REPORT NUMBER TR-P29001-01-NC

NEW CAR ASSESMENT PROGRAM
FRONTAL BARRIER IMPACT TEST

FORD MOTOR CO.
2009 FORD F-150 XLT SUPERCAB 4X4
2-DOOR TRUCK

NHTSA NUMBER: M90206

Prepared By:
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DECEMBER 19, 2008

FINAL REPORT

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U.S. DEPARTMENT OF TRANSPORTATION
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Final Report of New Car Assessment Program Testing of a 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No. M90206	December 19, 2008
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15. Supplementary Notes

16. Abstract

A 35 mph (56.3 km/h) frontal barrier impact test was conducted on the subject 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck at KARCO Engineering, LLC, in Adelanto, CA, on December 19, 2008. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity was 56.37 km/h. The ambient temperature at the barrier at the time of the crash was 5 degrees Celsius. The vehicle's maximum post static crush was 470 mm at DPD 4, to the right of the vehicle's centerline. The test vehicle was equipped with a 3-point continuous belt system and a second generation airbag at both front outboard positions. With respect to FMVSS 208 'Occupant Crash Protection', the occupant injury criteria summary is as follows:

Measurement Description	Units	Threshold	Driver ATD	Passenger ATD
Head Injury Criteria (HIC)	N/A	1000	514.0	433.1
Max. Chest Accel. (3 msec. Chest Clip)	G's	60	35.9	34.2
Left Femur Force	Newtons	10008	-388.3	-2402.2
Right Femur Force	Newtons	10008	-667.0	-1164.4

17. Key Words	18. Distribution Statement
56.3 km/h NCAP Frontal Impact Test New Car Assesment Program (NCAP) 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No. M90206	Copies of this report are available from: National Highway Traffic Safety Admin. NHTSA Technical Reference Division 1200 New Jersey Ave., SE, Room W43-410 Washington, DC 20590

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SECTION 1
PURPOSE AND SUMMARY OF TEST M90206

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier impact test is part of the New Car Assessment Program (NCAP) sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-06-D-00027. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 30 mph (48.3 km/h) requirements.

The 35 mph (56.3 km/h) frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated July 2005. Data was obtained indicant of FMVSS 208 “Occupant Crash Protection”, FMVSS 212, “Windshield Retention”, FMVSS 219, “Windshield Zone Intrusion (Partial)”, and FMVSS 301 “Fuel System Integrity”, performance. Procedures for receiving, inspection, testing and reporting of test results are described in the test procedures and are not repeated in this report.

1.2 SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck at a velocity of 56.37 km/h. The test was performed at KARCO Engineering, LLC on December 19, 2008

Three (3) real-time and fourteen (14) high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in Data Sheet number 14 (page number 24) of this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with head (primary and redundant), chest (primary and redundant) and pelvis triaxial accelerometers, chest displacement potentiometers, six-axis upper neck transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were placed on the driver’s and passenger’s lap and shoulder belts to measure dummy torso and pelvic section loading. Shoulder belt spool-off was measured for the driver and passenger dummies. The driver (position 1) ATD (Serial No.035) and the right-front passenger (position 2) ATD (Serial No. 034) were calibrated prior to this test.

One hundred and thirty-two (132) channels of data were recorded using a TDAS data acquisition system. Appendix A contains Pre and Post-Test Photographs, Appendix B contains the Dummy Response data traces, and Appendix C contains the Dummy Calibration data.

There was 100% windshield retention and no intrusion into the protected zone of the windshield during impact. There was no Stoddard solvent leakage after the event, or during any phase of the static rollover.

The maximum static crush of the vehicle was 470 mm at DPD 4, to the right of the vehicle's centerline.. Both the driver and passenger side doors remained closed and latched during the impact event, and were operable after the impact.

The driver’s visible contact points were as follows: The driver ATD's head and chest contacted the airbag. The head also contacted the headrest. Both knees contacted the bolster.

The passenger’s visible contact points were as follows: The passenger ATD's head and chest contacted the airbag. The head also contacted the headrest. Both knees contacted the glovebox.

Occupant injury data is contained in table below.

OCCUPANT DATA SUMMARY

ATD Position	HIC 36	3 msec Chest Clip	Chest Defl. (mm)	Left Femur (N)	Right Femur (N)
Driver	514.0	35.9	-24.4	-388.3	-667.0
Passenger	433.1	34.2	-21.7	-2402.2	-1164.4

Additional data plots for this test are available in the research and development section of the NHTSA website. The website can be found at: www.NHTSA.Dot.Gov

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	miles/hr	km/hr	1.609344
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in^2	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	^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

CRASH TEST SUMMARY

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.37
Test Weight	kg	2833
Impact Angle	degrees	0
Average Rebound	mm	297
Maximum Static Crush	mm	470

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Remained closed and latched, opened without tools	Remained closed and latched, opened without tools
Rear Door Opening	Remained closed and latched, opened without tools	Remained closed and latched, opened without tools
Seat Track Shift (mm)	6 mm	7 mm
Seatback Failure	No	No

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type/Serial No.	50% Male Hybrid III No.035	50% Male Hybrid III No. 034
Head Contact	Airbag, Headrest	Airbag, Headrest
Chest Contact	Airbag	Airbag
Abdomen Contact	None	None
Left Knee Contact	Bolster	Glovebox
Right Knee Contact	Bolster	Glovebox

MOVIE COVERAGE

Cameras	Standard	Additional
High Speed	16	0
Real Time	1	2
Total	15	2

DATA CHANNELS

Driver ATD Sensors	40
Passenger ATD Sensors	40
Belt Assessment Sensors	8
Vehicle Structure Acclerometers	8
Rigid Barrier Load Cells	36
Total	132

DATA SHEET NO. 2

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M90206
Make	Ford
Model	F-150 XLT SuperCab 4x4
Body Style	2-Door Truck
VIN No.	1FTPX14V69FA08071
Color	White
Delivery Date	12/03/08
Odometer (Miles)	56.7
Dealer	Team Ford
Transmission	6-Speed Automatic
Final Drive	4x4
Type/No. of Cylinders	V8
Engine Displ. (L)	5.4
Engine Placement	Longitudinal
Roof Rack	No
Sunroof/T-top	No
Tinted Glass	Yes
Traction Control	Yes
Power Brakes	Yes
Front Disc	Yes
Rear Disc	Yes

Anti-Lock Brakes	Yes
All Wheel Drive	Yes
Power Steering	Yes
Driver Front Airbag	Yes
Driver Side Torso Airbag	Yes
Driver Side Head Airbag	No
Driver Curtain Airbag	Yes
Pass. Front Airbag	Yes
Pass. Side Torso Airbag	Yes
Pass. Head Airbag	No
Pass. Curtain Airbag	Yes
Pre-Tensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes
Air Conditioning	Yes
AM/FM CD	Yes
Tilt Steering	Yes
Automatic Door Locks	Yes
Power Windows	Yes
Power Seats	Yes
Other	Back up sensors

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

DATA FROM MANUFACTURER'S LABEL

Manufactured By	Ford Motor Co.
Date of Manufacture	Oct-08

GVWR (kg)	3266
GAWR Front (kg)	1701
GAWR Rear (kg)	1746

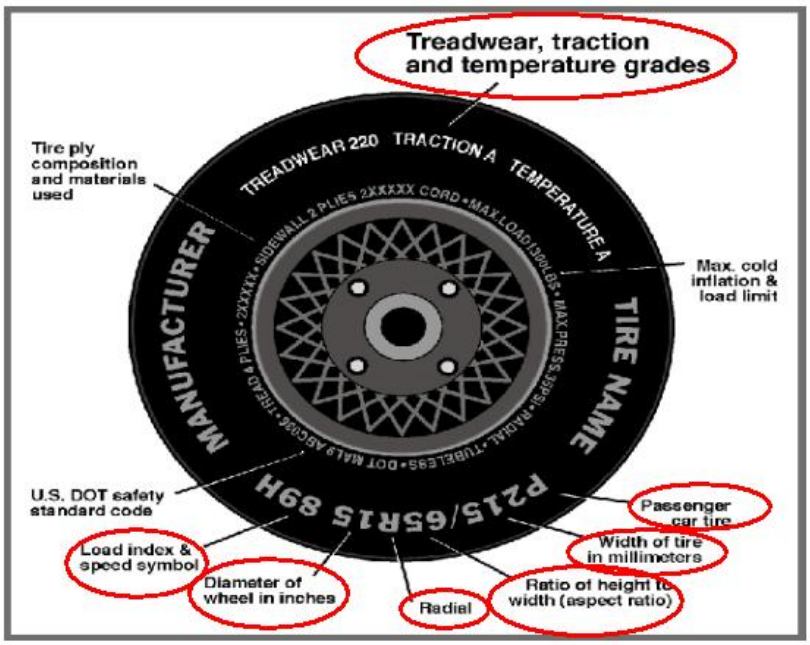
VEHICLE SEATING CAPACITY AND WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number of Occupants	3	3		6
Capacity Weight (VCW) (kg)				687
Cargo Weight (RCLW) (kg)				136

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

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



TIRE INFORMATION

Measured Paramater	Front	Rear
Max. Tire Pressure (kPa)	240	240
Cold Tire Pressure (kPa)	240	240
Recommended Tire Size	P235/75R17	P235/75R17
Tire Size on Vehicle	P235/75R17	P235/75R17
Tire Manufacturer	Hankook	Hankook
Treadwear	450	450
Traction	B	B
Temperature Grades	A	A
Tire Plies - Sidewall	2 Polyester	2 Polyester
Tire Plies - Body	2 Steel, 2 Polyester, 1 Nylon	2 Steel, 2 Polyester, 1 Nylon
Load Index/Speed Symbol	108S	108S
Tire Material	Steel, Polyester, Nylon	Steel, Polyester, Nylon
DOT Safety Code Right	T79J PCYH	T79J PCYH
DOT Safety Code Left	T79J PCYH	T79J PCYH

DATA SHEET NO. 2…(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	748	554	1302	790	661	1451
Right	kg	716	532	1248	743	639	1382
Ratio	%	57.4	42.6	100.0	54.1	45.9	100.0
Totals	kg	1464	1086	2550	1533	1300	2833

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	2550
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Weight (RCLW)	kg	136
Calculated Target Vehicle Test Weight (TVTW)	kg	2838

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	933	941	992	999	1571
As Tested	mm	921	932	956	964	1692

Vehicle Wheel Base (mm) 3687

Weight of Ballast Secured in Cargo Area (kg) 67

Weight of Items Removed (kg) 10

Vehicle Components Removed: Tire tools, hub caps

*Ballast weight does not include cameras, instrumentation or brake abort system.

FUEL SYSTEM DATA

Fuel System Capacity from Owner's Manual (L) 136.26

Actual Test Volume with Entire Fuel System Filled (L) 126.72

Test Fluid Type Stoddard Solvent

Kinematic Viscosity as per ASTM Standard D484-71 Red

Is Vehicle Fuel Pump Electric or Mechanical? Electric

If electric, does pump operate with the ignition switch "ON" & engine "OFF"? Yes

Fuel System Particulars The electric fuel pump operates for 3 seconds to pressurize the fuel system following the actuation of the ignition. If no attempt has been made to start the engine within 3 seconds the fuel pump will shut off. The fuel pump operates continuously while the engine is running.

DATA SHEET NO. 3

POST-TEST IMPACT DATA

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

SPEED TRAP DATA

Measured Paramater	Units	Requirement	Value
Trap No. 1 Velocity	km/h	55.1 to 57.12	56.37
Trap No. 2 Velocity	km/h	55.1 to 57.12	56.37

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	5681	5355	326
Center	mm	5876	5476	400
Right Side	mm	5681	5349	332

VEHICLE REBOUND FROM BARRIER

Measured Paramater	Units	Value
Left Side	mm	340
Center	mm	240
Right Side	mm	310
Average	mm	297

DATA SHEET NO. 4

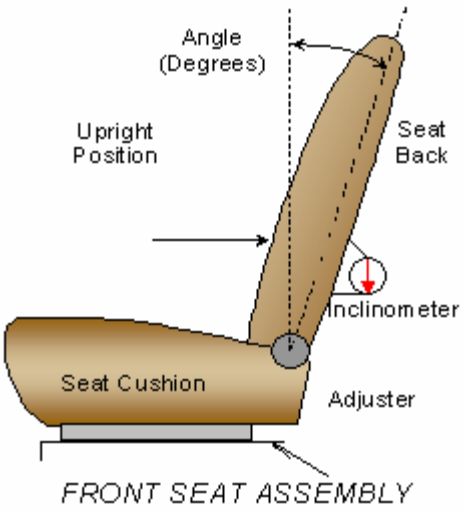
TEST VEHICLE INFORMATION

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

NOMINAL DESIGN RIDING POSITION

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



SEAT BACK ANGLES

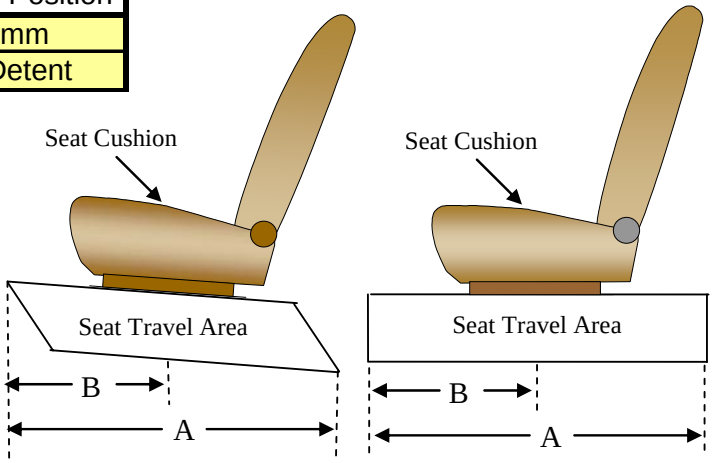
Position	Degrees
Driver w/ Seated Dummy	18.1 @ Seat Back
Passenger w/ Seated Dummy	18.2 @ Seat Back

SEAT FORE/AFT POSITIONS

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

SEAT FORE/AFT POSITIONING

Position	Total Fore/Aft Travel	Placed in Position
Driver Seat	282 mm	141 mm
Passenger Seat	53 Detents	27th Detent



SEAT BELT ANCHORAGE

Position number one (1) is the uppermost position.

SEAT BELT ANCHORAGE POSITIONING

	Total Number of Positions	Placed in Position
Driver Seat	4	2
Passenger Seat	4	2

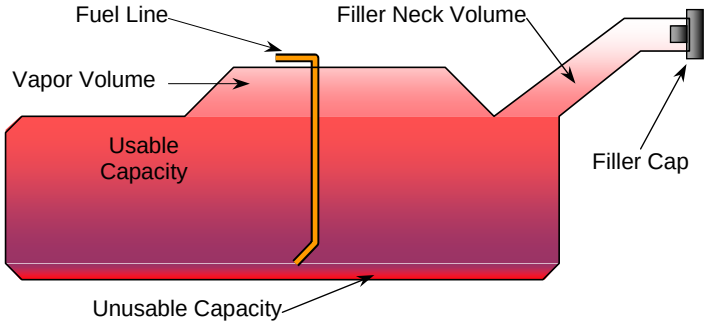
Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

FUEL TANK CAPACITY

	Liters
Usable Capacity of Standard Tank	136.26
Usable Capacity of Optional Tank	
Usable Capacity Used for FMVSS 301	125.36 to 128.08
Actual Amount of Solvent Used	126.72

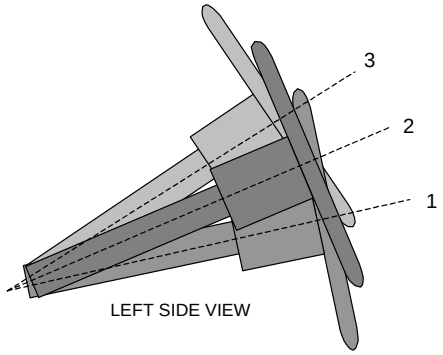
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately two (2) seconds with the ignition in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies the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



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
Lowermost - Position No. 1	12.5	
Geometric Center - Position No. 2	22.3	
Uppermost - Position No. 3	32.1	

DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield angle		32.6		
SWA	Steering wheel angle		21.9		
SCA	Steering column angle		38.1		
SA	Seat Back angle		18.1 @ seat back		18.2 @ seat back
HZ	Head to roof (Z)	278	90.0	280	90.0
HH	Head to header	466		453	
HW	Head to windshield	757		740	
HR	Head to side header (Y)	311		286	
NR	Nost to rim	427	4.7		
CD	Chest to dash	597		477	
CS	Chest to steering hub	367			
RA	Rim to abdomen	232			
KDL	Left knee to dash	182	38.1	132	
KDR	Right knee to dash	183		151	22.6
PA	Pelvic angle		22.9		24.4
TA	Tibia Angle		54.4		60.8
KK	Knee to knee	280		281	
SK	Striker to outboard knee	776	2.3	786	7.0
ST	Striker to head	363	71.0	633	67.9
SH	Striker to H-Point	367	0.0	385	0.0
SHY	Striker to H-Point (Y)	274		268	
HS	Head to side window	371		363	
HD	H-Point to door	144		147	
AD	Arm to door	161		35	

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

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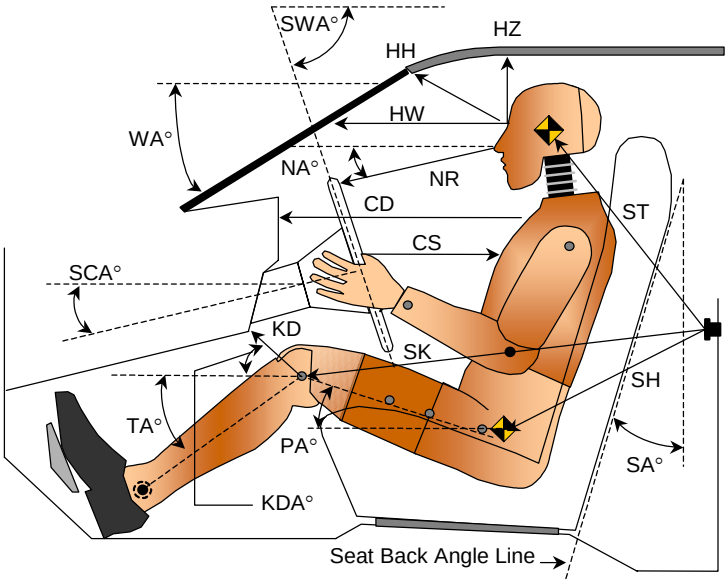
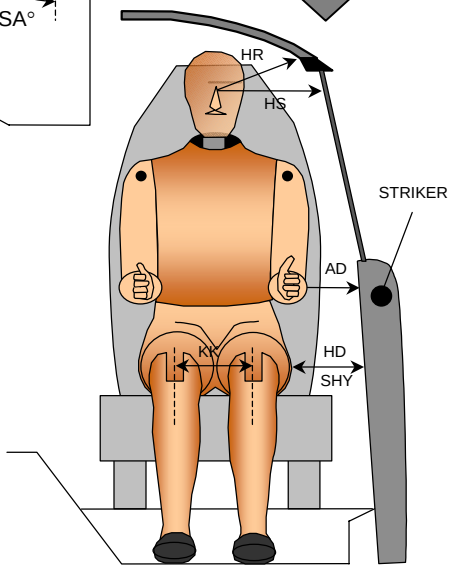
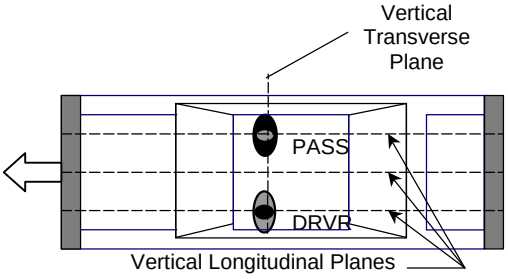


AD	Arm to Door
HD	H-Point to Door
HR	Head to Side Header
HS	Head to Side Window
KK	Knee to Knee
SHY	Striker to H-Point (Y Axis)



CD	Chest to Dash
CS	Chest to Steering Wheel Hub
HH	Head to Header
HW	Head to Windshield
HZ	Head to Roof
KDA	Knee to Dash Angle
KDL	Left Knee to Dash
KDR	Right Knee to Dash
NA	Nose to Rim Angle
NR	Nose to Rim
PA	Pelvic Angle
RA	Rim to Abdomen
SA	Seat Back Angle
SCA	Steering Column Angle
SH	Striker to H-Point
SK	Striker to Knee
ST	Striker to Head
SWA	Steering Wheel Angle
TA	Tibial Angle
WA	Windshield Angle

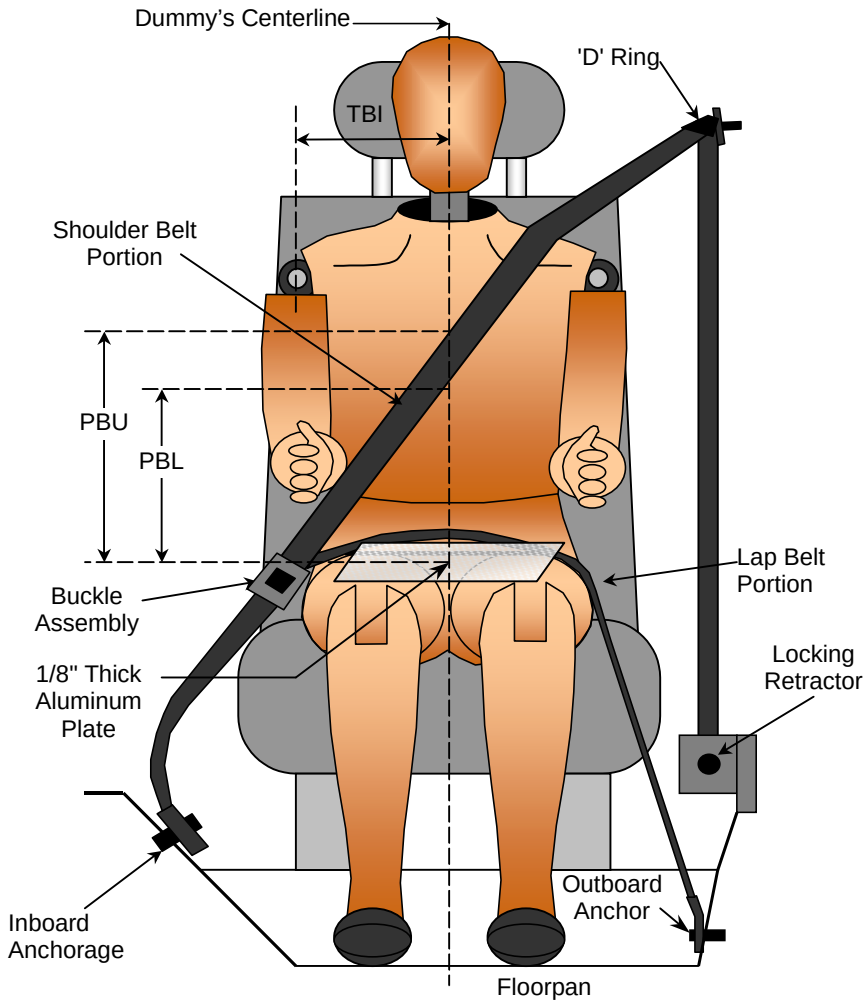


DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08



SEAT BELT POSITIONING MEASUREMENTS

Measured Parameter	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	210	210
PBU - Top Surface of Reference to Belt Upper Edge	mm	280	345
PBL - Top Surface of Reference to Belt Lower Edge	mm	222	263
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

DATA SHEET NO. 7

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurement (mm)			
		X	Y	Z	
1	Left Rear X-Member	2820	-790	615	
2	Right Rear X-Member	2820	760	615	
3	Engine Top				2
4	Engine Bottom	4665	25	275	
5	Left Brake Caliper	4750	-800	255	
6	Right Brake Caliper	4750	800	255	
7	Instrument Panel				1
8	Left Rear X-Member (Z-Axis)	2820	-790	615	
9	Right Rear X-Member (Z-Axis)	2820	790	615	

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

1.) Instrument Panel no longer used by NHTSA.

