

REPORT NUMBER TR-P26001-10-NC

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

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

NHTSA NUMBER: M60106

**PREPARED BY:
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FEBRUARY 7, 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 4-Door Pickup at Karco Engineering, LLC on 2/7/06. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity is 56.60 km/h. The ambient temperature at the barrier face at the time of impact is 17.0 degrees Celcius. The vehicle's maximum post-test static crush is 526 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	450.9	449.5
Max. Chest Accel. (3 msec Clip)		G's	60	43.7	43.7
Left Femur Force		Newtons	10008	-2477.7	-8998.5
Right Femur Force		Newtons	10008	-2383.1	-3622.1
17. Key Words 56.3 km/h NCAP Frontal Barrier Impact Test New Car Assessment Program (NCAP) 2006 Chevrolet Colorado 4-Door Pickup NHTSA No. M60106				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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SECTION 1

PURPOSE AND SUMMARY OF TEST M60106

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 4-Door Pickup at a velocity of 56.60 km/h. The test was performed at Karco Engineering, LLC on February 7, 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. 34) and the right-front passenger (position 2) ATD (Serial No. 35) 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 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 526 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	450.9	43.7	-32.4	-2477.7	-2383.1
Passenger	449.5	43.7	-30.5	-8998.5	-3622.1

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 4-Door Pickup

NHTSA No.: M60106

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/7/06

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 4-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
Test Date: 2/7/06

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.60
Test Weight	kg	2105
Impact Angle	degrees	0
Average Rebound	mm	380
Maximum Static Crush	mm	526

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. 34	50% Male Hybrid III No. 35
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	2
Total	15	2

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 4-Door Pickup

NHTSA No.: M60106

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/7/06

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M60106
Make	Chevrolet
Model	Colorado
Body Style	4-Door Pickup
Vin No.	1GCDT136668175975
Color	White
Delivery Date	1/31/2006
Odometer (Miles)	141.0
Dealer	Crest
Transmission	4-Speed Automatic
Final Drive	4WD
Type/No. Cyl.	Inline 5
Engine Disp. (L)	3.5
Engine Placement	Longitudinal
Roof Rack	No
Sunroof/T-Top	No
Tinted Glass	No
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	Yes
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

GVWR (kg)	2404
GAWR Front (kg)	1249
GAWR Rear (kg)	1314

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

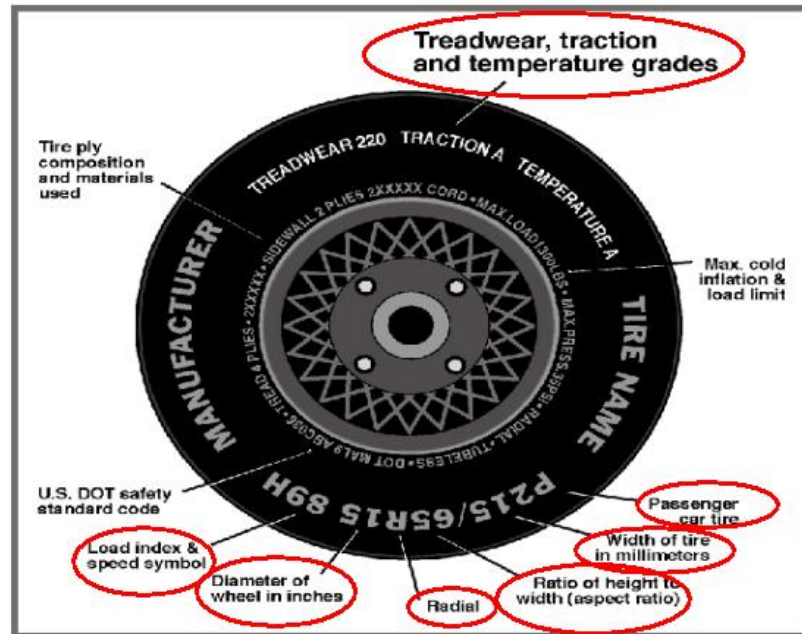
Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket		
Number of Occupants	3	3		6
Capacity Weight (VCW) (kg)				534
Cargo Weight (RCLW) (kg)				126

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

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06

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 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	531	402	933	583	499	1082
Right	kg	525	376	902	549	474	1022
Ratio	%	57.6	42.4	100	53.8	46.2	100
Totals	kg	1056	778	1834	1132	973	2105

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1834
Weight of 2 P572 ATD's	kg	152
Rated Cargo/Luggage Wt. (RCLW)	kg	126
Calculated Vehicle Target Wt. (TVTW)	kg	2112

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	965	984	980	994	1359
As Tested	mm	970	965	955	975	1481

Vehicle Wheel Base (mm) 3204

Weight of Ballast Secured in cargo area (kg) 33

Weight of Items Removed (kg) 11

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) 73.80

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 4-Door Pickup

NHTSA No.: M60106

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/7/06

SPEED TRAP DATA

Measured Parameter	Units	Requirement	Value
Trap No.1 Velocity (Primary)	km/h	55.51 to 57.12	56.60
Trap No.2 Velocity (Redun.)	km/h	55.51 to 57.12	56.55

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	5059	4682	-377
Center	mm	5258	4732	-526
Right Side	mm	5059	4703	-356

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	370
Center	mm	380
Right Side	mm	390
Average	mm	380

DATA SHEET NO. 4 **TEST VEHICLE INFORMATION**

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

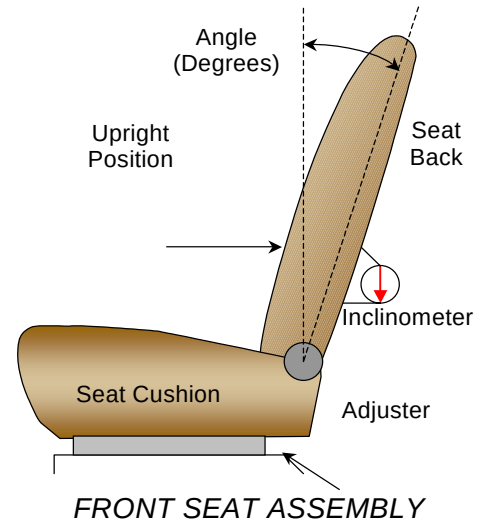
NHTSA No.: M60106
Test Date: 2/7/06

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

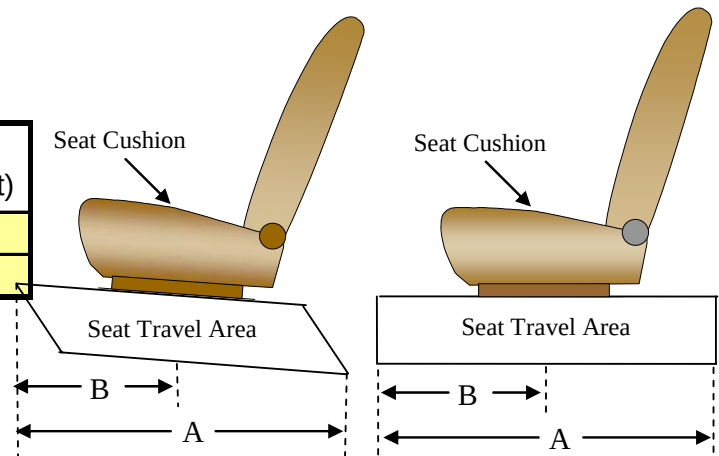


SEAT FORE/AFT POSITIONS

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	25	13
Passenger Seat	25	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

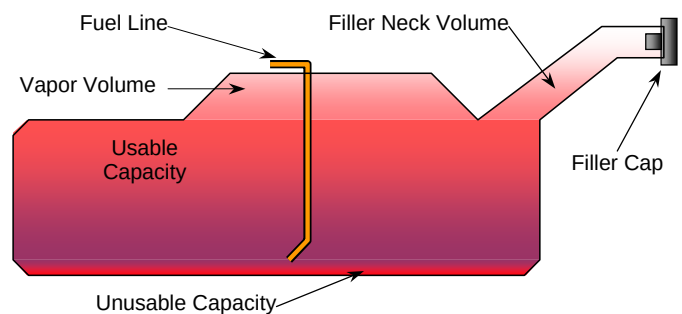
Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	73.80
Usable Capacity of "Optional" Tank	
Usable Capacity used for FMVSS 301	67.92 to 69.37
Actual Amount of Solvent used	68.62

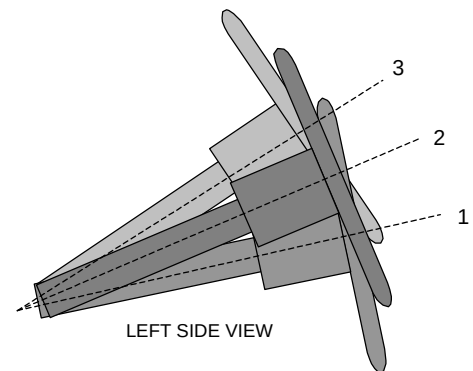
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies 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	16.0	
Geometric center position No. 2	22.2	
Uppermost position No. 3	28.5	

DATA SHEET NO. 5
DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
Test Date: 2/7/06

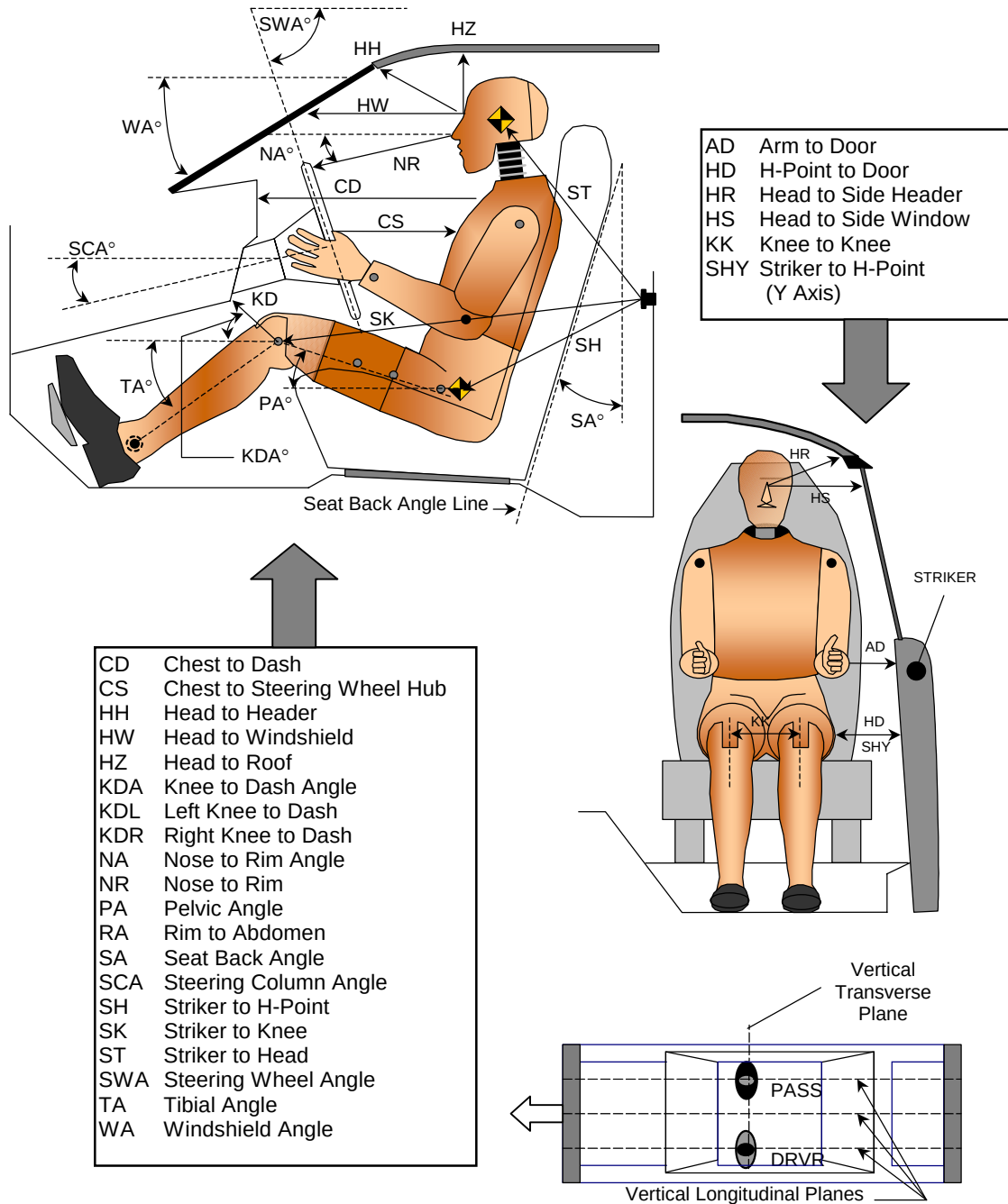
TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (deg)	Length (mm)	Angle (deg)
WA	Windshield Angle		35.1		
SWA	Steering Wheel Angle		67.8		
SCA	Steering Column Angle		22.2		
SA	Seat Back Angle		22.5		22.5
HZ	Head to Roof (Z)	210	90.0	200	90.0
HH	Head to Header	425		400	
HW	Head to Windshield	600		625	
HR	Head to Side Header (Y)	300		300	
NR	Nose to Rim	420	14.4		
CD	Chest to Dash	390		560	
CS	Chest to Steering Hub	330			
RA	Rim to Abdomen	230			
KDL	Left Knee to Dash	230	0.7	200	
KDR	Right Knee to Dash	200		220	0.6
PA	Pelvic Angle		23.0		23.8
TA	Tibia Angle		39.0		42.2
KK	Knee to Knee (Y)	290		290	
SK	Striker to Knee	660	0.4	660	1.5
ST	Striker to Head	610	74.8	580	74.0
SH	Striker to H-Point	230	21.0	230	18.0
SHY	Striker to H-Point (Y)	210		240	
HS	Head to Side Window	350		360	
HD	H-Point to Door (Y)	140		140	
AD	Arm to Door (Y)	110		140	

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

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06

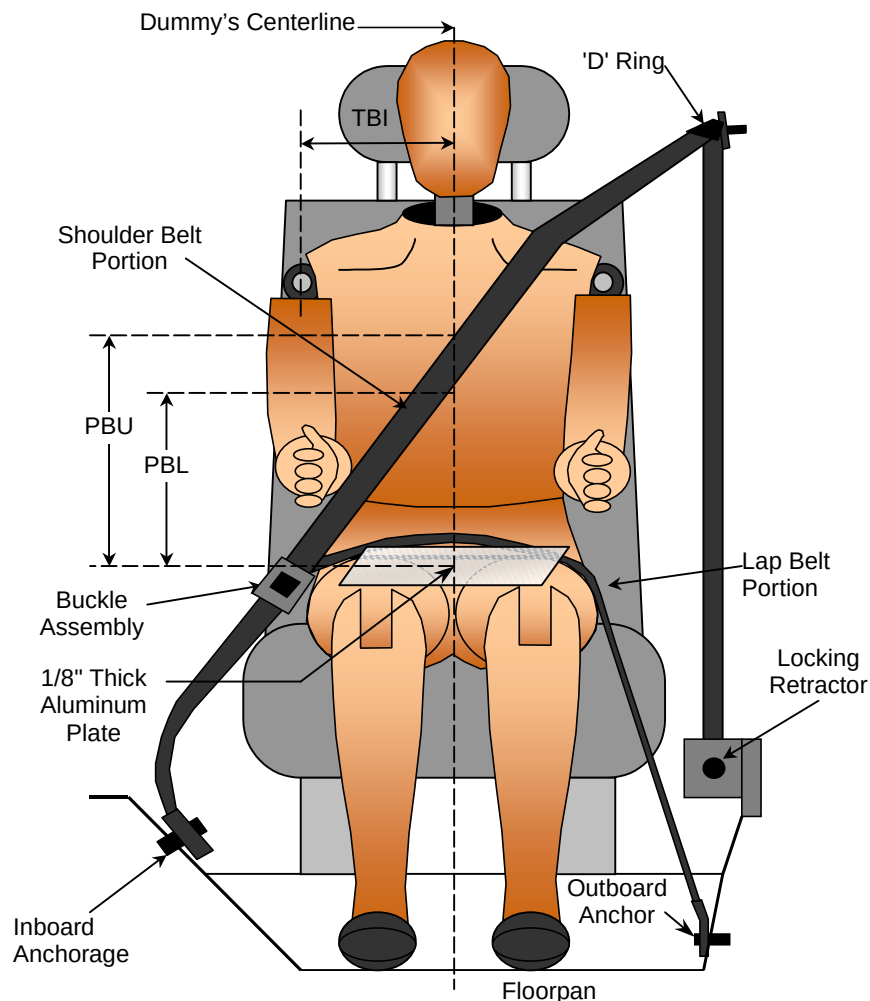


DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

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

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06



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	275	260
PBL - Top Surface of reference to belt lower edge	mm	207	185
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 4-Door Pickup

NHTSA No.: M60106

Test Program: 2006 NHTSA 35mph NCAP

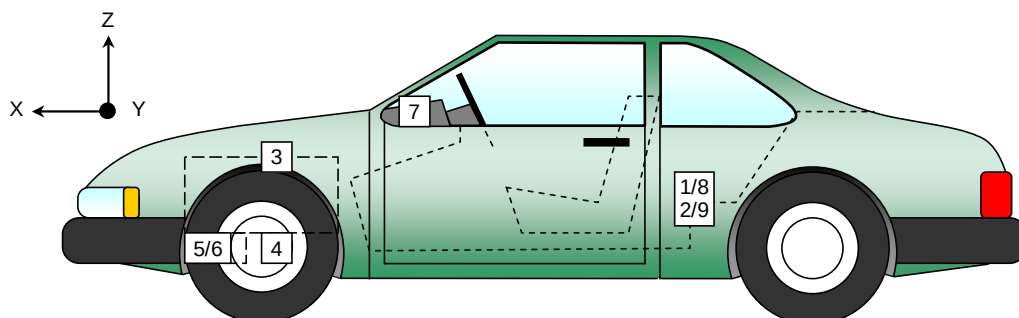
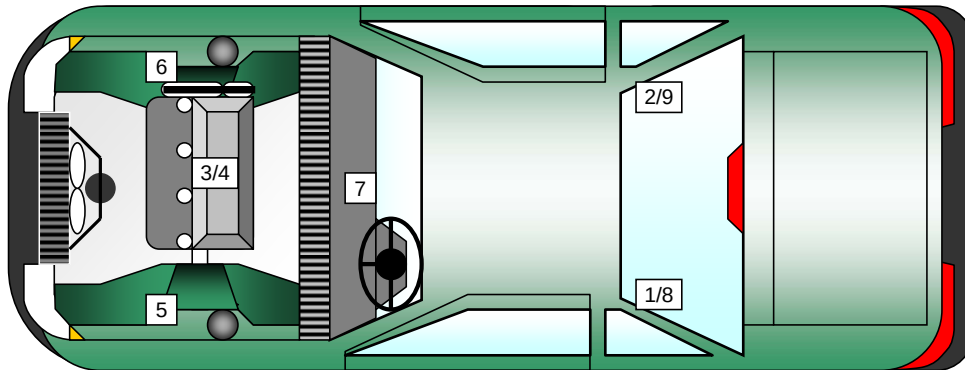
Test Date: 2/7/06

VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Left Rear X-Member	2366	-660	519
2	Right Rear X-Member	2366	660	519
3	Engine Top	4433	110	1170
4	Engine Bottom	4239	0	255
5	Left Brake Caliper	4249	-710	400
6	Right Brake Caliper	4249	710	400
7	Instrument Panel			
8	Left Rear X-Member (Z-Axis)	2366	-660	519
9	Right Rear X-Member (Z-Axis)	2366	660	519

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 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
Retractor Reel to "D" ring	mm	800	800
Shoulder Belt length as measured on ATD	mm	900	700
Lap Belt length as measured on ATD	mm	850	880
Remainder of belt on reel	mm	700	750
Total belt length for continuous webbing systems	mm	3250	3130

SHOULDER BELT SPOOL-OFF DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	120.0	100.0
As determined electronically	mm	205.5	168.6

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 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06

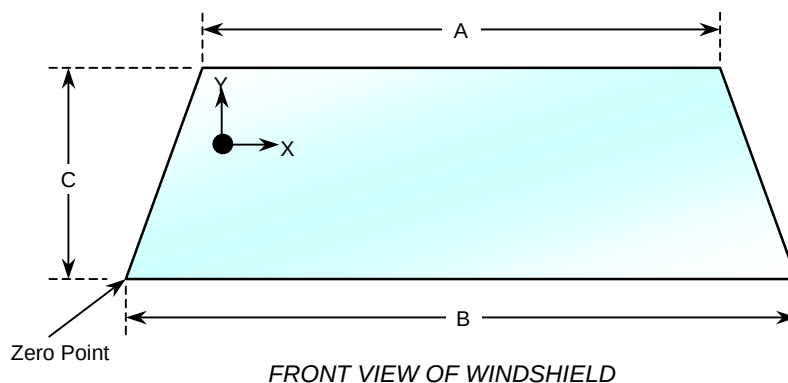
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with a rubber type adhesive. No molding covers the windshield periphery at any point.

