

REPORT NUMBER: SPNCAP-KAR-12-021

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

**HONDA OF AMERICA MFG., INC.
2012 ACURA TL 4-DOOR SEDAN**

NHTSA No: MC5315

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



DECEMBER 19, 2011

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**

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. SPNCAP-KAR-12-021	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 2012 Acura TL 4-Door Sedan NHTSA No. MC5315		5. Report Date December 19, 2011																												
		6. Performing Organization Code KAR																												
7. Authors Mr. Denver Schaffarzick, Project Engineer, KARCO Mr. Frank Richardson, Program Manager, KARCO		8. Performing Organization Report No. TR-P31007-08-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, Dec. 5 - 19, 2011																												
		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 2012 Acura TL 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 December 5, 2011. The impact velocity was 31.6 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 8.3 deg. C. The target vehicle's maximum post-test static crush was 465 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>211</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>mm</td> <td>82</td> <td>39</td> </tr> <tr> <td>Total Pelvic Force (Sum of Acetubular and Iliac Forces)</td> <td>N</td> <td>5525</td> <td>3065</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>N</td> <td>38</td> <td>19</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45</td> <td>17</td> </tr> </tbody> </table> The doors on the struck side of the vehicle did not separate from the body at the hinges or latches, and the opposite doors did not open during the side impact event.				Measurement Description	Driver ATD (ES-2re)			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	211	Resultant Lower Spine Acceleration	mm	82	39	Total Pelvic Force (Sum of Acetubular and Iliac Forces)	N	5525	3065	Maximum Thoracic Rib Deflection	N	38	19	Maximum Abdominal Rib Deflection	mm	45	17
Measurement Description	Driver ATD (ES-2re)																													
	Units	Threshold	Result																											
Head Injury Criteria (HIC ₃₆)		1000	211																											
Resultant Lower Spine Acceleration	mm	82	39																											
Total Pelvic Force (Sum of Acetubular and Iliac Forces)	N	5525	3065																											
Maximum Thoracic Rib Deflection	N	38	19																											
Maximum Abdominal Rib Deflection	mm	45	17																											
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 Reference Division 1200 New Jersey Ave., SE Room W43-410 Washington, DC 20590																												
19. Security Classification of this report UNCLASSIFIED	20. Security Classification of this page UNCLASSIFIED	21. No. of Pages 101	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 2012 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 2012 Acura TL 4-door sedan. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated August 2011.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2012 Acura TL 4-door sedan. The subject vehicle was towed into the rigid pole at an angle of 74.7° and a velocity of 31.6 km/h. The test was conducted by KARCO Engineering, LLC. in Adelanto, California, on December 5, 2011. 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 August 2011. Camera locations and other pertinent camera information are included in this report.

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

- 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.

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	211
Lower Spine (T12) Resultant Acceleration	g	82	39
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3065
Maximum Thoracic Rib Deflection	mm	38*	19
Maximum Abdominal Rib Deflection	mm	45*	17

*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 (Torso/Pelvis)	Yes	Yes	No	
Side Airbag 2 (Curtain)	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	
Other				

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: 2012 Acura TL 4-Door Sedan NHTSA No. MC5315
Test Program: NCAP Side Pole Impact Test Test Date: 12/05/11

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	29.573
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: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MC5315
Model Year	2012
Make	Acura
Model	TL
Body Style	4-Door Sedan
VIN	19UUA8F29CA006062
Body Color	Graphite Luster Metallic
Odometer Reading (km / mi)	103 / 64
Engine Displacement (L)	3.5
Type / No. of Cylinders	V6
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	Front
Roof Rack	No
Sunroof / T-Top	Yes
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes
All Wheel Drive (AWD)	No

Traction Control System (TCS)	Yes
Auto-Levelling System	No
Automatic Door Locks	Yes
Power Window Auto-Reverse	Yes
Other Optional Feature	None
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	Active Head Restraint

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	May-11
Vehicle Type	Passenger

GVWR (kg)	2130
GAWR Front (kg)	1165
GAWR Rear (kg)	975

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

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

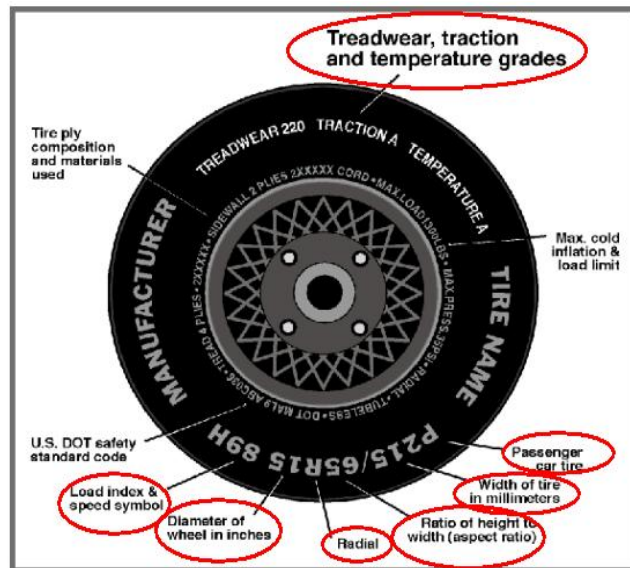
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11



TIRE PLACARD INFORMATION

Measured Parameter	Front	Rear
Recommended Cold Tire Pressure (kPa)	220	220
Recommended Tire Size	P245/50R17	P245/50R17

VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	350	350
Tire Size on Vehicle	P245/5017	P245/5017
Tire Manufacturer	Bridgestone	Bridgestone
Tire Name	Tuanza	Tuanza
Tire Type	Passenger	Passenger
Tire Width	245	245
Aspect Ratio	50	50
Radial	Yes	Yes
Wheel Diameter	17	17
Load Index/Speed Symbol	98V	98V
Treadware	260	260
Traction Grade	A	A
Temperature Grade	A	A
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	200	200	240	200
Tire Placard	kPa	220	220	220	220
Owner's Manual	kPa	220	220	220	220
As Tested	kPa	220	220	220	220

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	530.0	339.5		549.0	366.0		543.5	382.0	
Right	kg	506.0	324.5		521.0	349.0		507.5	358.5	
Ratio	%	60.9%	39.1%	100.0%	59.9%	40.1%	100.0%	58.7%	41.3%	100.0%
Total	kg	1036.0	664.0	1700.0	1070.0	715.0	1785.0	1051.0	740.5	1791.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1700.0	A
Actual Weight of 1 P5720 ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	44.8	C
Calculated Vehicle Target Wt (TVTW)	kg	1793.8	A+B+C

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e.

Calculated Test Vehicle Target Weight -4.5 kg to -9 kg)?

☒ Yes

☐ No

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Non-Struck Side Door Panels	8.0
Spare Tire and Tools	18.5
Trunk Liner	10.0
	2.5
Ballast / Equipment Added	88.0

DATA SHEET NO. 1 ... (CONTINUED)**GENERAL TEST AND VEHICLE PARAMETER DATA**Test Vehicle: 2012 Acura TL 4-Door SedanNHTSA No. MC5315Test Program: NCAP Side Pole Impact TestTest Date: 12/05/11**TEST VEHICLE ATTITUDE AND CG**

Measurement Description	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement** *
Driver Door Sill Angle (front-to-rear)*	°	0.3	0.2	0.1	Yes
Front Passenger Sill Angle (front-to-rear)*	°	-0.1	-0.2	-0.3	Yes
Front Bumper-Line Angle (left-to-right)**	°	-0.1	-0.1	-0.1	Yes
Rear Bumper-Line Angle (left-to-right)**	°	-0.1	-0.1	-0.1	Yes
Vehicle CG (Aft of Front Axle)	mm	1082	1110	1145	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	19	20	27	

*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. 2

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

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11

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	7.0	0.0	3.5
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	529	Max	530	542	554
			Mid	505	517	529
			Min	481	493	505
Front Passenger Seat	3.5	558	Max	559	571	583
			Mid	534	546	558
			Min	510	522	534
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: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

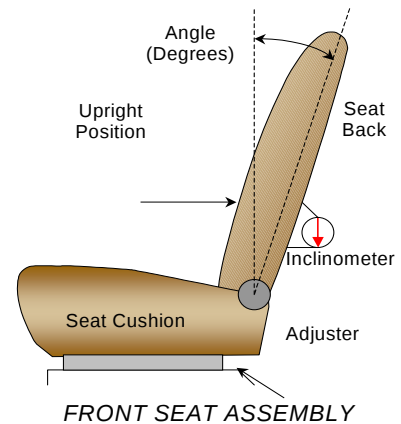
Test Date: 12/05/11

SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	239	N/A	0	N/A
Front Passenger Seat	239	N/A	0	N/A
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 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	76.5	N/A	4.7	N/A
Front Passenger Seat	77.0	N/A	4.7	N/A
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

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1.

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

DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11

HEAD RESTRAINT ADJUSTMENT

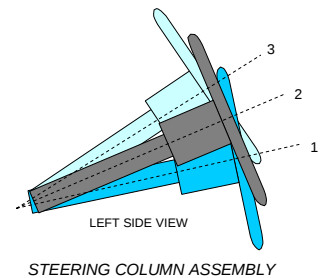
The driver's head restraint is adjusted to the lowest and most full forward in-use position.

	Total No. of Positions	Placed in Position
Driver Seat	6 Vertical	Full Down

STEERING COLUMN ADJUSTMENT

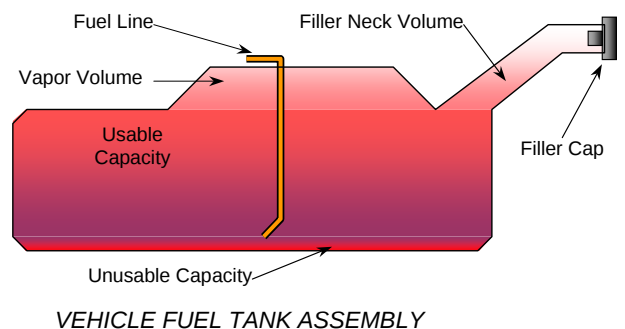
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of the geometric locus it describes when it moves through its full range of motion.

	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	19.1	0
Geometric Center - Position 2	21.8	17
Uppermost - Position 3	24.5	34
Telescoping Steering Wheel Travel		34
Test Position	21.8	17



FUEL PUMP

The vehicle is equipped with an electric fuel pump. The fuel pump will pump fuel when the ignition key is turned to the "on" position.



DATA SHEET NO. 2 ... (CONTINUED)**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA**Test Vehicle: 2012 Acura TL 4-Door SedanNHTSA No. MC5315Test Program: NCAP Side Pole Impact TestTest Date: 12/05/11**FUEL TANK CAPACITY**

Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	70.02
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	65.12
Actual amount of Solvent Used in Test	65.14
1/3 of Usable Capacity	23.34

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

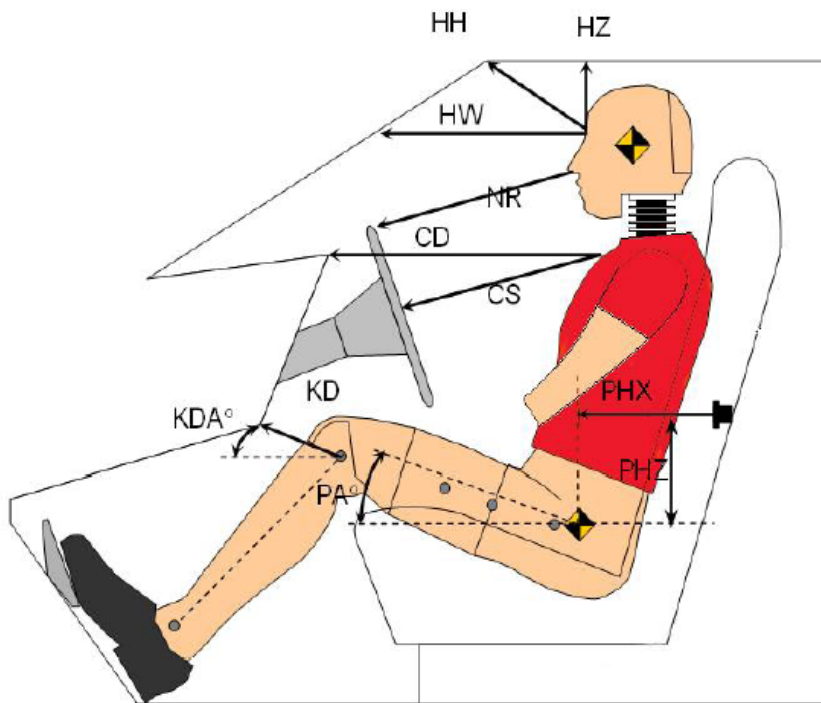
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11



DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	240	
HW	Head to Windshield	593	
HZ	Head to Roof	185	
NR	Nose to Rim	237	
CD	Chest to Dash	402	
CS	Chest to Steering Wheel	187	
KD(L)/KDA(L)°	Left Knee to Dash	125	37.6
KD(R)/KDA(R)°	Right Knee to Dash	120	42.0
PAX°	Pelvic Tilt Angle (x-axis)		19.8
PAY°	Pelvic Tilt Angle (y-axis)		0.2
PHX	Hip Point to Striker (x-axis)	338	
PHZ	Hip Point to Striker (z-axis)	200	

DATA SHEET NO. 4

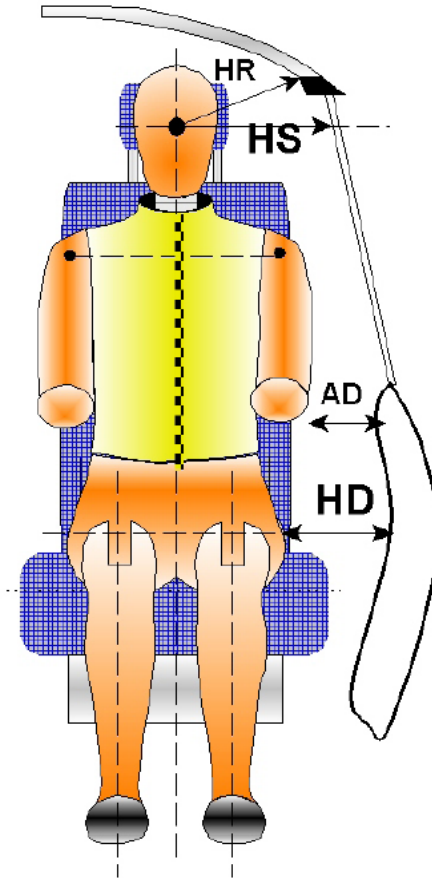
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11



DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	239
HS	Head to Side Window	mm	334
AD	Arm to Door	mm	180
HD	H-Point to Door	mm	185

DATA SHEET NO. 5

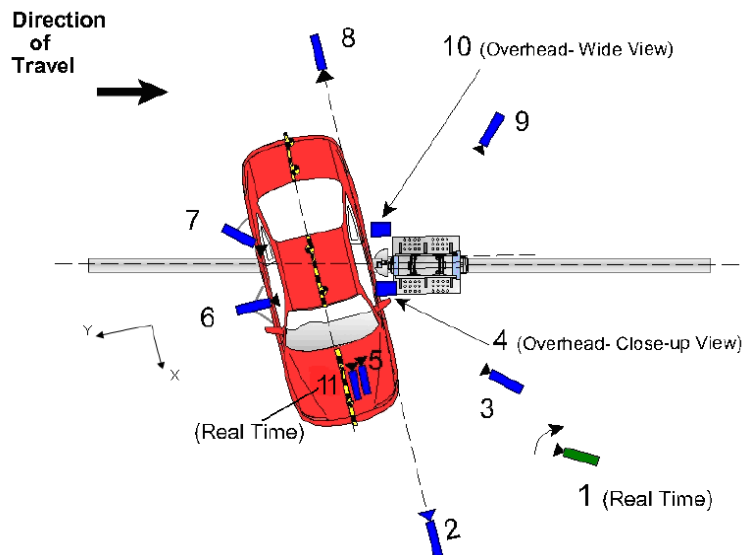
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11



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	1.34	0.46	-1.28	24	1000
6	On-Board - Dummy Side View	-0.02	1.61	-1.07	14	1000
7	On-Board - Dummy Rear Oblique View	-0.91	1.61	-1.09	14	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	1.34	0.51	-1.27		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

INSTRUMENTATION

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

DATA SHEET NO. 6

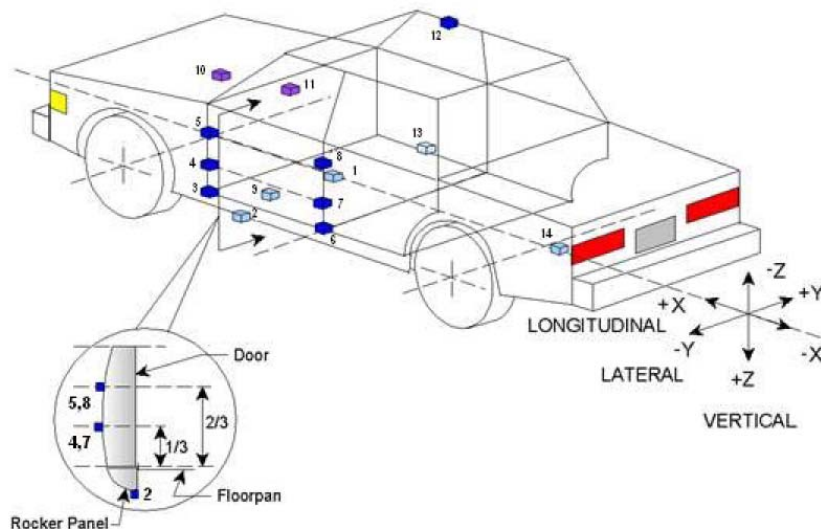
TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2089	0	-350
2	Left Floor Sill	3305	-675	-152
3	A-Pillar Sill	3352	-859	-325
4	A-Pillar Low	3352	-859	-500
5	A-Pillar Mid	3352	-859	-745
6	B-Pillar Sill	2176	-775	-345
7	B-Pillar Low	2176	-775	-480
8	B-Pillar Mid	2176	-775	-710
9	Driver Seat Track	2525	-590	-280
10	Engine Top	3995	270	-670
11	Firewall	3585	15	-830
12	Right Roof	2270	518	-1405
13	Right Floor Sill	2195	705	-291
14	Rear Floorpan	389	-425	-495

