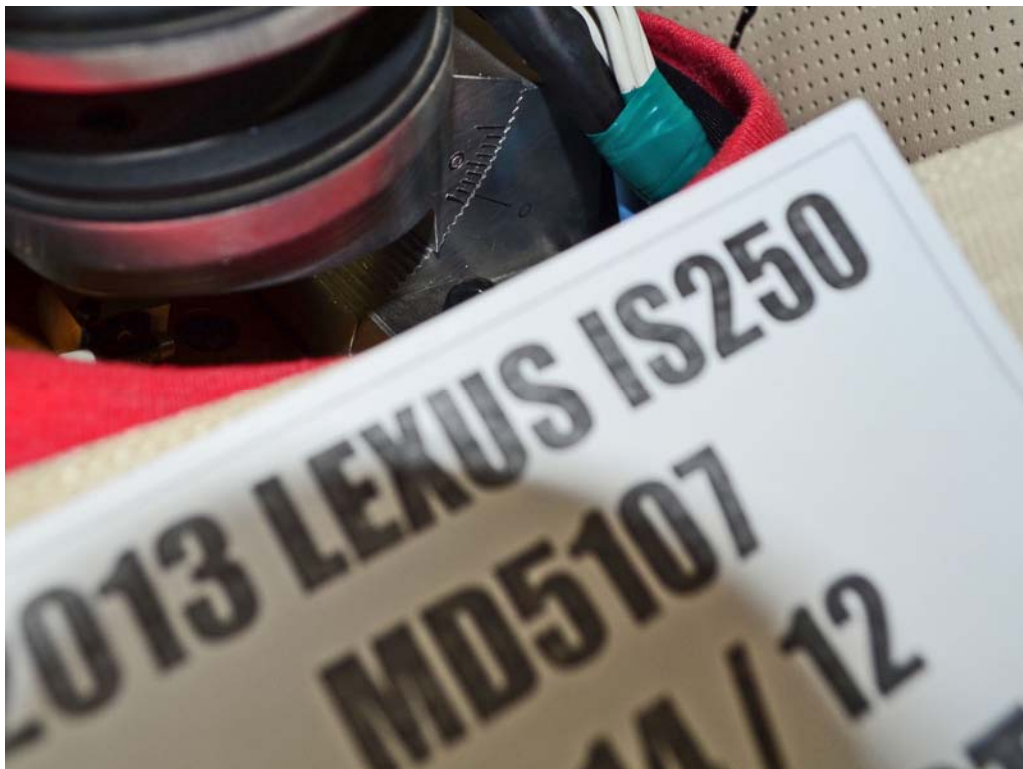


FIGURE 30. Pre-Test Left Side View of Dummy's Neck
Showing Position of Adjustable Neck Bracket