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



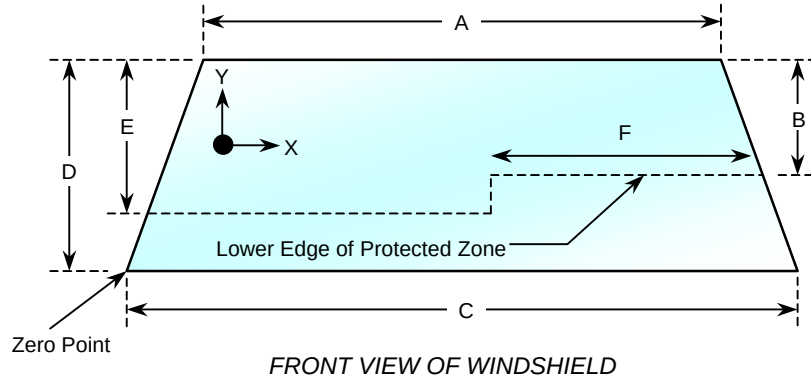
WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1200	28
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 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06



**WINDSHIELD AND
PROTECTED ZONE**

Item	Units	Value
A	mm	1200
B	mm	465
C	mm	1445
D	mm	710
E	mm	440
F	mm	570

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 4-Door Pickup NHTSA No.: M60106
Test Program: 2006 NHTSA 35mph NCAP Test Date: 2/7/06

Test Time: 12:03 PM Temperature: 17.0 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

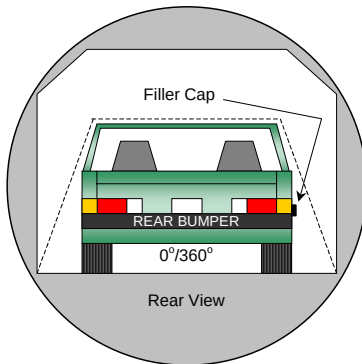
DATA SHEET NO. 12
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup

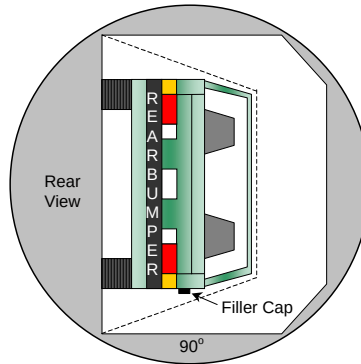
NHTSA No.: M60106

Test Program: 2006 NHTSA 35mph NCAP

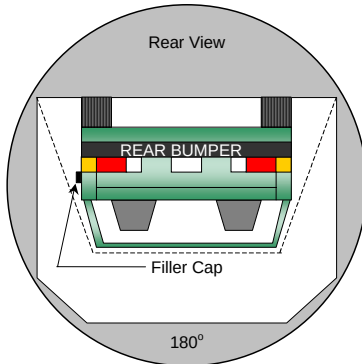
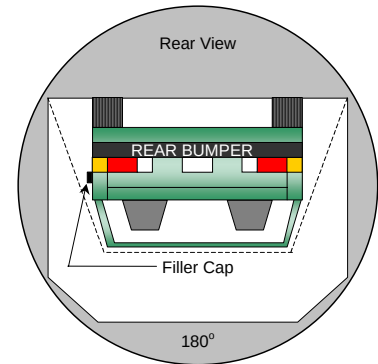
Test Date: 2/7/06



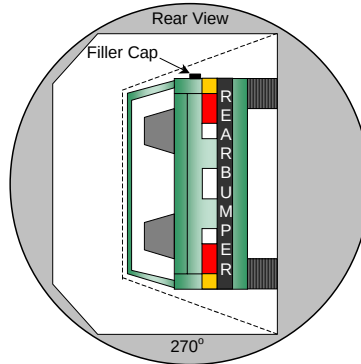
0° to 90°



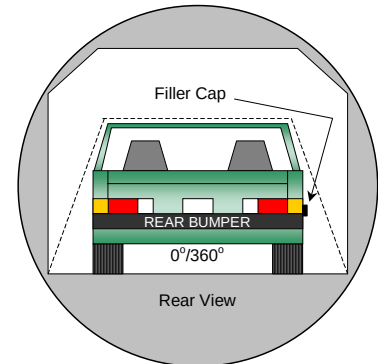
90° to 180°



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 4-Door Pickup

NHTSA No.: M60106

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/7/06

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	83	300	383
90° to 180°	80	300	380
180° to 270°	77	300	377
270° to 360°	77	300	377

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 4-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
Test Date: 2/7/06

VEHICLE MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length of vehicle at centerline	mm	5258	4732	-526
2	RSOV to front of engine	mm	4663	4420	-243
3	RSOV to firewall centerline	mm	4083	4071	-12
4	RSOV to leading edge of right door	mm	3847	3862	15
5	RSOV to leading edge of left door	mm	3839	3925	86
6	RSOV to lower leading edge of right door	mm	3820	3823	3
7	RSOV to lower leading edge of left door	mm	3814	3813	-1
8	RSOV to upper trailing edge of right door	mm	2686	2703	17
9	RSOV to upper trailing edge of left door	mm	2680	2765	85
10	RSOV to lower trailing edge of right door	mm	2691	2602	-89
11	RSOV to lower trailing edge of left door	mm	2679	2675	-4
12	RSOV to bottom of right 'A' pillar	mm	3788	3796	8
13	RSOV to bottom of left 'A' pillar	mm	3836	3803	-33
14	RSOV to firewall on right side	mm	4063	4103	40
15	RSOV to firewall on left side	mm	4073	4112	39
16	RSOV to steering column	mm	3370	3513	143
17	Center of steering column to left 'A' pillar	mm	355	430	75
18	Center of steering column to headlining	mm	445	460	15
19	RSOV to right side of front bumper	mm	5059	4703	-356
20	RSOV to left side of front bumper	mm	5059	4682	-377
21	Length of engine block	mm	573	573	0
RD	RSOV to right side of dash panel	mm	3633	3532	-101
CD	RSOV to center of dash panel	mm	3569	3538	-31
LD	RSOV to left side of dash panel	mm	3591	3589	-2

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

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup

NHTSA No.: M60106

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/7/06

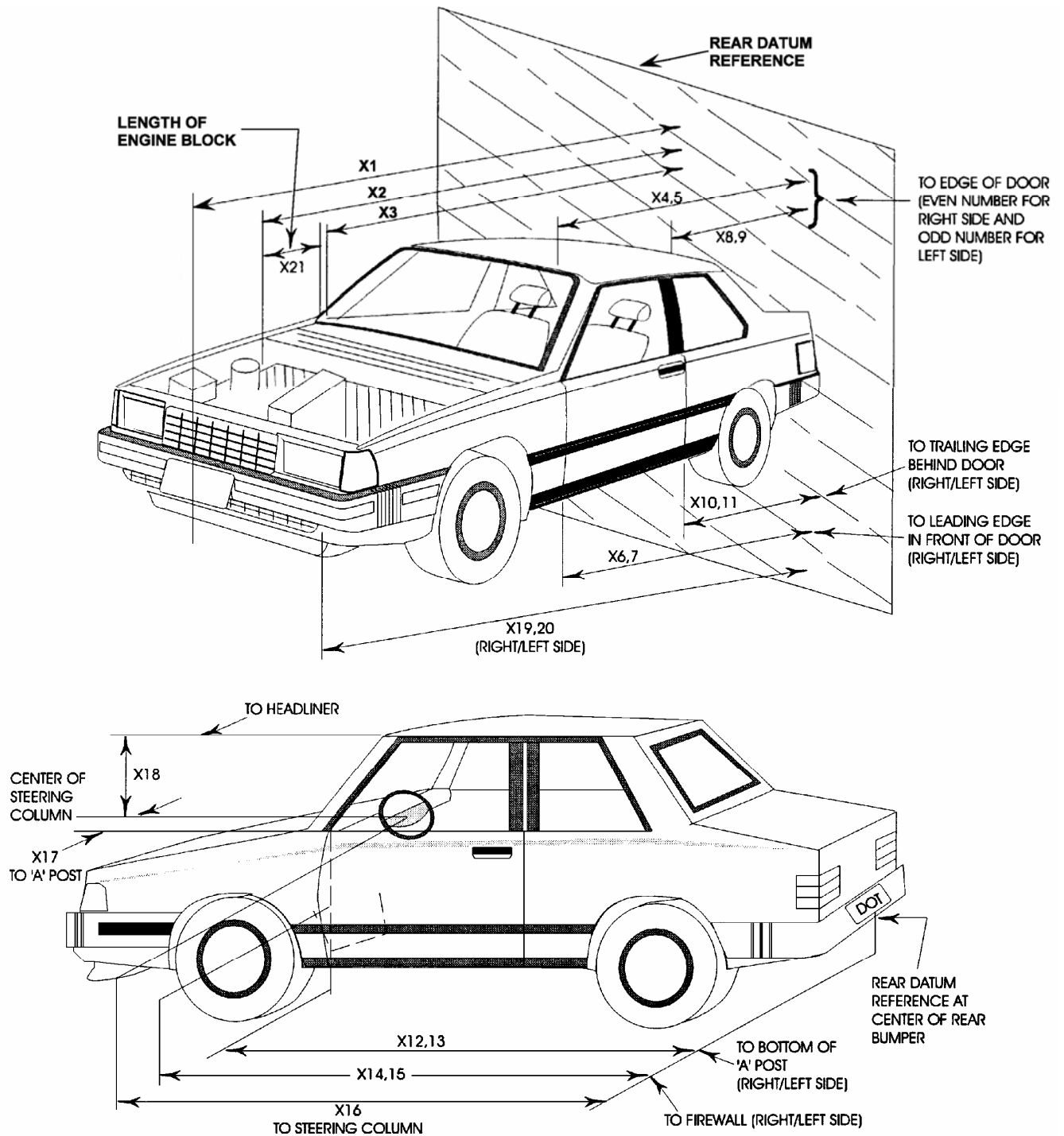
VEHICLE STRUCTURAL MEASUREMENT TABLE

No.	Measurement Description	Units	Pre-Test	Post-Test	Diff.
1	Total length	mm	5258	4732	-526
2	Total width	mm	1708	1708	0
3	Bumper top height	mm	656	685	29
4	Bumper bottom height	mm	247	510	263
5	Longitudinal member top height	mm	518	532	14
6	Longitudinal member bottom height	mm	434	436	2
7	Distance between longitudinal members	mm	700	695	-5
8	Longitudinal member width	mm	84	4	-80
9	Engine top height	mm	1052	1024	-28
10	Engine bottom height	mm	404	219	-185
11	Engine and gear box width	mm	559	559	0
12	Front bumper to engine distance	mm	595	322	-273
13	Front shock absorber fixing width	mm	671	550	-121
14	Bonnet leading edge height	mm	1018	1028	10
15	Front shock absorber fixing width	mm	695	840	145
16	Front bumper to front axle distance	mm	880	360	-520
17	Front axle to 'A' pillar distance	mm	579	512	-67
18	'A' pillar to 'B' pillar distance	mm	1180	1145	-35
19	'B' pillar to rear axle distance	mm	2490	2660	170
20	'B' pillar to 'C' pillar distance	mm	820	794	-26
21	Roof sill bottom height	mm	1575	1483	-92
22	Roof sill top height	mm	1685	1596	-89
23	Floor sill bottom height	mm	315	240	-75
24	Floor sill top height	mm	540	430	-110

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

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06



DATA SHEET NO. 14
CAMERA LOCATIONS

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
Test Date: 2/7/06

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	-1824	-7468	-1167	0	7776	20mm	1000
3	Left Side View	-1538	-7245	-1302	-3	7520	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	-2601	6942	-1321	-2	7530	20mm	1000
8	Right Side View	-2385	6675	-1284	-3	7204	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	-2987	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

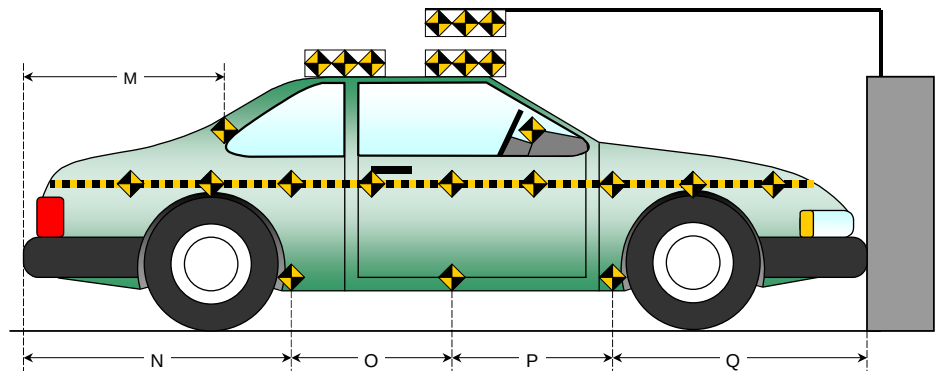
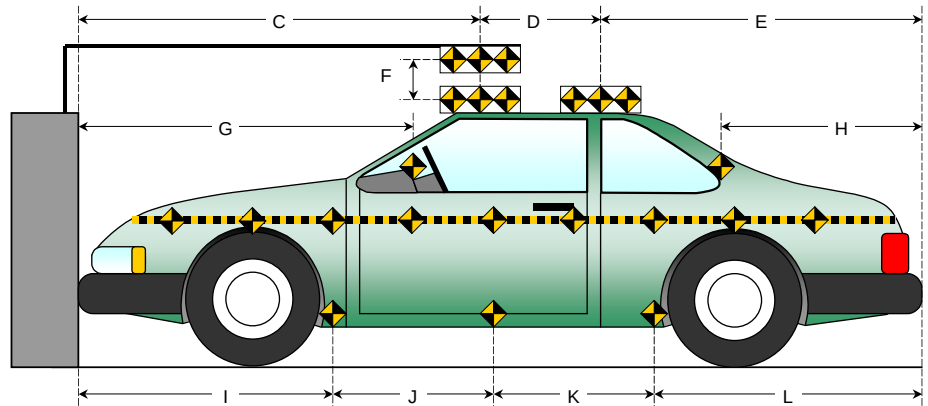
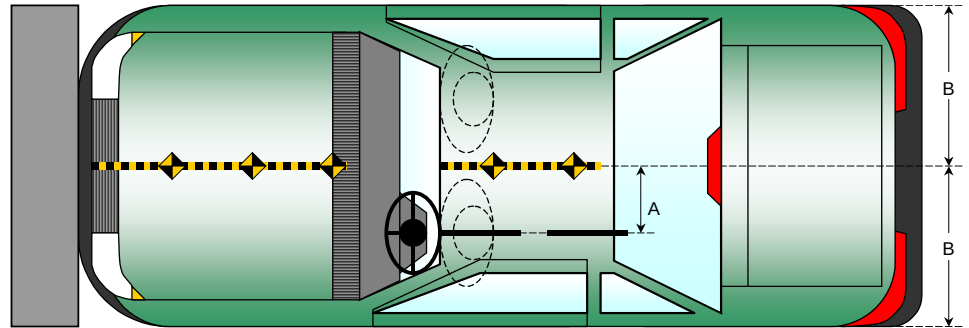
Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup

NHTSA No.: M60106

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/7/06

All Dimensions in (mm)	
Item	Value
A	355
B	854
C	2110
D	650
E	2520
F	155
G	1580
H	1885
I	398
J	990
K	990
L	2869
M	1890
N	2869
O	990
P	990
Q	1399



DATA SHEET NO. 16
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup

NHTSA No.: M60106

Test Program: 2006 NHTSA 35mph NCAP

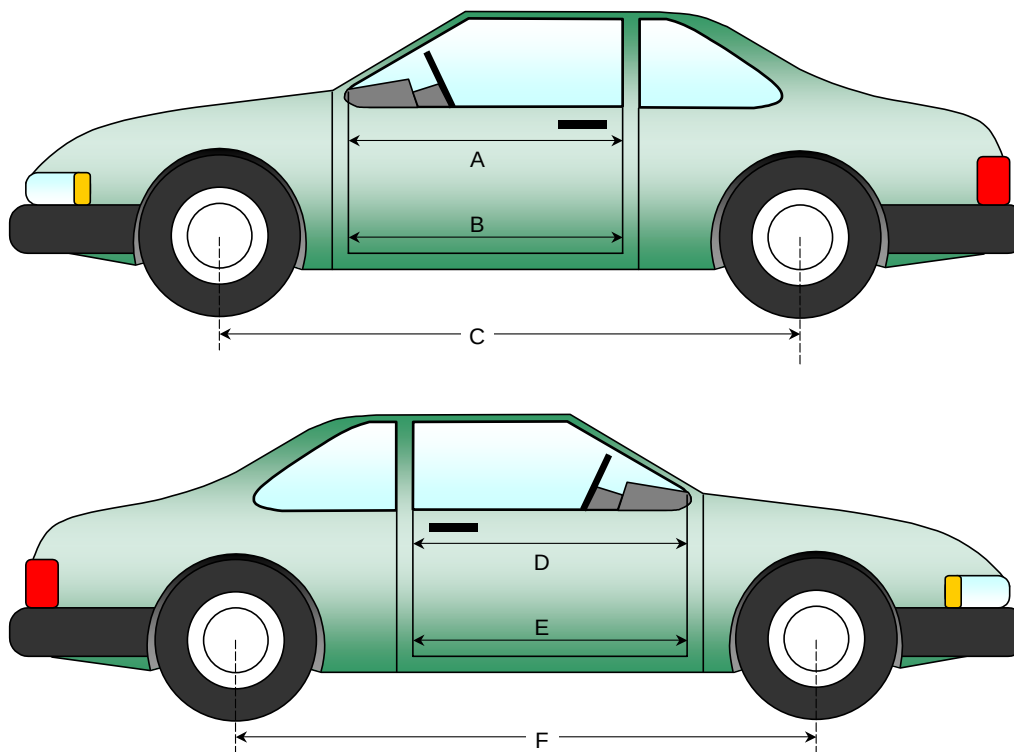
Test Date: 2/7/06

DOOR OPENING WIDTH TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
A	Left Side Upper	mm	1081	1082	1
B	Left Side Lower	mm	1041	1057	16
D	Right Side Upper	mm	1080	1086	6
E	Right Side Lower	mm	1046	1029	-17

