

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

CAMI AUTOMOTIVE INC.
2009 CHEVROLET EQUINOX LS
5-DOOR MPV

NHTSA NUMBER: M90102

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AUGUST 13, 2008

FINAL REPORT

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Technical Report Documentation Page

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16. Abstract A 55/28 km/h 90 deg. Moving Deformable Barrier Side Impact NCAP Test was conducted on the subject 2009 Chevrolet Equinox LS 5-Door MPV in accordance with the specifications of the Office of Crash Worthiness Standards Test Procedures for the generation of consumer information on vehicle side crash protection. The test was conducted at KARCO Engineering, LLC in Adelanto, CA, on August 13, 2008. The impact velocity of the Moving Deformable Barrier was 62.49 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 36.7 deg. C. The target vehicle's maximum post-test static crush was 344 mm located at level 3. The test vehicle's occupant performance data is as follows:			
Measurement Description	Driver SID/HIII	Pass. SID/HIII	
Left Upper Rib (LUR) G's	45.7	47.8	
Left Lower Rib (LLR) G's	53.4	56.4	
Lower Spine (T ₁₂) G's	64.4	59.0	
Thoracic Trauma Index (TTI) G's	59.0	58.0	
Pelvis (PEV) G's	53.4	80.9	
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SECTION 1

PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This Side Impact NCAP test is conducted as part of the FY' 2008 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-03-D-32005. The purpose of this test is to generate comparative side impact data on a 2009 Chevrolet Equinox LS 5-door MPV manufactured by Cami Automotive Inc.

1.2 TEST PROCEDURE

The side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Crashworthiness Standards (OCS), laboratory test procedure NCAP Side Impact Testing, dated November 2002. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

2.1 SUMMARY OF SIDE IMPACT NCAP TEST

A model year 2009 Chevrolet Equinox LS 5-Door MPV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.49 km/h. The specified impact velocity range is from 61.14 to 62.75 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 1957 kg and the test weight of the MDB was 1361 kg. The test was conducted at KARCO Engineering, LLC in Adelanto, California, on August 13, 2008.

Two (2) real-time cameras and ten (10) high-speed video cameras were used to document the impact event. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and SID/HIIIs can be found in Appendix A. Two 50th percentile adult male Side Impact Dummies, Hybrid III (SID/HIIIs) were placed in the driver's and left rear passenger designated seating positions according to the test procedure. Each SID/HIII is instrumented with contact switches on the pelvis, thorax and six-axis neck load cells, and fourteen accelerometers in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y, and Z axes primary and redundant)

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front Driver		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	Yes	No	
Side Torso Airbag	No		No	
Head Airbag	No		No	
Curtain Airbag	Yes	Yes	Yes	Yes

SECTION 2...(CONTINUED)

The test vehicle was instrumented with twenty-one (21) structural accelerometers and the MDB was instrumented with five (5) accelerometers and one (1) contact switch on the right bumper to compare left side to right side bumper impact timing. All data channels were recorded with the fully self contained on-board Data Acquisition System (DAS). The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

2.2 GENERAL COMMENTS

Both the driver and passenger doors remained closed during the impact. The test vehicle sustained a maximum static crush of 344 mm at level 3, 1500 mm rearward of the left vertical impact point. The driver SID/Hybrid III, Serial No. 275 and the passenger SID/Hybrid III, Serial No. 274 were calibrated prior to this test. The SID/Hybrid III injury criteria are summarized as follows:

Measurement	Units	Driver	Passenger
Thoracic Trauma Index (TTI)	G's	59	58
Peak Pelvic G's (PEV)	G's	53	81

Tests summaries and post-test observations are presented in Section 3. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID/HIIIs, vehicle, and MDB response data traces. Appendix C contains the SID Configuration and performance verification data.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION SHEETS

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609344
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M90102
Make	Chevrolet
Model	Equinox LS
Body Style	5-Door MPV
Vin No.	2CNDL13F196201811
Color	Deep Ruby Metallic
Delivery Date	7/31/2008
Odometer (Miles)	79.0
Dealer	Crest Chevrolet
Transmission	5-Speed Automatic
Final Drive	Front
Type/No. Cyl.	V6
Engine Disp. (L)	3.4
Engine Placement	Transverse
Roof Rack	Yes
Sunroof/T-Top	No
Tinted Glass	No
Traction Control	Yes
Power Brakes	Yes
Front Disc	Yes
Rear Disc	Yes

Anti-Lock Brakes	Yes
All Wheel Drive	No
Power Steering	Yes
Driver Front Airbag	Yes
Driver Side Torso Airbag	No
Driver Side Head Airbag	No
Driver Curtain/Airbag	Yes
Rear Pass. Airbag	No
Rear Pass. Side Airbag	No
Rear Pass. Head Airbag	No
Rear Pass. Curtain/Airbag	Yes
Pre-Tensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes
Air Cond.	Yes
AM/FM CD	Yes
Tilt Steering	Yes
Automatic Door Locks	Yes
Power Windows	Yes
Power Seats	No
Other	None

Does Owners Manual provide instructions to turn off automatic door locks.

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Cami Automotive Inc.
Date of Manufacture	Jun-08

GVWR (kg)	2300
GAWR Front (kg)	1150
GAWR Rear (kg)	1175

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number of Occupants	2	3		5
Capacity Weight (VCW) (kg)				599
Cargo Weight (RCLW) (kg)				136

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

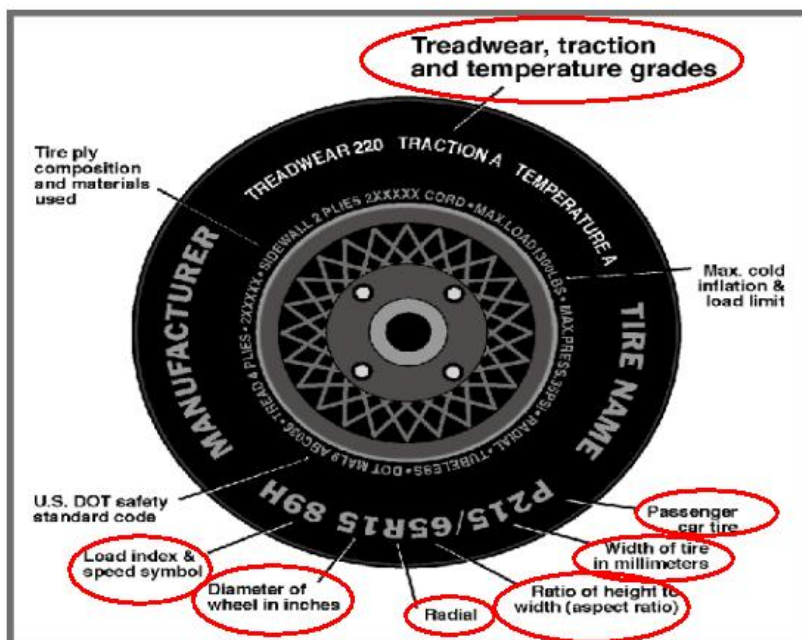
Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08

Collect year, make, model, VIN, items circled in red, and tire manufacturer and tire name.



TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	308	308
Cold Pressure (kpa)	210	210
Recommended Tire Size	P235/65R16	P235/65R16
Tire Size on Vehicle	P235/65R16	P235/65R16
Tire Manufacturer	Firestone	Firestone
Treadwear	480	480
Traction	A	A
Temperature Grades	B	B
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 2 Steel, 1 Nylon	2 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	101S	101S
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Right	VN74 D12 2308	VN74 D12 2308
DOT Safety Code Left	VN74 D12 2308	VN74 D12 2308

DATA SHEET NO. 1...(CONTINUED)**GENERAL TEST AND VEHICLE PARAMETER DATA**Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPVNHTSA No.: M90102Test Program: 55/28 km/h Side Impact NCAPTest Date: 08/13/08**TEST VEHICLE WEIGHTS**

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	476	356	832	522	492	1014
Right	kg	479	355	834	488	455	943
Ratio	%	57.3	42.7	100.0	51.6	48.4	100.0
Total	kg	955	711	1666	1010	947	1957

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1666
Weight of 2 P572 ATDs	kg	162
Rated Cargo/Luggage Wt (RCLW)	kg	136
Calculated Vehicle Target Wt (TVTW)	kg	1964

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	826	833	840	842	1224
As Tested	mm	812	818	800	807	1388
Fully Loaded	mm	811	815	800	805	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2869
Total Vehicle Length at Left Side	mm	3374
Total Vehicle Length at Centerline	mm	4805
Total Vehicle Length at Right Side	mm	3374
Weight of Ballast in Cargo Area	kg	86
Amount of Stoddard Solvent Added	L	71.42

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2869
Target Impact Point Aft of Front Axle	mm	495
Actual Impact Point Aft of Front Axle	mm	470

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

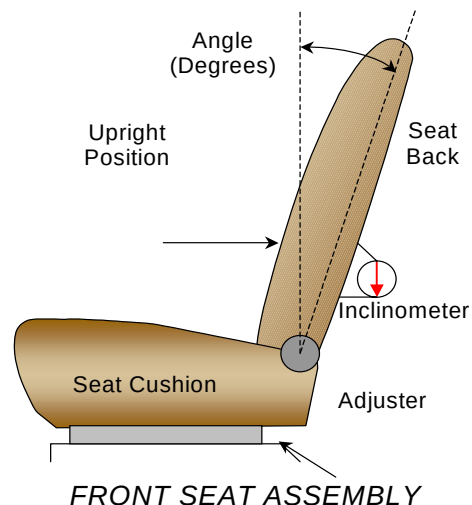
Test Date: 08/13/08

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturer's designated angle. The procedure is as follows: Seat back angle was measured at the seat back using a digital inclinometer.

SEAT BACK ANGLES

	Deg.
Driver w/seated Dummy	17.5 @ Seat Back
Passenger w/seated Dummy	18.3 @ Seat Back

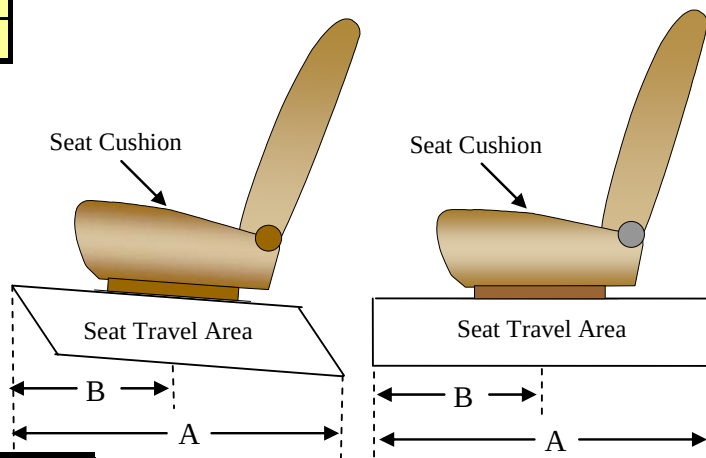


SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most possible position to rearmost possible position. The seat was set at the longitudinal mid position. There were vertical adjustments on the driver seat that was equipped with the vehicle. There were no adjustments on the passenger seat. The driver seat was placed at the lowermost position.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	25	13
Rear Seat	21	10



SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	4	3
Rear Seat	Fixed	Fixed

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

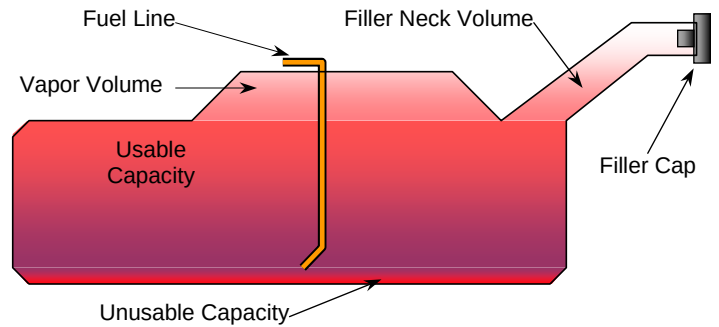
Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	76.84
Usable Capacity of "Optional" Tank	
Usable Capacity used for FMVSS 301	70.67 to 72.22
Actual Amount of Solvent used	71.42

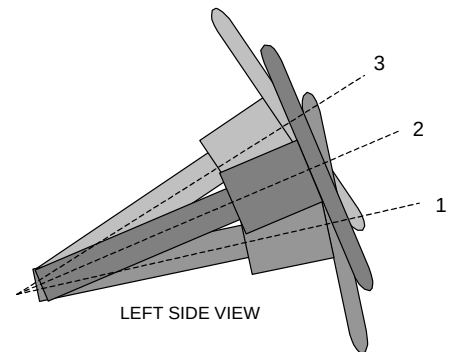
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately two (2) seconds with the ignition in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender. The standard fuel tank occupies the area under the rear seat.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONS

	Degrees	Fore/Aft Position (mm)
Lowermost position No. 1	21.9	
Geometric center position No. 2	23.9	
Uppermost position No. 3	25.8	

DATA SHEET NO. 2**TEST VEHICLE SUMMARY OF RESULTS**Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPVNHTSA No.: M90102Test Program: 55/28 km/h Side Impact NCAPTest Date: 08/13/08**TEST VEHICLE WEIGHTS**

	Units	As Delivered Weights (UWV)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	476	356	832	522	492	1014
Right	kg	479	355	834	488	455	943
Ratio	%	57.3	42.7	100.0	51.6	48.4	100.0
Total	kg	955	711	1666	1010	947	1957

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	154	315
Level 2	Occupant H-Point	mm	320	661
Level 3	Mid Door	mm	344	745
Level 4	Window Sill	mm	218	1023
Level 5	Window top	mm	66	1593
N/A	Maximum Penetration	mm	344	

INSTRUMENTATION

Driver SID/Hybrid III Accelerometers	20
Passenger SID/Hybrid III Accelerometers	20
Vehicle Structure Accelerometers	21
MDB Accelerometers	5
Total No. of Contact Switches	5
Total	71

CAMERA COVERAGE

High Speed, Vehicle On-Board	3
High Speed, Off-Board	4
High Speed, MDB On-Board	3
Real Time, Panning	2
Total	12

DATA SHEET NO. 3**MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS**Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPVNHTSA No.: M90102Test Program: 55/28 km/h Side Impact NCAPTest Date: 08/13/08**MDB SPECIFICATIONS (mm)**

Measurement Description	Length
Overall Width of Framework Carriage	1252
Overall Length including Honeycomb Face	4115
Wheel Base of Framework Carriage	2590
C.G. location aft of Front Axle	1127

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	384	308	
Right	kg	385	284	
Ratio	%	56.5	43.5	
Totals	kg	769	592	1361

SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.49
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.48
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.5

MAXIMUM STATIC CRUSH OF HONEYCOMB FACE (mm)

Vertical Location			From Centerline		Max. Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	800	Right	211
B	Top of Bumper	533	800	Right	100
C	Mid Level	686	800	Right	108
D	Top of Stack	813	800	Right	161

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	1
High Speed Cameras	2

DATA SHEET NO. 4**POST-TEST OBSERVATIONS**Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPVNHTSA No.: M90102Test Program: 55/28 km/h Side Impact NCAPTest Date: 08/13/08**TEST DUMMY INFORMATION AND CONTACT POINTS**

Description	Front Seat SID/Hybrid III	Rear Seat SID/Hybrid III
Dummy Type/Serial No.	P572F, SID/No. 275	P572F, SID/No. 274
Head Contact	Curtain Airbag, Headrest	Curtain Airbag, Headliner
Upper Torso Contact	Door Panel	Door Panel
Lower Torso Contact	Door Panel	Door Panel
Left Knee Contact	Door Panel, Right Knee	Door Panel, Right Knee
Right Knee Contact	Left Knee	Left Knee

POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Remained closed and latched, jammed	Remained closed and latched, jammed
Right Side Door Opening	Remained closed and latched, operational.	Remained closed and latched, operational.
Seat Movement	None	None
Seatback Failure	None	None

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No separation occurred.
Sill Separation	No separation occurred.
Windshield Damage	Cracked
Window Damage	Left rear door window broken
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 2	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	Yes	No	
Side Airbag	No		No	
Head Airbag	No		No	
Curtain Airbag	Yes	Yes	Yes	Yes
Pre-Tensioners	Yes		No	
Load Limiters	Yes		Yes	

MDB LEFT EDGE IMPACT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	-25 (left)
Vertical Offset	mm	+/-20	+10 (above)

DATA SHEET NO. 5

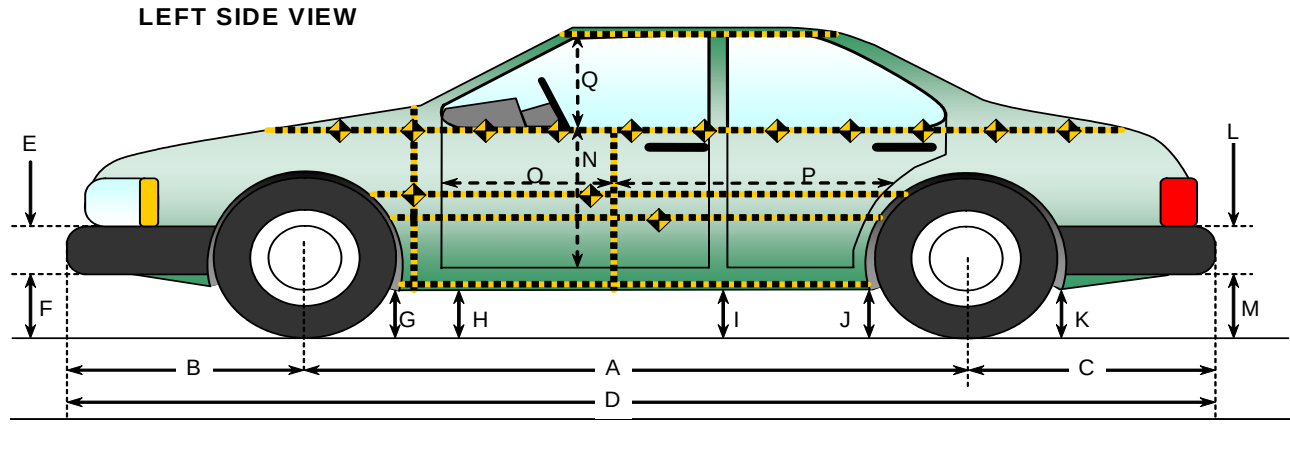
VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08