FIGURE 31. Pre-Test View of Dummy's Head Showing Dummy's Head Is Level



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

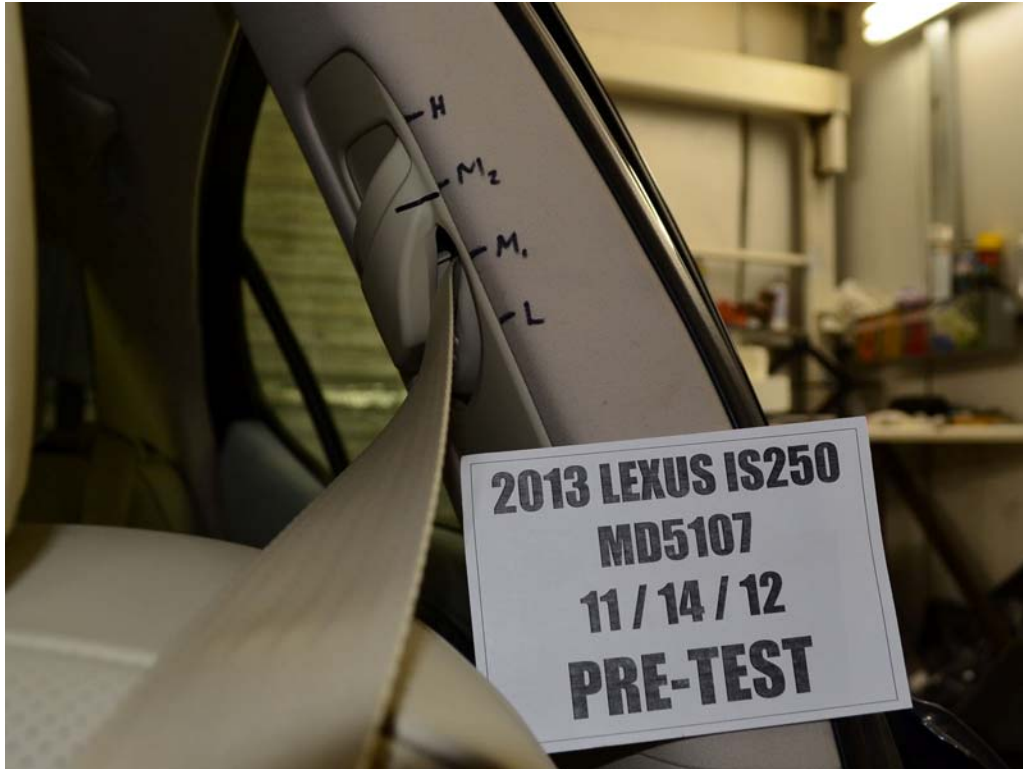


FIGURE 33. Pre-Test View of Belt Anchorage for Dummy

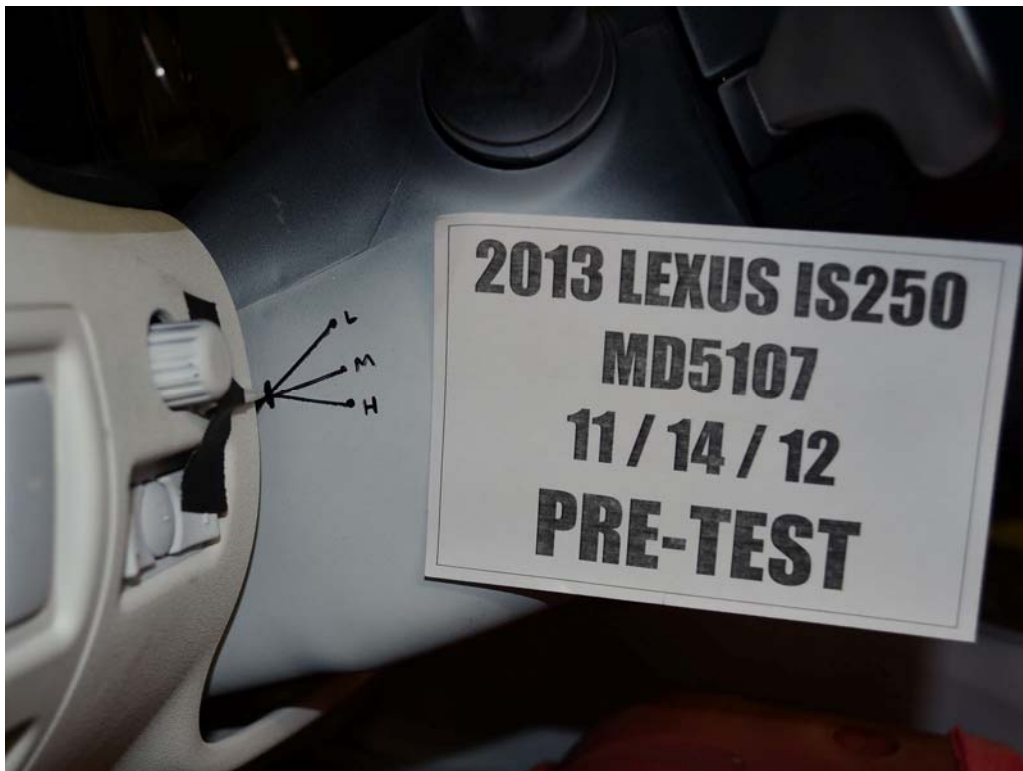


FIGURE 34. Pre-Test Left Side View of Steering Wheel



FIGURE 35. Pre-Test View of Disengaged Parking Brake



FIGURE 36. Pre-Test View of Parking Brake



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

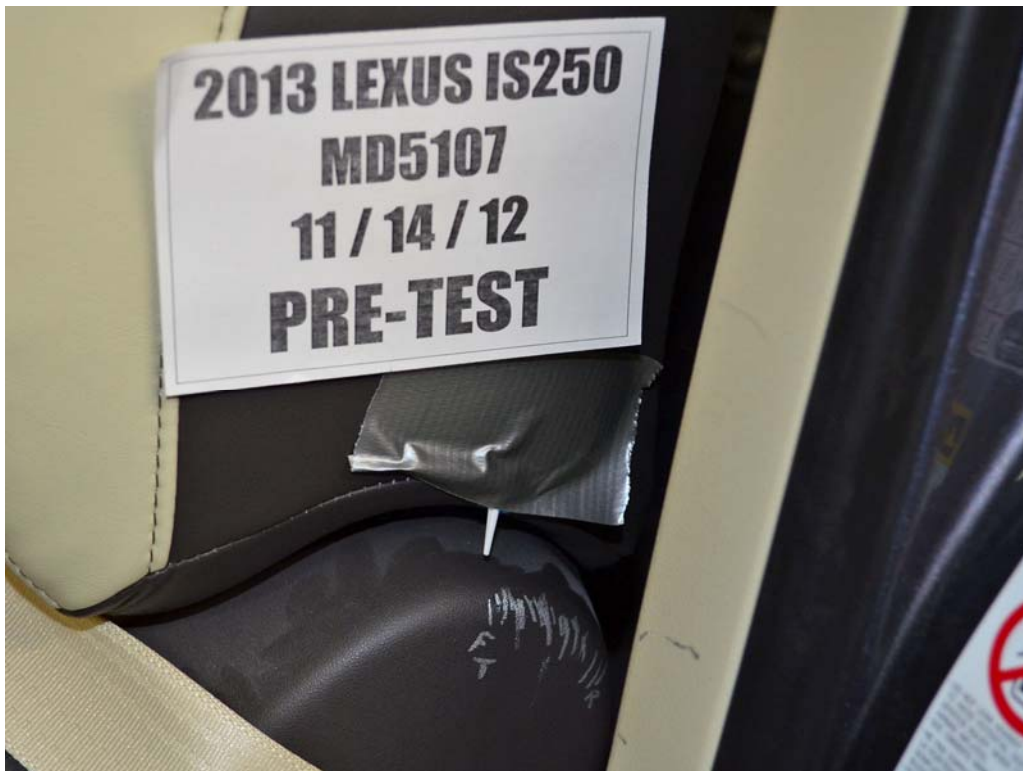


FIGURE 38. Pre-Test Close-Up Left Side View of Driver Seat Back



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



FIGURE 40. Pre-Test Dummy and Door Clearance

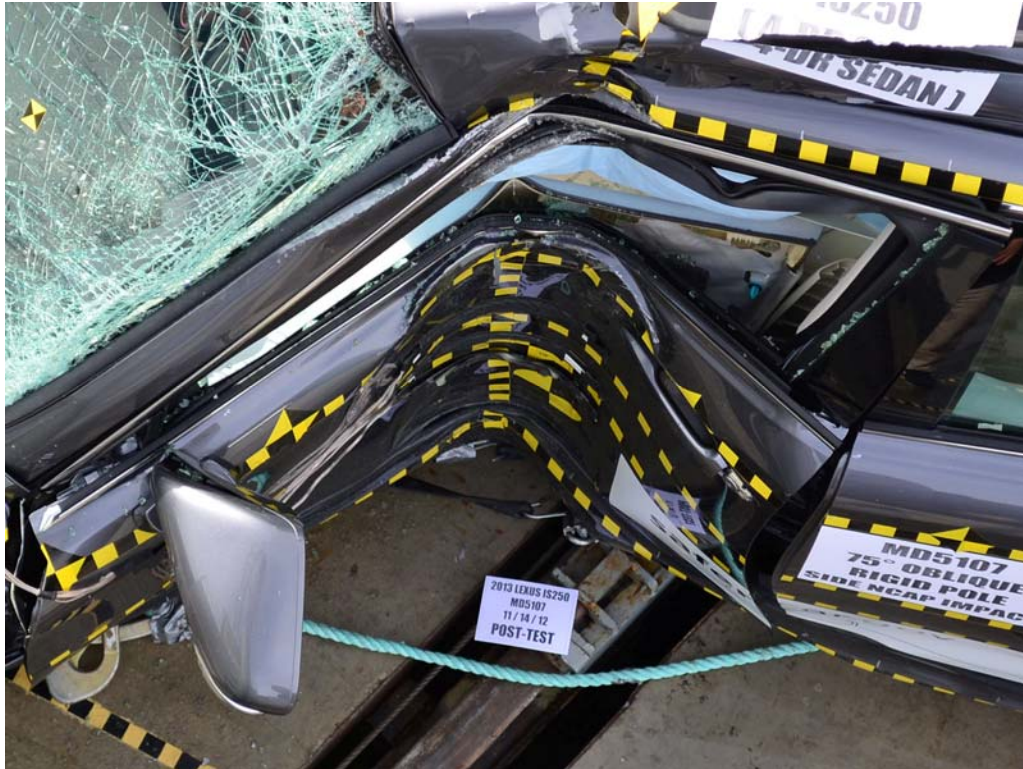


FIGURE 41. Post-Test Dummy and Door Clearance



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



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



FIGURE 44. Pre-Test Inner Door Panel View



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

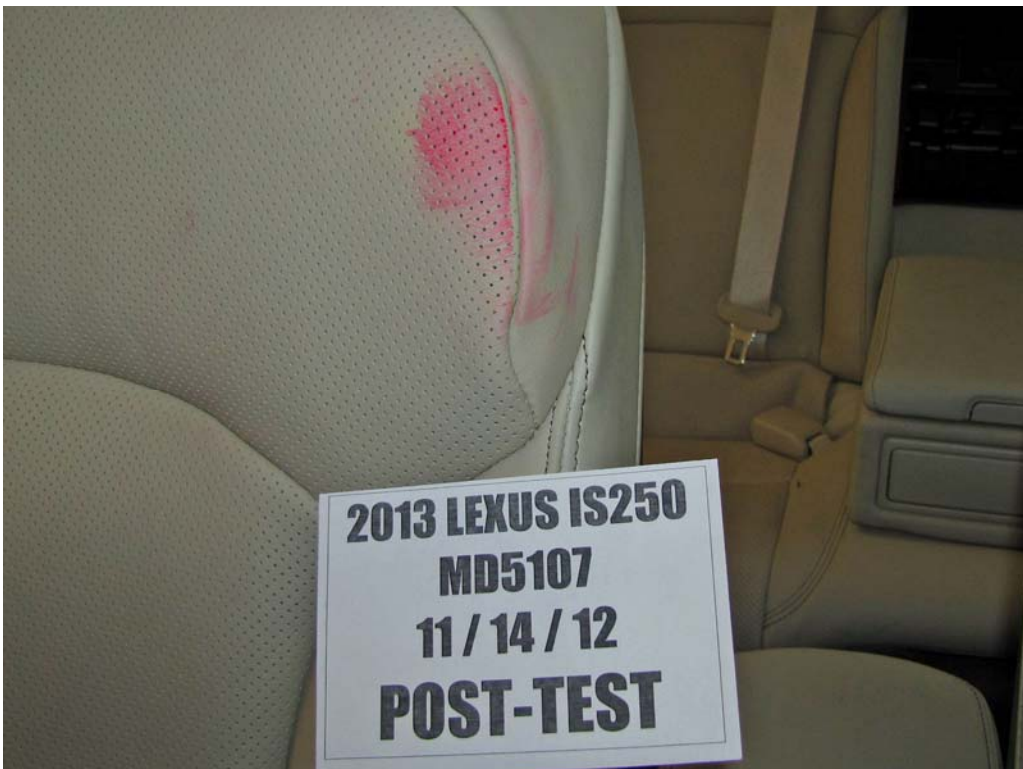


FIGURE 46. Post-Test Dummy Close-Up Head Contact with Vehicle Interior View

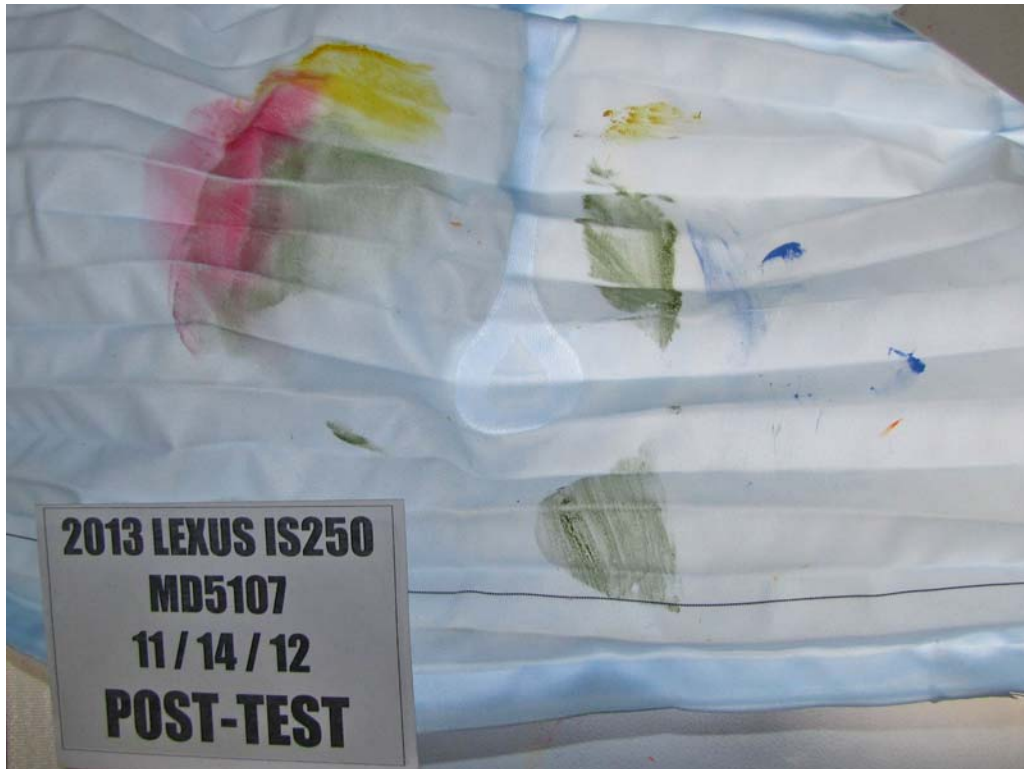


FIGURE 47. Post-Test Dummy Close-Up Head Contact with Side Airbag View



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



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



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



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



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



FIGURE 53. Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 54. Post-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 55. Close-Up View of Vehicle's Certification Label

Photograph Not Available

FIGURE 55a. Close-Up View of Vehicle's Reduced Load Carrying Capacity Label



FIGURE 56. Close-Up View of Vehicle's Tire Placard Information or Label



FIGURE 57. Pre-Test Pole Barrier Front View



FIGURE 58. Post-Test Pole Barrier Front View



FIGURE 59. Pre-Test Pole Barrier Side View



FIGURE 60. Post-Test Pole Barrier Side View



FIGURE 61. Pre-Test Ballast View



FIGURE 62. Post-Test Primary and Redundant Speed Trap Read-Out

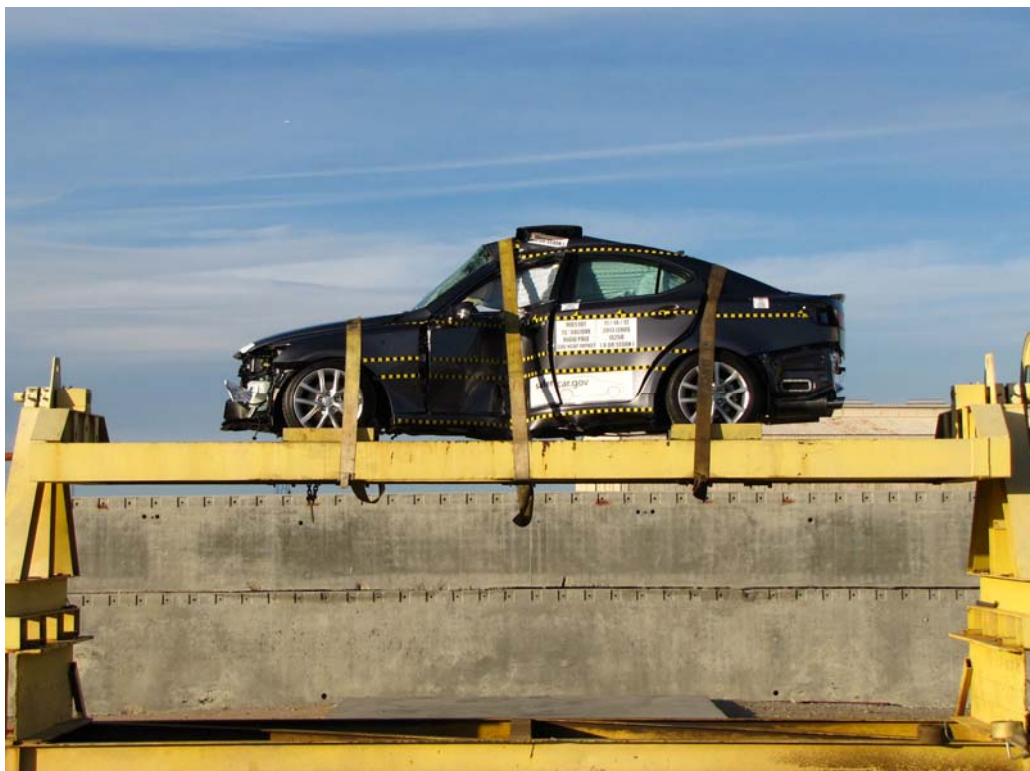


FIGURE 63. FMVSS No. 301 Rollover 0 Degrees



FIGURE 64. FMVSS No. 301 Rollover 90 Degrees



FIGURE 65. FMVSS No. 301 Rollover 180 Degrees



FIGURE 66. FMVSS No. 301 Rollover 270 Degrees

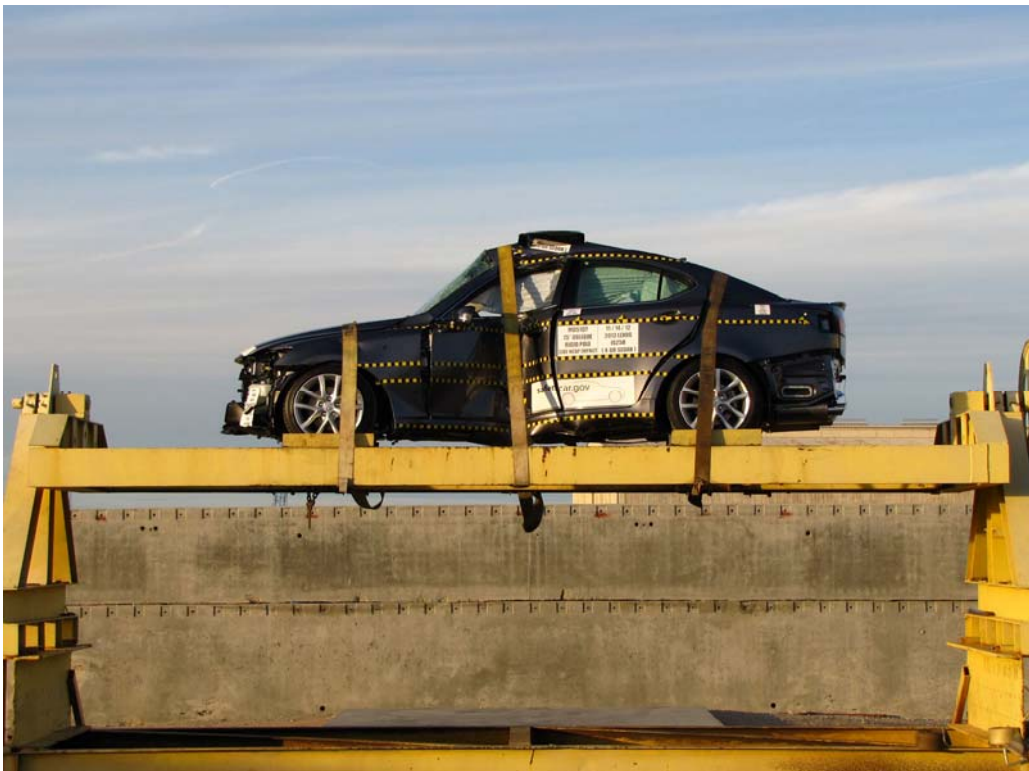


FIGURE 67. FMVSS No. 301 Rollover 360 Degrees



FIGURE 68. Impact Event

LEXUS
The Pursuit of Perfection

DESCRIPTION: 2013 / 9502A IS250 HYBRID SEDAN
COLOR: NEBULA GRAY PEARL
VIN: JTHBF5C24D5185209
PORT/PLANT: Long Beach, CA

Dealer Name / Address:
LONGO LEXUS
3230 N. PECK ROAD
EL MONTE CA91731

Ship to (State), unless otherwise indicated

STANDARD EQUIPMENT

PERFORMANCE FEATURES

- 2.5 Liter D4SE, 24 Valve V6 Dual VVT-i
- 204 Horsepower, 185 lb-ft of Torque
- Six-Speed Electronically Controlled Automatic Transmission with Intelligence (ECT-i)
- Electronic Throttle Control System w/Intelligence (ETCS-i) / Rear Wheel Drive
- Steering Wheel Mounted Shift Paddles
- Front and Rear Disc Brakes
- 17" 10-spoke Aluminum Alloy Wheels
- All-Season Tires, Front 225/45R17 Rear: 245/45R17
- Dual Chrome Exhaust Tips
- Double Wishbone Front & Multi-Link Rear Suspension

SAFETY FEATURES

- Vehicle Dynamics Integrated Management (VDIM)
- Anti-Lock Braking System (ABS) with Electronic Brakeforce Distribution (EBD) & Brake Assist
- Smart Stop Technology
- Advanced Front Airbags (Twin-Chamber for Front Passenger), Driver's and Front Passenger's Knee Airbags, Front Seat Mounted Side Impact Airbags, Side Curtain Airbags, Supplemental Restraint System (SRS)
- 3-Point Belts for All Seating Positions
- Protections w/Force Limiters for Front and Outboard Rear seats
- Child Restraint Seats (CRS) Tether Anchor Brackets
- Tire Pressure Monitor / First Aid Kit / Tool Kit

LUXURY AND CONVENIENCE FEATURES

- SmartAccess with Push-Button Start/Stop
- Leather Trim w/10-Way Power Driver's and Front Passenger Seats (includes 3-way power lumbar)
- Power 10-Slide Moonroof w/One-Touch Open/Close
- Electroluminescent Optitron Gauges
- Automatic Dual-Zone Climate Control
- Three-Spoke Leather Trimmed Steering Wheel with Audio Controls / Cruise Control
- Manual Tilt/Telescopic Steering Column
- Heated Outside Mirrors with Integrated Turn Signals and Puddle Lamps
- In-Vehicle Auto Dimming Electrochromic Rearview Mirror
- Driver Information Center w/ Trip Computer
- Lexus Premium Audio System with 13-speakers
- Automatic Sound Levelizer (ASL), and In-Dash Single Disc 6-Disc CD Auto-Changer, Bluetooth Technology, USB Audio Plug, XM Satellite Radio (includes a 90-day trial subscription)
- Power Windows w/One-Touch Auto Open/Close feature
- Trunk Pass-Through / Lexus Personalized Settings
- Fold-Out Front Door Pockets w/Water Bottle Holder
- Carpeted Floor Mats

INSTALLED OPTIONS

MANUFACTURER'S SUGGESTED RETAIL PRICE

Premium Package Value Edition	\$35,065.00
Heated and Ventilated Front Seats, Wood Interior Trim, and Perforated Leather Seat Upgrade (TOTAL MSRP VALUE OF OPTION \$1,090.00)	680.00
Rear Lip Spoiler	389.00
Preferred Accessory Package: Cargo Net, Trunk Mat and Wheel Locks	252.00

Fuel Economy and Environment

Fuel Economy

24 MPG
combined city/hwy

21 MPG
city

30 MPG
highway

4.2 gallons per 100 miles

You spend \$400 more in fuel costs over 5 years compared to the average new vehicle.

