

REPORT NUMBER TR-P26001-11-NC

**NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST**

**GENERAL MOTORS CORPORATION
2006 CHEVROLET COLORADO
2-DOOR PICKUP**

NHTSA NUMBER: M60107

**PREPARED BY:
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FEBRUARY 9, 2006

FINAL REPORT

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16. Abstract A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2006 Chevrolet Colorado 2-Door Pickup at Karco Engineering, LLC on 2/9/06. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 56.17 km/h. The ambient temperature at the barrier face at the time of impact is 19 degrees Celcius. The vehicle's maximum post-test static crush is 485 mm at the vehicle's centerline. The test vehicle is equipped with a 3-point continuous belt system and second generation supplemental airbags in both front outboard seating 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	375.2	564.3
Max. Chest Accel. (3 msec Clip)		G's	60	47.1	48.0
Left Femur Force		Newtons	10008	-2984.0	-2742.7
Right Femur Force		Newtons	10008	-2072.0	-3113.8
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) 2006 Chevrolet Colorado 2-Door Pickup NHTSA No. M60107				18. Distribution of Statement Copies of this report available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, D.C. 20590	
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TABLE OF CONTENTS

Section	Description	Page
1	Purpose and Summary of Test M60107	1
2	Occupant and Vehicle Information/Data Sheets	3

Data Sheet	Description	Page
1	Crash Test Summary	4
2	General Test and Vehicle Parameter Data	5
3	Post-Test Impact Data	8
4	Test Vehicle Information	9
5	Dummy Positioning in Vehicle	11
6	Seat Belt Positioning Data	13
7	Vehicle Accelerometer Location	14
8	Seat Belt Assessment Test Data	15
9	Summary of FMVSS 212 Data	16
10	Windshield Zone Intrusion FMVSS 219 Data (Partial)	17
11	FMVSS 301 Fuel System Integrity Post-Impact Data	18
12	FMVSS 301 Static Rollover Data	19
13	Vehicle Measurements	21
14	Camera Locations	24
15	Photographic Reference Target Locations	25
16	Vehicle Intrusion Measurements	26
17	Fixed Barrier Load Cell Locations	31
18	Accident Investigation Division Data	32
19	Dummy/Vehicle Temperature Stabilization	33

Appendix	Description	Appendix
A	Photographs	A
B	Data Plots	B
C	Dummy Calibration Data	C

SECTION 1

PURPOSE AND SUMMARY OF TEST M60107

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. DTNH22-01-D-02005. 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 2006 Chevrolet Colorado 2-Door Pickup at a velocity of 56.17 km/h. The test was performed at Karco Engineering, LLC on February 9, 2006.

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 also placed on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. Also, shoulder belt spool-off was measured for the driver and passenger dummy. The driver (position 1) ATD (Serial No. 35) and the right-front passenger (position 2) ATD (Serial No. 34) were calibrated one test 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 percent windshield retention and there was no intrusion into the protected zone of the windshield during the impact event. 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 485 mm at the vehicle's centerline and both the driver and the 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 and the abdomen had no contact. Both knees contacted the knee bolster.

The passenger's visible contact points were as follows: The passenger ATD's head, chest and abdomen contacted the airbag. Both knees contacted the glove box.

Occupant injury data is contained in table below.

OCCUPANT DATA SUMMARY					
ATD Position	HIC 36	Clip (g)	Chest Defl. (mm)	Left Femur (N)	Right Femur (N)
Driver	375.2	47.1	-45.8	-2984.0	-2072.0
Passenger	564.3	48.0	-28.7	-2742.7	-3113.8

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

SECTION 2
OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup

NHTSA No.: M60107

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06

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	miles/hr	km/hr	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(tf - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

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

DATA SHEET NO. 1
CRASH TEST SUMMARY

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
Test Date: 2/9/06

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.17
Test Weight	kg	1951
Impact Angle	degrees	0
Average Rebound	mm	280
Maximum Static Crush	mm	485

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door opening	Remained closed and latched, opened w/o tools	Remained closed and latched, opened w/o tools
Rear Door Opening	Remained closed and latched, opened w/o tools	Remained closed and latched, opened w/o tools
Seat Track Shift (mm)	None	None
Seat Back Failure	No	No

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type/ Serial No.	50% Male Hybrid III No. 35	50% Male Hybrid III No. 34
Head Contact	Airbag	Airbag
Chest Contact	Airbag	Airbag
Abdomen Contact	None	Airbag
Left Knee Contact	Knee Bolster	Glove Box
Right Knee Contact	Knee Bolster	Glove Box

MOVIE COVERAGE

Cameras	Standard	Additional
High Speed	14	
Real Time	1	1
Total	15	1

DATA CHANNELS

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

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup

NHTSA No.: M60107

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M60107
Make	Chevrolet
Model	Colorado
Body Style	2-Door Pickup
Vin No.	1GCDT146268197907
Color	White
Delivery Date	1/31/2006
Odometer (Miles)	57.0
Dealer	Crest
Transmission	5-Speed Manual
Final Drive	4WD
Type/No. Cyl.	Inline 5
Engine Disp. (L)	3.5
Engine Placement	Longitudinal
Roof Rack	No
Sunroof/T-Top	Np
Tinted Glass	Yes
Traction Control	No
Power Brakes	Yes
Front Disc	Yes
Rear Disc	No

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

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

No

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors Corporation
Date of Manufacture	Oct-05

GWR (kg)	2336
GAWR Front (kg)	1249
GAWR Rear (kg)	1314

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

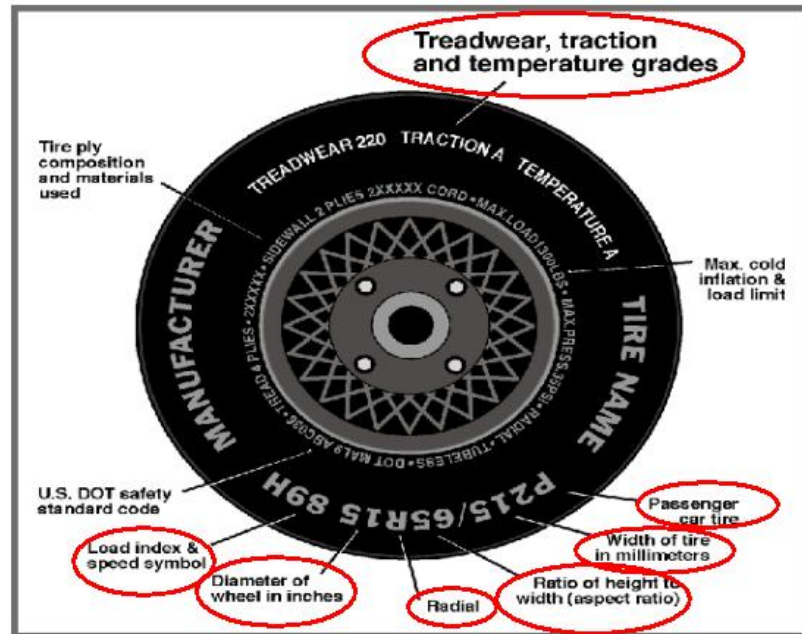
Measured Parameter	Front	Rear	Third	Total
Type of Seats	Split Bench			
Number of Occupants	3			3
Capacity Weight (VCW) (kg)				621
Cargo Weight (RCLW) (kg)				136

DATA SHEET NO. 2...(CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06

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



TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	300	300
Cold Pressure (kpa)	220	220
Recommended Tire Size	P235/75R15	P235/75R15
Tire Size on Vehicle	P235/75R15	P235/75R15
Tire Manufacturer	General	General
Treadwear	520	520
Traction	A	A
Temperature Grades	B	B
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester + 2 Steel	2 Polyester + 2 Steel
Load Index/Speed Symbol	105S	105S
Tire Material	Polyester + Steel	Polyester + Steel
DOT Safety Code Right	P5HL BLL	P5HL BLL
DOT Safety Code Left	P5HL BLL	P5HL BLL

DATA SHEET NO. 2...(CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	507	349	856	554	450	1004
Right	kg	474	341	815	505	442	947
Ratio	%	58.7	41.3	100	54.3	45.7	100
Totals	kg	981	690	1671	1059	892	1951

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1671
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	136
Calculated Vehicle Target Wt. (TVTW)	kg	1960

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	975	985	1005	1005	1165
As Tested	mm	965	970	950	965	1289

Vehicle Wheel Base (mm) 2820

Weight of Ballast Secured in cargo area (kg) 40

Weight of Items Removed (kg) 7

Vehicle Components Removed Jack and jack tools, floor mats

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

FUEL SYSTEM DATA

Fuel System Capacity From Owners Manual (L) 73.81

Actual Test Volume with entire fuel System Filled (L) 68.62

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 ignition switch "On" & engine "OFF" Yes

Fuel System Particulars: Electric fuel pump. Activated when electrical system is activated
Fuel pump will run for 3 seconds when ignition is in "on" position.

DATA SHEET NO. 3
POST-TEST IMPACT DATA

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup

NHTSA No.: M60107

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No.1 Velocity (Primary)	km/h	55.51 to 57.12	56.17
Trap No.2 Velocity (Redun.)	km/h	55.51 to 57.12	56.23

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4674	4296	-378
Center	mm	4884	4399	-485
Right Side	mm	4674	4324	-350

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	310
Center	mm	260
Right Side	mm	271
Average	mm	280

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

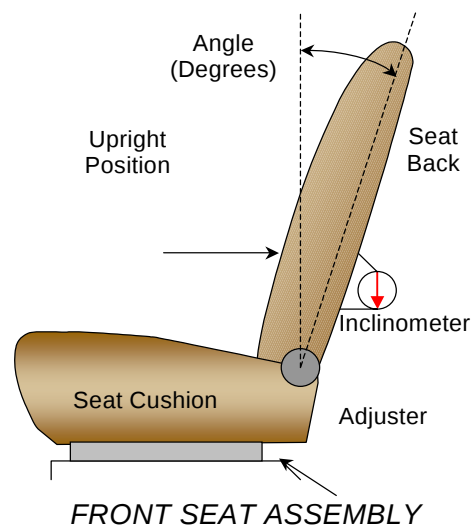
NHTSA No.: M60107
 Test Date: 2/9/06

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 of the seat back using a digital inclinometer.

SEAT BACK ANGLES

	Deg.
Driver w/seated Dummy	22.5
Passenger w/seated Dummy	22.5

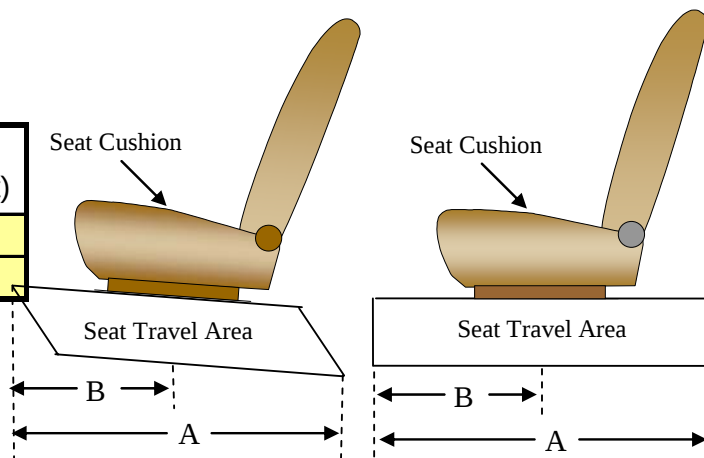


SEAT FORE/AFT POSITIONS

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 the vertical adjustment at the lowest position obtainable for the driver and passenger.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel (Detent)	Placed in Position (Detent)
Driver Seat	24	13
Passenger Seat	24	13



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	1
Passenger Seat	4	1

DATA SHEET NO. 4...(CONTINUED)
TEST VEHICLE INFORMATION

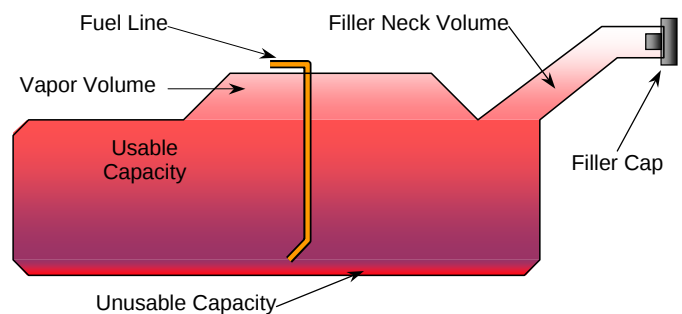
Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	73.81
Usable Capacity of "Optional" Tank	
Usable Capacity used for FMVSS 301	67.90 to 39.38
Actual Amount of Solvent used	68.62

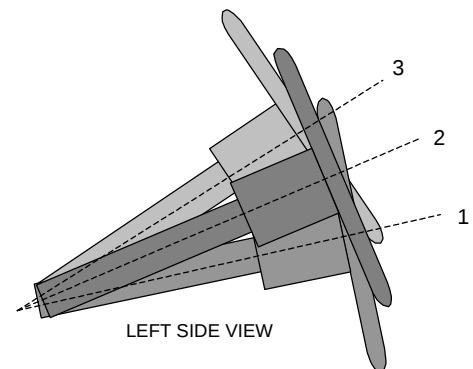
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies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



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

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



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONS

	Degrees	Fore/Aft Position (mm)
Lowermost position No. 1	17.4	
Geometric center position No. 2	20.3	
Uppermost position No. 3	28.3	

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
Test Date: 2/9/06

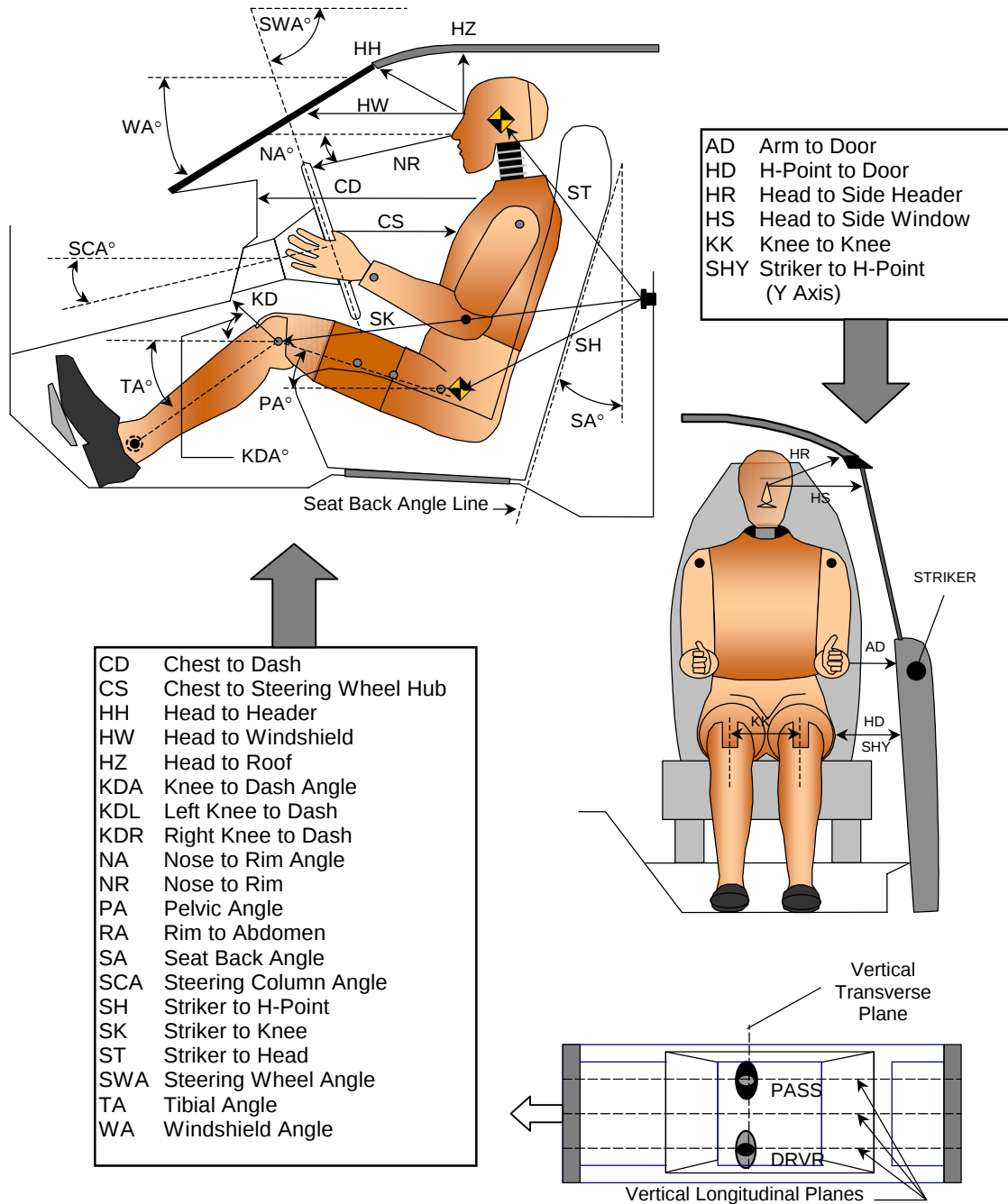
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (deg)	Length (mm)	Angle (deg)
WA	Windshield Angle		34.4		
SWA	Steering Wheel Angle		69.7		
SCA	Steering Column Angle		20.3		
SA	Seat Back Angle		22.5		22.5
HZ	Head to Roof (Z)	215	90.0	200	90.0
HH	Head to Header	400		400	
HW	Head to Windshield	610		610	
HR	Head to Side Header (Y)	300		290	
NR	Nose to Rim	385	16.7		
CD	Chest to Dash	600		538	
CS	Chest to Steering Hub	315			
RA	Rim to Abdomen	225			
KDL	Left Knee to Dash	222	6.8	225	
KDR	Right Knee to Dash	195		220	5.0
PA	Pelvic Angle		23.0		23.0
TA	Tibia Angle		48.5		49.4
KK	Knee to Knee (Y)	280		280	
SK	Striker to Knee	667	2.5	685	1.0
ST	Striker to Head	606	73.0	605	72.0
SH	Striker to H-Point	255	16.0	280	17.0
SHY	Striker to H-Point (Y)	220		200	
HS	Head to Side Window	350		350	
HD	H-Point to Door (Y)	130		150	
AD	Arm to Door (Y)	110		120	

DATA SHEET NO. 5...(CONTINUED) **DUMMY POSITIONING IN VEHICLE**

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06



DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

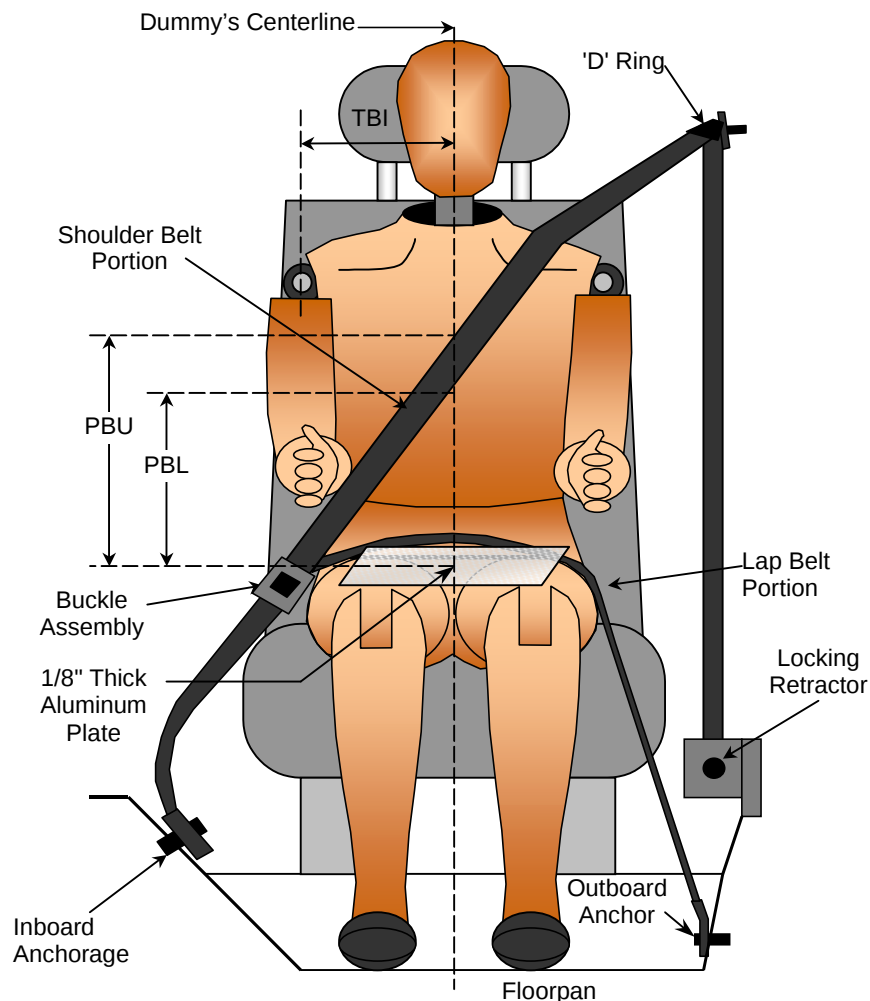
DATA SHEET NO. 6 **SEAT BELT POSITIONING DATA**

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup

NHTSA No.: M60107

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06



SEAT BELT POSITIONING MEASUREMENTS

Measured Parameter	Units	Driver	Passenger
TBI - Dummy C/L to Lap/Shoulder Belt Intersect	mm	200	200
PBU - Top Surface of reference to belt upper edge	mm	280	280
PBL - Top Surface of reference to belt lower edge	mm	207	204
Lap Belt Tension	Newtons	10	10
Shoulder Belt Tension	N/A	Retractor	Retractor

