REPORT NUMBER TR-P26003-04-NC

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

FORD MOTOR COMPANY
2006 FORD FUSION
4-DOOR SEDAN

NHTSA NUMBER: M60204

Prepared By:
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FINAL REPORT

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U.S. DEPARTMENT OF TRANSPORTATION
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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 Fusion 4-Door Sedan 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 January 11, 2005. The impact velocity of the Moving Deformable Barrier was 62.53 km/h, and the outside ambient temperature at the struck (driver's) side of the vehicle was 18.3 deg. C. The target vehicle's maximum post-test static crush was 307 mm located at level 2. The test vehicle's occupant performance data is as follows:

Measurement Description	Driver SID/HIII	Pass. SID/HIII
Left Upper Rib (LUR) G's	46.1	58.0
Left Lower Rib (LLR) G's	58.5	63.0
Lower Spine (T_{12}) G's	67.4	61.0
Thoracic Trauma Index (TTI) G's	63.0	62.0
Pelvis (PEV) G's	64.1	79.3

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New Car Assessment Program (NCAP) Side Impact Moving Deformable Barrier (MDB) Side Impact Dummy (SID/HIII)	Copies of this report are available from: National Highway Traffic Safety Admin. NHTSA Technical Reference Division 400 Seventh St., SW, Room 5108 Washington, DC 20590

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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' 2006 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 Fusion 4-Door Sedan 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 Fusion 4-Door Sedan 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 62.53 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 1655 kg and the test weight of the MDB was 1361 kg. The test was conducted at KARCO Engineering, LLC in Adelanto, California, on January 11, 2006.

Three (3) 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	No		No	
Head Airbag	No		No	
Curtain Airbag	No		No	

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 307 mm at level 2, 1050 mm rearward of the left vertical impact point. The driver SID/Hybrid III, Serial No. 274 and the passenger SID/Hybrid III, Serial No. 275 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	63.0	62.0
Peak Pelvic G's (PEV)	G's	64.1	79.3

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 Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

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	^oF	^oC	=(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 Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M60204	Anti-Lock Brakes	No
Make	Ford	All Wheel Drive	No
Model	Fusion	Power Steering	Yes
Body Style	4-Door Sedan	Driver Front Airbag	Yes
Vin No.	3FAFP06Z26R127780	Driver Side Airbag	No
Color	White	Driver Head Airbag	No
Delivery Date	12/23/2005	Driver Curtain Airbag	No
Odometer	52.0	Pass. Airbag	Yes
Dealer	Sunrise Ford of Fontana	Pass. Side Airbag	No
Transmission	5-Speed Manual	Pass. Head Airbag	No
Final Drive	Front	Pass. Curtain Airbag	No
Type/No. Cyl.	V-4	Pre-Tensioners	Yes
Engine Disp. (L)	2.3	Load Limiters	Yes
Engine Placement	Transverse	Bucket Seats	Yes
Roof Rack	No	Air. Cond.	Yes
Sunroof/T-Top	No	AM/FM Cassette	Yes
Tinted Glass	No	Tilt Steering	Yes
Traction Control	No	Automatic Door Locks	Yes
Power Brakes	Yes	Power Windows	Yes
Front Disc	Yes	Power Seats	Yes
Rear Disc	Yes	Other	None

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

DATA FROM CERTIFICATION LABEL

Manufactured By	Ford Motor Company	GVWR (kg)	1901
		GAWR Front (kg)	1007
Date of Manufacture	Nov-05	GAWR Rear (kg)	916

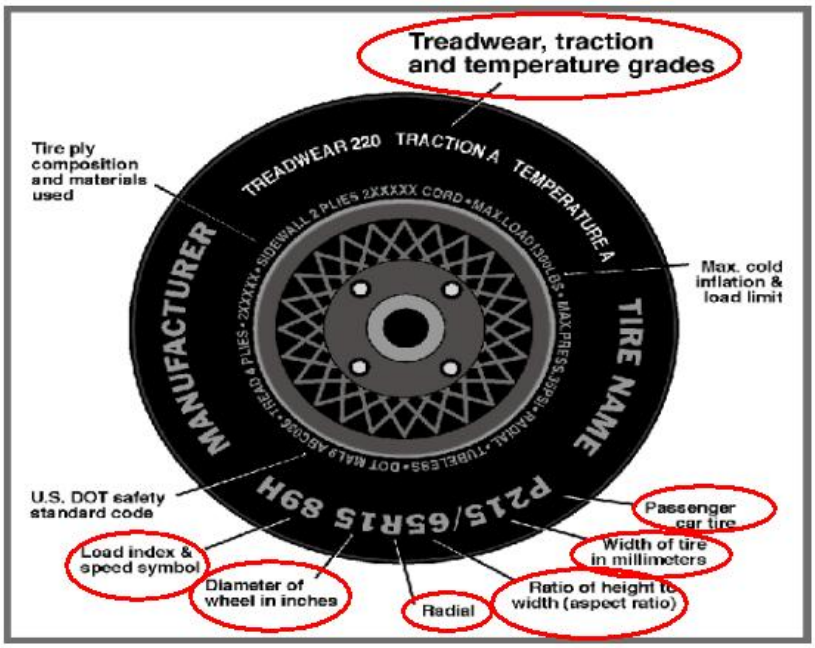
VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket		
Number of Occupants	2	3		5
Capacity Weight (VCW) (kg)				385
Cargo Weight (RCLW) (kg)				45

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

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)	235	235
Recommended Tire Size	P205/60R16	P205/60R16
Tire Size on Vehicle	P205/60R16	P205/60R16
Tire Manufacturer	Continental	Continental
Treadwear	400	400
Traction	AA	AA
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	91T	91T
Tire Material	Polyester + Steel + Nylon	Polyester + Steel + Nylon
DOT Safety Code Right	P5XV-46MB	P5XV-46MB
DOT Safety Code Left	P5XV-46MB	P5XV-46MB

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	436	292		485	369	
Right	kg	424	301		449	352	
Ratio	%	59.2	40.8		56.4	43.6	
Totals	kg	860	593	1453	934	721	1655

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1453
Weight of 2 P572 ATD's	kg	162
Rated Cargo/Luggage Wt. (RCLW)	kg	45
Calculated Vehicle Target Wt. (TVTW)	kg	1660

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	715	717	719	716	1114
As Tested	mm	700	713	683	689	1190
Fully Loaded	mm	700	711	678	687	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2730
Total Vehicle Length at Left Side	mm	3125
Total Vehicle Length at Centerline	mm	4835
Total Vehicle Length at Right Side	mm	3125
Weight of Ballast In Cargo Area	kg	16.0
Amount of Stoddard Solvent in Fuel Tank	liters	61.7

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2730
Target Impact Point Aft of Front Axle	mm	425
Actual Impact Point Aft of Front Axle	mm	527

DATA SHEET NO. 1…(CONTINUED)

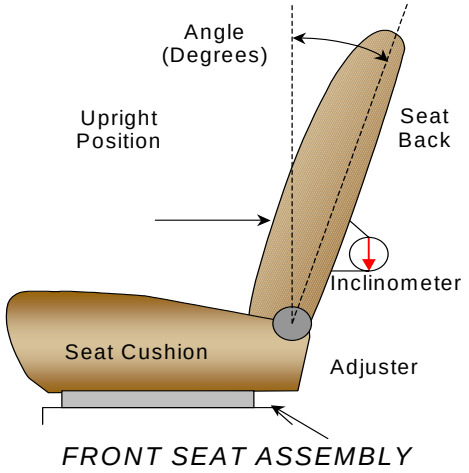
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

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

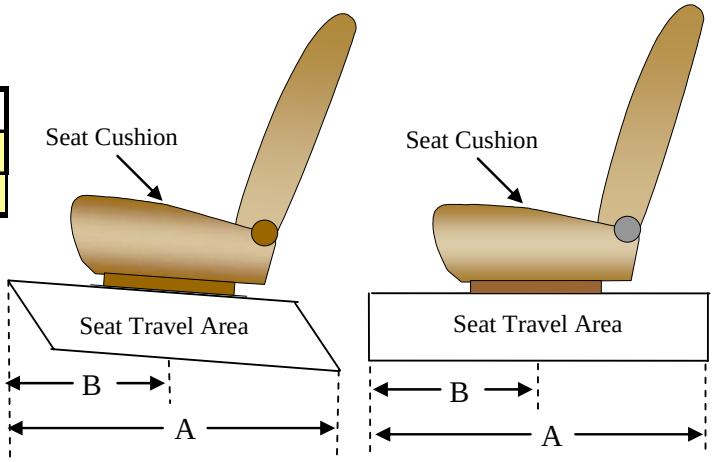
	Deg.
Driver Seat Back Angle	24.0
Rear Seat Back Angle	

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	295 mm	197 mm
Rear Seat	Fixed	Fixed



SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	4	2
Rear Seat	Fixed	Fixed

GENERAL TEST AND VEHICLE PARAMETER DATA

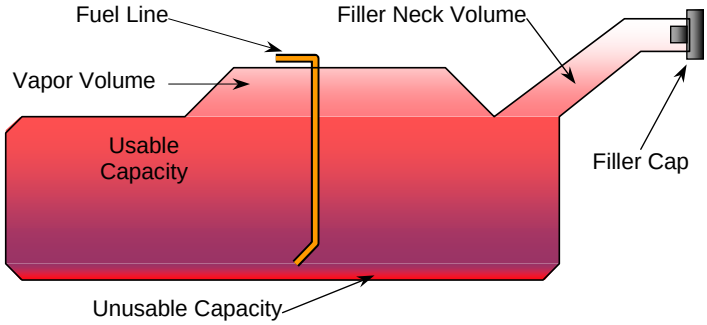
Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	66.2
Usable Capacity of "Optional" Tank	
Usable Capacity used for FMVSS 301	60.9 to 62.3
Actual Amount of Solvent used	61.7

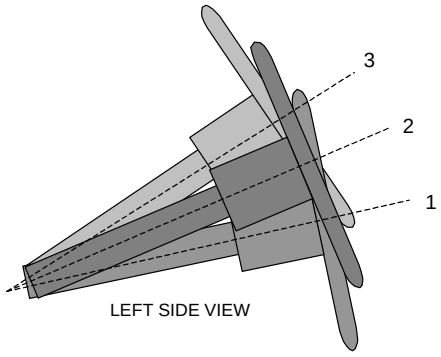
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately three (3) seconds with the ignition in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender.



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 positon No. 1	22.1	0
Geometric center position No. 2	24.8	24
Uppermost position No. 3	27.4	48

DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	436	292		485	369	
Right	kg	424	301		449	352	
Ratio	%	59.2	40.8		56.4	43.6	
Totals	kg	860	593	1453	934	721	1655

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	113	237
Level 2	Occupant H-Point	mm	307	510
Level 3	Mid Door	mm	282	604
Level 4	Window Sill	mm	251	883
Level 5	Window top	mm	111	1338
N/A	Maximum Penetration	mm	307	

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	3
Total	14

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

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	62.53
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.64
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	700
B	Top of Bumper	533	800	left	707
C	Mid Level	686	800	left	725
D	Top of Stack	813	800	left	730

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	1
High Speed Cameras	2

DATA SHEET NO. 4

POST-TEST OBSERVATIONS

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

TEST DUMMY INFORMATION AND CONTACT POINTS

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

POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Door remained closed and latched, jammed	Door 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 seperation
Sill Separation	None
Windshield Damage	Windshield cracked
Window Damage	Front and 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	No		No	
Head Airbag	No		No	
Curtain Airbag	No		No	
Seat Belt Pretensioner	Yes			
Seat Belt Load Limiter	Yes			

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	-21 (left)
Vertical Offset	mm	+/- 20	0

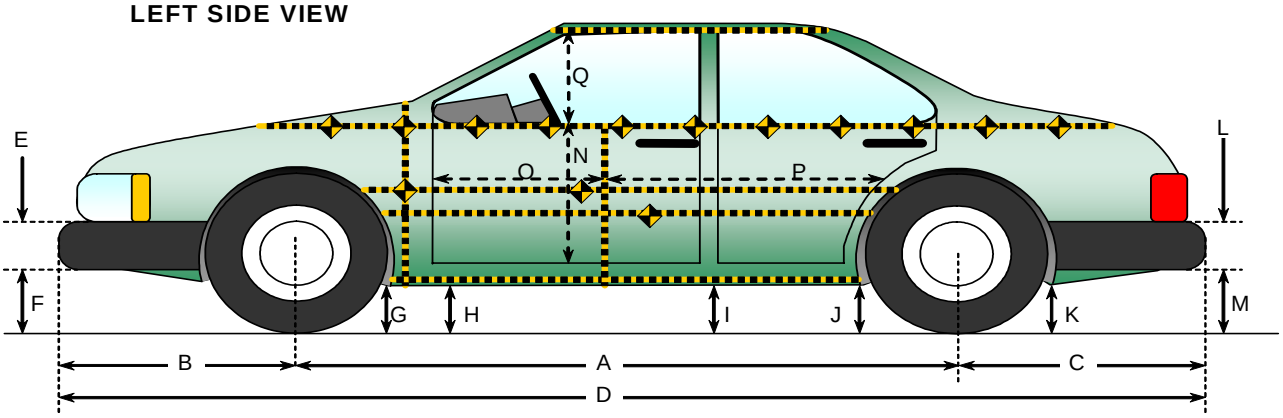
DATA SHEET NO. 5

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

LEFT SIDE VIEW



VEHICLE PRE AND POST TEST MEASUREMENT INFORMATION

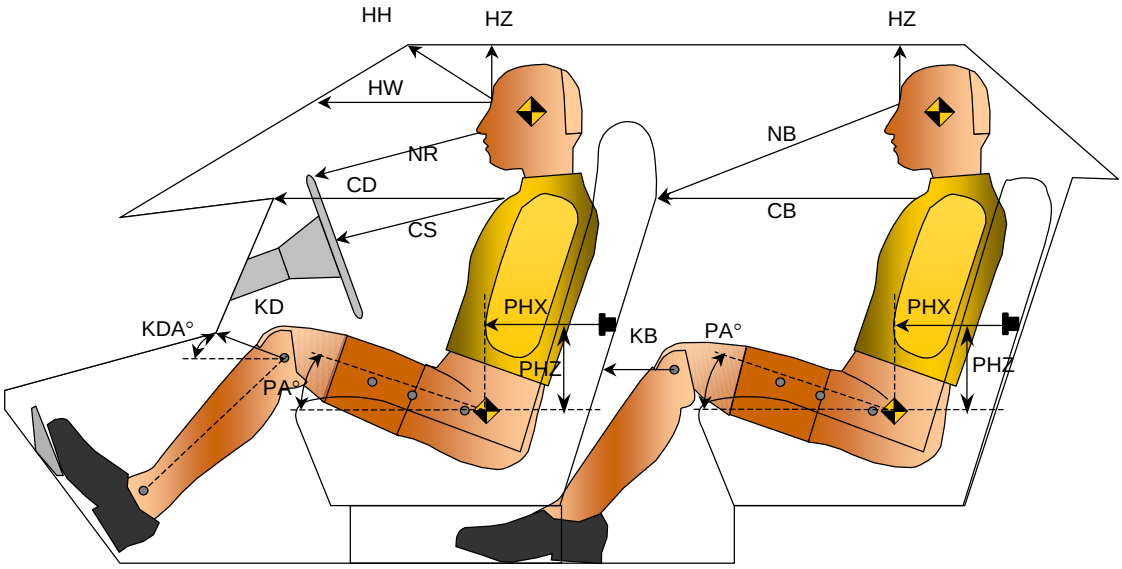
Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2730	2710	-20
B	Front Axle to FSOV	993	1000	7
C	Rear Axle to RSOV	1112	1114	2
D	Total Length at Centerline	4835	4830	-5
E	Front Bumper Thickness	336	335	-1
F	Front Bumper Bottom to Ground	198	201	3
G	Sill Height at Front Wheel Well	184	186	2
H	Sill Height at Front Door Leading Edge	190	251	61
I	Sill Height at "B" Pillar	189	267	78
J1	Sill Height at Rear Wheel Well	161	194	33
J2	Pinch Weld Height at Rear Wheel Well	189	222	33
K	Sill Height aft of Rear Wheel Well	222	279	57
L	Rear Bumper Thickness	334	339	5
M	Rear Bumper Bottom to Ground	282	347	65
N	Sill Height to Window Bottom Sill	684	610	-74
O	Front Door Leading Edge to Impact CL	841	792	-49
P	Rear Door Trailing Edge to Impact CL	1307	1290	-17
Q	Front Window Opening	406	379	-27
R	Right Side Length	3125	3132	7
S	Left Side Length	3125	3172	47
T	Vehicle Width at "B" Post	1802	1584	-218

