

REPORT NUMBER TR-P26161-01-NC

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

**FORD MOTOR COMPANY
2006 FORD FREESTYLE
5-DOOR MPV**

NHTSA NUMBER: F60202

**Prepared By:
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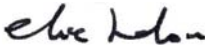
AUGUST 18, 2006


FINAL REPORT


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Date of Acceptance

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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 2006 Ford Freestyle 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 laboratories in Adelanto, California, on August 18, 2006. The impact velocity of the Moving Deformable Barrier was 62.05 km/h, and the outside ambient temperature at the struck (driver's) side of the vehicle was 33 deg. C. The target vehicle's maximum post-test static crush was 240 mm located at level 3. The test vehicle's occupant performance data is as follows:																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Measurement Description</th> <th style="width: 20%;">Driver SID/HIII</th> <th style="width: 20%;">Pass. SID/HIII</th> <th style="width: 30%;"></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) G's</td> <td style="text-align: center;">28.1</td> <td style="text-align: center;">32.1</td> <td></td> </tr> <tr> <td>Left Lower Rib (LLR) G's</td> <td style="text-align: center;">38.3</td> <td style="text-align: center;">38.8</td> <td></td> </tr> <tr> <td>Lower Spine (T₁₂) G's</td> <td style="text-align: center;">43.6</td> <td style="text-align: center;">39.2</td> <td></td> </tr> <tr> <td>Thoracic Trauma Index (TTI) G's</td> <td style="text-align: center;">41.0</td> <td style="text-align: center;">39.0</td> <td></td> </tr> <tr> <td>Pelvis (PEV) G's</td> <td style="text-align: center;">54.8</td> <td style="text-align: center;">63.1</td> <td></td> </tr> </tbody> </table>				Measurement Description	Driver SID/HIII	Pass. SID/HIII		Left Upper Rib (LUR) G's	28.1	32.1		Left Lower Rib (LLR) G's	38.3	38.8		Lower Spine (T ₁₂) G's	43.6	39.2		Thoracic Trauma Index (TTI) G's	41.0	39.0		Pelvis (PEV) G's	54.8	63.1	
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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' 2007 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 2006 Ford Freestyle 5-Door MPV manufactured by Ford Motor Company.

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 2006 Ford Freestyle 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 62.05 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 2069 kg and the test weight of the MDB was 1361 kg. The test was conducted at KARCO Engineering, LLC in Adelanto, California, on August 18, 2006.

Two (2) real-time cameras and eleven (11) 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	No	No	
Side Torso Airbag	Yes	Yes	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

The driver and passenger doors remained closed during impact. The test vehicle sustained a maximum static crush of 240 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 is summarized as follows:

Measurement	Units	Driver	Passenger
Thoracic Trauma Index (TTI)	G's	41.0	39.0
Peak Pelvic G's (PEV)	G's	54.8	63.1

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: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06

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	1.609
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	$=(tf - 32)/1.8$
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: 2006 Ford Freestyle 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: F60202
 Test Date: 8/18/06

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	F60202
Make	Ford
Model	Freestyle
Body Style	5-Door MPV
Vin No.	1FMDK01156GA03944
Color	Red
Delivery Date	8/9/2006
Odometer	89.7
Dealer	Sunrise Ford
Transmission	5-Speed Automatic
Final Drive	Front
Type/No. Cyl.	V6
Engine Disp. (L)	3.0
Engine Placement	Transverse
Roof Rack	Yes
Sunroof/T-Top	No
Tinted Glass	No
Traction Control	No
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 Airbag	Yes
Driver Head Airbag	No
Driver Curtain Airbag	Yes
Left Rear Pass. Airbag	No
Left Rear Pass. Side Airbag	No
Left Rear Pass. Head Airbag	No
Left Rear Pass. Curtain Airbag	Yes
Pre-Tensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes
Air. Cond.	Yes
AM/FM CD Player	Yes
Tilt Steering	Yes
Automatic Door Locks	Yes
Power Windows	Yes
Power Seats	Yes
Other	None

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

Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Ford Motor Company
Date of Manufacture	Jul-05

GVWR (kg)	2440
GAWR Front (kg)	1225
GAWR Rear (kg)	1270

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket	Bucket	
Number of Occupants	2	2	2	6
Capacity Weight (VCW) (kg)				521
Cargo Weight (RCLW) (kg)				113

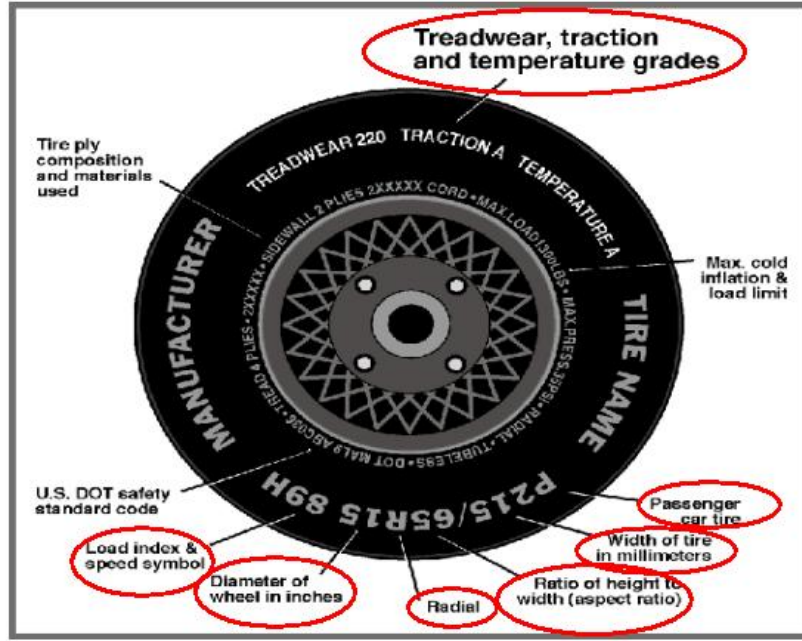
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GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Ford Freestyle 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: F60202
 Test Date: 8/18/06

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)	300	300
Cold Pressure (kpa)	220	235
Recommended Tire Size	P215/65R17	P215/65R17
Tire Size on Vehicle	P215/65R17	P215/65R17
Tire Manufacturer	Continental	Continental
Treadwear	360	360
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	4 Polyester	4 Polyester
Tire Plies Body	1 Polyester + 1 Nylon + 2 Steel	1 Polyester + 1 Nylon + 2 Steel
Load Index/Speed Symbol	98T	98T
Tire Material	Polyester + Nylon + Steel	Polyester + Nylon + Steel
DOT Safety Code Right	ACA6 3NT 2305	ACA6 3NT 2305
DOT Safety Code Left	ACA6 3NT 2305	ACA6 3NT 2305

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	509	384		560	489	
Right	kg	513	398		536	484	
Ratio	%	56.7	43.3		53.0	47.0	
Totals	kg	1022	782	1804	1096	973	2069

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1804
Weight of 2 P572 ATD's	kg	161
Rated Cargo/Luggage Wt. (RCLW)	kg	113
Calculated Vehicle Target Wt. (TVTW)	kg	2078

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	780	793	811	811	1241
As Tested	mm	772	785	785	789	1347
Fully Loaded	mm	774	787	775	783	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2865
Total Vehicle Length at Left Side	mm	4145
Total Vehicle Length at Centerline	mm	5074
Total Vehicle Length at Right Side	mm	4145
Weight of Ballast In Cargo Area	kg	73.0
Amount of Stoddard Solvent in Fuel Tank	liters	68.5

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2865
Target Impact Point Aft of Front Axle	mm	493
Actual Impact Point Aft of Front Axle	mm	492

DATA SHEET NO. 1...(CONTINUED)

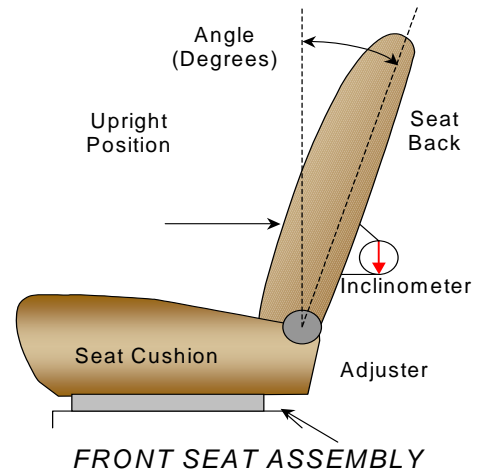
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Ford Freestyle 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: F60202
 Test Date: 8/18/06

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 headrest using a digital inclinometer.



SEAT BACK ANGLES

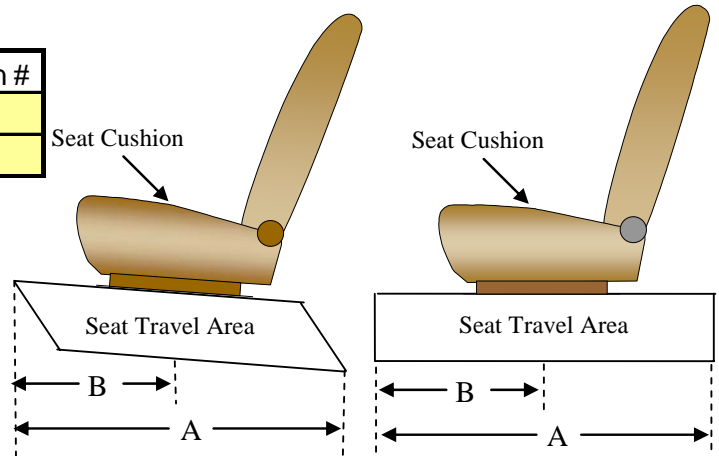
	Deg.
Driver Seat Back Angle	5.4 @ Headrest
Rear Seat Back Angle	14.2 @ Headrest

SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most position to rearmost position, irrespective of vertical seat height in those positions. The seat was set at the longitudinal mid position with vertical adjustment at the lowest position obtainable for both the driver and passenger.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	255 mm	128 mm
Rear Seat	Fixed	Fixed



SEAT BELT UPPER ANCHORAGE

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	4	1
Rear Seat	Fixed	Fixed

Position number one (1) is the uppermost position

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

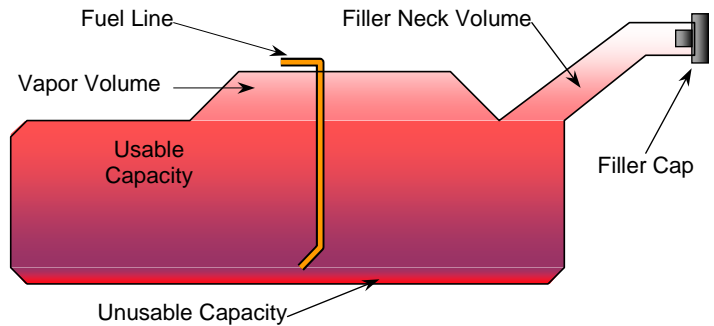
Test Vehicle: 2006 Ford Freestyle 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: F60202
 Test Date: 8/18/06

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	71.92
Usable Capacity of "Optional" Tank	
Usable Capacity used for FMVSS 301	66.24 to 67.37
Actual Amount of Solvent used	66.88

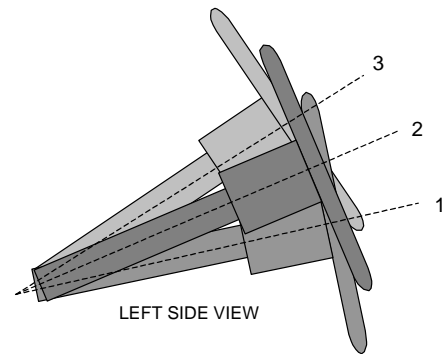
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately three (3) seconds with the ignition in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender.



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	22.4	
Geometric center position No. 2	25.5	
Uppermost position No. 3	28.6	

DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	509	384		560	489	
Right	kg	513	398		536	484	
Ratio	%	56.7	43.3		53.0	47.0	
Totals	kg	1022	782	1804	1096	973	2069

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	81	291
Level 2	Occupant H-Point	mm	222	627
Level 3	Mid Door	mm	240	680
Level 4	Window Sill	mm	171	986
Level 5	Window top	mm	10	1558
N/A	Maximum Penetration	mm	240	

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	5
High Speed, MDB On-Board	3
Real Time, Panning	2
Total	13

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06

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	62.05
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.99
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	Left	810
B	Top of Bumper	533	800	Left	767
C	Mid Level	686	800	Left	734
D	Top of Stack	813	800	Left	758

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	1
High Speed Cameras	2

DATA SHEET NO. 4

POST-TEST OBSERVATIONS

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06

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	Curtain Airbag, C-pillar
Upper Torso Contact	Side Airbag	Door Panel
Lower Torso Contact	Side Airbag	Door Panel
Left Knee Contact	Door Panel	Door Panel
Right Knee Contact	None	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
Seat Back Failure	None	None

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No separation
Sill Separation	None
Windshield Damage	None
Window Damage	Rear passenger side windows broke
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 01		Left Rear (Passenger) Occupant Location 04	
	Installed	Operation	Installed	Operation
Front Airbag	Yes	No	No	
Side Torso Airbag	Yes	Yes	No	
Head Airbag	No		No	
Curtain Airbag	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes		Yes	
Seat Belt Load Limiter	Yes		Yes	

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	-1 (left)
Vertical Offset	mm	+/- 20	3 (above)

DATA SHEET NO. 5

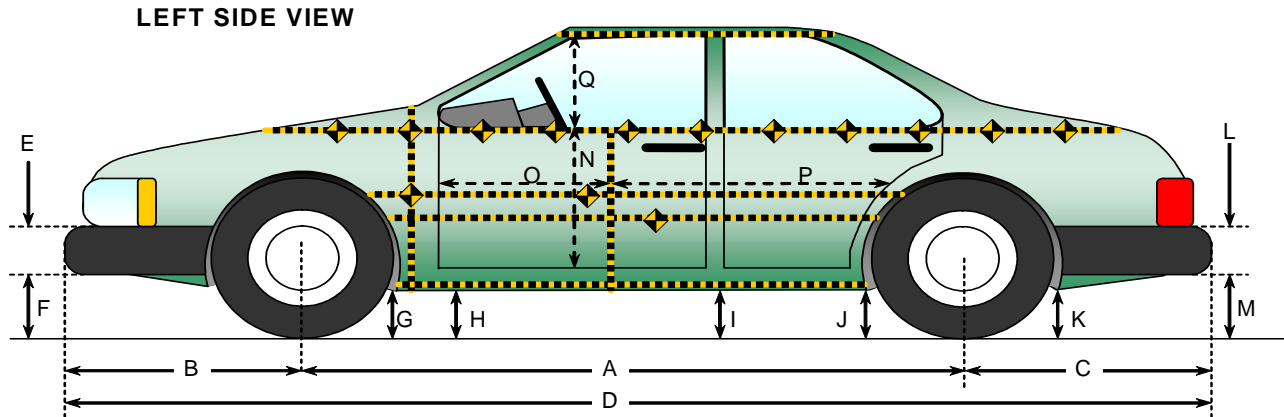
VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06