VEHICLE PRE AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2869	2833	-36
B	Front Axle to FSOV	967	972	5
C	Rear Axle to RSOV	969	990	21
D	Total Length at Centerline	4805	4797	-8
E	Front Bumper Thickness	383	392	9
F	Front Bumper Bottom to Ground	299	316	17
G	Sill Height at Front Wheel Well	270	279	9
H	Sill Height at Front Door Leading Edge	266	296	30
I	Sill Height at "B" Pillar	257	331	74
J1	Sill Height at Rear Wheel Well	238	311	73
J2	Pinch Weld Height at Rear Wheel Well	259	329	70
K	Sill Height aft of Rear Wheel Well	307	382	75
L	Rear Bumper Thickness	267	270	3
M	Rear Bumper Bottom to Ground	316	394	78
N	Sill Height to Window Bottom Sill	750	705	-45
O	Front Door Leading Edge to Impact CL	757	755	-2
P	Rear Door Trailing Edge to Impact CL	1334	1280	-54
Q	Front Window Opening	430	460	30
R	Right Side Length	3374	3391	17
S	Left Side Length	3374	3320	-54
T	Vehicle Width at "B" Post	1800	1580	-220

All Dimensions shown in millimeters

DATA SHEET NO. 6

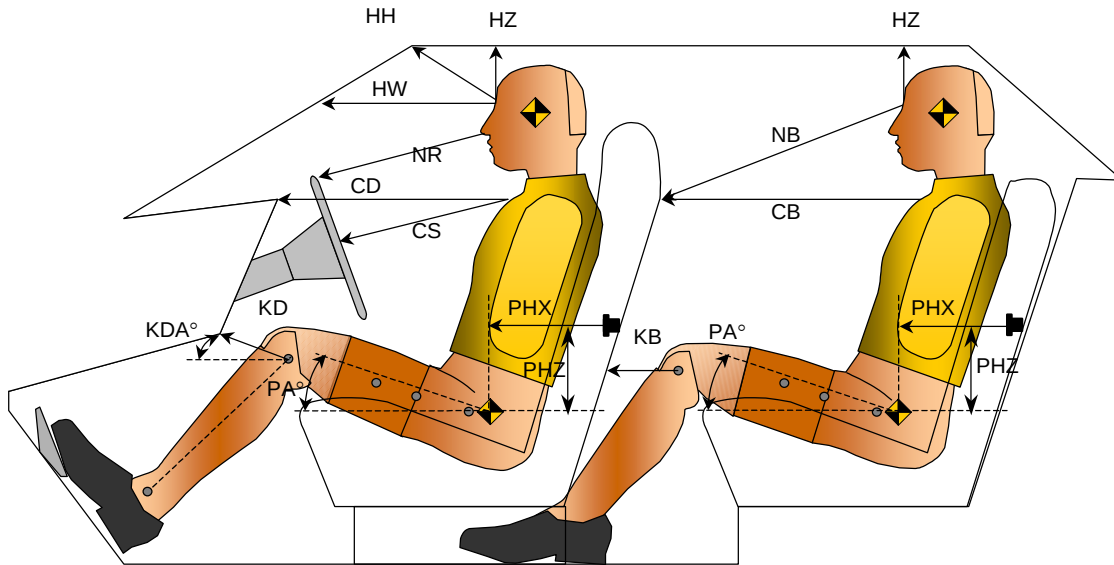
SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08



LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length(mm)	Angle	Length(mm)	Angle
HH		Head to Header	490	9.4		
HW		Head to Windshield	712	0.0		
HZ	HZ	Head to Roof	234	90.0	200	0.0
NR	NB	Nose to Rim/Nose to Seat Back	494	14.7	648	24.8
CD	CB	Chest to Dash or Seat Back	594	5.3	586	6.4
CS		Chest to Steering Wheel	372	14.0		
KDL	KBL	Left Knee to Dash or Seat Back	150	29.9	0	19.3
KDR	KBR	Right Knee to Dash or Seat Back	145		240	
PA	PA	Pelvic Angle		23.9		24.7
PHX	PHX	H-Point to Striker (X-Axis)	200		293	
PHZ	PHZ	H-Point to Striker (Z-Axis)	90		250	

All Dimensions shown in millimeters

DATA SHEET NO. 7

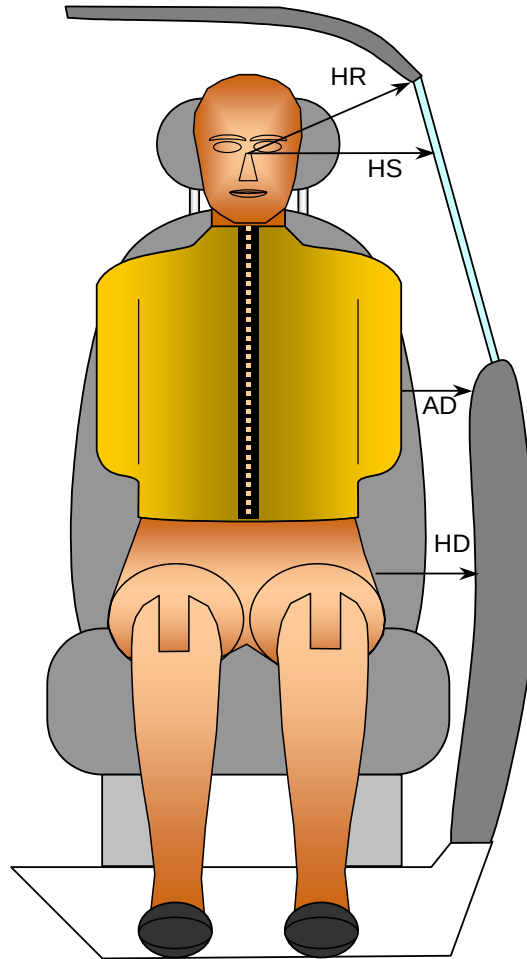
SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08



FRONT VIEW OF DUMMY

LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	300	275
HS	Head to Side Window	mm	360	330
AD	Arm to Door	mm	104	106
HD	H-Point to Door	mm	130	160

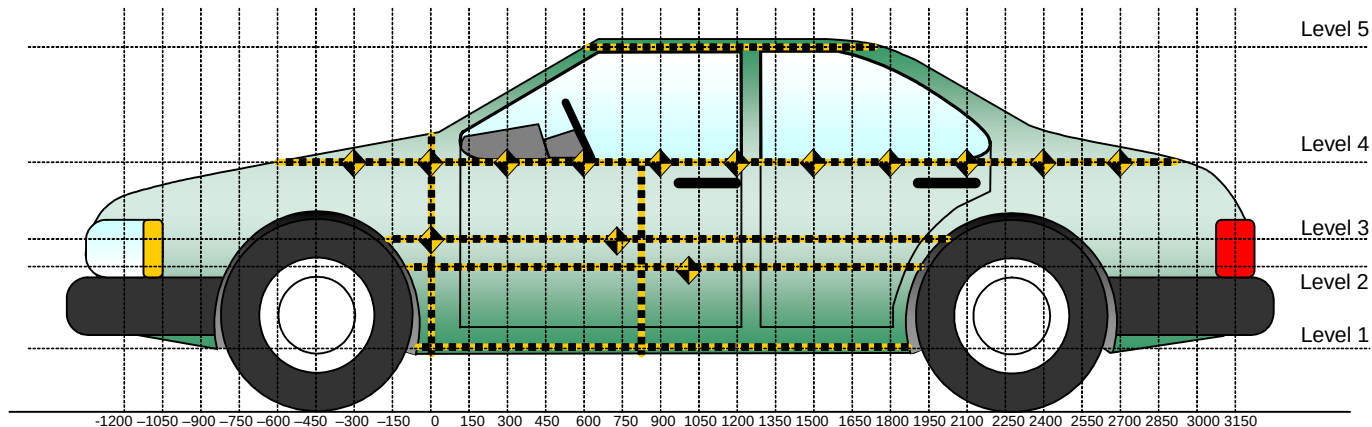
DATA SHEET NO. 8
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08



All Measurements Shown in mm

LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.

Measurements taken 900 mm right of impact reference.

All measurements below in mm.

Level	Measurement Description	Height Above Ground
1	Sill Top	315
2	Occupant H-Point	661
3	Mid Door	475
4	Window Sill	1023
5	Window Top	1593

All Dimensions shown in millimeters

DATA SHEET NO. 9

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300															
-150		610	608	703			650	641	721			40	33	18	
0	658	633	634	700		694	693	690	730		36	60	56	30	
150	671	625	633	686		723	815	819	715		52	190	186	29	
300	673	620	633	684		736	848	850	732		63	228	217	48	
450	671	617	633	672		746	871	871	754		75	254	238	82	
600	671	613	633	666	916	754	890	889	774	931	83	277	256	108	15
750	669	611	631	659	896	761	898	903	796	931	92	287	272	137	35
900	665	609	624	658	887	770	903	911	816	931	105	294	287	158	44
1050	665	609	618	651	884	777	908	926	830	931	112	299	308	179	47
1200	661	609	620	651	880	784	916	942	861	937	123	307	322	210	57
1350	660	611	620	650	875	790	923	956	858	933	130	312	336	208	58
1500	658	614	622	648	871	796	930	966	859	937	138	316	344	211	66
1650	656	616	624	648	871	803	936	956	866	926	147	320	332	218	55
1800	656	625	625	651	870	810	876	879	845	912	154	251	254	194	42
1950		598	606	631	870		748	767	769	911		150	161	138	41
2100			654	651	870			664	750	913			10	99	43
2250				653					749					96	
2400															
2550															
2700															
2850															
3000															

All Dimensions shown in millimeters.

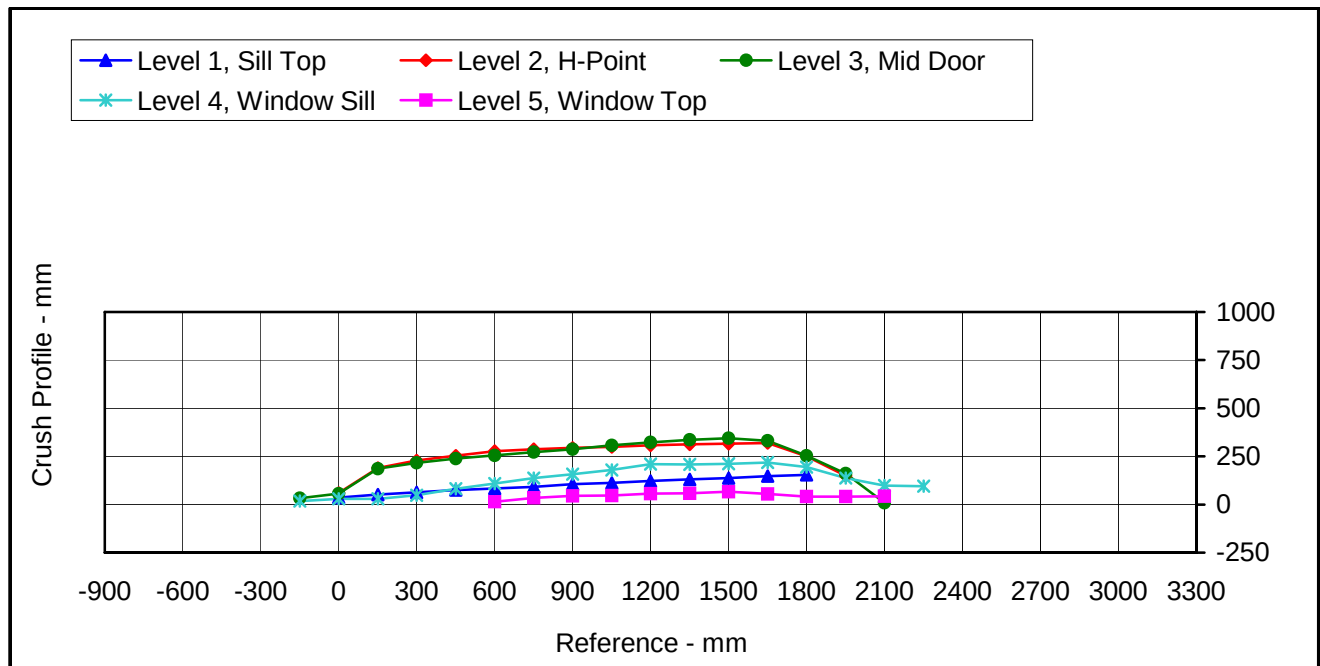
DATA SHEET NO. 9...(CONTINUED)
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08



	Units	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush	mm	154	320	344	218	66
Distance from Impact	mm	1800	1650	1500	1650	1500

DATA SHEET NO. 10

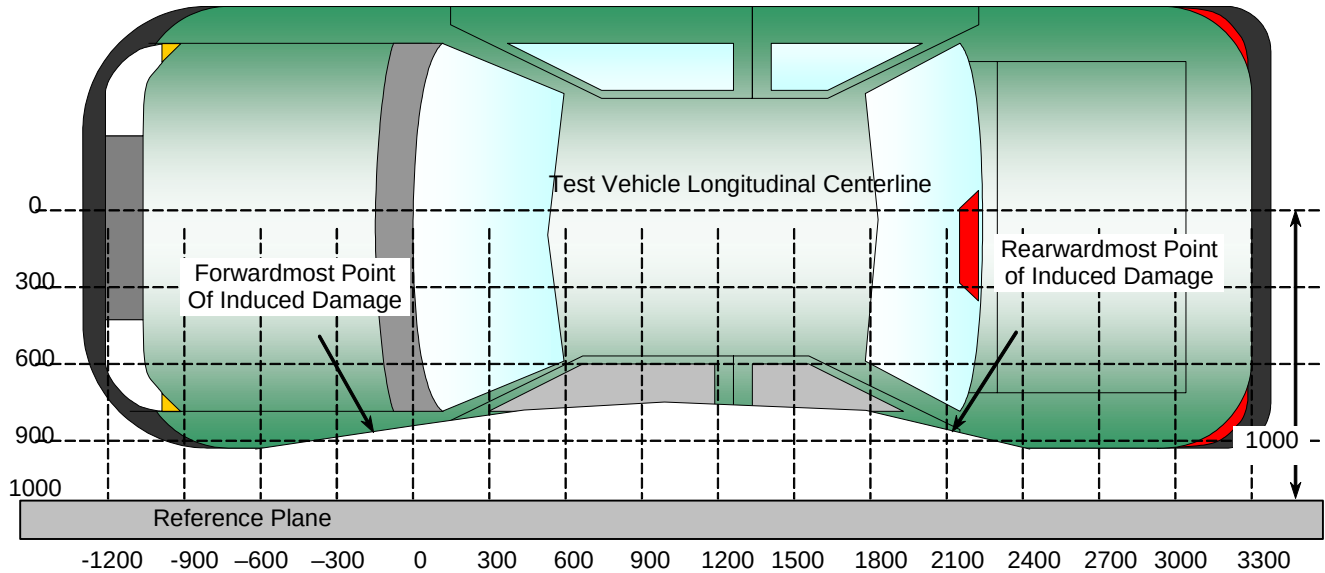
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08



All Dimensions Shown in millimeters

TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	2250	4	653	749	96
2	1800	3	625	879	254
3	1350	3	620	956	336
4	900	2	609	903	294
5	450	2	618	871	253
6	0	2	633	693	60

DATA SHEET NO. 11

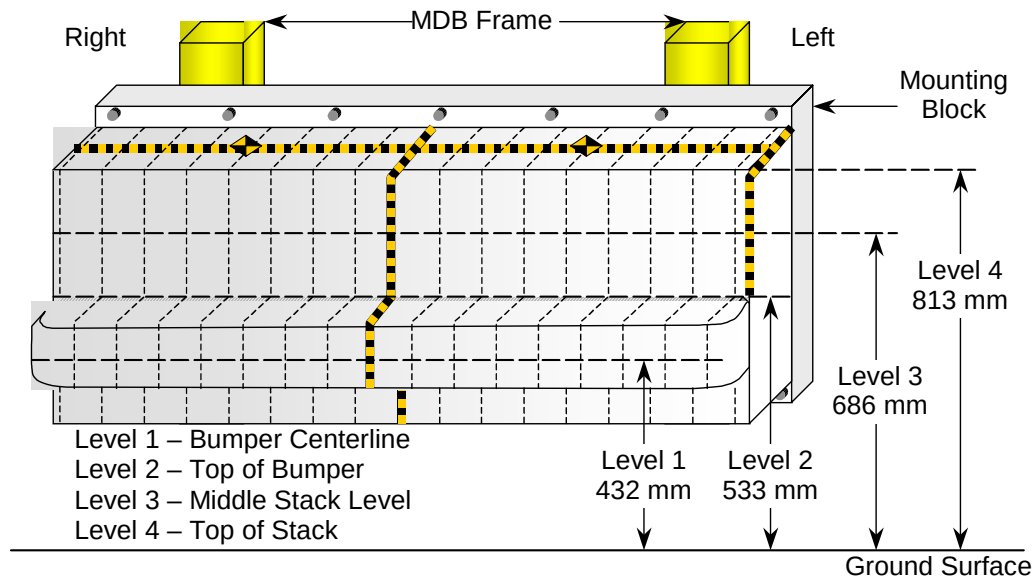
DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	665	641	636	637	638	644	643	643	657	650	655	661	665	670	673	691	729
2	702	687	687	683	679	677	674	674	668	668	673	681	688	693	696	701	720
3	665	652	646	643	641	643	644	642	644	638	639	644	651	665	683	706	728
4	678	657	644	629	620	626	641	635	632	644	653	666	679	691	705	736	781