DATA SHEET NO. 6

SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06



LONGITUDINAL CLEARANCE DIMENSION INFORMATION

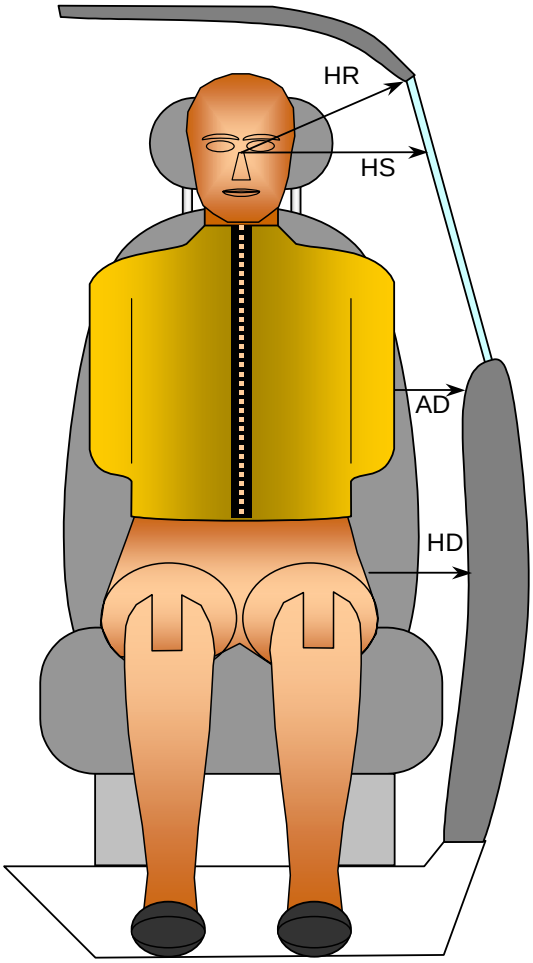
Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length(mm)	Angle	Length(mm)	Angle
HH		Head to Header	355	15.2		
HW		Head to Windshield	600			
HZ	HZ	Head to Roof	160	90.0	145	90.0
NR	NB	Nose to Rim/Nose to Seat Back	490	19.6	710	19.8
CD	CB	Chest to Dash or Seat Back	560	1.0	580	0.6
CS		Chest to Steering Wheel	290	5.0		
KDL	KBL	Left Knee to Dash or Seat Back	220	3.7	210	51.5
KDR	KBR	Right Knee to Dash or Seat Back	190		210	
PA	PA	Pelvic Angle		23.0		23.0
PHX	PHX	H-Point to Striker (X-Axis)	245	37.1	455	43.0
PHZ	PHZ	H-Point to Striker (Z-Axis)	150		325	

DATA SHEET NO. 7

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06



FRONT VIEW OF DUMMY

LATERAL CLEARANCE DIMENSION INFORMATION

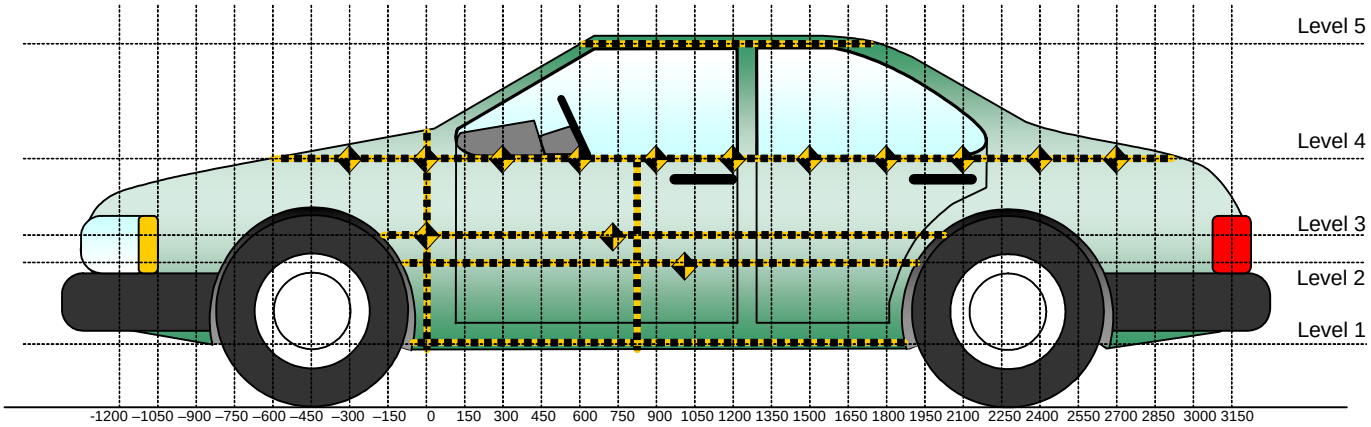
Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	250	265
HS	Head to Side Window	mm	330	340
AD	Arm to Door	mm	110	110
HD	H-Point to Door	mm	135	120

DATA SHEET NO. 8

VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06



All Measurements Shown in mm

LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.
Measurments taken 900 mm right of impact reference.
All measurements below in mm.

Level	Measurement Description	Height Above Ground
1	Sill Top	237
2	Occupant H-Point	510
3	Mid Door	604
4	Window Sill	883
5	Window Top	1338

DATA SHEET NO. 9

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

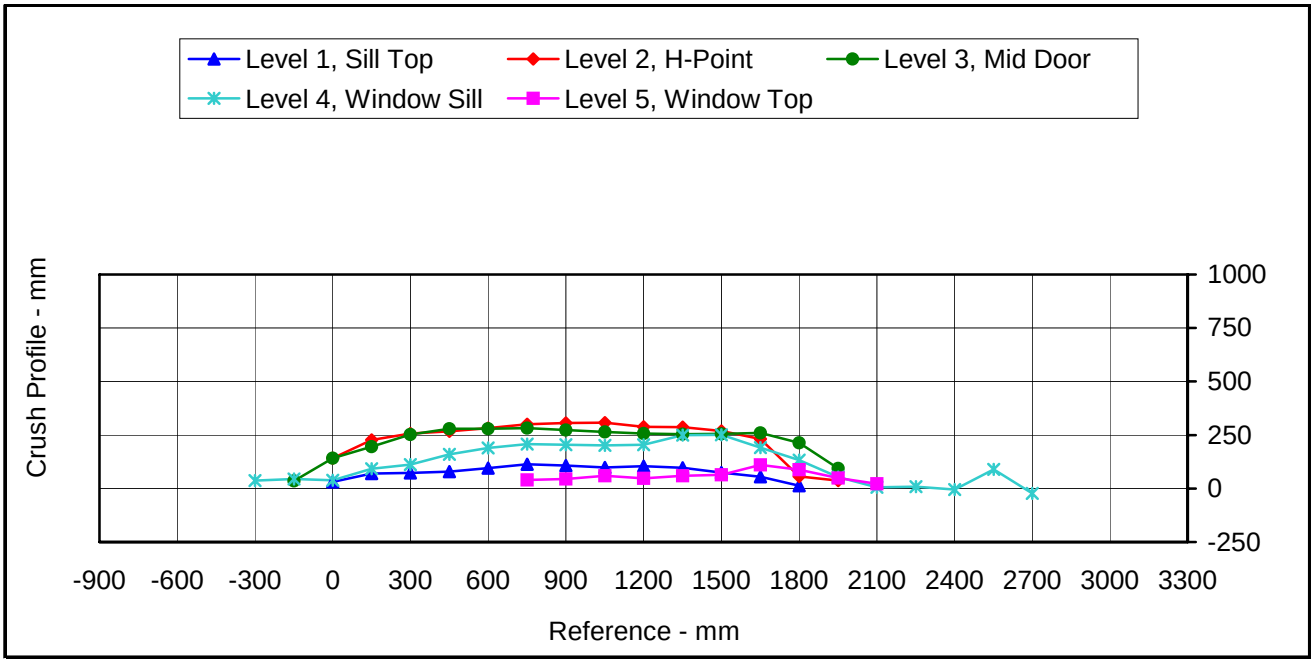
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600				723					740					17	
-450				697					725					28	
-300				684					721					37	
-150			594	671				630	715				36	44	
0	636	598	600	658		667	739	741	696		31	141	141	38	
150	640	609	603	656		710	836	798	768		70	227	195	112	
300	643	609	603	652		716	866	855	764		73	257	252	112	
450	643	609	601	652		722	876	880	811		79	267	279	159	
600	643	608	601	646		739	891	880	835		96	283	279	189	
750	646	607	600	642	908	759	907	882	850	948	113	300	282	208	40
900	647	607	601	642	896	754	913	875	846	941	107	306	274	204	45
1050	650	608	601	641	892	749	915	866	843	951	99	307	265	202	59
1200	651	611	604	646	891	756	900	861	851	939	105	289	257	205	48
1350	652	613	607	647	889	749	900	861	897	948	97	287	254	250	59
1500	655	617	609	647	890	729	886	865	898	954	74	269	256	251	64
1650	659	620	613	651	889	714	851	873	842	1000	55	231	260	191	111
1800	663	622	618	653	891	676	678	832	786	979	13	56	214	133	88
1950		619	612	662	892		656	706	715	941		37	94	53	49
2100			611	666	904			637	671	926			26	5	22
2250				673					681					8	
2400				696					691					-5	
2550				612					701					89	
2700				736					713					-23	
2850				761					713					-48	
3000															

DATA SHEET NO. 9…(CONTINUED)

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06



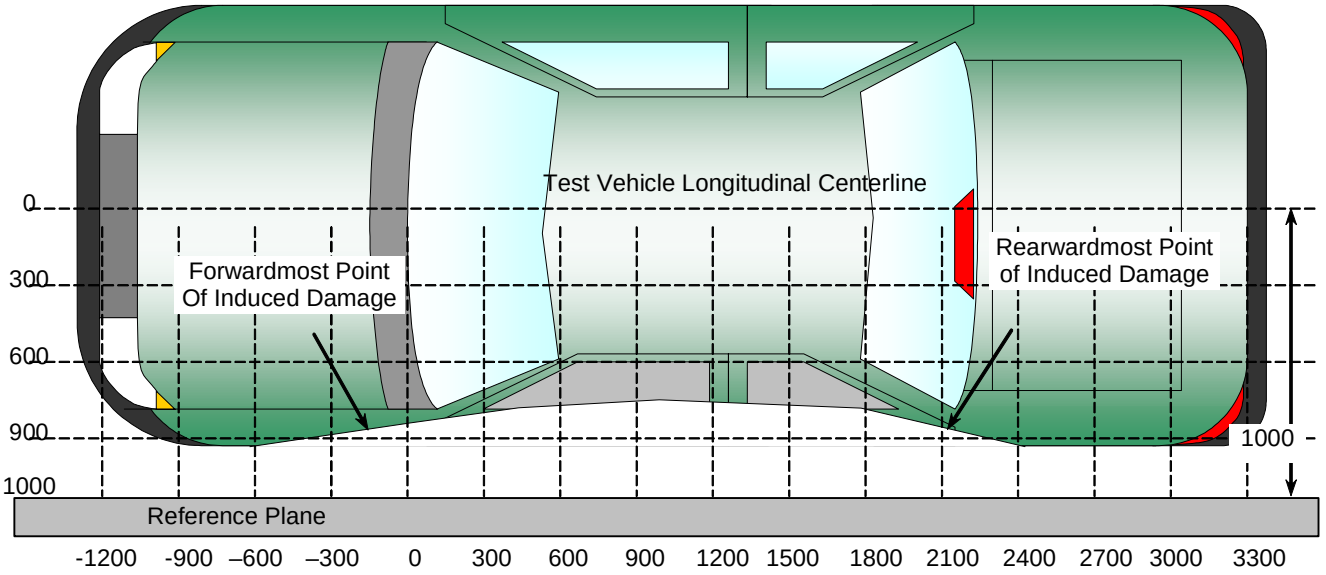
	Units	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush	mm	113	307	282	251	111
Distance from Impact	mm	750	1050	750	1500	1650

DATA SHEET NO. 10

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06



All Dimensions Shown in millimeters

TOP VIEW

DAMAGE PROFILE DISTANCES

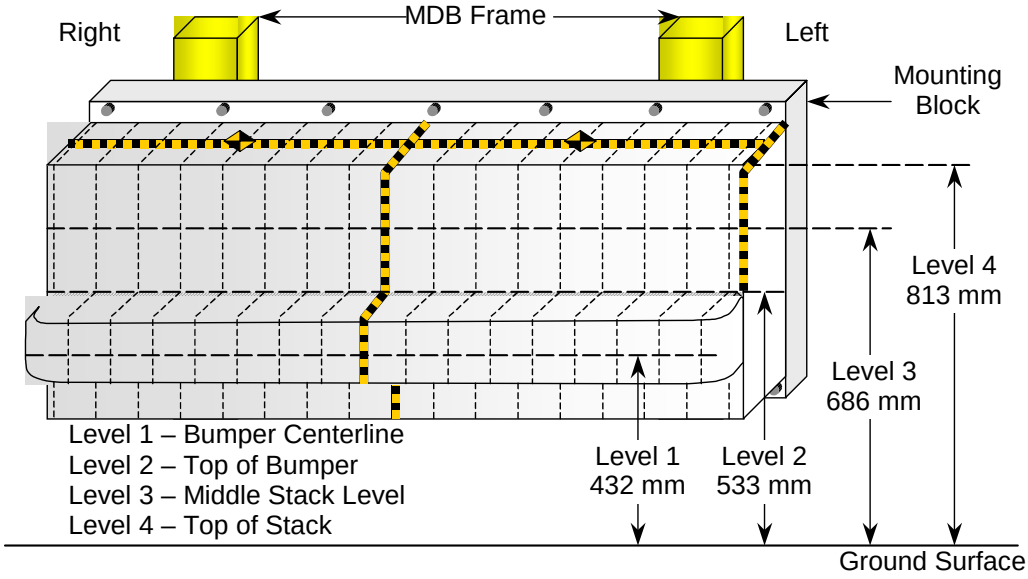
DPD	Distance From Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	-450	4	697	725	28
2	150	2	609	836	227
3	750	2	607	907	300
4	1350	2	613	900	287
5	1950	3	612	706	94
6	2550	4	612	701	89

DATA SHEET NO. 11

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06



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	800
1	668	644	636	636	636	643	639	638	635	627	628	632	636	639	639	651	700
2	692	685	681	676	661	661	664	666	662	660	664	671	684	690	697	707	707
3	660	626	624	624	633	662	670	660	643	635	632	633	636	643	652	674	725
4	693	647	616	612	631	671	685	676	655	645	641	648	653	663	685	701	730

