

FINAL REPORT NUMBER: SPNCAP-TRC-14-003

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

**General Motors LLC
2014 Chevrolet Malibu 1LS 4-Door Sedan
NHTSA NUMBER: M20140109**

**PREPARED BY:
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Report Date: January 23, 2014

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**

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Approval Date: January 23, 2014

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

FINAL REPORT ACCEPTANCE BY OCWS:

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NHTSA, Office of Crashworthiness Standards

Date: _____

Technical Report Documentation Page

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16. Abstract A 32.2 km/h (20 mph), 75° oblique impact Side NCAP Test was conducted on the subject vehicle, a 2014 Chevrolet Malibu 1LS 4-door sedan, 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. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on December 16, 2013. The impact velocity was 32.35 km/h, and the ambient temperature at the struck (left) side of the target vehicle at the time of impact was 21° C. The test vehicle's post-test maximum crush was 351 mm at Level 3. The test or target vehicle's performance is given below: <table border="1"> <thead> <tr> <th></th><th>Unit</th><th>Threshold</th><th>Front SID-IIs</th></tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆):</td><td>NA</td><td>1000</td><td>408</td></tr> <tr> <td>Resultant Lower Spine Acceleration:</td><td>g's</td><td>82</td><td>44.0</td></tr> <tr> <td>Total Pelvic Force: (sum of acetabular and iliac forces)</td><td>N</td><td>5525</td><td>2266.8</td></tr> <tr> <td>Maximum Thoracic Rib Deflection</td><td>mm</td><td>38</td><td>20.6</td></tr> <tr> <td>Maximum Abdomen Rib Deflection</td><td>mm</td><td>45</td><td>14.5</td></tr> </tbody> </table> The door struck by the pole did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.					Unit	Threshold	Front SID-IIs	Head Injury Criteria (HIC ₃₆):	NA	1000	408	Resultant Lower Spine Acceleration:	g's	82	44.0	Total Pelvic Force: (sum of acetabular and iliac forces)	N	5525	2266.8	Maximum Thoracic Rib Deflection	mm	38	20.6	Maximum Abdomen Rib Deflection	mm	45	14.5
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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 Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave Washington, DC 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																									
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SECTION 1

TEST PURPOSE AND PROCEDURE

TEST PURPOSE AND PROCEDURE

This side impact test was conducted as part of the MY14 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-09-D-00125. The purpose of this test is to generate comparative side impact performance in a 2014 Chevrolet Malibu 1LS 4-door sedan manufactured by General Motors LLC. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated September 2013.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a model year 2014 Chevrolet Malibu 1LS 4-door sedan. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.35 km/h. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, OH, on December 16, 2013. Pre-test and post-test photographs of the test vehicle and the side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated September 2013. Camera locations and other pertinent camera information are included in this report.

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

- Head CG Triaxial Accelerometers
- Thorax Upper, Middle, and Lower Rib Displacement Potentiometers
- Abdomen Upper and Lower Rib Displacement Potentiometers
- Lower Spine (T12) Triaxial 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	Driver ATD (SID-IIs)		
	Units	IARV	Result
Head Injury Criteria (HIC ₃₆)	NA	1000	408
Lower Spine Acceleration	G	82	44.0
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2266.8
Maximum Thoracic Rib Deflection	mm	38*	20.6
Maximum Abdominal Rib Deflection	mm	45*	14.5

* 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		
Knee Airbag	Yes	No		
Curtain	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	N/A
Side Torso Airbag	No	N/A	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	No	N/A
Seat Belt Load Limiter	No	N/A	No	N/A
Other	None	N/A	None	N/A

GENERAL COMMENTS

None

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan NHTSA No.: M20140109
 Test Program: SPNCAP Side Impact Test Date: 12/16/13

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20140109	Traction Control System (TCS)	Yes
Model Year	2014	Auto-Leveling System	No
Make	Chevrolet	Automatic Door Locks (ADL)	Yes
Model	Malibu 1LS	Power Window Auto-Reverse	No
Body Style	4-door Sedan	Other Optional Feature	None
VIN	1G11B5SL1EF109065	Driver Front Airbag	Yes
Body Color	Blue	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	124 mi.	Driver Head/Torso Airbag	No
Engine Displacement (L)	2.5	Driver Torso Airbag	No
Type/No. Cylinders	4	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Transverse	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	Yes
Transmission Speeds	6	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	FWD	Rear Pass. Torso Airbag	Yes
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	No
Sunroof/T-Top	No	Rear Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioner	No
Power Seats	No	Driver Load Limiter	No
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	No
		Other Safety Restraint	None

Does owner's manual provide instructions to turn off automatic door locks?

No

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors LLC	GVWR (kg)	2008
Date of Manufacturer	09/13	GAWR Front (kg)	1032
Vehicle Type	Passenger Car	GAWR Rear (kg)	976

VEHICLE SEATING AND WEIGHT CAPACITY DATA

	Front	Rear	Third	Total
Designated Seating Capacity (DSC)	2	3	N/A	5
Vehicle Capacity Weight (VCW) (kg)				420
DSC X 68.04 kg				340.2
Rated Cargo and Luggage Weight (RCLW) (kg)				79.8

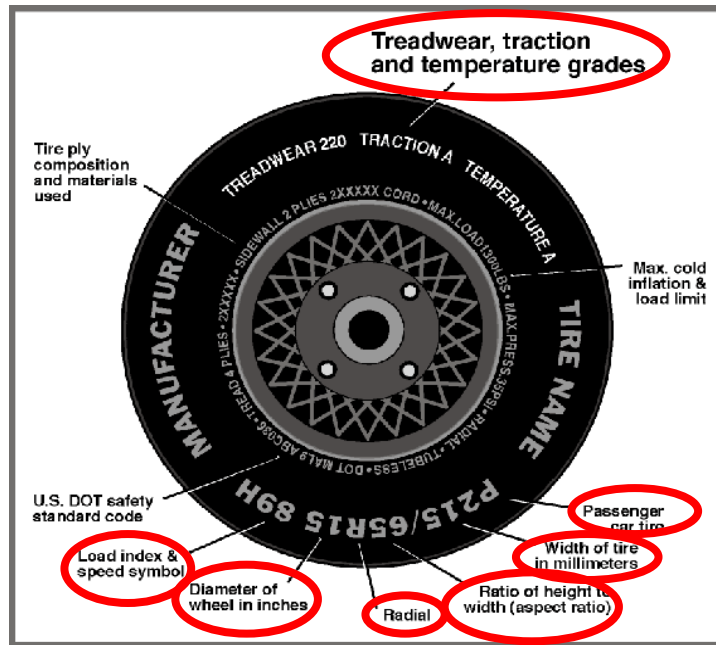
VEHICLE SEAT TYPE

Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						W/ Lever	W/ Knob
Front Seat	Yes	No	No		No	Yes	No
Rear or Second Row Seat	No	No	Yes	No	Yes	No	No
Third row seat	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20140109
 Test Date: 12/16/13



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	240	240
Recommended Tire Size	P215/60R16	P215/60R16
Tire Size on Vehicle	P215/60R16	P215/60R16
Tire Manufacturer	Continental	Continental
Tire Model	ContiProContact	ContiProContact
Treadwear	540	540
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	4	4
Tire Plies Body	4	4
Load Index/Speed Symbol	94S	94S
Tire Material	Polyester, Steel, Polyamide	Polyester, Steel, Polyamide
DOT Safety Code Left	6YX8 BN4 2913	6YX8 BN4 2913
DOT Safety Code Right	6YX8 BN4 2913	6YX8 BN4 2913

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

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan NHTSA No.: M20140109
 Test Program: SPNCAP Side Impact Test Date: 12/16/13

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	214	221	227	227
Tire Placard	kPa	240	240	240	240
Owner's Manual	kPa	N/A	N/A	N/A	N/A
As Tested	kPa	240	240	240	240

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	486.6	313.8		512.8	336.8		512.4	375.0	
Right	kg	464.2	293.2		498.8	333.6		473.0	344.4	
Ratio	%	61.0	39.0		60.1	39.9		57.8	42.2	
Totals	kg	950.8	607.0	1557.8	1011.6	670.4	1682.0	985.4	719.4	1704.8

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total As Delivered Weight (UVW)	kg	1557.8	(A)
Actual Weight of 1 P572V ATD (SID-IIs) Dummy Used	kg	49.0	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	79.8	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1686.6	(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)
None	0.0
Components removed: Trunk lid, rear fascia and bumper beam, rail lights and right side door seals	31.4

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	Deg.	-0.3	-0.2	+0.3	Yes
Front Passenger Sill Angle (front-to-rear)*	Deg.	-0.2	-0.2	+0.1	Yes
Front Bumper-Line Angle (left-to-right)**	Deg.	-0.2	-0.4	-0.5	Yes
Rear Bumper-Line Angle (left-to-right)**	Deg.	-0.1	-0.3	-0.3	Yes
Vehicle CG (Aft of Front Axle)	mm	1068	1092	1156	
Vehicle CG (Left (+) / Right (-) from longitudinal Centerline)	mm	+22	+8	+33	

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

*** The "As Tested" vehicle attitude measurements must be equal to or between the "As Delivered" and "Fully Loaded" vehicle attitude measurements. Indicate "Yes" or "No" for "Meets Requirements".

DATA SHEET NO. 2

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

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan NHTSA No.: M20140109
 Test Program: SPNCAP Side Impact Test Date: 12/16/13

SEAT POSITIONING

The driver seat, front center seat (if applicable), and right front passenger's seat should be set to the forward-most, mid-height, mid-angle position. The struck-side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rear-most, lowest, mid-angle position.

SCRL ANGLE RANGE

Seat	SCRL(°)		
	Max.	Min.	Mid
Driver Seat	18.7	14.0	16.4
Front Passenger Seat	20.7	16.0	18.4
Front Center Seat*	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	Fixed	13.0
Non-Struck Side Rear Seat	Fixed	Fixed	13.1
Rear Center Seat*	Fixed	Fixed	12.9

* If applicable.

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRIP Height (mm)	SCRIP Height Position	SCRIP Height (mm)		
				Rearmost	Mid- Fore/Aft	Forward- Most
Driver Seat	16.4	140	Max	N/A	N/A	N/A
			Mid	122	130	140
			Min	N/A	N/A	N/A
Front Passenger Seat	18.4	131	Max	N/A	N/A	N/A
			Mid	117	124	131
			Min	N/A	N/A	N/A
Front Center Seat*	N/A	N/A	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Struck Side Rear Seat	13.0	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Non-Struck Side Rear Seat	13.1	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Rear Center Seat*	12.9	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A

* If applicable.

DATA SHEET NO. 2 (CONTINUED)

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

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan

NHTSA No.: M20140109

Test Program: SPNCAP Side Impact

Test Date: 12/16/13

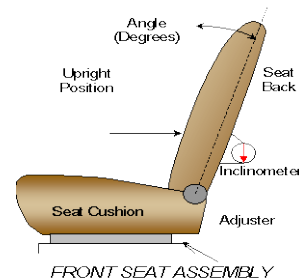
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position from Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	243	55	0	0
Front Passenger Seat	243	55	0	0
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	N/A	Fixed	N/A
Non-Struck Side Rear Seat	Fixed	N/A	Fixed	N/A
Rear Center Seat*	Fixed	N/A	Fixed	N/A

* If applicable.

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned such that the dummy's head is level. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck-side rear passenger seat back is positioned in accordance with the information provided by the manufacturer on Form No. 1. For the 5th percentile female dummy in a Side NCAP MDB test. The rear center and non-struck side rear passenger's seat back is set to match the struck-side rear seat back.



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degrees	Detent*
Driver Seat w/ Seated Dummy	87.7	47	26.5 fwd	14
Front Passenger Seat	87.3	47	26.5 fwd	14
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	N/A	25.3	N/A
Non-Struck Side Rear Seat	Fixed	N/A	25.4	N/A
Rear Center Seat*	Fixed	N/A	23.0	N/A

* If applicable.

SEAT BELT ANCHORAGE ADJUSTMENT

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

	Total # of Positions	Placed in Position #
Driver Seat	5, numbered from 0 to 4	0, Uppermost

HEAD RESTRAINT ADJUSTMENT

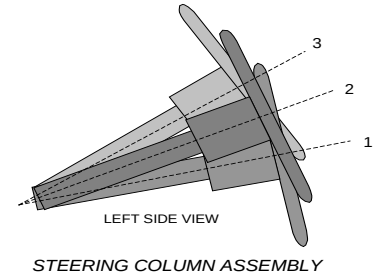
Head restraints are adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	9, numbered from 0 to 8	8 Lowermost

DATA SHEET NO. 2 (CONTINUED)**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA**Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedanNHTSA No.: M20140109Test Program: SPNCAP Side ImpactTest Date: 12/16/13**STEERING COLUMN ADJUSTMENT**

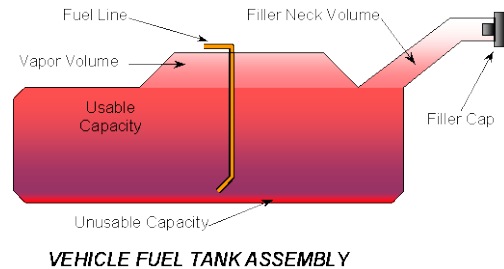
Steering wheel and column adjustments are made so that the steering wheel geometric locus it describes when moved through its full range of motion.

	Degrees	Fore/Aft Position, mm
Lowermost, Position No. 1	70.5	227
Geometric Center, Position No. 2	68.3	227
Uppermost, Position No. 3	66.1	227
Telescoping Steering Wheel Travel		55
Test Position	68.3	227

**FUEL PUMP**

Describe the fuel pump type, detail about how it operates and the location of the fuel filler neck:

Fuel tank is located in front of the rear axle. Filler neck enters the right side of the tank. Cap is on right rear quarter panel. Fuel pump will run when engine is running. Also, it will run briefly when ignition key is turned to the "ON" position without starting the engine.

**FUEL TANK CAPACITY**

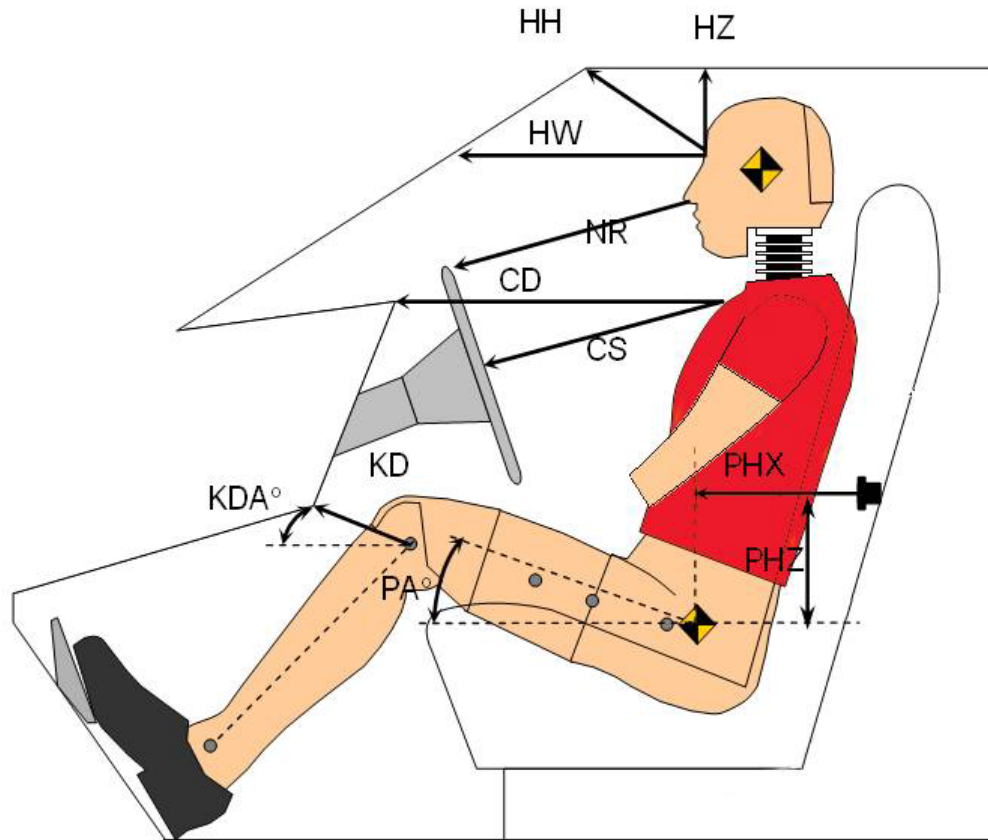
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	70.4
Usable Capacity of "Optional" Tank (see Form No. 1)	0.4
Usable Capacity of Standard Tank (see Owner's Manual)	59.7
Usable Capacity of Optional Tank (see Owner's Manual)	N/A
93% of Usable Capacity	65.5
Actual Amount of Solvent Used in Test	65.5
1/3 of Usable Capacity	23.5

Is the Actual Amount of Solvent Used in the test equal to 93% +/- 1% of the Usable Capacity stated on Form No. 1? X YES ☐ NO

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20140109
 Test Date: 12/16/13

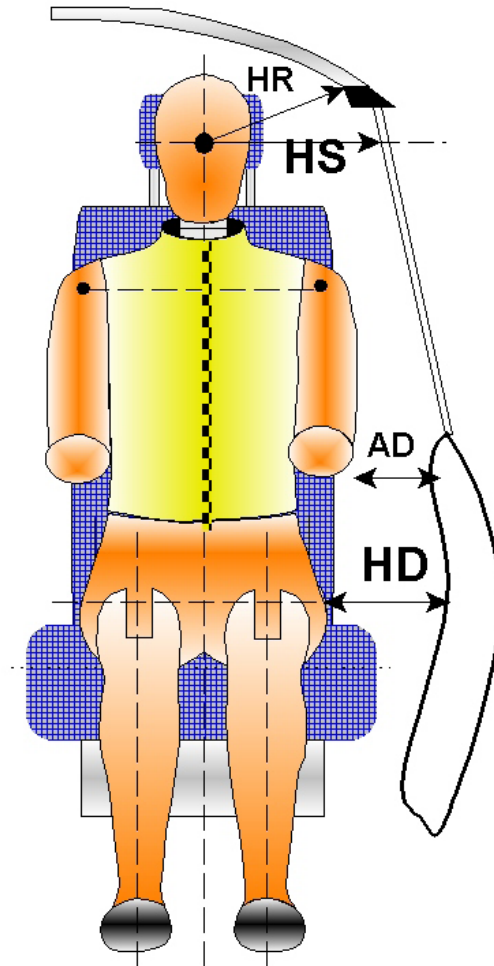


Code	Measurement Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	296	
HW	Head to Windshield	602	
HZ	Head to Roof Liner	198	
NR	Nose to Rim	250	
CD	Chest to Dashboard	421	
CS	Chest to Steering Wheel	218	
KDL/KDLA°	Left Knee to Dash	179	38.0
KDR/KDRA°	Right Knee to Dash	170	38.0
PAX°	Pelvic Tilt Angle (X-axis)		0.7
PAY°	Pelvic Tilt Angle (Y-axis)		21.5
PHX	Hip Point to Striker (X-Axis)	260	
PHZ	Hip Point to Striker (Z-Axis)	161	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan
Test Program: SPNCAP Side Impact

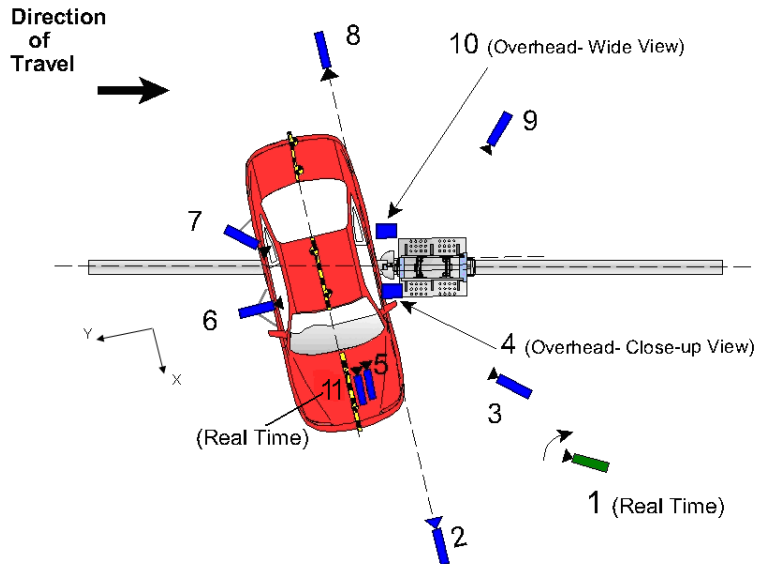
NHTSA No.: M20140109
Test Date: 12/16/13



Code	Measurement Description	Length (mm)
HR	Head to Side Header	235
HS	Head to Side Window	376
AD	Arm to Door	158
HD	Hip Point to Door	168

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan NHTSA No.: M20140109
 Test Program: SPNCAP Side Impact Test Date: 12/16/13



REFERENCE: (from point of impact for X and Y; from ground for Z)
 + X = Forward of vehicle, + Y = Right of vehicle, + Z = Down

Camera No.	View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Real time (24-30 fps) pan view of impact				Zoom	29
2	Front ground level – impact view	6147	0	-1293	Zoom	1000
3	Impact side 45° – forward pole view	3273	-1141	-1357	Zoom	1000
4	Overhead Close-up view of impact	0	0	-5679	50	1000
5	Onboard – dummy front view				8.5	1000
6	Onboard – dummy side view				8.5	1000
7	Onboard – dummy rear oblique view				8.5	1000
8	Rear ground level – impact view	-5245	0	-1148	25	1000
9	Impact side 45° – rearward pole view	-3375	-2585	-1348	Zoom	1000
10	Overhead wide view of impact	102	305	-5679	12.5	1000
11	Real time dummy front view				zoom	29

All measurements accurate to +/- 6 mm.

NOTE: Vehicle was at a 75° angle to the rigid pole.

If applicable, explain why camera(s) did not run: Not Applicable

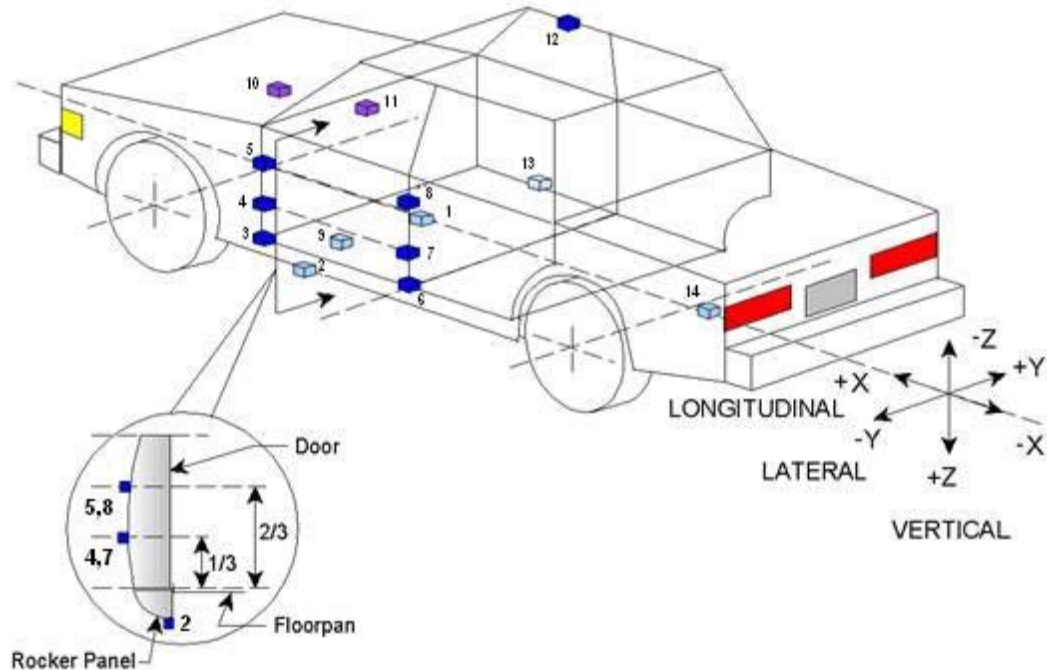
INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Vehicle Structure	18
Pole Load Cells	8
TOTAL	42

DATA SHEET NO. 6
VEHICLE ACCELEROMETER DATA

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20140109
 Test Date: 12/16/13



	Accelerometer/Sensor Location			
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2970	90	-332
2	Left Floor Sill	2946	-670	-289
3	A-Pillar Sill	3280	-670	-292
4	A-Pillar Low	3360	-810	-478
5	A-Pillar Mid	3370	-795	-832
6	B-Pillar Sill	2225	-680	-318
7	B-Pillar Low	2320	-835	-556
8	B-Pillar Mid	2288	-820	-893
9	Driver Seat Track	2503	-580	-300
10	Engine Top	3835	5	-790
11	Firewall	3445	0	-869
12	Right Roof	2190	572	-1432
13	Right Floor Sill	2955	670	-287
14	Rear Floorpan	1130	0	-504

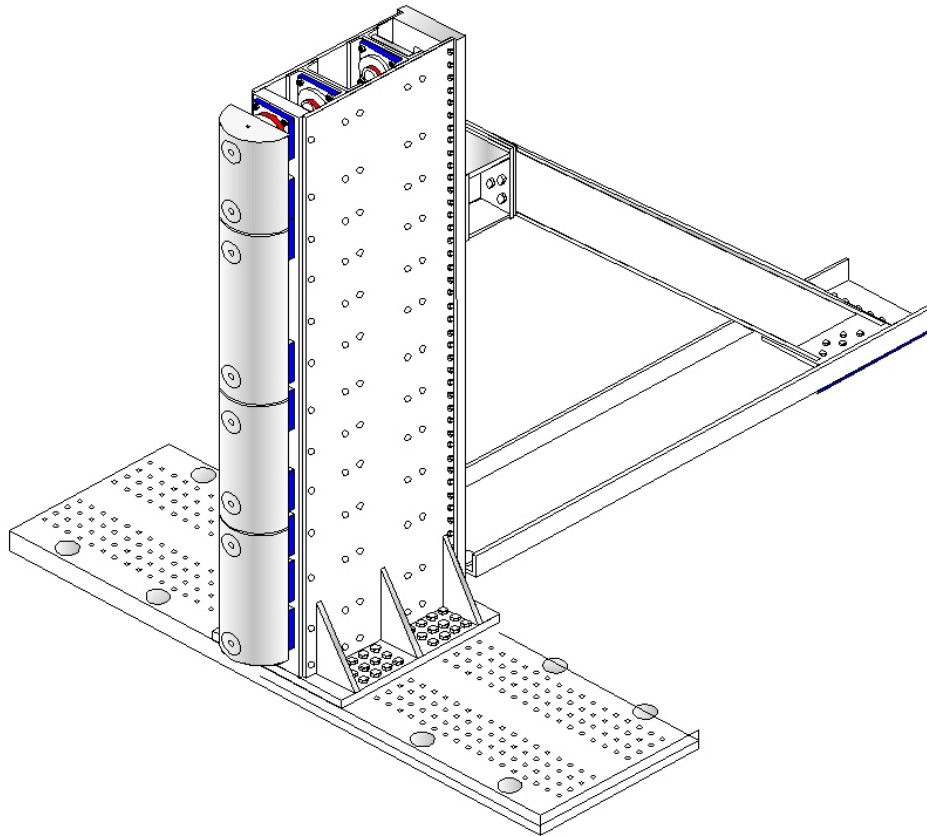
Reference: X - Test Vehicle Rear Bumper (+ forward)
 Y - Test Vehicle Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan
Test Program: SPNCAP Side Impact

NHTSA No.: M20140109
Test Date: 12/16/13

FOIL 300K RIGID POLE



Load Cell Locations	
ID	Height From Top of Carrier (mm)
1	87
2	468
3	648
4	978
5	1168
6	1651
7	1816
8	2057

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

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan NHTSA No.: M20140109
Test Program: SPNCAP Side Impact Test Date: 12/16/13

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver SID-IIs Dummy
Face	SCAB
Top of Head	Head restraint; SCAB
Left Side of Head	SCAB
Back of Head	SCAB
Left Shoulder	Torso/Pelvis Bag
Upper Torso	Torso/Pelvis Bag
Lower Torso	Torso/Pelvis Bag
Left Hip	Torso/Pelvis Bag
Left Knee	Door Panel

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	N/A
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	N/A
Latch or Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	N/A
Disengaged from Latched Position	No	No	No	No	N/A
Latch Separated from Striker	No	No	No	No	N/A
Jammed Shut	Yes	Yes	No	No	N/A
If Door Opened at Striker, Record Width of Opening at Striker (mm)	N/A	N/A	N/A	N/A	N/A

* Indicate "Yes", "No", or "NA".