Fuel Economy & Greenhouse Gas Rating

Annual fuel cost \$2,400

Smartphone QR Code

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score Not Rated

Frontal Crash Driver Passenger Not Rated Not Rated

Side Crash Front seat Not Rated Rear seat Not Rated

Rollover *****

APPLICABLE FEDERAL TAXES NOT INCLUDED

LEWIS NEW VEHICLE LIMITED WARRANTY

LEWIS IS PLEASED TO OFFER THE FOLLOWING DRIVER SUPPORT PACKAGE WITH EACH NEW LEXUS

202331 152 2803 51026

FIGURE 69. Monroney Label

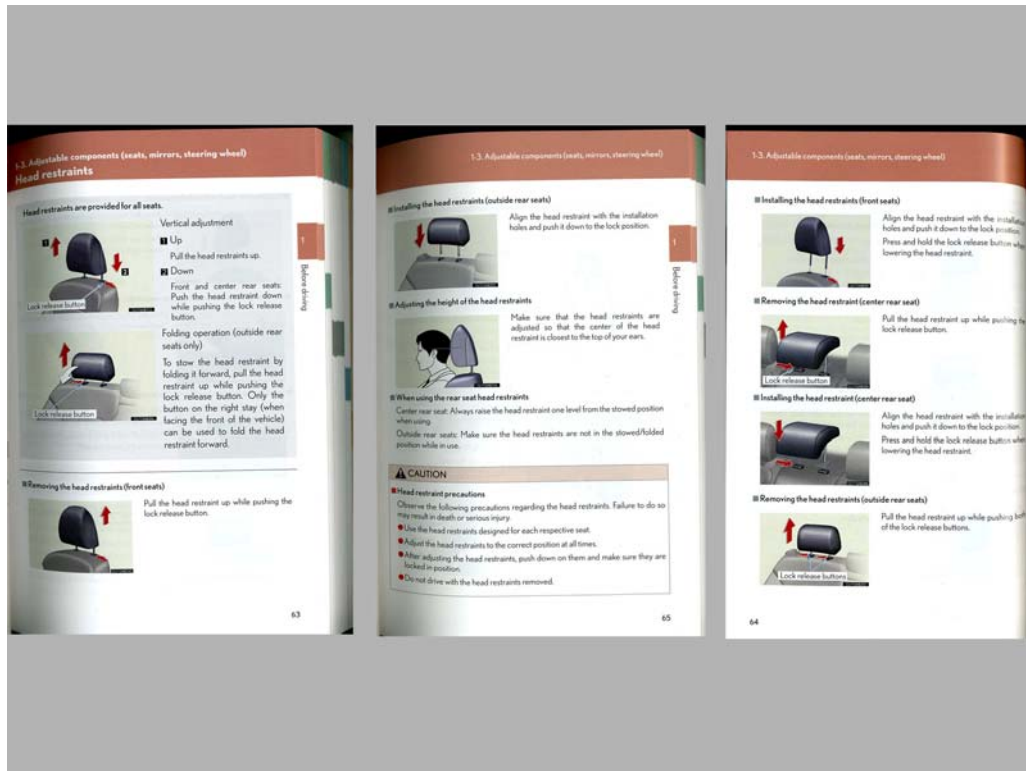


FIGURE 70. Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

Photograph Not Applicable

FIGURE 71. Post-Test View of Shattered Vehicle Inner Door Panel

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 Lower Spine T12 Acceleration (X) vs. Time	B-2
6	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-2
7	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-2
8	Driver Lower Spine T12 Resultant Acceleration vs. Time	B-2
9	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-3
10	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-3
11	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-3

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

www.NHTSA.dot.gov

Additional Driver Dummy Instrumentation Data

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

Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Left Floor Sill Acceleration (Y)
Left A-Pillar Sill Acceleration (Y)
Left Lower A-Pillar Acceleration (Y)
Left Mid A-Pillar Acceleration (Y)

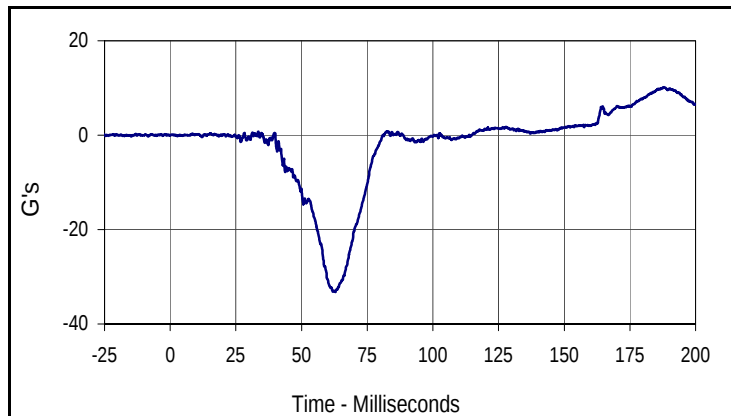
Left B-Pillar Sill Acceleration
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy Hip Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration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

Pole Instrumentation Data

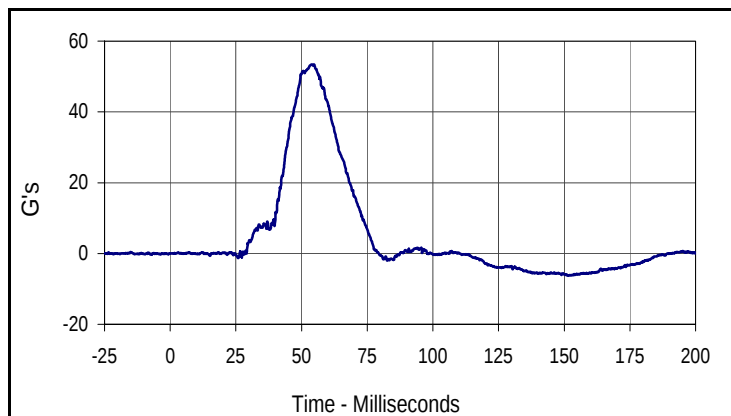
Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)

Test Vehicle: 2013 Lexus IS250 4-Door Sedan
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

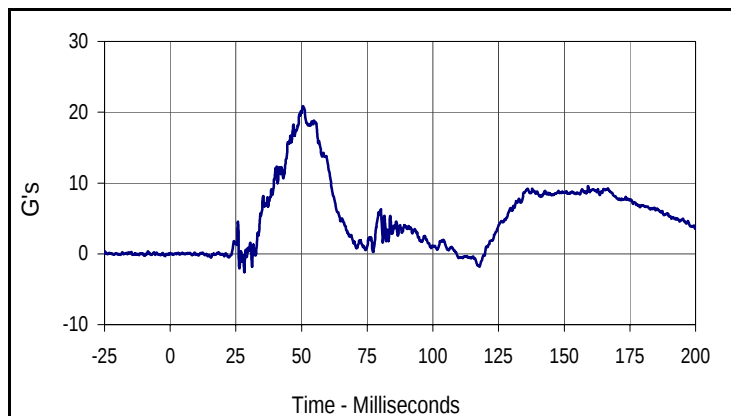
Test Date: 11/14/12
 NHTSA No.: MD5107



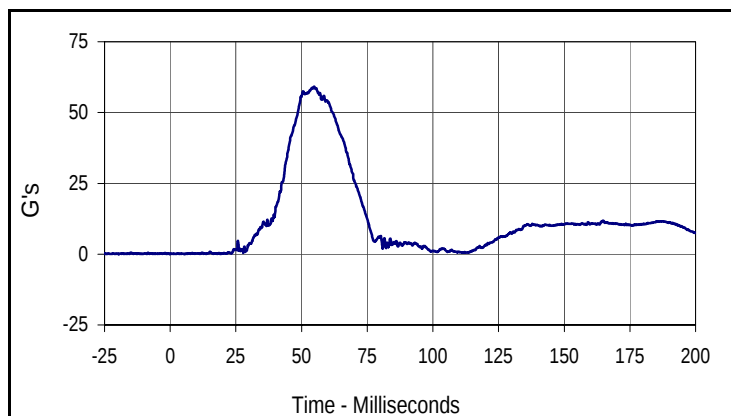
Curve Description			
Driver Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
10.2	188.0	-33.2	62.8



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
53.4	54.1	-6.3	151.2



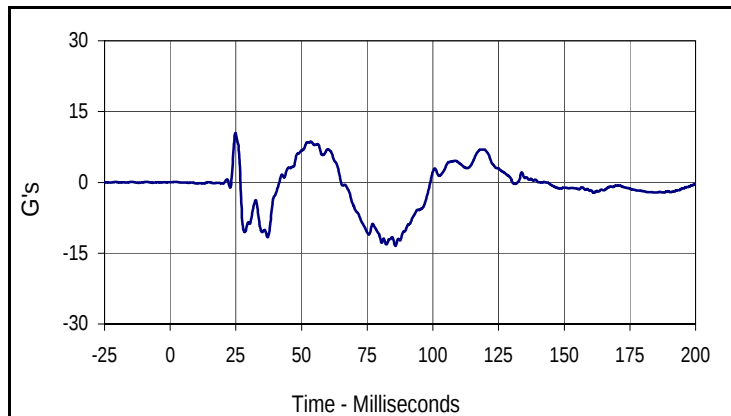
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
20.9	50.5	-2.6	28.2



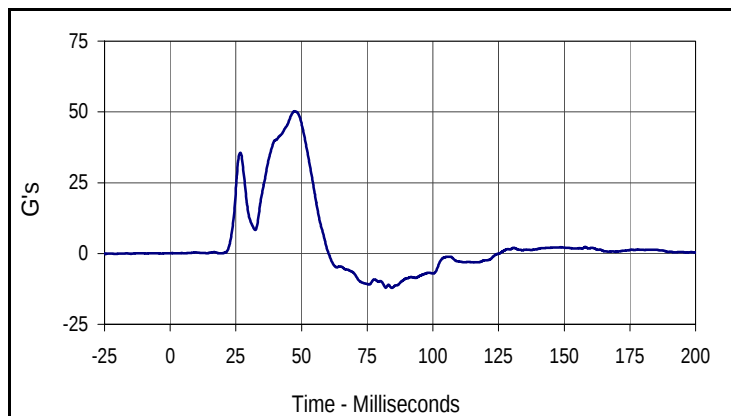
Curve Description			
Driver Head Acceleration Primary Res.			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
59.2	54.8	0.0	5.4

Test Vehicle: 2013 Lexus IS250 4-Door Sedan
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

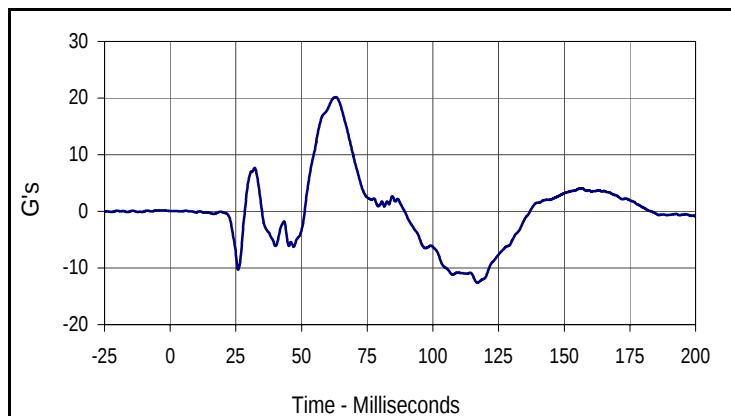
Test Date: 11/14/12
 NHTSA No.: MD5107



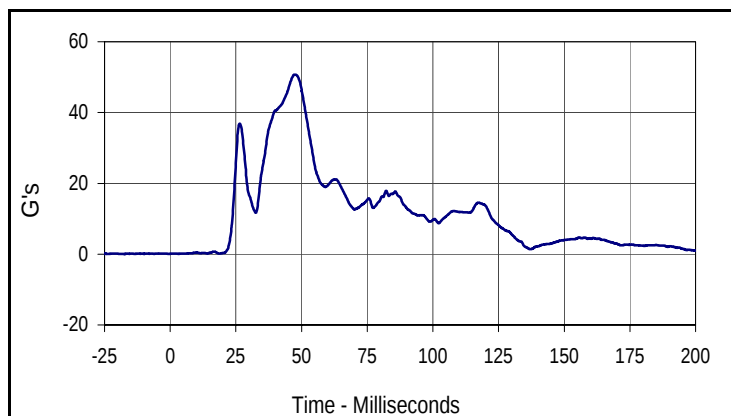
Curve Description			
Driver Lower Spine T12 Acceleration X			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
10.5	24.9	-13.5	85.7



Curve Description			
Driver Lower Spine T12 Acceleration Y			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
50.2	47.5	-12.2	84.4



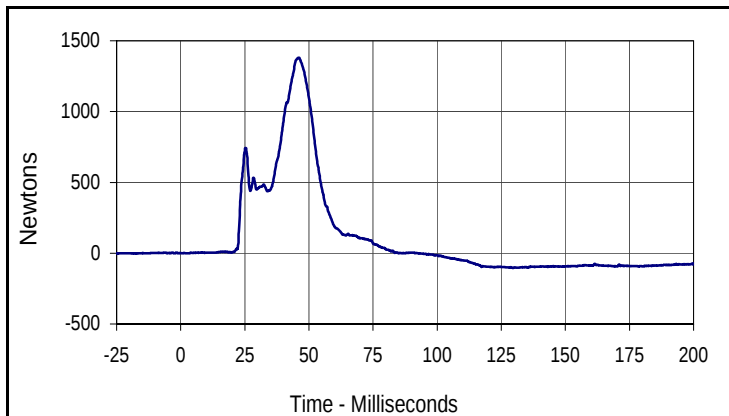
Curve Description			
Driver Lower Spine T12 Acceleration Z			
Plot No.	Type	SAE Class	Units
007	FIL	180	G's
Max	Time	Min	Time
20.2	63.1	-12.6	116.9



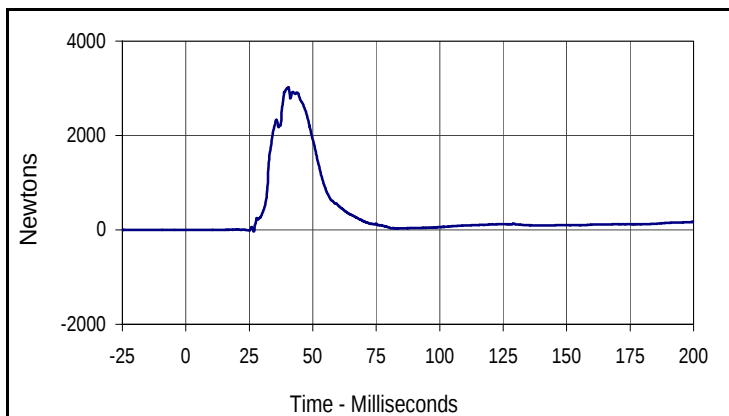
Curve Description			
Driver Lower Spine T12 Acceleration Res.			
Plot No.	Type	SAE Class	Units
008	RES	180	G's
Max	Time	Min	Time
50.7	47.5	0.1	3.2

Test Vehicle: 2013 Lexus IS250 4-Door Sedan
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

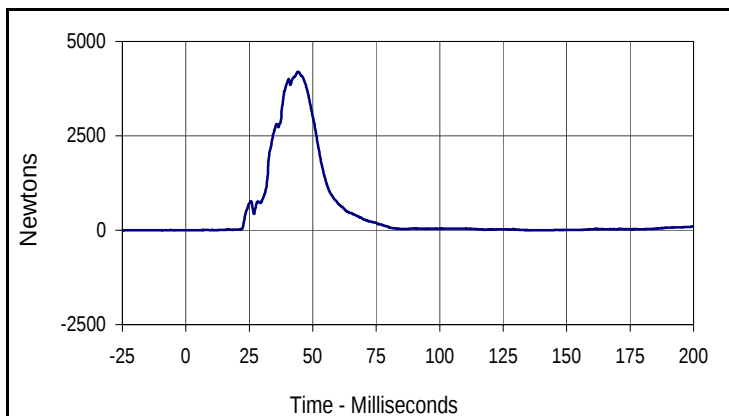
Test Date: 11/14/12
 NHTSA No.: MD5107



Curve Description			
Driver Iliac Wing Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
009	FIL	600	Newtons
Max	Time	Min	Time
1380.9	46.1	-104.9	129.7