WHEELBASE MEASUREMENT TABLE

Item	Description	Units	Pre-Test	Post-Test	Diff.
C	Left Side Wheel Base	mm	3204	3150	-54
F	Right Side Wheel Base	mm	3204	3171	-33



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

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup

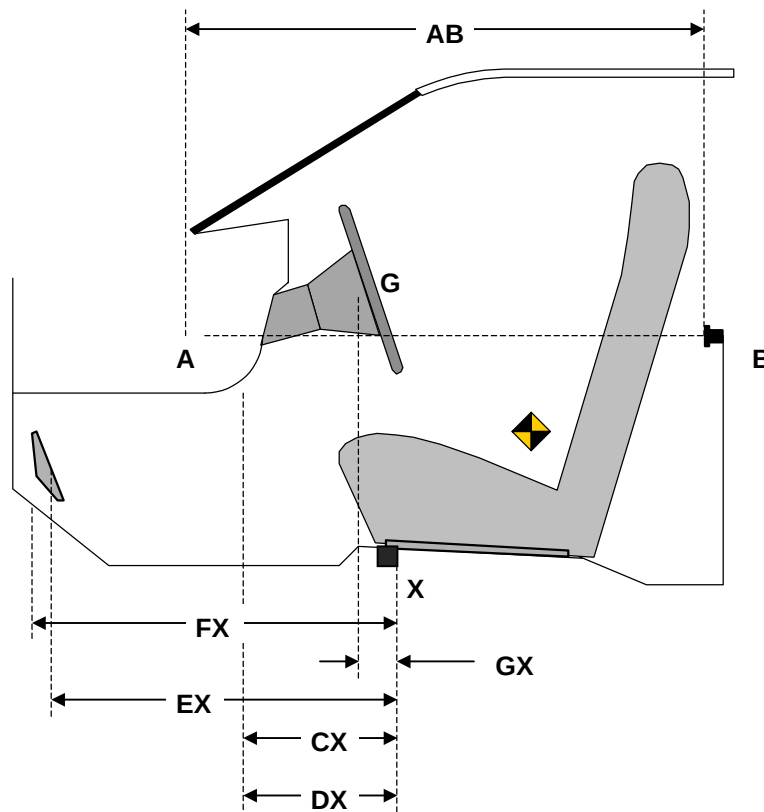
NHTSA No.: M60106

Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/7/06

DRIVER COMPARTMENT INTRUSION TABLE

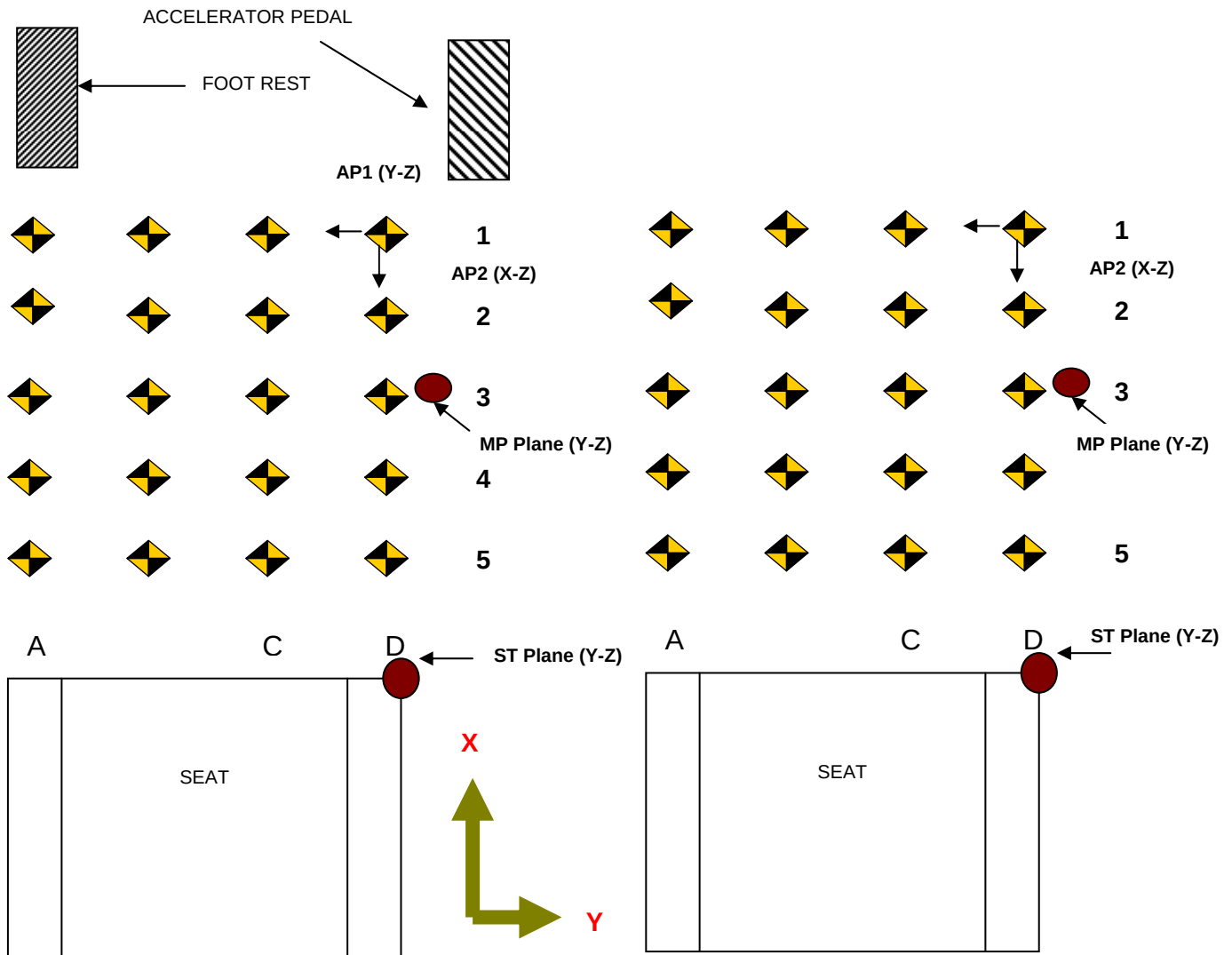
Item	Description	Units	Pre-Test	Post-Test	Diff.
AB	Door Opening (Inside window jam)	mm	1081	1082	1
CX	Left Knee Bolster to X	mm	255	281	26
DX	Right Knee Bolster to X	mm	260	257	-3
EX	Brake Pedal to X	mm	520	520	0
FX	Foot Rest to X	mm	595	620	25
GX	Center of Steering Wheel Hub to X	mm	150	150	0



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

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06



- 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 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06

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	629	713	717	706	632	700	694	668	3	-13	-23	-38
2	604	667	659	638	606	654	638	610	2	-13	-21	-28
3	549	546	531	526	556	538	526	506	7	-8	-5	-20
4	467	463	450	430	466	454	436	425	-1	-9	-14	-5
5	377	375	360	349	377	367	349	329	0	-8	-11	-20

DRIVER FLOOR PAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-65	70	205	322	-49	86	228	343	16	16	23	21
2	-72	60	204	329	-58	77	221	345	14	17	17	16
3	-80	54	198	327	-66	69	210	334	14	15	12	7
4	-89	55	185	322	-66	63	199	330	23	8	14	8
5	-90	42	187	319	-71	56	193	322	19	14	6	3

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-111	-66	-64	-62	-105	-60	-51	-55	6	6	13	7
2	-6	34	43	23	3	40	52	38	9	6	9	15
3	81	79	79	58	87	88	90	70	6	9	11	12
4	73	80	85	69	79	87	92	79	6	7	7	10
5	79	78	83	79	83	84	88	87	4	6	5	8

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

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06

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	686	688	672	607	634	658	663	619	-52	-30	-9	12
2	612	613	600	581	565	590	592	594	-47	-23	-8	13
3	530	517	503	492	495	497	500	514	-35	-20	-3	22
4	448	435	422	407	411	413	418	425	-37	-22	-4	18
5	366	350	336	319	328	327	333	335	-38	-23	-3	16

PASSENGER FLOOR PAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-230	-113	24	131	-322	-206	-71	47	-92	-93	-95	-84
2	-242	-120	18	149	-320	-201	-71	74	-78	-81	-89	-75
3	-246	-126	10	143	-307	-192	-57	83	-61	-66	-67	-60
4	-257	-134	1	137	-310	-187	-54	73	-53	-53	-55	-64
5	-262	-142	-5	128	-306	-184	-52	85	-44	-42	-47	-43

PASSENGER FLOOR PAN Z-AXIS

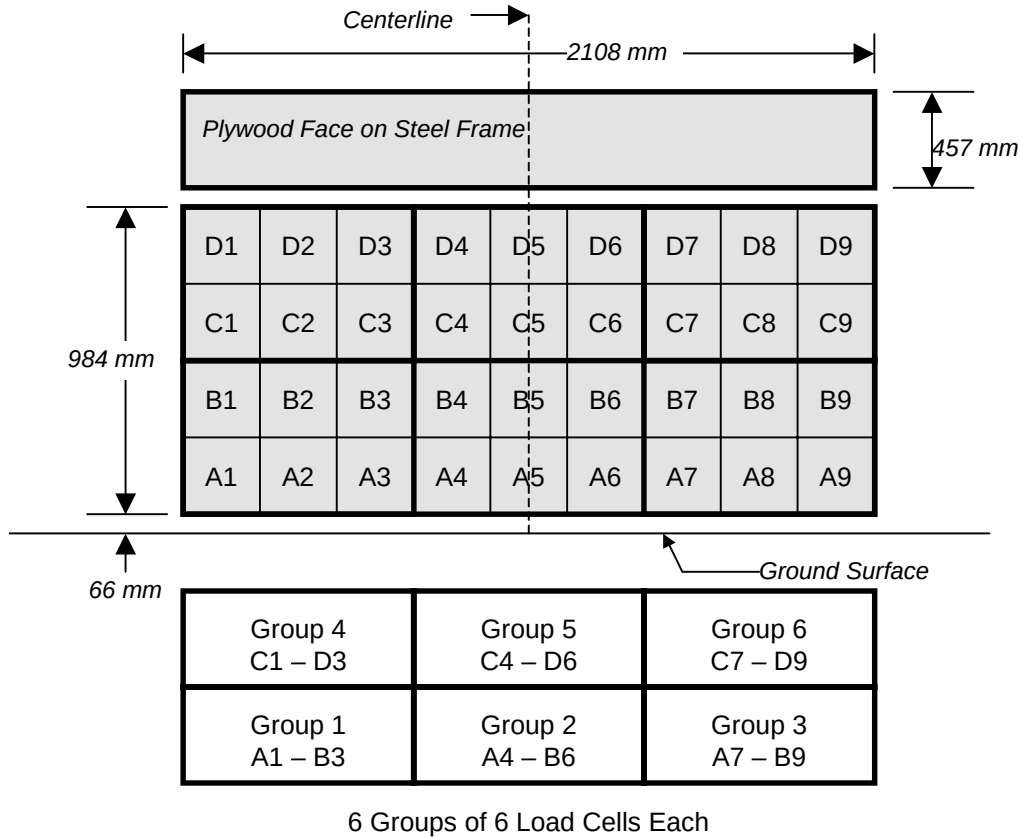
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	6	18	21	-17	18	27	34	2	12	9	13	19
2	53	80	77	77	71	96	94	90	18	16	17	13
3	67	84	80	78	74	110	103	93	7	26	23	15
4	79	86	79	76	87	107	99	91	8	21	20	15
5	82	83	76	73	89	99	93	86	7	16	17	13

DATA SHEET NO. 17
FIXED BARRIER LOAD CELL LOCATIONS

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
 Test Date: 2/7/06

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



ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
Test Date: 2/7/06

VEHICLE INFORMATION

VIN: 1GCDT136668175975
Vehicle Size Category: 4-Door

Wheel base (mm): 3204
Test Weight (kg): 2105

ACCELEROMETER DATA

Accelerometer Location: Left rear cross member
Cal. Procedure/Interval: 6 months / drop test
Integration Algorithm: NHTSA Standard
Impact Velocity (km/h): 56.60
Velocity Change (km/h): 61.2

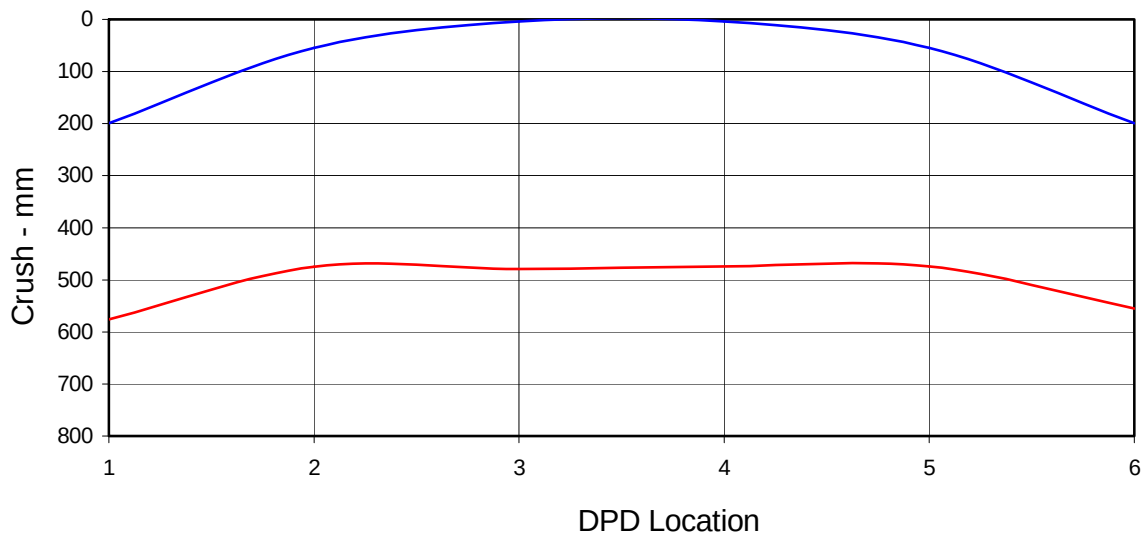
Linearity: Good

Time of Separation (msec): 69.4

CRUSH PROFILE

Collision Deformation Classification: 12FDEW6 Midpoint of Damage: Vehicle Centerline
Damage Region Length (mm): 1572 Impact Mode: Full Frontal

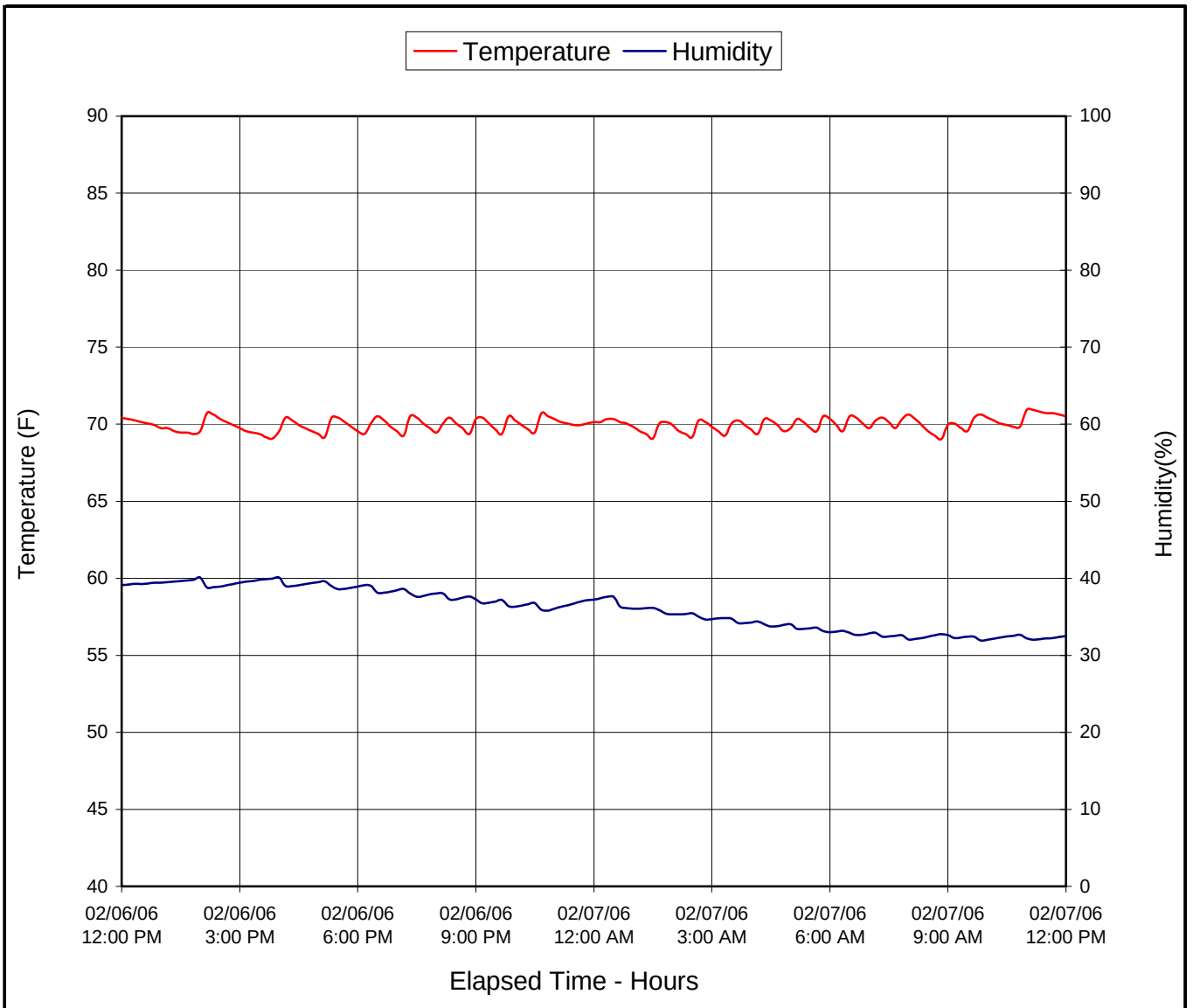
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	199	576	377
C2	Crush zone 2 on left side	mm	55	475	420
C3	Crush zone 3 on left side	mm	4	479	475
C4	Crush zone 4 on right side	mm	4	474	470
C5	Crush zone 5 on right side	mm	55	474	419
C6	Crush zone 6 at right side	mm	199	555	356



DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
Test Program: 2006 NHTSA 35mph NCAP

NHTSA No.: M60106
Test Date: 2/7/06



APPENDIX A
PHOTOGRAPHS

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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