VEHICLE PRE AND POST TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2865	2865	0
B	Front Axle to FSOV	1029	1092	63
C	Rear Axle to RSOV	1176	1244	68
D	Total Length at Centerline	5074	5082	8
E	Front Bumper Thickness	435	436	1
F	Front Bumper Bottom to Ground	246	284	38
G	Sill Height at Front Wheel Well	195	230	35
H	Sill Height at Front Door Leading Edge	208	241	33
I	Sill Height at "B" Pillar	216	256	40
J1	Sill Height at Rear Wheel Well	228	279	51
J2	Pinch Weld Height at Rear Wheel Well	220	261	41
K	Sill Height aft of Rear Wheel Well	278	350	72
L	Rear Bumper Thickness	270	273	3
M	Rear Bumper Bottom to Ground	365	436	71
N	Sill Height to Window Bottom Sill	784	755	-29
O	Front Door Leading Edge to Impact CL	808	1091	283
P	Rear Door Trailing Edge to Impact CL	1381	1358	-23
Q	Front Window Opening	450	470	20
R	Right Side Length	4145	4138	-7
S	Left Side Length	4145	4151	6
T	Vehicle Width at "B" Post	1920	1630	-290

DATA SHEET NO. 6

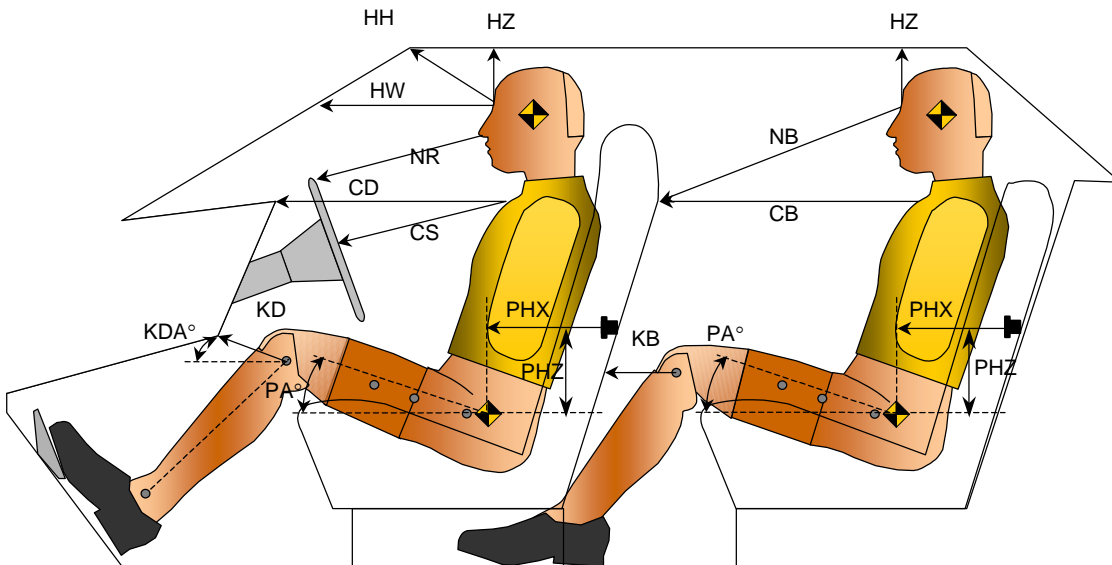
SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06



LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length(mm)	Angle	Length(mm)	Angle
HH		Head to Header	390	20.0		
HW		Head to Windshield	610			
HZ	HZ	Head to Roof	178	90.0	205	90.0
NR	NB	Nose to Rim/Nose to Seat Back	420	16.4	655	23.8
CD	CB	Chest to Dash or Seat Back	613	0.2	594	6.3
CS		Chest to Steering Wheel	328	11.3		
KDL	KBL	Left Knee to Dash or Seat Back	159	0.3	273	0.6
KDR	KBR	Right Knee to Dash or Seat Back	175		271	
PA	PA	Pelvic Angle		23.0		23.1
PHX	PHX	H-Point to Striker (X-Axis)	218		378	
PHZ	PHZ	H-Point to Striker (Z-Axis)	130		260	

DATA SHEET NO. 7

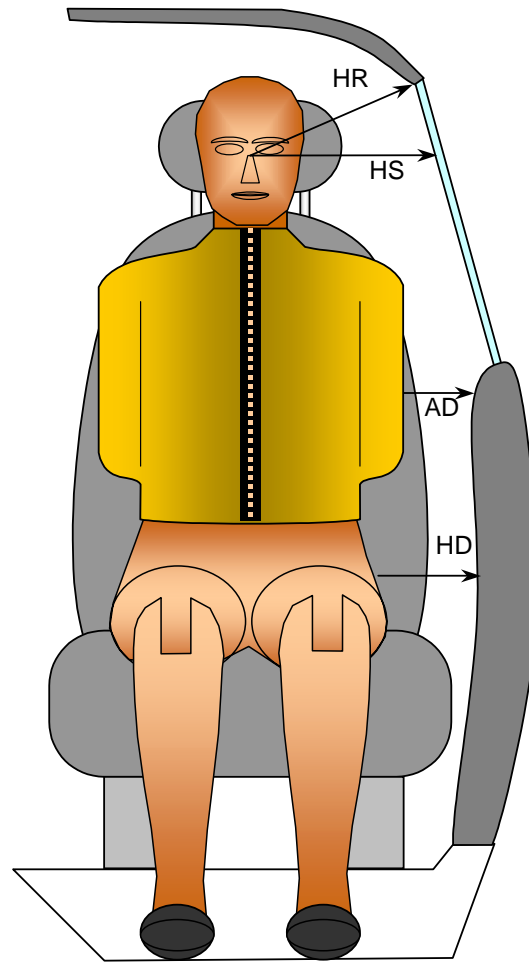
SID/HII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06



FRONT VIEW OF DUMMY

LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	315	270
HS	Head to Side Window	mm	332	305
AD	Arm to Door	mm	129	86
HD	H-Point to Door	mm	140	132

DATA SHEET NO. 8

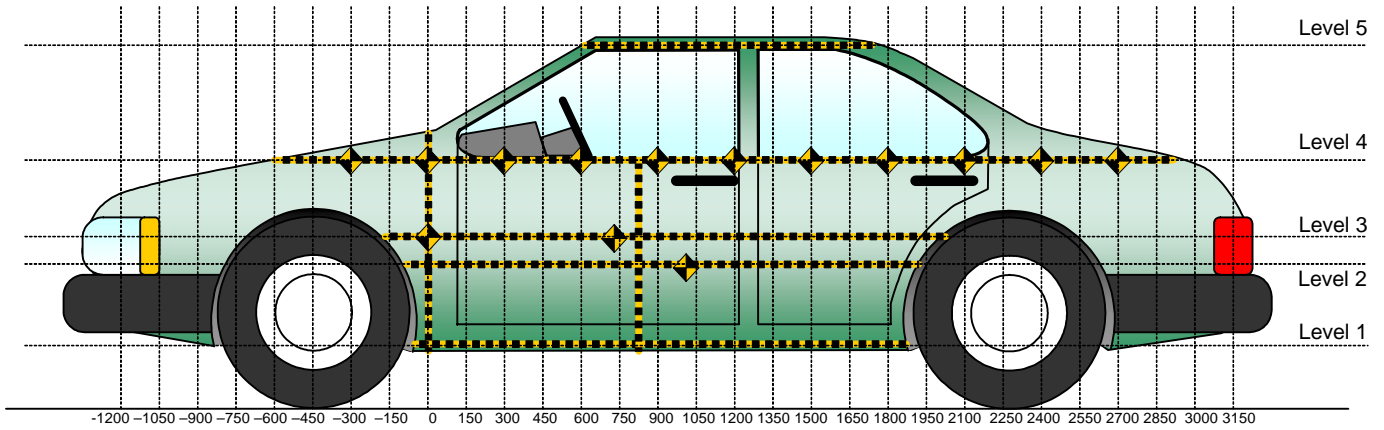
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06



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	291
2	Occupant H-Point	627
3	Mid Door	680
4	Window Sill	986
5	Window Top	1558

DATA SHEET NO. 9

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

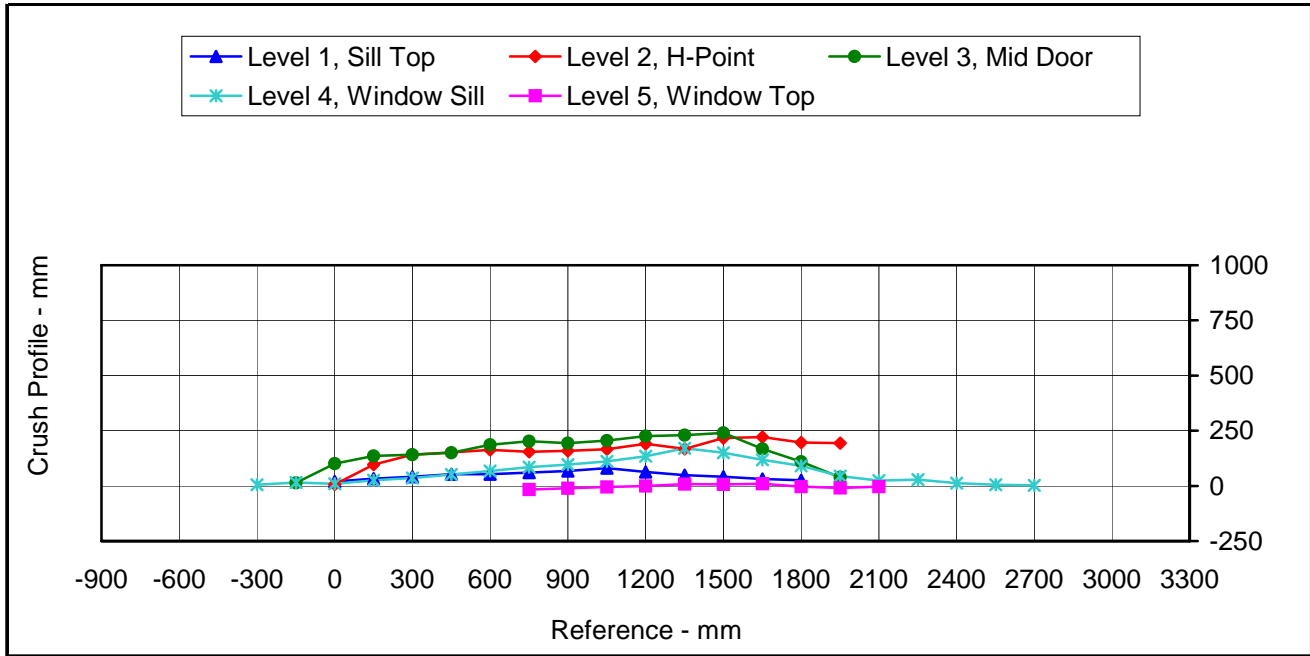
Test Date: 8/18/06

	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			560	636				571	641				11	5	
-150		569	572	621			571	586	636			2	14	15	
0	606	581	581	626		626	587	682	636		20	6	101	10	
150	630	581	578	615		663	677	714	641		33	96	136	26	
300	627	579	576	611		668	721	717	646		41	142	141	35	
450	626	577	573	605		679	729	723	656		53	152	150	51	
600	626	576	571	600	886	679	739	758	667	844	53	163	187	67	-42
750	626	576	571	596	868	686	731	774	681	852	60	155	203	85	-16
900	626	573	570	593	865	694	732	764	690	854	68	159	194	97	-11
1050	626	573	570	591	861	707	739	776	702	856	81	166	206	111	-5
1200	633	576	570	591	857	696	767	796	726	856	63	191	226	135	-1
1350	639	576	573	591	852	687	743	803	762	860	48	167	230	171	8
1500	639	578	576	591	856	681	795	816	741	862	42	217	240	150	6
1650	641	581	576	592	856	672	803	743	711	866	31	222	167	119	10
1800	636	583	578	592	861	662	779	688	683	857	26	196	110	91	-4
1950	606	573	578	596	871	642	767	616	641	862	36	194	38	45	-9
2100		551	545	596	866		678	536	620	863		127	-9	24	-3
2250				596	866				625	862				29	-4
2400				603	866				616	866				13	0
2550				611	876				616	861				5	-15
2700				618					621					3	
2850				630					636					6	
3000				646					646					0	

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

Test Vehicle: 2006 Ford Freestyle 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: F60202
 Test Date: 8/18/06



	Units	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush	mm	81	222	240	171	10
Distance from Impact	mm	1050	1650	1500	1350	1650