All Dimensions in mm

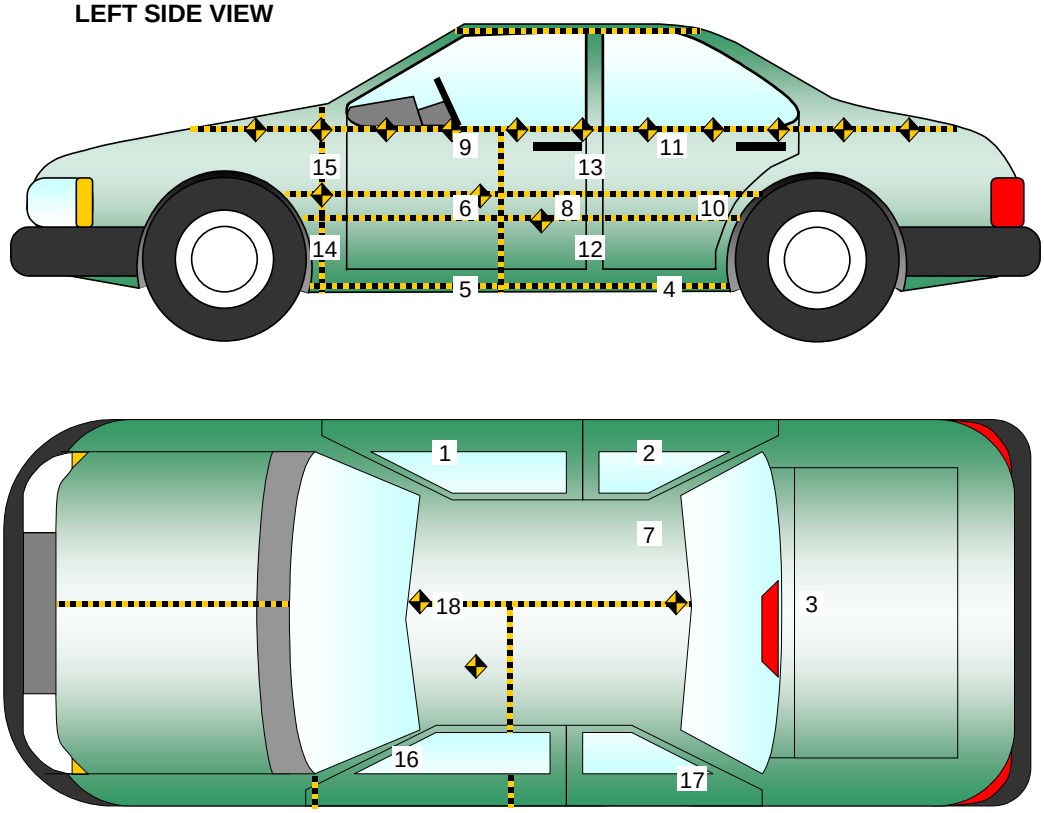
DATA SHEET NO. 12

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

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 Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			
		X	Y	Z	
1	Right Sill at Front Seat	2922	752	342	
2	Right Sill at Rear Seat	1900	725	385	
3	Rear Floorpan Above Axle	1112	0	631	
4	Left Sill at Rear Door	1718	-878	179	
5	Left Sill at Front Door	2582	-878	179	
6	Front Door Centerline				1
7	Rt. Rear Occ. Compartment	2158	361	356	
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	2242	-732	670	
13	B-Post Middle	2242	-732	824	
14	A-Post Lower	3291	-780	536	
15	A-Post Middle	3291	-780	682	
16	Front Seat Track	2772	-625	350	
17	Rear Seat Structure				1
18	Vehicle CG	2985	254	256	

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

1.) Not installed

DATA SHEET NO. 13

MDB ACCELEROMETER LOCATIONS

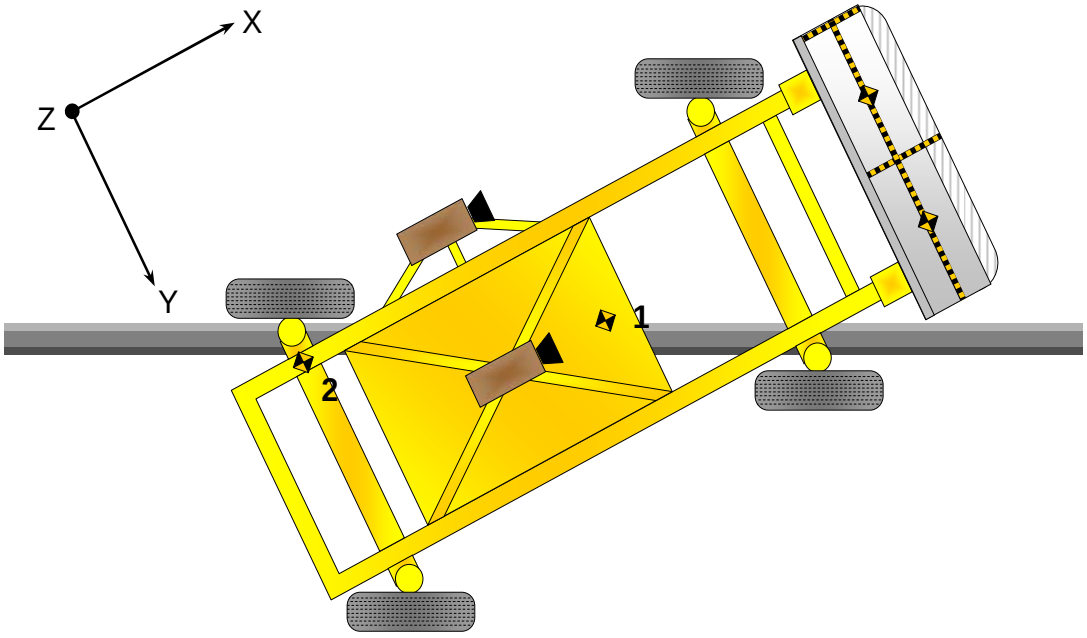
Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

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

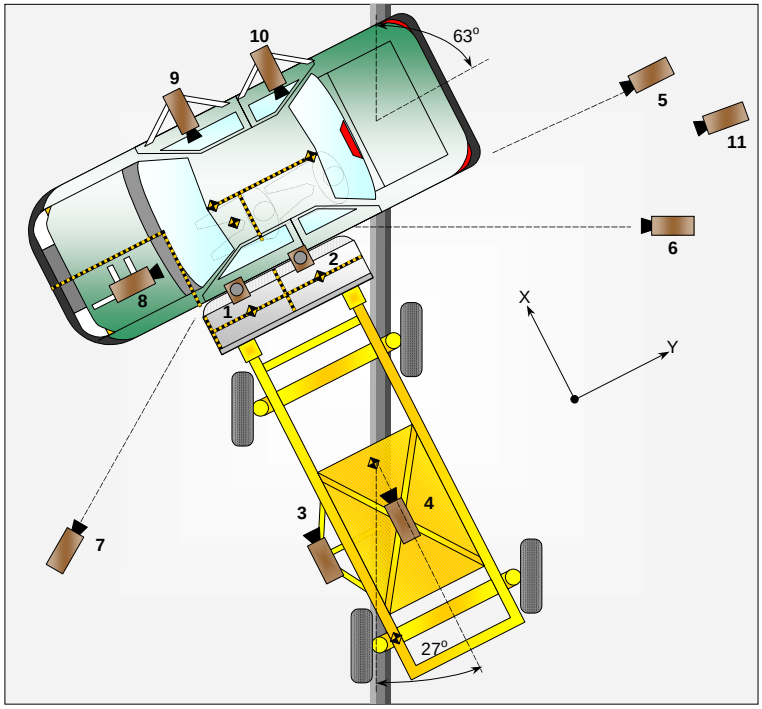


DATA SHEET NO. 14

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06



No.	Camera View	Location (mm)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X	Y	Z			
Doc	Real Time Digital	3658	21530	-1727	-2	N/A	30
1	Overhead Overall	1220	2287	-5486	-90	14	1000
2	Overhead Close Up	609	2287	-5486	-90	22	1000
3	Left Impact Point (MDB)	-2134	0	-1143	-7	25	1000
4	Side Overall (MDB)	-3912	838	-1829	-11	12	1000
5	Rear	236	15545	-1371	-1	25	1000
6	Left Rear (MDB)	-2137	1302	-939	-4	24	1000
7	Left Front	-2666	3549	-1473	-4	24	1000
8	Driver Front (O.B.)	533	-275	-1237	-15	35	1000
9	Driver Side (O.B.)	1910	336	-1225	-2	20	1000
10	Passenger Side (O.B.)	1910	945	-1225	-2	20	1000
Doc	Real Time Digital	257	15563	-1371	0	N/A	30
Doc	Real Time Digital	-2685	3539	-1473	-2	N/A	30
11	Left Rear	-7100	16459	-839	0	40	1000

X = Barrier Face Y = Monorail Centerline Z = Ground DNR = Did Not Run NTM = No Timing Marks

DATA SHEET NO. 15

FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

Test Time: 1:44 PM Temperature: 18.3 Deg. C.

Stoddard Solvent Spillage Measurements

A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)

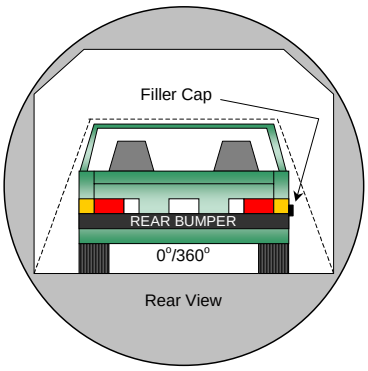
B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)

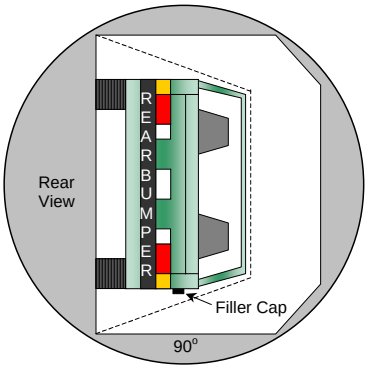
C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)

D. Spillage Details: No leakage occurred

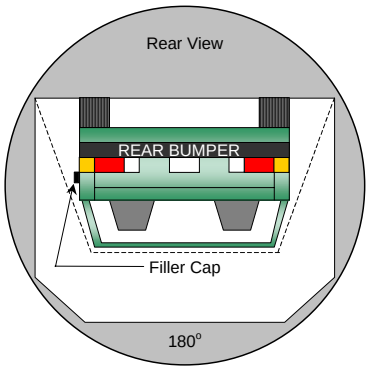
DATA SHEET NO. 16
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204
Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

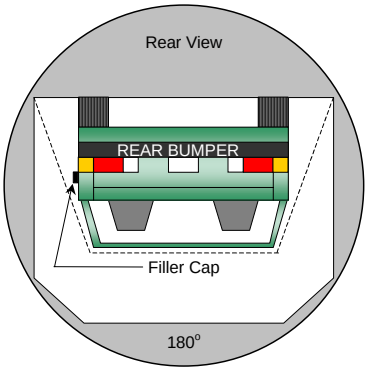




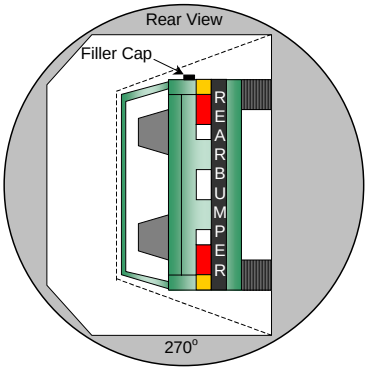
0° to 90°

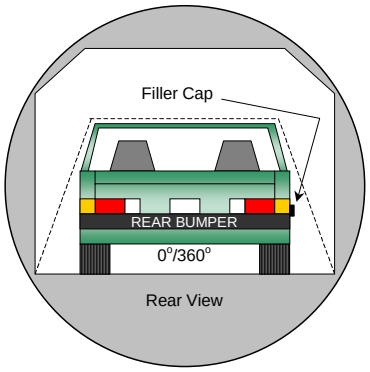


90° to 180°



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.

FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2006 Ford Fusion 4-Door Sedan NHTSA No.: M60204

Test Program: 55/28 km/h Side Impact NCAP Test Date: 1/11/06

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	84	300	384
90° to 180°	78	300	378
180° to 270°	81	300	381
270° to 360°	78	300	378

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

LIST OF PHOTOGRAPHS

LIST OF PHOTOGRAPHS…(CONTINUED)

Figure A-1: Left Front ¾ View, as Received

Figure A-2: Right Rear ¾ View, as Received

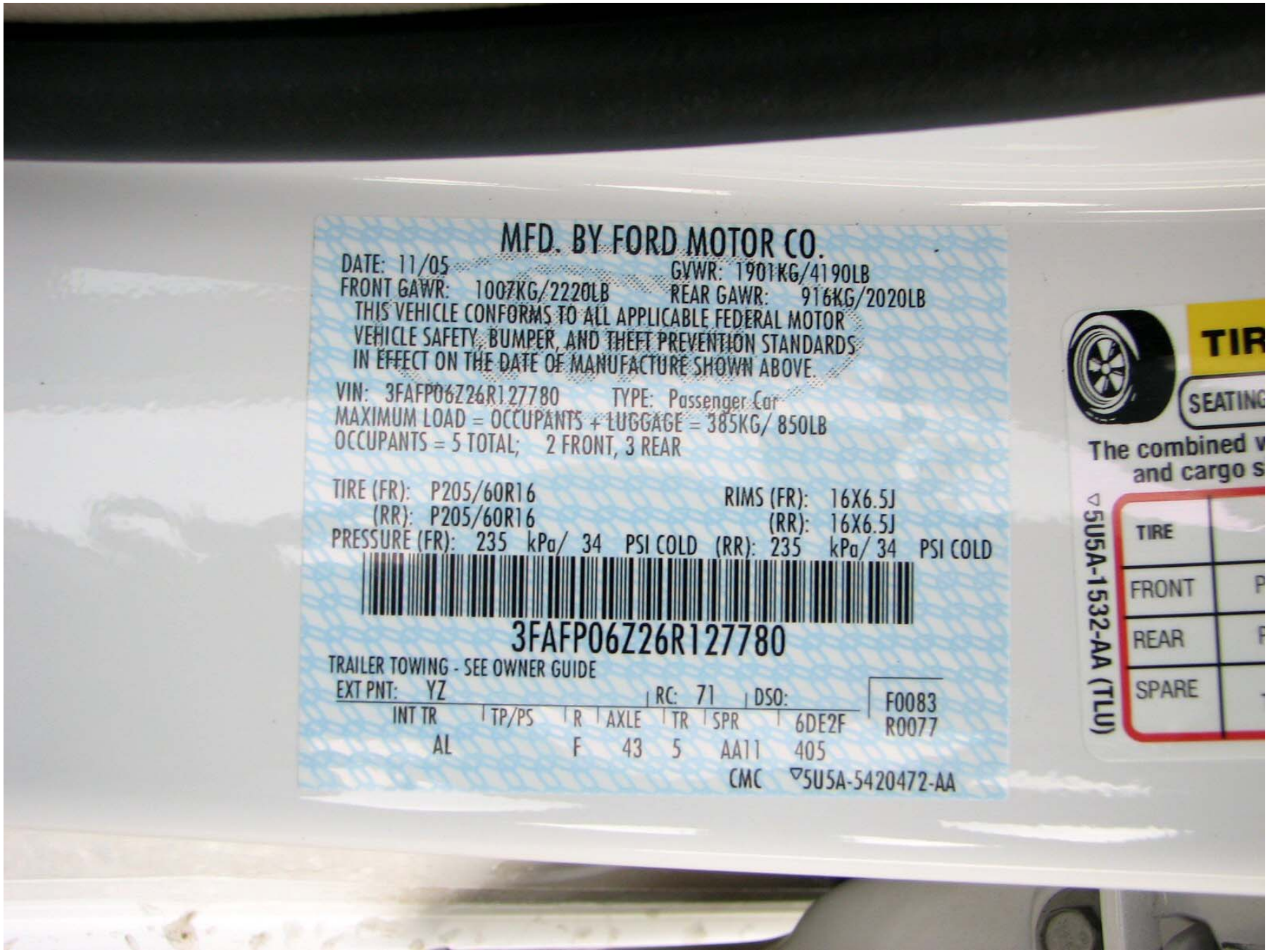


Figure A-3: Manufacturer's Label

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 ¾ 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