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	None	None	None	None
Seat Disengagement from Floor pan	None	None	None	None
Seat Back Movement from Initial Position	Yes	None	None	None
Seat Back Collapse	None	None	None	None

* Indicate "Yes", "No", or "NA".

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Major deformation
Sill Separation	435 mm separation at pinch weld forward of left rear wheel housing
Windshield Damage	Broken at A-Pillar
Side Window Damage	Shattered
Other Notable Effects	None

DATA SHEET NO. 8 (CONTINUED)
POST TEST OBSERVATIONS

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan NHTSA No.: M20140109
 Test Program: SPNCAP Side Impact Test Date: 12/16/13

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side (Driver)		Struck Side (Rear Passenger)	
	Mounted	Deployed	Mounted	Deployed
Front Airbag	Yes	No		
Knee Airbag	Yes	No		
Curtain	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	N/A
Side Torso Airbag	No	N/A	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	No	N/A
Seat Belt Load Limiter	No	N/A	No	N/A
Other	None	NA	None	N/A

VEHICLE SPEED, VEHICLE ANGLE AT IMPACT AND IMPACT POINT LOCATION DATA

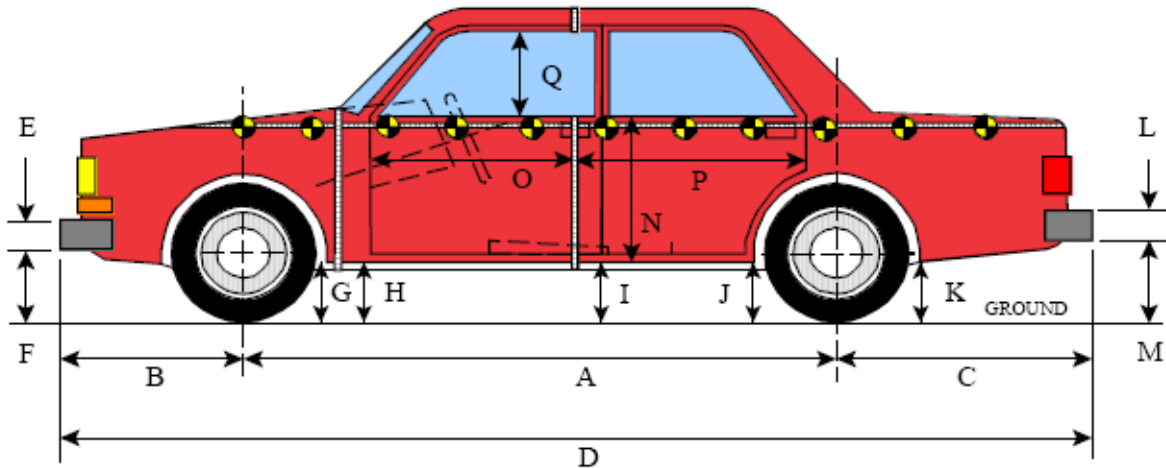
Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		1131
Actual Impact Point (Aft of Front Axle)	mm		1129
Horizontal Offset (+ forward / - rearward)	mm	+/- 38 of Intended Impact point	+2
Angle Between Vehicle's Longitudinal Centerline and Line of Motion	degrees	75 +/- 3	75
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.35
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	6.57 ¹

¹ Redundant light trap did not function properly.

DATA SHEET NO. 9
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20140109
 Test Date: 12/16/13



LEFT SIDE VIEW

All MEASUREMENTS IN (mm) WITH TOLERANCE OF $\pm 3\text{mm}$

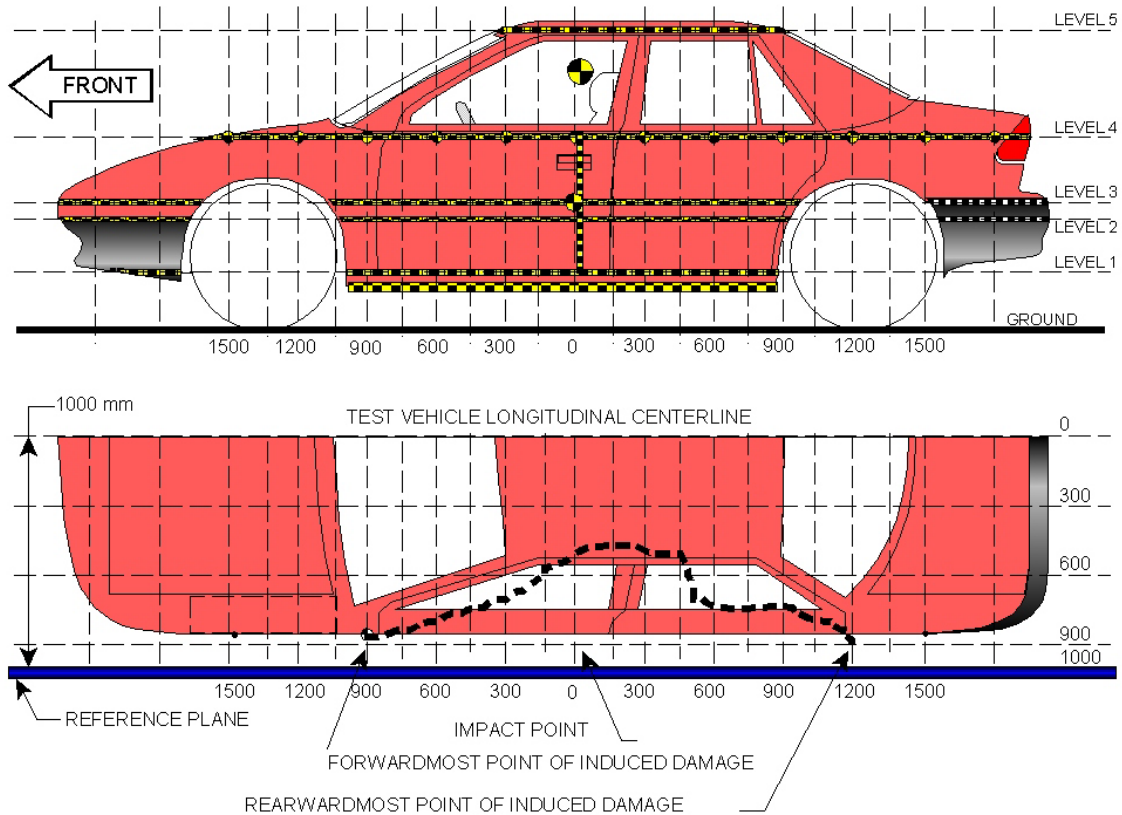
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2740	2700	40
B	Front Axle to Front Surface of Vehicle	1005	1005	0
C	Rear Axle to Rear Surface of Vehicle	1135	1135	0
D	Total Length at Centerline	4880	4850	30
E	Front Bumper Thickness	160	160	0
F	Front Bumper Bottom to Ground	375	397	-22
G	Sill Height at Front Wheel Well	225	250	-25
H	Sill Height at Front Door Leading Edge	230	269	-39
I	Sill Height at B-Pillar	272	313	-41
J1	Sill Height at Rear Wheel Well	296	332	-36
J2	Pinch Weld Height at Rear Wheel Well	177	229	-52
K	Sill Height Aft of Rear Wheel Well	285	328	-43
L	Rear Bumper Thickness	210	210	0
M	Rear Bumper Bottom to Ground	483	525	-42
N	Sill Height to Bottom of Front Window Sill	725	730	-5
O	Front Door Leading Edge to Impact CL	663	652	11
P	Rear Door Trailing Edge to Impact CL	1265	1180	85
Q	Front Window Opening	405	372	33
R	Right Side Length	4640	4625	15
S	Left Side Length	4640	4570	70
T	Vehicle Width at "B" Pillars	1820	1719	101

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20140109
 Test Date: 12/16/13



NOTE: All measurements are in millimeters (mm)

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	342	325	-150
2	Occupant H-Point	549	347	-150
3	Mid-Door	620	351	-150
4	Window Sill	883	316	-150
5	Window Top	1390	120	0

NOTE: The above measurements should be taken along the vertical impact reference line. Vehicle measurements forward of the vertical impact reference line are negative.

DATA SHEET NO. 10 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20140109
 Test Date: 12/16/13

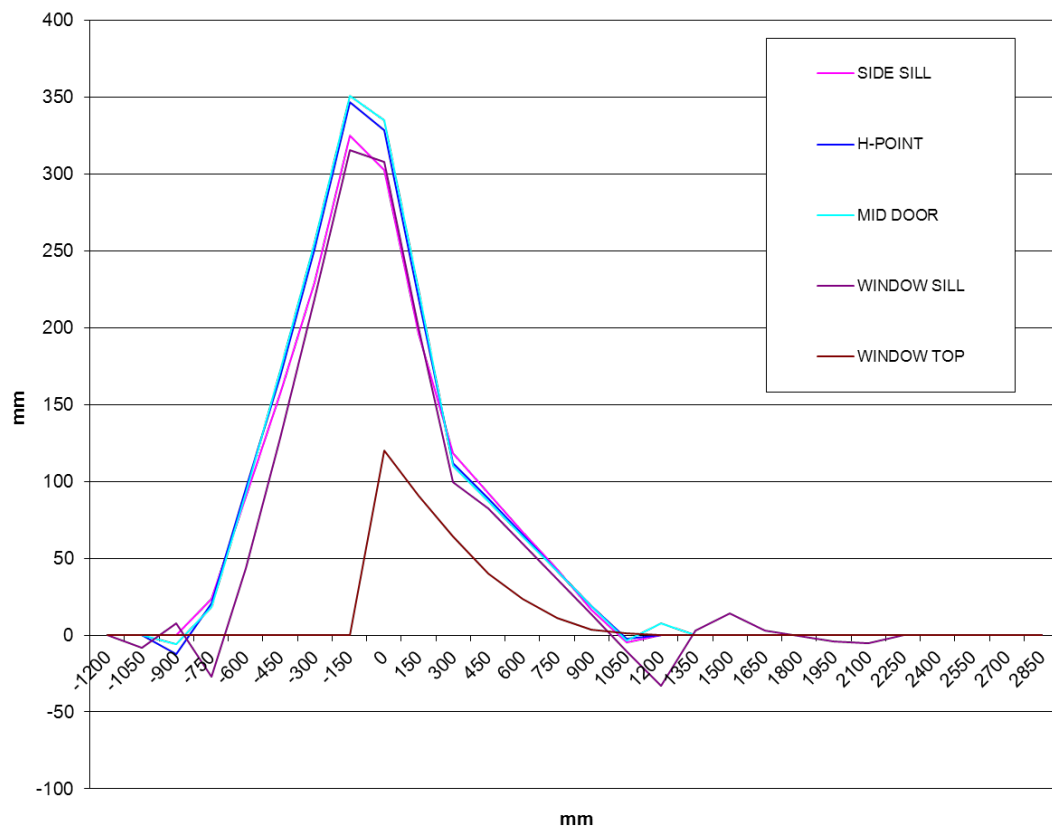
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900	0	929	924	846	0	0	941	930	839	0	0	-12	-6	7	0
-750	903	918	918	852	0	879	898	899	879	0	24	20	19	-27	0
-600	897	918	918	857	0	807	822	826	813	0	90	96	92	44	0
-450	897	918	919	863	0	740	749	748	735	0	157	169	171	128	0
-300	899	918	920	868	0	669	667	664	649	0	230	251	256	219	0
-150	901	918	920	873	0	576	571	569	557	0	325	347	351	316	0
0	903	917	919	877	598	600	588	584	569	478	303	329	335	308	120
150	905	916	918	881	611	710	697	694	681	520	195	219	224	200	91
300	908	914	917	883	616	790	803	806	784	551	118	111	111	99	65
450	910	913	915	884	617	818	824	828	801	577	92	89	87	83	40
600	911	912	914	885	617	844	846	850	825	593	67	66	64	60	24
750	904	910	913	885	612	861	868	872	849	601	43	42	41	36	11
900	900	910	912	885	604	884	890	893	872	601	16	20	19	13	3
1050	894	920	919	873	585	899	922	923	883	583	-5	-2	-4	-10	2
1200	0	0	928	884	0	0	0	920	917	0	0	0	8	-33	0
1350	0	0	0	884	0	0	0	0	882	0	0	0	0	2	0
1500	0	0	0	882	0	0	0	0	868	0	0	0	0	14	0
1650	0	0	0	872	0	0	0	0	869	0	0	0	0	3	0
1800	0	0	0	855	0	0	0	0	856	0	0	0	0	-1	0
1950	0	0	0	835	0	0	0	0	839	0	0	0	0	-4	0
2100	0	0	0	809	0	0	0	0	814	0	0	0	0	-5	0
2250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to the test based on an estimated impact point. The final distance from impact is determined after the final dummy positioning and the pole is aligned with the center of gravity of the dummy's head.

DATA SHEET NO. 10 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan
Test Program: SPNCAP Side Impact

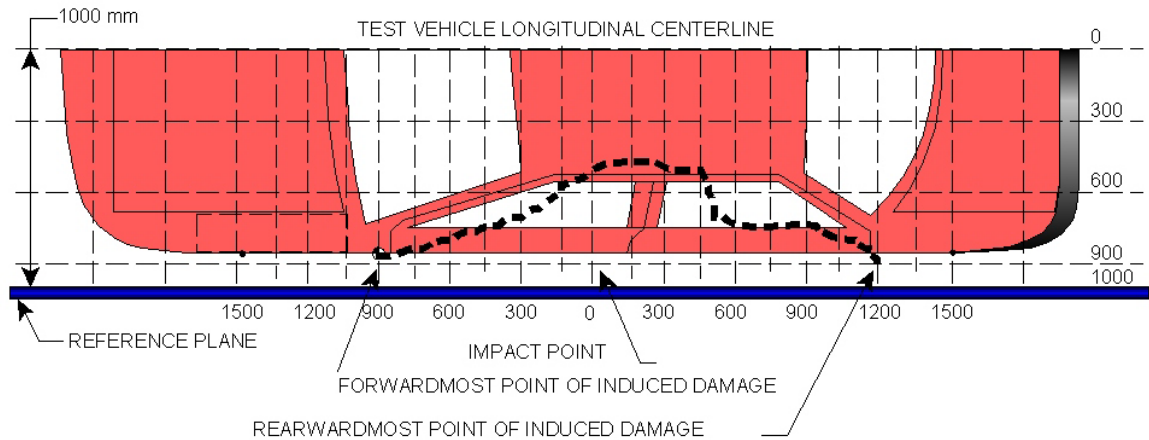
NHTSA No.: M20140109
Test Date: 12/16/13



DATA SHEET NO. 11
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan
 Test Program: SPNCAP Side Impact

NHTSA No.: M20140109
 Test Date: 12/16/13



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	-750	1	879	903	24
2	-300	3	664	918	256
3	150	3	694	918	224
4	600	1	844	911	67
5	1200	3	917	928	8
6	1650	4	869	872	3

DATA SHEET NO. 11

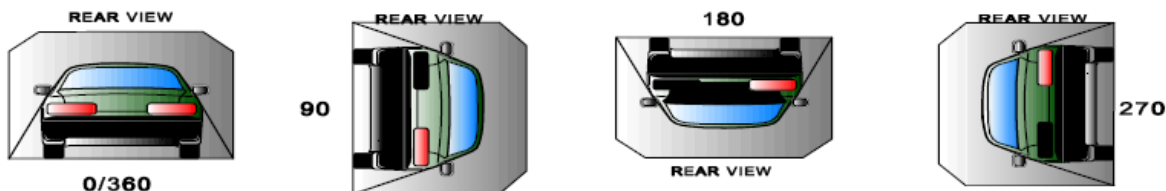
FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan NHTSA No.: M20140109
 Test Program: SPNCAP Side Impact Test Date: 12/16/13

Test Time: 14:14 Temperature: 20°C

- A. From impact until vehicle motion ceases: 0 oz.
 (Maximum allowable is 1 ounce)
- B. For the 5 minute period after motion ceases: 0
 (Maximum allowable is 5 ounces)
- C. For the following 25 minutes: 0
 (Maximum allowable is 1 ounce/minute)
- D. Spillage Data1LS: None

FMVSS 301 STATIC ROLLOVER DATA



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0 to 90	120	300	420
90 to 180	120	300	840
180 to 270	120	300	1260
270 to 360	120	300	1680

FMVSS NO. 301 ROLLOVER SPILLAGE TABLE

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0 to 90	0	0	0	N/A
90 to 180	0	0	0	N/A
180 to 270	0	0	0	N/A
270 to 360	0	0	0	N/A

ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0 to 90	None
90 to 180	None
180 to 270	None
270 to 360	None

DATA SHEET NO. 13

DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

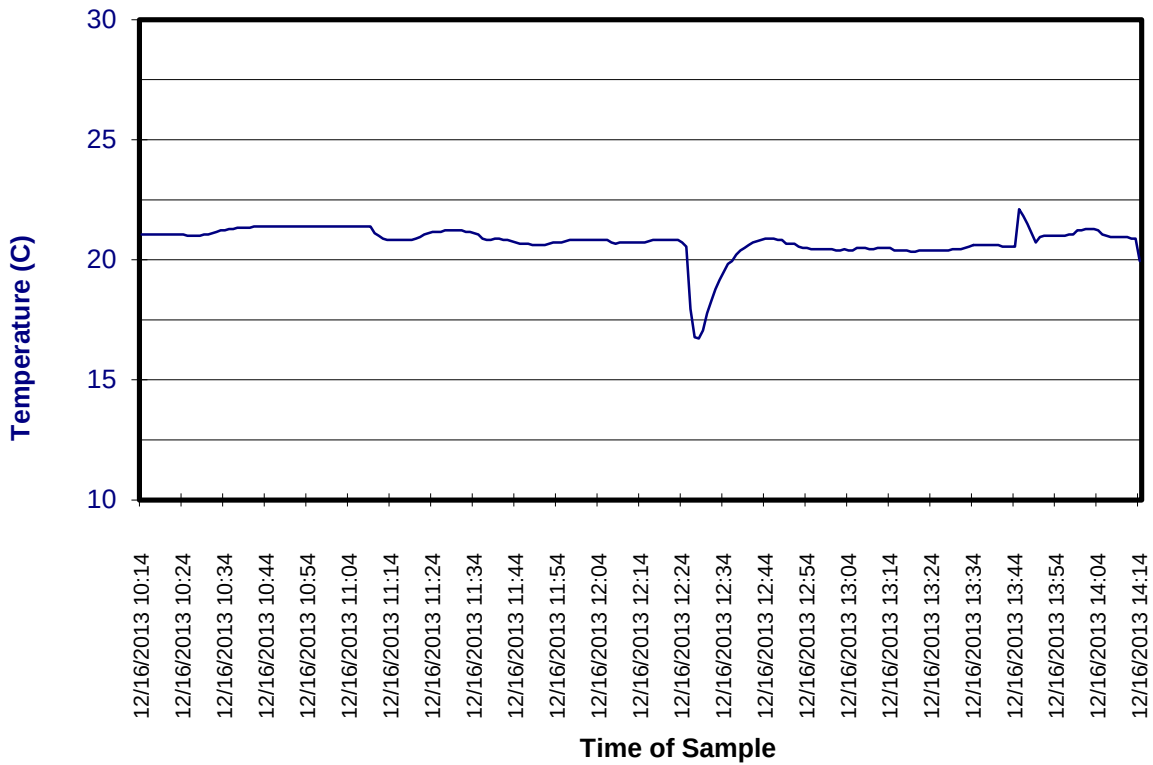
Test Vehicle: 2014 Chevrolet Malibu 1LS 4-door sedan

NHTSA No.: M20140109

Test Program: SPNCAP Side Impact

Test Date: 12/16/13

**M20140109 2014 Chevrolet Malibu 1LS 4-Door Sedan
75 Degree Oblique Rigid Pole Impact 1312161; Test Time 14:14**



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

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1	As Delivered Right Front 3-4 View of Test Vehicle	A-4
2	As Delivered Left Rear 3-4 View of Test Vehicle	A-4
3	Pre-Test Frontal View of Test Vehicle	A-5
4	Post-Test Frontal View of Test Vehicle	A-5
5	Pre-Test Left Front 3-4 View of Test Vehicle	A-6
6	Post-Test Left Front 3-4 View of Test Vehicle	A-6
7	Pre-Test Left Side View of Test Vehicle	A-7
8	Post-Test Left Side View of Test Vehicle	A-7
9	Pre-Test Left Rear 3-4 View of Test Vehicle	A-8
10	Post-Test Left Rear 3-4 View of Test Vehicle	A-8
11	Pre-Test Rear View of Test Vehicle	A-9
12	Post-Test Rear View of Test Vehicle	A-9
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17	Pre-Test Left Side View of Pole Positioned Against Side of Vehicle	A-12
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22	Post-Test Front Close-Up View of Dummy	A-14
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27	Pre-Test Front View of Dummy Head and Shoulders in Relation to Head Restraint	A-17
28	Pre-Test Front View of Seat Pan Prior to Dummy Positioning	A-17
29	Pre-Test Overhead View of Dummy Thighs on Seat Pan	A-18
30	Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket	A-18
31	Pre-Test Left Side View of Dummy's Head Showing Dummy's Head is Level	A-19
32	Pre-Test Placement of Dummy's Feet	A-19
33	Pre-Test View of Belt Anchorage for Dummy	A-20
34	Pre-Test Left Side View of Steering Wheel	A-20

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36	Pre-Test View of Parking Brake	A-21
37	Pre-Test Close-Up Left Side View of Driver Seat Track	A-22
38	Pre-Test Close-Up Left Side View of Driver Seat Back	A-22
39	Pre-Test Close-Up View of Driver Seat Back or Head Restraint	A-23
40	Pre-Test Dummy and Door Clearance View	A-23
41	Post-Test Dummy and Door Clearance View	A-24
42	Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment	A-24
43	Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment	A-25
44	Pre-Test Inner Driver Door Panel View	A-25
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48	Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View	A-27
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50	Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View	A-28
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52	Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View	A-29
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54	Post-Test View of Fuel Filler Cap or Fuel Filler Neck	A-30
55	Close-Up View of Vehicle's Certification Label	A-31
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60	Post-Test Pole Barrier Side View	A-33
61	Pre-Test Ballast View	A-34
62	Post-Test Primary and Redundant Speed Trap Read-Out	A-34
63	FMVSS No. 301 Static Rollover 0 Degrees	A-35
64	FMVSS No. 301 Static Rollover 90 Degrees	A-35
65	FMVSS No. 301 Static Rollover 180 Degrees	A-36
66	FMVSS No. 301 Static Rollover 270 Degrees	A-36
67	FMVSS No. 301 Static Rollover 360 Degrees	A-37
68	Impact Event	A-37
69	Monroney Label	A-38
70	Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-38
71	Post-Test View of Shattered Vehicle Inner Door Panel	A-39



001 As Delivered Right Front 3-4 View of Test Vehicle



002 As Delivered Left Rear 3-4 View of Test Vehicle



003 Pre-Test Frontal View of Test Vehicle



004 Post-Test Frontal View of Test Vehicle



005 Pre-Test Left Front 3-4 View of Test Vehicle



006 Post-Test Left Front 3-4 View of Test Vehicle



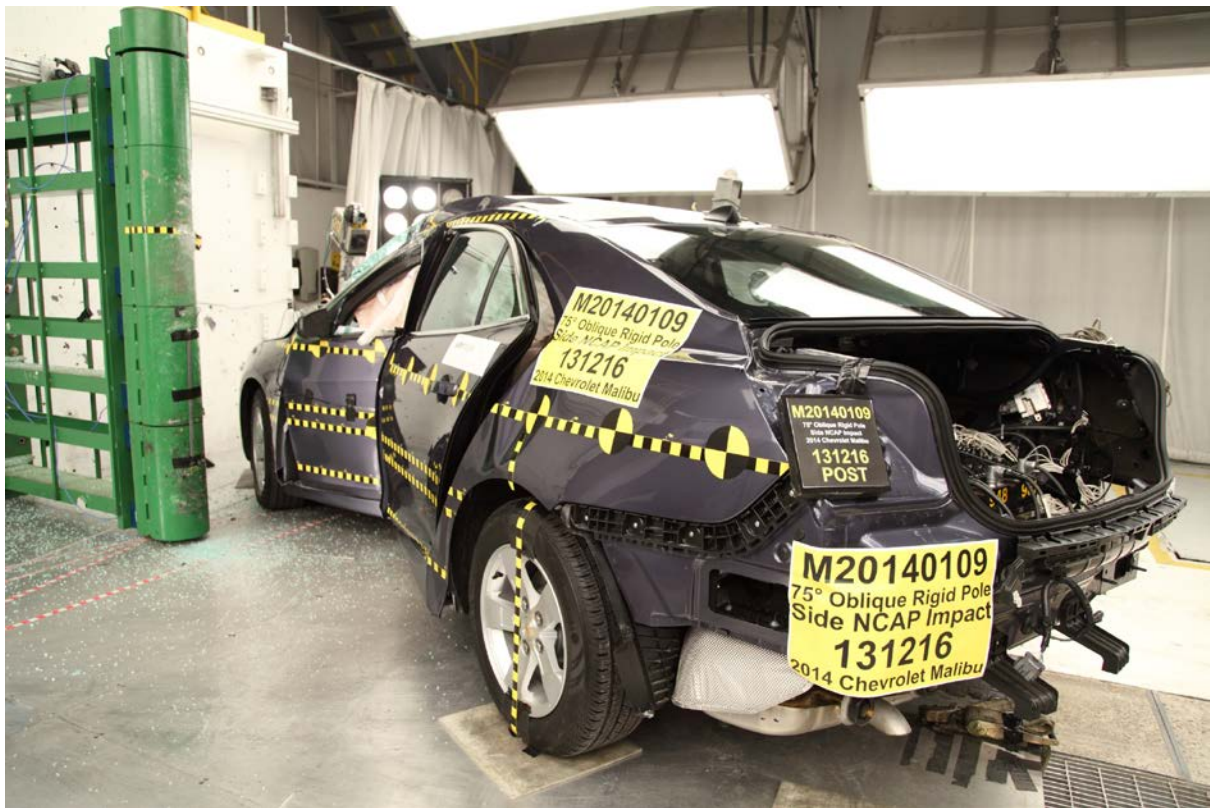
007 Pre-Test Left Side View of Test Vehicle