2.) Not installed

DATA SHEET NO. 8

SEAT BELT ASSESSMENT TEST DATA

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
Retractor Reel to D-Ring	mm	706	706
Shoulder Belt Length as Measured on ATD	mm	936	951
Lap Belt Length as Measured on ATD	mm	941	892
Remainder of Belt on Reel	mm	786	761
Total Belt Length for Continuous Webbing Systems	mm	3369	3310

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	143	210
As determined electronically	mm	143.2	213.2

BELT STRETCH DATA

Measurement Description	Units	Driver	Passenger
Electronically between belt load cell and D-Ring	mm/cm	*	*
Mechanically	mm/cm		

*Not used with shoulder belt pre-tensioner systems

DATA SHEET NO. 9

SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

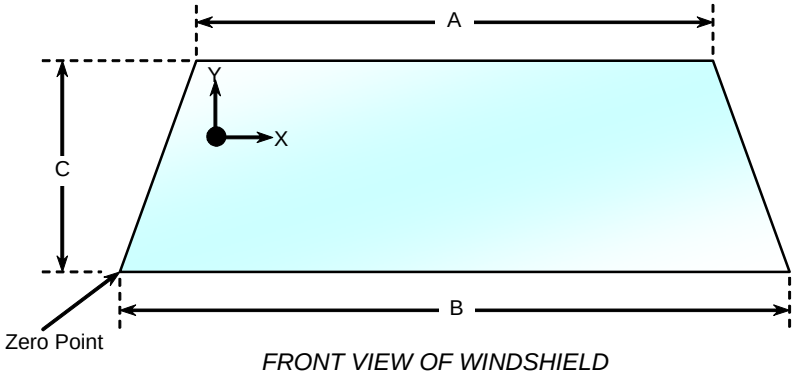
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with rubber cement type adhesive. plastic molding covers the windshield periphery.

The standard requires that the post-test retention measurement be a minimum of 75 percent of the pretest total periphery measurement for vehicles not equipped with occupant passive restraints and 50 percent for each side of the windshield for vehicles that are equipped with occupant passive restraints.

Temperature of windshield molding during test: 5 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% of Retention
Left Side	2427	2427	100.0
Right Side	2427	2427	100.0
Total	4854	4854	100.0



FRONT VIEW OF WINDSHIELD

WINDSHIELD DIMENSIONS

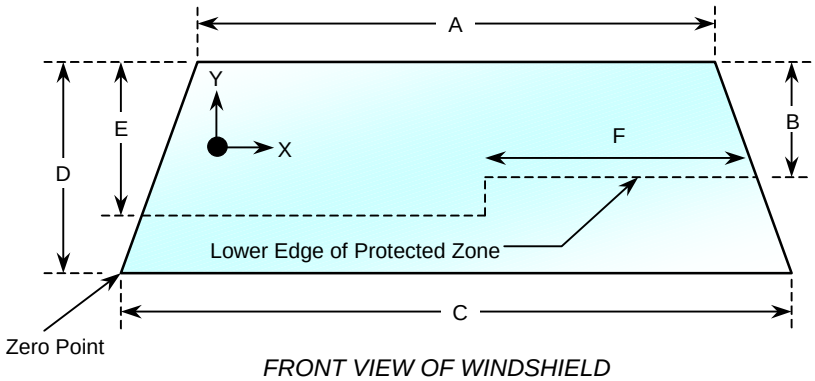
Item	Units	Segment Length	Molding Width
A	mm	1467	5
B	mm	1825	12
C-Left	mm	781	8
C-Right	mm	781	8

DATA SHEET NO. 10

WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08



FRONT VIEW OF WINDSHIELD

WINDSHIELD AND PROTECTED ZONE

Item	Units	Value
A	mm	1467
B	mm	431
C	mm	1825
D	mm	781
E	mm	475
F	mm	625

AREA OF PROTECTED ZONE FAILURES

A. Provide coordinates of the area that the protected zone was penetrated more than 0.25 in. by a vehicle component other than one that is normally in contact with the windshield.

X	Y

B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

X	Y

DATA SHEET NO. 11

FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

Test Time: 10:20 AM Temperature: 5 ° C

STODDARD SOLVENT SPILLAGE MEASUREMENTS

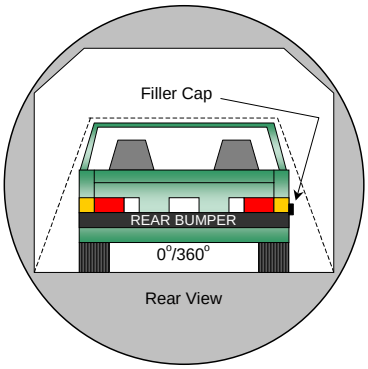
A.	From impact until vehicle motion ceases:	0
	(Maximum allowable = 1 ounce)	
B.	For the 5 minute period after motion ceases:	0
	(Maximum allowable = 5 ounces)	
C.	For the following 25 minutes:	0
	(Maximum allowable = 1 oz/minute)	
D.	Spillage Details:	No leakage occurred.

DATA SHEET NO. 12

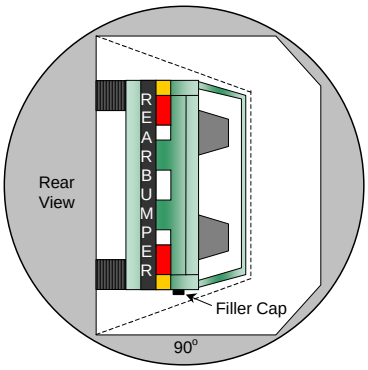
FMVSS 301 STATIC ROLLOVER DATA

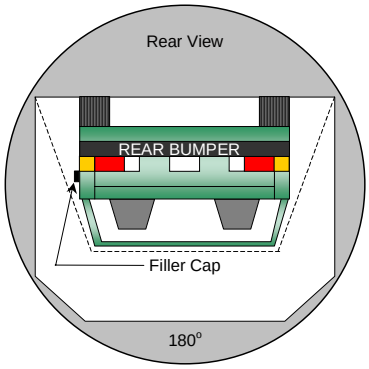
Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

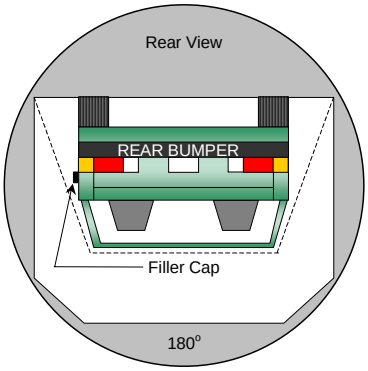


0° to 90°

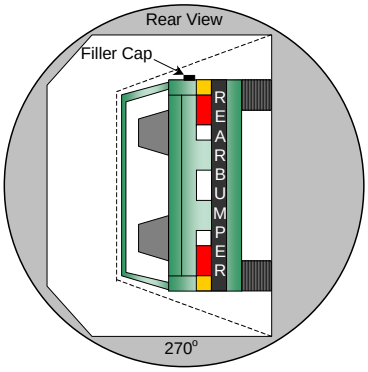


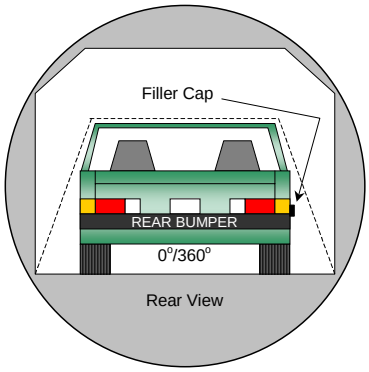


90° to 180°



180° to 270°





270° to 360°

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

DATA SHEET NO. 12…(CONTINUED)

FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	83	300	383
90° to 180°	78	300	378
180° to 270°	80	300	380
270° to 360°	83	300	383

FMVSS 301 SPILLAGE TABLE REQUIREMENT

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

ACTUAL TEST VEHICLE SOLVENT SPILLAGE TABLE (OZ)

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

SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 13

VEHICLE MEASUREMENTS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Length of test vehicle at centerline	mm	5876	5476	-400
2	RSOV to front of engine	mm	5082	4981	-101
3	RSOV to firewall centerline	mm	4696	4661	-35
4	RSOV to upper leading edge of right door	mm	4292	4303	11
5	RSOV to upper leading edge of left door	mm	4303	4290	-13
6	RSOV to lower leading edge of right door	mm	4254	4272	18
7	RSOV to lower leading edge of left door	mm	4252	4255	3
8	RSOV to upper trailing edge of right door	mm	3044	3049	5
9	RSOV to upper trailing edge of left door	mm	3045	3035	-10
10	RSOV to lower trailing edge of right door	mm	3021	3040	19
11	RSOV to lower trailing edge of left door	mm	3023	3028	5
12	RSOV to bottom of right A-pillar	mm	4270	4263	-7
13	RSOV to bottom of left A-pillar	mm	4267	4263	-4
14	RSOV to firewall on right side	mm	4678	4684	6
15	RSOV to firewall on left side	mm	4681	4671	-10
16	RSOV to steering column hub	mm	3844	3840	-4
17	Center of steering column to left A-pillar, Y	mm	480	495	15
18	Center of steering column to headlining, Z	mm	490	445	-45
19	RSOV to right side of front bumper	mm	5681	5349	-332
20	RSOV to left side of front bumper	mm	5681	5355	-326
21	Length of engine block	mm	600	600	0
RD	RSOV to right side of dash panel	mm	4036	4037	1
CD	RSOV to center of dash panel	mm	4083	4090	7
LD	RSOV to left side of dash panel	mm	4023	4018	-5

DATA SHEET NO. 13…(CONTINUED)

VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

VEHICLE STRUCTURAL MEASUREMENT TABLE

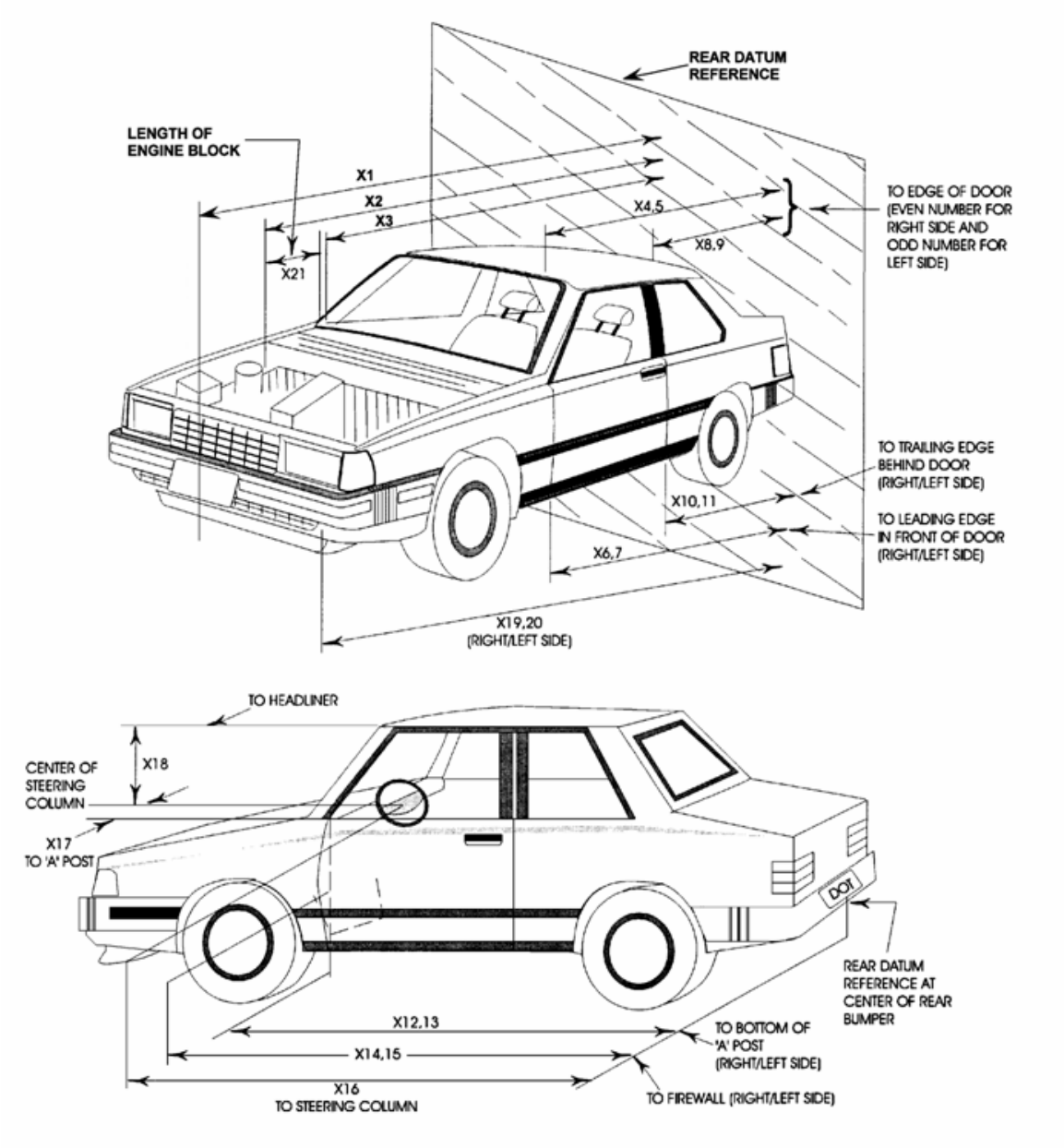
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length	mm	5876	5476	-400
2	Total width	mm	1959	1961	2
3	Front bumper top height	mm	660	370	-290
4	Front bumper bottom height	mm	398	135	-263
5	Longitudinal member top height	mm	570	550	-20
6	Longtidunal member bottom height	mm	420	370	-50
7	Distance between longitudinal members	mm	750	720	-30
8	Longitudinal member width	mm	115	150	35
9	Engine top height	mm	1010	1025	15
10	Engine bottom height	mm	305	323	18
11	Engine and gearbox width	mm	760	760	0
12	Front bumper-engine distance	mm	796	490	-306
13	Front shock absorber height	mm	816	865	49
14	Front hood leading edge height	mm	1135	1060	-75
15	Distance between front shock absorbers	mm	920	1025	105
16	Front bumper-front axle distance	mm	928	680	-248
17	Front axle to A-pillar distance	mm	608	540	-68
18	A Pillar to B Pillar distance	mm	1200	1196	-4
19	B Pillar to rear axle distance	mm	1805	1795	-10
20	B Pillar to C Pillar distance	mm	702	702	0
21	Roof sill bottom height	mm	1750	1760	10
22	Roof sill top height	mm	1850	1860	10
23	Floor sill bottom height	mm	380	454	74
24	Floor sill top height	mm	575	585	10

DATA SHEET NO. 13…(CONTINUED)

VEHICLE MEASUREMENTS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08



DATA SHEET NO. 14

CAMERA LOCATIONS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

VEHICLE CAMERA MEASUREMENT TABLE

No.	Camera View	Location			Angle (deg)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real Time Camera (Panning)	-11412	-8150	-1484	0			30
2	Overall Left Side	-2358	-7621	-1128	0	8105	20	1000
3	Closeup Left Side	-1678	-7228	-1456	0	7844	50	1000
4	Driver and Interior View	-6696	-5987	-1071	-17	15570	ZOOM	1000
5	Steering Column (Bottom)	-1972	-8184	-2879	-13	9453	35	1000
6	Steering Column (Top)	-1966	-8141	-3258	-13	9549	35	1000
7	Overall Right Side	-2956	7857	-1129	0	7409	20	1000
8	Closeup Right Side	-1691	-7208	-1478	0	7079	50	1000
9	Passenger and Interior View	-5136	9516	-2460	-10	10211	ZOOM	1000
10	Right Side View	-1582	7995	-1713	-6	7134	ZOOM	1000
11	Windshield View	-354	0	-5749	-90		24	1000
12	Driver Front View	363	-543	-2548	-34		25	1000
13	Passenger Front View	381	445	-2548	-34		25	1000
14	Pit View of Engine	-756	0	1495	90		12	1000
15	Pit View of Fuel Tank	-3398	0	1495	90		8	1000
16	Driver Side Dummy On-Board	-3553	229	-1843	-26	1101	12	1000
17	Passenger Side Dummy On-Board	-3553	-229	-1843	-27	1109	12	1000
18	Real Time Driver	-1926	-8089	-1704	-1	-1704	-1	30
19	Real Time Passenger	-1433	8047	-1704	-1	-1704	-1	30

All measurements are made relative to the point of impact.

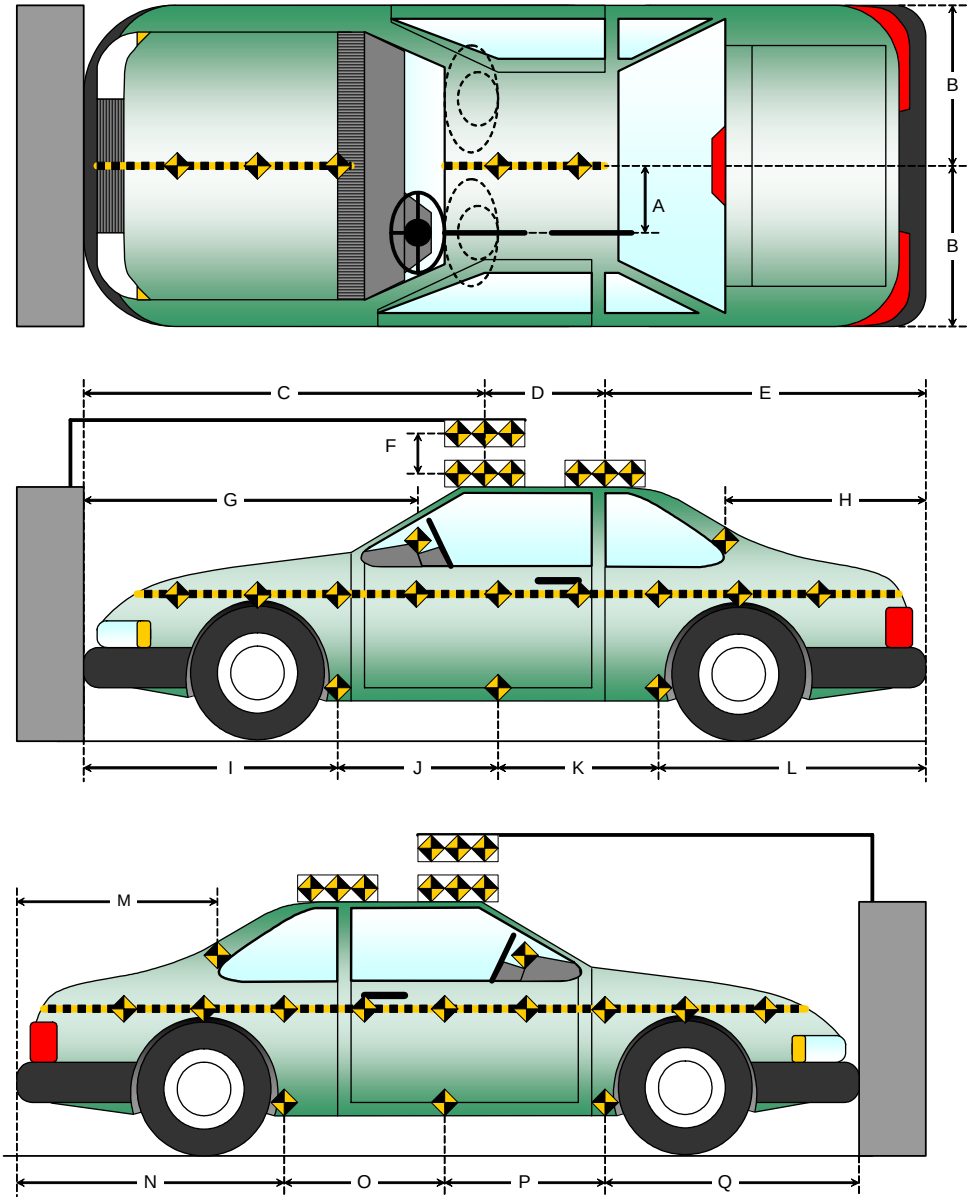
DATA SHEET NO. 15

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

All Dimensions in Millimeters (mm)	
Item	Value
A	442
B	980
C	2322
D	615
E	2951
F	155
G	1853
H	2470
I	1547
J	970
K	970
L	2394
M	2463
N	2395
O	980
P	980
Q	1515