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

DATA SHEET NO. 7

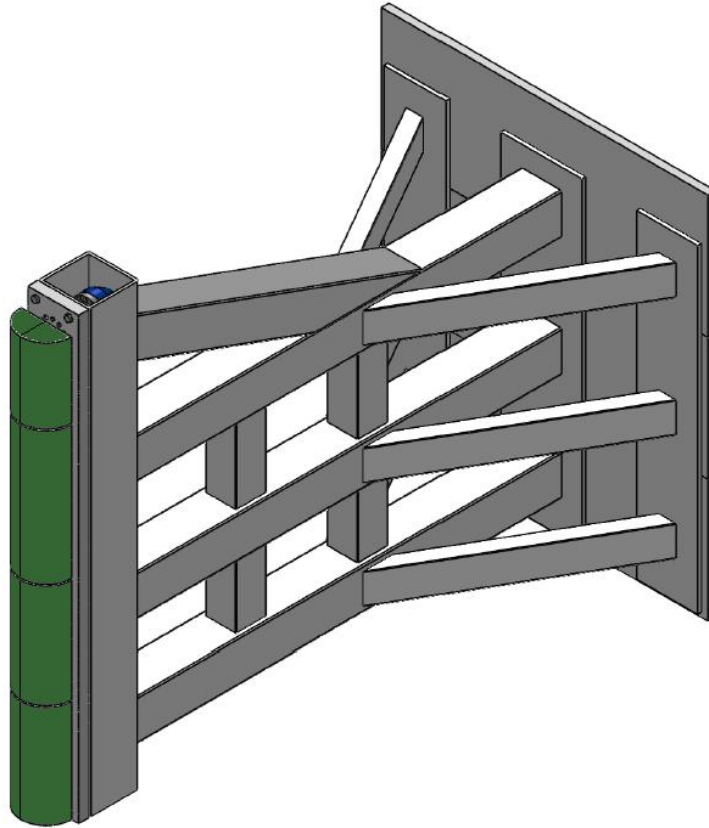
RIGID POLE LOAD CELL DATA

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11



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: 2012 Acura TL 4-Door SedanNHTSA No. MC5315Test Program: NCAP Side Pole Impact TestTest Date: 12/05/11**TEST DUMMY INFORMATION AND CONTACT POINTS**

Dummy Body Part	Driver SID-11s Dummy
Face	Curtain Airbag
Top of Head	Curtain Airbag
Left Side of Head	Curtain Airbag
Back of Head	Curtain Airbag, Head Restraint
Left Shoulder	Torso/Pelvis Airbag
Upper Torso	Torso/Pelvis Airbag, Seat
Lower Torso	Torso/Pelvis Airbag, Seat
Left Hip	Torso/Pelvis Airbag
Left Knee	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: 2012 Acura TL 4-Door Sedan NHTSA No. MC5315
 Test Program: NCAP Side Pole Impact Test Test Date: 12/05/11

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		1153
Actual Impact Point (Aft of Front Axle)	mm		1172
Horizontal Offset (+ forward / - rearward)	mm	± 38 of Intended Impact Point	-19
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	°	75 ± 3	74.7
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	31.6
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	31.6

DATA SHEET NO. 9

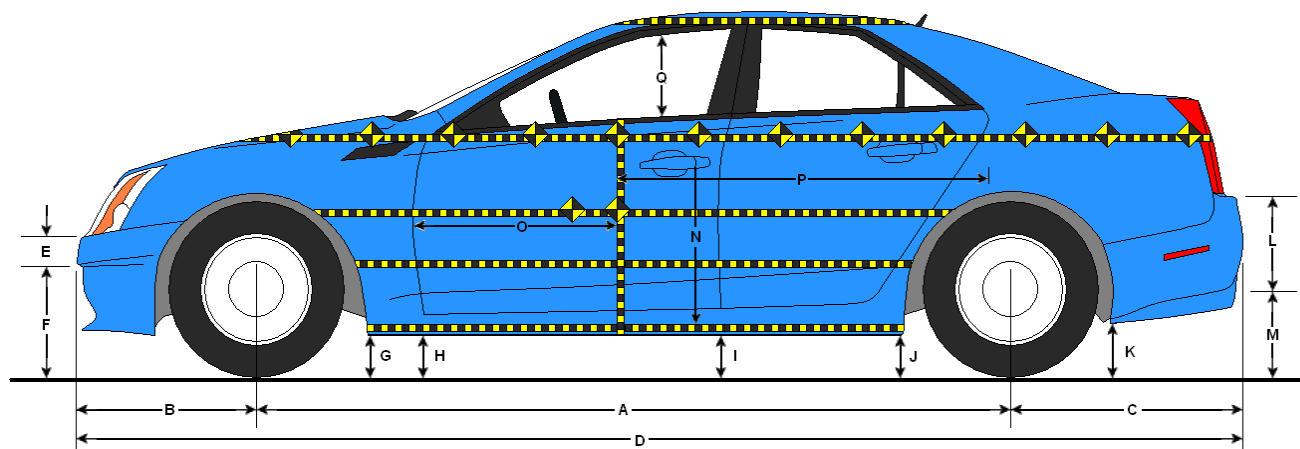
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2771	2691	-80
B	Front Axle to FSOV	1015	1060	45
C	Rear Axle to RSOV	1137	1143	6
D	Total Length at Centerline	4901	4893	-8
E	Front Bumper Thickness	287	287	0
F	Front Bumper Bottom to Ground	219	277	58
G	Sill Height at Front Wheel Well	129	155	26
H	Sill Height at Front Door Leading Edge	163	186	23
I	Sill Height at B-Pillar	227	276	49
J1	Sill Height at Rear Wheel Well	157	204	47
J2	Pinch Weld Height at Rear Wheel Well	148	201	53
K	Sill Height Aft of Rear Wheel Well	184	235	51
L	Rear Bumper Thickness	285	283	-2
M	Rear Bumper Bottom to Ground	375	433	58
N	Sill Height to Bottom of Front Window Sill	599	716	117
O	Front Door Leading Edge to Impact CL	624	555	-69
P	Rear Door Trailing Edge to Impact CL	1460	1356	-104
Q	Front Window Opening	392	404	12
R	Right Side Length	3318	3339	21
S	Left Side Length	3314	3207	-107
T	Vehicle Width at B-Pillar	1851	1703	-148

All measurements in mm with tolerance of ± 3 mm

DATA SHEET NO. 10

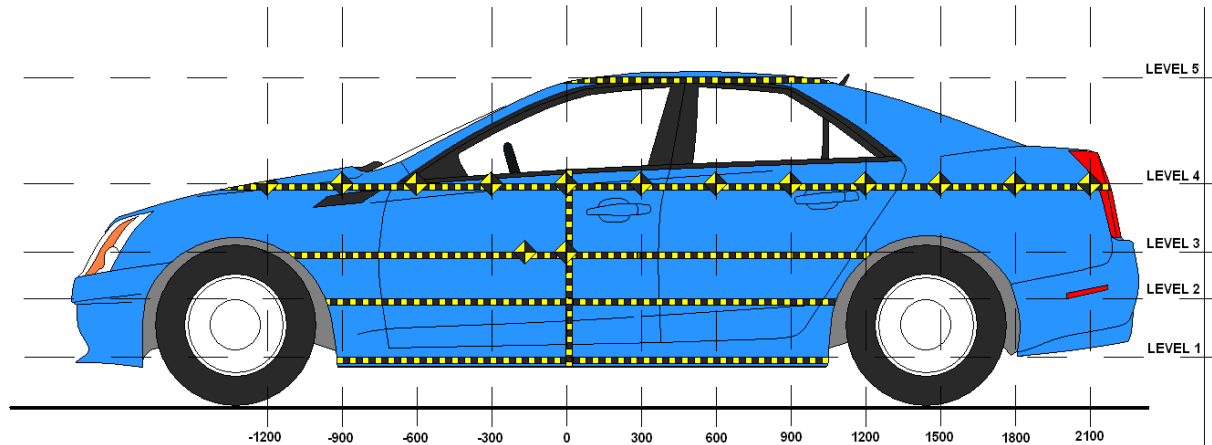
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Acura TL 4-Door Sedan

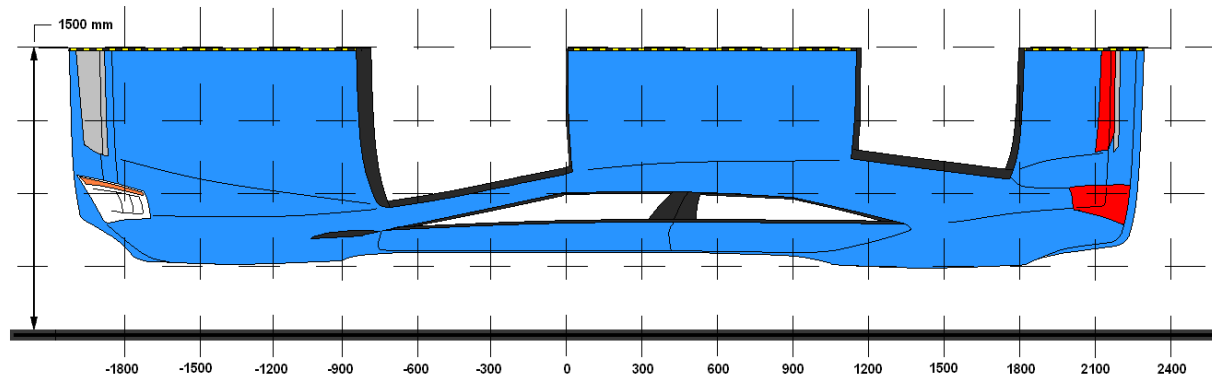
NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11



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	211	404	0
2	Occupant H-Point	483	457	0
3	Mid-Door	604	465	0
4	Window Sill	882	400	0
5	Window Top	1357	190	150

DATA SHEET NO. 10 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11

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			559	690				639	763				80	73	
-750		566	578	682			644	642	767			78	64	85	
-600	605	583	581	674		732	719	700	775		127	136	119	101	
-450	612	580	578	669		794	783	783	812		182	203	205	143	
-300	611	577	575	661		852	840	848	882		241	263	273	221	
-150	611	576	574	656		922	935	948	952		311	359	374	296	
0	611	575	573	649		1015	1032	1038	1049		404	457	465	400	
150	611	575	572	643	897	956	1000	1018	1042	1087	345	425	446	399	190
300	612	575	573	636	891	858	899	901	940	1054	246	324	328	304	163
450	614	575	573	629	889	783	790	790	841	1021	169	215	217	212	132
600	616	577	575	624	887	730	741	743	795	993	114	164	168	171	106
750	618	578	577	620	885	694	704	707	753	968	76	126	130	133	83
900	618	580	579	617	885	670	668	673	714	945	52	88	94	97	60
1050	612	580	581	619	887	640	631	637	679	928	28	51	56	60	41
1200	601	569	577	594	892	607	585	596	619	928	6	16	19	25	36
1350			560	618				594	604				34	-14	
1500				629					655					26	
1650				636					649					13	
1800				644					665					21	
1950															
2100															
2250															
2400															
2550															
2700															
2850															

DATA SHEET NO. 10 ... (CONTINUED)

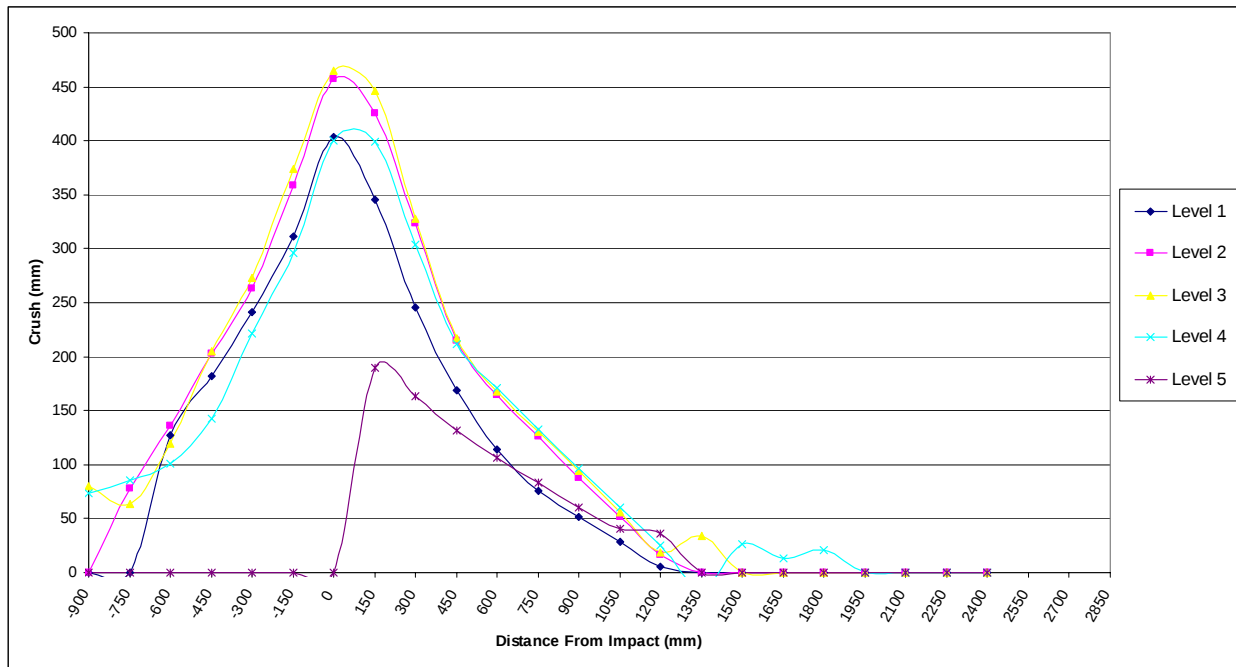
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11



DATA SHEET NO. 11

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

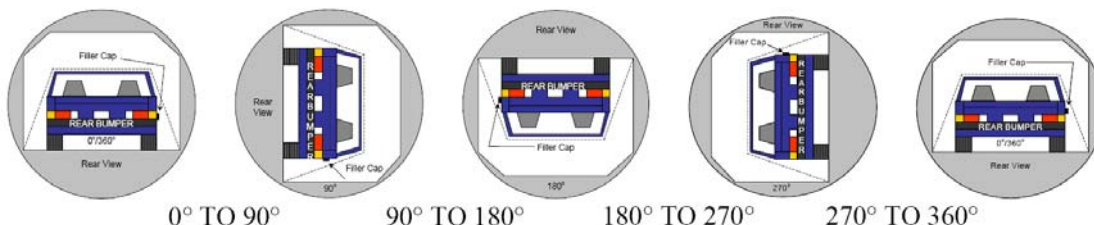
Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11

Temperature at Time of Impact: 8.3° C

Test Time: 12:15 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°	80	300	380
90° To 180°	80	300	380
180° To 270°	79	300	379
270° To 360°	80	300	380

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

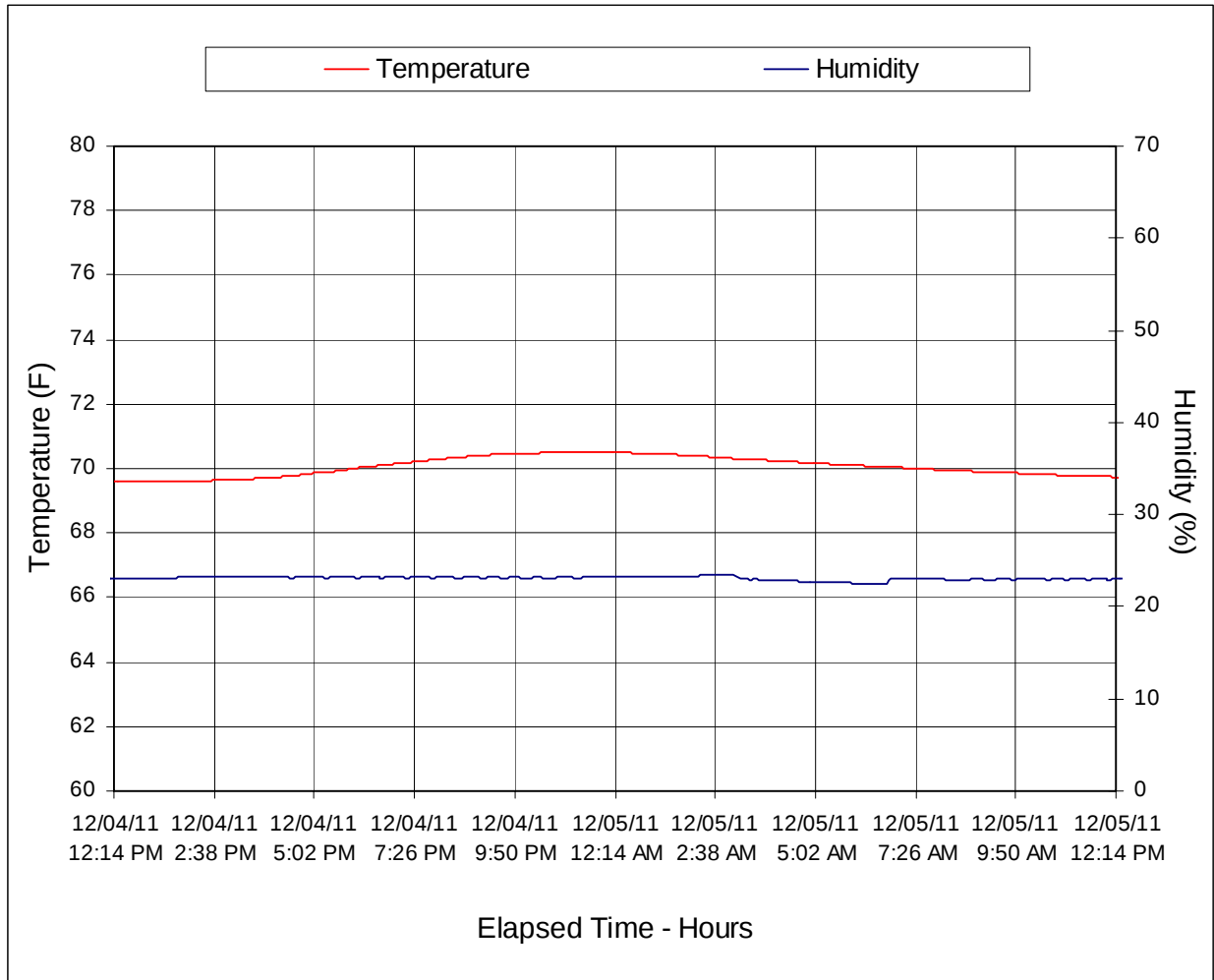
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2012 Acura TL 4-Door Sedan