All Dimensions in mm

DATA SHEET NO. 12

VEHICLE ACCELEROMETER LOCATIONS

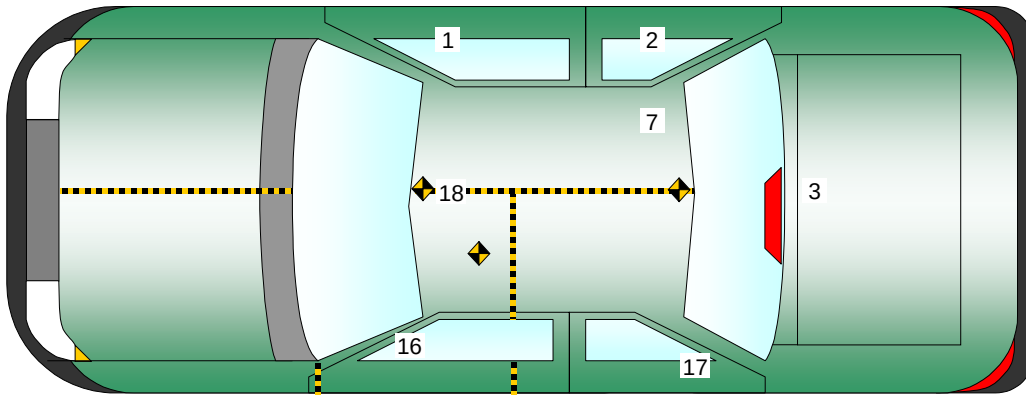
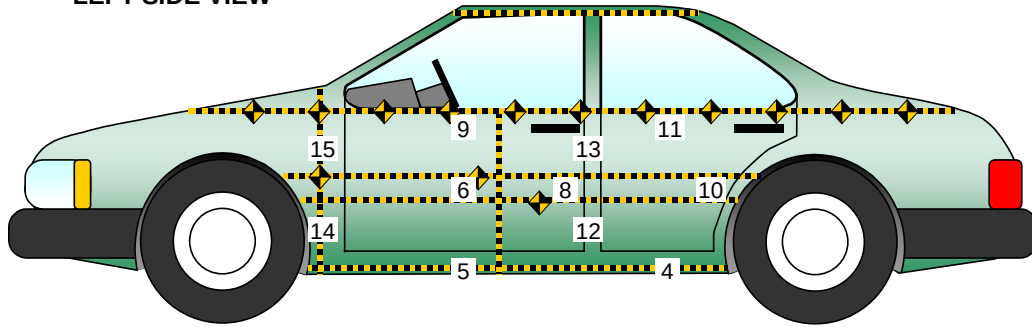
Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08

LEFT SIDE VIEW



No.	Location
1	Right Sill at Front Seat
2	Right Sill at Rear Seat
3	Rear Floorpan Above Axle
4	Left Sill at Rear Door
5	Left Sill at Front Door
6	Left Front Door Centerline
7	Right Rear Occupant Compartment
8	Left Front Door Mid-Rear
9	Left Front Door Upper Centerline

No.	Location
10	Left Rear Door Mid-Rear
11	Left Rear Door Upper Centerline
12	Left Lower B-Post
13	Left Middle B-Post
14	Left Lower A-Post
15	Left Middle A-Post
16	Front Seat Track
17	Rear Seat Track or Structure
18	Vehicle CG

DATA SHEET NO. 12...(CONTINUED)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90101

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08

VEHICLE ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2774	650	435
2	Right Sill at Rear Seat	1736	650	435
3	Rear Floorpan Above Axle	840	115	559
4	Left Sill at Rear Door	1845	390	200
5	Left Sill at Front Door	2436	390	200
6	Front Door Centerline			
7	Rt. Rear Occ. Compartment	2228	300	416
8	Front Door Mid-Rear			
9	Front Door Upper Centerline			
10	Rear Door Mid-Rear			
11	Rear Door Upper Centerline			
12	B-Post Lower	2291	725	822
13	B-Post Middle	2291	725	975
14	A-Post Lower	3287	725	442
15	A-Post Middle	3287	720	846
16	Front Seat Track	2710	562	525
17	Rear Seat Structure	1660	490	500
18	Vehicle CG	3041	131	416

Reference Planes: X=From Rear Surface of Vehicle, Y=Vehicle Centerline, Z=Ground Plane

1.) Not installed

DATA SHEET NO. 13

MDB ACCELEROMETER LOCATION S

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

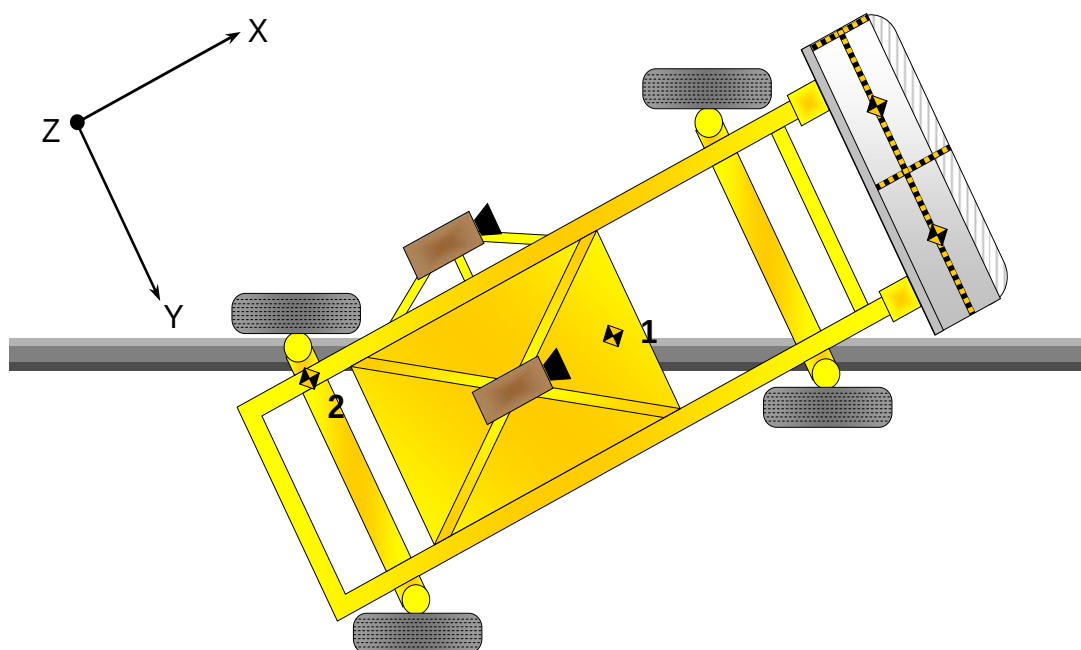
NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08

Loc. No.	Accelerometer Locations	Measurements (mm)		
		X	Y	Z
1	MDB CG	-1195	0	430
2	MDB Rear	-2642	-593	608

Reference Points:
X - MDB Front Axle
Y - MDB Centerline
Z - Ground Plane



DATA SHEET NO. 14

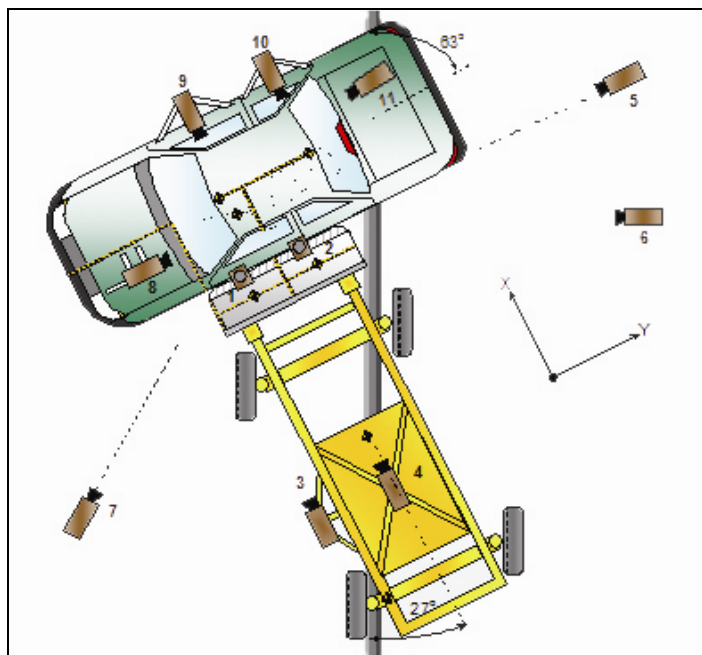
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08



No.	Camera View	Location (mm)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X	Y	Z			
Doc	Real Time Inrun	-2484	-3958	-1506	0		30
Doc	Real Time Left Front	-2266	3549	-1475	-2		30
1	Overhead Overall	1220	2287	-5486	-90	14mm	1000
2	Overhead Close Up	609	2287	-5102	-90	Zoom	1000
3	Left Impact Point (MDB)	-2134	0	-1143	-2	12mm	1000
4	Side Overall (MDB)	-3912	838	-1829	-4	12mm	1000
5	Rear	-64	20485	-1348	0	105mm	1000
6	Left Rear (MDB)	-2137	-1302	-339	-4	85mm	1000
7	Left Front	-2266	-3564	-1475	-2	24mm	1000
8	Driver Front (O.B.)	635	584	-1448	-7	35mm	1000
9	Driver Side (O.B.)	1321	767	-1194	-9	20mm	1000
10	Passenger Side (O.B.)	1727	1676	-1270	-7	20mm	1000

All measurements are made relative to the point of impact.

DNR = Did not run

DATA SHEET NO. 15

FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP Test Date: 08/13/08

Test Time: 11:37 AM Temperature: 36.7 Deg. C.

Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)
- C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)
- D. Spillage Details: No leakage occurred

DATA SHEET NO. 16

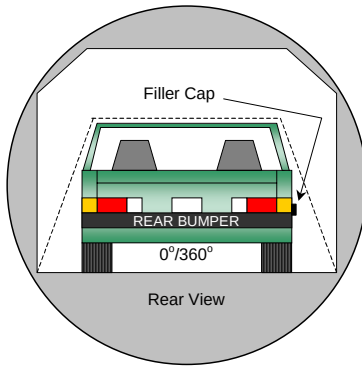
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

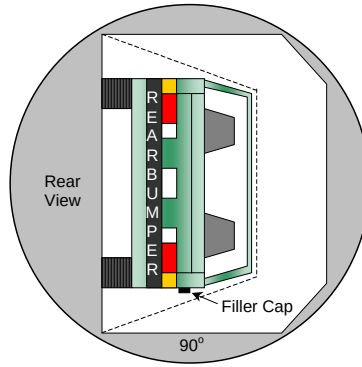
NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

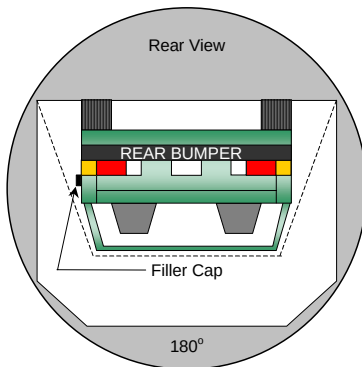
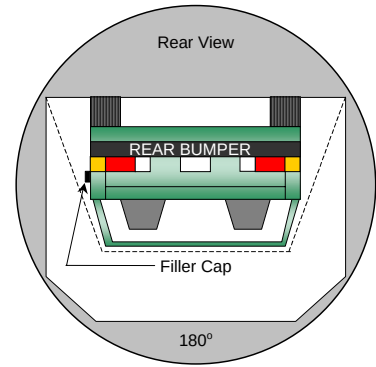
Test Date: 08/13/08



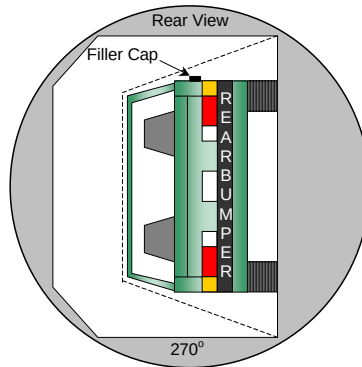
0° to 90°



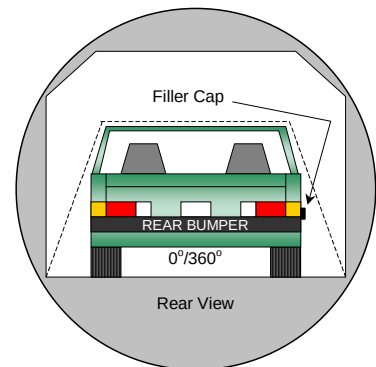
90° to 180°



180° to 270°



270° to 360°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage locations.
No solvent leakage occurred during static rollover testing.

DATA SHEET NO. 16...(CONTINUED)**FMVSS 301 STATIC ROLLOVER DATA SHEET**Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPVNHTSA No.: M90102Test Program: 55/28 km/h Side Impact NCAPTest Date: 08/13/08**SOLVENT COLLECTION TIME TABLE IN SECONDS**

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	79	305	384
90° to 180°	83	305	388
180° to 270°	79	310	389
270° to 360°	77	300	377

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

First 5 Minutes	5.0
Sixth Minute	1.0
Seventh Minute	1.0
Eighth Minute	1.0

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

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. 17

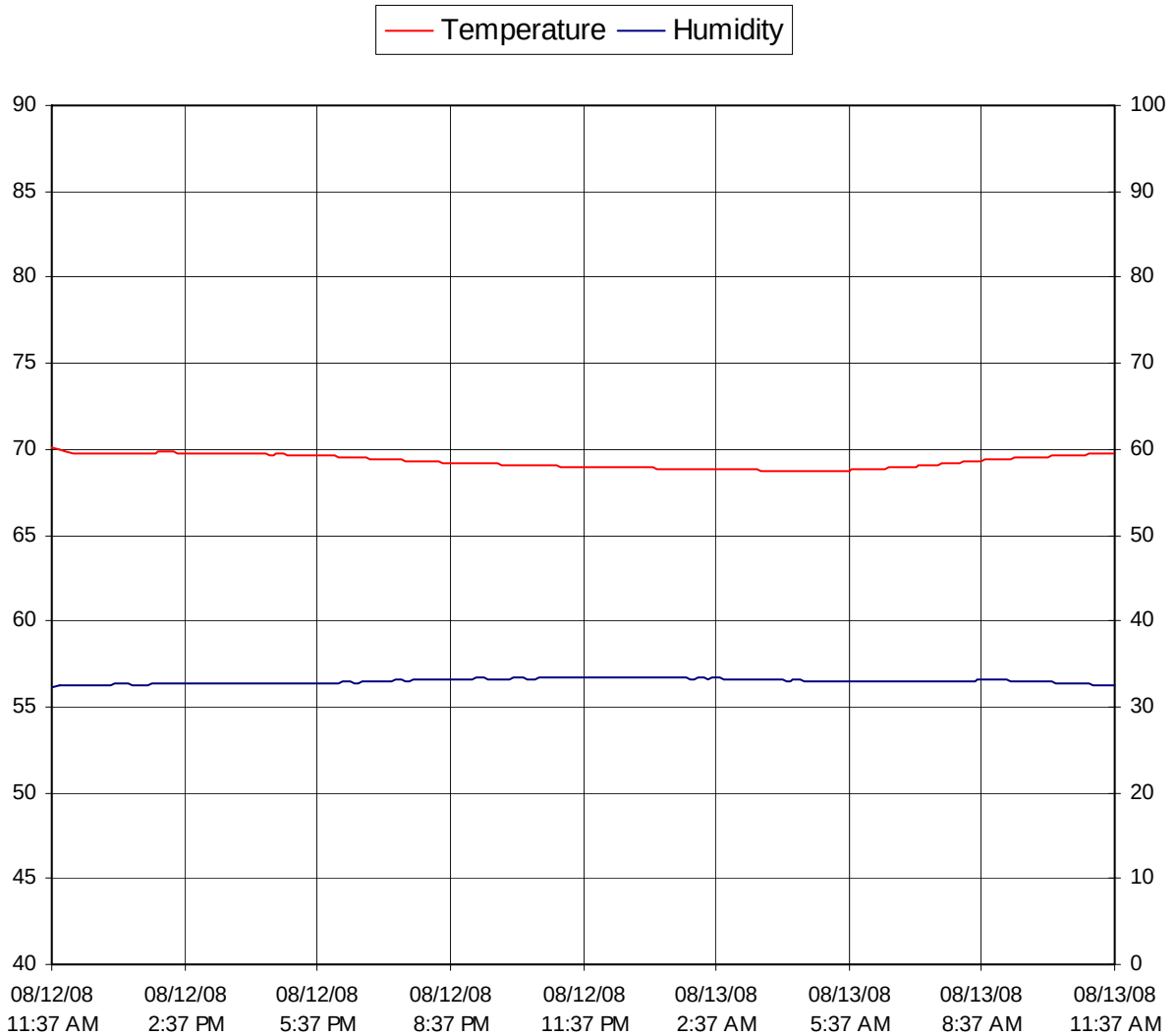
DUMMY / VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV

NHTSA No.: M90102

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 08/13/08



APPENDIX A
PHOTOGRAPHS

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Figure A-1: Right Front $\frac{3}{4}$ View, as Received



Figure A-2: Left Rear $\frac{3}{4}$ View, as Received



MFD BY CAMI AUTOMOTIVE INC.

