

REPORT NUMBER: SPNCAP-KAR-12-049

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

**HONDA OF CANADA MFG.
2012 HONDA CIVIC LX 2-DOOR COUPE**

NHTSA No: MC5312

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



FEBRUARY 21, 2012

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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16. Abstract A 32.2 km/h (20 mph) 75 deg. oblique impact Side NCAP Test was conducted on the subject 2012 Honda Civic LX 2-door coupe in accordance with the specifications of the Office of Crashworthiness 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 February 7, 2012. The impact velocity was 32.2 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 13.9 deg. C. The target vehicle's maximum post-test static crush was 360 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>224.3</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82</td> <td>49.9</td> </tr> <tr> <td>Total Pelvic Force (Sum of Acetabular and Iliac Forces)</td> <td>N</td> <td>5525</td> <td>3906</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38</td> <td>23</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45</td> <td>25</td> </tr> </tbody> </table> The door on the struck side of the vehicle did not separate from the body at the hinges or latches. The opposite door did not open during the side impact event.				Measurement Description	Driver ATD (ES-2re)			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	224.3	Resultant Lower Spine Acceleration	g	82	49.9	Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	3906	Maximum Thoracic Rib Deflection	mm	38	23	Maximum Abdominal Rib Deflection	mm	45	25
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Maximum Thoracic Rib Deflection	mm	38	23																											
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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																												
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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 of a 2012 Honda Civic LX 2-door coupe. 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 Honda Civic LX 2-door coupe. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.2 km/h. The test was conducted by KARCO Engineering, LLC. in Adelanto, California on February 7, 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 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	224.3
Lower Spine (T12) Resultant Acceleration	g	82	49.9
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3906
Maximum Thoracic Rib Deflection	mm	38*	23
Maximum Abdominal Rib Deflection	mm	45*	25

**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)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes	Yes	Yes	Yes
Other	No		No	

GENERAL COMMENTS

The door on the struck side of the vehicle remained closed and latched. There was no separation at the hinges or latches. The door 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 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12

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: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MC5312
Model Year	2012
Make	Honda
Model	Civic LX
Body Style	2-Door Coupe
VIN	2HGFG3B58CH512266
Body Color	Rallye Red
Odometer Reading (km / mi)	116 / 72
Engine Displacement (L)	1.8
Type / No. of Cylinders	Inline 4
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	5
Overdrive	Yes
Final Drive	Front
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes
All Wheel Drive (AWD)	No

Traction Control System (TCS)	Yes
Auto-Leveling 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	Yes
Driver Torso/Pelvis Airbag	No
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	None

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

Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda of Canada Mfg.
Date of Manufacture	Oct-11
Vehicle Type	Passenger

GVWR (kg)	1660
GAWR Front (kg)	900
GAWR Rear (kg)	790

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity	2	3		5	A
Capacity Weight (VCW) (kg)				385.0	B
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							

GENERAL TEST AND VEHICLE PARAMETER DATA

The diagram shows a tire with the following markings and labels:

- Treadwear, traction and temperature grades:** TREADWEAR 220 TRACTION A TEMPERATURE A
- Tire ply composition and materials used:** TREAD 2 PLYES 20XXX CORD MAX LOAD 1300 LBS MAX PRESS 35 PSI
- Max cold inflation & load limit:** MAX COLD INFLATION & LOAD LIMIT
- Tire Name:** TIRE NAME
- Manufacturer:** MANUFACTURER
- U.S. DOT safety standard code:** U.S. DOT SAFETY STANDARD CODE
- Load index & speed symbol:** 89H
- Diameter of wheel in inches:** 22.5
- Ratio of height to width (aspect ratio):** 65
- Radial:** R
- Width of tire in millimeters:** 215
- Passenger car tire:** Passenger car tire

Measured Parameter	Front	Rear
Recommended Cold Tire Pressure (kPa)	210	210
Recommended Tire Size	P195/65R15	P195/65R15

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	300	300
Tire Size on Vehicle	P195/65R15	P195/65R15
Tire Manufacturer	Continental	Continental
Tire Name	ContiPro Contact	ContiPro Contact
Tire Type	Passenger	Passenger
Tire Width	195	195
Aspect Ratio	65	65
Radial	Yes	Yes
Wheel Diameter	15	15
Load Index/Speed Symbol	89H	89H
Treadware	500	500
Traction Grade	AA	AA
Temperature Grade	A	A
Tire Material	Polyester, Polyamide, Steel	Polyester, Polyamide, Steel

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	200	200	195	195
Tire Placard	kPa	210	210	210	210
Owner's Manual	kPa	210	210	210	210
As Tested	kPa	210	210	210	210

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	383.5	238.5		403.5	265.0		400.0	281.0	
Right	kg	366.0	231.5		383.0	255.5		367.5	265.0	
Ratio	%	61.5%	38.5%	100.0%	60.2%	39.8%	100.0%	58.4%	41.6%	100.0%
Total	kg	749.5	470.0	1219.5	786.5	520.5	1307.0	767.5	546.0	1313.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1219.5	A
Actual Weight of 1 P572 O ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	44.8	C
Calculated Vehicle Target Wt (TVTW)	kg	1313.3	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

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Rear Bumper Cover	4.0
Rear Bumper Beam	8.5
Trunk Soft Trim	1.5
Outboard Mirror	1.0
Non-Struck Door Panel and Interior Trim	6.0
Non-Struck Side Windows	5.0
Tail lights	2.0
Ballast / Equipment Added	72.3

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

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12

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	0.0	Yes
Front Passenger Sill Angle (front-to-rear)*	°	-0.2	-0.1	0.0	Yes
Front Bumper-Line Angle (left-to-right)**	°	-0.5	-0.5	-0.5	Yes
Rear Bumper-Line Angle (left-to-right)**	°	-1.1	-1.1	-1.3	Yes
Vehicle CG (Aft of Front Axle)	mm	1011	1045	1090	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	15	17	28	

*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 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12

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	1.0	0.0	0.5
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle	As Tested SCRP Height	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid Fore/Aft	Forwardmost
Driver Seat	0.5	517	Max	493	505	517
			Mid	493	505	517
			Min	493	505	517
Front Passenger Seat	Fixed	512	Max	488	500	512
			Mid	488	500	512
			Min	488	500	512
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

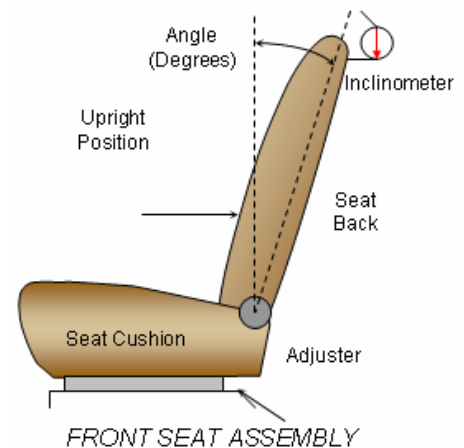
Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12

SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	240	25	0	0
Front Passenger Seat	240	25	0	0
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	69.6	36	0.2	0
Front Passenger Seat	63.2	36	0.2	0
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. The positions are marked H, M1, ... , L from top to bottom.

	Total No. of Positions	Placed in Position
Driver Seat	Fixed	Fixed

DATA SHEET NO. 2 ... (CONTINUED)**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA**Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12**HEAD RESTRAINT ADJUSTMENT**

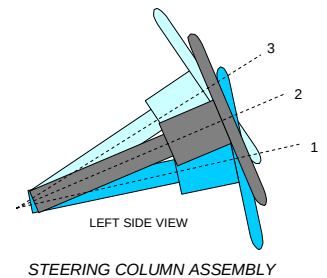
The driver's head restraint is adjusted to the lowest and most full forward in-use position.

	Total No. of Positions	Placed in Position
Driver Seat	6	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	19.9	151
Geometric Center - Position 2	22.4	170
Uppermost - Position 3	25.0	190
Telescoping Steering Wheel Travel		39
Test Position	22.4	170



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

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12

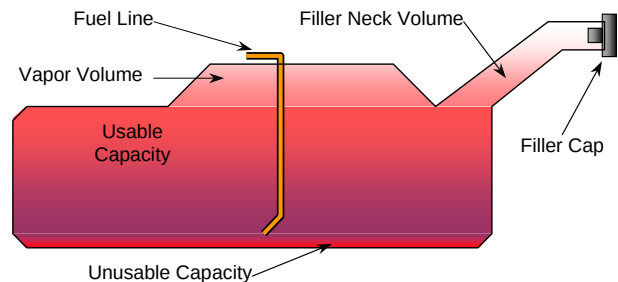
FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	49.96
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	46.46
Actual amount of Solvent Used in Test	46.46
1/3 of Usable Capacity	16.65

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**

FUEL PUMP

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

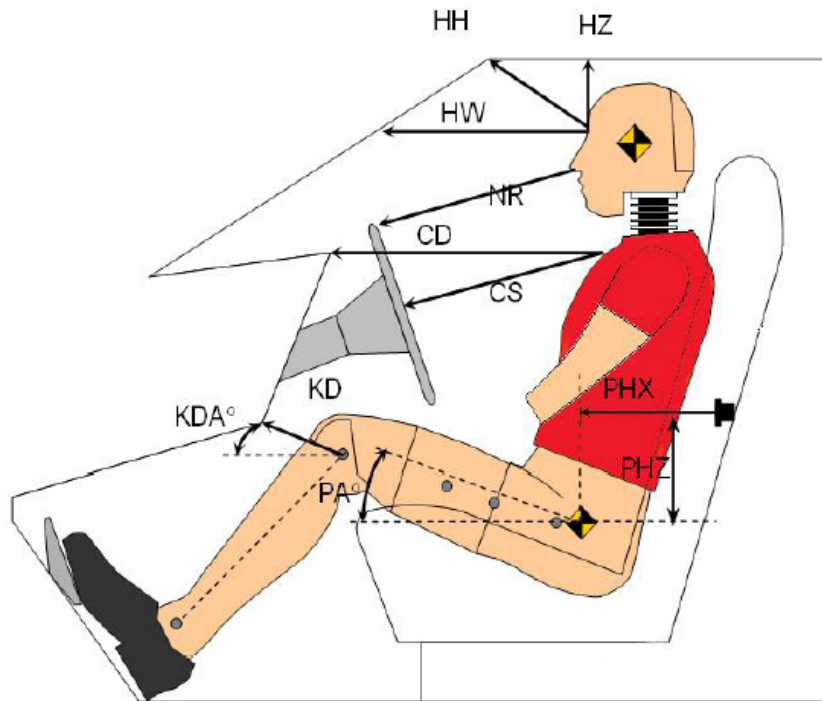


VEHICLE FUEL TANK ASSEMBLY

DATA SHEET NO. 3

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12



DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	243	
HW	Head to Windshield	642	
HZ	Head to Roof	184	
NR	Nose to Rim	216	
CD	Chest to Dash	421	
CS	Chest to Steering Wheel	167	
KD(L)/KDA(L)°	Left Knee to Dash	94	40.3
KD(R)/KDA(R)°	Right Knee to Dash	81	40.0
PAX°	Pelvic Tilt Angle (x-axis)		21.5
PAY°	Pelvic Tilt Angle (y-axis)		0.0
PHX	Hip Point to Striker (x-axis)	597	
PHZ	Hip Point to Striker (z-axis)	238	

DATA SHEET NO. 4

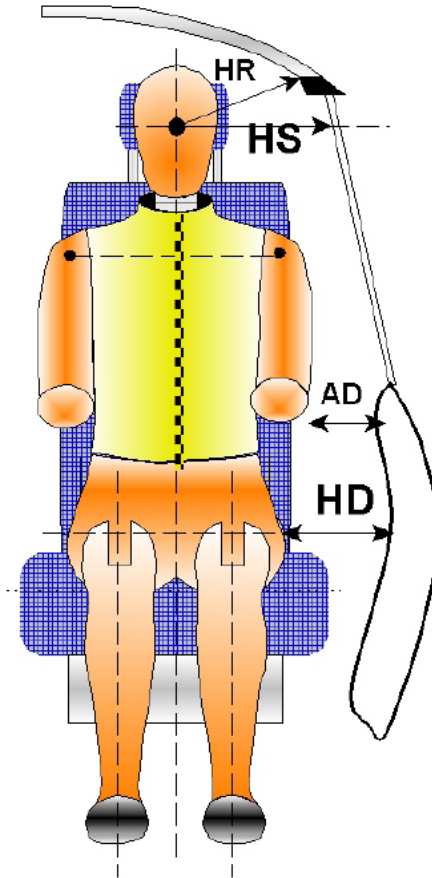
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe

NHTSA No. MC5312

Test Program: NCAP Side Pole Impact Test

Test Date: 02/07/12



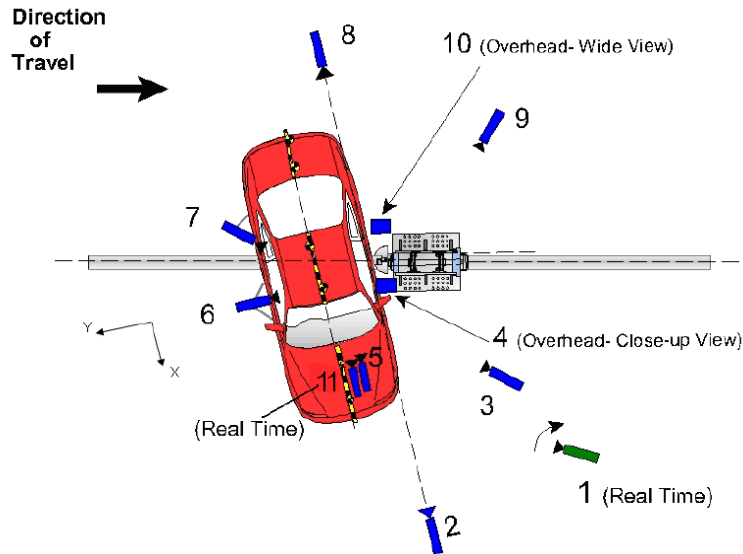
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	236
HS	Head to Side Window	mm	360
AD	Arm to Door	mm	162
HD	H-Point to Door	mm	174

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12



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	1.49	0.41	-1.25	24	1000
6	On-Board - Dummy Side View	-0.19	1.48	-1.05	14	1000
7	On-Board - Dummy Rear Oblique View	-0.96	1.64	-1.14	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	1.49	0.47	-1.25		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

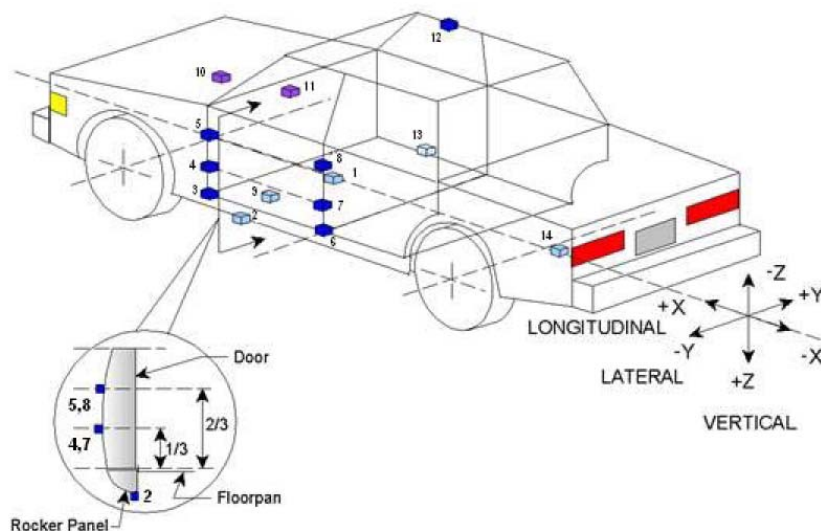
INSTRUMENTATION

Driver Dummy Channels	16
Vehicle Structure Accelerometers	15
Pole Load Cells	8
Total	39

DATA SHEET NO. 6

TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

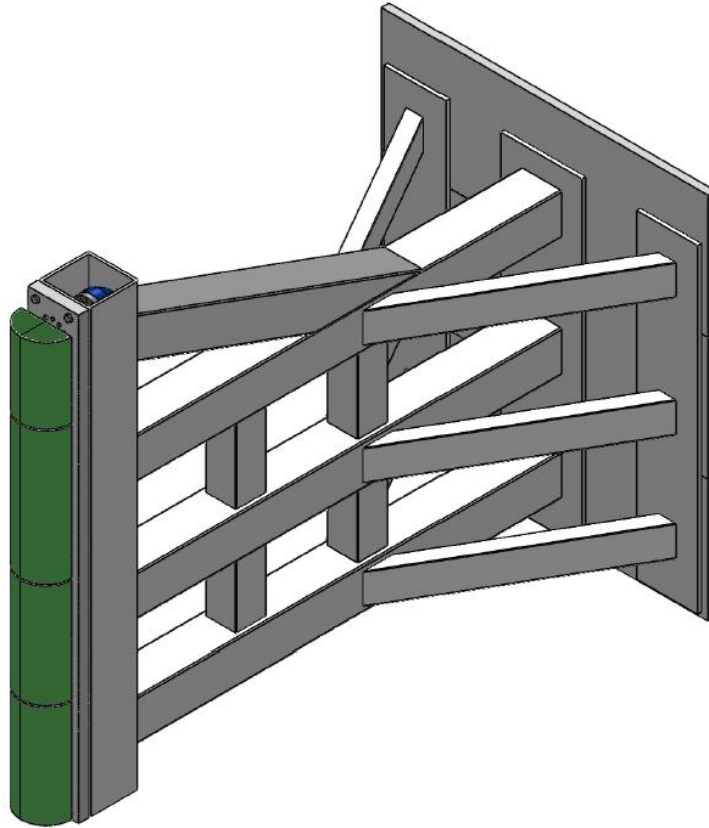
Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	1819	18	-235
2	Left Floor Sill	3022	-605	-184
3	A-Pillar Sill	3106	-771	-315
4	A-Pillar Low	3106	-771	-464
5	A-Pillar Mid	3106	-771	-736
6	B-Pillar Sill			
7	B-Pillar Low			
8	B-Pillar Mid			
9	Driver Seat Track	2297	-550	-310
10	Engine Top	3710	89	-831
11	Firewall	3463	122	-745
12	Right Roof	2105	471	-1356
13	Right Floor Sill	1975	688	-290
14	Rear Floorpan	859	410	-530

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 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12



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: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver SID-IIs Dummy
Face	Curtain Airbag, Torso Airbag
Top of Head	Curtain Airbag, Head Restraint
Left Side of Head	Curtain Airbag, Torso Airbag, Head Restraint
Back of Head	Curtain Airbag, Head Restraint
Left Shoulder	Seat, Torso Airbag
Upper Torso	Seat
Lower Torso	Seat, Torso 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		Yes		Yes
Total Separation from Vehicle at Hinges or Latches	No		No		No
Latch or Hinge System Pulled Out of Their Anchorages	No		No		No
Disengaged from Latched Position	No		No		No
Latch Separated from Striker	No		No		No
Jammed Shut	Yes		No		No
If Door Opened at Striker, Record Width of Opening at Striker (mm)	n/a		n/a		n/a

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	No	No	No
Seat Disengagement from Floor Pan	No	No	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	No Separation
Windshield Damage	Broken
Side Window Damage	Left Front Window Broken
Other Notable Effects	None

DATA SHEET NO. 8 ... (CONTINUED)

POST-TEST OBSERVATIONS

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

IMPACT POINT LOCATION DATA

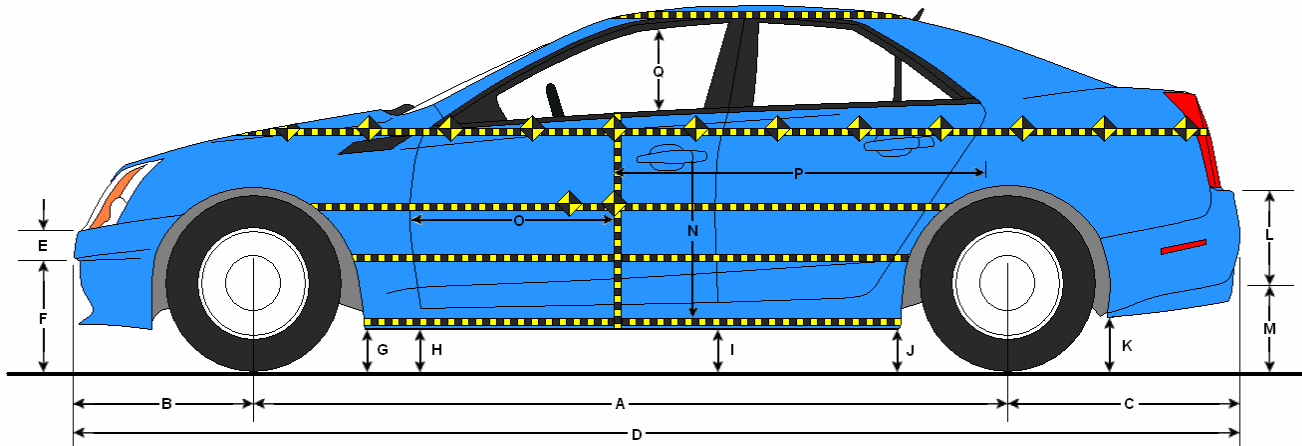
Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		1097
Actual Impact Point (Aft of Front Axle)	mm		1072
Horizontal Offset (+ forward / - rearward)	mm	± 38 of Intended Impact Point	25
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	°	75 ± 3	
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.2
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.2

¹Measurement unavailable due to camera failure.