008 Post-Test Left Side View of Test Vehicle



009 Pre-Test Left Rear 3-4 View of Test Vehicle



010 Post-Test Left Rear 3-4 View of Test Vehicle



011 Pre-Test Rear View of Test Vehicle



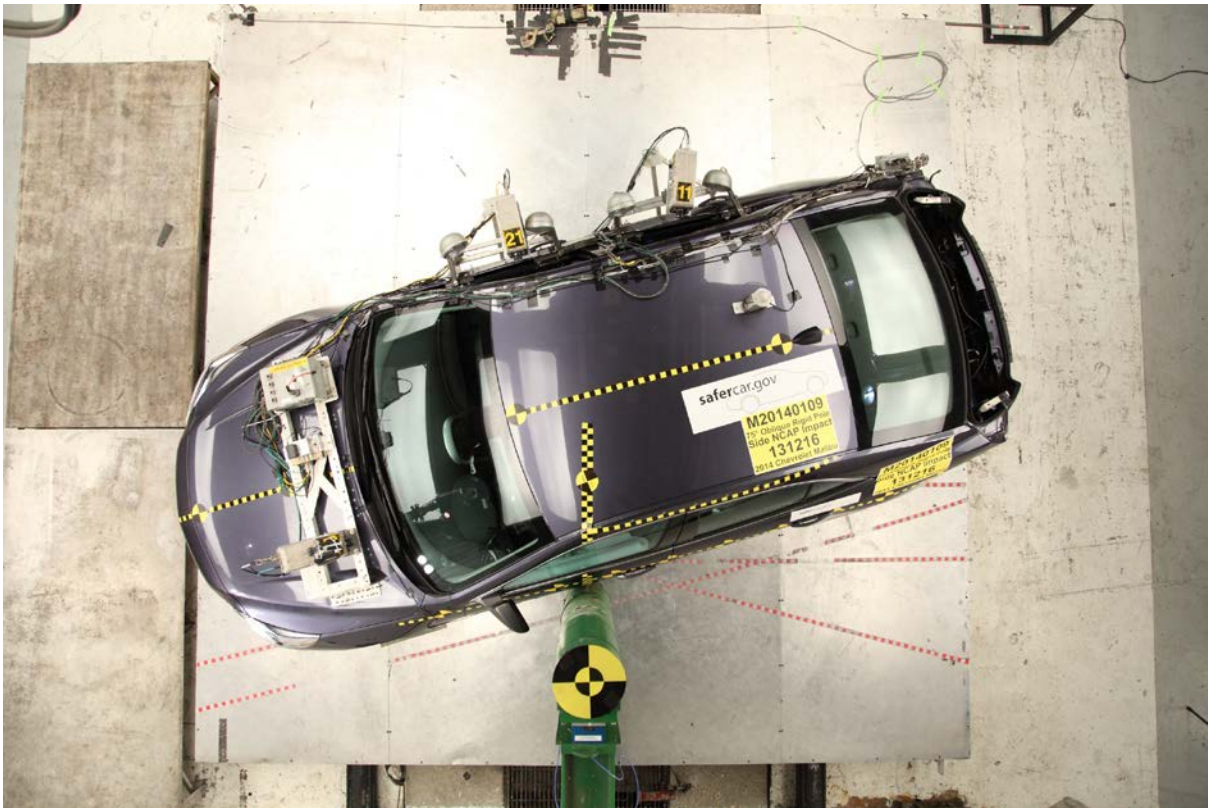
012 Post-Test Rear View of Test Vehicle



013 Pre-Test Right Side View of Test Vehicle



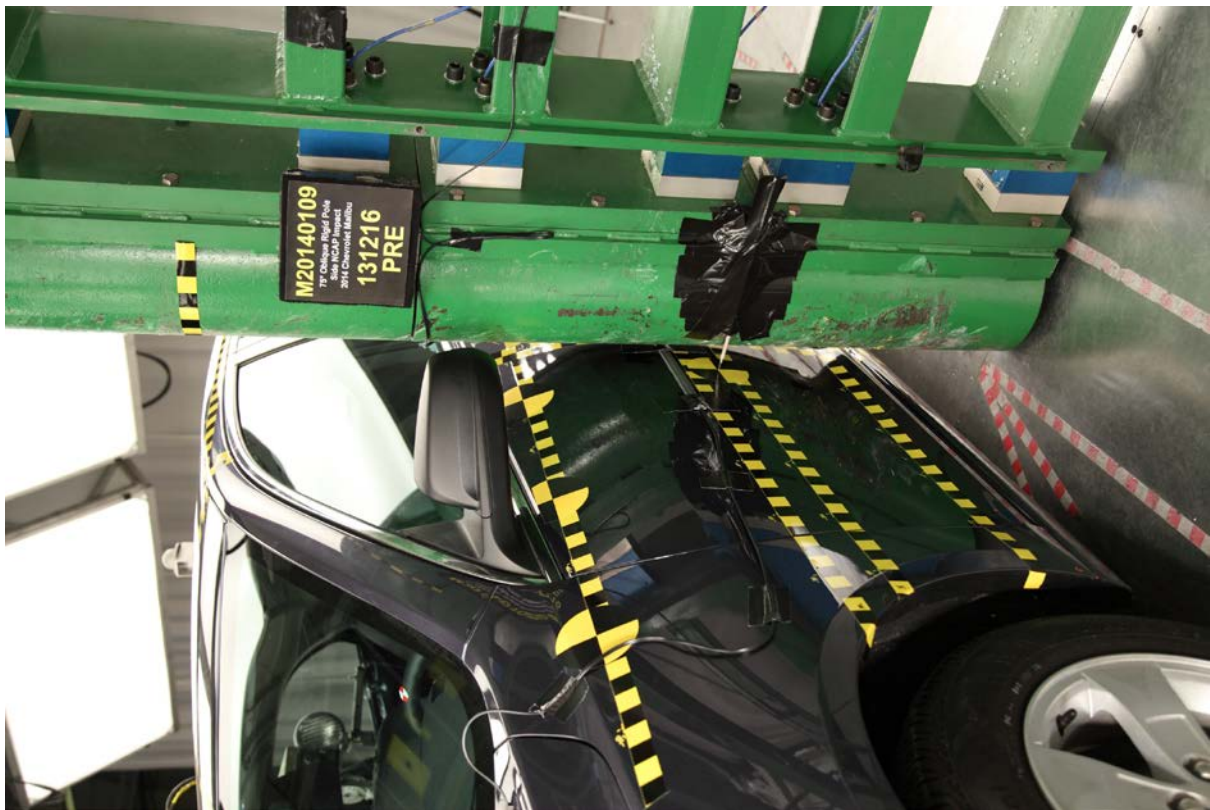
014 Post-Test Right Side View of Test Vehicle



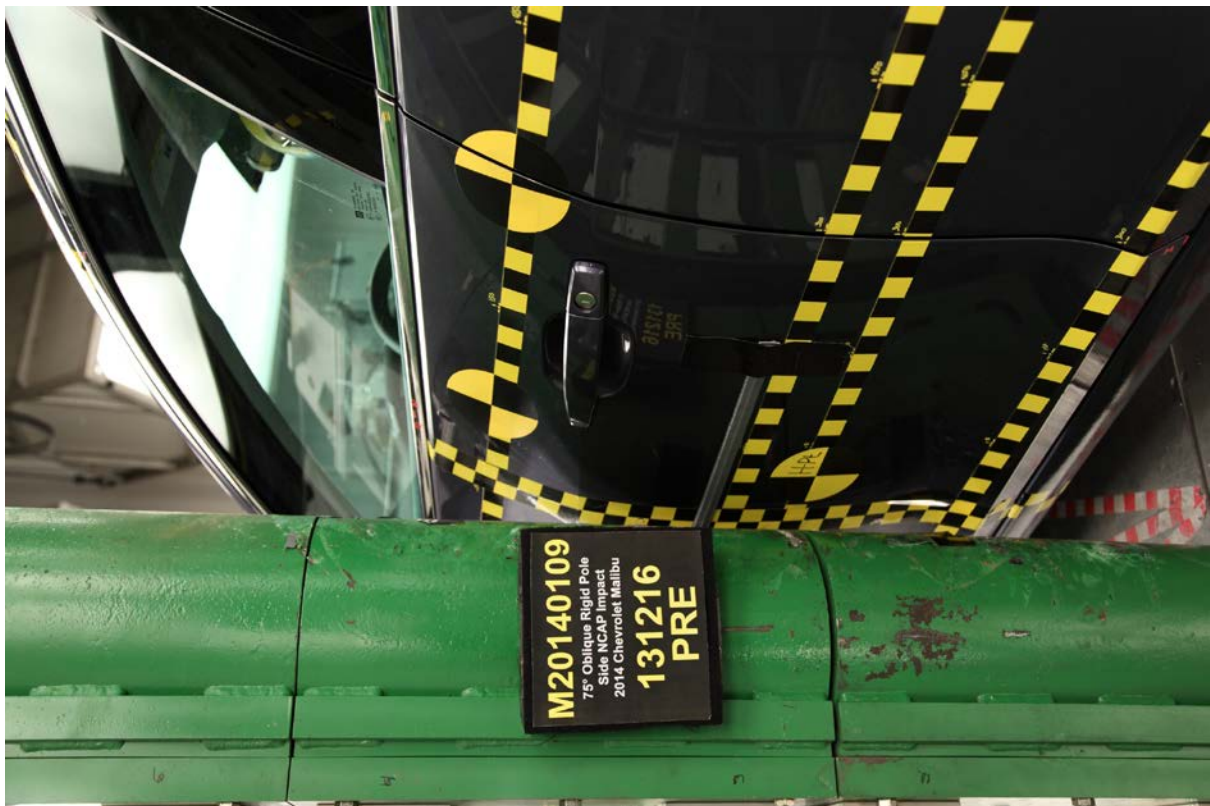
015 Pre-Test Overhead View of Test Area



016 Post-Test Overhead View of Test Area



017 Pre-Test Left Side View of Pole Positioned Against Side of Vehicle



018 Pre-Test Right Side View of Pole Positioned Against Side of Vehicle



019 Pre-Test Close-Up View of Impact Point Target



020 Post-Test Close-Up View of Impact Point Target Showing Impact Location



021 Pre-Test Front Close-Up View of Dummy Head and Chest



022 Post-Test Front Close-Up View of Dummy



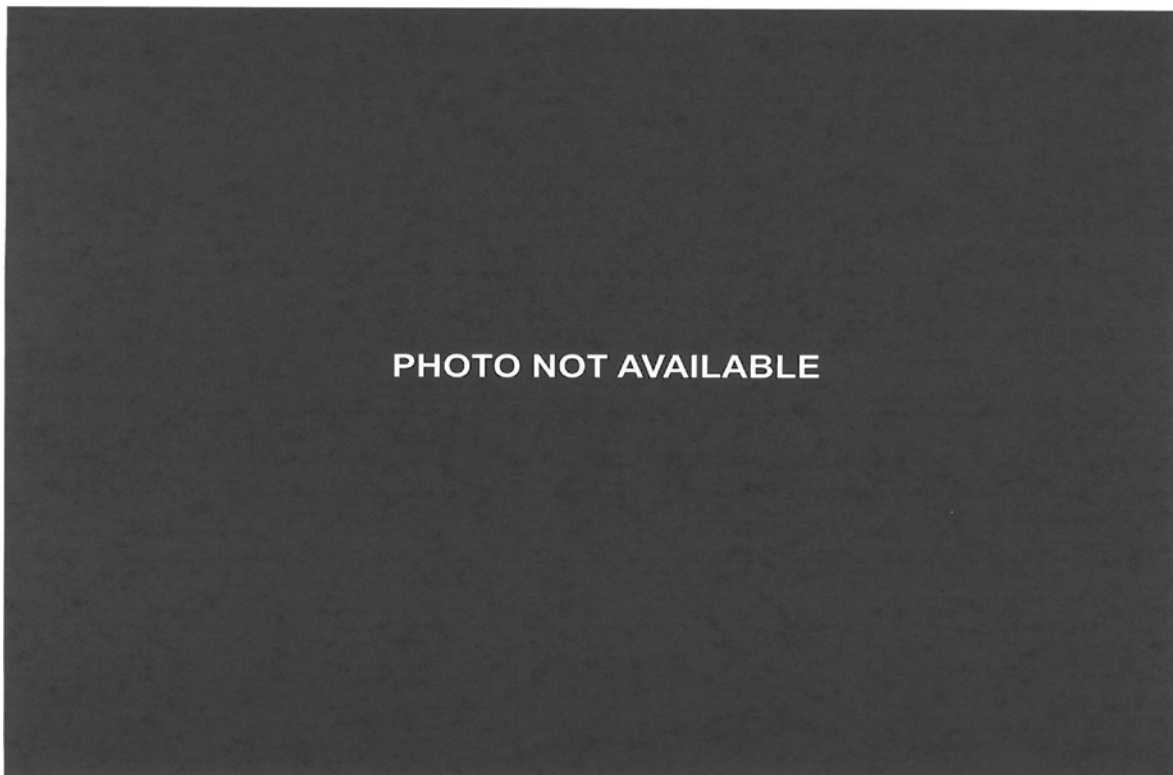
023 Pre-Test Left Side View of Dummy Showing Belt and Chalking



024 Pre-Test Left Side View of Dummy Shoulder and Door Top View



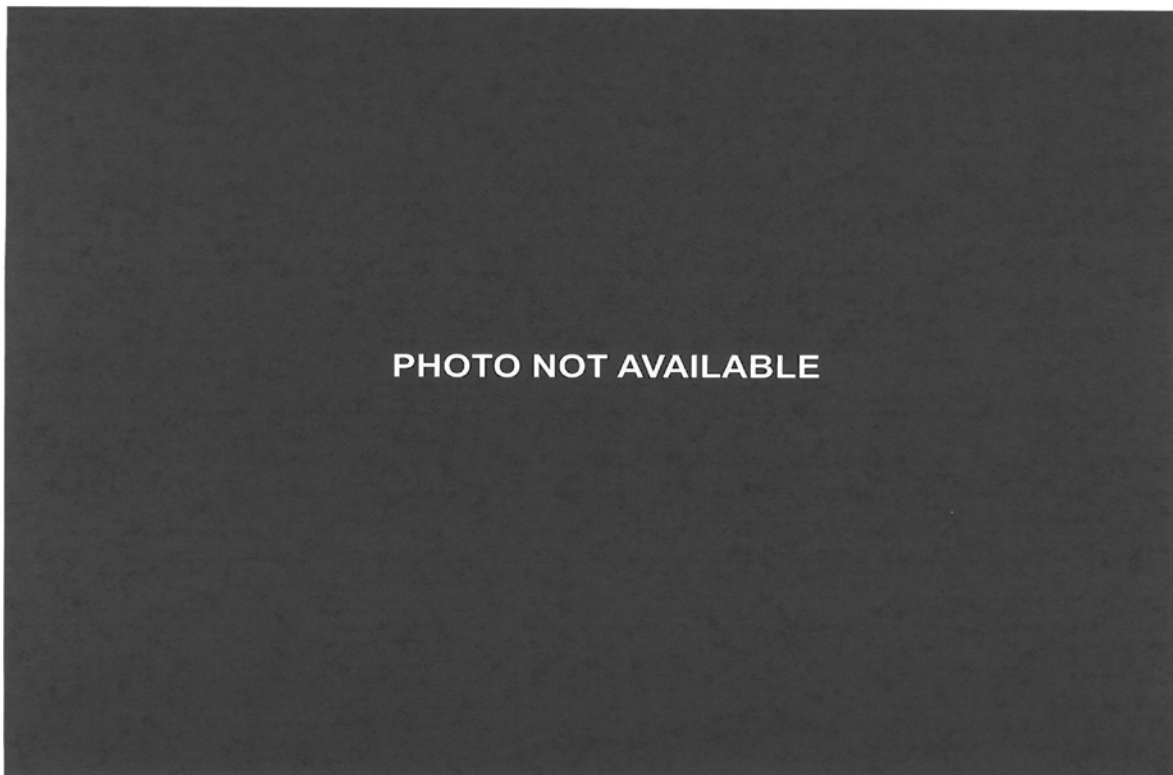
025 Post-Test Left Side View of Dummy Shoulder and Door Top View



026 Pre-Test Front View of Seat Back Prior to Dummy Positioning



027 Pre-Test Front View of Dummy Head and Shoulders in Relation to Head Restraint



028 Pre-Test Front View of Seat Pan Prior to Dummy Positioning



029 Pre-Test Overhead View of Dummy Thighs on Seat Pan



030 Pre-Test Left Side View of Dummy Neck Showing Position of Adjustable Neck Bracket



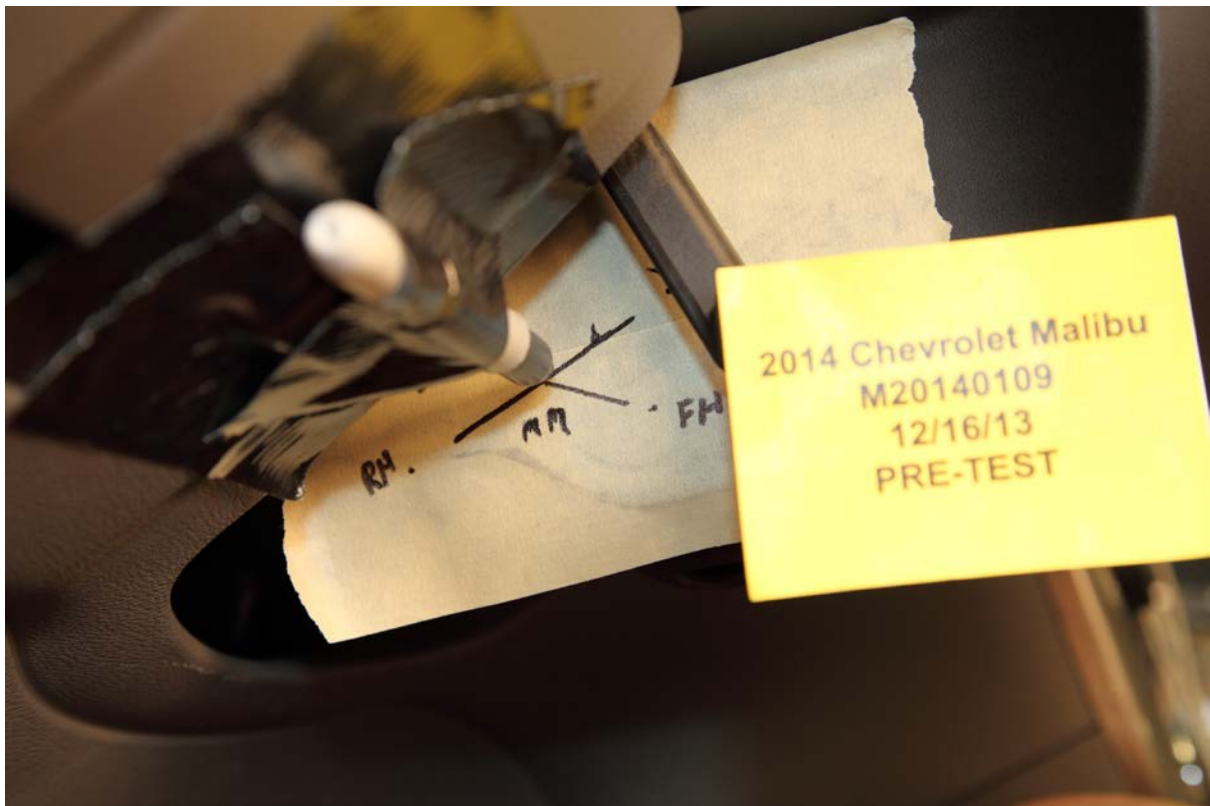
031 Pre-Test Left Side View of Dummy Head Showing Dummy Head is Level



032 Pre-Test Placement of Dummy Feet



033 Pre-Test View of Belt Anchorage for Dummy



034 Pre-Test Left Side View of Steering Wheel



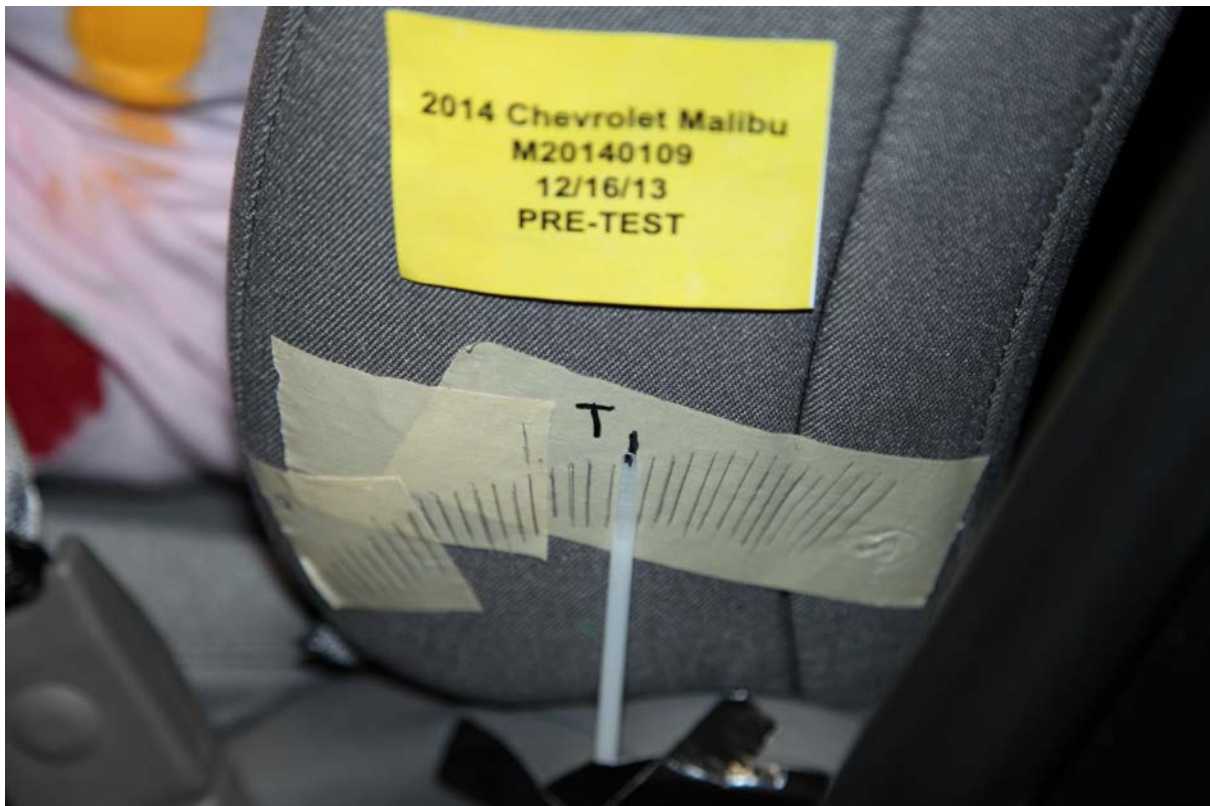
035 Pre-Test View of Disengaged Parking Brake



036 Pre-Test View of Parking Brake



037 Pre-Test Close-Up Left Side View of Driver Seat Track



038 Pre-Test Close-Up Left Side View of Driver Seat Back



039 Pre-Test Close-Up View of Driver Seat Back or Head Restraint



040 Pre-Test Dummy and Door Clearance View



041 Post-Test Dummy and Door Clearance View



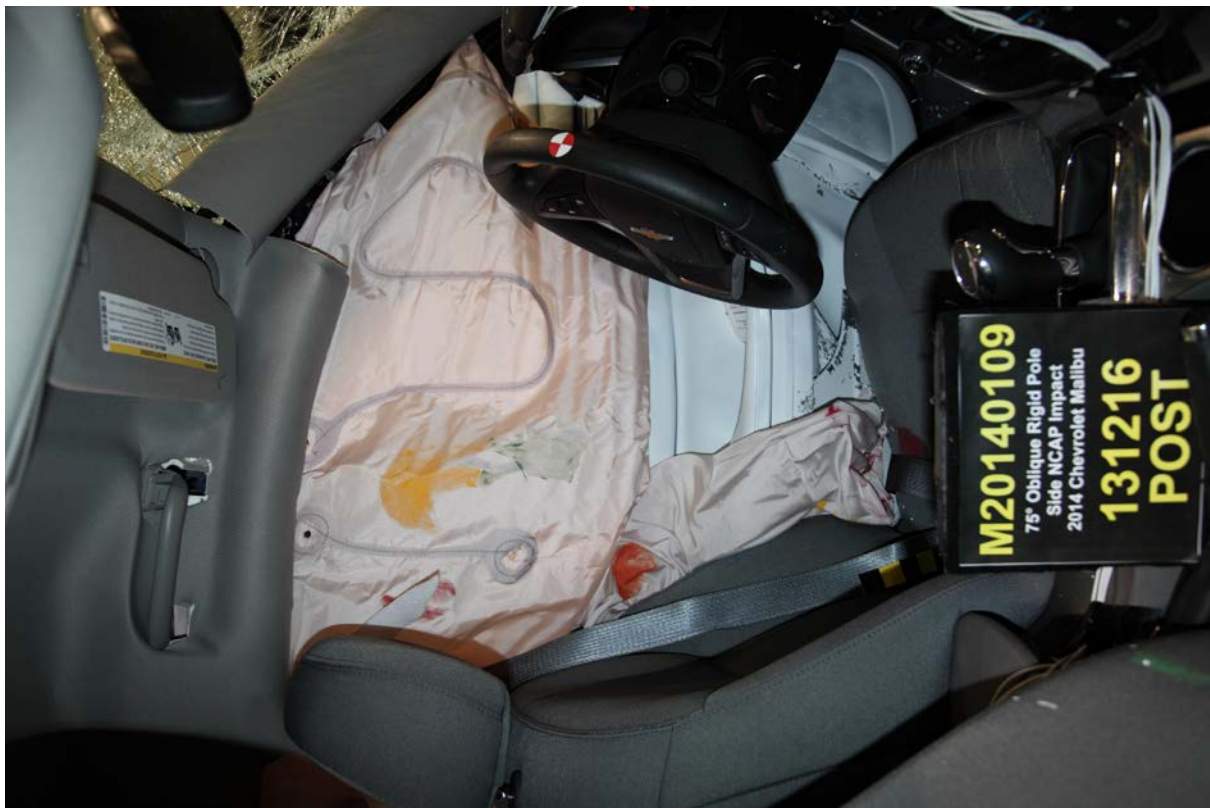
042 Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



043 Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



044 Pre-Test Inner Driver Door Panel View



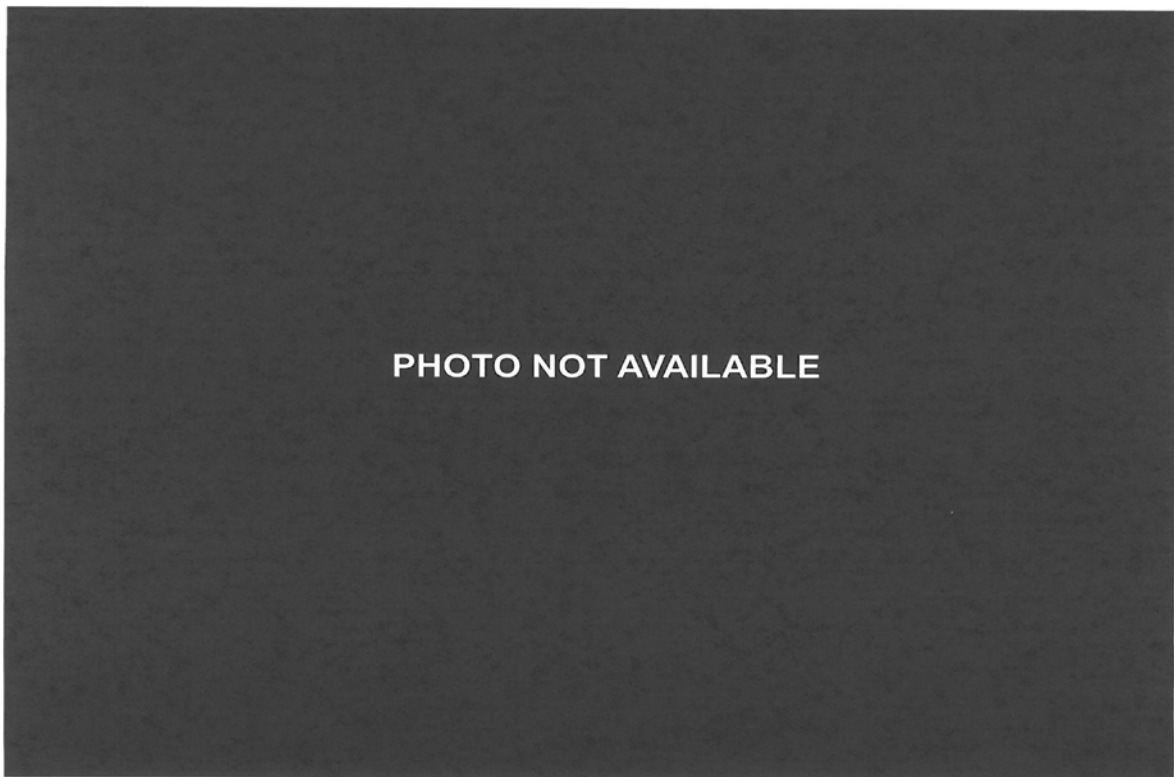
045 Post-Test Inner Driver Door Panel View Showing Dummy Contact Location