NHTSA No. MC5315

Test Program: NCAP Side Pole Impact Test

Test Date: 12/05/11



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 Impact Zone	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 Head and Chest	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 Front 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	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 Locations	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	Pre-Test View of Fuel Filler Cap or Fuel Filler Neck	A-26
53	Post-Test View of Fuel Filler Cap or Fuel Filler Neck	A-27
54	Close-Up View of Vehicle's Certification Label	A-27
55	Close-Up View of Vehicle's Tire Information Placard or Label	A-28
56	Pre-Test Pole Barrier Front View	A-28
57	Post-Test Pole Barrier Front View	A-29
58	Pre-Test Pole Barrier Side View	A-29
59	Post-Test Pole Barrier Side View	A-30
60	Pre-Test Ballast View	A-30
61	Post-Test Primary and Redundant Speed Trap Read-Out	A-31
62	FMVSS No. 301 Rollover 0 Degrees	A-31
63	FMVSS No. 301 Rollover 90 Degrees	A-32
64	FMVSS No. 301 Rollover 180 Degrees	A-32
65	FMVSS No. 301 Rollover 270 Degrees	A-33
66	FMVSS No. 301 Rollover 360 Degrees	A-33
67	Impact Event	A-34
68	Monroney Label	A-34
69	Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-35



FIGURE 1. As-Delivered Right Front Three-Quarter View of Test Vehicle



FIGURE 2. As-Delivered Left Rear Three-Quarter 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 Three-Quarter View of Test Vehicle



FIGURE 6. Post-Test Left Front Three-Quarter 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 Three-Quarter View of Test Vehicle



FIGURE 10. Post-Test Left Rear Three-Quarter 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 Vehicle and Pole

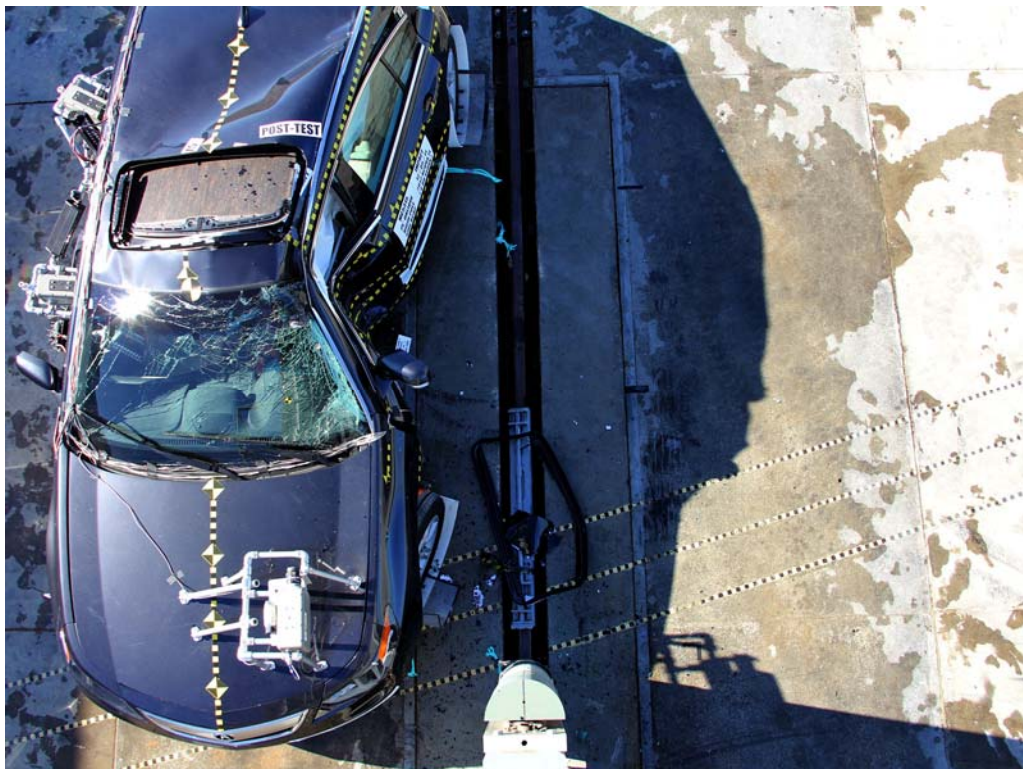


FIGURE 16. Post-Test Overhead View of Test Vehicle and Pole



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



FIGURE 18. Pre-Test Right Side View of Pole
Positioned Against Side of Vehicle at Ideal Impact Point



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



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



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



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

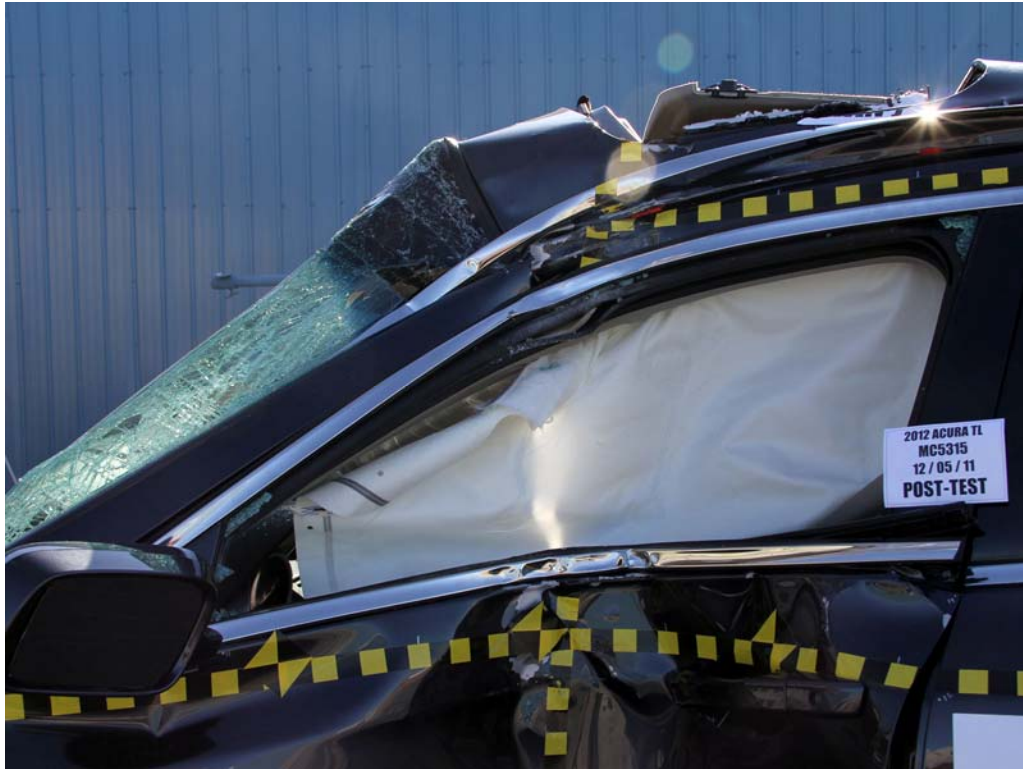


FIGURE 25. Post-Test Left Side View of Dummy Shoulder and Door Top View



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



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



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



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



FIGURE 30. Pre-Test 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

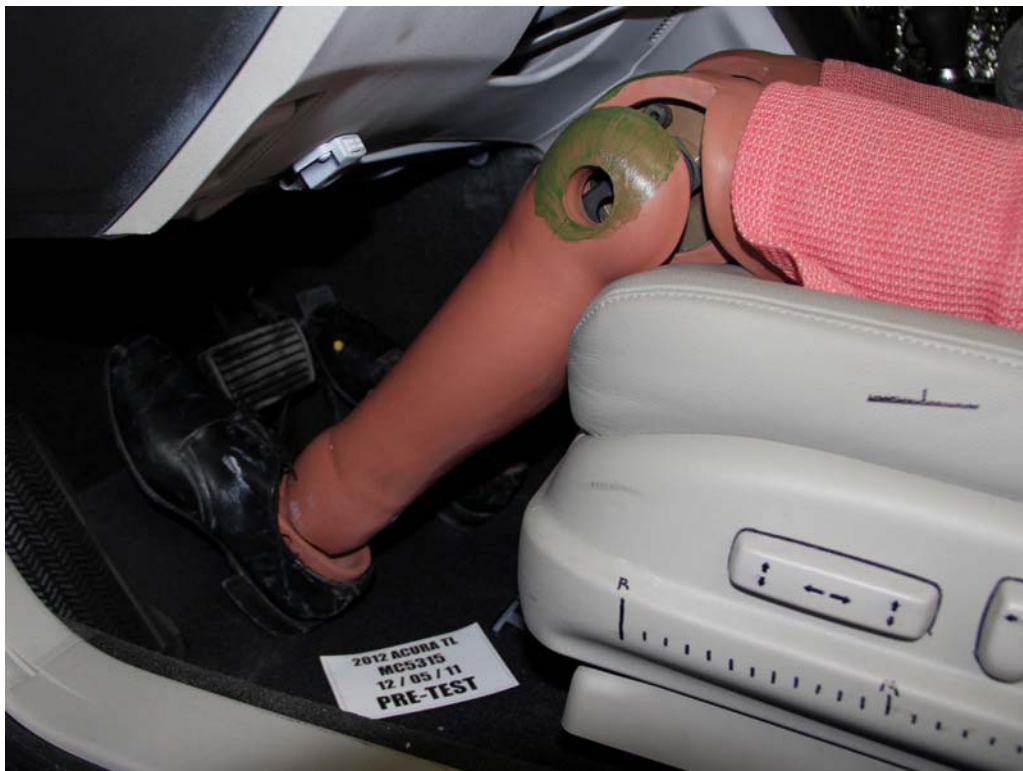


FIGURE 32. Pre-Test Placement of Dummy's Feet



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



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



FIGURE 35. 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 Driver Dummy and Door Clearance



FIGURE 41. Post-Test Driver 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 Driver Door Panel View



FIGURE 45. Post-Test Inner Driver 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

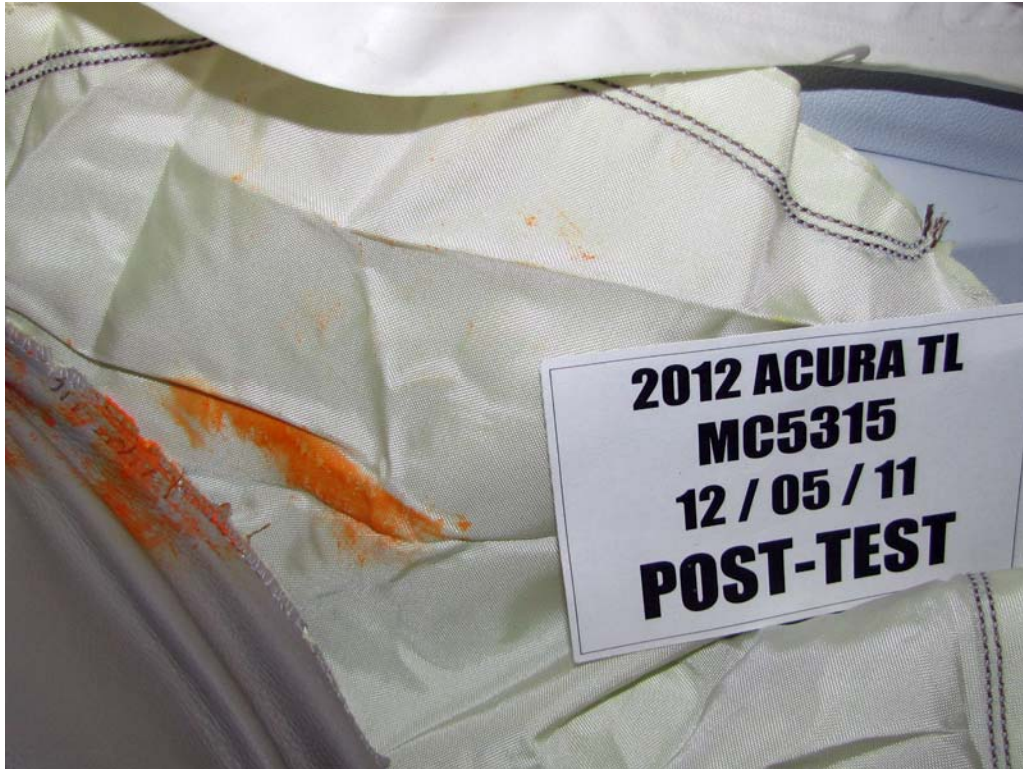


FIGURE 49. Post-Test Dummy Close-Up Torso Contact with Side Airbag View



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



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



FIGURE 54. Close-Up View of Vehicle's Certification Label



FIGURE 55. Close-Up View of Vehicle's Tire Information Placard



FIGURE 56. Pre-Test Pole Barrier Front View



FIGURE 57. Post-Test Pole Barrier Front View



FIGURE 58. Pre-Test Pole Barrier Side View



FIGURE 59. Post-Test Pole Barrier Side View

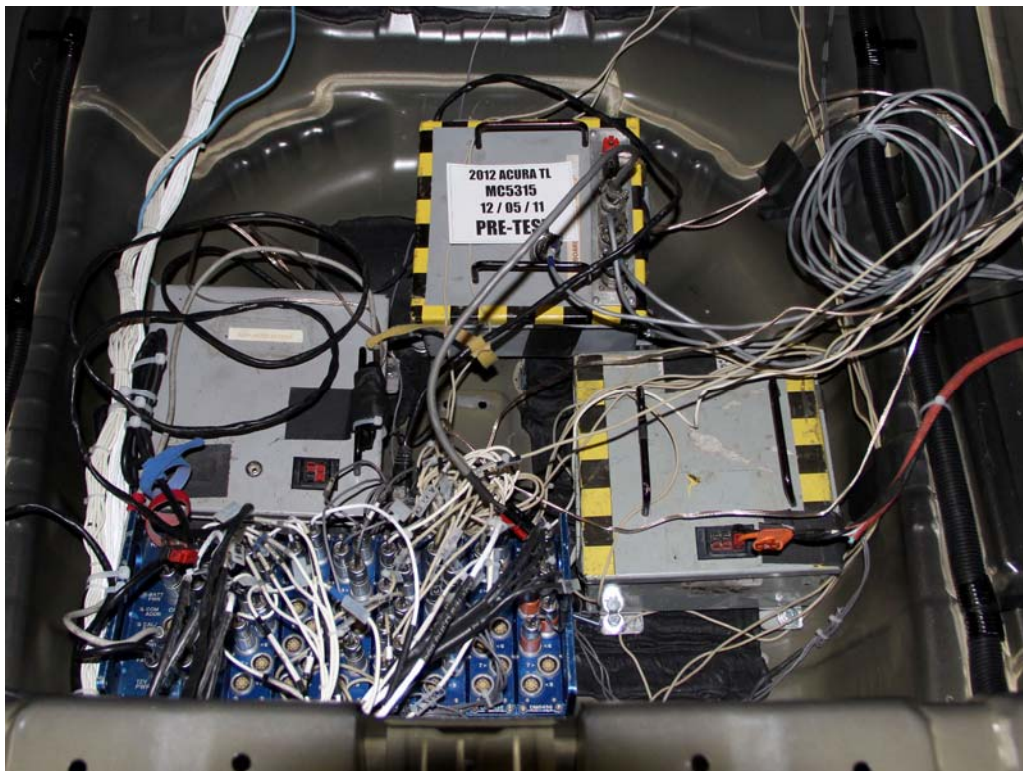


FIGURE 60. Pre-Test Ballast View



FIGURE 61. Post-Test Primary and Redundant Speed Trap Read-Out

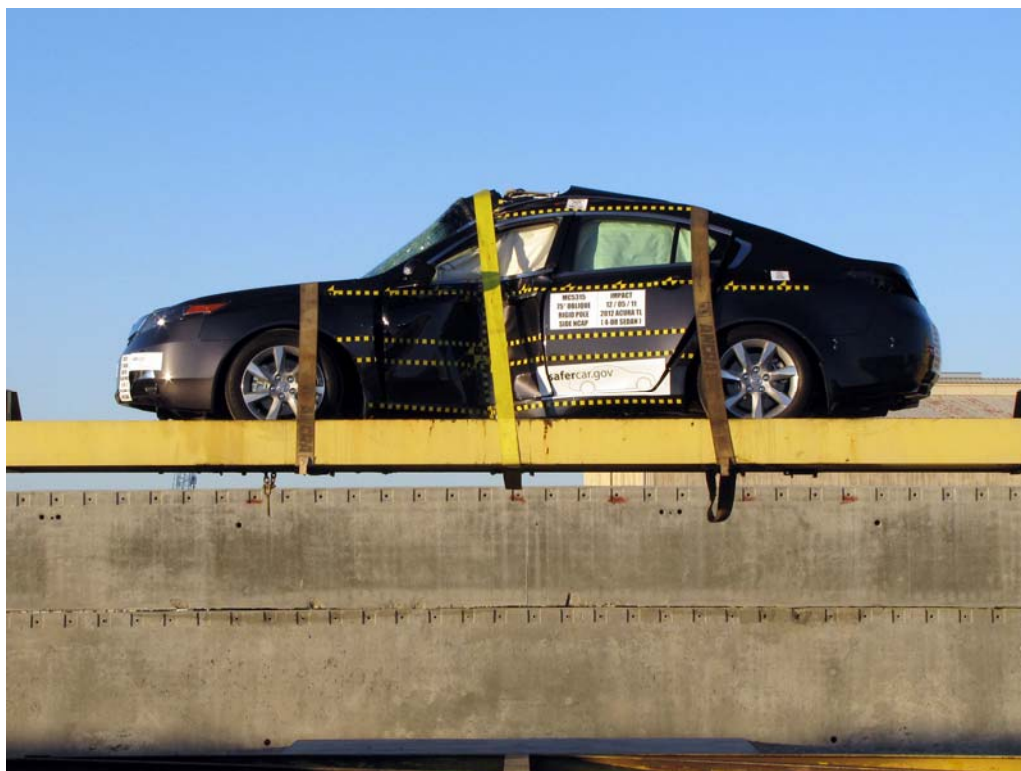


FIGURE 62. FMVSS No. 301-305 Rollover 0 Degrees



FIGURE 63. FMVSS No. 301-305 Rollover 90 Degrees

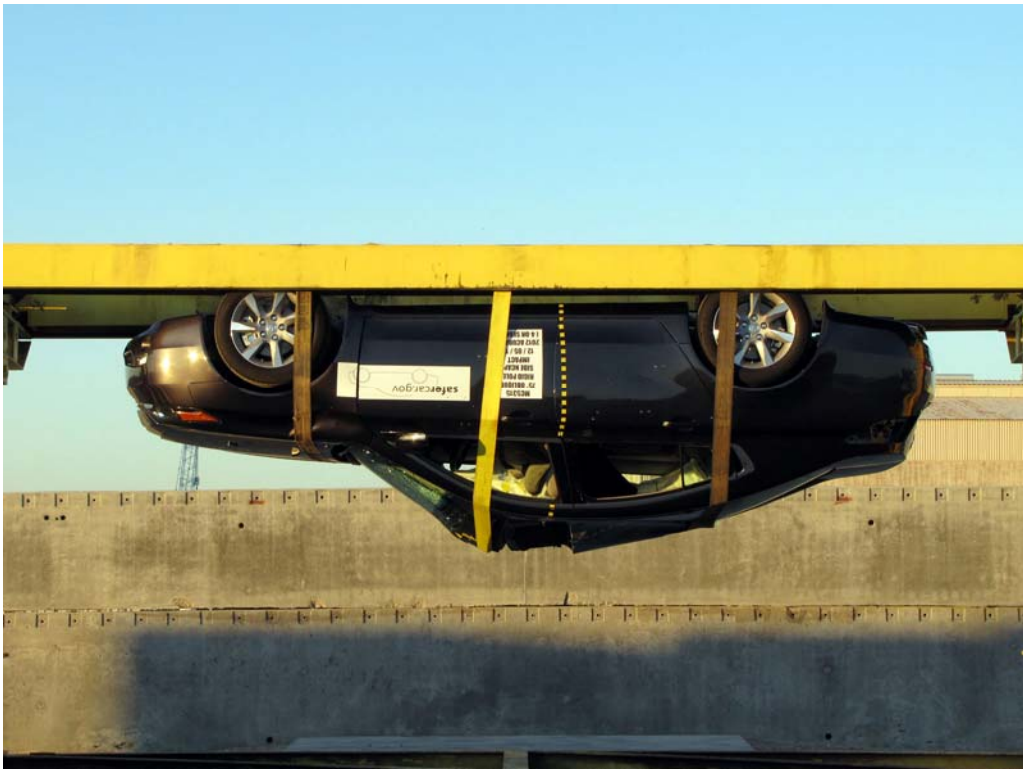


FIGURE 64. FMVSS No. 301-305 Rollover 180 Degrees



FIGURE 65. FMVSS No. 301-305 Rollover 270 Degrees



FIGURE 66. FMVSS No. 301-305 Rollover 360 Degrees



FIGURE 67. Impact Event

ACURA

2012 TL
 VEHICLE NUMBER: 19UUA8F29CA06062
 ENGINE NUMBER: J3525-406414
 CONTROL NUMBER: 35256
 EXT: GRAPHITE LUSTER M.
 INT: TAPE