DATA SHEET NO. 9

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

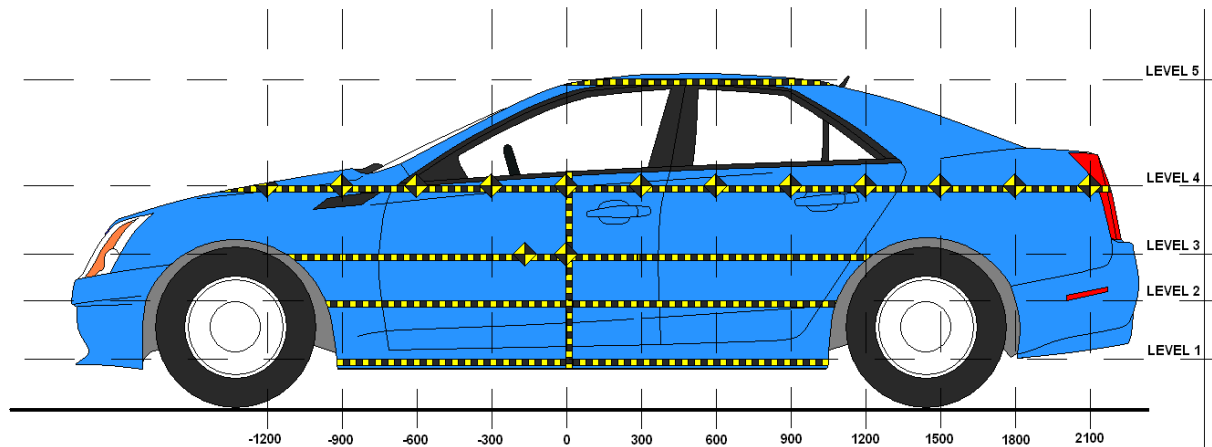
Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2623	2564	-59
B	Front Axle to FSOV	891	910	19
C	Rear Axle to RSOV	846	864	18
D	Total Length at Centerline	4252	4338	86
E	Front Bumper Thickness	356	356	0
F	Front Bumper Bottom to Ground	222	243	21
G	Sill Height at Front Wheel Well	186	201	15
H	Sill Height at Front Door Leading Edge	186	205	19
I	Sill Height at B-Pillar	192	237	45
J1	Sill Height at Rear Wheel Well	191	242	51
J2	Pinch Weld Height at Rear Wheel Well	167	222	55
K	Sill Height Aft of Rear Wheel Well	428	451	23
L	Rear Bumper Thickness	354	354	0
M	Rear Bumper Bottom to Ground	281	304	23
N	Sill Height to Bottom of Front Window Sill	572	626	54
O	Front Door Leading Edge to Impact CL	646	571	-75
P	Rear Door Trailing Edge to Impact CL	1310	1706	396
Q	Front Window Opening	327	346	19
R	Right Side Length	3038	3046	8
S	Left Side Length	3037	2948	-89
T	Vehicle Width at B-Pillar	1752	1714	-38

All measurements in mm with tolerance of $\pm 3\text{mm}$

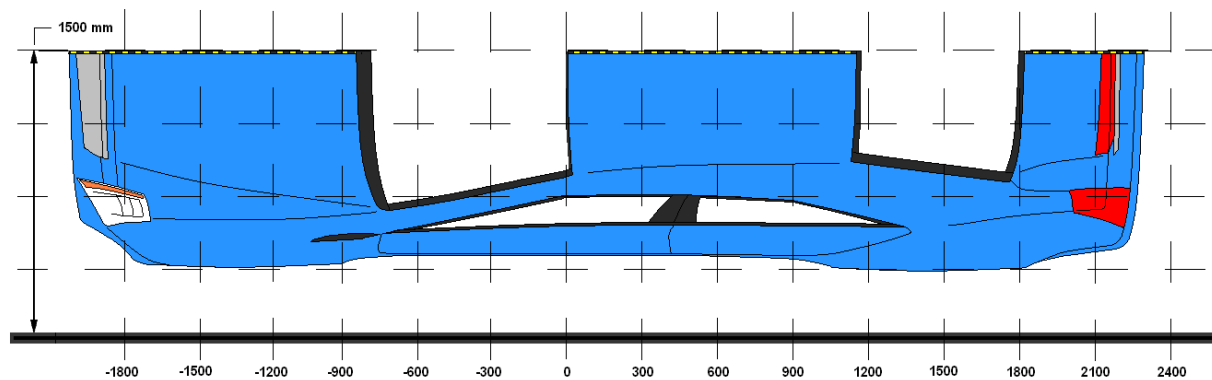
DATA SHEET NO. 10

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12



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	228	332	0
2	Occupant H-Point	496	351	0
3	Mid-Door	618	360	0
4	Window Sill	857	324	0
5	Window Top	1321	153	150

DATA SHEET NO. 10 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312

Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12

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			622	704				664	742				42	38	
-750		622	626	695			666	670	743			44	44	48	
-600	655	630	630	687		694	703	701	744		39	73	71	57	
-450	659	632	631	680		786	764	767	786		127	132	136	106	
-300	659	633	630	676		845	830	840	841		186	197	210	165	
-150	658	633	630	674		918	906	914	920		260	273	284	246	
0	658	633	630	673	891	990	984	990	997	1043	332	351	360	324	152
150	656	633	630	672	892	952	945	957	972	1045	296	312	327	300	153
300	655	634	630	669	895	859	877	894	898	1029	204	243	264	229	134
450	655	635	630	663	899	801	816	815	834	1004	146	181	185	171	105
600	654	636	629	659	904	759	749	744	767	983	105	113	115	108	79
750	653	636	630	654	908	719	703	702	706	964	66	67	72	52	56
900	652	636	632	655	914	684	696	696	716	954	32	60	64	61	40
1050	651	632	633	656	922	651	661	697	708	955	0	29	64	52	33
1200		630	627	657	928		636	692	702	955		6	65	45	27
1350			627	659				663	698				36	39	
1500				662					692					30	
1650				671					692					21	
1800				684					697					13	
1950				700					706					6	
2100															
2250															
2400															
2550															
2700															
2850															

DATA SHEET NO. 10 ... (CONTINUED)

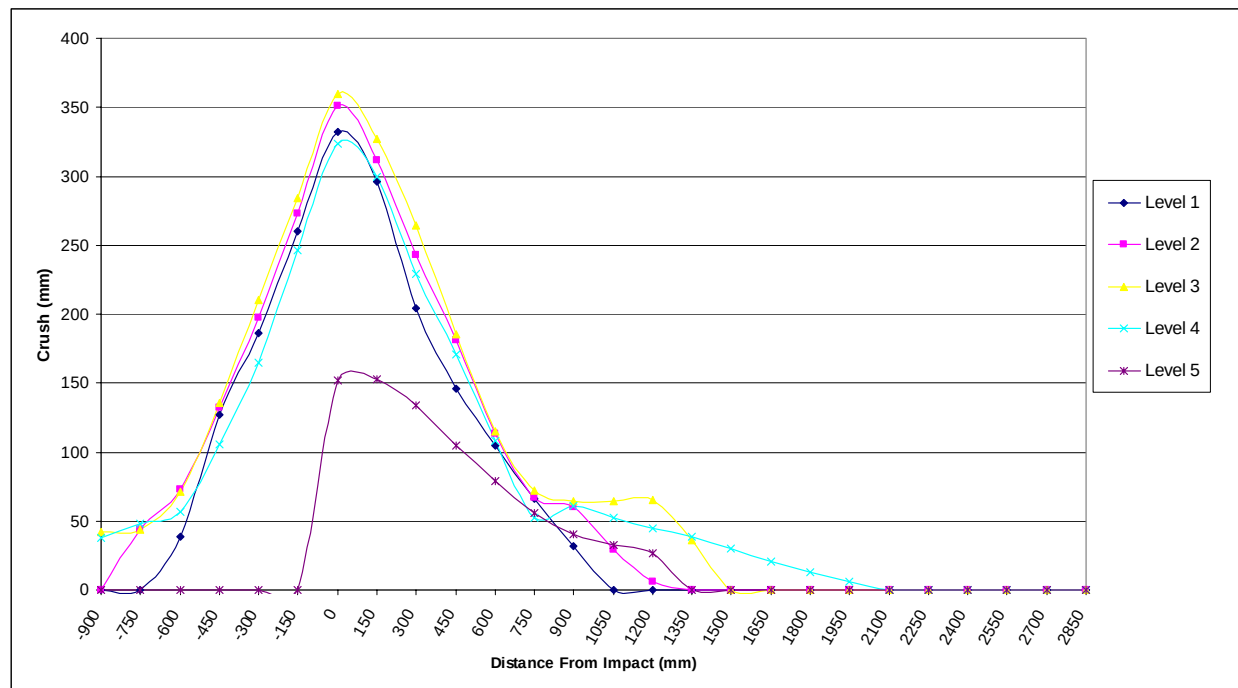
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe

NHTSA No. MC5312

Test Program: NCAP Side Pole Impact Test

Test Date: 02/07/12

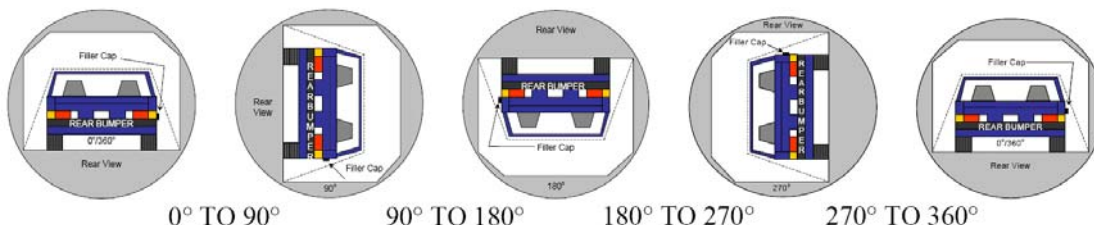


DATA SHEET NO. 11

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
 Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12
 Temperature at Time of Impact: 13.9 ° C Test Time: 11:43 AM

- 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°	85	300	385
90° To 180°	81	300	381
180° To 270°	78	300	378
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			

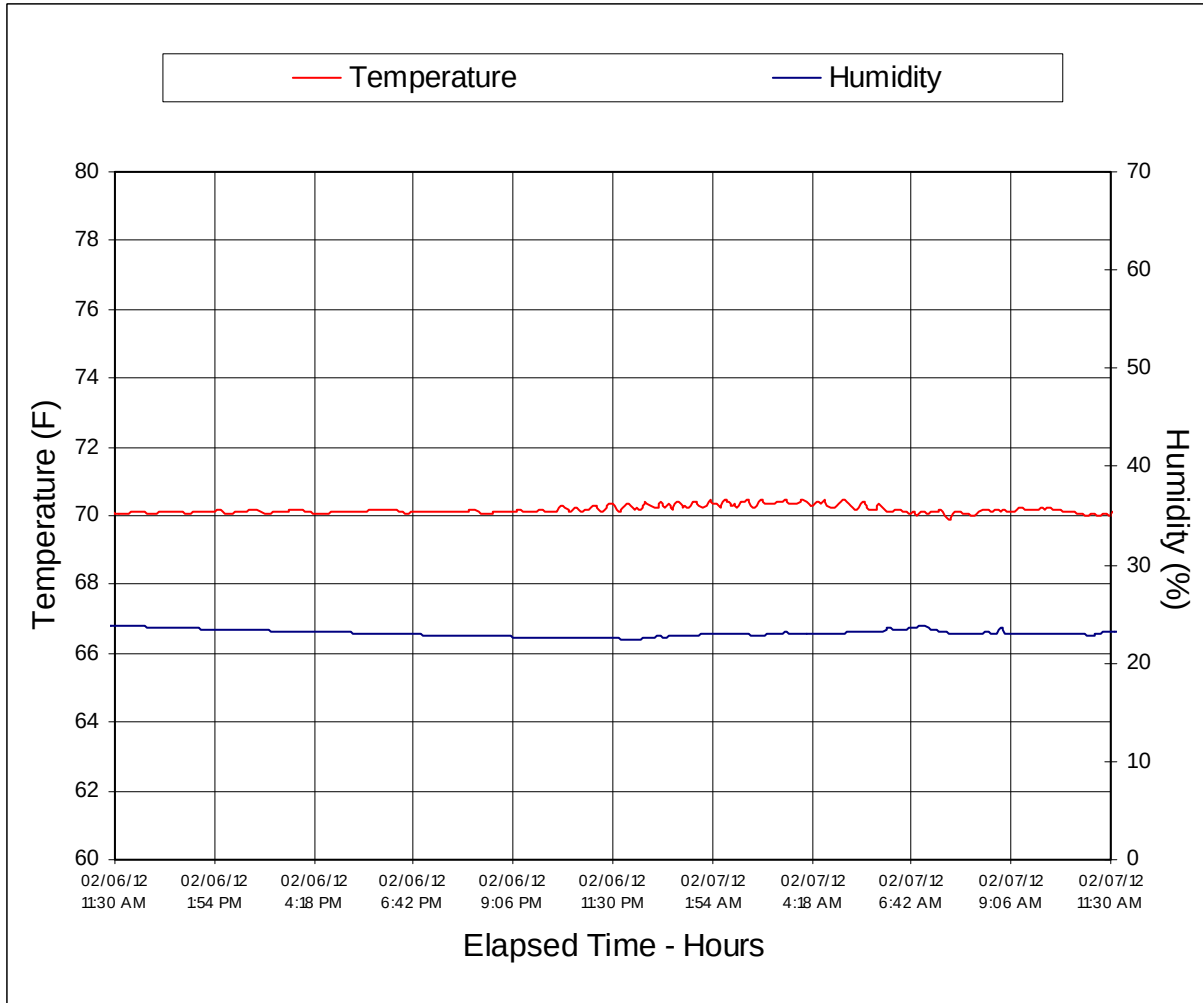
SOLVENT SPILLAGE LOCATION TABLE

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 Honda Civic LX 2-Door Coupe NHTSA No. MC5312
Test Program: NCAP Side Pole Impact Test Test Date: 02/07/12