DATA SHEET NO. 16

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

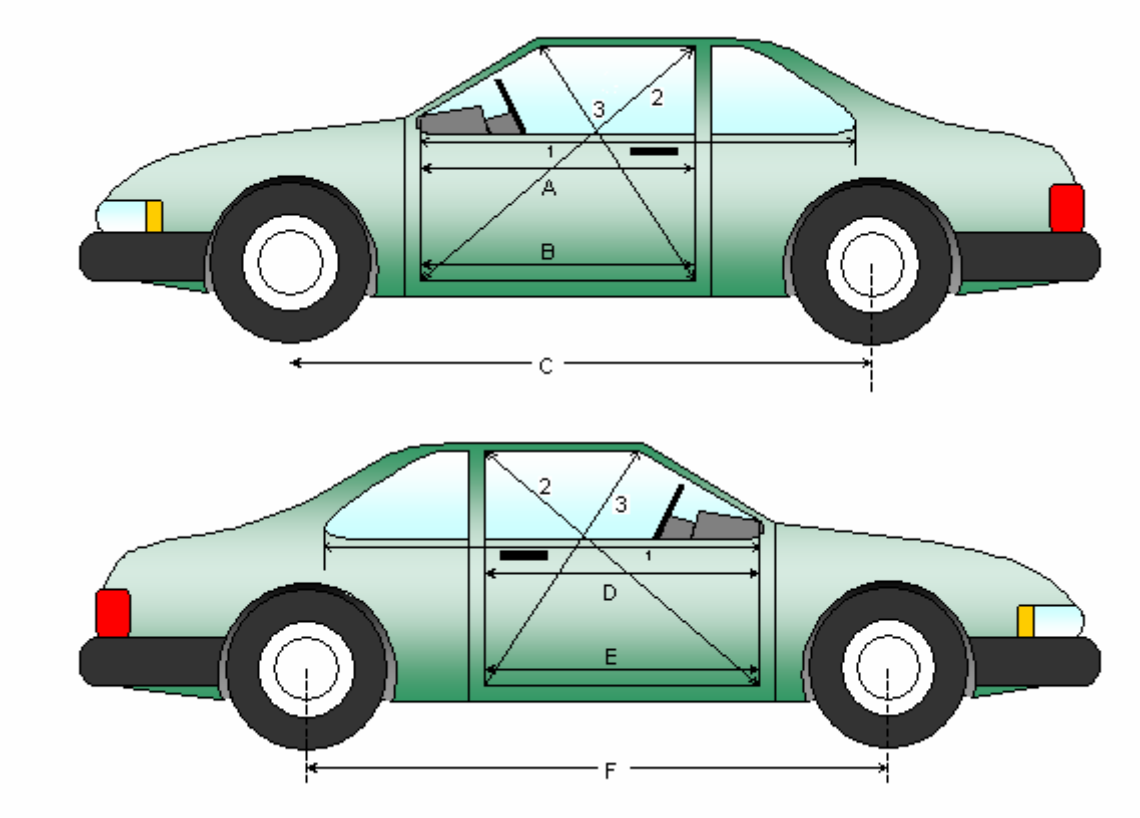
Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Difference
1L	Left Side	mm	1200	1196	4
2L	Left Side (Diagonally)	mm	1616	1626	-10
3L	Left Side (Diagonally)	mm	1365	1368	-3
1R	Right Side	mm	1186	1186	0
2R	Right Side (Diagonally)	mm	1610	1614	-4
3R	Right Side (Diagonally)	mm	1373	1381	-8

WHEELBASE MEASURMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	3687	3533	154
F	Right Side Wheelbase	mm	3687	3580	107



DATA SHEET NO. 16…(CONTINUED)

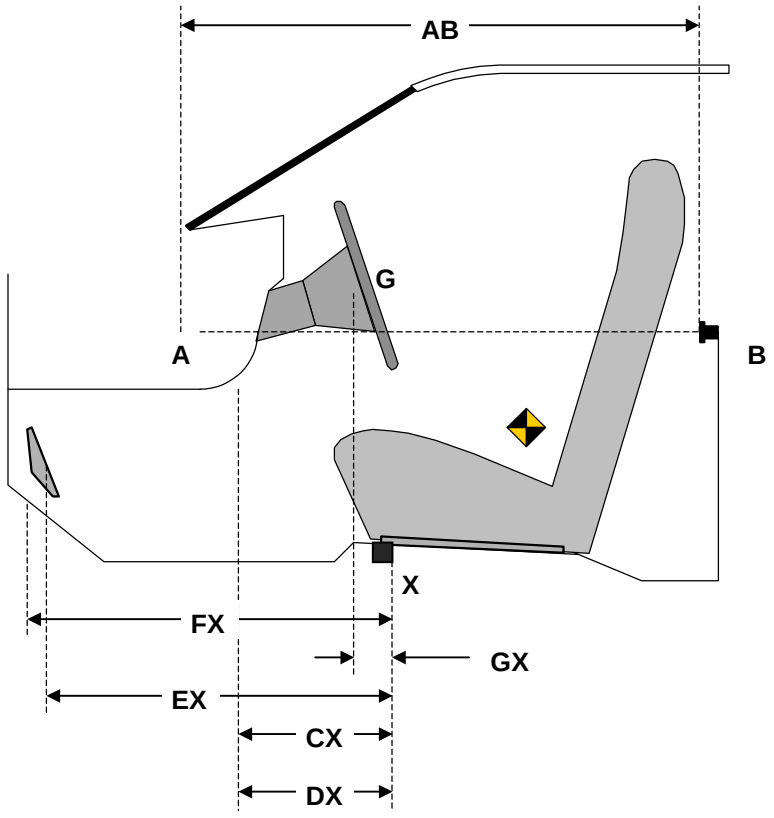
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

DRIVER COMPARTMENT INTRUSION TABLE

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Windown Jam)	mm	1200	1196	4
CX	Left Knee Bolster to X	mm	265	257	8
DX	Right Knee Bolster to X	mm	263	267	-4
EX	Brake Pedal to X	mm	470	460	10
FX	Foot Rest to X	mm	570	510	60
GX	Center of Steering Wheel Hub to X	mm	100	80	20

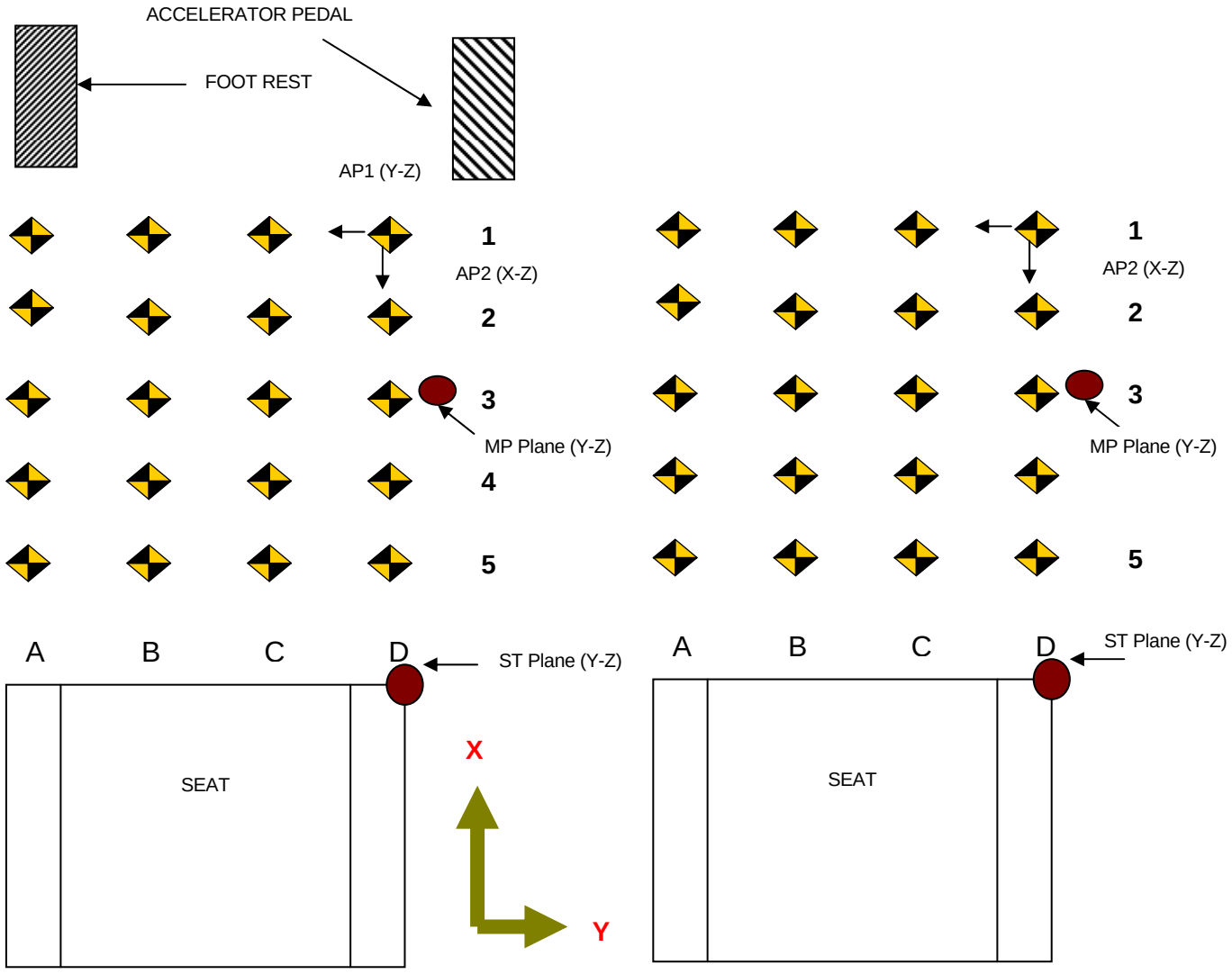


DATA SHEET NO. 16…(CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08



AP1: Y-Z Plane passing through D1
AP2: X-Z Plane passing through D1
AP3: X-Y plane passing through D1
MP: Y-Z plane, halfway between the ST plane and AP1 plane
CF Plane: X-Z plane passes through center of footrest.
BP Plane: X-Z plane passes through center of brake pedal
TP Plane: Y-Z plane, intersection of BP Plane and the intersection of the toe pan and floorboard
Column A: intersection of vehicle and CF plane
Column D: Intersection of vehicle and AP2 plane
Row 1: intersection of the vehicle and the AP3 Plane
Row 3: intersection of the vehicle and TP plane
Row 5: intersection of the vehicle and MP plane
Row 2: evenly spaced between row 1 and 3
Row 4: evenly spaced between row 3 and 5

DATA SHEET NO. 16…(CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

All measurements in mm

DRIVER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	648	648	649	648	633	630	623	623	15	18	26	25
2	556	554	551	549	549	544	539	536	7	10	12	13
3	453	451	451	448	443	443	444	440	10	8	7	8
4	327	326	325	323	320	317	318	318	7	9	7	5
5	203	203	200	200	198	195	195	195	5	8	5	5

DRIVER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-26	-131	-225	-371	-26	-127	-224	-369	0	-4	-1	-2
2	-29	-130	-226	-369	-26	-125	-220	-364	-3	-5	-6	-5
3	-32	-134	-229	-372	-27	-128	-223	-364	-5	-6	-6	-8
4	-33	-131	-230	-372	-29	-126	-223	-365	-4	-5	-7	-7
5	-38	-132	-229	-373	-28	-127	-223	-366	-10	-5	-6	-7

DRIVER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-44	-46	-44	-41	-16	-16	-13	-21	-28	-30	-31	-20
2	-88	-88	-85	-84	-73	-77	-78	-79	-15	-11	-7	-5
3	-121	-119	-116	-114	-99	-110	-119	-125	-22	-9	3	11
4	-122	-117	-115	-117	-118	-121	-122	-139	-4	4	7	22
5	-122	-112	-114	-113	-117	-116	-123	-134	-5	4	9	21

DATA SHEET NO. 16…(CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

All measurements in mm

PASSENGER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	630	658	659	659	607	635	642	644	23	23	17	15
2	549	554	562	466	535	541	551	555	14	13	11	11
3	328	460	461	338	442	453	455	461	10	7	6	5
4	207	333	335	209	320	325	328	331	8	8	7	7
5	207	209	212	209	199	200	203	202	8	9	9	7

PASSENGER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	372	240	126	25	375	244	130	27	-3	-4	-4	-2
2	374	233	126	22	377	236	129	24	-3	-3	-3	-2
3	374	235	129	24	376	238	131	27	-2	-3	-2	-3
4	373	233	128	28	373	233	129	29	0	0	-1	-1
5	371	229	131	27	371	229	130	28	0	0	1	-1

PASSENGER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-14	-26	-26	-24	8	-1	-4	-3	-22	-25	-22	-21
2	-81	-79	-77	-74	-67	-65	-62	-59	-14	-14	-15	-15
3	-111	-115	-117	-116	-111	-112	-111	-104	0	-3	-6	-12
4	-111	-112	-116	-115	-120	-114	-114	-102	9	2	-2	-13
5	-110	-110	-112	-116	-122	-114	-112	-112	12	4	0	-4

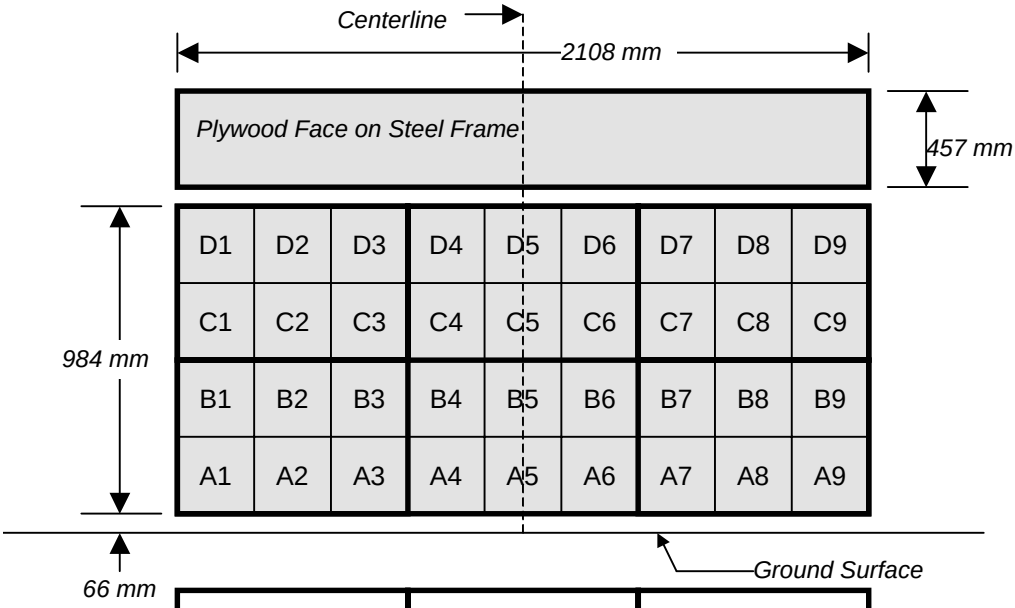
DATA SHEET NO. 17

FIXED BARRIER LOAD CELL LOCATIONS

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

36 Load Cell Rigid Barrier (NHTSA Standard)
Load Cell Locations on Fixed Barrier



D1	D2	D3	D4	D5	D6	D7	D8	D9
C1	C2	C3	C4	C5	C6	C7	C8	C9
B1	B2	B3	B4	B5	B6	B7	B8	B9
A1	A2	A3	A4	A5	A6	A7	A8	A9

Group 4 C1 – D3	Group 5 C4 – D6	Group 6 C7 – D9
Group 1 A1 – B3	Group 2 A4 – B6	Group 3 A7 – B9

6 Groups of 6 Load Cells Each

DATA SHEET NO. 18

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08

VEHICLE INFORMATION

VIN: 1FTPX14V69FA08071 Wheelbase (mm): 3687

Vehicle Size Category: 2-Door Truck Test Weight (kg): 2833

ACCELEROMETER DATA

Accelerometer Location: Left rear cross member

Cal. Procedure/Interval: 6 months/drop test

Integration Algorithm: NHTSA Standard Linearity: Good

Impact Velocity (km/h): 56.37

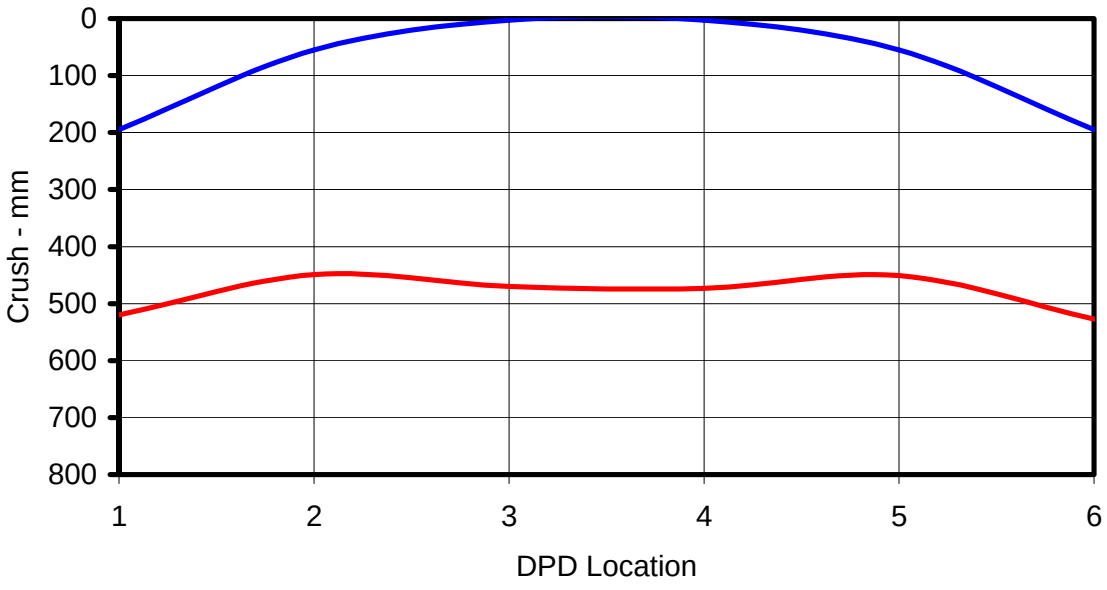
Velocity Change (km/h): 66.0 Time of Separation (msec): 67.9

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6 Midpoint of Damage: Vehicle Centerline

Damage Region Length: 1959 Impact Mode: Full frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side of vehicle	mm	195	520	-325
C2	Crush zone 2 on left side of vehicle	mm	55	449	-394
C3	Crush zone 3 on left side of vehicle	mm	3	470	-467
C4	Crush zone 4 on right side of vehicle	mm	3	473	-470
C5	Crush zone 5 on right side of vehicle	mm	55	451	-396
C6	Crush zone 6 at right side of vehicle	mm	195	527	-332

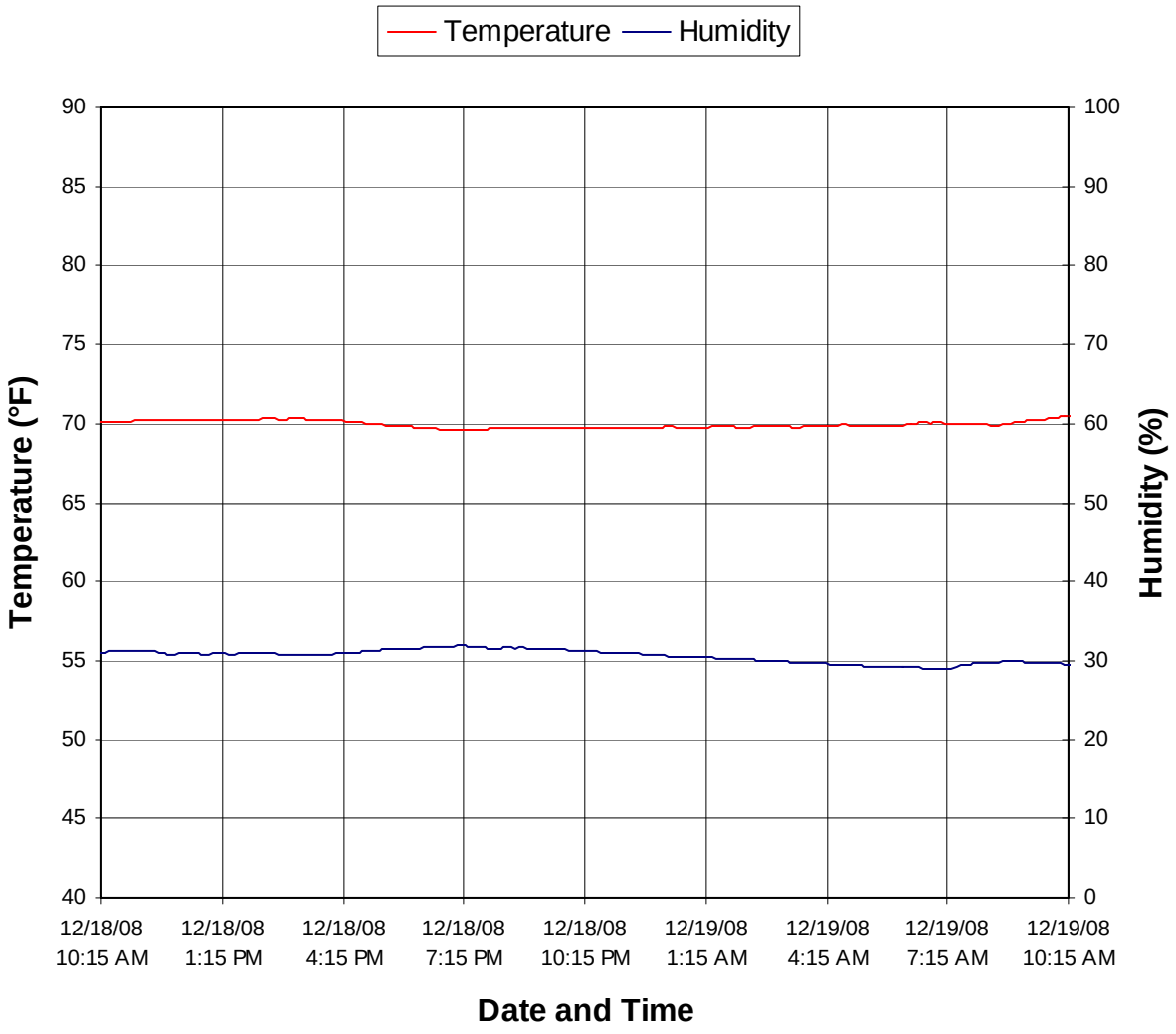


DATA SHEET NO. 19

DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2009 Ford F-150 XLT SuperCab 4x4 2-Door Truck NHTSA No.: M90206