STANDARD EQUIPMENT AT NO EXTRA COST

- TECHNICAL FEATURES ***
 - 201hp 3.5-Liter SOHC 24-Valve VTEC V6 Engine
 - 6-Speed Automatic Transmission with Sequential SportShift
 - 4-Wheel Disc Brakes
 - Front Double Wishbone Suspension
 - Rear Multi-Link Suspension
 - Electric Power-Assisted Rack-and-Pinion Steering
 - Drive-by-Wire Throttle System
 - Immobilizer Theft-Deterrent System
 - High-Flow Sport-Tuned Exhaust System
- SAFETY FEATURES ***
 - Driver's and Front Passenger's Dual-Stage Airbags (SRS)
 - Driver's and Front Passenger's Side Airbags
 - Side Curtain Airbags
 - Vehicle Stability Assist (VSA)
 - Anti-Lock Braking System (ABS)
 - Electronic Brake Distribution (EBD)
 - Brake Assist
 - 3-Point Seat Belts
 - Front Seat Belts with Automatic Tensioning Systems
 - Active Front Head Restraints
 - Tire Pressure Monitoring System
 - ACLS Body Structure
 - Day Time Running Lights (DRL)
 - LATCH System for Child Seats
- INTERIOR FEATURES ***
 - Sport Seats with Leather Trim
 - Acura Premium Sound System with 8 Speakers
 - and Acura/ELS Studio In-Dash CD
 - XM Satellite Radio
 - XM Auxiliary Input Jack
 - XM Audio Interface
 - Driver Recognition Memory System
 - Driver's 10-Way Power Seat
 - Front Passenger's 6-Way Power Seat
 - Heated Front Seats
 - Internet Link System
 - Bluetooth HandsFreeLink
 - Steering Wheel Mounted Controls with Air Filtration System
 - Power Windows and Door Locks
 - Front Auto Up-Down Windows
 - Maintenance Minder System
 - Auto Dimming Rearview Mirror
- EXTERIOR FEATURES ***
 - Power Moonroof with TR Pedestal
 - 17" x 8.0" Alloy Wheels
 - 245/50 R17 All-Season Tires
 - LED Illuminated Tail Lights
 - Fog Lights
 - Remote Entry with Security System

Manufacturer's Suggested Retail Price
\$35,605.00

MSRP includes:
 -5YR/100K Mile Powertrain Warranty
 -4YR/50K Mile Ltd Vehicle Warranty
 -Full Tank of Fuel
 -3 Months Free XM Radio Service

XM Radio is available in the 48 contiguous states

Destination and Handling 860.00

TOTAL VEHICLE PRICE
 (includes Pre-Delivery Service)
\$36,465.00

License and title fees, state and local taxes and dealer options and accessories are not included in the manufacturer's suggested retail price.

Environmental Performance

Protect the environment, choose vehicles with higher scores:

Global Warming Score 7
 Smog Score 5

Vehicle emissions are a primary contributor to global warming and smog. Scores are determined by the California Air Resources Board based on the vehicle's measured emissions. Please visit californiaemissions.com

THOMAS ACURA
 840 S. CITRUS AVENUE
 COVINA, CA 91723

PORT OF ENTRY: MARYSVILLE
 DELIVERY POINT: LOS ANGELES

DATE: 8/2/2011
 TRANSFER METHOD: A/S SA BERNARDINO
 VIN: 19UUA8F29CA06062

ORIG. D/L: 251232
 REF. NO: 45152
 IN CODE: AL-2658
 EMISN: 50 STATE

DEALER: 251232

FOR THIS VEHICLE
 Final Assembly Plant:
 MARYSVILLE, OHIO
 USA

Country of Origin: Engine:
 U.S.A.
 Transmission:
 JAPAN

EPA Fuel Economy Estimates

CITY MPG **20**
 Expected range for most drivers 16 to 24 MPG

Estimated Annual Fuel Cost **\$2,088**
 based on 15,000 miles at \$3.20 per gallon

Highway MPG **29**
 Expected range for most drivers 24 to 34 MPG

Combined Fuel Economy
 This Vehicle **23**
 All MIDSIZEs

Your actual mileage will vary depending on how you drive and maintain your vehicle

See the FREE Fuel Economy Guide at dealers or www.fueleconomy.gov

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE:
 U.S./Canadian Parts Content: **60 %**
 Major Sources of Foreign Parts Content:
JAPAN 20 %

NOTE: Parts content does not include final assembly, distribution or other non-parts costs.

GOVERNMENT SAFETY RATINGS

Frontal Crash	Driver Passenger	Not Rated
Star ratings based on the risk of injury in a frontal impact. Frontal ratings should ONLY be compared to other vehicles of similar size and weight.		
Side Crash	Front seat	Not Rated
Star ratings based on the risk of injury in a side impact.		
Rollover	Rear seat	Not Rated
Star ratings based on the risk of rollover in a single vehicle crash.		

Star ratings range from 1 to 5 stars (★ ★ ★ ★ ★) with 5 being the highest.
 Source: National Highway Traffic Safety Administration (NHTSA).

www.safercar.gov or 1-888-327-4236

This vehicle is equipped with bumpers that can withstand an impact of 2.5 miles per hour with no damage to the vehicle's body and safety systems, although the bumper and related components may sustain damage. The bumper system on this vehicle conforms to the current Federal bumper standard of 2.5 miles per hour.

FIGURE 68. Monroney Label

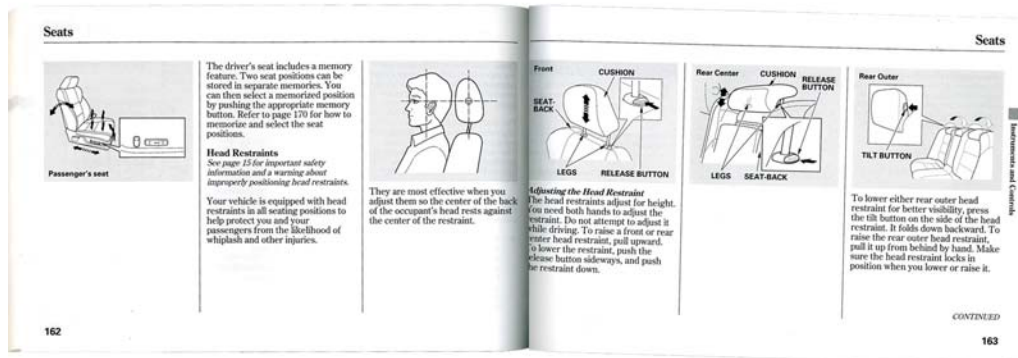


FIGURE 69. Head Restraint Use and Adjustment
Information from Vehicle Manual

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 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)

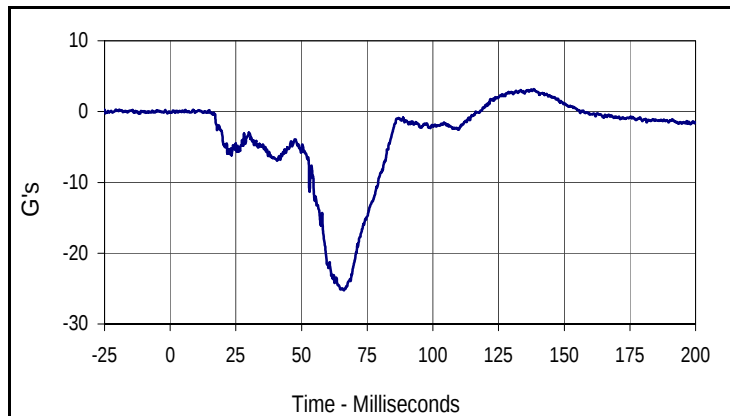
Left B-Pillar Sill Acceleration
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy Hip Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration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

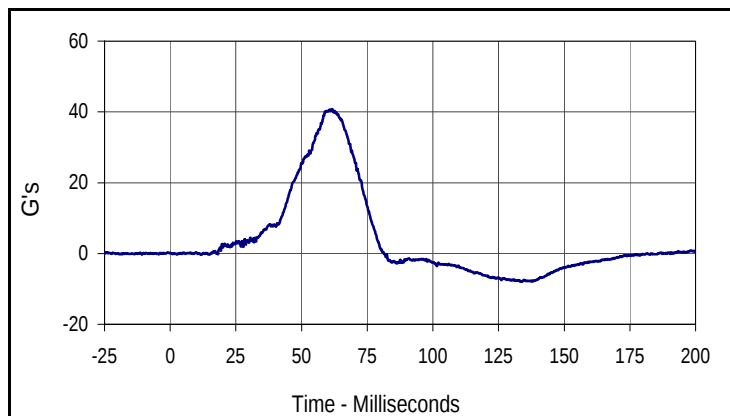
Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)

Test Vehicle: 2012 Acura TL 4-Door Sedan
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

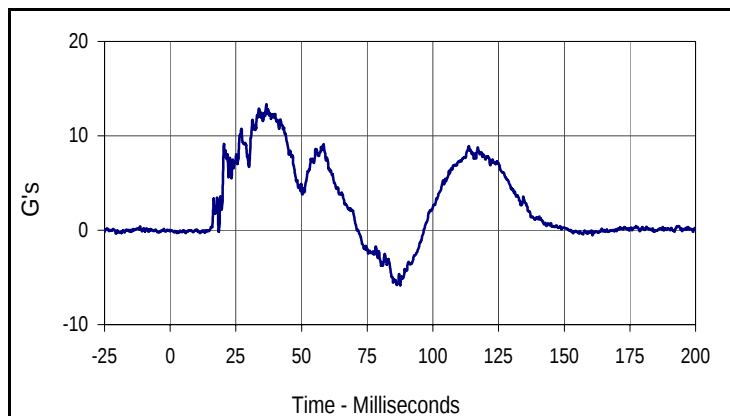
Test Date: 12/5/11
 NHTSA No.: MC5315



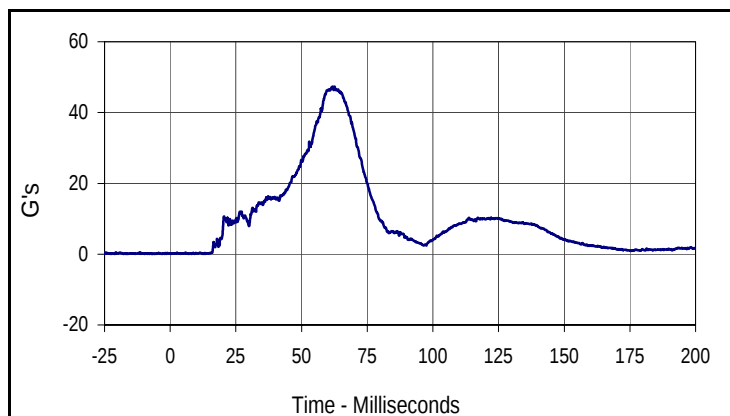
Curve Description			
Driver Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
3.2	138.5	-25.2	66.1



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
40.8	61.6	-8.0	133.9



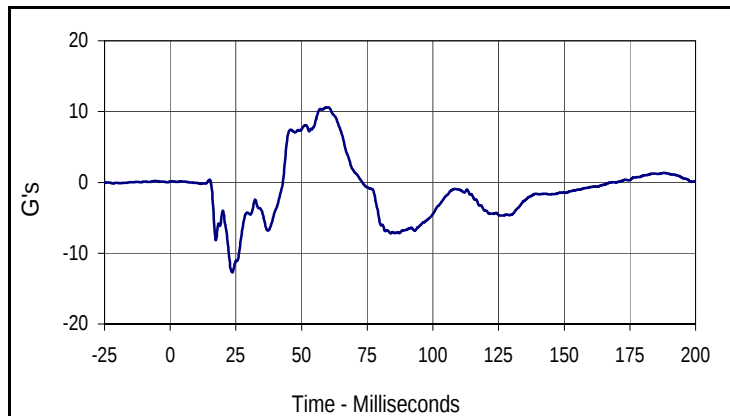
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
13.3	36.6	-5.8	87.5



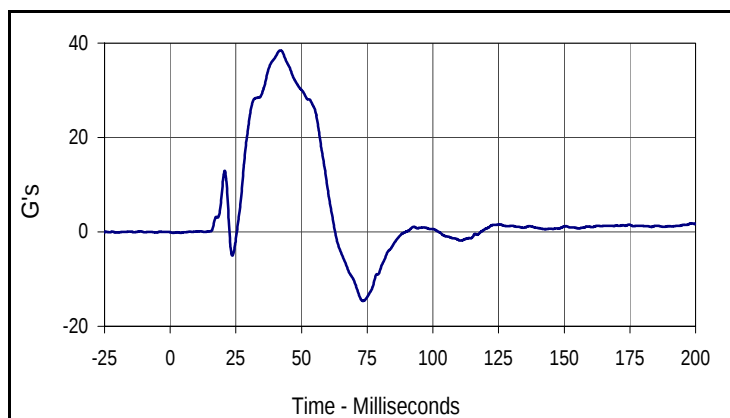
Curve Description			
Driver Head Acceleration Primary Res.			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
47.3	62.6	0.1	7.1

Test Vehicle: 2012 Acura TL 4-Door Sedan
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

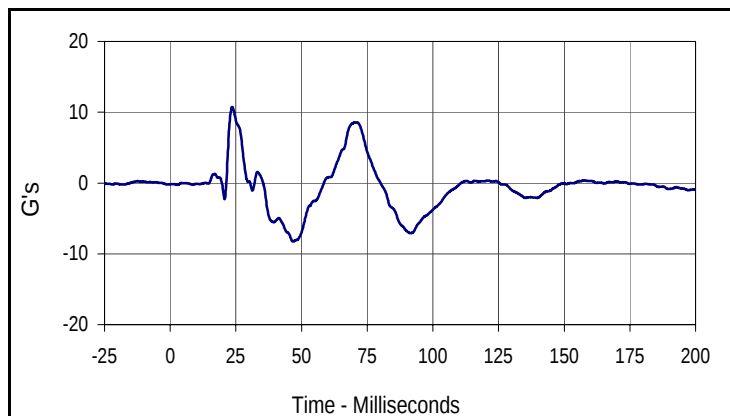
Test Date: 12/5/11
 NHTSA No.: MC5315



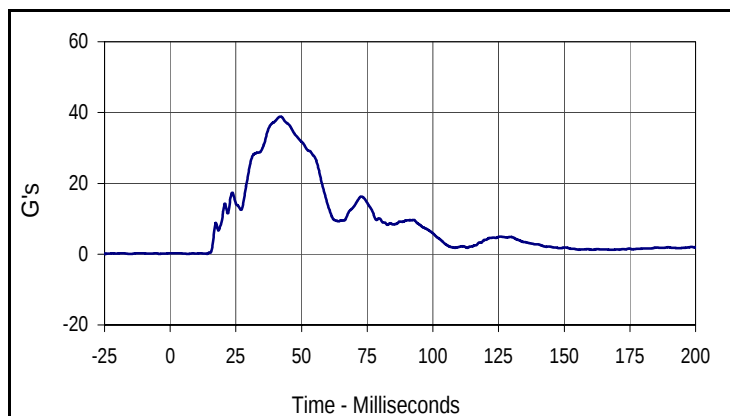
Curve Description			
Driver Lower Spine T12 Acceleration X			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
10.6	59.6	-12.7	23.7



Curve Description			
Driver Lower Spine T12 Acceleration Y			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
38.5	41.9	-14.6	73.4



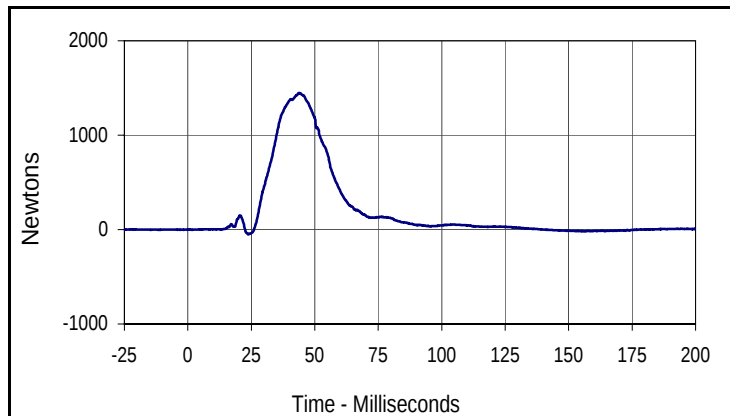
Curve Description			
Driver Lower Spine T12 Acceleration Z			
Plot No.	Type	SAE Class	Units
007	FIL	180	G's
Max	Time	Min	Time
10.7	23.7	-8.3	46.8