APPENDIX A
PHOTOGRAPHS

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



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



FIGURE 3. Pre-Test Frontal View of Test Vehicle

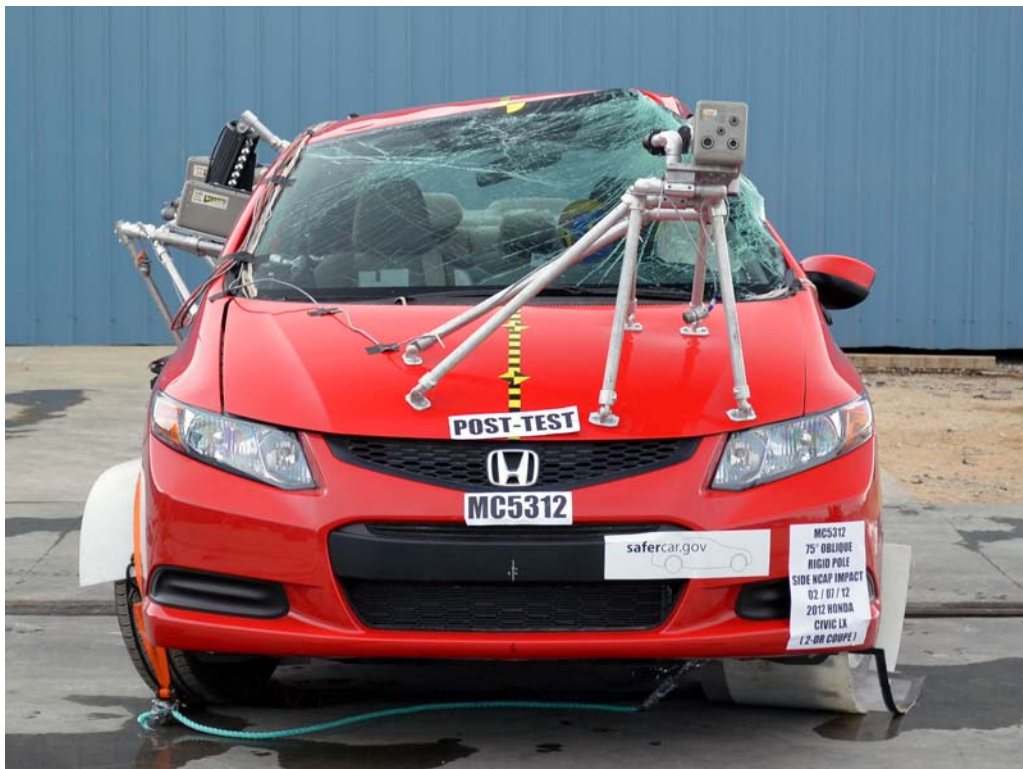


FIGURE 4. Post-Test Frontal View of Test Vehicle



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



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



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



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



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



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



FIGURE 11. Pre-Test Rear View of Test Vehicle

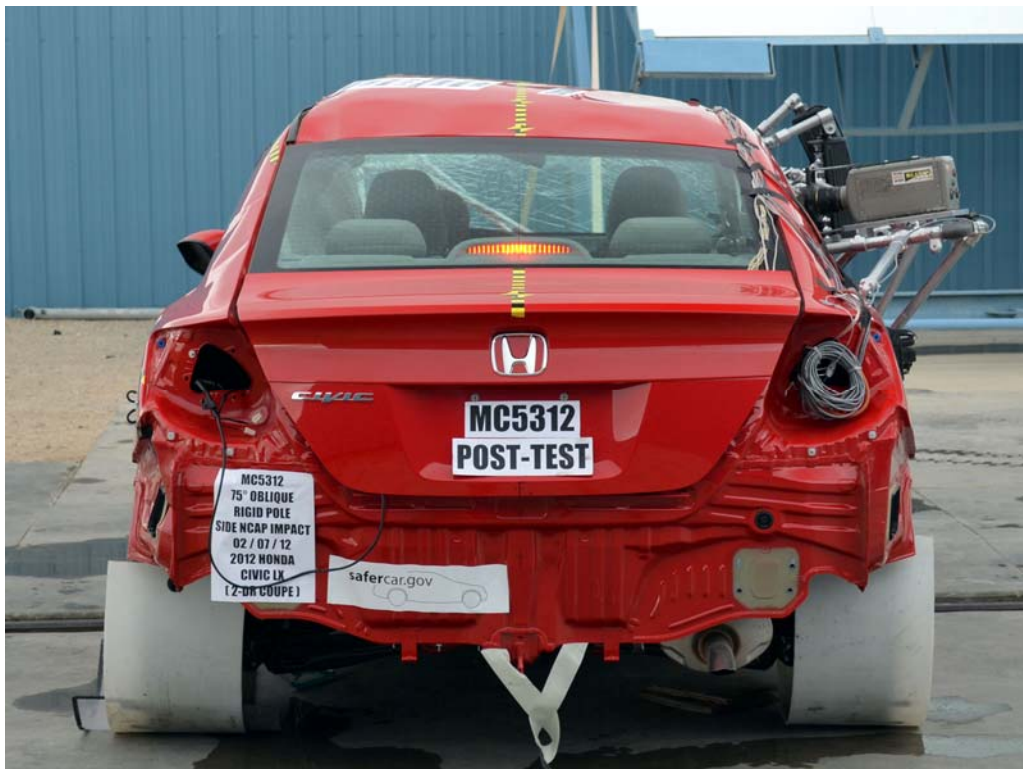


FIGURE 12. Post-Test Rear View of Test Vehicle



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



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



FIGURE 15. Pre-Test Overhead View of Test Vehicle and Pole

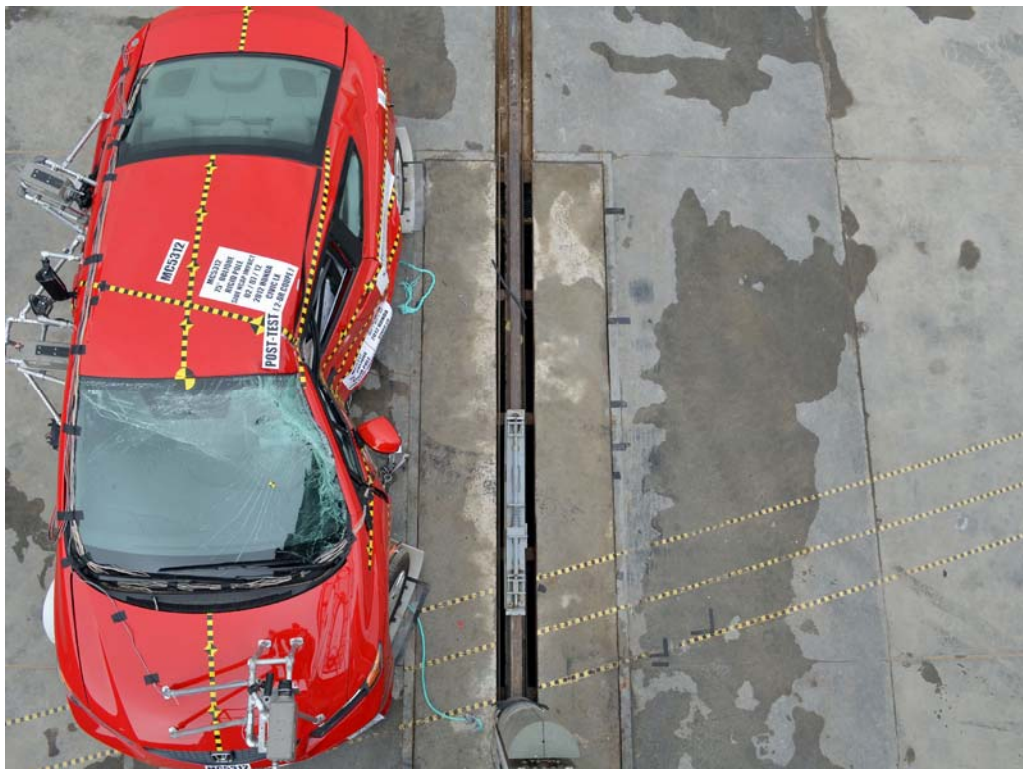


FIGURE 16. Post-Test Overhead View of Test Vehicle and Pole



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 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

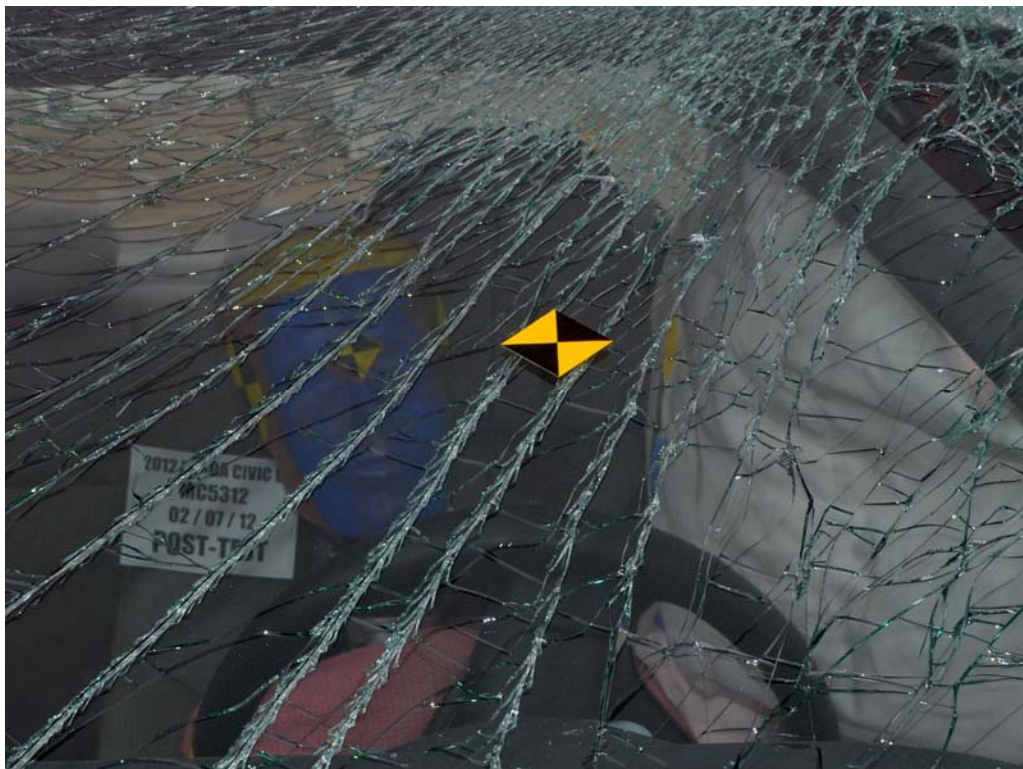


FIGURE 22. Post-Test Front Close-Up View of Dummy



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 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

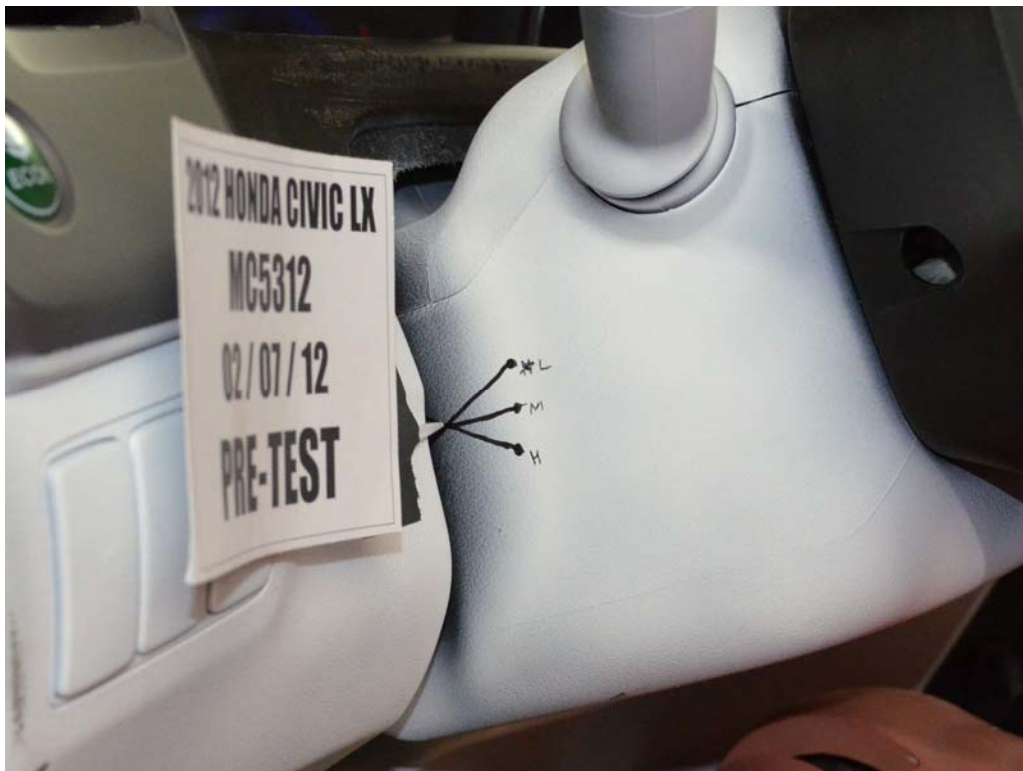


FIGURE 34. Pre-Test Left Side View of Steering Wheel



FIGURE 35. View of Disengaged Parking Brake



FIGURE 36. Pre-Test View of Parking Brake

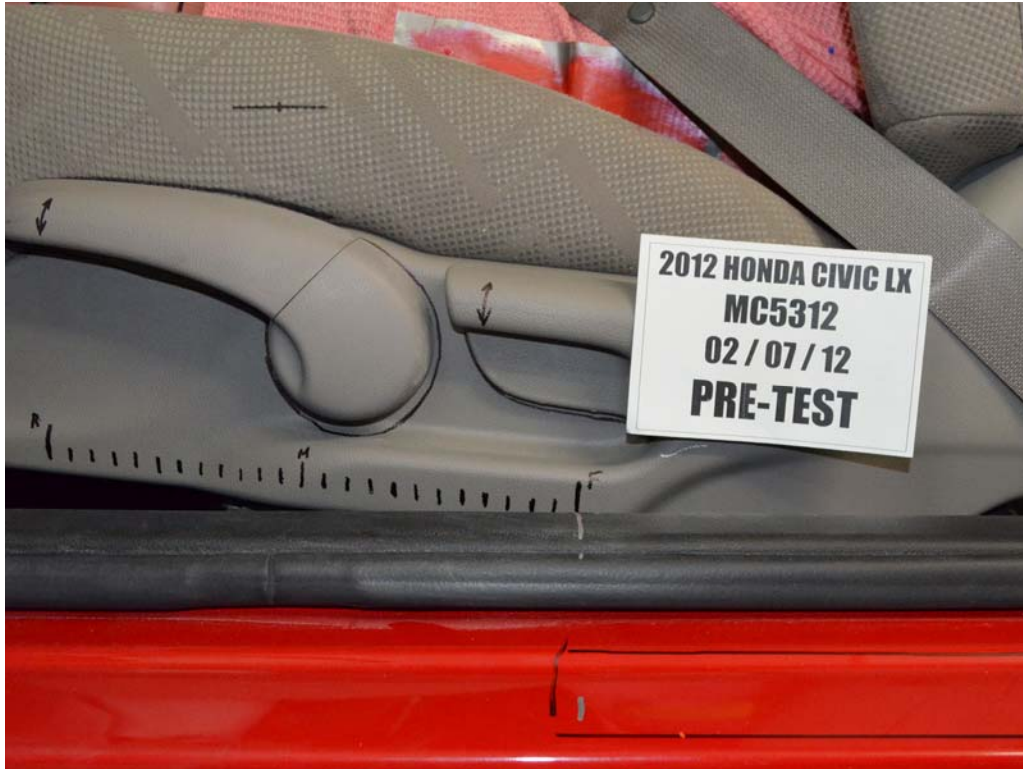


FIGURE 37. Pre-Test Close-Up Left Side View of Driver Seat Track



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

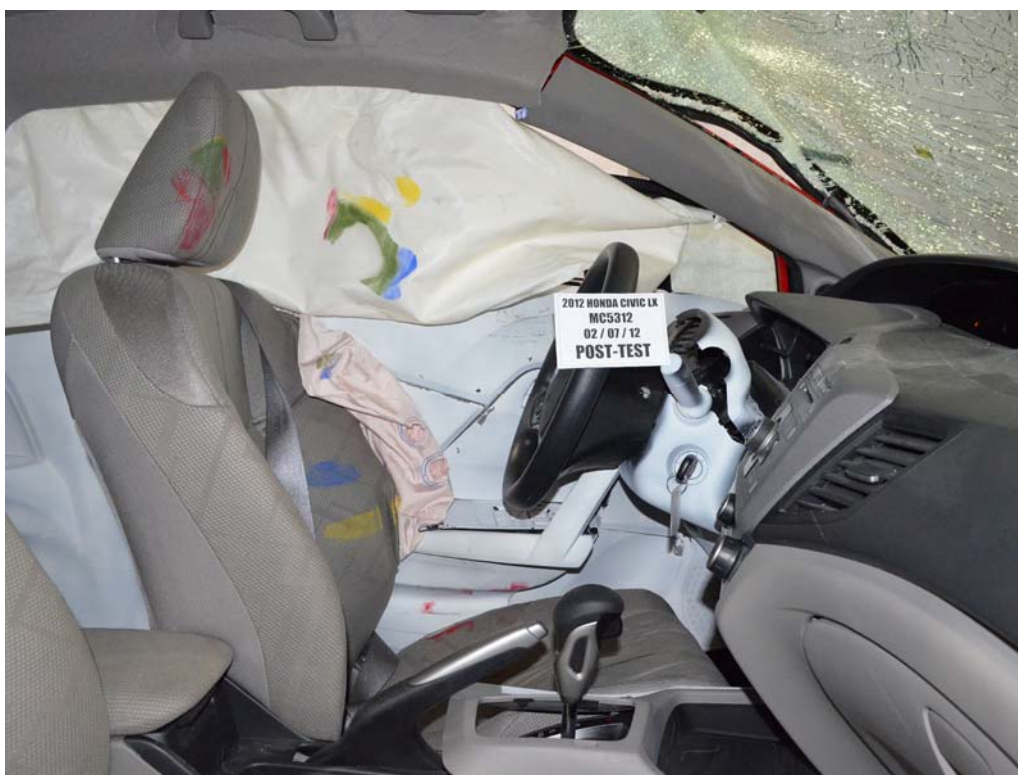


FIGURE 45. Post-Test Inner Driver Door Panel View
Showing Dummy Contact Locations