046 Post-Test Dummy Close-Up Head Contact with Vehicle View



047 Post-Test Dummy Close-Up Head Contact with Side Airbag View



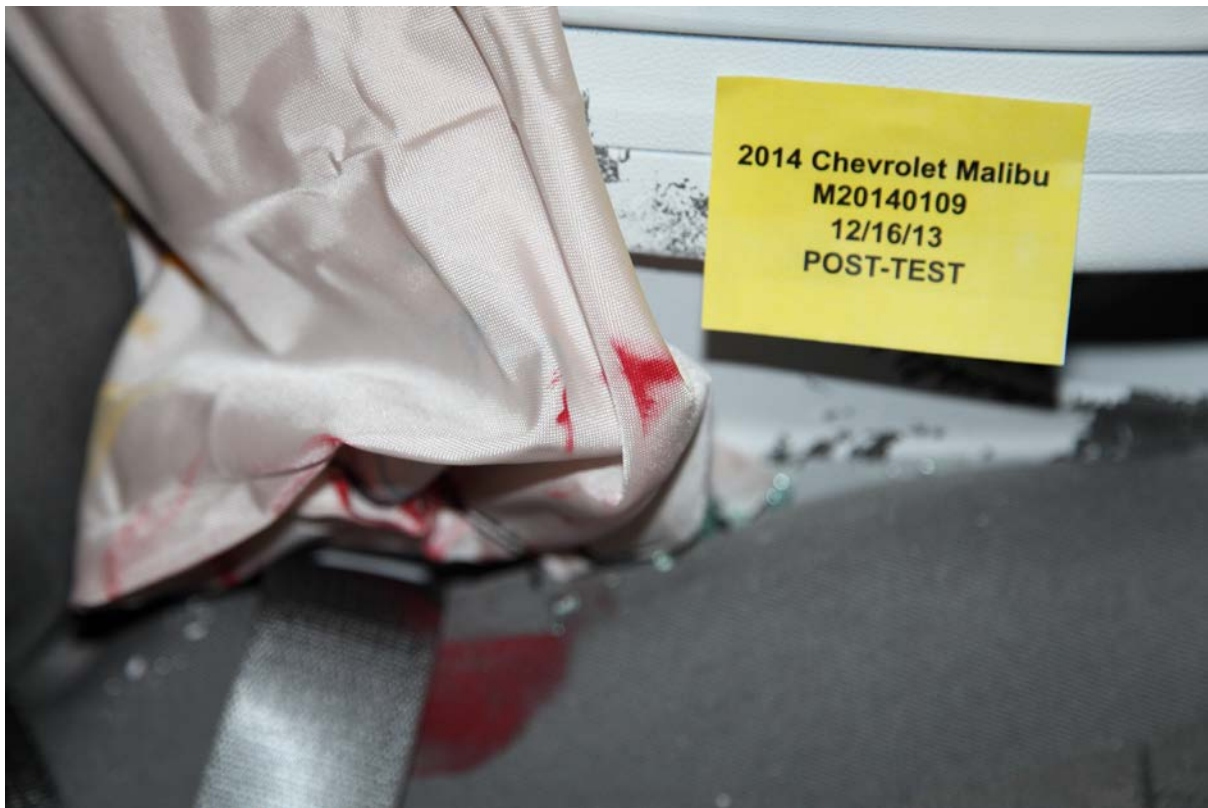
048 Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



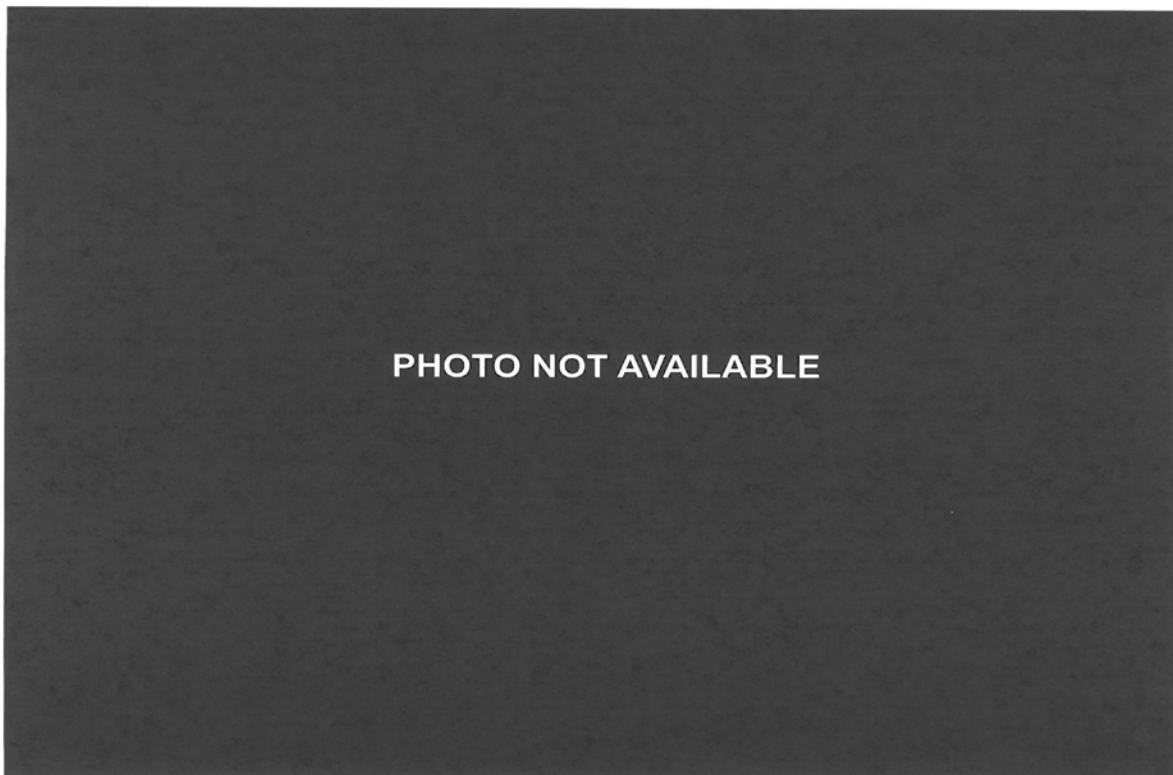
049 Post-Test Dummy Close-Up Torso Contact with Side Airbag View



050 Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



051 Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View



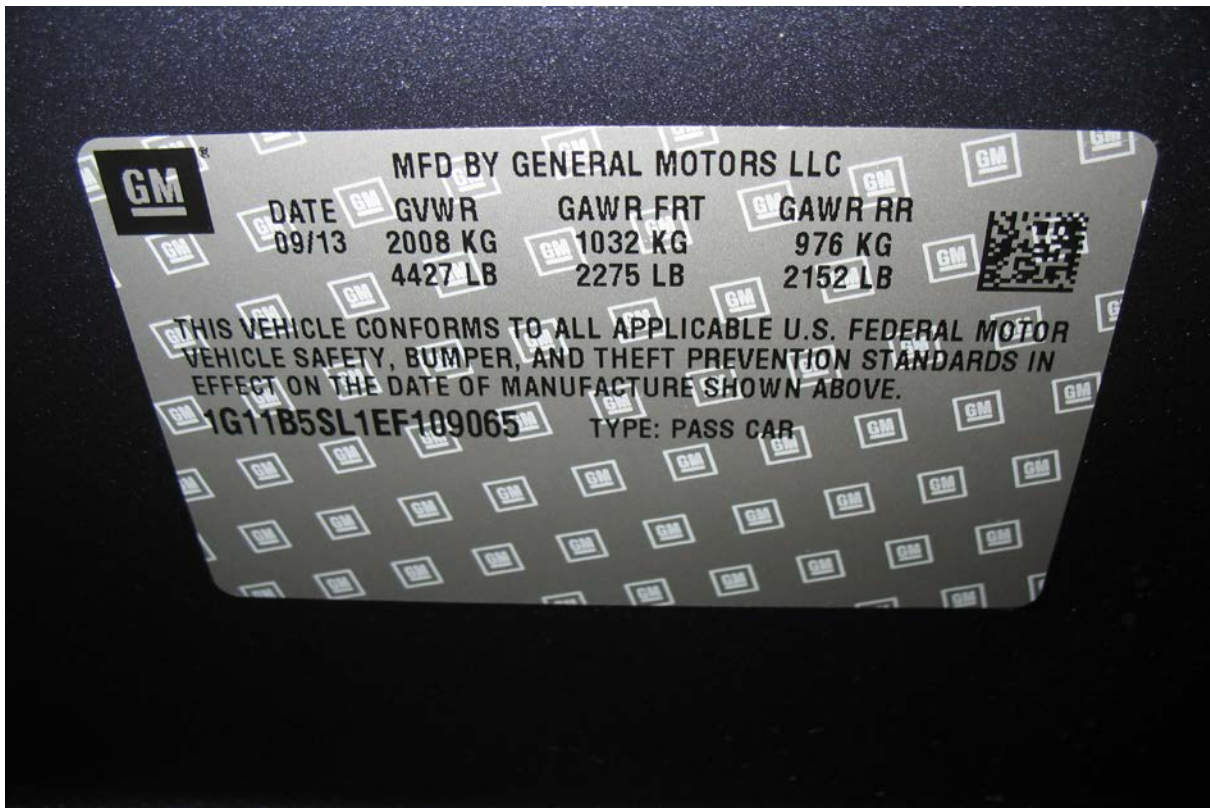
052 Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View



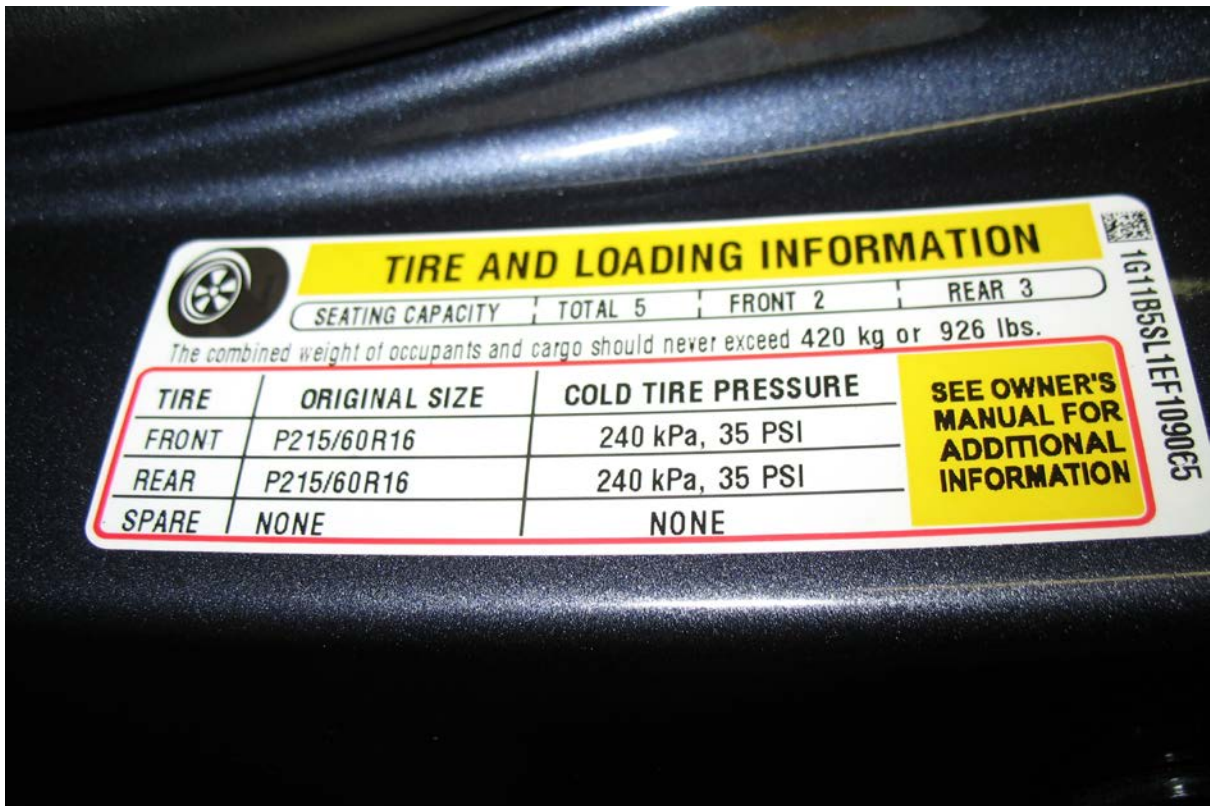
053 Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



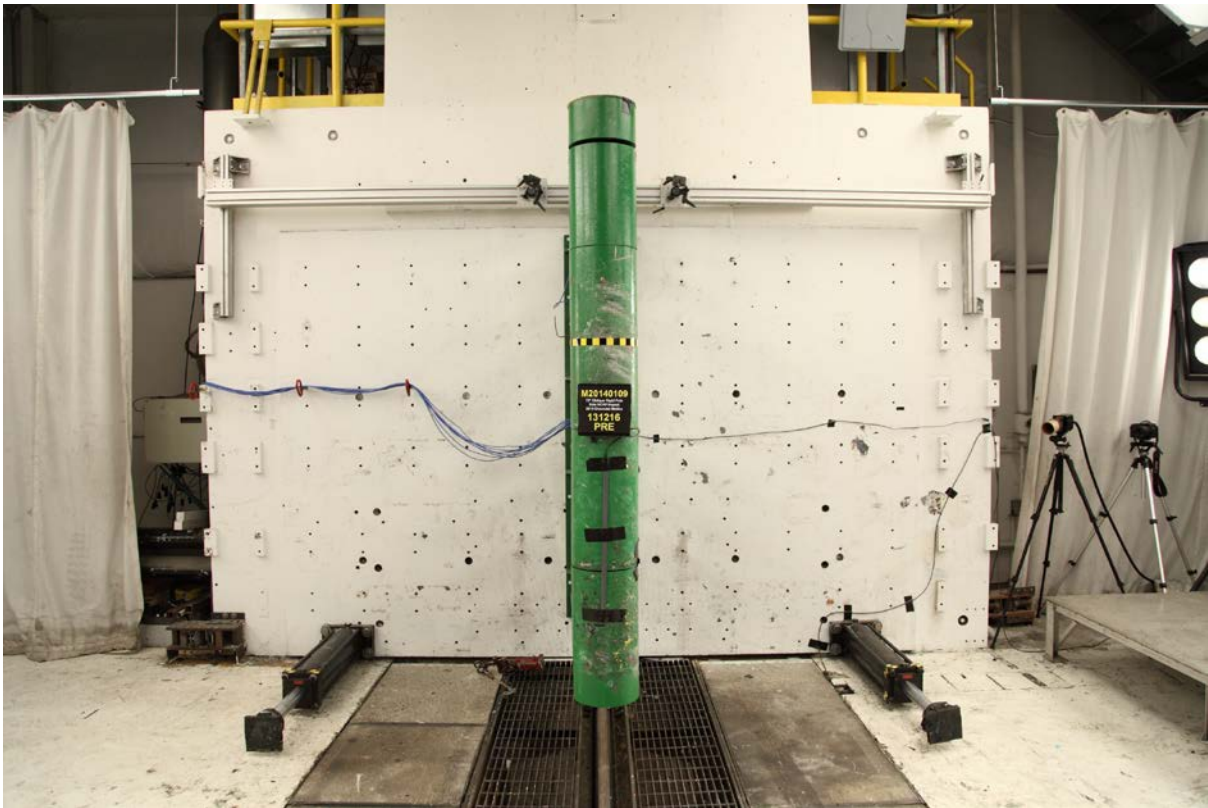
054 Post-Test View of Fuel Filler Cap or Fuel Filler Neck



055 Close-Up View of Vehicle Certification Label



056 Close-Up View of Vehicle Tire Information Placard or Label



057 Pre-Test Pole Barrier Front View



058 Post-Test Pole Barrier Front View



059 Pre-Test Pole Barrier Side View



060 Post-Test Pole Barrier Side View



061 Pre-Test Ballast View



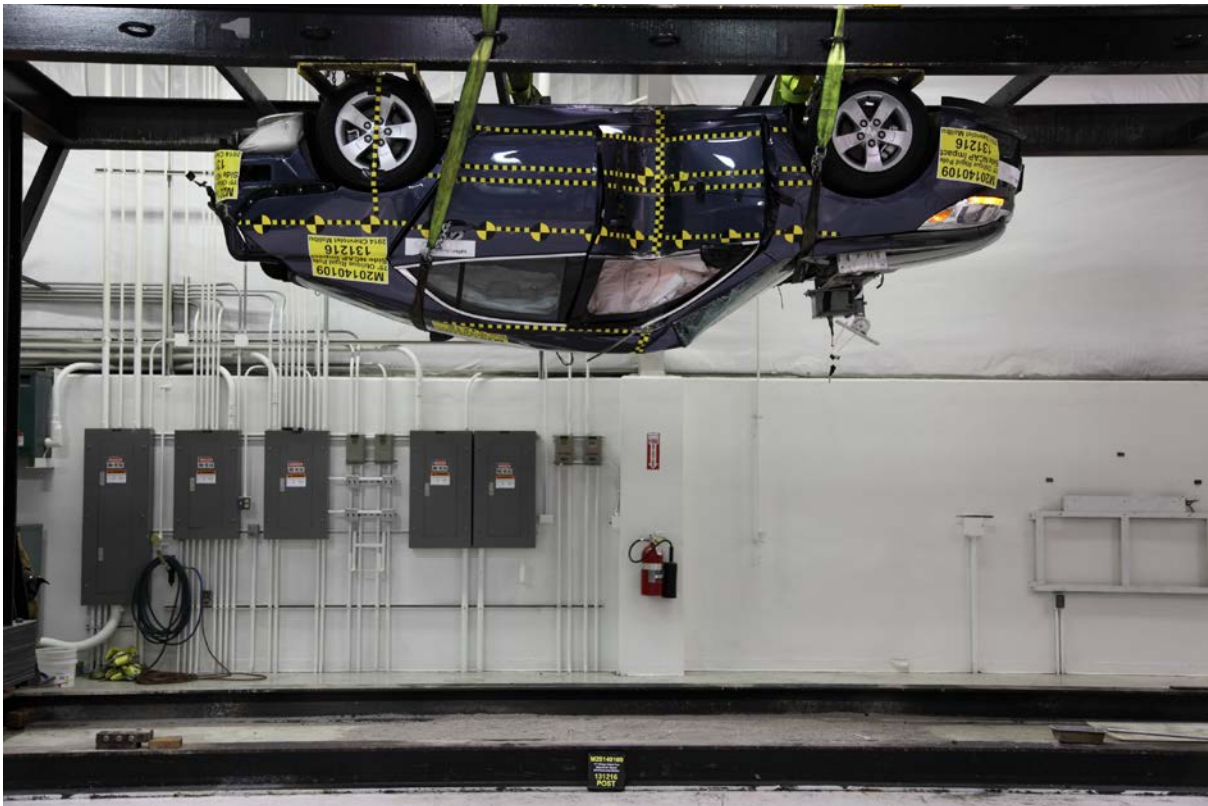
062 Post-Test Primary and Redundant Speed Trap Read-Out



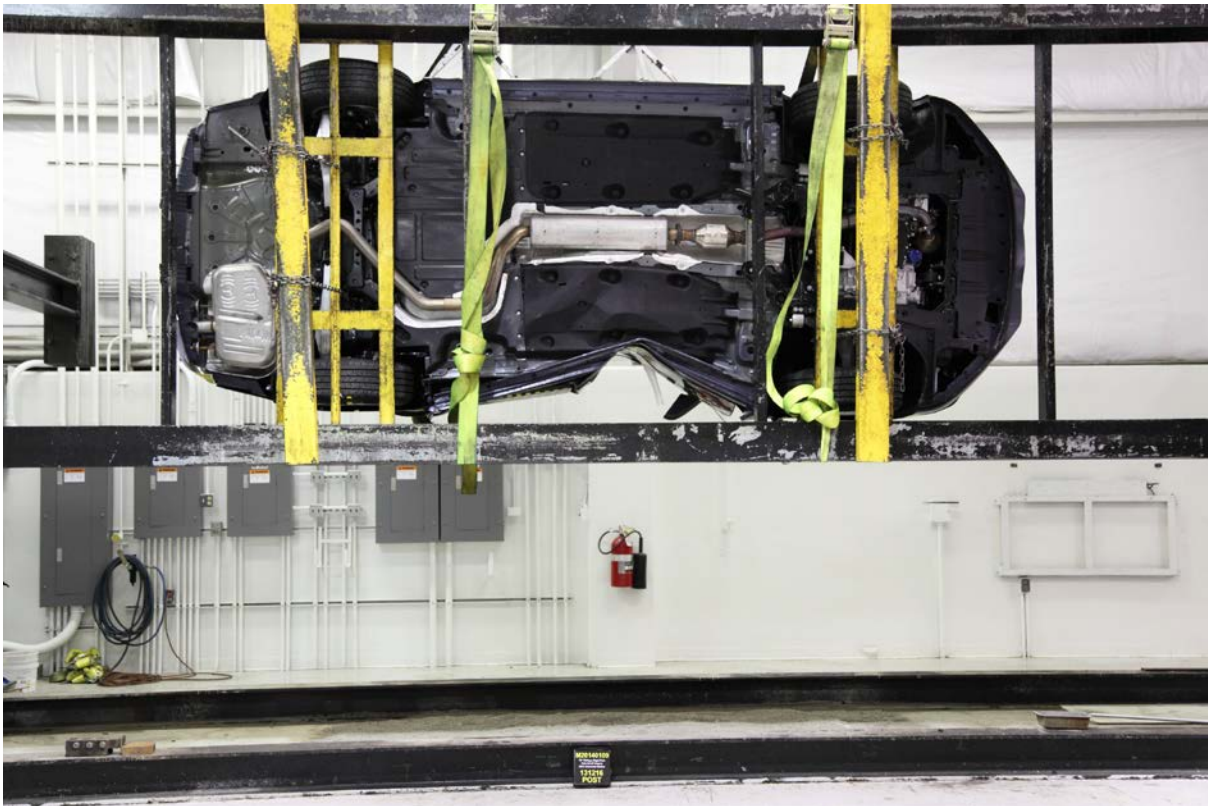
063 FMVSS No. 301 Static Rollover 0 Degrees



064 FMVSS No. 301 Static Rollover 90 Degrees



065 FMVSS No. 301 Static Rollover 180 Degrees



066 FMVSS No. 301 Static Rollover 270 Degrees



067 FMVSS No. 301 Static Rollover 360 Degrees



068 Impact Event



CHEVROLET

2014 MALIBU 1LS



EXTERIOR: ATLANTIS BLUE METALLIC ENGINE: ECOTEC 2.5L DOHC
INTERIOR: JET BLACK/DARK TITANIUM TRANSMISSION: 6-SPD AUTOMATIC

Visit us at www.chevy.com

EPA DOT Fuel Economy and Environment Fuel Economy 29 MPG combined city/hwy 25 MPG city 36 MPG highway 3.4 gallons per 100 miles Annual fuel Cost \$1,800 Fuel Economy & Greenhouse Gas Rating 1 (10) Smog Rating 6 (10) fuel economy.gov	STANDARD EQUIPMENT SCHEDULED MAINTENANCE 2-YEAR/24,000 MILES OIL & FILTER 4 WHEEL TIRE ROTATION (SEE WWW.CHEVY.COM OR DEALER FOR DETAILS) 5-YEAR/100,000 MILE POWERTRAIN LIMITED WARRANTY SEE DEALER FOR DETAILS MECHANICAL • ENGINE, ECOTEC 2.5L DOHC 4 CYL. DI VALVE, INTAKE VAL & AUTO STOP/START • TAPSHIFT MANUAL SHIFT CONTROL • POWER STEERING, ELECTRIC CRUISE CONTROL SAFETY & SECURITY • AIRBAGS, DRIVER & PASSENGER FRONTAL AND SIDE	FRONT HEAD CURTAIN & SIDE • STABILITRAK® STABILITY CONTROL SYSTEM W/ TRACTION CONTROL • ANTILOCK BRAKE SYSTEM, 4 WHEEL DISC • THEFT DETERRENT SYSTEM • SAFETY BELTS, 3 POINT, ALL SEATING POSITIONS INCLUDING FRONT SAFETY BELT PRETENSIONERS • CHILD LOCKS, REAR DOORS & WINDOWS • 6 MTH (ONSTAR®) DIRECTIONS AND CONNECTIONS W/ AUTOMATIC CRASH RESPONSE, TURN-ON TURN NAV & 5-YEAR REMOTE LINK APP KEY FOB SERVICES (ASK DEALER ABOUT GEOGRAPHIC COVERAGE) • DAYTIME RUNNING LAMPS • HEADLAMP CONTROL AUTO ON/OFF • TIRE PRESSURE MONITOR SYSTEM • TIRE REPAIR KIT	EXTERIOR • DUAL/ALF (TM) BRAKE ROTORS • HEADLAMPS, HALOGEN • WHEELS, 16" ALUMINUM INTERIOR • POWER WINDOWS, FRONT & REAR WITH EXPRESS DOWN • POWER DOOR LOCKS W/ REMOTE KEYLESS ACCESS • FRONT BUCKET SEATS • SEAT ADJUSTER, DRIVER 4-WAY MANUAL, 2-WAY POWER VERTICAL • SEAT ADJUSTER, FRONT PASSENGER 4-WAY MANUAL • 2-WAY POWER VERTICAL • ARMREST, REAR CENTER, CUPHOLDERS/STORAGE • STEERING COLUMN, TILT & TELESCOPIC • STEERING WHEEL CONTROLS, AUDIO AND CRUISE • AM/FM STEREO, CD PLAYER	OPTIONS & PRICING MANUFACTURER'S SUGGESTED RETAIL PRICE STANDARD VEHICLE PRICE \$22,140.00 OPTIONAL EQUIPMENT (SEE DEALER FOR DETAILS) TOTAL OPTIONS \$0.00 TOTAL VEHICLE & OPTIONS \$22,140.00 DESTINATION CHARGE \$25.00 TOTAL VEHICLE PRICE* \$22,965.00	GOVERNMENT 5-STAR SAFETY RATINGS Overall Vehicle Score Not Rated Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight. Frontal Crash Driver Passenger ★★★★★ Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight. Side Crash Front seat: Not Rated Rear seat: Not Rated Based on the risk of injury in a side impact. Rollover ★★★★★ 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
PARTS CONTENT INFORMATION FOR VEHICLES IN THIS CARLINE: U.S./CANADIAN PARTS CONTENT: 66% MAJOR SOURCES OF FOREIGN PARTS CONTENT: MEXICO 17% NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS. FOR THIS VEHICLE: FINAL ASSEMBLY POINT: KANSAS CITY, KS U.S.A. COUNTRY OF ORIGIN: ENGINE: UNITED STATES TRANSMISSION: UNITED STATES © 2013 General Motors LLC GM VIN: 1G11850L1E109005 DEALER TO WHOM DELIVERED: PESMONT'S DUNDEE CHEVROLET, INC. PO BOX 60 DUNDEE, IL 60118-0069		Equipped with the safety and connectivity of OnStar. Push your blue button or visit onstar.com for details. XX 1A22287746			

069 Monroney Label

3-2 Seats and Restraints

Head Restraints



Warning

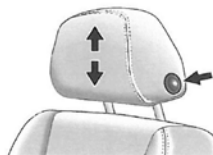
With head restraints that are not installed and adjusted properly, there is a greater chance that occupants will suffer a neck/spinal injury in a crash. Do not drive until the head restraints for all occupants are installed and adjusted properly.



Adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chance of a neck injury in a crash.

Front Seat

The vehicle's front seats have adjustable head restraints in the outboard seating positions.



To raise or lower the head restraint, press the button located on the side of the head restraint and pull up or push the head restraint down and release the button.

Pull and push on the head restraint after the button is released to make sure that it is locked in place.

The front seat outboard head restraints are not designed to be removed.

Rear Seat

The vehicle's rear seats have adjustable head restraints in the outboard seating positions.



070 Head Restraint Use and Adjustment Information from Vehicle Owner Manual

PHOTO NOT APPLICABLE

071 Post-Test View of Shattered Vehicle Inner Door Panel

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

No.	Description	Page
1	Driver Head Acceleration (X) vs. Time	B-4
2	Driver Head Acceleration (Y) vs. Time	B-4
3	Driver Head Acceleration (Z) vs. Time	B-4
4	Driver Head Acceleration Resultant vs. Time	B-4
5	Driver Lower Spine T12 Acceleration (X) vs. Time	B-5
6	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-5
7	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-5
8	Driver Lower Spine T12 Acceleration Resultant vs. Time	B-5
9	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-6
10	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-6
11	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-6

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

www.nhtsa.dot.gov.

Additional Driver Dummy Instrumentation Data

Driver Head Acceleration (X) Redundant
Driver Head Acceleration (Y) Redundant
Driver Head Acceleration (Z) Redundant
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 (Y)
 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)

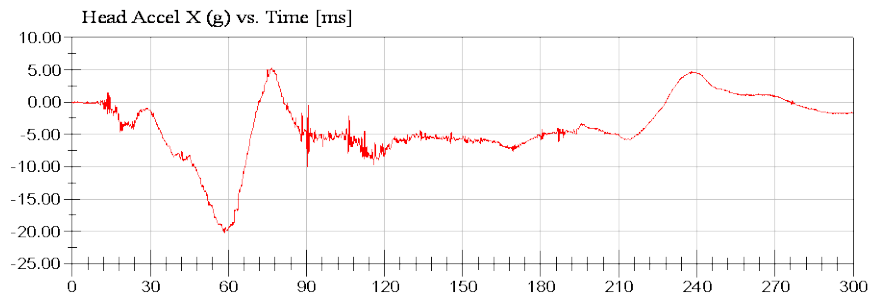
NHTSA

Test Lab: CTF

Test Number: 131216 (M20140109)

Position #1 SID IIs Dummy (DI8818)

Test Date: 12/16/2013

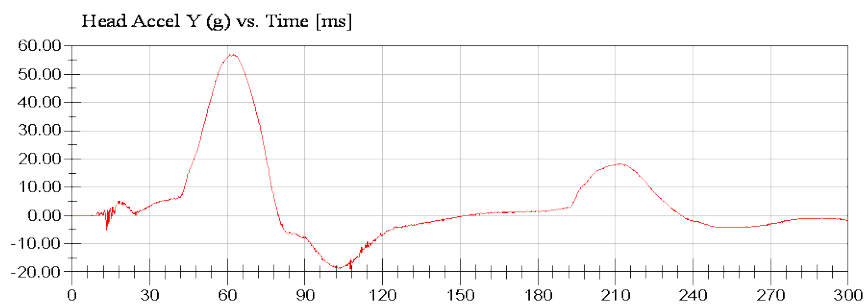


<Max>

5.30 g at 76.72 ms

<Min>

-20.28 g at 58.56 ms

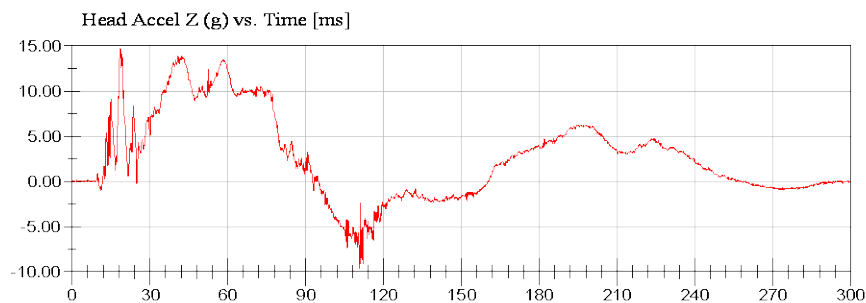


<Max>

56.90 g at 62.32 ms

<Min>

-19.04 g at 102.80 ms

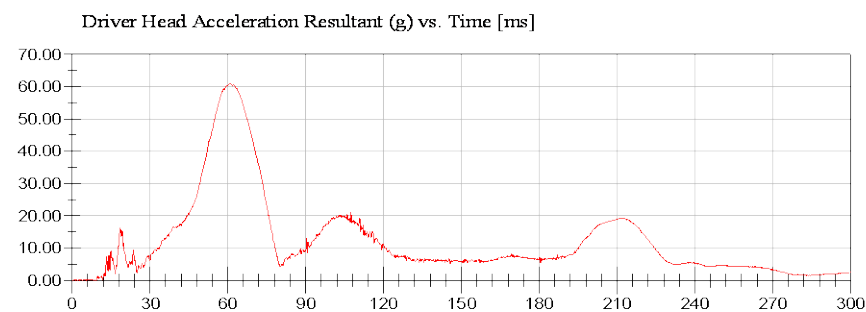


<Max>

14.77 g at 18.48 ms

<Min>

-9.64 g at 110.80 ms



<Max>

61.01 g at 60.88 ms

<Min>

0.03 g at 0.32 ms



NHTSA

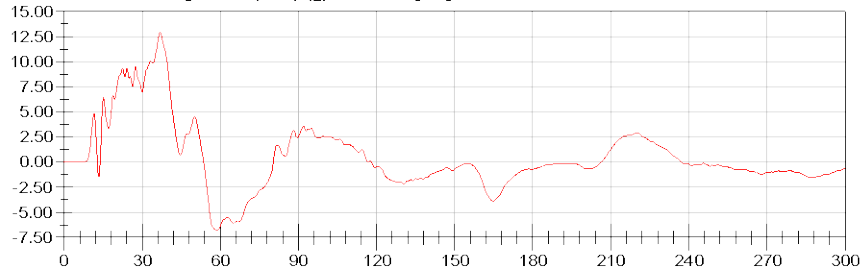
Test Lab: CTF

Test Number: 131216 (M20140109)

Position #1 SID II's Dummy (DI8818)

Test Date: 12/16/2013

Abdominal Spine X (T12) (g) vs. Time [ms]



<Max>

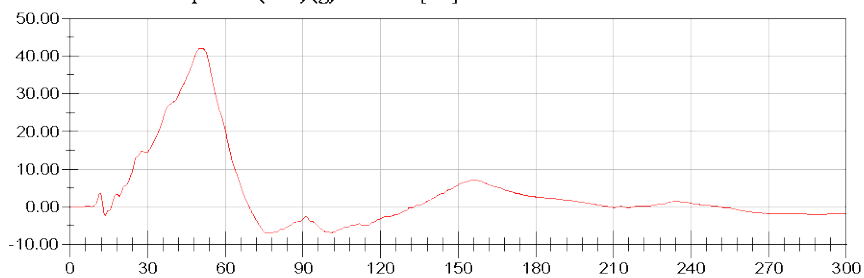
12.97 g at 36.88 ms

<Min>

-6.78 g at 58.56 ms

CFC_180

Abdominal Spine Y (T12) (g) vs. Time [ms]



<Max>

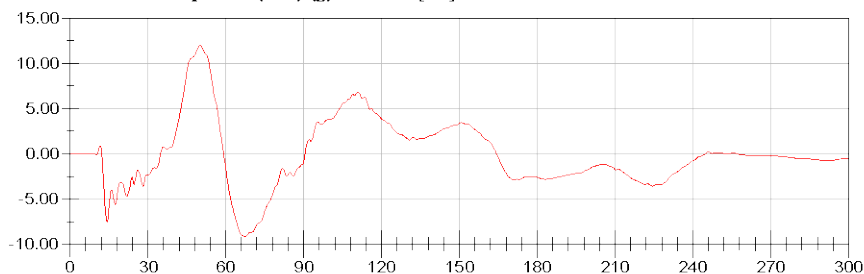
42.12 g at 50.48 ms

<Min>

-7.08 g at 76.40 ms

CFC_180

Abdominal Spine Z (T12) (g) vs. Time [ms]



<Max>

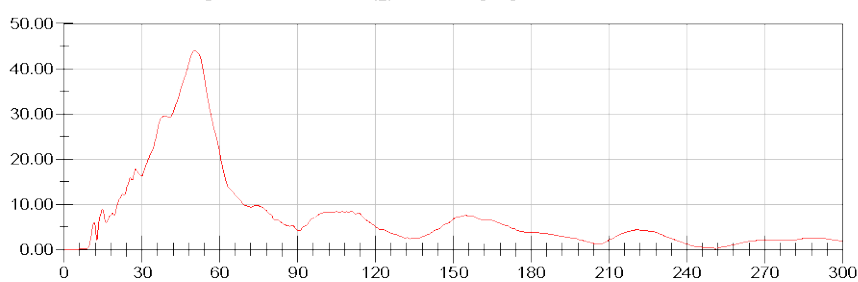
12.02 g at 50.16 ms

<Min>

-9.16 g at 67.44 ms

CFC_180

Driver Lower Spine T12 Resultant (g) vs. Time [ms]



<Max>

44.01 g at 50.40 ms

<Min>

0.01 g at 0.16 ms

CFC_180



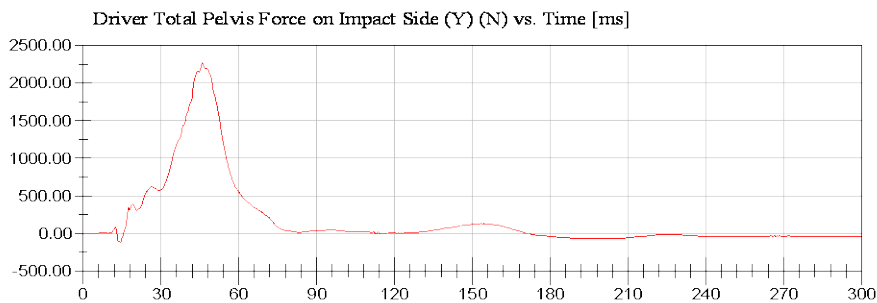
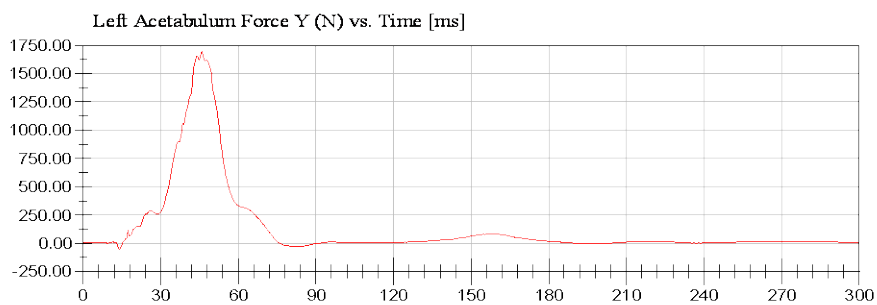
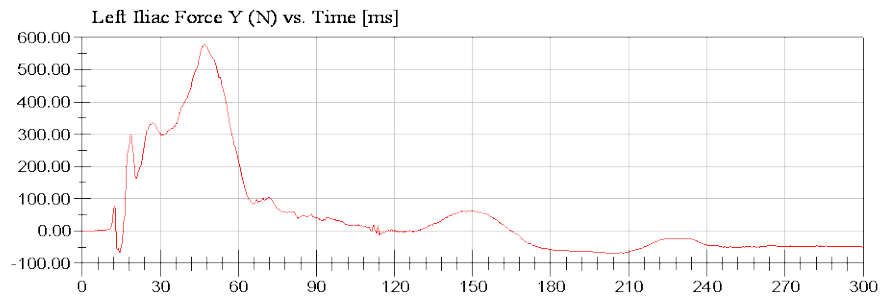
NHTSA

Test Lab: CTF

Test Number: 131216 (M20140109)

Position #1 SID IIs Dummy (DI8818)

Test Date: 12/16/2013



APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

TABLE OF CALIBRATION MEASUREMENTS AND PLOTS
SID-IIs (Driver) Dummy
Description

Table 1. External Measurements

Table 2. Head Drop Test

Resultant Head Acceleration (G's) vs. Time (ms)
Head (X) Acceleration (G's) vs. Time (ms)
Head (Y) Acceleration (G's) vs. Time (ms)
Head (Z) Acceleration (G's) vs. Time (ms)

Table 3. Lateral Neck Pendulum Test

Pendulum Velocity (m/s) vs. Time (ms)
Flexion Angle (°) vs. Time (ms)
Moment About Occipital Condyle (Nm) vs. Time (ms)

Table 4. Shoulder Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Shoulder Displacement (mm) vs. Time (ms)
Upper Spine Acceleration (G's) vs. Time (ms)

Table 5. Thorax (With Arm) Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Shoulder Displacement (mm) vs. Time (ms)
Upper Rib Displacement (mm) vs. Time (ms)
Middle Rib Displacement (mm) vs. Time (ms)
Lower Rib Displacement (mm) vs. Time (ms)
Upper Spine Acceleration (G's) vs. Time (ms)
Lower Spine Acceleration (G's) vs. Time (ms)

Table 6. Thorax (Without Arm) Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Upper Rib Displacement (mm) vs. Time (ms)
Middle Rib Displacement (mm) vs. Time (ms)
Lower Rib Displacement (mm) vs. Time (ms)
Upper Spine Acceleration (G's) vs. Time (ms)
Lower Spine Acceleration (G's) vs. Time (ms)

Table 7. Abdomen Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Upper Abdominal Rib Displacement (mm) vs. Time (ms)
Lower Abdominal Rib Displacement (mm) vs. Time (ms)
Lower Spine Acceleration (G's) vs. Time (ms)

Table 8. Pelvis Plug Quasi-Static Test (Optional*)

Table 9. Pelvis Acetabulum Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Pelvis (Y) Acceleration (G's) vs. Time (ms)
Acetabulum Force (N) vs. Time (ms)

Table 10. Pelvis Iliac Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Pelvis (Y) Acceleration (G's) vs. Time (ms)
Iliac Force (N) vs. Time (ms)

Pre-Test Calibration Sheets
Driver S/N DI8818

Transportation Research Center Inc.
SIDI's Dummy - Level D
External Dimensions
Serial No. DI8818 Calibration No.06

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	780	Yes
B	Shoulder Pivot Height	437.0 - 453.0	440	Yes
C	H-Point Height	79.0 - 89.0	82	Yes
D	H-Point from Seat Back	141.0 - 151.0	142	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	100	Yes
F	Thigh Clearance	119.0 - 135.0	129	Yes
G	Head Breadth	140.0 - 148.0	143	Yes
H	Head Back from Backline	40.0 - 46.0	45	Yes
I	Head Depth	178.0 - 188.0	182	Yes
J	Head Circumference	541.0 - 551.0	544	Yes
K	Buttock to Knee Length	514.0 - 540.0	536	Yes
L	Popliteal Height	343.0 - 369.0	352	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	397	Yes
N	Buttock Popliteal Length	416.0 - 442.0	427	Yes
O	Chest Depth without Jacket	195.0 - 211.0	203	Yes
P	Foot Length (right)	216.0 - 232.0	220	Yes
P	Foot Length (left)	216.0 - 232.0	220	Yes
Q	Hip Breadth	313.0 - 323.0	313	Yes
R	Arm Length	249.0 - 259.0	255	Yes
S	Knee Joint to seat Back	478.0 - 493.0	483	Yes
V	Shoulder Width (only one arm installed)	341.0 - 357.0	350	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
W	Foot Width (left)	78.0 - 94.0	84	Yes
Y	Chest Circumference with Jacket	851.0 - 881.0	870	Yes
Z	Waist Circumference	761.0 - 791.0	771	Yes

Technician



Approved



Revised 9/29/2005



Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DI8818 Certification No. 6-2

Test Date: 11/14/2013

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	40 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	120.9 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	3.4 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 15:09:34 235

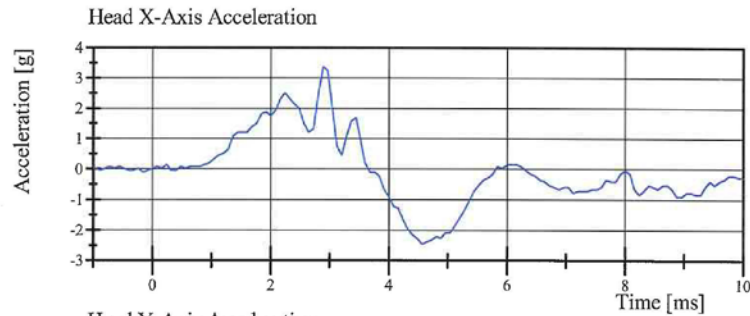


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIa Serial No. DI8818 Certification No. 6-2

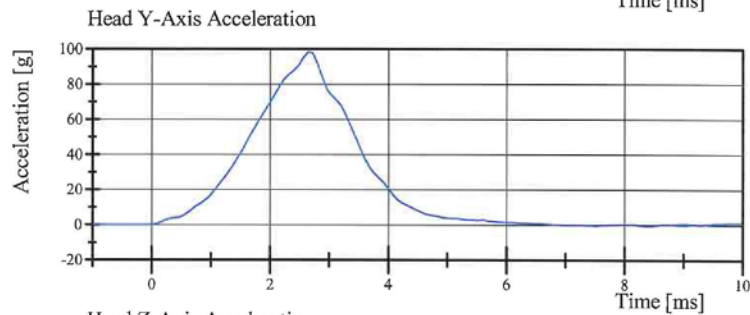
Test Date: 11/14/2013



Filter Class: CFC_1000

Max: 3.4 g at 2.9 ms

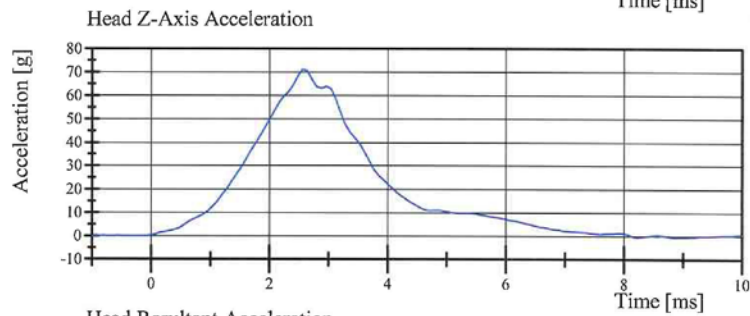
Min: -2.5 g at 4.6 ms



Filter Class: CFC_1000

Max: 98.2 g at 2.6 ms

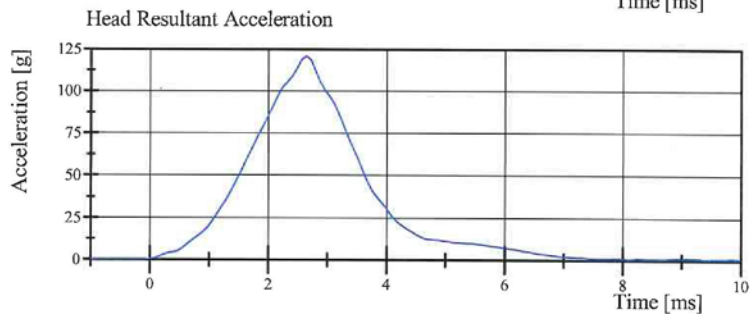
Min: -0.6 g at 8.4 ms



Filter Class: CFC_1000

Max: 71.2 g at 2.6 ms

Min: -0.8 g at 8.9 ms



Filter Class: CFC_1000

Max: 120.9 g at 2.6 ms

Min: 0.0 g at -1.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 15:09:50 235



Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 6-7

Test Date: 11/14/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	41 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.621 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.396 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.477 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	4.611 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.558 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.797 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-71.4 deg	Yes
Time of Peak	50 - 70 ms	63.0 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	40.7 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	102 - 126 ms	116.6 ms	Yes

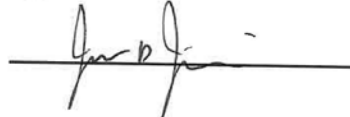
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 16:47:11 638

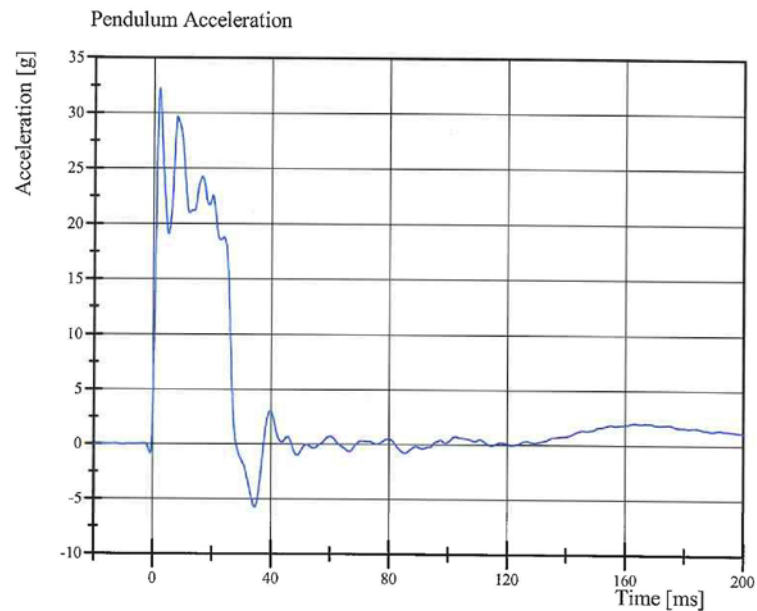


Transportation Research Center Inc.

Left Lateral Neck

SID II_s Serial No. DI8818 Certification No. 6-7

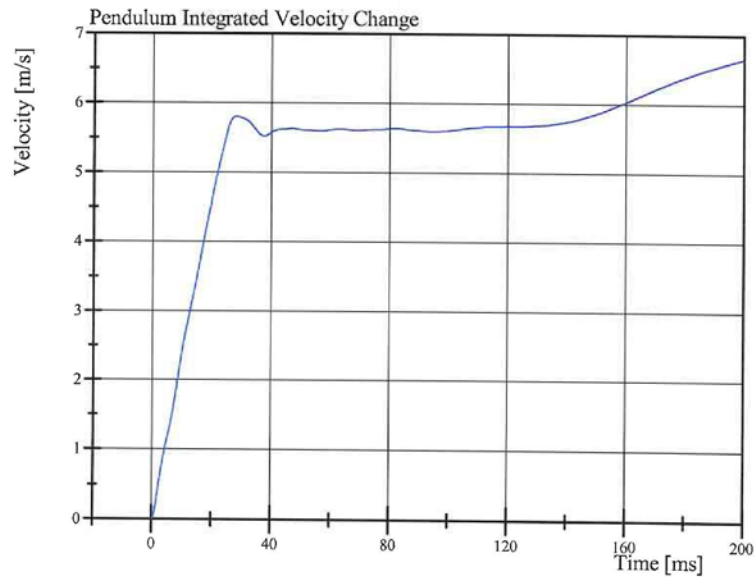
Test Date: 11/14/2013



Filter Class: CFC_180

Max: 32.2 g at 1.9 ms

Min: -5.7 g at 34.5 ms



Filter Class: CFC_180

Max: 6.6 m/s at 200.0 ms

Min: 0.0 m/s at 0.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 16:47:18 638

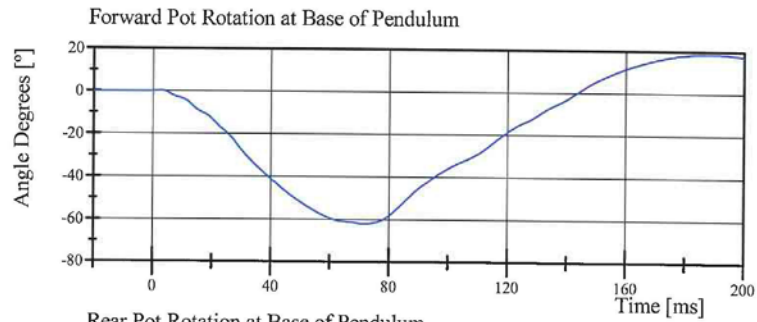


Transportation Research Center Inc.

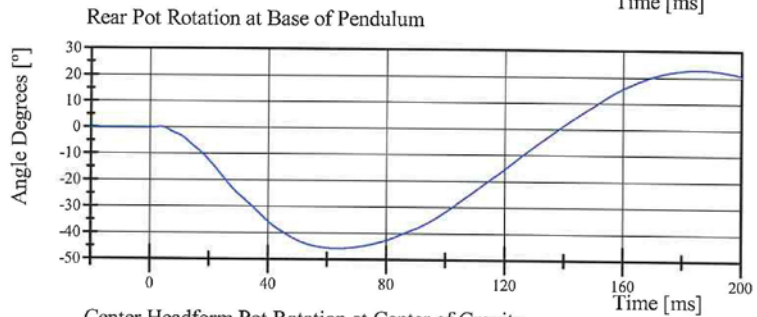
Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 6-7

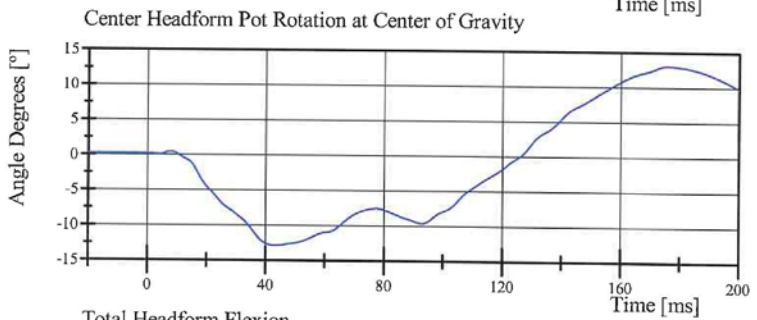
Test Date: 11/14/2013



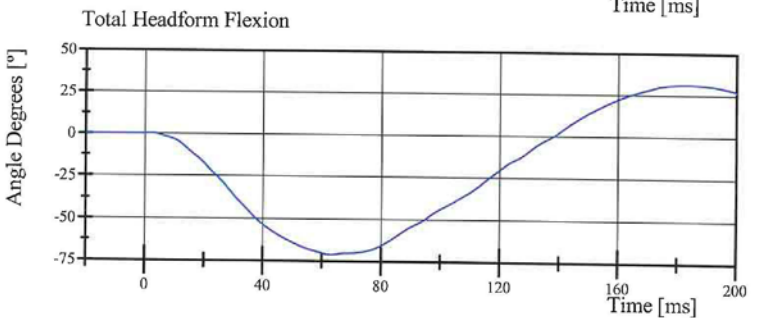
Filter Class: CFC_60
Max: 18.5 ° at 188.6 ms
Min: -62.1 ° at 71.4 ms



Filter Class: CFC_60
Max: 22.7 ° at 185.2 ms
Min: -45.9 ° at 63.3 ms



Filter Class: CFC_60
Max: 13.1 ° at 175.8 ms
Min: -12.9 ° at 43.1 ms



Filter Class: CFC_60
Max: 31.0 ° at 182.9 ms
Min: -71.4 ° at 63.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 16:47:19 638

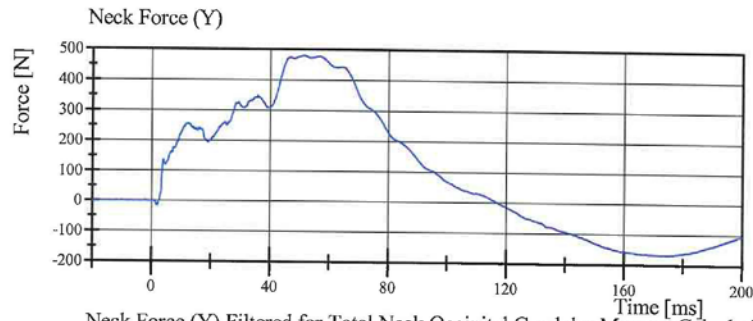


Transportation Research Center Inc.