DATA SHEET NO. 10

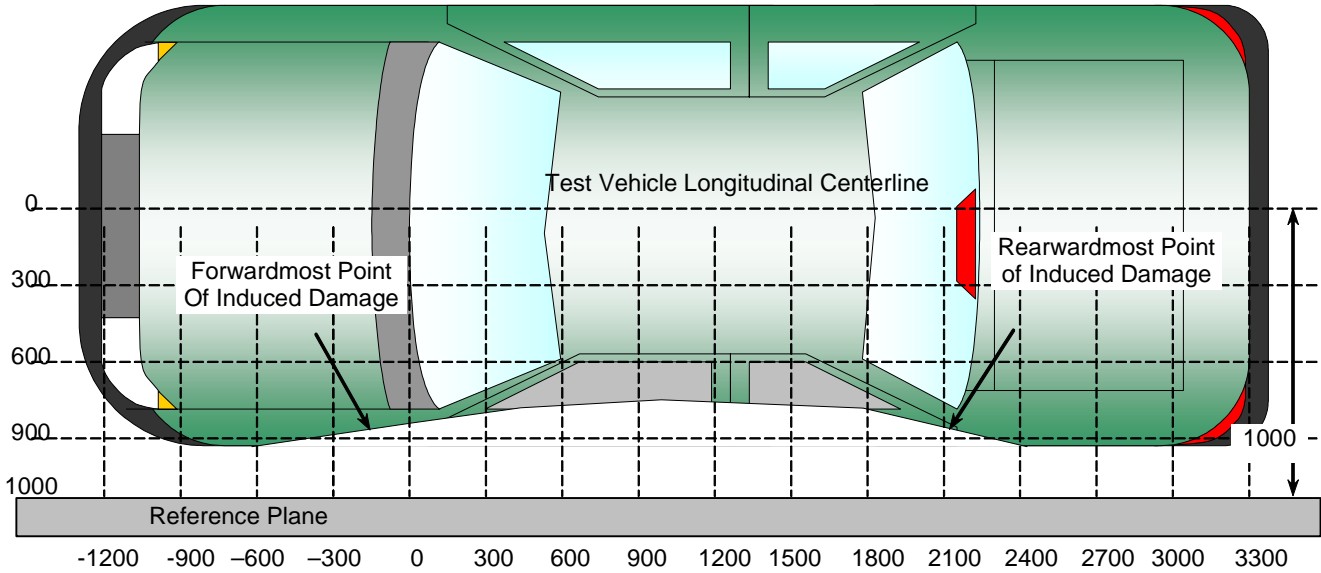
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06



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	-300	3	560	571	11
2	300	2	579	721	142
3	900	3	570	764	194
4	1500	3	576	816	240
5	2100	2	551	678	127
6	2700	4	618	621	3

DATA SHEET NO. 11

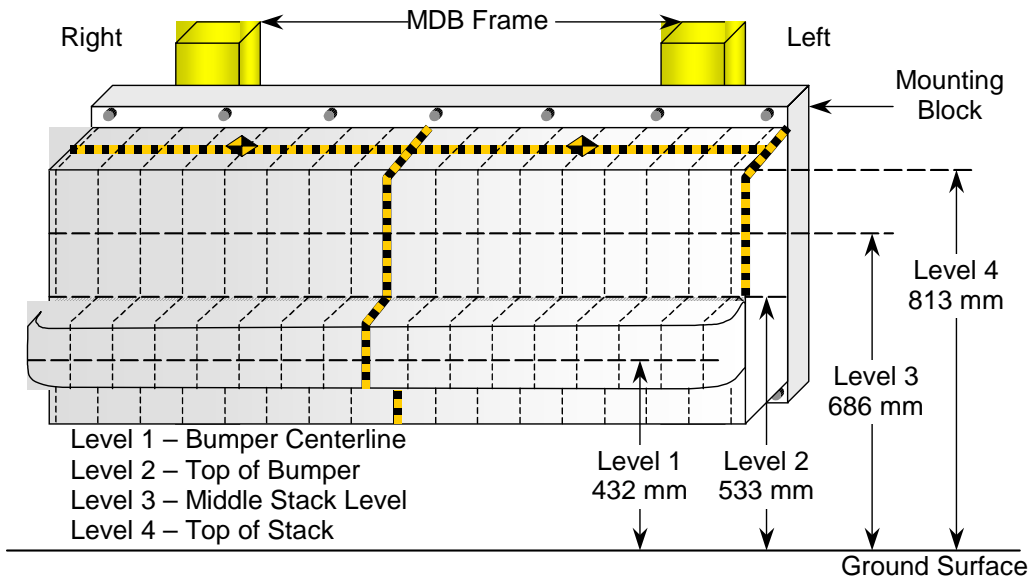
DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		0	100	200	300	400	500	600	700
1	749	732	721	710	709	704	706	701	701	701	701	704	702	704	706	706	810
2	740	725	717	716	711	712	696	709	707	706	707	707	706	705	706	707	767
3	660	641	629	631	636	654	666	656	675	632	637	644	648	652	670	690	734
4	646	625	620	622	630	653	672	654	636	631	641	644	656	667	692	730	758

All Dimensions in mm

DATA SHEET NO. 12

VEHICLE ACCELEROMETER LOCATIONS

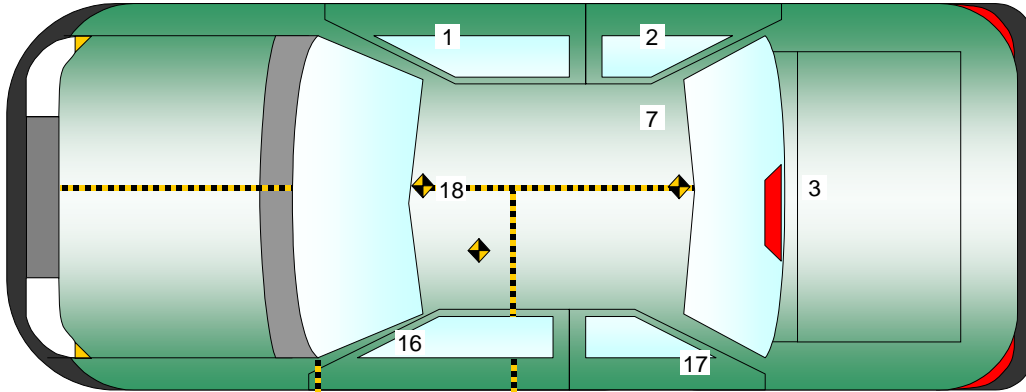
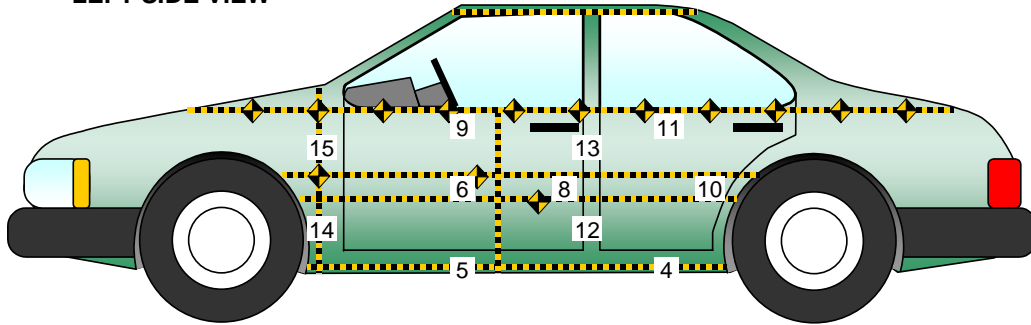
Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06

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 LOCATIONS

Test Vehicle: 2006 Ford Freestyle 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: F60202
 Test Date: 8/18/06

VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2962	725	409
2	Right Sill at Rear Seat	2162	725	409
3	Rear Floorpan Above Axle	505	-397	672
4	Left Sill at Rear Door	2810	-645	233
5	Left Sill at Front Door	1994	-645	233
6	Front Door Centerline			1
7	Rt. Rear Occ. Compartment	2336	279	273
8	Front Door Mid-Rear			1
9	Front Door Upper Centerline			1
10	Rear Door Mid-Rear			1
11	Rear Door Upper Centerline			1
12	B-Post Lower	2355	-744	750
13	B-Post Middle	2355	-744	996
14	A-Post Lower	3404	-836	500
15	A-Post Middle	3404	-836	840
16	Front Seat Track	2914	-638	432
17	Rear Seat Structure			1
18	Vehicle CG	3186	183	273

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

1.) Not installed

DATA SHEET NO. 13
MDB ACCELEROMETER LOCATIONS

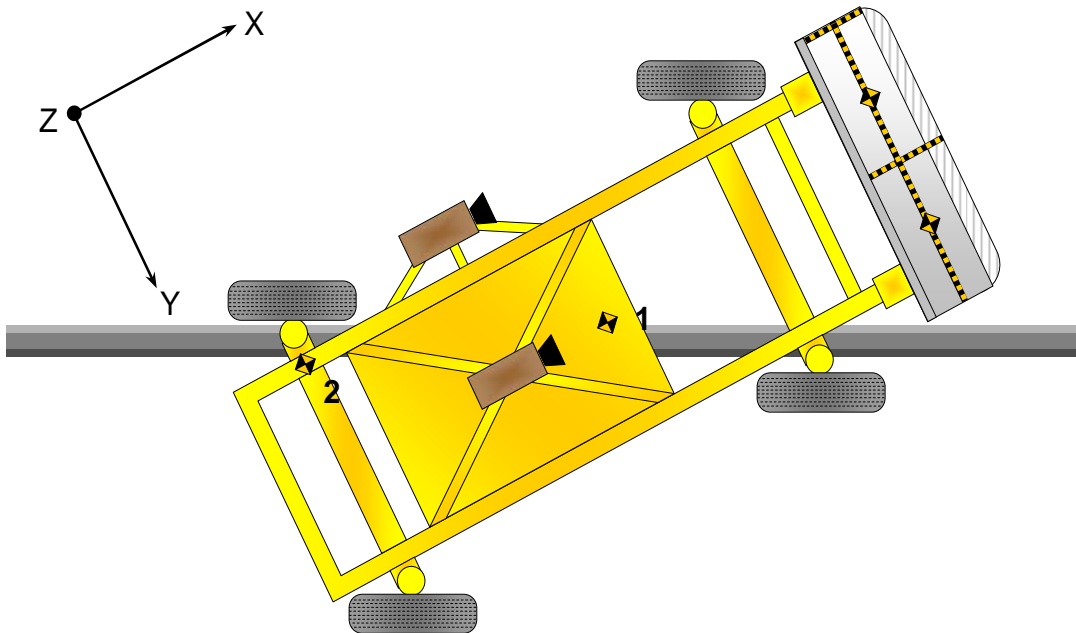
Test Vehicle: 2006 Ford Freestyle 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

NHTSA No.: F60202
 Test Date: 8/18/06

MDB ACCELEROMETER LOCATIONS

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

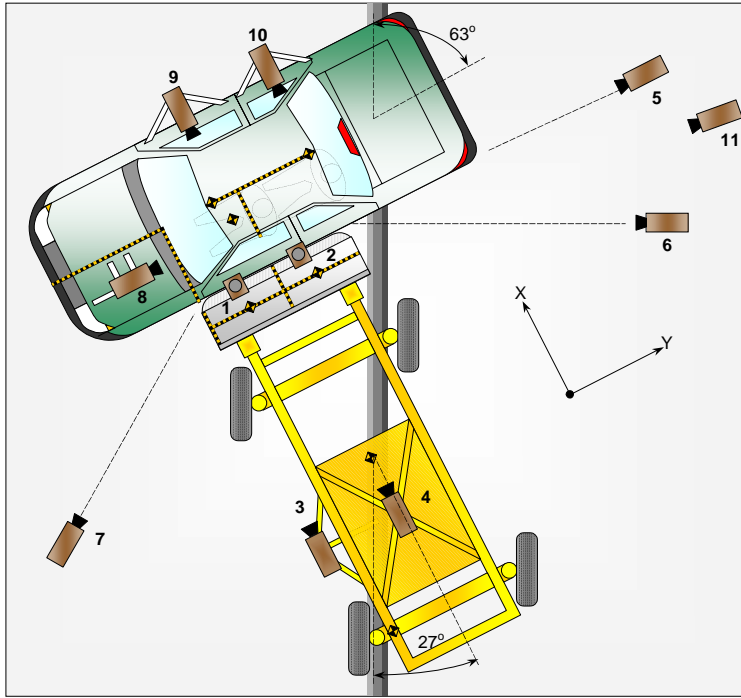
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06



No.	Camera View	Location			Angle (Deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
DOC	REAL TIME DIGITAL	-7254	16851	-1798	-2		30
1	OVERHEAD OVERALL	1220	2287	-5486	-90	14mm	1000
2	OVERHEAD CLOSE UP	609	2287	-5451	-90	ZOOM	1000
3	LEFT IMPACT POINT (MDB)	-2134	0	-1143	-7	25mm	1000
4	SIDE OVERALL (MDB)	-3912	838	-1829	-11	12mm	1000
5	REAR	248	14984	-1371	0	ZOOM	1000
6	LEFT REAR (MDB)	-2137	1302	-939	-4	25mm	1000
7	LEFT FRONT	-2710	3561	-1521	-4	24mm	1000
8	DRIVER FRONT (O.B.)	535	-325	-1623	-15	35mm	1000
9	DRIVER SIDE (O.B.)	DNR					
10	PASSENGER SIDE (O.B.)	2156	1123	-1104	-2	20mm	1000
DOC	REAL TIME DIGITAL	257	15563	-1371	0		30
11	LEFT REAR	-7100	16459	-839	0	ZOOM	1000

+ X = Rearward

+ Y = To Right

+ Z = Down

DNR = Did Not Run

DATA SHEET NO. 15

FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06

Test Time: 12:24 PM

Temperature: 33.0 Deg. C.