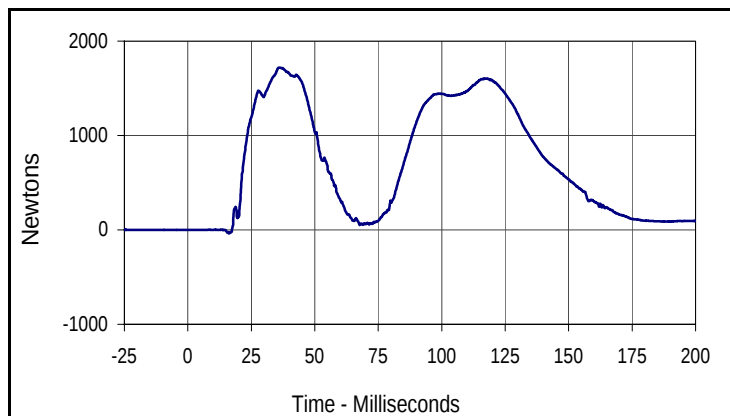
Curve Description			
Driver Lower Spine T12 Acceleration Res.			
Plot No.	Type	SAE Class	Units
008	RES	180	G's
Max	Time	Min	Time
38.8	42.0	0.1	6.6

Test Vehicle: 2012 Acura TL 4-Door Sedan
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

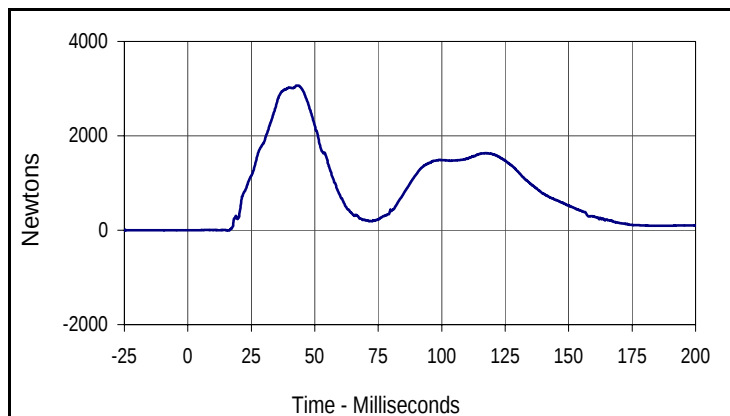
Test Date: 12/5/11
 NHTSA No.: MC5315



Curve Description			
Driver Iliac Wing Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
009	FIL	600	Newtons
Max	Time	Min	Time
1447.1	43.9	-49.2	23.9



Curve Description			
Driver Acetabulum Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
010	FIL	600	Newtons
Max	Time	Min	Time
1720.3	35.9	-36.1	16.2



Curve Description			
Driver Total Pelvic Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
011	SUM	600	Newtons
Max	Time	Min	Time
3065.1	42.7	-7.6	16.2

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: 12/3/11
 Test I.D.: N/A



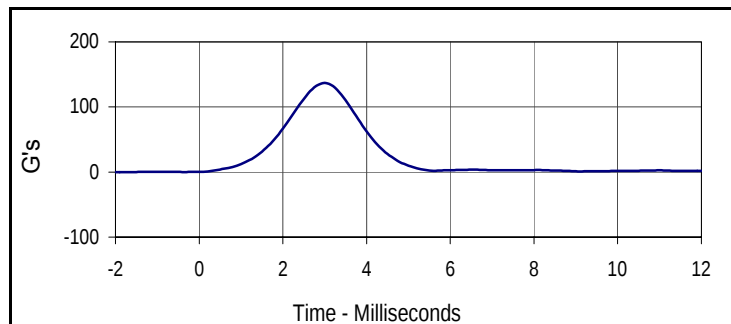
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
A	Sitting Height	mm	772 - 788	777	Pass
B	Shoulder Pivot Height	mm	437 - 453	442	Pass
C	H-Point Height	mm	79 - 89	81	Pass
D	H-Point from Seatback	mm	141 - 151	147	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	101	Pass
F	Thigh Clearance	mm	119 - 135	125	Pass
G	Head Breadth	mm	140 - 148	146	Pass
H	Head Back from Backline	mm	40 - 46	46	Pass
I	Head Depth	mm	178 - 188	186	Pass
J	Head Circumference	mm	541 - 551	547	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	429	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	200	Pass
P	Foot Length	mm	216 - 232	220	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	317	Pass
R	Arm Length	mm	249 - 259	256	Pass
S	Knee Joint to Seatback	mm	477 - 493	485	Pass
V	Shoulder Width	mm	341 - 357	350	Pass
W	Foot Width	mm	78 - 94	92	Pass
Y	Chest Circumference with Jacket	mm	851 - 881	878	Pass
Z	Waist Circumference	mm	760 - 791	773	Pass
Overall Test Results					Pass

Test Program: SID IIs Head Drop Test
 ATD Serial No.: 299

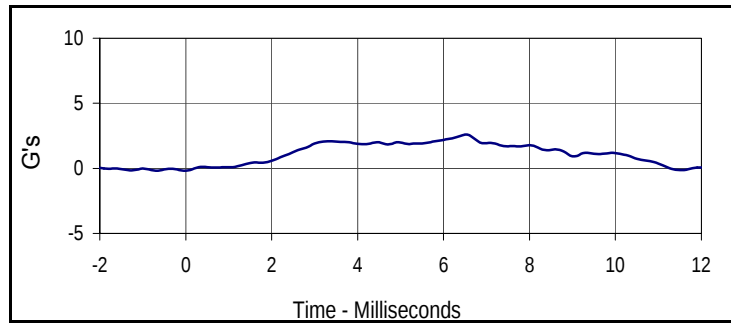
Test Date: 12/3/11
 Test I.D.: 299HD024



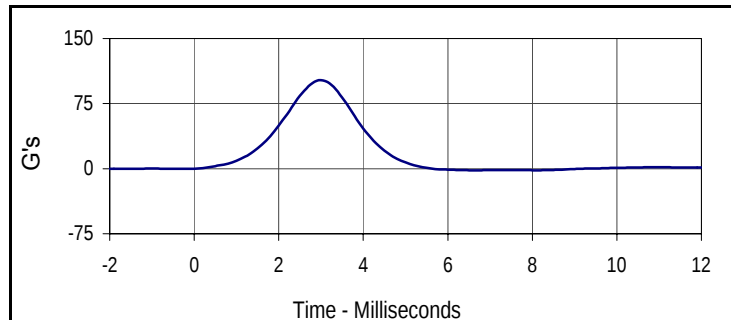
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	245	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	37.4	Pass
Peak Head Resultant Acceleration	G's	115 to 137	136.9	Pass
Peak Head X Acceleration	G's	<15	2.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	7.2	Pass
Overall Test Results				Pass



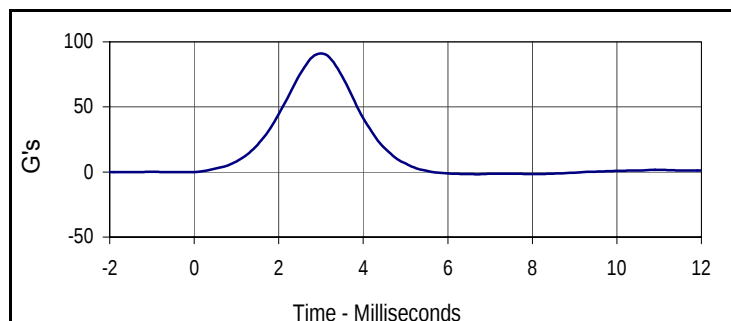
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
136.9	3.0	0.0	-1.9



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.2	6.0	-0.2	0.0



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
102.0	3.0	-1.9	6.7



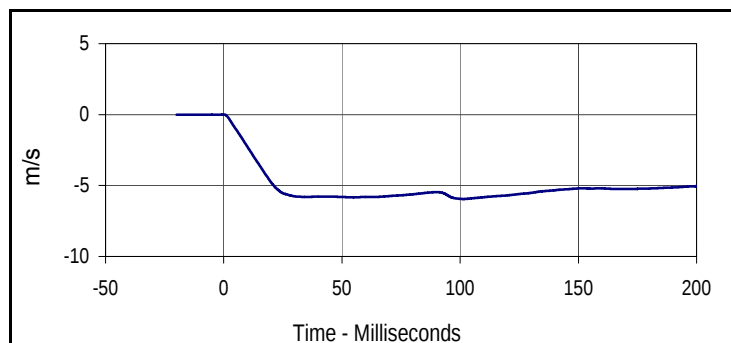
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
91.2	3.0	-1.7	6.7

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

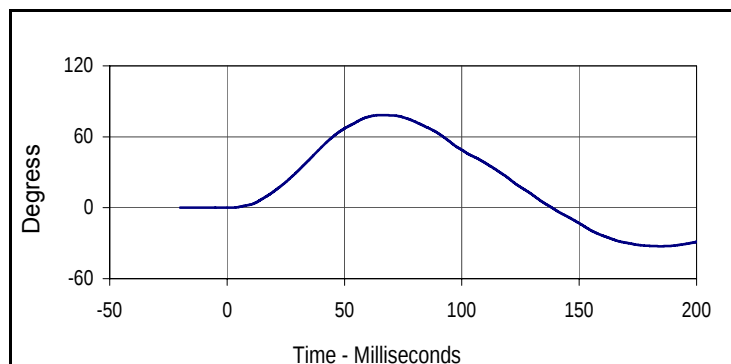
Test Date: 12/3/11
 Test I.D.: 299NB024



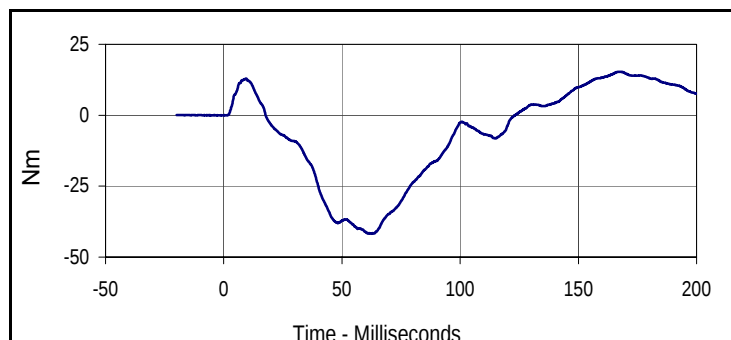
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	250	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	30.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.9	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.60	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.27	Pass
	15 msec	m/s	-3.30 to -4.10	-3.54	Pass
	20 msec	m/s	-4.40 to -5.40	-4.76	Pass
	25 msec	m/s	-5.40 to -6.10	-5.54	Pass
	25-100 msec	m/s	-5.50 to -6.20	-5.94	Pass
D-Plane Rotation	Max	Degrees	71 to 81	78.4	Pass
	Time	msec	50 to 70	65.5	Pass
Peak Occipital Condyle Moment		Nm	-36 to -44	-41.8	Pass
Decaying Moment Time to Cross 0 Nm		msec	102 to 126	123.3	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	-6.0	101.4



Curve Description			
Maximum Translation Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
78.4	65.5	-32.5	184.7



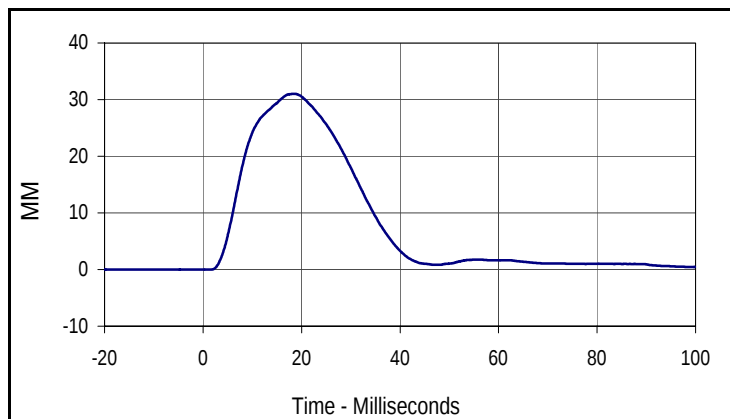
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
15.4	167.2	-41.8	62.4

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

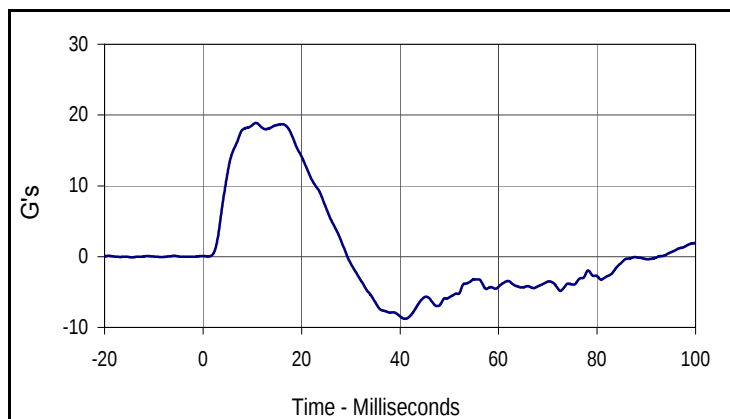
Test Date: 12/3/11
 Test I.D.: 299SH024



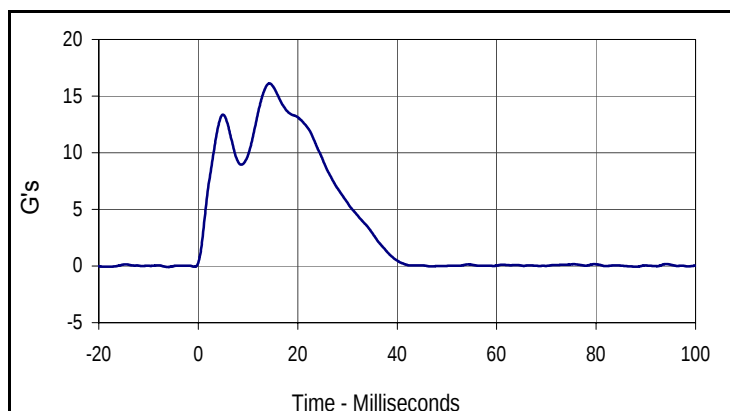
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	275	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	37.1	Pass
Impactor Velocity		m/s	4.20 to 4.40	4.28	Pass
Peak Shoulder Deflection		mm	28 to 37	31.0	Pass
Peak Lateral Spine Acceleration Y		G's	17 to 22	18.9	Pass
Peak Impactor Acceleration		G's	13 to 18	16.1	Pass
Overall Test Results				Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
31.0	18.3	0.0	-2.1



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.9	10.7	-8.8	41.0



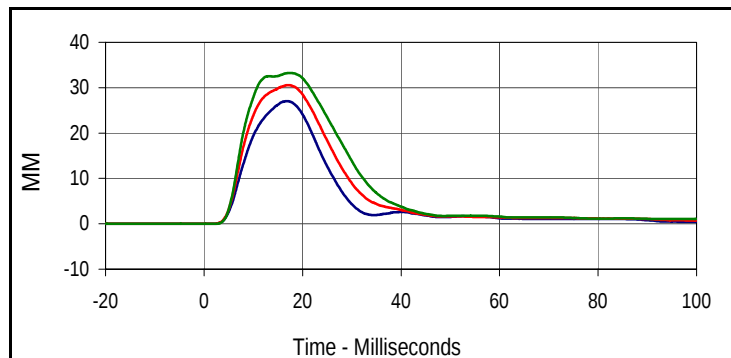
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
16.1	14.3	-0.1	-6.1

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

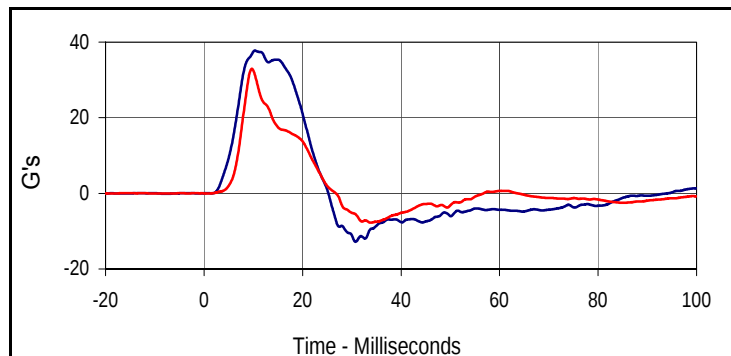
Test Date: 12/3/11
 Test I.D.: 299TWA024



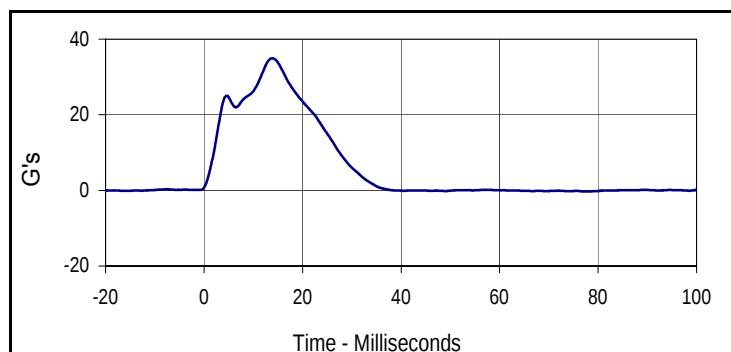
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	300	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.9	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Shoulder Deflection	mm	31 to 40	34.7	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.1	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	30.6	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	33.2	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	37.8	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	32.9	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
27.1	16.8	0.0	-12.5
Middle Thorax Deflection			
Max	Time	Min	Time
30.6	17.1	0.0	-14.4
Lower Thorax Deflection			
Max	Time	Min	Time
33.2	17.6	0.0	-19.7