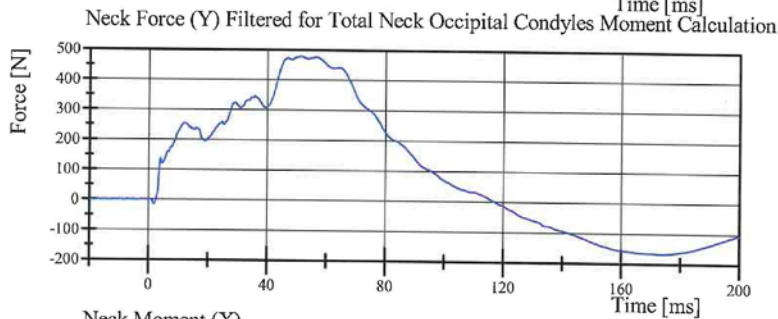
Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 6-7

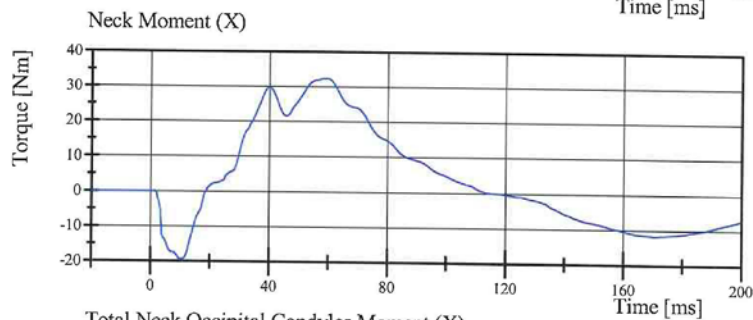
Test Date: 11/14/2013



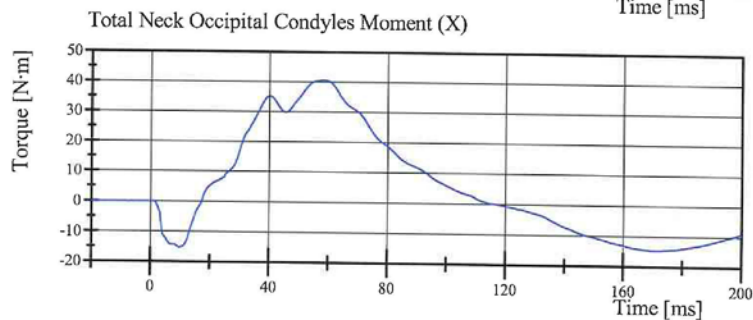
Filter Class: CFC_1000
Max: 479.9 N at 51.2 ms
Min: -168.3 N at 172.5 ms



Filter Class: CFC_600
Max: 479.5 N at 51.1 ms
Min: -168.1 N at 174.5 ms



Filter Class: CFC_600
Max: 32.4 Nm at 58.8 ms
Min: -19.4 Nm at 10.6 ms



Filter Class: Without (Constai
Max: 40.7 N·m at 57.8 ms
Min: -15.4 N·m at 9.7 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 16:47:20 638



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 6-1

Test Date: 11/14/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	24 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-14.2 g	Yes
Shoulder Displacement	28 - 37 mm	32.0 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	19.0 g	Yes

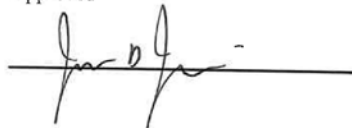
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 08:09:45 876

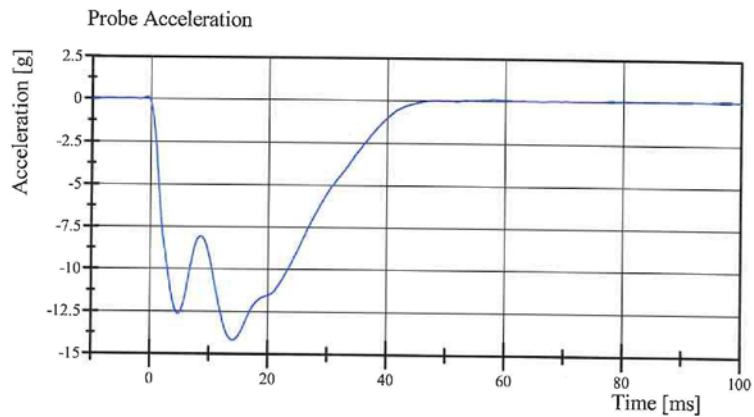


Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 6-1

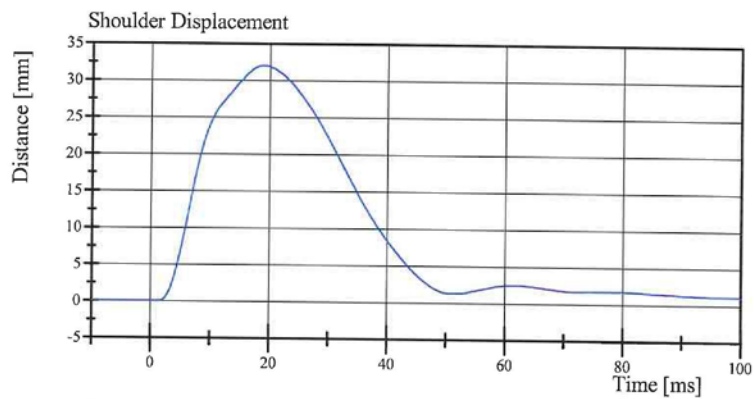
Test Date: 11/14/2013



Filter Class: CFC_180

Max: 0.1 g at -0.6 ms

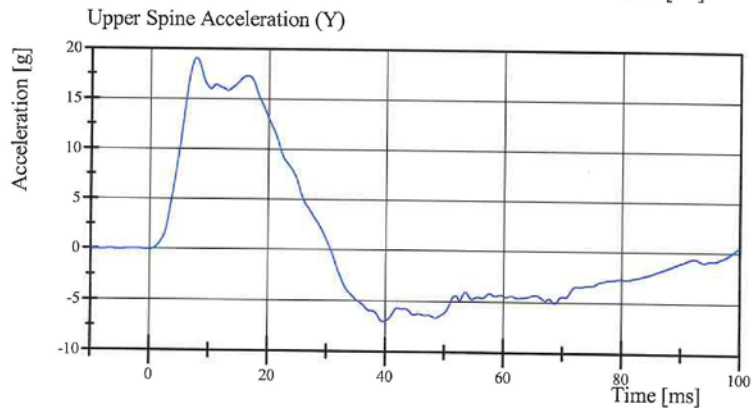
Min: -14.2 g at 14.0 ms



Filter Class: CFC_600

Max: 32.0 mm at 18.8 ms

Min: -0.0 mm at 1.2 ms



Filter Class: CFC_180

Max: 19.0 g at 7.8 ms

Min: -7.0 g at 39.6 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 08:10:04 876



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 6-1
Test Date: 11/14/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	23 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.740 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-34.3 g	Yes
Shoulder Displacement	31 - 40 mm	37.8 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	28.9 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	31.9 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	33.2 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	36.3 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	34.1 g	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 08:38:23 609

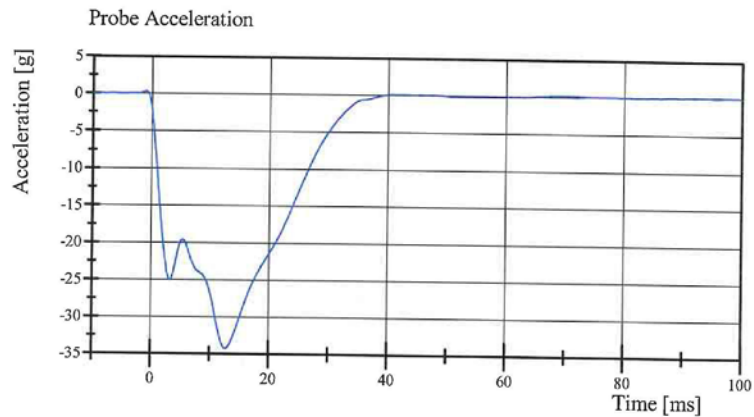


Transportation Research Center Inc.

Left Lateral Thorax with Arm

SID IIs Serial No. DI8818 Certification No. 6-1

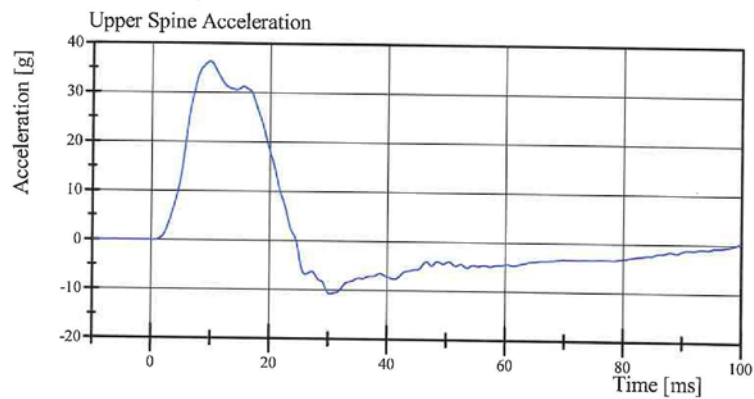
Test Date: 11/14/2013



Filter Class: CFC_180

Max: 0.3 g at -1.0 ms

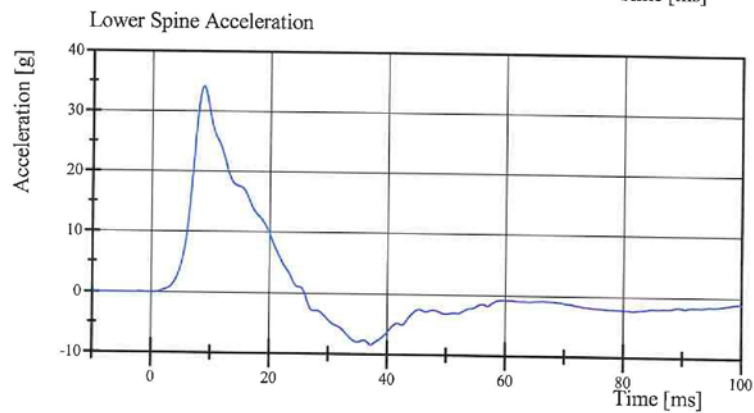
Min: -34.3 g at 12.7 ms



Filter Class: CFC_180

Max: 36.3 g at 9.8 ms

Min: -10.8 g at 30.2 ms



Filter Class: CFC_180

Max: 34.1 g at 8.7 ms

Min: -8.5 g at 37.3 ms

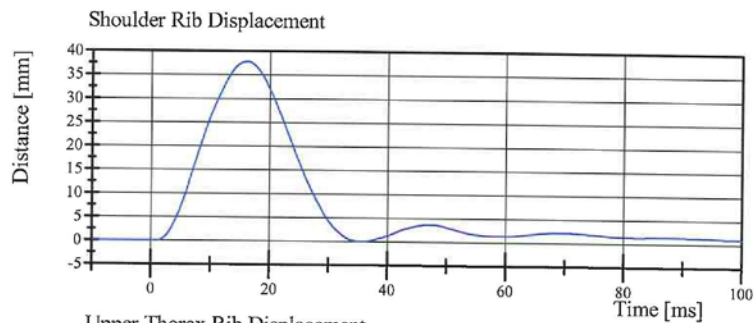
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 08:38:40 609

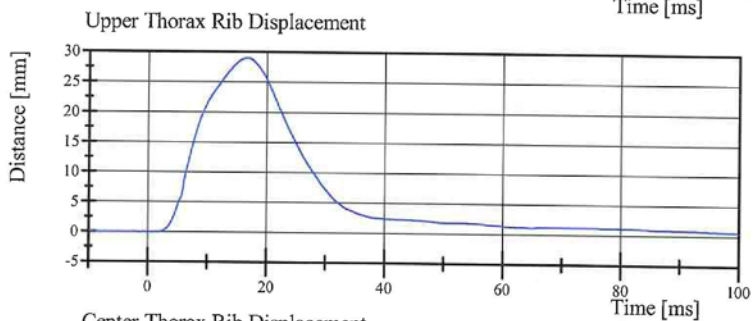


Transportation Research Center Inc.

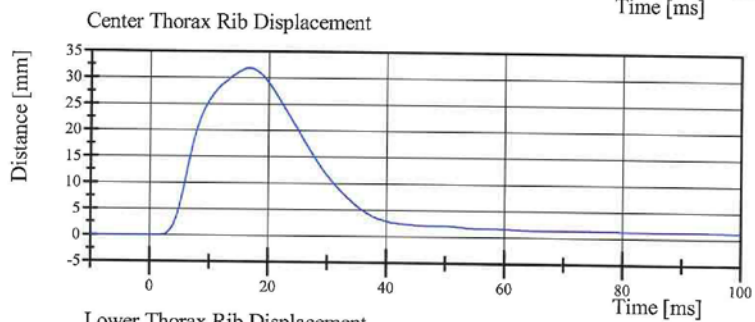
Left Lateral Thorax with Arm
SID II's Serial No. DI8818 Certification No. 6-1
Test Date: 11/14/2013



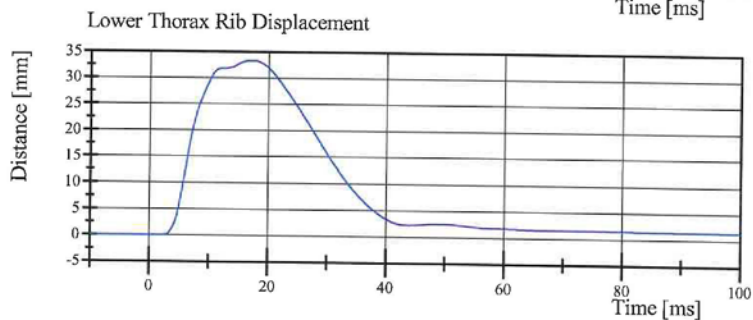
Filter Class: CFC_600
Max: 37.8 mm at 16.2 ms
Min: -0.0 mm at 1.0 ms



Filter Class: CFC_600
Max: 28.9 mm at 16.6 ms
Min: -0.0 mm at -4.1 ms



Filter Class: CFC_600
Max: 31.9 mm at 16.6 ms
Min: -0.0 mm at -8.2 ms



Filter Class: CFC_600
Max: 33.2 mm at 17.4 ms
Min: -0.0 mm at -7.8 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 08:38:41 609



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 6-1
Test Date: 11/14/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	22 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.244 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-15.7 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	37.1 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	41.2 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	38.3 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	14.1 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	9.3 g	Yes

Test meets specifications.

Comments:

Technician



Approved



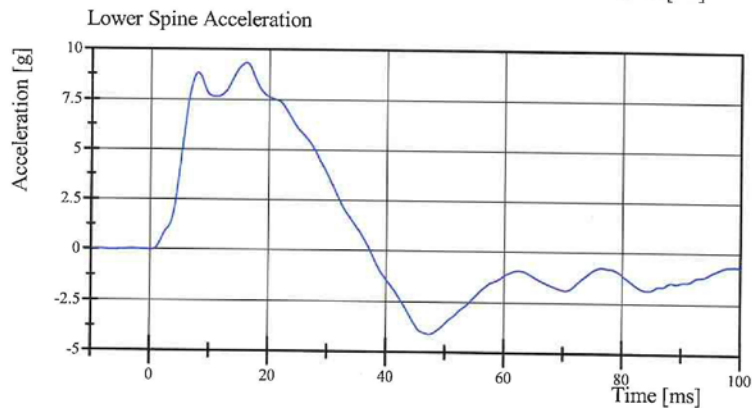
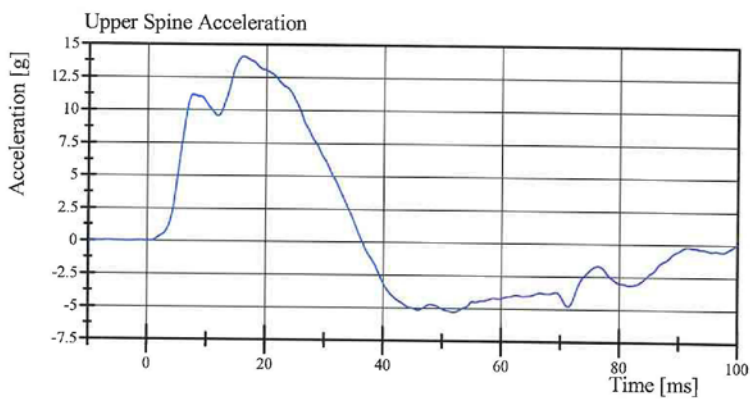
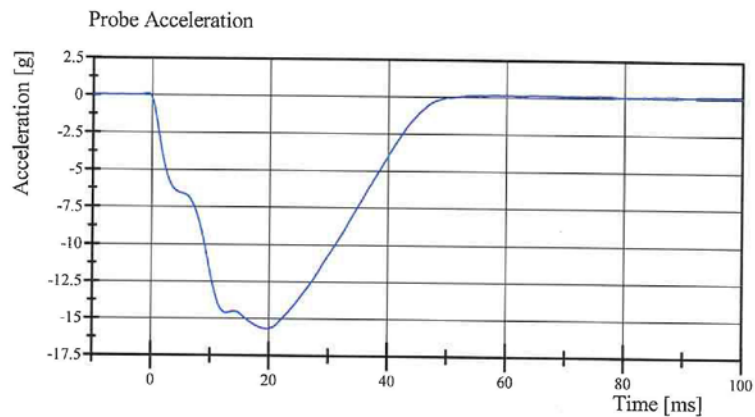
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 09:09:56 834



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 6-1
Test Date: 11/14/2013



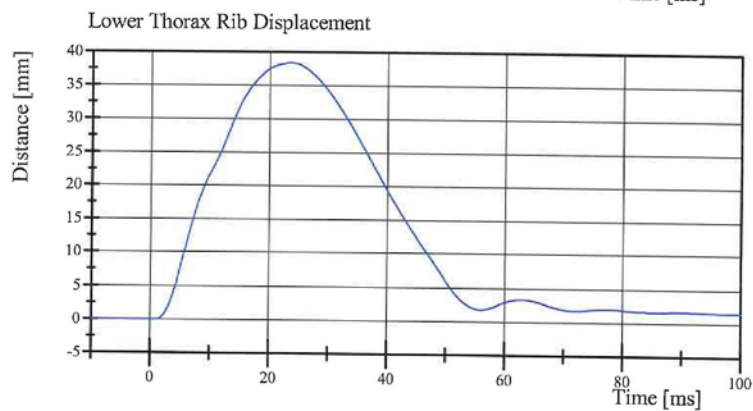
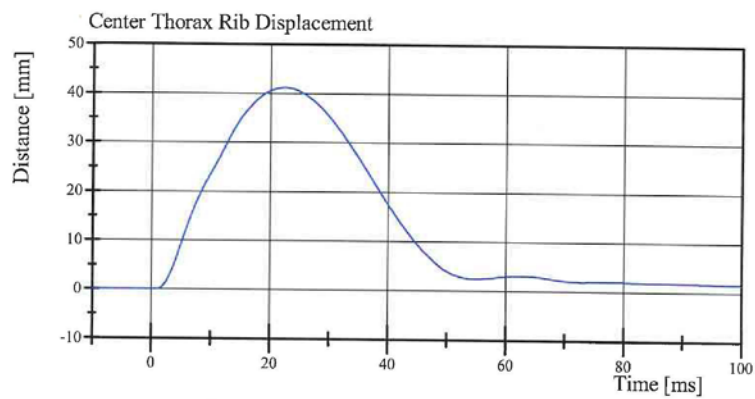
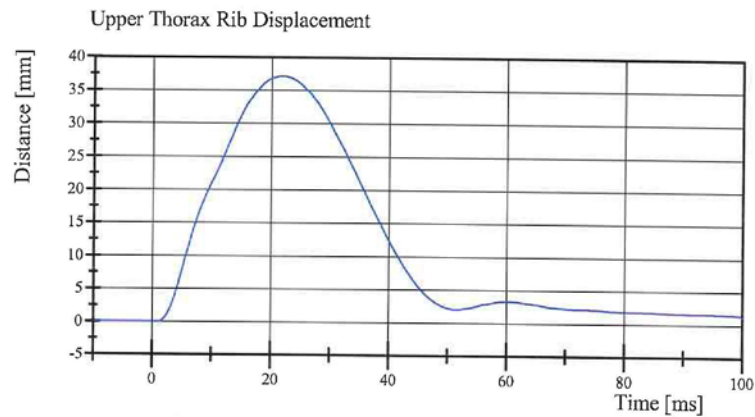
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 09:10:14 834



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 6-1
Test Date: 11/14/2013



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 09:10:15 834



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. DI8818 Certification No. 6-1

Test Date: 11/14/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	21 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.24 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.4 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	39.0 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	35.2 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	10.90 g	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 10:33:54 641

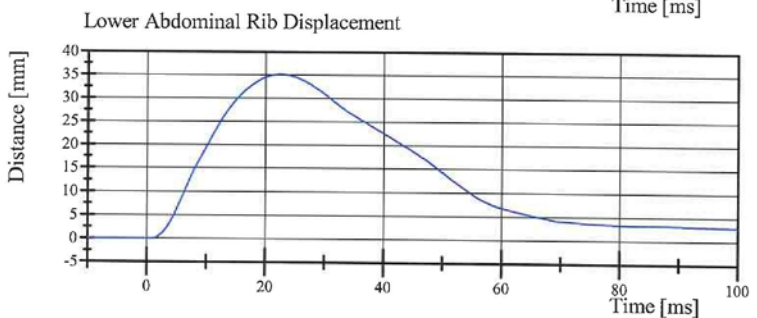
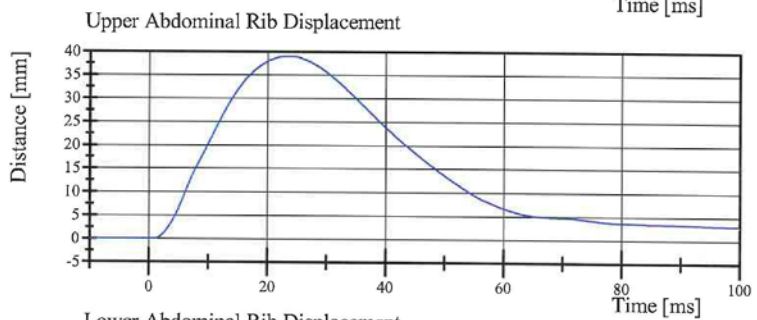
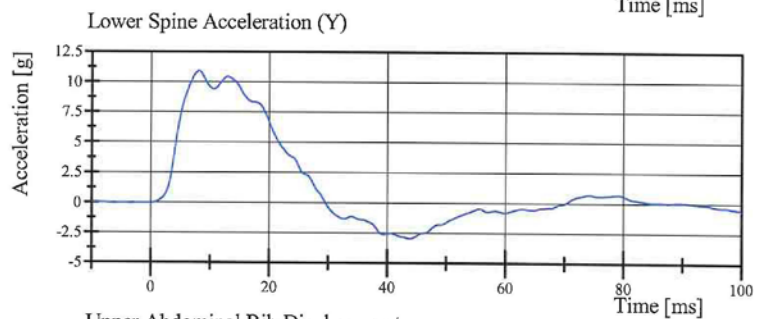
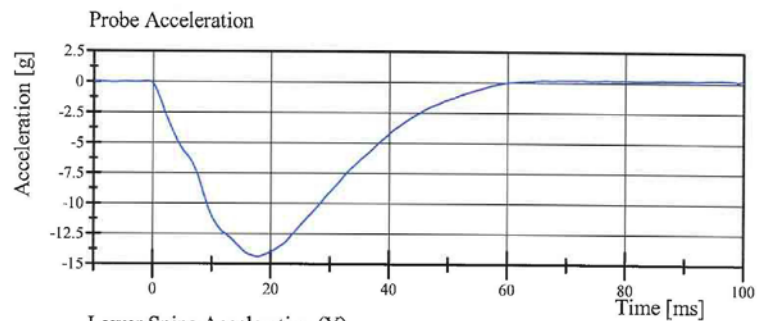


Transportation Research Center Inc.