DATA SHEET NO. 7
VEHICLE ACCELEROMETER LOCATION

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup

NHTSA No.: M60107

Test Program: 2006 NHTSA 35mph NCAP

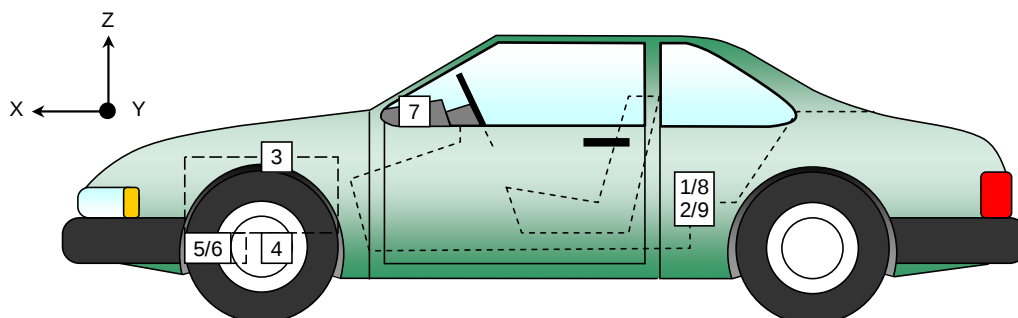
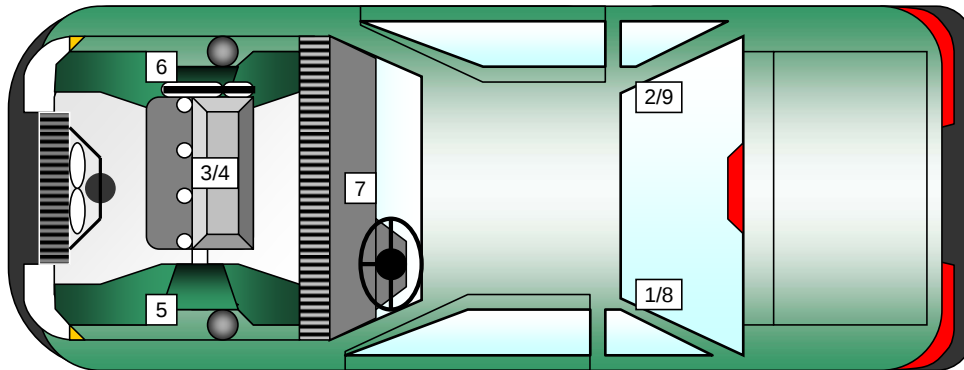
Test Date: 2/9/06

VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Left Rear X-Member	2480	-693	544
2	Right Rear X-Member	2480	693	544
3	Engine Top	4026	110	1161
4	Engine Bottom	3373	0	256
5	Left Brake Caliper	3881	-725	350
6	Right Brake Caliper	3881	725	350
7	Instrument Panel			
8	Left Rear X-Member (Z-Axis)	2480	-693	544
9	Right Rear X-Member (Z-Axis)	2480	693	544

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

1.) Not installed



DATA SHEET NO. 8
SEAT BELT ASSESSMENT TEST DATA

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
Retractor Reel to "D" ring	mm	820	820
Shoulder Belt length as measured on ATD	mm	900	880
Lap Belt length as measured on ATD	mm	860	860
Remainder of belt on reel	mm	640	700
Total belt length for continuous webbing systems	mm	3220	3260

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	10.0	35.0
As determined electronically	mm	162.9	281.6

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: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06

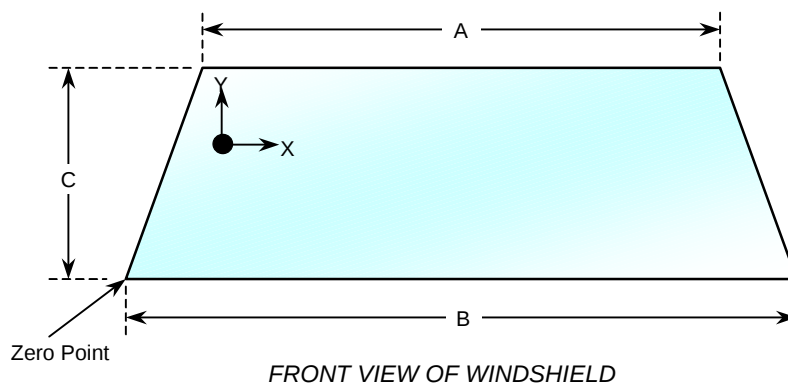
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

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: 21.1 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test(mm)	Post-Test(mm)	% of Retention
Left Side	2033	2033	100
Right Side	2033	2033	100
Total	4066	4066	100



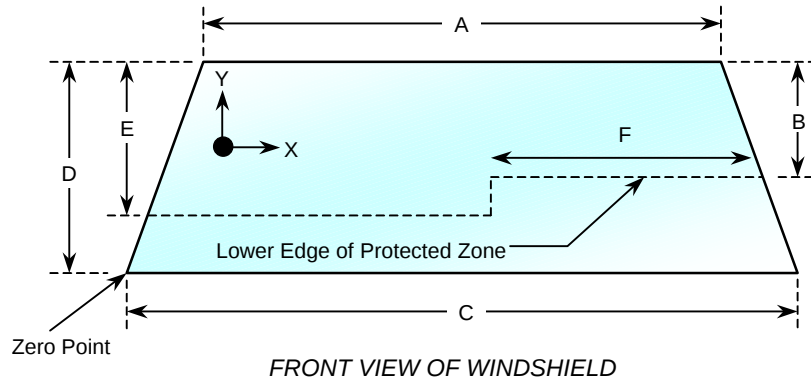
WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1200	26
B	mm	1445	10
C-Left	mm	710	15
C-Right	mm	710	15

DATA SHEET NO. 10
WINDSHIELD ZONE INTRUSION FMVSS 219 DATA (PARTIAL)

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06



**WINDSHIELD AND
PROTECTED ZONE**

Item	Units	Value
A	mm	1200
B	mm	395
C	mm	1445
D	mm	710
E	mm	452
F	mm	545

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: 2006 Chevrolet Colorado 2-Door Pickup NHTSA No.: M60107
Test Program: 2006 NHTSA 35mph NCAP Test Date: 2/9/06

Test Time: 11:43 AM Temperature: 19.0 Deg. C.

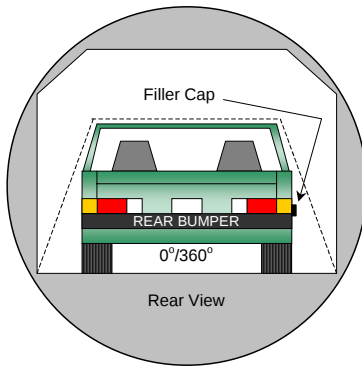
STODDARD SOLVENT SPILLAGE MEASUREMENTS

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

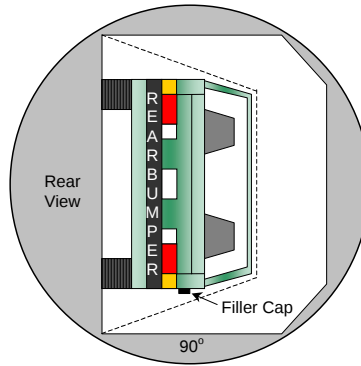
DATA SHEET NO. 12
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

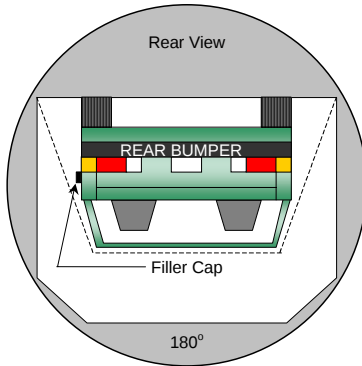
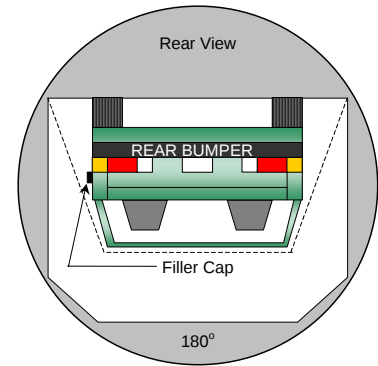
NHTSA No.: M60107
Test Date: 2/9/06



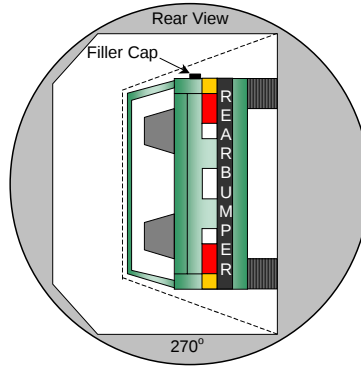
0° to 90°



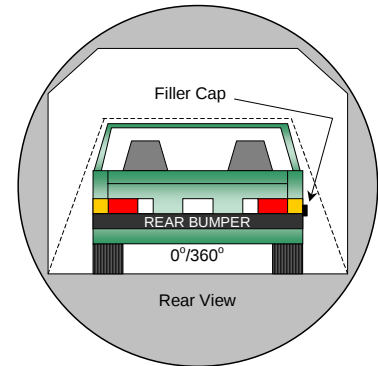
90° to 180°



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. No solvent leakage occurred during rollover.

DATA SHEET NO. 12...(CONTINUED)
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup

NHTSA No.: M60107

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	80	300	380
90° to 180°	81	300	381
180° to 270°	78	300	378
270° to 360°	80	300	380

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

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: 2006 Chevrolet Colorado 2-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
Test Date: 2/9/06

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length of vehicle at centerline	mm	4884	4399	-485
2	RSOV to front of engine	mm	4339	4106	-233
3	RSOV to firewall centerline	mm	3709	3678	-31
4	RSOV to leading edge of right door	mm	3468	3520	52
5	RSOV to leading edge of left door	mm	3485	3510	25
6	RSOV to lower leading edge of right door	mm	3435	3460	25
7	RSOV to lower leading edge of left door	mm	3450	3450	0
8	RSOV to upper trailing edge of right door	mm	2314	2375	61
9	RSOV to upper trailing edge of left door	mm	2325	2350	25
10	RSOV to lower trailing edge of right door	mm	2308	2340	32
11	RSOV to lower trailing edge of left door	mm	2325	2325	0
12	RSOV to bottom of right 'A' pillar	mm	3436	3445	9
13	RSOV to bottom of left 'A' pillar	mm	3457	3444	-13
14	RSOV to firewall on right side	mm	3701	3708	7
15	RSOV to firewall on left side	mm	3704	3727	23
16	RSOV to steering column	mm	3012	3080	68
17	Center of steering column to left 'A' pillar	mm	512	390	-122
18	Center of steering column to headlining	mm	430	530	100
19	RSOV to right side of front bumper	mm	4674	4324	-350
20	RSOV to left side of front bumper	mm	4674	4296	-378
21	Length of engine block	mm	615	615	0
RD	RSOV to right side of dash panel	mm	3213	3256	43
CD	RSOV to center of dash panel	mm	3175	3225	50
LD	RSOV to left side of dash panel	mm	3227	3167	-60

DATA SHEET NO. 13...(CONTINUED)
VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup

NHTSA No.: M60107

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06

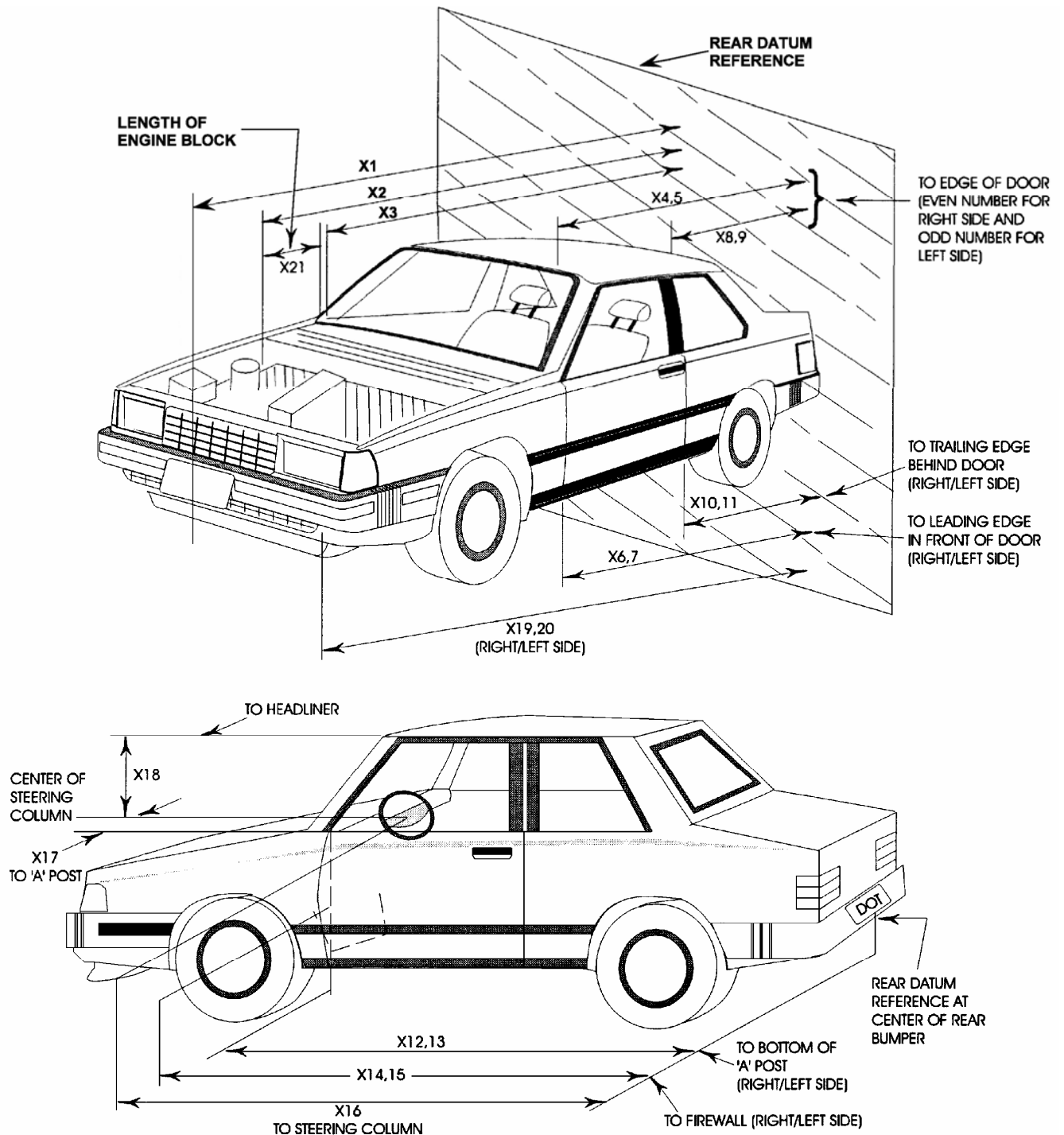
VEHICLE STRUCTURAL MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length	mm	4884	4399	-485
2	Total width	mm	1700	1734	34
3	Bumper top height	mm	725	615	-110
4	Bumper bottom height	mm	400	430	30
5	Longitudinal member top height	mm	520	470	-50
6	Longitudinal member bottom height	mm	430	380	-50
7	Distance between longitudinal members	mm	678	700	22
8	Longitudinal member width	mm	90	90	0
9	Engine top height	mm	1100	1040	-60
10	Engine bottom height	mm	286	226	-60
11	Engine and gear box width	mm	670	670	0
12	Front bumper to engine distance	mm	545	310	-235
13	Front shock absorber fixing width	mm	670	542	-128
14	Bonnet leading edge height	mm	1025	974	-51
15	Front shock absorber fixing width	mm	700	745	45
16	Front bumper to front axle distance	mm	880	455	-425
17	Front axle to 'A' pillar distance	mm	595	500	-95
18	'A' pillar to 'B' pillar distance	mm	1148	1145	-3
19	'B' pillar to rear axle distance	mm	1090	1123	33
20	'B' pillar to 'C' pillar distance	mm			
21	Roof sill bottom height	mm	1532	1465	-67
22	Roof sill top height	mm	1717	1644	-73
23	Floor sill bottom height	mm	420	265	-155
24	Floor sill top height	mm	550	463	-87

DATA SHEET NO. 13...(CONTINUED)
VEHICLE MEASUREMENTS

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06



DATA SHEET NO. 14
CAMERA LOCATIONS

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
Test Date: 2/9/06

VEHICLE CAMERA MEASUREMENT TABLE

No.	Camera View	Location (mm)			Angle (deg.)	Film Plane to Head	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real Time Camera (Panning)	-15385	-7882	-1598	0			30
2	Overall Left Side	-1981	-7468	-1167	0	7814	20mm	1000
3	Left Side View	-1828	-7245	-1302	0	7585	50mm	1000
4	Driver and Interior View	-8696	-12562	-4511	-13	15930	ZOOM	1000
5	Steering Column (Bottom)	-1631	-8234	-2682	-11	8812	35mm	1000
6	Steering Column (Top)	-1663	-8153	-3078	-13	8872	35mm	1000
7	Overall Right Side	-1981	6942	-1321	0	7339	20mm	1000
8	Right Side View	-1828	6675	-1284	0	7039	50mm	1000
9	Passenger and Interior View	-5330	9365	-2407	-10	11041	ZOOM	1000
10	Right Side View	-2006	6967	-1463	-6	7396	ZOOM	1000
11	Windshield View	-601	0	-5556	-75		25mm	1000
12	Driver Front View	378	-286	-2438	-35		25mm	1000
13	Passenger Front View	375	413	-2439	-35		25mm	1000
14	Pit View of Engine	-832	0	1495	90		12mm	1000
15	Pit View of Fuel Tank	-2794	0	1495	90		10mm	1000
16	Real Time Camera	-1585	-8255	-1767	-1	8590		30
17	Real Time Camera	-2167	6988	-1463	-1	7461		30

DATA SHEET NO. 15
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

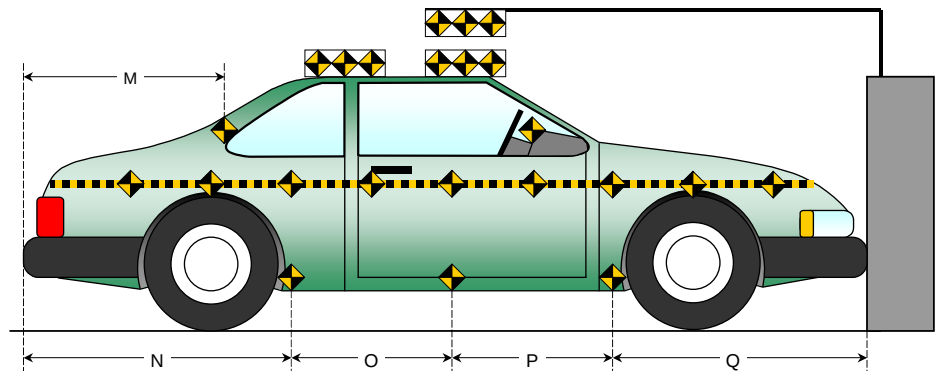
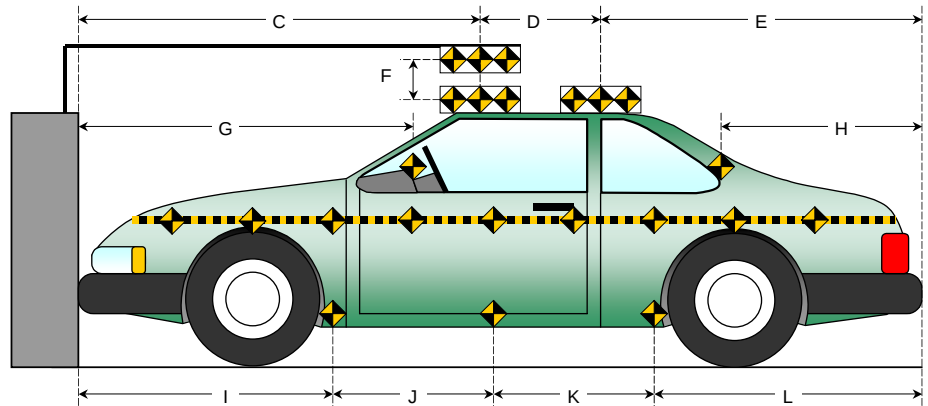
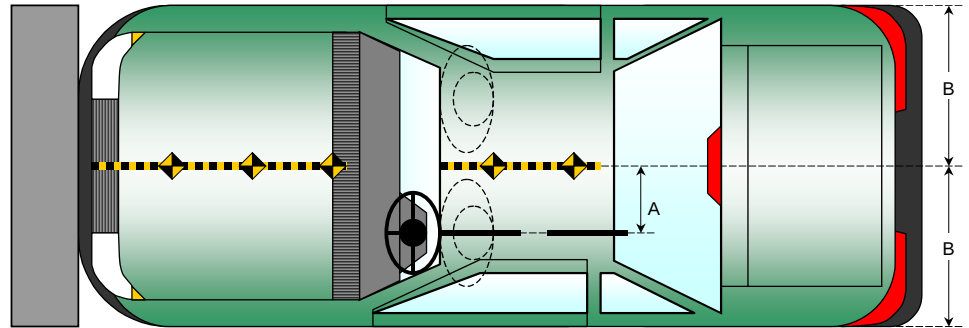
Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup

NHTSA No.: M60107

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06

All Dimensions in (mm)	
Item	Value
A	5
B	850
C	1980
D	605
E	2299
F	155
G	1690
H	
I	1450
J	825
K	825
L	1784
M	
N	1784
O	825
P	825
Q	1450



