

REPORT NUMBER: SPNCAP-KAR-11-036

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

**NISSAN MOTOR CO., LTD.
2011 NISSAN SENTRA 2.0 4-DOOR SEDAN**

NHTSA No: MB5212

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



OCTOBER 29, 2010

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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15. Supplementary Notes																							
16. Abstract A 32.2 km/h (20 mph) 75° oblique impact Side NCAP test was conducted on the subject 2011 Nissan Sentra 2.0 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. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on October 29, 2010. The impact velocity was 31.97 km/h and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 25.0° C. The test vehicle's post-test maximum crush was 503 mm at level 3. The test vehicle's performance was as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Passenger ATD</th> </tr> <tr> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>391.8</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>G</td> <td>82</td> <td>39</td> </tr> <tr> <td>Combined Acetabulum and Iliac Pelvic Force</td> <td>N</td> <td>5525</td> <td>3750</td> </tr> </tbody> </table> The two doors on the struck side of the vehicle did not separate from the vehicle at the hinges or latches. The opposite side doors did not open during the impact event.					Measurement Description	Passenger ATD			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	391.8	Resultant Lower Spine Acceleration	G	82	39	Combined Acetabulum and Iliac Pelvic Force	N	5525	3750
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17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs			18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. Technical Reference Division 1200 New Jersey Ave., SE Washington, DC 20590																				
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SECTION 1

TEST PURPOSE AND PROCEDURE

This side impact test is part of the MY 2011 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-09-D-00122. The purpose of this test is to generate comparative side impact performance in a 2011 Nissan Sentra 2.0 4-Door Sedan. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated January 25, 2010.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2011 Nissan Sentra 2.0 4-Door Sedan. The subject vehicle was towed into the rigid pole at an angle of 73.5° and a velocity of 31.97 km/h. The test was conducted by KARCO Engineering, LLC. in Adelanto, California, on October 29, 2010. Pre-test and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated January 25, 2010. Camera location and other pertinent camera information are included in this report.

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

- Head CG Triaxial Accelerometers
- Thorax Upper, Middle, and Lower Rib Displacement Potentiometers
- Abdomen Upper and Lower Rib Displacement Potentiometers
- Lower Spine 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.

The following table summarizes the results of the test:

Dummy	HIC (36ms)	Resultant Lower Spine Acceleration	Pelvic Force (N)	
SID-IIs 5th Percentile Adult Female	392	39	Iliac Wing	853
			Acetabulur	2963
			Sum	3750

SUPPLEMENTAL RESTRAINT INFORMATION

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

GENERAL COMMENTS

Both of the struck side doors of the test vehicle remained closed and latched and were jammed shut after the impact. There was no separation at the hinges or the latches. The non-struck side doors remained closed and latched. There were no driver injury values that exceeded their limits. There was no FMVSS 301 Stoddard solvent spillage as a result of the impact.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan NHTSA No. MB5212
Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 10/29/10

CONVERSION FACTORS

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	miles/hr	km/hr	1.609344
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	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

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMATER DATA

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan NHTSA No. MB5212
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 10/29/10

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MB5212
Model Year	2011
Make	Nissan
Model	Sentra 2.0
Body Style	4-Door Sedan
VIN	3N1AB6AP1BL606560
Body Color	Magnetic Gray
Delivery Date	9/22/2010
Odometer Reading (km / mi)	137/85
Dealer	Puente Hills Nissan
Transmission	CVT
Final Drive	Front
Type / No. of Cylinders	Inline 4
Engine Displacement (L)	2.0
Engine Placement	Transverse
Roof Rack	No
Sunroof / T-Top	No
Tinted Glass	No
Traction Control	Yes
Power Brakes	Yes
Front Disc	Yes
Rear Disc	No

Anti-Lock Brakes	Yes
All Wheel Drive	No
Power Steering	Yes
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Rear Pass. Curtain Airbag	Yes
Rear Pass. Head/Torso Airbag	No
Rear Pass. Torso Airbag	No
Rear Pass. Toso/Pelvis Airbag	No
Rear Pass. Pelvis Airbag	No
Pretensioners	Yes
Load Limiters	Yes
Automatic Door Locks	Yes
Bucket Seats	Yes
Tilt Steering	Yes
Other	
Other	

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

Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Co., Ltd.
Date of Manufacture	Aug-10

GVWR (kg)	1792
GAWR Front (kg)	1010
GAWR Rear (kg)	821

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

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

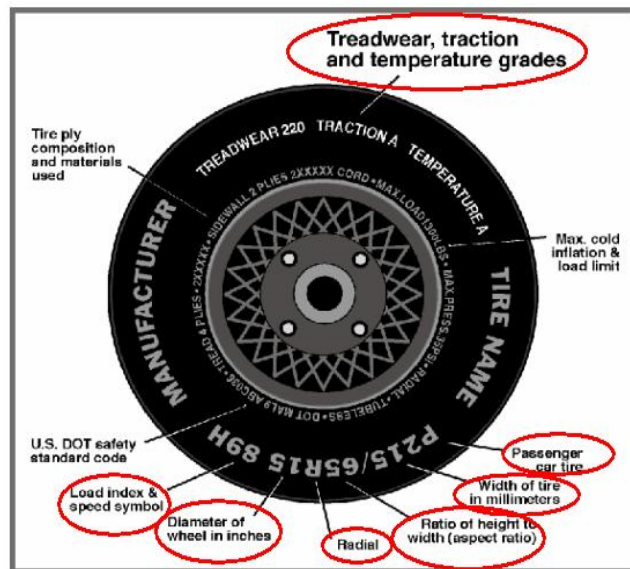
VEHICLE SEAT TYPE

Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						w/ Lever	w/ Knob
Front Seat	Yes					Yes	
Rear or Second Row Seat		Yes			Yes		
Third Row Seat							

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMATER DATA

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan NHTSA No. MB5212
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 10/29/10



VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	300	300
Cold Pressure (kpa)	230	230
Recommended Tire Size	P205/60R15	P205/60R15
Tire Size on Vehicle	P205/60R15	P205/60R15
Tire Model	Turanza	Turanza
Tire Manufacturer	Bridgestone	Bridgestone
Treadwear	300	300
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Nylon	1 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	90H	90H
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Right	V6UN TE0 3010	V6UN TE0 3010
DOT Safety Code Left	V6UN TE0 2910	V6UN TE0 2910

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMATER DATA

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan NHTSA No. MB5212
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 10/29/10

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	419.5	257.0		443.0	291.5		437.5	303.0	
Right	kg	408.0	242.5		413.0	267.5		408.5	272.0	
Ratio	%	62.4%	37.6%	100.0%	60.5%	39.5%	100.0%	59.5%	40.5%	100.0%
Total	kg	827.5	499.5	1327.0	856.0	559.0	1415.0	846.0	575.0	1421.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1327.0	A
Actual Weight of 1 P572V ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	44.8	C
Calculated Vehicle Target Wt (TVTWT)	kg	1420.8	A+B+C

TEST VEHICLE ATTITUDES

Condition	Units	As Delivered	As Tested	Fully Loaded
Driver Door Sill Angle (front-to-rear)	Deg	-0.6	-0.6	-0.3
Front Passenger Sill Angle (front-to-rear)	Deg	-0.8	-0.6	-0.5
Front Bumper Angle (left-to-right)	Deg	0.0	-0.1	-0.1
Rear Bumper Angle (left-to-right)	Deg	0.3	0.3	0.3
Vehicle CG (Aft of Front Axle)	mm	1010	1060	1085
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	15	29	32

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Weight of Ballast in Cargo Area	kg	29.0
Weight of Vehicle Components Removed	kg	39.0

Vehicle components removed to make Target Vehicle Test Weight:

Trunk liner (1.0 kg), Spare tire and tools (15.0 kg), Non-struck side windows (8.0 kg), Tail lights (3.5 kg), Non-struck side door panels (4.0 kg), Non-struck side mirror (1.5 kg), Speaker (6.0 kg)

TEST VEHICLE IMPACT POINT DATA

Measurement Description	Units	Value
Vertical Impact Reference Line (Aft of Front Axle)	mm	1049
Actual Impact Point (Aft of Front Axle)	mm	1045
Impact Point Difference (- forward/+ rearward)	mm	-4

DATA SHEET NO. 2

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

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan

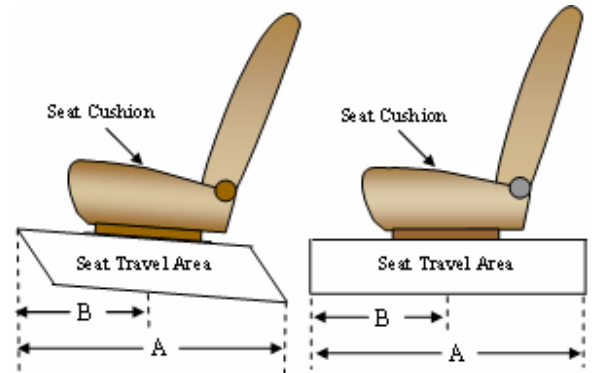
NHTSA No. MB5212

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 10/29/10

SEAT FORE / AFT POSITIONING

The total seat travel is measured from the forward most possible position to the rearmost possible position with the seat set at mid angle and lowest height. The driver's seat is set to the forward most position where the ATD will not contact any interior panels at the mid angle and mid height positions.

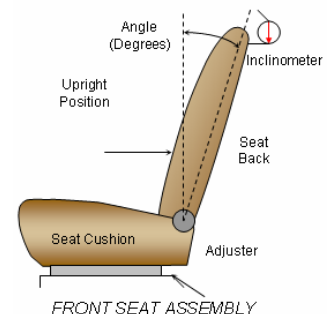


SEAT FORE/AFT POSITIONS

Seating Position	Total Fore-Aft Travel	Placed in Position	Cushion Range	Placed in Position
Driver Seat	242 mm	0 mm	Fixed	Fixed
Front Passenger Seat	240 mm	0 mm	Fixed	Fixed
Rear Seat - Struck Side	Fixed	Fixed	Fixed	Fixed
Rear Seat - Non-Struck Side	Fixed	Fixed	Fixed	Fixed

SEAT BACK ANGLE POSITIONING

The procedure for the driver is as follows: the seat back is set to level the driver ATD's (SID-IIs) head transverse instrumentation platform; seat back angle is measured at the headrest post using a digital inclinometer. Detent zero (0) is the full forward position.



SEAT BACK ANGLE POSITIONS

Seating Position	Degrees	Detent
Driver Seat Back Angle w/Seated Dummy	1.7	3
Front Passenger Seat Back Angle	1.7	3
Struck Side Rear Seat Back Angle	Fixed	Fixed
Non-Struck Side Rear Seat Back Angle	Fixed	Fixed

SEAT BELT UPPER ANCHORAGE POSITIONING

The seat belt upper anchorage is positioned to the manufacturer's design position for a 5th percentile adult female ATD. Position zero (0) is the uppermost position.

SEAT BELT UPPER ANCHORAGES

Seating Position	Total No. of Positions	Placed in Position
Driver Seat	4	0

DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan

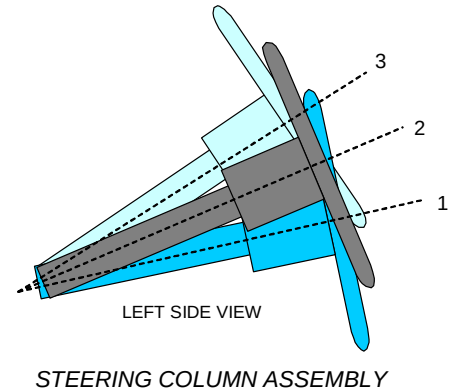
NHTSA No. MB5212

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 10/29/10

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. A digital inclinometer is used to measure a plate placed across the rim of the steering wheel for angle.

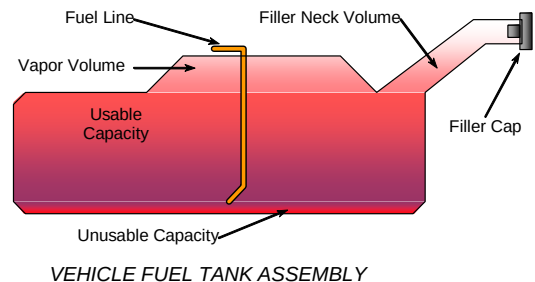


STEERING COLUMN POSITIONS

	Angle (°)	Fore-Aft Position (mm)
Lowermost Position, No. 1	25.6	
Geometric Center Position, No. 2	27.4	
Uppermost Position, No. 3	29.2	
Steering Wheel Travel	3.6	
Test Position	27.4	

FUEL PUMP

The test vehicle is equipped with an electric fuel pump. The fuel pump will pump fuel for 1.0 second after the ignition is switched "on", while the engine is running, and for 1.5 seconds after the engine stops running. The fuel filler door is located on the right rear fender. The standard fuel tank occupies the area under the rear seat.



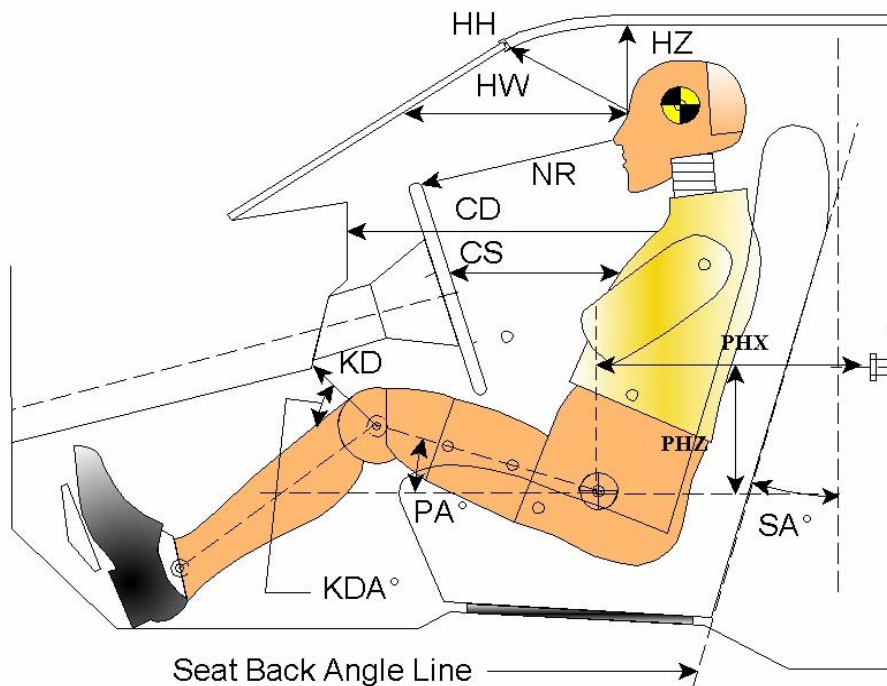
FUEL CAPACITY DATA

Description	Liters
Usable Capacity of "Standard Tank"	52.61
Usable Capacity of "Optional Tank"	
Usable Capacity of Standard Tank as Specified In Owner's Manual	
Usable Capacity of Optional Tank as Specified in Owner's Manual	
92 - 94% of Usable Capacity	48.4 to 49.45
Actual Amount of Stoddard Solvent Used	48.90
1/3 of Usable Capacity	17.54

DATA SHEET NO. 3

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan NHTSA No. MB5212
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test Date: 10/29/10



DUMMY LONGITUDINAL CLEARANCE DIMENSIONS (S/N: 307)

Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	262	51.0
HW	Head to Windshield	635	0.0
HZ	Head to Roof	182	90.0
NR	Nose to Rim	256	12.3
CD	Chest to Dash	400	9.4
CS	Chest to Steering Wheel	191	8.5
KDL / KDAL°	Left Knee to Dash	127	38.3
KDR / KDAR°	Right Knee to Dash	132	43.0
PA°	Pelvic Angle		18.0
PHX	H-Point to Striker (x-direction)	386	
PHZ	H-Point to Striker (z-direction)	111	
SA°	Seat Back Angle		1.7

DATA SHEET NO. 4

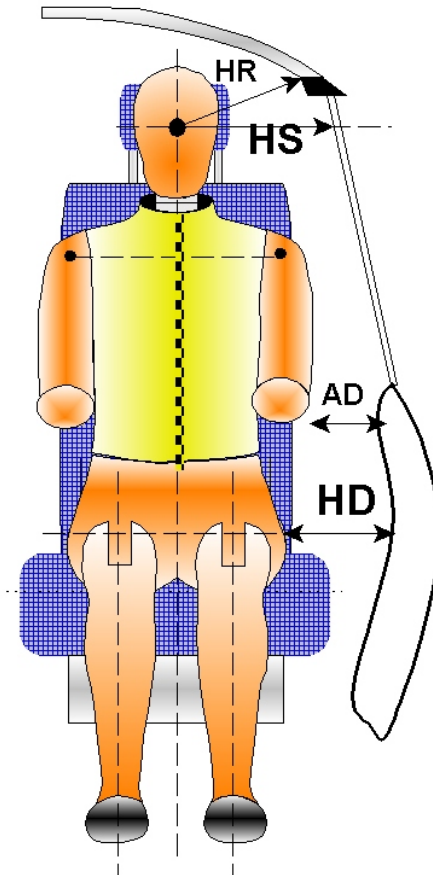
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan

NHTSA No. MB5212

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

Test Date: 10/29/10



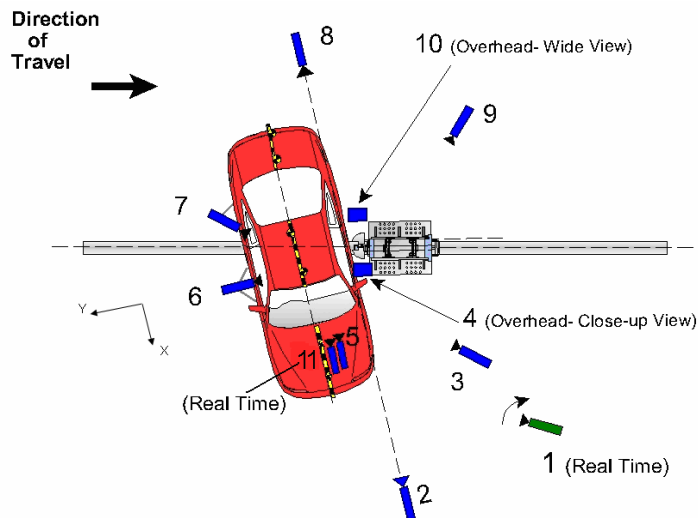
DUMMY LATERAL CLEARANCE DIMENSIONS (S/N: 307)

Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	288
HS	Head to Side Window	mm	371
AD	Arm to Door	mm	148
HD	H-Point to Door	mm	170

DATA SHEET NO. 5

CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan NHTSA No. MB5212
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test Date: 10/29/10



CAMERA LOCATIONS

Camera No.	View	Coordinates (m)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real Time Pan View of Impact	8.89	46.57	-3.04		30
2	Front Ground Level - Impact View	8.34	-0.05	-0.93	24	1000
3	Impact Side 45° - Forward Pole View	4.10	-2.15	-1.15	8.5	1000
4	Overhead Close-Up View of Impact	0.00	0.00	-5.79	12.5	1000
5	On-Board - Dummy Front View	1.26	0.49	-1.26	6.7	400
6	On-Board - Dummy Side View	-0.04	1.64	-1.11	5.3	1000
7	On-Board - Dummy Rear Oblique View	-0.97	1.53	-1.16	11.9	1000
8	Rear Ground Level - Impact View	-6.12	-6.23	-0.96	24	1000
9	Impact Side 45° - Rearward Pole View	-8.02	0.04	-1.01	35	1000
10	Overhead Wide View of Impact	-0.06	0.22	-5.79	14	1000
11	Real Time Dummy Front View	1.35	0.56	-1.25		30

Reference: +X = Forward of Vehicle
 +Y = Right of Vehicle
 +Z = Down

* All Measurements accurate to ± 6 mm

NOTE: Vehicle was at a 15° angle to the rigid pole

INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Vehicle Structure	21
Pole Load Cells	8
Contact Switches	3
Airbag Timing Sensor	2
Total No. of Data Channels	50

DATA SHEET NO. 6

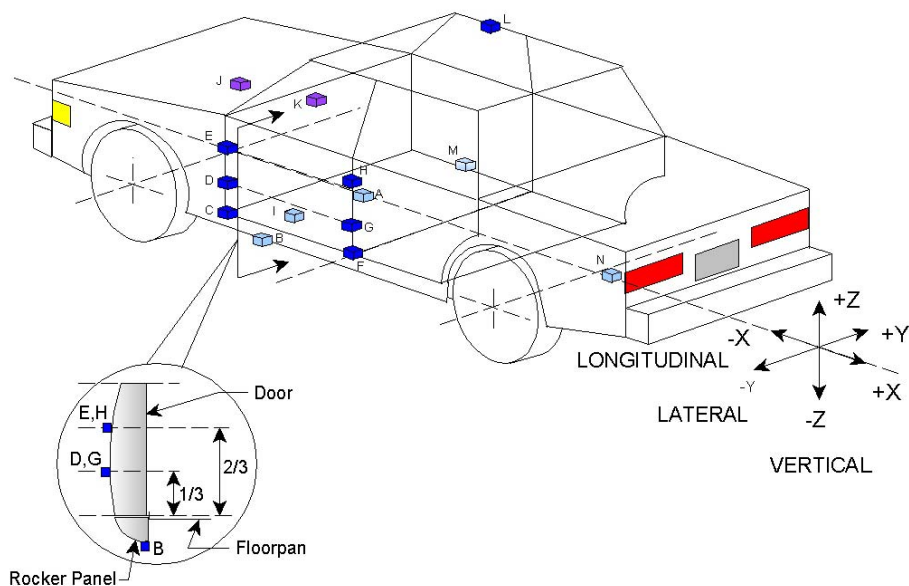
VEHICLE ACCELEROMETER DATA

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan

NHTSA No. MB5212

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 10/29/10



VEHICLE ACCELEROMETER LOCATIONS

	Sensor Description	Coordinates (mm)		
		X	Y	Z
A	Vehicle CG Accelerometer	-1097	0	359
	Vehicle CG ARS	-1097	0	359
B	Left Floor Sill	-2887	-708	197
C	A-Pillar Sill	-3161	-794	409
D	A-Pillar Lower	-3161	-794	522
E	A-Pillar Mid	-3161	-794	823
F	B-Pillar Sill	-2078	-709	340
G	B-Pillar Lower	-2078	-709	621
H	B-Pillar Mid	-2078	-709	849
I	Driver Seat	-2382	-561	288
J	Engine Top	-3774	42	847
K	Firewall	-3392	348	762
L	Right Roof Sill	-2199	538	1449
M	Right Floor Sill	-2162	698	292
N	Rear Floorpan	-1035	0	530

Reference: +X = Rearward

• +Y = To Right

• +Z = Down

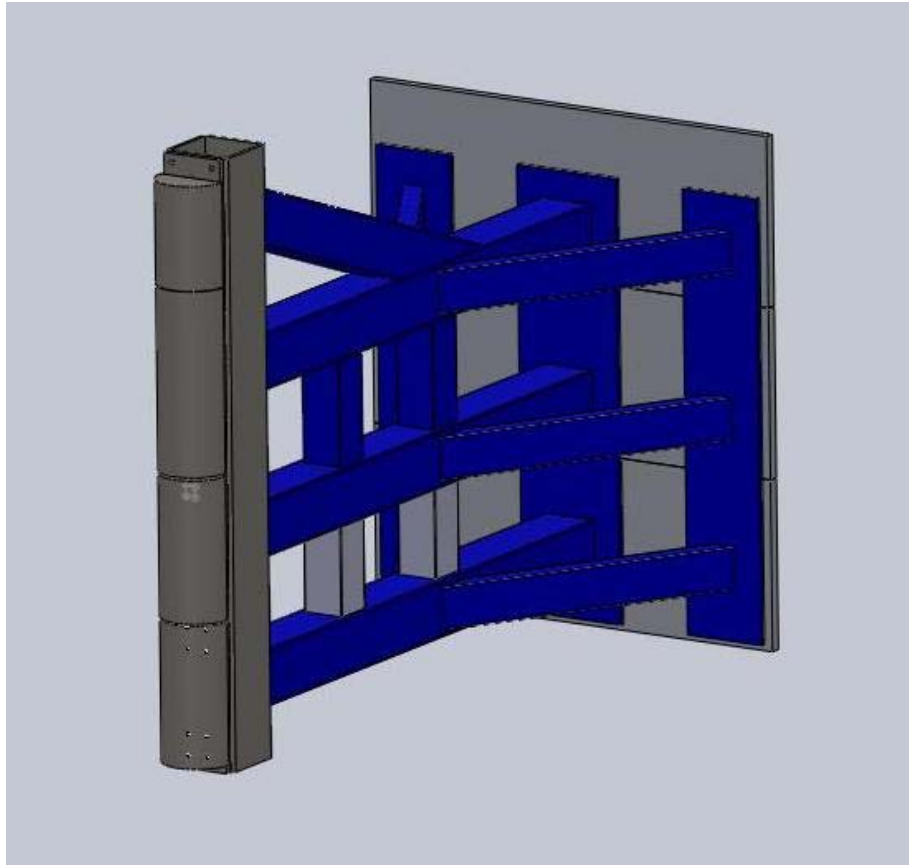
DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan

NHTSA No. MB5212

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 10/29/10



RIGID POLE LOAD CELL LOCATIONS

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

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan NHTSA No. MB5212
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 10/29/10

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver Dummy
Dummy Type/Serial No.	P572V (SID-IIs) / Serial No. 299
Head Contact	Curtain Airbag, Headrest, Front Passenger Seat Back
Upper Torso Contact	Torso/Pelvis Airbag, Seat Back
Lower Torso Contact	Torso/Pelvis Airbag, Door Panel
Left Knee Contact	Knee Bolster, Right Knee
Right Knee Contact	Left knee

POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Jammed shut	Jammed shut
Right Side Door Opening	Remained closed and operational	Remained closed and operational
Seat Movement	None	None
Seatback Failure	No	No

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No separation occurred
Sill Separation	No separation occurred
Windshield Damage	Broken
Window Damage	Left front window broken
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

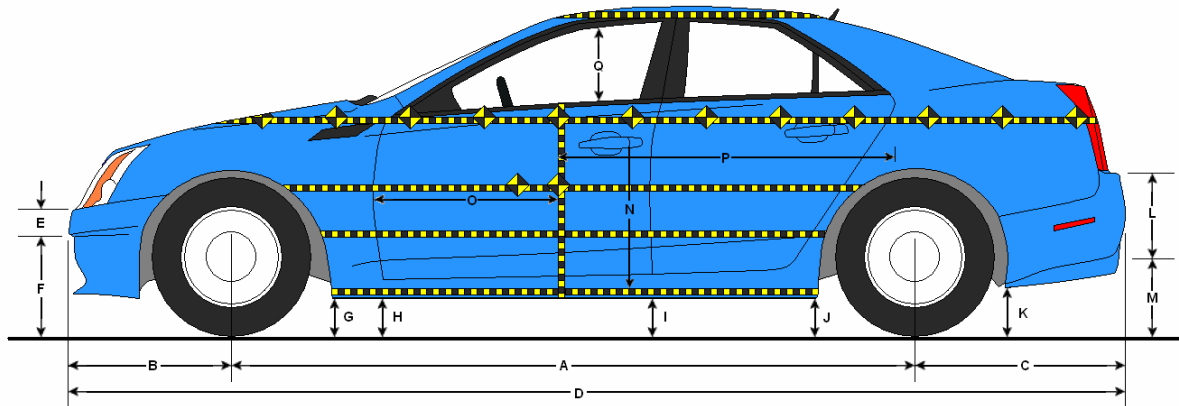
VEHICLE SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset From Vertical Reference Line	mm	+/- 38	-4 (Left)
Trap No. 1 Velocity (Primary)	km/h	30.4 to 33.0	32.0
Trap No. 2 Velocity (Redundant)	km/h	30.4 to 33.0	31.9

DATA SHEET NO. 9

VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan NHTSA No. MB5212
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole Test Date: 10/29/10



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Vehicle Wheelbase	2682	2587	-95
B	Front Axle to FSOV	933	937	4
C	Rear Axle to RSOV	942	975	33
D1	Total Vehicle Length at Left Side	3108	2976	-132
D2	Total Vehicle Length at Centerline	4529	4498	-31
D3	Total Vehicle Length at Right Side	3107	3123	16
E	Front Bumper Thickness	111	109	-2
F	Front Bumper Bottom to Ground	424	479	55
G	Sill Height at Front Wheel Well	168	180	12
H	Sill Height at Front Door Leading Edge	223	236	13
I	Sill Height at B-Pillar	246	267	21
J1	Sill Height at Rear Wheel Well	256	276	20
J2	Pinch Weld Height at Rear Wheel Well	218	241	23
K	Sill Aft of Rear Wheel Well	253	263	10
L	Rear Bumper Thickness	238	238	0
M	Rear Bumper Bottom to Ground	411	401	-10
N	Sill Height to Window Bottom Sill	586	612	26
O	Front Door Leading Edge to Impact CL	601	463	-138
P	Rear Door Trailing Edge to Impact CL	1481	1376	-105
Q	Front Window Opening	480	498	18
R	Right Side Length	3107	3123	16
S	Left Side Length	3108	2976	-132
T	Vehicle Width at B-Pillar	1767	1628	-139

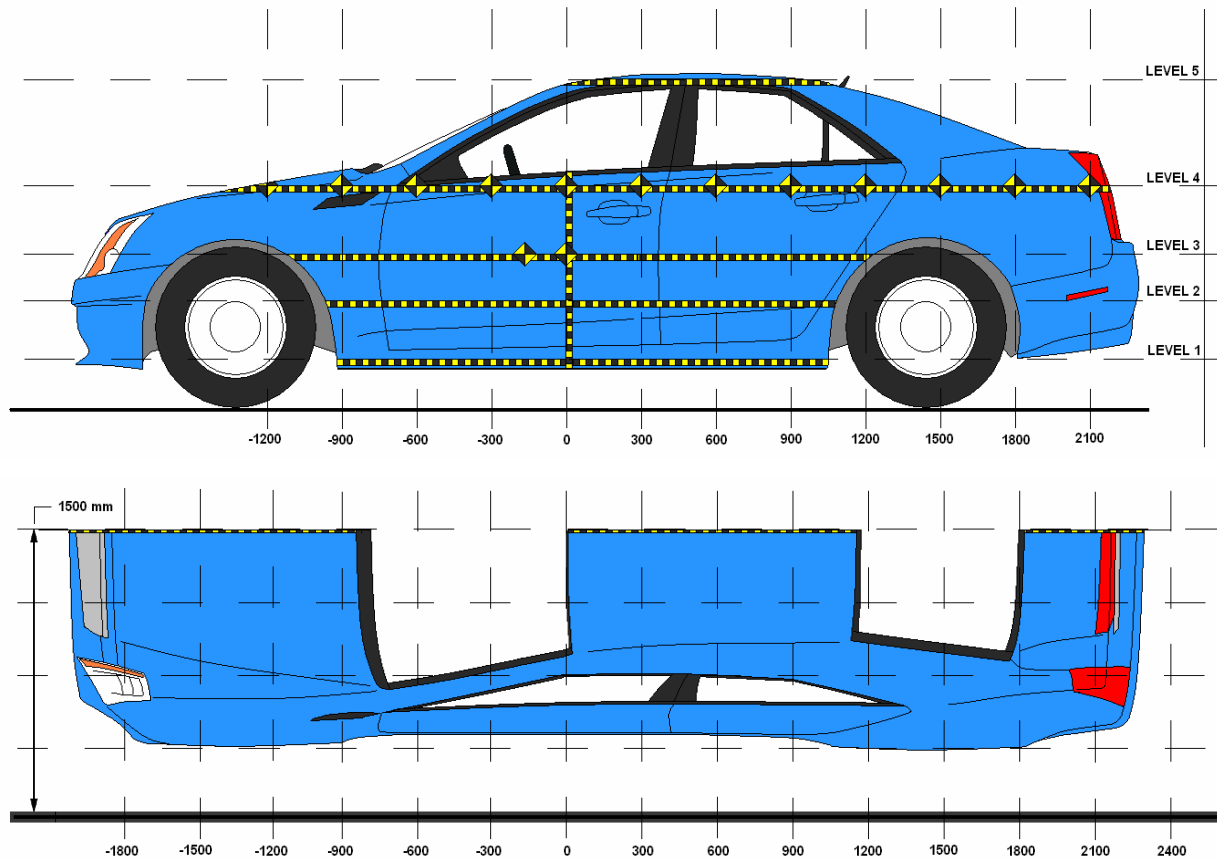
All measurements in (mm) with tolerance of ± 3 mm

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan NHTSA No. MB5212

Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test Date: 10/29/10



NOTE: All measurements are in millimeters (mm)

Level	Description	Height Above Ground (mm)
1	Sill Top Height	271
2	Occupant H-Point Height	574
3	Mid-Door Height	657
4	Window Sill Height	895
5	Window Top Height	1438

DATA SHEET NO. 10 ... (CONTINUED)

VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan

NHTSA No. MB5212

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 10/29/10

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900			614	685				681	751				67	66	
-750		611	616	673			687	699	751			76	83	78	
-600	627	620	624	664		707	736	736	763		80	116	112	99	
-450	665	621	622	659		851	827	825	833		186	206	203	174	
-300	670	619	619	655		936	912	912	925		266	293	293	270	
-150	671	617	616	653		1022	1018	1019	1017		351	401	403	364	
0	672	616	615	649		1127	1116	1118	1118		455	500	503	469	
150	673	616	614	645	896	1077	1083	1087	1093	1169	404	467	473	448	273
300	674	617	615	642	885	984	964	967	983	1102	310	347	352	341	217
450	673	618	616	637	884	918	865	860	874	1054	245	247	244	237	170
600	675	620	617	637	885	860	808	803	817	1014	185	188	186	180	129
750	676	621	618	638	888	810	777	773	790	990	134	156	155	152	102
900	677	624	621	639	892	771	748	744	760	980	94	124	123	121	88
1050	675	626	624	641	898	740	718	717	734	977	65	92	93	93	79
1200	669	623	624	624	913	705	677	684	686	984	36	54	60	62	71
1350		618	615	631			671	669	668			53	54	37	
1500				650					696					46	
1650				656					696					40	
1800				665					700					35	
1950				682					709					27	
2100				704					723					19	
2250															
2400															
2550															
2700															
2850															

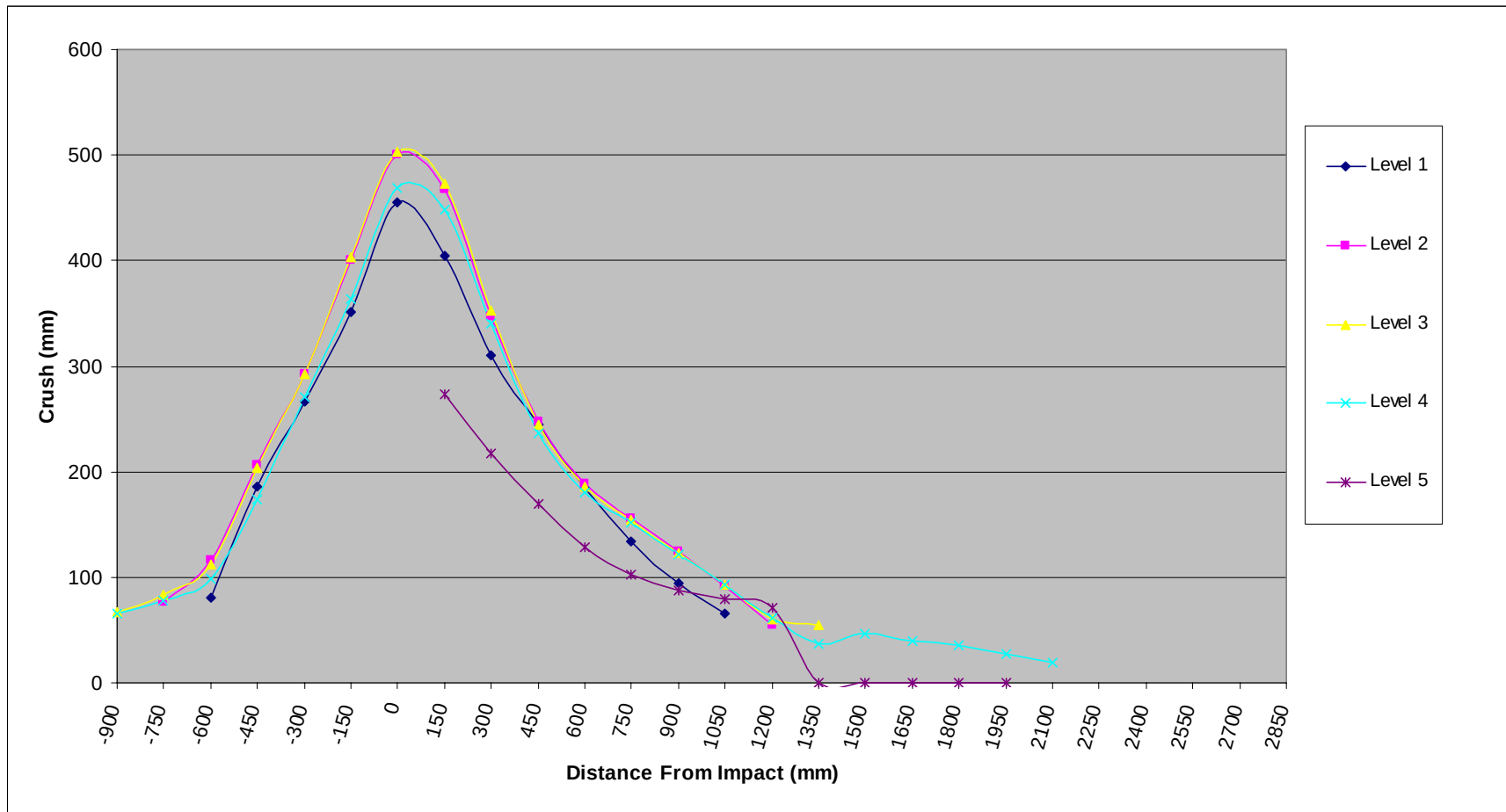
MAXIMUM CRUSH DATA

	Units	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush	mm	455	500	503	469	273
Distance From Impact	mm	0	0	0	0	150

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

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan
Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole

NHTSA No. MB5212
Test Date: 10/29/10



DATA SHEET NO. 11

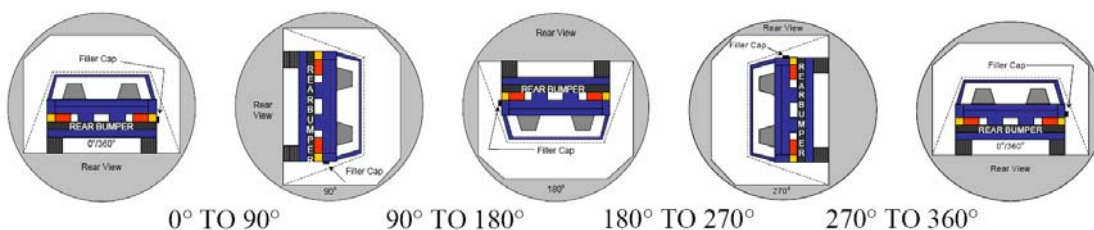
FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan NHTSA No. MB5212
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test Date: 10/29/10

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 25.0° C Test Time: 12:54 PM

- A. From impact until vehicle motion ceases: 0 oz.
 (Maximum allowable = 1 oz.)
- B. For the 5 minute period after motion ceases: 0 oz.
 (Maximum allowable = 5 oz.)
- C. For the following 25 minutes: 0 oz.
 (Maximum allowable = 1 oz./minute)
- D. Spillage Details: No spillage occurred



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	83	305	388
90° To 180°	79	305	384
180° To 270°	77	300	377
270° To 360°	80	300	380

FMVSS 301 SPILLAGE TABLE

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° To 90°	0	0		
90° To 180°	0	0		
180° To 270°	0			
270° To 360°	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. 12

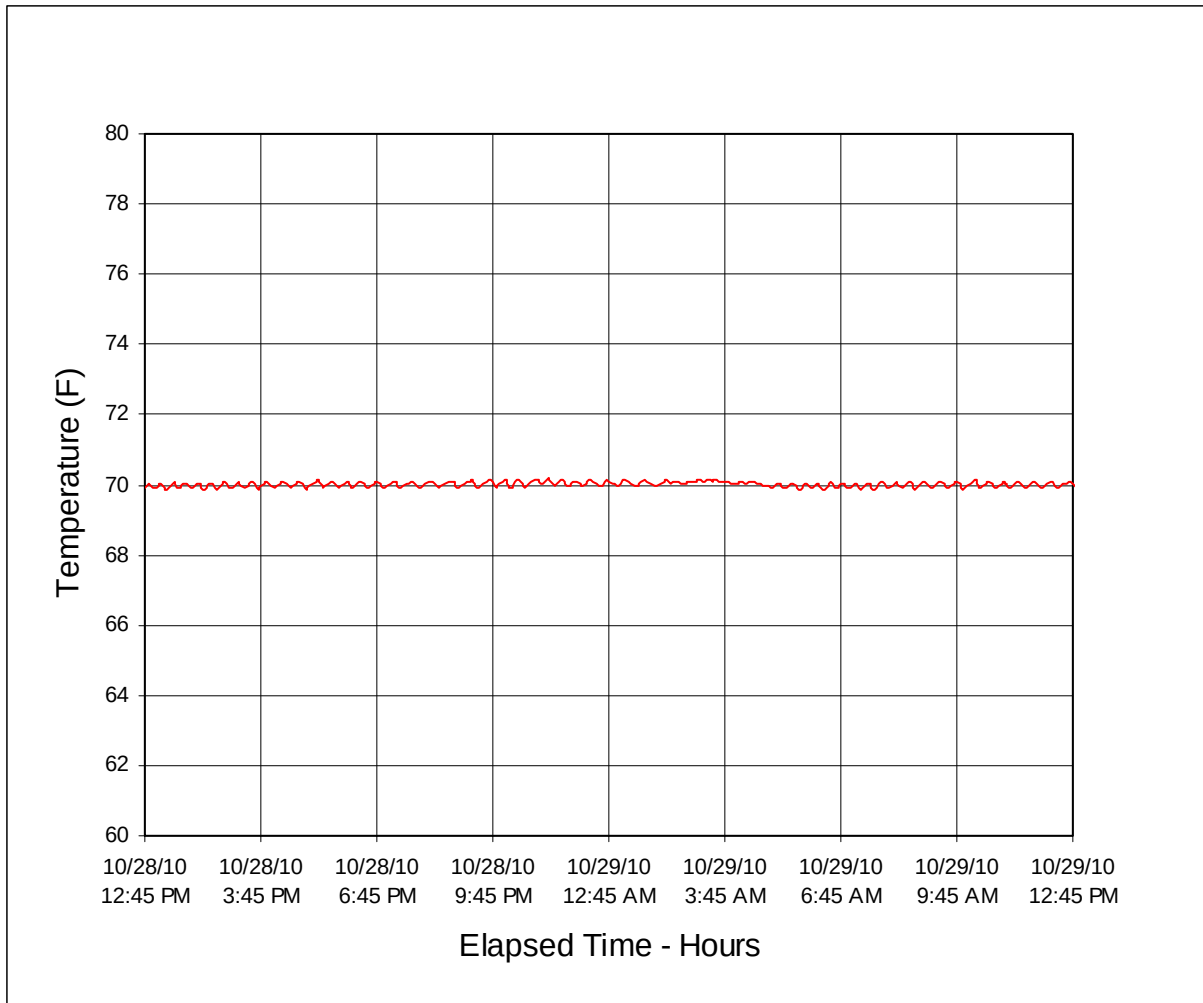
DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan

NHTSA No. MB5212

Test Program: 32 km/h (20 mph) Side Impact NCAP 75°Rigid Pole

Test Date: 10/29/10



APPENDIX A
PHOTOGRAPHS

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



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



FIGURE 3. Pre-Test Frontal View of Test Vehicle



FIGURE 4. Post-Test Frontal View of Test Vehicle



FIGURE 5. Pre-Test Left Front Three-Quarter View of Test Vehicle



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



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



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



FIGURE 9. Pre-Test Left Rear Three-Quarter View of Test Vehicle



FIGURE 10. Post-Test Left Rear Three-Quarter View of Test Vehicle



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



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



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

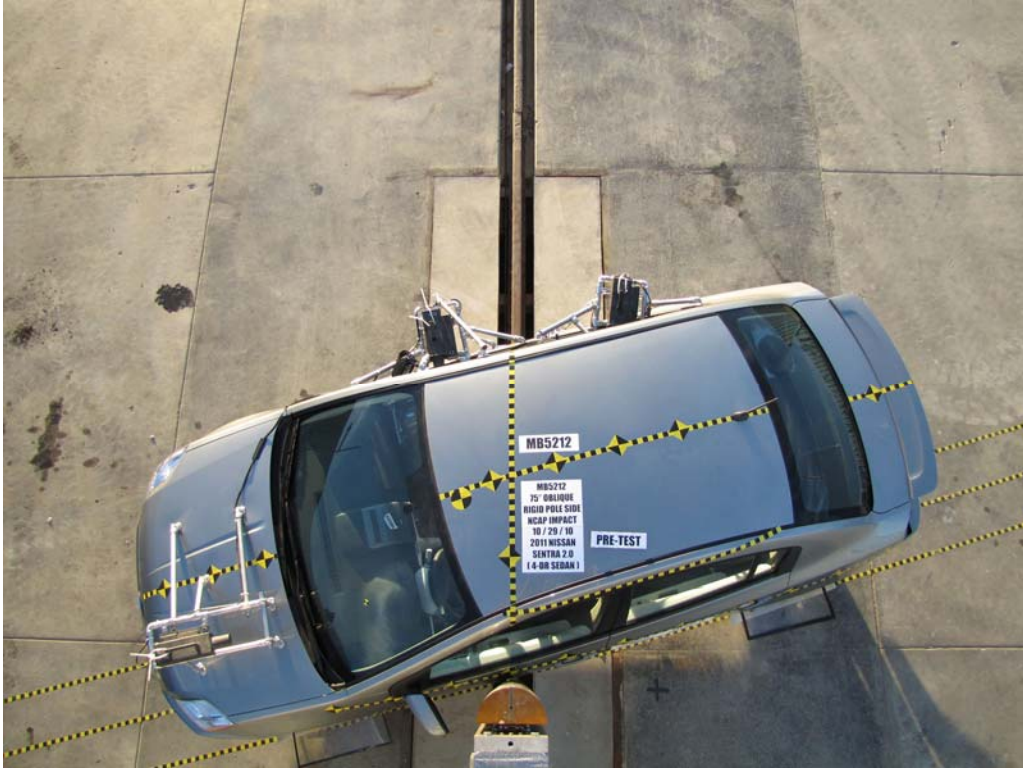


FIGURE 15. Pre-Test Overhead View of Test Vehicle and Pole

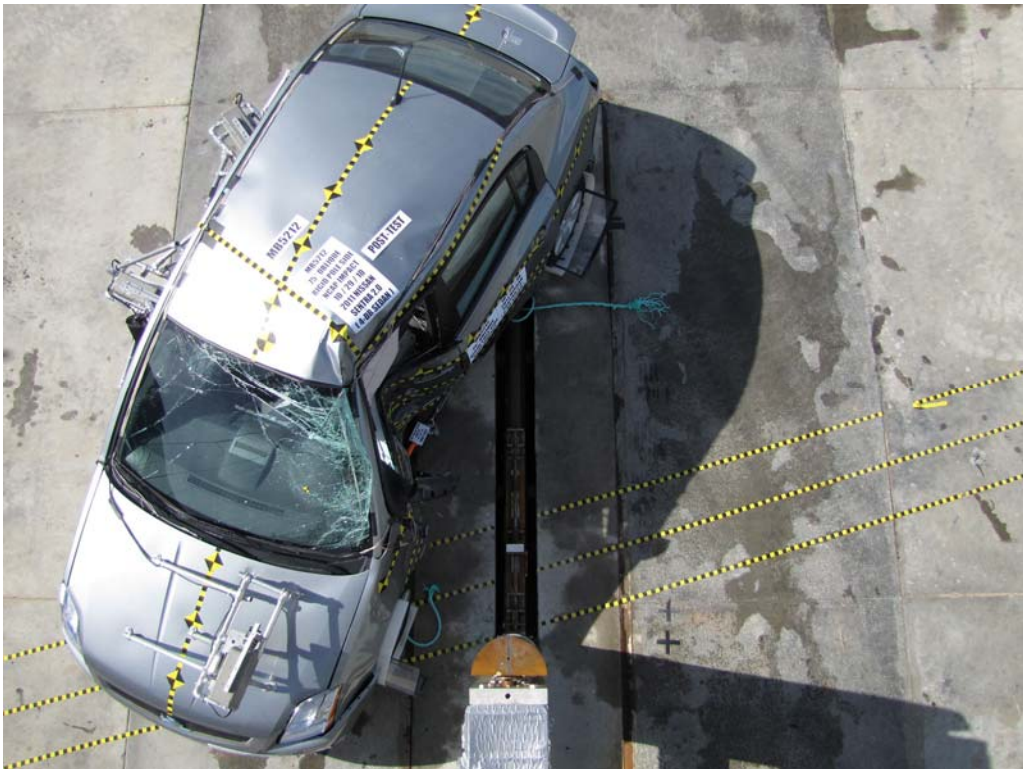


FIGURE 16. Post-Test Overhead View of Test Vehicle and Pole



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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