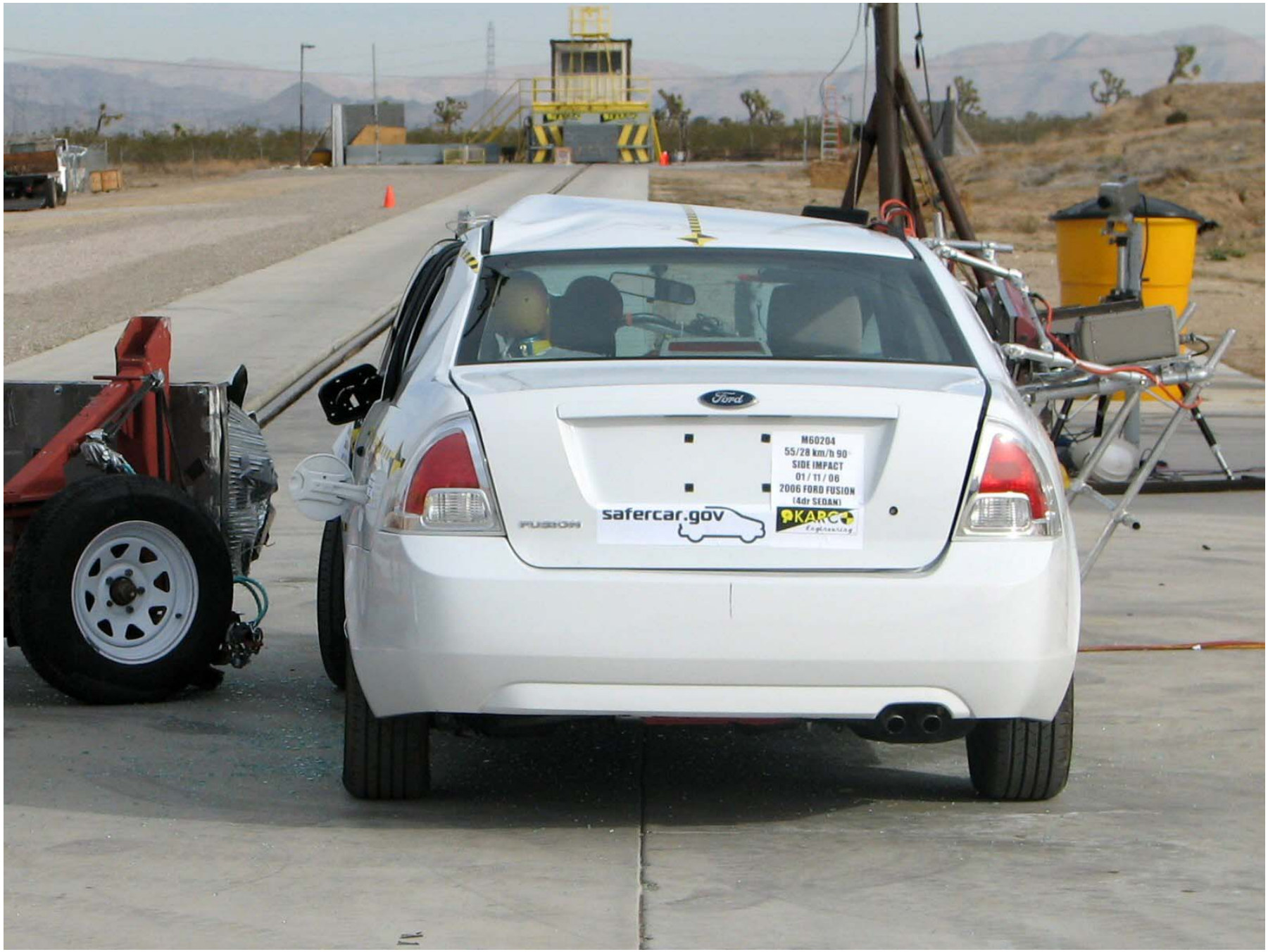


Figure A-14: Post-Test Rear View

Figure A-15: Pre-Test Right Rear ¾ View

Figure A-16: Post-Test Right Rear ¾ View

Figure A-17: Pre-Test Right Side View

Figure A-18: Post-Test Right Side View

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

Figure A-20: Post-Test Right Front ¾ View

Figure A-21: Pre-Test Overhead View

Figure A-22: Post-Test Overhead View

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

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

Figure A-25: Pre-Test Left Impact Point

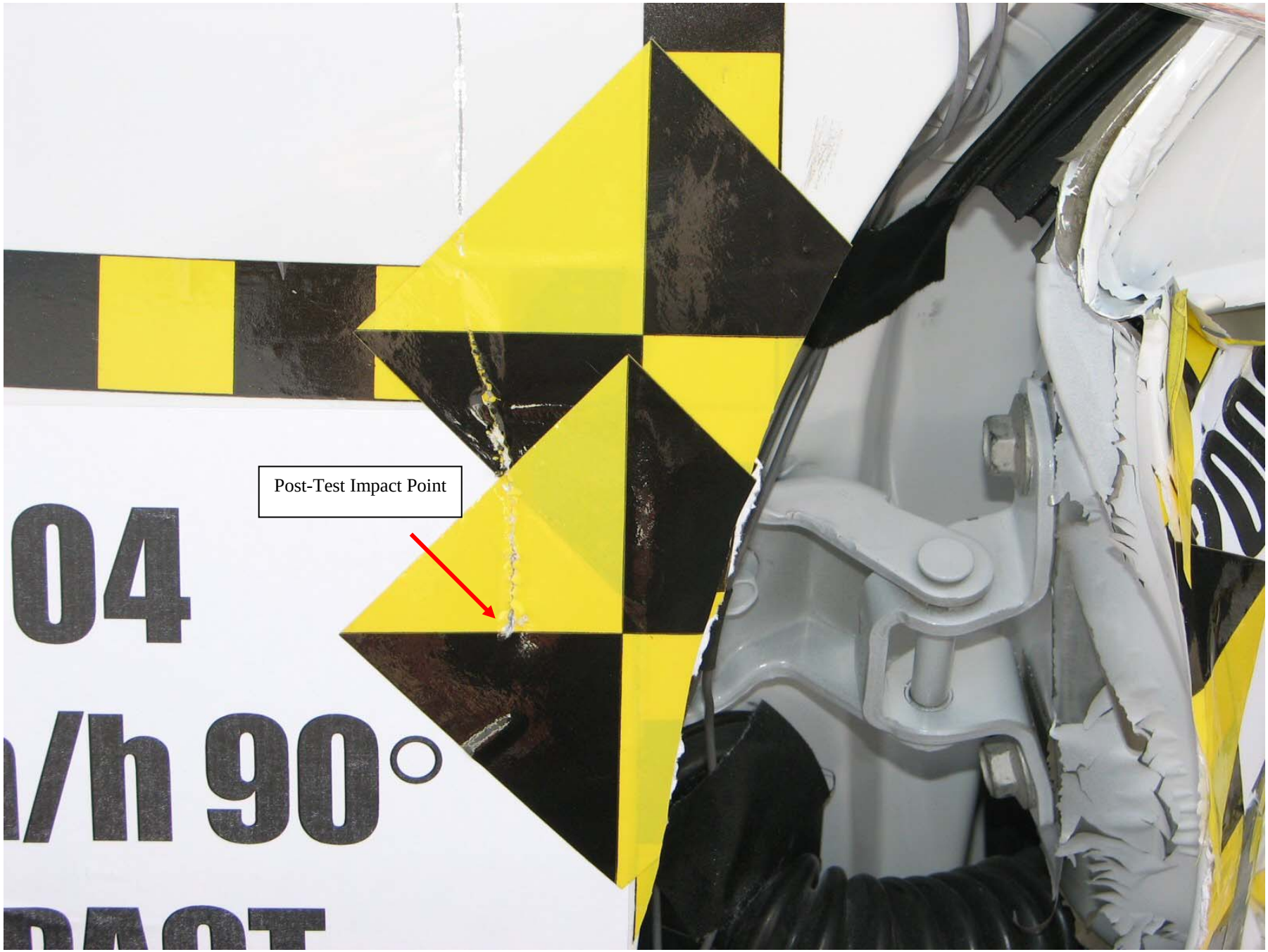


Figure A-26: Post-Test Left Impact Point

Figure A-27: Pre-Test Front ¾ 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 ¾ View of Left Side Doors

Figure A-31: Pre-Test Left Front Door

Figure A-32: Post-Test Left Front Door

Figure A-33: Pre-Test Left Rear Door

Figure A-34: Post-Test Left Rear Door

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

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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)