Curve Description			
Driver Acetabulum Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
010	FIL	600	Newtons
Max	Time	Min	Time
3023.0	40.4	-34.0	26.8



Curve Description			
Driver Total Pelvic Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
011	SUM	600	Newtons
Max	Time	Min	Time
4199.1	44.3	-3.3	140.0

APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

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

Test Program: SID IIs External Measurements
 ATD Serial No.: 299

Test Date: 11/12/12
 Test I.D.: N/A



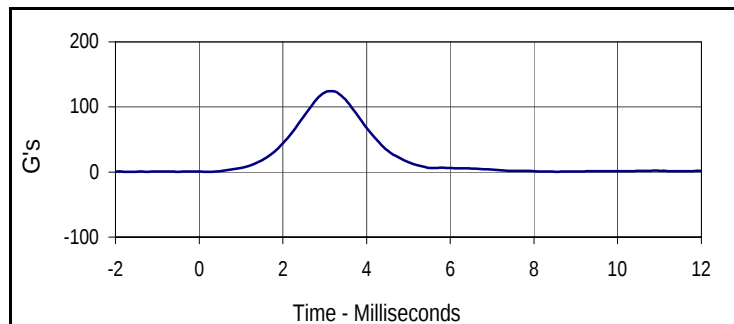
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
A	Sitting Height	mm	772 - 788	781	Pass
B	Shoulder Pivot Height	mm	437 - 453	446	Pass
C	H-Point Height	mm	79 - 89	86	Pass
D	H-Point from Seatback	mm	141 - 151	145	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	102	Pass
F	Thigh Clearance	mm	119 - 135	125	Pass
G	Head Breadth	mm	140 - 148	145	Pass
H	Head Back from Backline	mm	40 - 46	44	Pass
I	Head Depth	mm	178 - 188	184	Pass
J	Head Circumference	mm	541 - 551	545	Pass
K	Buttock to Knee Length	mm	514 - 540	527	Pass
L	Popliteal Height	mm	343 - 369	352	Pass
M	Knee Pivot to Floor Height	mm	392 - 409	401	Pass
N	Buttock Popliteal Length	mm	416 - 442	432	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	202	Pass
P	Foot Length	mm	216 - 232	221	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	315	Pass
R	Arm Length	mm	249 - 259	252	Pass
S	Knee Joint to Seatback	mm	477 - 493	481	Pass
V	Shoulder Width	mm	341 - 357	352	Pass
W	Foot Width	mm	78 - 94	86	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.: 299

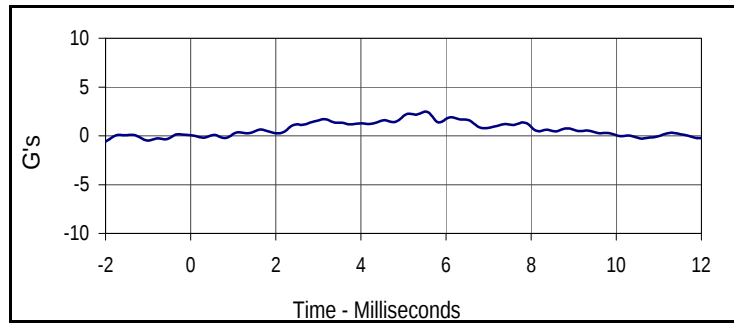
Test Date: 11/12/12
 Test I.D.: 299HD048



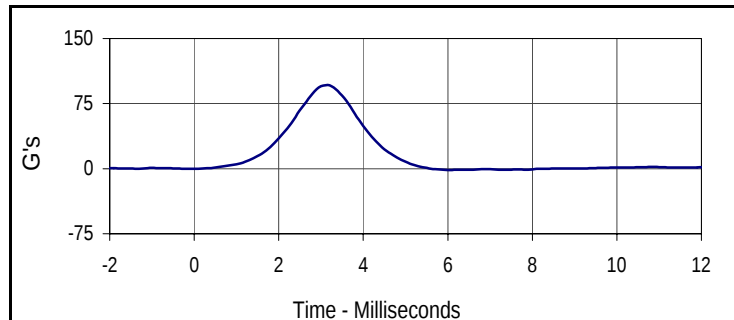
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	250	Pass
Temperature During Soak	Max	18.9 to 25.6	21.4	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	30.5	Pass
	Min		28.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.3	Pass
Peak Head Resultant Acceleration	G's	115 to 137	124.5	Pass
Peak Head X Acceleration	G's	<15	2.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	2.8	Pass
Overall Test Results				Pass



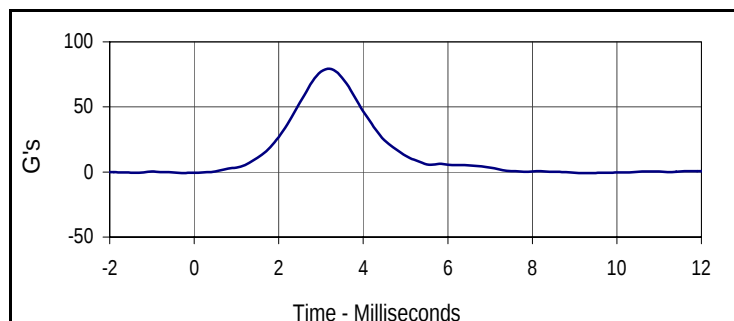
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
124.5	3.2	0.4	-1.8



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.5	5.5	-0.6	-2.0



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
96.3	3.1	-1.5	6.0



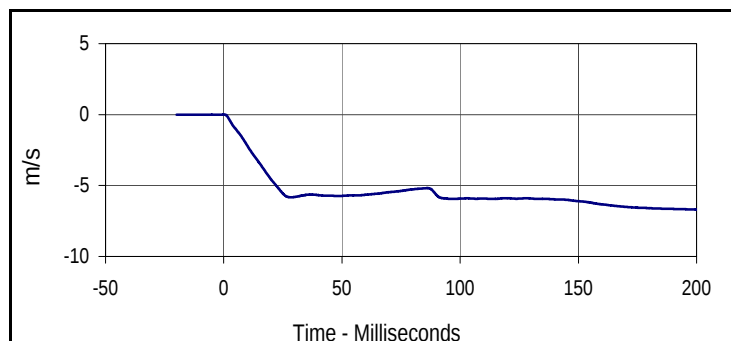
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
79.3	3.2	-0.9	9.3

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 299

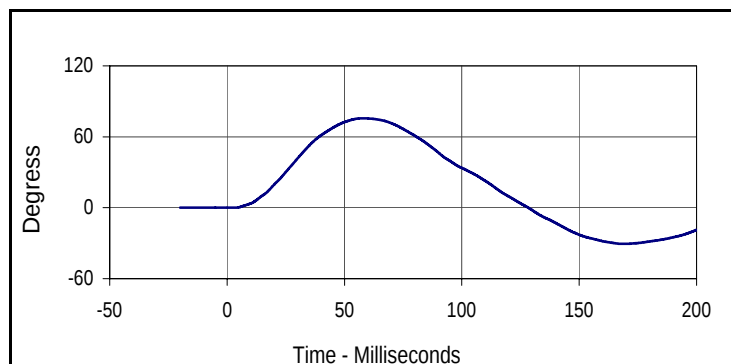
Test Date: 11/12/12
 Test I.D.: 299NB048



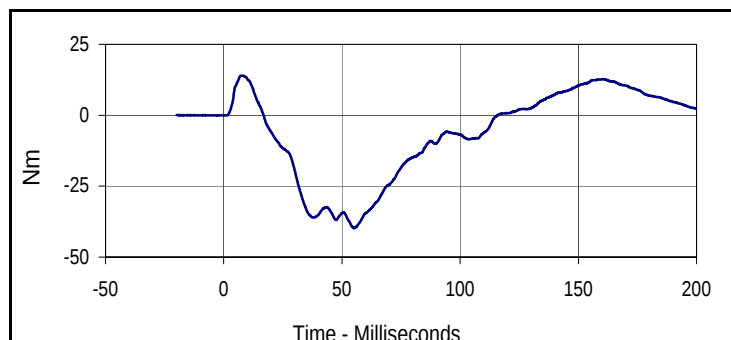
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	300	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	30.5	Pass
	Min		28.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.9	Pass
Pendulum Velocity	m/s	5.51 to 5.63	5.53	Pass
Pendulum Deceleration	10 msec	-2.20 to -2.80	-2.20	Pass
	15 msec	-3.30 to -4.10	-3.39	Pass
	20 msec	-4.40 to -5.40	-4.57	Pass
	25 msec	-5.40 to -6.10	-5.56	Pass
	25-100 msec	-5.50 to -6.20	-5.95	Pass
D-Plane Rotation	Max	71 to 81	75.6	Pass
	Time	50 to 70	57.9	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-39.8	Pass
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	115.9	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	-0.1	-6.7	200.0



Curve Description			
Maximum Translation Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
75.6	57.9	-30.6	169.0



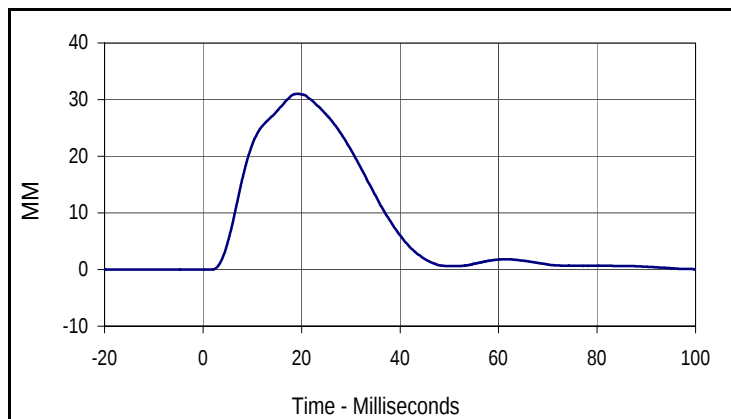
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
14.0	7.2	-39.8	55.2

Test Program: SID IIs Shoulder Impact Test
 ATD Serial No.: 299

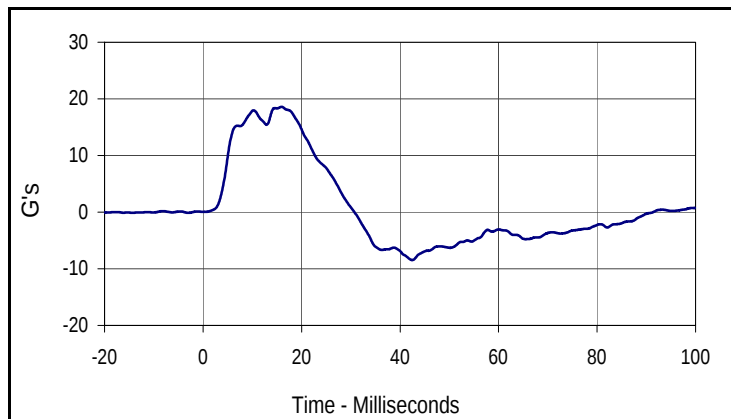
Test Date: 11/12/12
 Test I.D.: 299SH048



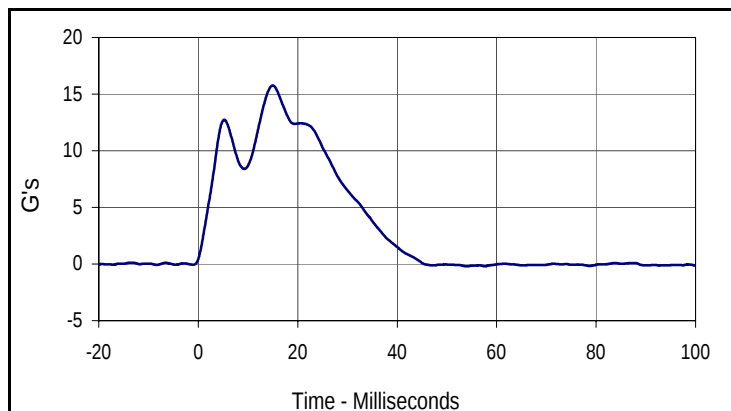
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	355	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.4	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	30.5	Pass
	Min	%		28.1	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.4	Pass
Impactor Velocity		m/s	4.20 to 4.40	4.30	Pass
Peak Shoulder Deflection		mm	28 to 37	31.0	Pass
Peak Lateral Spine Acceleration Y		G's	17 to 22	18.6	Pass
Peak Impactor Acceleration		G's	13 to 18	15.8	Pass
Overall Test Results				Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
31.0	19.1	0.0	-5.2



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.6	16.0	-8.5	42.4



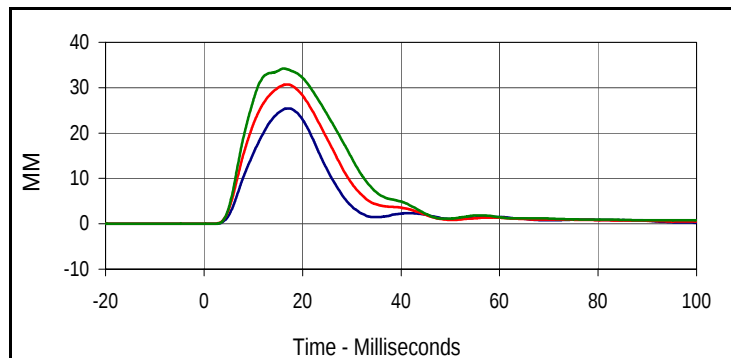
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.8	15.0	-0.2	53.9

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 299

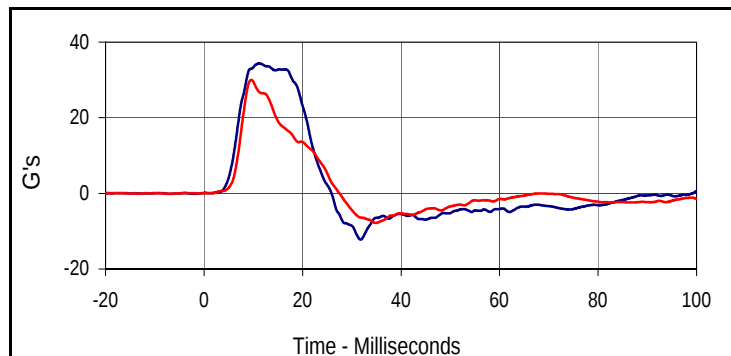
Test Date: 11/12/12
 Test I.D.: 299TWA048