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

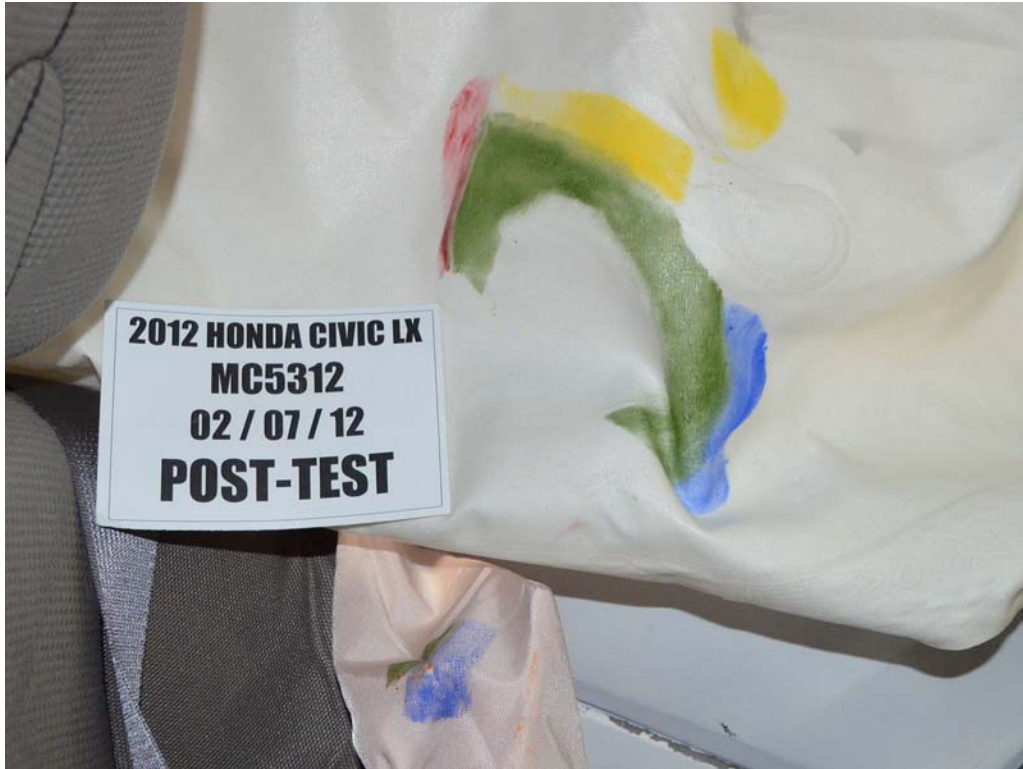


FIGURE 47. Post-Test Dummy Close-Up Head Contact with Side Airbag View



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

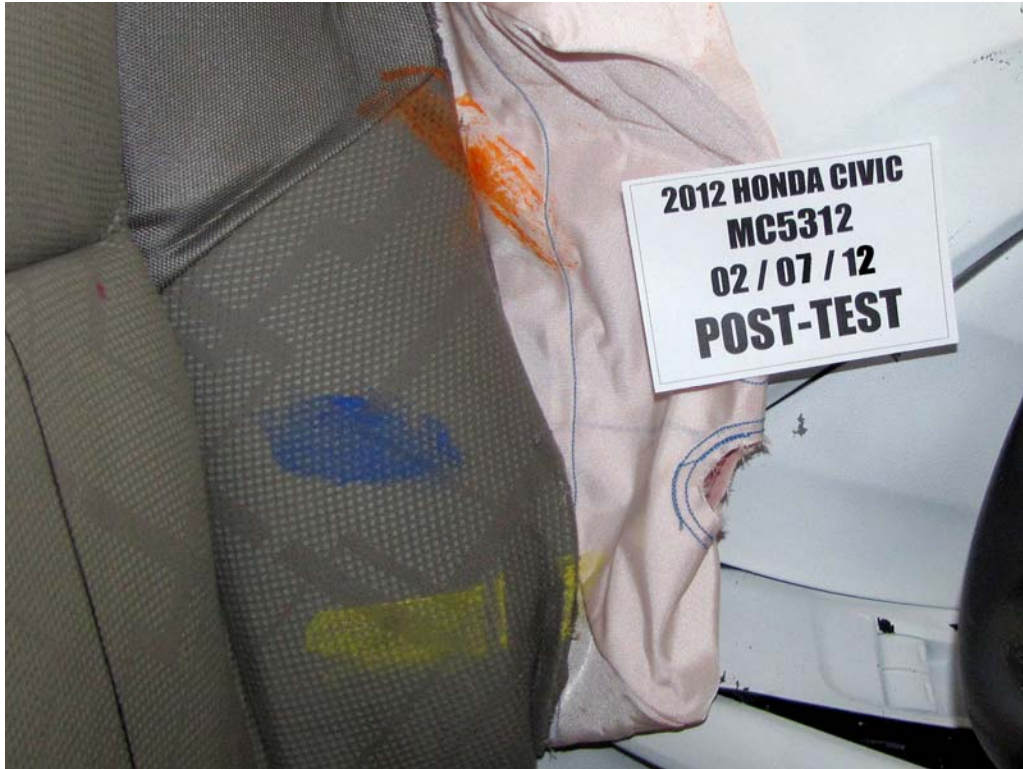


FIGURE 49. Post-Test Dummy Close-Up Torso Contact with Side Airbag View



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

Photograph Not Applicable

No Driver Dummy Pelvis Contact With Side Airbag

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

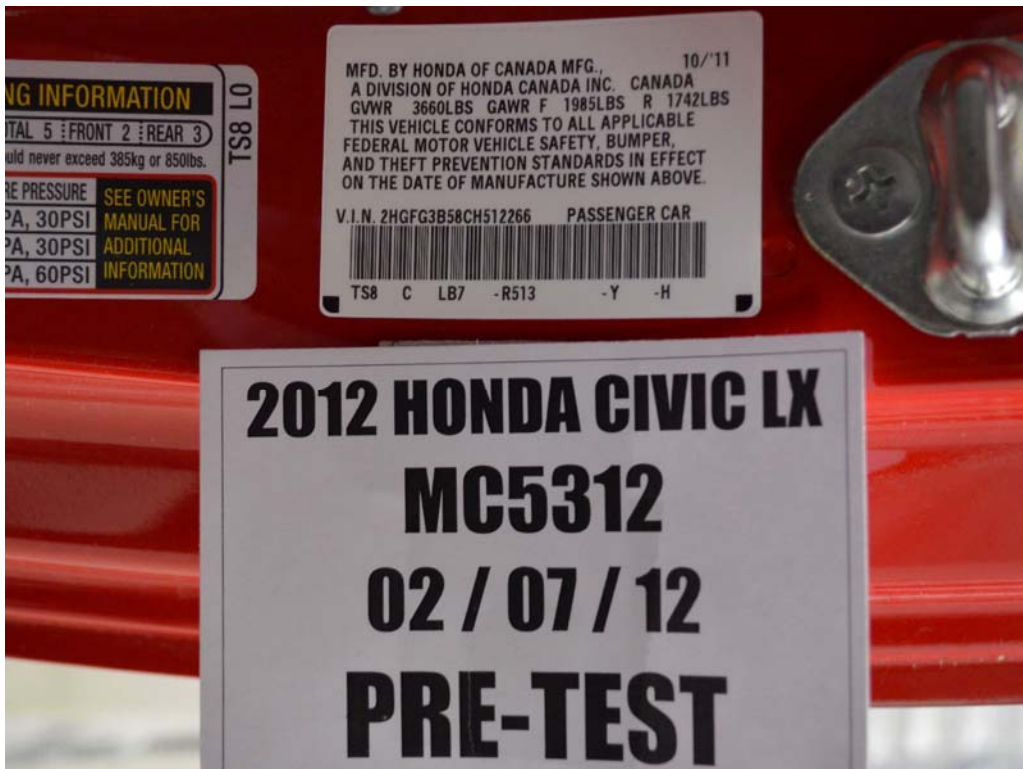


FIGURE 54. Close-Up View of Vehicle's Certification Label

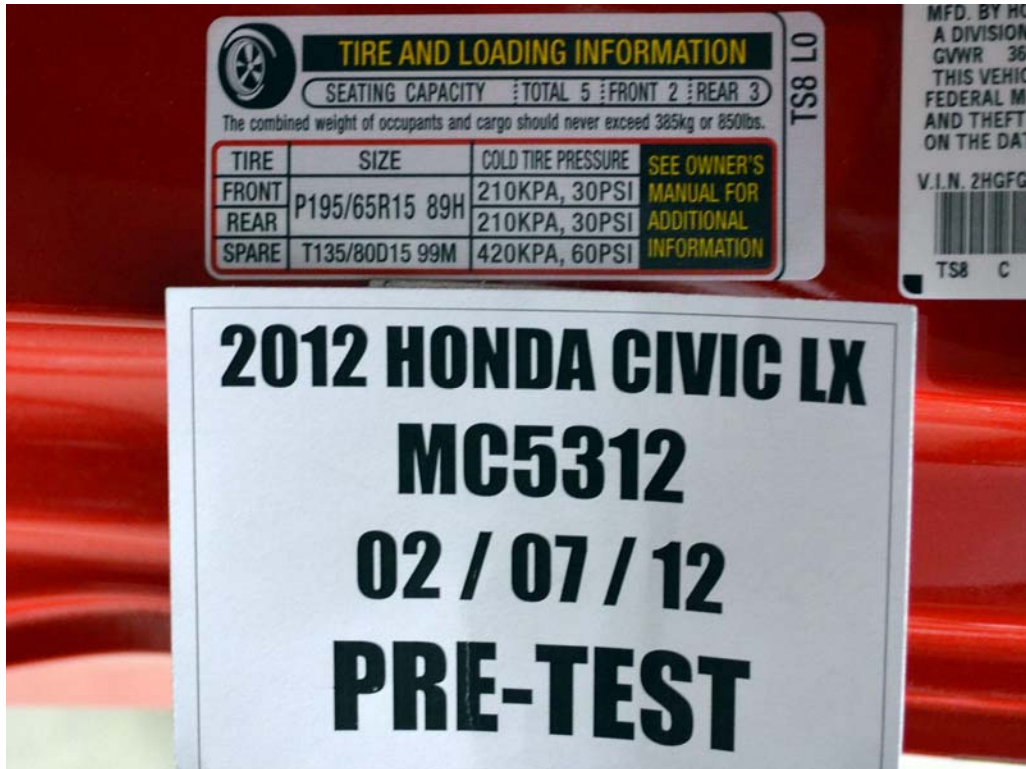


FIGURE 55. Close-Up View of Vehicle's Tire Information Placard



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

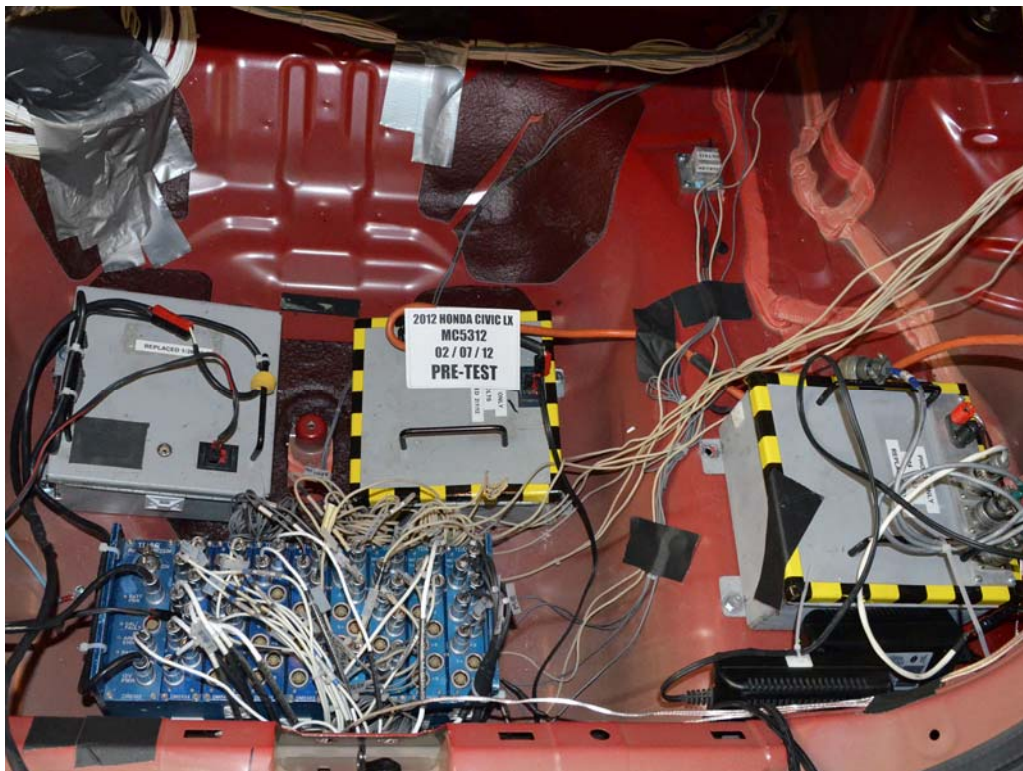


FIGURE 60. Pre-Test Ballast View



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

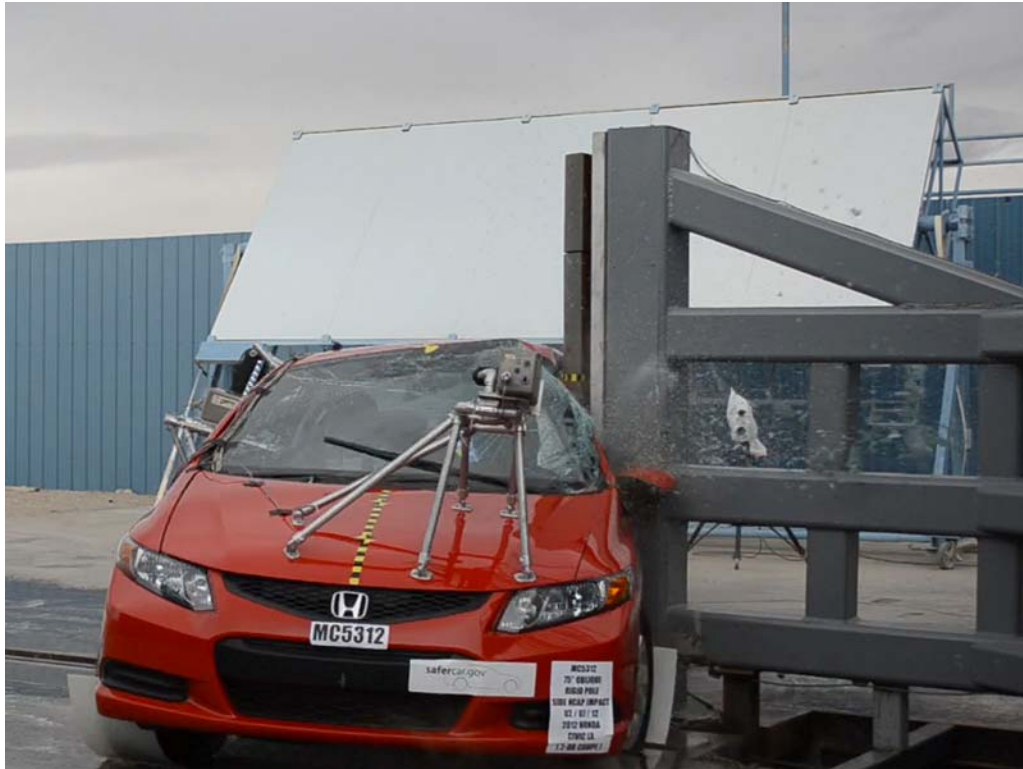


FIGURE 67. Impact Event

2012 CIVIC 2DR LX
 VEHICLE NUMBER: 2HGFC3B58CH512266
 VIN: 2HGFC3B58CH512266
 EXTERIOR COLOR: RAL 1116 RED
 INTERIOR COLOR: GRAY

STANDARD EQUIPMENT AT NO EXTRA COST

- TECHNICAL FEATURES**
 - 140-hp 2.4-liter I4 SOHC 16-Valve VTEC-E Cylinder Engine
 - 5-Speed Automatic Transmission with Grade Logic Control
 - Front MacPherson Strut Suspension with Blade-Beam Control
 - Rear Multi-Link Suspension
 - Electric Power-Assisted Rack and Pinion Steering
 - CAFR-Certified PZEV
 - Immobilizer Theft-Deterrent System
- SAFETY FEATURES**
 - Driver's and Front Passenger's Dual-Stage Airbags (SRS)
 - Driver's and Front Passenger's Side Airbags
 - Side Curtain Airbags
 - Anti-Lock Braking System (ABS)
 - Brake Assist
 - Electronic Brake Distribution (EBD)
 - Vehicle Stability Assist (VSA)
 - 3-Point Seat Belts
 - Four Seat Belts with Automatic Retracting System
 - Tire Pressure Monitoring System
 - Side-Impact Door Beams
 - Front and Rear Crumple Zones
 - ACE Body Structure
 - Engine Running Lights (ERL)
 - LATCH System for Child Seats
- INTERIOR FEATURES**
 - 160-Watt AM/FM/CD Audio System with 6 Speakers incl. MP3/WMA Playback
 - Steering Wheel Mounted Controls
 - USB Audio Interface
 - MP3/Auxiliary Input Jack
 - Air Conditioning
 - with Air Filtration System
 - Intelligent Multi-Information Display (i-MID)
 - Driver's Seat Height Adjustment
 - Fold-Down Rear Seatback
 - Front Center Console with Armrest
 - Power Windows and Door Locks
 - Driver's Auto Up/Down Window
 - Tilt & Telescopic Steering Column
 - Front Map Lights & Cargo Area Light
 - 12-Volt Power Outlet
 - Cruise Control
 - Child Locks
 - Essential Assist with Eco Button
 - Maintenance Minder System
- EXTERIOR FEATURES**
 - 15" x 6.0" Steel Wheels with Full Wheel Covers
 - 7135-55 1113 All-Season Tires
 - Auto-Off Headlights
 - Intermittent Wiper/Washers
 - Rear Window Defogger
 - Power Door Mirrors
 - Rear Spoiler
 - Remote Entry System
 - Security System

Manufacturer's Suggested Retail Price
\$18,455.00

Fuel Tank of Fuel No Charge

Destination and Handling 770.00

TOTAL VEHICLE PRICE
\$19,225.00

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
 10 (Best) 9 8 7 6 5 4 3 2 1 (Worst)
 A (Best) B C D E F G H I J (Worst)

Smog Score
 10 (Best) 9 8 7 6 5 4 3 2 1 (Worst)
 A (Best) B C D E F G H I J (Worst)

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 www.cars.ca.gov for more information. AIR RESOURCES BOARD

Environmental Performance

Protect the environment, choose vehicles with higher scores:

Global Warming Score
 10 (Best) 9 8 7 6 5 4 3 2 1 (Worst)
 A (Best) B C D E F G H I J (Worst)

Smog Score
 10 (Best) 9 8 7 6 5 4 3 2 1 (Worst)
 A (Best) B C D E F G H I J (Worst)

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 www.cars.ca.gov for more information. AIR RESOURCES BOARD

EPA Fuel Economy Estimates

CITY MPG
28
 Expected range for most drivers 33 to 33 MPG

Estimated Annual Fuel Cost
\$1,732
 Based on 15,000 miles at \$3.70 per gallon

Highway MPG
39
 Expected range for most drivers 39 to 46 MPG

Combined Fuel Economy
32
 This Vehicle
 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100
 All Compacts

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: **65 %**
 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's seat: **Not Rated**
 Passenger seat: **Not Rated**

Side Crash
 Front seat: **Not Rated**
 Rear seat: **Not Rated**

Rollover
Not Rated

Our ratings based on the risk of injury in a single vehicle crash.

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

www.safercar.gov or 1-800-327-4236

FOR THIS VEHICLE

Final Assembly Plant:
ALLISTON, ONTARIO CANADA

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

Transmission:
JAPAN

FIGURE 68. Monroney Label

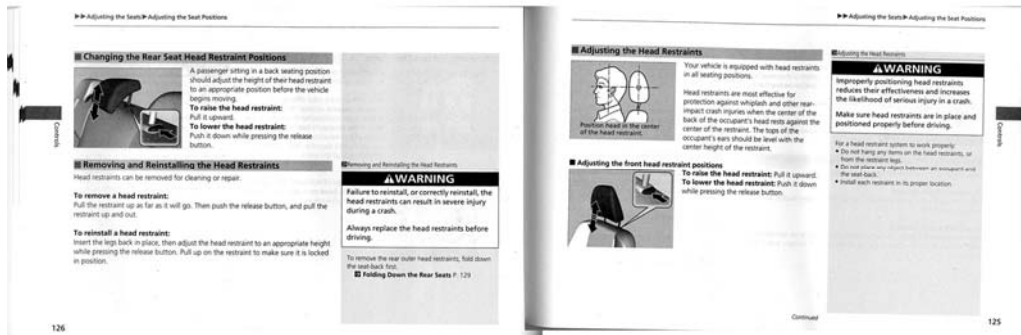


FIGURE 69. Head Restraint Use and Adjustment
Information from Vehicle Manual

APPENDIX B
DUMMY RESPONSE DATA

LIST 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)

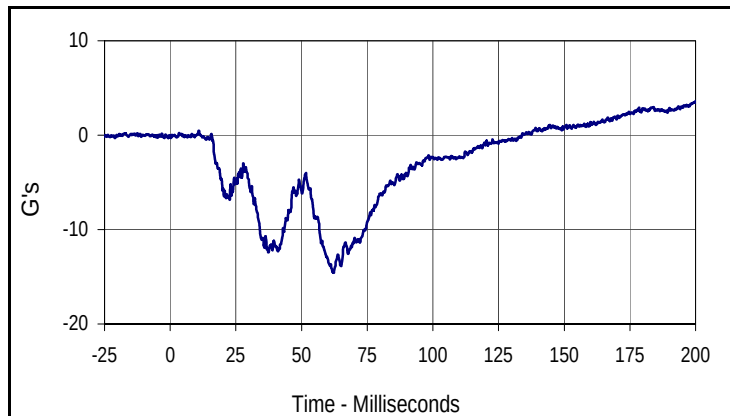
Left B-Pillar Sill Acceleration
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy Hip Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration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

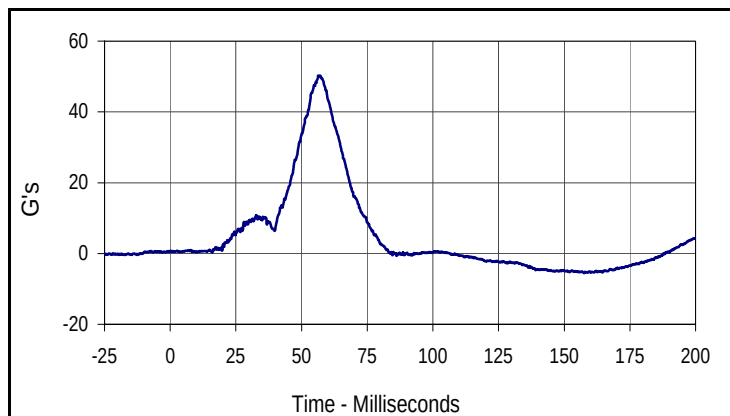
Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

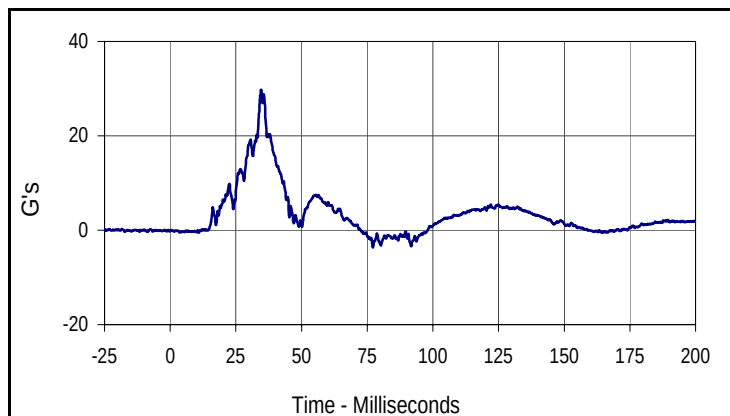
Test Date: 2/7/12
 NHTSA No.: MC5312



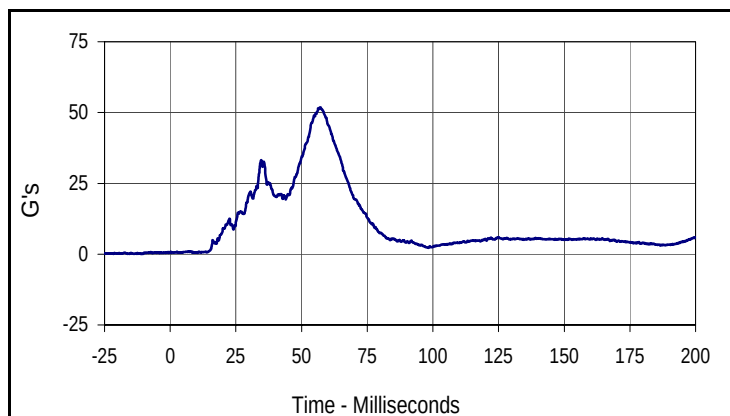
Curve Description			
Driver Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
3.6	200.0	-14.6	62.2