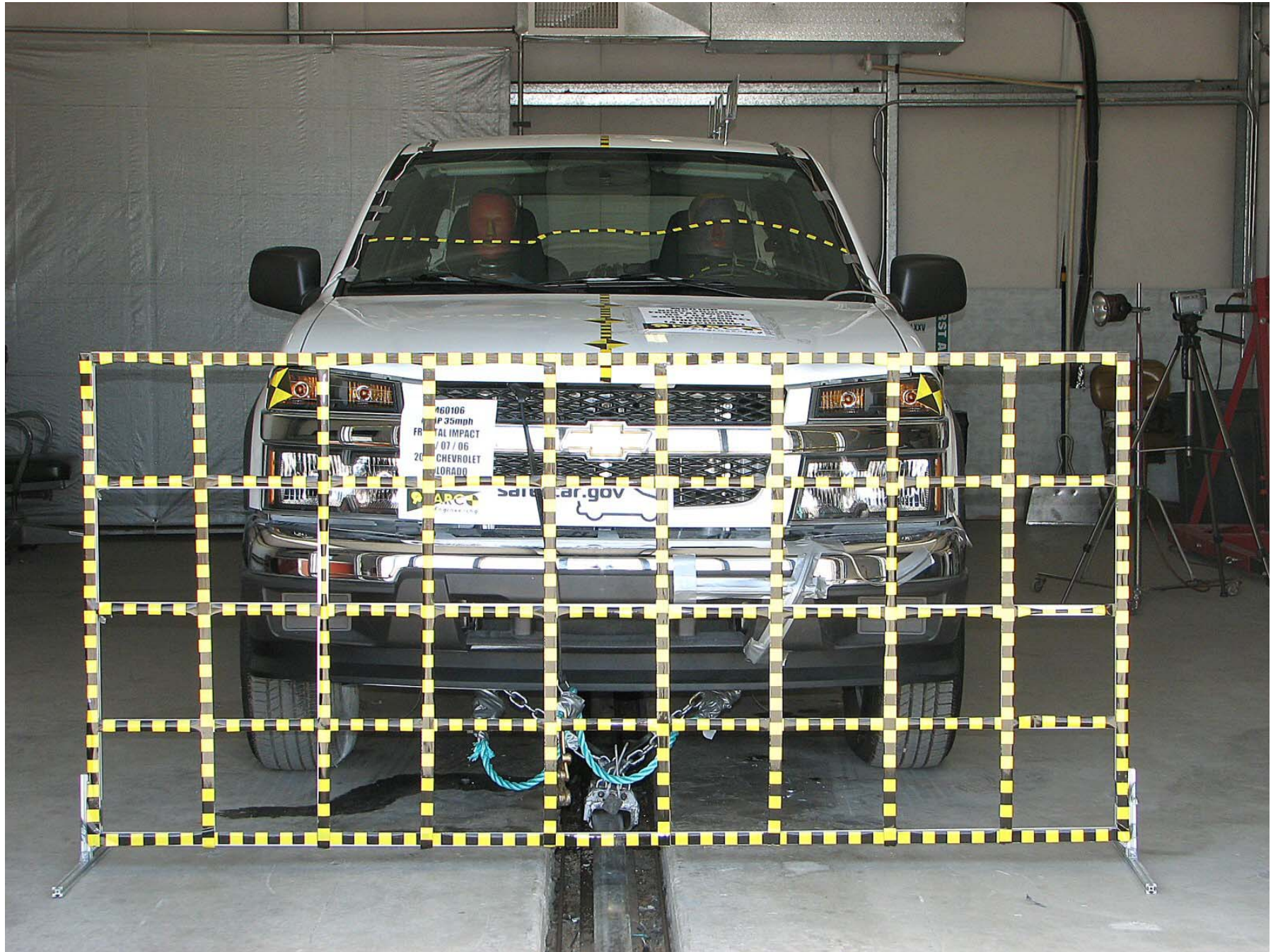


Figure A-1: Load Cell Location

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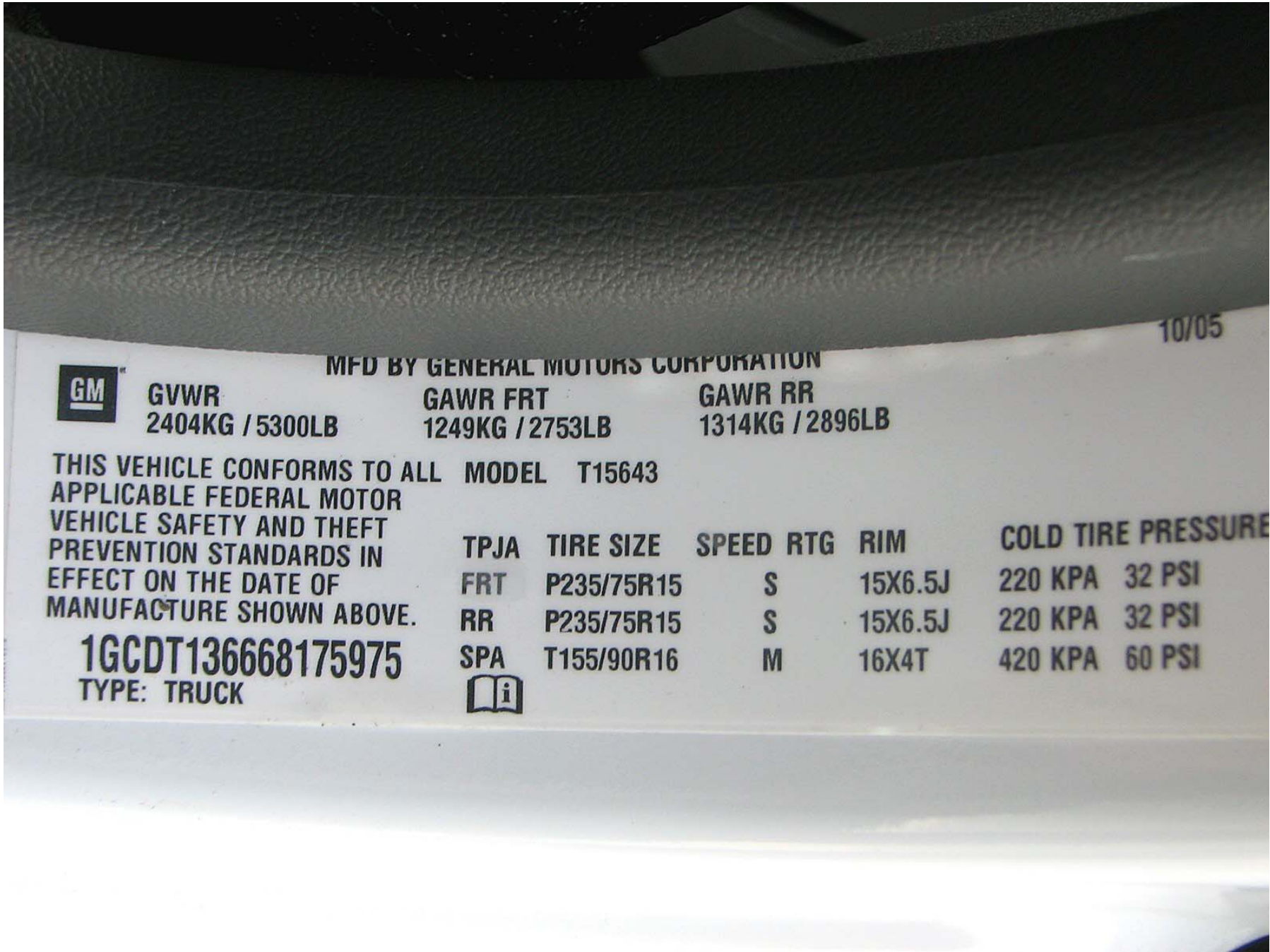


Figure A-2: Manufacturer's Label



TIRE AND LOADING INFORMATION

SEATING CAPACITY : TOTAL 6 : FRONT 3 : REAR 3

The combined weight of occupants and cargo should never exceed 534 kg or 1177 lbs.

TIRE	ORIGINAL SIZE		COLD TIRE PRESSURE	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION
FRONT	P235/75R15	S	220 kPa, 32 PSI	
REAR	P235/75R15	S	220 kPa, 32 PSI	
SPARE	T155/90R16	M	420 kPa, 60 PSI	

1GCDT136668175975

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

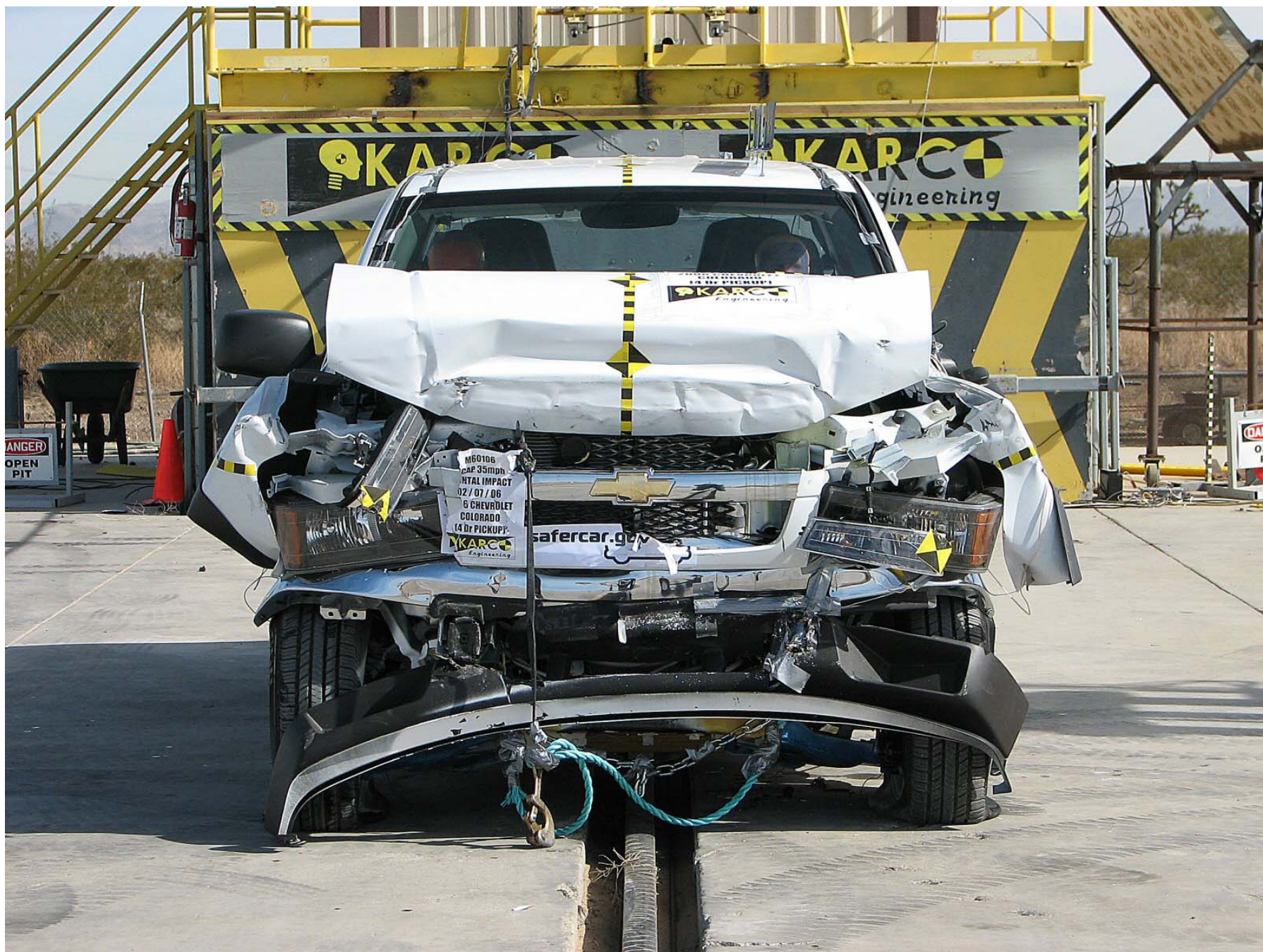


Figure A-7: Post-Test Front View (Vehicle Moved)



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 $\frac{3}{4}$ View



Figure A-13: Post-Test Right Front 3/4 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