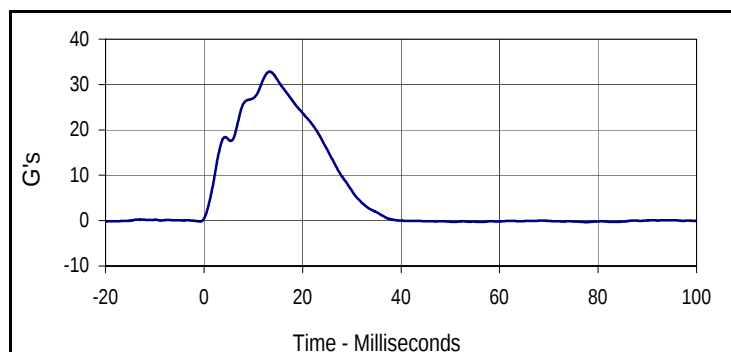
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	380	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	30.5	Pass
	Min		28.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.4	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.68	Pass
Peak Shoulder Deflection	mm	31 to 40	32.7	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	25.4	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	30.7	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	34.2	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	34.4	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	30.0	Pass
Peak Impactor Acceleration	G's	30 to 36	32.8	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
25.4	17.1	0.0	-15.9
Middle Thorax Deflection			
Max	Time	Min	Time
30.7	16.8	0.0	-17.4
Lower Thorax Deflection			
Max	Time	Min	Time
34.2	16.1	0.0	-15.3



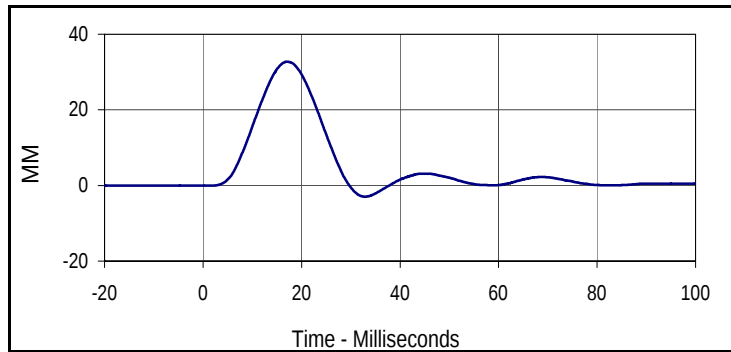
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
34.4	11.2	-12.3	31.8
Lower Spine Y Acceleration			
Max	Time	Min	Time
30.0	9.6	-7.8	34.9



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
32.8	13.3	-0.3	77.6

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 299

Test Date: 11/12/12
 Test I.D.: 299TWA048



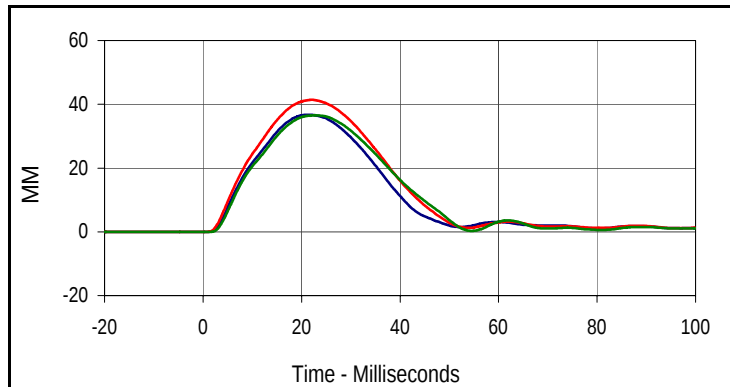
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
32.7	17.0	-3.0	32.9

Test Program: SID IIs Thorax without Arm Impact Test
 ATD Serial No.: 299

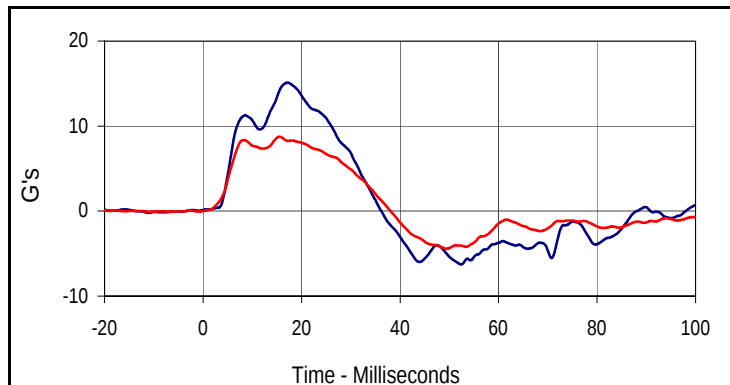
Test Date: 11/12/12
 Test I.D.: 299TWOA048



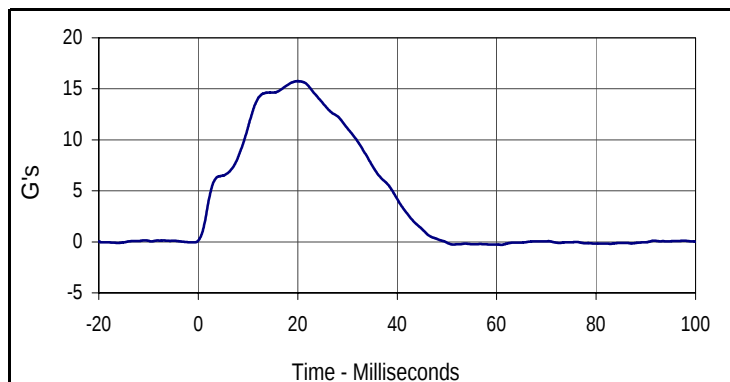
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	405	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.4	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	30.5	Pass
	Min	%		28.1	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.2	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.29	Pass
Peak Upper Thorax Rib Deflection		mm	32 to 40	36.7	Pass
Peak Middle Thorax Rib Deflection		mm	39 to 45	41.4	Pass
Peak Lower Thorax Rib Deflection		mm	35 to 43	36.6	Pass
Peak Upper Spine Y Acceleration		G's	13 to 17	15.1	Pass
Peak Lower Spine Y Acceleration		G's	7 to 11	8.7	Pass
Peak Impactor Acceleration		G's	14 to 18	15.8	Pass
Overall Test Results				Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
36.7	21.5	0.0	-19.5
Middle Thorax Deflection			
Max	Time	Min	Time
41.4	22.2	0.0	-19.7
Lower Thorax Deflection			
Max	Time	Min	Time
36.6	22.7	0.0	-20.0



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.1	17.1	-6.3	52.4
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.7	15.5	-4.4	49.5



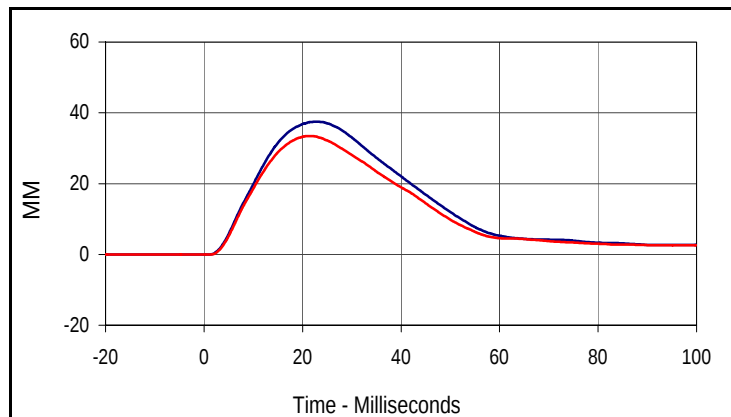
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
15.8	20.0	-0.3	61.0

Test Program: SID IIs Abdomen Impact Test
 ATD Serial No.: 299

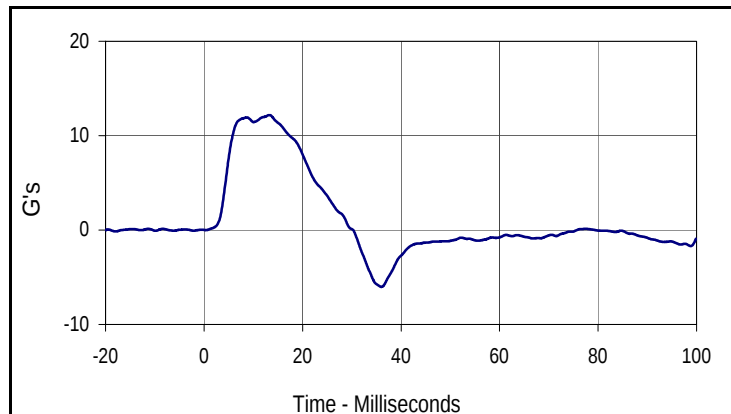
Test Date: 11/12/12
 Test I.D.: 299ABD048



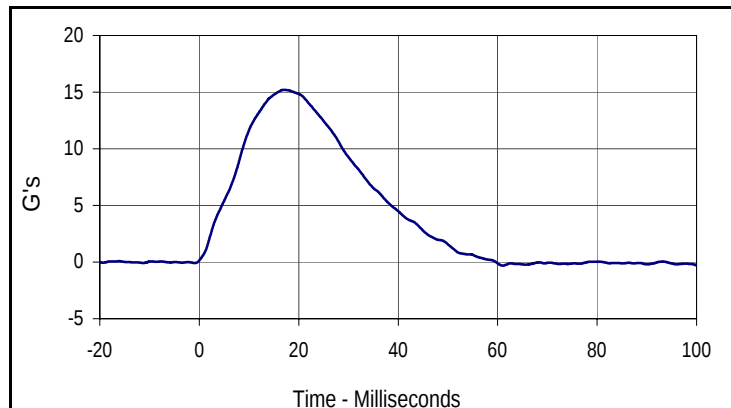
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	430	Pass
Temperature During Soak	Max °C	20.6 to 22.2	21.4	Pass
	Min °C		20.8	Pass
Humidity During Soak	Max %	10.0 to 70.0	30.5	Pass
	Min %		28.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.1	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.29	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	37.5	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	33.4	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.2	Pass
Peak Impactor Acceleration	G's	12 to 16	15.2	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
37.5	22.9	0.0	-9.9
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
33.4	21.3	0.0	-8.9

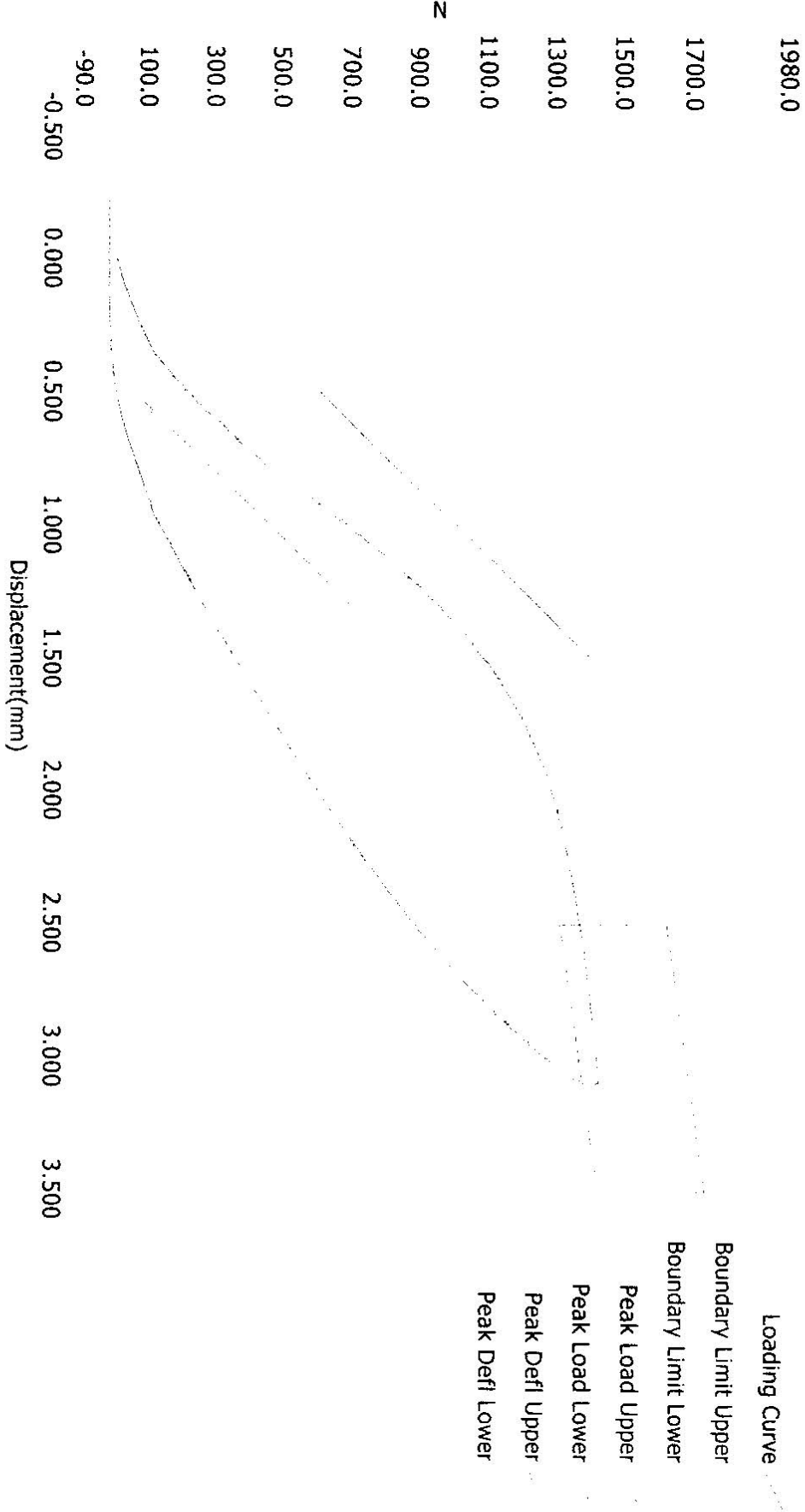


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.2	13.3	-6.0	36.0



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.2	16.9	-0.3	61.0

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

<u>Test ID</u>	<u>Part Serial Number</u>	<u>Test Date</u>	<u>Test Time</u>
46008		9/20/2011	9:28 PM
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
N/A		SIDIIs	