DATA SHEET NO. 16
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

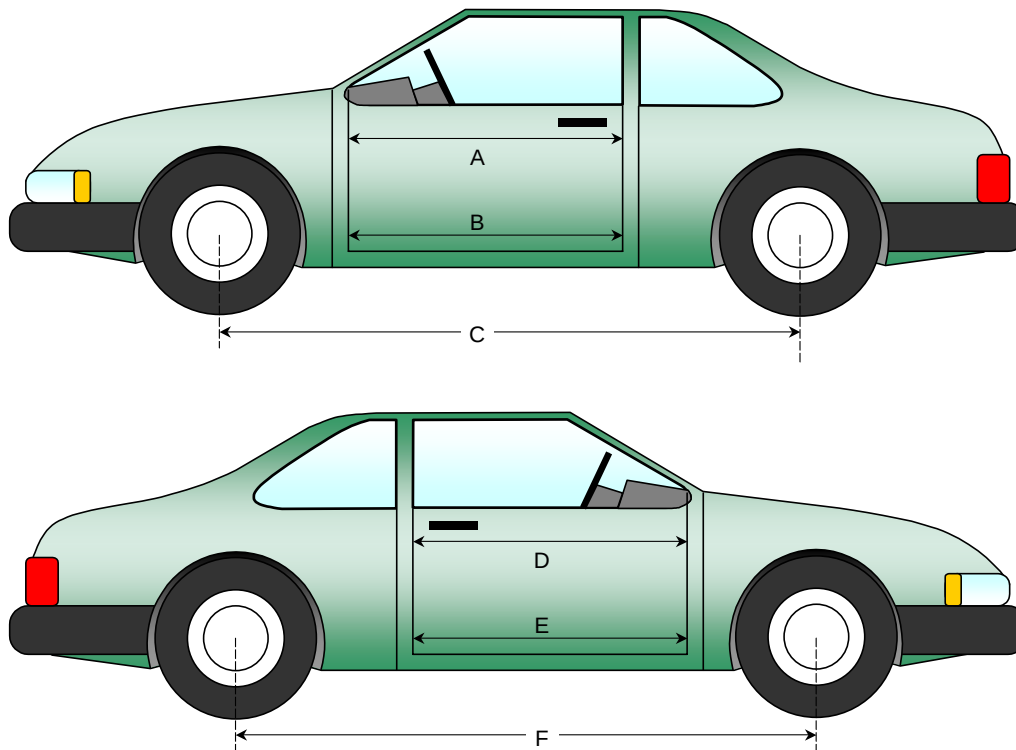
NHTSA No.: M60107
 Test Date: 2/9/06

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
A	Left Side Upper	mm	1075	1074	-1
B	Left Side Lower	mm	1030	1032	2
D	Right Side Upper	mm	1072	1073	1
E	Right Side Lower	mm	1028	1027	-1

WHEELBASE MEASUREMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
C	Left Side Wheel Base	mm	2820	2774	-46
F	Right Side Wheel Base	mm	2820	2775	-45



DATA SHEET NO. 16...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup

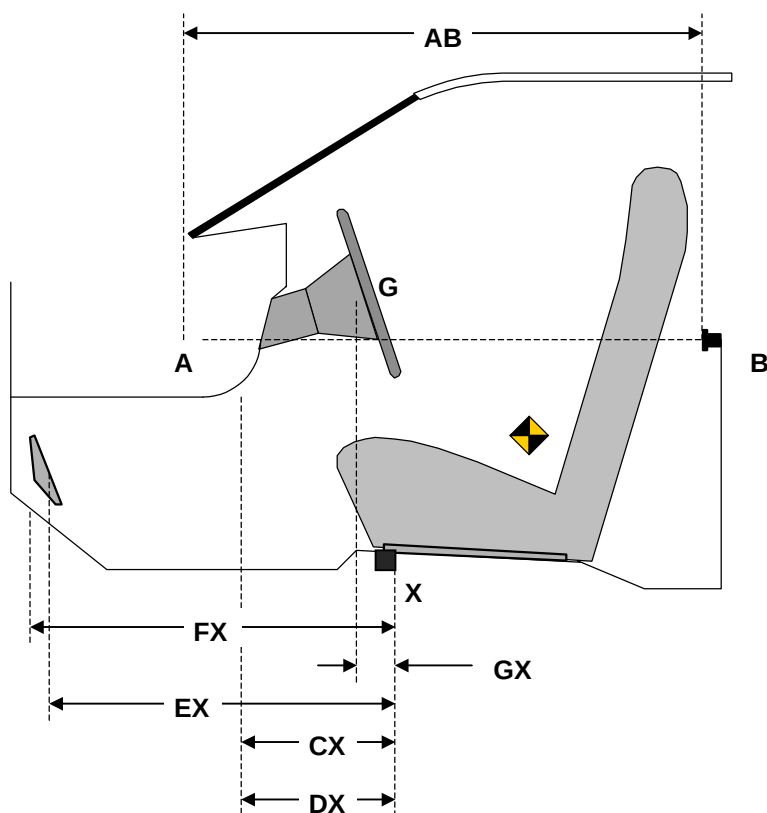
NHTSA No.: M60107

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06

DRIVER COMPARTMENT INTRUSION TABLE

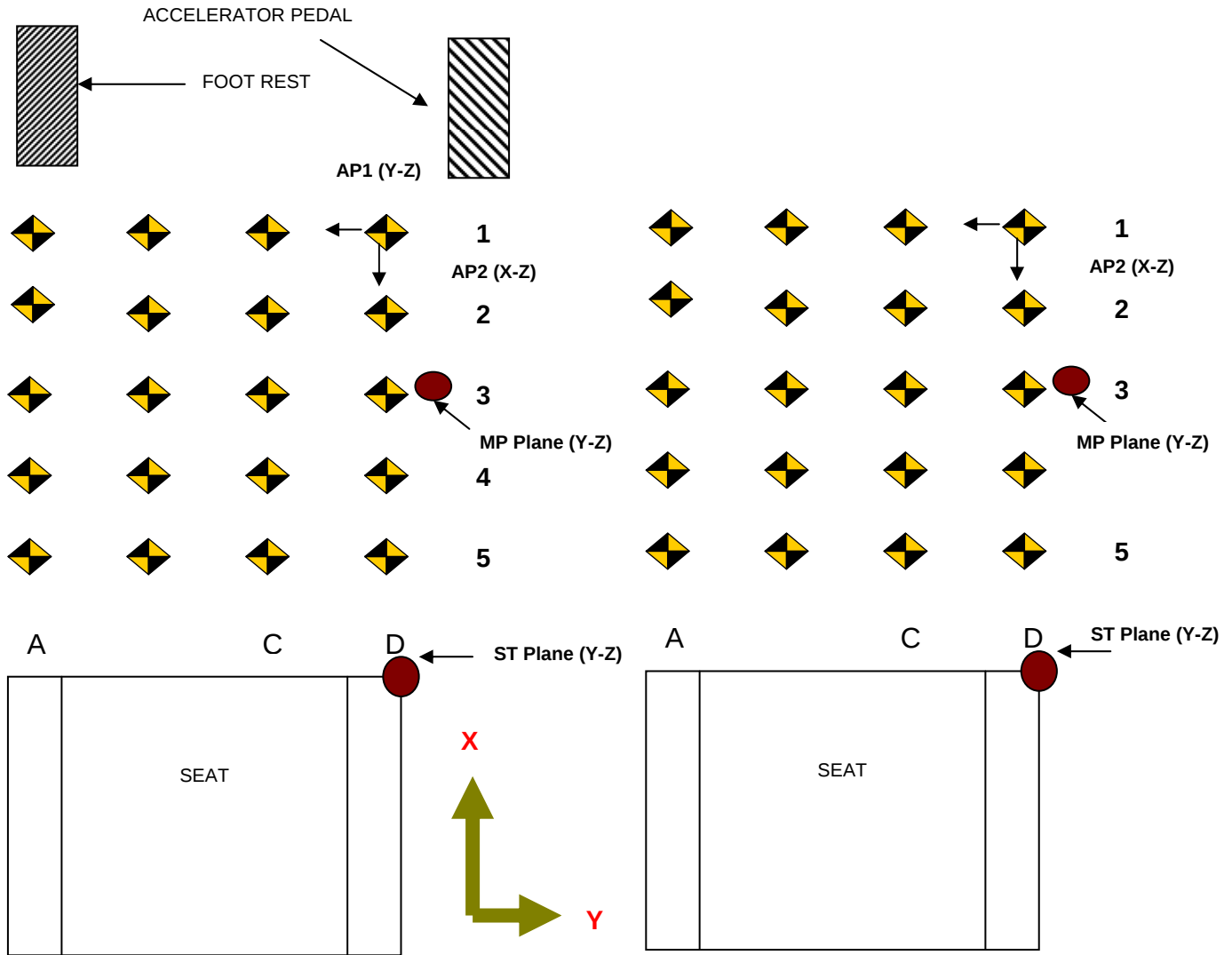
Item	Description	Units	Pre-Test	Post-Test	Diff.
AB	Door Opening (Inside window jam)	mm	1075	1074	-1
CX	Left Knee Bolster to X	mm	240	271	31
DX	Right Knee Bolster to X	mm	245	260	15
EX	Brake Pedal to X	mm	530	510	-20
FX	Foot Rest to X	mm	610	613	3
GX	Center of Steering Wheel Hub to X	mm	61	130	69



DATA SHEET NO. 16...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06



- 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: 2006 Chevrolet Colorado 2-Door Pickup

NHTSA No.: M60107

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06

All measurements in mm

DRIVER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	637	733	727	720	640	720	699	670	3	-13	-28	-50
2	609	680	679	664	613	667	652	625	4	-13	-27	-39
3	571	576	571	568	570	562	550	530	-1	-14	-21	-38
4	462	461	459	462	461	448	436	423	-1	-13	-23	-39
5	345	344	344	349	347	334	322	310	2	-10	-22	-39

DRIVER FLOOR PAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-76	50	164	280	-11	126	239	350	65	76	75	70
2	-80	43	159	275	-19	116	231	342	61	73	72	67
3	-86	43	161	272	-28	102	218	327	58	59	57	55
4	-81	41	160	276	-31	89	207	320	50	48	47	44
5	-80	40	162	282	-43	73	196	313	37	33	34	31

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-112	-64	-59	-62	-82	-37	-38	-44	30	27	21	18
2	-26	16	25	19	1	43	50	41	27	27	25	22
3	78	78	77	72	107	108	109	105	29	30	32	33
4	78	79	86	80	104	105	112	107	26	26	26	27
5	76	76	83	82	95	97	102	103	19	21	19	21

DATA SHEET NO. 16...(CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06

All measurements in mm

PASSENGER FLOOR PAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	732	737	730	694	703	718	716	689	-29	-19	-14	-5
2	677	677	670	652	652	658	657	647	-25	-19	-13	-5
3	578	577	571	569	556	564	559	562	-22	-13	-12	-7
4	466	464	458	456	449	450	449	447	-17	-14	-9	-9
5	353	349	343	344	338	336	334	340	-15	-13	-9	-4

PASSENGER FLOOR PAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-248	-148	-48	32	-268	-178	-80	9	-20	-30	-32	-23
2	-258	-163	-47	42	-282	-187	-70	22	-24	-24	-23	-20
3	-277	-173	-54	53	-290	-191	-73	36	-13	-18	-19	-17
4	-293	-183	-62	53	-305	-197	-76	38	-12	-14	-14	-15
5	-304	-188	-64	54	-321	-199	-76	44	-17	-11	-12	-10

PASSENGER FLOOR PAN Z-AXIS

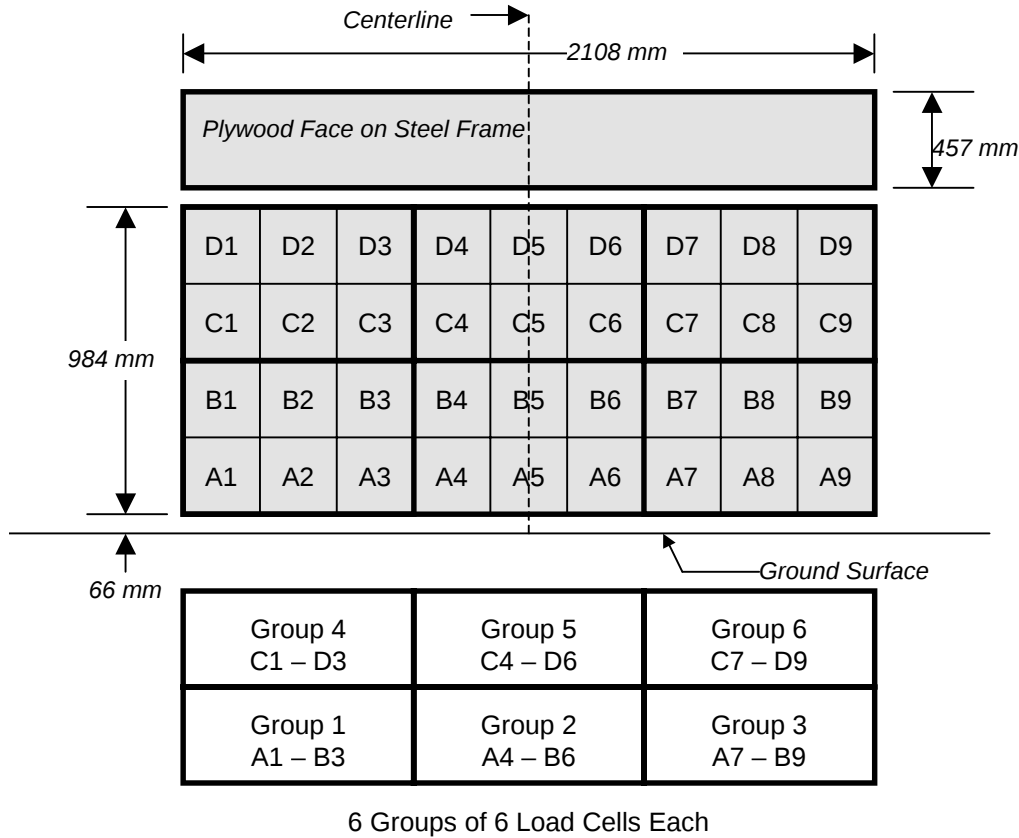
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-60	-55	-57	-82	-46	-42	-40	-69	14	13	17	13
2	18	40	41	26	33	58	56	39	15	18	15	13
3	52	86	88	88	70	111	111	105	18	25	23	17
4	66	95	88	86	82	116	110	104	16	21	22	18
5	74	95	84	85	90	111	101	95	16	16	17	10

DATA SHEET NO. 17
FIXED BARRIER LOAD CELL LOCATIONS

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
 Test Date: 2/9/06

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



ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
Test Date: 2/9/06

VEHICLE INFORMATION

VIN: 1GCDT146268197907
Vehicle Size Category: 2-Door

Wheel base (mm): 2820
Test Weight (kg): 1951

ACCELEROMETER DATA

Accelerometer Location: Left rear cross member
Cal. Procedure/Interval: 6 months / drop test
Integration Algorithm: NHTSA Standard
Impact Velocity (km/h): 56.17
Velocity Change (km/h): 61.6

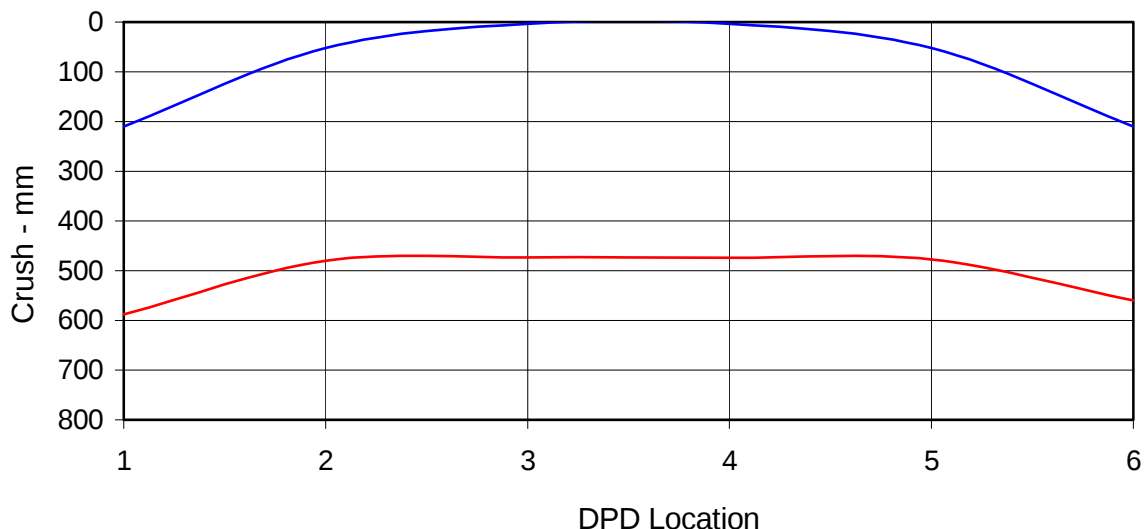
Linearity: Good

Time of Separation (msec): 64.2

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6 Midpoint of Damage: Vehicle Centerline
Damage Region Length (mm): 1592 Impact Mode: Full Frontal

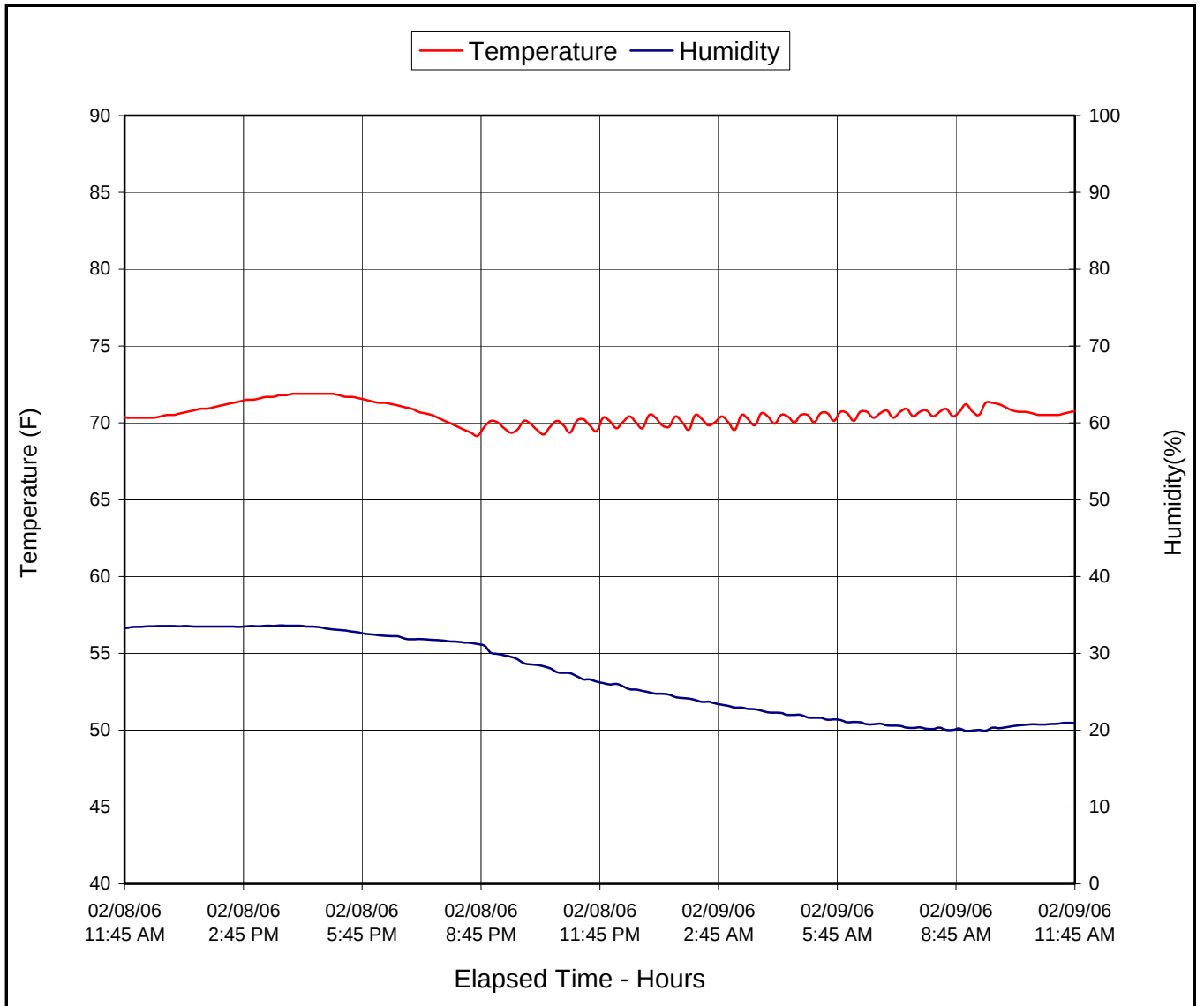
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	210	588	-378
C2	Crush zone 2 on left side	mm	52	480	-428
C3	Crush zone 3 on left side	mm	3	473	-470
C4	Crush zone 4 on right side	mm	3	474	-471
C5	Crush zone 5 on right side	mm	52	477	-425
C6	Crush zone 6 at right side	mm	210	560	-350



DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60107
Test Date: 2/9/06



APPENDIX A
PHOTOGRAPHS

LIST OF PHOTOGRAPHS

Figure		Page
A-1	Load Cell Location	A-1
A-2	Manufacturer's Label	A-2
A-3	Tire Placard	A-3
A-4	Right Front $\frac{3}{4}$ View, As Received	A-4
A-5	Left Rear $\frac{3}{4}$ View, As Received	A-5
A-6	Pre-Test Front View	A-6
A-7	Post-Test Front View (Vehicle Moved)	A-7
A-8	Pre-Test Left Side View	A-8
A-9	Post-Test Left Side View	A-9
A-10	Pre-Test Right Side View	A-10
A-11	Post-Test Right Side View	A-11
A-12	Pre-Test Right Front $\frac{3}{4}$ View	A-12
A-13	Post-Test Right Front $\frac{3}{4}$ View (Vehicle Moved)	A-13
A-14	Pre-Test Left Rear $\frac{3}{4}$ View	A-14
A-15	Post-Test Left Rear $\frac{3}{4}$ View	A-15
A-16	Post-Test Left Side $\frac{3}{4}$ View of Doors After Impact	A-16
A-17	Post-Test Right Side $\frac{3}{4}$ View of Doors After Impact	A-17
A-18	Pre-Test Windshield	A-18
A-19	Post-Test Windshield	A-19
A-20	Pre-Test Engine Compartment	A-20
A-21	Post-Test Engine Compartment (Vehicle Moved)	A-21
A-22	Pre-Test Fuel Cap	A-22
A-23	Post-Test Fuel Cap	A-23
A-24	Pre-Test Front Underbody	A-24
A-25	Post-Test Front Underbody	A-25
A-26	Pre-Test Mid Underbody	A-26
A-27	Post-Test Mid Underbody	A-27
A-28	Pre-Test Rear Underbody	A-28
A-29	Post-Test Rear Underbody	A-29
A-30	Pre-Test Driver Dummy Front View (Head Position)	A-30
A-31	Post-Test Driver Dummy Front View (Head Position)	A-31
A-32	Pre-Test Driver Dummy (Through Window)	A-32
A-33	Post-Test Driver Dummy (Through Window)	A-33
A-34	Pre-Test Driver Dummy (Door Open)	A-34
A-35	Post-Test Driver Dummy (Door Open)	A-35