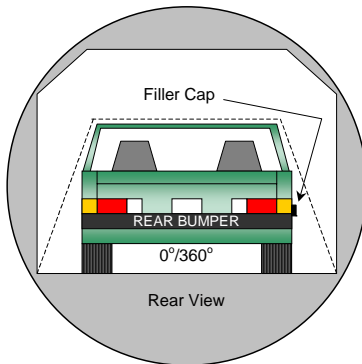
Stoddard Solvent Spillage Measurements

- 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

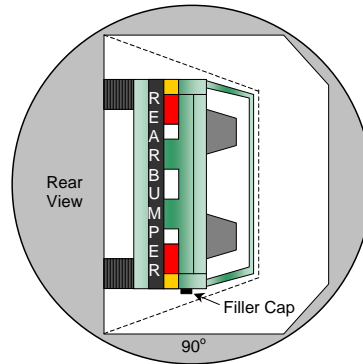
DATA SHEET NO. 16
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2006 Ford Freestyle 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

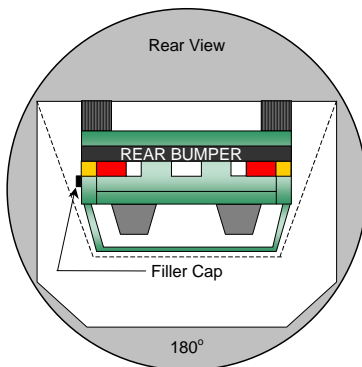
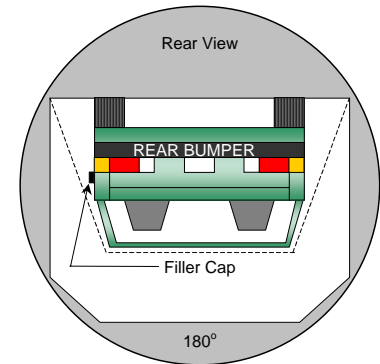
NHTSA No.: F60202
 Test Date: 8/18/06



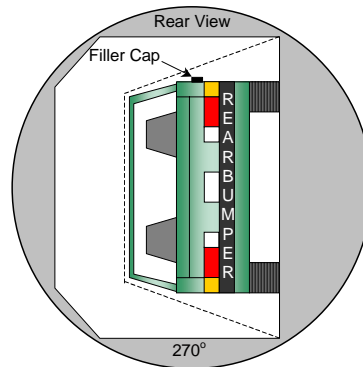
0° to 90°



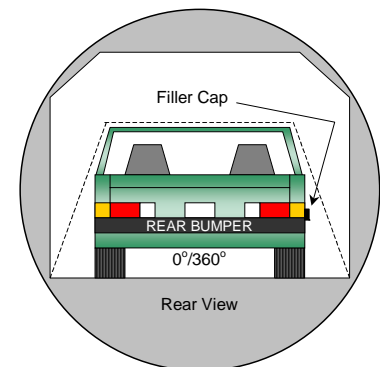
90° to 180°



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: 2006 Ford Freestyle 5-Door MPV

NHTSA No.: F60202

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

Test Date: 8/18/06

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	83	300	383
90° to 180°	81	300	381
180° to 270°	78	300	378
270° to 360°	79	300	379

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

**APPENDIX A
PHOTOGRAPHS**

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



Figure A-2: Right Rear 3/4 View, as Received

MFD. BY FORD MOTOR CO.

DATE: 07/05 GVWR: 2440KG/5380LB
FRONT GAWR: 1225KG/2700LB REAR GAWR: 1270KG/2800LB

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

VIN: 1FMDK01156GA03944 TYPE: MPV
MAXIMUM LOAD = OCCUPANTS + LUGGAGE = 521KG/1150LB
OCCUPANTS = 6 TOTAL; 2 FRONT, 4 REAR

TIRE (FR): P215/65R17 RIMS (FR): 17X7.0J
(RR): P215/65R17 (RR): 17X7.0J
PRESSURE (FR): 220 kPa/ 32 PSI COLD (RR): 235 kPa/ 34 PSI COLD



1FMDK01156GA03944

TRAILER TOWING - SEE OWNER GUIDE

EXT PNT: G2 ZW RC: 71 DSO: F0173
R0179
INT TR TP/PS R AXLE TR SPR 5PB1F
BT 2 3A C AA11 C05

 **TIRE AND LOADING INFORMATION**

Figure A-3: Manufacturer's Label

TRAILER TOWING - SEE OWNER GUIDE

EXT PNT: G2 ZW

RC: 71

DSO:

F0173

R0179

INT TR

TP/PS

R

AXLE

TR

SPR

5PB1F

BT

2

3A

C

AA11

C05



TIRE AND LOADING INFORMATION

SEATING CAPACITY

TOTAL : 6

FRONT: 2

REAR: 4

The combined weight of occupants and cargo should never exceed : **521 kg or 1150 lbs.**

5USA-1532-AA (TLU)

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	P215/65R17	220 KPA, 32 PSI
REAR	P215/65R17	235 KPA, 34 PSI
SPARE	T135/90D17	415 KPA, 60 PSI

**SEE OWNERS
MANUAL FOR
ADDITIONAL
INFORMATION**

1FMDDK01156GA03944



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 ¾ 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 ¾ View



Figure A-12: Post-Test Left Rear ¾ View



Figure A-13: Pre-Test Rear View



Figure A-14: Post-Test Rear View



Figure A-15: Pre-Test Right Rear 3/4 View



A-16

TR-P26161-01-NC

Figure A-16: Post-Test Right Rear 3/4 View



Figure A-17: Pre-Test Right Side View



Figure A-18: Post-Test Right Side View



A-19

TR-P26161-01-NC

Figure A-19: Pre-Test Right Front ¾ View



A-20

TR-P26161-01-NC

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

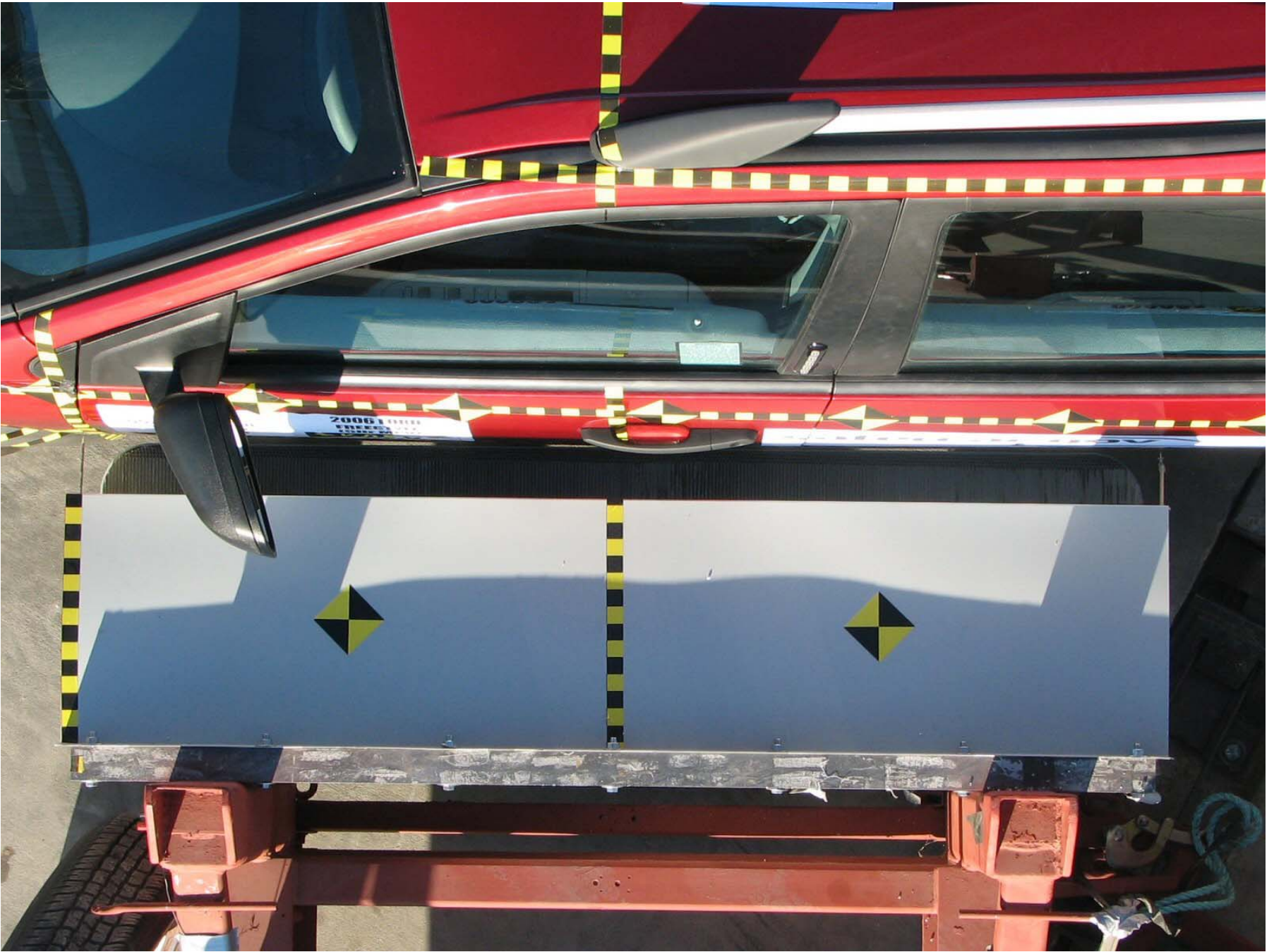


Figure A-23: Pre-Test Overhead Close-up View



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



Figure A-25: Pre-Test Left Impact Point



Post-Test Impact Point

Figure A-26: Post-Test Left Impact Point



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



Figure A-28: Post-Test Front ¾ View of Left Side Doors



Figure A-29: Pre-Test Rear ¾ View of Left Side Doors



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



Figure A-31: Pre-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



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



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



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-49: Pre-Test Passenger Dummy Right Side View



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



A-51

TR-P26161-01-NC

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



A-54

TR-P26161-01-NC

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



A-55

TR-P26161-01-NC

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



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

A-57

TR-P26161-01-NC



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



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

A-59

TR-P26161-01-NC



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

A-60

TR-P26161-01-NC



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

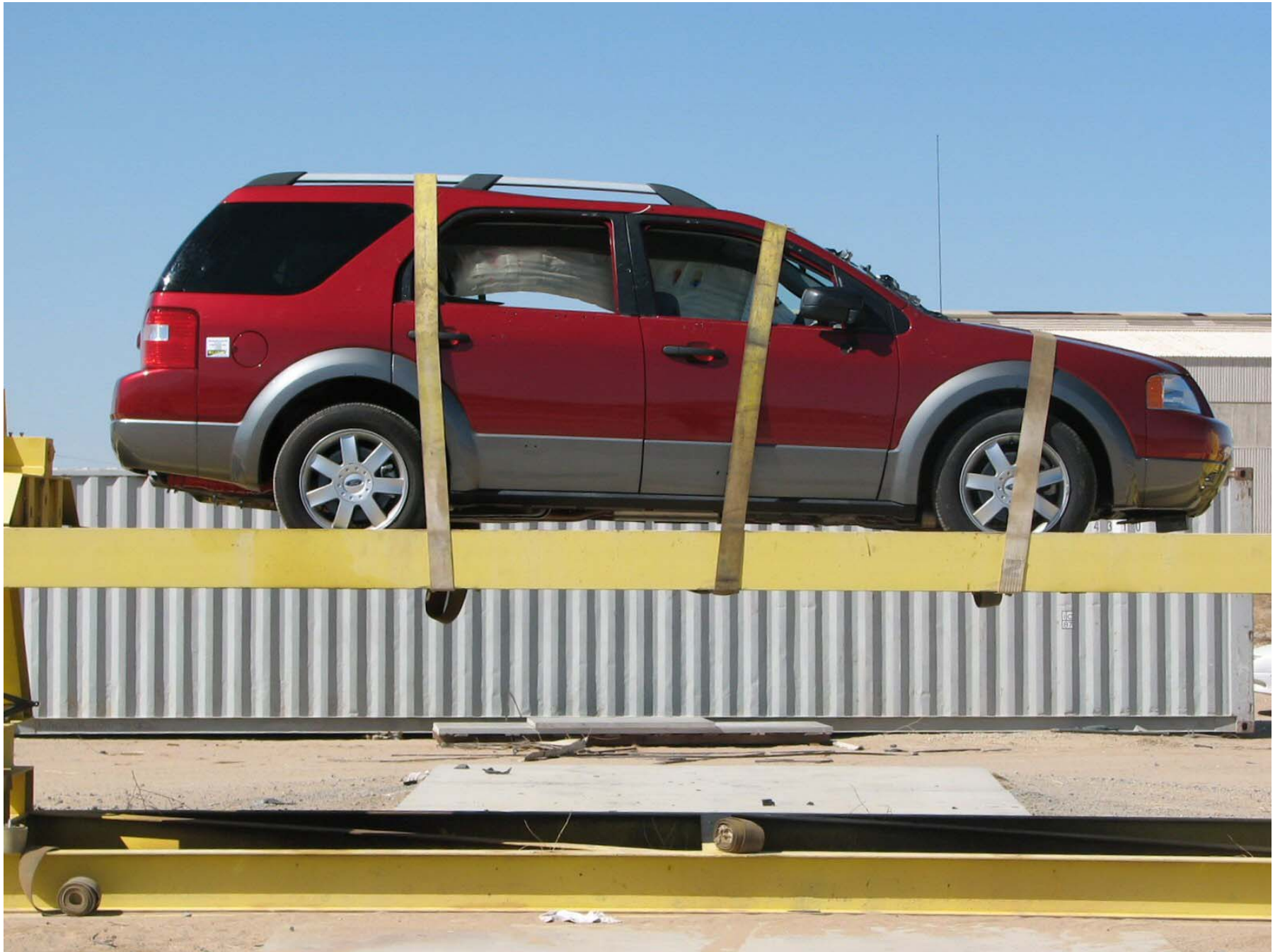


Figure A-61: Vehicle on Rollover Device (0°)