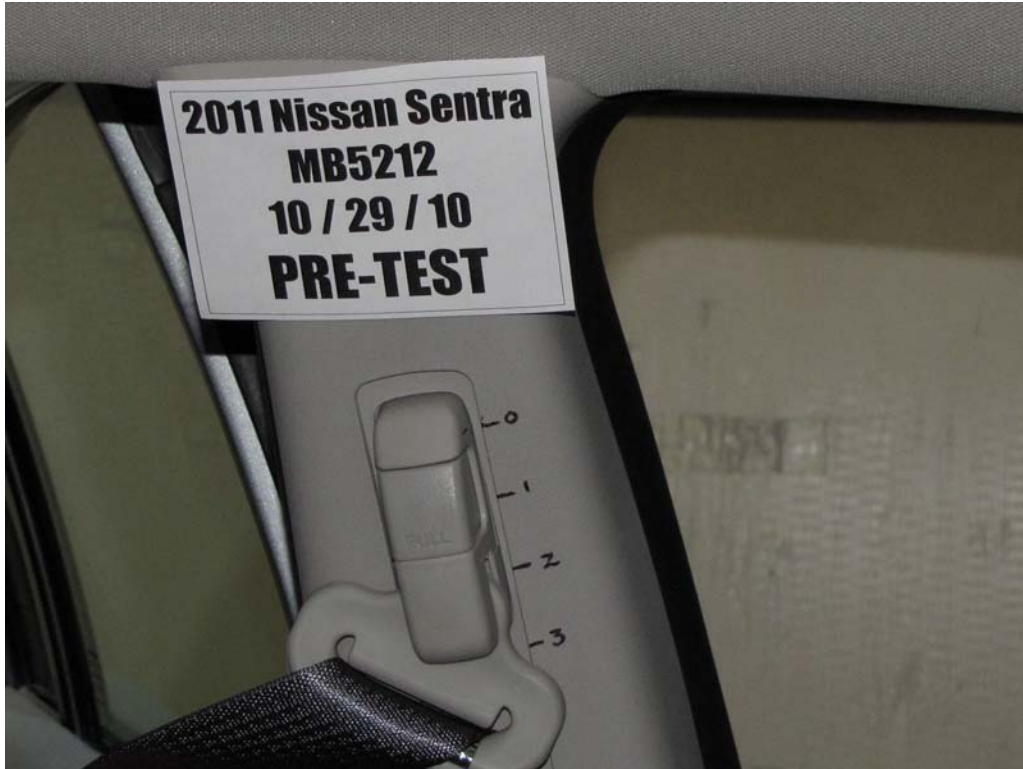


FIGURE 33. Pre-Test View of Belt Anchorage for Dummy



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



FIGURE 35. Pre-Test View of Parking Brake



FIGURE 36. Pre-Test Close-Up Left Side View of Driver Seat Track



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



FIGURE 38. Pre-Test Close-Up View of Driver Seat Back or Head Restraint



FIGURE 39. Pre-Test Driver Dummy and Door Clearance

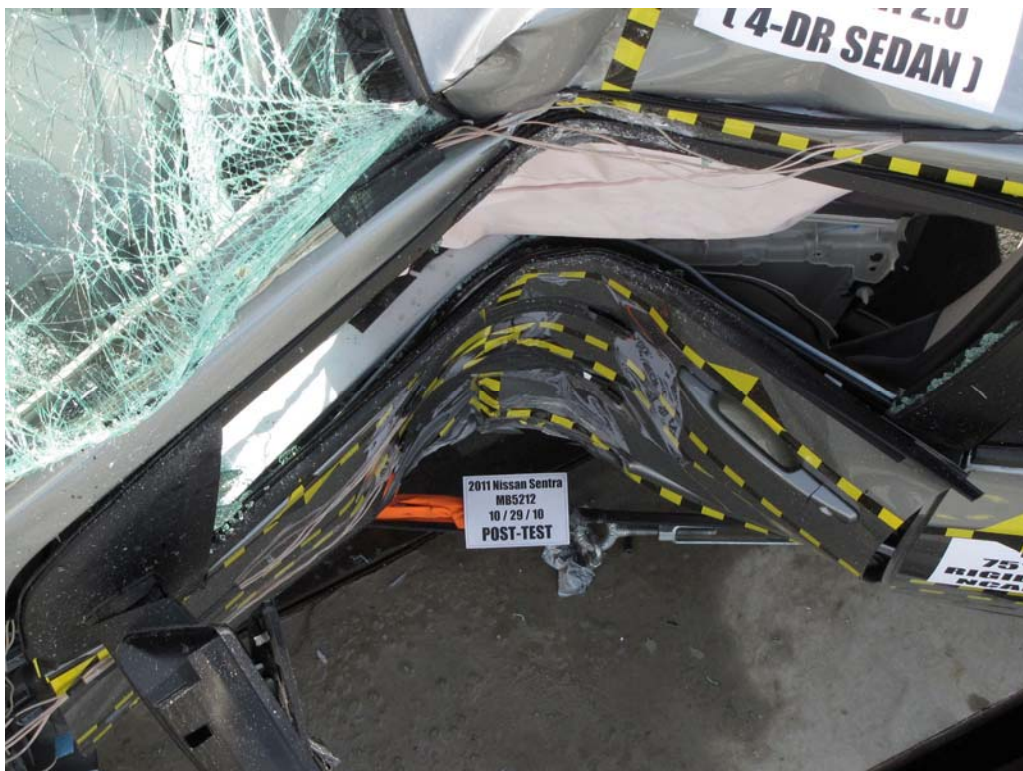


FIGURE 40. Post-Test Driver Dummy and Door Clearance



FIGURE 41. Pre-Test Right Side View of Dummy and Front Seat Occupant Compartment



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



FIGURE 43. Pre-Test Inner Driver Door Panel View



FIGURE 44. Post-Test Inner Driver Door Panel View
Showing Dummy Contact Locations

Photograph Not Applicable

No Dummy Head Contact with Vehicle Interior

FIGURE 45. Post-Test Dummy Close-Up Head Contact with Vehicle Interior View



FIGURE 46. Post-Test Dummy Close-Up Head Contact with Side Airbag View



FIGURE 47. Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



FIGURE 48. Post-Test Dummy Close-Up Torso Contact with Side Airbag View



FIGURE 49. Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



FIGURE 50. Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View



FIGURE 51. Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 52. Post-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 53. Close-Up View of Vehicle's Certification Label



FIGURE 54. Close-Up View of Vehicle's Tire Information Placard



FIGURE 55. Pre-Test Pole Barrier Front View



FIGURE 56. Post-Test Pole Barrier Front View



FIGURE 57. Pre-Test Pole Barrier Side View



FIGURE 58. Post-Test Pole Barrier Side View



FIGURE 59. Pre-Test Ballast View



FIGURE 60. Post-Test Primary and Redundant Speed Trap Read-Out



FIGURE 61. FMVSS No. 301-305 Rollover 0 Degrees



FIGURE 62. FMVSS No. 301-305 Rollover 90 Degrees



FIGURE 63. FMVSS No. 301-305 Rollover 180 Degrees



FIGURE 64. FMVSS No. 301-305 Rollover 270 Degrees



FIGURE 65. FMVSS No. 301-305 Rollover 360 Degrees



FIGURE 66. Impact Event



2011 SENTRA 2.0

Sensible With A Sense of Style

Standard Equipment Included at No Extra Charge

MECHANICAL & PERFORMANCE
 2.0 liter D4iC 4-Cylinder Engine
 140 Horsepower & 147 lb-ft Torque
 (135 HP & 140 lb-ft Torque w/CAI, Emissions)
 Xtronic CVT™
 (Continuously Variable Transmission)
 Ultra Low Emissions Vehicle (ULEV) Rating
 (P2EV Rating w/CAI, Emissions)
 Torsion Beam Rear Suspension
 Integrated Stabilizer Bar
 Independent Strut Front Suspension
 Front Stabilizer Bar
 Power-Assisted Vented
 Front Disc/Rear Drum Brakes
 Electric Power Assisted Steering
 15" Steel Wheels w/Full Wheel Covers
 205/60R15 All-Season Tires

SAFETY AND SECURITY
 Anti-Lock Brake System (ABS)
 Electronic Brake Force Distribution (EBD)
 Vehicle Dynamic Control (VDC)
 Traction Control System (TCS)
 Nissan Advanced Air Bag System (AABS)
 Driver and Front Passenger
 Side-Impact Supplemental Air Bags
 Roof Mounted Curtain
 Side-Impact Supplemental Air Bags
 Front-Seat Active Head Restraints
 Front Seat Belts w/pretensioners
 Load Limiters, and Adjustable Upper Anchors
 3-Point ALNLR Seat Belts for All
 Seating Positions (Driver ELR Only)
 Fasten Driver Seat Belt Warning Chime/Light
 Child Safety Rear Door Locks
 Lower Anchors and Tethers for Children
 (LATCH)
 Pipe-Style Steel Side Door Guard Beams
 Hood-Blocking Chimes & Safety Glass
 Energy-Absorbing Steering Column
 Tire Pressure Monitoring System (TPMS)
 Nissan Vehicle Immobilizer System

COMFORT & CONVENIENCE
 Air Conditioning w/Carbon Monofilter
 Power Windows w/Driver's One-Touch
 Auto-Up/Down w/ Auto-Reverse Feature
 Power Door Locks w/ Auto-Locking Feature
 4-Speaker Audio System w/AM/FM/CD
 Auxiliary Input Jack
 Covered Upper Console Storage Bin
 Swade Cloth Seat Trim
 60/40 Split Fold-Flat Rear Seats
 4-Way Adjustable Driver's Seat
 Driver & Passenger Door Storage Pockets
 Tilt Steering Column
 Variable Intermittent Windshield Wipers
 Electric Rear Window Defroster w/Timer
 Remote Fuel-Filler Door & Trunk Release
 Passenger-Side Covered Mirror Vanity Mirror
 Front & Rear Passenger Side
 Folding Style Assist Grips
 Rear-Seat Center Armrest w/Cup Holders

EXTERIOR FEATURES
 Chrome Trunk Lid Finisher
 Body-Color Fenders & Door Handles
 Body-Color Manual All-Season Mirrors
 Rear Spoiler
 Integrated Brake Light

Manufacturer's Suggested Retail Base Price: \$16,700.00

Options Included by Manufacturer
 SPLASH GUARDS 140.00
 FLOOR MATS (4pc) 110.00

Destination Charge: 750.00

Total: \$17,700.00

EPA Fuel Economy Estimates

CITY MPG

27

Expected range for most drivers
22 to 32 MPG

Estimated Annual Fuel Cost

\$1,498

based on 15,000 miles at \$3.00 per gallon

HIGHWAY MPG

34

Expected range for most drivers
28 to 40 MPG

Combined Fuel Economy

This Vehicle **30**

12 15 18 21 24 27 30 33 36 39 42 45 48 51 54 57 60

MPG MIDSIZE CARS

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

GOVERNMENT SAFETY RATINGS

Frontal Crash	Driver Passenger	To Be Rated
Star ratings based on the risk of injury in a frontal impact. Frontal ratings should ONLY be compared to other vehicles of similar size and weight.		
Side Crash	Front seat Rear seat	To Be Rated
Star ratings based on the risk of injury in a side impact.		
Rollover		
Star ratings based on the risk of rollover in a single vehicle crash.		
Star ratings range from 1 to 5 stars (★★★★★), with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA).		

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

DELIVERY

VEHICLE COLORS:
 EXT: MAGNETIC GRAY
 INT: CHARCOAL

FINAL ASSEMBLY POINT:
 AGUAS/ABV/MEX

TRANSPORT METHOD:
 TRUCK

DEALER:
 PUENTE HILLS NISSAN
 17320 E GALE AVENUE
 CITY OF INDUSTRY CA 91748

VIN: 3N1AB6AP1BL606560
 EMS: CALIFORNIA EMISSIONS
 MDL: 12011-009560 K36-X
 OPT: A-B10C01L92

20100813020037RIS258

This Vehicle qualifies for Nissan's **Security+Plus Vehicle Protection Plan**. The only service agreement backed by Nissan! Ask your dealer for details, or call 1-800-NISSAN-1 for more information.

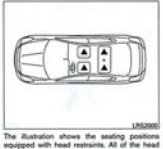
FIGURE 67. Monroney Label



Center armrest (if so equipped)
 Fold the armrest down until it is horizontal.

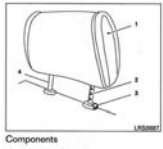
HEAD RESTRAINTS

WARNING
 Head restraints supplement the other vehicle safety systems. They may provide additional protection against injury in certain rear-end collisions. Adjust the head restraints properly, as specified in this section. Check the adjustment after someone else uses the seat. Do not use the seat if the head restraint stalk is removed. If the head restraint was removed, reinstall and properly adjust the head restraint before an occupant uses the seating position. Failure to follow these instructions can reduce the effectiveness of the head restraints. This may increase the risk of serious injury or death in a collision.



The illustration shows the seating positions equipped with head restraints. All of the head restraints are adjustable.

▲ indicates the seating position is equipped with a head restraint.
 ■ indicates the seating position is not equipped with a head restraint.

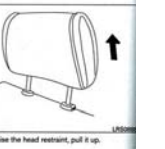


Components

1. Head restraint
2. Adjustment notches
3. Lock knob
4. Bulbs

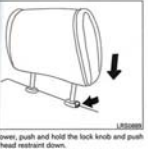


Adjustment
 Adjust the head restraint so the center is level with the center of the seat occupant's ears.

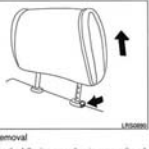


To raise the head restraint, pull it up.

Safety—Seats, seat belts and supplemental restraint system 1-7

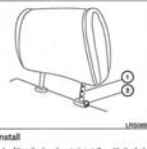


Lower, push and hold the lock knob and push head restraint down.



Removal
 Use the following procedure to remove the adjustable head restraints.

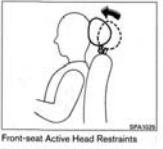
1. Pull the head restraint up to the highest position.
2. Push and hold the lock knob.
3. Remove the head restraint from the seat.
4. Store the head restraint properly so it is not loose in the vehicle.
5. Reinstall and properly adjust the head restraint before an occupant uses the seating position.



Install

1. Align the head-restraint stalk with the holes in the seat. Make sure the head restraint is facing the correct direction. The stalk with the adjustment notches (▲) must be installed in the hole with the lock knob (■).
2. Push and hold the lock knob and push the head-restraint down.
3. Properly adjust the head restraint before an occupant uses the seating position.

Safety—Seats, seat belts and supplemental restraint system 1-9



Front-seat Active Head Restraints

The Active Head Restraint moves forward utilizing the force that the seatback retracts from the occupant in a rear-end collision. The movement of the head restraint helps support the occupant's head by reducing its backward movement and helping absorb some of the forces that may lead to whiplash-type injuries.

Active Head Restraints are effective for collisions at low to medium speeds in which it is said that whiplash injury occurs most.

Active Head Restraints operate only in certain rear-end collisions. After the collision, the head restraints return to their original position.

Adjust the Active Head Restraints properly as described in this section.