LIST OF PHOTOGRAPHS...(CONTINUED)

Figure		Page
A-36	Pre-Test Driver Dummy Feet	A-36
A-37	Post-Test Driver Dummy Feet	A-37
A-38	Pre-Test Driver Side Knee Bolster	A-38
A-39	Post-Test Driver Side Knee Bolster	A-39
A-40	Pre-Test Driver Side Floor Pan	A-40
A-41	Post-Test Driver Side Floor Pan	A-41
A-42	Post-Test Driver Dummy Head	A-42
A-43	Post-Test Driver Dummy Airbag Contact	A-43
A-44	Pre-Test Passenger Dummy Front View (Head Position)	A-44
A-45	Post-Test Passenger Dummy Front View (Head Position)	A-45
A-46	Pre-Test Passenger Dummy Front (Through Window)	A-46
A-47	Post-Test Passenger Dummy Front (Through Window)	A-47
A-48	Pre-Test Passenger Dummy (Door Open)	A-48
A-49	Post-Test Passenger Dummy (Door Open)	A-49
A-50	Pre-Test Passenger Dummy Feet	A-50
A-51	Post-Test Passenger Dummy Feet	A-51
A-52	Pre-Test Passenger Side Glove Box	A-52
A-53	Post-Test Passenger Side Glove Box	A-53
A-54	Pre-Test Passenger Side Floor Pan	A-54
A-55	Post-Test Passenger Side Floor Pan	A-55
A-56	Post-Test Passenger Dummy Head	A-56
A-57	Post-Test Passenger Dummy Airbag Contact	A-57
A-58	Vehicle on Rollover Device (0°)	A-58
A-59	Vehicle on Rollover Device (90°)	A-59
A-60	Vehicle on Rollover Device (180°)	A-60
A-61	Vehicle on Rollover Device (270°)	A-61
A-62	Vehicle Impact	A-62

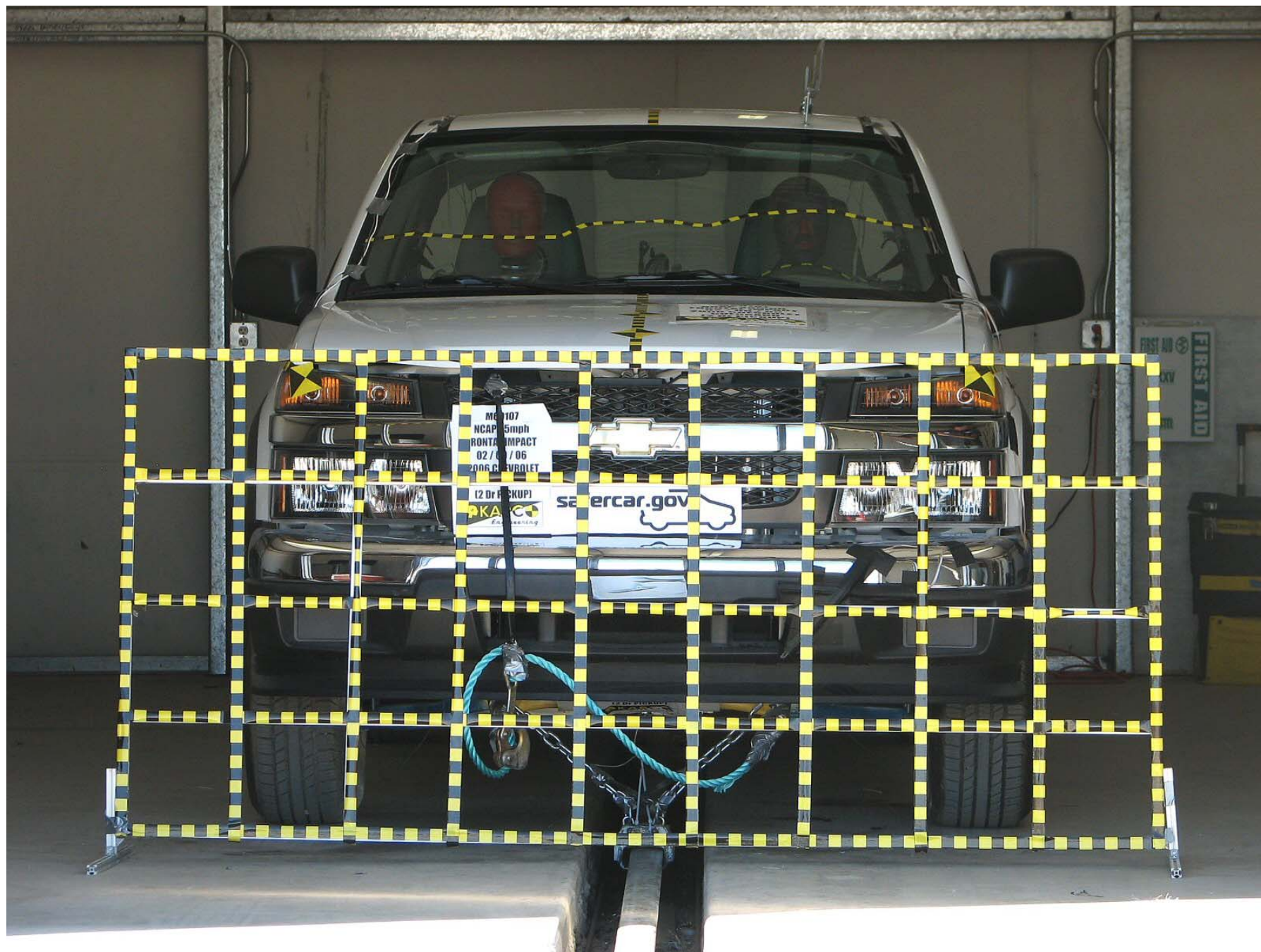
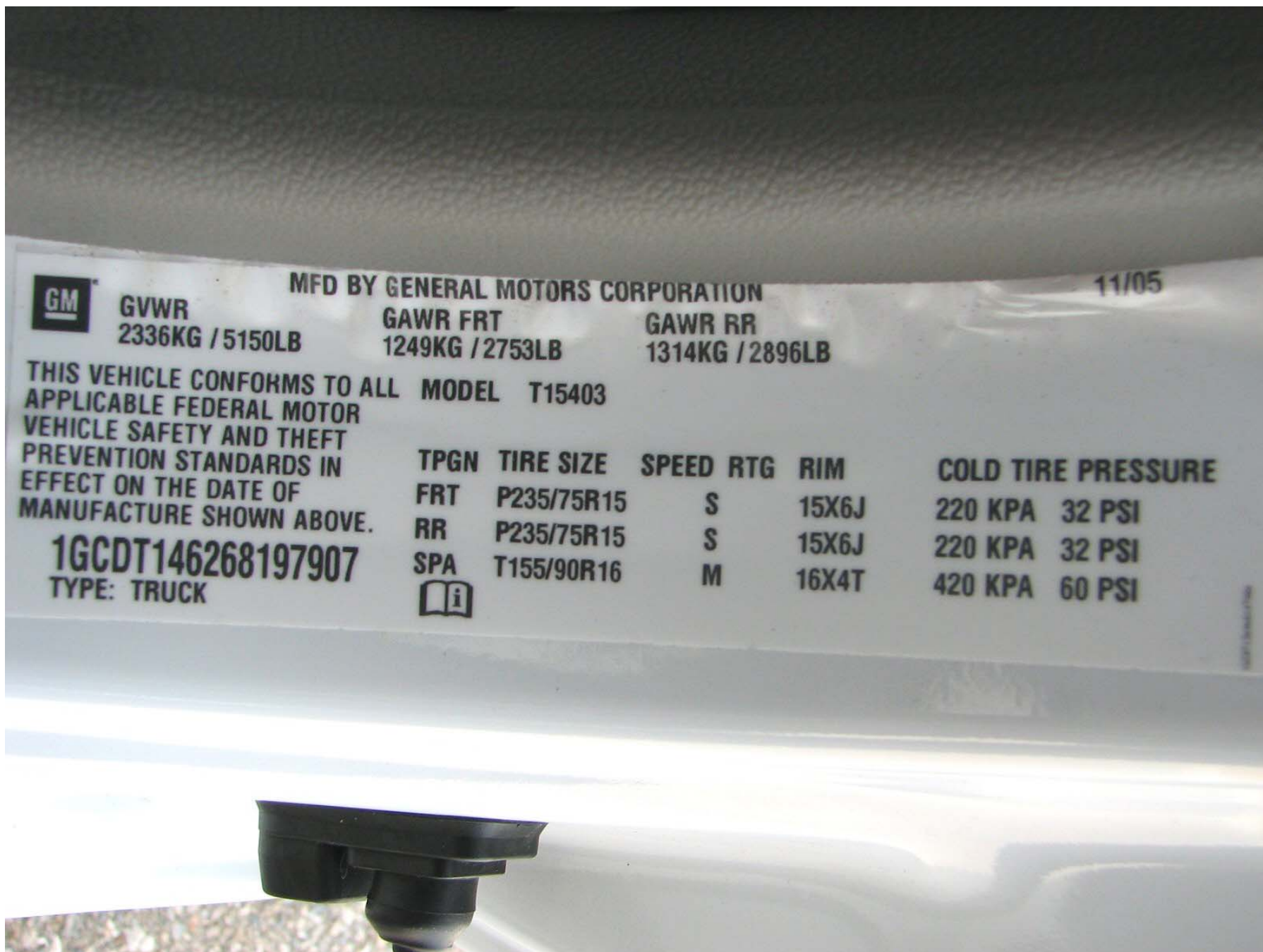


Figure A-1: Load Cell Location

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GVWR
2336KG / 5150LB

MFD BY GENERAL MOTORS CORPORATION

GAWR FRT
1249KG / 2753LB

GAWR RR
1314KG / 2896LB

11/05

THIS VEHICLE CONFORMS TO ALL MODEL T15403
APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY AND THEFT
PREVENTION STANDARDS IN
EFFECT ON THE DATE OF
MANUFACTURE SHOWN ABOVE.

1GCDT146268197907

TYPE: TRUCK

TPGN	TIRE SIZE	SPEED RTG	RIM	COLD TIRE PRESSURE	
FRT	P235/75R15	S	15X6J	220 KPA	32 PSI
RR	P235/75R15	S	15X6J	220 KPA	32 PSI
SPA	T155/90R16	M	16X4T	420 KPA	60 PSI



Figure A-2: Manufacturer's Label



Figure A-3: Tire Placard



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



Figure A-5: Left Rear $\frac{3}{4}$ View, as Received



Figure A-6: Pre-Test Front View

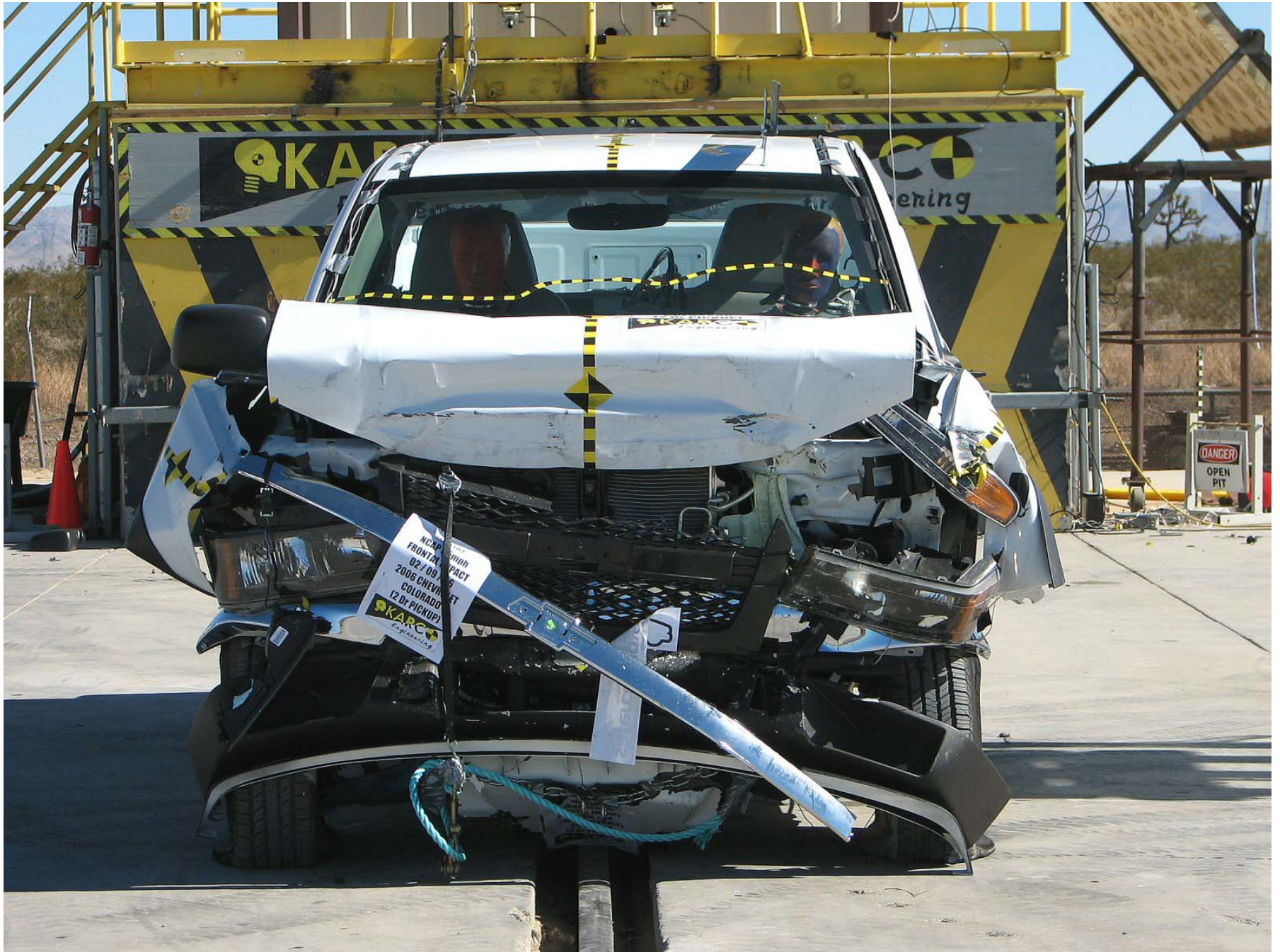


Figure A-7: Post-Test Front View (Vehicle Moved)