Current Date : 9/20/2011

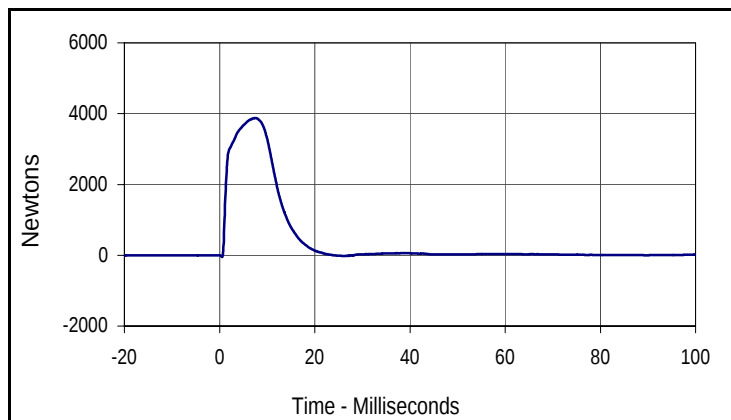
Current Time : 21:28:53

Test Program: SID IIs Pelvis Acetabulum Impact Test
 ATD Serial No.: 299

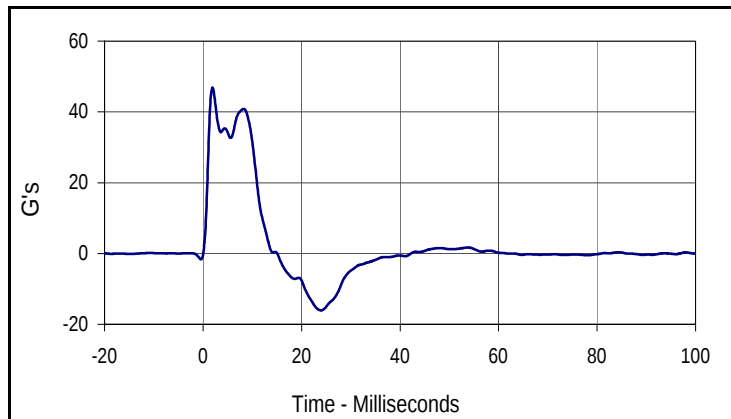
Test Date: 11/12/12
 Test I.D.: 299ACET048



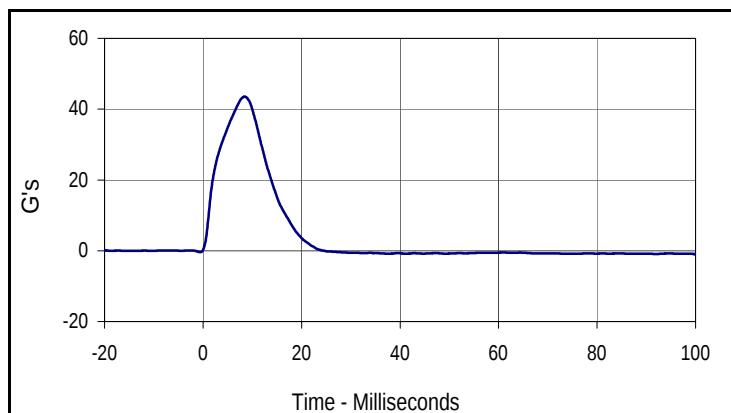
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	455	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	30.5	Pass
	Min		28.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.9	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.72	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	3875.7	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	40.8	Pass
Peak Impactor Acceleration	G's	38 to 47	43.5	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3875.7	7.5	-46.7	0.5



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
46.9	1.9	-16.1	24.0



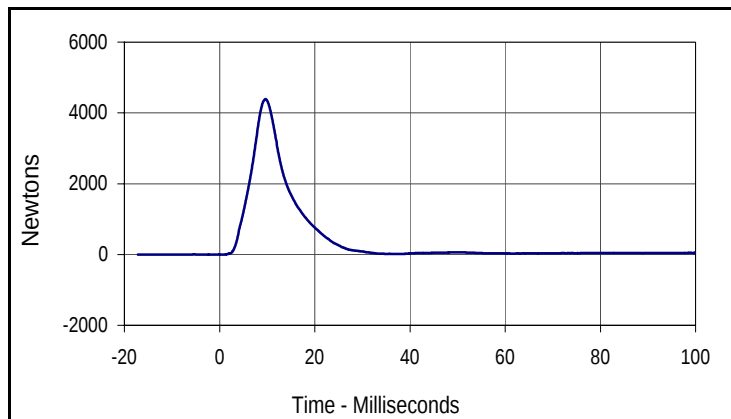
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
43.5	8.4	-1.0	99.9

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 299

Test Date: 11/12/12
 Test I.D.: 299PL048



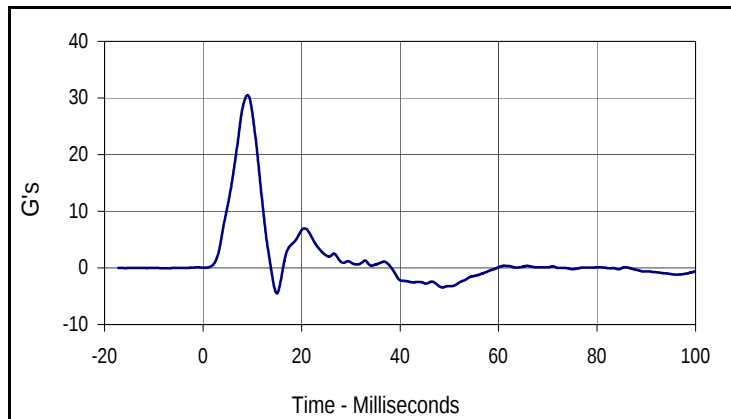
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	510	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	30.5	Pass
	Min		28.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.0	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.33	Pass
Peak Iliac Force	Newtons	4100 to 5100	4387.5	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	30.5	Pass
Peak Impactor Acceleration	G's	36 to 45	40.1	Pass
Overall Test Results			Pass	



Curve Description

Pelvis Iliac Force

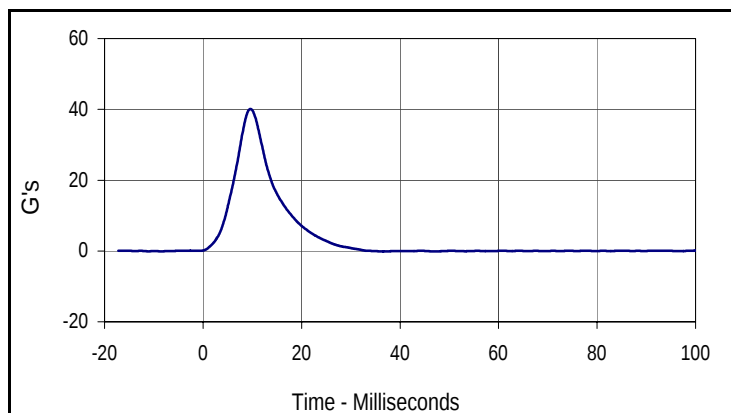
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4387.5	9.6	-3.0	-15.9



Curve Description

Pelvis Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
30.5	9.0	-4.5	15.0



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
40.1	9.6	-0.1	36.7

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

Test Program: SID IIs External Measurements
 ATD Serial No.: 299

Test Date: 11/15/12
 Test I.D.: N/A



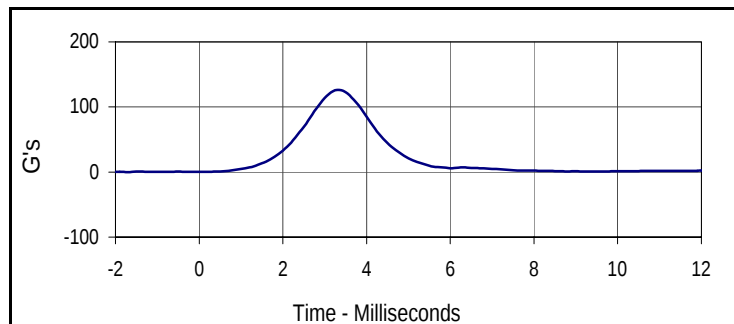
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
A	Sitting Height	mm	772 - 788	780	Pass
B	Shoulder Pivot Height	mm	437 - 453	445	Pass
C	H-Point Height	mm	79 - 89	85	Pass
D	H-Point from Seatback	mm	141 - 151	145	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	102	Pass
F	Thigh Clearance	mm	119 - 135	125	Pass
G	Head Breadth	mm	140 - 148	145	Pass
H	Head Back from Backline	mm	40 - 46	44	Pass
I	Head Depth	mm	178 - 188	184	Pass
J	Head Circumference	mm	541 - 551	545	Pass
K	Buttock to Knee Length	mm	514 - 540	527	Pass
L	Popliteal Height	mm	343 - 369	352	Pass
M	Knee Pivot to Floor Height	mm	392 - 409	401	Pass
N	Buttock Popliteal Length	mm	416 - 442	432	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	202	Pass
P	Foot Length	mm	216 - 232	221	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	315	Pass
R	Arm Length	mm	249 - 259	252	Pass
S	Knee Joint to Seatback	mm	477 - 493	481	Pass
V	Shoulder Width	mm	341 - 357	352	Pass
W	Foot Width	mm	78 - 94	86	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.: 299

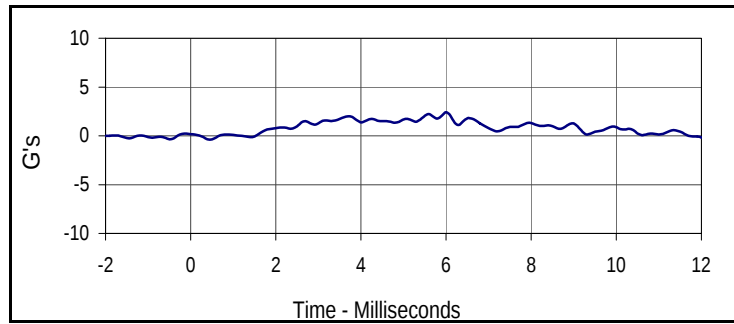
Test Date: 11/15/12
 Test I.D.: 299HD049



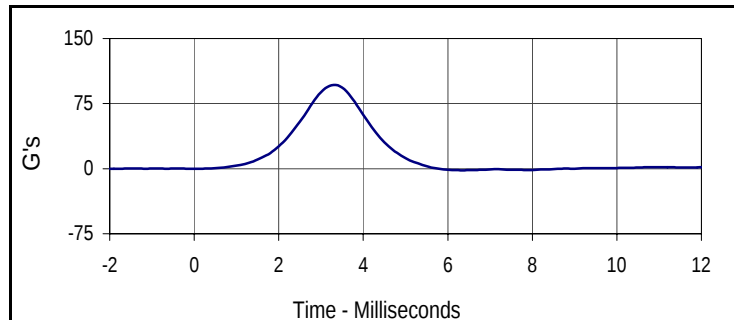
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	265	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		20.6	Pass
Humidity During Soak	Max	10.0 to 70.0	30.9	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.0	Pass
Peak Head Resultant Acceleration	G's	115 to 137	126.1	Pass
Peak Head X Acceleration	G's	<15	2.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.9	Pass
Overall Test Results				Pass



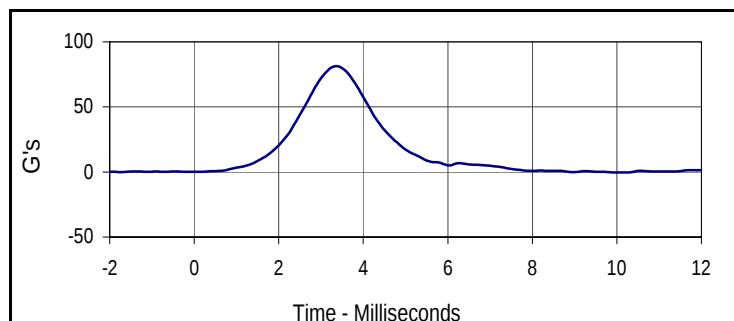
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
126.1	3.3	0.0	-1.7



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.4	6.0	-0.4	0.5



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
96.6	3.3	-1.9	6.4



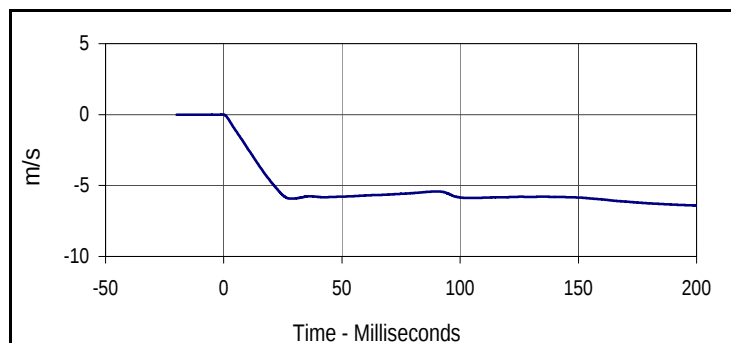
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
81.2	3.4	-0.4	9.9

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 299

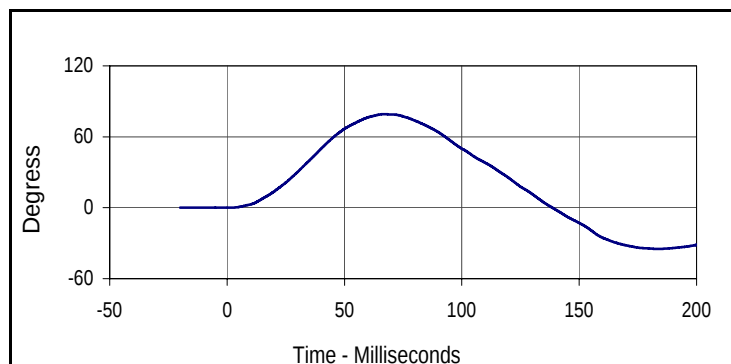
Test Date: 11/15/12
 Test I.D.: 299NB049



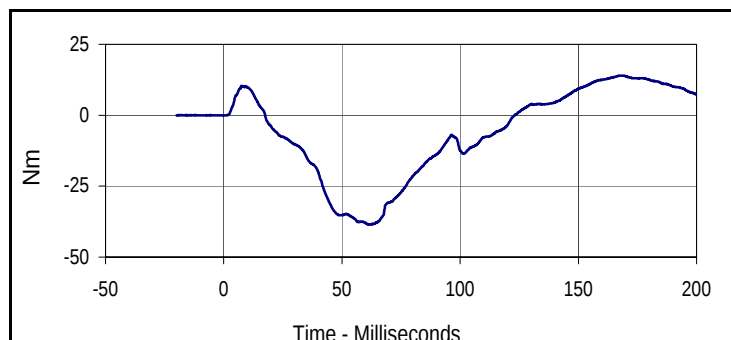
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	315	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	30.9	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.0	Pass
Pendulum Velocity	m/s	5.51 to 5.63	5.55	Pass
Pendulum Deceleration	10 msec	-2.20 to -2.80	-2.37	Pass
	15 msec	-3.30 to -4.10	-3.61	Pass
	20 msec	-4.40 to -5.40	-4.74	Pass
	25 msec	-5.40 to -6.10	-5.68	Pass
	25-100 msec	-5.50 to -6.20	-5.93	Pass
D-Plane Rotation	Max	71 to 81	79.1	Pass
	Time	50 to 70	66.7	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-38.5	Pass
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	123.1	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	-0.6	-6.4	200.0