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

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

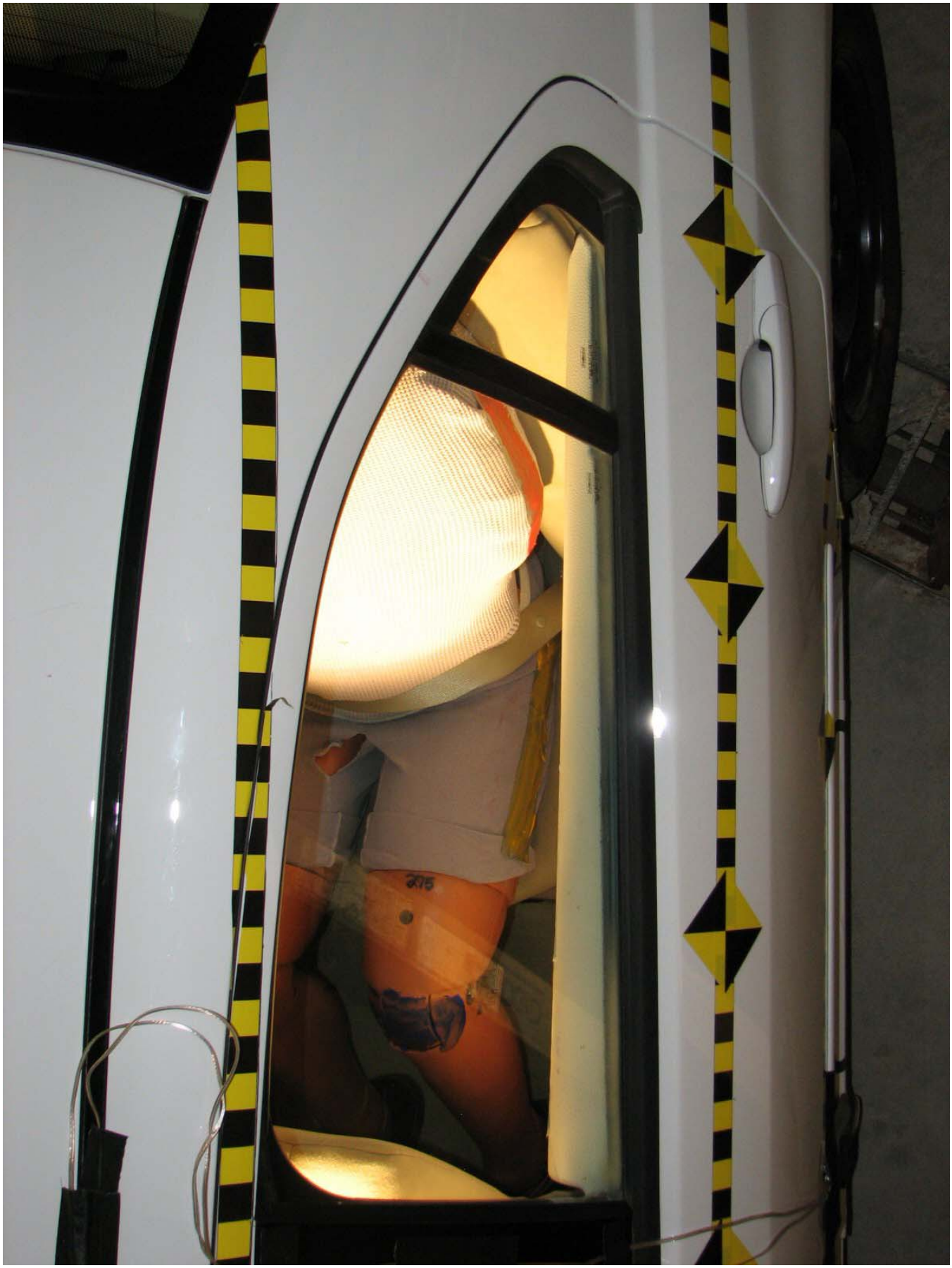


Figure A-47: Pre-Test Passenger Dummy Clearance From Door

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

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

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

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

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

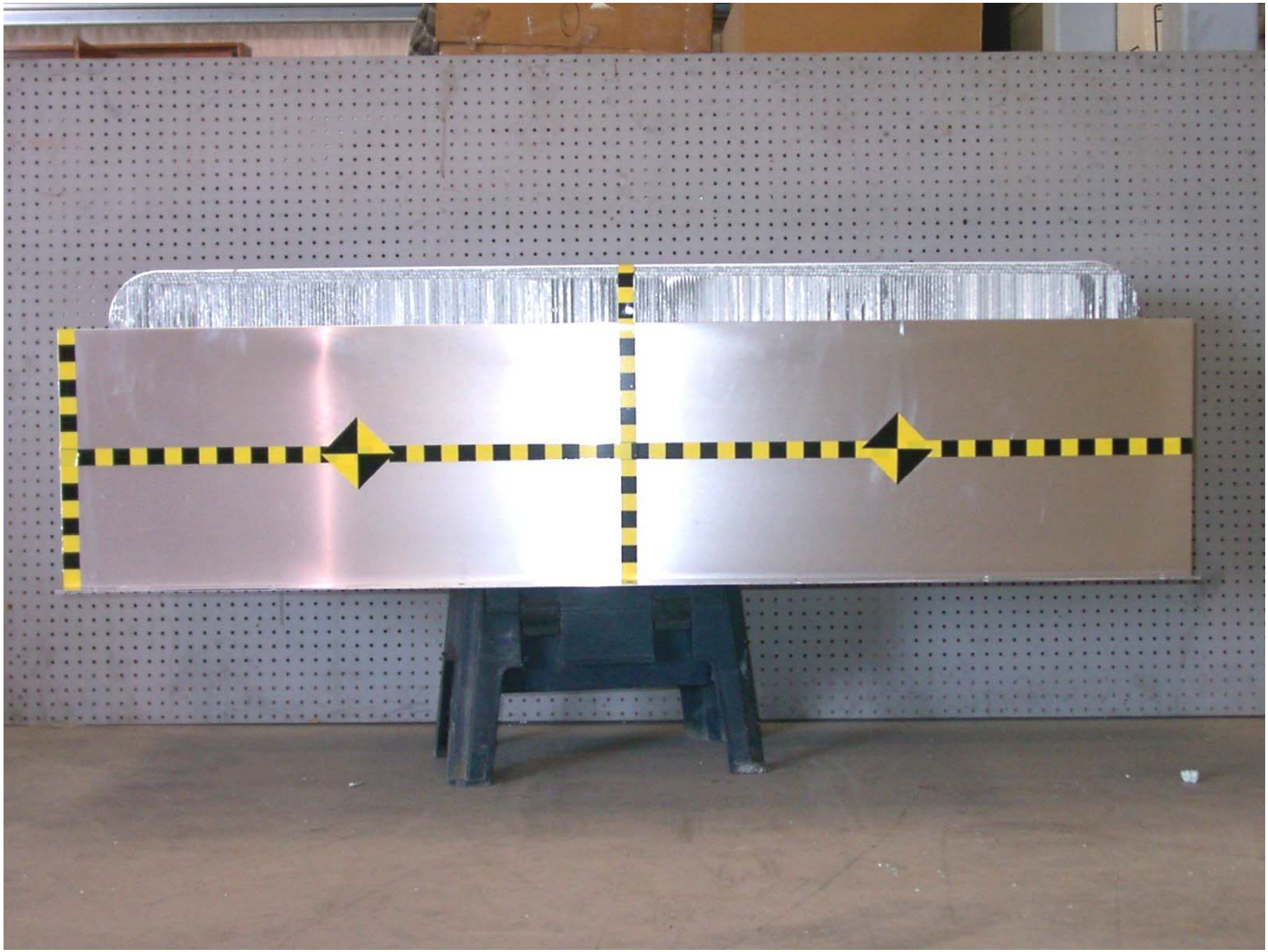


Figure A-55: Pre-Test Top View of Deformable Barrier

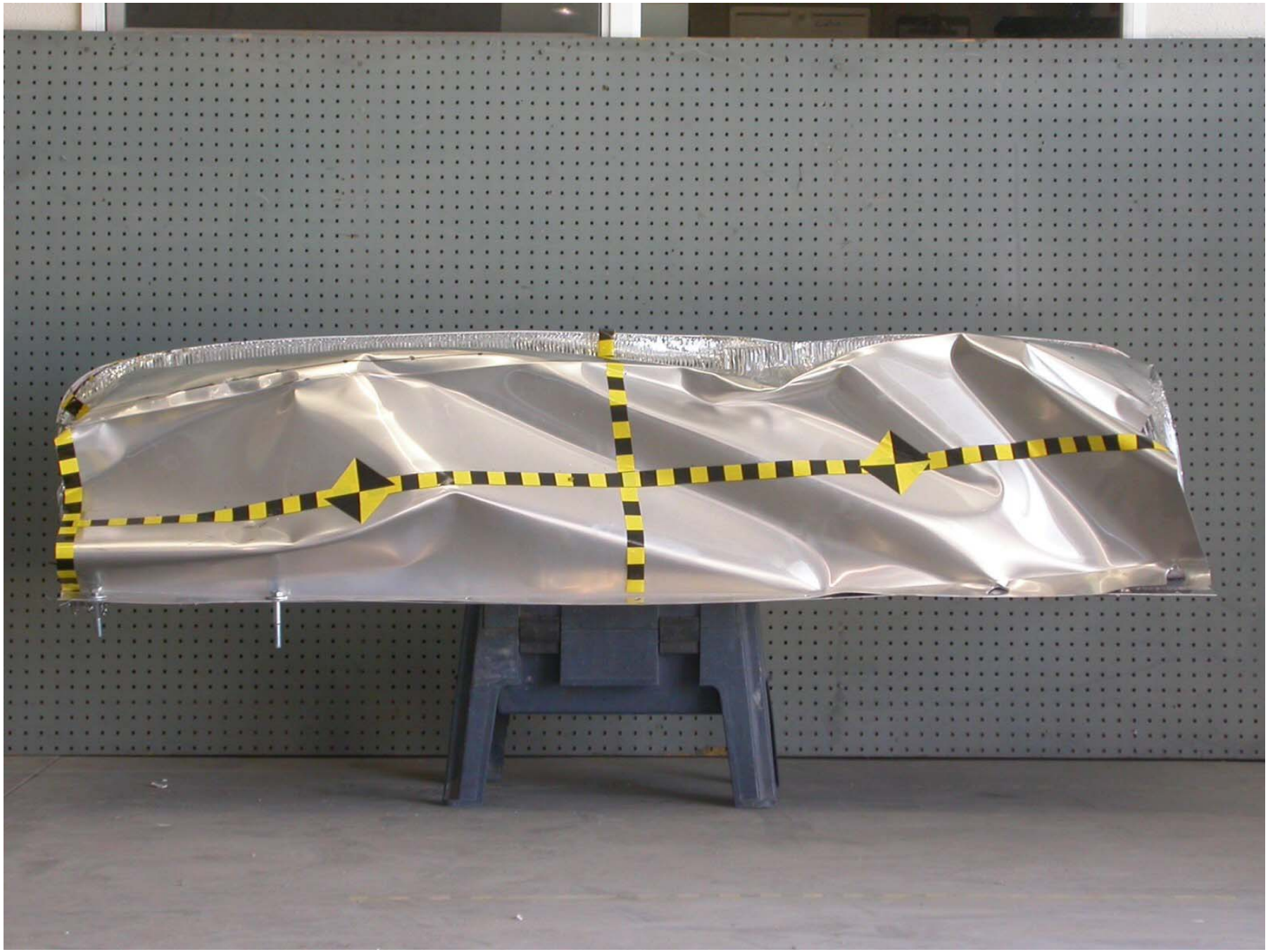


Figure A-56: Post-Test Top View of Deformable Barrier

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

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

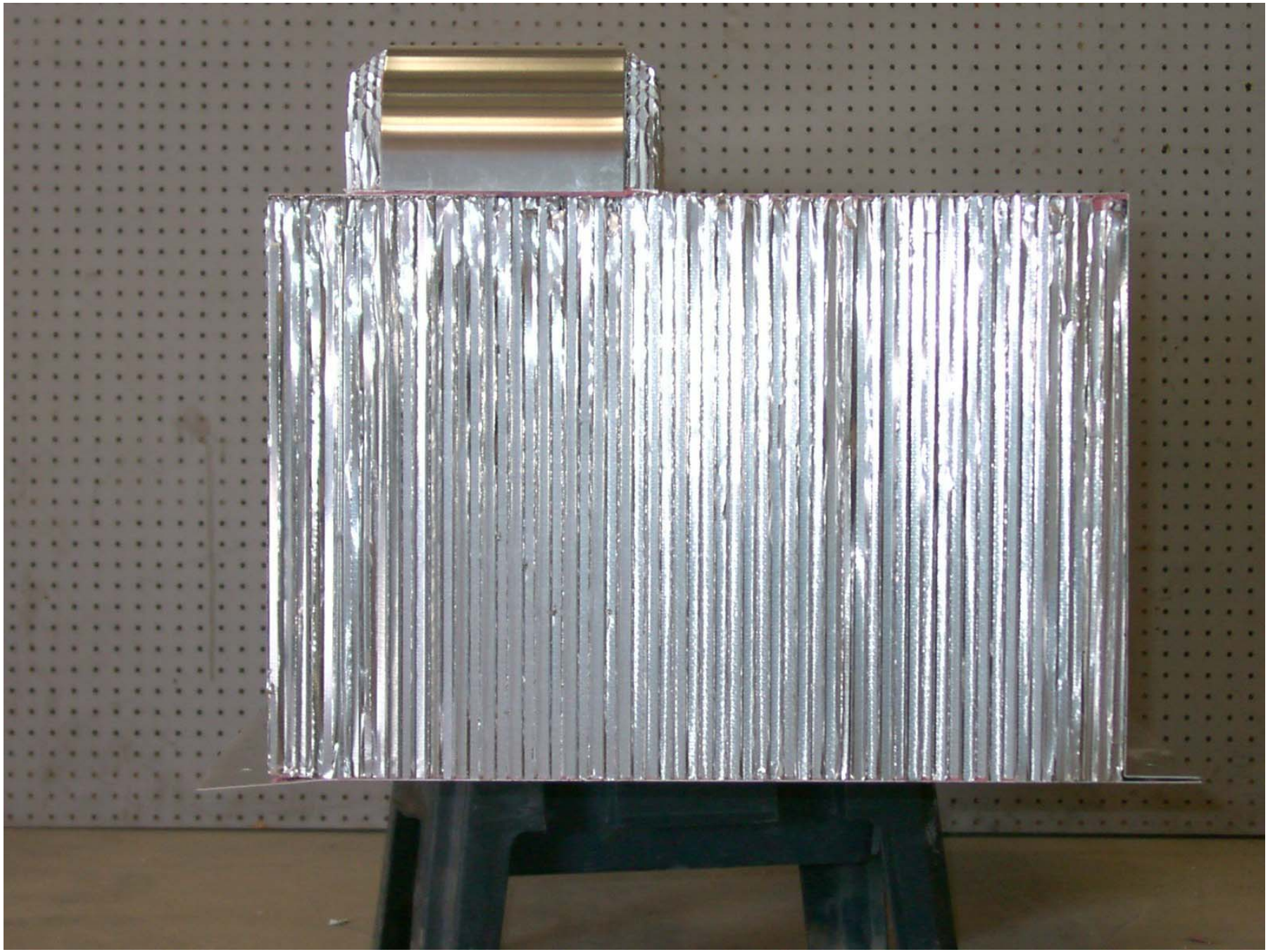


Figure A-59: Pre-Test Left Side View of Deformable Barrier

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

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

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

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

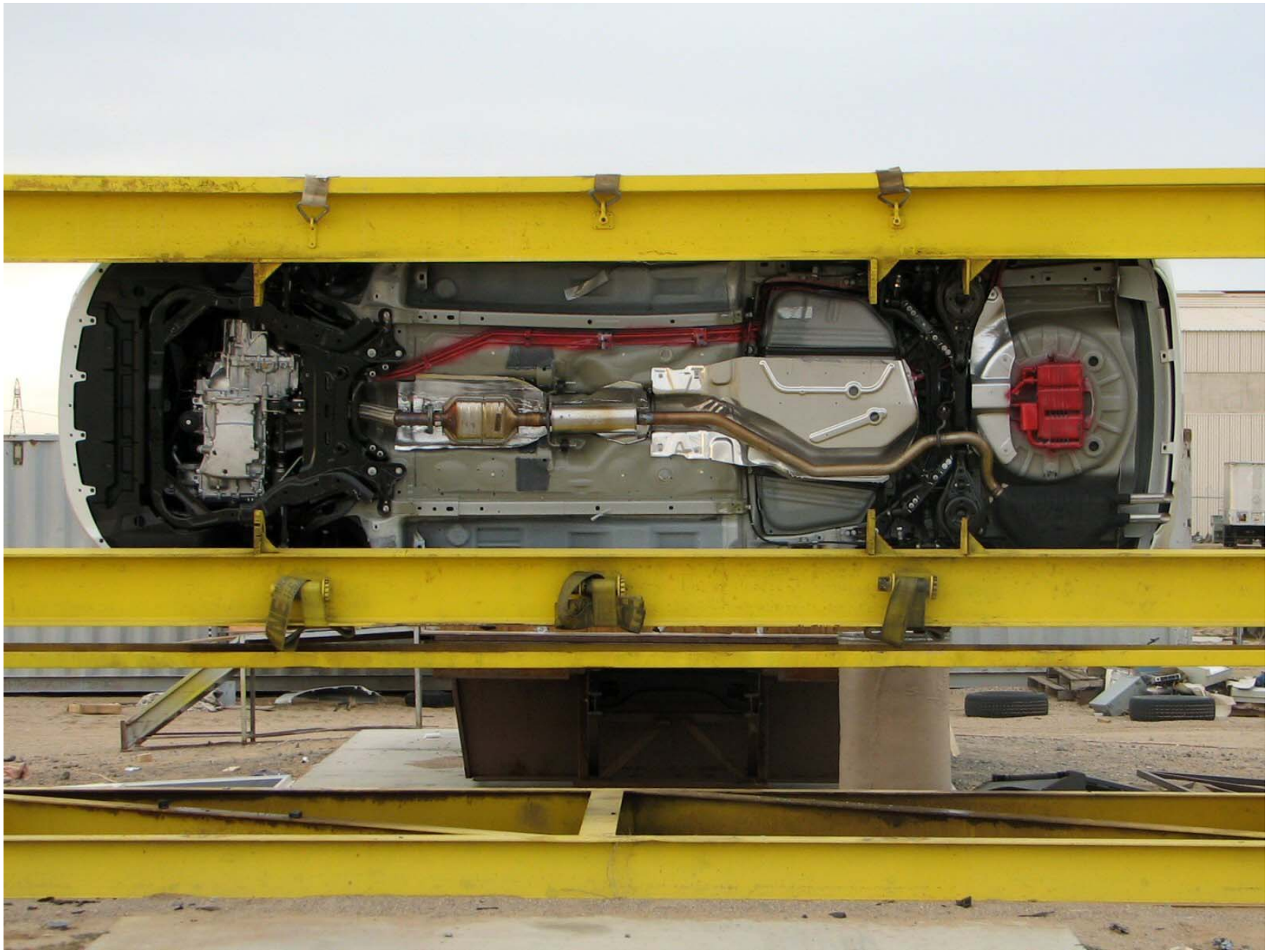


Figure A-64: Vehicle on Rollover Device (270°)

Figure A-65: Vehicle Impact

APPENDIX B

SID/HIII, VEHICLE AND MDB RESPONSE DATA

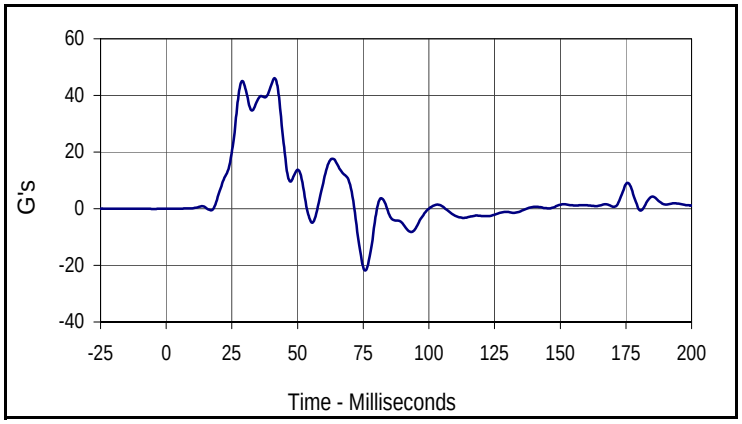
LIST OF DATA PLOTS

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

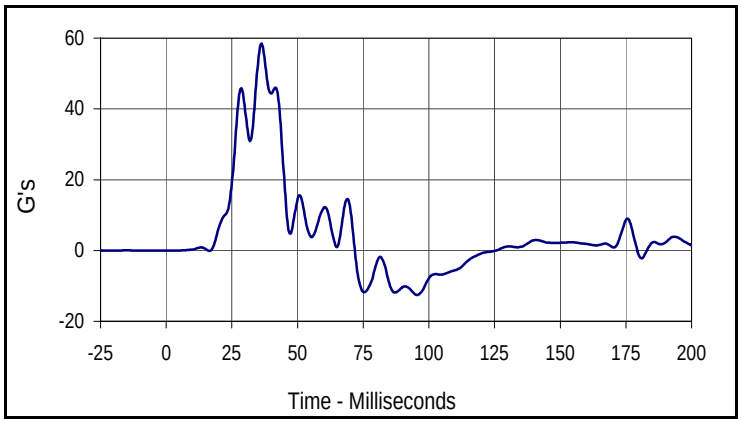
LIST OF DATA PLOTS…(CONTINUED)

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

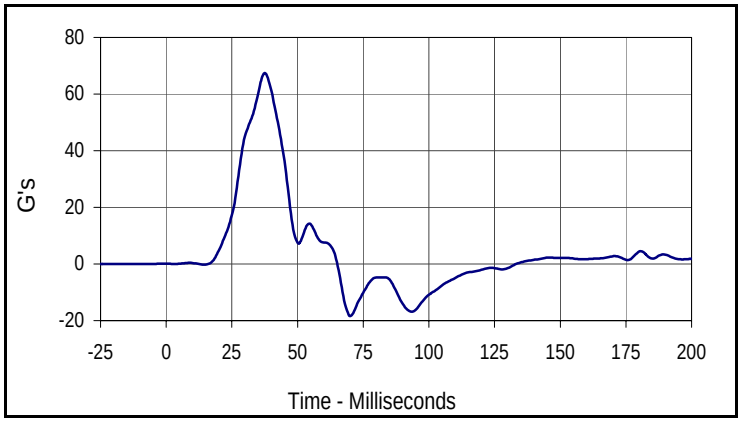
Test Vehicle:	2006 Ford Fusion 4-Door Sedan	Test Date:	1/11/06
Test Program:	55/28 km/h Side Impact NCAP	NHTSA No.:	M60204



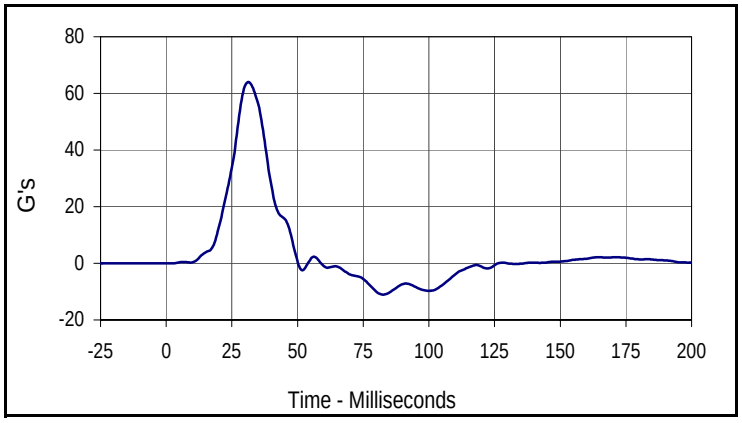
Curve Description			
Driver Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
001	FIR	FIR100	G's
Max	Time	Min	Time
46.1	41.3	-21.8	75.6



Curve Description			
Driver Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
002	FIR	FIR100	G's
Max	Time	Min	Time
58.5	36.3	-12.6	95.6

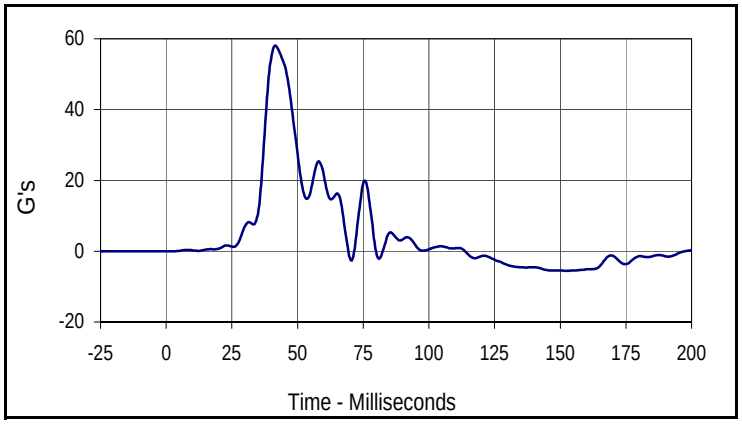


Curve Description			
Driver Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
003	FIR	FIR100	G's
Max	Time	Min	Time
67.4	37.5	-18.4	70.0