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



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

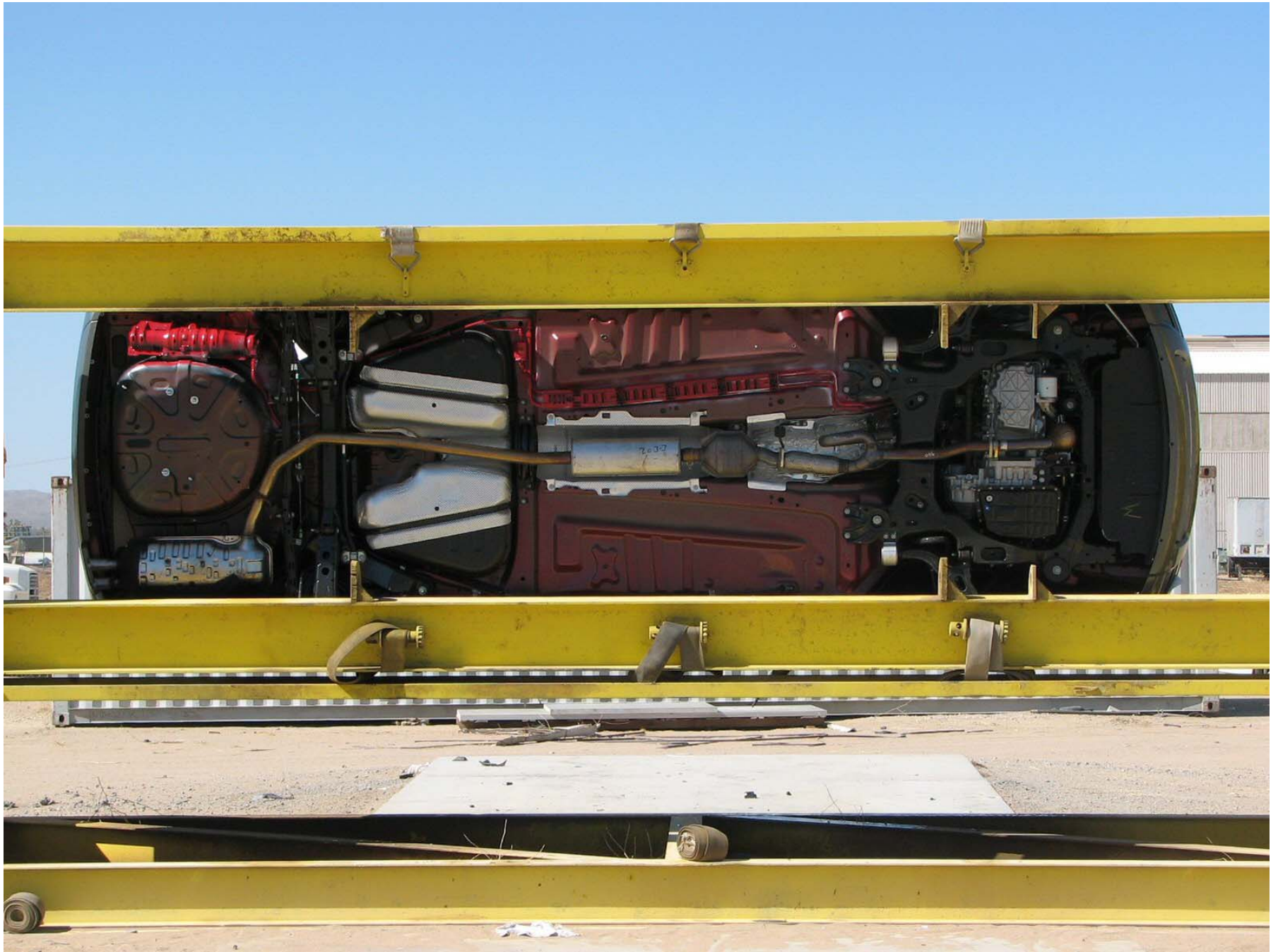


Figure A-64: Vehicle on Rollover Device (270°)



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	B-1
	Driver Lower Rib Primary Y	B-1
	Driver Lower Spine Primary Y	B-1
	Driver Pelvis Primary Y	B-1
B-2	Passenger Upper Rib Primary Y	B-2
	Passenger Lower Rib Primary Y	B-2
	Passenger Lower Spine Primary Y	B-2
	Passenger Pelvis Primary Y	B-2

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)

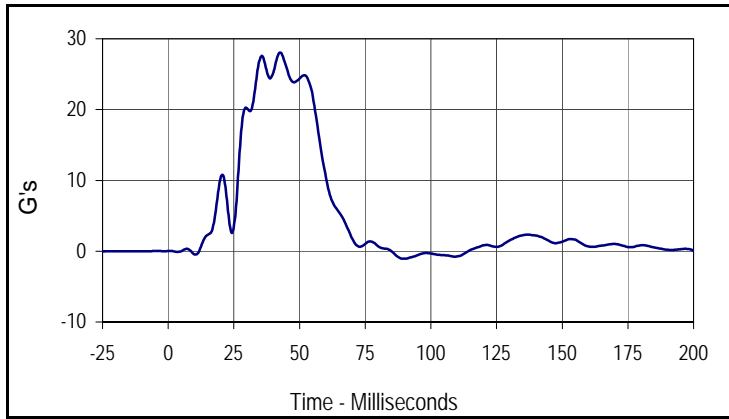
Vehicle Left Sill at Rear Door Y
Vehicle Left Sill at Front Door Y
Vehicle Left Sill at Rear Door Y Velocity
Vehicle Left Sill at Front Door Y Velocity
Vehicle Left Front Door C/L Y
Vehicle Right Rear Occupant Compartment
Vehicle Left Front Door Mid Rear Y
Vehicle Left Front Door Upper CL Y
Vehicle Left 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)

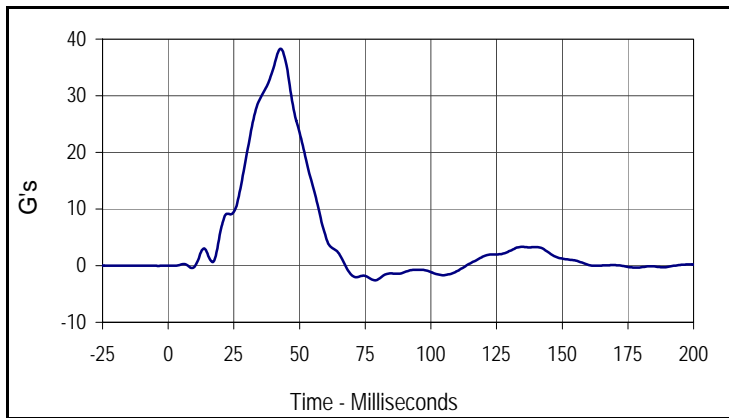
Driver Upper Rib Primary Y
Driver Lower Rib Primary Y
Driver Lower Spine Primary Y
Driver Pelvis Primary Y
Driver Upper Rib Redundant Y
Driver Lower Rib Redundant Y
Driver Lower Spine Redundant Y
Driver Pelvis Redundant Y
Passenger Upper Rib Primary Y
Passenger Lower Rib Primary Y
Passenger Lower Spine 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: 2006 Ford Freestyle 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

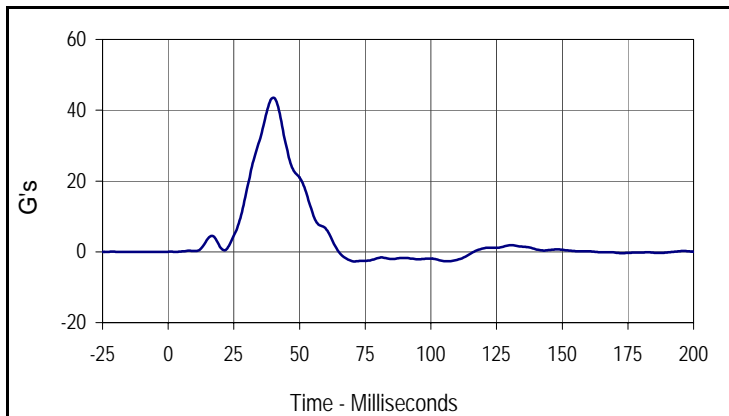
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 NHTSA No.: F60202



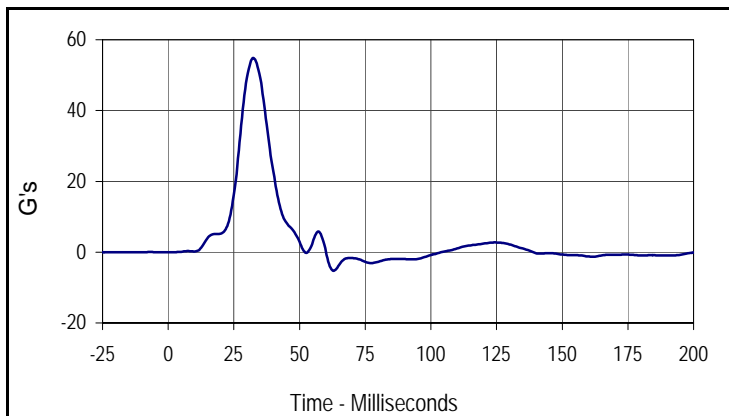
Curve Description			
Driver Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
001	FIR	FIR100	G's
Max	Time	Min	Time
28.1	42.5	-1.1	89.4



Curve Description			
Driver Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
002	FIR	FIR100	G's
Max	Time	Min	Time
38.3	43.1	-2.6	78.8



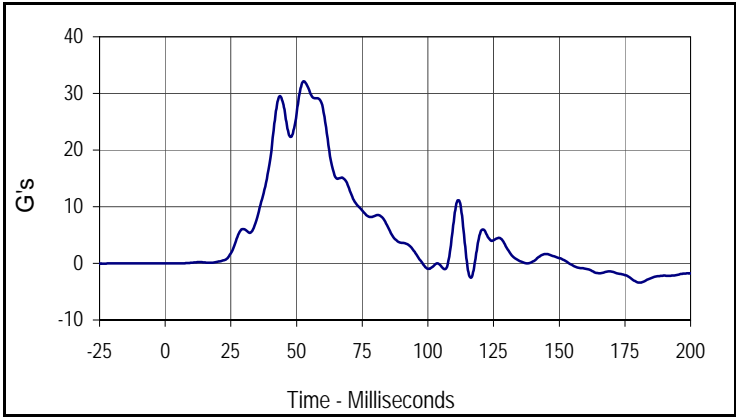
Curve Description			
Driver Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
003	FIR	FIR100	G's
Max	Time	Min	Time
43.6	40.0	-2.7	71.3



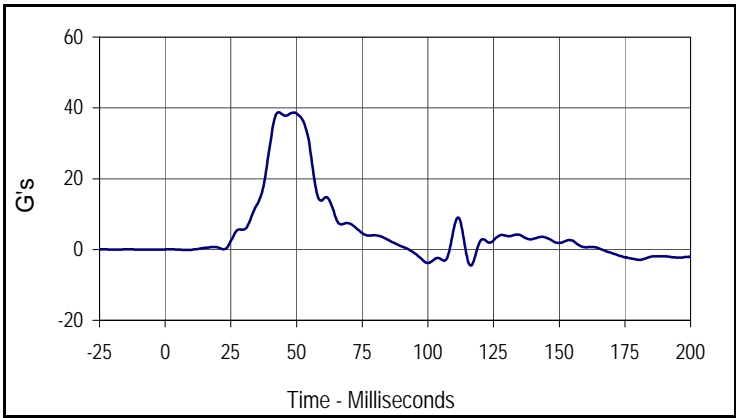
Curve Description			
Driver Pelvis Primary Y			
CURNO	Type	SAE Class	Units
004	FIR	FIR100	G's
Max	Time	Min	Time
54.8	32.5	-5.2	63.1

Test Vehicle: 2006 Ford Freestyle 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

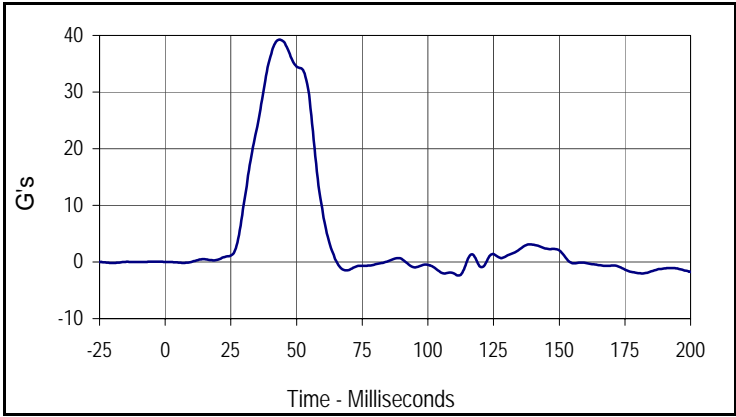
Test Date: 8/18/06
 NHTSA No.: F60202



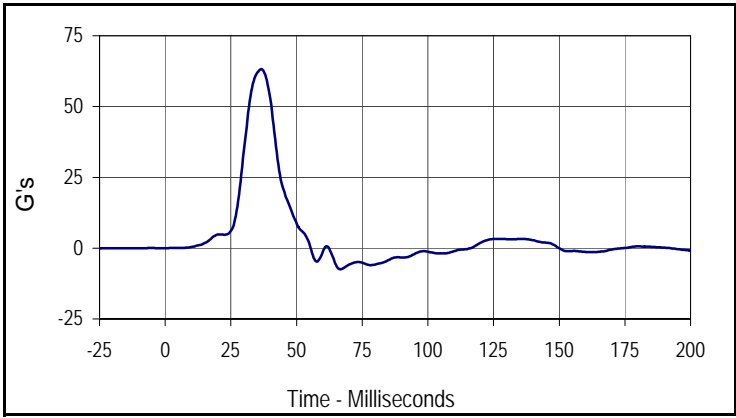
Curve Description			
Passenger Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
005	FIR	FIR100	G's
Max	Time	Min	Time
32.1	53.1	-3.4	180.6



Curve Description			
Passenger Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
006	FIR	FIR100	G's
Max	Time	Min	Time
38.8	43.1	-4.5	116.3



Curve Description			
Passenger Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
007	FIR	FIR100	G's
Max	Time	Min	Time
39.2	43.8	-2.4	111.9



Curve Description			
Passenger Pelvis Primary Y			
CURNO	Type	SAE Class	Units
008	FIR	FIR100	G's
Max	Time	Min	Time
63.1	36.3	-7.4	66.9

APPENDIX C
SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

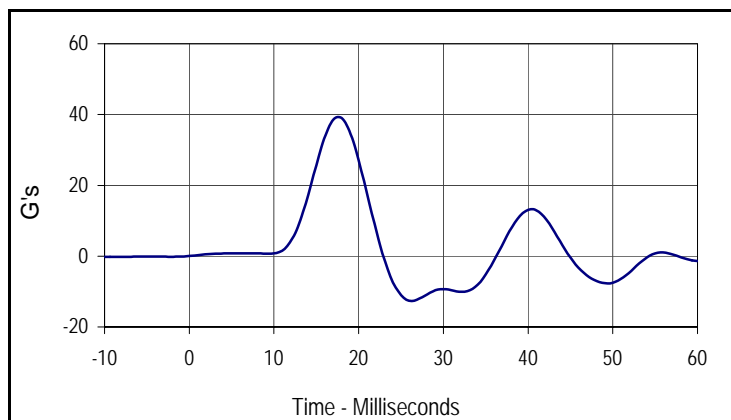
APPENDIX C
PRE-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