Curve Description			
Maximum Translation Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
79.1	66.7	-34.8	183.4



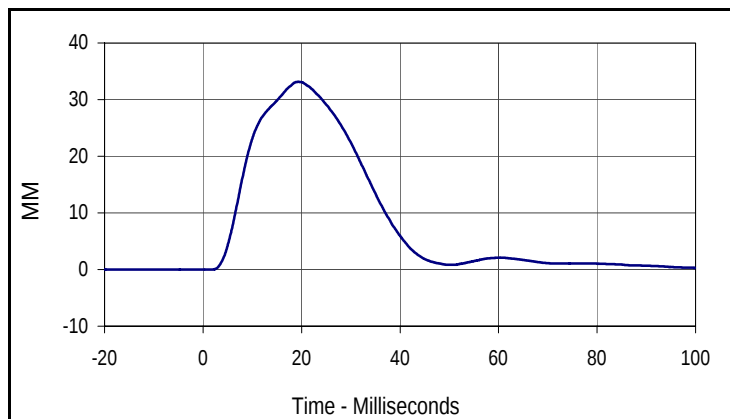
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
14.0	168.5	-38.5	62.0

Test Program: SID IIs Shoulder Impact Test
 ATD Serial No.: 299

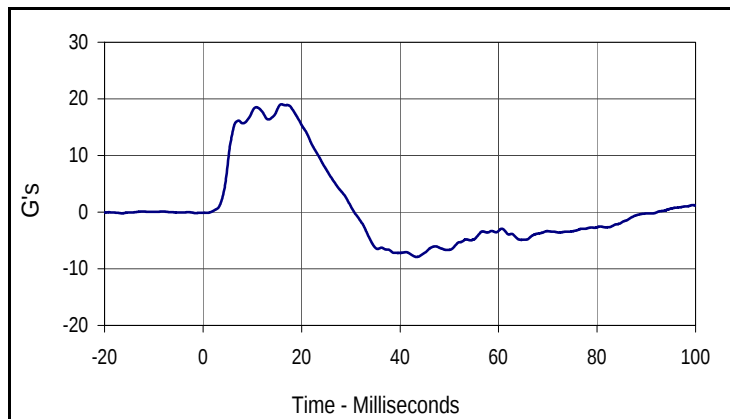
Test Date: 11/15/12
 Test I.D.: 299SH049



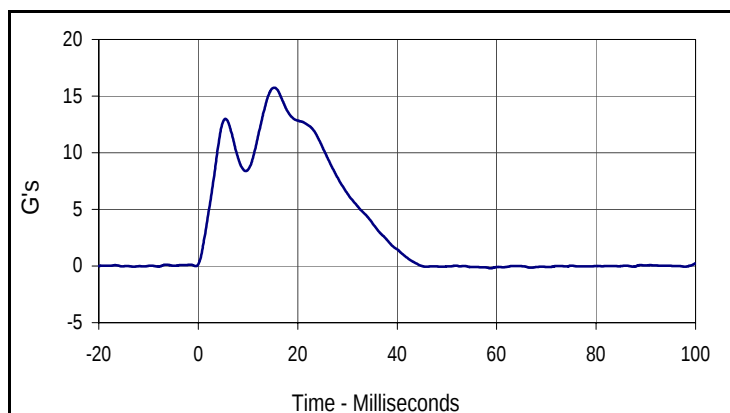
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	370	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.5	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	30.9	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.0	Pass
Impactor Velocity		m/s	4.20 to 4.40	4.33	Pass
Peak Shoulder Deflection		mm	28 to 37	33.1	Pass
Peak Lateral Spine Acceleration Y		G's	17 to 22	19.0	Pass
Peak Impactor Acceleration		G's	13 to 18	15.7	Pass
Overall Test Results				Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
33.1	19.4	0.0	-13.8



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.0	15.9	-7.9	43.4



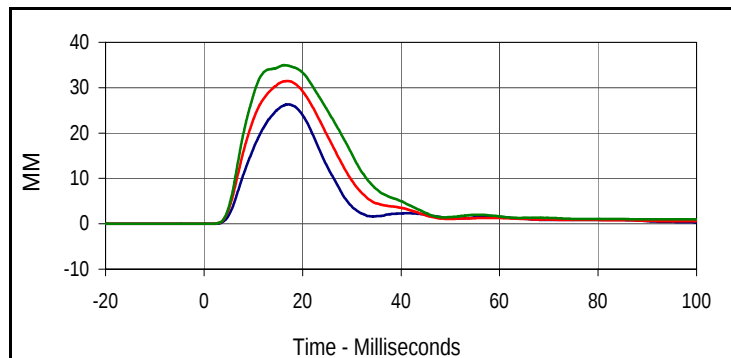
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.7	15.3	-0.2	58.7

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 299

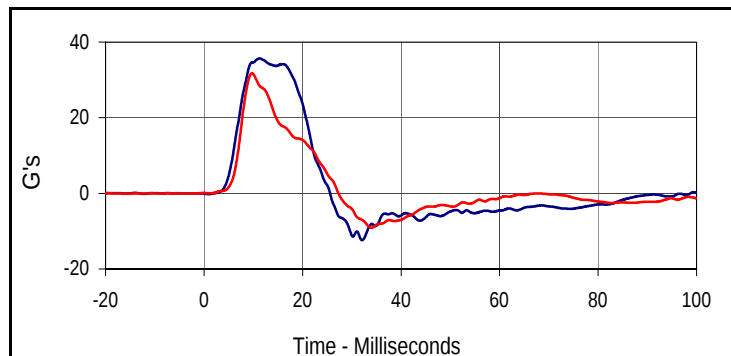
Test Date: 11/15/12
 Test I.D.: 299TWA049



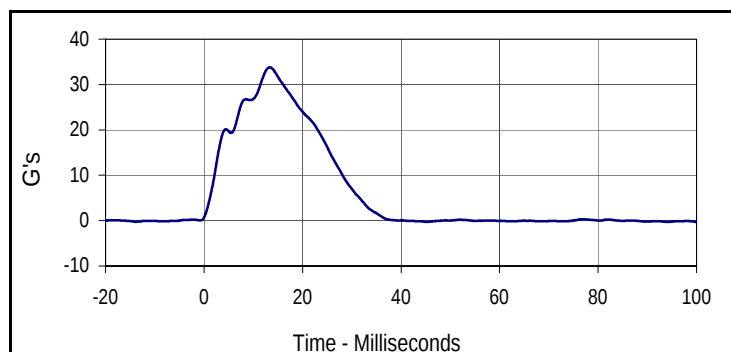
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	395	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	30.9	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.0	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.69	Pass
Peak Shoulder Deflection	mm	31 to 40	33.7	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	26.3	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.4	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	35.0	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	35.7	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	31.8	Pass
Peak Impactor Acceleration	G's	30 to 36	33.8	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
26.3	17.0	0.0	-7.4
Middle Thorax Deflection			
Max	Time	Min	Time
31.4	16.9	0.0	-9.2
Lower Thorax Deflection			
Max	Time	Min	Time
35.0	16.2	0.0	-7.4



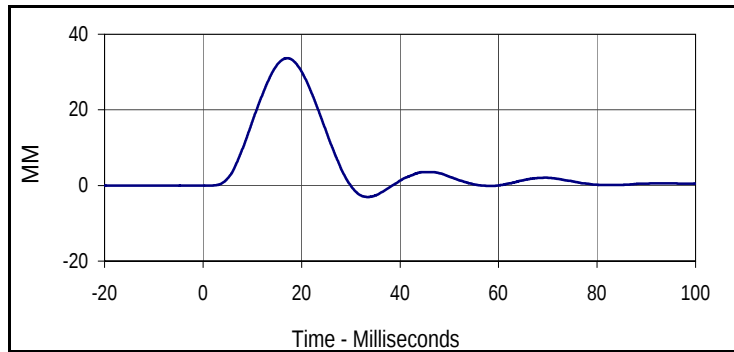
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
35.7	11.3	-12.4	32.1
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
31.8	9.7	-9.1	34.0



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
33.8	13.3	-0.3	99.9

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 299

Test Date: 11/15/12
 Test I.D.: 299TWA049



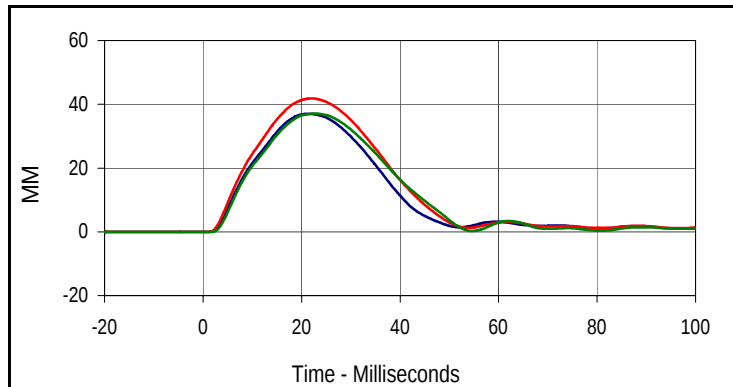
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
33.7	17.1	-3.1	33.4

Test Program: SID IIs Thorax without Arm Impact Test
 ATD Serial No.: 299

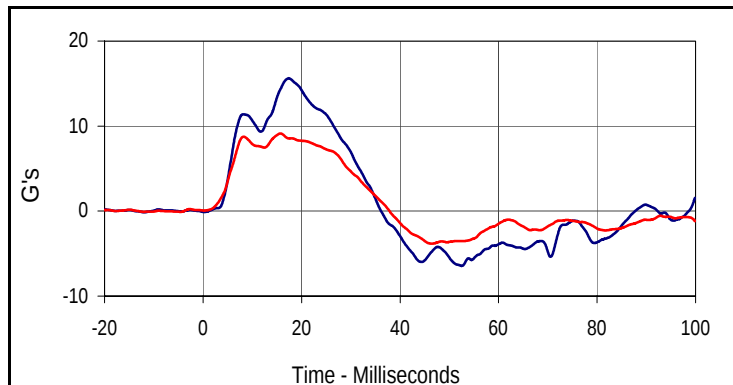
Test Date: 11/15/12
 Test I.D.: 299TWOA049



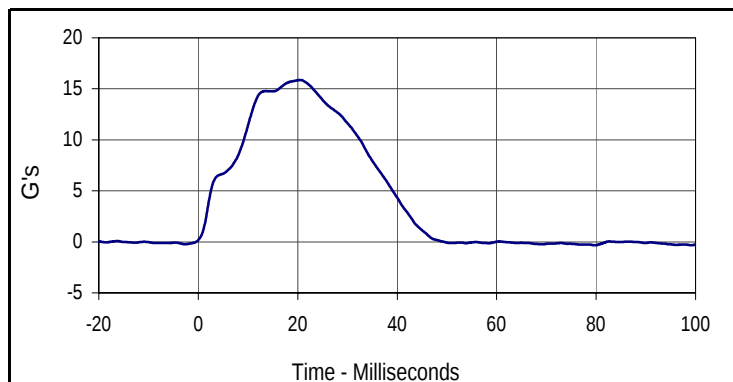
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	420	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.5	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	30.9	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.0	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.31	Pass
Peak Upper Thorax Rib Deflection		mm	32 to 40	37.0	Pass
Peak Middle Thorax Rib Deflection		mm	39 to 45	41.9	Pass
Peak Lower Thorax Rib Deflection		mm	35 to 43	37.1	Pass
Peak Upper Spine Y Acceleration		G's	13 to 17	15.6	Pass
Peak Lower Spine Y Acceleration		G's	7 to 11	9.1	Pass
Peak Impactor Acceleration		G's	14 to 18	15.9	Pass
Overall Test Results				Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
37.0	21.6	0.0	-2.4
Middle Thorax Deflection			
Max	Time	Min	Time
41.9	22.1	0.0	-9.7
Lower Thorax Deflection			
Max	Time	Min	Time
37.1	23.0	0.0	-4.1



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.6	17.4	-6.4	52.5
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.1	15.7	-3.8	46.4



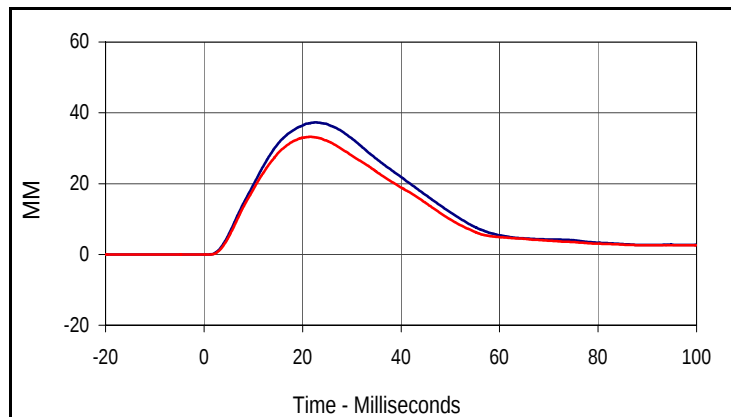
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
15.9	20.4	-0.3	79.6

Test Program: SID IIs Abdomen Impact Test
 ATD Serial No.: 299

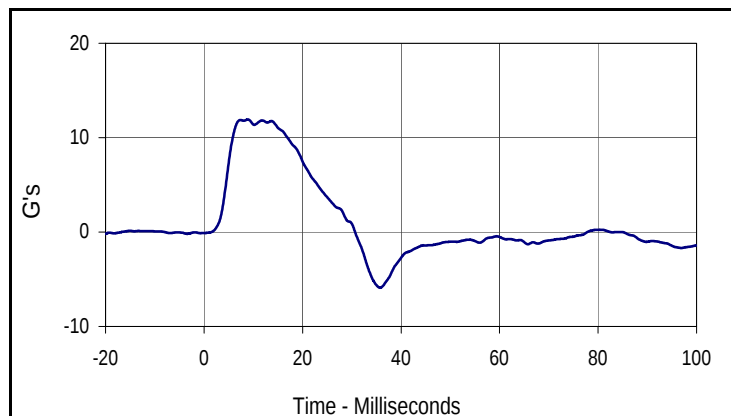
Test Date: 11/15/12
 Test I.D.: 299ABD049