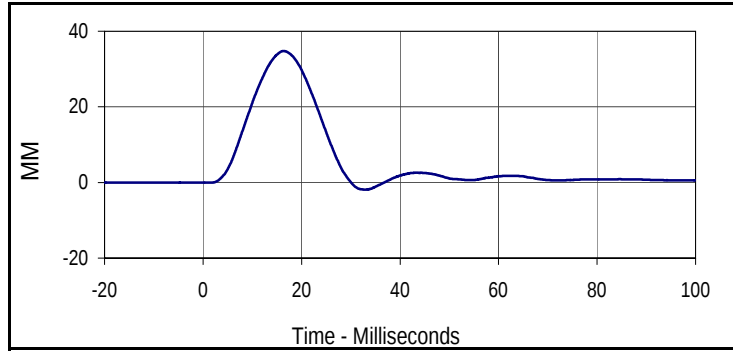
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
37.8	10.3	-12.8	30.8
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
32.9	9.7	-7.8	33.9



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.9	13.8	-0.3	77.4

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

Test Date: 12/3/11
 Test I.D.: 299TWA024



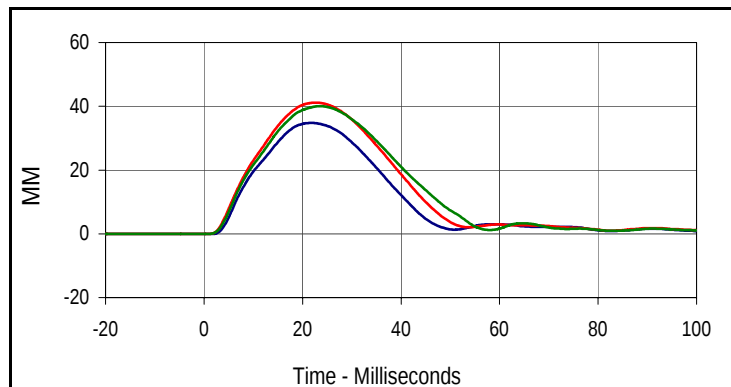
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
34.7	16.3	-1.9	33.1

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

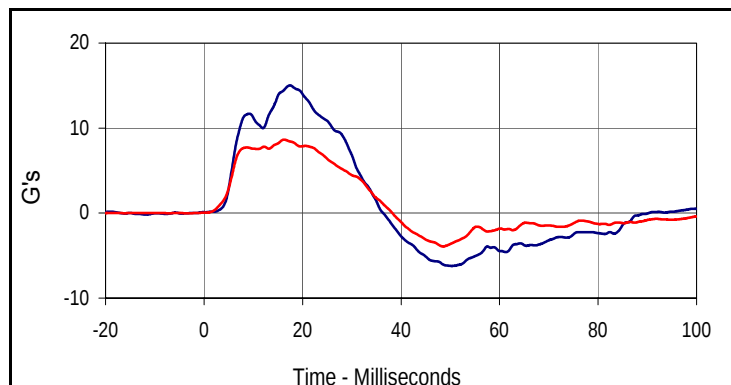
Test Date: 12/3/11
 Test I.D.: 299TWOA024



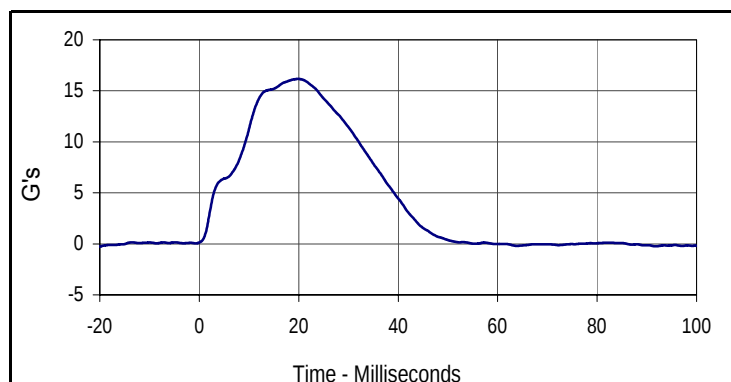
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	325	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	36.7	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.3	Pass
Peak Upper Thorax Rib Deflection		mm	32 to 40	34.8	Pass
Peak Middle Thorax Rib Deflection		mm	39 to 45	41.2	Pass
Peak Lower Thorax Rib Deflection		mm	35 to 43	40.0	Pass
Peak Upper Spine Y Acceleration		G's	13 to 17	15.0	Pass
Peak Lower Spine Y Acceleration		G's	7 to 11	8.6	Pass
Peak Impactor Acceleration		G's	14 to 18	16.2	Pass
Overall Test Results				Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
34.8	21.7	0.0	1.1
Middle Thorax Deflection			
Max	Time	Min	Time
41.2	22.7	0.0	0.4
Lower Thorax Deflection			
Max	Time	Min	Time
40.0	23.5	0.0	0.3



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.0	17.5	-6.2	50.3
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.6	16.3	-3.9	48.5



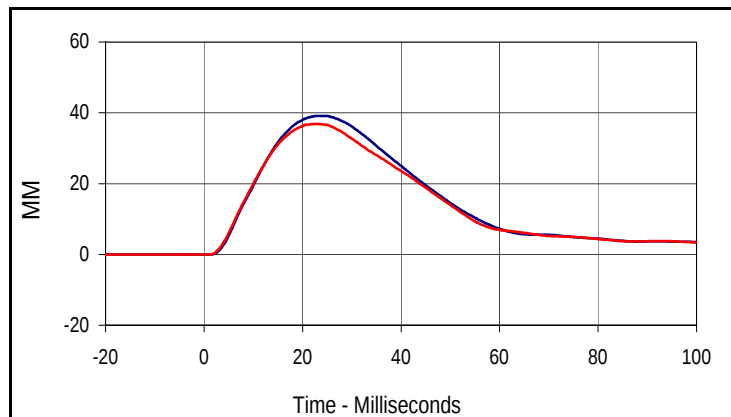
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.2	19.9	-0.3	-20.0

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

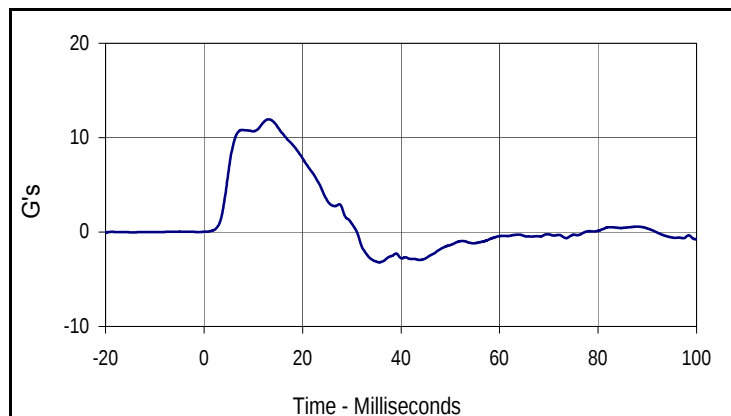
Test Date: 12/3/11
 Test I.D.: 299ABD024



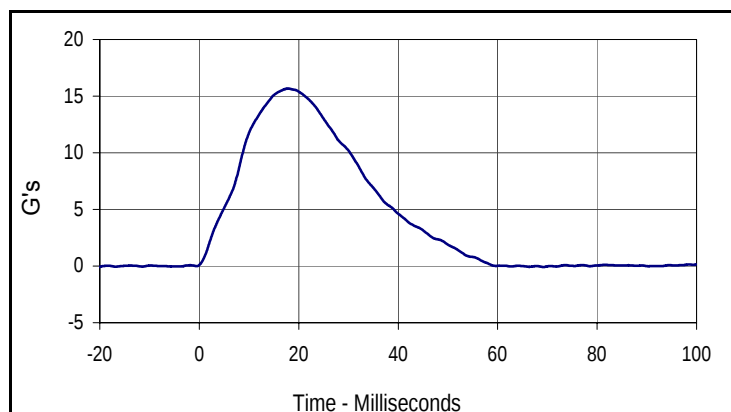
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	360	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.7	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.3	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	39.1	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	36.9	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	11.9	Pass
Peak Impactor Acceleration	G's	12 to 16	15.7	Pass
Overall Test Results			Pass	



Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
39.1	23.6	0.0	-5.0
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
36.9	22.6	0.0	-6.8



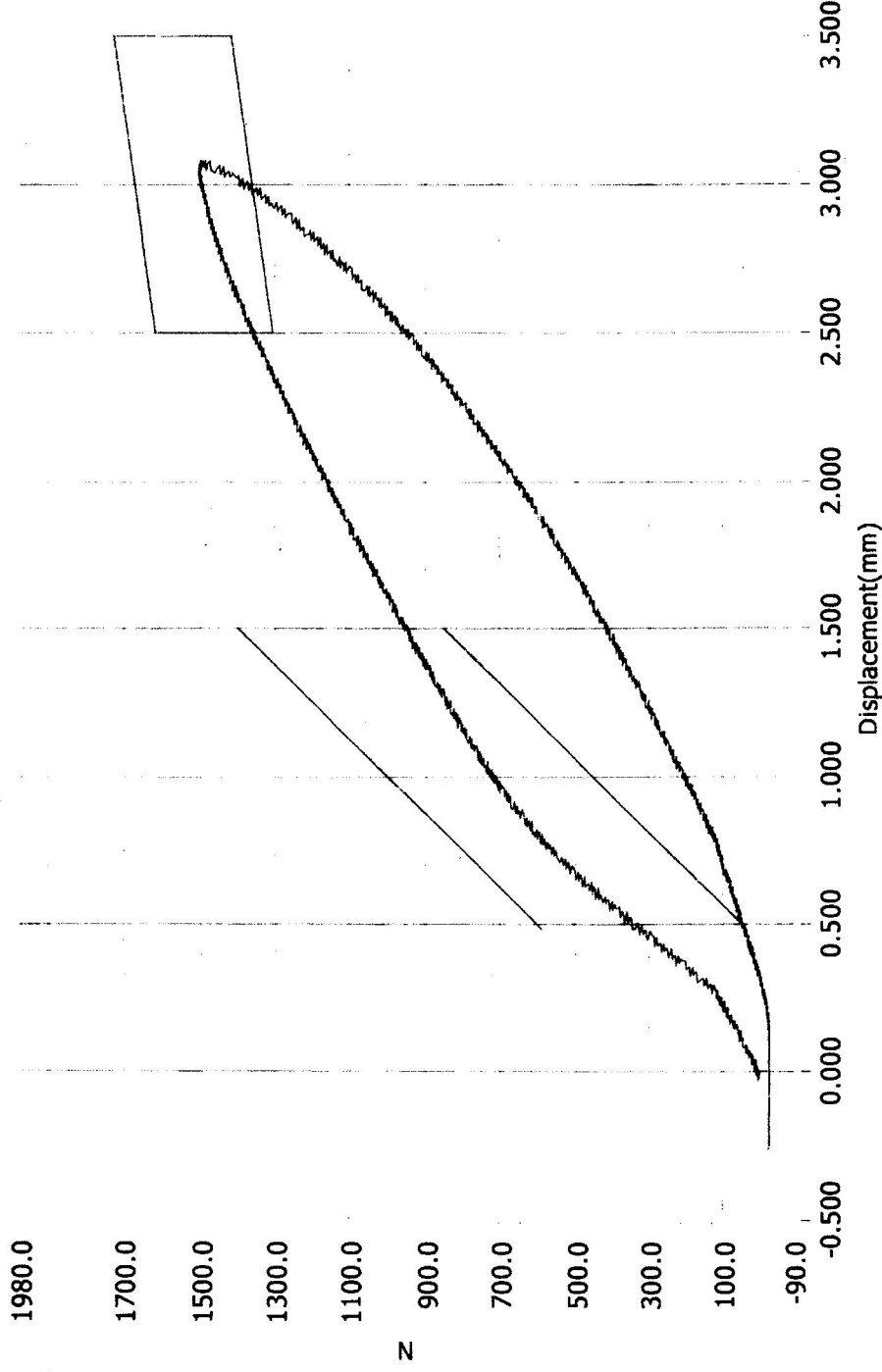
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.9	13.1	-3.2	35.6



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.7	17.9	-0.1	69.2

MC5315 PRE TEST

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>
		10/6/2010	5:04 PM
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
	36858	SIDIIs	

Current Date : 10/6/2010

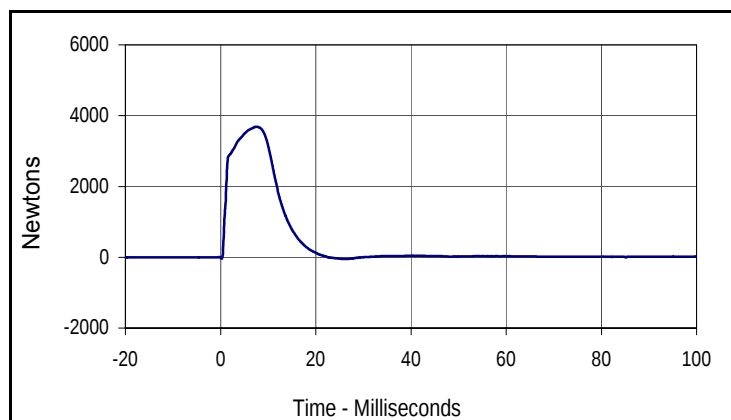
Current Time : 17:05:14

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

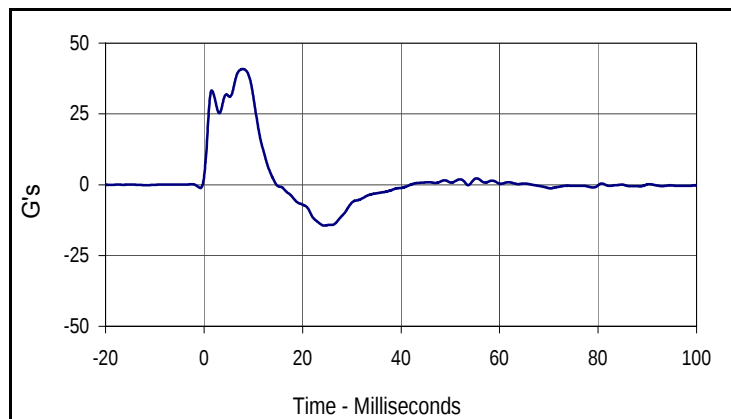
Test Date: 12/3/11
 Test I.D.: 299ACET024



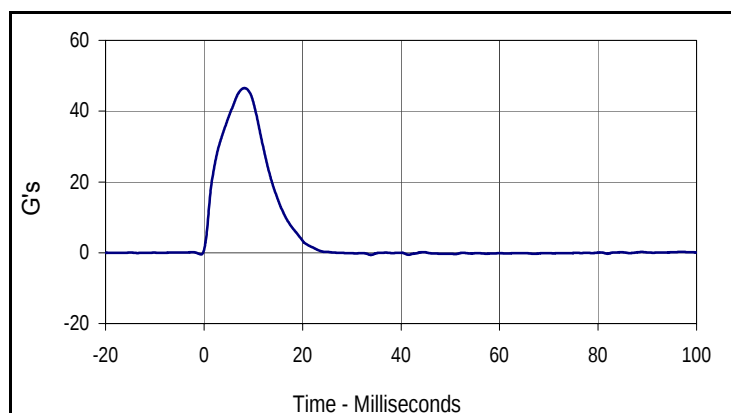
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	380	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.1	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	3685.3	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	40.8	Pass
Peak Impactor Acceleration	G's	38 to 47	46.5	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3685.3	7.5	-50.8	26.4



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
40.8	7.8	-14.4	24.4



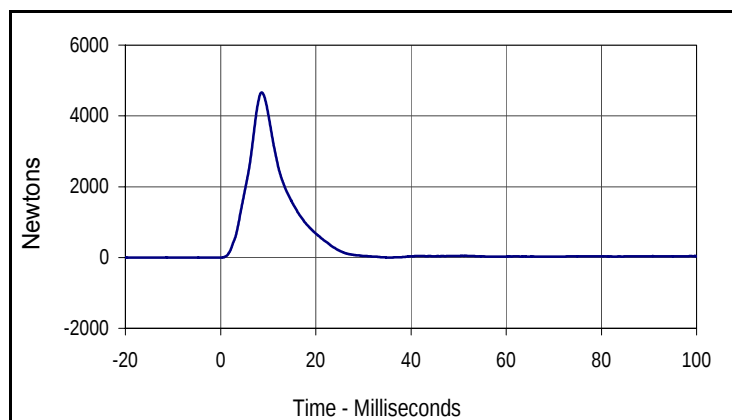
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
46.5	8.2	-0.6	33.9

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

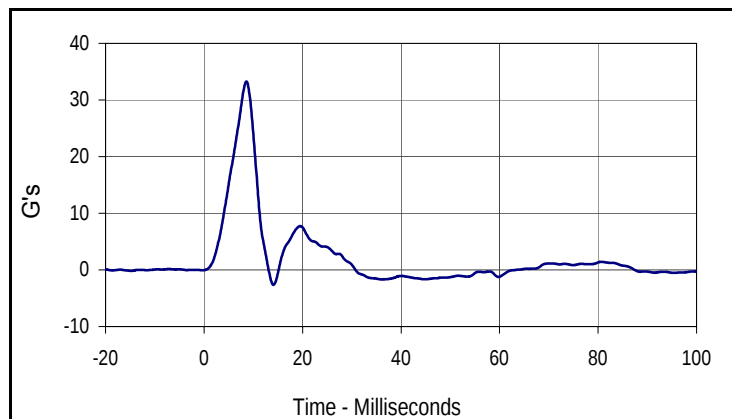
Test Date: 12/3/11
 Test I.D.: 299PL024



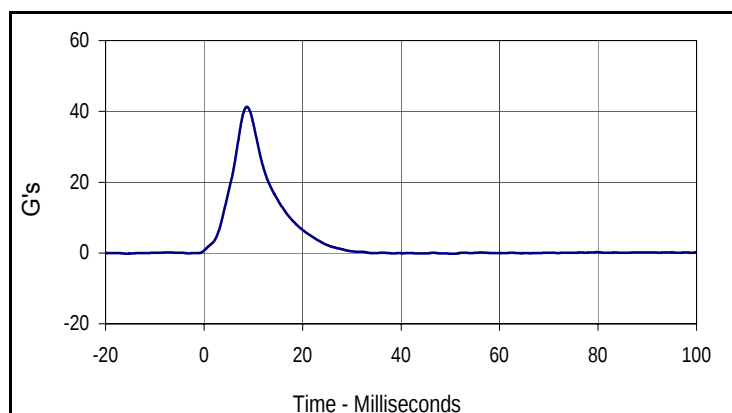
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	420	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.1	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.4	Pass
Peak Iliac Force	Newtons	4100 to 5100	4658.4	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	33.3	Pass
Peak Impactor Acceleration	G's	36 to 45	41.3	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4658.4	8.7	-2.2	-18.6