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

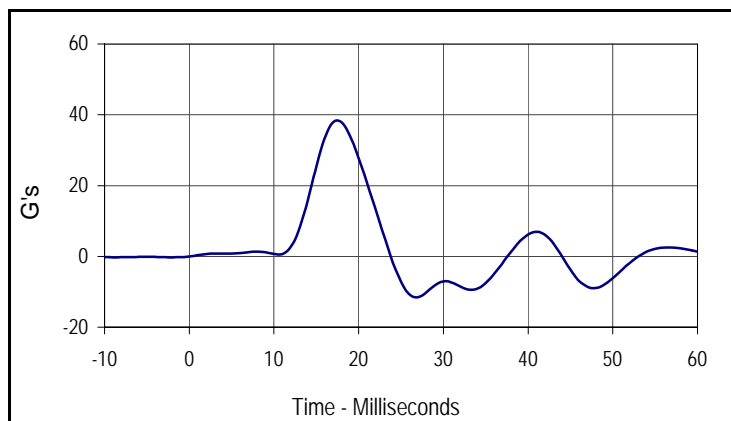
Test Date: 8/16/06
 Test I.D.: TH08Q



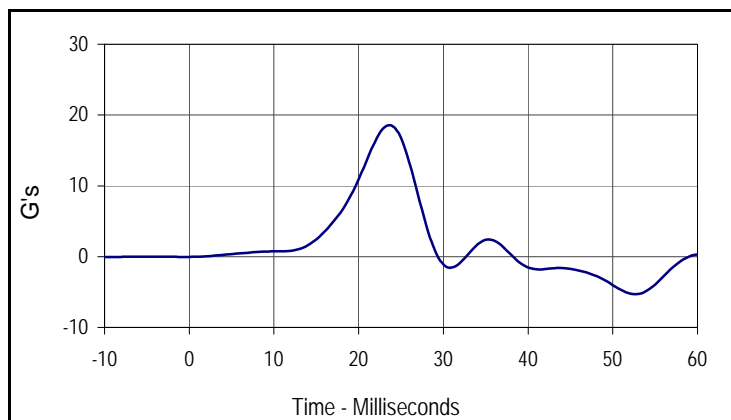
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.22	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	39.3	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	38.4	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	18.6	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
39.3	17.5	-12.7	26.3



Curve Description			
Lower Rib Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
38.4	17.5	-11.6	26.9



Curve Description			
Lower Spine Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
18.6	23.8	-5.3	52.5

Test Program: SID / HIII External Measurements

Test Date: 8/16/06

ATD Serial No.: 275

Test I.D.: N/A



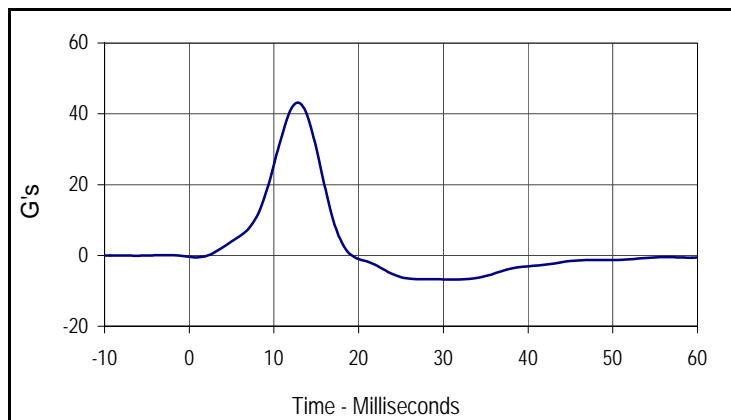
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	901	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	506	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	521	Pass
KV- Knee Pivot From Floor	mm	490 to 505	495	Pass
HW- Hip Width	mm	356 to 391	362	Pass
Overall Test Results				Pass

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

Test Date: 8/16/06
 Test I.D.: PL08L



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
Probe Velocity	m/s	4.21 to 4.33	4.29	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	42.9	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.88	Pass
Overall Test Results				Pass



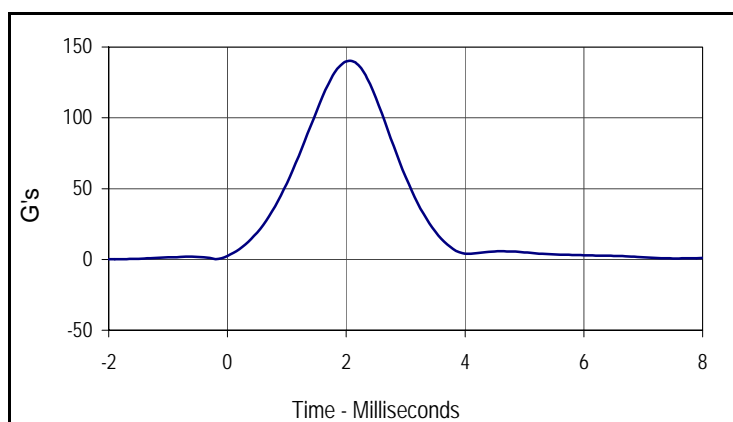
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
42.9	13.1	-6.8	31.3

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

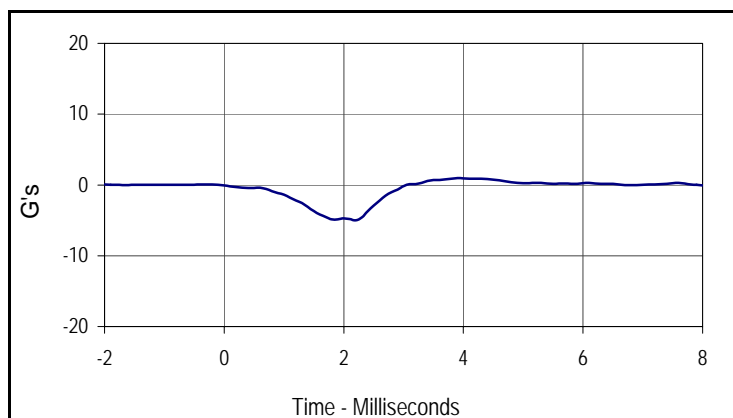
Test Date: 8/16/06
 Test I.D.: HD08L



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	140.0	Pass
Peak Longitudinal Acceleration	G's	≤15.0	5.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.6	Pass
Overall Test Results			Pass	Pass



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
140.0	2.1	0.1	-1.9



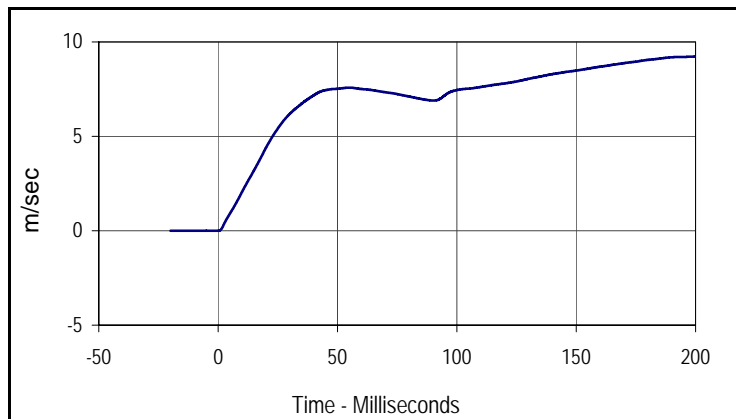
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.0	3.9	-5.0	2.2

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

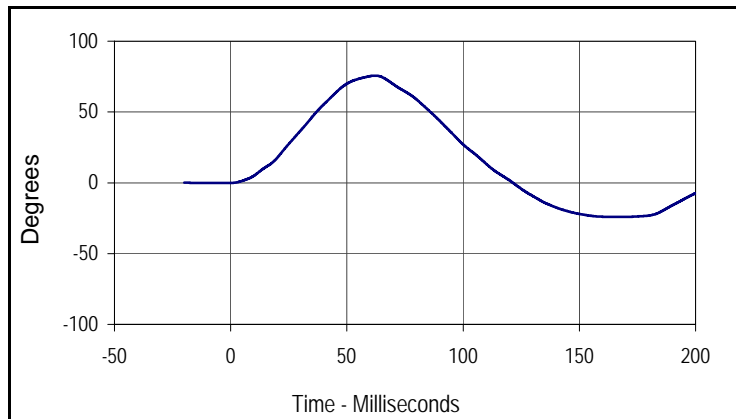
Test Date: 8/16/06
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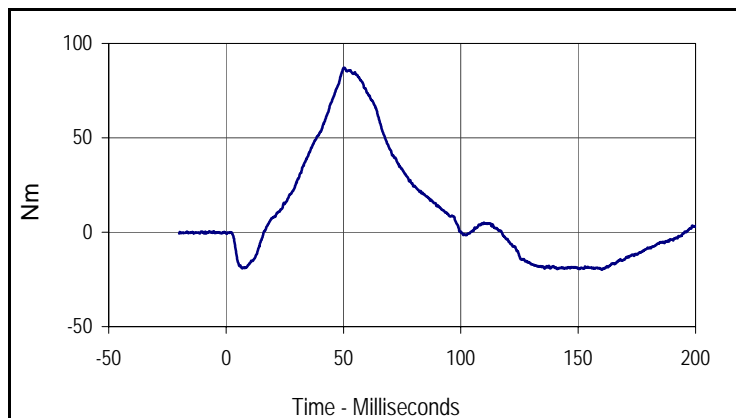
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/sec	6.89 to 7.13	6.94	Pass	
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.06	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.39	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.20	Pass
	40 to 70	m/sec	6.27 to 7.64	7.58	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	75.7	Pass
Max Rotation Time After Peak Moment	Msec.	2.0 to 16.0	11.8	Pass	
Rotation Time From Peak to Zero Angle	Msec.	58.0 to 67.0	59.2	Pass	
Moment About Occipital Condyle	Nm	73.0 to 88.0	87.2	Pass	
Positive Moment Decay, Time To 0 Nm	Msec.	49.0 to 64.0	49.8	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
9.2	198.9	0.0	-0.1



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
75.7	62.2	-24.1	169.2



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
87.2	50.4	-19.8	160.0

Test Program: SID / HIII External Measurements

Test Date: 8/16/06

ATD Serial No.: 274

Test I.D.: N/A



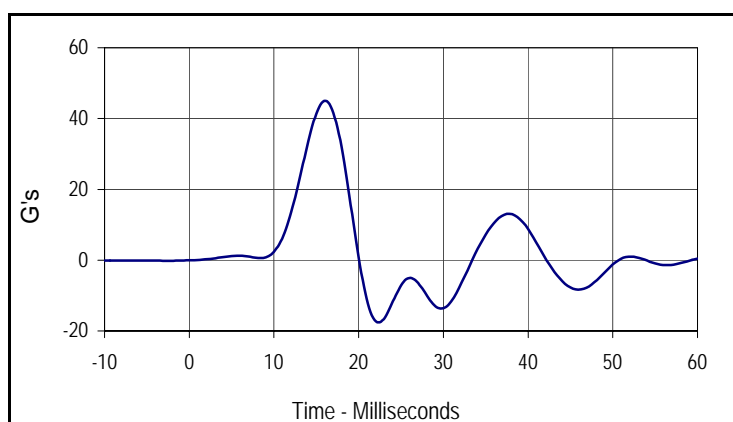
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	900	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	505	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	520	Pass
KV- Knee Pivot From Floor	mm	490 to 505	495	Pass
HW- Hip Width	mm	356 to 391	363	Pass
Overall Test Results				Pass

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

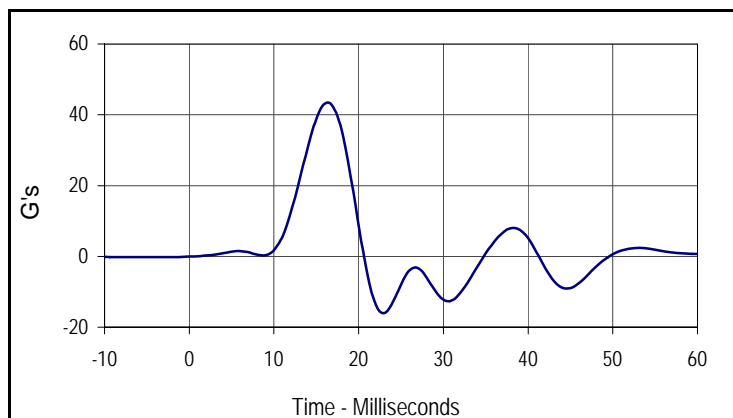
Test Date: 8/16/06
 Test I.D.: TH08M



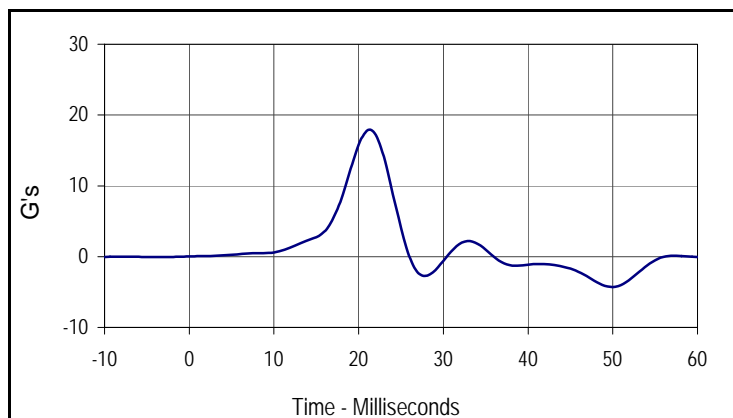
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.26	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	44.9	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	43.5	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	17.9	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
44.9	16.3	-17.6	22.5



Curve Description			
Lower Rib Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
43.5	16.3	-15.9	23.1



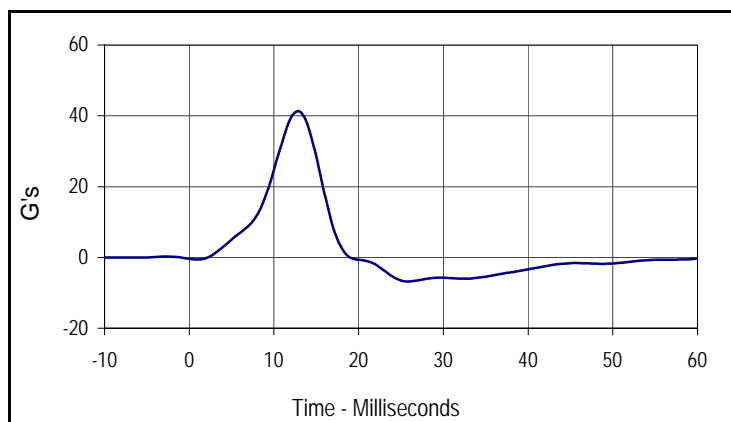
Curve Description			
Lower Spine Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
17.9	21.3	-4.3	50.0