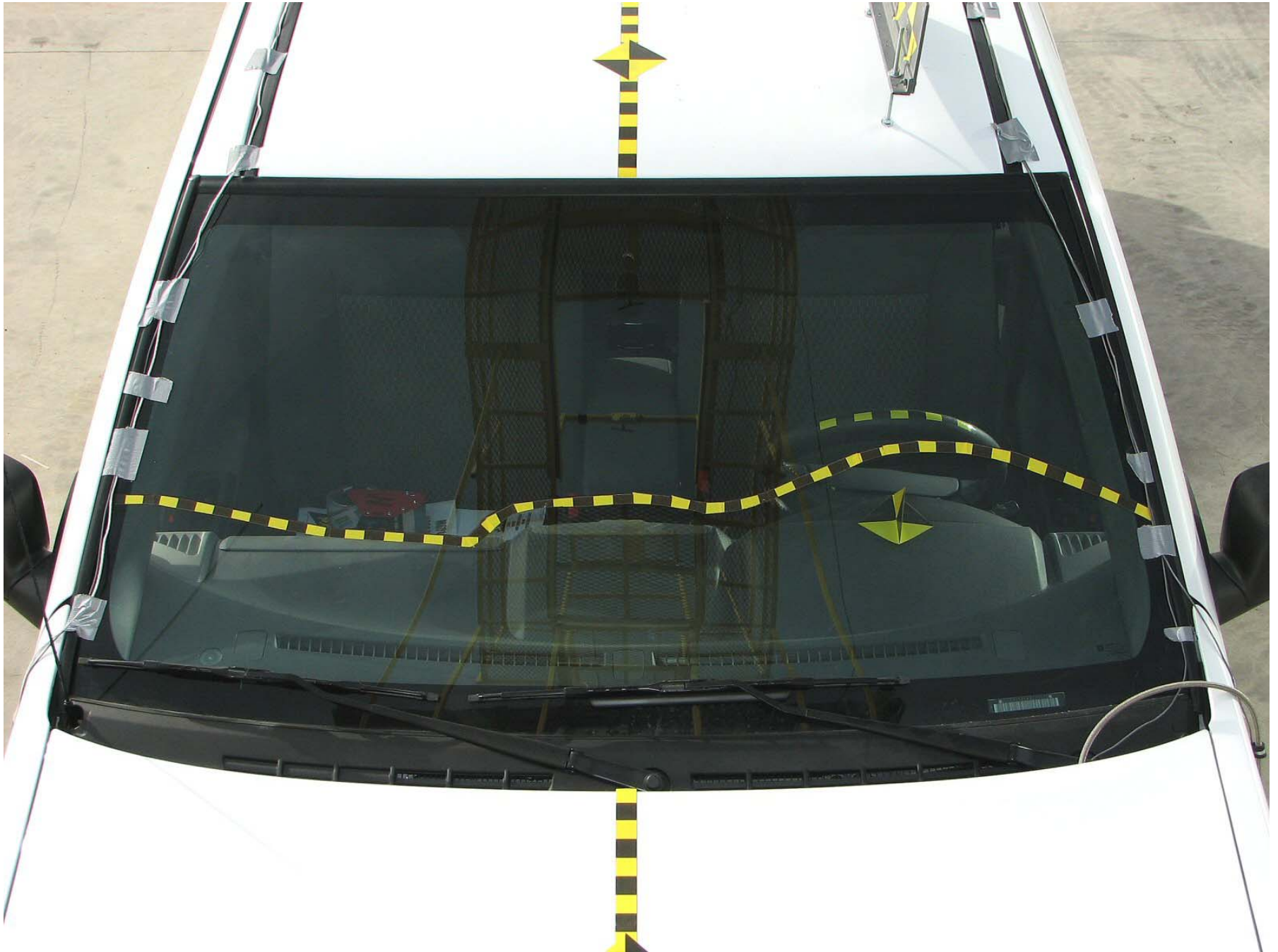


Figure A-18: Pre-Test Windshield



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

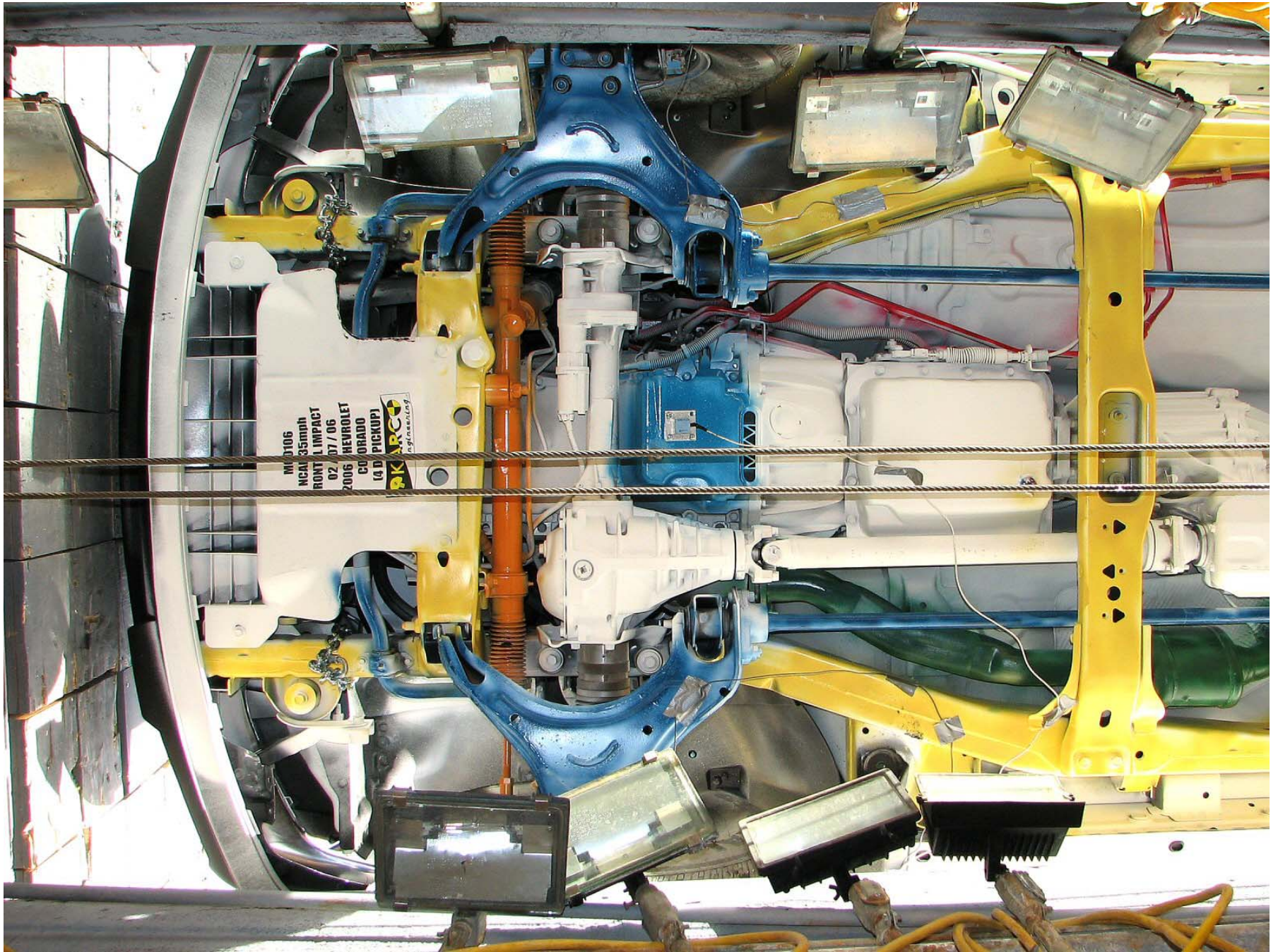


Figure A-24: Pre-Test Front Underbody

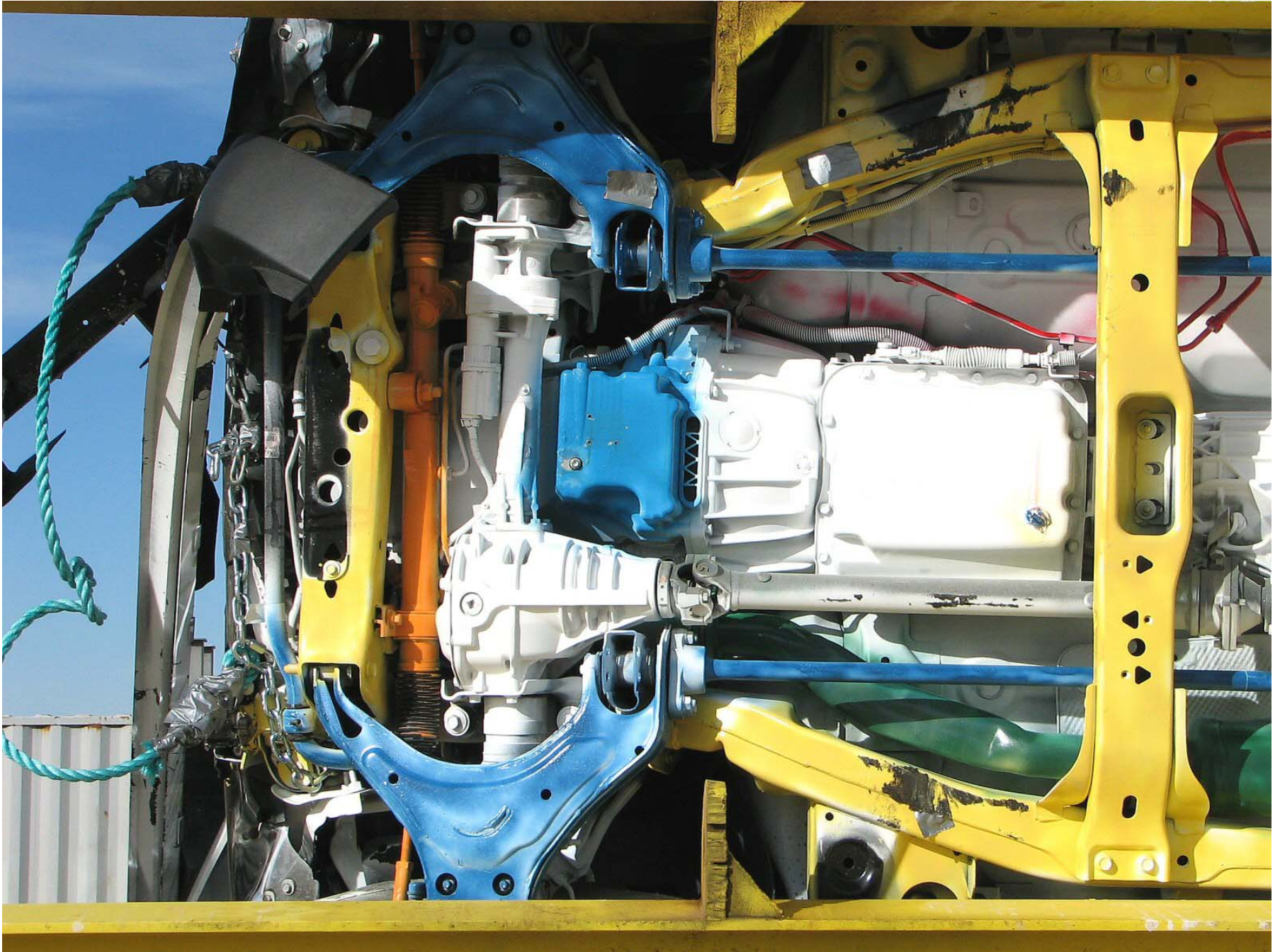


Figure A-25: Post-Test Front Underbody

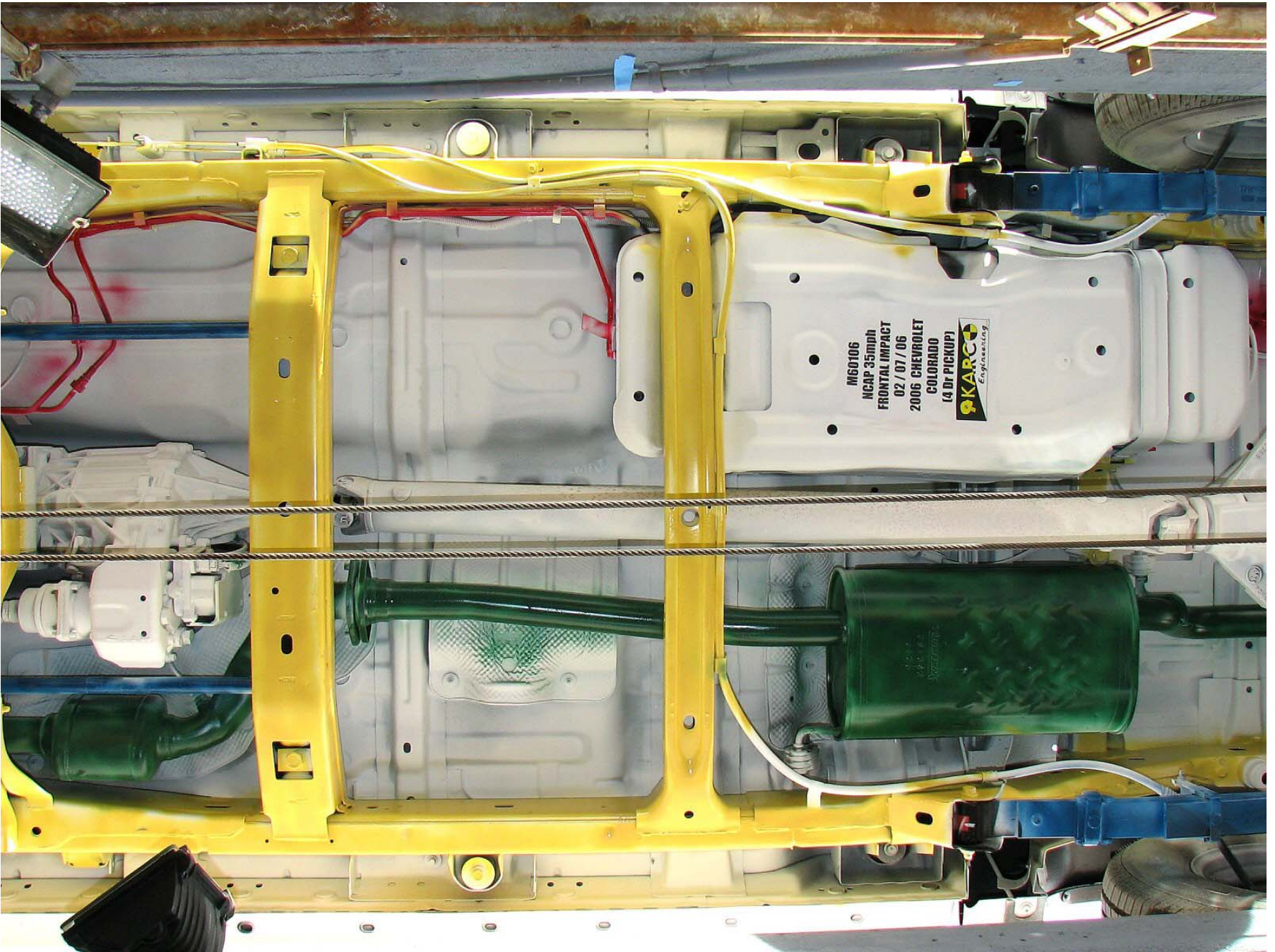


Figure A-26: Pre-Test Mid Underbody

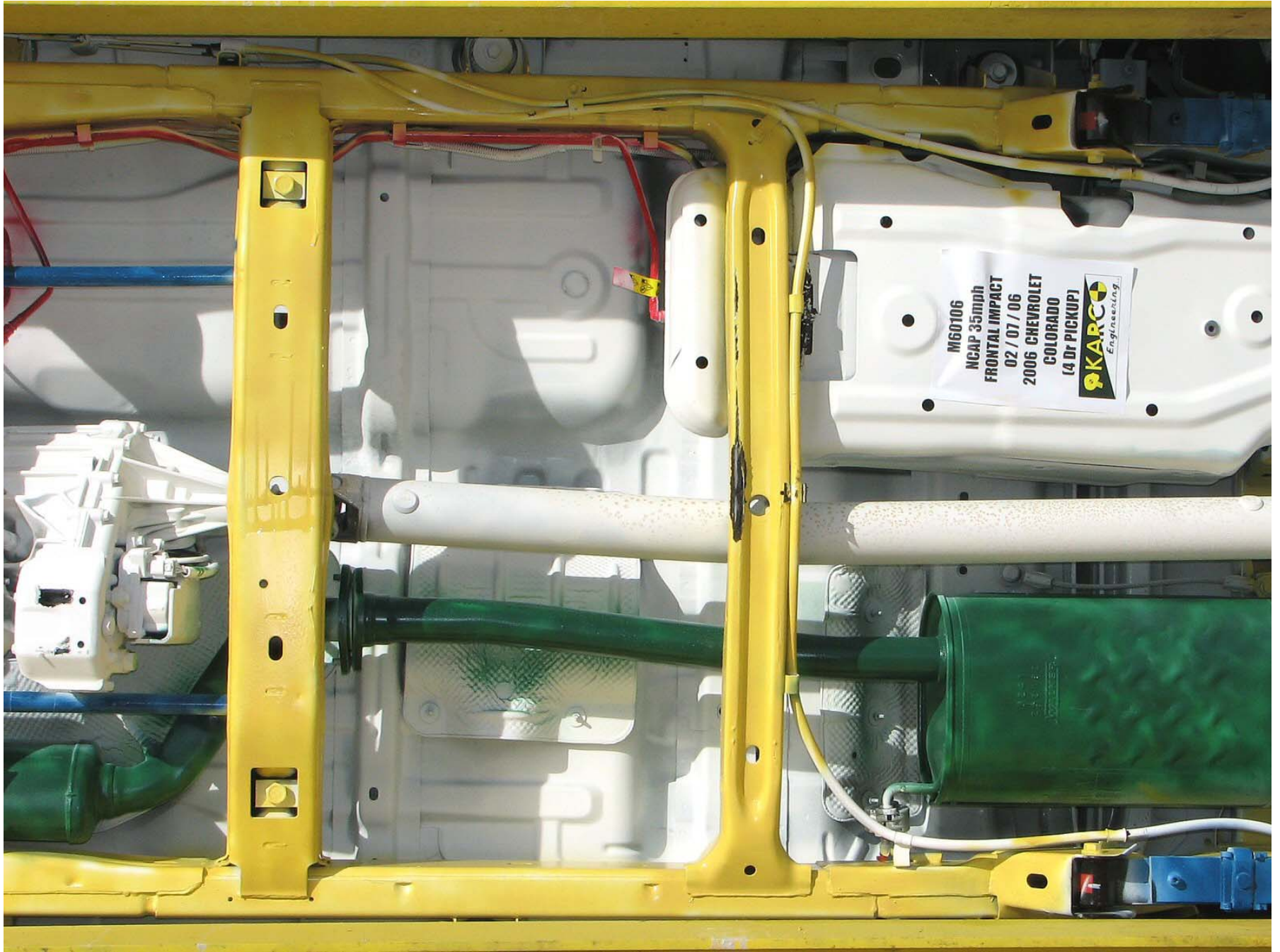


Figure A-27: Post-Test Mid Underbody

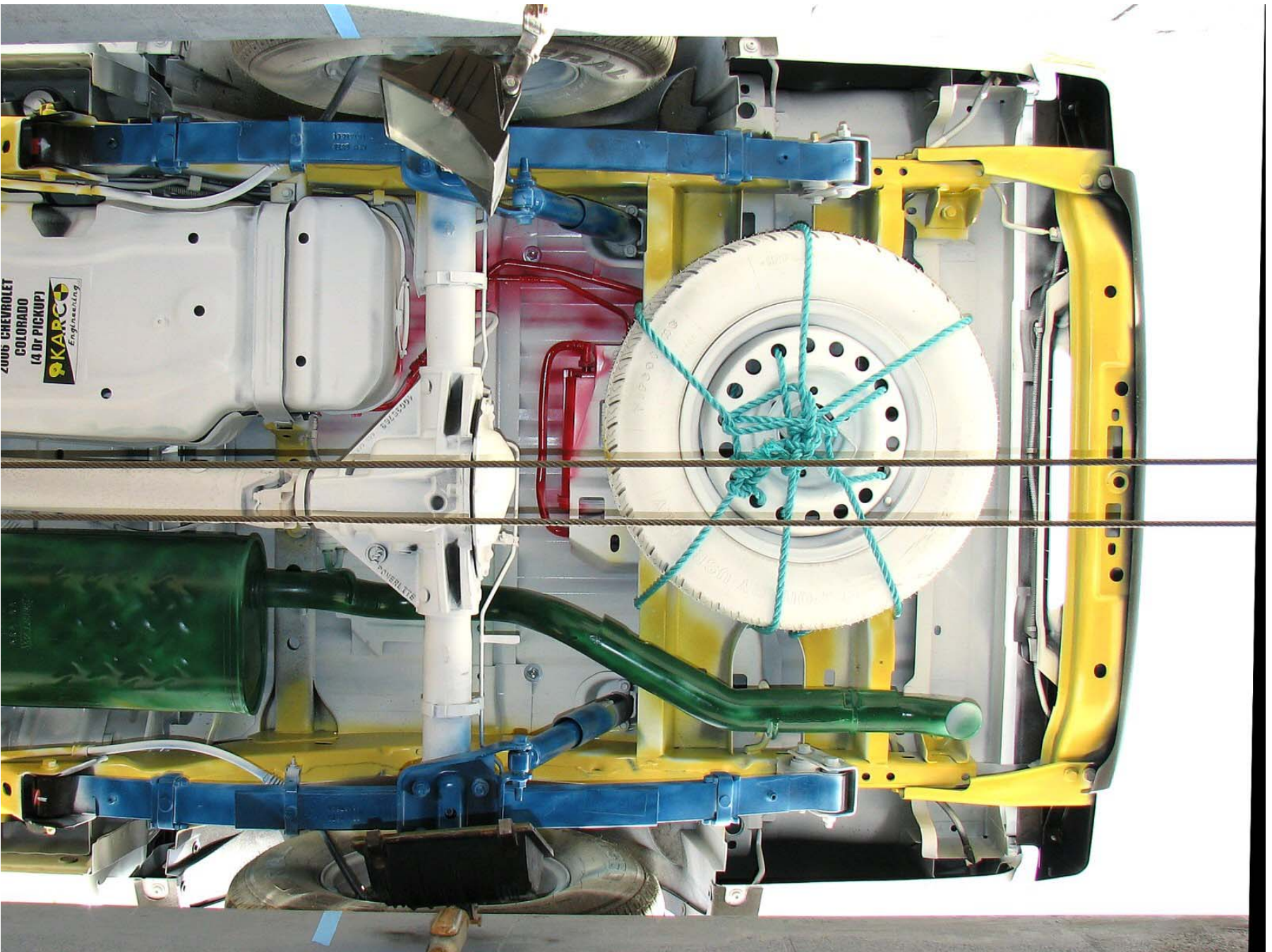


Figure A-28: Pre-Test Rear Underbody

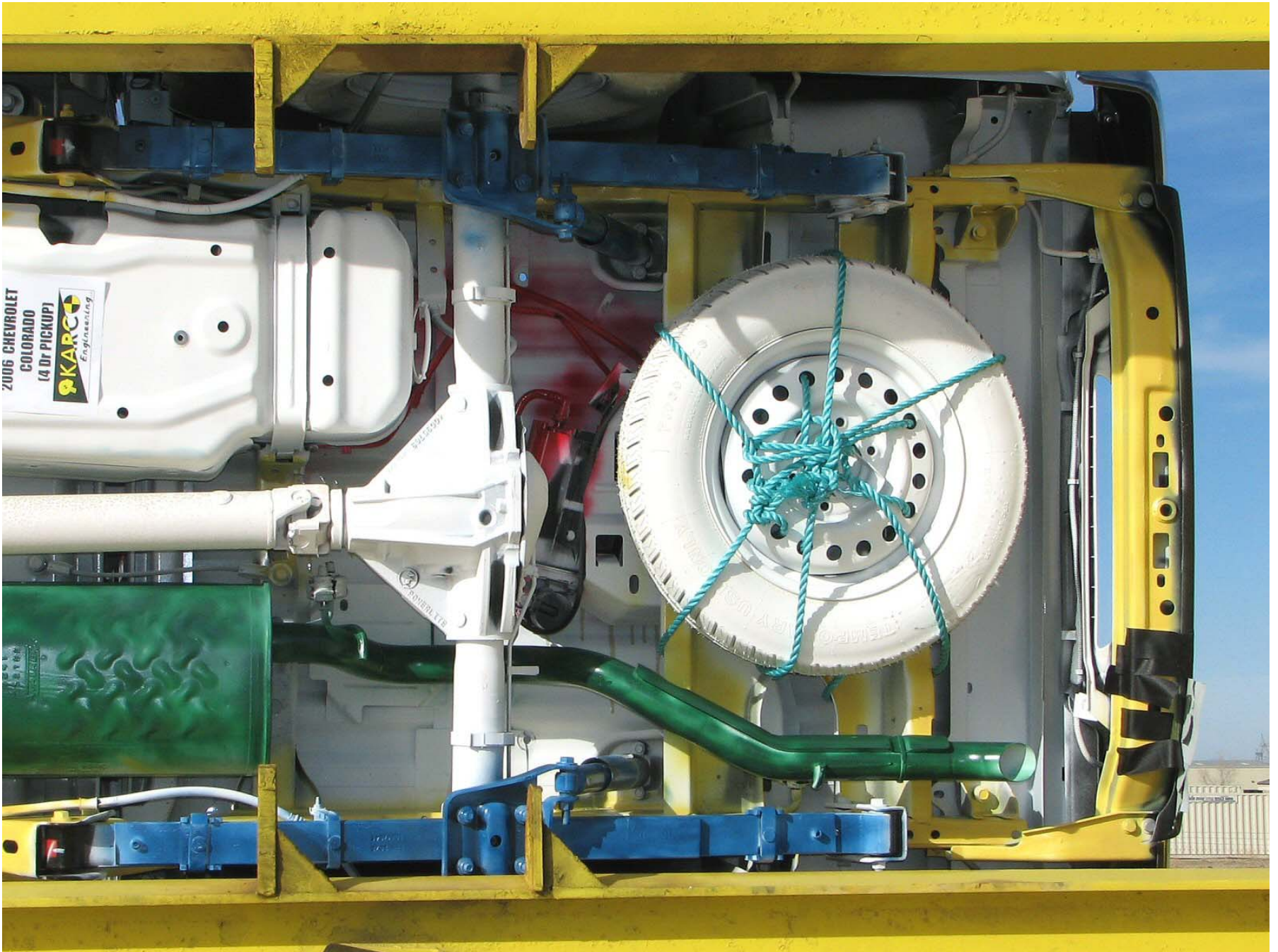


Figure A-29: Post-Test Rear Underbody



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

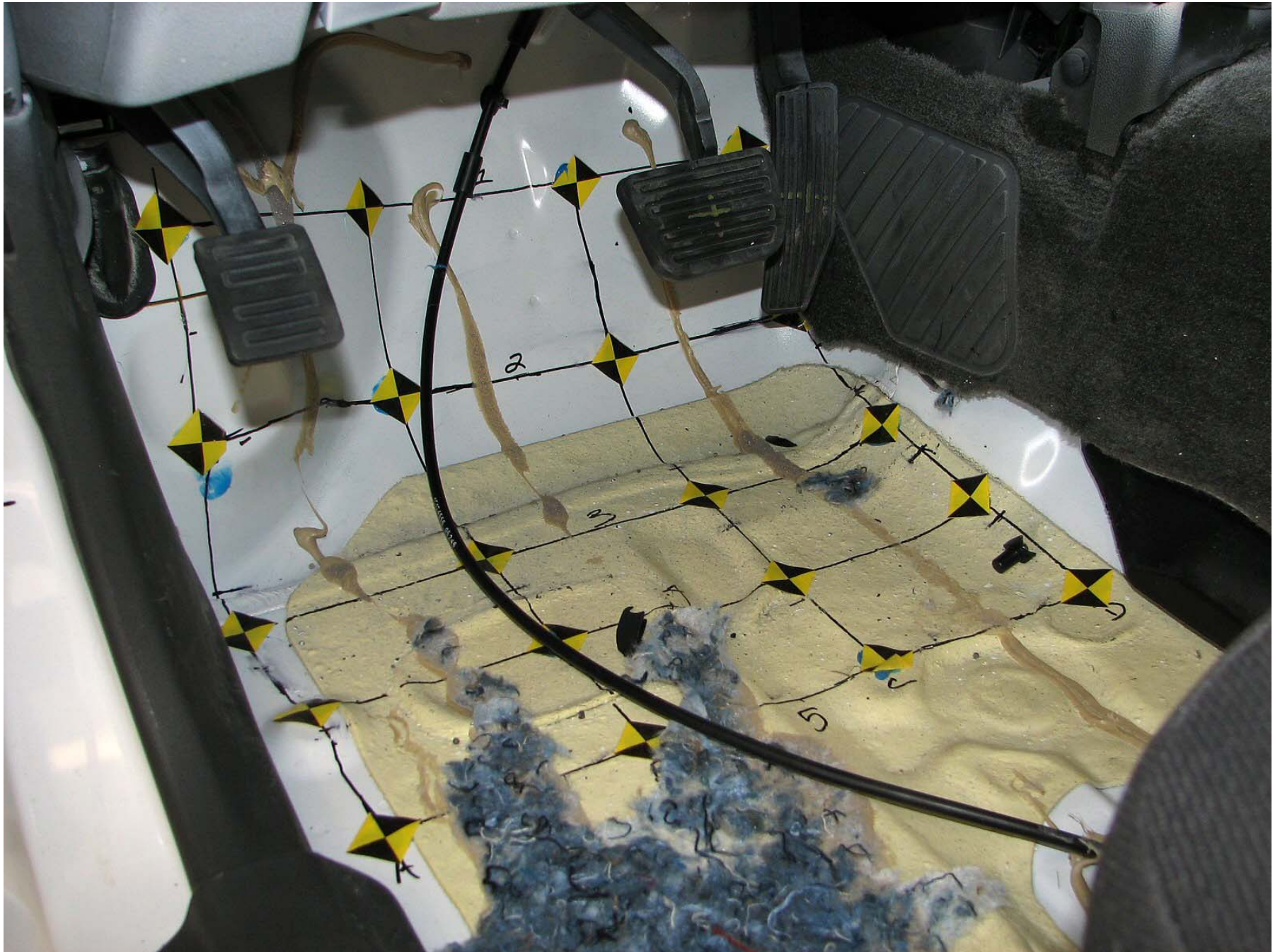


Figure A-41: Post-Test Driver Side Floor Pan



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

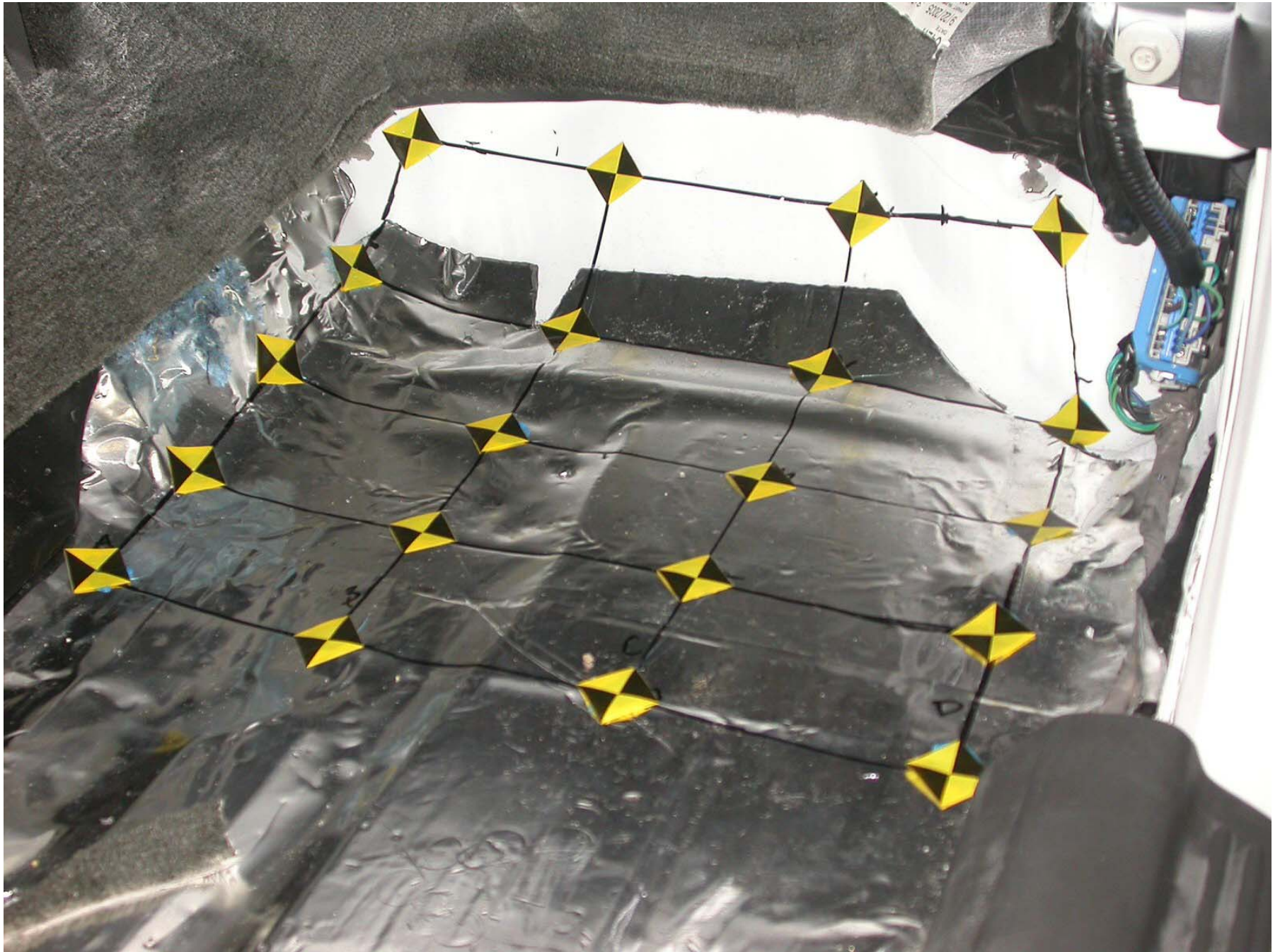


Figure A-54: Pre-Test Passenger Side Floor Pan



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°)

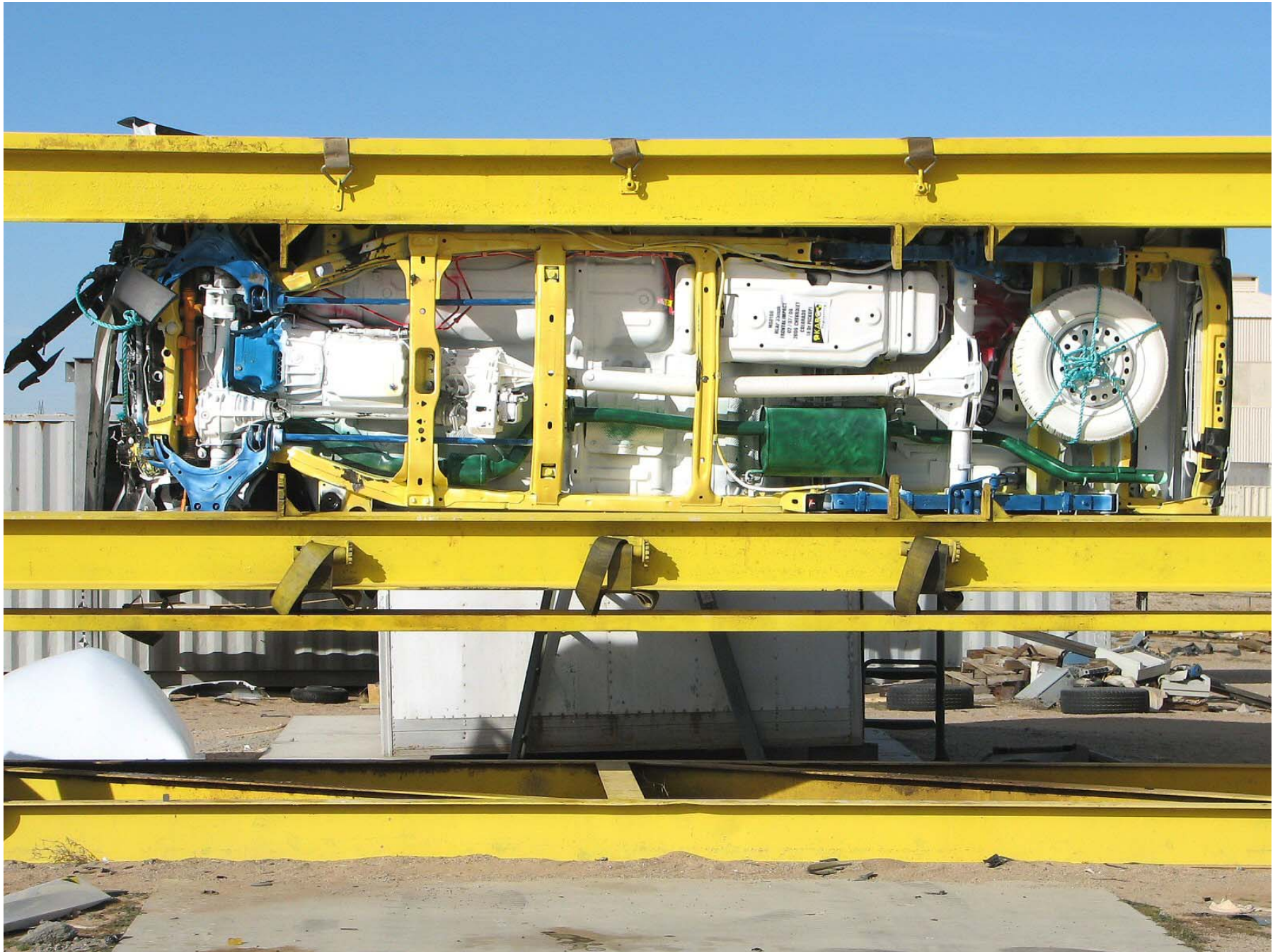


Figure A-61: Vehicle on Rollover Device (270°)



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)

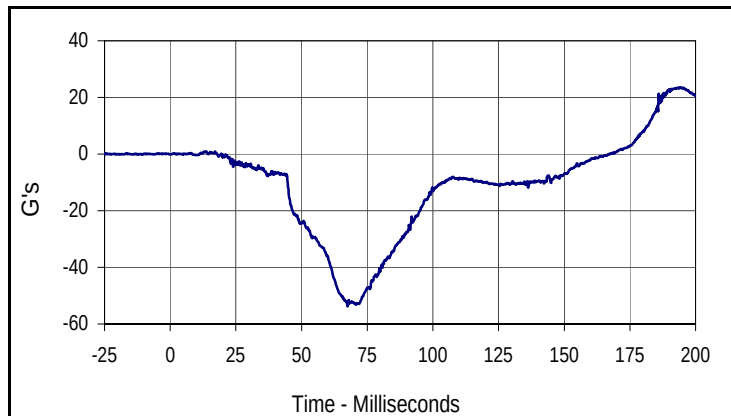
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Passenger Chest Redundant Z
Passenger Chest Resultant Redundant
Passenger Chest Redundant X Velocity
Passenger Chest Redundant X Displacement
Passenger Chest Displacement
Passenger Pelvis X
Passenger Pelvis Y
Passenger Pelvis Z