Test Program: NHTSA 35mph NCAP Test Date: 12/19/08



APPENDIX A
PHOTOGRAPHS

LIST OF PHOTOGRAPHS

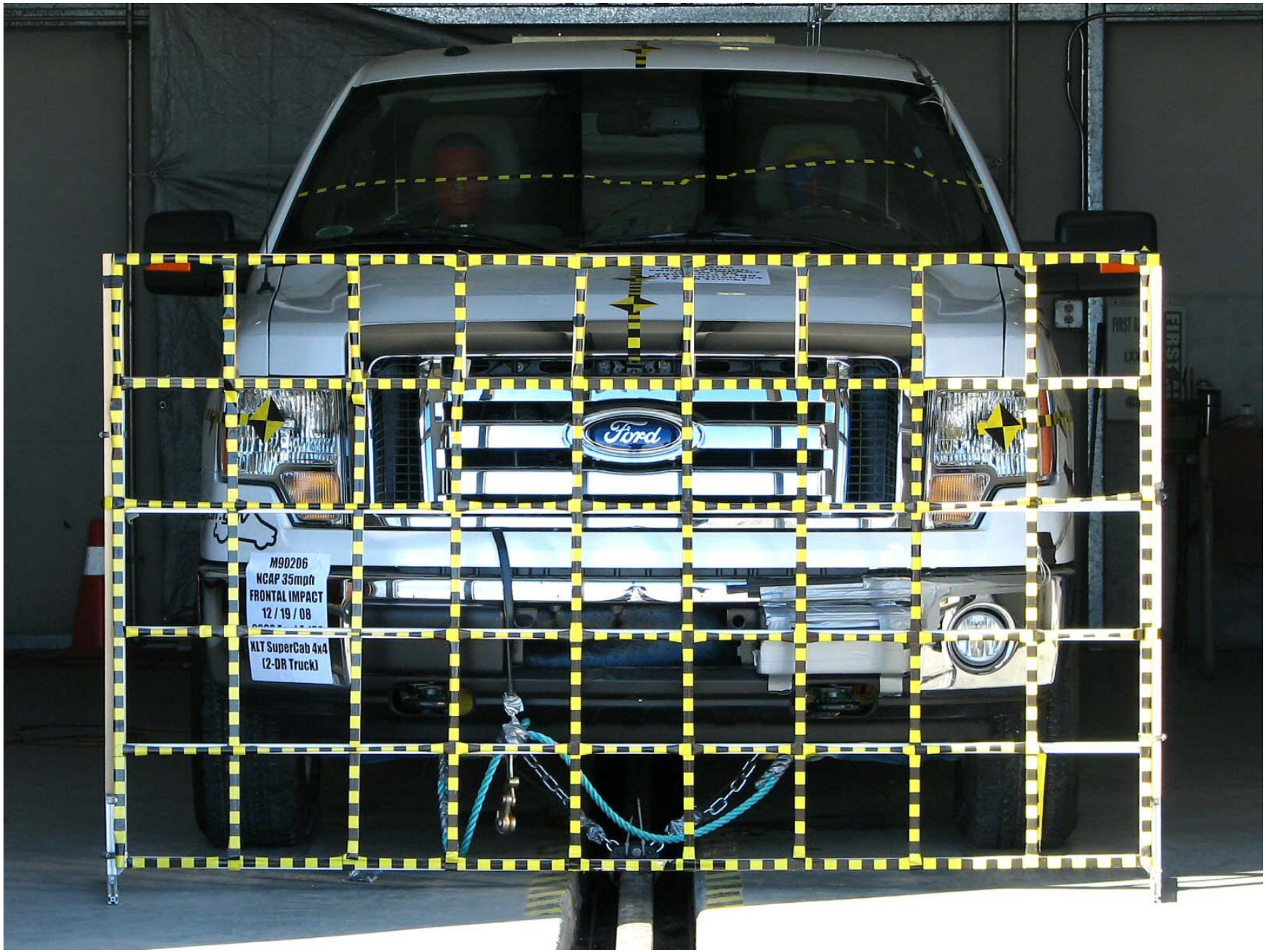


Figure A-1: Load Cell Location

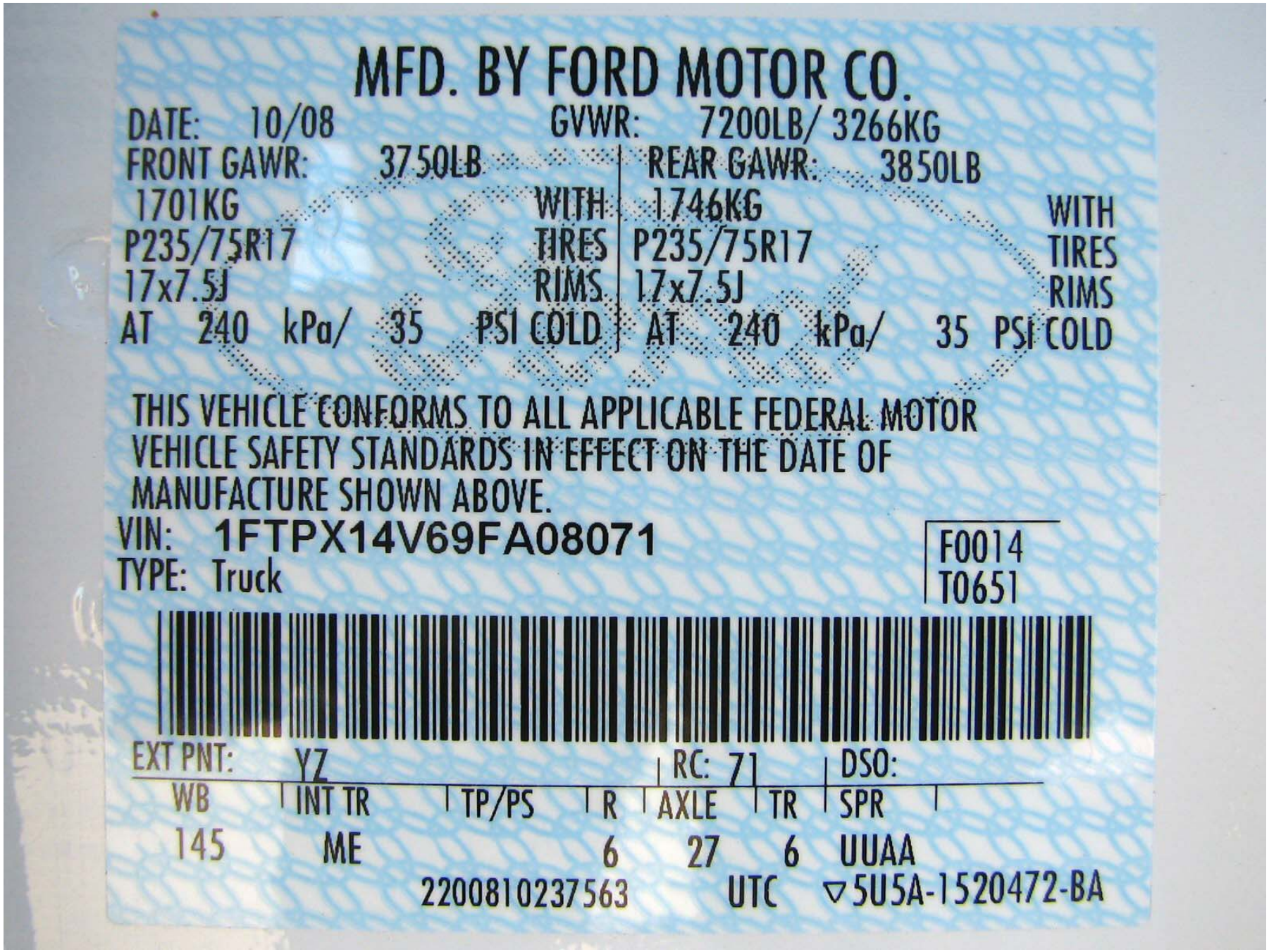


Figure A-2: Manufacturer's Label

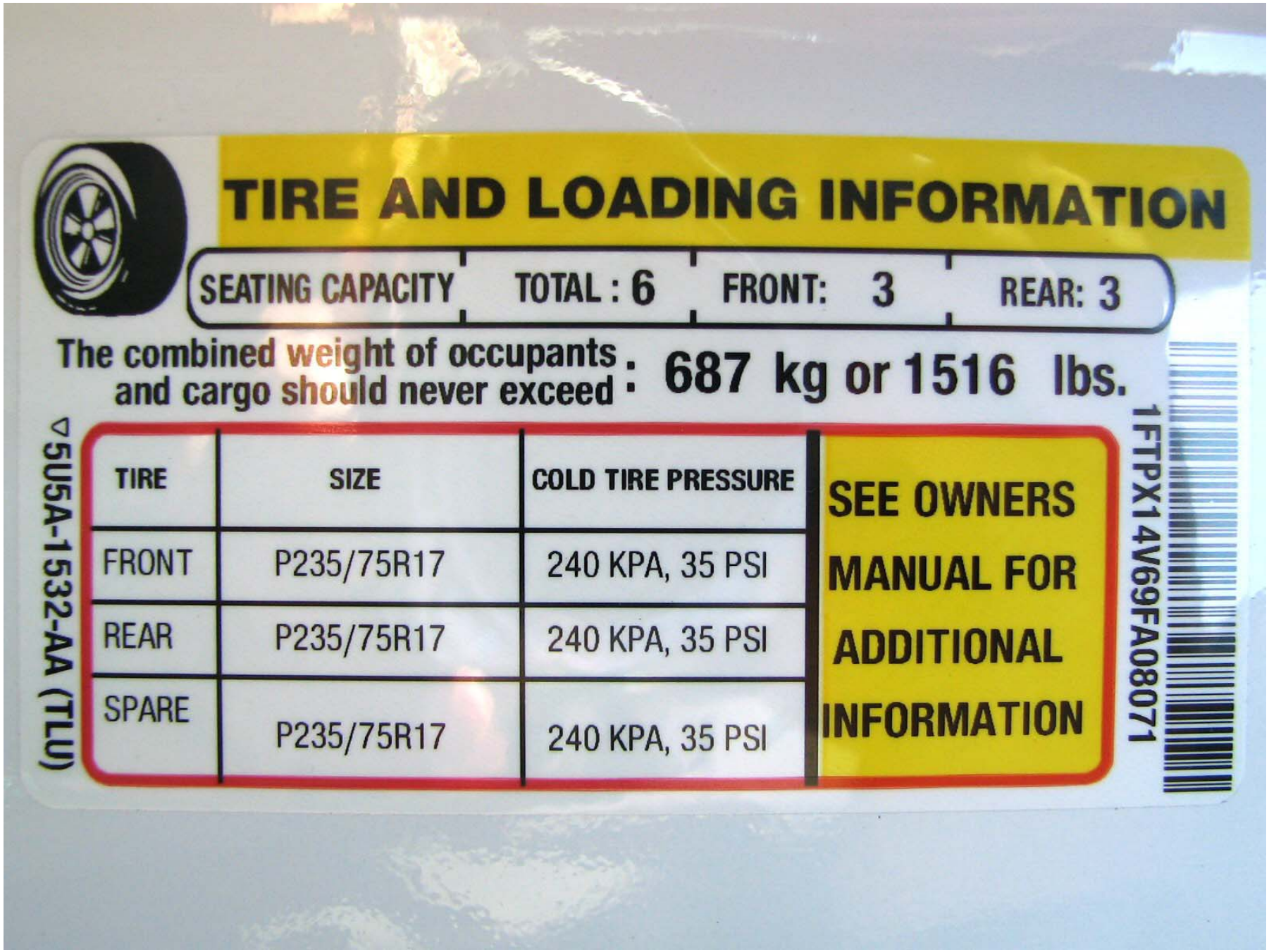


Figure A-3: Tire Placard

Figure A-4: Right Front ¾ View, As Received

Figure A-5: Left Rear ¾ View, as Received

Figure A-6: Pre-Test Front View

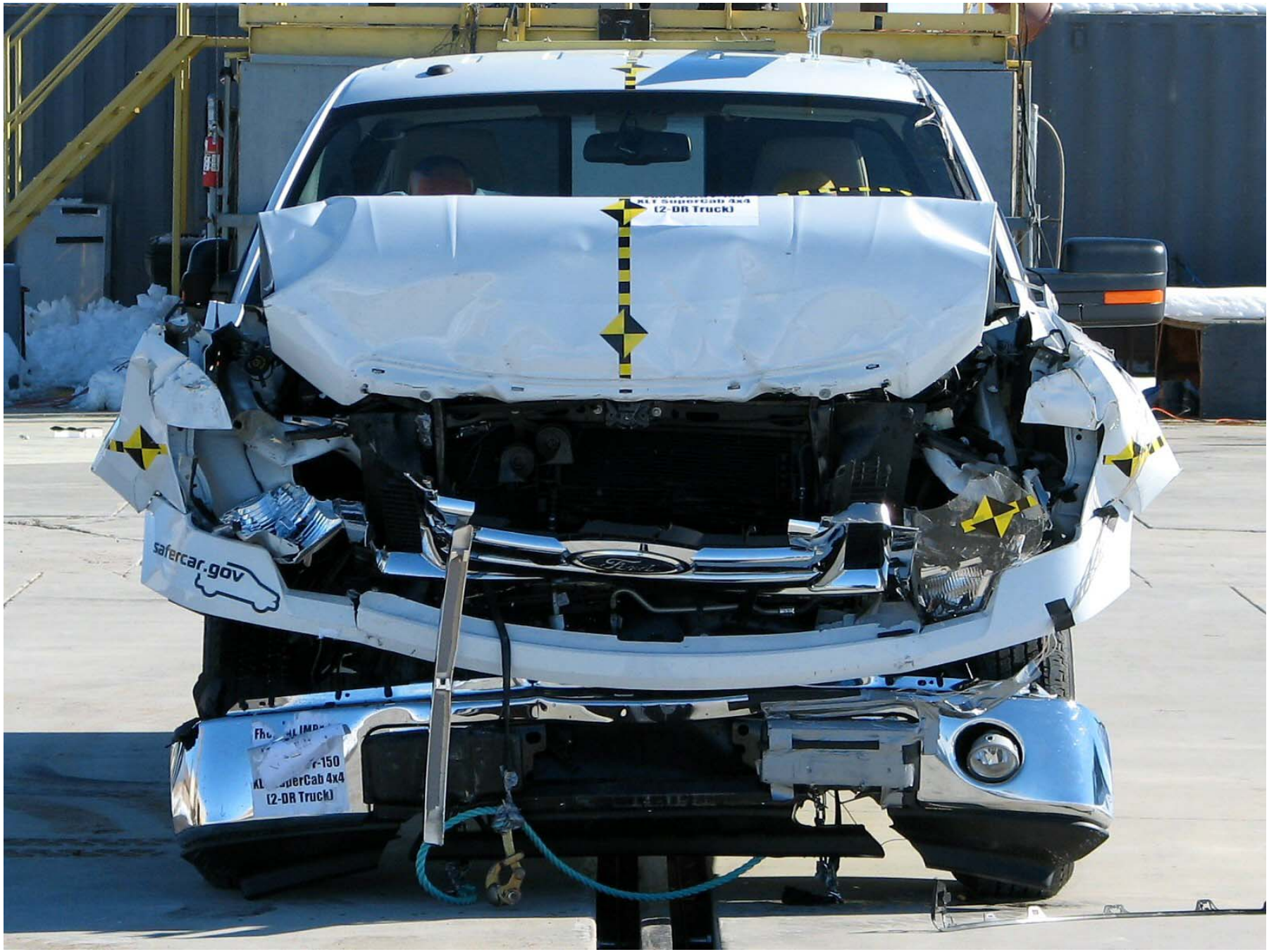


Figure A-7: Post-Test Front View (Vehicle Moved)

Figure A-8: Pre-Test Left Side View

Figure A-9: Post-Test Left Side View

Figure A-10: Pre-Test Right Side View

Figure A-11: Post-Test Right Side View

Figure A-12: Pre-Test Right Front ¾ View

Figure A-13: Post-Test Right Front ¾ View (Vehicle Moved)

Figure A-14: Pre-Test Left Rear ¾ View

Figure A-15: Post-Test Left Rear ¾ View

Figure A-16: Post-Test Left Side ¾ View of Doors After Impact

Figure A-17: Post-Test Right Side ¾ View of Doors After Impact

Figure A-18: Pre-Test Windshield

Figure A-19: Post-Test Windshield

Figure A-20: Pre-Test Engine Compartment

Figure A-21: Post-Test Engine Compartment (Vehicle Moved)