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

Test Date: 8/16/06
 Test I.D.: PL08M



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
Probe Velocity	m/s	4.21 to 4.33	4.29	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	41.1	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.88	Pass
Overall Test Results				Pass



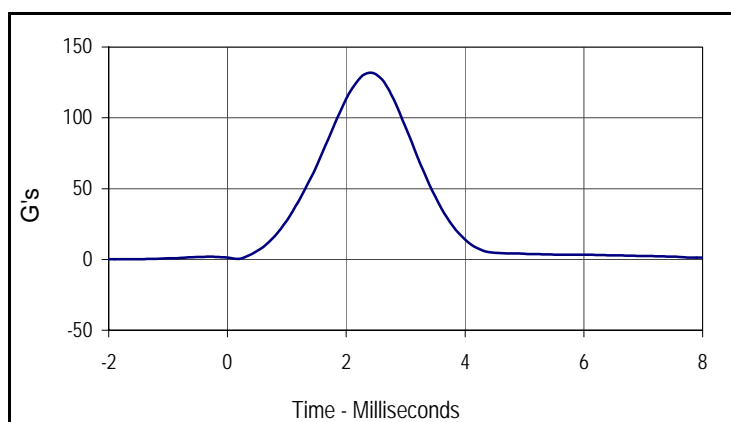
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
41.1	13.1	-6.8	25.6

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

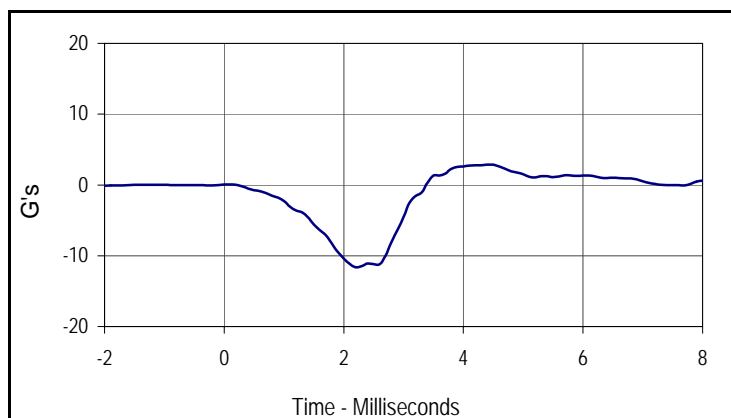
Test Date: 8/16/06
 Test I.D.: HD08P



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	131.9	Pass
Peak Longitudinal Acceleration	G's	≤15.0	11.6	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.1	Pass
Overall Test Results			Pass	Pass



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
131.9	2.4	0.1	-1.6



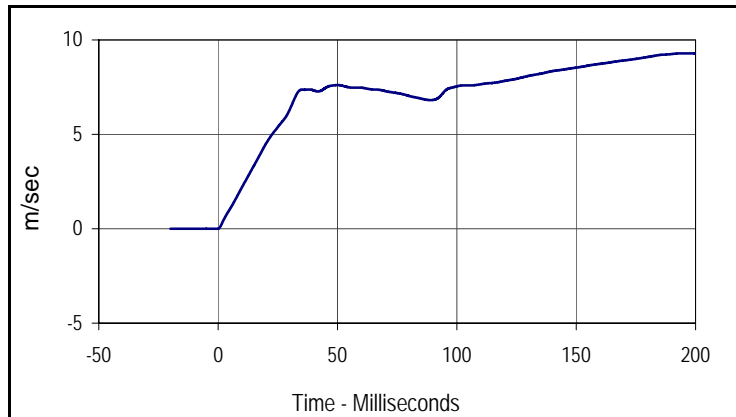
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.9	4.4	-11.6	2.2

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

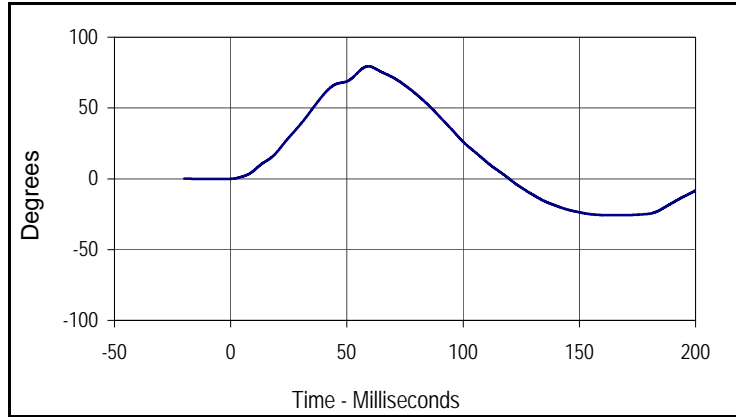
Test Date: 8/16/06
 Test I.D.: NB08T



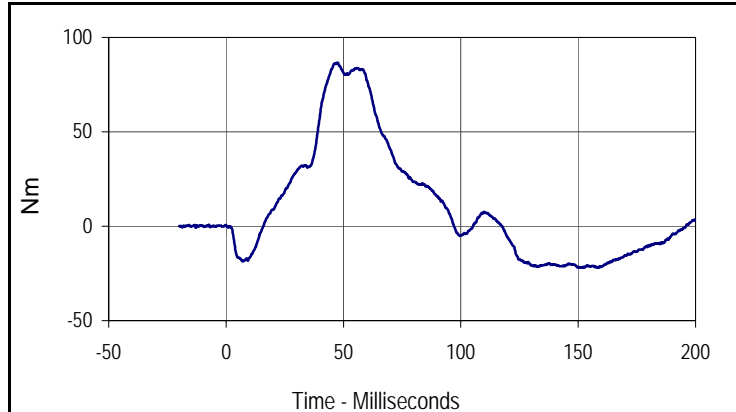
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/sec	6.89 to 7.13	6.92	Pass	
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.21	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.50	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.32	Pass
	40 to 70	m/sec	6.27 to 7.64	7.61	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	79.4	Pass
Max Rotation Time After Peak Moment	Msec.	2.0 to 16.0	11.6	Pass	
Rotation Time From Peak to Zero Angle	Msec.	58.0 to 67.0	60.6	Pass	
Moment About Occipital Condyle	Nm	73.0 to 88.0	86.7	Pass	
Positive Moment Decay, Time To 0 Nm	Msec.	49.0 to 64.0	49.6	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
9.3	199.9	0.0	-0.5



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
79.4	59.2	-25.7	169.2



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
86.7	47.6	-22.0	152.6

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

Test Program: SID / HIII External Measurements

Test Date: 8/18/06

ATD Serial No.: 275

Test I.D.: N/A



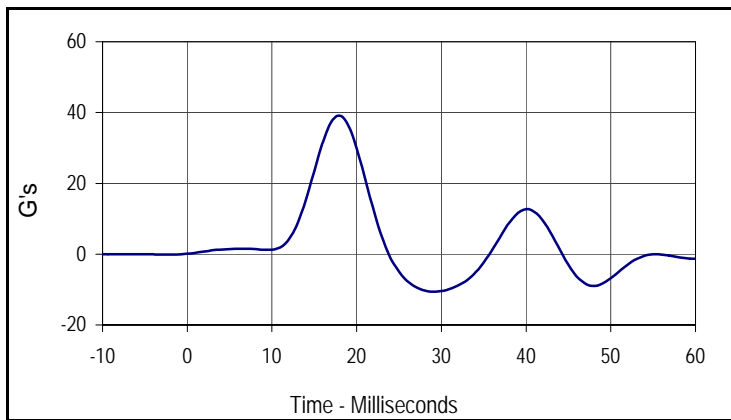
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	902	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	508	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	525	Pass
KV- Knee Pivot From Floor	mm	490 to 505	500	Pass
HW- Hip Width	mm	356 to 391	364	Pass
Overall Test Results				Pass

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

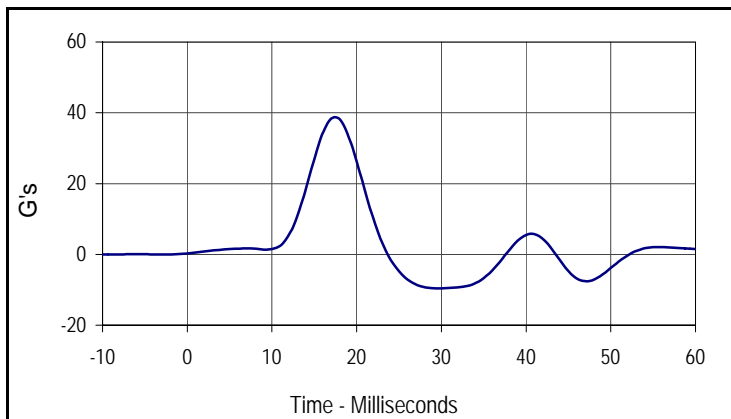
Test Date: 8/18/06
 Test I.D.: TH08V



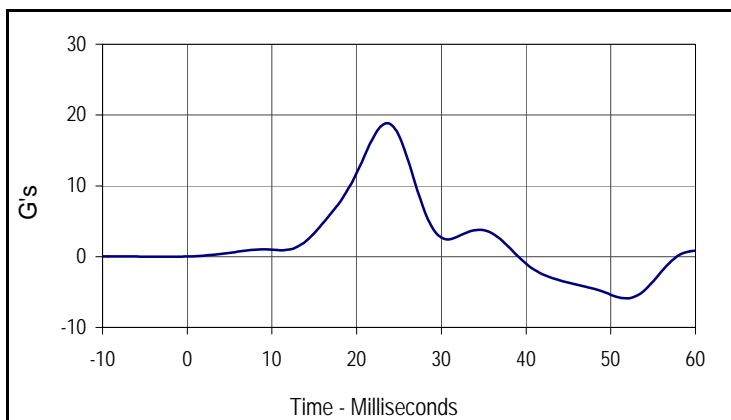
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	22.2	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.26	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	39.0	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	38.8	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	18.8	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
39.0	18.1	-10.6	29.4



Curve Description			
Lower Rib Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
38.8	17.5	-9.6	29.4



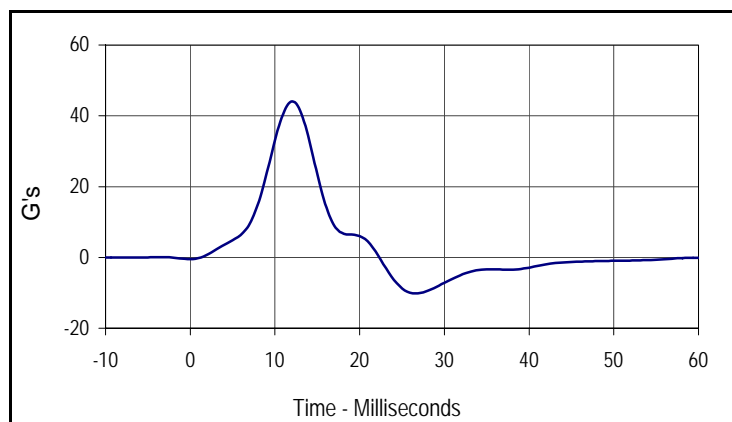
Curve Description			
Lower Spine Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
18.8	23.8	-5.9	51.9

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

Test Date: 8/18/06
 Test I.D.: PL08V



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	22.2	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.29	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	44.0	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.88	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
44.0	11.9	-10.2	26.9

Test Program: SID / HIII Head Drop Lateral Impact Test

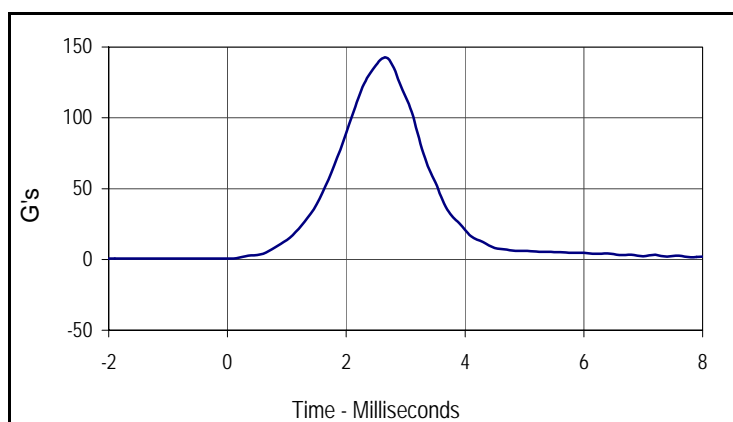
Test Date: 8/18/06

ATD Serial No.: 275

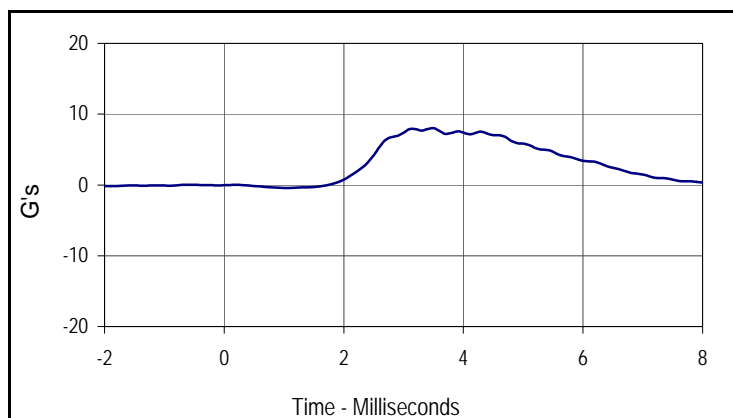
Test I.D.: HD08V



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	142.1	Pass
Peak Longitudinal Acceleration	G's	≤15.0	8.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	4.2	Pass
Overall Test Results				Pass



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
142.1	2.7	0.5	-2.0



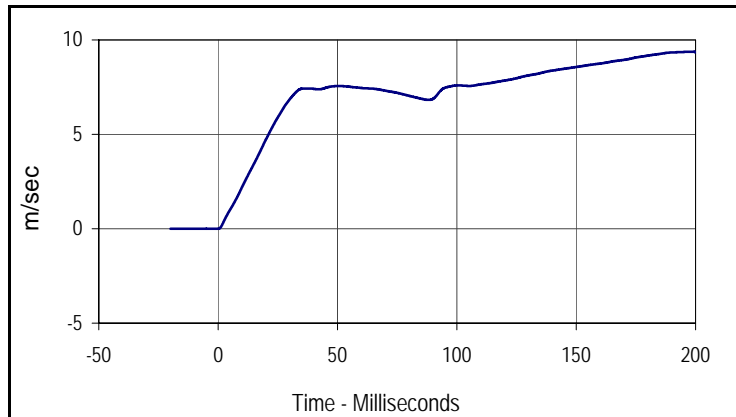
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
8.0	3.5	-0.4	1.0