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 3/4 View



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



Figure A-14: Pre-Test Left Rear $\frac{3}{4}$ View



Figure A-15: Post-Test Left Rear $\frac{3}{4}$ View

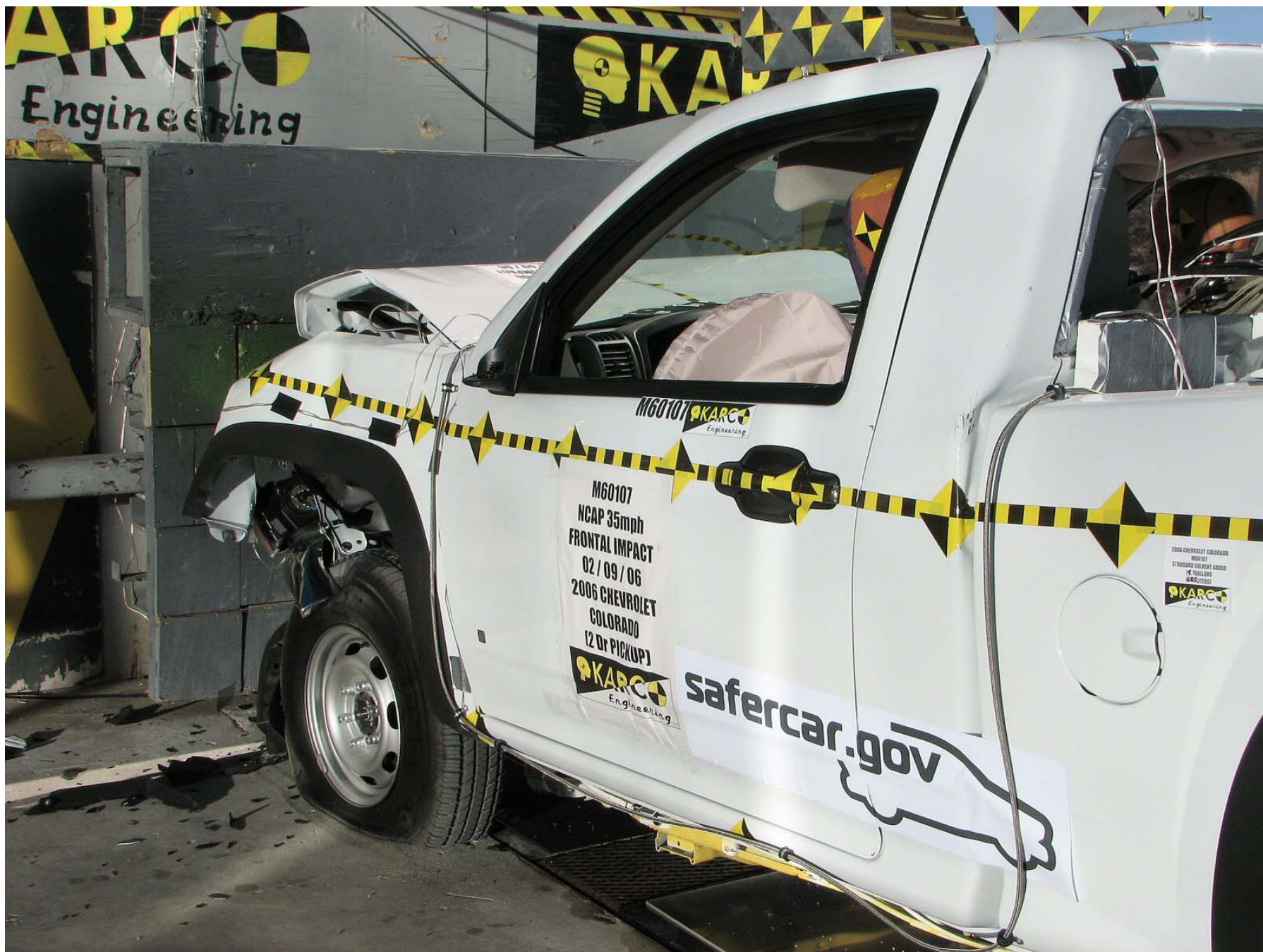


Figure A-16: Post-Test Left Side $\frac{3}{4}$ View of Doors After Impact



Figure A-17: Post-Test Right Side $\frac{3}{4}$ View of Doors After Impact

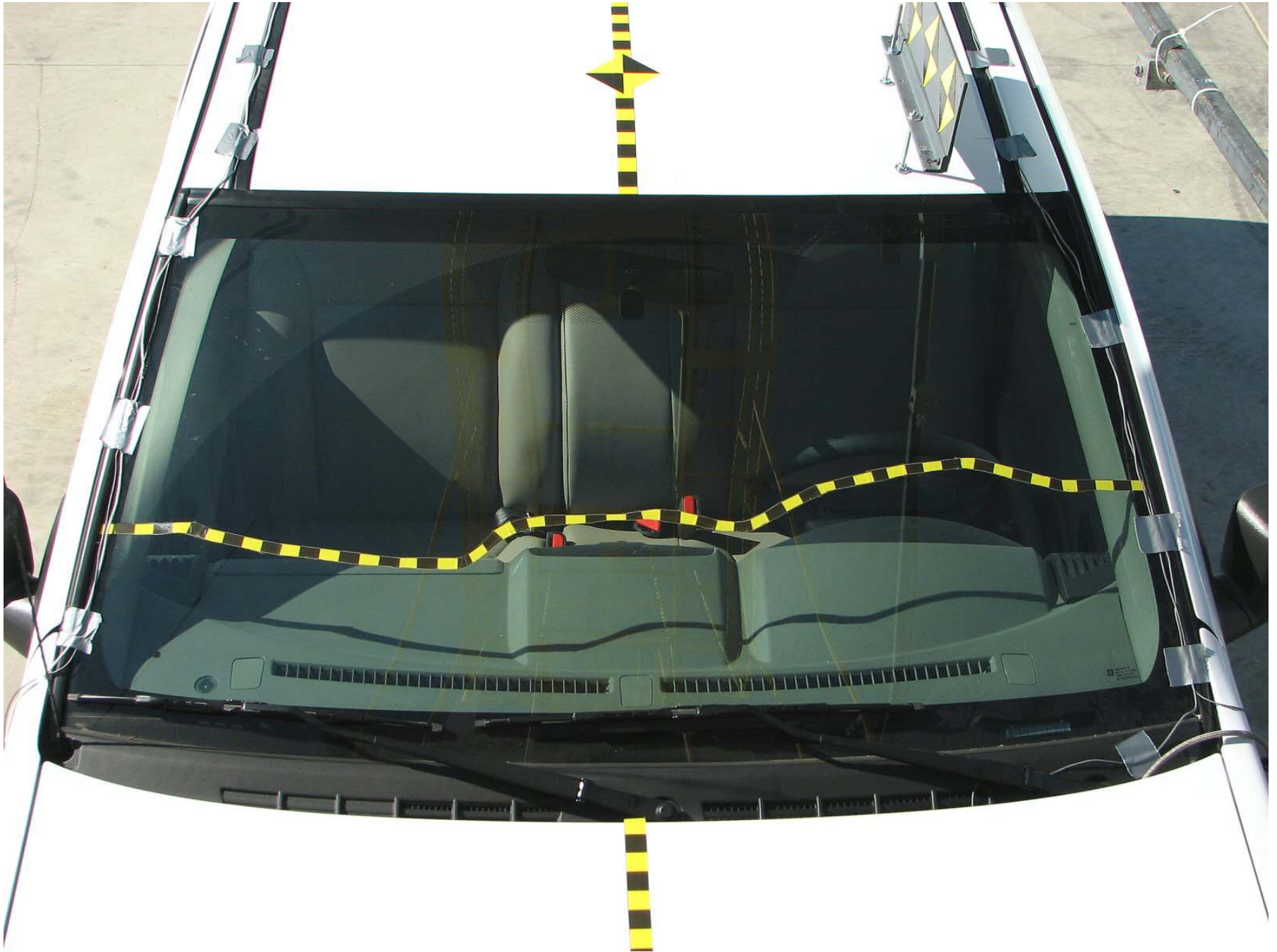


Figure A-18: Pre-Test Windshield

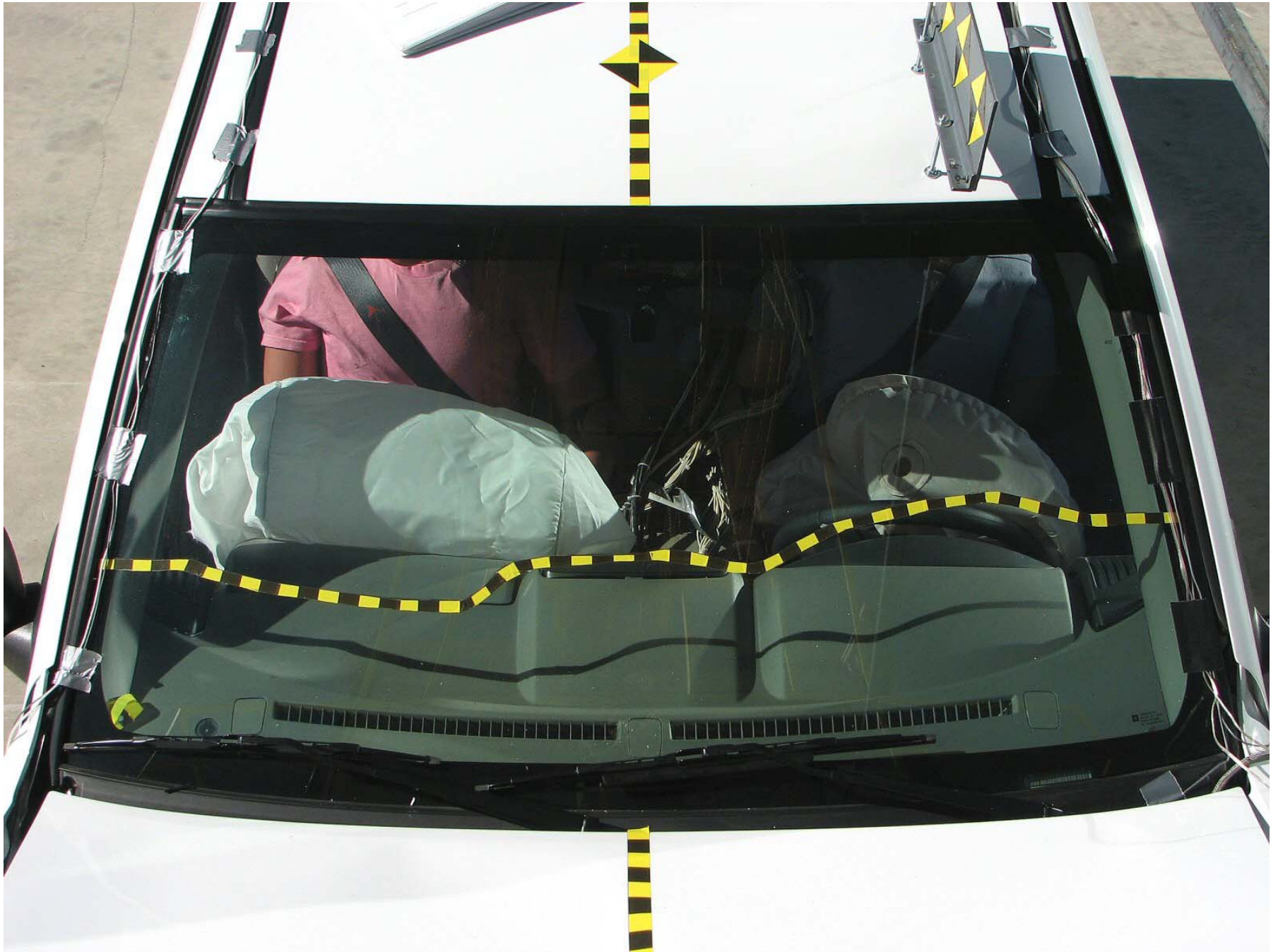


Figure A-19: Post-Test Windshield



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

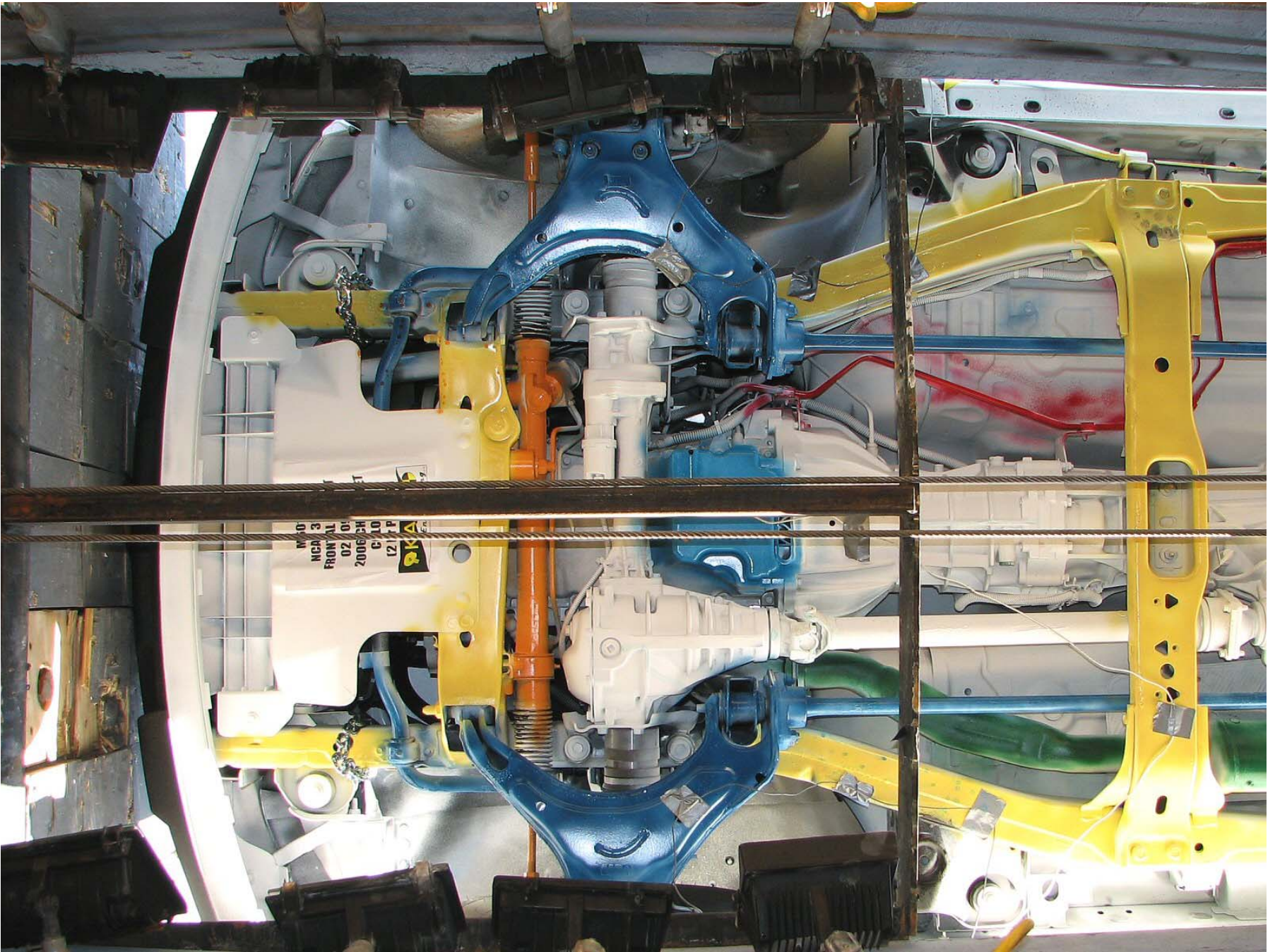


Figure A-24: Pre-Test Front Underbody

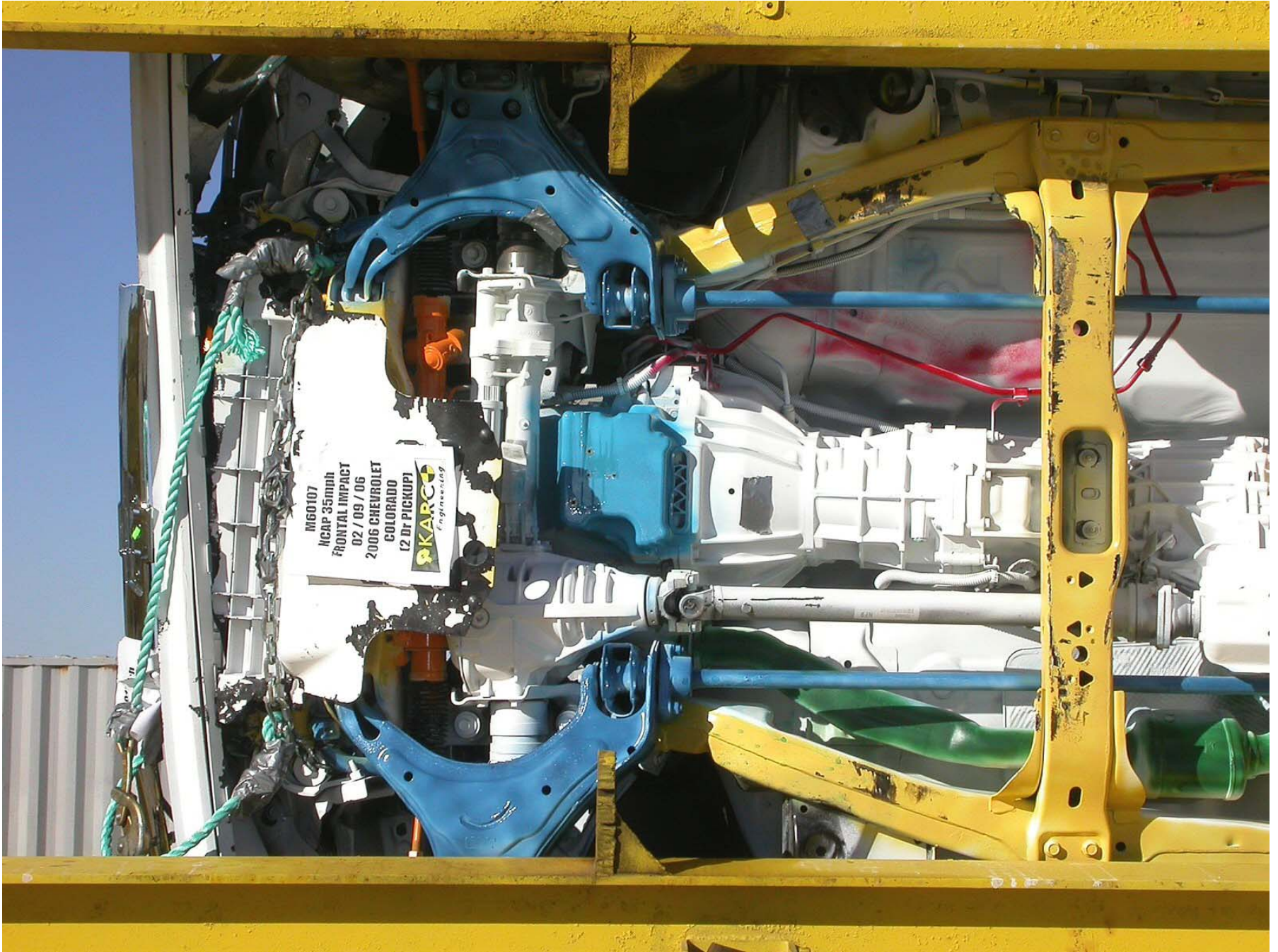


Figure A-25: Post-Test Front Underbody

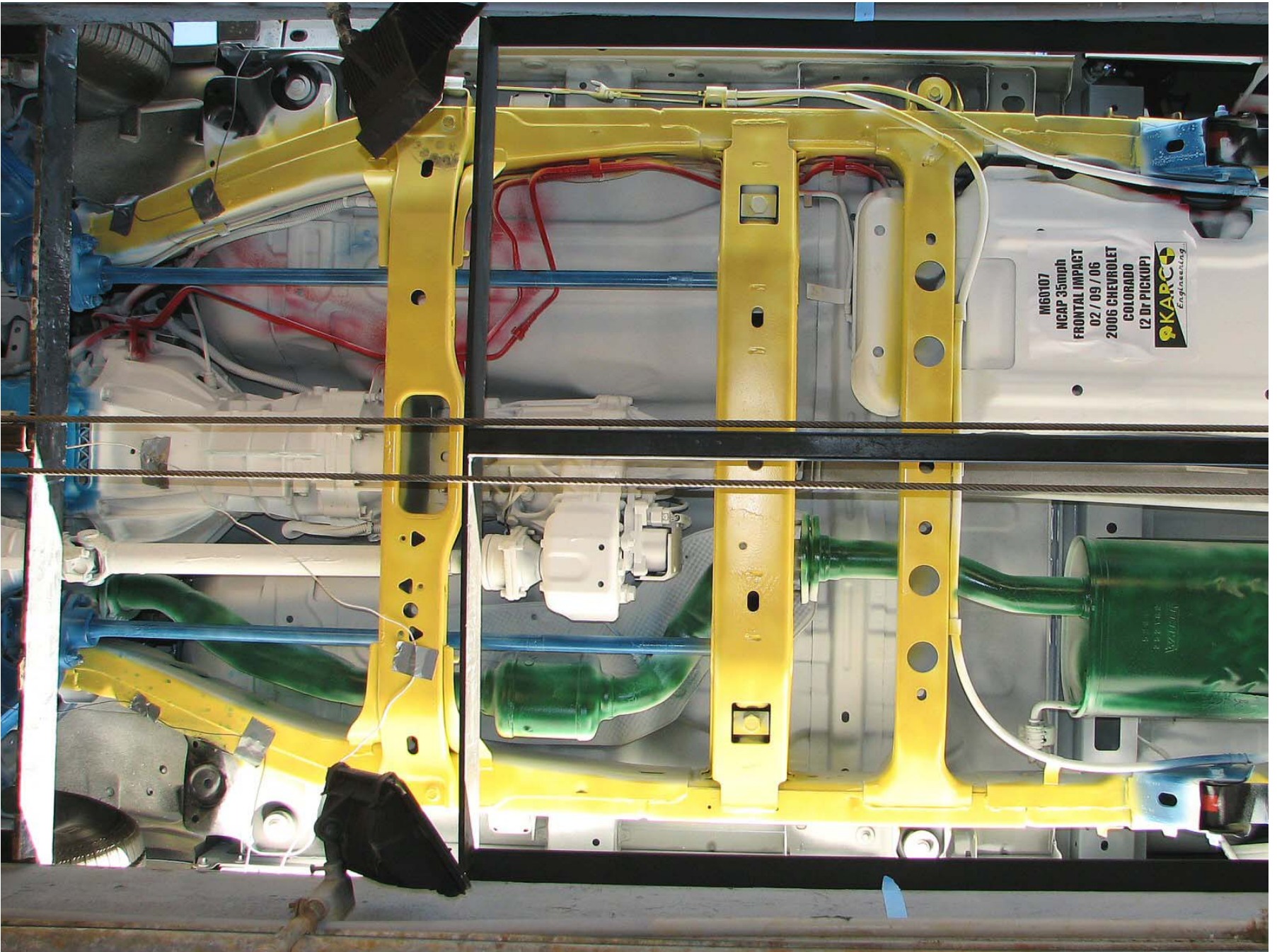


Figure A-26: Pre-Test Mid Underbody

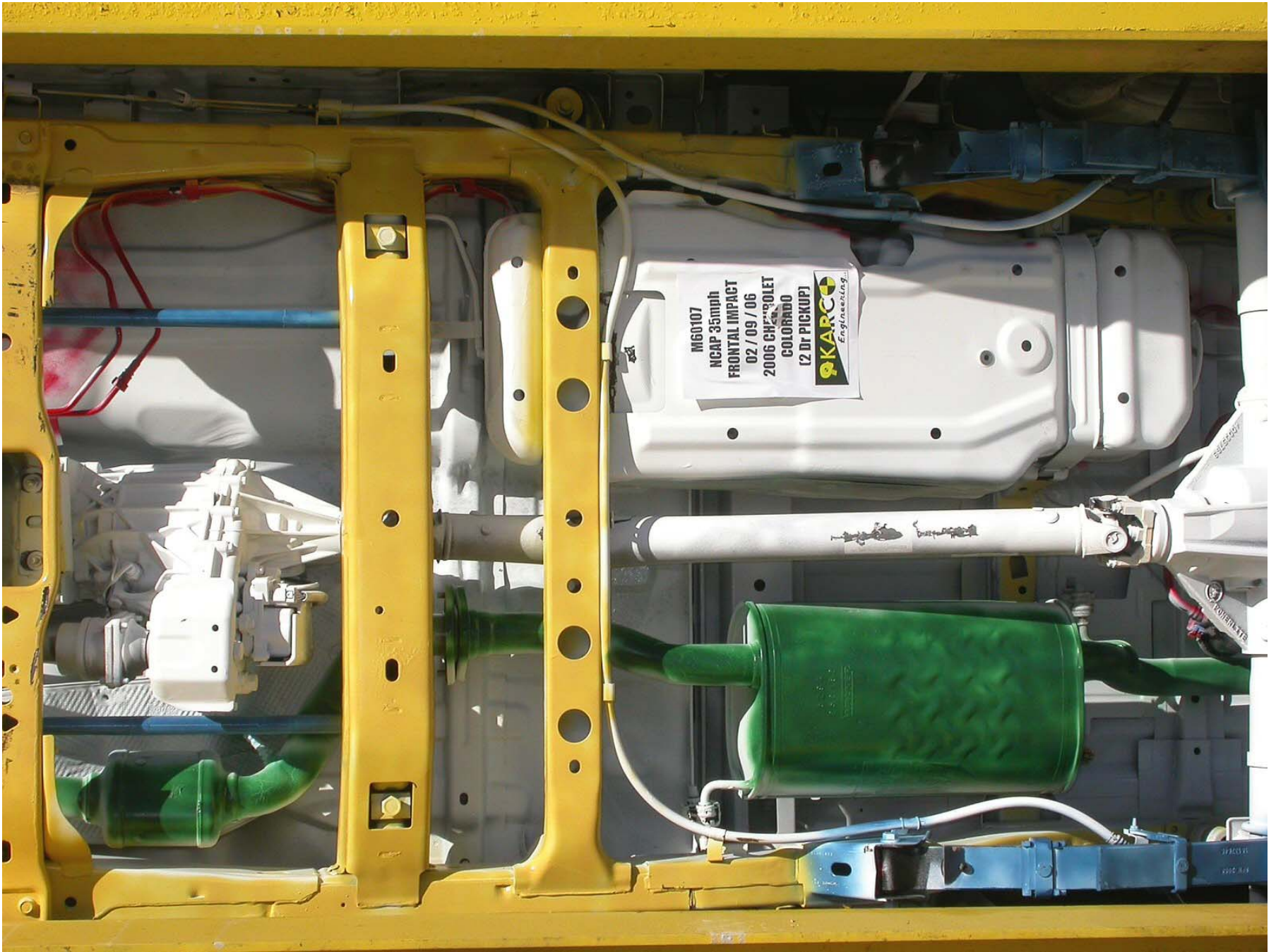


Figure A-27: Post-Test Mid Underbody

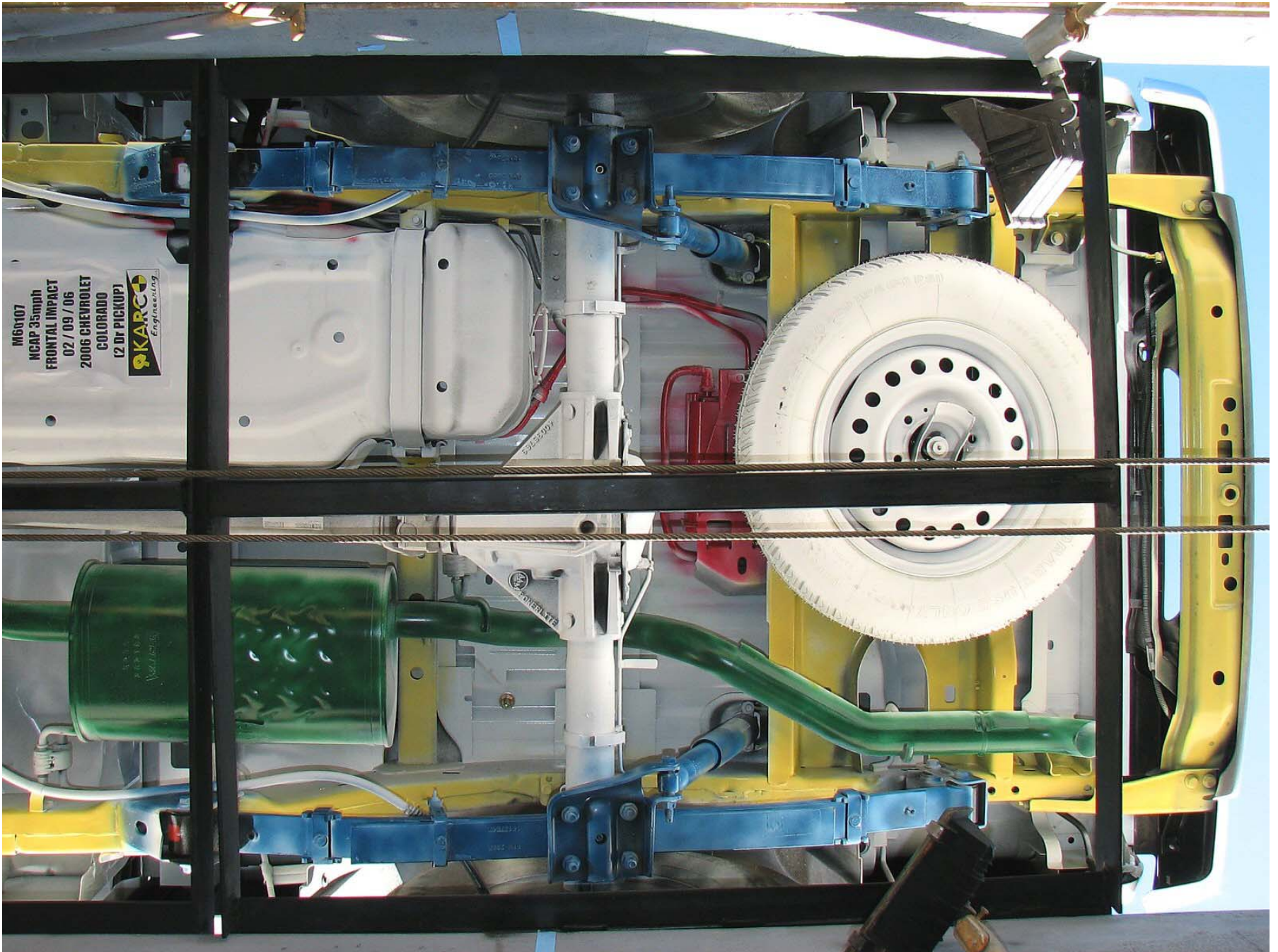


Figure A-28: Pre-Test Rear Underbody

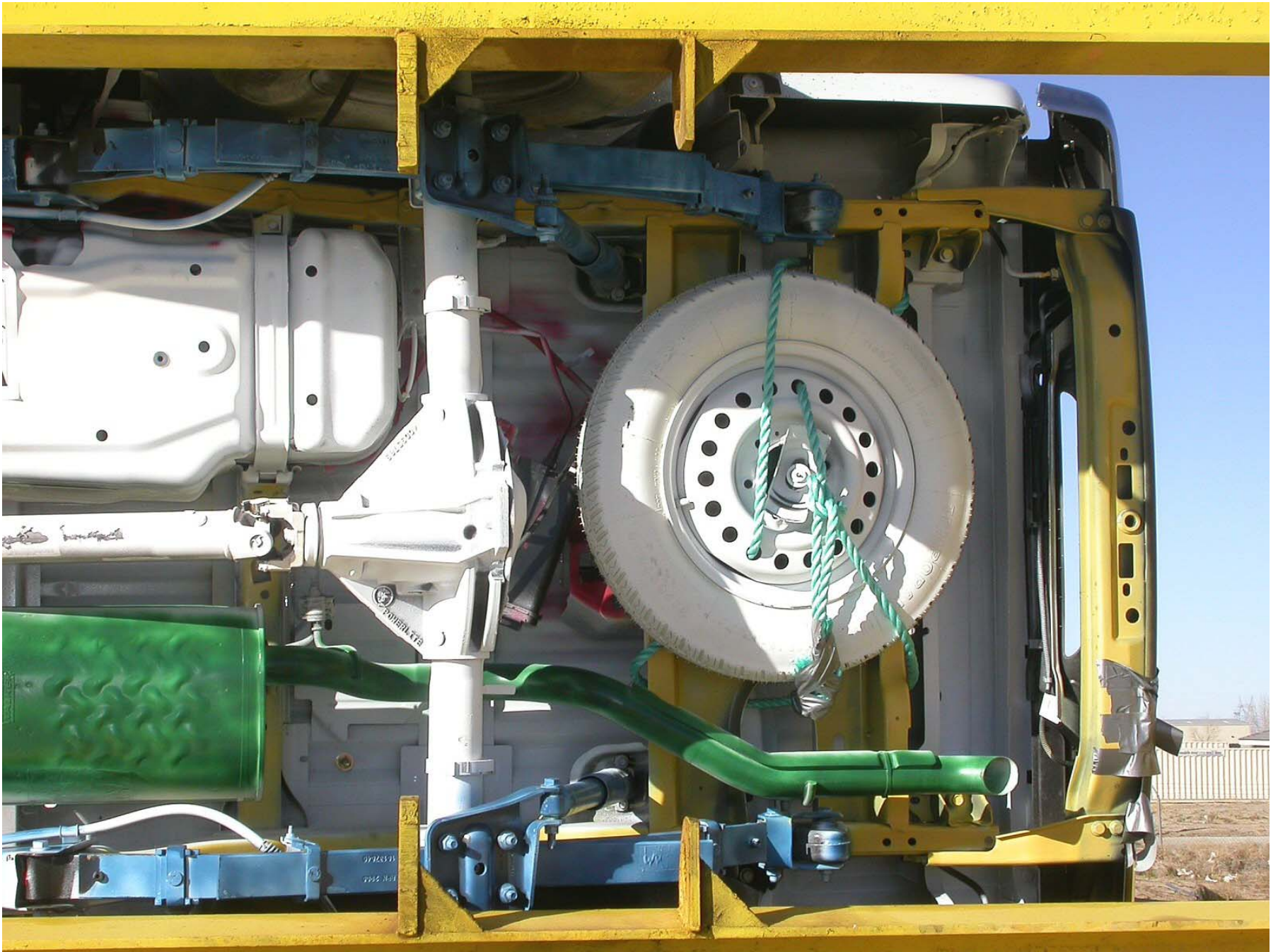


Figure A-29: Post-Test Rear Underbody



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

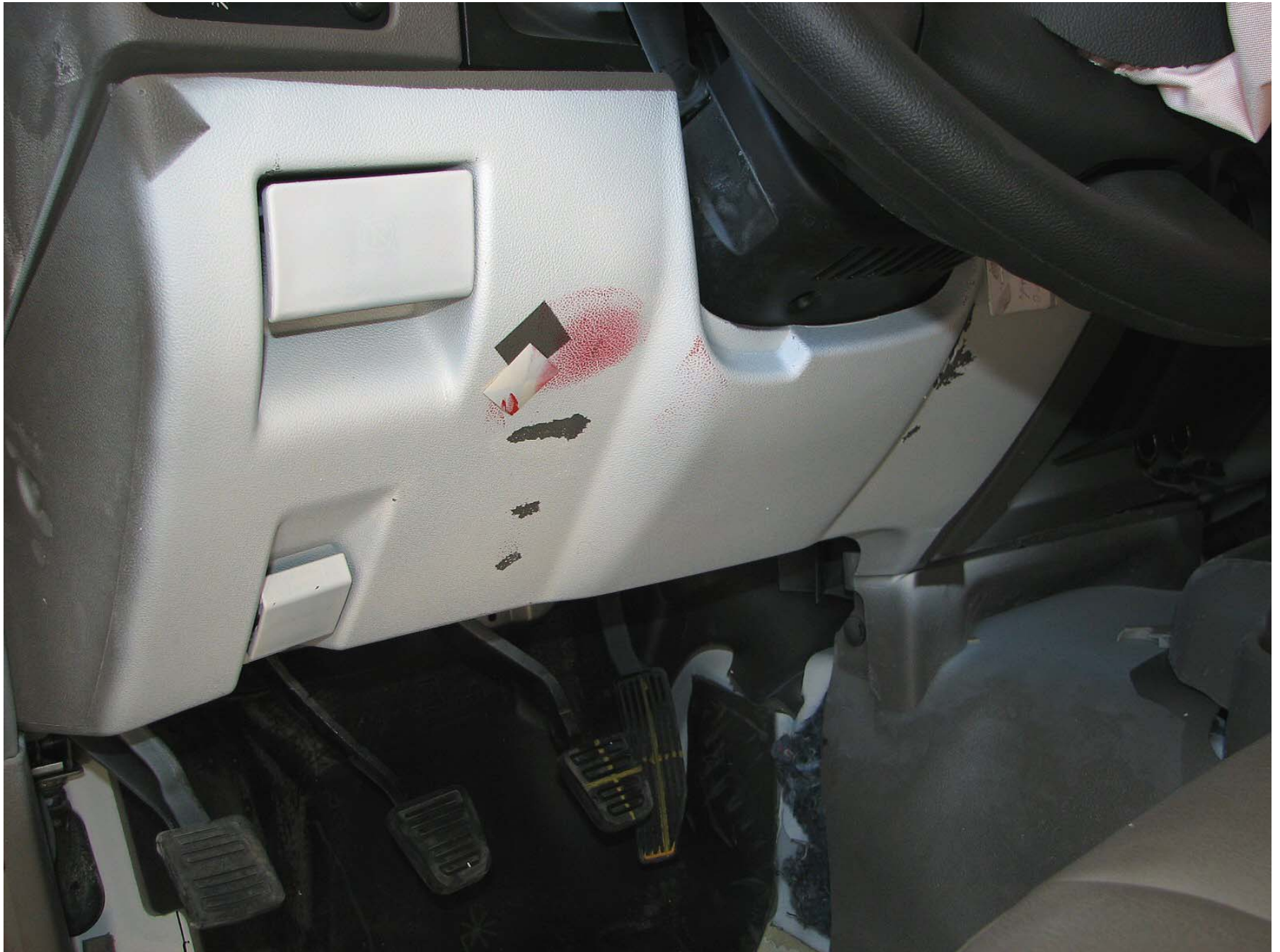


Figure A-39: Post-Test Driver Side Knee Bolster



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°)

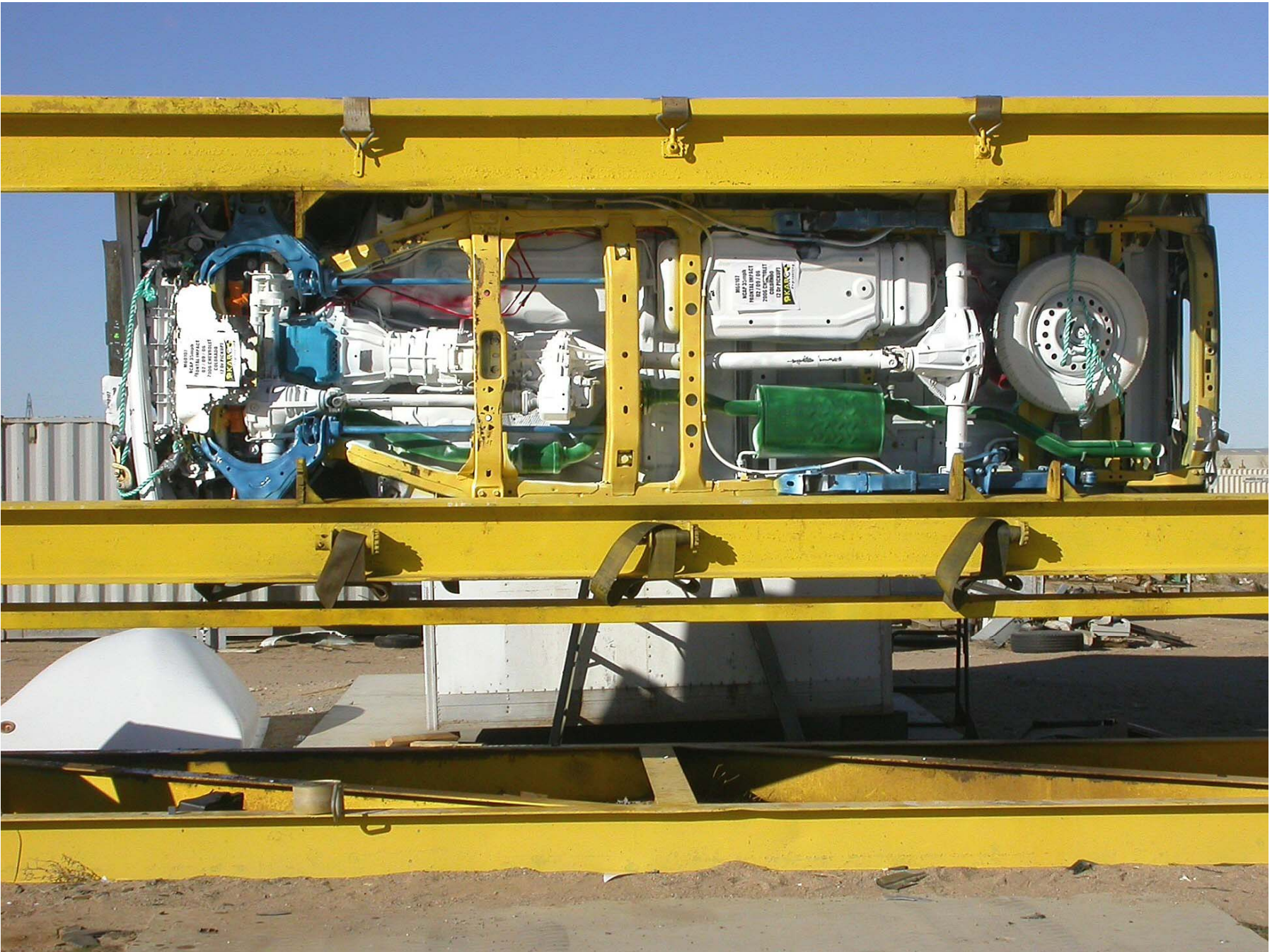


Figure A-61: Vehicle on Rollover Device (270°)



Figure A-62: Vehicle Impact

APPENDIX B

DATA PLOTS

LIST OF DATA PLOTS

Data Plot	Page
B-1	Driver Head Primary X
	Driver Head Primary Y
	Driver Head Primary Z
	Driver Head Resultant Primary
B-2	Driver Chest Primary X
	Driver Chest Primary Y
	Driver Chest Primary Z
	Driver Chest Resultant Primary
B-3	Driver Left Femur Force Z
	Driver Right Femur Force Z
B-4	Passenger Head Primary X
	Passenger Head Primary Y
	Passenger Head Primary Z
	Passenger Head Resultant Primary
B-5	Passenger Chest Primary X
	Passenger Chest Primary Y
	Passenger Chest Primary Z
	Passenger Chest Resultant Primary
B-6	Passenger Left Femur Force Z
	Passenger Right Femur Force Z

LIST OF DATA PLOTS...(CONTINUED)

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

LIST OF DATA PLOTS...(CONTINUED)

Driver Right Upper Tibia Moment Y
Driver Left Lower Tibia Moment X
Driver Left Lower Tibia Moment Y
Driver Left Lower Tibia Force Z
Driver Right Lower Tibia Moment X
Driver Right Lower Tibia Moment Y
Driver Right Lower Tibia Force Z
Driver Left Foot Aft X
Driver Left Foot Aft Z
Driver Left Foot Fore Z
Driver Right Foot Aft X
Driver Right Foot Aft Z
Driver Right Foot Fore Z
Driver Lap Belt Force
Driver Shoulder Belt Force
Driver Shoulder Belt Pullout
Driver Shoulder Belt Elongation
Passenger Head Primary X Velocity
Passenger Head Primary X Displacement
Passenger Head Redundant X
Passenger Head Redundant Y
Passenger Head Redundant Z
Passenger Head Resultant Redundant