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
50.3	56.9	-5.5	157.6



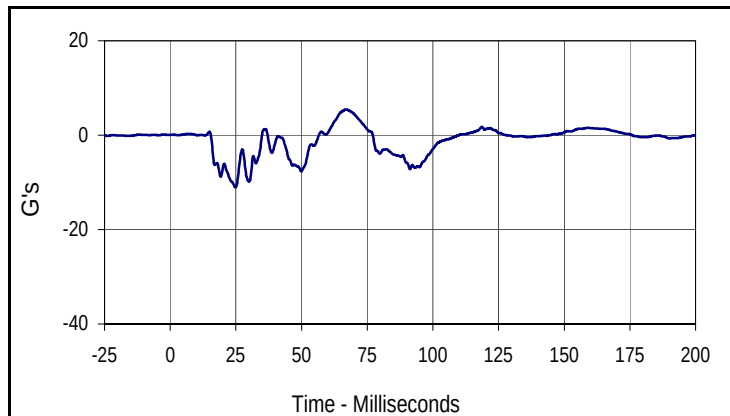
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
29.8	34.6	-3.7	77.2



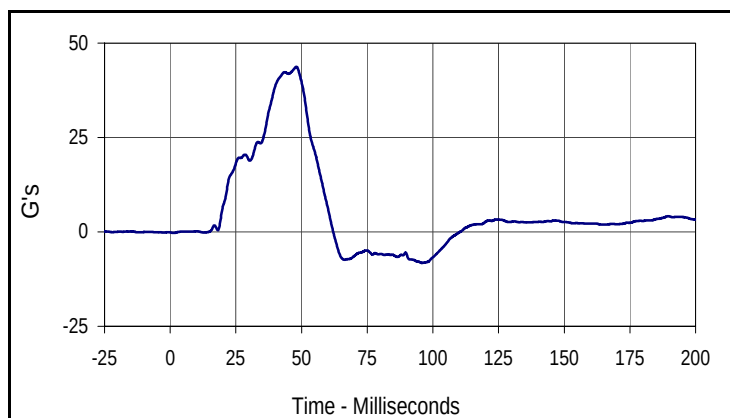
Curve Description			
Driver Head Acceleration Primary Res.			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
51.8	57.2	0.4	10.5

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

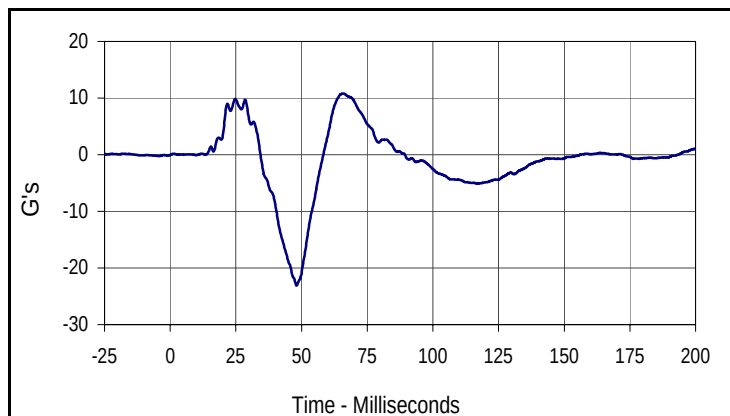
Test Date: 2/7/12
 NHTSA No.: MC5312



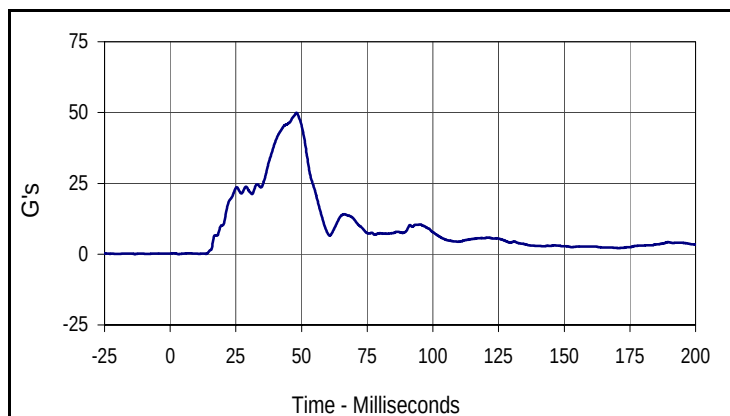
Curve Description			
Driver Lower Spine T12 Acceleration X			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
5.4	66.9	-11.1	24.8



Curve Description			
Driver Lower Spine T12 Acceleration Y			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
43.7	48.1	-8.2	95.9



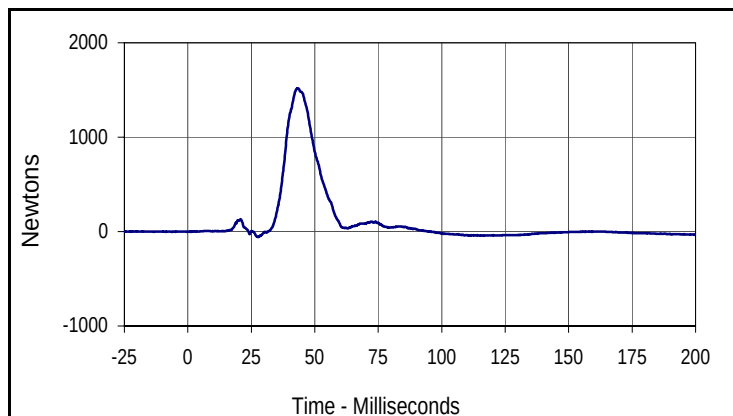
Curve Description			
Driver Lower Spine T12 Acceleration Z			
Plot No.	Type	SAE Class	Units
007	FIL	180	G's
Max	Time	Min	Time
10.8	66.0	-23.1	48.1



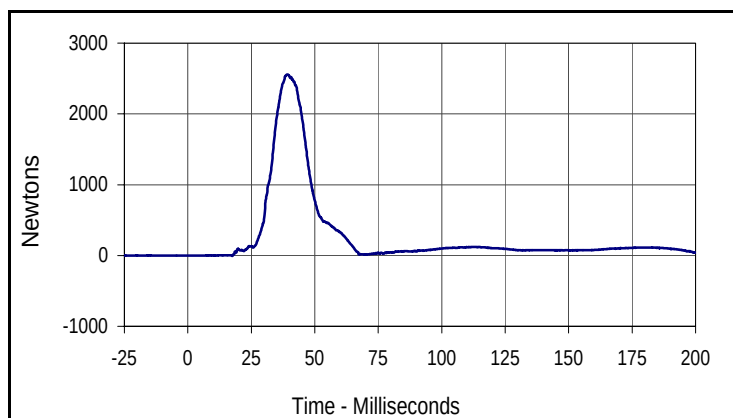
Curve Description			
Driver Lower Spine T12 Acceleration Res.			
Plot No.	Type	SAE Class	Units
008	RES	180	G's
Max	Time	Min	Time
49.9	48.1	0.0	3.2

Test Vehicle: 2012 Honda Civic LX 2-Door Coupe
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

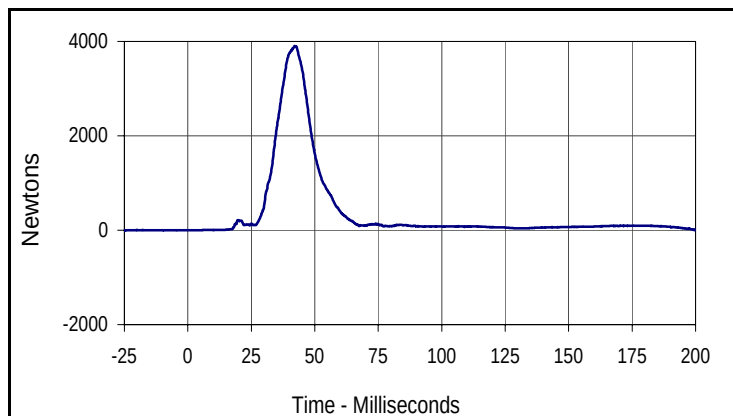
Test Date: 2/7/12
 NHTSA No.: MC5312



Curve Description			
Driver Iliac Wing Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
009	FIL	600	Newtons
Max	Time	Min	Time
1519.0	43.3	-57.0	27.8



Curve Description			
Driver Acetabulum Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
010	FIL	600	Newtons
Max	Time	Min	Time
2556.5	39.2	-5.8	17.5



Curve Description			
Driver Total Pelvic Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
011	SUM	600	Newtons
Max	Time	Min	Time
3905.8	42.0	-2.4	1.6

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: 2/2/12
 Test I.D.: N/A



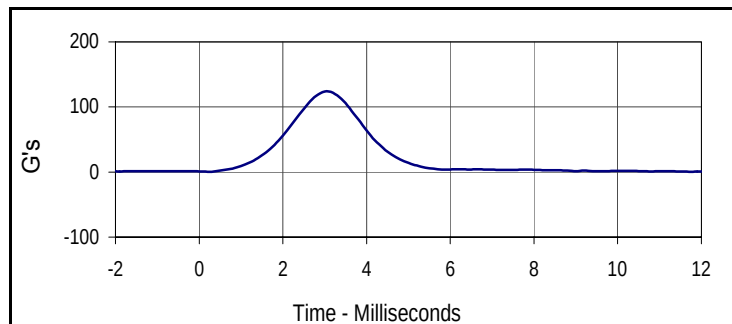
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity		%	10 to 70	33	Pass
A	Sitting Height	mm	772 - 788	780	Pass
B	Shoulder Pivot Height	mm	437 - 453	445	Pass
C	H-Point Height	mm	79 - 89	84	Pass
D	H-Point from Seatback	mm	141 - 151	146	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	103	Pass
F	Thigh Clearance	mm	119 - 135	127	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	185	Pass
J	Head Circumference	mm	541 - 551	546	Pass
K	Buttock to Knee Length	mm	514 - 540	528	Pass
L	Popliteal Height	mm	343 - 369	356	Pass
M	Knee Pivot to Floor Height	mm	392 - 409	402	Pass
N	Buttock Popliteal Length	mm	416 - 442	429	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	201	Pass
P	Foot Length	mm	216 - 232	220	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	318	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	351	Pass
W	Foot Width	mm	78 - 94	92	Pass
Y	Chest Circumference with Jacket	mm	851 - 881	876	Pass
Z	Waist Circumference	mm	760 - 791	774	Pass
Overall Test Results					Pass

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

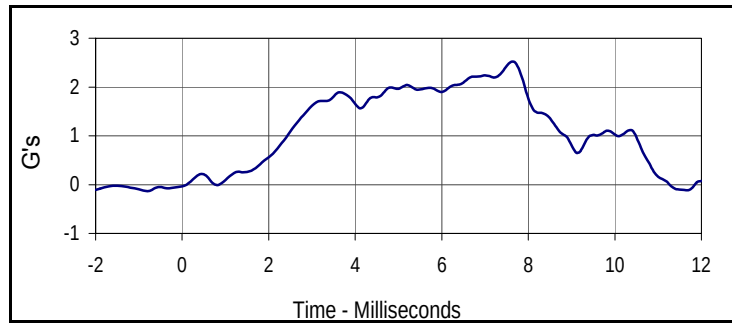
Test Date: 2/2/12
 Test I.D.: 299HD032



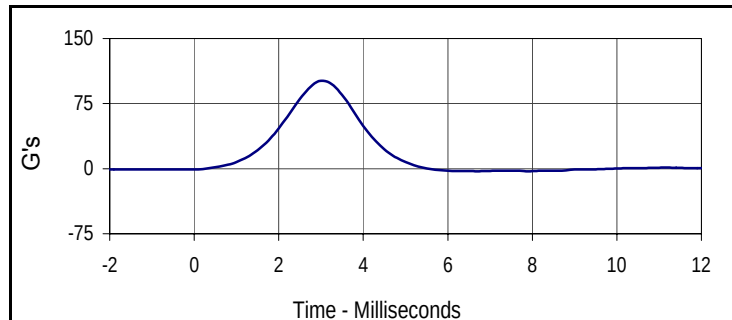
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	250	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	34.0	Pass
	Min		29.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.8	Pass
Peak Head Resultant Acceleration	G's	115 to 137	123.7	Pass
Peak Head X Acceleration	G's	<15	2.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	11.3	Pass
Overall Test Results				Pass



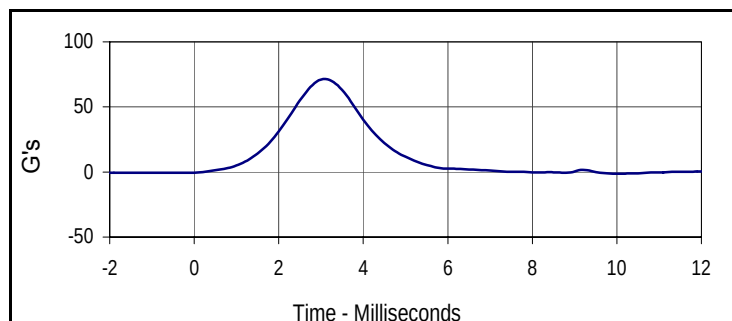
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
123.7	3.1	0.3	0.2



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.0	5.2	-0.1	-0.8



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
101.2	3.0	-2.9	7.9



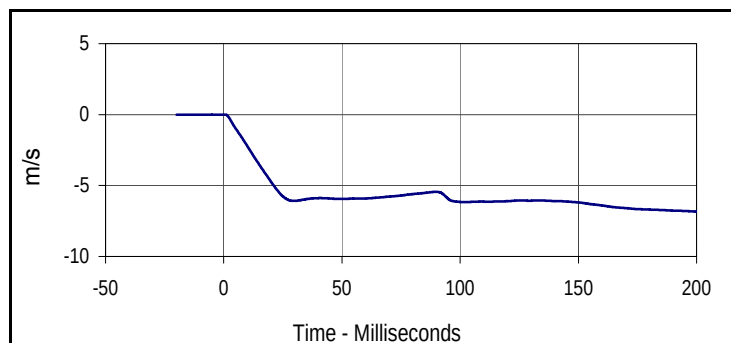
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
71.5	3.1	-1.2	10.0

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

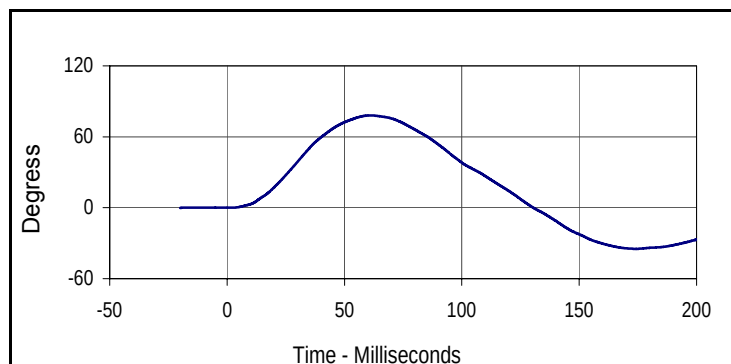
Test Date: 2/2/12
 Test I.D.: 299NB032



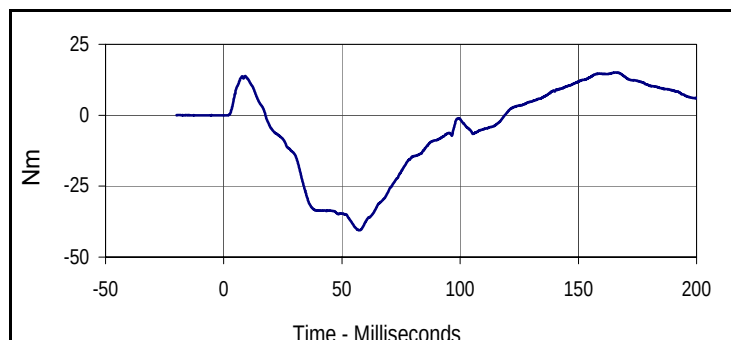
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	280	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	34.0	Pass
	Min		29.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	20.9	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.4	Pass
Pendulum Velocity	m/s	5.51 to 5.63	5.61	Pass
Pendulum Deceleration	10 msec	-2.20 to -2.80	-2.23	Pass
	15 msec	-3.30 to -4.10	-3.52	Pass
	20 msec	-4.40 to -5.40	-4.73	Pass
	25 msec	-5.40 to -6.10	-5.76	Pass
	25-100 msec	-5.50 to -6.20	-6.16	Pass
D-Plane Rotation	Max	71 to 81	78.1	Pass
	Time	50 to 70	61.0	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-40.5	Pass
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	118.9	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	0.2	-6.8	200.0



Curve Description			
Maximum Translation Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
78.1	61.0	-34.7	174.1



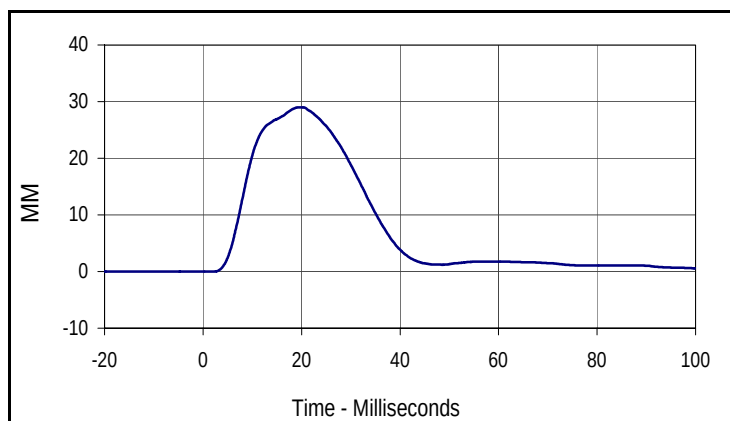
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
15.1	166.3	-40.5	57.4

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

Test Date: 2/2/12
 Test I.D.: 299SH032



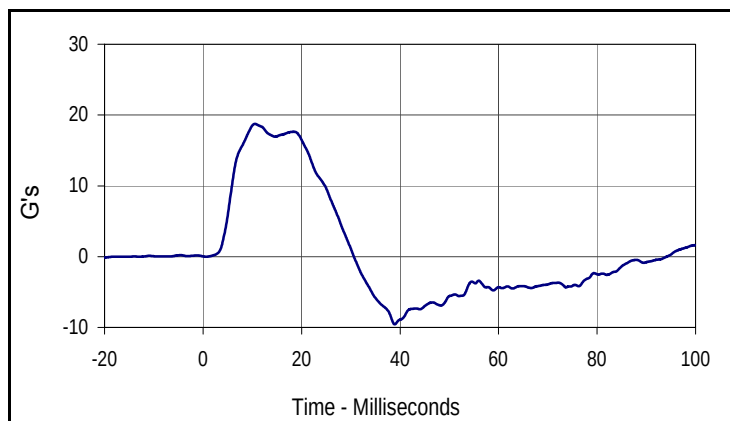
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	320	Pass
Temperature During Soak	Max °C	20.6 to 22.2	21.7	Pass
	Min °C		20.7	Pass
Humidity During Soak	Max %	10.0 to 70.0	34.0	Pass
	Min %		29.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.1	Pass
Impactor Velocity	m/s	4.20 to 4.40	4.33	Pass
Peak Shoulder Deflection	mm	28 to 37	29.0	Pass
Peak Lateral Spine Acceleration Y	G's	17 to 22	18.7	Pass
Peak Impactor Acceleration	G's	13 to 18	15.7	Pass
Overall Test Results			Pass	