Figure A-22: Pre-Test Fuel Cap

Figure A-23: Post-Test Fuel Cap

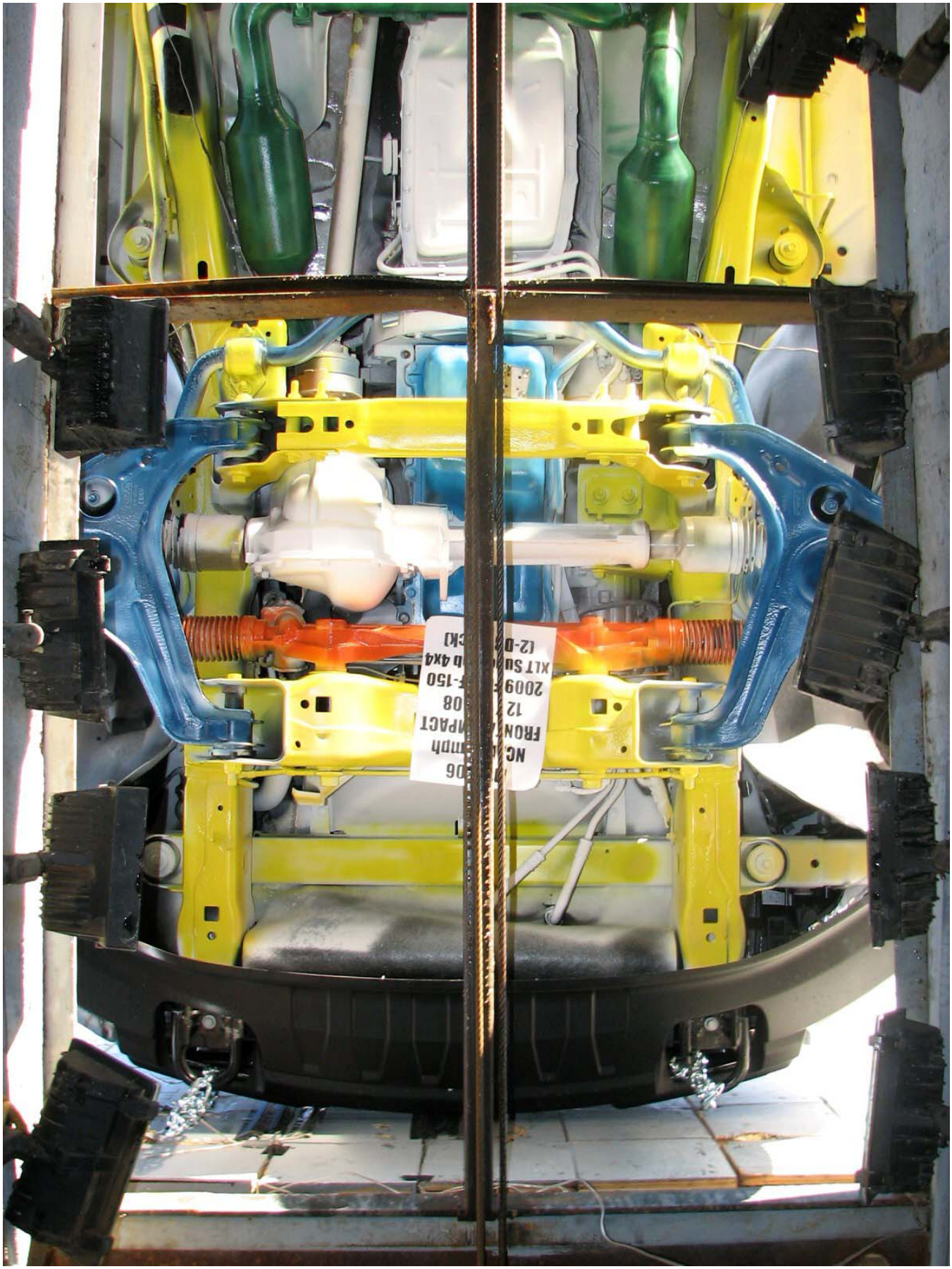


Figure A-24: Pre-Test Front Underbody

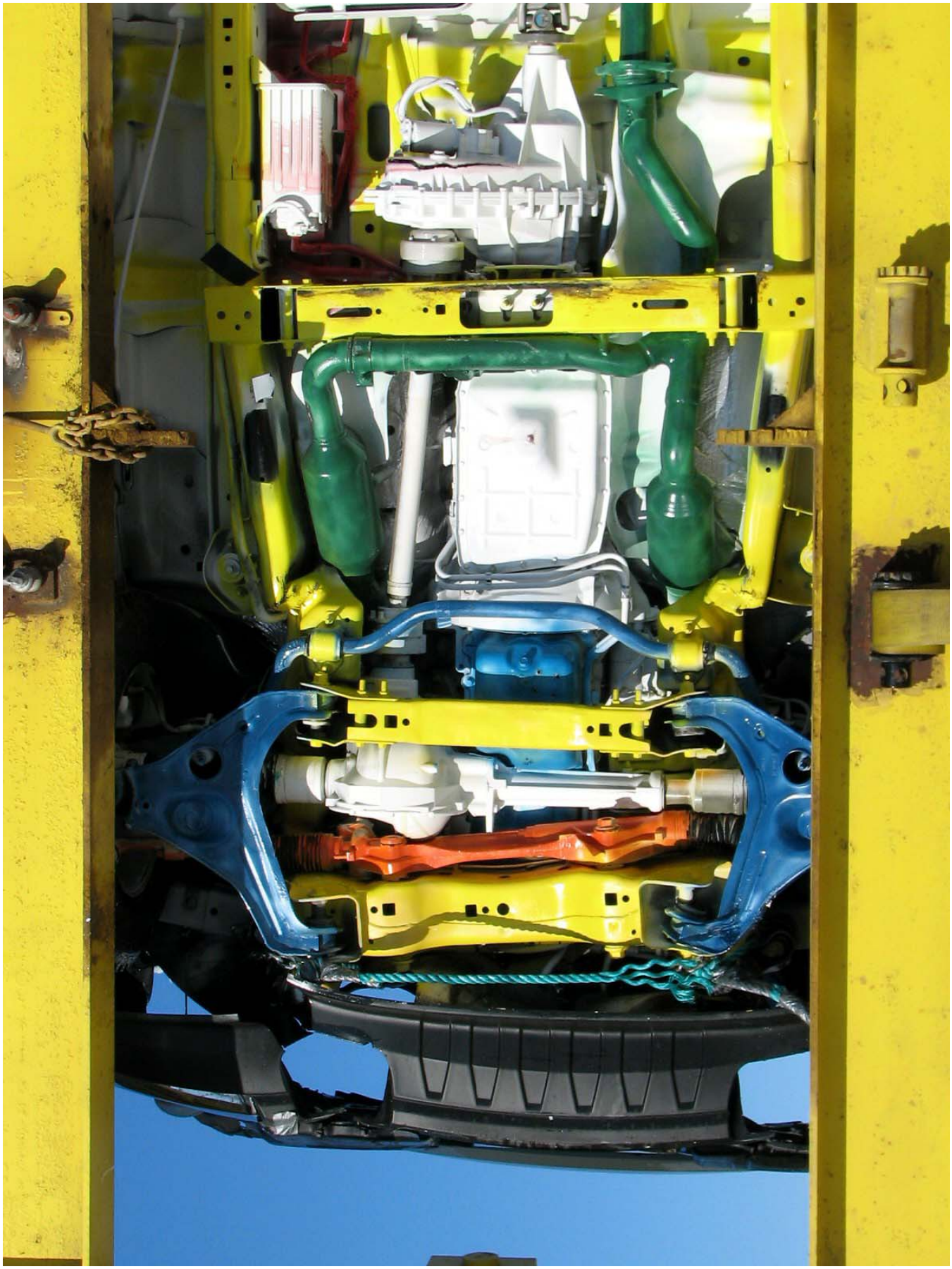


Figure A-25: Post-Test Front Underbody

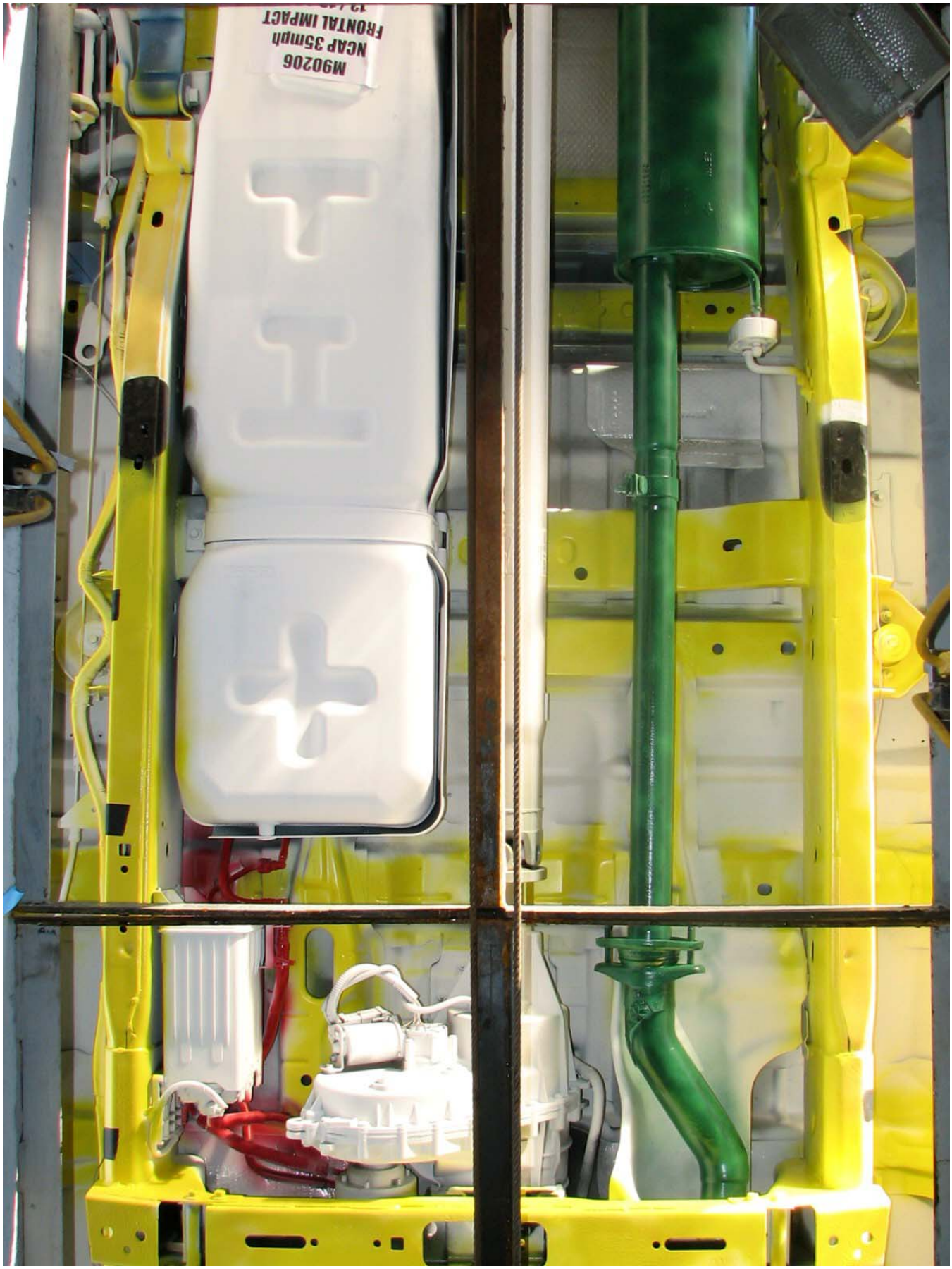


Figure A-26: Pre-Test Mid Underbody

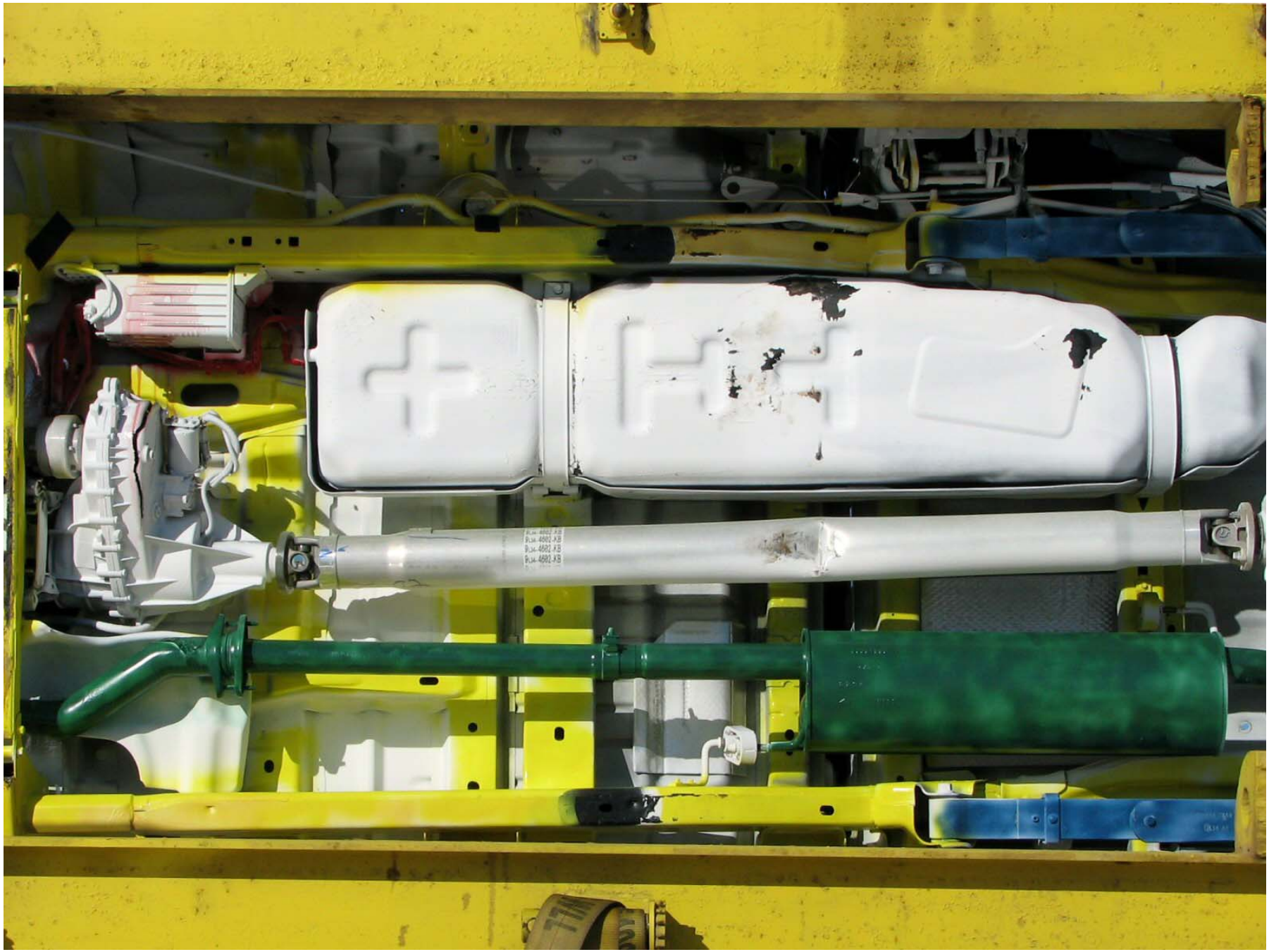


Figure A-27: Post-Test Mid Underbody

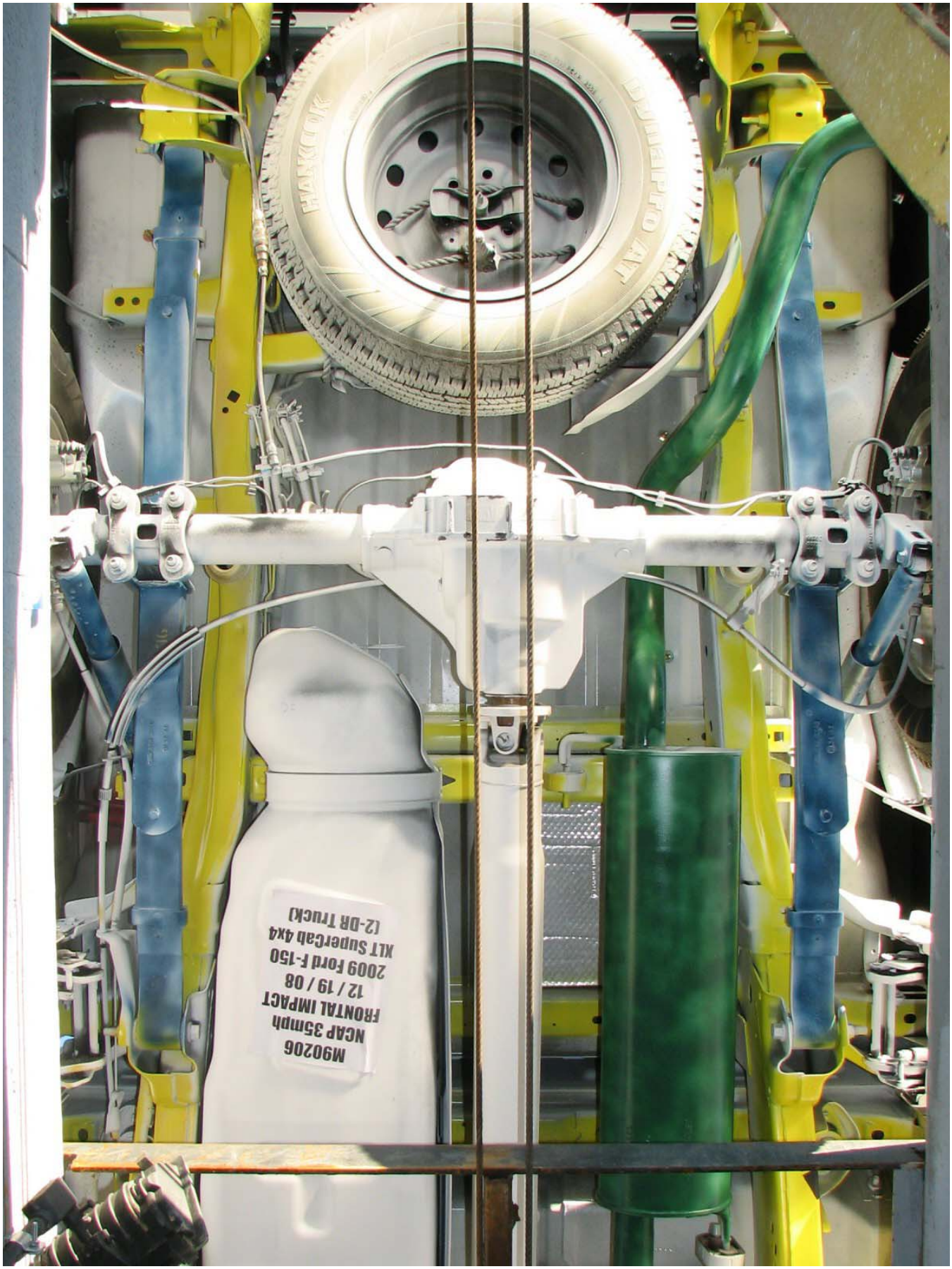


Figure A-28: Pre-Test Rear Underbody

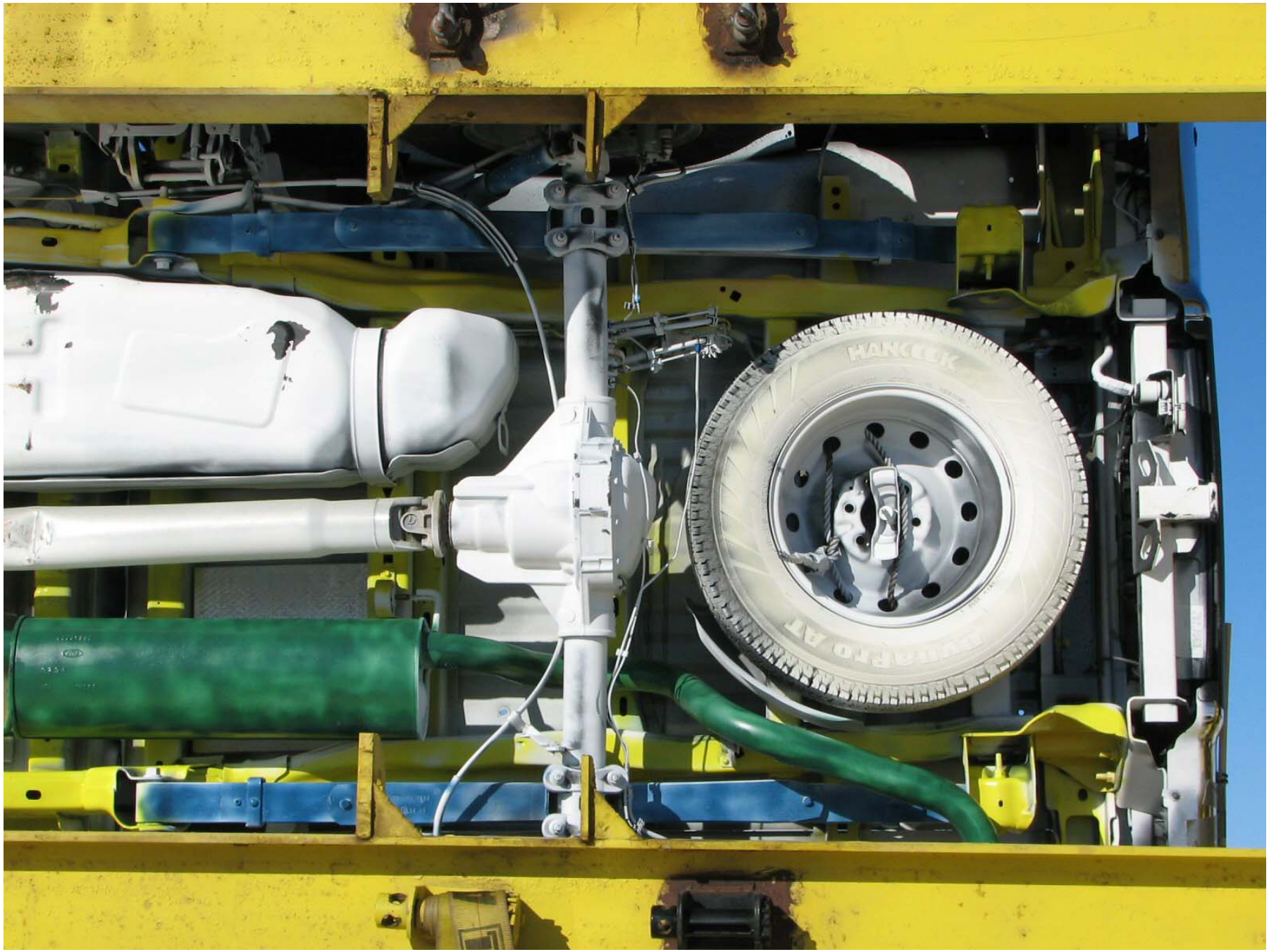


Figure A-29: Post-Test Rear Underbody

Figure A-30: Pre-Test Driver Dummy Front View (Head Position)

Figure A-31: Post-Test Driver Dummy Front View (Head Position)

Figure A-32: Pre-Test Driver Dummy (Through Window)

Figure A-33: Post-Test Driver Dummy (Through Window)

Figure A-34: Pre-Test Driver Dummy (Door Open)

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

Figure A-36: Pre-Test Driver Dummy Feet

Figure A-37: Post-Test Driver Dummy Feet

Figure A-38: Pre-Test Driver Side Knee Bolster

Figure A-39: Post-Test Driver Side Knee Bolster

Figure A-40: Pre-Test Driver Side Floor Pan

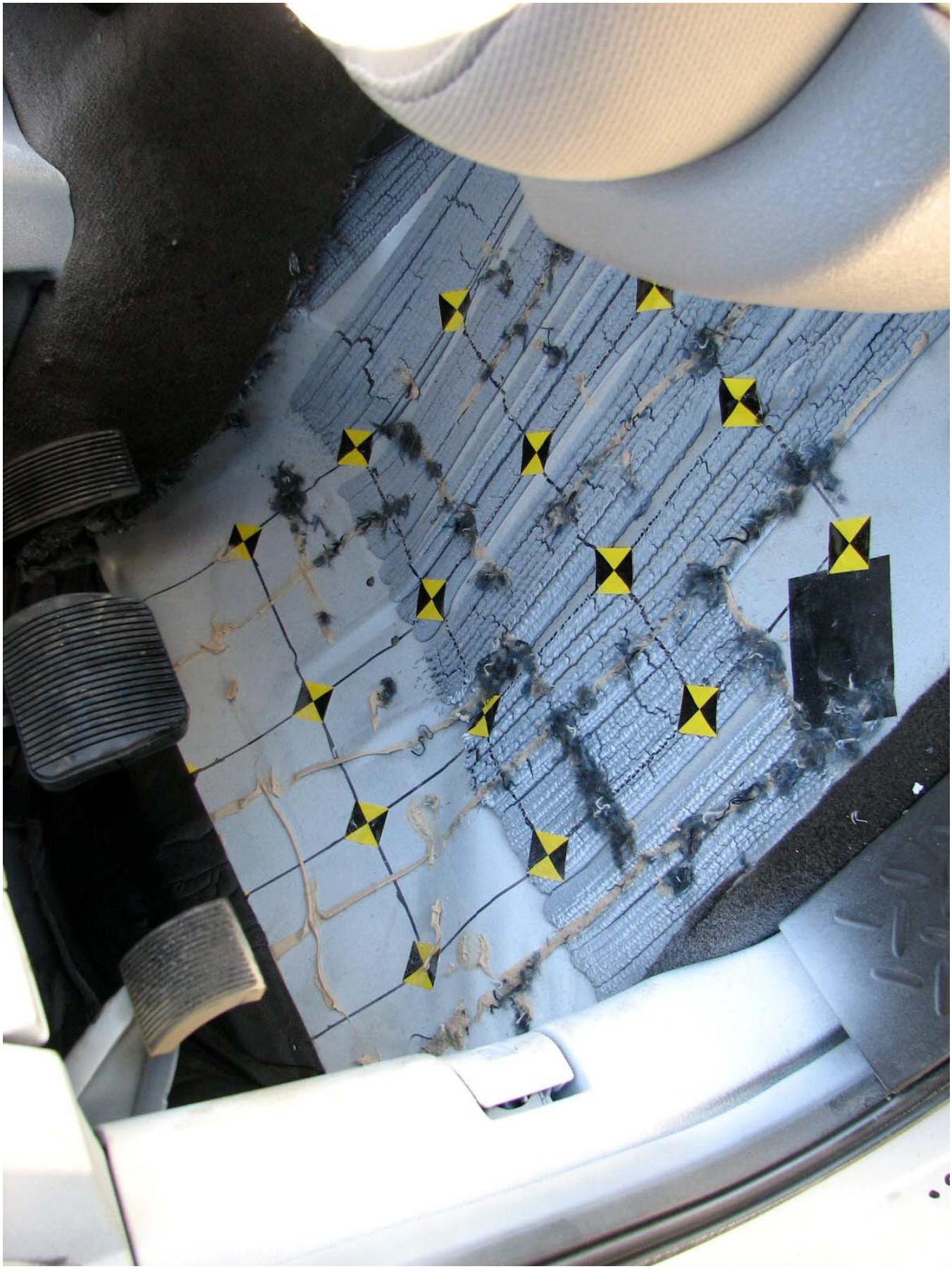


Figure A-41: Post-Test Driver Side Floor Pan

Figure A-42: Post-Test Driver Dummy Head

Figure A-43: Post-Test Driver Dummy Airbag Contact

Figure A-44: Pre-Test Passenger Dummy Front View (Head Position)