Passenger Head Redundant X Velocity
Passenger Head Redundant X Displacement
Passenger Upper Neck Force X
Passenger Upper Neck Force Y
Passenger Upper Neck Force Z
Passenger Upper Neck Force Resultant
Passenger Upper Neck Moment X
Passenger Upper Neck Moment Y
Passenger Upper Neck Moment Z
Passenger Upper Neck Moment Resultant
Passenger Chest Primary X Velocity
Passenger Chest Primary X Displacement
Passenger Chest Redundant X

LIST OF DATA PLOTS...(CONTINUED)

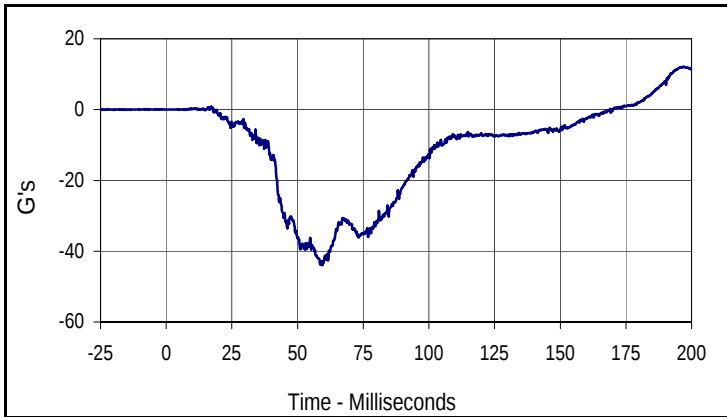
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Passenger Chest Redundant Z
Passenger Chest Resultant Redundant
Passenger Chest Redundant X Velocity
Passenger Chest Redundant X Displacement
Passenger Chest Displacement
Passenger Pelvis X
Passenger Pelvis Y
Passenger Pelvis Z
Passenger Pelvis Resultant
Passenger Pelvis X Velocity
Passenger Pelvis X Displacement
Passenger Left Femur Force
Passenger Right Femur Force
Passenger Left Upper Tibia Moment X
Passenger Left Upper Tibia Moment Y
Passenger Right Upper Tibia Moment X
Passenger Right Upper Tibia Moment Y
Passenger Left Lower Tibia Moment X
Passenger Left Lower Tibia Moment Y
Passenger Left Lower Tibia Force Z
Passenger Right Lower Tibia Moment X
Passenger Right Lower Tibia Moment Y
Passenger Right Lower Tibia Force Z
Passenger Left Foot Aft X
Passenger Left Foot Aft Z
Passenger Left Foot Fore Z
Passenger Right Foot Aft X
Passenger Right Foot Aft Z
Passenger Right Foot Fore Z
Passenger Lap Belt Force
Passenger Shoulder Belt Force
Passenger Shoulder Belt Pullout
Passenger Shoulder Belt Elongation
Vehicle Left Rear X
Vehicle Left Rear X Velocity

LIST OF DATA PLOTS...(CONTINUED)

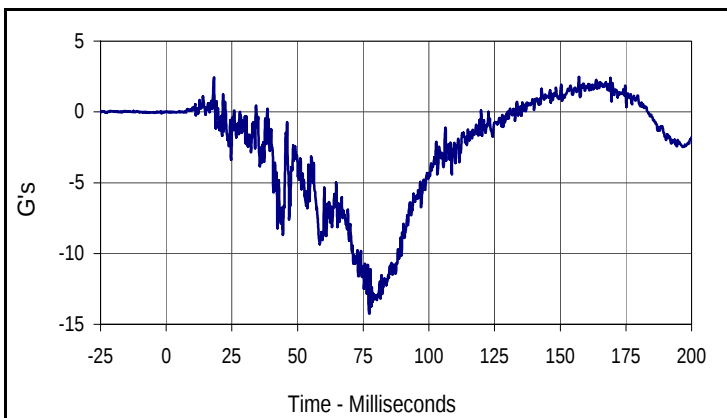
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Vehicle Right Rear X
Vehicle Right Rear X Velocity
Vehicle Right Rear X Displacement
Vehicle Engine Top
Vehicle Engine Top Velocity
Vehicle Engine Top Displacement
Vehicle Engine Bottom
Vehicle Engine Bottom Velocity
Vehicle Engine Bottom Displacement
Vehicle Left Brake Caliper
Vehicle Left Brake Caliper Velocity
Vehicle Left Brake Caliper Displacement
Vehicle Right Brake Caliper
Vehicle Right Brake Caliper Velocity
Vehicle Right Brake Caliper Displacement
Vehicle Instrument Panel
Vehicle Instrument Panel Velocity
Vehicle Instrument Panel Displacement
Vehicle Left Rear Z
Vehicle Left Rear Z Velocity
Vehicle Left Rear Z Displacement
Vehicle Right Rear Z
Vehicle Right Rear Z Velocity
Vehicle Right Rear Z Displacement

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

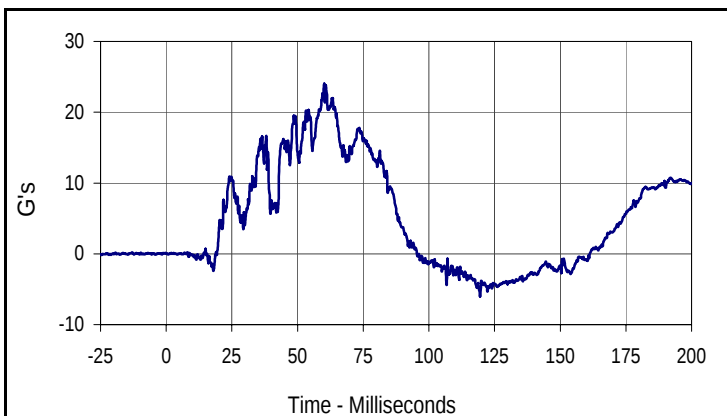
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 NHTSA No.: M60107



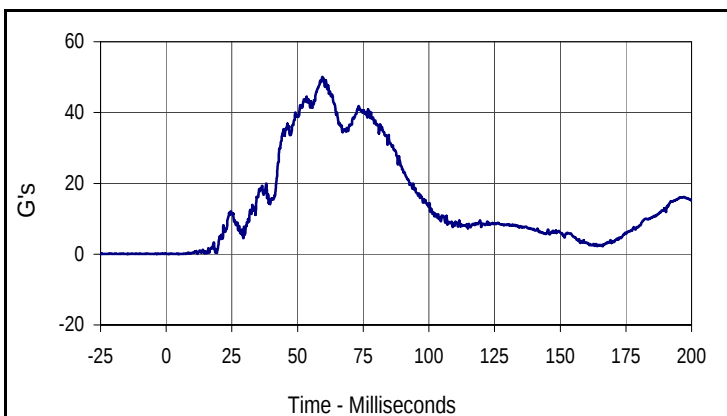
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Max	Time	Min	Time
12.1	196.9	-44.0	59.4



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Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.5	157.1	-14.2	77.3