1-10 Safety—Seats, seat belts and supplemental restraint system

FIGURE 68. Head Restraint Use and Adjustment
 Information from Vehicle Manual

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

Plot		Page
1	Driver Head Acceleration (X) Primary	B-1
2	Driver Head Acceleration (Y) Primary	B-1
3	Driver Head Acceleration(Z) Primary	B-1
4	Driver Head Resultant Primary	B-1
5	Driver Lower Spine T12 Acceleration (X)	B-2
6	Driver Lower Spine T12 Acceleration (Y)	B-2
7	Driver Lower Spine T12 Acceleration (Z)	B-2
8	Driver Lower Spine Y12 Resultant Acceleration	B-2
9	Driver Iliac Wing Force on Impact Side (Y)	B-3
10	Driver Acetabulum Force on Impact Side (Y)	B-3
11	Driver Total Pelvis Force on Impact Side (Y)	B-3

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

Additional Driver Dummy Instrumentation Data

Driver Head Acceleration (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)
 Driver Shoulder Contact Switch
 Driver Torso Contact Switch
 Driver Pelvis Contact Switch
 Center of Gravity Acceleration (X)
 Vehicle Center of Gravity Acceleration (Y)
 Vehicle Center of Gravity Acceleration (Z)
 Vehicle Center of Gravity Angular Rate About X (Roll)
 Vehicle Center of Gravity Angular Rate About Y (Pitch)
 Vehicle Center of Gravity Angular Rate About Z (Yaw)

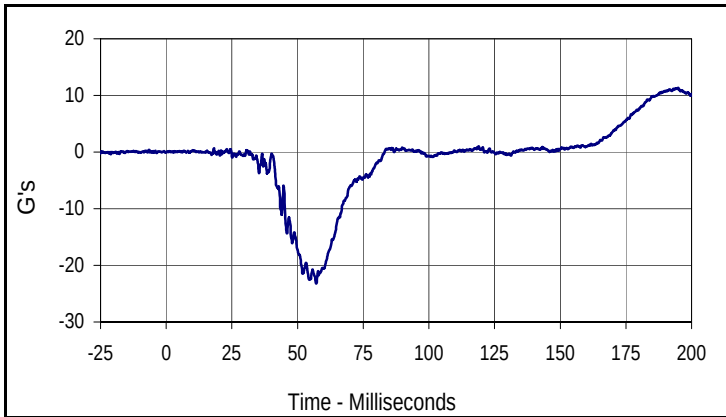
Left Floor Sill Acceleration (Y)
Left A-Pillar Sill Acceleration (Y)
Left Lower A-Pillar Acceleration (Y)
Left Mid A-Pillar Acceleration (Y)
Left B-Pillar Sill Acceleration (Y)
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy H-Point Acceleration (Y)
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)
Driver Side Airbag Timing
Driver Side Curtain Airbag Timing

Pole Instrumentation Data

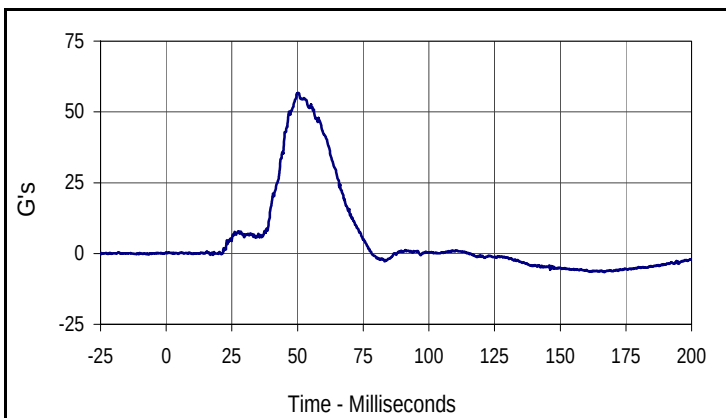
Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

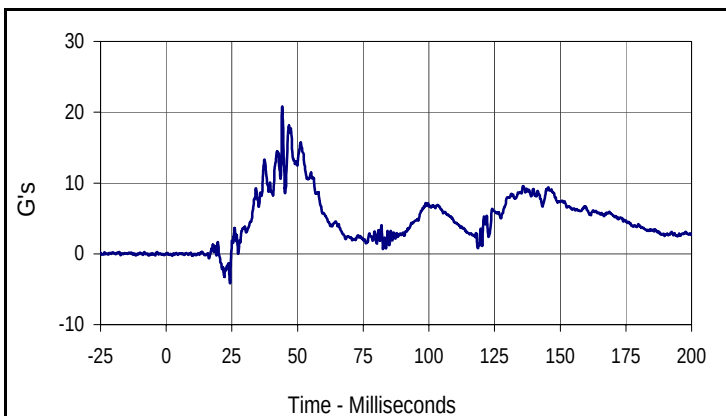
Test Date: 10/29/10
 NHTSA No.: MB5212



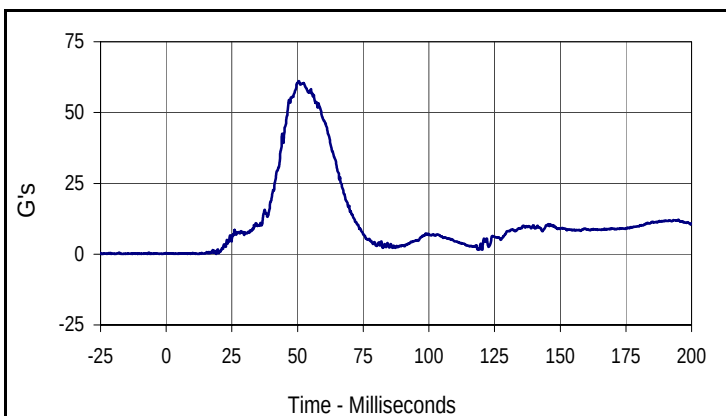
Curve Description			
Driver Head Acceleration X Primary			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
11.4	194.9	-23.2	57.1



Curve Description			
Driver Head Acceleration Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
56.7	50.3	-6.6	166.8



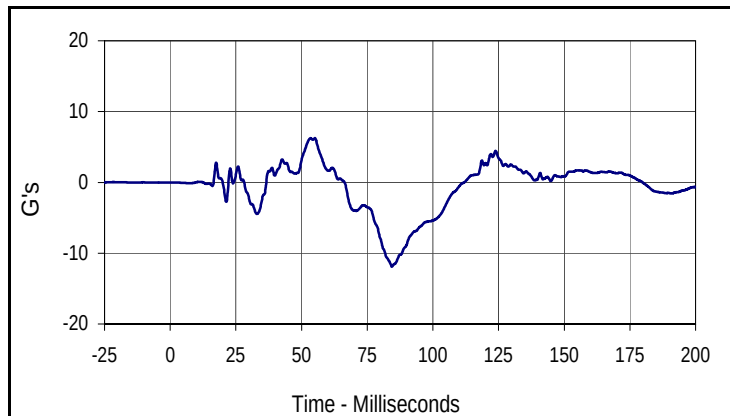
Curve Description			
Driver Head Acceleration Z Primary			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
20.8	44.2	-4.2	24.3



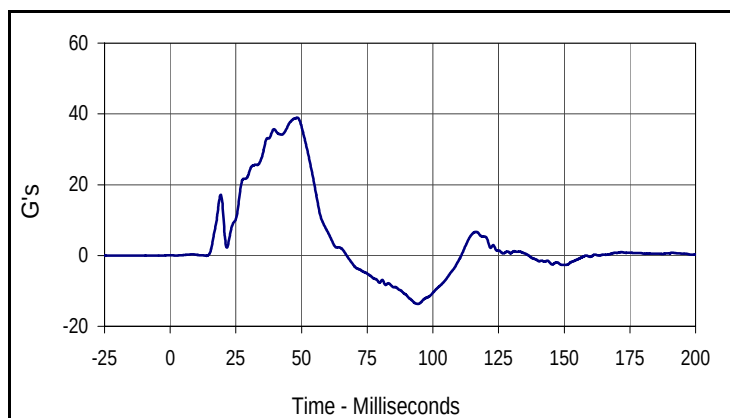
Curve Description			
Driver Head Acceleration Primary Res.			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
61.2	50.4	0.1	12.4

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

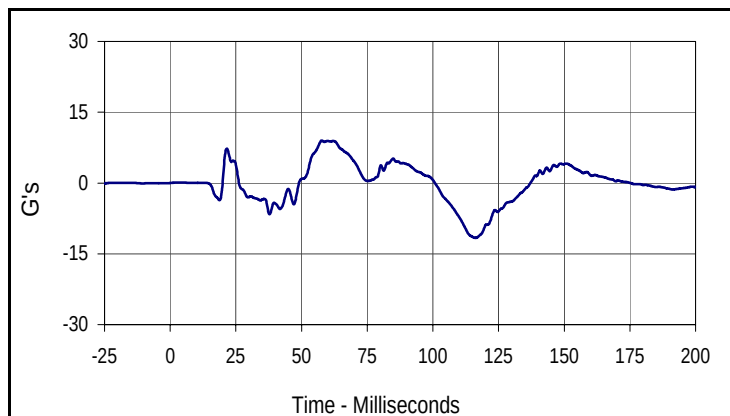
Test Date: 10/29/10
 NHTSA No.: MB5212



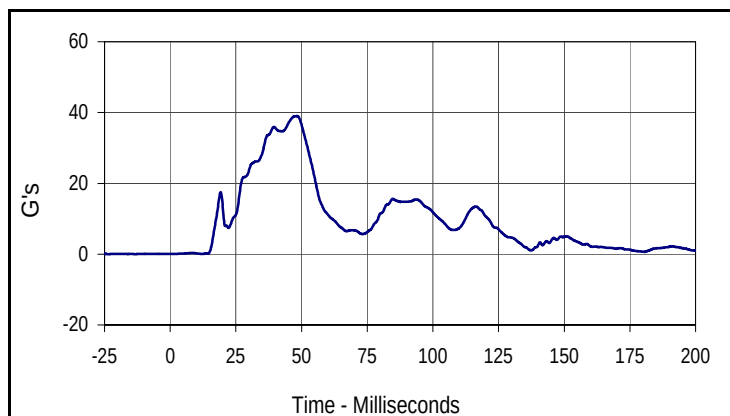
Curve Description			
Driver Lower Spine T12 Acceleration X			
CURNO	Type	SAE Class	Units
012	FIL	180	G's
Max	Time	Min	Time
6.2	55.1	-11.9	84.4



Curve Description			
Driver Lower Spine T12 Acceleration Y			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
38.9	48.4	-13.7	94.3



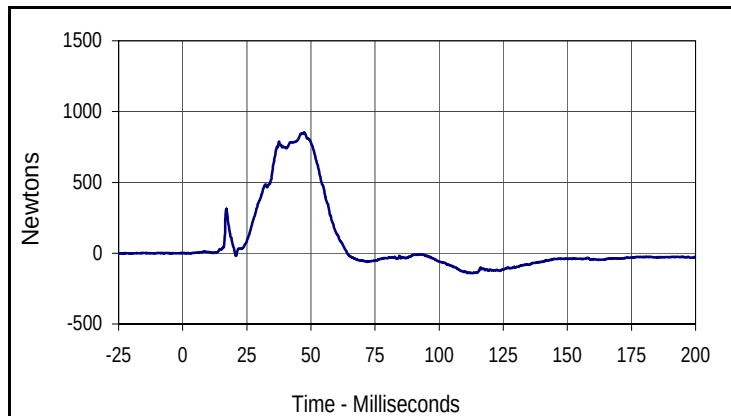
Curve Description			
Driver Lower Spine T12 Acceleration Z			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
9.0	57.7	-11.6	116.3



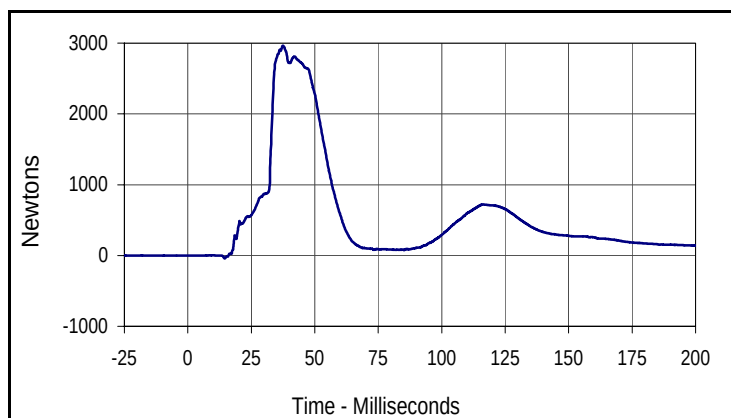
Curve Description			
Driver Lower Spine T12 Acceleration Res.			
CURNO	Type	SAE Class	Units
012	RES	180	G's
Max	Time	Min	Time
39.0	48.3	0.0	0.0

Test Vehicle: 2011 Nissan Sentra 2.0 4-Door Sedan
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

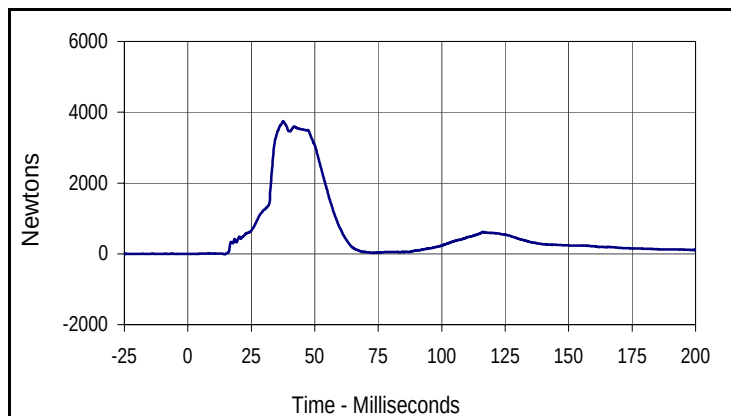
Test Date: 10/29/10
 NHTSA No.: MB5212



Curve Description			
Driver Iliac Wing Force on Impact Side Y			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
853.4	47.4	-140.9	113.0



Curve Description			
Driver Acetabulum Force on Impact Side Y			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
2963.0	37.4	-42.2	14.5



Curve Description			
Driver Total Pelvic Force on Impact Side Y			
CURNO	Type	SAE Class	Units
015	SUM	600	Newtons
Max	Time	Min	Time
3749.5	37.5	-12.9	14.5

APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

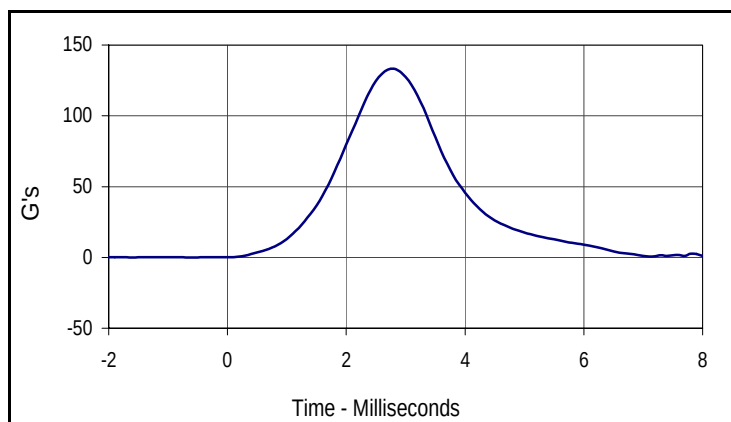
APPENDIX C
PRE-TEST / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

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

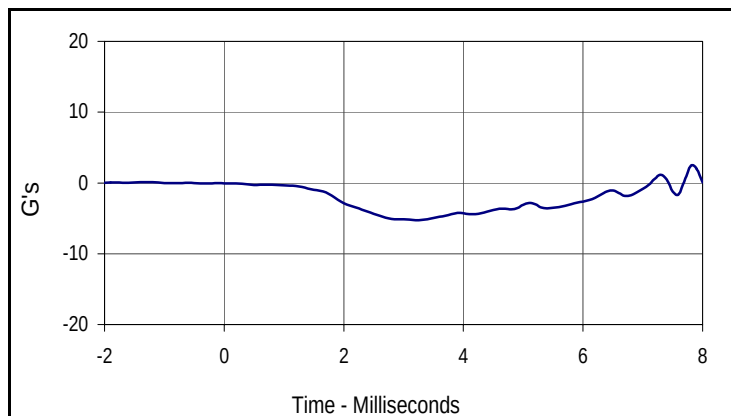
Test Date: 10/20/10
 Test I.D.: HDP10D



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
Peak Resultant Acceleration	G's	115 to 137	133.3	Pass
Peak Longitudinal Acceleration	G's	≤15	5.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	13.1	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
133.3	2.8	0.0	-0.6



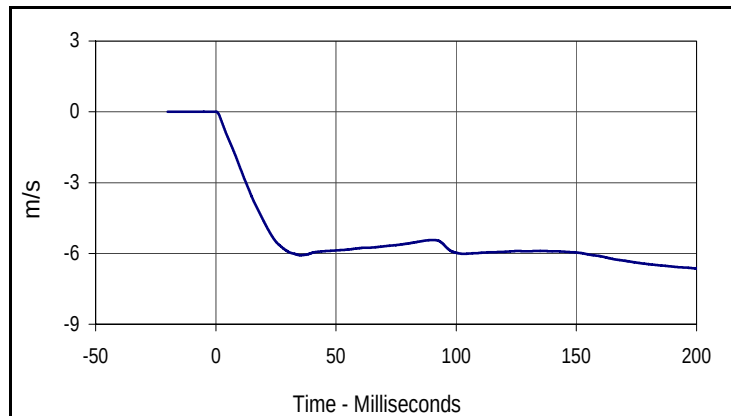
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.1	-1.3	-5.3	3.2

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

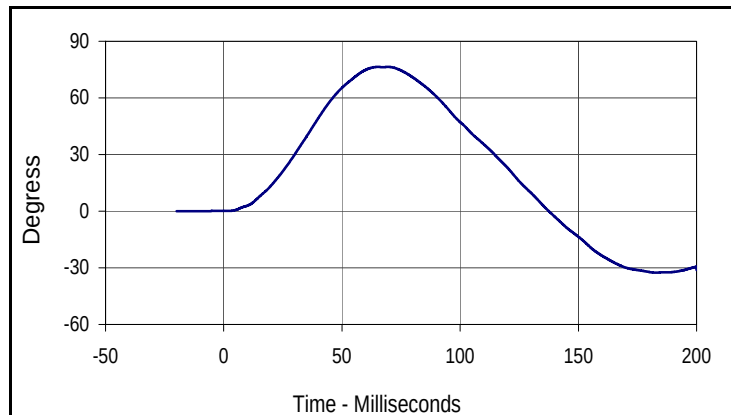
Test Date: 10/20/10
 Test I.D.: NBP10D



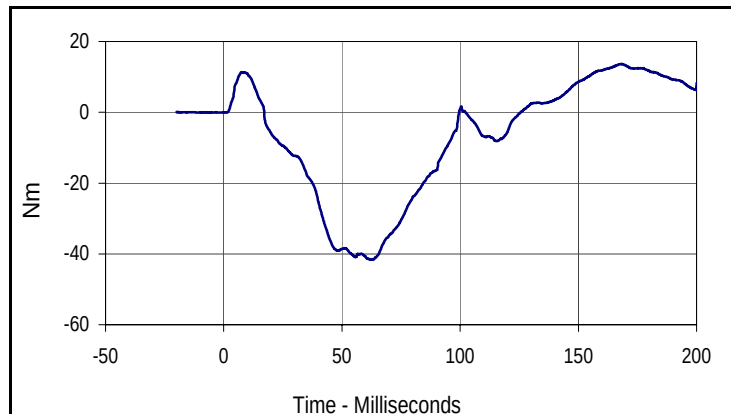
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.6	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.3	Pass
	15 msec	m/s	-3.30 to -4.10	-3.6	Pass
	20 msec	m/s	-4.40 to -5.40	-4.6	Pass
	25 msec	m/s	-5.40 to -6.10	-5.5	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.1	Pass
Translation-Rotation	Max	Degrees	71.0 to 81.0	76.4	Pass
	Time	msec	50.0 to 70.0	65.1	Pass
Peak Occipital Condyle Moment		Nm	-36.0 to -44.0	-41.7	Pass
Decaying Moment Time to Cross 0 Nm		msec	102.0 to 126.0	125.6	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.2	-6.6	199.9