06/08

GVWR
2300KG(5070LB)

GAWR FRT
1150KG(2535LB)

GAWR RR
1175KG(2590LB)

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR
VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE.

2CNDL13F196201811

TYPE: M.P.V.

MODEL: LF26

LBB3	TIRE SIZE	SPEED RTG	RIM	COLD TIRE PRESSURE
FRT	P235/65R16	S	16X6.5J	210KPA(30PSI)
RR	P235/65R16	S	16X6.5J	210KPA(30PSI)
SPA	T155/90D16	M	16X4T	420KPA(60PSI)

SEE OWNER'S MANUAL  FOR MORE INFORMATION.

Figure A-3: Manufacturer's Label



TIRE AND LOADING INFORMATION

SEATING CAPACITY : TOTAL 5 : FRONT 2 : REAR 3

The combined weight of occupants and cargo should never exceed 599 kg or 1320 lbs.

TIRE	ORIGINAL SIZE		COLD TIRE PRESSURE
FRONT	P235/65R16	S	210 kPa, 30 PSI
REAR	P235/65R16	S	210 kPa, 30 PSI
SPARE	T155/90D16	M	420 kPa, 60 PSI

**SEE OWNER'S
MANUAL FOR
ADDITIONAL
INFORMATION**

2CNDL13F196201811

Figure A-4: Tire Placard



Figure A-5: Pre-Test Front View



Figure A-6: Post-Test Front View



Figure A-7: Pre-Test Left Front 3/4 View



Figure A-8: Post-Test Left Front $\frac{3}{4}$ View



Figure A-9: Pre-Test Left Side View



Figure A-10: Post-Test Left Side View



Figure A-11: Pre-Test Left Rear $\frac{3}{4}$ View



Figure A-12: Post-Test Left Rear $\frac{3}{4}$ View



Figure A-13: Pre-Test Rear View



Figure A-14: Post-Test Rear View



Figure A-15: Pre-Test Right Rear $\frac{3}{4}$ View



Figure A-16: Post-Test Right Rear $\frac{3}{4}$ View



Figure A-17: Pre-Test Right Side View



Figure A-18: Post-Test Right Side View



Figure A-19: Pre-Test Right Front $\frac{3}{4}$ View



Figure A-20: Post-Test Right Front $\frac{3}{4}$ View



Figure A-21: Pre-Test Overhead View



Figure A-22: Post-Test Overhead View



Figure A-23: Pre-Test Overhead Close-up View



Figure A-24: Post-Test Overhead Close-up View

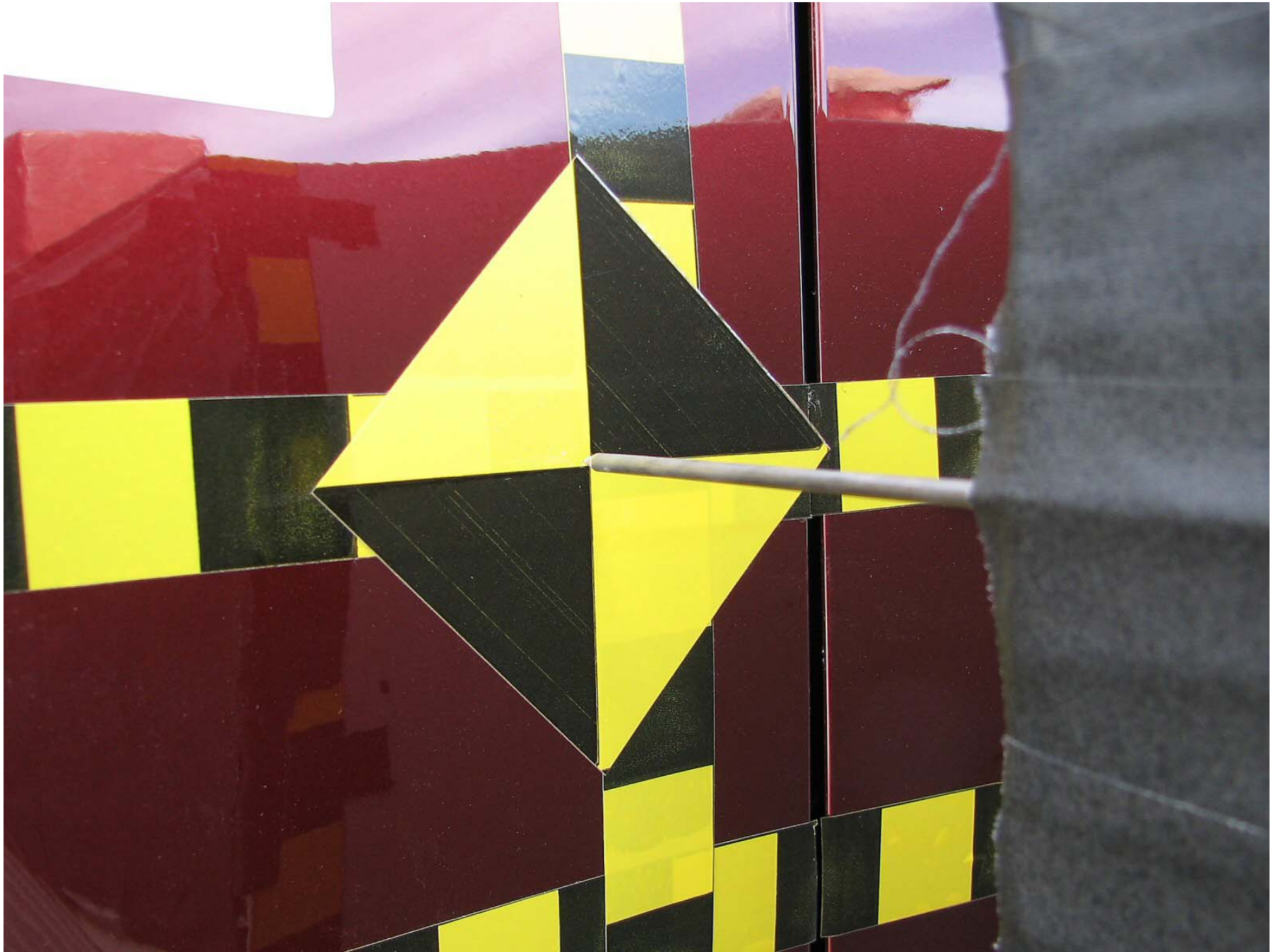


Figure A-25: Pre-Test Left Impact Point



Figure A-26: Post-Test Left Impact Point



Figure A-27: Pre-Test Front $\frac{3}{4}$ View of Left Side Door



Figure A-28: Post-Test Front $\frac{3}{4}$ View of Left Side Door



Figure A-29: Pre-Test Rear $\frac{3}{4}$ View of Left Side Door

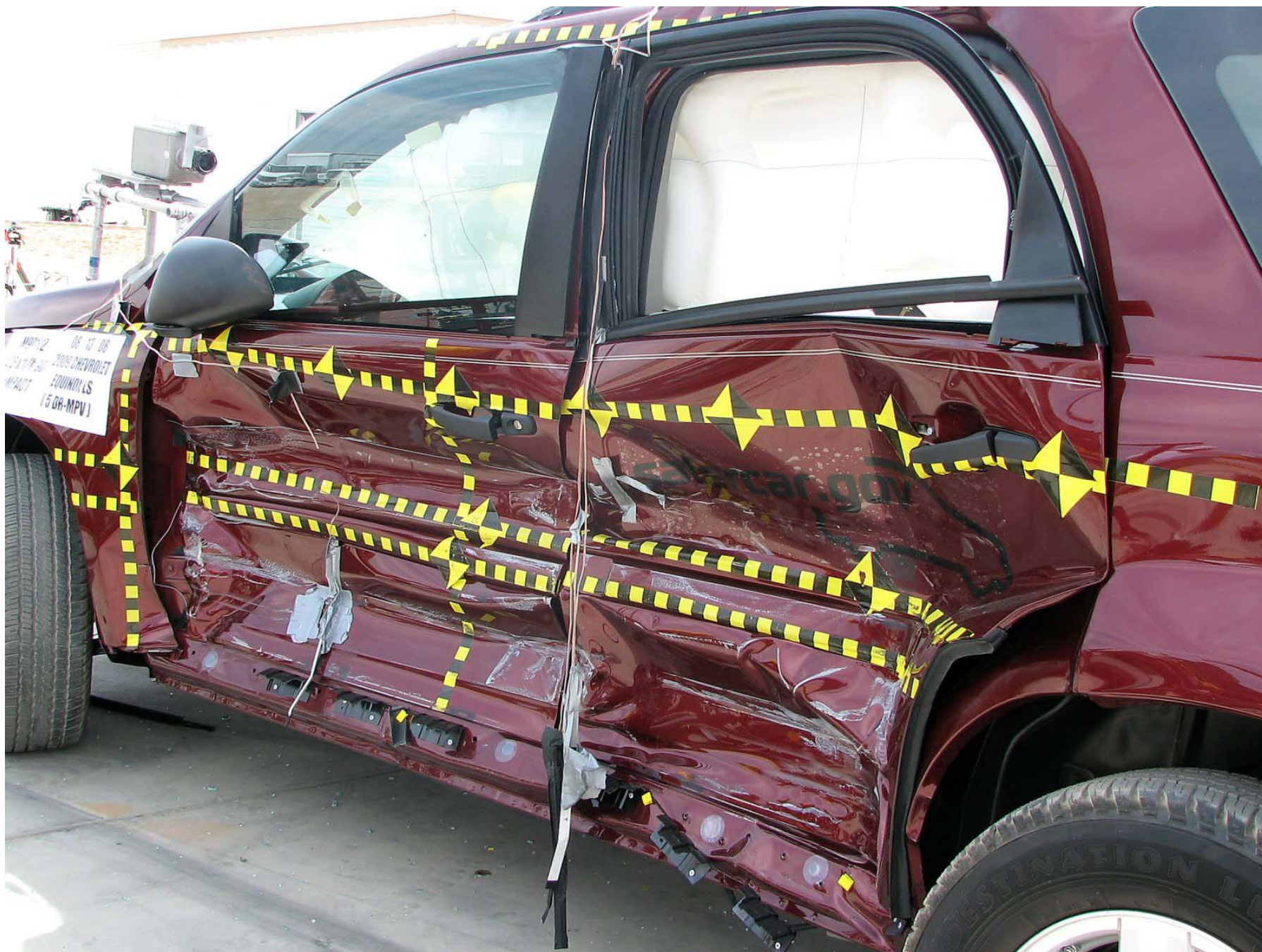


Figure A-30: Post-Test Rear $\frac{3}{4}$ View of Left Side Door



Figure A-31: Pre-Test Left Front Door

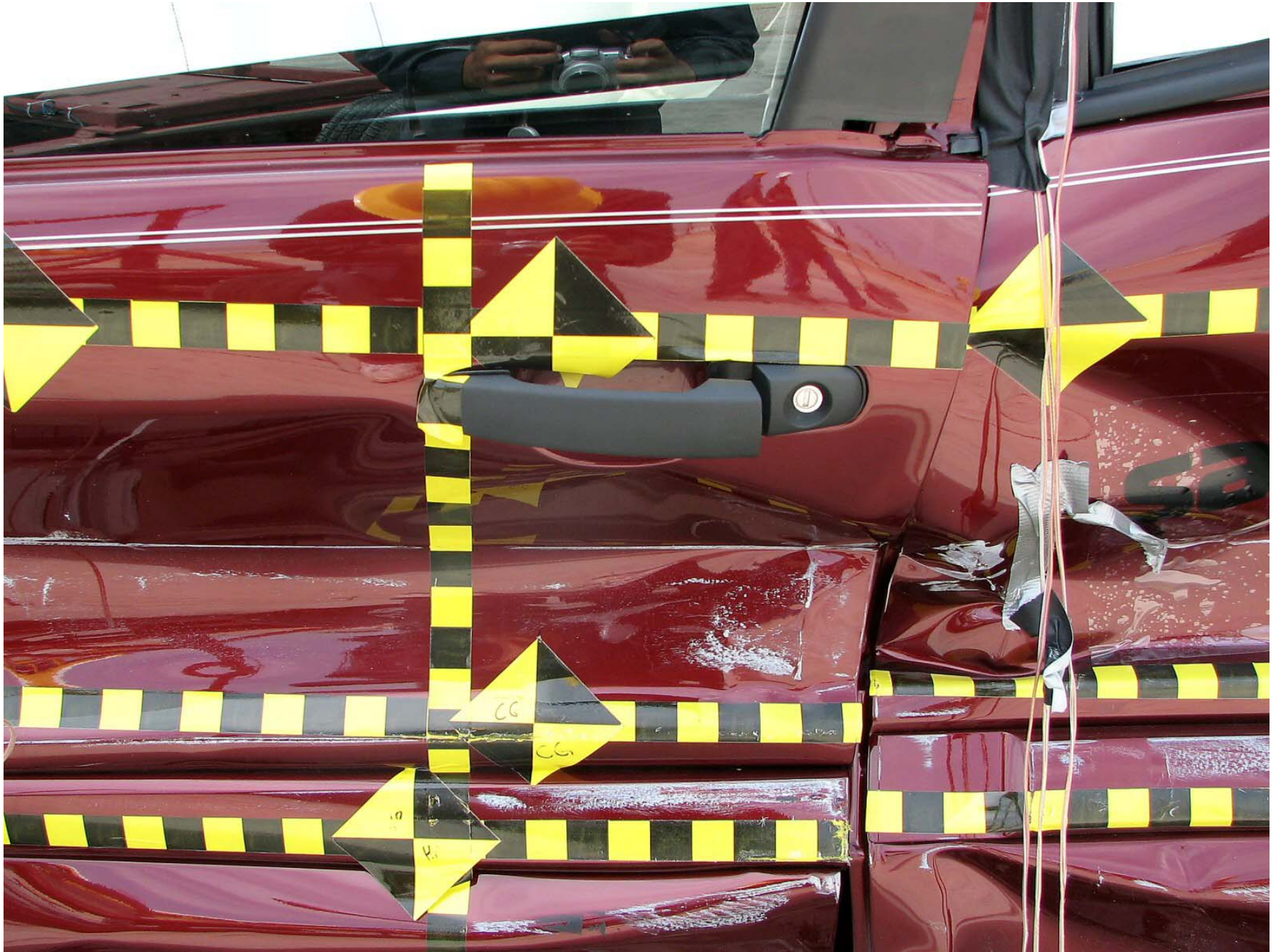


Figure A-32: Post-Test Left Front Door



Figure A-33: Pre-Test Left Rear Door



Figure A-34: Post-Test Left Rear Door



Figure A-35: Pre-Test Driver Dummy (Door Open)



Figure A-36: Pre-Test Driver Dummy (Through Window)



Figure A-37: Post-Test Driver Dummy (Through Window)



Figure A-38: Pre-Test Driver Dummy Clearance From Door



Figure A-39: Post-Test Driver Dummy Clearance From Door



Figure A-40: Pre-Test Driver Dummy Right Side View



Figure A-41: Post-Test Driver Dummy Right Side View

**Photograph Not
Available**

Figure A-42: Pre-Test Front Door Panel (Interior)



Figure A-43: Post-Test Front Door Panel (Interior)

**Photograph Not
Available**

Figure A-44: Pre-Test Passenger Dummy Left Side (Door Open)



Figure A-45: Pre-Test Passenger Dummy Left Side (Through Window)



Figure A-46: Post-Test Passenger Dummy Left Side (Through Window)



Figure A-47: Pre-Test Passenger Dummy Clearance From Door



Figure A-48: Post-Test Passenger Dummy Clearance From Door

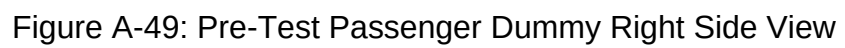




Figure A-50: Post-Test Passenger Dummy Right Side View

**Photograph Not
Available**

Figure A-51: Pre-Test Rear Door Panel (Interior)



Figure A-52: Post-Test Rear Door Panel (Interior)