Passenger Pelvis Resultant
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)

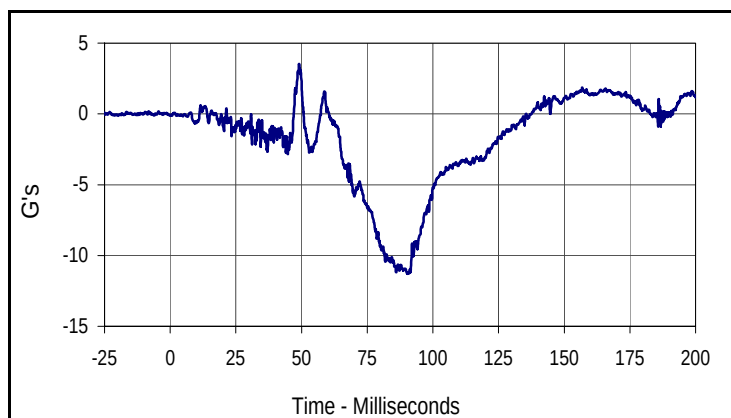
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Vehicle Right Rear X
Vehicle Right Rear X Velocity
Vehicle Right Rear X Displacement
Vehicle Engine Top
Vehicle Engine Top Velocity
Vehicle Engine Top Displacement
Vehicle Engine Bottom
Vehicle Engine Bottom Velocity
Vehicle Engine Bottom Displacement
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 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

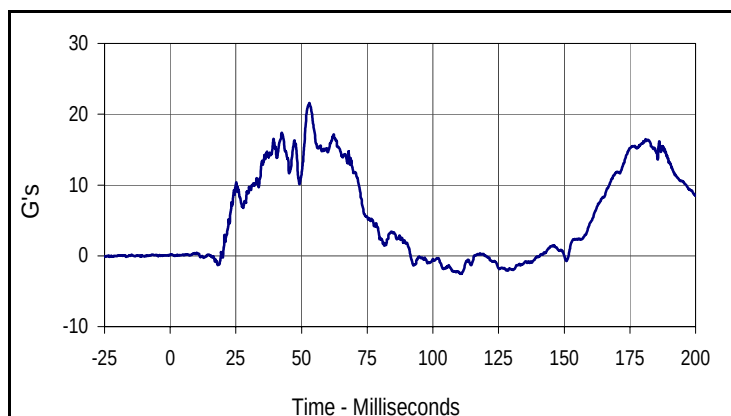
Test Date: 2/7/06
 NHTSA No.: M60106



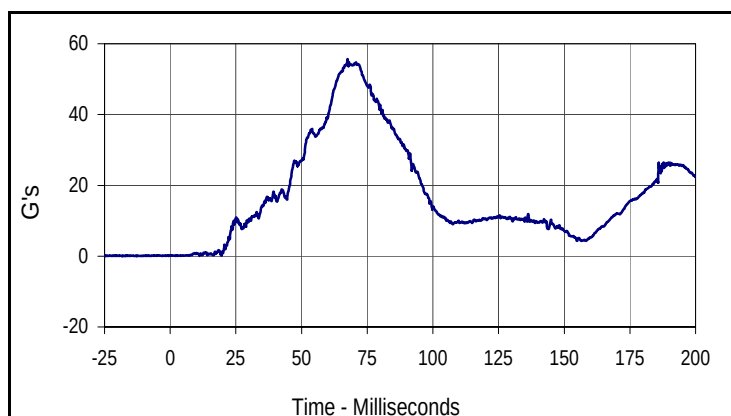
Curve Description			
Driver Head Primary X			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
23.6	194.1	-53.7	67.5



Curve Description			
Driver Head Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.5	49.1	-11.3	90.2



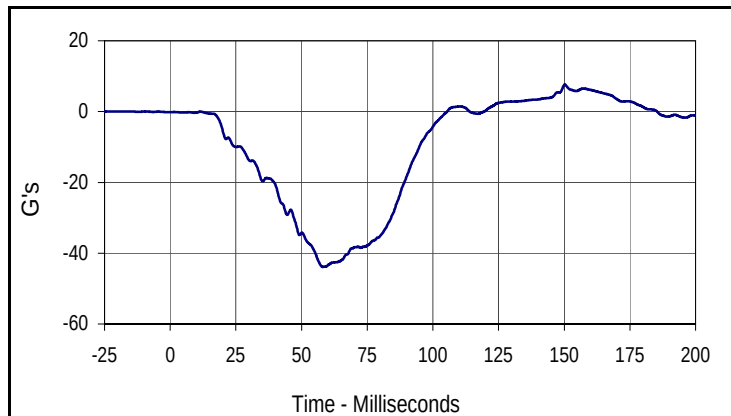
Curve Description			
Driver Head Primary Z			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
21.6	53.0	-2.5	110.4



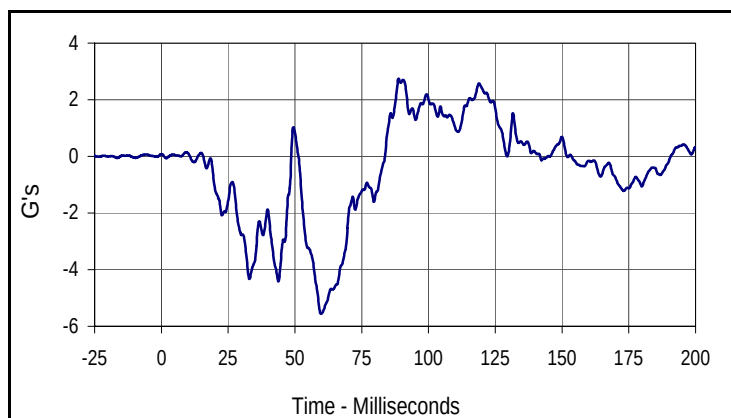
Curve Description			
Driver Head Resultant Primary			
CURNO	Type	SAE Class	Units
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Max	Time	Min	Time
55.6	67.6	0.0	11.2

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

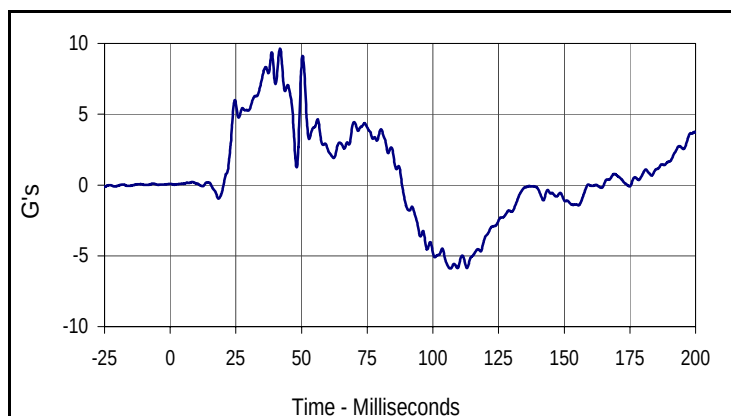
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 NHTSA No.: M60106