Curve Description			
Maximum Translation Rotation			
CURNO	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
76.4	65.1	-32.5	182.7



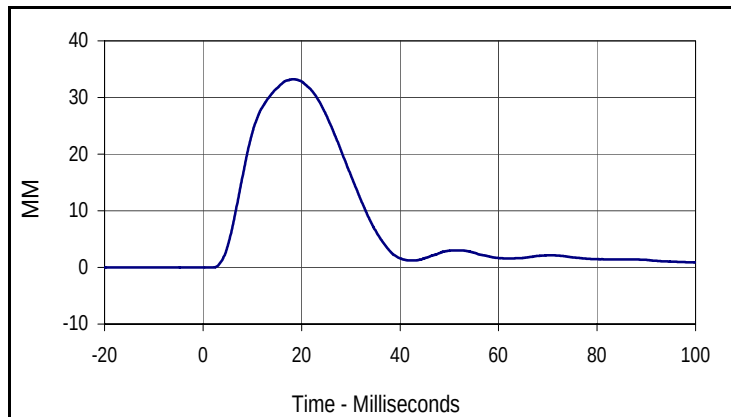
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
13.7	168.3	-41.7	61.9

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

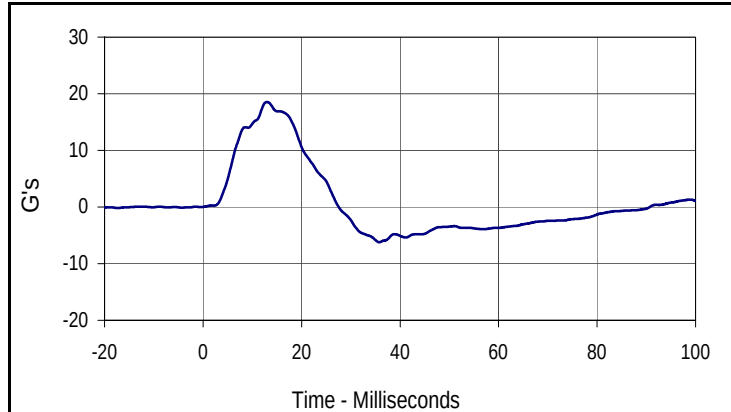
Test Date: 10/20/10
 Test I.D.: SHP10D



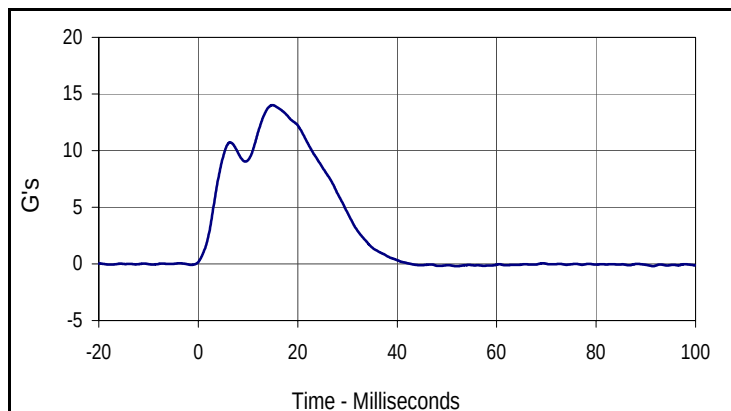
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.33	Pass
Shoulder Deflection	MM	28 to 37	33.2	Pass
Peak Upper Spine Y Acceleration	G's	17 to 22	18.5	Pass
Peak Impactor Acceleration	G's	13 to 18	14.0	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Acceleration			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
33.2	18.3	0.0	-2.1



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.5	13.0	-6.2	35.7



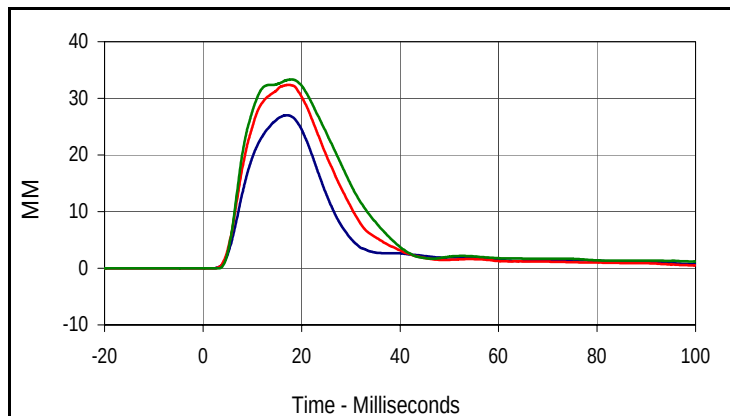
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
14.0	14.9	-0.2	52.0

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

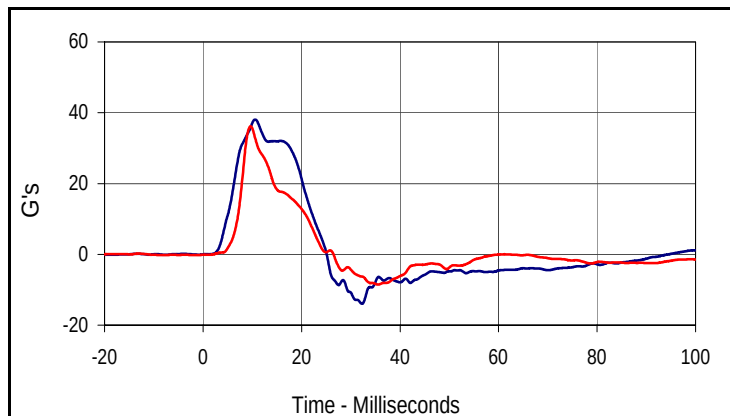
Test Date: 10/20/10
 Test I.D.: TWAP10D



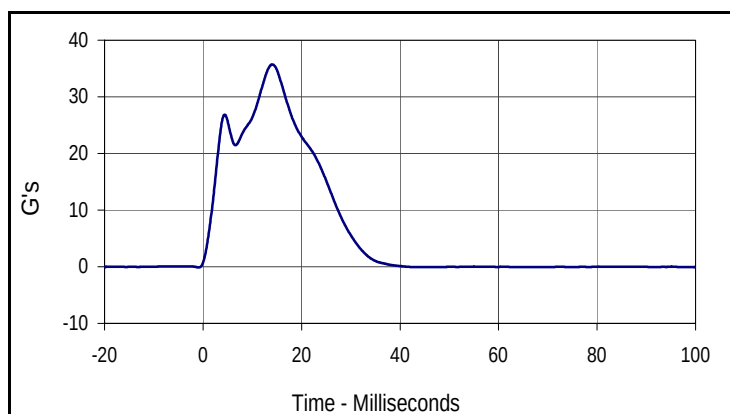
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.64	Pass
Shoulder Deflection	MM	31 to 40	37.5	Pass
Upper Thorax Rib Deflection	MM	25 to 32	27.0	Pass
Middle Thorax Rib Deflection	MM	30 to 36	32.4	Pass
Lower Thorax Rib Deflection	MM	32 to 38	33.3	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	38.1	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	36.2	Pass
Peak Impactor Acceleration After 5 msec.	G's	30 to 36	35.7	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.0	17.0	0.0	-15.7
Middle Thorax Deflection			
Max	Time	Min	Time
32.4	17.2	0.0	-18.9
Lower Thorax Deflection			
Max	Time	Min	Time
33.3	18.0	0.0	-0.9



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
38.1	10.5	-14.0	32.3
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
36.2	9.6	-8.5	35.6



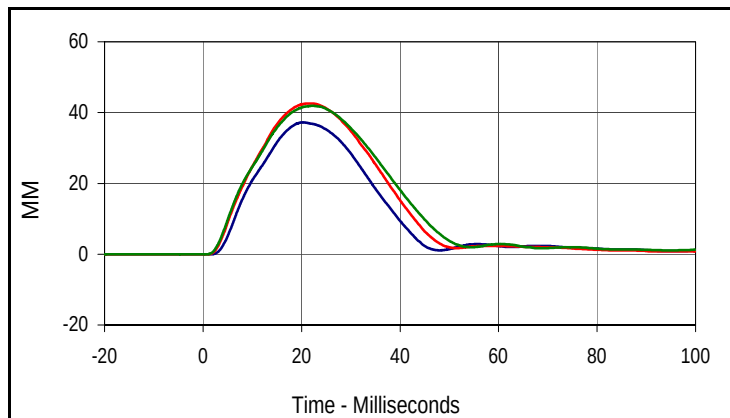
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
35.7	14.1	-0.1	-0.9

Test Program: SID IIs Thorax w/o Arm Calibration
 ATD Serial No.: 299

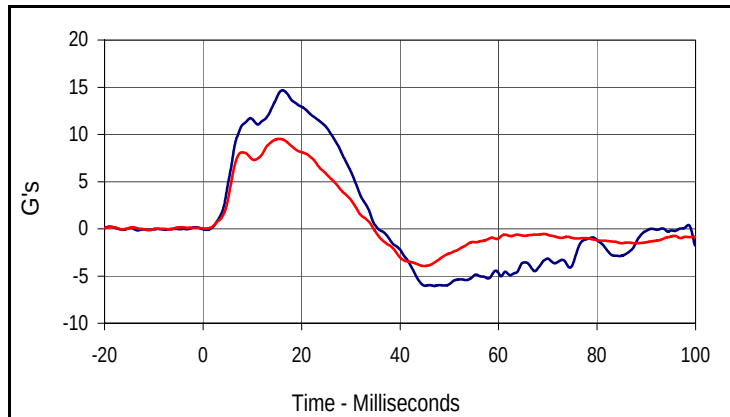
Test Date: 10/20/10
 Test I.D.: TOAP10D



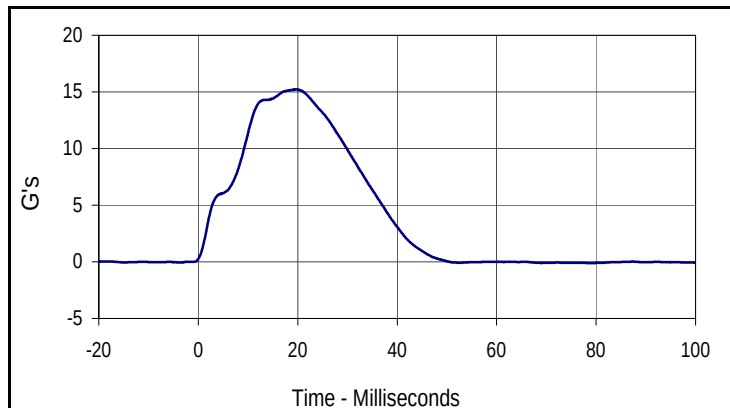
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.28	Pass
Upper Thorax Rib Deflection	MM	32 to 40	37.2	Pass
Middle Thorax Rib Deflection	MM	39 to 45	42.6	Pass
Lower Thorax Rib Deflection	MM	35 to 43	41.9	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	14.7	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	9.5	Pass
Peak Impactor Acceleration	G's	14 to 18	15.2	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
37.2	20.3	0.0	-10.1
Middle Thorax Deflection			
Max	Time	Min	Time
42.6	21.6	0.0	-14.5
Lower Thorax Deflection			
Max	Time	Min	Time
41.9	22.2	0.0	0.8



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.7	16.1	-6.1	47.0
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.5	15.4	-3.9	44.8



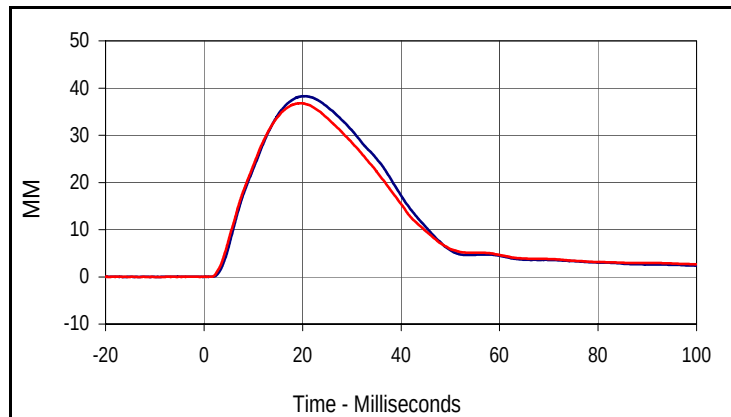
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
15.2	19.7	-0.1	0.0

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

Test Date: 10/20/10
 Test I.D.: ABDP10D

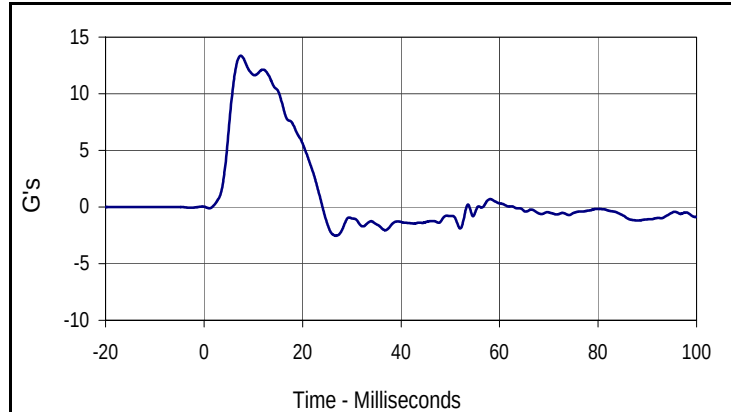


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.26	Pass
Upper Abdominal Rib Deflection	MM	36 to 47	38.3	Pass
Lower Abdominal Rib Deflection	MM	33 to 44	36.8	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	13.4	Pass
Peak Impactor Acceleration	G's	12 to 16	14.5	Pass
Overall Test Results			Pass	

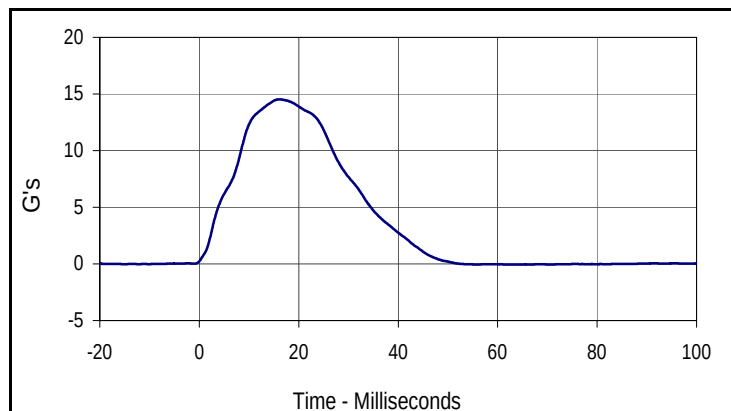


Curve Description			
Upper Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
38.3	20.2	0.0	-8.9

Curve Description			
Lower Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
36.8	19.7	0.0	-9.8



Curve Description			
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
13.4	7.5	-2.5	26.8



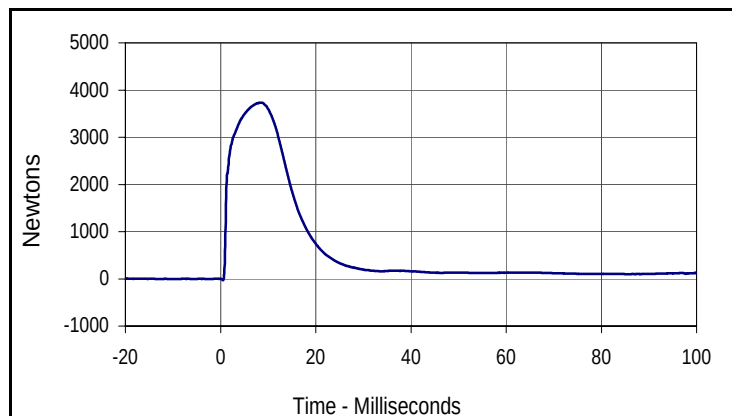
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.5	16.1	-0.1	64.2