Figure A-53: Pre-Test Front View of Deformable Barrier



Figure A-54: Post-Test Front View of Deformable Barrier



Figure A-55: Pre-Test Top View of Deformable Barrier

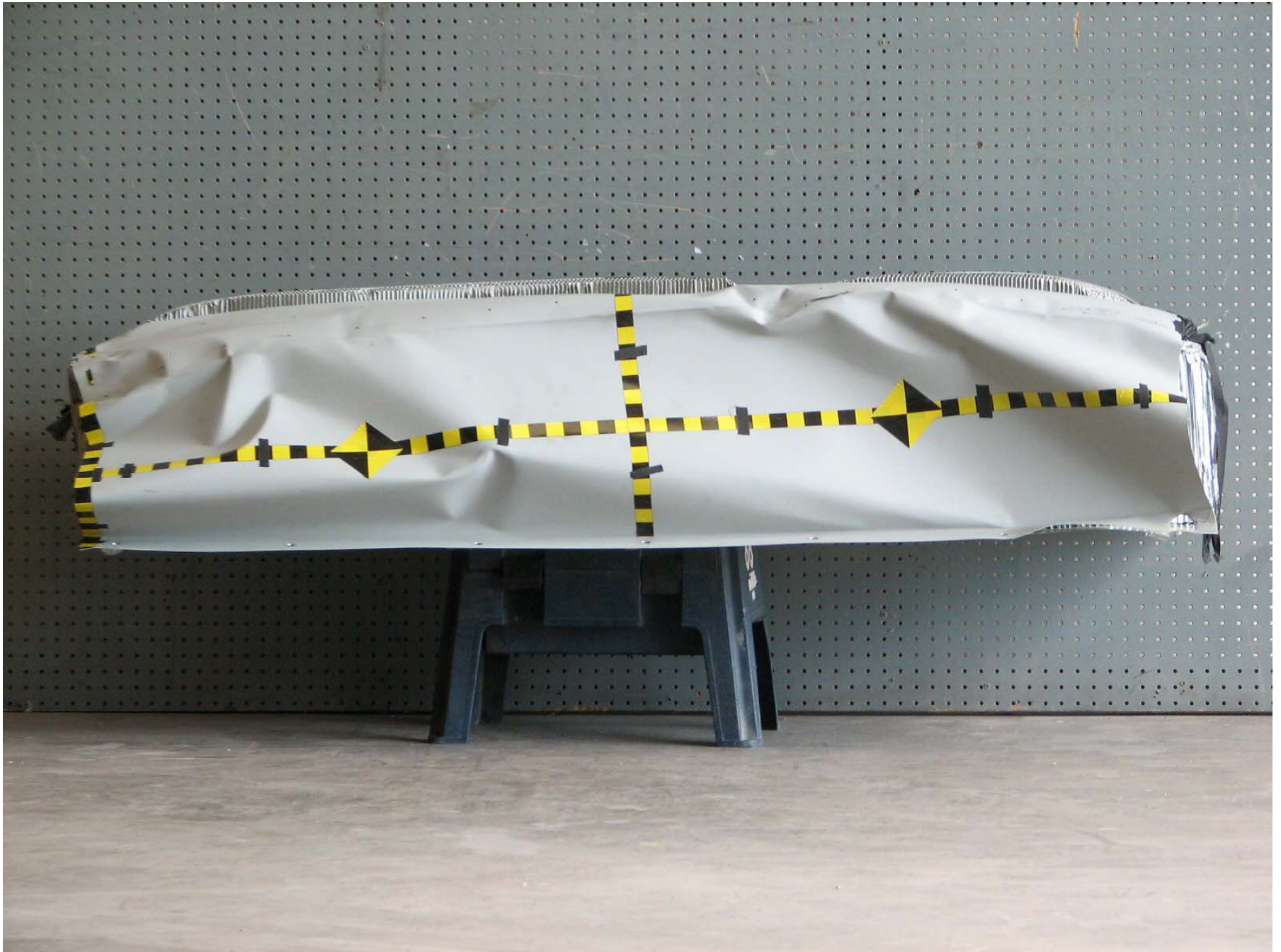


Figure A-56: Post-Test Top View of Deformable Barrier



Figure A-57: Pre-Test Right Side View of Deformable Barrier



Figure A-58: Post-Test Right Side View of Deformable Barrier



Figure A-59: Pre-Test Left Side View of Deformable Barrier



Figure A-60: Post-Test Left Side View of Deformable Barrier

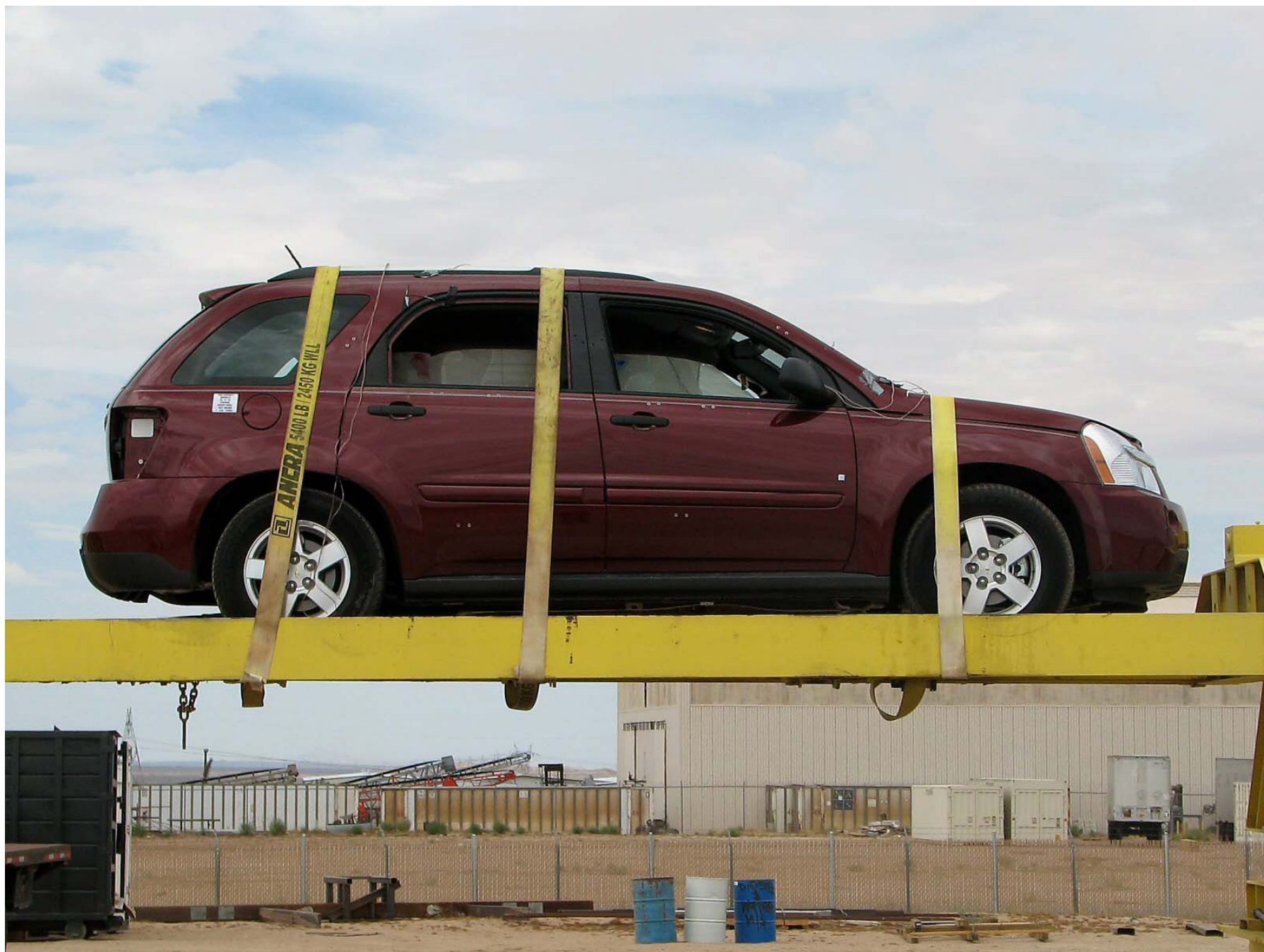


Figure A-61: Vehicle on Rollover Device (0°)



Figure A-62: Vehicle on Rollover Device (90°)



Figure A-63: Vehicle on Rollover Device (180°)

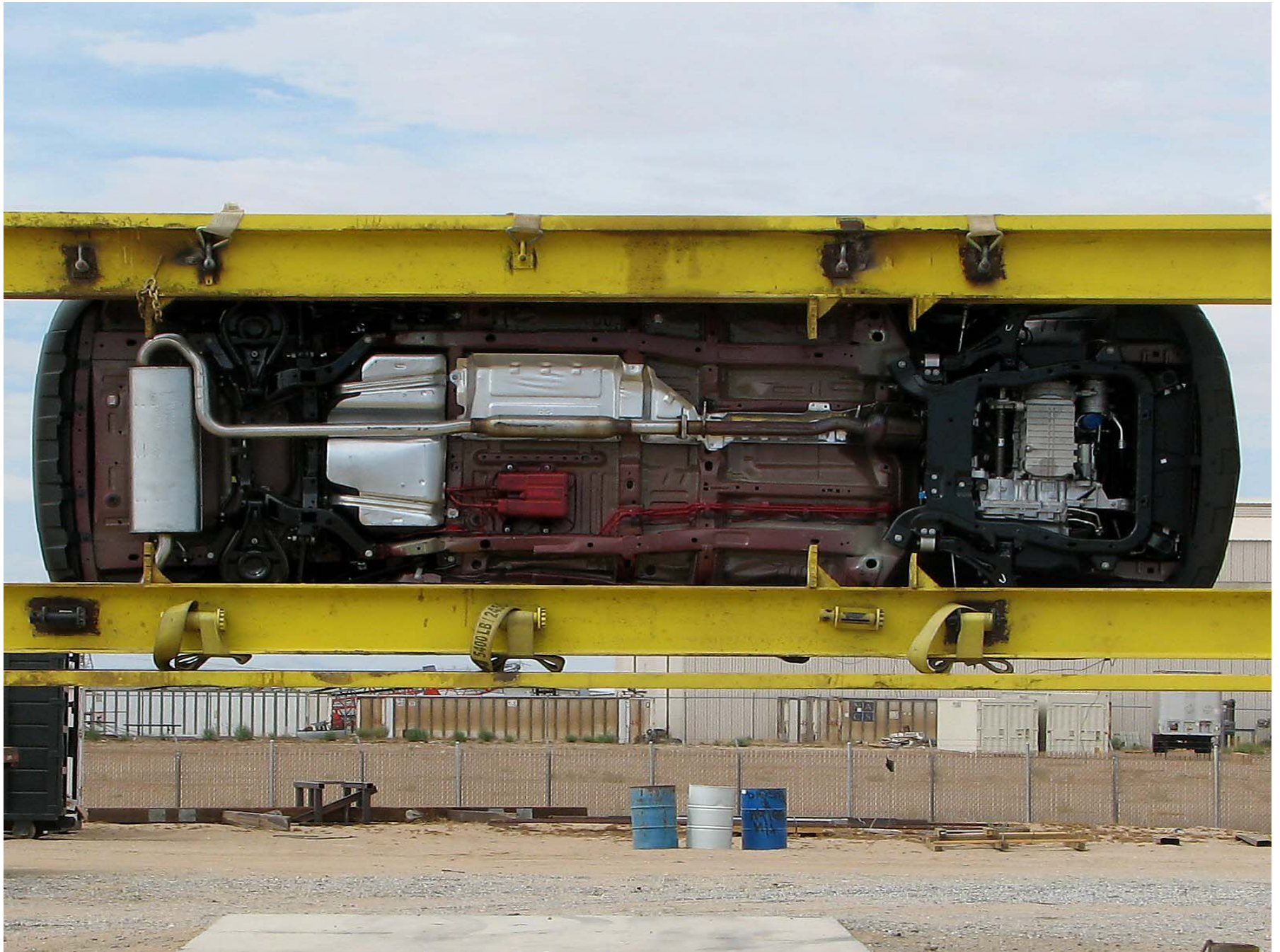


Figure A-64: Vehicle on Rollover Device (270°)



Figure A-65: Vehicle Impact

APPENDIX B
SID/HIII, VEHICLE AND MDB RESPONSE DATA

LIST OF DATA PLOTS

<u>Data Plot</u>	<u>Page</u>
B-1	Driver Upper Rib Primary Y
	Driver Lower Rib Primary Y
	Driver Lower Spine Primary Y
	Driver Pelvis Primary Y
B-2	Passenger Upper Rib Primary Y
	Passenger Lower Rib Primary Y
	Passenger Lower Spine Primary Y
	Passenger Pelvis Primary Y

The following additional data plots 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

LIST OF DATA PLOTS...(CONTINUED)

Driver Head X Primary
Driver Head Y Primary
Driver Head Z Primary
Driver Head Resultant Primary
Driver Head Primary X Velocity
Driver Head Primary Y Velocity
Driver Head Primary Z Velocity
Driver Head X Redundant
Driver Head Y Redundant
Driver Head Z Redundant
Driver Head Resultant Redundant
Driver Head Redundant X Velocity
Driver Head Redundant Y Velocity
Driver Head Redundant Z Velocity
Driver Upper Neck Force X
Driver Upper Neck Force Y
Driver Upper Neck Force Z
Driver Upper Neck Force Resultant
Driver Upper Neck Moment X
Driver Upper Neck Moment Y
Driver Upper Neck Moment Z
Driver Upper Neck Moment Resultant
Driver Upper Rib Primary Y Velocity
Driver Lower Rib Primary Y Velocity
Driver Lower Spine Primary Y Velocity
Driver Pelvis Primary Y Velocity
Driver Upper Rib Redundant Y
Driver Lower Rib Redundant Y
Driver Lower Spine Redundant Y
Driver Pelvis Redundant Y

LIST OF DATA PLOTS...(CONTINUED)

Driver Upper Rib Redundant Y Velocity
Driver Lower Rib Redundant Y Velocity
Driver Lower Spine Redundant Y Velocity
Driver Pelvis Redundant Y Velocity
Driver Thorax Contact
Driver Pelvis Contact
Passenger Head X Primary
Passenger Head Y Primary
Passenger Head Z Primary
Passenger Head Resultant Primary
Passenger Head Primary X Velocity
Passenger Head Primary Y Velocity
Passenger Head Primary Z Velocity
Passenger Head X Redundant
Passenger Head Y Redundant
Passenger Head Z Redundant
Passenger Head Resultant Redundant
Passenger Head Redundant X Velocity
Passenger Head Redundant Y Velocity
Passenger Head Redundant Z Velocity
Passenger Upper Neck Force X
Passenger Upper Neck Force Y
Passenger Upper Neck Force Z
Passenger Upper Neck Force Resultant
Passenger Upper Neck Moment X
Passenger Upper Neck Moment Y
Passenger Upper Neck Moment Z
Passenger Upper Neck Moment Resultant

LIST OF DATA PLOTS...(CONTINUED)

Passenger Upper Rib Primary Y Velocity
Passenger Lower Rib Primary Y Velocity
Passenger Lower Spine Primary Y Velocity
Passenger Pelvis Primary Y Velocity
Passenger Upper Rib Redundant Y
Passenger Lower Rib Redundant Y
Passenger Lower Spine Redundant Y
Passenger Pelvis Redundant Y
Passenger Upper Rib Redundant Y Velocity
Passenger Lower Rib Redundant Y Velocity
Passenger Lower Spine Redundant Y Velocity
Passenger Pelvis Redundant Y Velocity
Passenger Thorax Contact
Passenger Pelvis Contact
Vehicle Right Sill at Front Seat X
Vehicle Right Sill at Front Seat Y
Vehicle Right Sill at Front Seat Z
Vehicle Right Sill Front Seat Resultant
Vehicle Right Sill at Front Seat X Velocity
Vehicle Right Sill at Front Seat Y Velocity
Vehicle Right Sill at Front Seat Z Velocity
Vehicle Right Sill at Rear Seat X
Vehicle Right Sill at Rear Seat Y
Vehicle Right Sill at Rear Seat Z
Vehicle Right Sill Rear Seat Resultant
Vehicle Right Sill at Rear Seat X Velocity
Vehicle Right Sill at Rear Seat Y Velocity
Vehicle Right Sill at Rear Seat Z Velocity
Vehicle Rear Floor Above Axle X
Vehicle Rear Floor Above Axle Y
Vehicle Rear Floor Above Axle Z
Vehicle Rear Floor Above Axle Resultant
Vehicle Rear Floor Above Axle X Velocity
Vehicle Rear Floor Above Axle Y Velocity
Vehicle Rear Floor Above Axle Z Velocity

LIST OF DATA PLOTS...(CONTINUED)

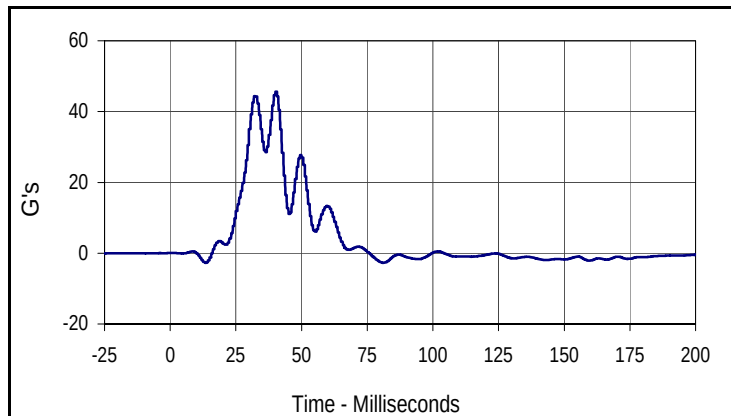
Vehicle Left Sill at Rear Door Y
Vehicle Left Sill at Front Door Y
Vehicle Left Sill at Rear Door Y Velocity
Vehicle Left Sill at Front Door Y Velocity
Vehicle Left Front Door C/L Y
Vehicle Right Rear Occupant Compartment
Vehicle Left Front Door Mid Rear Y
Vehicle Left Front Door Upper CL Y
Vehicle Left Front Door CL Y Velocity
Vehicle Right Rear Occupant Compartment Y Velocity
Vehicle Left Front Door Mid Rear Y Velocity
Vehicle Left Rear Door Upper CL Y Velocity
Vehicle Left Rear Door Mid Rear Y
Vehicle Left Rear Door Upper C/L Y
Vehicle Left Rear Door Mid Rear Y Velocity
Vehicle Left Rear Door Upper CL Y Velocity
Vehicle B-Post Lower Y
Vehicle B-Post Middle Y
Vehicle B-Post Lower Y Velocity
Vehicle B-Post Middle Y Velocity
Vehicle A-Post Lower Y
Vehicle A-Post Middle Y
Vehicle A-Post Lower Y Velocity
Vehicle A-Post Middle Y Velocity
Vehicle Left Front Seat Track
Vehicle Rear Seat Structure
Vehicle Left Front Seat Track Y Velocity
Vehicle Rear Seat Structure Y Velocity
Vehicle CG X
Vehicle CG Y
Vehicle CG Z
Vehicle CG Resultant
Vehicle CG X Velocity
Vehicle CG Y Velocity
Vehicle CG Z Velocity