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
33.3	8.6	-2.7	14.1



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
41.3	8.7	-0.2	50.8

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

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

Test Date: 12/7/11
 Test I.D.: N/A



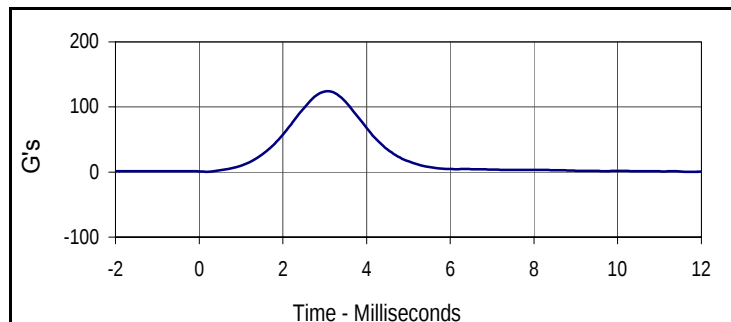
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.5	Pass
Laboratory Relative Humidity		%	10 to 70	35	Pass
A	Sitting Height	mm	772 - 788	778	Pass
B	Shoulder Pivot Height	mm	437 - 453	443	Pass
C	H-Point Height	mm	79 - 89	82	Pass
D	H-Point from Seatback	mm	141 - 151	147	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	101	Pass
F	Thigh Clearance	mm	119 - 135	125	Pass
G	Head Breadth	mm	140 - 148	146	Pass
H	Head Back from Backline	mm	40 - 46	44	Pass
I	Head Depth	mm	178 - 188	185	Pass
J	Head Circumference	mm	541 - 551	547	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	429	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	200	Pass
P	Foot Length	mm	216 - 232	220	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	317	Pass
R	Arm Length	mm	249 - 259	256	Pass
S	Knee Joint to Seatback	mm	477 - 493	485	Pass
V	Shoulder Width	mm	341 - 357	350	Pass
W	Foot Width	mm	78 - 94	92	Pass
Y	Chest Circumference with Jacket	mm	851 - 881	878	Pass
Z	Waist Circumference	mm	760 - 791	773	Pass
Overall Test Results					Pass

Test Program: SID IIs Head Drop Test
 ATD Serial No.: 299

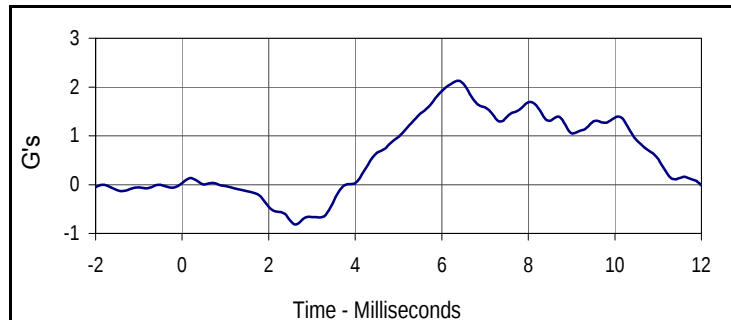
Test Date: 12/7/11
 Test I.D.: 299HD025



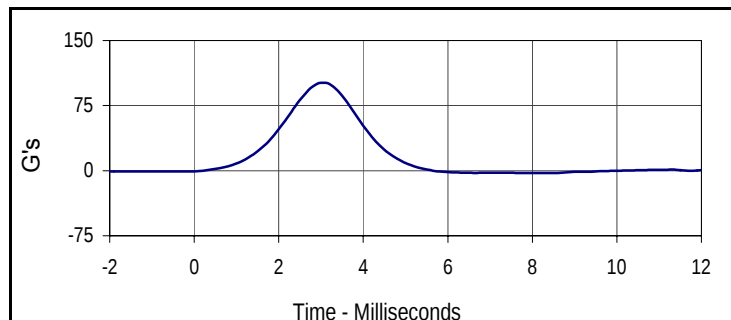
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	250	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.2	Pass
Peak Head Resultant Acceleration	G's	115 to 137	124.1	Pass
Peak Head X Acceleration	G's	<15	1.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	13.2	Pass
Overall Test Results				Pass



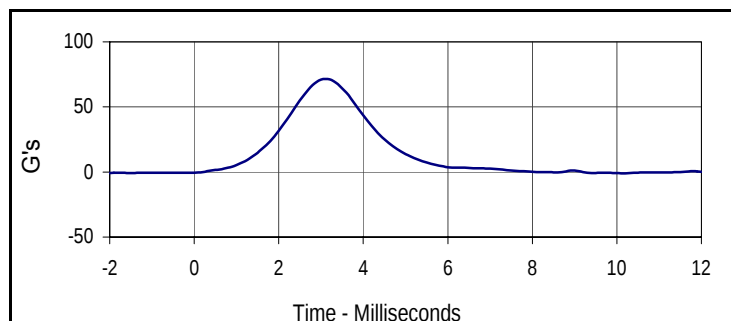
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
124.1	3.1	0.2	0.2



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.9	6.0	-0.8	2.6



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
101.5	3.1	-2.9	8.1



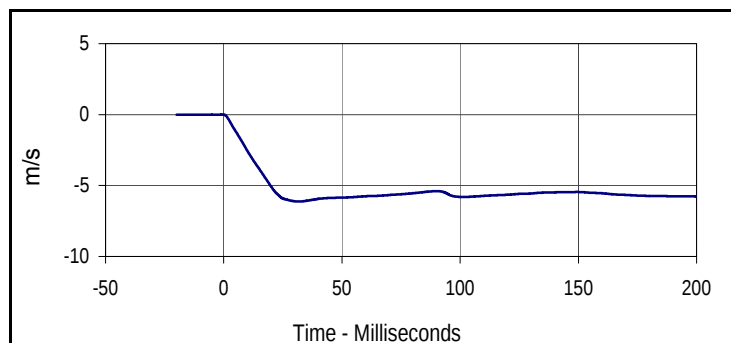
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
71.5	3.1	-0.9	10.0

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

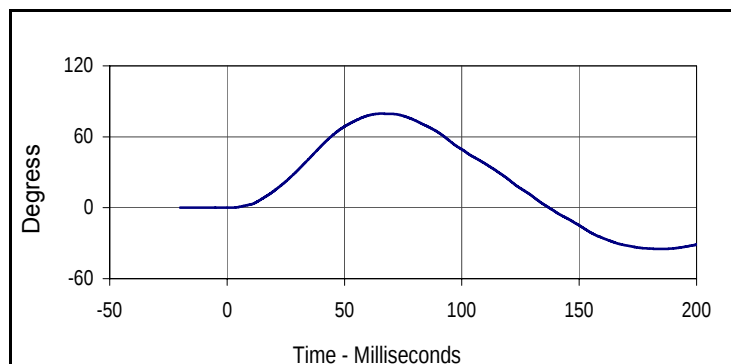
Test Date: 12/7/11
 Test I.D.: 299NB025



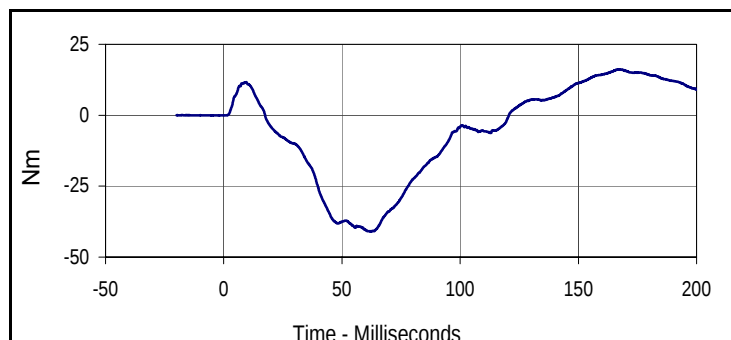
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	250	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	30.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	32.6	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.60	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.56	Pass
	15 msec	m/s	-3.30 to -4.10	-3.83	Pass
	20 msec	m/s	-4.40 to -5.40	-5.07	Pass
	25 msec	m/s	-5.40 to -6.10	-5.91	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.13	Pass
D-Plane Rotation	Max	Degrees	71 to 81	79.6	Pass
	Time	msec	50 to 70	65.6	Pass
Peak Occipital Condyle Moment		Nm	-36 to -44	-41.0	Pass
Decaying Moment Time to Cross 0 Nm		msec	102 to 126	120.7	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	-6.1	31.4



Curve Description			
Maximum Translation Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
79.6	65.6	-34.8	184.8



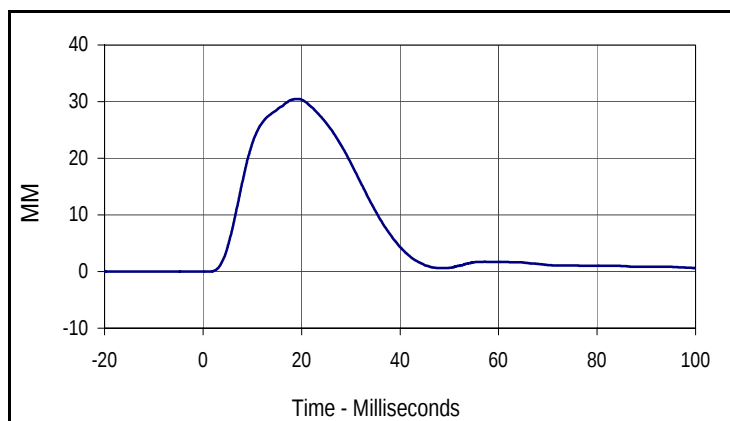
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
16.2	167.2	-41.0	62.5

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

Test Date: 12/7/11
 Test I.D.: 299SH025



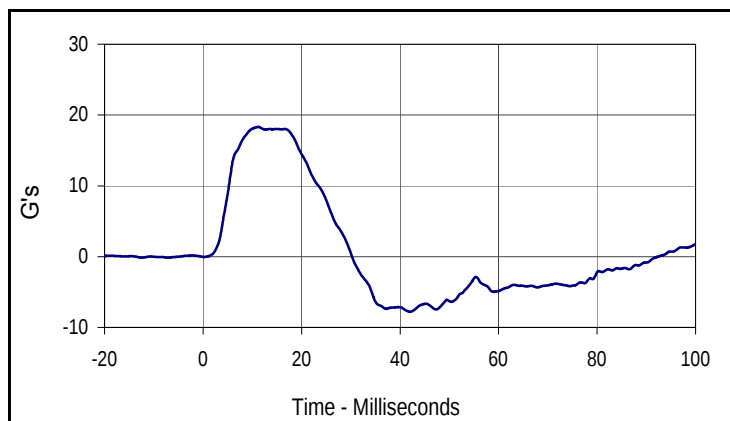
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	260	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	32.5	Pass
Impactor Velocity		m/s	4.20 to 4.40	4.31	Pass
Peak Shoulder Deflection		mm	28 to 37	30.5	Pass
Peak Lateral Spine Acceleration Y		G's	17 to 22	18.3	Pass
Peak Impactor Acceleration		G's	13 to 18	15.6	Pass
Overall Test Results				Pass	



Curve Description

Shoulder Deflection

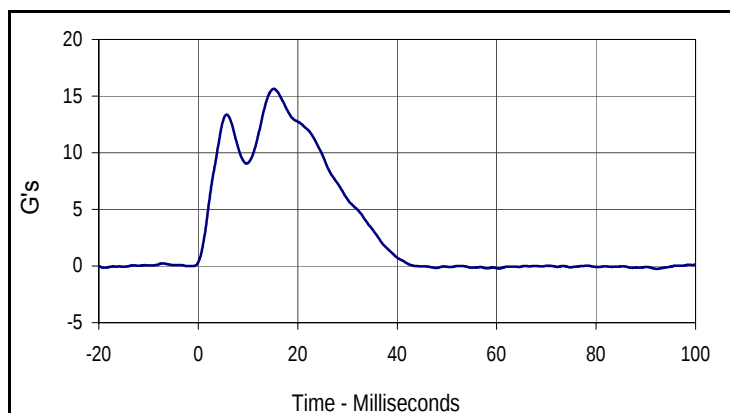
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
30.5	18.9	0.0	-20.0



Curve Description

Upper Spine Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.3	11.2	-7.8	42.0



Curve Description

Impactor Acceleration

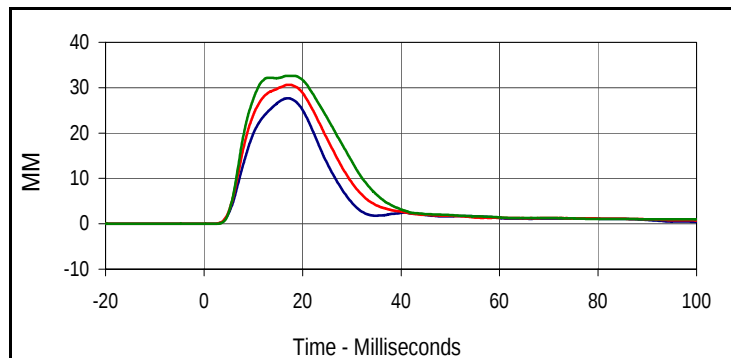
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.6	15.2	-0.2	92.3

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

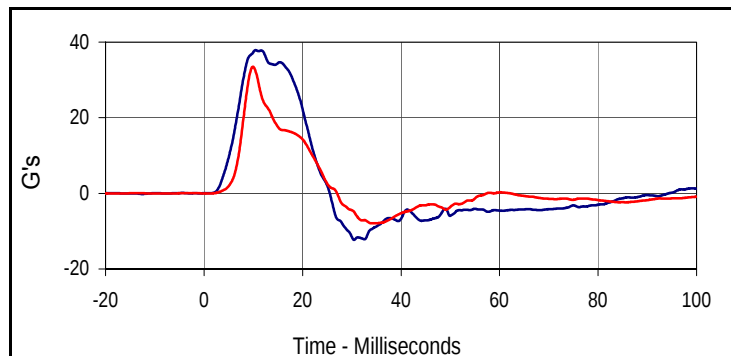
Test Date: 12/7/11
 Test I.D.: 299TWA025



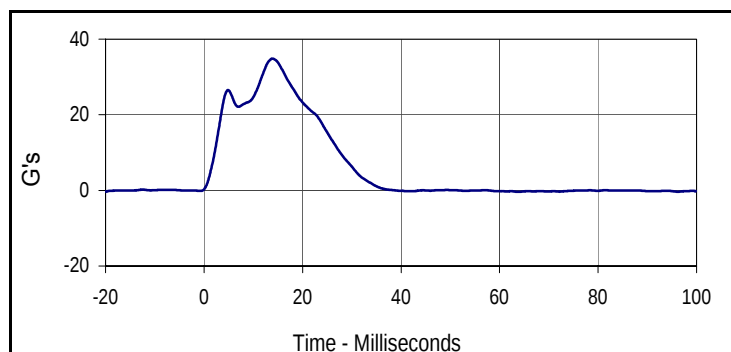
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	300	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	34.9	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Shoulder Deflection	mm	31 to 40	36.1	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.7	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	30.6	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	32.6	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	37.9	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	33.5	Pass
Peak Impactor Acceleration	G's	30 to 36	34.8	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.7	17.0	0.0	-2.1
Middle Thorax Deflection			
Max	Time	Min	Time
30.6	17.5	0.0	-2.3
Lower Thorax Deflection			
Max	Time	Min	Time
32.6	17.3	0.0	-13.2



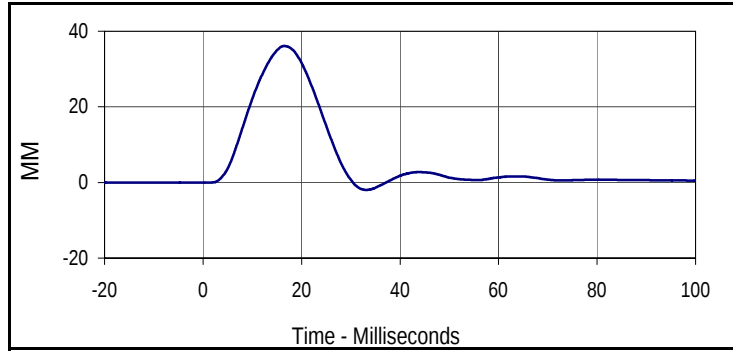
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
37.9	10.4	-12.3	30.5
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
33.5	9.9	-7.9	34.1



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.8	13.9	-0.4	63.8

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

Test Date: 12/7/11
 Test I.D.: 299TWA025



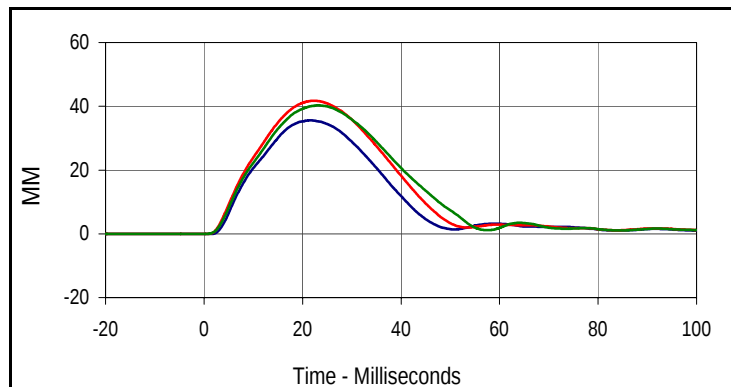
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
36.1	16.4	-2.0	33.1

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

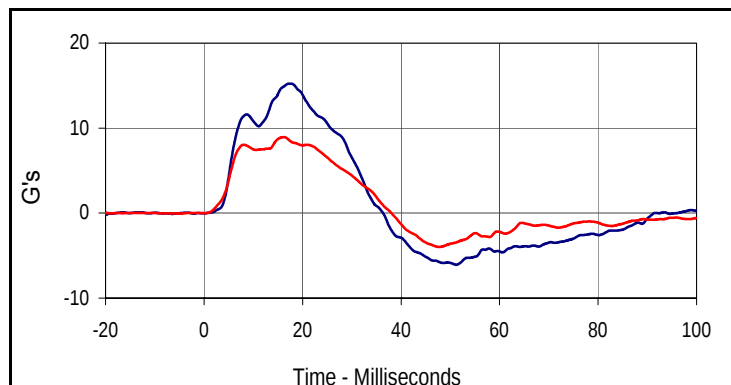
Test Date: 12/7/11
 Test I.D.: 299TWOA025