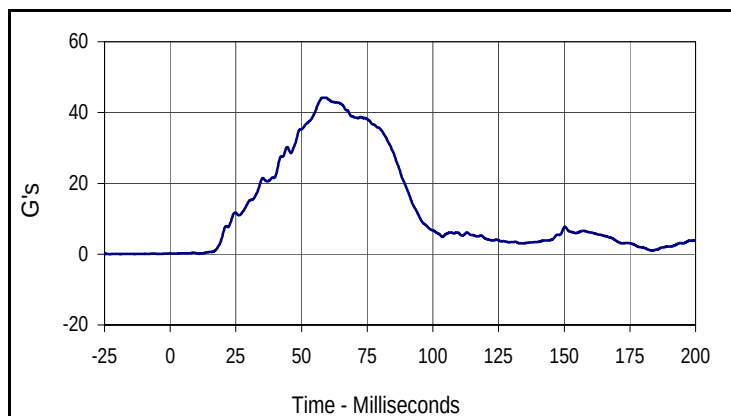
Curve Description			
Driver Chest Primary X			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
7.6	150.2	-43.9	58.0



Curve Description			
Driver Chest Primary Y			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
2.7	88.8	-5.6	59.8



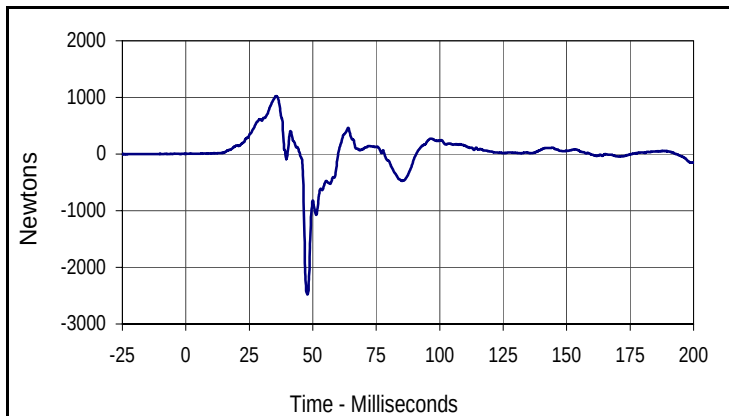
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Driver Chest Primary Z			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
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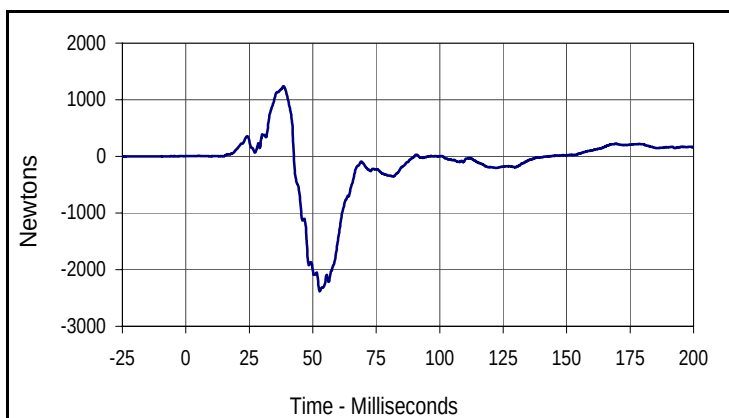
Curve Description			
Driver Chest Resultant Primary			
CURNO	Type	SAE Class	Units
004	RES	180	G's
Max	Time	Min	Time
44.2	59.1	0.1	11.0

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/7/06
 NHTSA No.: M60106



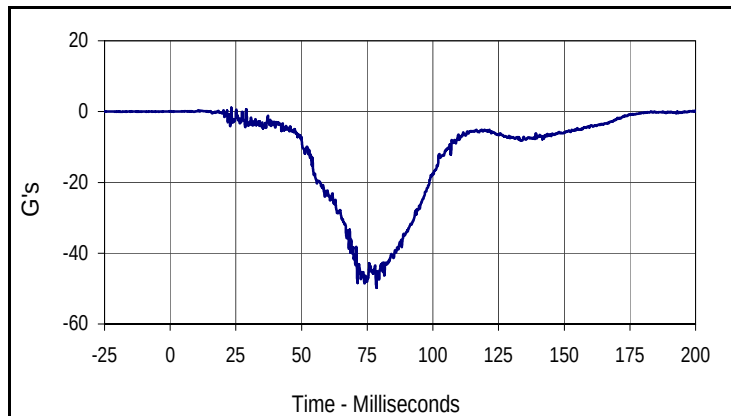
Curve Description			
Driver Left Femur Force Z			
CURNO	Type	SAE Class	Units
007	FIL	600	Newtons
Max	Time	Min	Time
1020.3	35.6	-2477.7	47.9



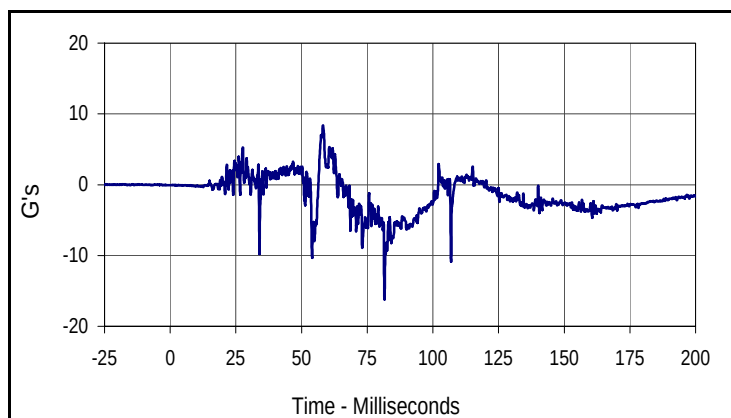
Curve Description			
Driver Right Femur Force Z			
CURNO	Type	SAE Class	Units
008	FIL	600	Newtons
Max	Time	Min	Time
1238.9	38.5	-2383.1	52.7

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

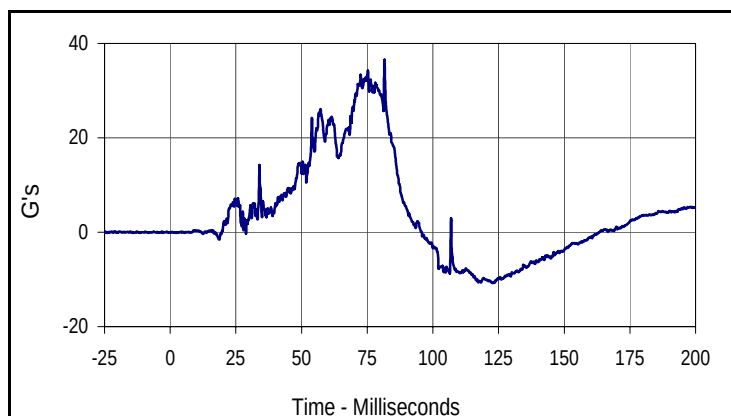
Test Date: 2/7/06
 NHTSA No.: M60106



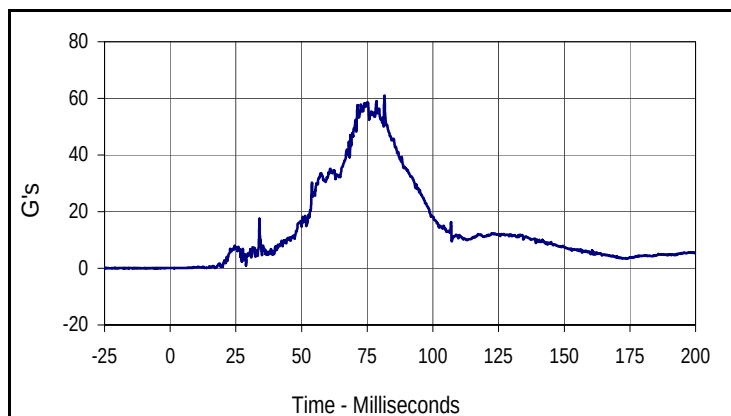
Curve Description			
Passenger Head Primary X			
CURNO	Type	SAE Class	Units
009	FIL	1000	G's
Max	Time	Min	Time
1.1	23.3	-49.8	78.5



Curve Description			
Passenger Head Primary Y			
CURNO	Type	SAE Class	Units
010	FIL	1000	G's
Max	Time	Min	Time
8.4	58.2	-16.2	81.6



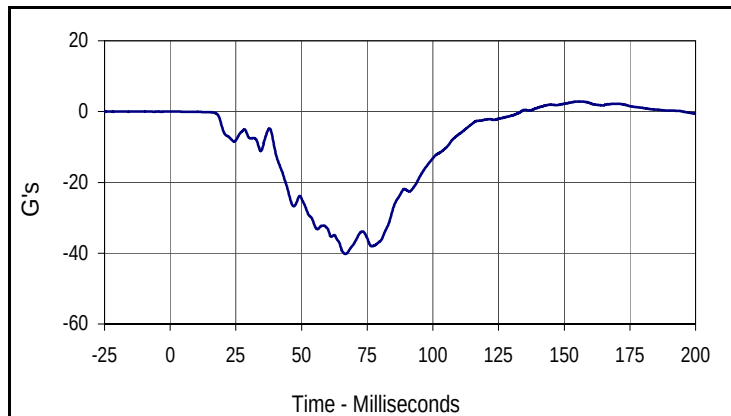
Curve Description			
Passenger Head Primary Z			
CURNO	Type	SAE Class	Units
011	FIL	1000	G's
Max	Time	Min	Time
36.5	81.6	-10.8	122.9



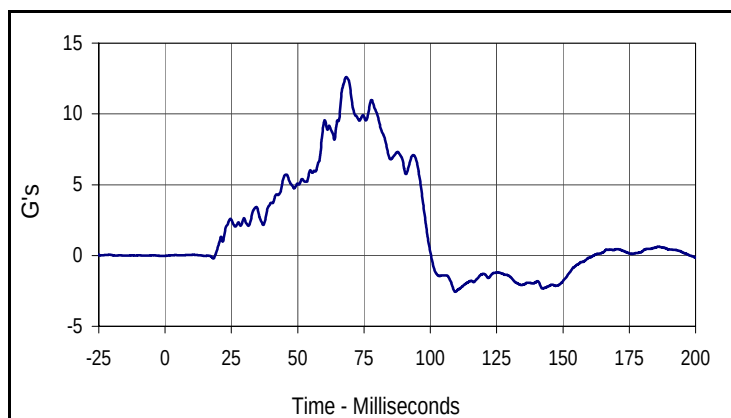
Curve Description			
Passenger Head Resultant Primary			
CURNO	Type	SAE Class	Units
009	RES	1000	G's
Max	Time	Min	Time
61.0	81.6	0.0	1.5

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

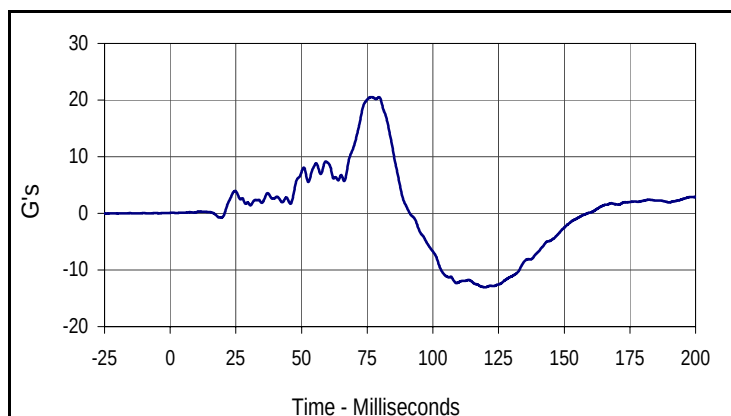
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 NHTSA No.: M60106



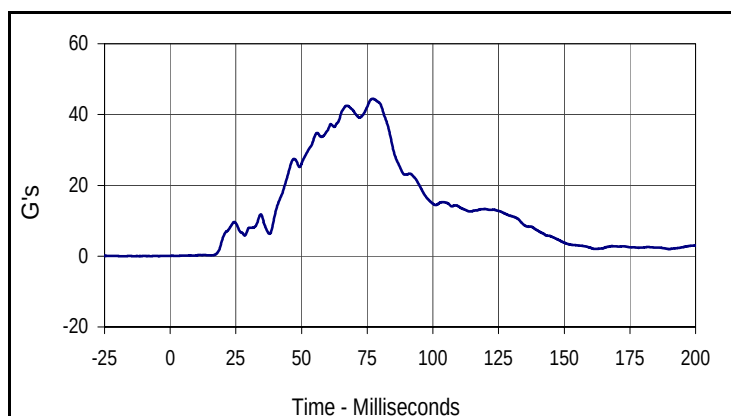
Curve Description			
Passenger Chest Primary X			
CURNO	Type	SAE Class	Units
012	FIL	180	G's
Max	Time	Min	Time
2.8	156.5	-40.2	66.7



Curve Description			
Passenger Chest Primary Y			
CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
12.6	68.3	-2.6	109.4



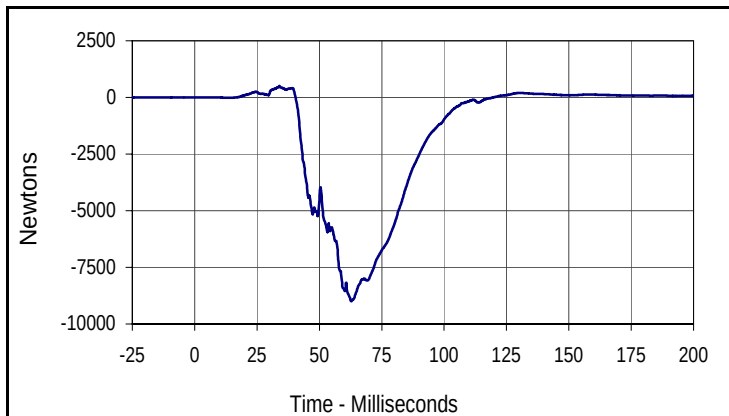
Curve Description			
Passenger Chest Primary Z			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
20.5	76.7	-13.1	119.9



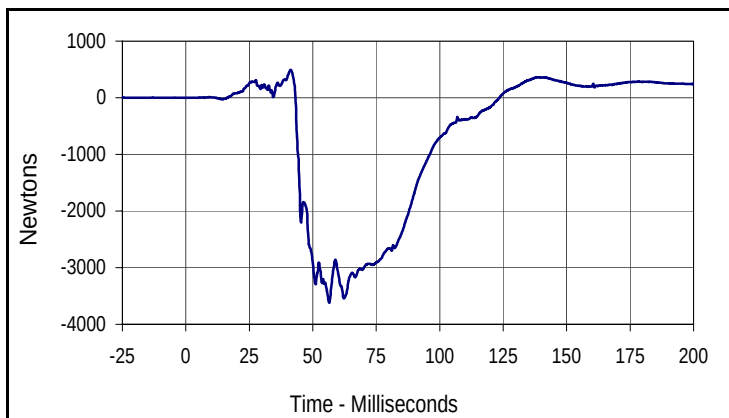
Curve Description			
Passenger Chest Resultant Primary			
CURNO	Type	SAE Class	Units
012	RES	180	G's
Max	Time	Min	Time
44.5	77.0	0.1	2.4

Test Vehicle: 2006 Chevrolet Colorado 4-Door Pickup
 Test Program: 2006 NHTSA 35mph NCAP

Test Date: 2/7/06
 NHTSA No.: M60106



Curve Description			
Passenger Left Femur Force Z			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
503.4	34.0	-8998.5	62.8



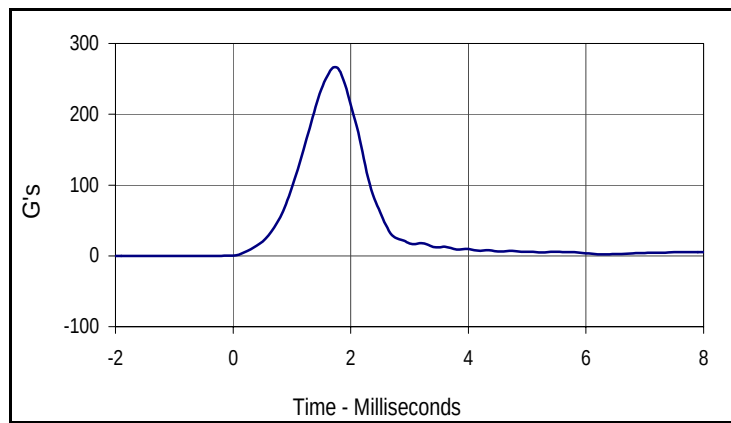
Curve Description			
Passenger Right Femur Force Z			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
491.4	41.3	-3622.1	56.5

APPENDIX C

DUMMY CALIBRATION DATA

Test Program: Hybrid III 50th Percentile Male Head Drop TestTest Date: 2/1/06ATD Serial No.: 034Test I.D.: HD02A

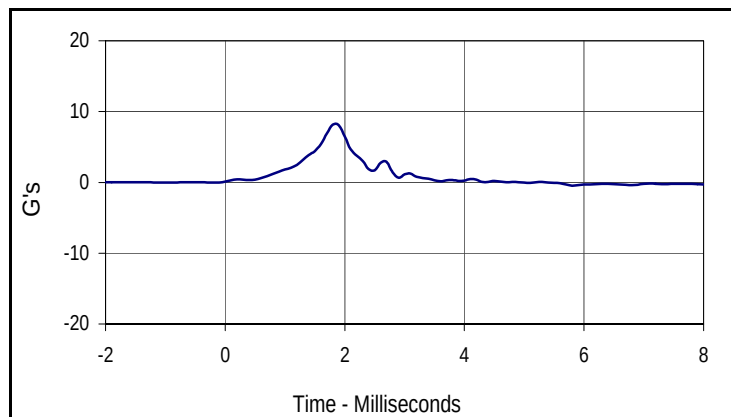
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	266.2	Pass
Peak Lateral Acceleration	G's	≤15.0	8.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall 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

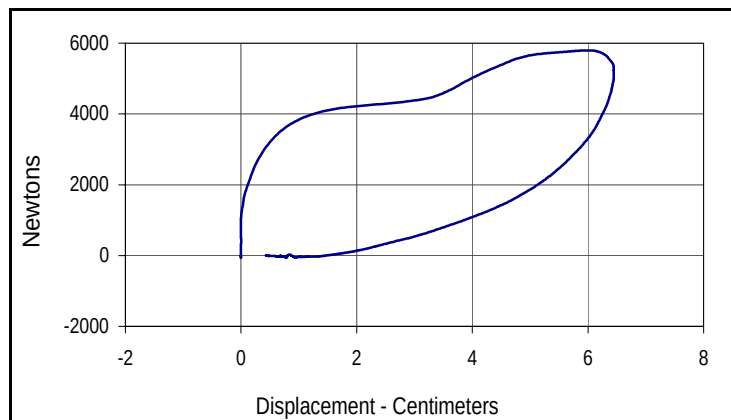
Test Date: 2/3/06

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



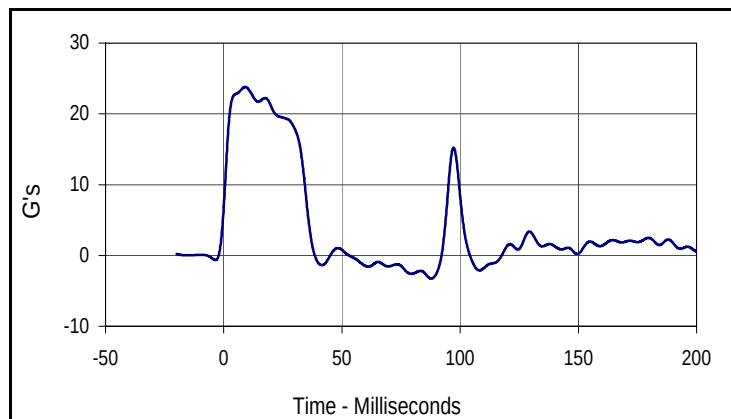
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	600	76.8
Peak Probe Force		Peak Chest Deflection	
5796		6.45	