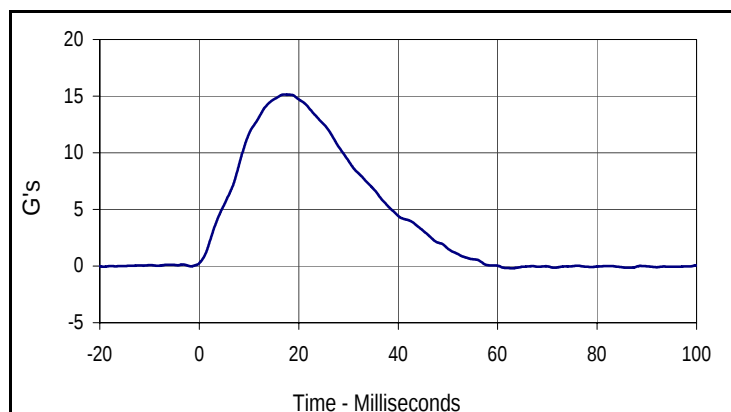
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	445	Pass
Temperature During Soak	Max °C	20.6 to 22.2	21.5	Pass
	Min °C		20.8	Pass
Humidity During Soak	Max %	10.0 to 70.0	30.9	Pass
	Min %		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.9	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.28	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	37.3	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	33.2	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	11.9	Pass
Peak Impactor Acceleration	G's	12 to 16	15.1	Pass
Overall Test Results			Pass	



Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
37.3	22.6	0.0	-11.0
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
33.2	21.6	0.0	-14.8

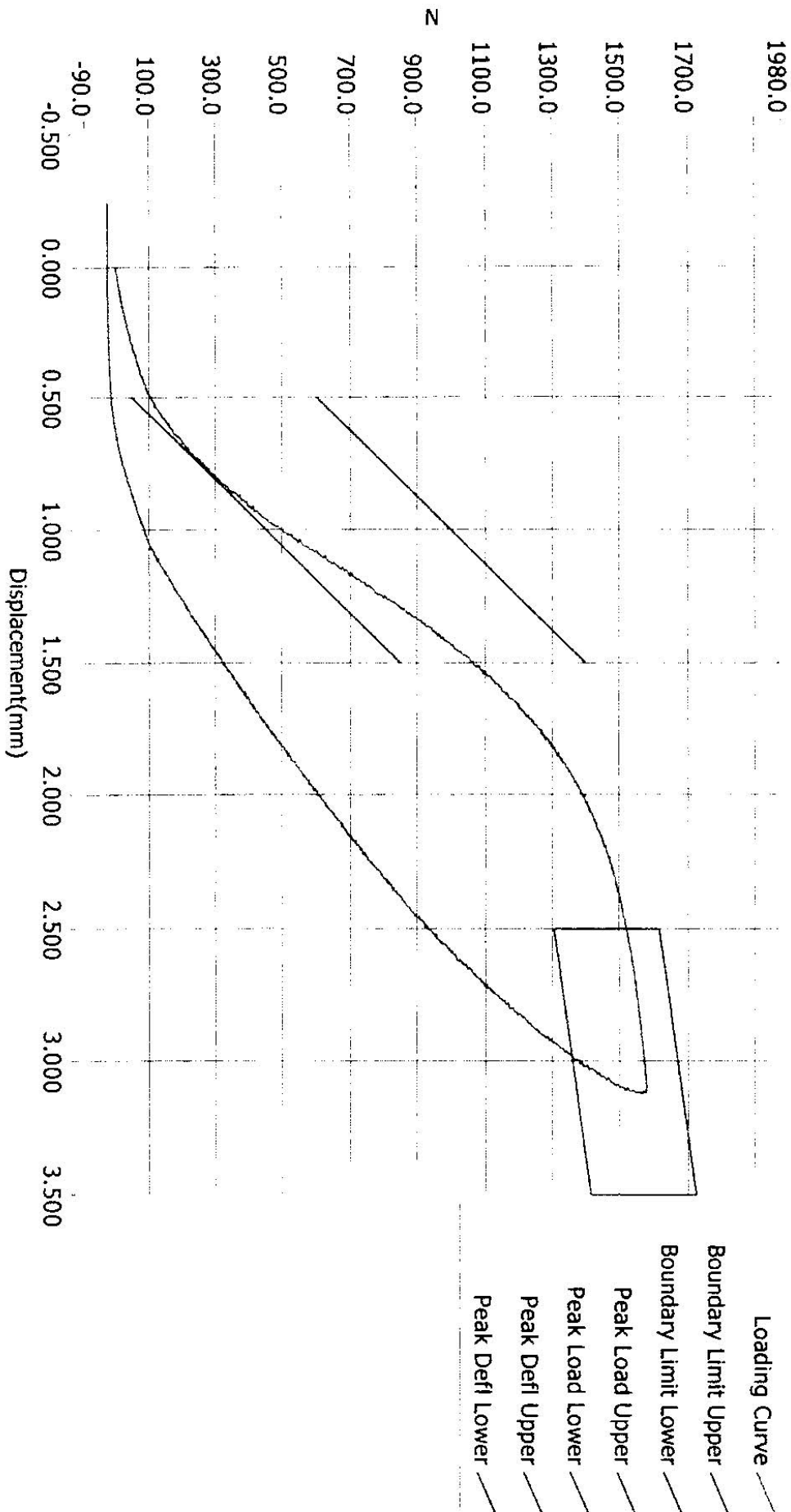


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.9	8.9	-5.9	35.7



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.1	17.0	-0.2	62.9

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

<u>Test ID</u>	<u>Part Serial Number</u>	<u>Test Date</u>	<u>Test Time</u>
49151	12/8/2011	12:39 AM	
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
N/A	SIDIIs		

Current Date : 12/8/2011

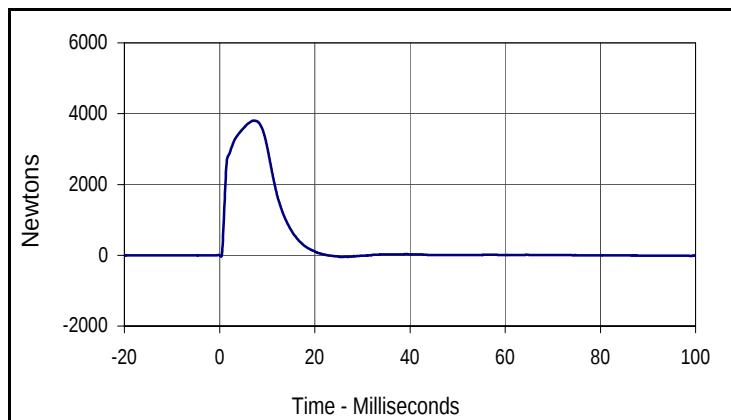
Current Time : 00:40:40

Test Program: SID IIs Pelvis Acetabulum Impact Test
 ATD Serial No.: 299

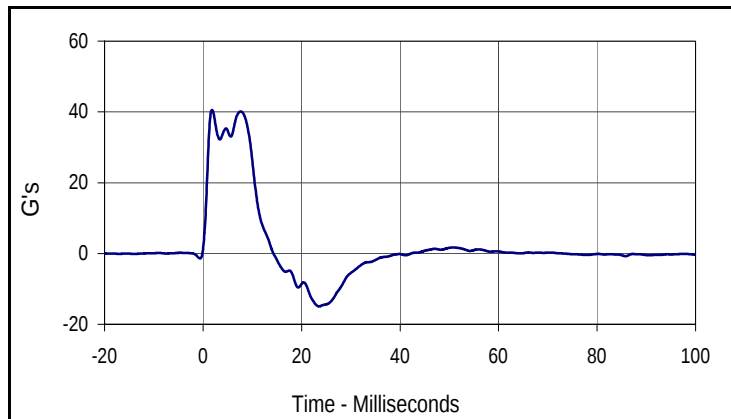
Test Date: 11/15/12
 Test I.D.: 299ACET049



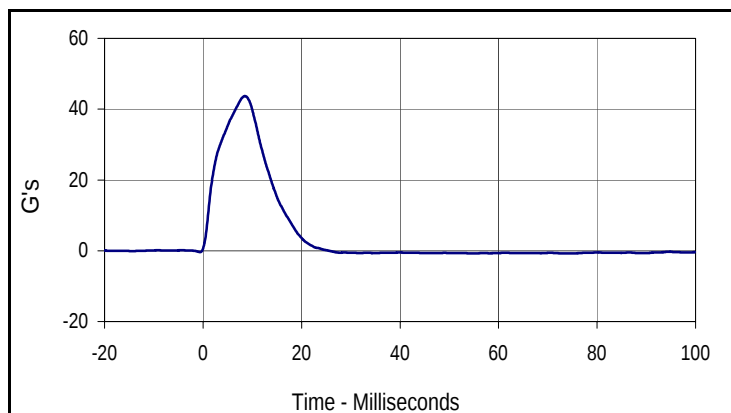
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	470	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	30.9	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.0	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.70	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	3804.6	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	40.1	Pass
Peak Impactor Acceleration	G's	38 to 47	43.7	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3804.6	7.2	-47.4	26.9



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
40.6	1.8	-14.9	23.5



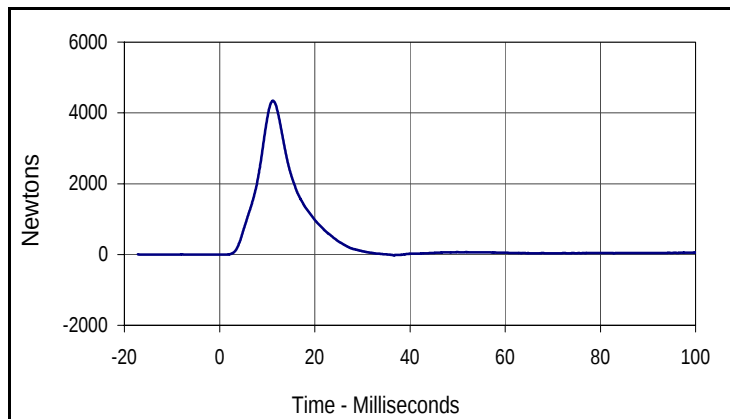
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
43.7	8.5	-0.8	75.1

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 299

Test Date: 11/15/12
 Test I.D.: 299PL049



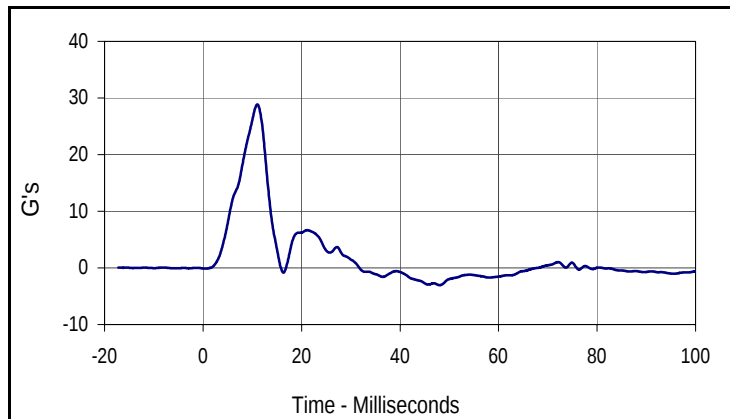
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	525	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		20.8	Pass
Humidity During Soak	Max	10.0 to 70.0	30.9	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.0	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.35	Pass
Peak Iliac Force	Newtons	4100 to 5100	4344.2	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	28.9	Pass
Peak Impactor Acceleration	G's	36 to 45	40.5	Pass
Overall Test Results			Pass	



Curve Description

Pelvis Iliac Force

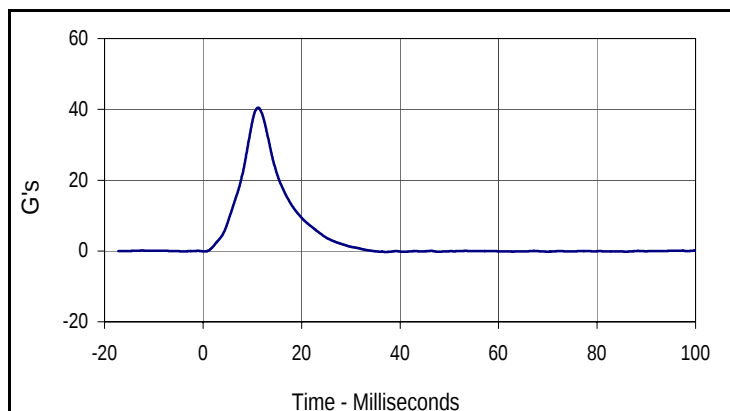
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4344.2	11.2	-24.1	36.6



Curve Description

Pelvis Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
28.9	11.0	-3.0	48.1



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
40.5	11.2	-0.3	37.1

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N 299			
				Serial Number	Manufacturer	Calibration	
Head Accelerometers				X	P51926	Endevco	10/2/12
				Y	P51929	Endevco	10/2/12
				Z	P51934	Endevco	10/2/12
Displacement Potentiometers	Shoulder			Y	1074	FTSS	10/5/12
	Thoracic Rib	Upper	Y	1143	FTSS	10/5/12	
		Middle	Y	1160	FTSS	10/5/12	
		Lower	Y	1213	FTSS	10/5/12	
	Abdominal Rib	Upper	Y	1218	FTSS	10/5/12	
		Lower	Y	1234	FTSS	10/5/12	
Lower Spine Accelerometers (T12)				X	P63999	Endevco	10/3/12
				Y	P58872	Endevco	10/3/12
				Z	P58795	Endevco	10/3/12
Acetabulum Load Cell				Y	272	Denton	5/24/12
Iliac Wing Load Cell				Y	284	Denton	5/24/12
Pelvis Plug (Struck Side)					49096	FTSS	12/7/11
Pelvis Plug (Non-Struck Side)					45980	FTSS	9/20/11

TABLE 2 – Vehicle Instrumentation

Vehicle Instrumentation		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	Ketx5a	ICSensor	8/20/12
Vehicle Center of Gravity	Y	Ketx5b	ICSensor	8/20/12
Vehicle Center of Gravity	Z	Ketx5c	ICSensor	8/20/12
Left Floor Sill	Y	13380	Endevco	6/21/12
A-Pillar Sill	Y	13346	Endevco	6/18/12
A-Pillar Low	Y	13325	Endevco	6/18/12
A-Pillar Mid	Y	12898	Endevco	1/11/12
B-Pillar Sill	Y	13320	Endevco	6/18/12
B-Pillar Low	Y	13336	Endevco	6/28/12
B-Pillar Mid	Y	12862	Endevco	1/11/12
Driver Seat	Y	12919	Endevco	10/30/12
Engine Top	X	13316	Endevco	6/18/12
Engine Top	Y	12887	Endevco	12/17/11
Firewall	Y	13373	Endevco	6/26/12
Right Roof	Y	13330	Endevco	6/18/12
Right Floor Sill	Y	13375	Endevco	7/9/12
Rear Floorpan	X	12489	Endevco	2/14/12
Rear Floorpan	Y	13322	Endevco	6/18/12

TABLE 3 – Pole Instrumentation

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	131822A	Interface	9/17/12
Load Cell 2	132304A	Interface	9/17/12
Load Cell 3	19477	Interface	9/18/12
Load Cell 4	19325	Interface	9/18/12
Load Cell 5	131827A	Interface	9/18/12
Load Cell 6	132302A	Interface	9/18/12
Load Cell 7	19267	Interface	9/19/12
Load Cell 8	19321	Interface	9/19/12