Curve Description

Shoulder Deflection

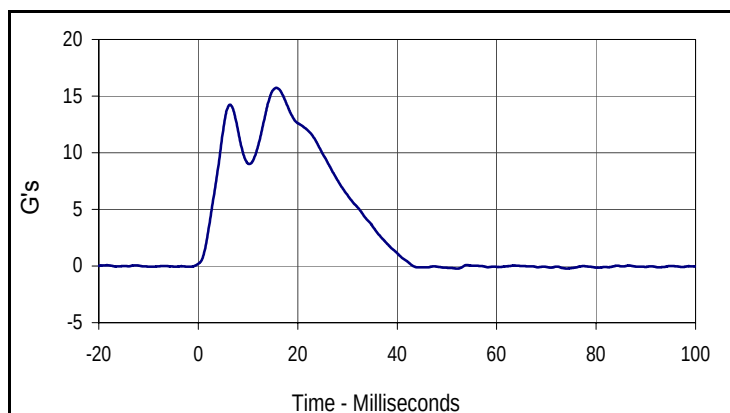
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
29.0	20.3	0.0	-0.2



Curve Description

Upper Spine Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.7	10.5	-9.6	38.9



Curve Description

Impactor Acceleration

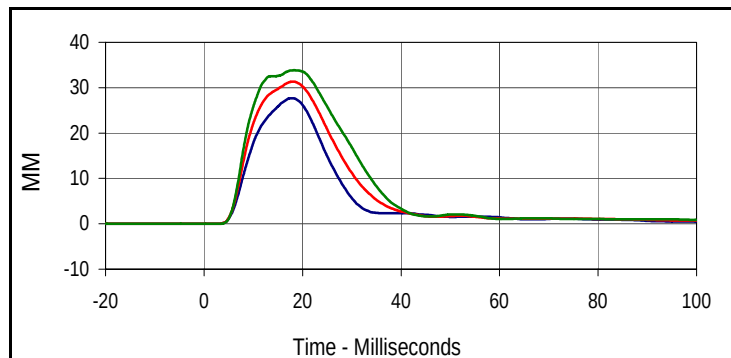
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.7	15.7	-0.2	52.1

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

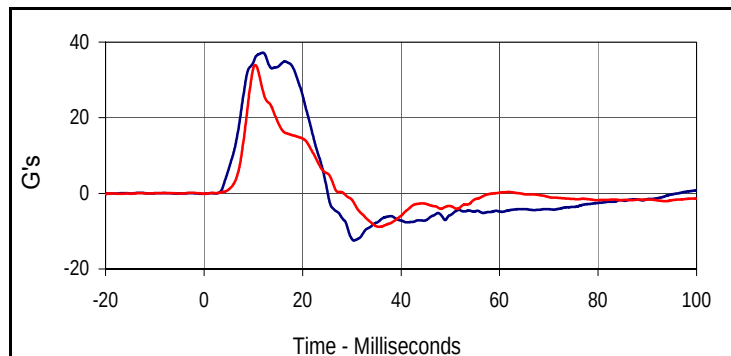
Test Date: 2/2/12
 Test I.D.: 299TWA032



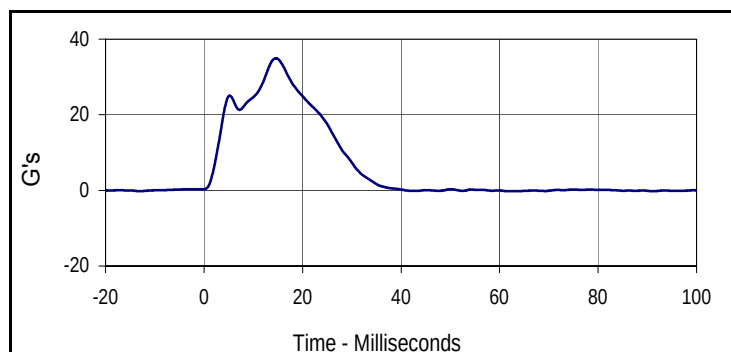
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	350	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	34.0	Pass
	Min		29.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	28.2	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Shoulder Deflection	mm	31 to 40	35.4	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.7	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.3	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	33.8	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	37.2	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	33.9	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
27.7	17.8	0.0	-14.0
Middle Thorax Deflection			
Max	Time	Min	Time
31.3	18.1	0.0	-10.9
Lower Thorax Deflection			
Max	Time	Min	Time
33.8	18.3	0.0	-10.9



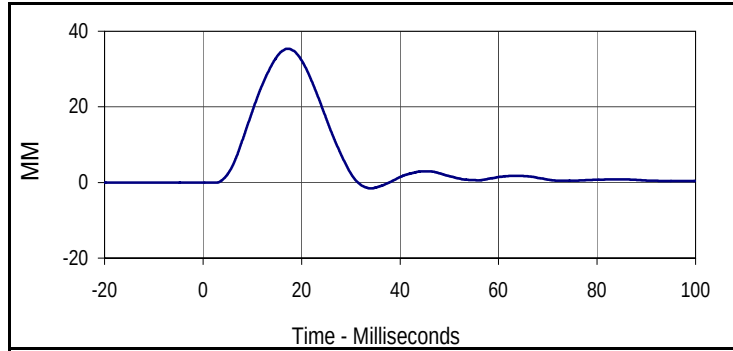
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
37.2	11.9	-12.5	30.5
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
33.9	10.4	-8.9	35.6



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.9	14.6	-0.2	61.8

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

Test Date: 2/2/12
 Test I.D.: 299TWA032



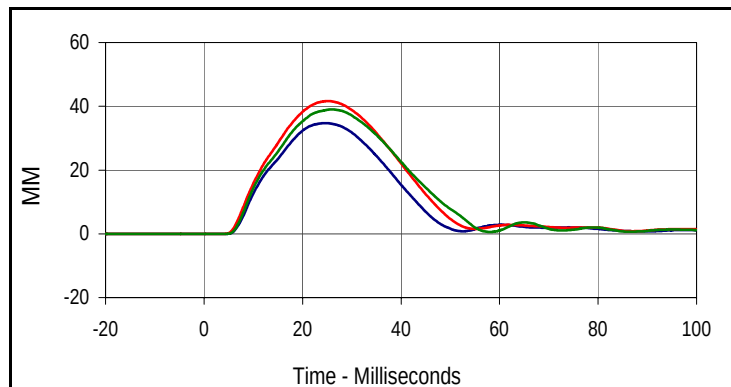
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
35.4	17.1	-1.6	34.2

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

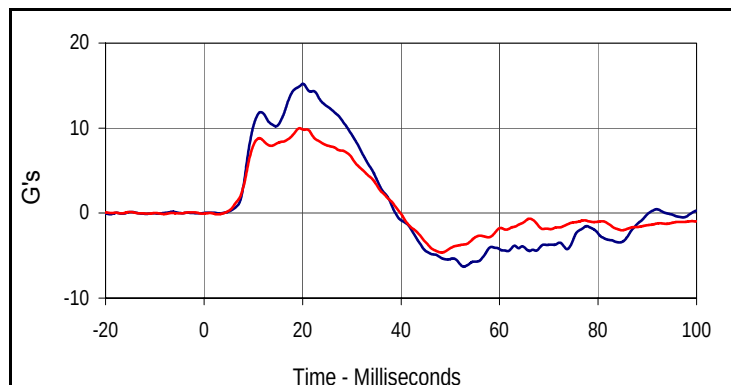
Test Date: 2/2/12
 Test I.D.: 299TWOA032



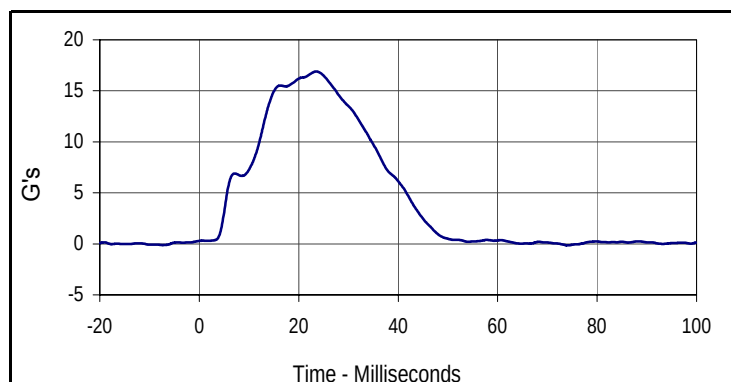
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	380	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	34.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	31.1	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.29	Pass
Peak Upper Thorax Rib Deflection		mm	32 to 40	34.7	Pass
Peak Middle Thorax Rib Deflection		mm	39 to 45	41.7	Pass
Peak Lower Thorax Rib Deflection		mm	35 to 43	39.0	Pass
Peak Upper Spine Y Acceleration		G's	13 to 17	15.2	Pass
Peak Lower Spine Y Acceleration		G's	7 to 11	10.0	Pass
Peak Impactor Acceleration		G's	14 to 18	16.9	Pass
Overall Test Results				Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
34.7	24.8	0.0	-6.8
Middle Thorax Deflection			
Max	Time	Min	Time
41.7	25.3	0.0	-7.8
Lower Thorax Deflection			
Max	Time	Min	Time
39.0	25.9	0.0	-7.0



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.2	20.1	-6.3	52.7
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
10.0	19.4	-4.6	48.2



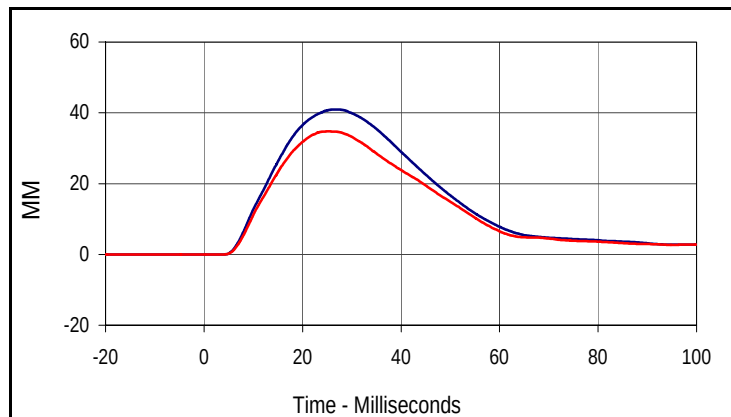
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.9	23.6	-0.1	74.1

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

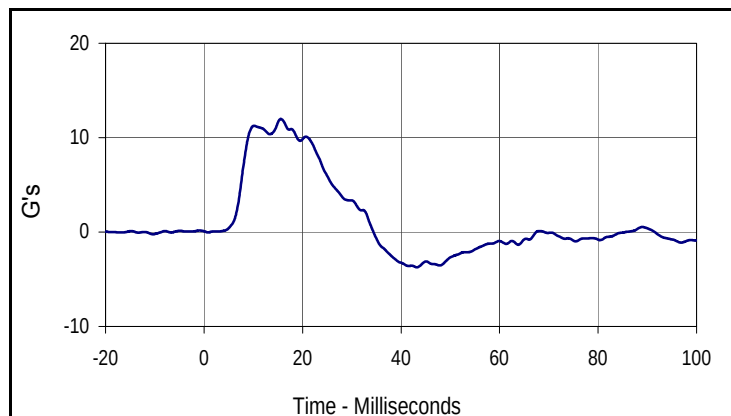
Test Date: 2/2/12
 Test I.D.: 299ABD032



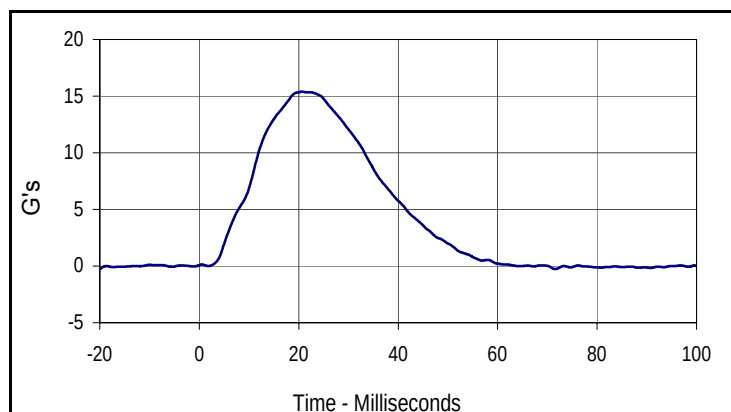
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	400	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	34.0	Pass
	Min		29.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.5	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.3	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	40.9	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	34.7	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.0	Pass
Peak Impactor Acceleration	G's	12 to 16	15.4	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
40.9	27.0	0.0	-18.5
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
34.7	25.2	0.0	-4.6



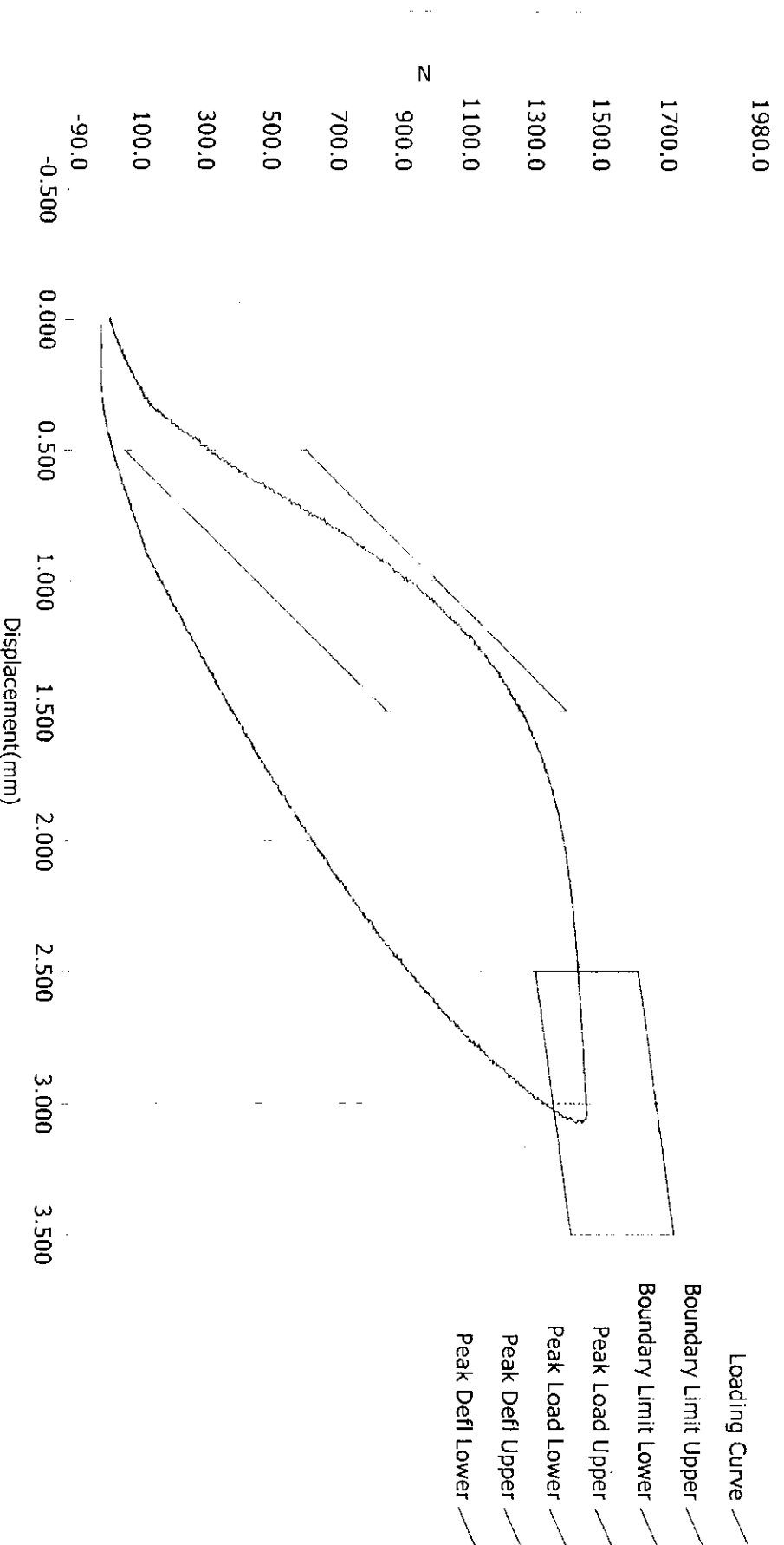
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.0	15.6	-3.7	43.2



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.4	20.7	-0.3	71.6

MC5312 PRE TEST

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
Cert ID	ATD Serial Number	ATD Type	
36284	SIDIIs		

Current Date : 9/22/2010

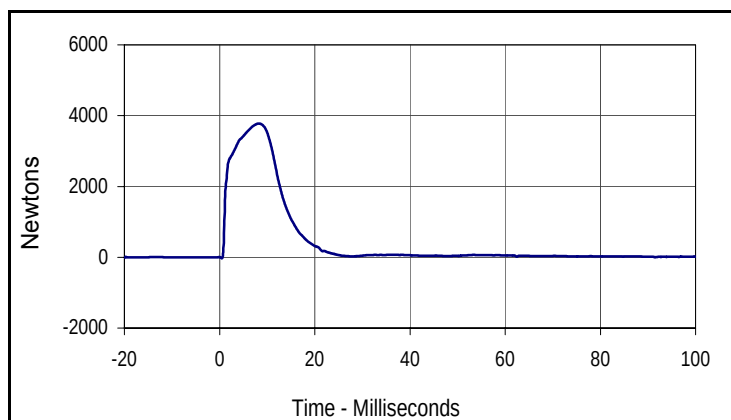
Current Time : 11:12:07

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

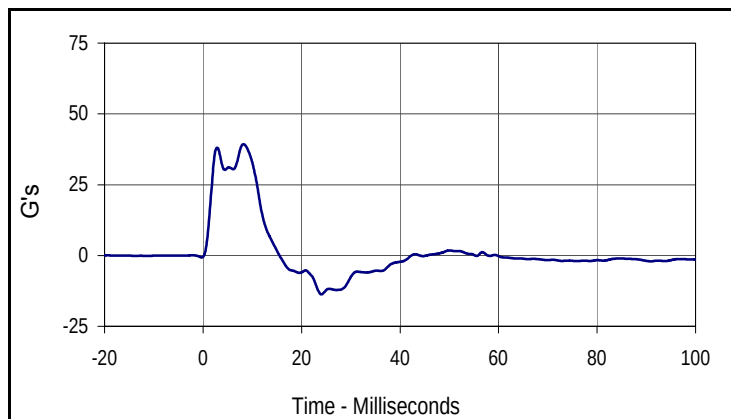
Test Date: 2/2/12
 Test I.D.: 299ACET032