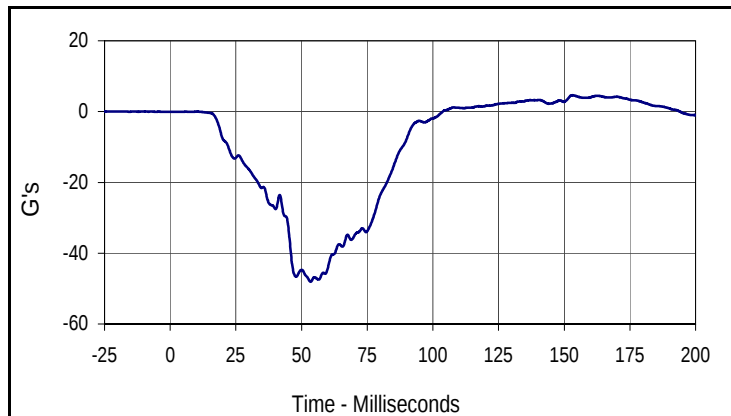
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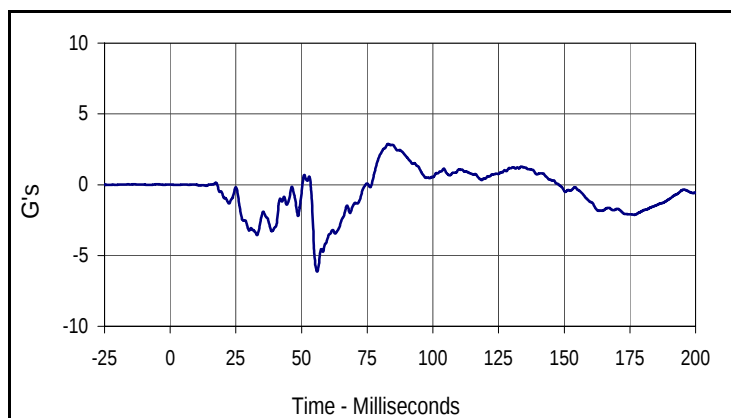
Curve Description			
Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
50.1	59.4	0.0	4.7

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

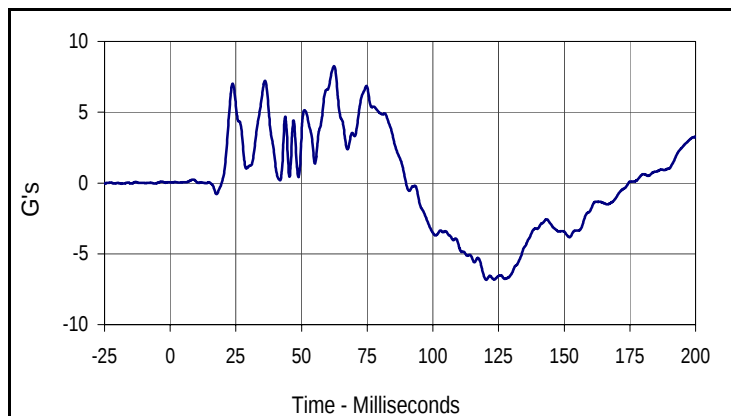
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 NHTSA No.: M60107



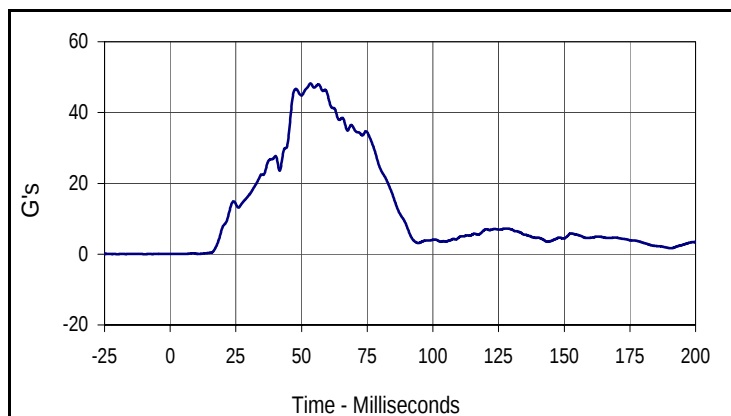
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Max	Time	Min	Time
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Curve Description			
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Max	Time	Min	Time
2.9	82.9	-6.1	55.9



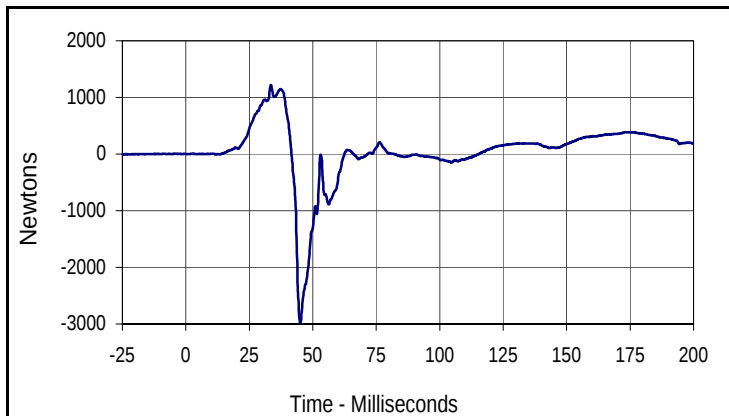
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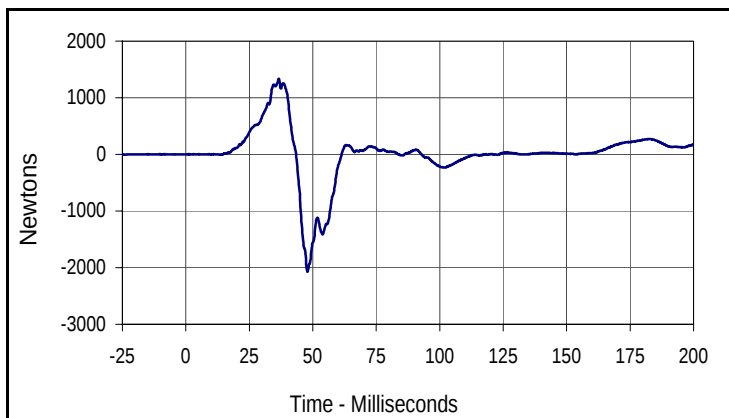
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Driver Chest Resultant Primary			
CURNO	Type	SAE Class	Units
004	RES	180	G's
Max	Time	Min	Time
48.2	53.4	0.0	10.5

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06
 NHTSA No.: M60107



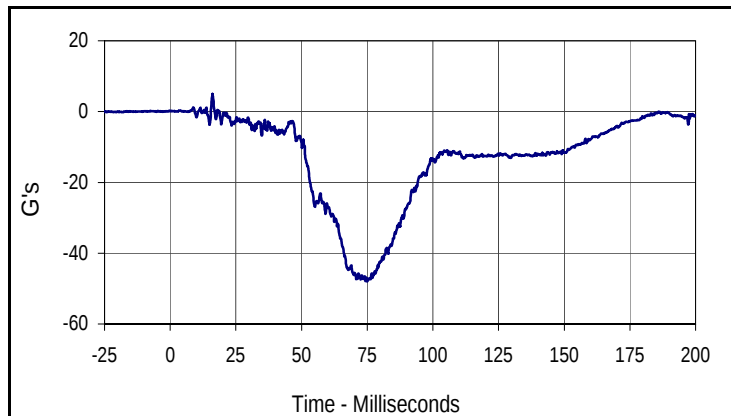
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Driver Left Femur Force Z			
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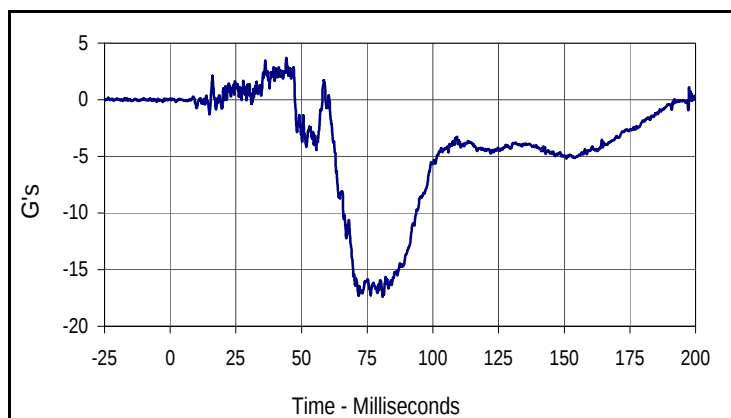
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Driver Right Femur Force Z			
CURNO	Type	SAE Class	Units
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Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

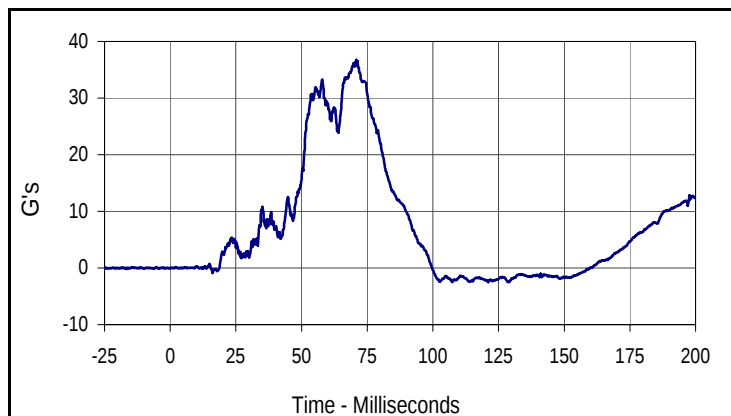
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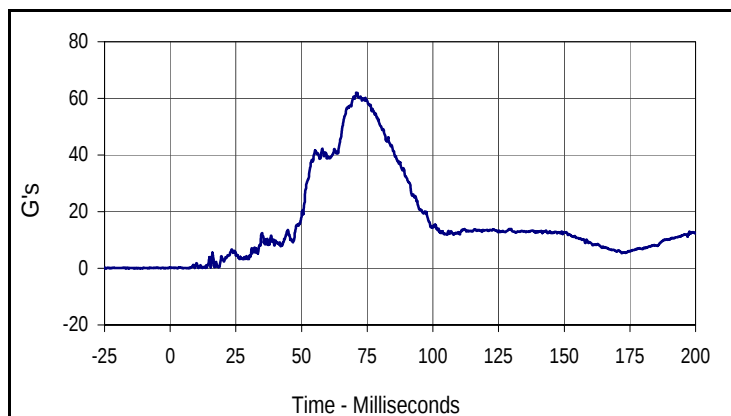
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009	FIL	1000	G's
Max	Time	Min	Time
5.0	16.1	-48.0	75.0



Curve Description			
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010	FIL	1000	G's
Max	Time	Min	Time
3.7	44.2	-17.4	80.9



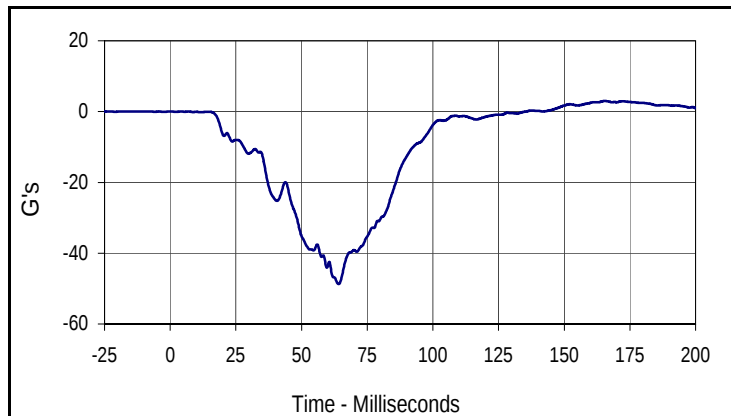
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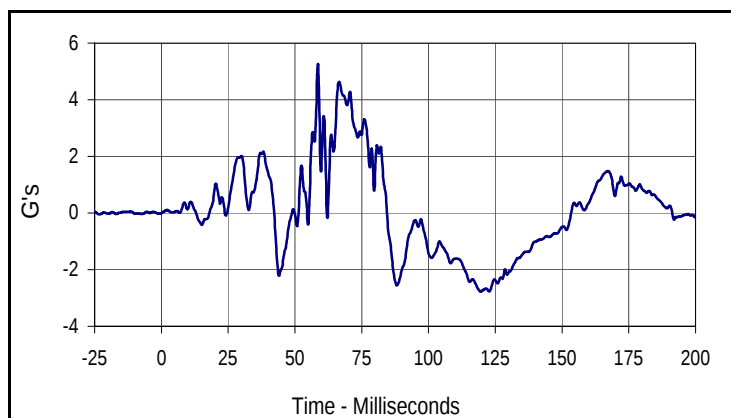
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Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
009	RES	1000	G's
Max	Time	Min	Time
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Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

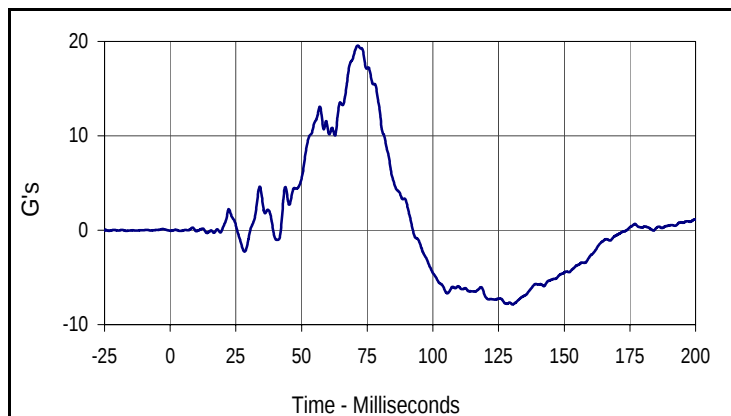
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 NHTSA No.: M60107



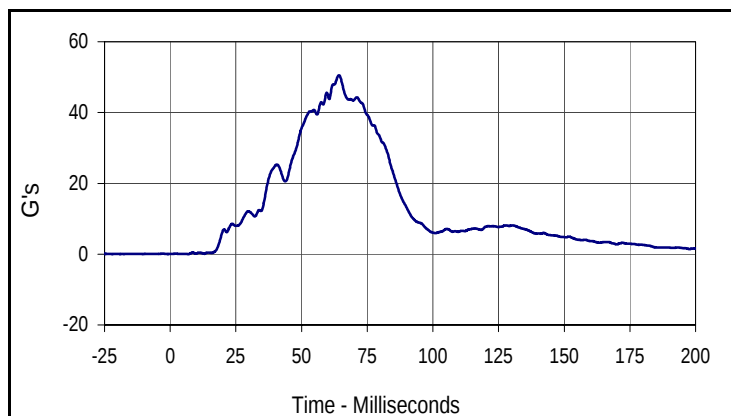
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012	FIL	180	G's
Max	Time	Min	Time
3.0	165.3	-48.7	64.1



Curve Description			
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CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
5.3	58.6	-2.8	119.5



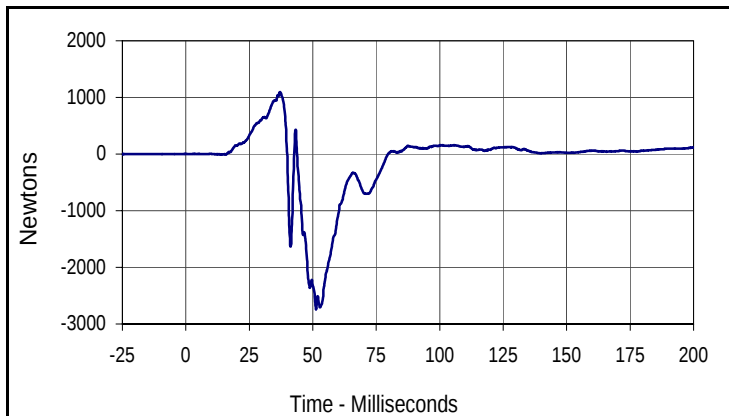
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Passenger Chest Primary Z			
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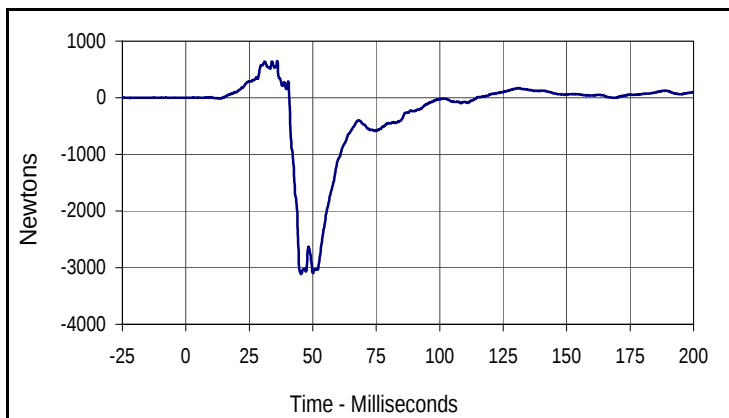
Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
012	RES	180	G's
Max	Time	Min	Time
50.5	64.3	0.0	6.8

Test Vehicle: 2006 Chevrolet Colorado 2-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/9/06
 NHTSA No.: M60107



Curve Description			
Passenger Left Femur Force Z			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
1095.3	37.1	-2742.7	51.3



Curve Description			
Passenger Right Femur Force Z			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
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APPENDIX C

DUMMY CALIBRATION DATA

Test Program: Hybrid III 50th Percentile Male Head Drop Test

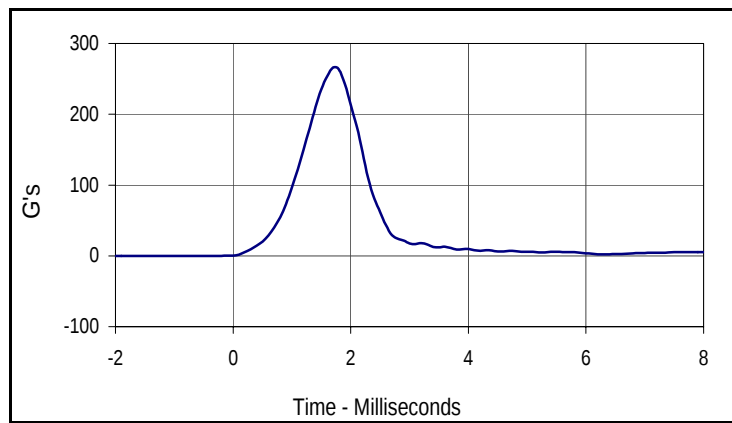
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ATD Serial No.: 034

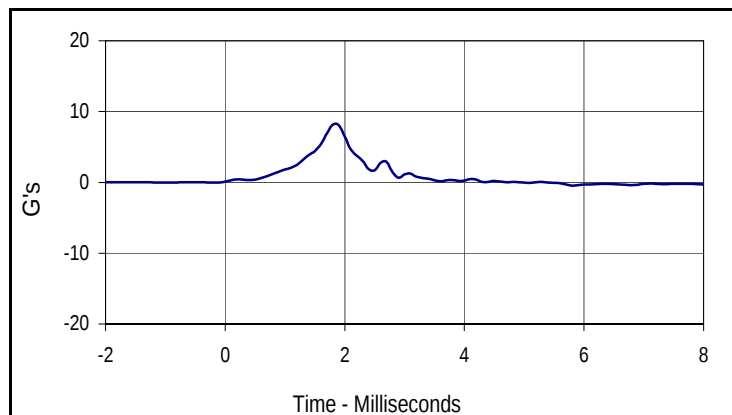
Test I.D.: HD02A



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	266.2	Pass
Peak Lateral Acceleration	G's	≤15.0	8.2	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
266.2	1.7	0.0	-0.8



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
8.2	1.8	-0.5	5.8

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

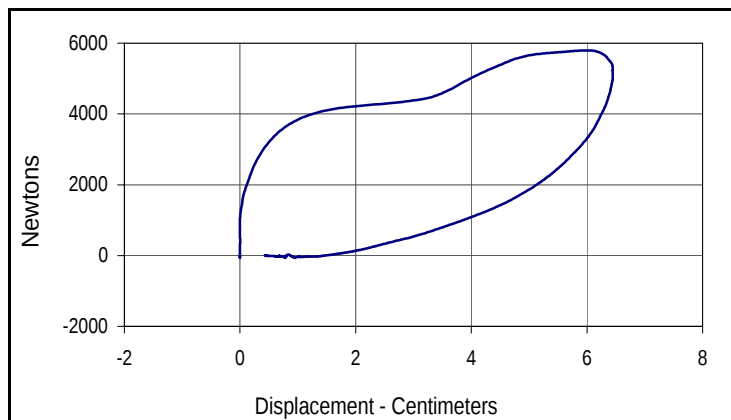
Test Date: 2/3/06

ATD Serial No.: 034

Test I.D.: CH02A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.58 to 6.82	6.75	Pass
Peak Probe Force	Newtons	5159 to 5893	5796	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.45	Pass
Internal Hysteresis	%	69 to 85	76.8	Pass
Overall Test Results				Pass



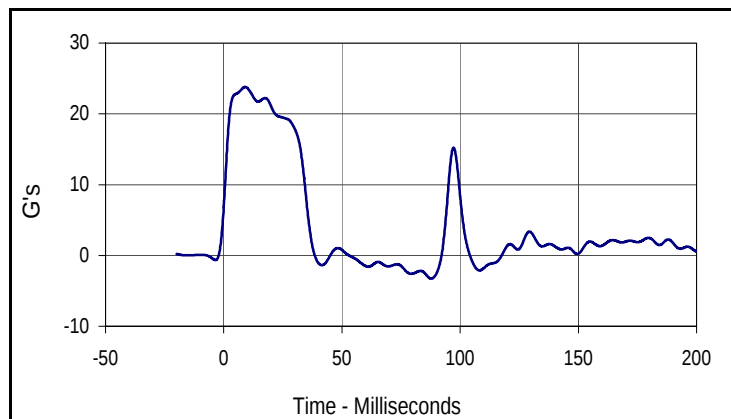
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	600	76.8
Peak Probe Force		Peak Chest Deflection	
5796		6.45	