LIST OF DATA PLOTS...(CONTINUED)

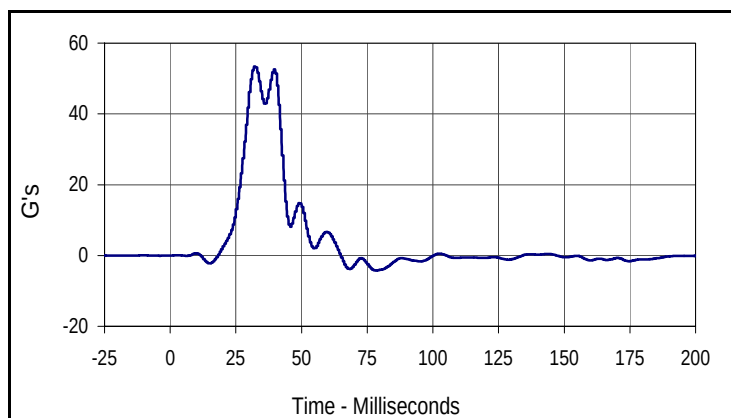
Driver Upper Rib Primary Y
Driver Lower Rib Primary Y
Driver Lower Spine Primary Y
Driver Pelvis Primary Y
Driver Upper Rib Redundant Y
Driver Lower Rib Redundant Y
Driver Lower Spine Redundant Y
Driver Pelvis Redundant Y
Passenger Upper Rib Primary Y
Passenger Lower Rib Primary Y
Passenger Lower Spine Primary Y
Passenger Pelvis Primary Y
Passenger Upper Rib Redundant Y
Passenger Lower Rib Redundant Y
Passenger Lower Spine Redundant Y
Passenger Pelvis Redundant Y
MDB CG X
MDB CG Y
MDB CG Z
MDB CG Resultant
MDB CG X Velocity
MDB CG Y Velocity
MDB CG Z Velocity
MDB Rear X
MDB Rear Y
MDB Rear X Velocity
MDB Rear Y Velocity
MDB Right Bumper Contact

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

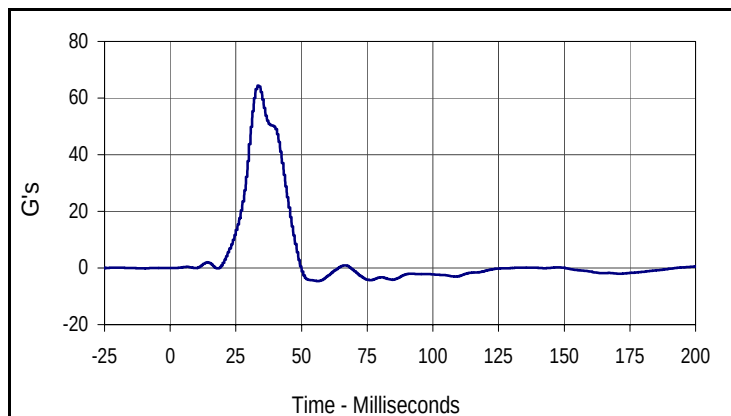
Test Date: 8/13/08
 NHTSA No.: M90102



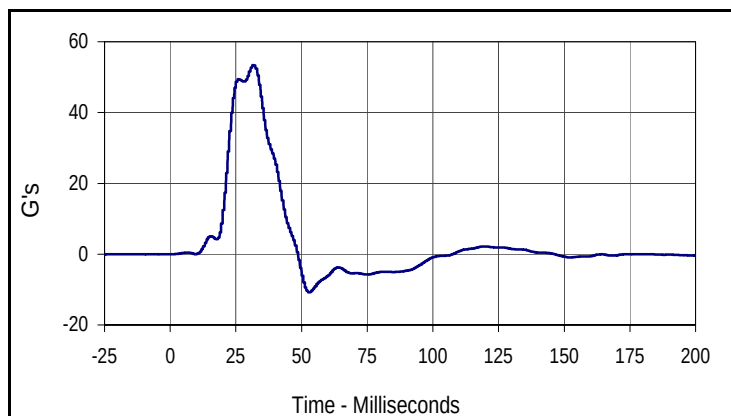
Curve Description			
Driver Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
001	FIR	FIR100	G's
Max	Time	Min	Time
45.7	40.0	-2.7	80.7



Curve Description			
Driver Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
002	FIR	FIR100	G's
Max	Time	Min	Time
53.4	31.9	-4.3	78.2



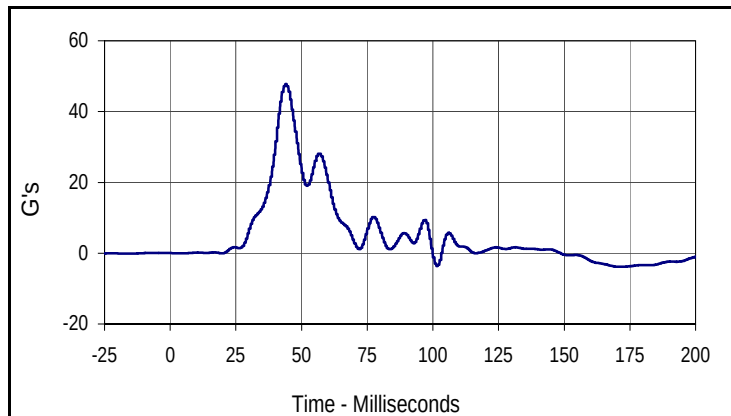
Curve Description			
Driver Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
003	FIR	FIR100	G's
Max	Time	Min	Time
64.4	33.2	-4.7	56.3



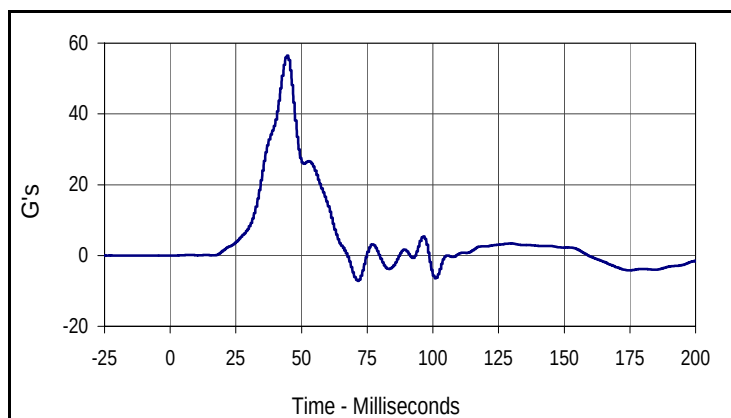
Curve Description			
Driver Pelvis Y Primary			
CURNO	Type	SAE Class	Units
004	FIR	FIR100	G's
Max	Time	Min	Time
53.4	31.3	-10.7	52.5

Test Vehicle: 2009 Chevrolet Equinox LS 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

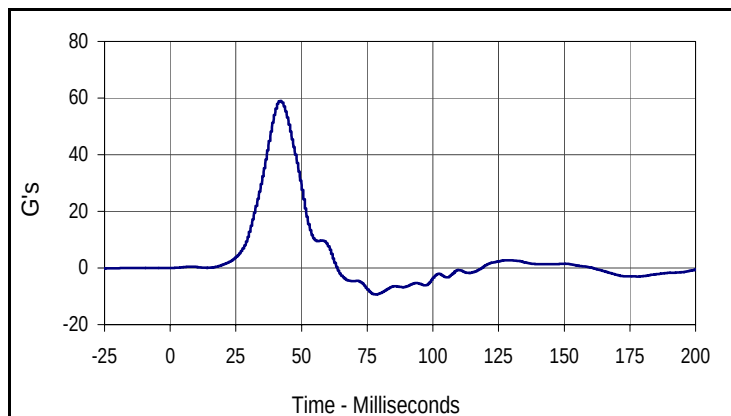
Test Date: 8/13/08
 NHTSA No.: M90102



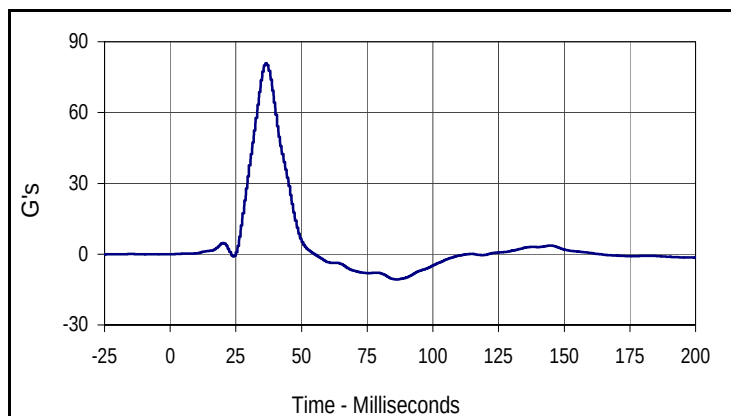
Curve Description			
Passenger Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
005	FIR	FIR100	G's
Max	Time	Min	Time
47.8	43.8	-3.8	171.3



Curve Description			
Passenger Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
006	FIR	FIR100	G's
Max	Time	Min	Time
56.4	44.4	-7.2	71.3



Curve Description			
Passenger Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
007	FIR	FIR100	G's
Max	Time	Min	Time
59.0	41.9	-9.3	78.2



Curve Description			
Passenger Pelvis Primary Y			
CURNO	Type	SAE Class	Units
008	FIR	FIR100	G's
Max	Time	Min	Time
80.9	36.3	-10.7	85.7

APPENDIX C
SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

APPENDIX C
PRE-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: SID / HIII External Measurements
ATD Serial No.: 274

Test Date: 7/17/08
Test I.D.: N/A



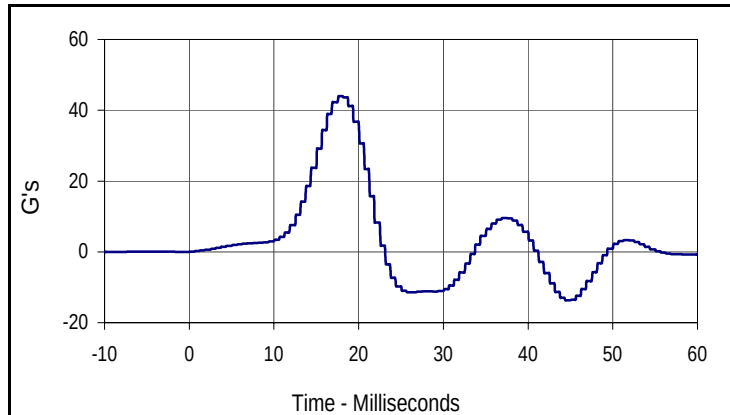
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	892	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	515	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	521	Pass
KV- Knee Pivot From Floor	mm	490 to 505	498	Pass
HW- Hip Width	mm	356 to 391	366	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 274

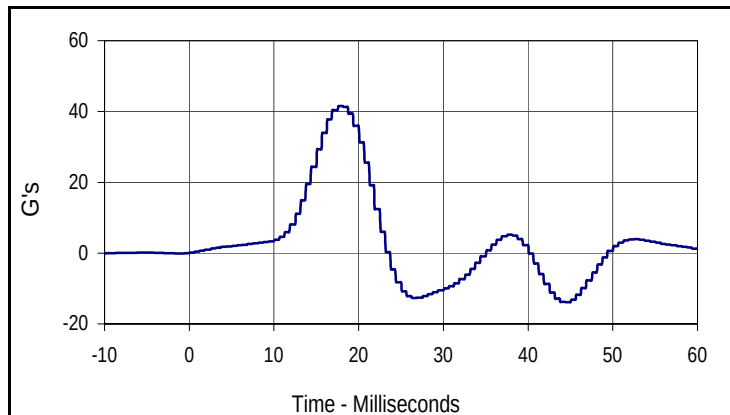
Test Date: 7/17/08
 Test I.D.: TH07G



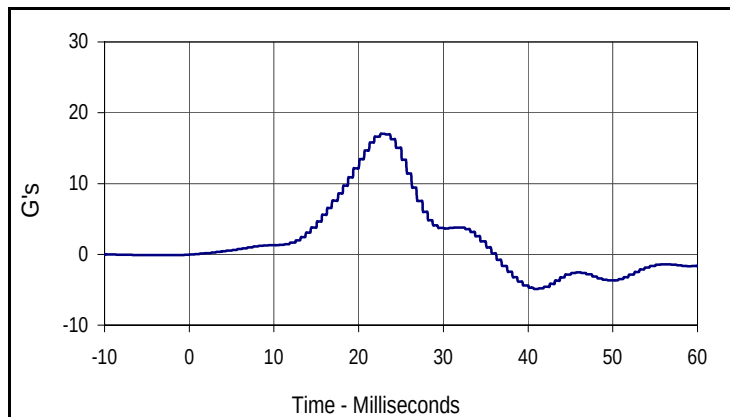
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.33	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	44.0	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	41.6	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	17.0	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
44.0	17.6	-13.7	44.4



Curve Description			
Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
41.6	17.6	-13.9	44.4



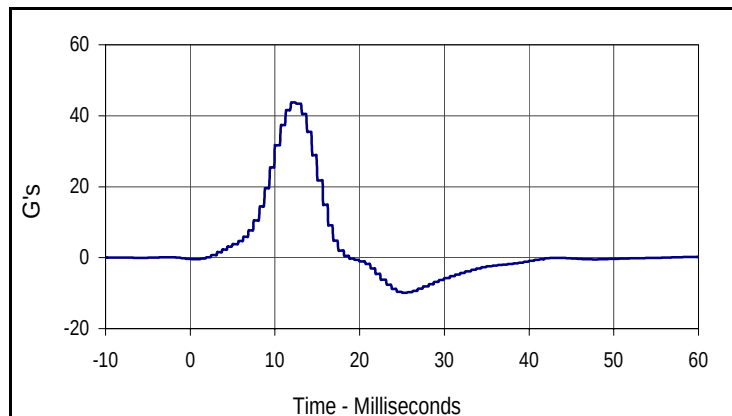
Curve Description			
Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
17.0	22.6	-4.9	40.7

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 274

Test Date: 7/17/08
 Test I.D.: PL07G



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.32	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	43.8	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	5.50	Pass
Overall Test Results				Pass



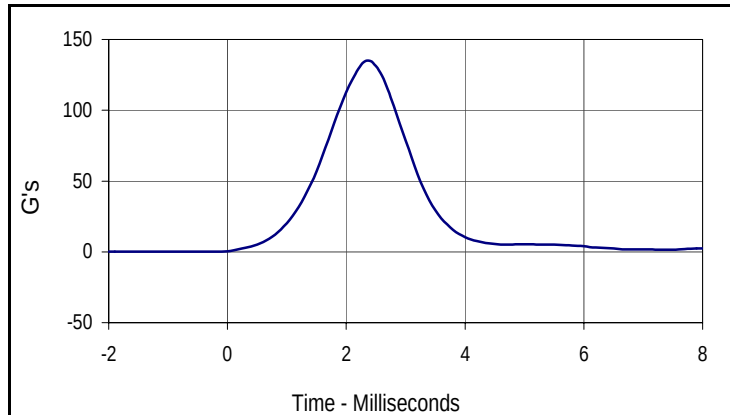
Curve Description			
Pelvis Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
43.8	11.9	-9.9	25.0

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 274

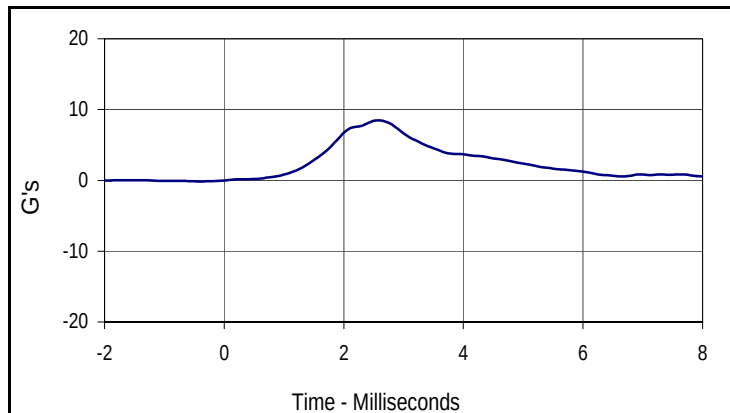
Test Date: 7/17/08
 Test I.D.: HD07G



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	135.0	Pass
Peak Longitudinal Acceleration	G's	≤15.0	8.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	4.0	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
135.0	2.4	0.1	-1.0