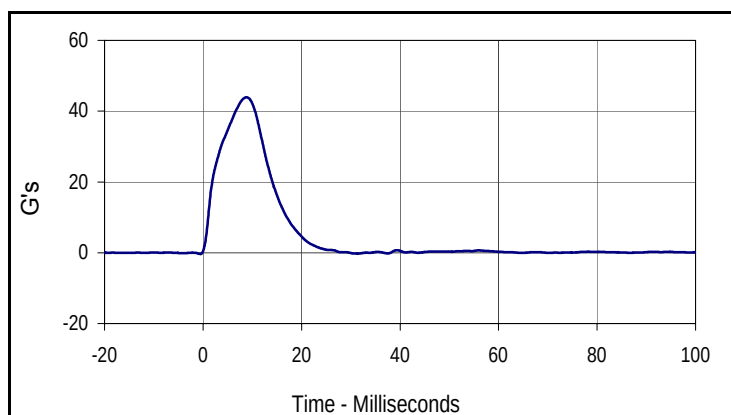
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	410	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	34.0	Pass
	Min		29.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.6	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	3778.7	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	39.3	Pass
Peak Impactor Acceleration	G's	38 to 47	43.9	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3778.7	8.2	-28.7	0.5



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
39.3	8.2	-13.7	24.0



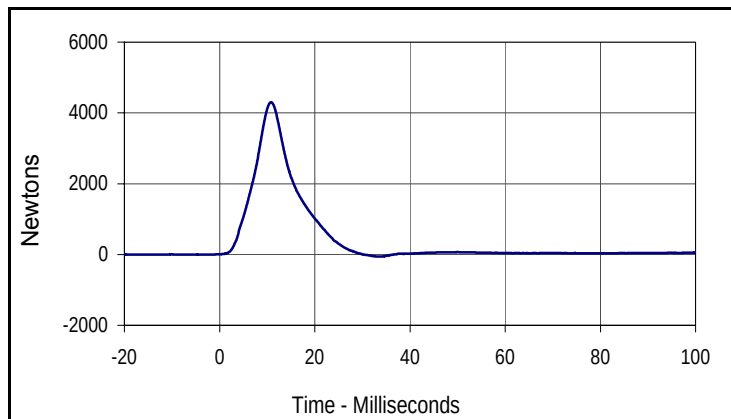
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
43.9	8.8	-0.3	-0.6

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

Test Date: 2/2/12
 Test I.D.: 299PL032



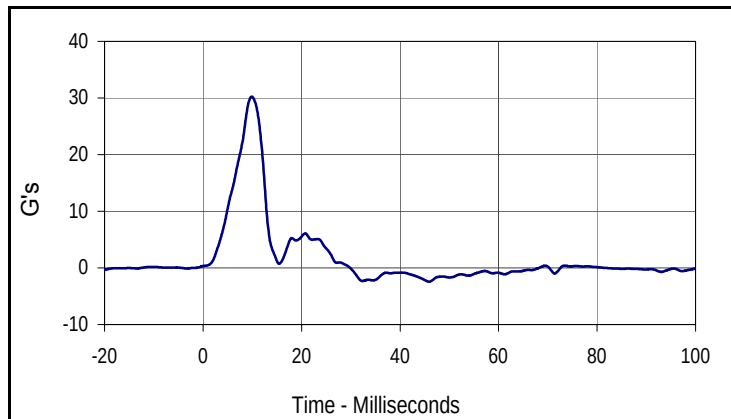
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	470	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	34.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	20.7	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	31.5	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.4	Pass
Peak Iliac Force		Newtons	4100 to 5100	4301.6	Pass
Peak Pelvis Y Acceleration		G's	28 to 39	30.2	Pass
Peak Impactor Acceleration		G's	36 to 45	38.9	Pass
Overall Test Results				Pass	



Curve Description

Pelvis Iliac Force

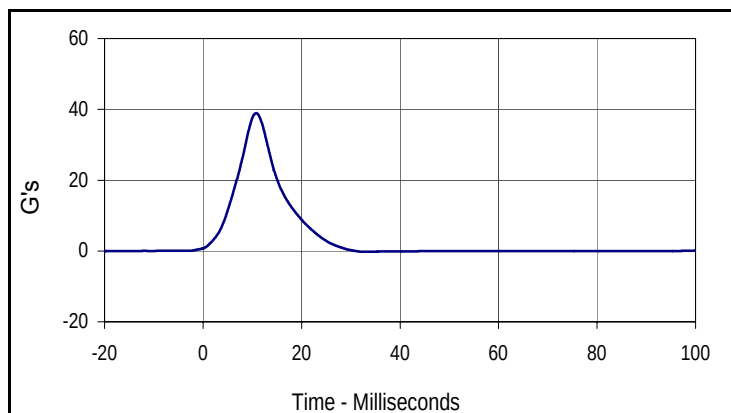
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4301.6	10.8	-61.0	34.1



Curve Description

Pelvis Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
30.2	9.9	-2.4	45.9



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
38.9	10.8	-0.2	32.6

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

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

Test Date: 2/7/12
 Test I.D.: N/A



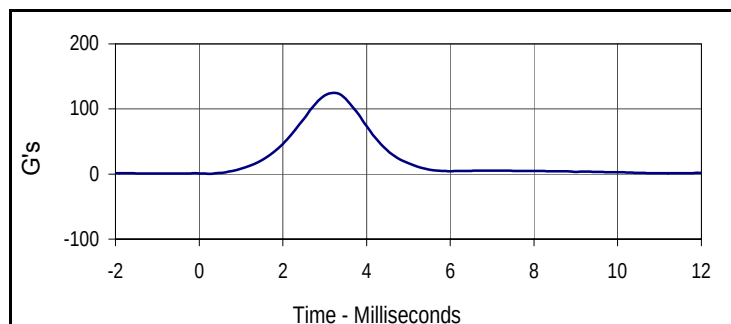
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	31	Pass
A	Sitting Height	mm	772 - 788	779	Pass
B	Shoulder Pivot Height	mm	437 - 453	445	Pass
C	H-Point Height	mm	79 - 89	84	Pass
D	H-Point from Seatback	mm	141 - 151	146	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	103	Pass
F	Thigh Clearance	mm	119 - 135	126	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	185	Pass
J	Head Circumference	mm	541 - 551	546	Pass
K	Buttock to Knee Length	mm	514 - 540	527	Pass
L	Popliteal Height	mm	343 - 369	356	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	201	Pass
P	Foot Length	mm	216 - 232	220	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	318	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	351	Pass
W	Foot Width	mm	78 - 94	92	Pass
Y	Chest Circumference with Jacket	mm	851 - 881	875	Pass
Z	Waist Circumference	mm	760 - 791	774	Pass
Overall Test Results					Pass

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

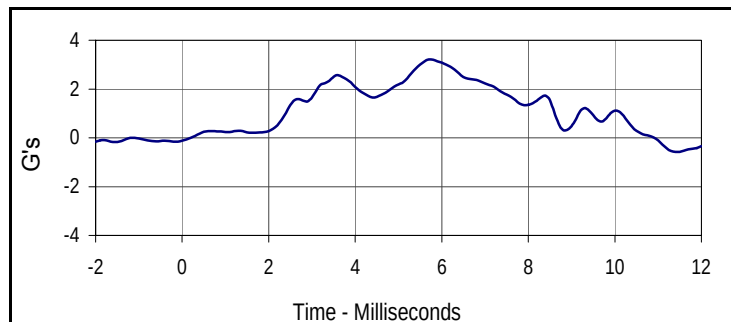
Test Date: 2/7/12
 Test I.D.: 299HD033



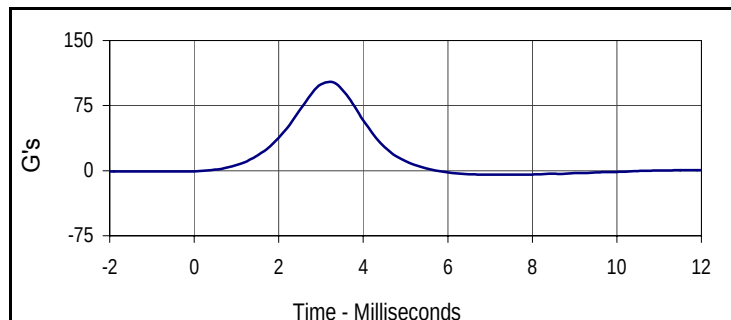
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	250	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	34.0	Pass
	Min		28.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	31.7	Pass
Peak Head Resultant Acceleration	G's	115 to 137	124.9	Pass
Peak Head X Acceleration	G's	<15	3.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	13.3	Pass
Overall Test Results				Pass



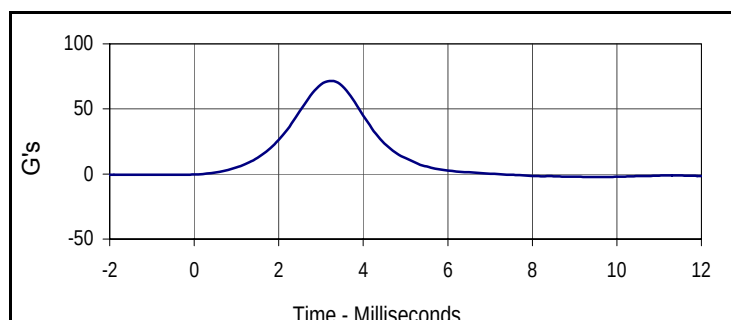
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
124.9	3.2	0.3	0.2



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.2	5.7	-0.2	-1.5



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
102.3	3.2	-4.7	7.3



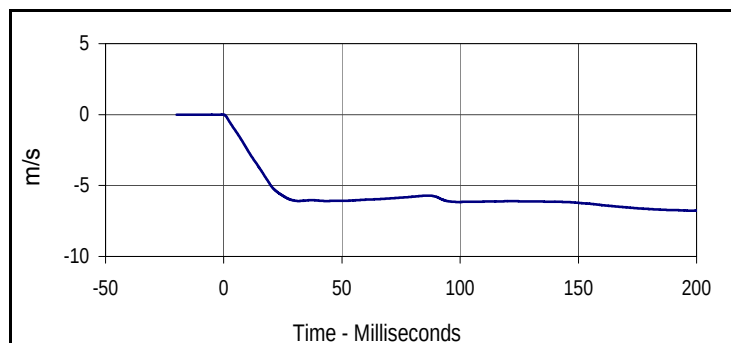
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
71.6	3.2	-2.4	9.6

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

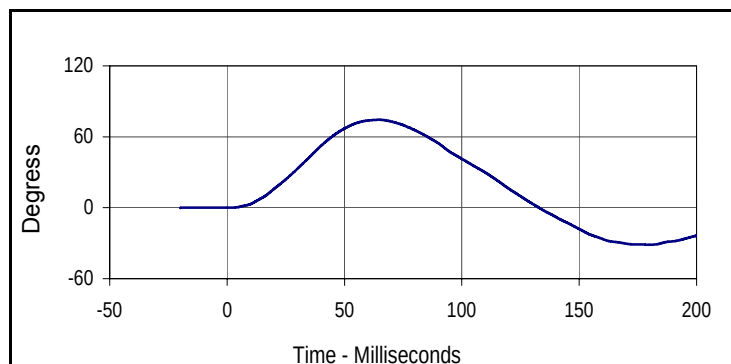
Test Date: 2/7/12
 Test I.D.: 299NB033



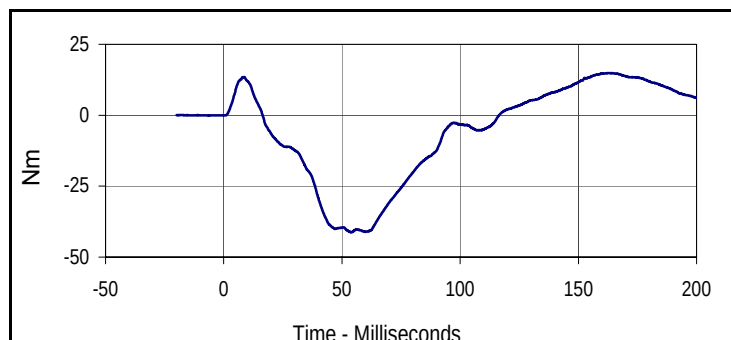
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	280	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	34.0	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	20.7	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	33.8	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.59	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.48	Pass
	15 msec	m/s	-3.30 to -4.10	-3.74	Pass
	20 msec	m/s	-4.40 to -5.40	-5.02	Pass
	25 msec	m/s	-5.40 to -6.10	-5.72	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.16	Pass
D-Plane Rotation	Max	Degrees	71 to 81	74.4	Pass
	Time	msec	50 to 70	64.7	Pass
Peak Occipital Condyle Moment		Nm	-36 to -44	-41.2	Pass
Decaying Moment Time to Cross 0 Nm		msec	102 to 126	116.5	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	-6.8	200.0



Curve Description			
Maximum Translation Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
74.4	64.7	-31.2	180.6



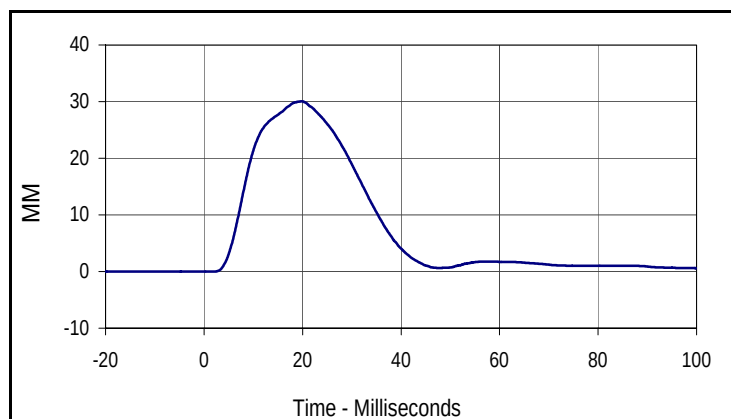
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
14.9	162.4	-41.2	53.8

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

Test Date: 2/7/12
 Test I.D.: 299SH033



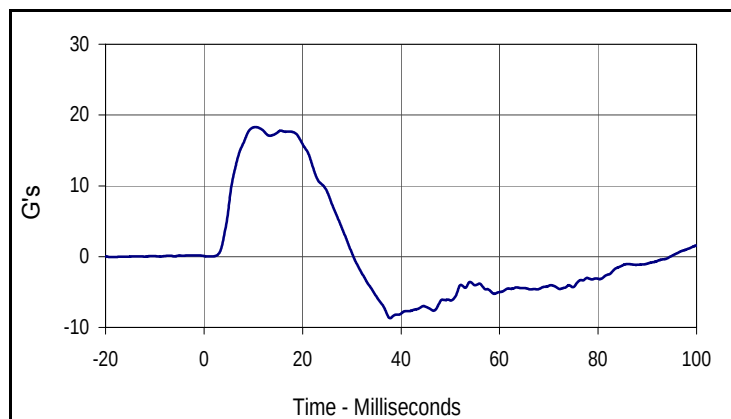
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	320	Pass
Temperature During Soak	Max °C	20.6 to 22.2	21.7	Pass
	Min °C		20.7	Pass
Humidity During Soak	Max %	10.0 to 70.0	34.0	Pass
	Min %		28.5	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	20.8	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.7	Pass
Impactor Velocity	m/s	4.20 to 4.40	4.36	Pass
Peak Shoulder Deflection	mm	28 to 37	30.0	Pass
Peak Lateral Spine Acceleration Y	G's	17 to 22	18.3	Pass
Peak Impactor Acceleration	G's	13 to 18	15.7	Pass
Overall Test Results			Pass	



Curve Description

Shoulder Deflection

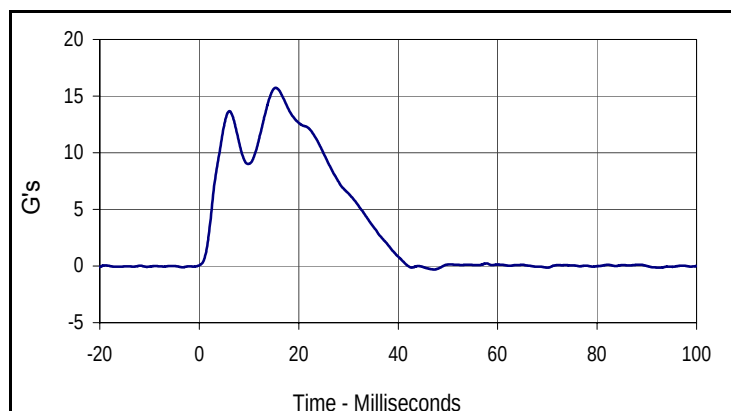
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
30.0	19.8	0.0	-5.1



Curve Description

Upper Spine Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.3	10.5	-8.7	37.8



Curve Description

Impactor Acceleration

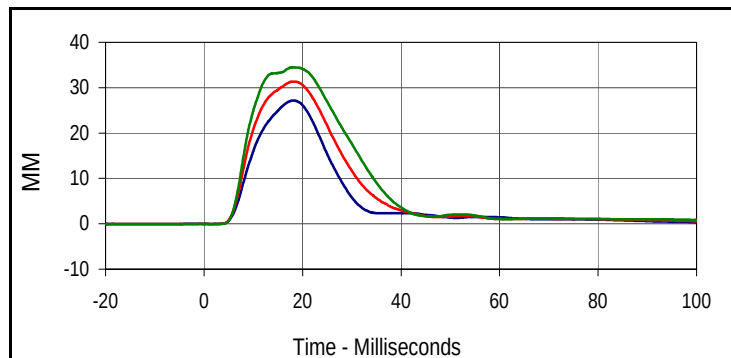
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.7	15.3	-0.3	47.2

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

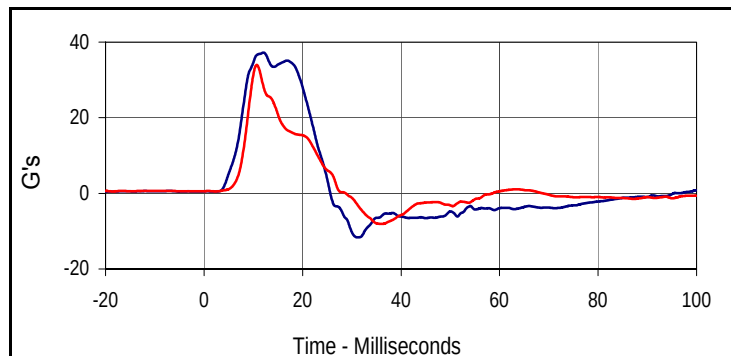
Test Date: 2/7/12
 Test I.D.: 299TWA033



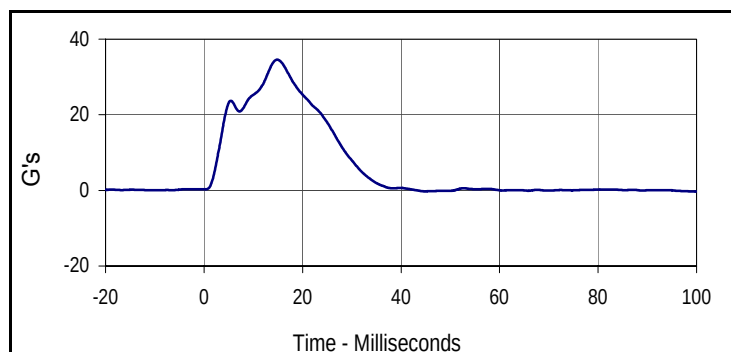
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	350	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	34.0	Pass
	Min		28.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.5	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Shoulder Deflection	mm	31 to 40	34.4	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.2	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.4	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	34.5	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	37.2	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	34.0	Pass
Peak Impactor Acceleration	G's	30 to 36	34.6	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.2	18.2	0.0	-6.3
Middle Thorax Deflection			
Max	Time	Min	Time
31.4	18.2	-0.1	-16.9
Lower Thorax Deflection			
Max	Time	Min	Time
34.5	18.1	0.0	-11.3