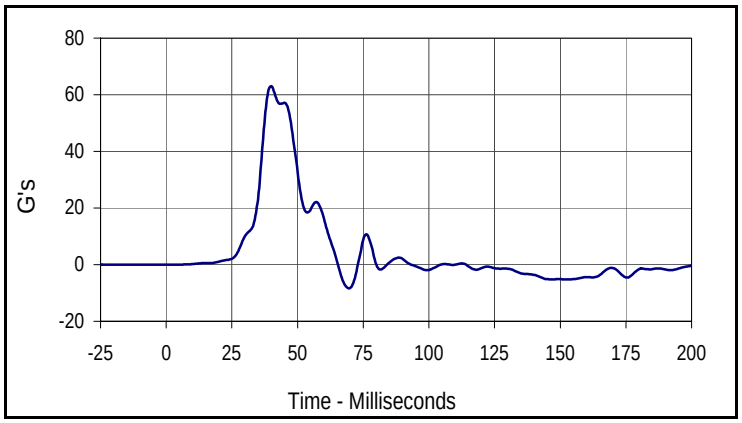


Curve Description			
Driver Pelvis Primary Y			
CURNO	Type	SAE Class	Units
004	FIR	FIR100	G's
Max	Time	Min	Time
64.1	31.3	-11.0	82.5

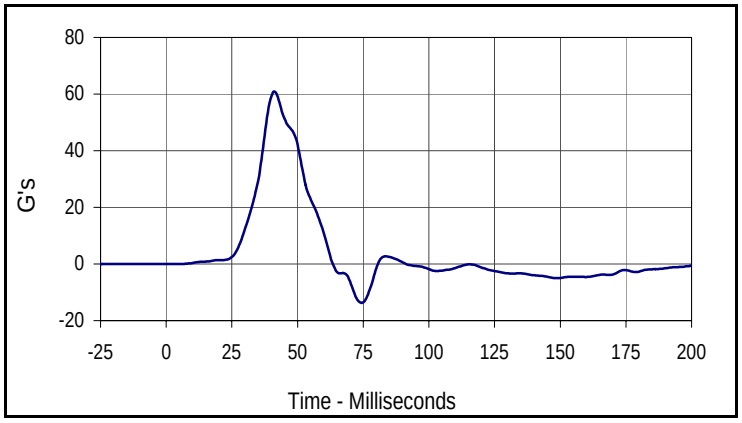
Test Vehicle:	2006 Ford Fusion 4-Door Sedan	Test Date:	1/11/06
Test Program:	55/28 km/h Side Impact NCAP	NHTSA No.:	M60204



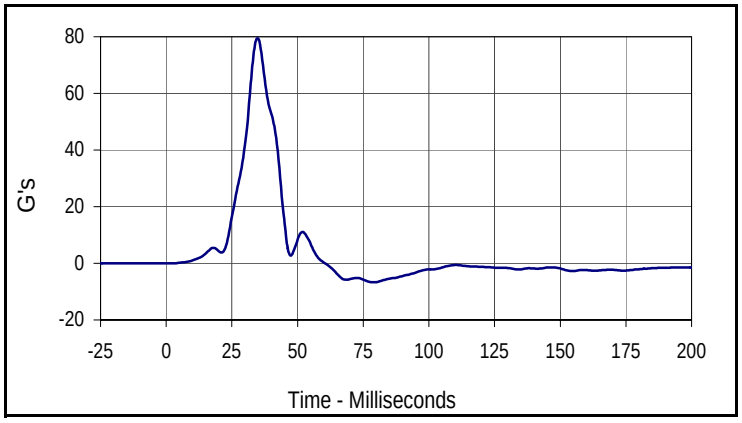
Curve Description			
Passenger Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
005	FIR	FIR100	G's
Max	Time	Min	Time
58.0	41.3	-5.5	152.5



Curve Description			
Passenger Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
006	FIR	FIR100	G's
Max	Time	Min	Time
63.0	40.0	-8.3	69.4



Curve Description			
Passenger Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
007	FIR	FIR100	G's
Max	Time	Min	Time
61.0	41.3	-13.7	74.4



Curve Description			
Passenger Pelvis Primary Y			
CURNO	Type	SAE Class	Units
008	FIR	FIR100	G's
Max	Time	Min	Time
79.3	35.0	-6.7	78.8

APPENDIX C
SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

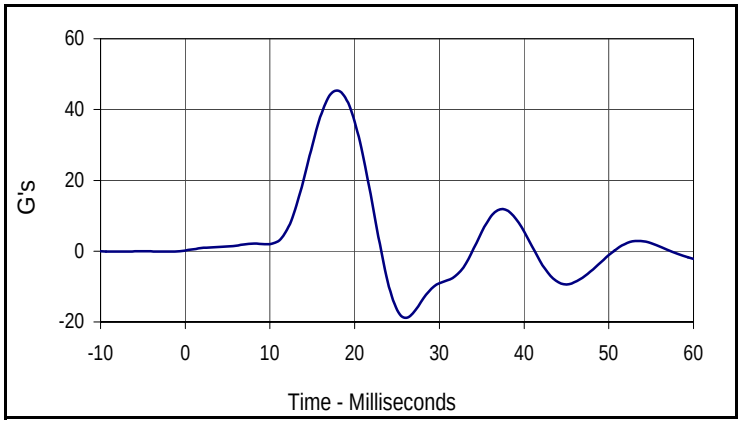
APPENDIX C
PRE-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program:	SID / HIII External Measurements	Test Date:	12/11/05
ATD Serial No.:	274	Test I.D.:	N/A

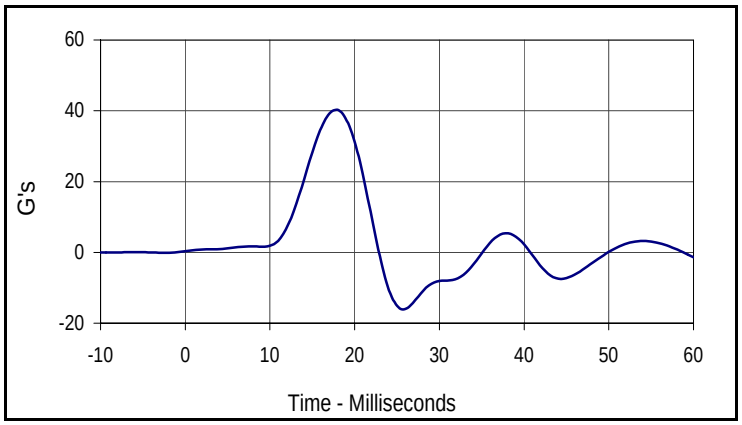
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	900	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	515	Pass
KH- Knee Pivot From Back 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	365	Pass
		Overall Test Results		Pass

Test Program:	SID / HIII Thorax Lateral Impact	Test Date:	12/9/05
ATD Serial No.:	274	Test I.D.:	TH12J

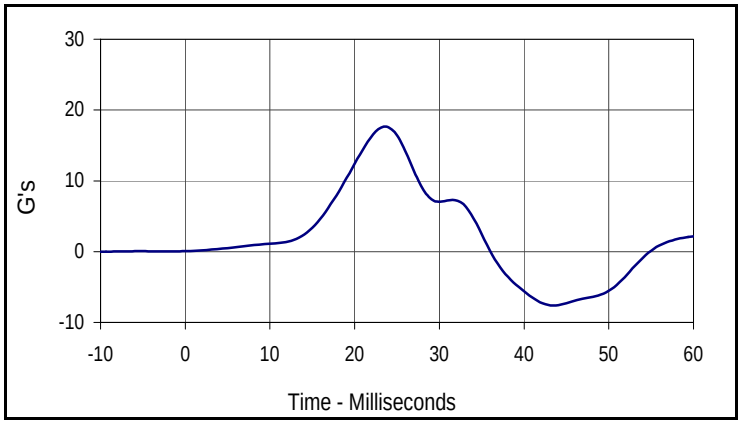
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	45.3	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	40.1	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	17.7	Pass
		Overall Test Results		Pass



Curve Description			
Upper Rib Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
45.3	18.1	-18.8	26.3



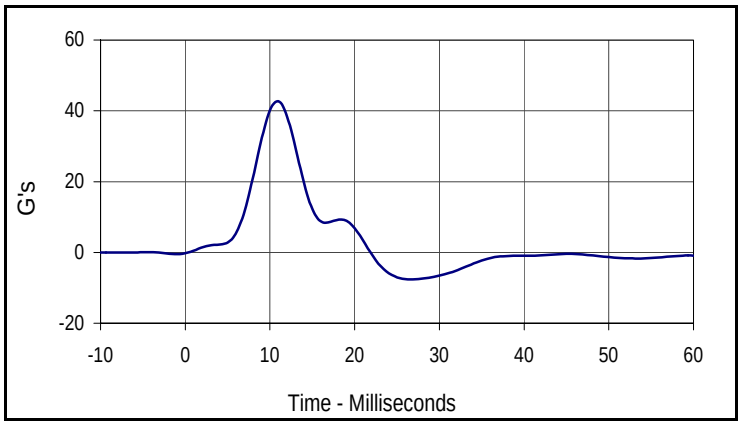
Curve Description			
Lower Rib Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
40.1	17.5	-16.1	25.6



Curve Description			
Lower Spine Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
17.7	23.8	-7.6	43.1

Test Program:	SID / HIII Pelvis Lateral Impact	Test Date:	12/9/05
ATD Serial No.:	274	Test I.D.:	PI12K

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.28	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	42.5	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.25	Pass
		Overall Test Results		Pass

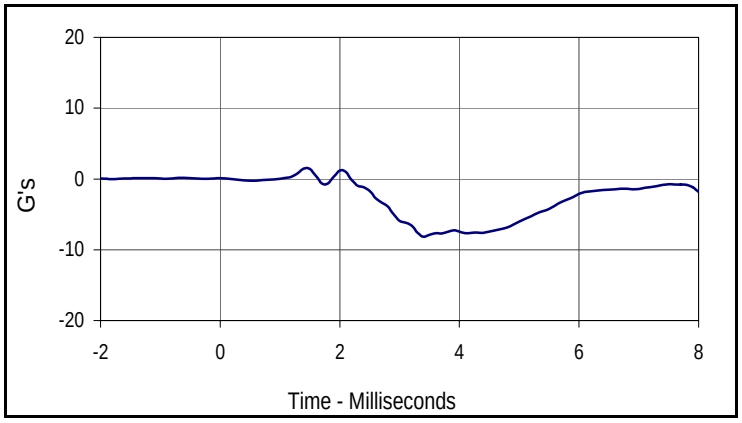


Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
42.5	10.6	-7.6	26.9

Test Program:	SID / HIII Head Drop Lateral Impact Test	Test Date:	12/11/05
ATD Serial No.:	274	Test I.D.:	HD12L

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	138.3	Pass
Peak Longitudinal Acceleration	G's	≤15.0	8.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	7.5	Pass
		Overall Test Results		Pass

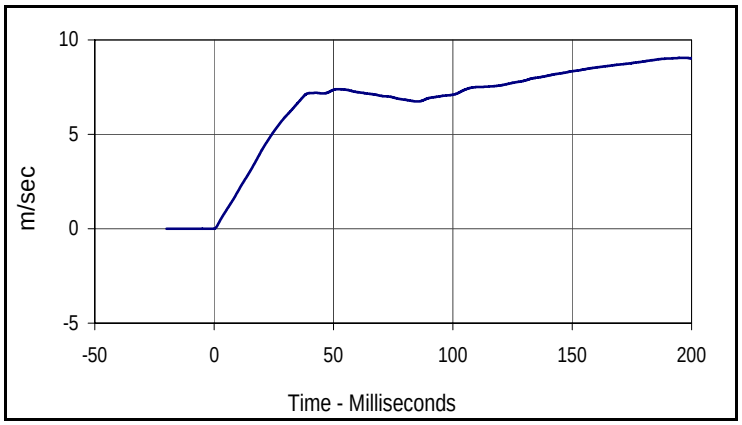
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
138.3	2.5	0.2	0.3



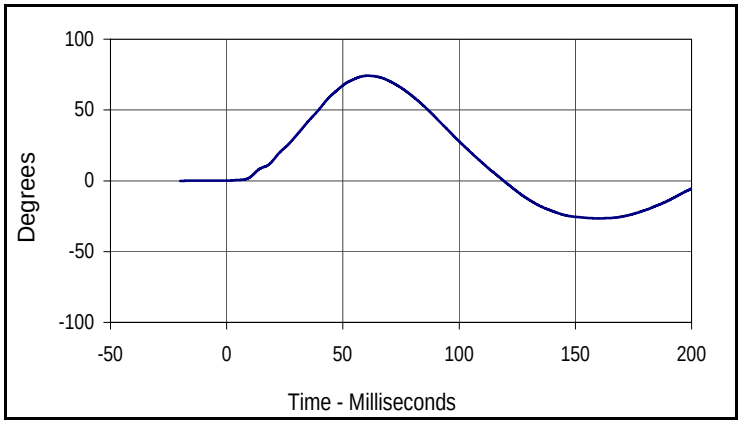
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.5	1.4	-8.2	3.4

Test Program:	SID / HIII Neck Pendulum Lateral Test	Test Date:	12/11/05
ATD Serial No.:	274	Test I.D.:	NB12O

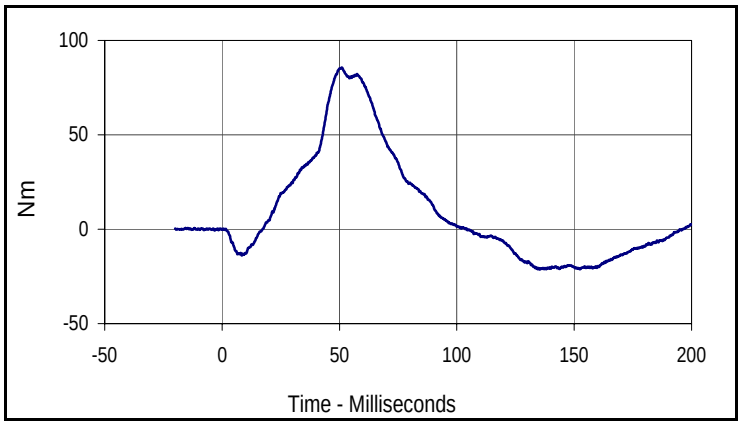
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	7.05	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	1.99	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.17	Pass
	30 Msec.	m/sec	5.73 to 7.01	5.96	Pass
	40 to 70	m/sec	6.27 to 7.64	7.39	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	74.2	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	9.7	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	58.4	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	85.6	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	52.6	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
9.1	196.2	0.0	-0.4



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
74.2	60.8	-26.5	159.3



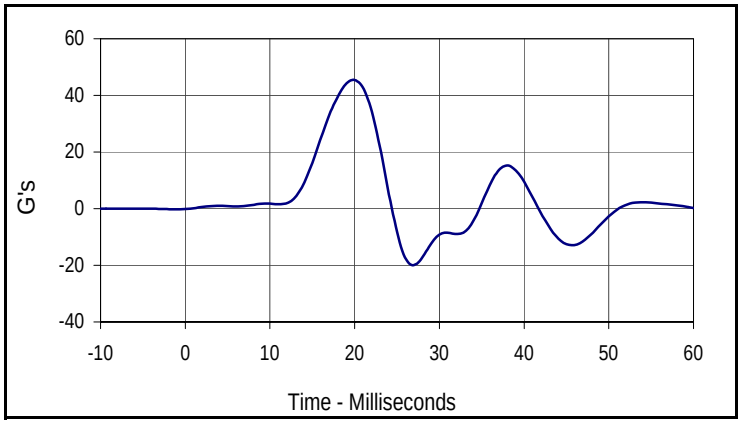
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
85.6	51.1	-21.3	135.4

Test Program:	SID / HIII External Measurements	Test Date:	12/11/05
ATD Serial No.:	275	Test I.D.:	N/A