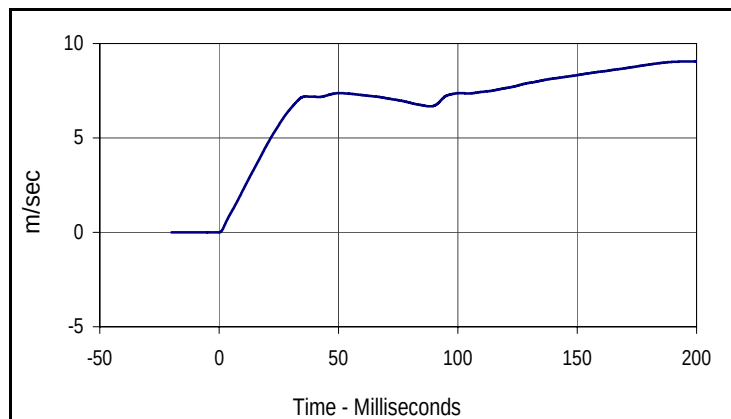
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
8.5	2.6	-0.1	-0.4

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 274

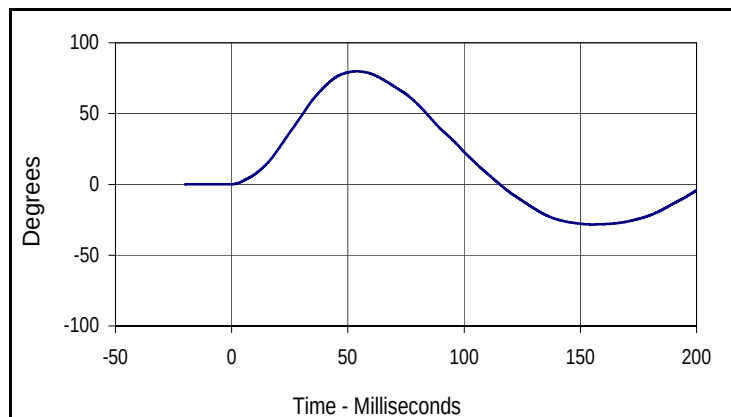
Test Date: 7/17/08
 Test I.D.: NB07G



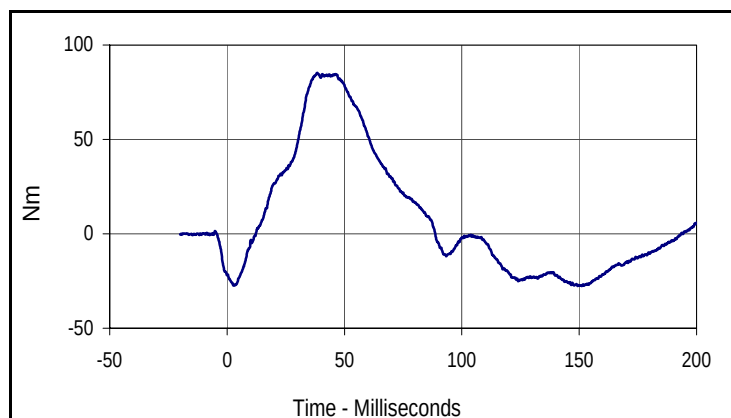
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	7.09	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.25	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.63	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.57	Pass
	40 to 70	m/sec	6.27 to 7.64	7.37	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	79.8	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	15.5	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	61.6	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	85.2	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	50.4	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
9.1	196.6	0.0	-0.1



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
79.8	53.8	-28.3	155.3



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
85.2	38.3	-27.7	151.0

Test Program: SID / HIII External Measurements
 ATD Serial No.: 275

Test Date: 7/17/08
 Test I.D.: N/A



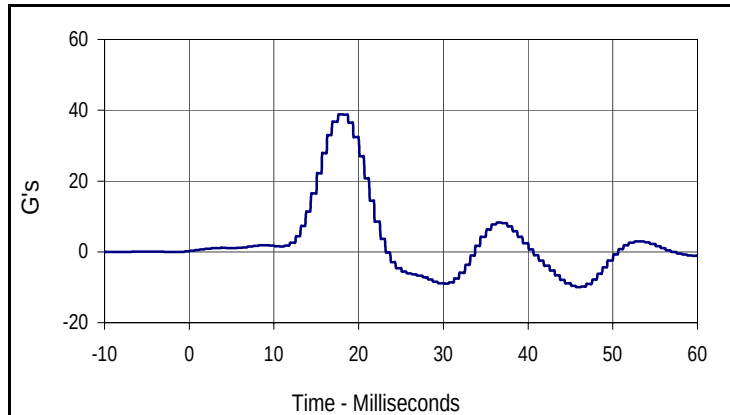
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	899	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	516	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	519	Pass
KV- Knee Pivot From Floor	mm	490 to 505	496	Pass
HW- Hip Width	mm	356 to 391	365	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 275

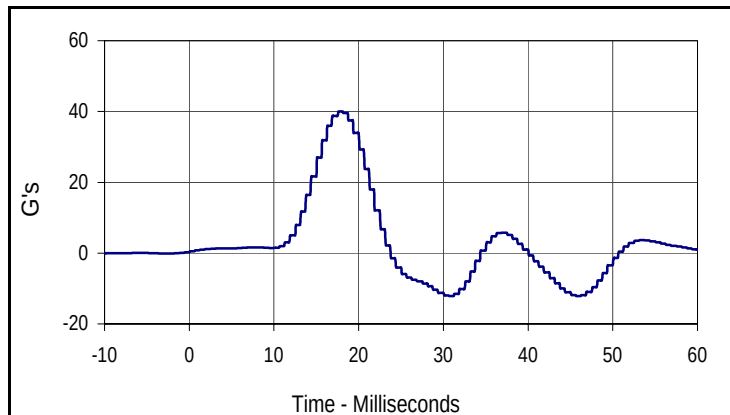
Test Date: 7/17/08
 Test I.D.: TH07F



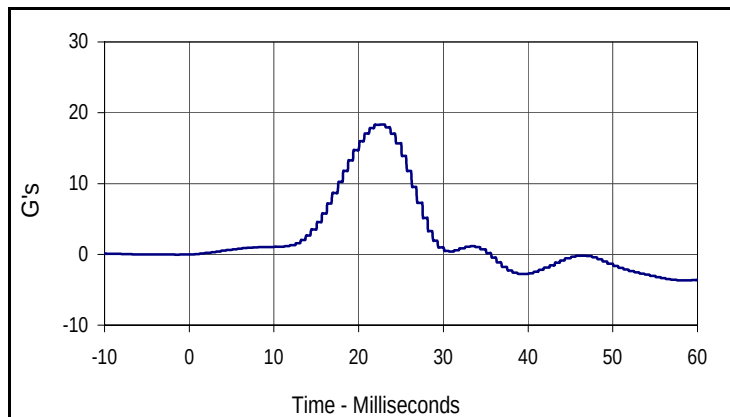
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.33	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	38.8	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	40.0	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	18.3	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
38.8	17.6	-10.0	45.7



Curve Description			
Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
40.0	17.6	-12.1	45.7



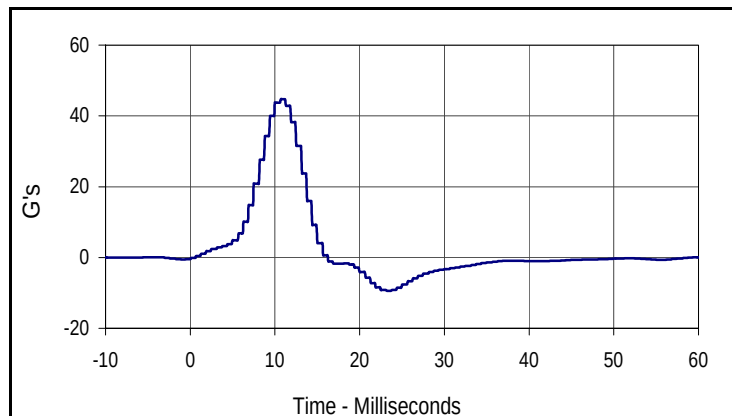
Curve Description			
Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
18.3	22.6	-3.7	58.2

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 275

Test Date: 7/17/08
 Test I.D.: PL07F



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.32	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	44.7	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	4.90	Pass
Overall Test Results				Pass



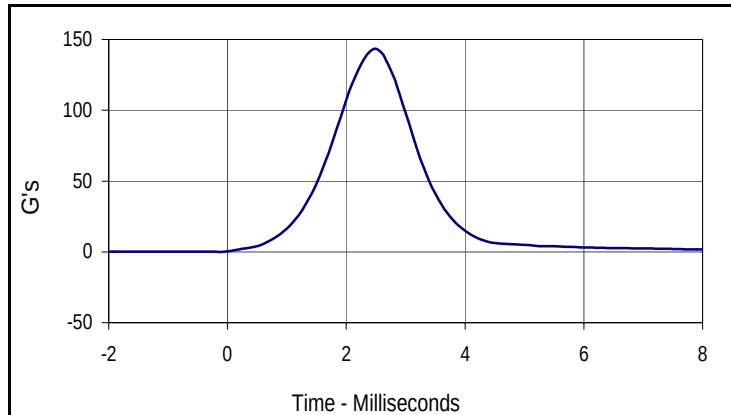
Curve Description			
Pelvis Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
44.7	10.7	-9.4	23.2

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 275

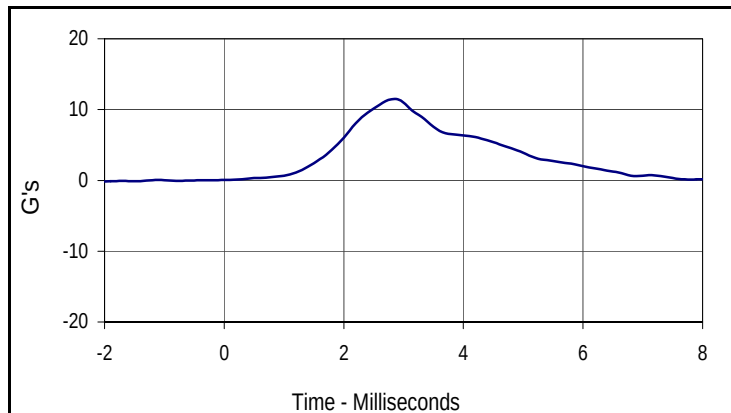
Test Date: 7/17/08
 Test I.D.: HD07F



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	143.4	Pass
Peak Longitudinal Acceleration	G's	≤15.0	11.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.4	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
143.4	2.5	0.0	-0.1



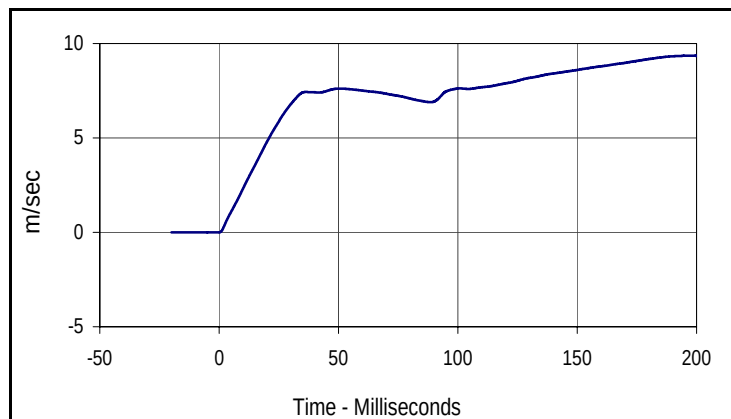
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
11.5	2.8	-0.1	-2.0

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 275

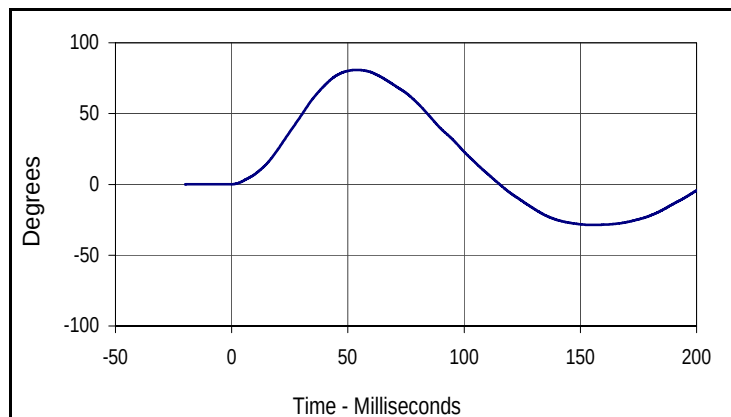
Test Date: 5/19/08
 Test I.D.: NB05C



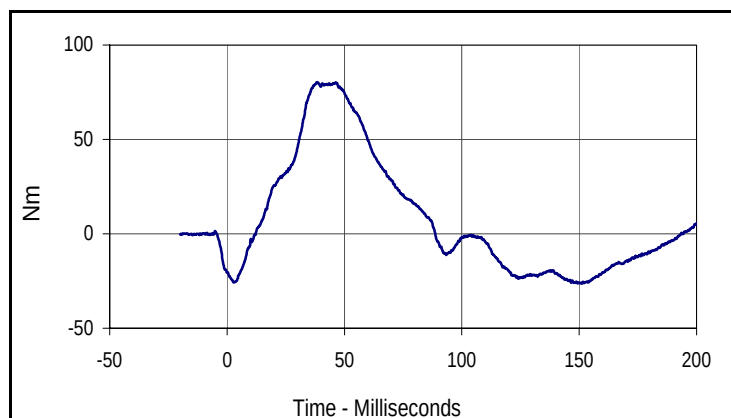
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	7.09	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.32	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.79	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.79	Pass
	40 to 70	m/sec	6.27 to 7.64	7.62	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	80.9	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	15.5	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	61.6	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	80.4	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	50.4	Pass
Overall Test Results					Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
9.4	196.6	0.0	-0.1



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
80.9	53.8	-28.7	155.3



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
80.4	38.3	-26.4	151.0

APPENDIX C
POST-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: SID / HIII External Measurements
 ATD Serial No.: 274

Test Date: 8/14/08
 Test I.D.: N/A



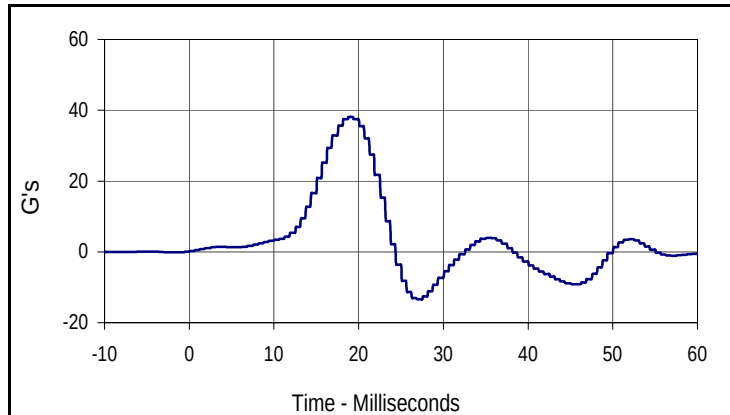
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	890	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	517	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	522	Pass
KV- Knee Pivot From Floor	mm	490 to 505	499	Pass
HW- Hip Width	mm	356 to 391	364	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 274

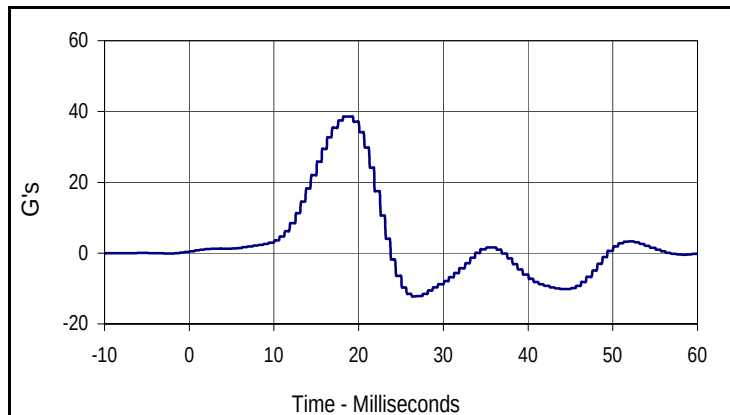
Test Date: 8/14/08
 Test I.D.: TH07H



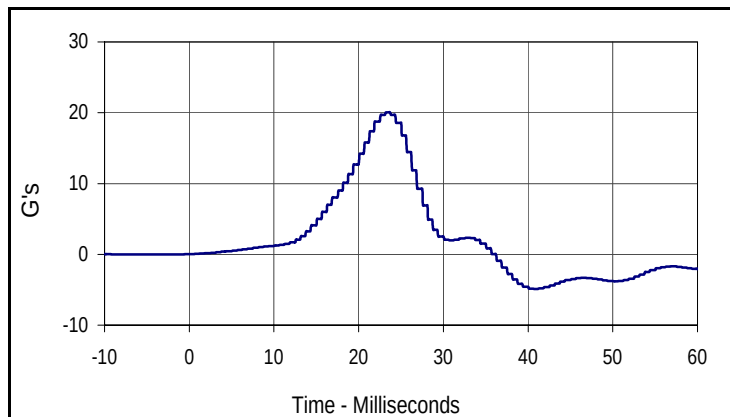
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.33	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	38.1	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	38.6	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	20.1	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
38.1	18.8	-13.4	26.9