Figure A-45: Post-Test Passenger Dummy Front View (Head Position)

Figure A-46: Pre-Test Passenger Dummy (Through Window)

Figure A-47: Post-Test Passenger Dummy (Through Window)

Figure A-48: Pre-Test Passenger Dummy (Door Open)

Figure A-49: Post-Test Passenger Dummy (Door Open)

Figure A-50: Pre-Test Passenger Dummy Feet

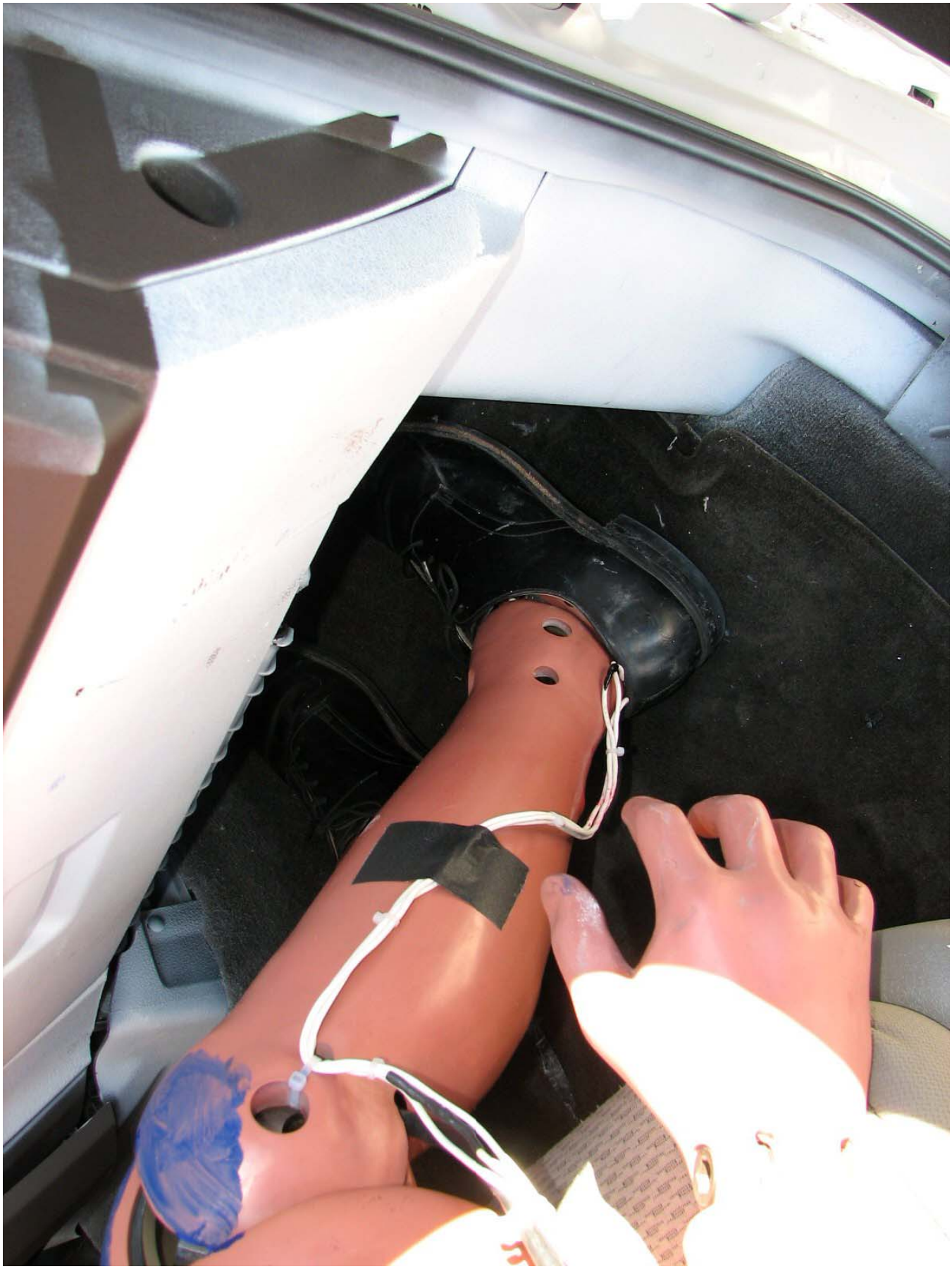


Figure A-51: Post-Test Passenger Dummy Feet

Figure A-52: Pre-Test Passenger Side Glove Box

Figure A-53: Post-Test Passenger Side Glove Box

Figure A-54: Pre-Test Passenger Side Floor Pan

Figure A-55: Post-Test Passenger Side Floor Pan

Figure A-56: Post-Test Passenger Dummy Head

Figure A-57: Post-Test Passenger Dummy Airbag Contact

Figure A-58: Vehicle on Rollover Device (0°)

Figure A-59: Vehicle on Rollover Device (90°)

Figure A-60: Vehicle on Rollover Device (180°)

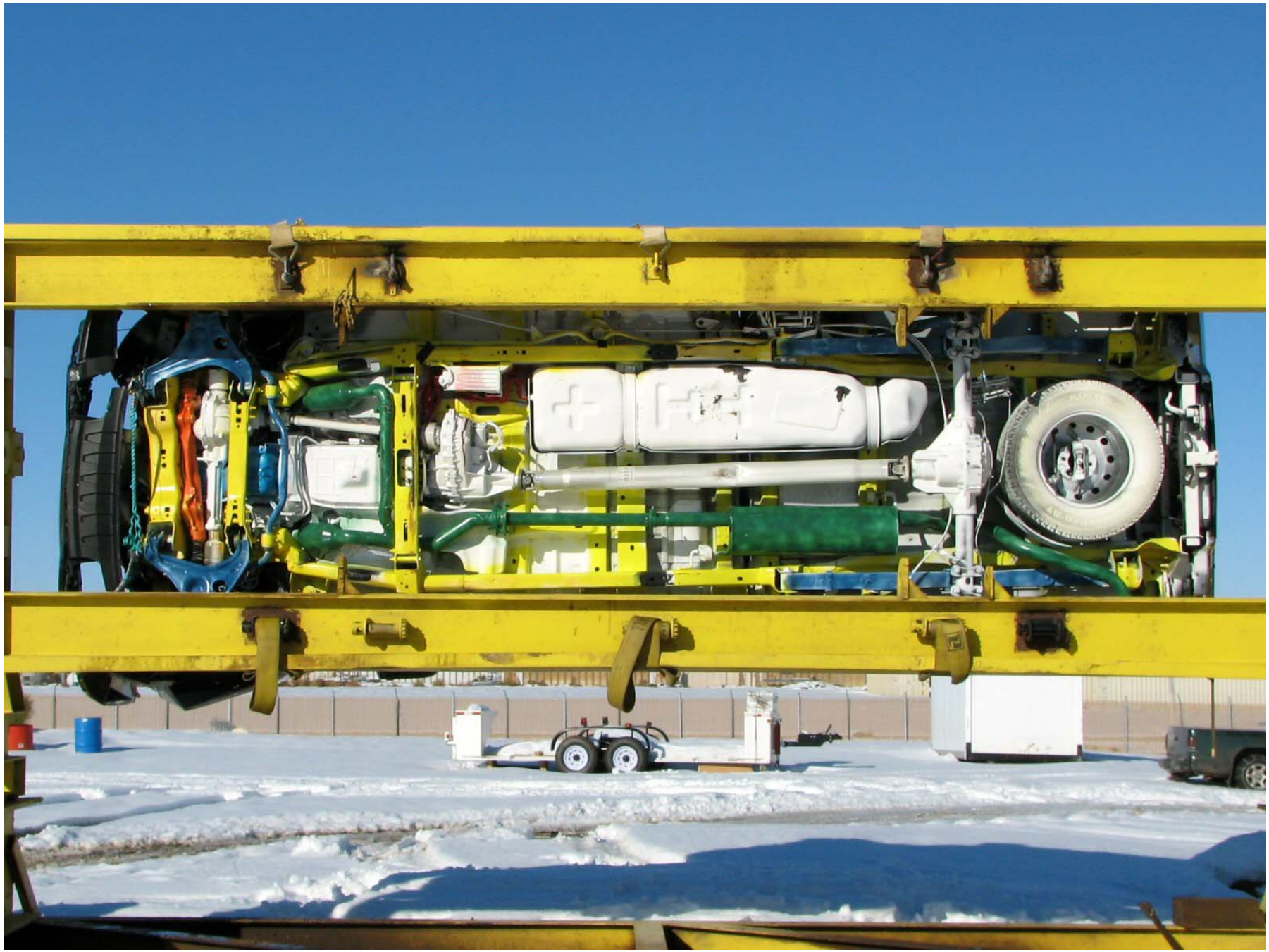


Figure A-61: Vehicle on Rollover Device (270°)

Figure A-62: Vehicle on Rollover Device (360°)

Figure A-63: Timers

Figure A-64: Vehicle Impact

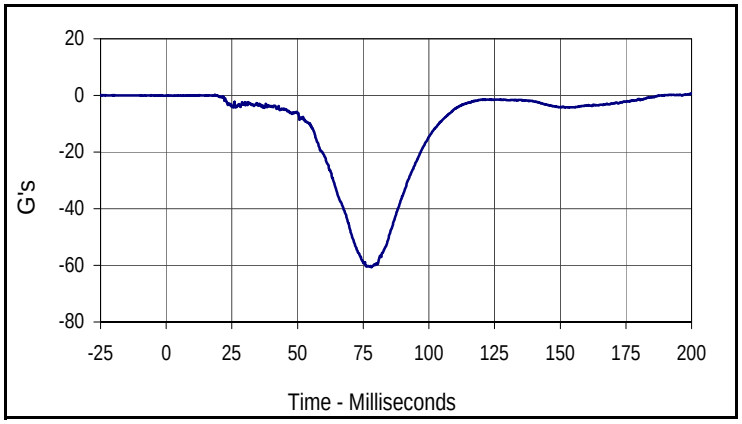
APPENDIX B
DATA PLOTS

LIST OF DATA PLOTS

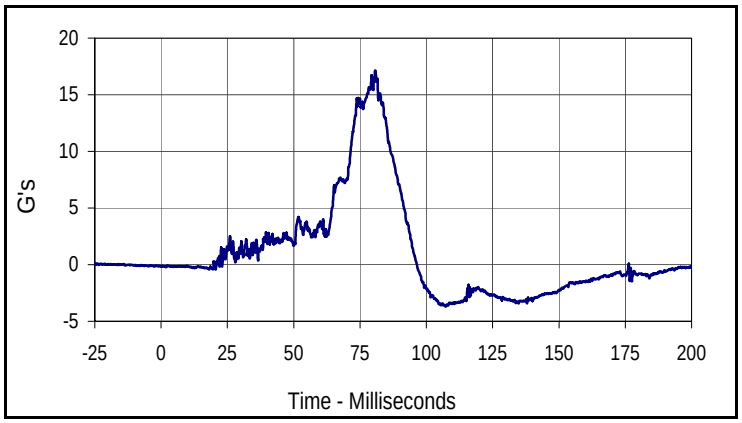
The following additional data plots for this test can be obtained from the research and development section of the NHTSA website. The website can be found at www.NHTSA.dot.gov.

Driver Head Primary X Velocity
Driver Head Primary X Displacement
Driver Head Redundant X
Driver Head Redundant Y
Driver Head Redundant Z
Driver Head Resultant Redundant
Driver Head Redundant X Velocity
Driver Head Redundant X Displacement
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 Chest Primary X Velocity
Driver Chest Primary X Displacement
Driver Chest Redundant X
Driver Chest Redundant Y
Driver Chest Redundant Z
Driver Chest Resultant Redundant
Driver Chest Redundant X Velocity
Driver Chest Redundant X Displacement
Driver Chest Displacement
Driver Pelvis X
Driver Pelvis Y
Driver Pelvis Z
Driver Pelvis Resultant
Driver Pelvis X Velocity
Driver Pelvis X Displacement
Driver Left Upper Tibia Moment X
Driver Left Upper Tibia Moment Y
Driver Right Upper Tibia Moment X

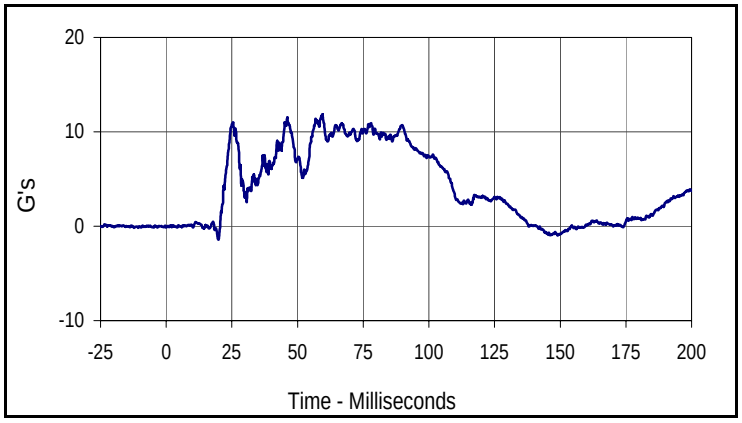
Test Vehicle:	2009 Ford F-150 XLT SuperCab 2-Door Truck	Test Date:	12/19/08
Test Program:	NHTSA 35mph NCAP	NHTSA No.:	M90206



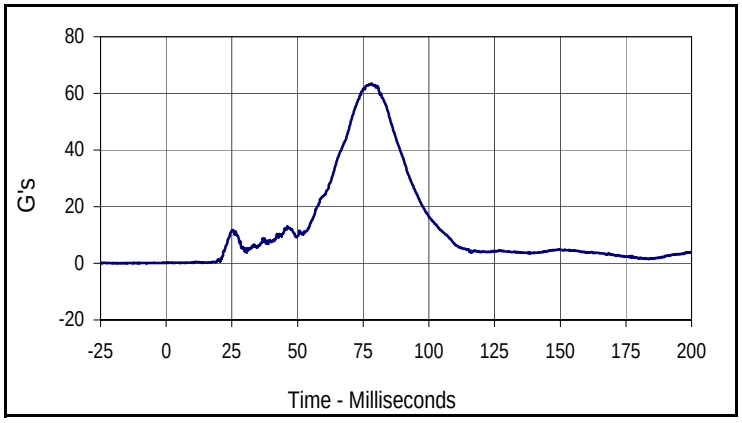
Curve Description			
Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
0.6	199.8	-60.7	78.2



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
17.2	80.7	-3.7	107.2

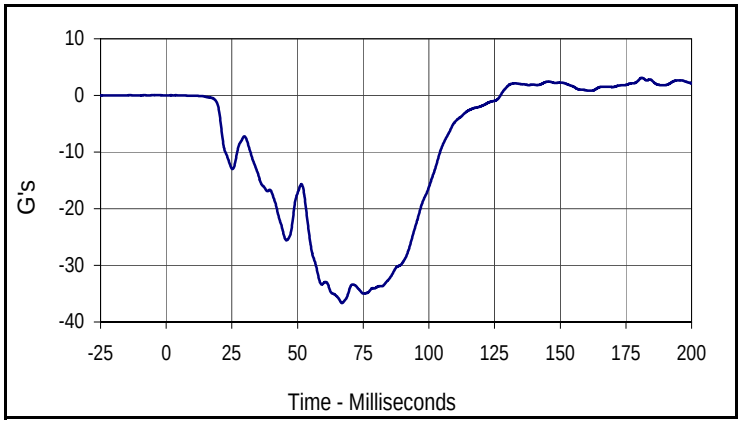


Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
11.9	59.5	-1.4	19.9

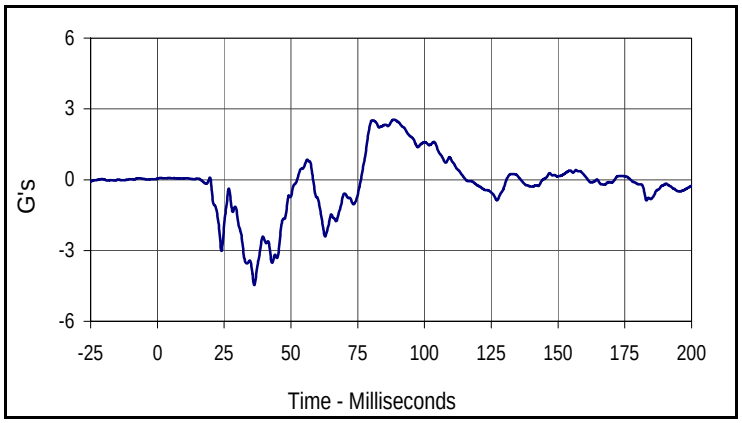


Curve Description			
Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
63.5	78.2	0.1	2.7

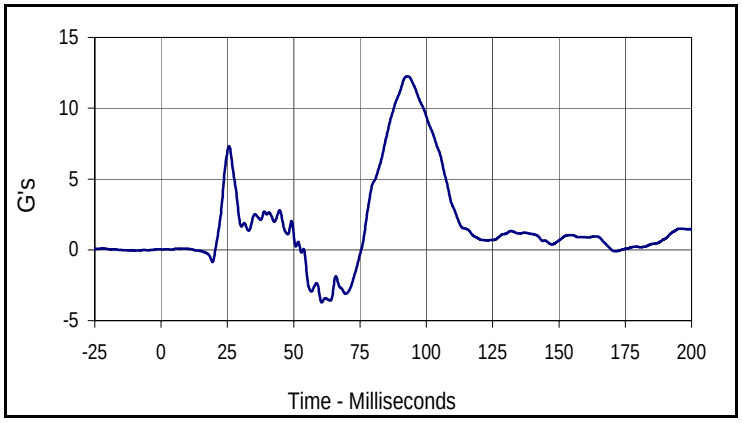
Test Vehicle:	2009 Ford F-150 XLT SuperCab 2-Door Truck	Test Date:	12/19/08
Test Program:	NHTSA 35mph NCAP	NHTSA No.:	M90206



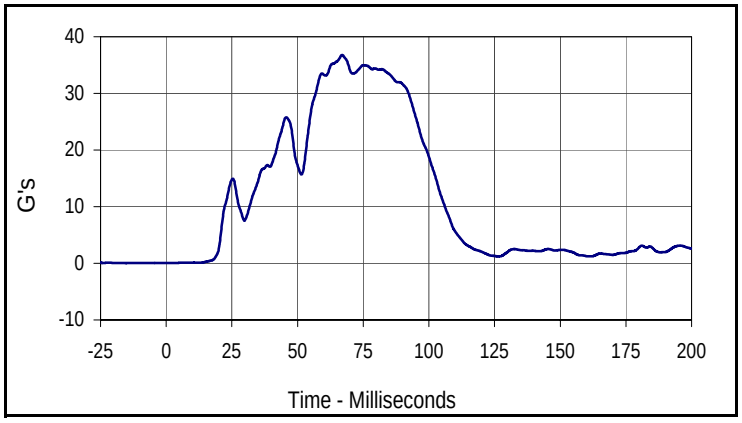
Curve Description			
Driver Chest Primary X			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
3.1	181.1	-36.6	67.0



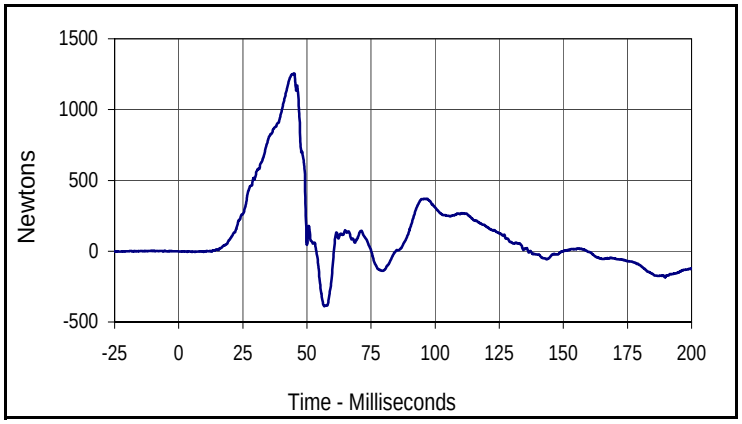
Curve Description			
Driver Chest Primary Y			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
2.5	88.5	-4.5	36.3



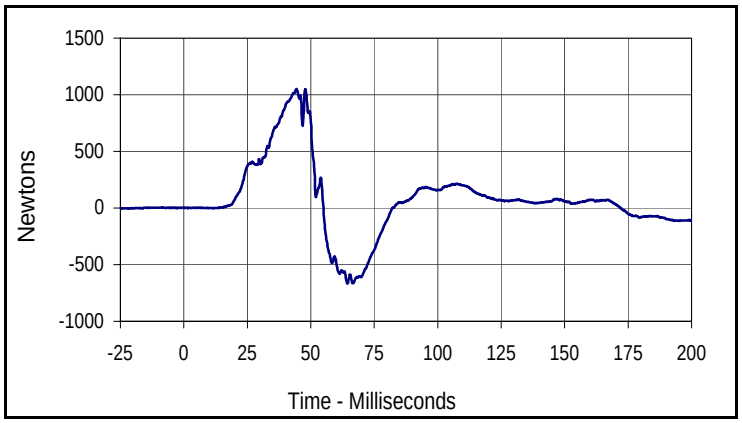
Curve Description			
Driver Chest Primary Z			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
12.2	93.0	-3.7	60.5