Left Lateral Abdomen

SID II_s Serial No. DI8818 Certification No. 6-1

Test Date: 11/14/2013



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 10:34:04 641



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DI8818 Certification No. 6-3

Test Date: 11/14/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.67 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-42.89 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	38.3 g	Yes
Acetabulum Force	3,600 - 4,300 N	4,001.1 N	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 15:16:08 518

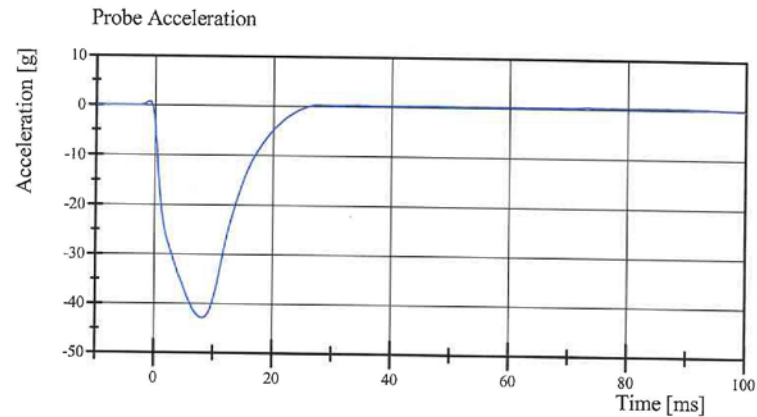


Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DI8818 Certification No. 6-3

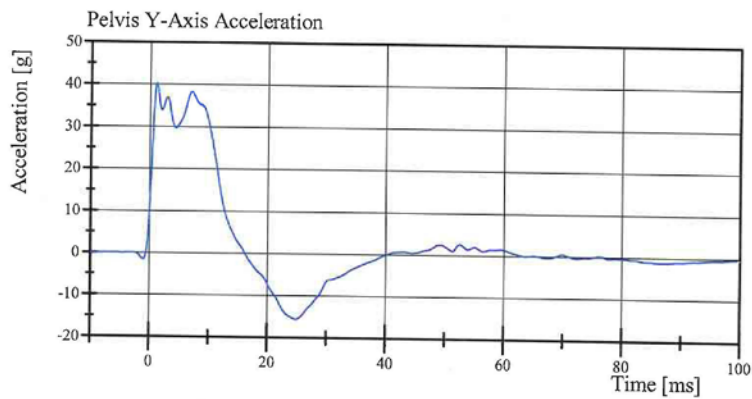
Test Date: 11/14/2013



Filter Class: CFC_180

Max: 0.7 g at -1.0 ms

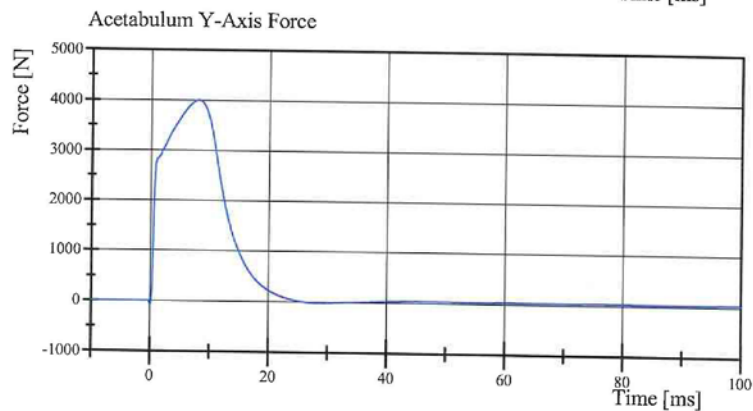
Min: -42.9 g at 8.2 ms



Filter Class: CFC_180

Max: 40.3 g at 1.1 ms

Min: -15.6 g at 24.9 ms



Filter Class: CFC_600

Max: 4,001.1 N at 7.9 ms

Min: -67.8 N at 0.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 15:16:26 518



Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 6-1

Test Date: 11/14/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	25 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.39 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-42.7 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	34.5 g	Yes
Iliac Force	4,100 - 5,100 N	4,847.9 N	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 10:50:50 572

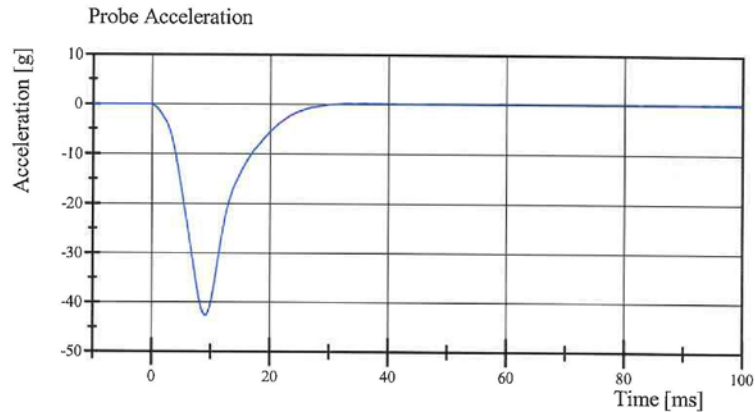


Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 6-1

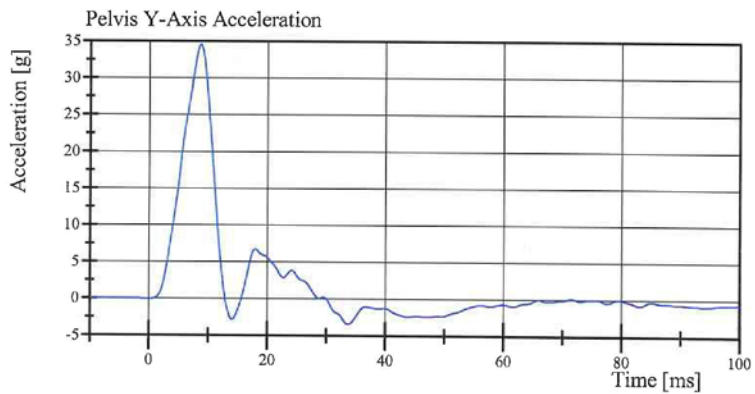
Test Date: 11/14/2013



Filter Class: CFC_180

Max: 0.2 g at 35.8 ms

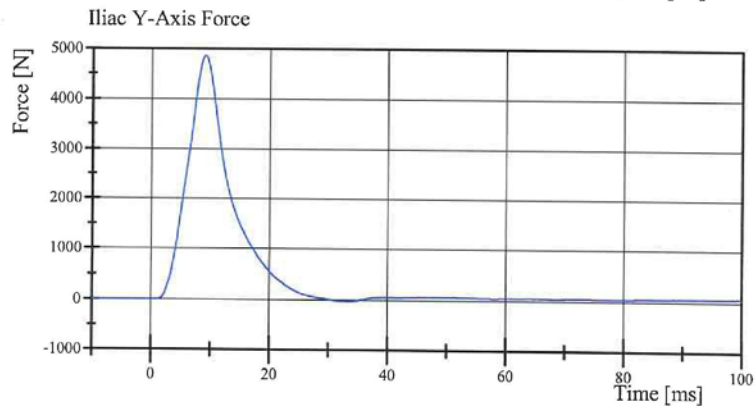
Min: -42.7 g at 9.0 ms



Filter Class: CFC_180

Max: 34.5 g at 8.6 ms

Min: -3.4 g at 33.7 ms



Filter Class: CFC_600

Max: 4,847.9 N at 9.0 ms

Min: -27.9 N at 33.3 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

11.14.2013 10:51:00 572



Driver S/N DI8818

Post-Test Calibration Sheets

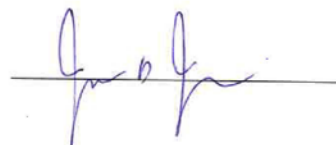
Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. DI8818 Calibration No.07

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	781	Yes
B	Shoulder Pivot Height	437.0 - 453.0	440	Yes
C	H-Point Height	79.0 - 89.0	82	Yes
D	H-Point from Seat Back	141.0 - 151.0	142	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	100	Yes
F	Thigh Clearance	119.0 - 135.0	1828	No
G	Head Breadth	140.0 - 148.0	143	Yes
H	Head Back from Backline	40.0 - 46.0	45	Yes
I	Head Depth	178.0 - 188.0	182	Yes
J	Head Circumference	541.0 - 551.0	544	Yes
K	Buttock to Knee Length	514.0 - 540.0	536	Yes
L	Popliteal Height	343.0 - 369.0	352	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	397	Yes
N	Buttock Popliteal Length	416.0 - 442.0	427	Yes
O	Chest Depth without Jacket	195.0 - 211.0	203	Yes
P	Foot Length (right)	216.0 - 232.0	220	Yes
P	Foot Length (left)	216.0 - 232.0	220	Yes
Q	Hip Breadth	313.0 - 323.0	313	Yes
R	Arm Length	249.0 - 259.0	255	Yes
S	Knee Joint to seat Back	478.0 - 493.0	483	Yes
V	Shoulder Width (only one arm installed)	341.0 - 357.0	350	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
W	Foot Width (left)	78.0 - 94.0	84	Yes
Y	Chest Circumference with Jacket	851.0 - 881.0	871	Yes
Z	Waist Circumference	761.0 - 791.0	771	Yes

Technician



Approved



Revised 9/29/2005



Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DI8818 Certification No. 7-1

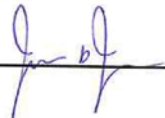
Test Date: 12/17/2013

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	132.6 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	7.9 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician


Approved


Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 08:30:12 235

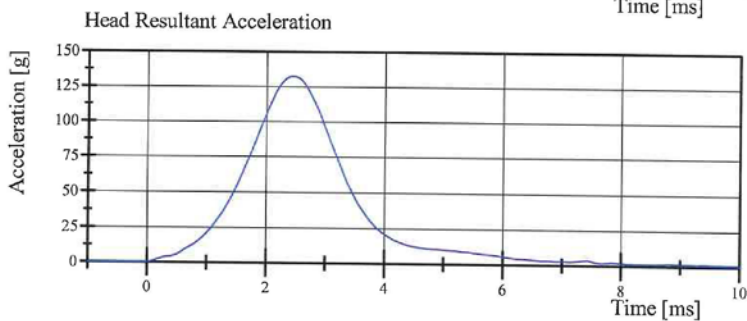
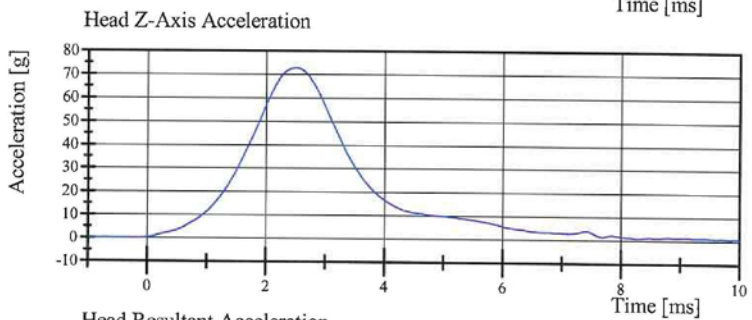
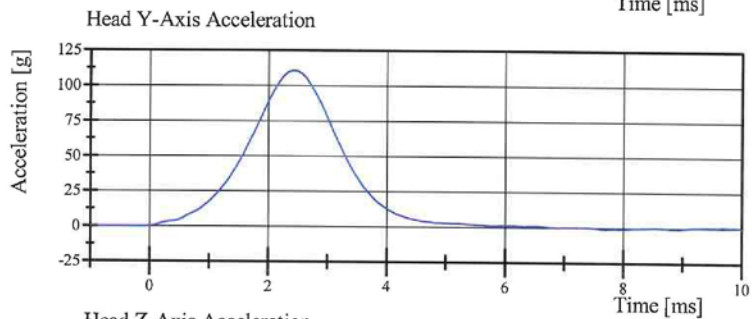
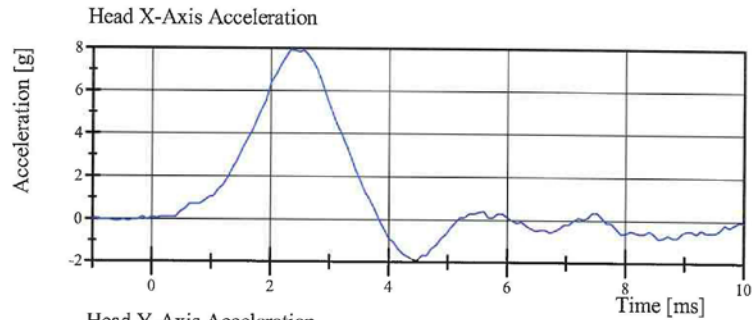


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. DI8818 Certification No. 7-1

Test Date: 12/17/2013



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 08:30:20 235



Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 7-3

Test Date: 12/23/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	34 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.625 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.382 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.475 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	4.667 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.551 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.818 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-75.5 deg	Yes
Time of Peak	50 - 70 ms	69.8 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	39.8 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	102 - 126 ms	114.2 ms	Yes

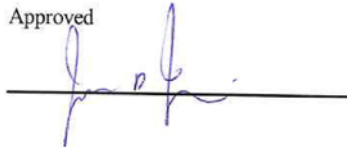
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.23.2013 08:09:57 637

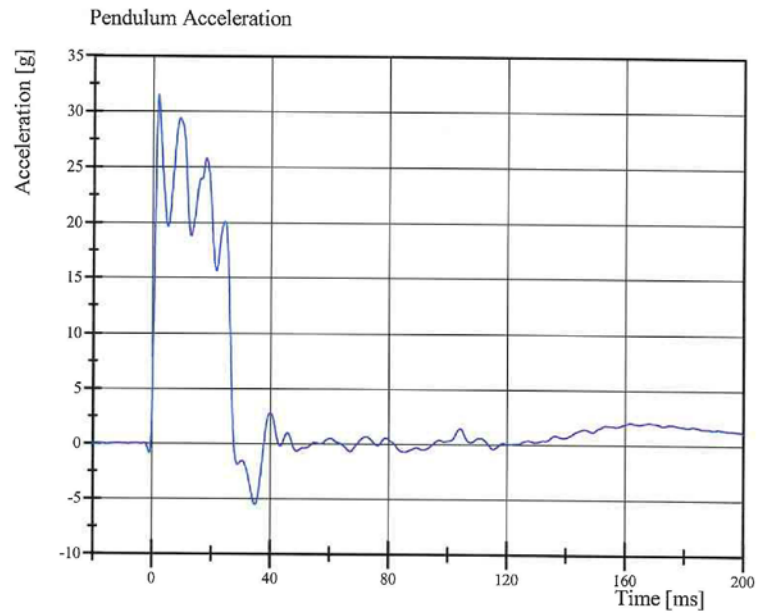


Transportation Research Center Inc.

Left Lateral Neck

SID II_s Serial No. DI8818 Certification No. 7-3

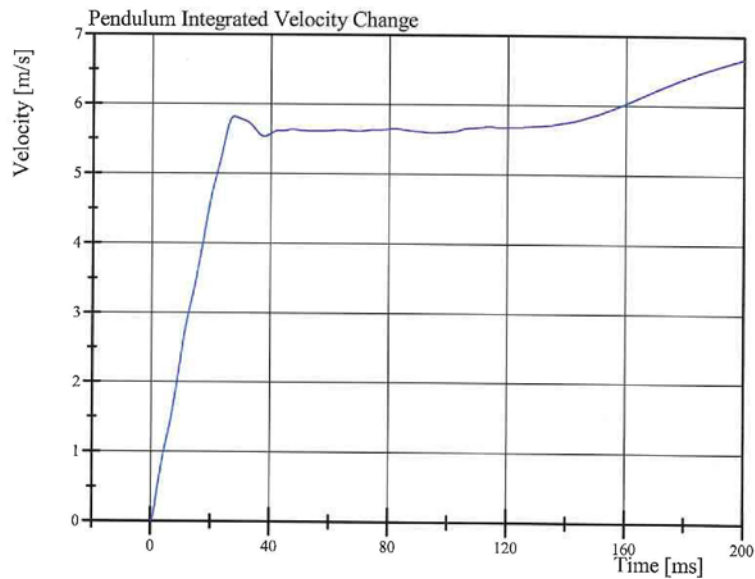
Test Date: 12/23/2013



Filter Class: CFC_180

Max: 31.5 g at 1.8 ms

Min: -5.5 g at 34.9 ms



Filter Class: CFC_180

Max: 6.7 m/s at 200.0 ms

Min: 0.0 m/s at 0.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.23.2013 08:10:08 637

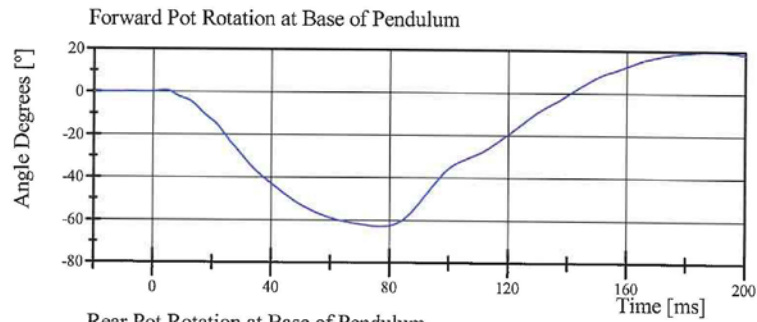


Transportation Research Center Inc.

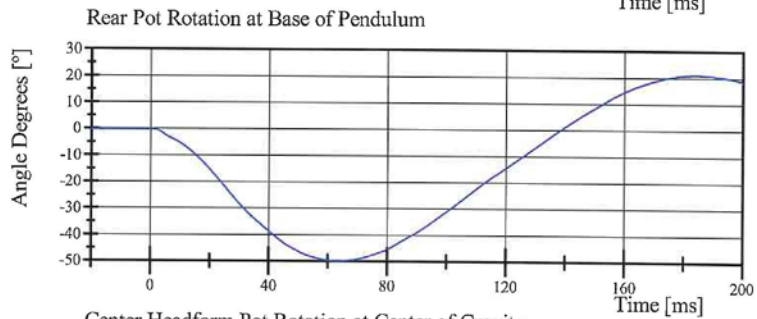
Left Lateral Neck

SID IIs Serial No. DI8818 Certification No. 7-3

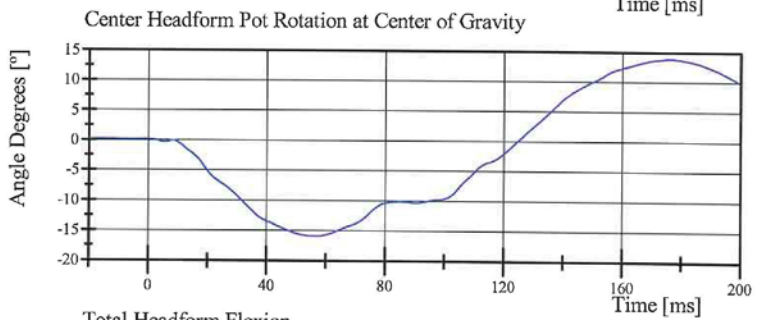
Test Date: 12/23/2013



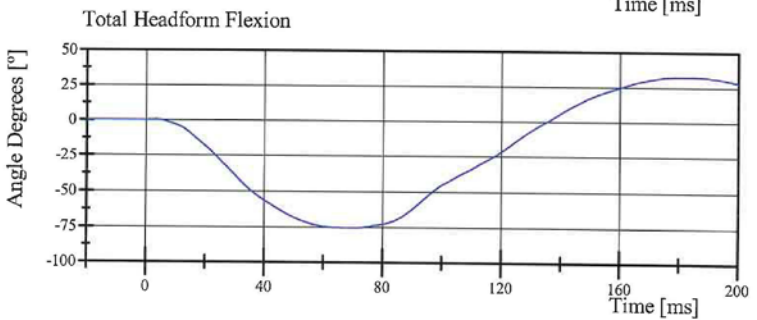
Filter Class: CFC_60
Max: 19.5 ° at 188.6 ms
Min: -62.7 ° at 76.4 ms



Filter Class: CFC_60
Max: 21.0 ° at 183.8 ms
Min: -49.9 ° at 63.4 ms



Filter Class: CFC_60
Max: 13.8 ° at 176.1 ms
Min: -15.9 ° at 56.6 ms



Filter Class: CFC_60
Max: 32.6 ° at 182.5 ms
Min: -75.5 ° at 69.8 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.23.2013 08:10:08 637

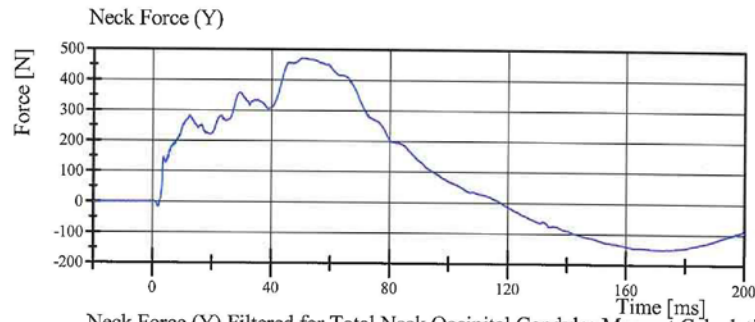


Transportation Research Center Inc.

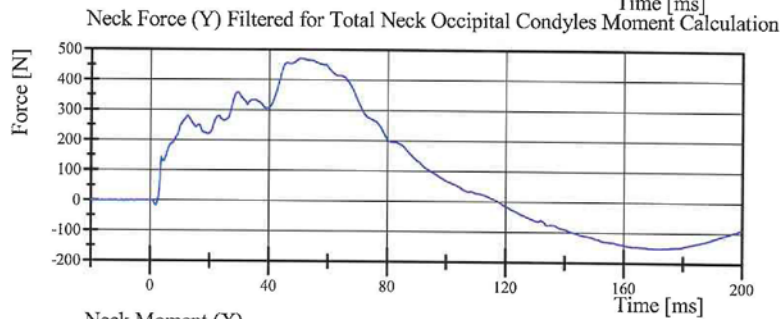
Left Lateral Neck

SID II_s Serial No. DI8818 Certification No. 7-3

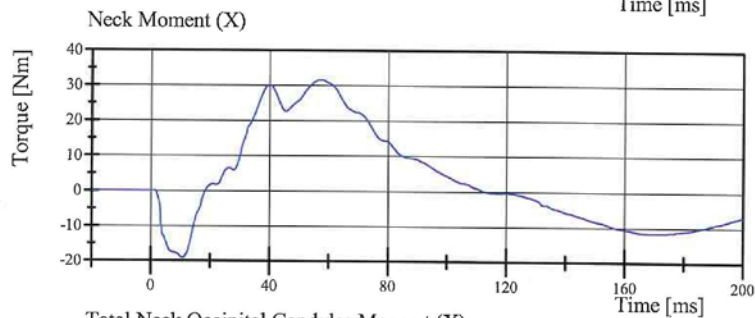
Test Date: 12/23/2013



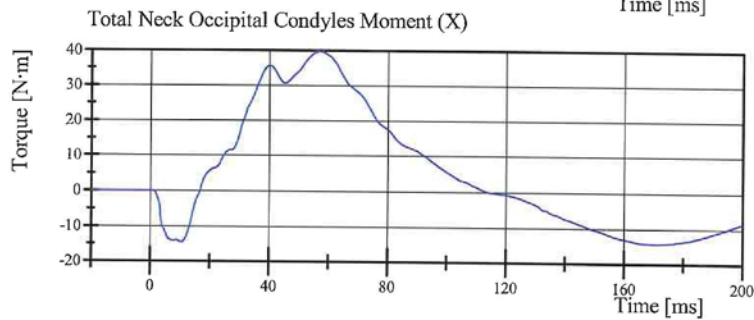
Filter Class: CFC_1000
Max: 471.8 N at 50.2 ms
Min: -152.5 N at 172.2 ms



Filter Class: CFC_600
Max: 471.8 N at 50.5 ms
Min: -152.3 N at 172.3 ms



Filter Class: CFC_600
Max: 31.7 Nm at 57.4 ms
Min: -19.1 Nm at 10.7 ms



Filter Class: Without_(Consta
Max: 39.8 N·m at 56.9 ms
Min: -14.6 N·m at 10.6 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.23.2013 08:10:09 637



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 7-1

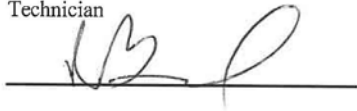
Test Date: 12/17/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	38 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-14.4 g	Yes
Shoulder Displacement	28 - 37 mm	32.4 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	20.0 g	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 10:06:26 836

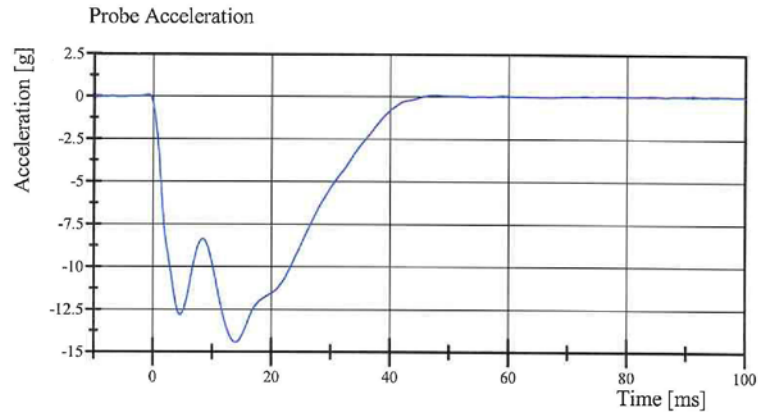


Transportation Research Center Inc.

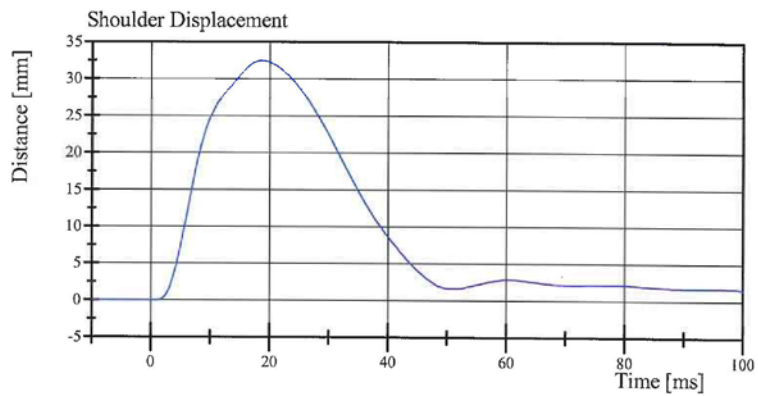
Left Lateral Shoulder

SID IIs Serial No. DI8818 Certification No. 7-1

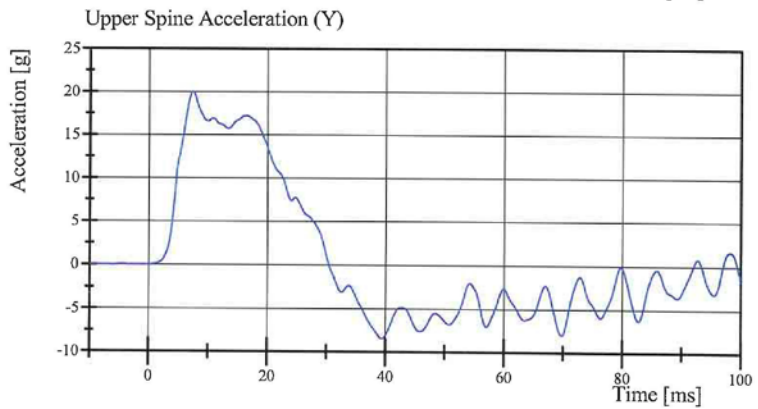
Test Date: 12/17/2013



Filter Class: CFC_180
Max: 0.1 g at -0.9 ms
Min: -14.4 g at 14.0 ms



Filter Class: CFC_600
Max: 32.4 mm at 18.6 ms
Min: -0.0 mm at -2.8 ms



Filter Class: CFC_180
Max: 20.0 g at 7.4 ms
Min: -8.4 g at 39.4 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 10:06:33 836



Transportation Research Center Inc.

Left Lateral Thorax with Arm

SID IIs Serial No. DI8818 Certification No. 7-1

Test Date: 12/17/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.743 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-33.4 g	Yes
Shoulder Displacement	31 - 40 mm	35.1 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	28.3 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	31.6 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	33.6 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	37.8 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	32.3 g	Yes

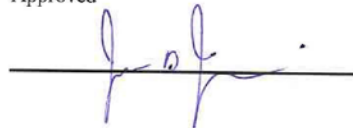
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 10:22:18 597

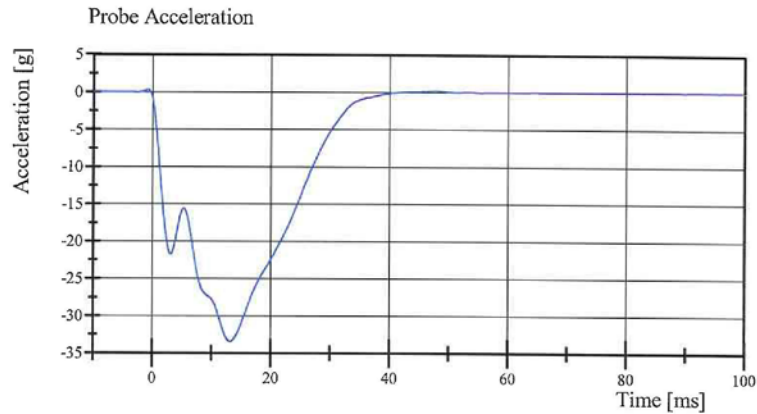


Transportation Research Center Inc.