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 034

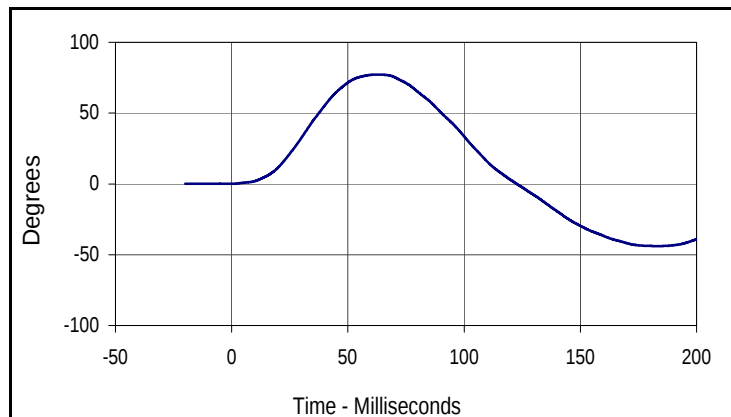
Test Date: 2/2/06
 Test I.D.: NF02A



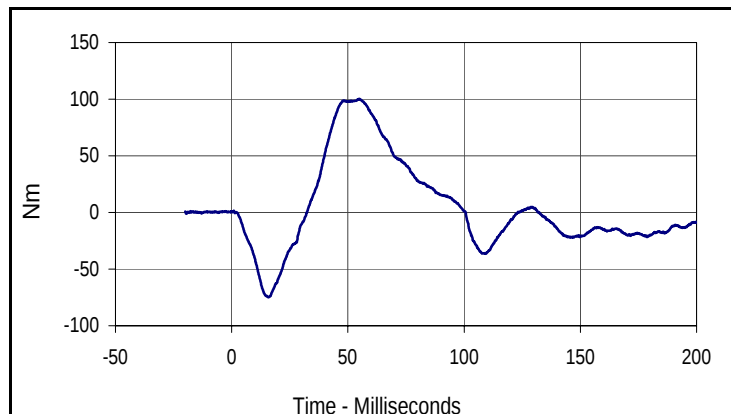
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.6	Pass
	20 Msec.	G's	17.6 to 22.6	21.1	Pass
	30 Msec.	G's	12.5 to 18.5	17.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.9	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	35.9	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	77.2	Pass
	Time	Msec.	57.0 to 64.0	62.2	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	122.7	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	100.4	Pass
	Time	Msec.	47.0 to 58.0	54.9	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	100.7	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.8	9.1	-3.3	87.7



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
77.2	62.2	-43.9	184.2



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
100.4	54.9	-74.9	15.9

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

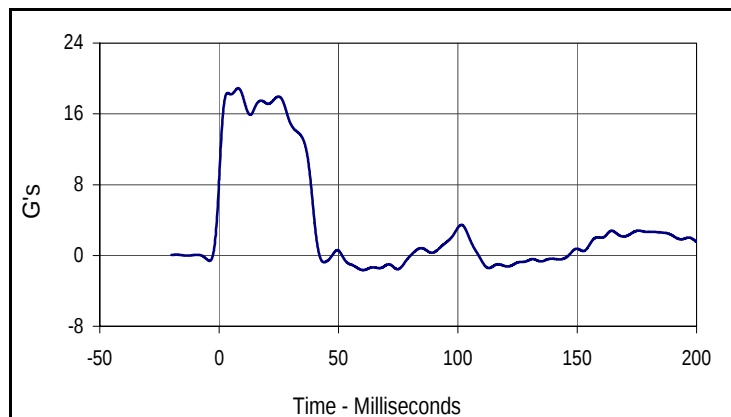
Test Date: 2/2/06

ATD Serial No.: 034

Test I.D.: NE02A



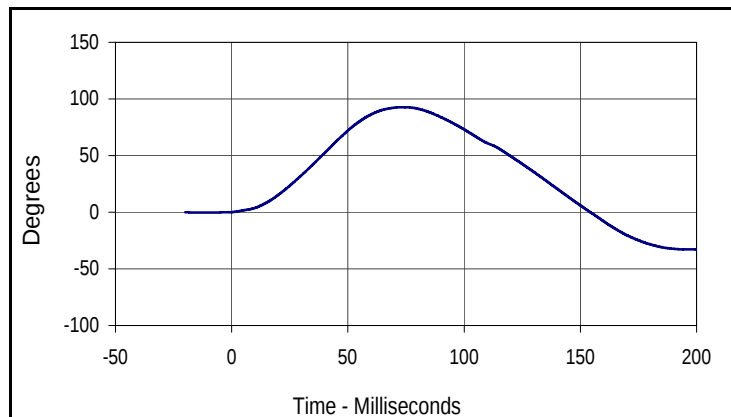
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.11	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.9	Pass
	20 Msec.	G's	14.0 to 19.0	17.2	Pass
	30 Msec.	G's	11.0 to 16.0	14.8	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	14.8	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	39.6	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	92.7	Pass
	Time	Msec.	72.0 to 82.0	73.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	154.3	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-63.8	Pass
	Time	Msec.	65.0 to 79.0	66.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	135.0	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Deceleration

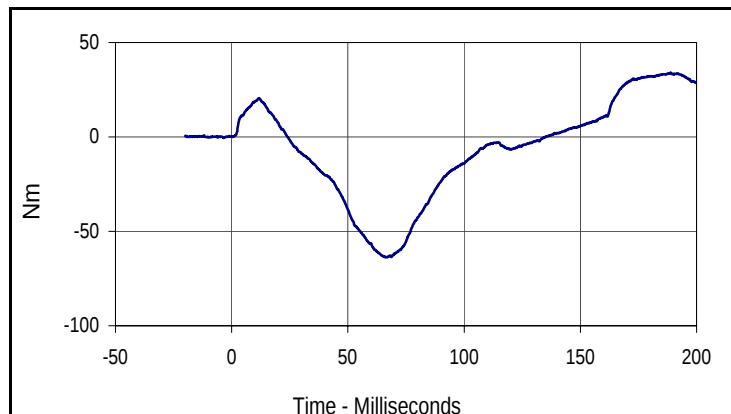
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.9	8.0	-1.7	60.3



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
92.7	73.7	-32.8	196.1



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
34.0	188.9	-63.8	66.4

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 2/3/06

ATD Serial No.: 034

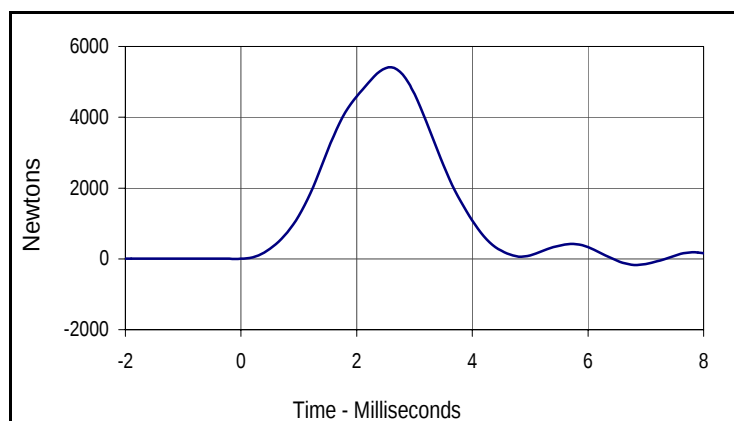
Test I.D.: LK02A , RK02A

**Left Knee**

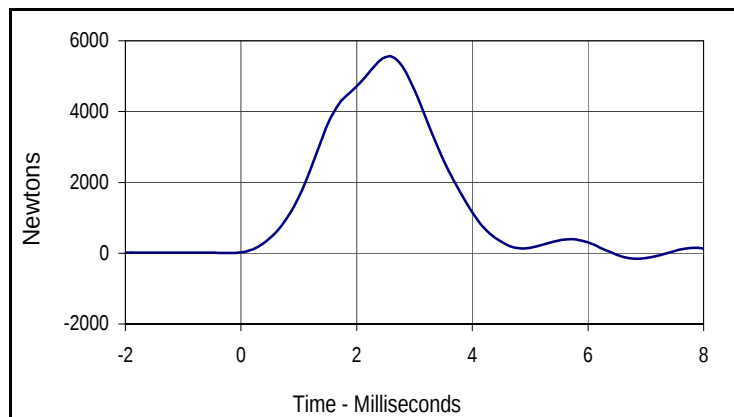
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	5409	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	5556	Pass
Overall Test Results				Pass

**Curve Description****Left Knee Probe Force**

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5409.4	2.6	-201.6	8.9

**Curve Description****Right Knee Probe Force**

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5555.6	2.6	-178.8	8.9

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 2/3/06

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	880	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	139	Pass
E - Shoulder pivot from back	mm	84 to 94	86	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	335	Pass
J - Elbow rest height	mm	190 to 211	208	Pass
K - Buttock to knee length	mm	579 to 604	600	Pass
L - Popliteal length	mm	429 to 455	436	Pass
M - Knee pivot height	mm	485 to 500	489	Pass
N - Buttock popliteal length	mm	452 to 477	475	Pass
O - Chest depth	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	261	Pass
V - Shoulder breadth	mm	422 to 437	431	Pass
W - Foot breadth	mm	91 to 107	100	Pass
Y - Chest circumference	mm	970 to 1001	985	Pass
Z - Waist circumference	mm	836 to 866	850	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	228	Pass
Overall Test Results				Pass

Test Program: Hybrid III 50th Percentile Male Head Drop Test

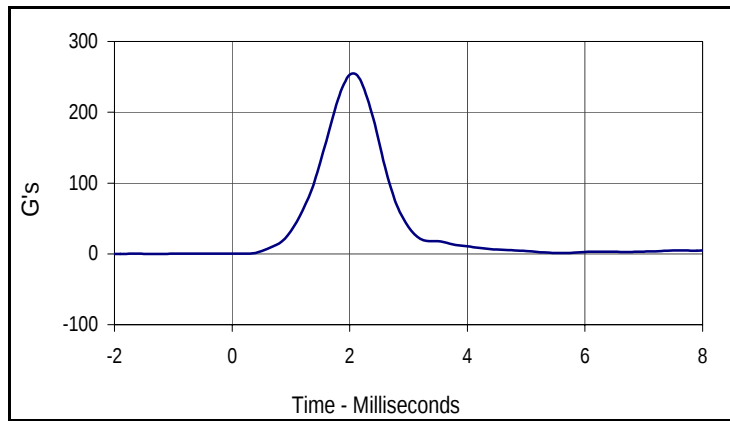
Test Date: 2/1/06

ATD Serial No.: 035

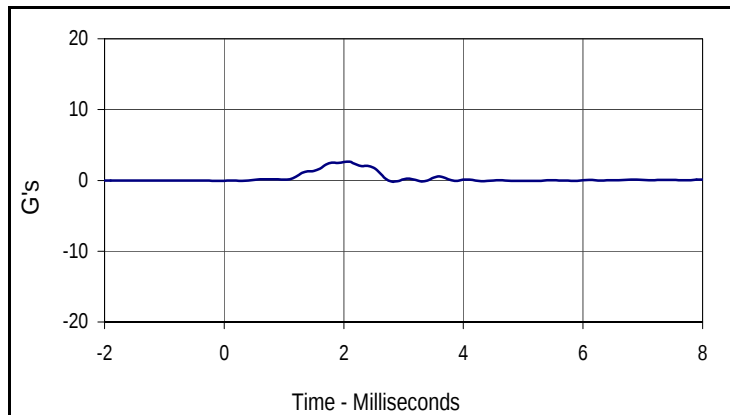
Test I.D.: HD02B



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	254.0	Pass
Peak Lateral Acceleration	G's	≤15.0	2.6	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
254.0	2.1	0.1	-1.3



Curve Description			
Head Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.6	2.1	-0.2	3.3

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

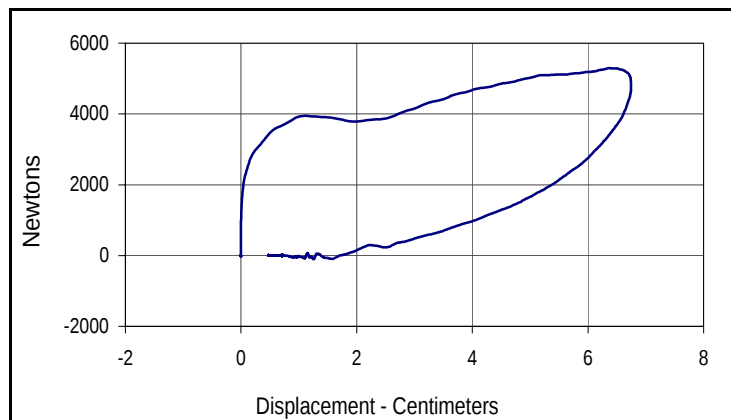
Test Date: 2/3/06

ATD Serial No.: 035

Test I.D.: CH12A



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	6.64	Pass
Peak Probe Force	Newtons	5159 to 5893	5293	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.75	Pass
Internal Hysteresis	%	69 to 85	75.9	Pass
Overall Test Results				Pass



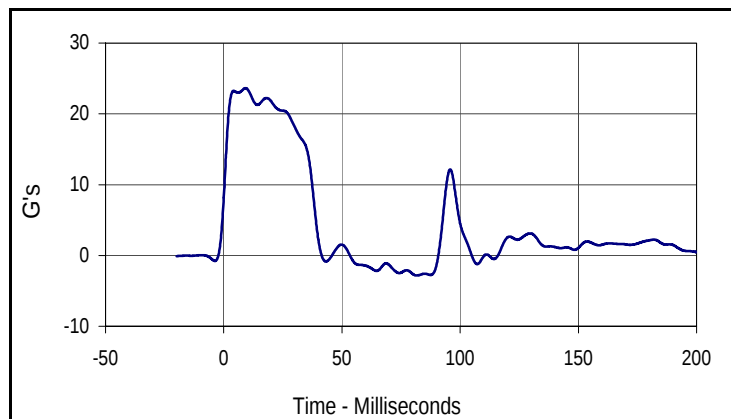
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	75.9
Peak Probe Force		Peak Chest Deflection	
5293		6.75	

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 035

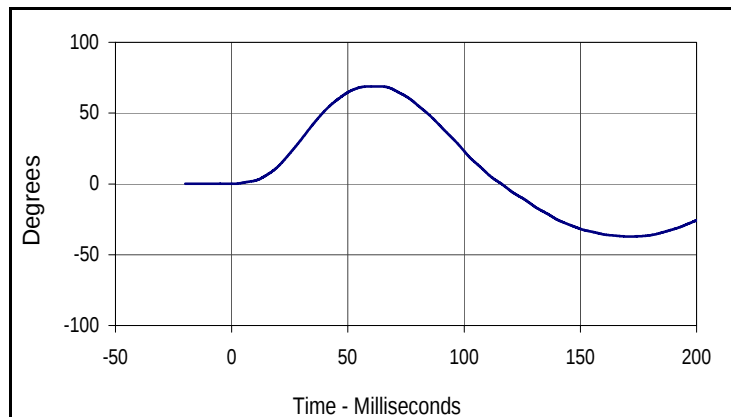
Test Date: 2/2/06
 Test I.D.: NF02B



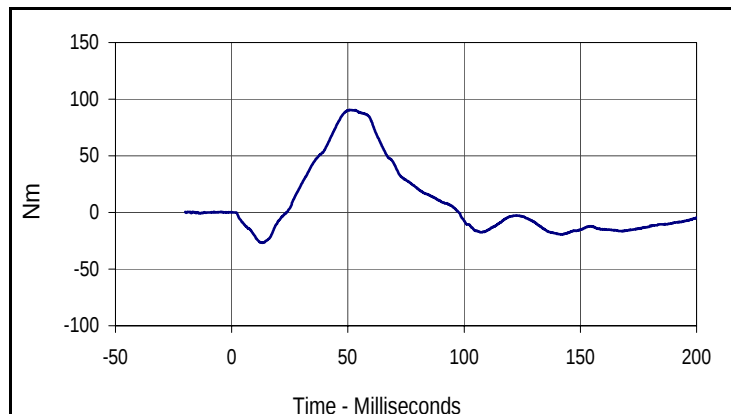
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.5	Pass
	20 Msec.	G's	17.6 to 22.6	21.8	Pass
	30 Msec.	G's	12.5 to 18.5	18.2	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	18.2	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	39	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	68.9	Pass
	Time	Msec.	57.0 to 64.0	61.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	116.1	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	90.6	Pass
	Time	Msec.	47.0 to 58.0	50.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.8	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.6	9.3	-2.8	81.6



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
68.9	61.1	-37.1	170.9



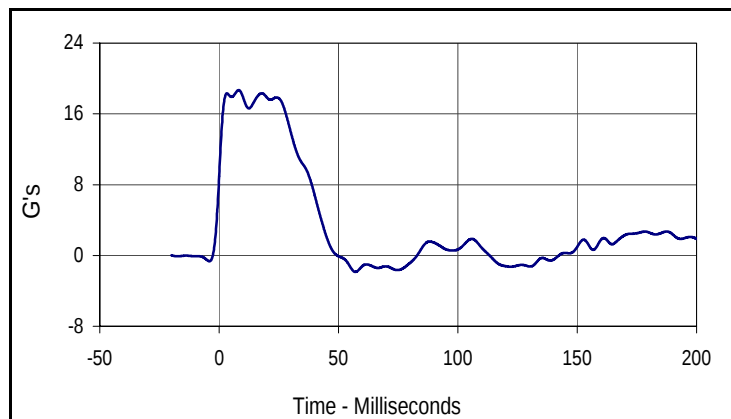
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
90.6	50.7	-26.8	13.1

Test Program: Hybrid III 50th Percentile Male Neck Extension Test
 ATD Serial No.: 035

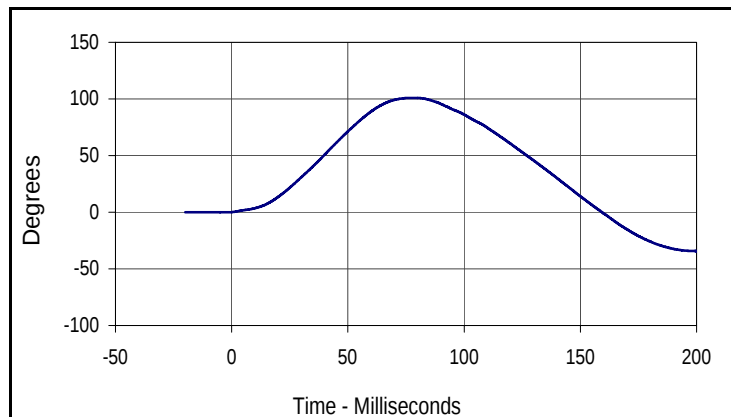
Test Date: 2/2/06
 Test I.D.: NE02B



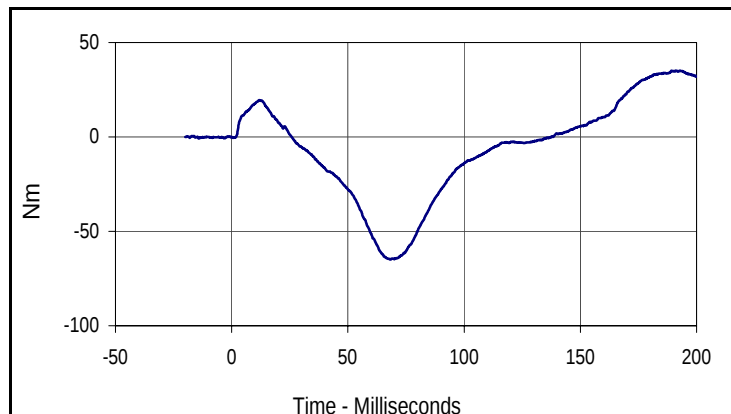
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.11	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.9	Pass
	20 Msec.	G's	14.0 to 19.0	17.9	Pass
	30 Msec.	G's	11.0 to 16.0	13.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	13.9	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	41.8	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	101.0	Pass
	Time	Msec.	72.0 to 82.0	78.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	159.3	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-64.8	Pass
	Time	Msec.	65.0 to 79.0	68.3	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	137.5	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.7	8.1	-1.9	57.1



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
101.0	78.1	-34.3	200.0



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
35.1	189.2	-64.8	68.3

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 2/3/06

ATD Serial No.: 035

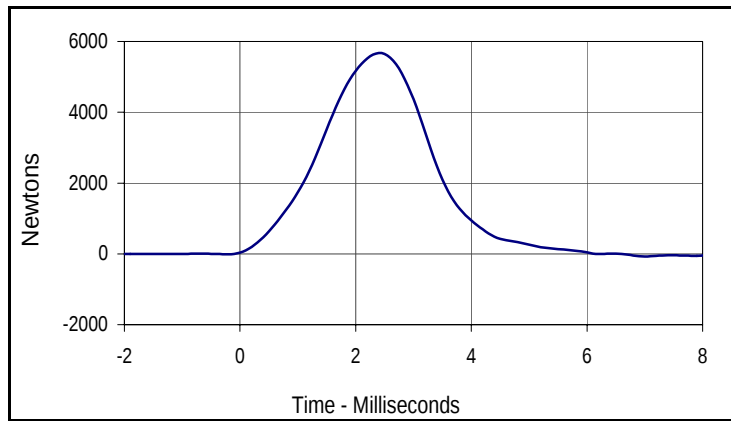
Test I.D.: LK02B , RK02B

**Left Knee**

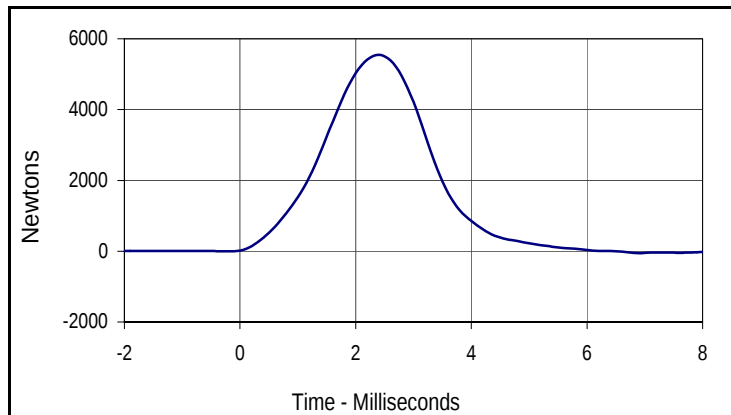
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5671	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5544	Pass
Overall Test Results				Pass

**Curve Description****Left Knee Probe Force**

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5671.0	2.4	-72.7	7.0

**Curve Description****Right Knee Probe Force**

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5544.5	2.4	-52.0	6.9

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 2/3/06

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	887	Pass
B - Shoulder pivot height	mm	505 to 521	508	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	139	Pass
E - Shoulder pivot from back	mm	84 to 94	90	Pass
F - Thigh clearance	mm	140 to 155	143	Pass
G - Elbow back to wrist pivot	mm	290 to 305	298	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	340	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	580	Pass
L - Popliteal length	mm	429 to 455	445	Pass
M - Knee pivot height	mm	485 to 500	495	Pass
N - Buttock popliteal length	mm	452 to 477	470	Pass
O - Chest depth	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	432	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	995	Pass
Z - Waist circumference	mm	836 to 866	860	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	228	Pass
Overall Test Results				Pass