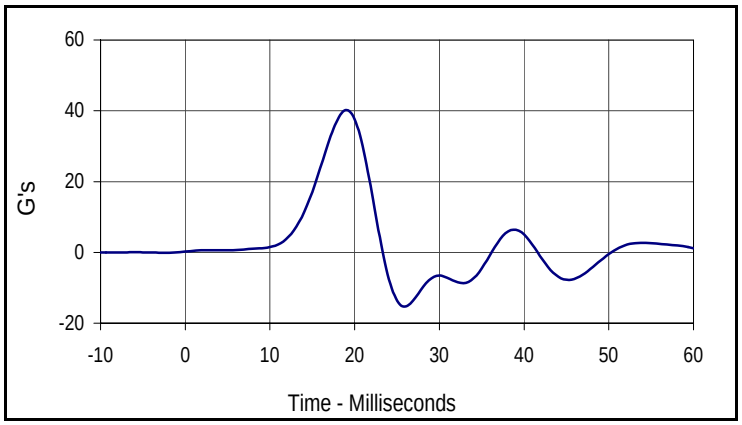
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	901	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	512	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	518	Pass
KV- Knee Pivot From Floor	mm	490 to 505	495	Pass
HW- Hip Width	mm	356 to 391	380	Pass
		Overall Test Results		Pass

Test Program:	SID / HIII Thorax Lateral Impact	Test Date:	12/9/05
ATD Serial No.:	275	Test I.D.:	TH12K

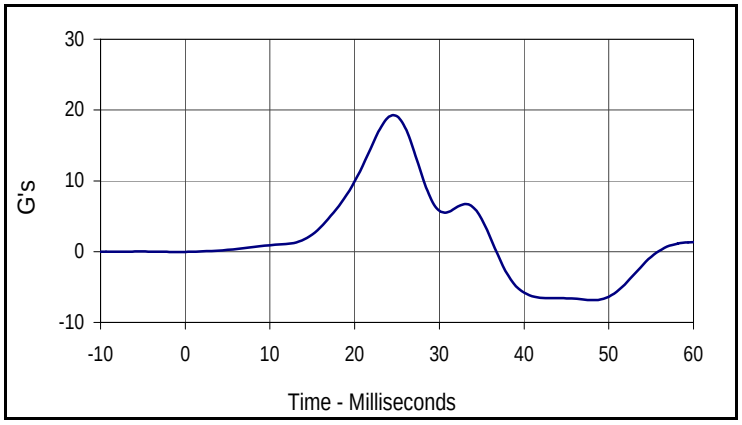
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.26	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	45.5	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	40.0	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	19.2	Pass
		Overall Test Results		Pass



Curve Description			
Upper Rib Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
45.5	20.0	-20.0	26.9



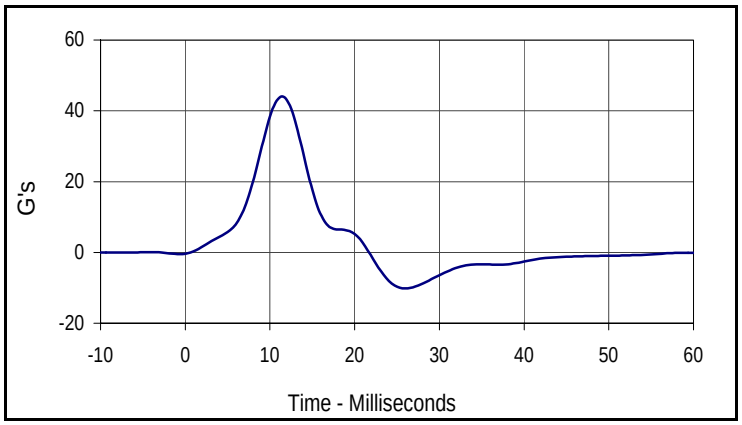
Curve Description			
Lower Rib Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
40.0	18.8	-15.2	25.6



Curve Description			
Lower Spine Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
19.2	24.4	-6.9	48.1

Test Program:	SID / HIII Pelvis Lateral Impact	Test Date:	12/9/05
ATD Serial No.:	275	Test I.D.:	PL12L

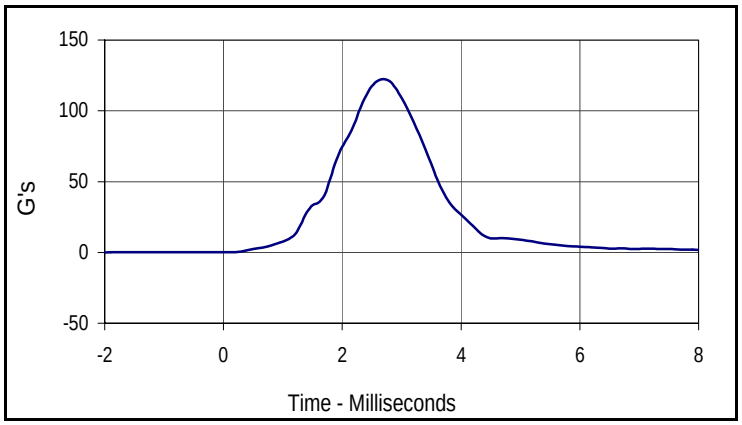
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.24	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	44.0	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.88	Pass
		Overall Test Results		Pass



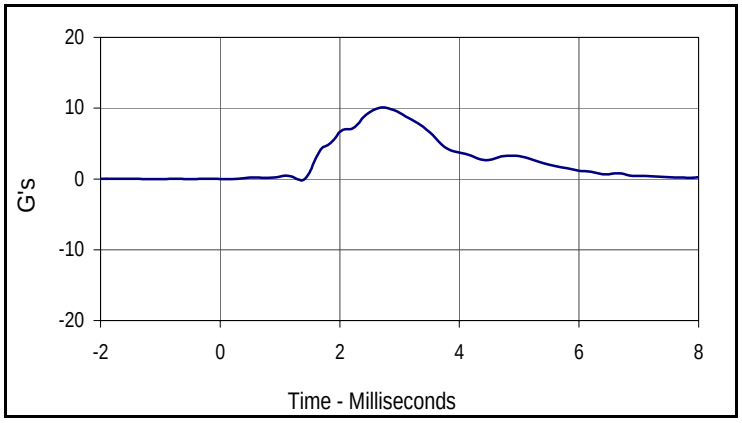
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
44.0	11.3	-10.2	26.3

Test Program:	SID / HIII Head Drop Lateral Impact Test	Test Date:	12/11/05
ATD Serial No.:	275	Test I.D.:	HD12P

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	122.5	Pass
Peak Longitudinal Acceleration	G's	≤15.0	10.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	7.3	Pass
		Overall Test Results		Pass



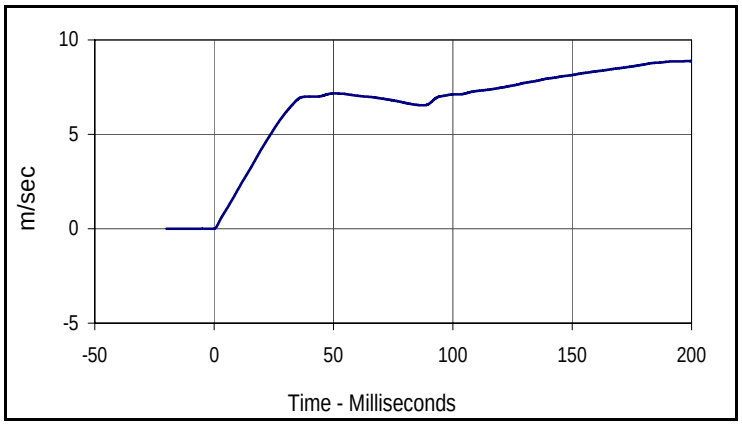
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
122.5	2.7	0.0	-2.0



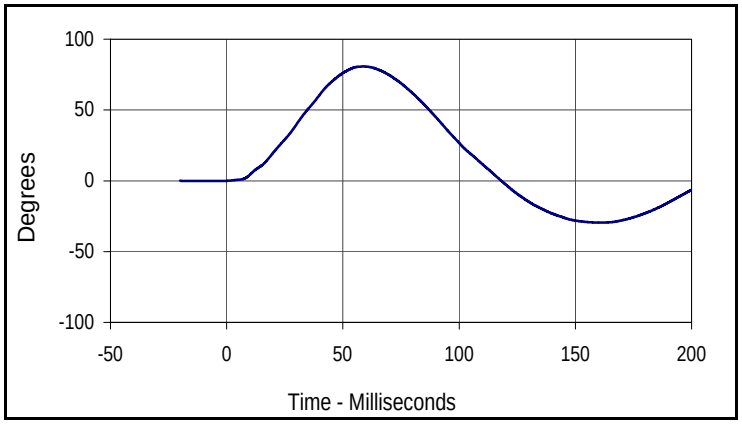
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
10.1	2.7	-0.1	1.4

Test Program:	SID / HIII Neck Pendulum Lateral Test	Test Date:	12/11/05
ATD Serial No.:	275	Test I.D.:	NB12J

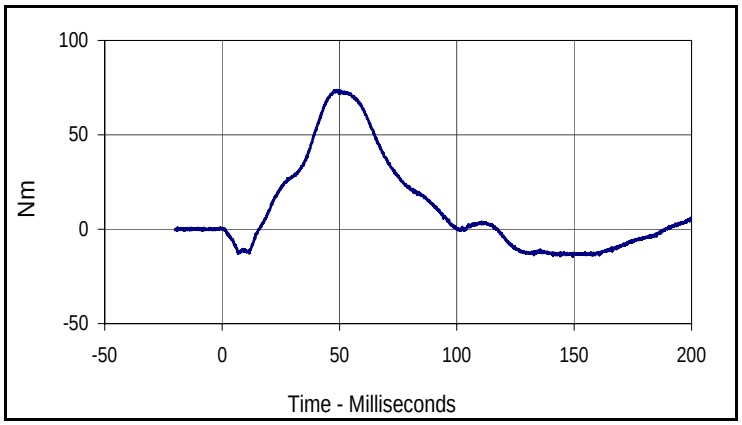
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	6.93	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.09	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.26	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.17	Pass
	40 to 70	m/sec	6.27 to 7.64	7.16	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	80.7	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	9.4	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	59.4	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	73.7	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	50.4	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
8.9	198.8	0.0	-0.5



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
80.7	58.8	-29.5	160.7



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	60	Nm
Max	Time	Min	Time
73.7	49.4	-14.5	149.4

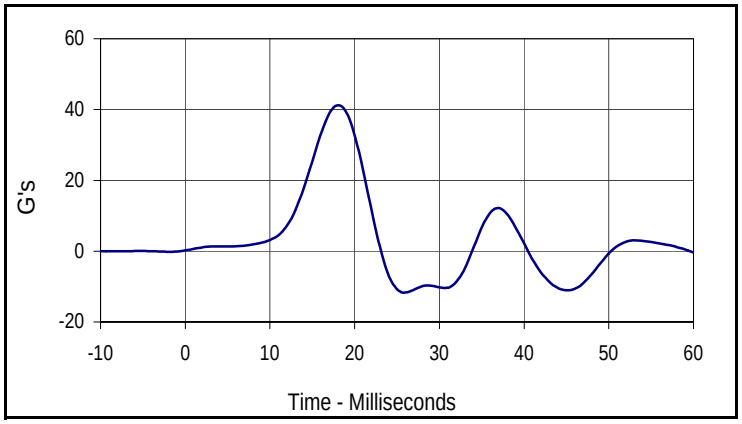
APPENDIX C
POST-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program:	SID / HIII External Measurements	Test Date:	1/11/06
ATD Serial No.:	274	Test I.D.:	N/A

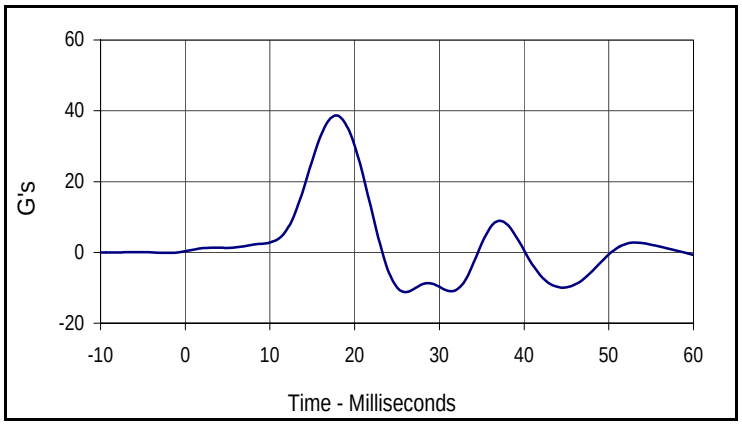
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	900	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	515	Pass
KH- Knee Pivot From Back 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	385	Pass
		Overall Test Results		Pass

Test Program:	SID / HIII Thorax Lateral Impact	Test Date:	1/11/06
ATD Serial No.:	274	Test I.D.:	TH01A

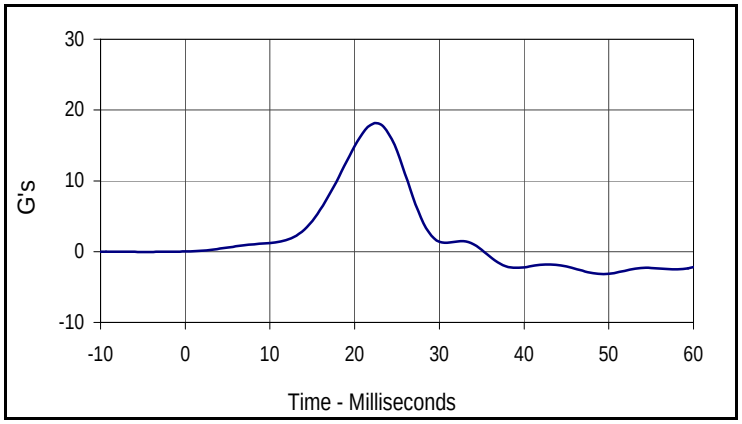
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.25	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	41.2	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	38.5	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	18.2	Pass
		Overall Test Results		Pass



Curve Description			
Upper Rib Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
41.2	18.1	-11.7	25.6



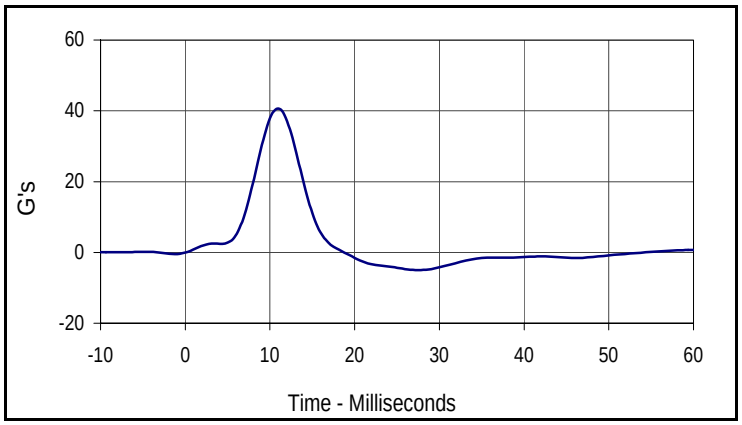
Curve Description			
Lower Rib Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
38.5	17.5	-11.1	26.3



Curve Description			
Lower Spine Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
18.2	22.5	-3.2	49.4

Test Program:	SID / HIII Pelvis Lateral Impact	Test Date:	1/11/06
ATD Serial No.:	274	Test I.D.:	PL01A

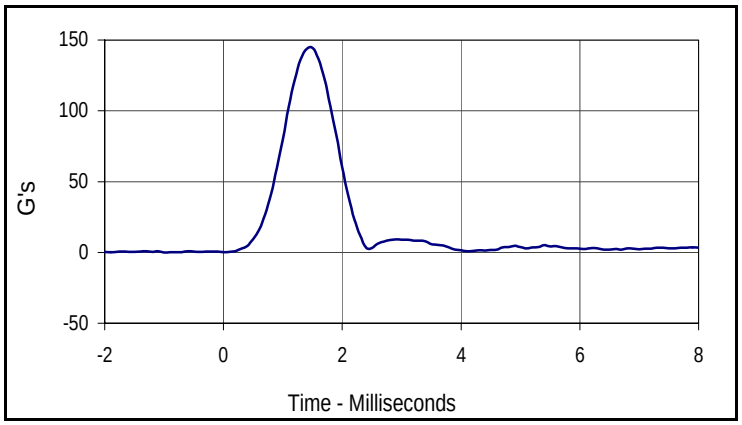
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	40.4	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.25	Pass
		Overall Test Results		Pass