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

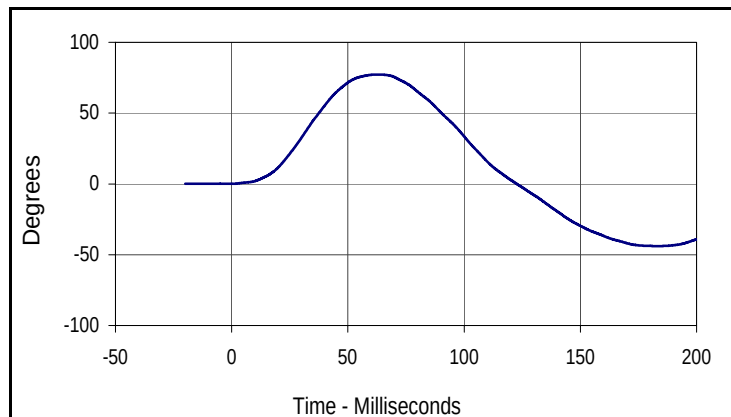
Test Date: 2/2/06
 Test I.D.: NF02A



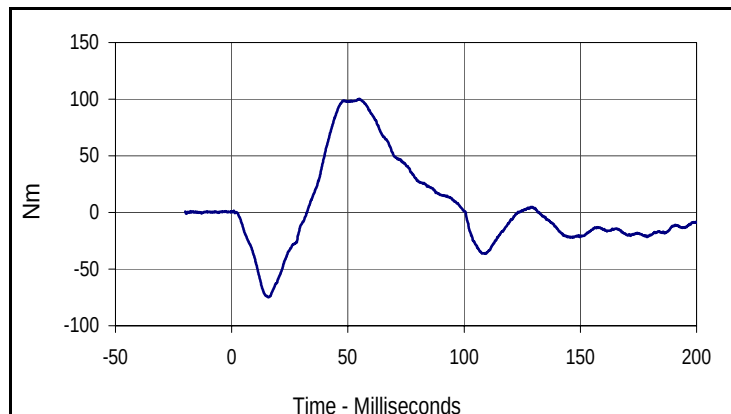
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.6	Pass
	20 Msec.	G's	17.6 to 22.6	21.1	Pass
	30 Msec.	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

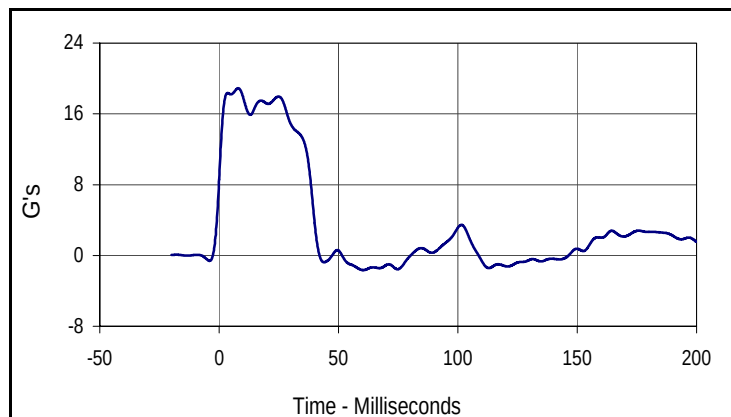
Test Date: 2/2/06

ATD Serial No.: 034

Test I.D.: NE02A



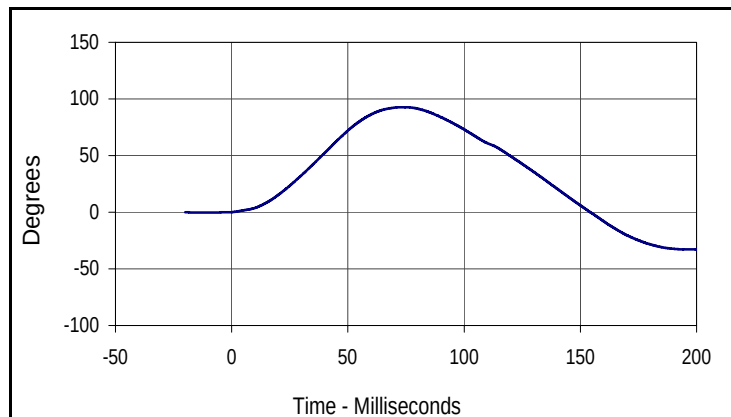
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.11	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.9	Pass
	20 Msec.	G's	14.0 to 19.0	17.2	Pass
	30 Msec.	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

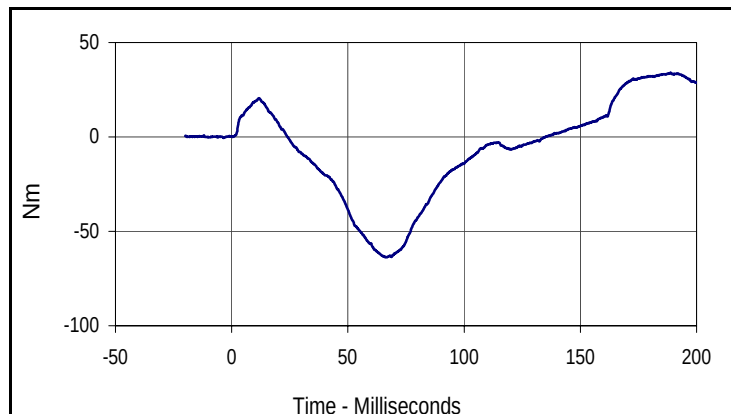
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.9	8.0	-1.7	60.3



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

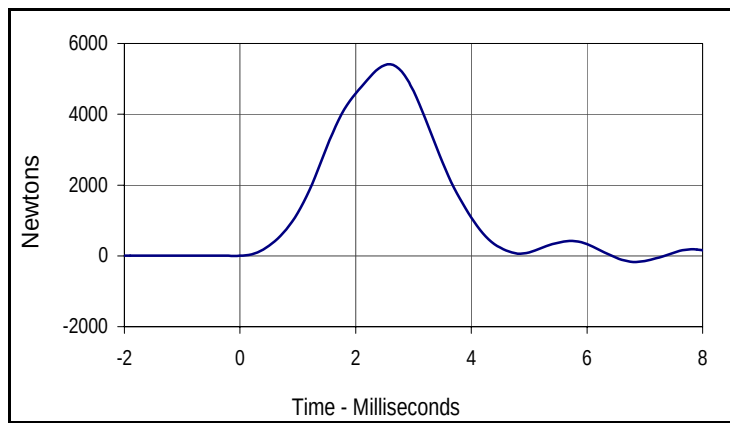
Test I.D.: LK02A , RK02A

**Left Knee**

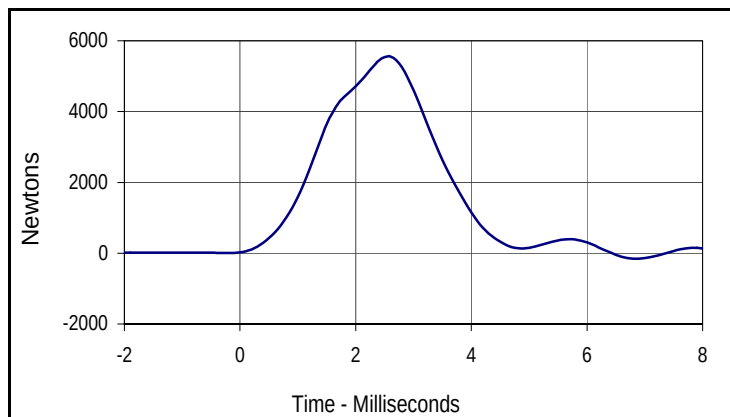
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	5409	Pass
Overall Test Results				Pass

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

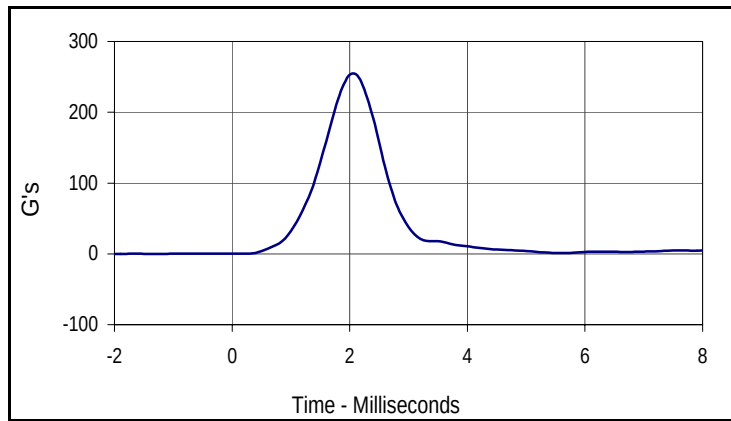
Test Date: 2/1/06

ATD Serial No.: 035

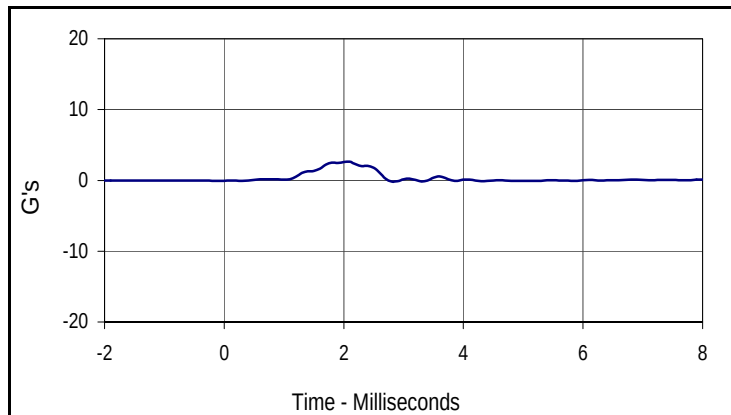
Test I.D.: HD02B



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

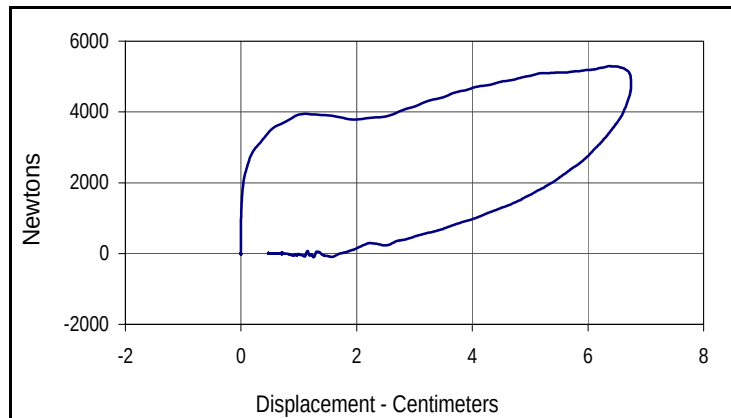
Test Date: 2/3/06

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



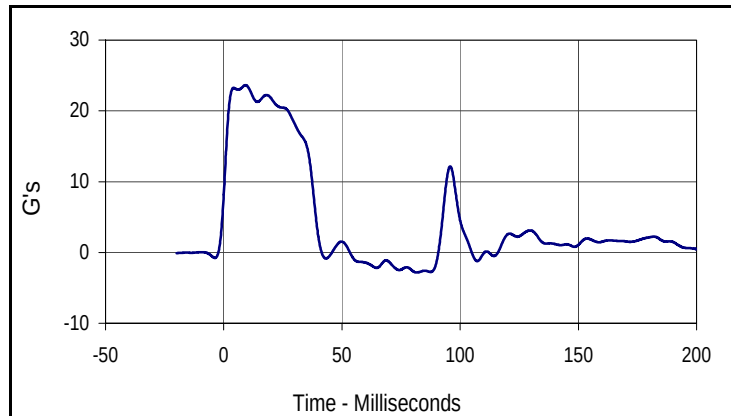
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	75.9
Peak Probe Force		Peak Chest Deflection	
5293		6.75	

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

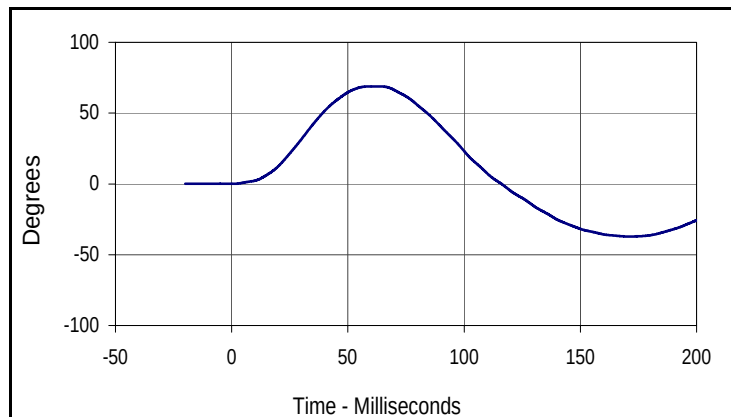
Test Date: 2/2/06
 Test I.D.: NF02B



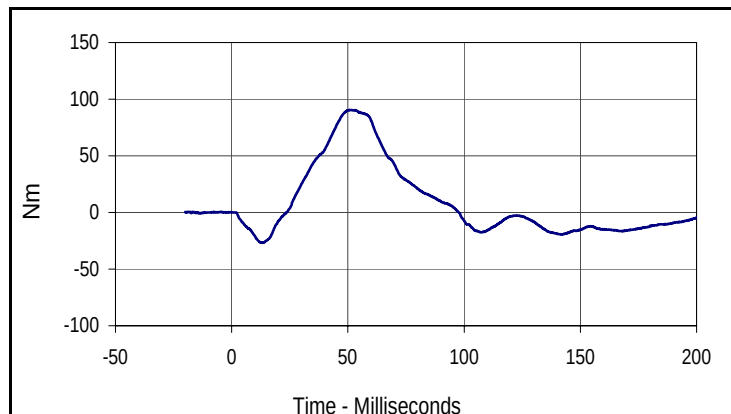
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.5	Pass
	20 Msec.	G's	17.6 to 22.6	21.8	Pass
	30 Msec.	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

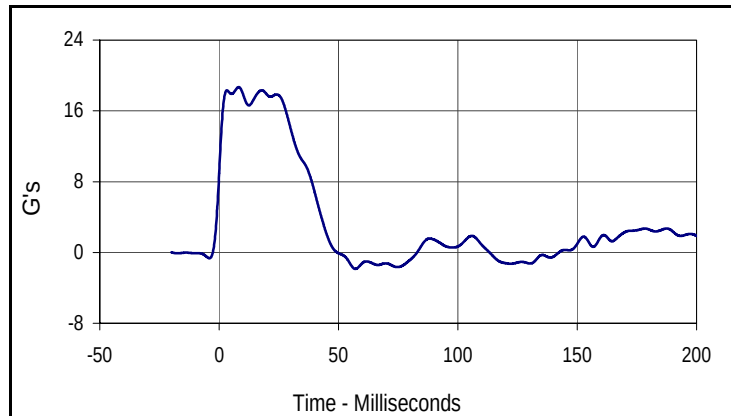
Test Date: 2/2/06

ATD Serial No.: 035

Test I.D.: NE02B



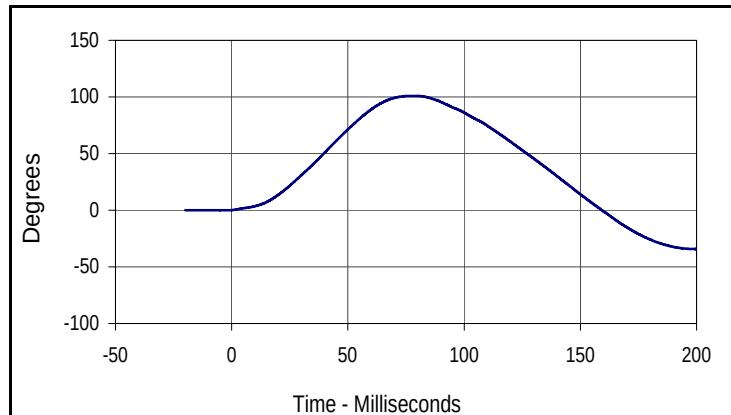
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.11	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.9	Pass
	20 Msec.	G's	14.0 to 19.0	17.9	Pass
	30 Msec.	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

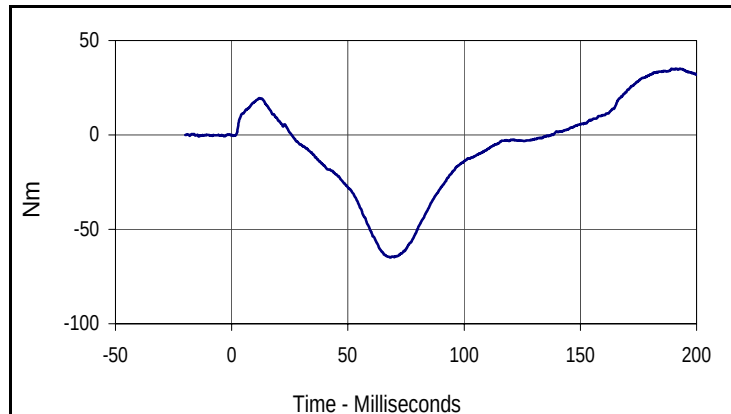
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.7	8.1	-1.9	57.1



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

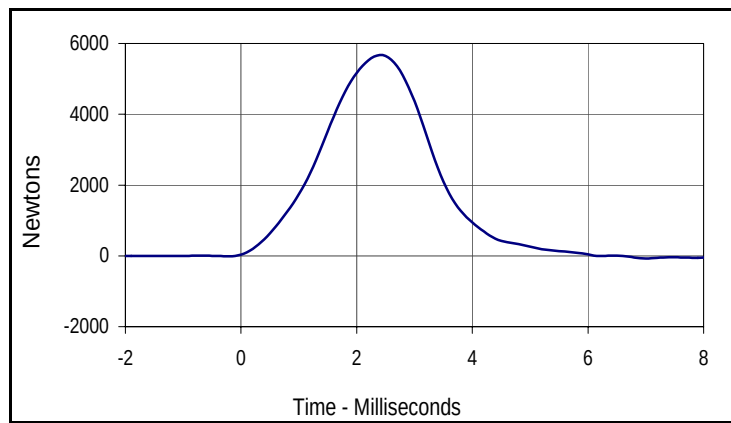
Test I.D.: LK02B , RK02B

**Left Knee**

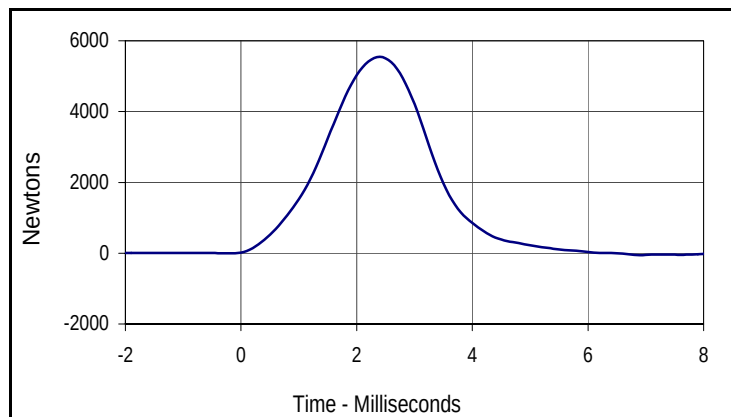
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5671	Pass
Overall Test Results				Pass

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