Curve Description			
Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
38.6	18.2	-12.2	26.3



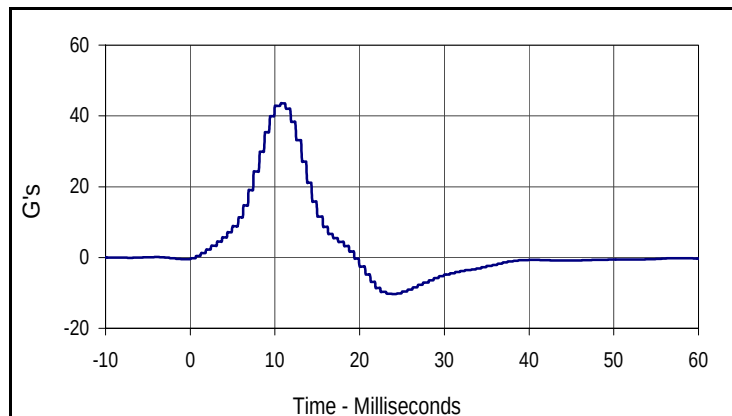
Curve Description			
Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
20.1	23.2	-4.9	40.7

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 274

Test Date: 8/14/08
 Test I.D.: PL07H



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.32	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	43.5	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	4.90	Pass
Overall Test Results				Pass



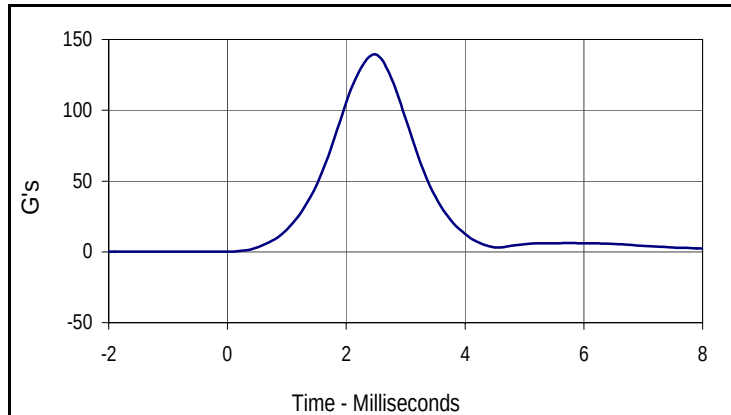
Curve Description			
Pelvis Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
43.5	10.7	-10.4	23.8

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 274

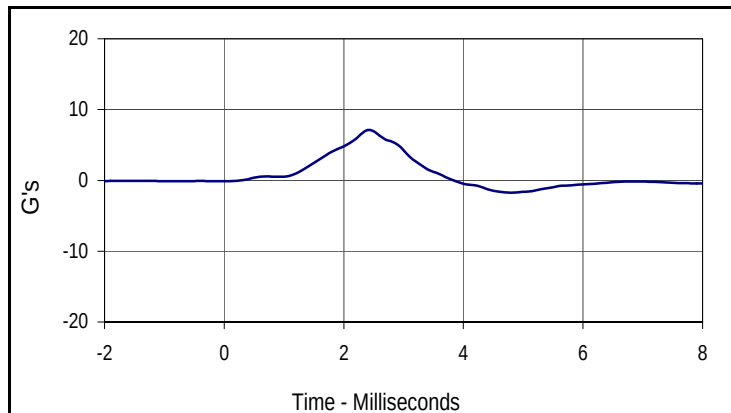
Test Date: 8/14/08
 Test I.D.: HD07H



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	139.5	Pass
Peak Longitudinal Acceleration	G's	≤15.0	7.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	4.5	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
139.5	2.5	0.1	-1.4



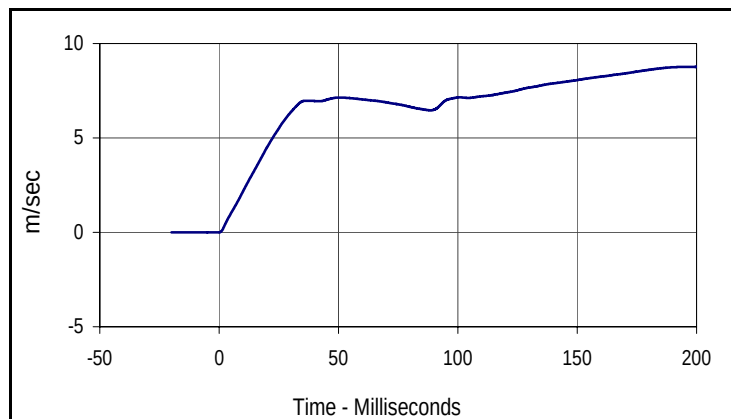
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
7.1	2.4	-1.7	4.8

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 274

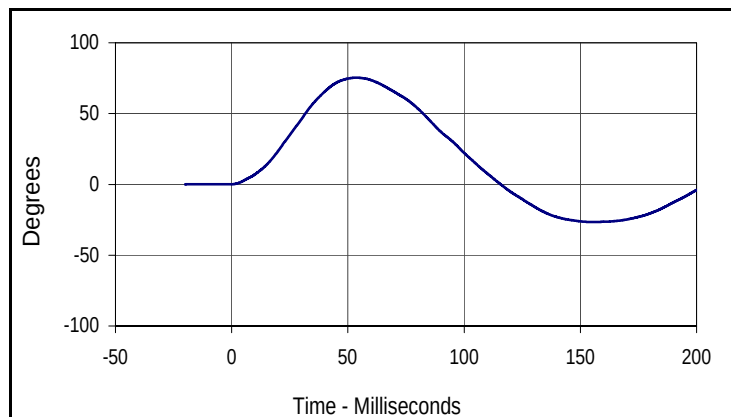
Test Date: 8/14/08
 Test I.D.: NB07H



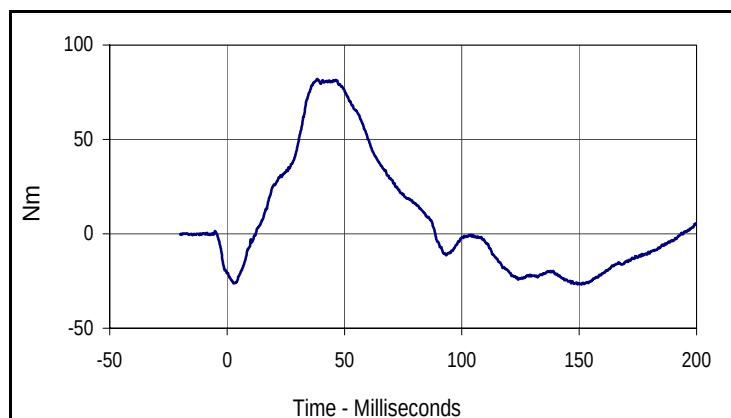
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	7.09	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.18	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.49	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.37	Pass
	40 to 70	m/sec	6.27 to 7.64	7.14	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	75.3	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	15.3	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	62.2	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	82.0	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	50.4	Pass
Overall Test Results					Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
8.8	196.6	0.0	-0.1



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
75.3	53.6	-26.6	155.3



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
82.0	38.3	-26.8	151.0

Test Program: SID / HIII External Measurements
 ATD Serial No.: 275

Test Date: 8/14/08
 Test I.D.: N/A



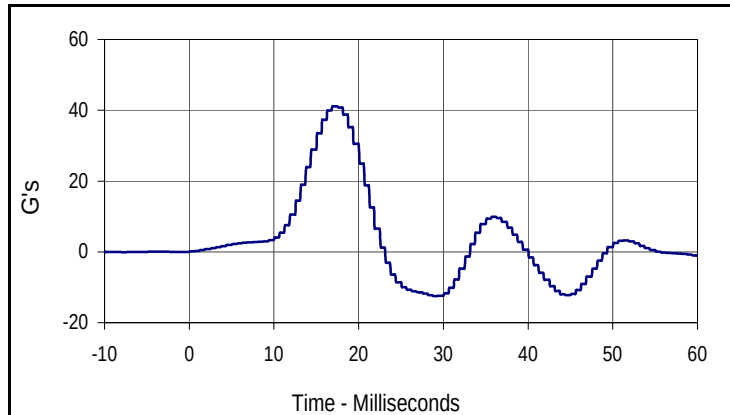
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	897	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	517	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	520	Pass
KV- Knee Pivot From Floor	mm	490 to 505	494	Pass
HW- Hip Width	mm	356 to 391	361	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 275

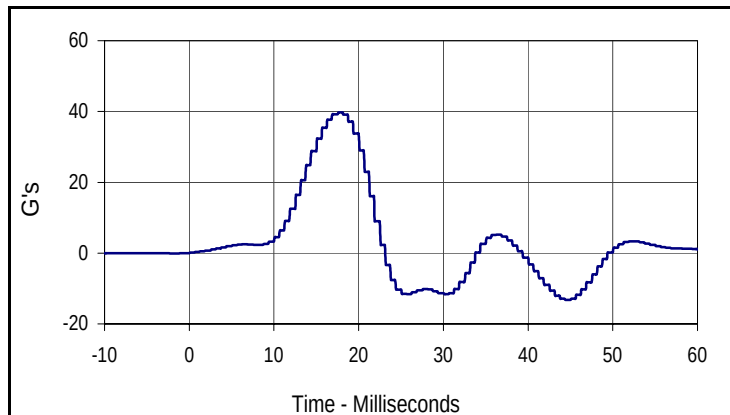
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 Test I.D.: TH07I



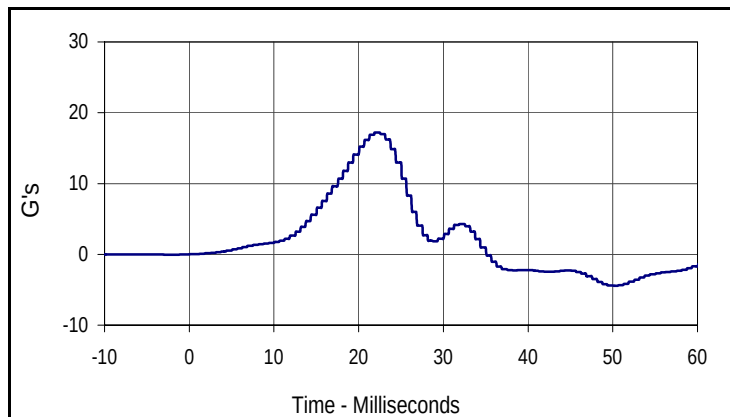
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.33	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	41.1	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	39.7	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	17.2	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
41.1	16.9	-12.5	28.8



Curve Description			
Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
39.7	17.6	-13.2	44.4



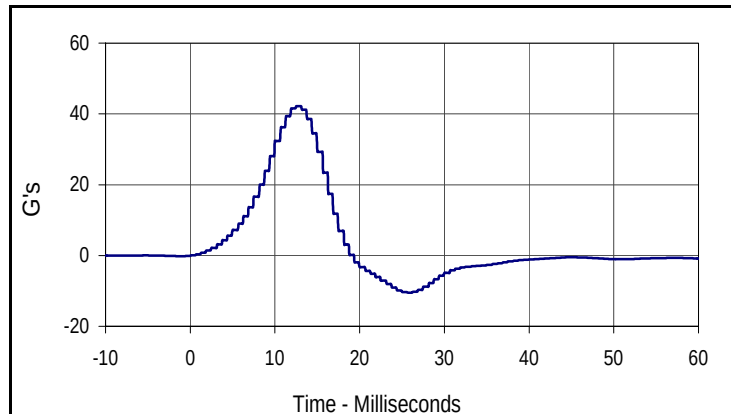
Curve Description			
Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
17.2	21.9	-4.4	50.1

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 275

Test Date: 8/14/08
 Test I.D.: PL07I



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.32	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	42.2	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.70	Pass
Overall Test Results				Pass



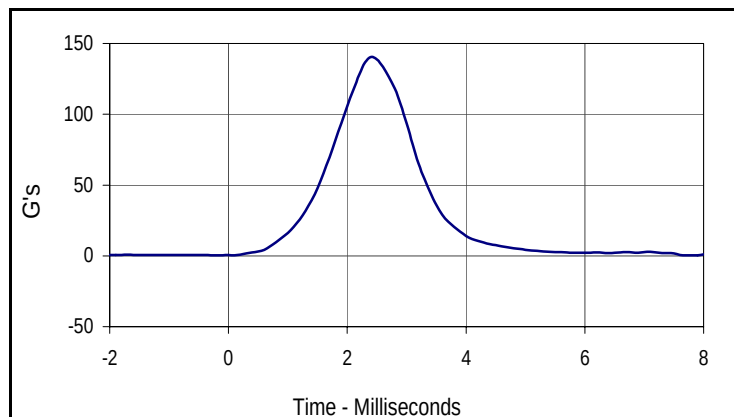
Curve Description			
Pelvis Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
42.2	12.5	-10.5	25.7

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 275

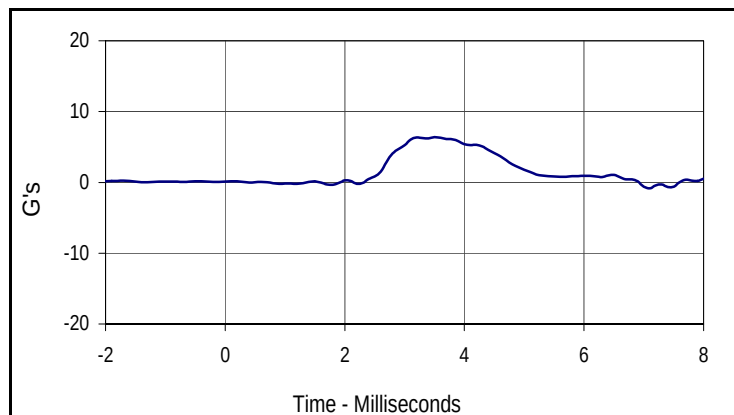
Test Date: 8/14/08
 Test I.D.: HD07I



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	140.5	Pass
Peak Longitudinal Acceleration	G's	≤15.0	6.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.1	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
140.5	2.4	0.5	-0.2



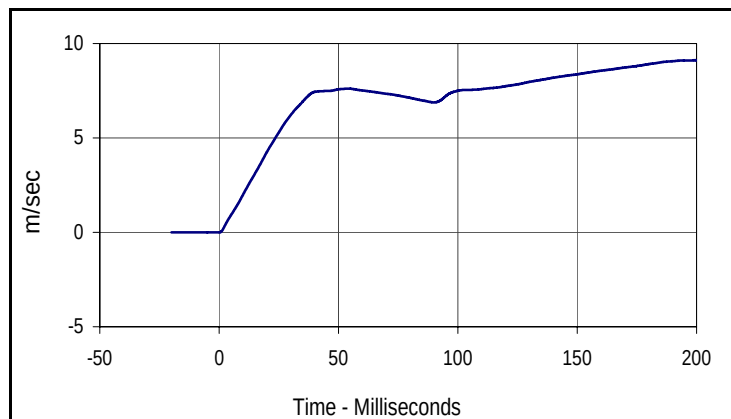
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
6.4	3.5	-0.3	1.8

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 275

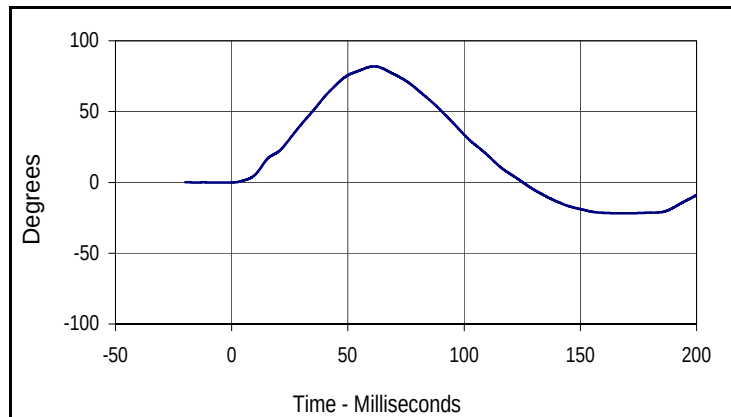
Test Date: 8/14/08
 Test I.D.: NB07I



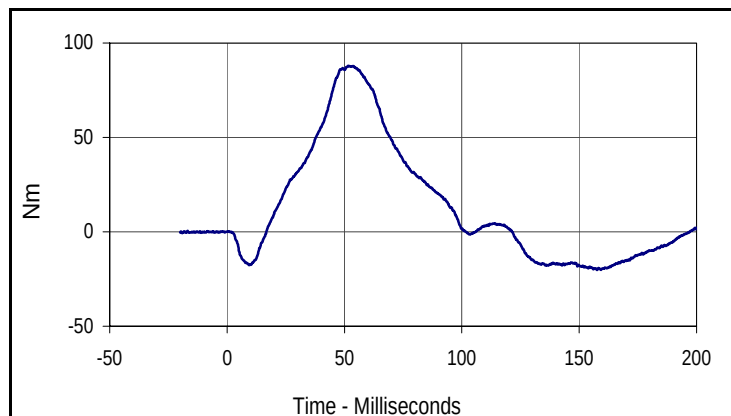
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	7.09	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.00	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.25	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.21	Pass
	40 to 70	m/sec	6.27 to 7.64	7.61	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	81.9	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	9.7	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	64.0	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	87.9	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	50.3	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
9.1	200.0	0.0	-0.1



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
81.9	61.3	-21.8	167.2



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
87.9	51.6	-20.1	157.6