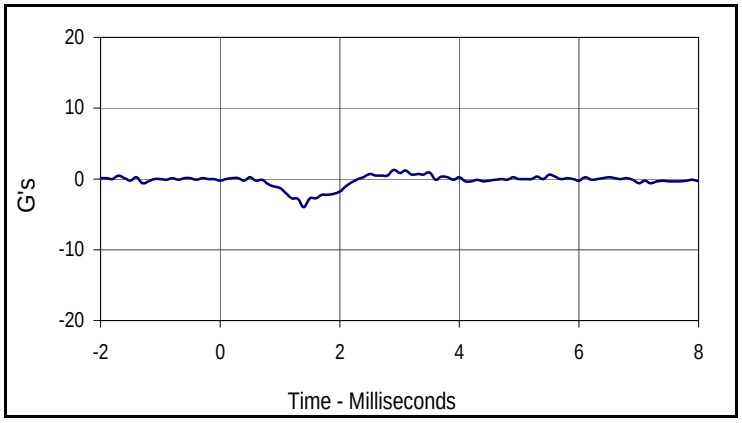
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
40.4	11.3	-5.0	27.5

Test Program:	SID / HIII Head Drop Lateral Impact Test	Test Date:	1/11/06
ATD Serial No.:	274	Test I.D.:	HD01A

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	144.3	Pass
Peak Longitudinal Acceleration	G's	≤15.0	4.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.5	Pass
		Overall Test Results		Pass



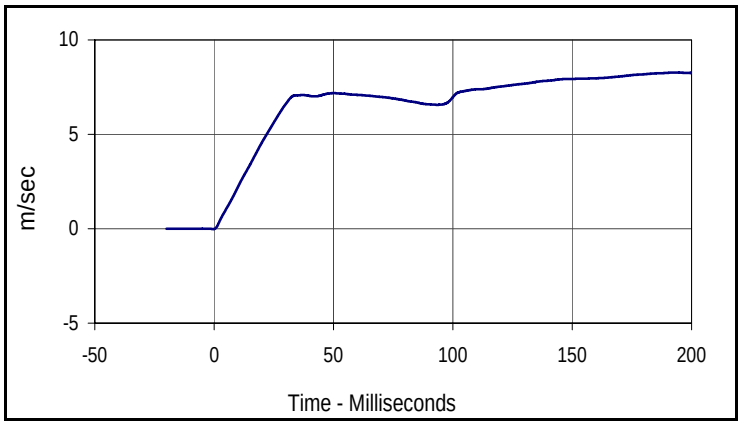
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
144.3	1.5	0.0	-1.0



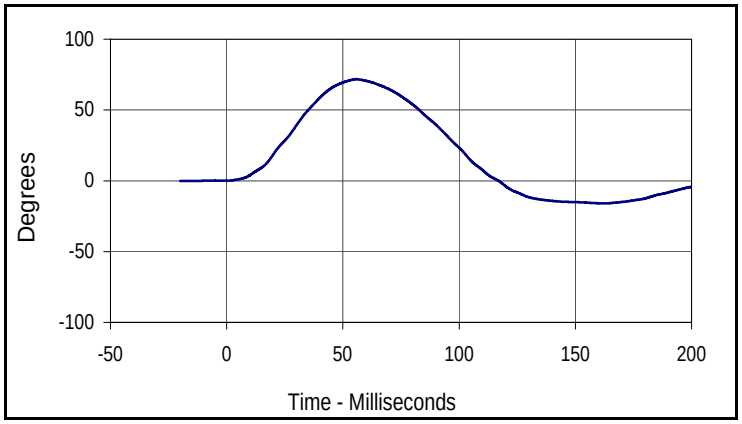
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.3	2.9	-4.0	1.4

Test Program:	SID / HIII Neck Pendulum Lateral Test	Test Date:	1/11/06
ATD Serial No.:	274	Test I.D.:	NB01A

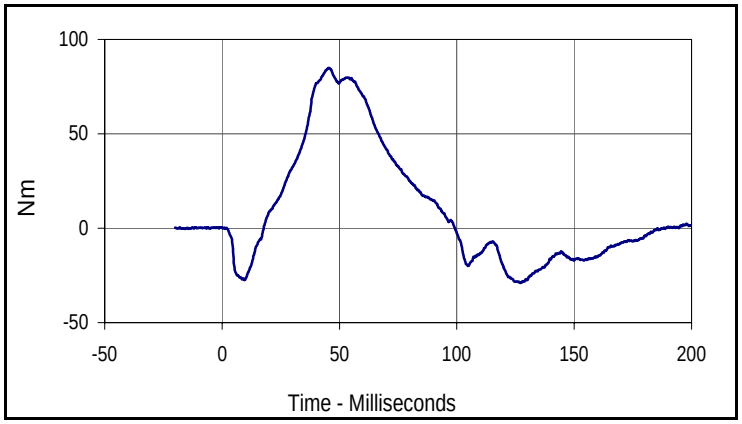
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.23	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.57	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.61	Pass
	40 to 70	m/sec	6.27 to 7.64	7.18	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	71.7	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	10.4	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	61.2	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	84.8	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	53.8	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
8.3	192.4	0.0	-0.3



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
71.7	55.8	-16.0	162.6



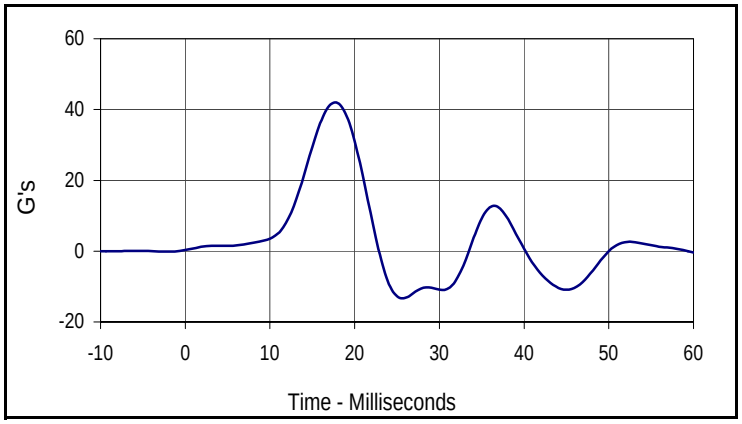
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
84.8	45.4	-29.0	127.0

Test Program:	SID / HIII External Measurements	Test Date:	1/11/06
ATD Serial No.:	275	Test I.D.:	N/A

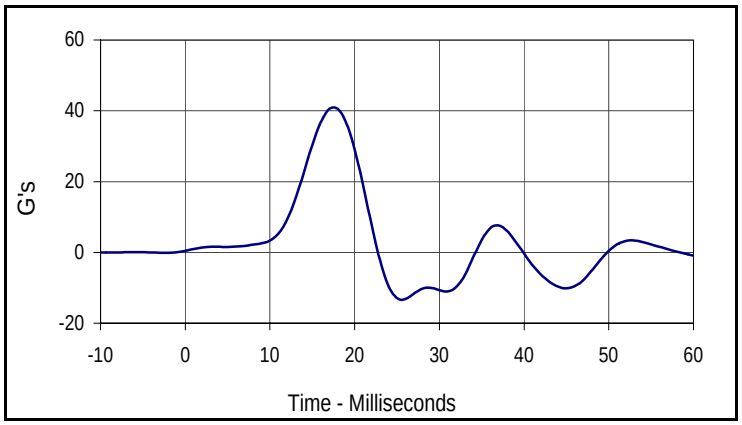
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	896	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	512	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	520	Pass
KV- Knee Pivot From Floor	mm	490 to 505	498	Pass
HW- Hip Width	mm	356 to 391	375	Pass
		Overall Test Results		Pass

Test Program:	SID / HIII Thorax Lateral Impact	Test Date:	1/11/06
ATD Serial No.:	275	Test I.D.:	TH01B

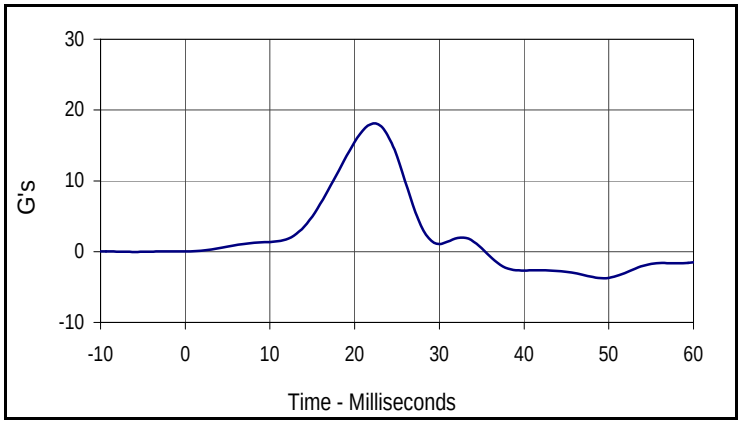
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	42.0	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	41.0	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	18.1	Pass
		Overall Test Results		Pass



Curve Description			
Upper Rib Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
42.0	17.5	-13.4	25.6



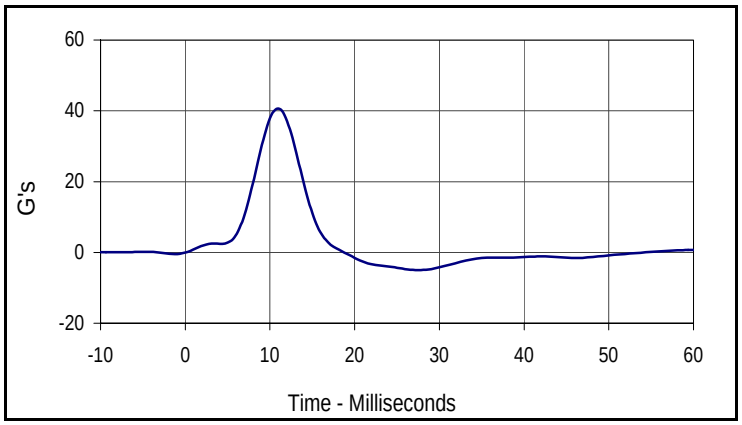
Curve Description			
Lower Rib Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
41.0	17.5	-13.4	25.6



Curve Description			
Lower Spine Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
18.1	22.5	-3.7	49.4

Test Program:	SID / HIII Pelvis Lateral Impact	Test Date:	1/11/06
ATD Serial No.:	275	Test I.D.:	PL01B

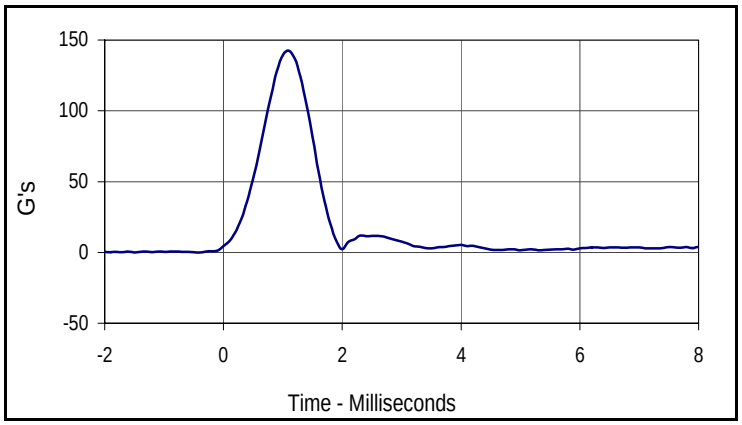
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.29	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	40.4	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.25	Pass
		Overall Test Results		Pass



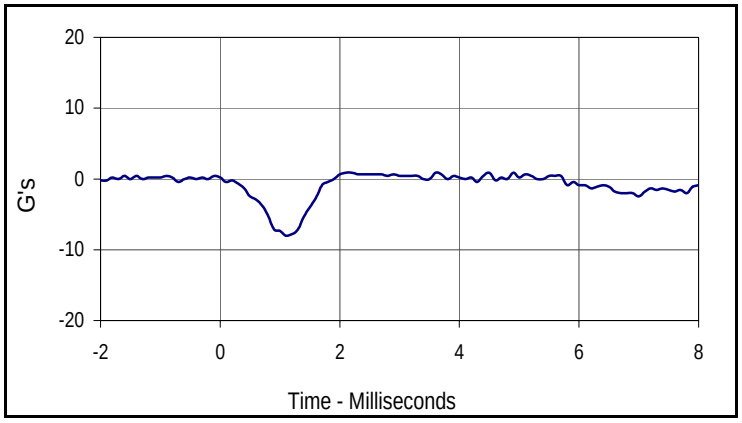
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
40.4	11.3	-5.0	27.5

Test Program:	SID / HIII Head Drop Lateral Impact Test	Test Date:	1/11/06
ATD Serial No.:	275	Test I.D.:	HD01B

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	142.6	Pass
Peak Longitudinal Acceleration	G's	≤15.0	8.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	2.5	Pass
		Overall Test Results		Pass



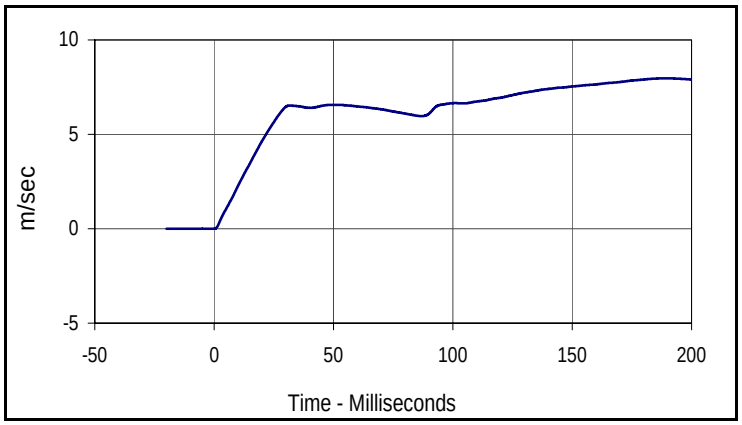
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
142.6	1.1	0.0	-1.5



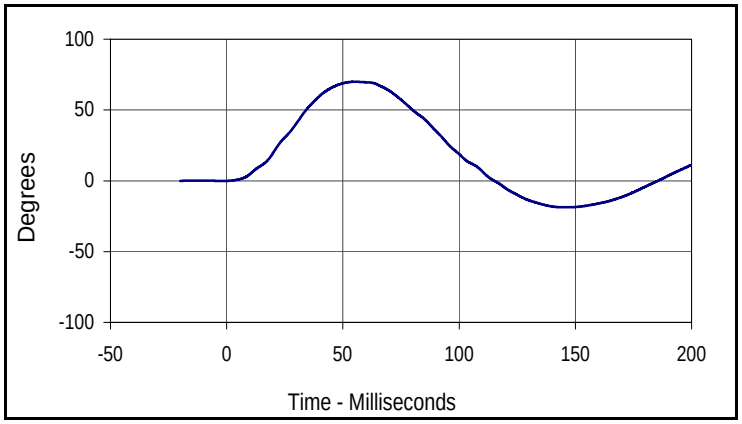
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.9	2.1	-8.0	1.1

Test Program:	SID / HIII Neck Pendulum Lateral Test	Test Date:	1/11/06
ATD Serial No.:	275	Test I.D.:	NB01B

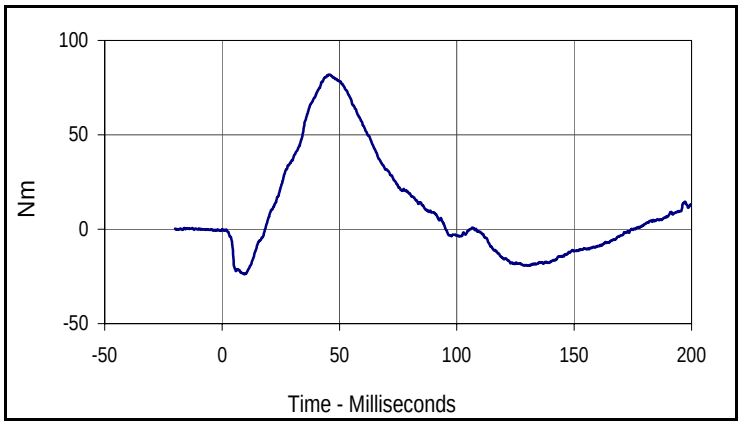
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	7.11	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.27	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.63	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.46	Pass
	40 to 70	m/sec	6.27 to 7.64	6.57	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	69.9	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	9.1	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	60.2	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	81.9	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	49.4	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
8.0	189.5	0.0	-0.1



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
69.9	55.0	-18.7	146.6



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
81.9	45.9	-23.8	9.6