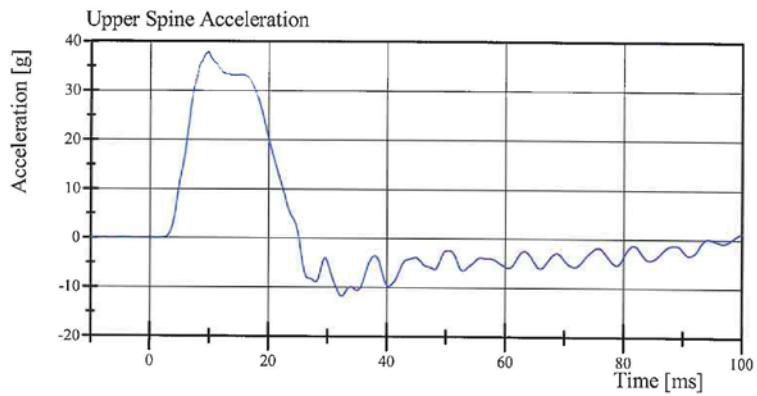
Left Lateral Thorax with Arm

SID II_s Serial No. DI8818 Certification No. 7-1

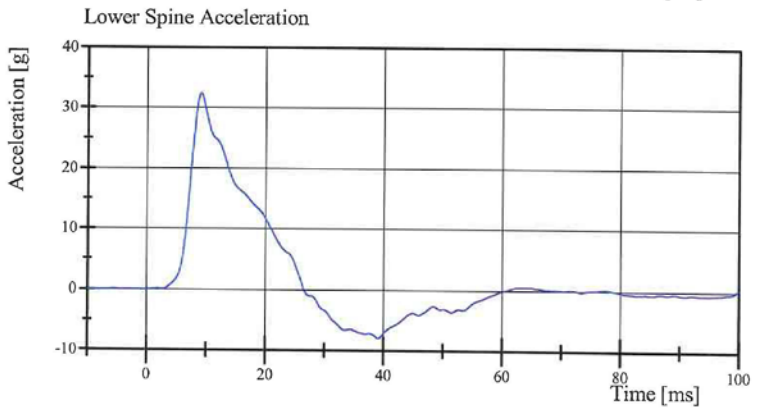
Test Date: 12/17/2013



Filter Class: CFC_180
Max: 0.3 g at -0.8 ms
Min: -33.4 g at 13.2 ms



Filter Class: CFC_180
Max: 37.8 g at 9.8 ms
Min: -11.8 g at 32.4 ms



Filter Class: CFC_180
Max: 32.3 g at 9.0 ms
Min: -8.0 g at 39.1 ms

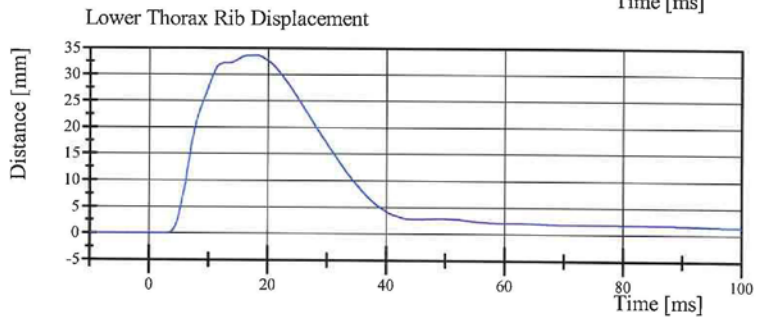
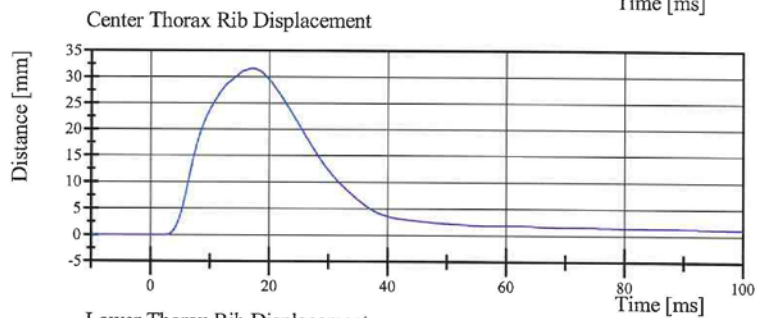
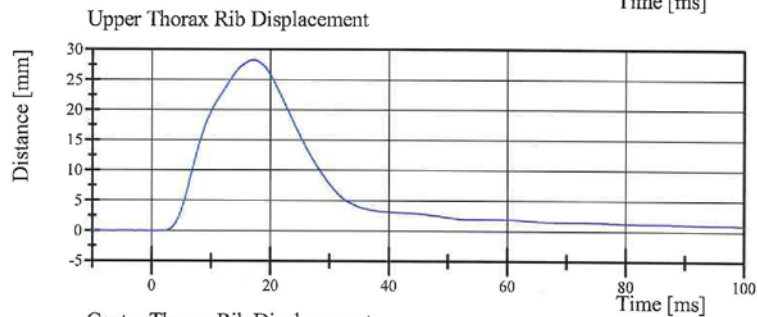
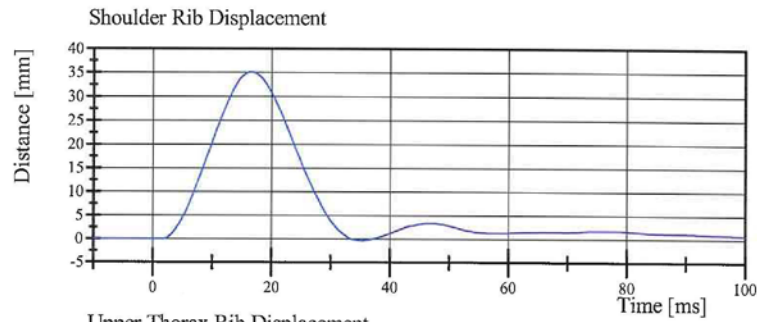
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 10:22:27 597



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. DI8818 Certification No. 7-1
Test Date: 12/17/2013



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 10:22:28 597



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 7-1
Test Date: 12/17/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.248 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-15.6 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	37.3 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	40.8 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	37.0 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	14.9 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	8.4 g	Yes

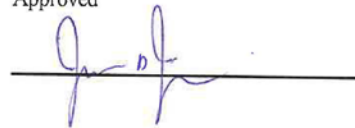
Test meets specifications.

Comments:

Technician



Approved



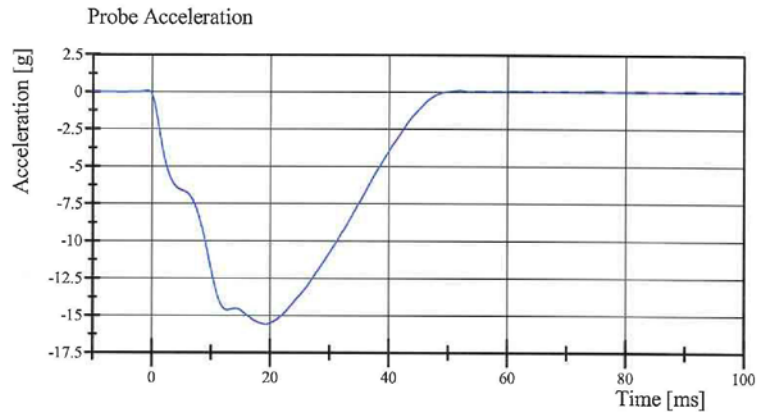
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 10:55:13 844

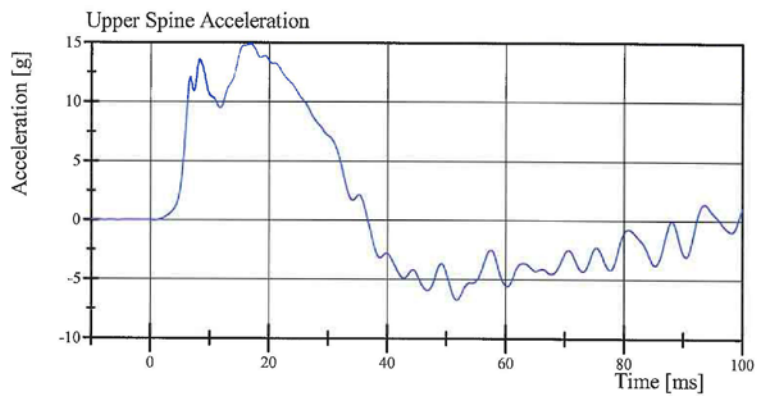


Transportation Research Center Inc.

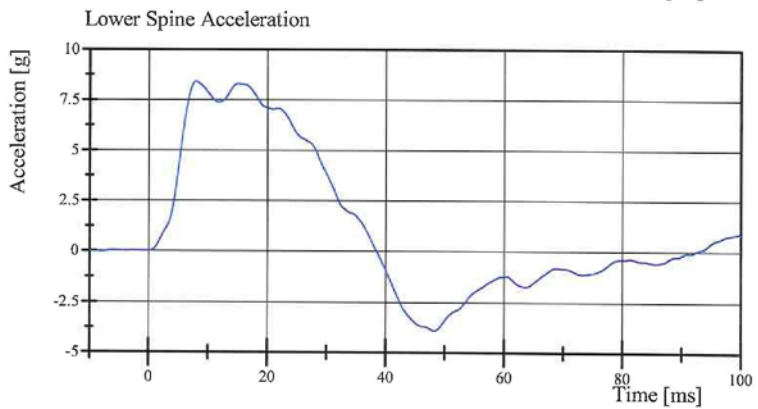
Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 7-1
Test Date: 12/17/2013



Filter Class: CFC_180
Max: 0.1 g at 51.9 ms
Min: -15.6 g at 19.3 ms



Filter Class: CFC_180
Max: 14.9 g at 16.9 ms
Min: -6.7 g at 51.8 ms



Filter Class: CFC_180
Max: 8.4 g at 7.9 ms
Min: -3.9 g at 48.2 ms

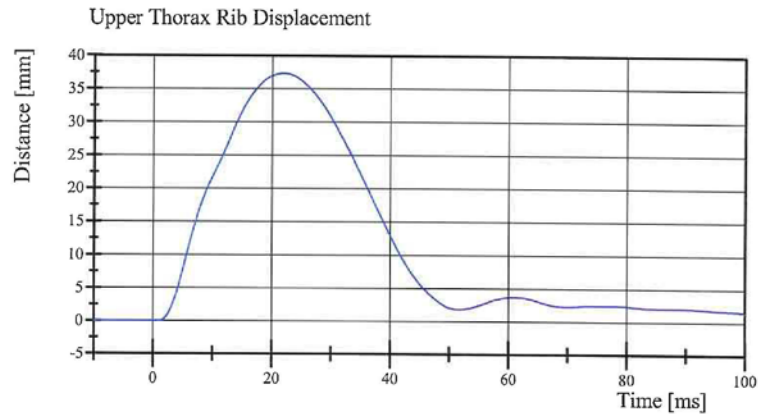
Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 10:55:21 844

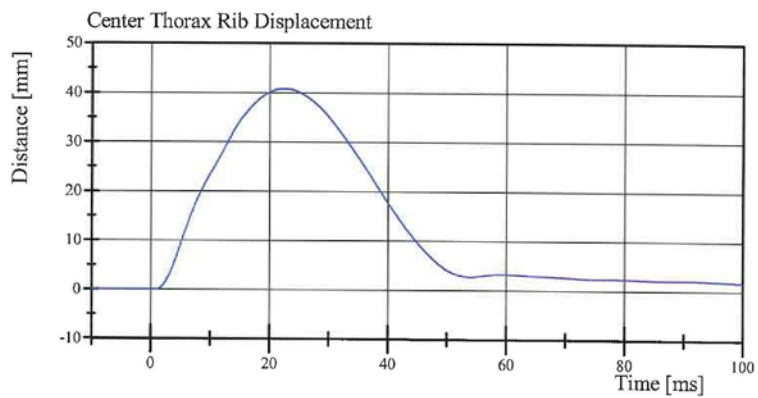


Transportation Research Center Inc.

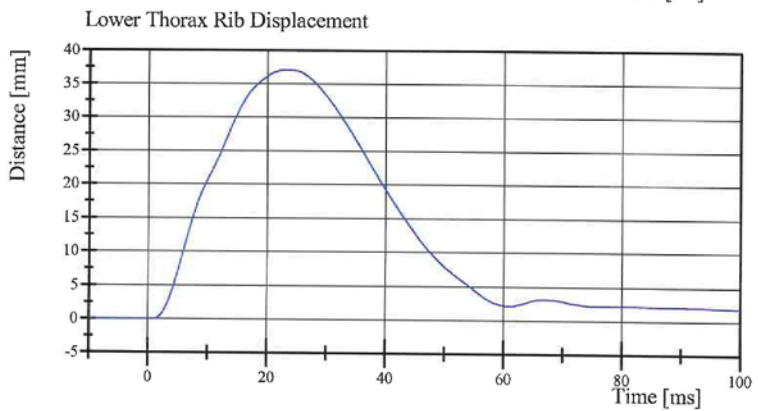
Left Lateral Thorax without Arm
SID IIs Serial No. DI8818 Certification No. 7-1
Test Date: 12/17/2013



Filter Class: CFC_600
Max: 37.3 mm at 21.9 ms
Min: -0.0 mm at -5.4 ms



Filter Class: CFC_600
Max: 40.8 mm at 22.3 ms
Min: -0.0 mm at -5.8 ms



Filter Class: CFC_600
Max: 37.0 mm at 23.4 ms
Min: -0.0 mm at -5.3 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 10:55:22 844



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. DI8818 Certification No. 7-3

Test Date: 12/19/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.28 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.4 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	40.1 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	34.4 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	11.70 g	Yes

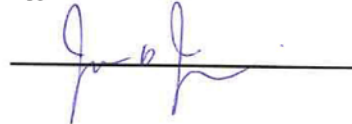
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.19.2013 11:24:01 688

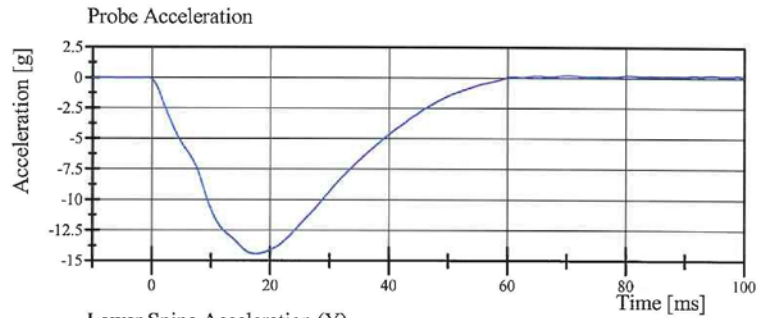


Transportation Research Center Inc.

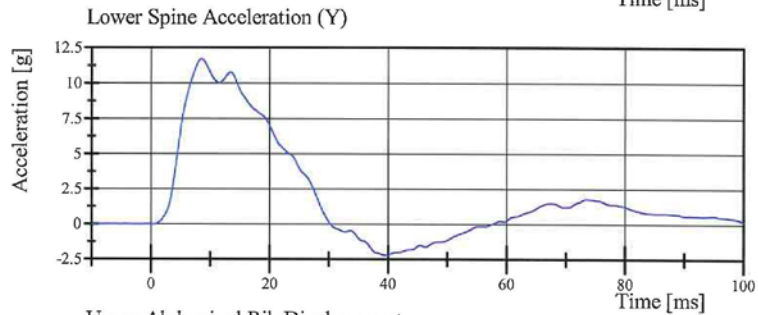
Left Lateral Abdomen

SID II_s Serial No. DI8818 Certification No. 7-3

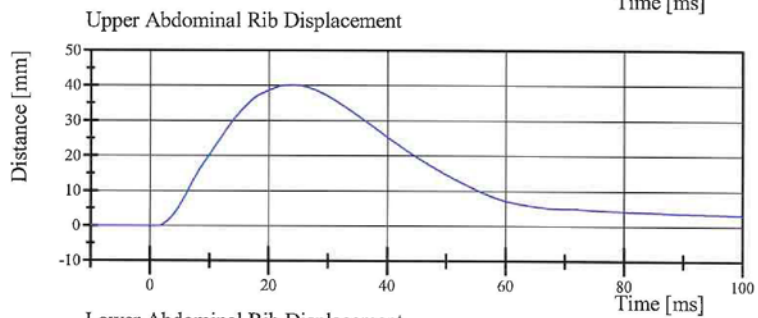
Test Date: 12/19/2013



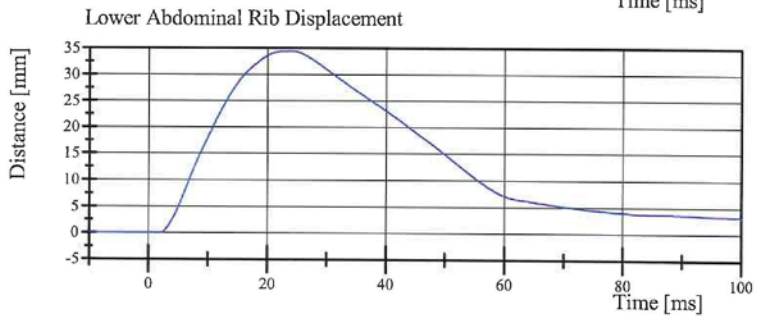
Filter Class: CFC_180
Max: 0.2 g at 70.1 ms
Min: -14.4 g at 17.5 ms



Filter Class: CFC_180
Max: 11.7 g at 8.5 ms
Min: -2.2 g at 39.5 ms



Filter Class: CFC_600
Max: 40.1 mm at 23.8 ms
Min: -0.0 mm at 1.5 ms



Filter Class: CFC_600
Max: 34.4 mm at 23.6 ms
Min: -0.0 mm at 2.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.19.2013 11:24:13 688



Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 7-1

Test Date: 12/17/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.27 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-42.2 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	34.4 g	Yes
Iliac Force	4,100 - 5,100 N	4,825.9 N	Yes

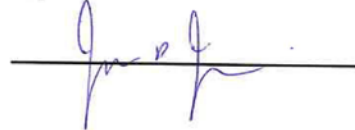
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 13:02:17 682

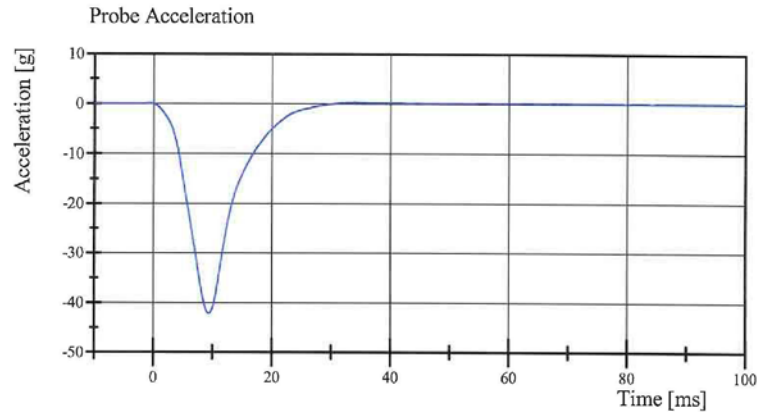


Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. DI8818 Certification No. 7-1

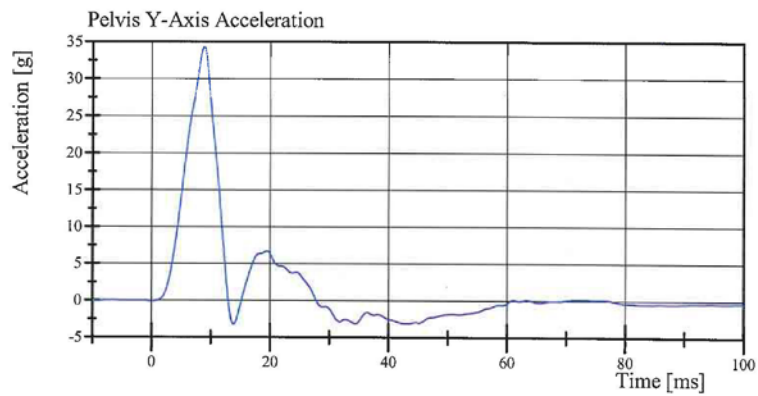
Test Date: 12/17/2013



Filter Class: CFC_180

Max: 0.3 g at 33.8 ms

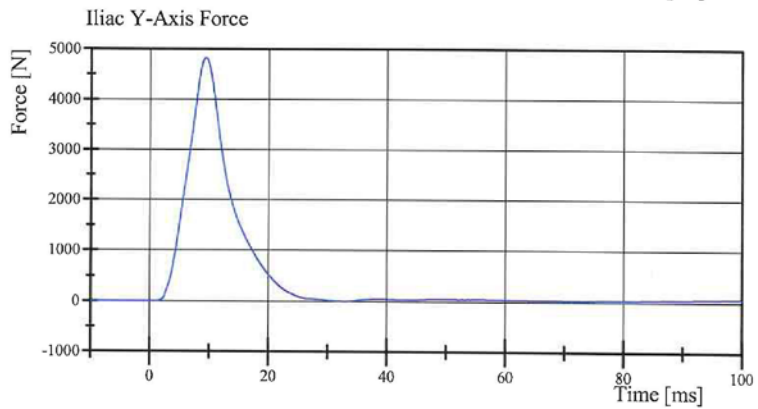
Min: -42.2 g at 9.4 ms



Filter Class: CFC_180

Max: 34.4 g at 8.8 ms

Min: -3.2 g at 13.8 ms



Filter Class: CFC_600

Max: 4,825.9 N at 9.4 ms

Min: -0.8 N at -5.0 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 13:02:24 682



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. DI8818 Certification No. 7-1

Test Date: 12/17/2013

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.69 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-44.41 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	41.1 g	Yes
Acetabulum Force	3,600 - 4,300 N	3,900.3 N	Yes

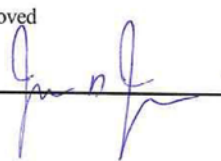
Test meets specifications.

Comments:

Technician



Approved



Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 15:03:57 439

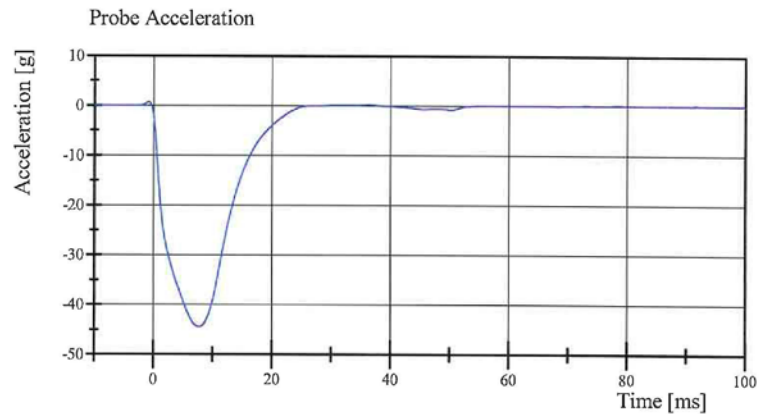


Transportation Research Center Inc.

Left Lateral Pelvis

SID II_s Serial No. DI8818 Certification No. 7-1

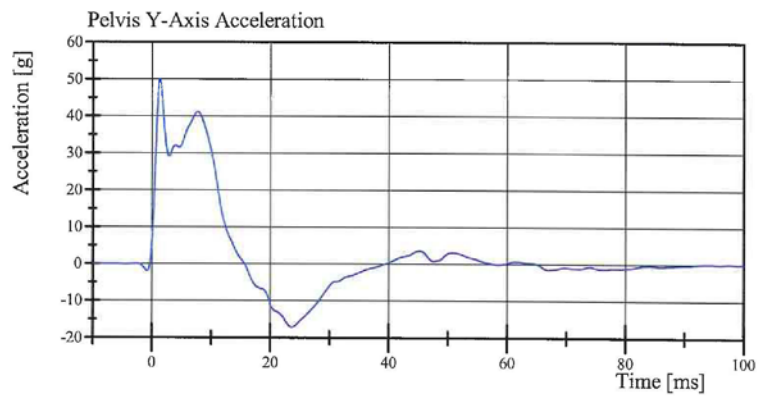
Test Date: 12/17/2013



Filter Class: CFC_180

Max: 0.6 g at -0.8 ms

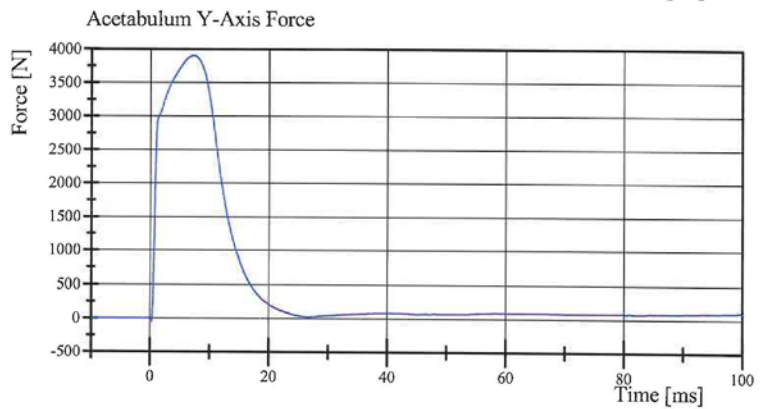
Min: -44.4 g at 7.7 ms



Filter Class: CFC_180

Max: 50.1 g at 1.4 ms

Min: -17.1 g at 23.6 ms



Filter Class: CFC_600

Max: 3,900.3 N at 7.3 ms

Min: -53.0 N at 0.2 ms

Specification Source: Procedures based on Final Rule effective 8/24/2009
Polarity in accordance with SAE J211.

12.17.2013 15:04:06 439



APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N DI8818			
				Serial Number	Manufacturer	Calibration Date	
Head Accelerometers				X	J32214	Endevco	9-Dec-2013
				Y	J27040	Endevco	9-Dec-2013
				Z	AGAC4	Endevco	9-Dec-2013
Displacement Potentiometers	Shoulder		Y	N/A	N/A	N/A	
	Thoracic Rib	Upper	Y	3787-047	Servo	10-Dec-2013	
		Middle	Y	3745-01815	Servo	10-Dec-2013	
		Lower	Y	03745-01803	Servo	10-Dec-2013	
	Abdominal Rib	Upper	Y	3745-01811	Servo	10-Dec-2013	
		Lower	Y	3745-00557	Servo	10-Dec-2013	
Lower Spine Accelerometers (T12)				X	00L13-F05	Entran	9-Dec-2013
				Y	04J04I20-A17	Entran	9-Dec-2013
				Z	P64093	Endevco	9-Dec-2013
Acetabulum Load Cell				Y	235-FY	FTSS	6-Nov-13
Iliac Wing Load Cell				Y	113-FY	FTSS	6-Nov-13
Pelvis Plug (struck side)					63441	FTSS	28-Jan-13
Pelvis Plug (non-struck side)					46014	FTSS	20-Sep-11

TABLE 2 – Vehicle Instrumentation

Vehicle Instrumentation		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P81492	Endevco	14-Nov-2013
Vehicle Center of Gravity	Y	P81609	Endevco	14-Nov-2013
Vehicle Center of Gravity	Z	P81660	Endevco	14-Nov-2013
Left Floor Sill	Y	P82268	Endevco	17-Nov-2013
A-Pillar Sill	Y	P82285	Endevco	14-Nov-2013
A-Pillar Low	Y	P81991	Endevco	5-Nov-2013
A-Pillar Mid	Y	P82000	Endevco	5-Nov-2013
B-Pillar Sill	Y	P81100	Endevco	13-Nov-2013
B-Pillar Low	Y	P80776	Endevco	16-Sep-2013
B-Pillar Mid	Y	P81012	Endevco	16-Sep-2013
Driver Seat	Y	P82047	Endevco	12-Nov-2013
Engine Top	X	P78203	Endevco	24-Sep-2013
Engine Top	Y	P79313	Endevco	24-Sep-2013
Firewall	Y	P81098	Endevco	12-Nov-2013
Right Roof	Y	P81598	Endevco	13-Nov-2013
Right Floor Sill	Y	P81994	Endevco	5-Nov-2013
Rear Floor Pan	X	P81017	Endevco	25-Sep-2013
Rear Floor Pan	Y	P80777	Endevco	16-Sep-2013

TABLE 3 – Pole Instrumentation

Pole Instrumentation	Serial Number	Manufacturer	Calibration Date
Load Cell 1	5763-87-FX	Denton	9-Dec-2013
Load Cell 2	5763-97-FX	Denton	9-Dec-2013
Load Cell 3	5763-84-FX	Denton	9-Dec-2013
Load Cell 4	5764-81-FX	Denton	9-Dec-2013
Load Cell 5	5763-89-FX	Denton	9-Dec-2013
Load Cell 6	5763-77-FX	Denton	9-Dec-2013
Load Cell 7	5764-89-FX	Denton	9-Dec-2013
Load Cell 8	5764-77-FX	Denton	9-Dec-2013