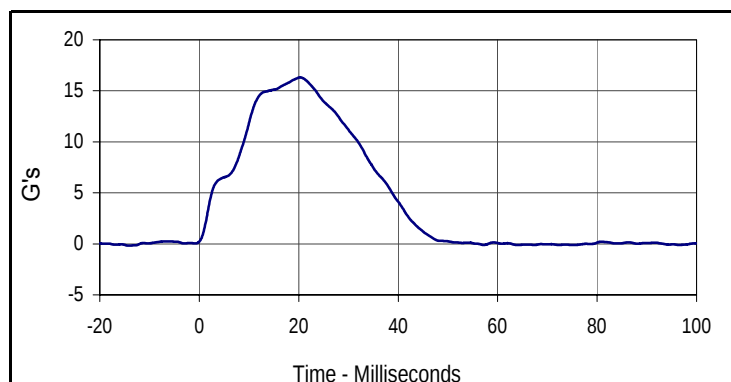
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	320	Pass
Temperature During Soak	Max °C	18.9 to 25.6	21.7	Pass
	Min °C		20.7	Pass
Humidity During Soak	Max %	10.0 to 70.0	40.0	Pass
	Min %		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	35.2	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.3	Pass
Peak Upper Thorax Rib Deflection	mm	32 to 40	35.6	Pass
Peak Middle Thorax Rib Deflection	mm	39 to 45	41.7	Pass
Peak Lower Thorax Rib Deflection	mm	35 to 43	40.3	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.2	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	8.9	Pass
Peak Impactor Acceleration	G's	14 to 18	16.3	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
35.6	21.5	0.0	-17.1
Middle Thorax Deflection			
Max	Time	Min	Time
41.7	22.2	0.0	-12.8
Lower Thorax Deflection			
Max	Time	Min	Time
40.3	23.2	0.0	-10.9



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.2	17.7	-6.1	51.2
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.9	16.2	-4.0	47.7



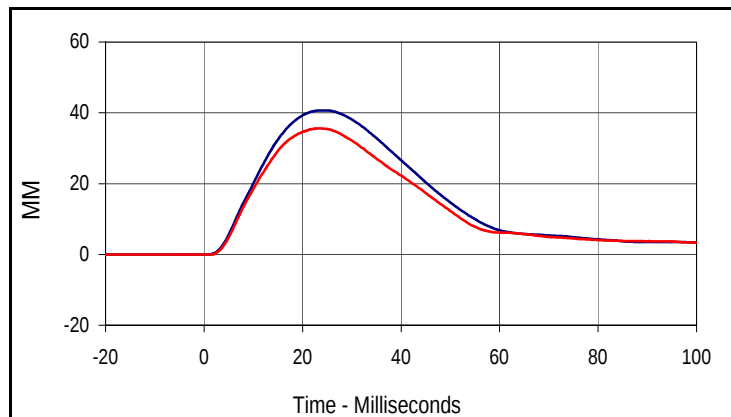
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.3	20.3	-0.2	-14.2

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

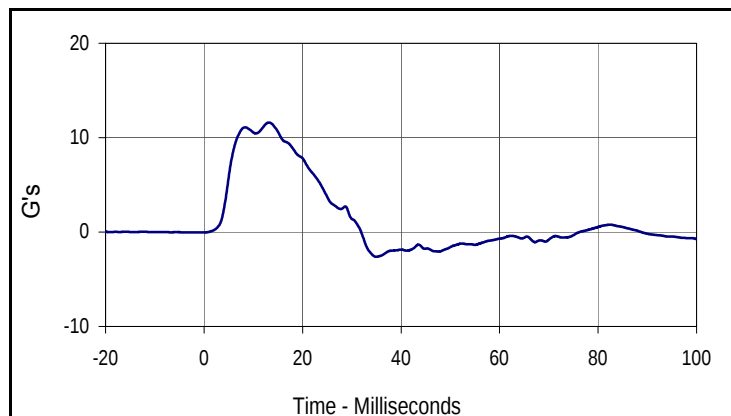
Test Date: 12/7/11
 Test I.D.: 299ABD025



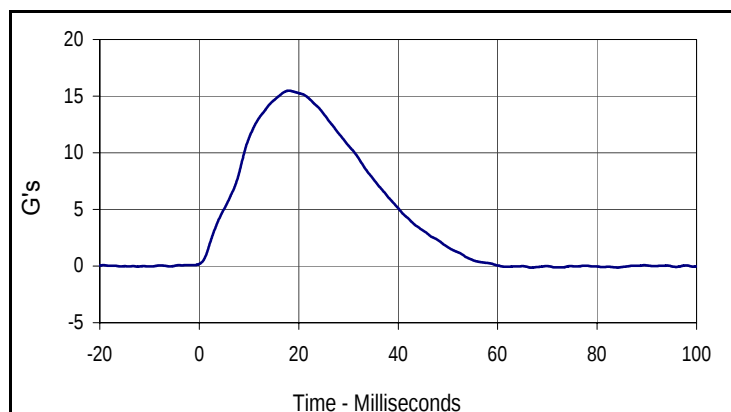
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	350	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.9	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.3	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	40.7	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	35.6	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	11.6	Pass
Peak Impactor Acceleration	G's	12 to 16	15.5	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
40.7	24.1	0.0	-12.1
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
35.6	23.8	0.0	-10.8



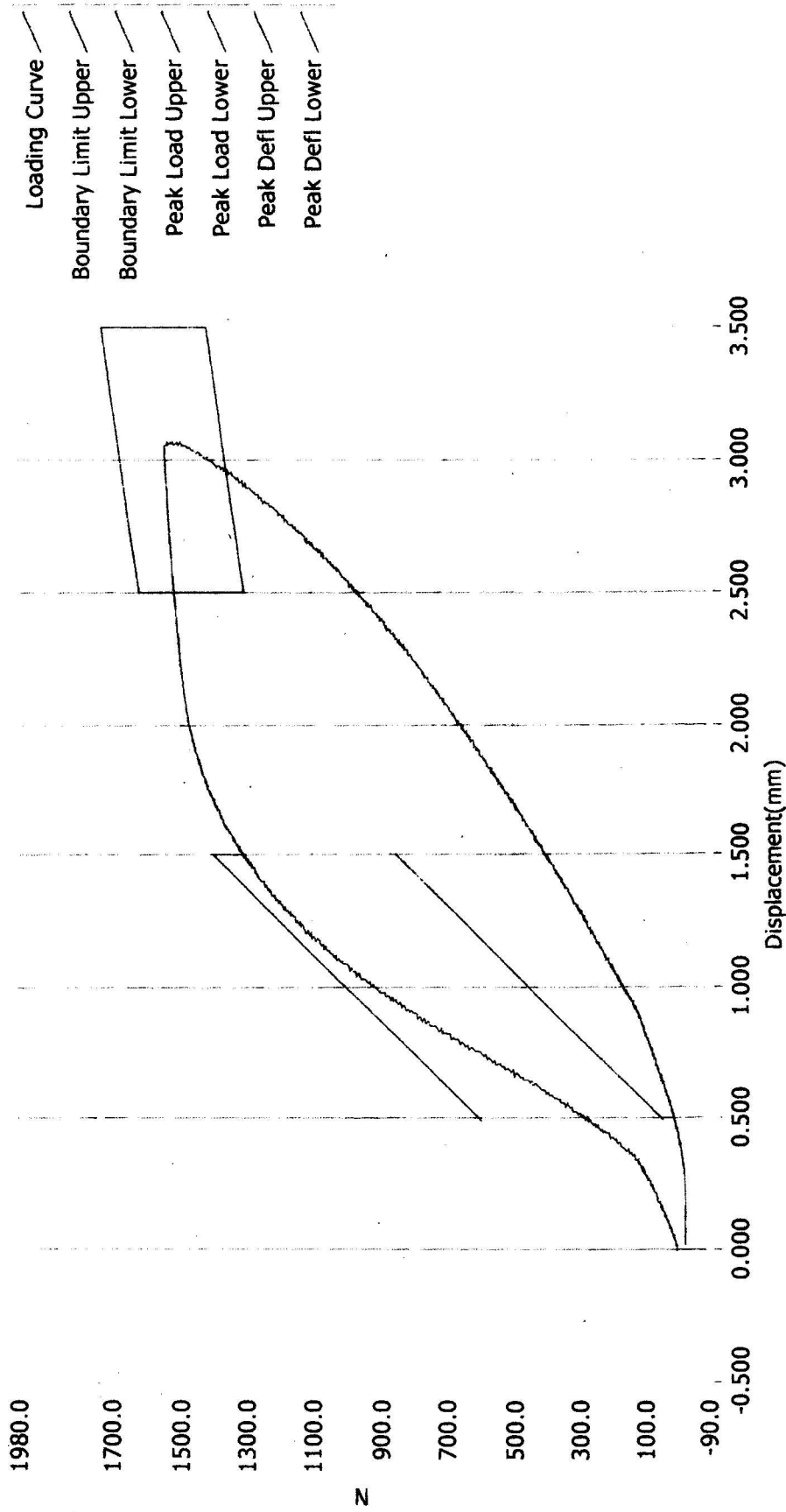
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.6	13.2	-2.6	35.0



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.5	18.1	-0.1	66.7

MC5315 POST TEST

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>
		9/22/2010	1:19 PM
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
	36322	SIDIIs	

Current Date : 9/22/2010

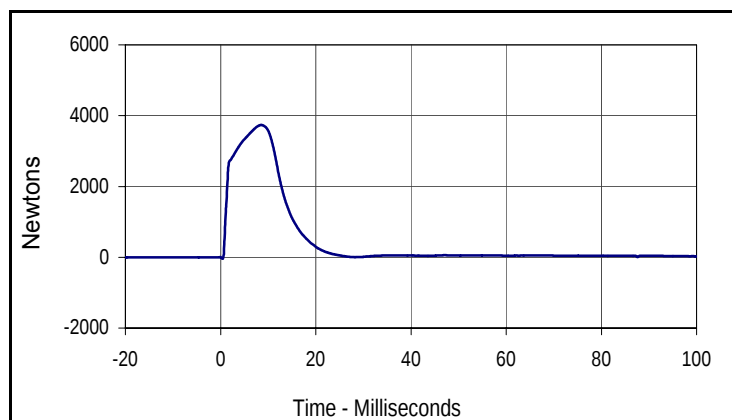
Current Time : 13:21:42

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

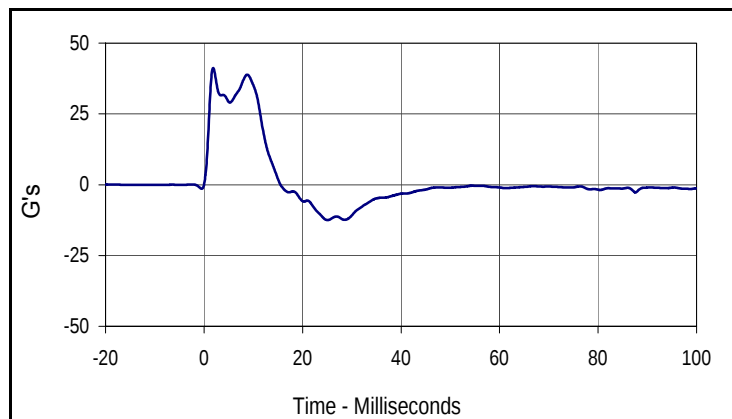
Test Date: 12/7/11
 Test I.D.: 299ACET025



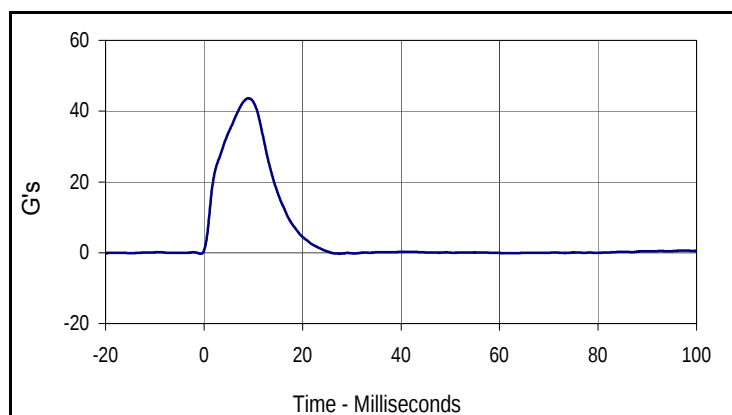
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	380	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.9	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	3736.0	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	38.9	Pass
Peak Impactor Acceleration	G's	38 to 47	43.6	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3736.0	8.5	-35.1	0.4



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
41.2	1.9	-12.5	25.1



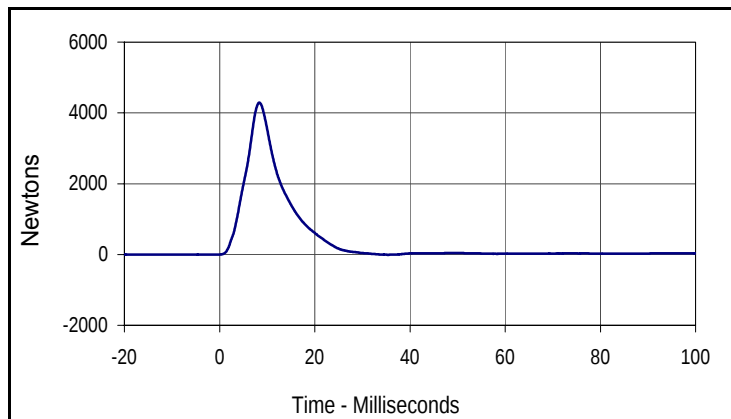
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
43.6	9.0	-0.3	-0.7

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

Test Date: 12/7/11
 Test I.D.: 299PL025



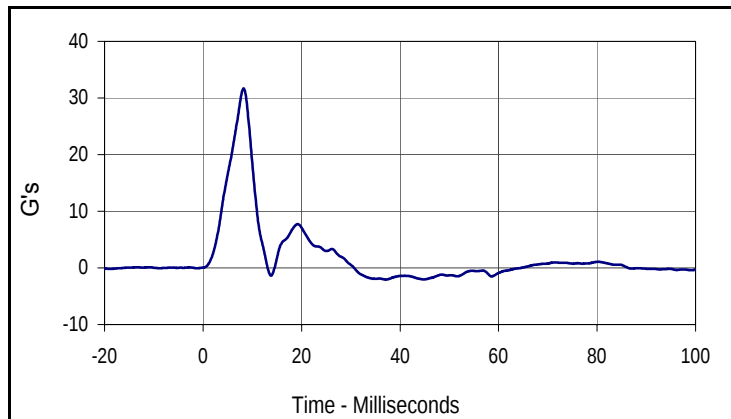
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	420	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	35.7	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.3	Pass
Peak Iliac Force	Newtons	4100 to 5100	4289.5	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	31.7	Pass
Peak Impactor Acceleration	G's	36 to 45	40.6	Pass
Overall Test Results			Pass	



Curve Description

Pelvis Iliac Force

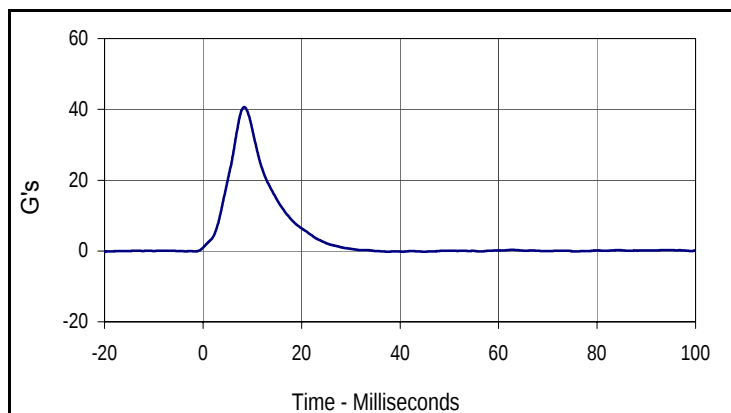
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4289.5	8.4	-7.9	35.4



Curve Description

Pelvis Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
31.7	8.2	-2.1	37.1



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
40.6	8.4	-0.2	45.0

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	8/8/11
			Y	P51929	Endevco	8/8/11
			Z	P51934	Endevco	8/8/11
Displacement Potentiometers	Shoulder		Y	1074	FTSS	8/8/11
	Thoracic Rib	Upper	Y	1143	FTSS	8/8/11
		Middle	Y	1160	FTSS	8/8/11
		Lower	Y	1213	FTSS	8/8/11
	Abdominal Rib	Upper	Y	1218	FTSS	8/8/11
		Lower	Y	1234	FTSS	8/8/11
Lower Spine Accelerometers (T12)			X	P63999	Endevco	8/5/11
			Y	P58872	Endevco	8/4/11
			Z	P58795	Endevco	8/4/11
Acetabulum Load Cell			Y	272	Denton	7/22/11
Iliac Wing Load Cell			Y	284	Denton	7/22/11
Pelvis Plug (Struck Side)				36394	FTSS	9/23/10
Pelvis Plug (Non-Struck Side)				36527	FTSS	9/24/10

TABLE 2 – Vehicle Instrumentation

Vehicle Instrumentation		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	Ketx5a	ICSensor	6/20/11
Vehicle Center of Gravity	Y	Ketx5b	ICSensor	6/20/11
Vehicle Center of Gravity	Z	Ketx5c	ICSensor	6/20/11
Left Floor Sill	Y	Keva508	Endevco	8/2/11
A-Pillar Sill	Y	J36724	Endevco	3/30/11
A-Pillar Low	Y	00L20-A20	Endevco	10/28/11
A-Pillar Mid	Y	J24288	Endevco	3/22/11
B-Pillar Sill	Y	J24533	Endevco	4/1/11
B-Pillar Low	Y	CY06H	Endevco	3/15/11
B-Pillar Mid	Y	AK96	Endevco	3/15/11
Driver Seat	Y	J21907	Endevco	3/30/11
Engine Top	X	BI60H	Endevco	7/22/11
Engine Top	Y	AR17	Endevco	7/22/11
Firewall	Y	BJ54H	Endevco	5/30/11
Right Roof	Y	EK16J	Endevco	2/3/11
Right Floor Sill	Y	BG29H	Endevco	5/6/11
Rear Floorpan	X	Ketx12a	Endevco	7/20/11
Rear Floorpan	Y	Ketx12y	Endevco	7/21/11

TABLE 3 – Pole Instrumentation

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	131822A	Interface	8/8/11
Load Cell 2	132304A	Interface	8/8/11
Load Cell 3	19477	Interface	8/8/11
Load Cell 4	19325	Interface	8/8/11
Load Cell 5	131827A	Interface	8/8/11
Load Cell 6	132302A	Interface	8/8/11
Load Cell 7	19267	Interface	8/8/11
Load Cell 8	19321	Interface	8/8/11