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

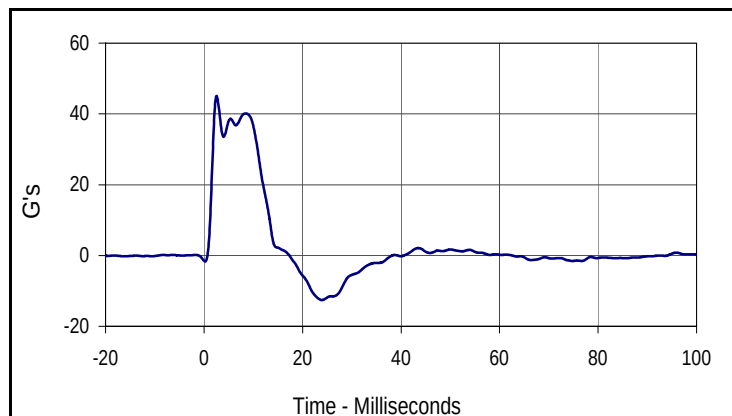
Test Date: 10/20/10
 Test I.D.: PAP10D



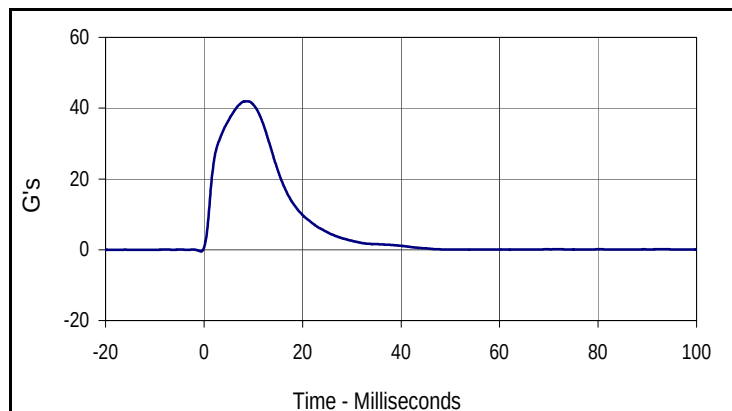
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.61	Pass
Peak Acetabulum Force	Newtons	3600 to 4300	3732.3	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	40.1	Pass
Peak Impactor Acceleration	G's	38 to 47	42.0	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3732.3	8.6	-28.5	0.5



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
45.0	2.5	-12.6	23.9



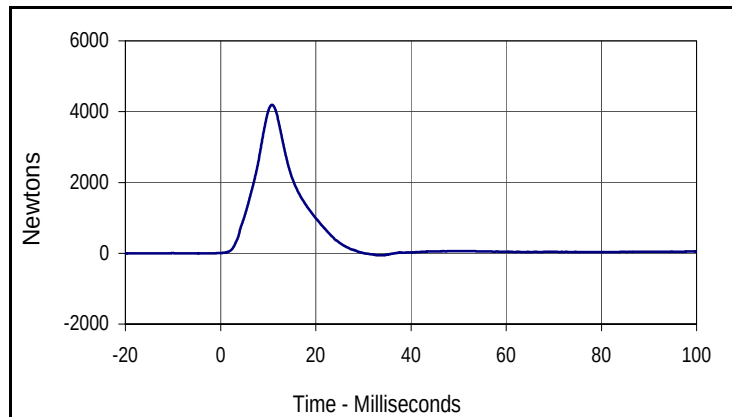
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
42.0	8.8	-0.4	-0.6

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

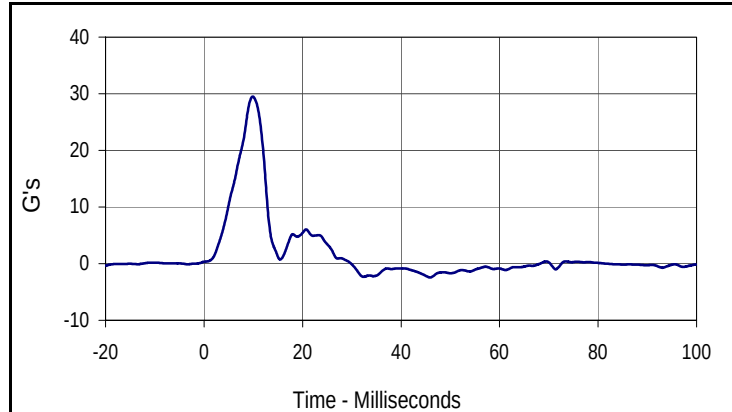
Test Date: 10/20/10
 Test I.D.: PLP10D



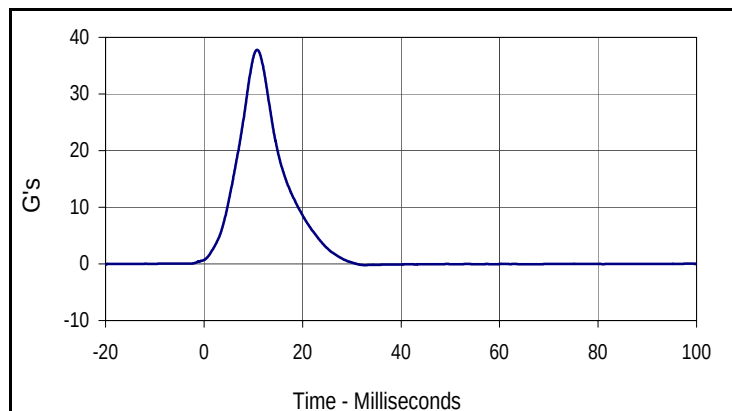
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.26	Pass
Peak Iliac Force	Newtons	4100 to 5100	4194.5	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	29.5	Pass
Peak Impactor Acceleration	G's	36 to 45	37.8	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4194.5	10.8	-59.9	34.1



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
29.5	9.9	-2.4	45.9



Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
37.8	10.8	-0.2	32.6

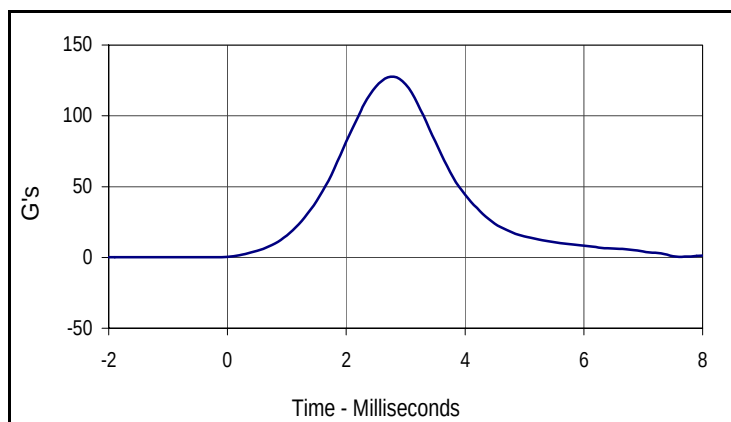
APPENDIX C
POST-TEST / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

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

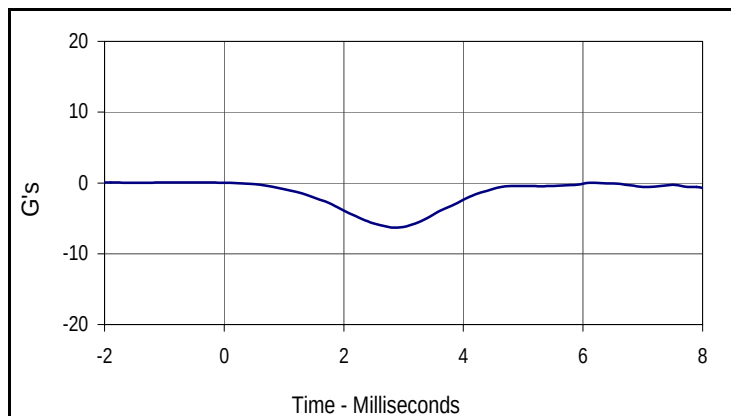
Test Date: 11/3/10
 Test I.D.: HDP10E



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
Peak Resultant Acceleration	G's	115 to 137	127.6	Pass
Peak Longitudinal Acceleration	G's	≤15	6.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	11.7	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
127.6	2.8	0.1	-1.8



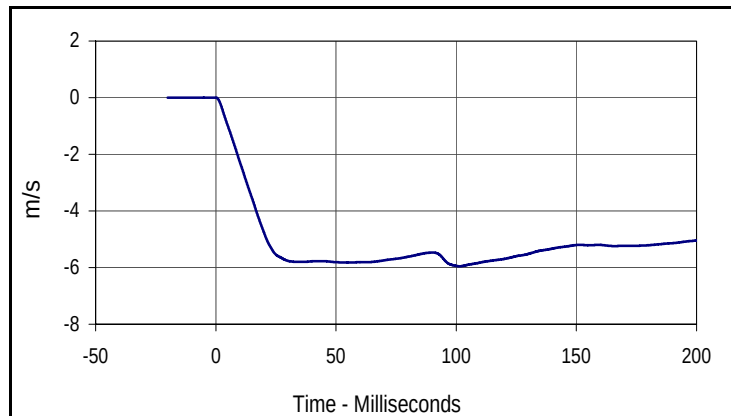
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.1	-0.5	-6.3	2.9

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

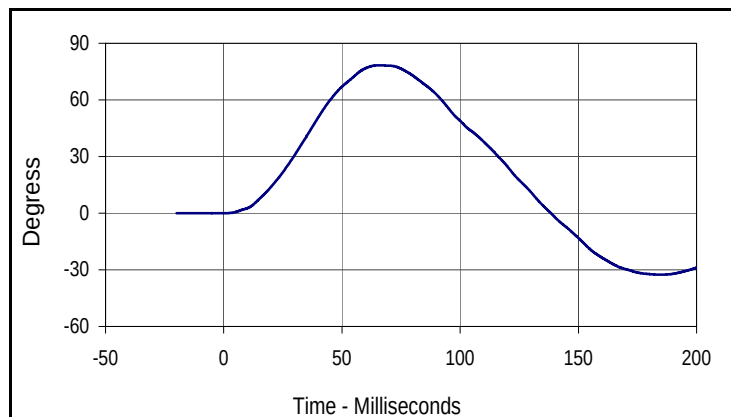
Test Date: 11/3/10
 Test I.D.: NBP10E



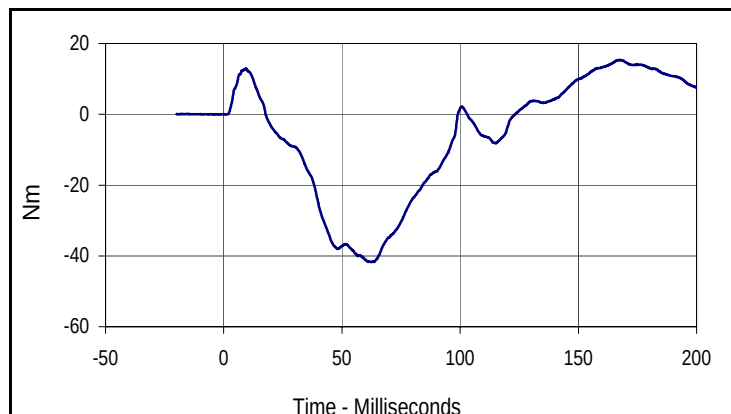
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.6	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.3	Pass
	15 msec	m/s	-3.30 to -4.10	-3.5	Pass
	20 msec	m/s	-4.40 to -5.40	-4.8	Pass
	25 msec	m/s	-5.40 to -6.10	-5.5	Pass
	25-100 msec	m/s	-5.50 to -6.20	-5.9	Pass
Translation-Rotation	Max	Degrees	71.0 to 81.0	78.4	Pass
	Time	msec	50.0 to 70.0	65.5	Pass
Peak Occipital Condyle Moment		Nm	-36.0 to -44.0	-41.7	Pass
Decaying Moment Time to Cross 0 Nm		msec	102.0 to 126.0	123.3	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.4	-6.0	101.4



Curve Description			
Maximum Translation Rotation			
CURNO	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
78.4	65.5	-32.5	184.7



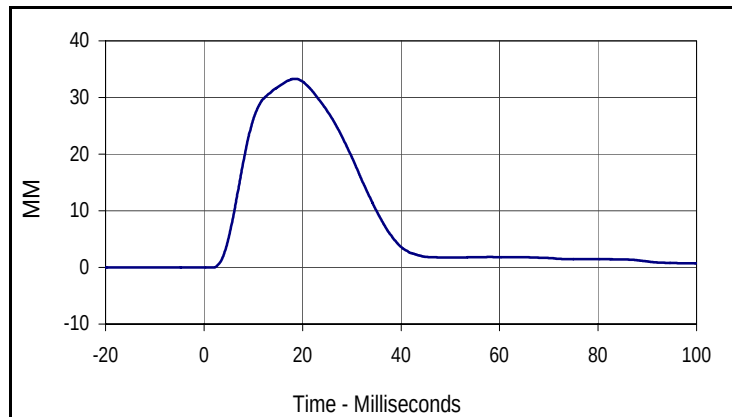
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
15.4	167.2	-41.7	62.5

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

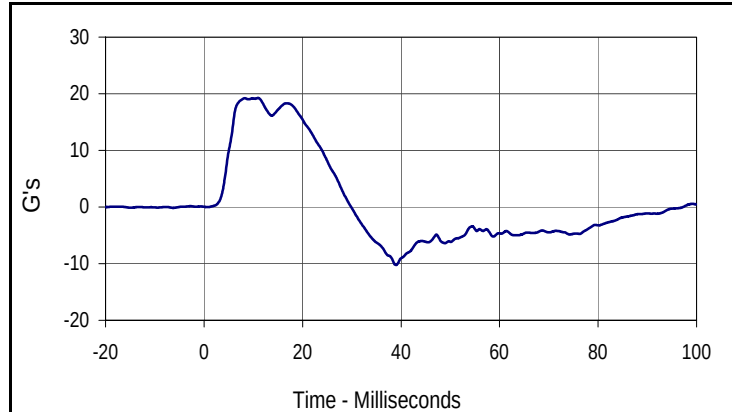
Test Date: 11/3/10
 Test I.D.: SHP10E



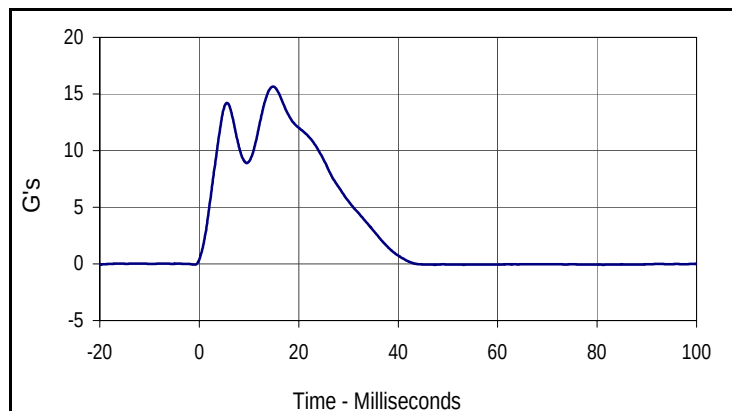
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.33	Pass
Shoulder Deflection	MM	28 to 37	33.3	Pass
Peak Upper Spine Y Acceleration	G's	17 to 22	19.3	Pass
Peak Impactor Acceleration	G's	13 to 18	15.7	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Acceleration			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
33.3	18.6	0.0	1.0



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.3	11.0	-10.2	39.0



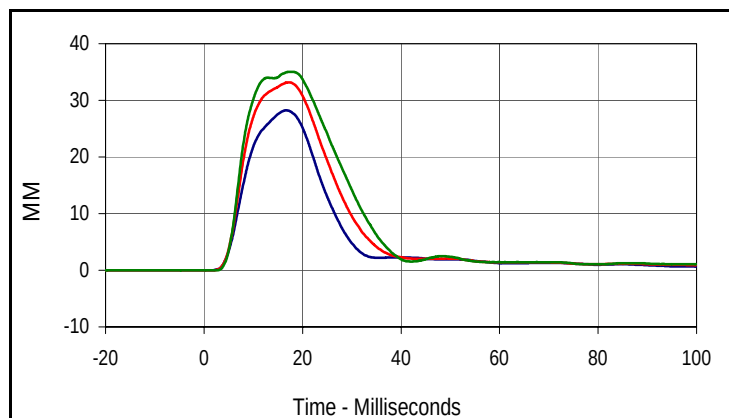
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.7	14.8	-0.1	81.3

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

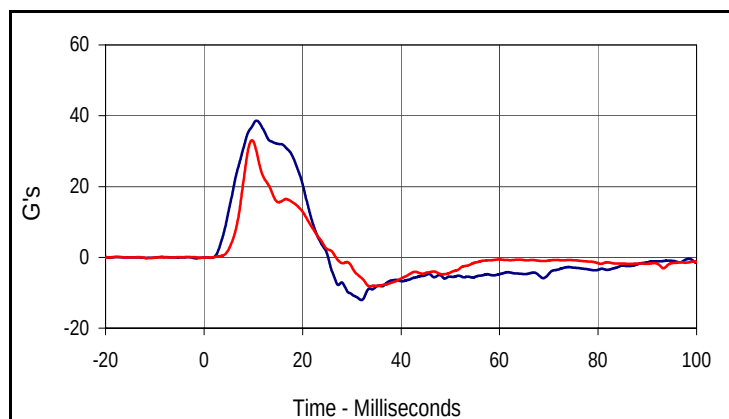
Test Date: 11/3/10
 Test I.D.: TWAP10E



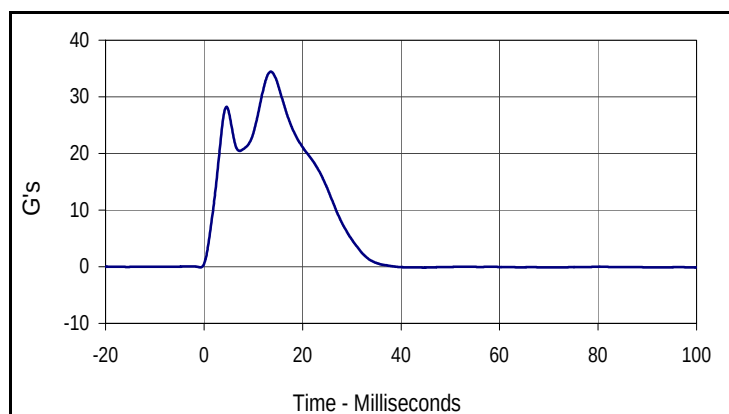
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.71	Pass
Shoulder Deflection	MM	31 to 40	36.0	Pass
Upper Thorax Rib Deflection	MM	25 to 32	28.2	Pass
Middle Thorax Rib Deflection	MM	30 to 36	33.2	Pass
Lower Thorax Rib Deflection	MM	32 to 38	35.0	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	38.6	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	33.1	Pass
Peak Impactor Acceleration After 5 msec.	G's	30 to 36	34.4	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
28.2	16.7	0.0	-8.9
Middle Thorax Deflection			
Max	Time	Min	Time
33.2	17.3	0.0	-10.9
Lower Thorax Deflection			
Max	Time	Min	Time
35.0	17.5	0.0	-5.1



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
38.6	10.6	-12.0	32.0
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
33.1	9.7	-8.2	33.7



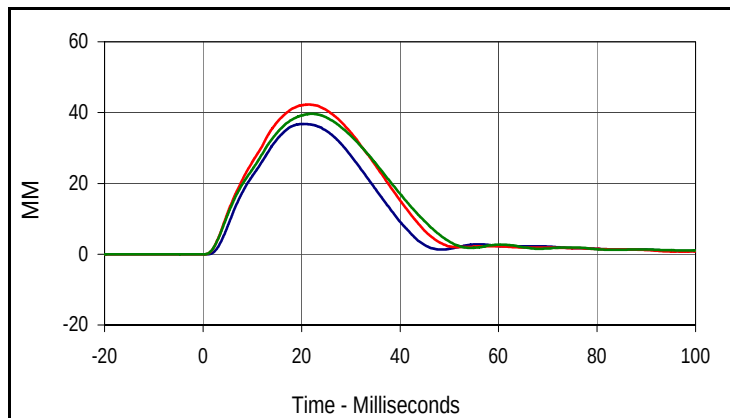
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.4	13.5	-0.1	44.6

Test Program: SID IIs Thorax w/o Arm Calibration
 ATD Serial No.: 299

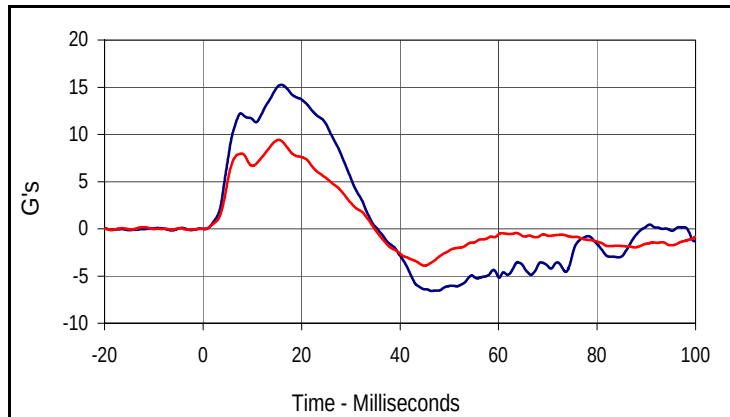
Test Date: 11/3/10
 Test I.D.: TOAP10E



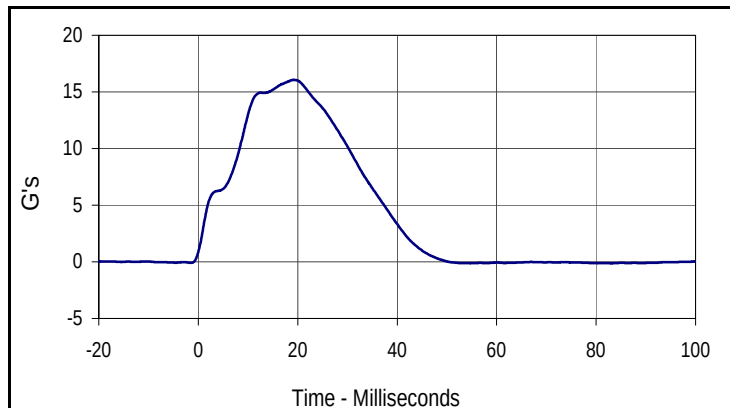
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.27	Pass
Upper Thorax Rib Deflection	MM	32 to 40	36.8	Pass
Middle Thorax Rib Deflection	MM	39 to 45	42.3	Pass
Lower Thorax Rib Deflection	MM	35 to 43	39.6	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.3	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	9.4	Pass
Peak Impactor Acceleration	G's	14 to 18	16.1	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
36.8	20.5	0.0	-0.1
Middle Thorax Deflection			
Max	Time	Min	Time
42.3	21.4	0.0	-4.1
Lower Thorax Deflection			
Max	Time	Min	Time
39.6	22.0	0.0	0.2



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.3	15.9	-6.6	46.5
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.4	15.3	-3.9	45.0



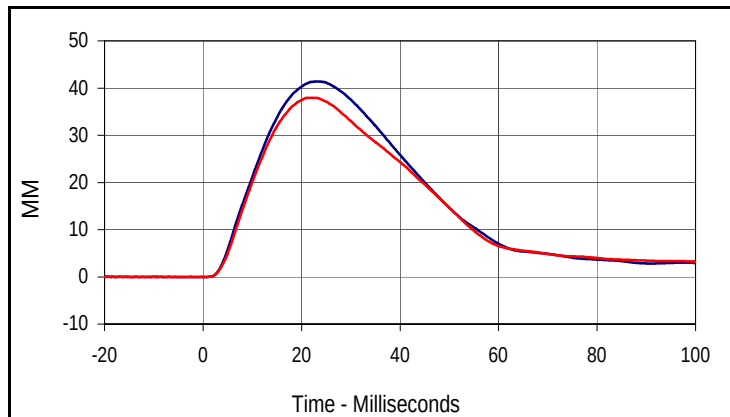
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.1	19.2	-0.1	83.0

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

Test Date: 11/3/10
 Test I.D.: ABDP10E

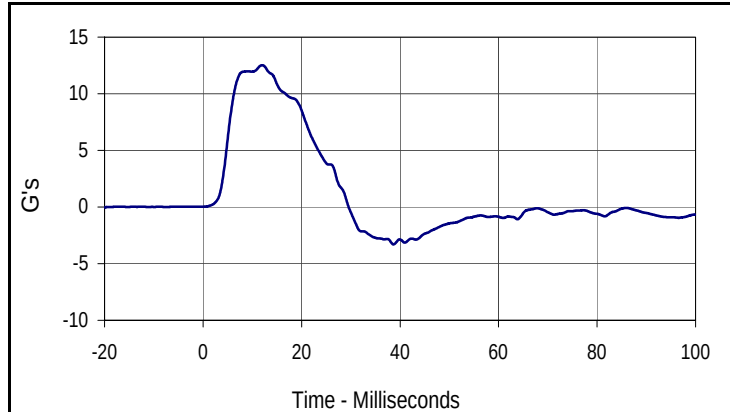


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.26	Pass
Upper Abdominal Rib Deflection	MM	36 to 47	41.4	Pass
Lower Abdominal Rib Deflection	MM	33 to 44	38.0	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.5	Pass
Peak Impactor Acceleration	G's	12 to 16	15.3	Pass
Overall Test Results			Pass	

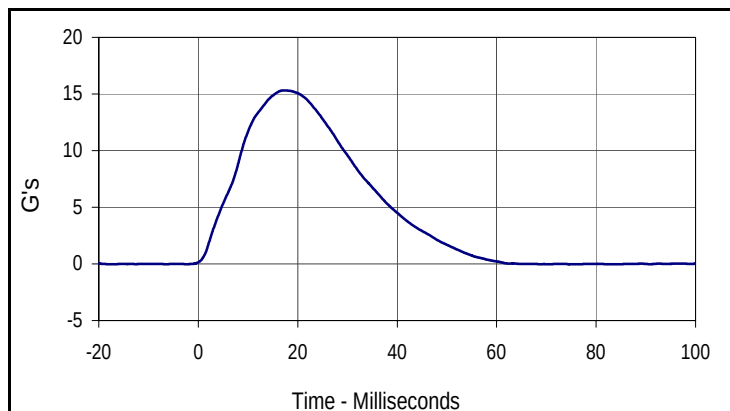


Curve Description			
Upper Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
41.4	23.2	0.0	-11.2

Curve Description			
Lower Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
38.0	22.2	0.0	-6.3



Curve Description			
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.5	12.0	-3.3	38.7



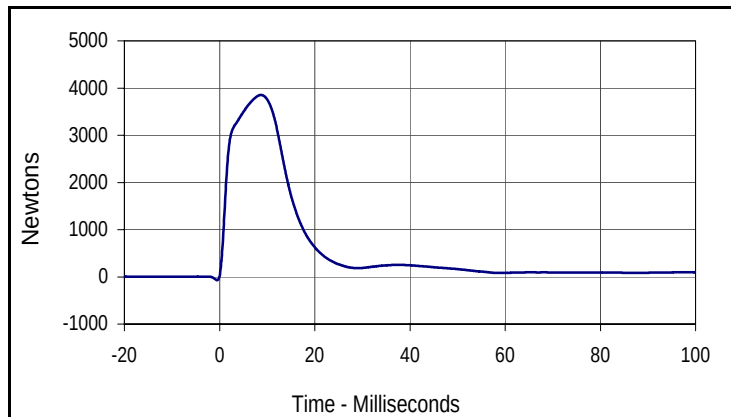
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.3	17.3	0.0	76.2

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

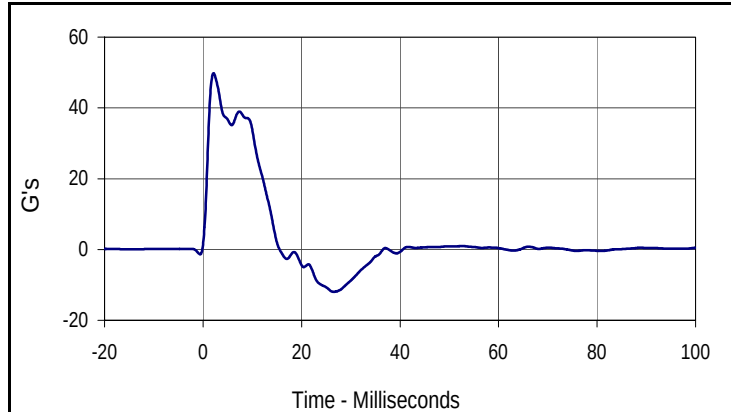
Test Date: 11/3/10
 Test I.D.: PAP10E



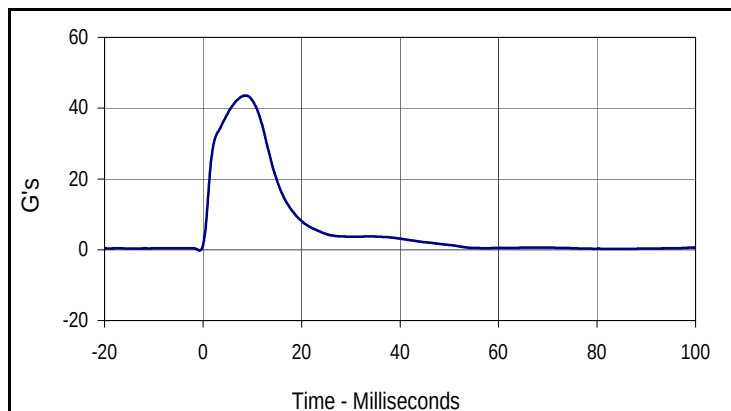
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.61	Pass
Peak Acetabulum Force	Newtons	3600 to 4300	3853.4	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	39.0	Pass
Peak Impactor Acceleration	G's	38 to 47	43.6	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
CURNO	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
3853.4	8.7	-70.2	-0.5



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
49.8	2.1	-12.0	26.5



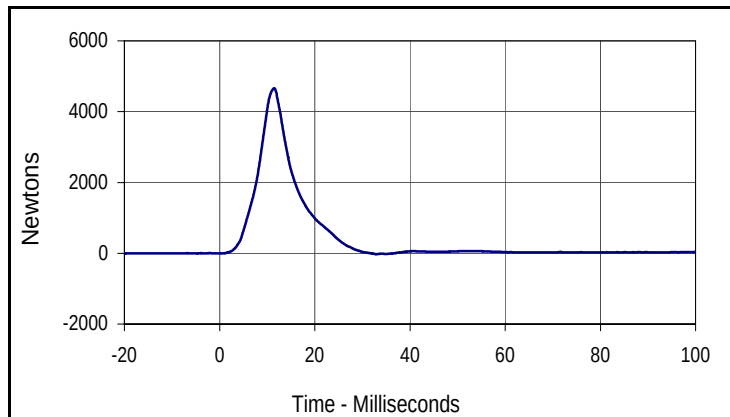
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
43.6	8.7	-0.2	-0.7

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

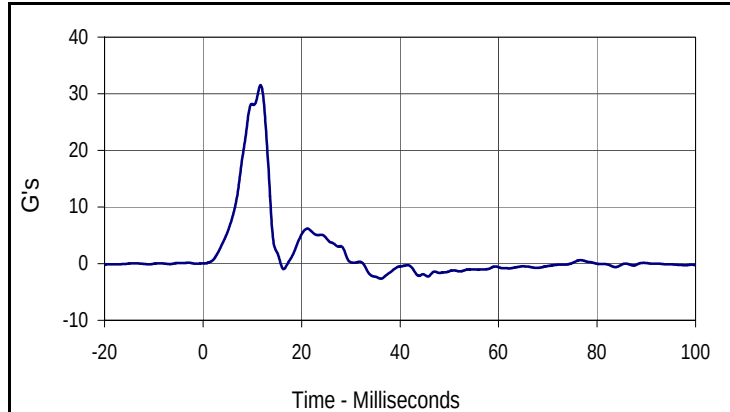
Test Date: 11/3/10
 Test I.D.: PLP10E



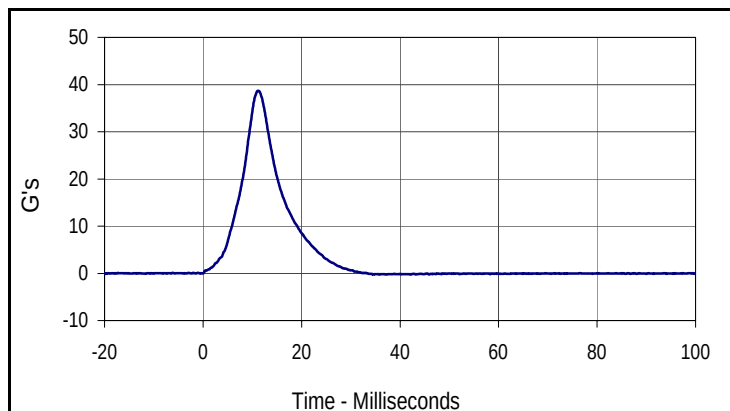
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.28	Pass
Peak Iliac Force	Newtons	4100 to 5100	4662.1	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	31.5	Pass
Peak Impactor Acceleration	G's	36 to 45	38.7	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4662.1	11.5	-25.7	32.9



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
31.5	11.7	-2.6	36.1



Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
38.7	11.2	-0.2	34.6