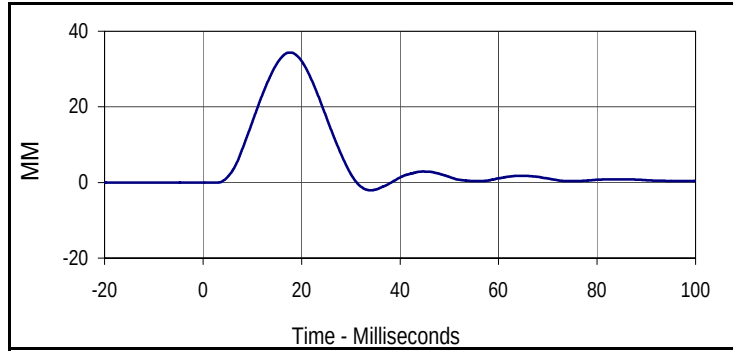
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
37.2	12.0	-11.6	31.1
Lower Spine Y Acceleration			
Max	Time	Min	Time
34.0	10.7	-8.1	36.1



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.6	14.9	-0.3	99.0

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

Test Date: 2/7/12
 Test I.D.: 299TWA033



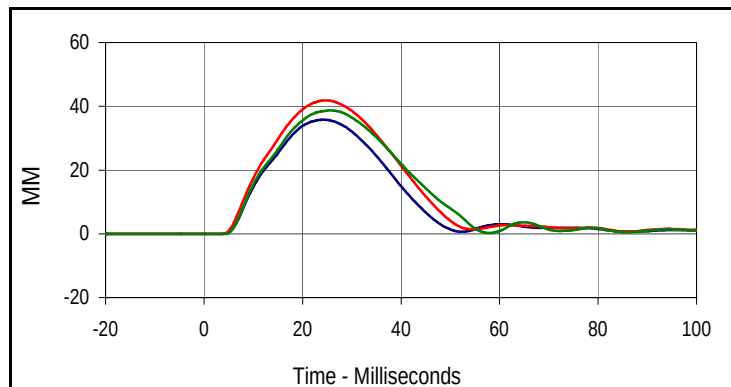
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
34.4	17.8	-2.1	34.0

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

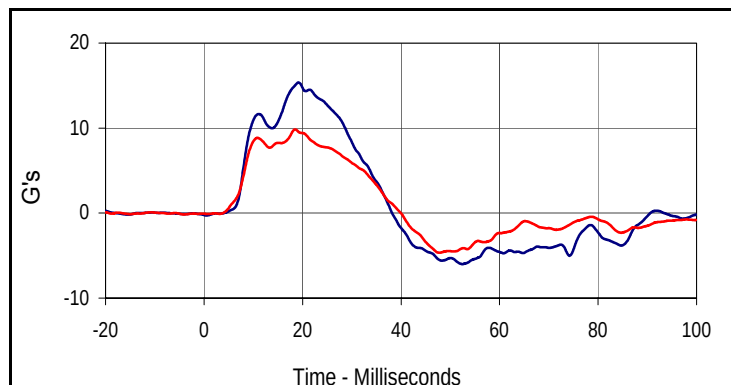
Test Date: 2/7/12
 Test I.D.: 299TWOA033



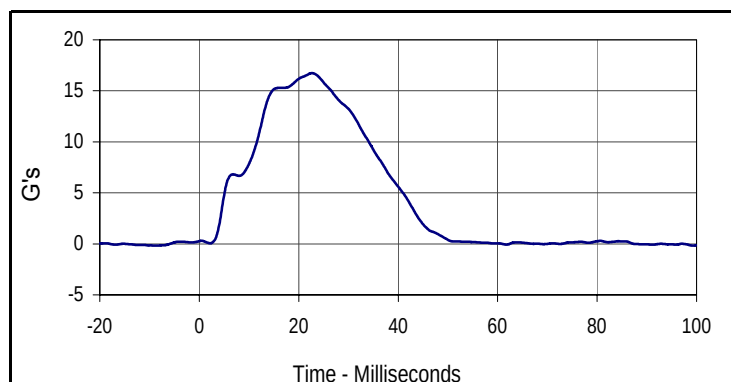
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	380	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	34.0	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.9	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.30	Pass
Peak Upper Thorax Rib Deflection		mm	32 to 40	35.8	Pass
Peak Middle Thorax Rib Deflection		mm	39 to 45	41.9	Pass
Peak Lower Thorax Rib Deflection		mm	35 to 43	38.7	Pass
Peak Upper Spine Y Acceleration		G's	13 to 17	15.4	Pass
Peak Lower Spine Y Acceleration		G's	7 to 11	9.9	Pass
Peak Impactor Acceleration		G's	14 to 18	16.7	Pass
Overall Test Results				Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
35.8	24.1	0.0	-7.2
Middle Thorax Deflection			
Max	Time	Min	Time
41.9	24.7	0.0	-8.2
Lower Thorax Deflection			
Max	Time	Min	Time
38.7	25.6	0.0	-6.1



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.4	19.2	-6.0	52.4
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.9	18.5	-4.7	47.7



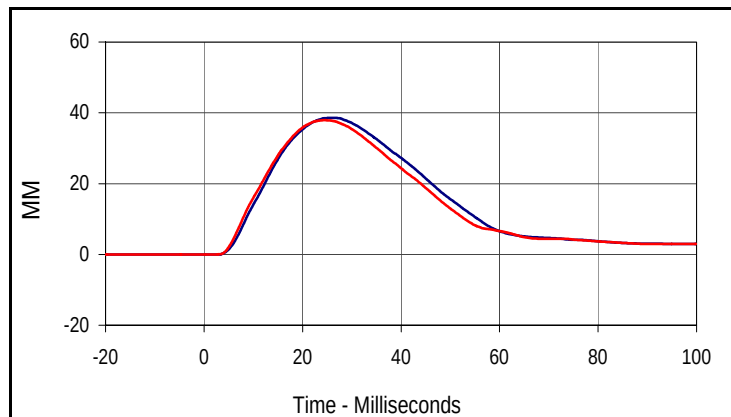
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.7	22.7	-0.2	99.3

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

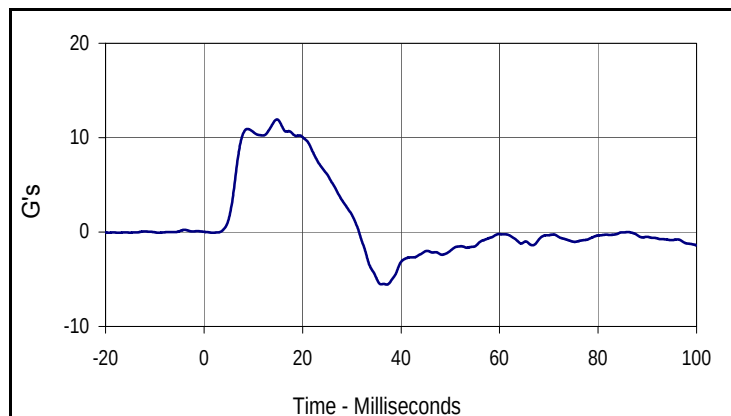
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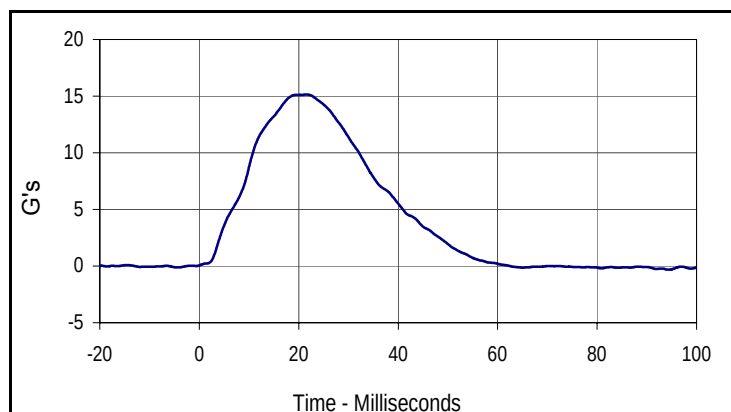
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	400	Pass
Temperature During Soak	Max °C	20.6 to 22.2	21.7	Pass
	Min °C		20.7	Pass
Humidity During Soak	Max %	10.0 to 70.0	34.0	Pass
	Min %		28.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	20.8	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.3	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.3	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	38.6	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	37.9	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
38.6	26.1	0.0	-5.8
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
37.9	24.5	0.0	-9.8



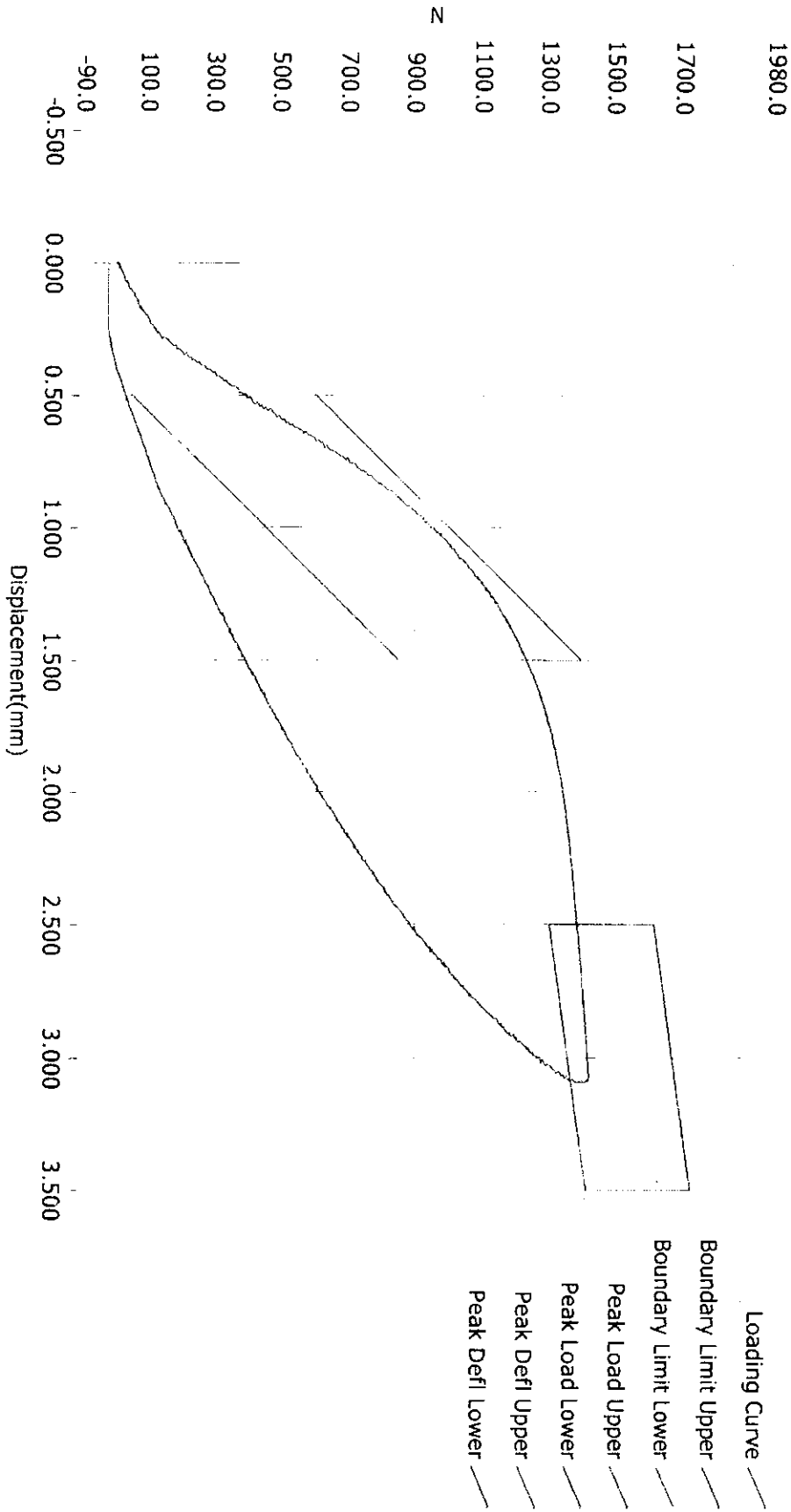
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.9	14.8	-5.6	37.1



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.1	21.5	-0.3	94.4

MC5312 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>
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
	36409	SIDIIs	

Current Date : 9/23/2010

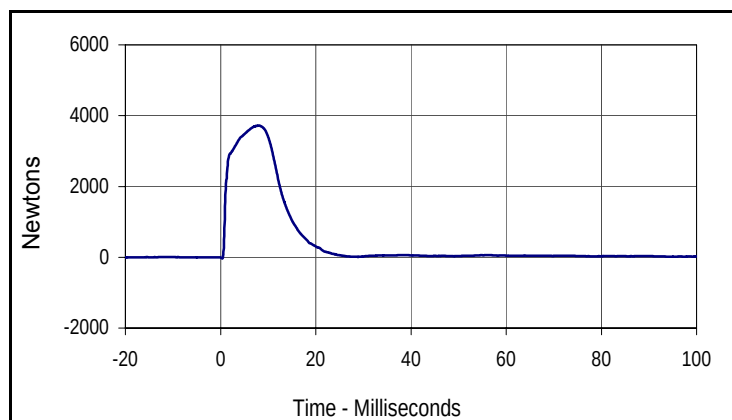
Current Time : 07:55:27

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

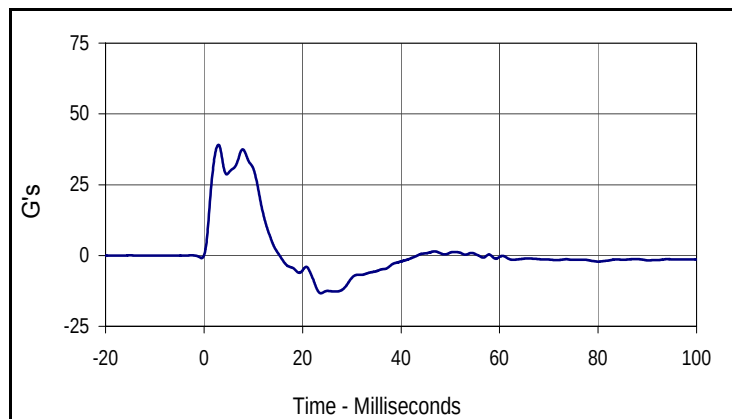
Test Date: 2/7/12
 Test I.D.: 299ACET033



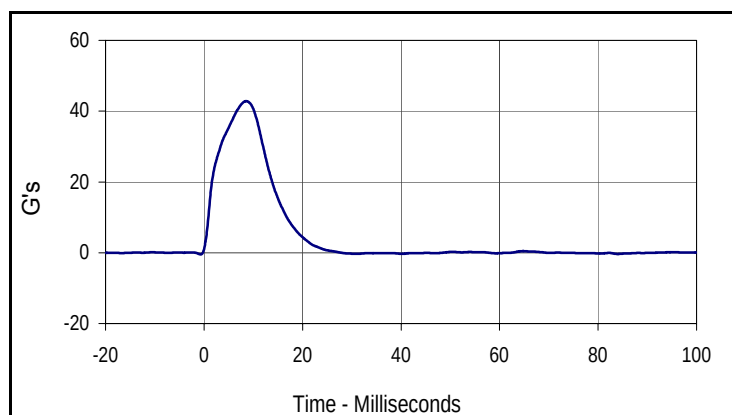
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	410	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	34.0	Pass
	Min		28.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.2	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	3721.4	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	37.5	Pass
Peak Impactor Acceleration	G's	38 to 47	42.8	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3721.4	8.0	-31.3	0.4



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
39.1	2.9	-13.3	23.7



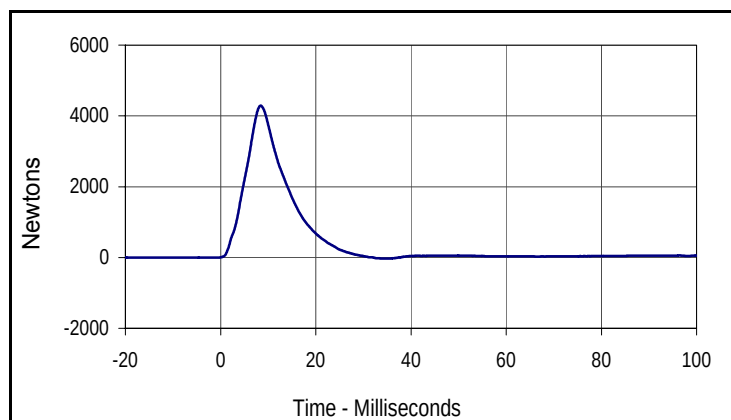
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
42.8	8.6	-0.5	-0.7

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

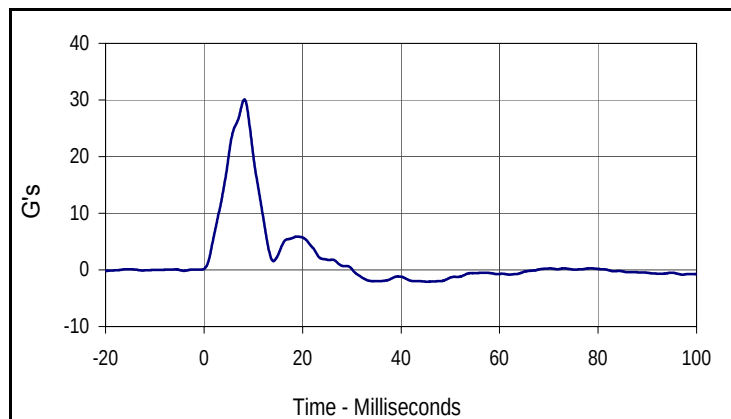
Test Date: 2/7/12
 Test I.D.: 299PL033



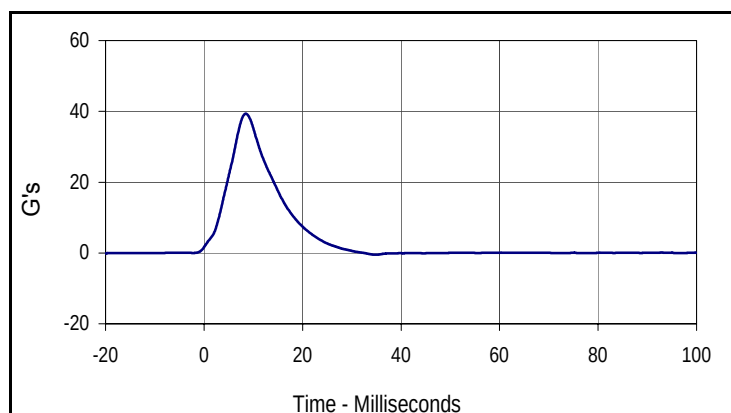
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	470	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	34.0	Pass
	Min		28.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.2	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.3	Pass
Peak Iliac Force	Newtons	4100 to 5100	4288.2	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	30.1	Pass
Peak Impactor Acceleration	G's	36 to 45	39.4	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4288.2	8.4	-32.7	35.1



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
30.1	8.2	-2.1	45.3



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
39.4	8.5	-0.5	34.9

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)				36681	FTSS	9/27/10
Pelvis Plug (Non-Struck Side)				36367	FTSS	9/23/10

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	EK16J	Endevco	2/3/11
A-Pillar Sill	Y	J36724	Endevco	1/20/12
A-Pillar Low	Y	BE68J	Endevco	1/6/12
A-Pillar Mid	Y	J21776	Endevco	1/11/12
B-Pillar Sill	Y	N/A	N/A	N/A
B-Pillar Low	Y	N/A	N/A	N/A
B-Pillar Mid	Y	N/A	N/A	N/A
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	BF83H	Endevco	3/31/11
Right Roof	Y	J24583	Endevco	4/1/11
Right Floor Sill	Y	BJ15H	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