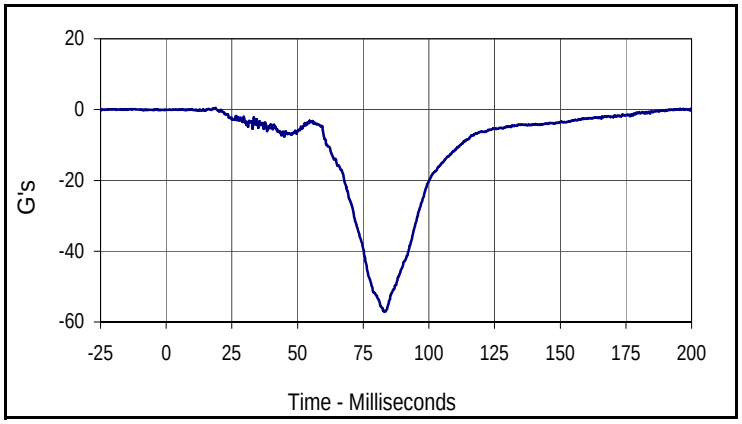
Curve Description			
Driver Chest Resultant Primary			
CURNO	Type	SAE Class	Units
004	RES	180	G's
Max	Time	Min	Time
36.8	67.0	0.1	0.0



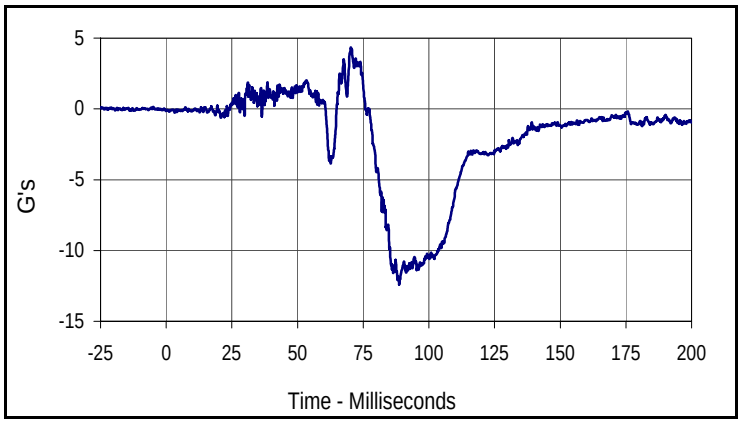
Curve Description			
Driver Left Femur Force Z			
CURNO	Type	SAE Class	Units
007	FIL	600	Newtons
Max	Time	Min	Time
1255.0	45.0	-388.3	56.8



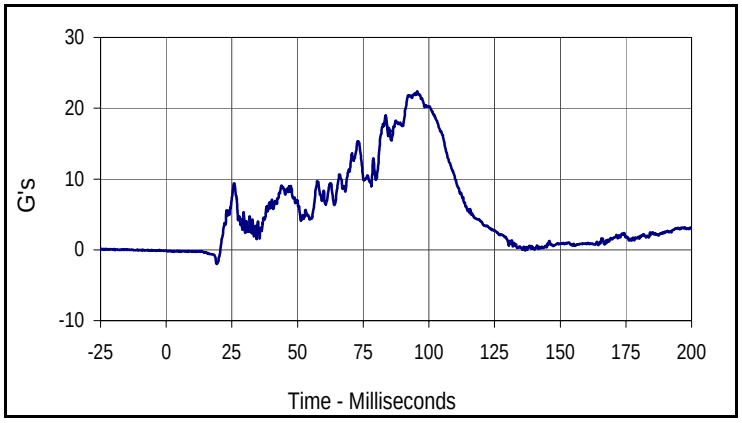
Curve Description			
Driver Right Femur Force Z			
CURNO	Type	SAE Class	Units
008	FIL	600	Newtons
Max	Time	Min	Time
1052.1	44.4	-667.0	64.4



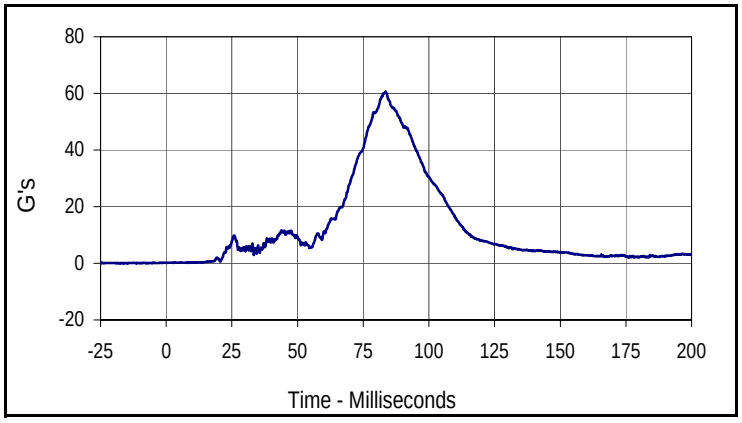
Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
009	FIL	1000	G's
Max	Time	Min	Time
0.5	18.7	-57.1	82.9



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
010	FIL	1000	G's
Max	Time	Min	Time
4.3	70.3	-12.4	88.7

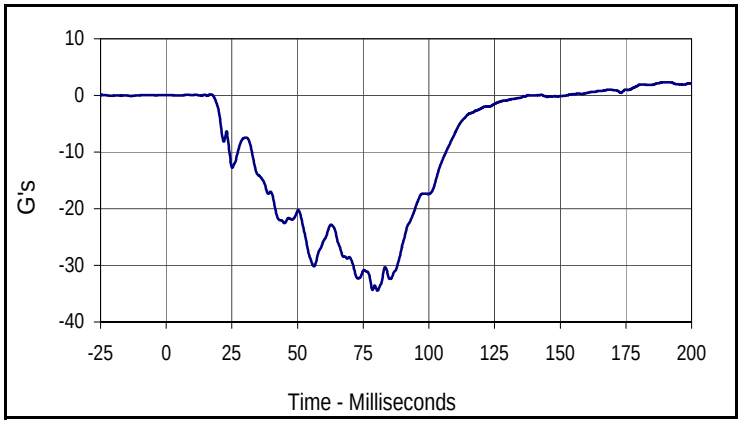


Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
011	FIL	1000	G's
Max	Time	Min	Time
22.4	95.5	-2.0	19.3

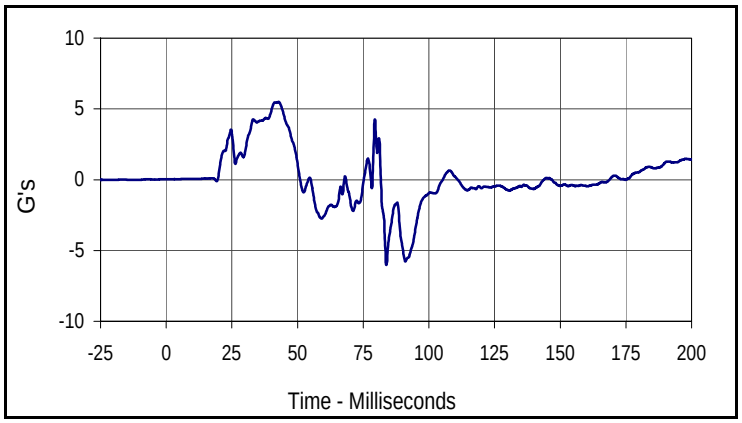


Curve Description			
Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
009	RES	1000	G's
Max	Time	Min	Time
60.6	83.6	0.1	0.1

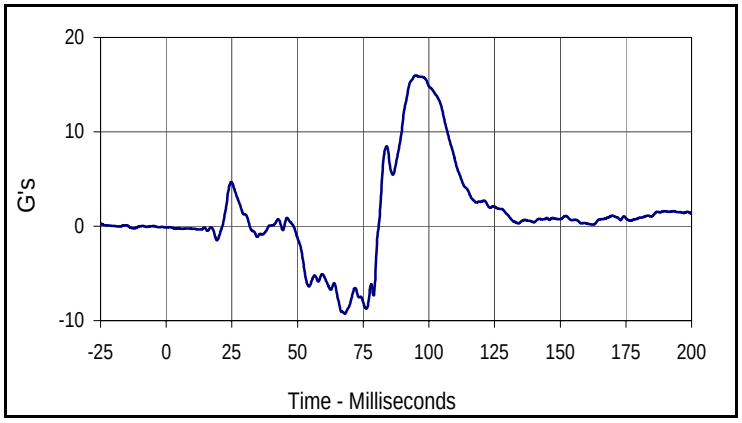
Test Vehicle:	2009 Ford F-150 XLT SuperCab 2-Door Truck	Test Date:	12/19/08
Test Program:	NHTSA 35mph NCAP	NHTSA No.:	M90206



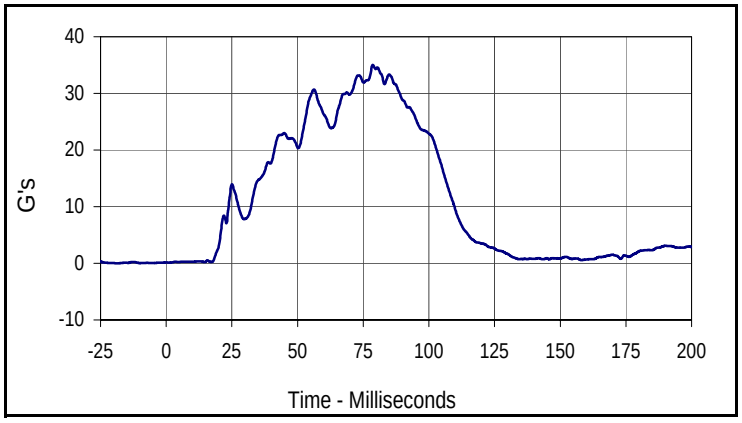
Curve Description			
Passenger Chest Primary X			
CURNO	Type	SAE Class	Units
012	FIL	180	G's
Max	Time	Min	Time
2.3	189.5	-34.5	80.4



Curve Description			
Passenger Chest Primary Y			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
5.5	42.8	-6.0	83.8

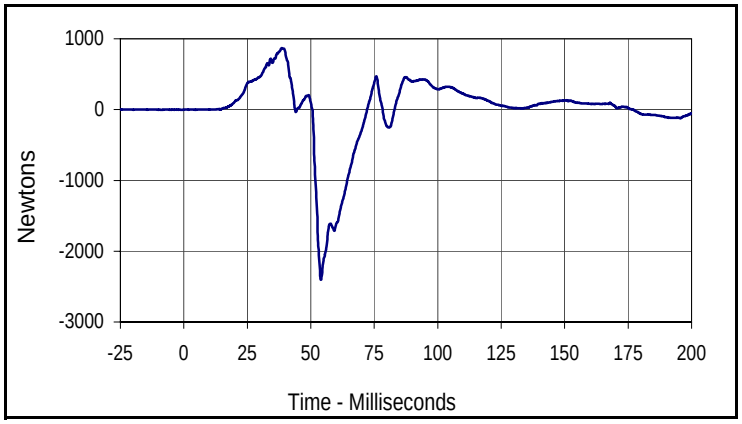


Curve Description			
Passenger Chest Primary Z			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
16.0	94.9	-9.3	68.0

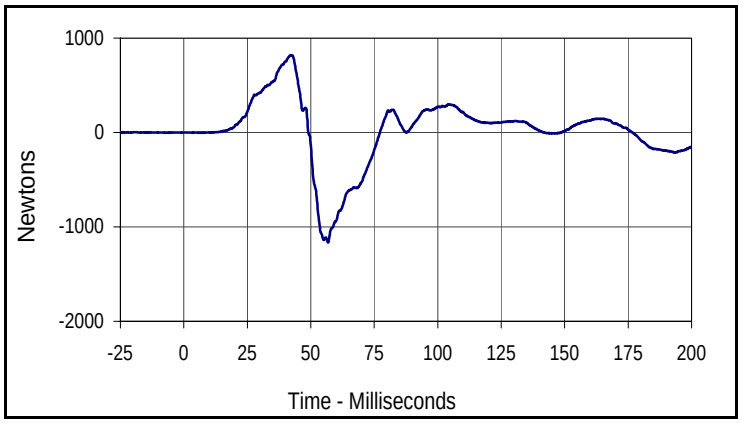


Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
012	RES	180	G's
Max	Time	Min	Time
35.0	78.6	0.1	1.1

Test Vehicle:	2009 Ford F-150 XLT SuperCab 2-Door Truck	Test Date:	12/19/08
Test Program:	NHTSA 35mph NCAP	NHTSA No.:	M90206



Curve Description			
Passenger Left Femur Force Z			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
869.3	38.6	-2402.2	54.0

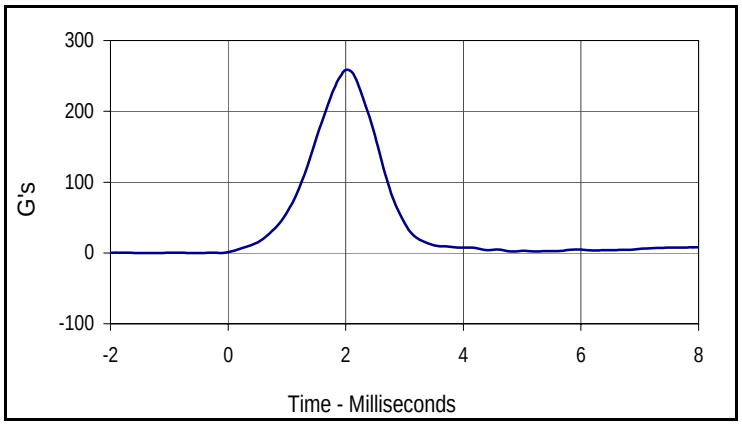


Curve Description			
Passenger Right Femur Force Z			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
819.7	42.1	-1164.4	56.8

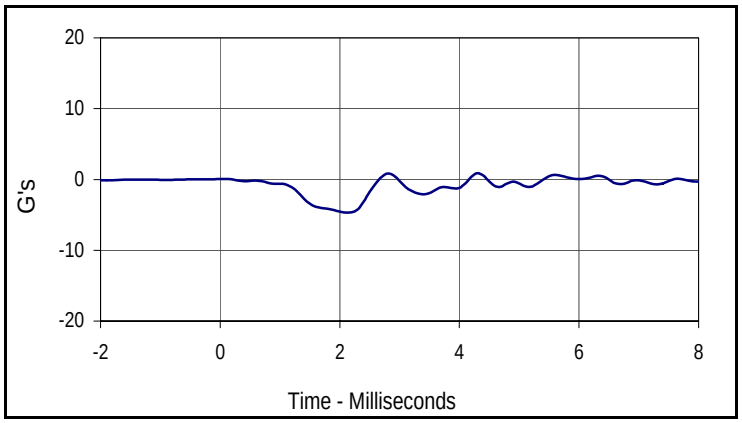
APPENDIX C
DUMMY CALIBRATION DATA

Test Program:	Hybrid III 50th Percentile Male Head Drop Test	Test Date:	12/11/08
ATD Serial No.:	035	Test I.D.:	HD12D

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	225.0 to 275.0	258.5	Pass
Peak Lateral Acceleration	G's	≤15.0	4.7	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
		Overall Test Results		Pass



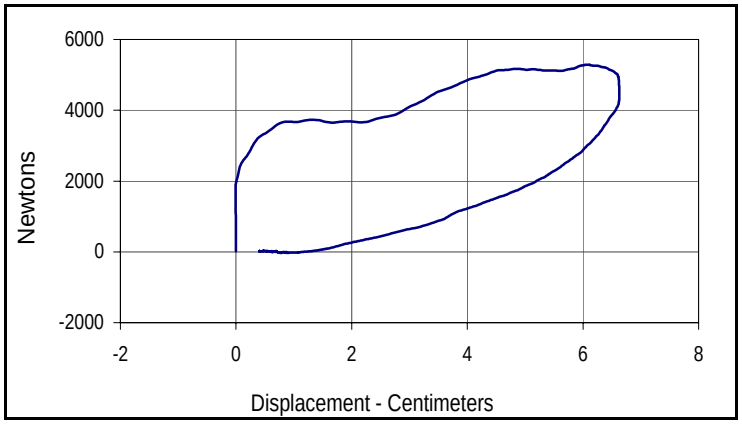
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
258.5	2.0	0.0	-1.2



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.9	4.3	-4.7	2.1

Test Program:	Hybrid III 50th Percentile Male Thorax Impact Test	Test Date:	12/11/08
ATD Serial No.:	35	Test I.D.:	CH12E

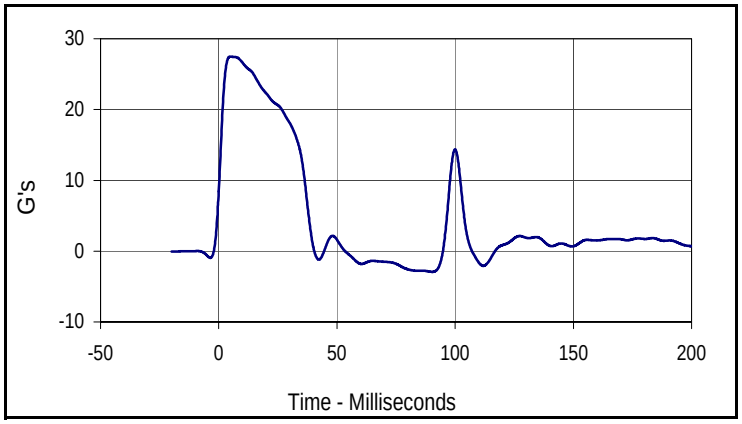
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.61	Pass
Peak Probe Force	Newtons	5159 to 5893	5288	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.63	Pass
Internal Hysterysis	%	69 to 85	73.8	Pass
		Overall Test Results		Pass



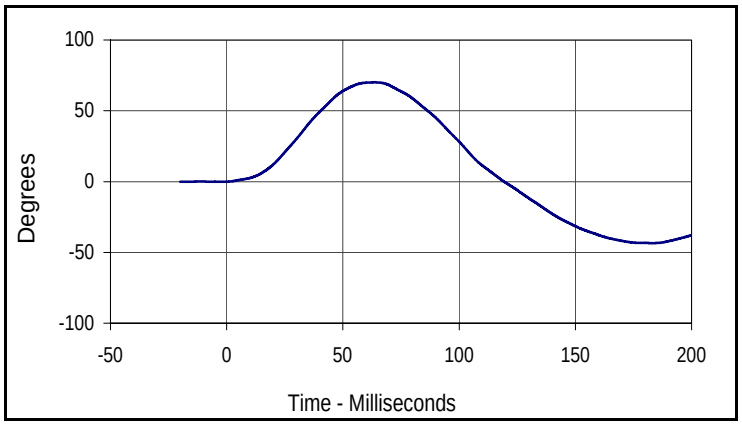
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysterysis
001	FIL	180	73.8
Peak Probe Force		Peak Chest Deflection	
5288		6.63	

Test Program:	Hybrid III 50th Percentile Male Neck Flexion Test	Test Date:	12/11/08
ATD Serial No.:	035	Test I.D.:	NF12A

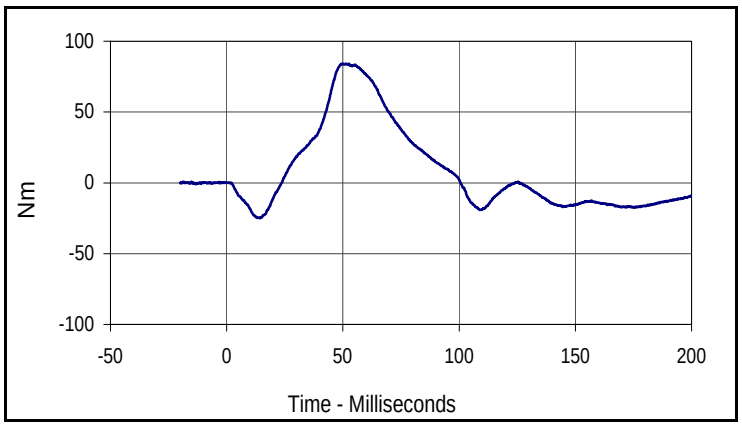
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.01	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	26.6	Pass
	20 Msec.	G's	17.6 to 22.6	22.3	Pass
	30 Msec.	G's	12.5 to 18.5	18.1	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	38.1	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	70.1	Pass
	Time	Msec.	57.0 to 64.0	63.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	119.3	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	84.2	Pass
	Time	Msec.	47.0 to 58.0	51.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	100.6	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
27.5	4.9	-2.9	90.4



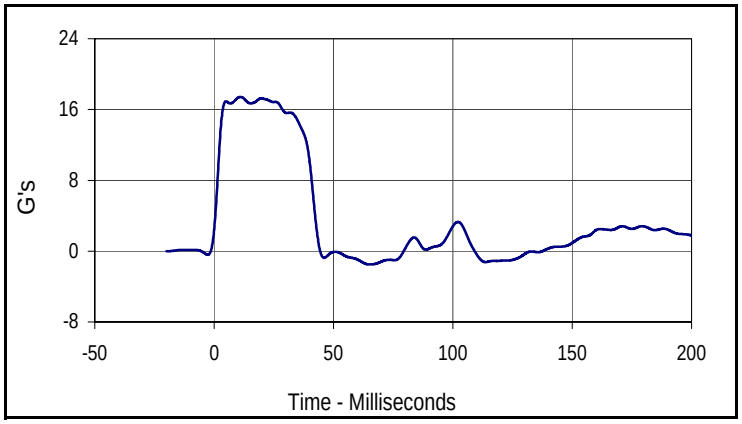
Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
70.1	63.7	-43.4	183.4



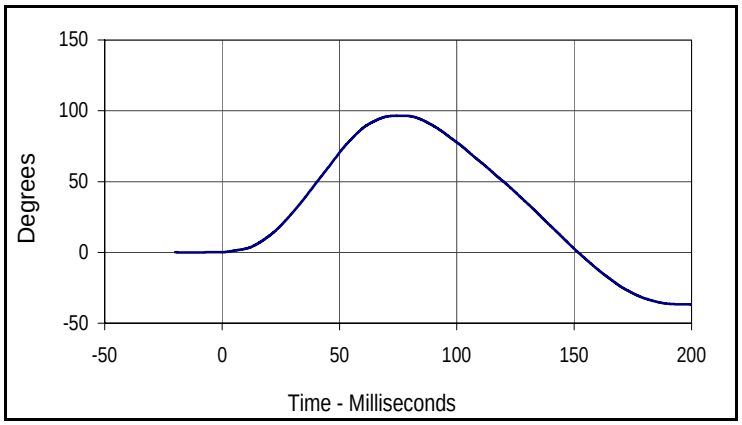
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
84.2	51.4	-24.9	14.1

Test Program:	Hybrid III 50th Percentile Male Neck Extension Test	Test Date:	12/11/08
ATD Serial No.:	035	Test I.D.:	NE12A