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

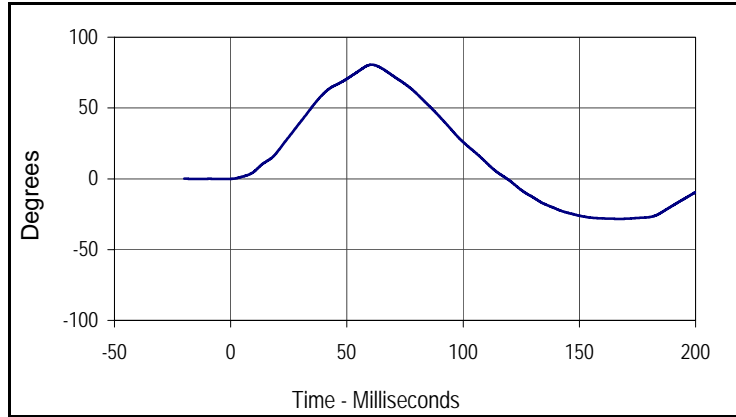
Test Date: 8/18/06
 Test I.D.: NB08X



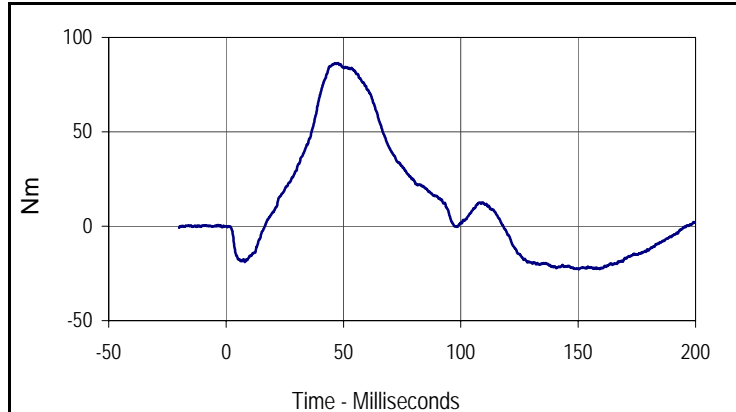
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/sec	6.89 to 7.13	6.97	Pass	
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.21	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.72	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.86	Pass
	40 to 70	m/sec	6.27 to 7.64	7.55	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	80.6	Pass
Max Rotation Time After Peak Moment	Msec.	2.0 to 16.0	13.0	Pass	
Rotation Time From Peak to Zero Angle	Msec.	58.0 to 67.0	58.2	Pass	
Moment About Occipital Condyle	Nm	73.0 to 88.0	86.4	Pass	
Positive Moment Decay, Time To 0 Nm	Msec.	49.0 to 64.0	49.7	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	197.7	0.0	-0.2



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
80.6	60.7	-28.3	168.3



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
86.4	47.7	-22.8	150.2

Test Program: SID / HIII External Measurements

Test Date: 8/18/06

ATD Serial No.: 274

Test I.D.: N/A



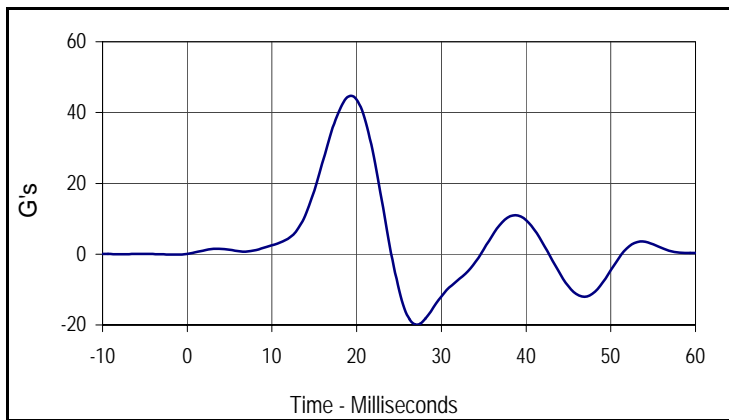
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	901	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	504	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	519	Pass
KV- Knee Pivot From Floor	mm	490 to 505	494	Pass
HW- Hip Width	mm	356 to 391	362	Pass
Overall Test Results				Pass

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

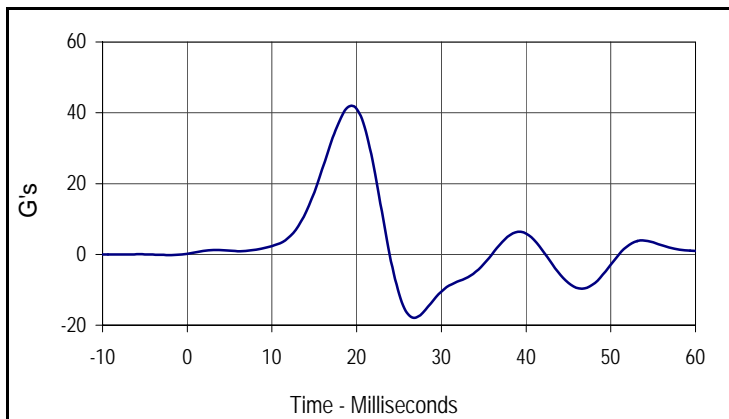
Test Date: 8/18/06
 Test I.D.: TH08X



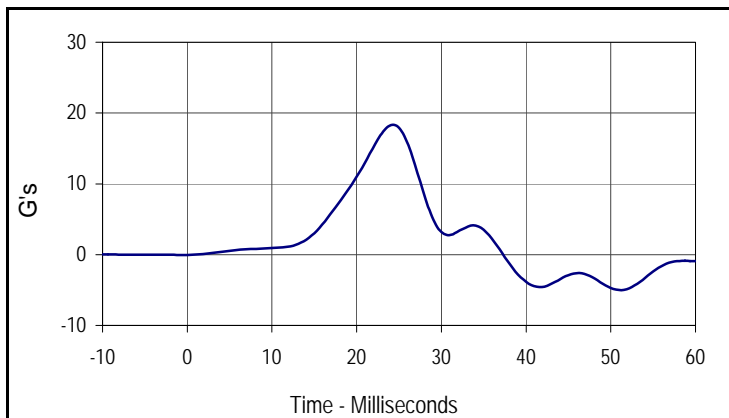
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	22.2	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.25	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	44.7	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	42.0	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	18.3	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
44.7	19.4	-19.8	26.9



Curve Description			
Lower Rib Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
42.0	19.4	-17.9	26.9



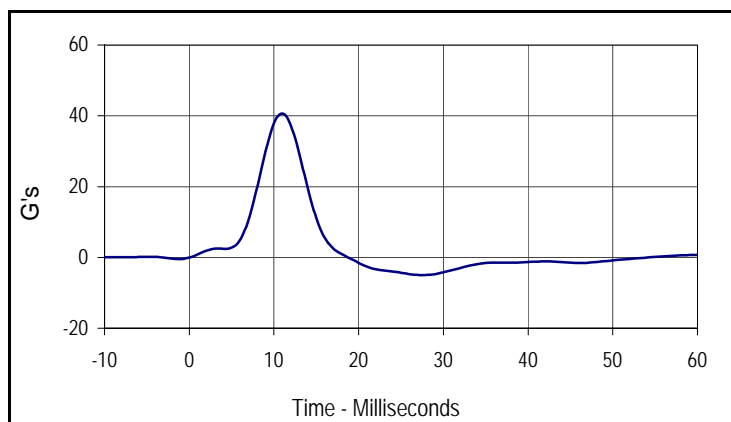
Curve Description			
Lower Spine Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
18.3	24.4	-5.0	51.3

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

Test Date: 8/18/06
 Test I.D.: PL08X



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	22.2	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.26	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	40.4	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.25	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
40.4	11.3	-5.0	27.5

Test Program: SID / HIII Head Drop Lateral Impact Test

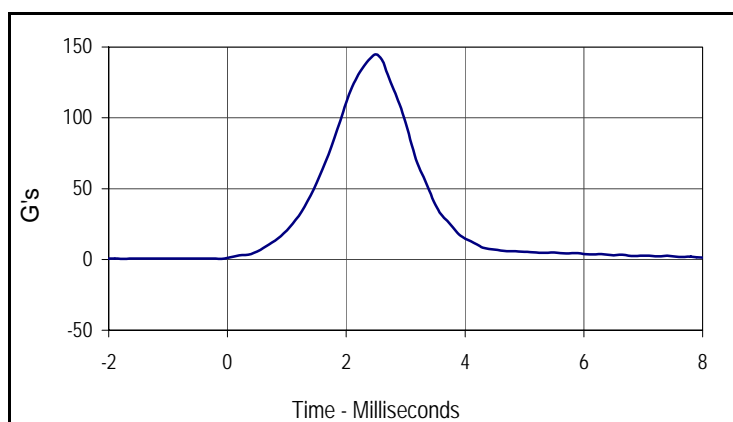
Test Date: 8/18/06



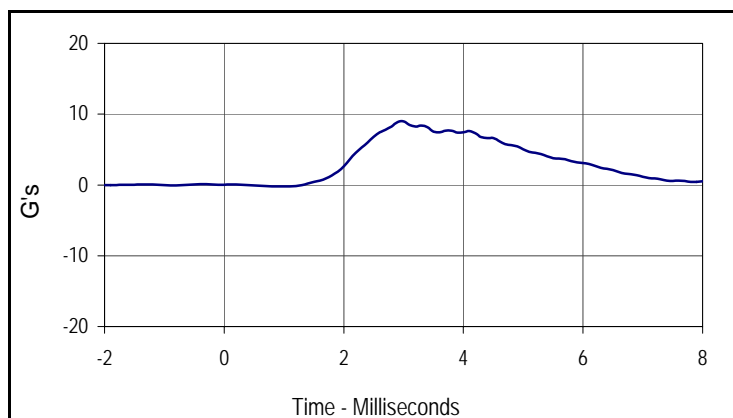
ATD Serial No.: 274

Test I.D.: HD08Y

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
Peak Resultant Acceleration	G's	120.0 to 150.0	144.8	Pass
Peak Longitudinal Acceleration	G's	≤15.0	9.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.7	Pass
Overall Test Results				Pass



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
144.8	2.5	0.5	-1.7



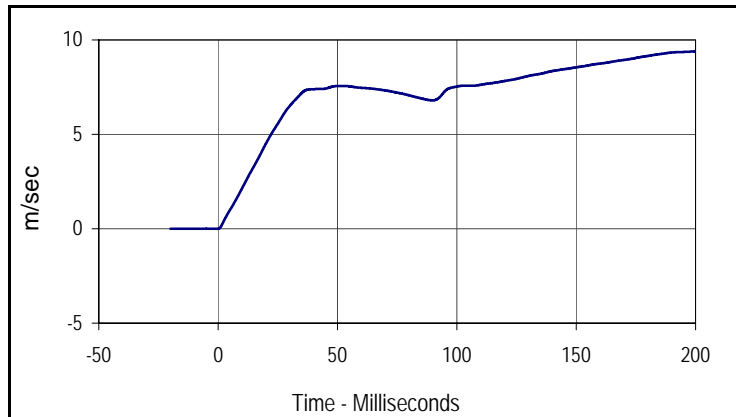
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
9.0	3.0	-0.2	1.1

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

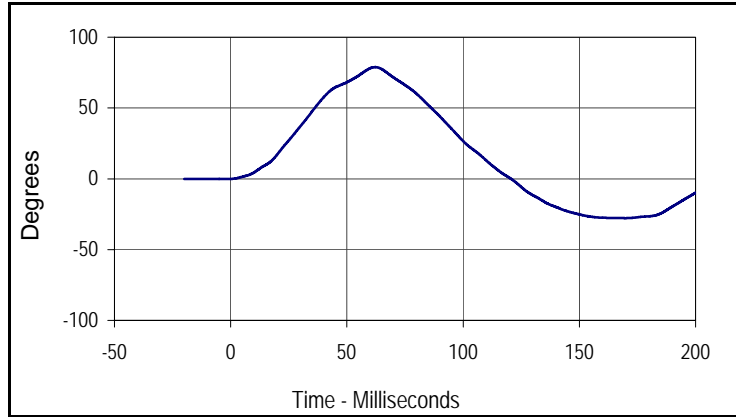
Test Date: 8/18/06
 Test I.D.: NB08Y



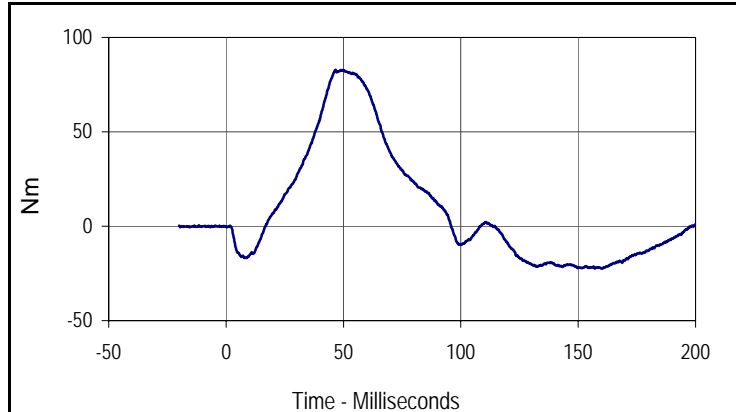
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	°C	20.6 to 22.2	21.7	Pass	
Laboratory Relative Humidity	%	10 to 70	30	Pass	
Pendulum Velocity	m/sec	6.89 to 7.13	7.10	Pass	
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.14	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.50	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.51	Pass
	40 to 70	m/sec	6.27 to 7.64	7.57	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	78.9	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	58.5	Pass	
Moment About Occipital Condyle	Nm	73.0 to 88.0	82.8	Pass	
Positive Moment Decay, Time To 0 Nm	Msec.	49.0 to 64.0	49.3	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
9.4	199.3	0.0	-0.3



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
78.9	62.1	-27.8	169.8



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
82.8	46.6	-22.3	159.9