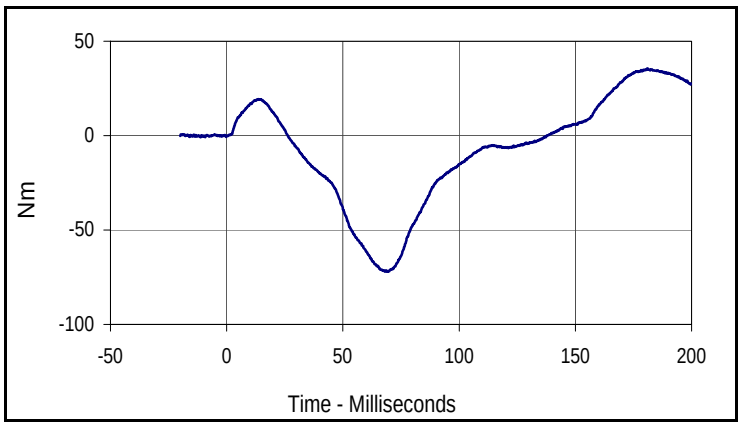
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	20.8	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.16	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.3	Pass
	20 Msec.	G's	14.0 to 19.0	17.3	Pass
	30 Msec.	G's	11.0 to 16.0	15.6	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	42.0	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	96.5	Pass
	Time	Msec.	72.0 to 82.0	76.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	151.7	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-72.0	Pass
	Time	Msec.	65.0 to 79.0	68.1	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	137.8	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
17.4	11.0	-1.5	65.2



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
96.5	76.8	-36.7	196.4



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
35.5	181.0	-72.0	68.1

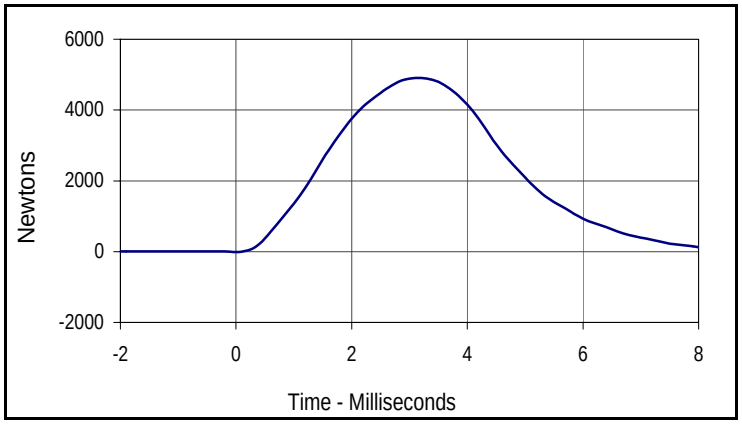
Test Program:	Hybrid III 50th Percentile Male Knee Impact Test	Test Date:	12/11/08
ATD Serial No.:	035	Test I.D.:	LK12D , RK12D

Left Knee

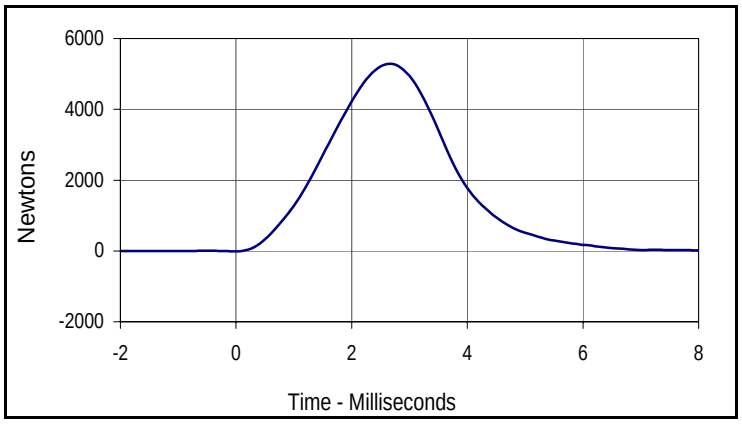
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	4908	Pass
		Overall Test Results		Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5286	Pass
		Overall Test Results		Pass



Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4908.3	3.1	-8.9	9.6



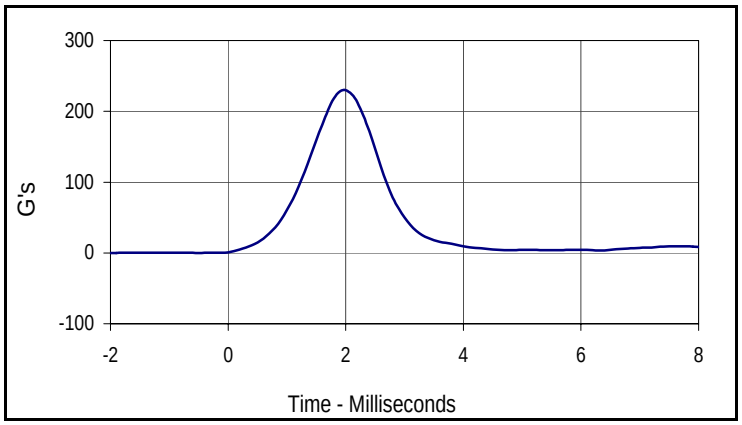
Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5286.5	2.7	-33.5	10.0

Test Program:	Hybrid III 50th Percentile Male External Measurements	Test Date:	12/11/08
ATD Serial No.:	035	Test I.D.:	N/A

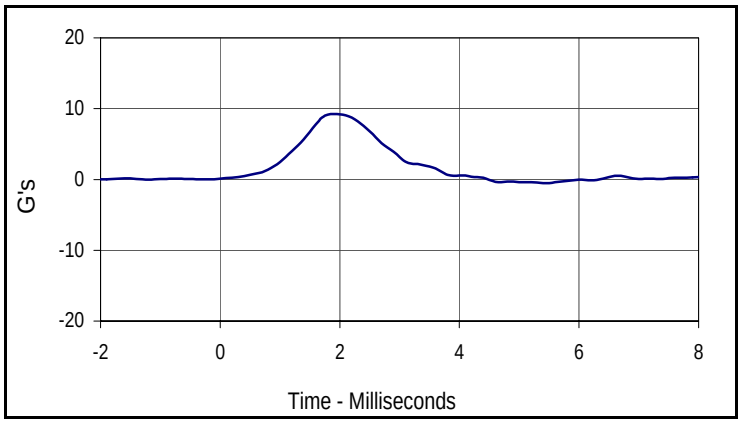
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	299	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	330	Pass
J - Elbow rest height	mm	190 to 211	205	Pass
K - Buttock to knee length	mm	579 to 604	594	Pass
L - Poplipteal length	mm	429 to 455	441	Pass
M - Knee pivot height	mm	485 to 500	496	Pass
N - Buttock poplipteal length	mm	452 to 477	473	Pass
O - Chest depth	mm	213 to 229	213	Pass
P - Foot length	mm	251 to 267	253	Pass
V - Shoulder breadth	mm	422 to 437	425	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	975	Pass
Z - Waist circumference	mm	836 to 866	859	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	229	Pass
		Overall Test Results		Pass

Test Program:	Hybrid III 50th Percentile Male Head Drop Test	Test Date:	12/11/08
ATD Serial No.:	035	Test I.D.:	HD12G

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	229.8	Pass
Peak Lateral Acceleration	G's	≤15.0	9.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
		Overall Test Results		Pass



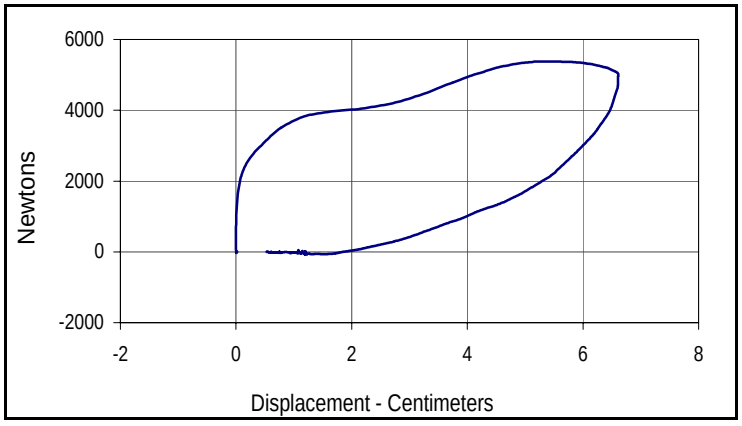
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
229.8	2.0	0.0	-2.0



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
9.2	1.9	-0.5	5.4

Test Program:	Hybrid III 50th Percentile Male Thorax Impact Test	Test Date:	12/11/08
ATD Serial No.:	35	Test I.D.:	CH12E

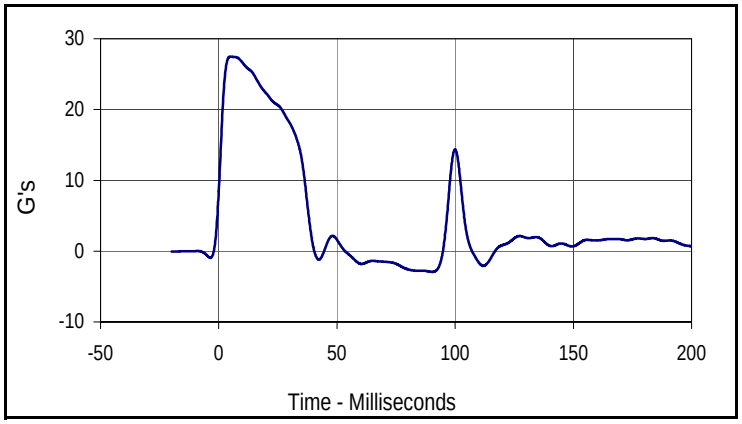
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.61	Pass
Peak Probe Force	Newtons	5159 to 5893	5380	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.61	Pass
Internal Hysterysis	%	69 to 85	76.9	Pass
		Overall Test Results		Pass



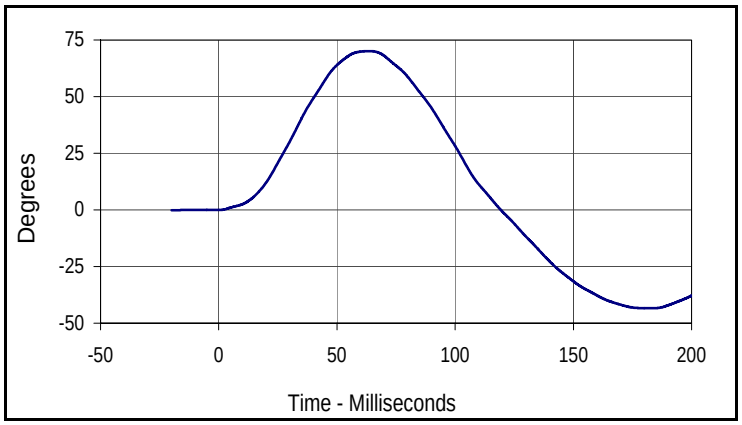
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysterysis
001	FIL	180	76.9
Peak Probe Force		Peak Chest Deflection	
5380		6.61	

Test Program:	Hybrid III 50th Percentile Male Neck Flexion Test	Test Date:	12/11/08
ATD Serial No.:	035	Test I.D.:	NF12A

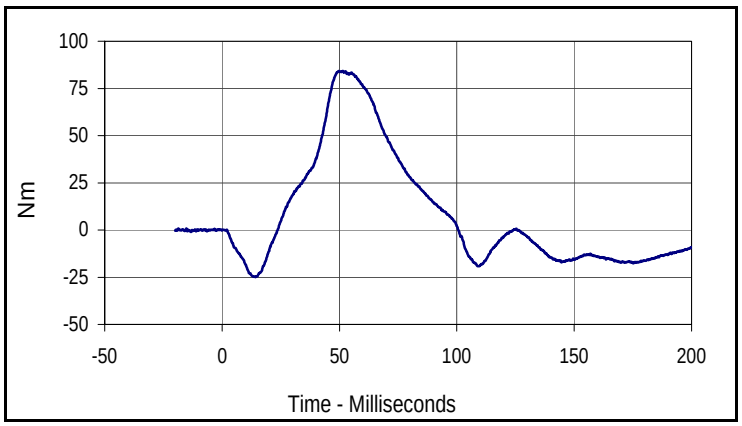
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.01	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	26.6	Pass
	20 Msec.	G's	17.6 to 22.6	22.3	Pass
	30 Msec.	G's	12.5 to 18.5	18.1	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	38.1	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	70.1	Pass
	Time	Msec.	57.0 to 64.0	63.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	119.3	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	84.2	Pass
	Time	Msec.	47.0 to 58.0	51.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	100.6	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
27.5	4.9	-2.9	90.4



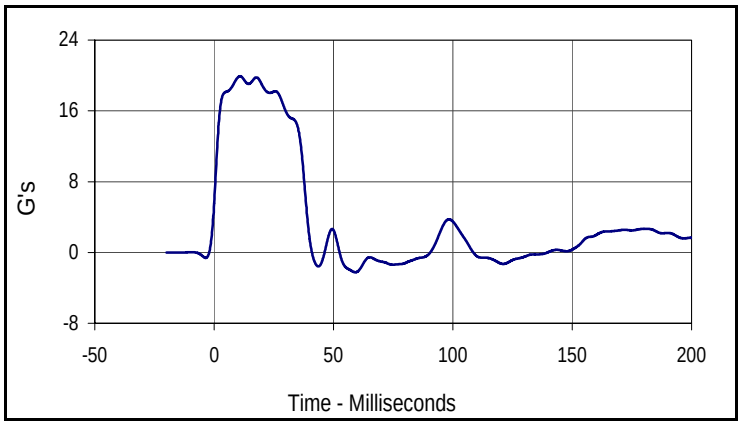
Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
70.1	63.7	-43.4	183.4



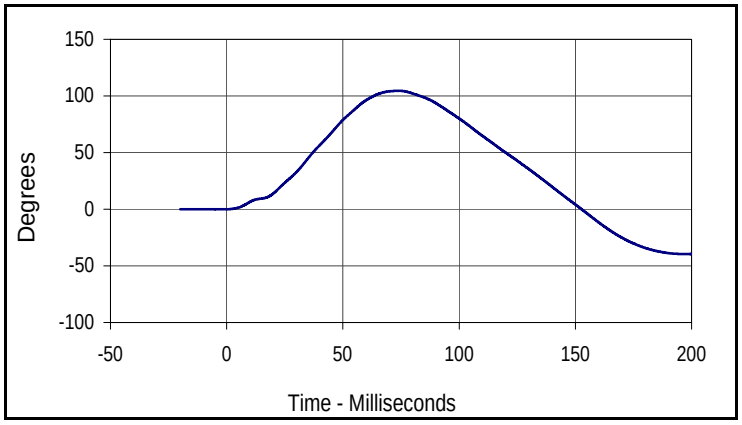
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
84.2	51.4	-24.9	14.1

Test Program:	Hybrid III 50th Percentile Male Neck Extension Test	Test Date:	12/11/08
ATD Serial No.:	034	Test I.D.:	NE12G

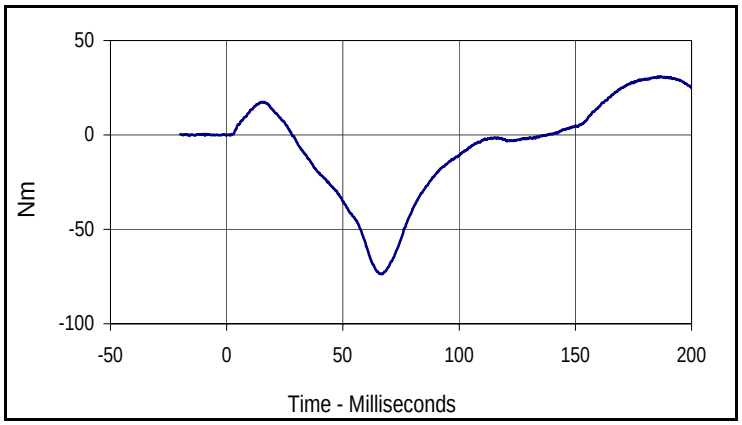
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.11	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.8	Pass
	20 Msec.	G's	14.0 to 19.0	19.0	Pass
	30 Msec.	G's	11.0 to 16.0	16.0	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	16.0	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	38.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	104.5	Pass
	Time	Msec.	72.0 to 82.0	73.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	152.7	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-73.8	Pass
	Time	Msec.	65.0 to 79.0	66.8	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	137.7	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
19.9	10.9	-2.2	59.2



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
104.5	73.9	-39.6	197.4



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
31.1	185.5	-73.8	66.8

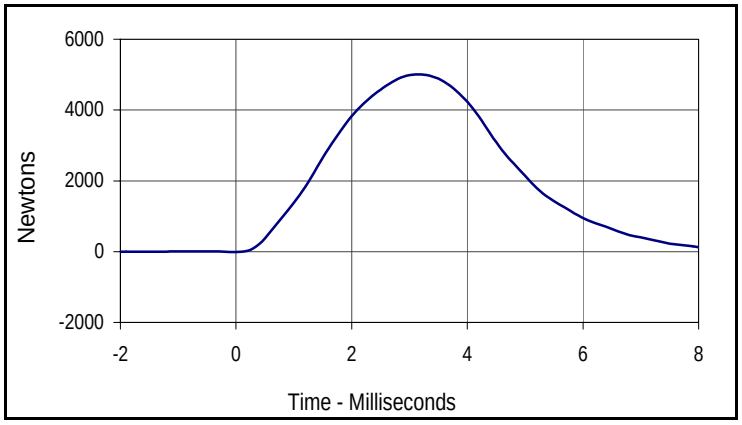
Test Program:	Hybrid III 50th Percentile Male Knee Impact Test	Test Date:	12/11/08
ATD Serial No.:	034	Test I.D.:	LK12G , RK12G

Left Knee

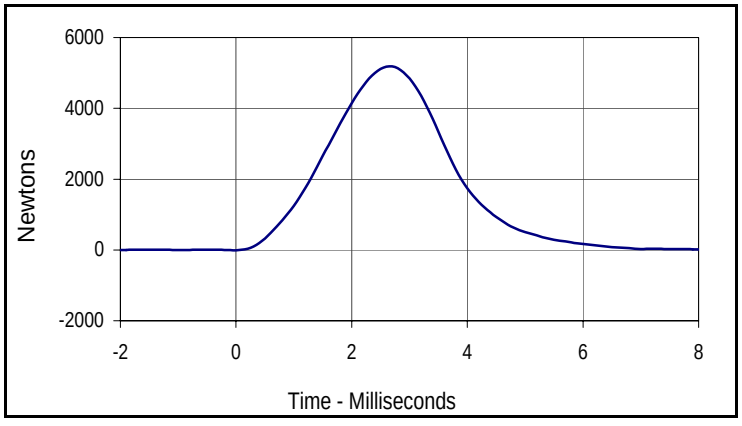
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5003	Pass
		Overall Test Results		Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5183	Pass
		Overall Test Results		Pass



Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5003.4	3.1	-11.9	9.6



Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5182.8	2.7	-30.9	10.0

Test Program:	Hybrid III 50th Percentile Male External Measurements	Test Date:	12/11/08
ATD Serial No.:	034	Test I.D.:	N/A

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
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	299	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	330	Pass
J - Elbow rest height	mm	190 to 211	205	Pass
K - Buttock to knee length	mm	579 to 604	593	Pass
L - Poplipteal length	mm	429 to 455	448	Pass
M - Knee pivot height	mm	485 to 500	492	Pass
N - Buttock poplipteal length	mm	452 to 477	473	Pass
O - Chest depth	mm	213 to 229	213	Pass
P - Foot length	mm	251 to 267	253	Pass
V - Shoulder breadth	mm	422 to 437	425	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	998	Pass
Z - Waist circumference	mm	836 to 866	847	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
		Overall Test Results		Pass

Test Program:	Dummy Damage Checklist	Test Date:	12/11/08
ATD Serial No.:	035	Test I.D.:	N/A

GENERAL	DAMAGED	OK
Outer skin on entire dummy		X
Head ballast secure		X
Gashes, rips, general appearance, etc.		X
Neck-Broken or cracks in rubber		X
Check that upper neck bracket is firmly attached to lwr neck bracket		X
Three rubber bumpers in place		X
Spine- Broken or cracks in rubber		X
Check for looseness at the condyle joint		X
Nodding blocks- cracked or out of position		X
Ribs- Check all ribs and rib supports for damage (bent or broken)		X
Check damping material or separation or cracks		X
OTHER		
CHEST DISPLACEMENT ASSEMBLY		
Bent shaft		X
Slider arm riding correctly, in track		X
TRANSDUCER LEADS		
Torn cables		X
ACCELEROMETER MOUNTINGS		
Check for secure mounting		X
KNEES		
Check outer skin, insert and casting (without removing insert)		X
Knee sliders - Wires intact		X
Knee sliders- Rubber returned to "at rest position"		X
LIMBS		
Check for normal movement and adjustment		X
PELVIS		
Inspect for breakage, especially at iliac crest		X

Comments on repair or replacement parts:

Test Program:	Dummy Damage Checklist	Test Date:	12/11/08
ATD Serial No.:	034	Test I.D.:	N/A

GENERAL	DAMAGED	OK
Outer skin on entire dummy		X
Head ballast secure		X
Gashes, rips, general appearance, etc.		X
Neck-Broken or cracks in rubber		X
Check that upper neck bracket is firmly attached to lwr neck bracket		X
Three rubber bumpers in place		X
Spine- Broken or cracks in rubber		X
Check for looseness at the condyle joint		X
Nodding blocks- cracked or out of position		X
Ribs- Check all ribs and rib supports for damage (bent or broken)		X
Check damping material or separation or cracks		X
OTHER		
CHEST DISPLACEMENT ASSEMBLY		
Bent shaft		X
Slider arm riding correctly, in track		X
TRANSDUCER LEADS		
Torn cables		X
ACCELEROMETER MOUNTINGS		
Check for secure mounting		X
KNEES		
Check outer skin, insert and casting (without removing insert)		X
Knee sliders - Wires intact		X
Knee sliders- Rubber returned to "at rest position"		X
LIMBS		
Check for normal movement and adjustment		X
PELVIS		
Inspect for breakage, especially at iliac crest		X

Comments on repair or replacement parts: