**REPORT NUMBER TR-P26003-02-NC**

# NEW CAR ASSESSMENT PROGRAM
# SIDE IMPACT TEST

**FORD MOTOR COMPANY**
**2006 FORD EXPLORER**
**4-DOOR MPV**

**NHTSA NUMBER: M60201**

**Prepared By:**
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**ADELANTO, CALIFORNIA 92301**

**NOVEMBER 29, 2005**

**FINAL REPORT**

**PREPARED FOR:**
**U.S. DEPARTMENT OF TRANSPORTATION**
**NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION**
**OFFICE OF CRASHWORTHINESS STANDARDS**
**RULEMAKING**
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**WASHINGTON, D.C. 20590**

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_____
Date of Acceptance

## Technical Report Documentation Page

| | | |
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**16. Abstract**

A 55/28 km/h 90 deg. Moving Deformable Barrier Side Impact NCAP Test was conducted on the subject 2006 Ford Explorer 4-Door MPV in accordance with the specifications of the Office of Crash Worthiness Standards Test Procedures for the generation of consumer information on vehicle side crash protection. The test was conducted at KARCO Engineering, LLC laboratories in Adelanto, California, on November 29, 2005. The impact velocity of the Moving Deformable Barrier was 61.30 km/h, and the outside ambient temperature at the struck (driver's) side of the vehicle was 18.3 deg. C. The target vehicle's maximum post-test static crush was 245 mm located at level 3. The test vehicle's occupant performance data is as follows:

| Measurement Description | Driver SID/HIII | Pass. SID/HIII |
|---|---|---|
| Left Upper Rib (LUR) G's | 27.8 | 34.7 |
| Left Lower Rib (LLR) G's | 30.2 | 32.1 |
| Lower Spine ($T_{12}$) G's | 35.9 | 28.2 |
| Thoracic Trauma Index (TTI) G's | 33.0 | 31.0 |
| Pelvis (PEV) G's | 63.2 | 31.3 |

| | | | |
|---|---|---|---|
| **17. Key Words**<br>New Car Assessment Program (NCAP)<br>Side Impact<br>Moving Deformable Barrier (MDB)<br>Side Impact Dummy (SID/HIII) | | **18. Distribution Statement**<br>Copies of this report are available from:<br>National Highway Traffic Safety Admin.<br>NHTSA Technical Reference Division<br>400 Seventh St., SW, Room 5108<br>Washington, DC 20590 | |
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# SECTION 1
# PURPOSE AND TEST PROCEDURE

## 1.1 PURPOSE

This Side Impact NCAP test is conducted as part of the FY' 2006 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-03-D-32005. The purpose of this test is to generate comparative side impact data on a 2006 Ford Explorer 4-Door MPV manufactured by Ford Motor Company.

## 1.2 TEST PROCEDURE

The side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Crashworthiness Standards (OCS), laboratory test procedure NCAP Side Impact Testing, dated November 2002. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

## SECTION 2

## SUMMARY OF SIDE IMPACT TEST

### 2.1 SUMMARY OF SIDE IMPACT NCAP TEST

A model year 2006 Ford Explorer 4-Door MPV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.30 km/h. The specified impact velocity range is from 61.14 to 62.75 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 2393 kg and the test weight of the MDB was 1361 kg. The test was conducted at KARCO Engineering, LLC in Adelanto, California, on November 29, 2005.

Two (2) real-time cameras and twelve (12) high-speed video cameras were used to document the impact event. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and SID/HIIIs can be found in Appendix A. Two 50th percentile adult male Side Impact Dummies, Hybrid III (SID/HIIIs) were placed in the driver's and left rear passenger designated seating positions according to the test procedure. Each SID/HIII is instrumented with contact switches on the pelvis, thorax and six-axis neck load cells, and fourteen accelerometers in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y, and Z axes primary and redundant)

**SUPPLEMENTAL RESTRAINT INFORMATION**

| Restraint Type | Left Front Driver | | Left Rear (Passenger) | |
|---|---|---|---|---|
| | Installed | Deployed | Installed | Deployed |
| Front Airbag | Yes | No | No | |
| Side Torso Airbag | Yes | Yes | No | |
| Head Airbag | No | | No | |
| Curtain Airbag | No | | No | |

The test vehicle was instrumented with twenty-six (26) structural accelerometers and the MDB was instrumented with five (5) accelerometers and one (1) contact switch on the right bumper to compare left side to right side bumper impact timing. All data channels were recorded with the fully self contained on-board Data Acquisition System (DAS). The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

## 2.2 GENERAL COMMENTS

The driver and passenger doors remained closed during impact. The test vehicle sustained a maximum static crush of 245 mm at level 3, 1650 mm rearward of the left vertical impact point. The driver SID/Hybrid III, Serial No. 274 and the passenger SID/Hybrid III, Serial No. 275 were calibrated prior to this test. The SID/Hybrid III injury criteria is summarized as follows:

| Measurement | Units | Driver | Passenger |
|---|---|---|---|
| Thoracic Trauma Index (TTI) | G's | 33.0 | 31.0 |
| Peak Pelvic G's (PEV) | G's | 63.2 | 31.3 |

Tests summaries and post-test observations are presented in Section 3. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID/HIIIs, vehicle, and MDB response data traces. Appendix C contains the SID Configuration and performance verification data.

## SECTION 3

## OCCUPANT AND VEHICLE INFORMATION SHEETS

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

### CONVERSION FACTORS USED IN THIS REPORT*

| Quantity | Typical Application | Std Units | Metric Unit | Multiply By |
|---|---|---|---|---|
| Mass | Vehicle Weight | lb | kg | 0.4536 |
| Linear Velocity | Impact Velocity | mile/h | km/h | 1.609 |
| Length or Distance | Measurements | in | mm | 25.4 |
| Volume | Fuel Systems | gal | liter | 3.785 |
| Volume | Small Fluids | oz | mL | 29.573 |
| Pressure | Tire Pressures | $lbf/in^2$ | kPa | 7.0 |
| Volume | Liquid | gal | liter | 3.785 |
| Temperature | General Use | $^oF$ | $^oC$ | =(tf -32)/1.8 |
| Force | Dynamic Forces | lbf | N | 4.448 |
| Moment | Torque | lbf/ft | Nm | 1.355 |

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

## DATA SHEET NO. 1

## GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

### TEST VEHICLE INFORMATION AND OPTIONS

| | | | |
|---|---|---|---|
| NHTSA No. | M60201 | Anti-Lock Brakes | Yes |
| Make | Ford | All Wheel Drive | No |
| Model | Explorer | Power Steering | Yes |
| Body Style | 4-Door MPV | Driver Front Airbag | Yes |
| Vin No. | 1FMEU72E96UA29148 | Driver Side Torso Airbag | Yes |
| Color | Black | Driver Side Head Airbag | No |
| Delivery Date | 11/18/2005 | Driver Curtain/Airbag | No |
| Odometer | 124 | Rear Pass. Airbag | No |
| Dealer | Chino Hills Ford | Rear Pass. Side Airbag | No |
| Transmission | 5-Speed Automatic | Rear Pass. Head Airbag | No |
| Final Drive | 4WD | Rear Pass. Curtain/Airbag | No |
| Type/No. Cyl. | V-6 | Pre-Tensioners | Yes |
| Engine Disp. (L) | 4 | Load Limiters | Yes |
| Engine Placement | Longitudinal | Bucket Seats | Yes |
| Roof Rack | Yes | Air Cond. | Yes |
| Sunroof/T-Top | No | AM/FM Cassette | Yes |
| Tinted Glass | Yes | Tilt Steering | Yes |
| Traction Control | Yes | Automatic Door Locks | Yes |
| Power Brakes | Yes | Power Windows | Yes |
| Front Disc | Yes | Power Seats | No |
| Rear Disc | Yes | Other | None |

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

### DATA FROM CERTIFICATION LABEL

| | | | |
|---|---|---|---|
| Manufactured By | Ford Motor Company | GVWR (kg) | 2803 |
| Date of Manufacture | 09/05 | GAWR Front (kg) | 1343 |
| | | GAWR Rear (kg) | 1542 |

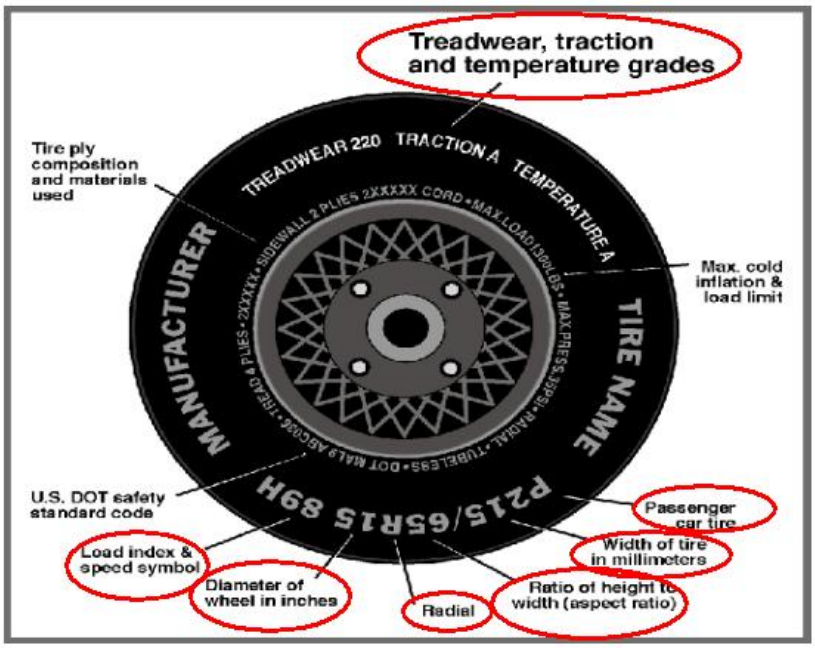
### VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

| Measured Parameter | Front | Rear | Third | Total |
|---|---|---|---|---|
| Type of Seats | Bucket | Bench | None | |
| Number of Occupants | 2 | 3 | | 5 |
| Capacity Weight (VCW) (kg) | | | | 679 |
| Cargo Weight (RCLW) (kg) | | | | 136 |

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

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) | 308 | 308 |
| Cold Pressure (kPa) | 240 | 240 |
| Recommened Tire Size | P235/70R16 | P235/70R16 |
| Tire Size on Vehicle | P235/70R16 | P235/70R16 |
| Tire Manufacturer | Michelin | Michelin |
| Treadwear | 420 | 420 |
| 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 | 104S | 104S |
| Tire Material | Polyester, Steel, Rubber | Polyester, Steel, Rubber |
| DOT Safety Code Right | B37P,NDJX,3005 | B37P,NDJX,3005 |
| DOT Safety Code Left | B37P,NDJX,2905 | B37P,NDJX,3005 |

## DATA SHEET NO. 1...(CONTINUED)

## GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

### TEST VEHICLE WEIGHTS

| | Units | As Delivered Weights (UVW) | | | As Tested Weights (ATW) | | |
|---|---|---|---|---|---|---|---|
| | | Front Axle | Rear Axle | Total | Front Axle | Rear Axle | Total |
| Left | kg | 570 | 489 | | 623 | 609 | |
| Right | kg | 560 | 484 | | 588 | 573 | |
| Ratio | % | 53.7 | 46.3 | | 50.6 | 49.4 | |
| Totals | kg | 1129 | 973 | 2102 | 1211 | 1182 | 2393 |

### TARGET TEST WEIGHT CALCULATION

| Measured Parameter | Units | Value |
|---|---|---|
| Total Delivered Weight (UVW) | kg | 2102 |
| Weight of 2 P572 ATD's | kg | 161 |
| Rated Cargo/Luggage Wt. (RCLW) | kg | 136 |
| Calculated Vehicle Target Wt. (TVTW) | kg | 2399 |

### TEST VEHICLE ATTITUDE AND CG

| | Units | LF | RF | LR | RR | CG (aft of front axle) |
|---|---|---|---|---|---|---|
| As Delivered | mm | 875 | 885 | 865 | 880 | 1336 |
| As Tested | mm | 860 | 860 | 860 | 857 | 1425 |
| Fully Loaded | mm | 866 | 869 | 860 | 865 | |

### GENERAL TEST VEHICLE DATA

| Measurement Description | Units | Value |
|---|---|---|
| Test Vehicle Wheel Base | mm | 2885 |
| Total Vehicle Length at Left Side | mm | 3940 |
| Total Vehicle Length at Centerline | mm | 4909 |
| Total Vehicle Length at Right Side | mm | 3940 |
| Weight of Ballast In Cargo Area | kg | 136 |
| Amount of Stoddard Solvent in Fuel Tank | liters | 79.1 |

### TEST VEHICLE VERTICAL IMPACT LINE DATA

| Measurement Description | Units | Value |
|---|---|---|
| Test Vehicle Wheel Base | mm | 2885 |
| Target Impact Point Aft of Front Axle | mm | 503 |
| Actual Impact Point Aft of Front Axle | mm | 505 |

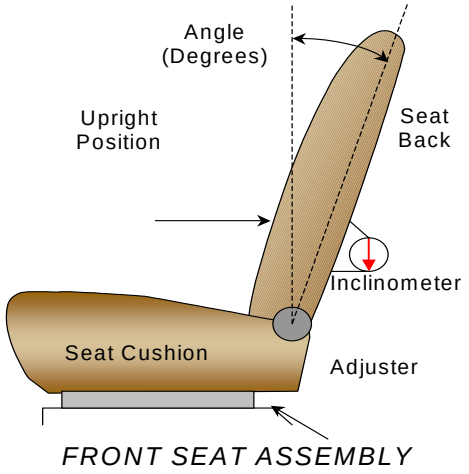
## GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

### NOMINAL DESIGN RIDING POSITION

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




**SEAT BACK ANGLES**

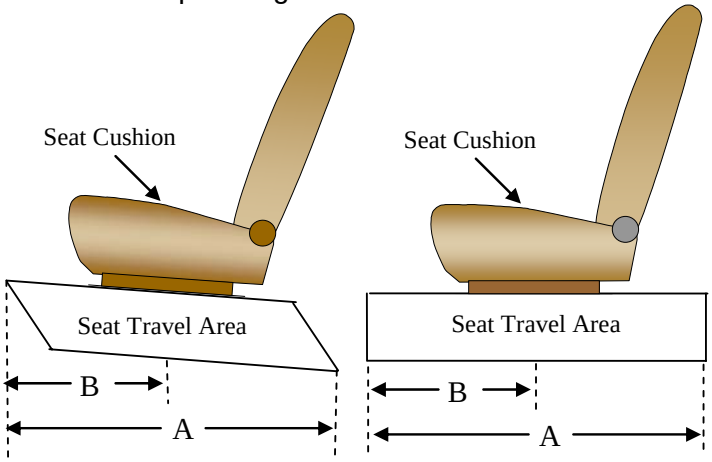
| | Deg. |
|---|---|
| Driver Seat Back Angle | 18.0 |
| Rear Seat Back Angle | |

### SEAT FORE/AFT POSITIONS

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

**SEAT FORE/AFT POSITIONING**

| | Total Fore/Aft Travel | Placed in Position # |
|---|---|---|
| Driver Seat | 35 detents | 18th detent |
| Rear Seat | Fixed | Fixed |




**SEAT BELT UPPER ANCHORAGE**

| | Total # of Positions | Placed in Position # |
|---|---|---|
| Driver Seat | 5 | 1 |
| Rear Seat | Fixed | Fixed |

### SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position

## GENERAL TEST AND VEHICLE PARAMETER DATA

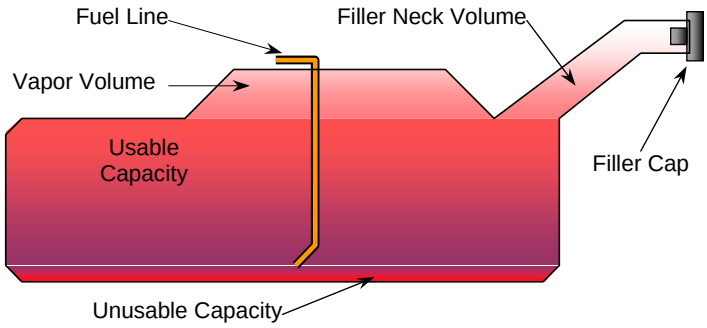
Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

### FUEL TANK CAPACITY

| | Liters |
|---|---|
| Usable Capacity of "Standard Tank" | 85.1 |
| Usable Capacity of "Optional" Tank | |
| Usable Capacity used for FMVSS 301 | 78.3 to 79.8 |
| Actual Amount of Solvent used | 79.1 |

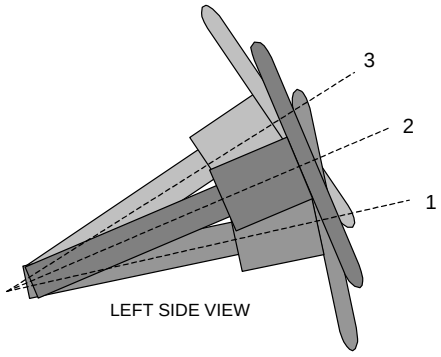
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately three (3) seconds with the ignition in the “ON” position, after which the fuel pump automatically shuts off. The fuel filler door is located on the right rear fender.




*VEHICLE FUEL TANK ASSEMBLY*

### STEERING COLUMN ADJUSTMENT

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




*STEERING COLUMN ASSEMBLY*

### STEERING COLUMN POSITIONS

| | Degrees | Fore/Aft Position (mm) |
|---|---|---|
| Lowermost positon No. 1 | 17.5 | |
| Geometric center position No. 2 | 21.4 | |
| Uppermost position No. 3 | 25.3 | |

## DATA SHEET NO. 2

## TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

### TEST VEHICLE WEIGHTS

| | Units | As Delivered Weights (UVW) | | | As Tested Weights (ATW) | | |
|---|---|---|---|---|---|---|---|
| | | Front Axle | Rear Axle | Total | Front Axle | Rear Axle | Total |
| Left | kg | 570 | 489 | | 623 | 609 | |
| Right | kg | 560 | 484 | | 588 | 573 | |
| Ratio | % | 53.7 | 46.3 | | 50.6 | 49.4 | |
| Totals | kg | 1129 | 973 | 2102 | 1211 | 1182 | 2393 |

### MAXIMUM EXTERIOR STATIC CRUSH

| Level | Measured Parameter | Units | Maximum Crush | Above Ground |
|---|---|---|---|---|
| Level 1 | Sill Top Height | mm | 219 | 413 |
| Level 2 | Occupant H-Point | mm | 240 | 665 |
| Level 3 | Mid Door | mm | 245 | 780 |
| Level 4 | Window Sill | mm | 172 | 1102 |
| Level 5 | Window top | mm | 42 | 1650 |
| N/A | Maximum Penetration | mm | 245 | |

### INSTRUMENTATION

| | |
|---|---|
| Driver SID/Hybrid III Accelerometers | 20 |
| Passenger SID/Hybrid III Accelerometers | 20 |
| Vehicle Structure Accelerometers | 26 |
| MDB Accelerometers | 5 |
| Total No. of Contact Switches | 5 |
| Total | 76 |

### CAMERA COVERAGE

| | |
|---|---|
| High Speed, Vehicle On-Board | 3 |
| High Speed, Off-Board | 6 |
| High Speed, MDB On-Board | 3 |
| Real Time, Panning | 2 |
| Total | 14 |

## DATA SHEET NO. 3

## MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

### MDB SPECIFICATIONS (mm)

| Measurement Description | Length |
|---|---|
| Overall Width of Framework Carriage | 1252 |
| Overall Length including Honeycomb Face | 4115 |
| Wheel Base of Framework Carriage | 2590 |
| C.G. location aft of Front Axle | 1127 |

### MDB WEIGHTS

| | Units | Front Axle | Rear Axle | Total |
|---|---|---|---|---|
| Left | kg | 384 | 308 | |
| Right | kg | 385 | 284 | |
| Ratio | % | 56.5 | 43.5 | |
| Totals | kg | 769 | 592 | 1361 |

### SPEED AND IMPACT DATA

| Measured Parameter | Units | Requirement | Value |
|---|---|---|---|
| Trap No. 1 Velocity (Primary) | km/h | 61.1 to 62.7 | 61.30 |
| Trap No. 2 Velocity (Redundant) | km/h | 61.1 to 62.7 | 61.20 |
| MDB CL to Target Vehicle CL | degrees | 88.5 to 91.5 | 89.5 |

### MAXIMUM STATIC CRUSH OF HONEYCOMB FACE (mm)

| Vertical Location | | | From Centerline | | Max. Crush |
|---|---|---|---|---|---|
| Row | Description | Height | Distance | Direction | |
| A | Center of Bumper | 432 | 800 | Left | 273 |
| B | Top of Bumper | 533 | 800 | Left | 191 |
| C | Mid Level | 686 | 800 | Right | 172 |
| D | Top of Stack | 813 | 800 | Right | 206 |

### MDB INSTRUMENTATION AND CAMERAS

| | |
|---|---|
| Accelerometers | 5 |
| Contact Switches | 1 |
| High Speed Cameras | 2 |

## DATA SHEET NO. 4

## POST-TEST OBSERVATIONS

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

### TEST DUMMY INFORMATION AND CONTACT POINTS

| Description | Front Seat SID/Hybrid III | Rear Seat SID/Hybrid III |
|---|---|---|
| Dummy Type / Serial No. | P572F, SID / No. 274 | P572F, SID / No. 275 |
| Head Contact | Headrest | Rear Window |
| Upper Torso Contact | Airbag | Door Panel |
| Lower Torso Contact | Door Panel | Door Panel |
| Left Knee Contact | No Contact | No Contact |
| Right Knee Contact | Left Knee | Left Knee |

### POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

| Description | Front | Rear |
|---|---|---|
| Left Side Door Opening | Door remained closed and latched, jammed | Door remained closed and latched, jammed |
| Right Side Door Opening | Remained closed and latched, operational | Remained closed and latched, operational |
| Seat Movement | None | None |
| Seat Back Failure | None | None |

### POST-TEST STRUCTURAL OBSERVATIONS

| Critical Areas of Performance | Observations and Conclusions |
|---|---|
| Pillar Performance | No seperation |
| Sill Separation | None |
| Windshield Damage | Windshield cracked |
| Window Damage | Rear passenger side window broke |
| Other Notable Effects | None |

### SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

### MDB LEFT EDGE IMPACT POINT DATA

| Measured Parameter | Units | Requirement | Value |
|---|---|---|---|
| Horizontal Offset | mm | +/- 50 | 2 (right) |
| Vertical Offset | mm | +/- 20 | 2 (above) |

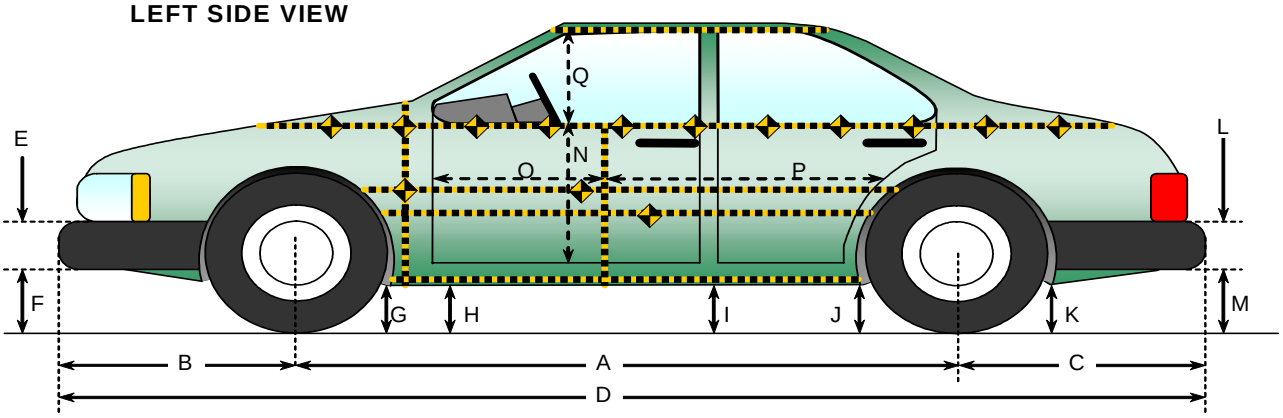
## DATA SHEET NO. 5

## VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

**LEFT SIDE VIEW**




### VEHICLE PRE AND POST TEST MEASUREMENT INFORMATION

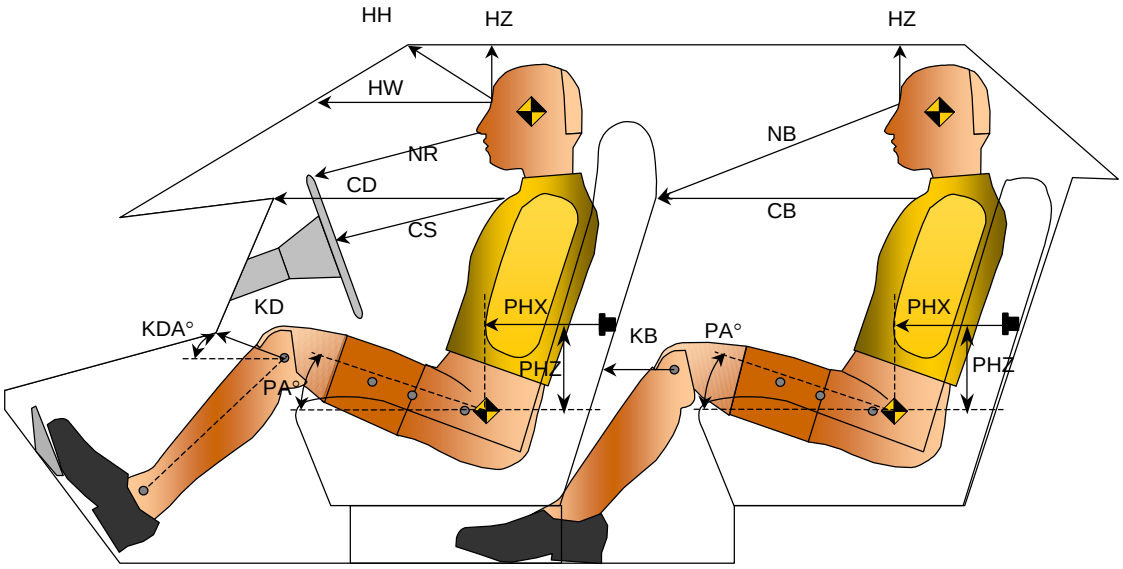
| Code | Measurement Description | Pre-Test | Post-Test | Difference |
|---|---|---|---|---|
| A | Wheelbase | 2885 | 2885 | 0 |
| B | Front Axle to FSOV | 917 | 917 | 0 |
| C | Rear Axle to RSOV | 1107 | 1109 | 2 |
| D | Total Length at Centerline | 4909 | 4909 | 0 |
| E | Front Bumper Thickness | 430 | 428 | -2 |
| F | Front Bumper Bottom to Ground | 371 | 370 | -1 |
| G | Sill Height at Front Wheel Well | 371 | 395 | 24 |
| H | Sill Height at Front Door Leading Edge | 371 | 370 | -1 |
| I | Sill Height at "B" Pillar | 381 | 372 | -9 |
| J1 | Sill Height at Rear Wheel Well | 376 | 380 | 4 |
| J2 | Pinch Weld Height at Rear Wheel Well | 356 | 360 | 4 |
| K | Sill Height aft of Rear Wheel Well | 391 | 396 | 5 |
| L | Rear Bumper Thickness | 200 | 200 | 0 |
| M | Rear Bumper Bottom to Ground | 426 | 437 | 11 |
| N | Sill Height to Window Bottom Sill | 770 | 781 | 11 |
| O | Front Door Leading Edge to Impact CL | 750 | 720 | -30 |
| P | Rear Door Trailing Edge to Impact CL | 1395 | 1340 | -55 |
| Q | Front Window Opening | 485 | 485 | 0 |
| R | Right Side Length | 3940 | 3940 | 0 |
| S | Left Side Length | 3940 | 3910 | -30 |
| T | Vehicle Width at "B" Post | 1820 | 1635 | -185 |

## DATA SHEET NO. 6

## SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05




### LONGITUDINAL CLEARANCE DIMENSION INFORMATION

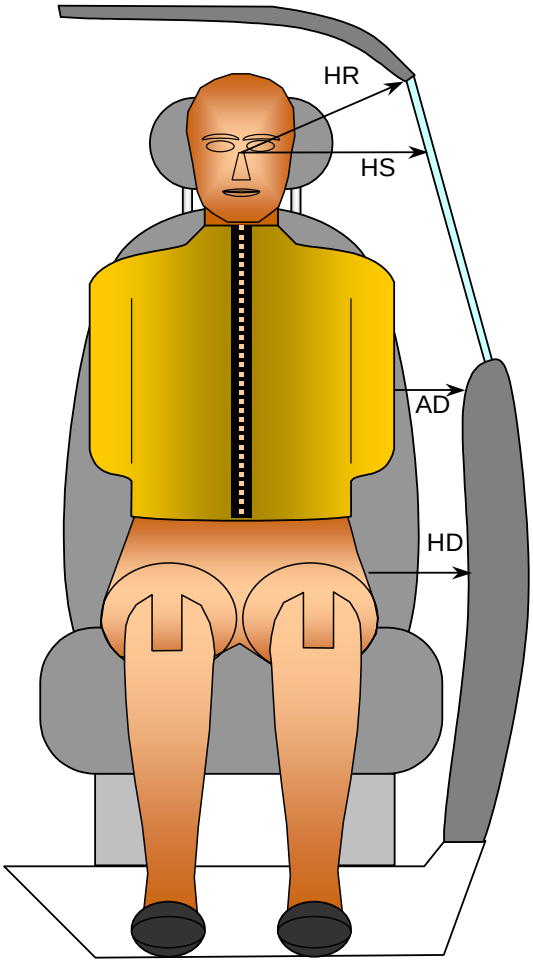
| Driver Code | Pass. Code | Measurement Description | Driver | | Passenger | |
|---|---|---|---|---|---|---|
| | | | Length(mm) | Angle | Length(mm) | Angle |
| HH | | Head to Header | 452 | 13.1 | | |
| HW | | Head to Windshield | 570 | | | |
| HZ | HZ | Head to Roof | 200 | 90.0 | 190 | 90.0 |
| NR | NB | Nose to Rim/Nose to Seat Back | 440 | 18.0 | 610 | 22.0 |
| CD | CB | Chest to Dash or Seat Back | 600 | 2.0 | 560 | 1.8 |
| CS | | Chest to Steering Wheel | 310 | 1.0 | | |
| KDL | KBL | Left Knee to Dash or Seat Back | 180 | 36.0 | 235 | 32.0 |
| KDR | KBR | Right Knee to Dash or Seat Back | 195 | | 250 | |
| PA | PA | Pelvic Angle | | 23.1 | | 23.0 |
| PHX | PHX | H-Point to Striker (X-Axis) | 195 | | 280 | |
| PHZ | PHZ | H-Point to Striker (Z-Axis) | 45 | | 200 | |

**DATA SHEET NO. 7**

**SID/HIII LATERAL CLEARANCE DIMENSIONS**

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05




*FRONT VIEW OF DUMMY*

**LATERAL CLEARANCE DIMENSION INFORMATION**

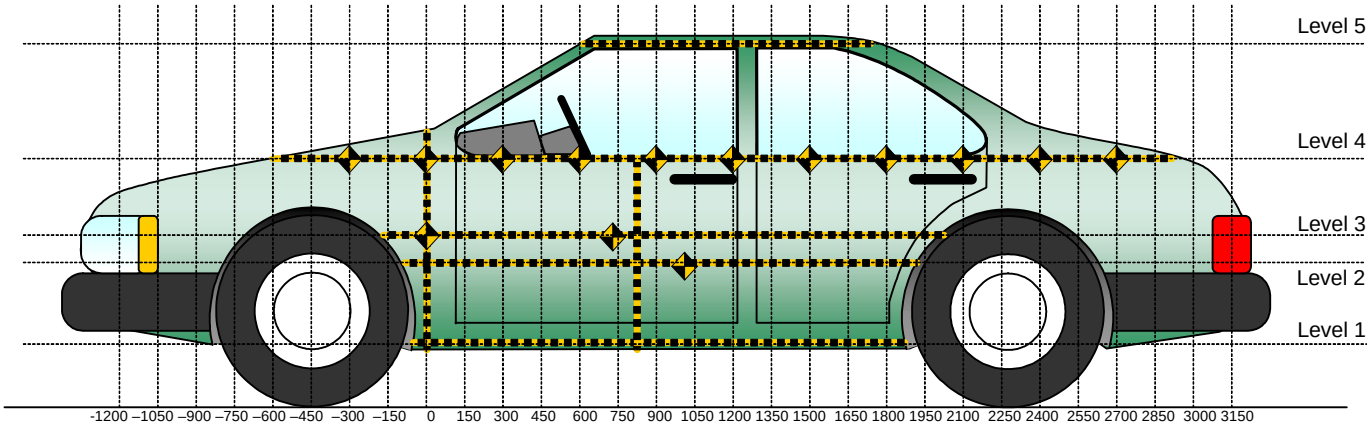
| Code | Measurement Description | Units | Driver | Passenger |
|---|---|---|---|---|
| HR | Head to Side Header | mm | 252 | 235 |
| HS | Head to Side Window | mm | 240 | 315 |
| AD | Arm to Door | mm | 120 | 105 |
| HD | H-Point to Door | mm | 125 | 125 |

**DATA SHEET NO. 8**

**VEHICLE SIDE MEASUREMENTS**

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05




All Measurements Shown in mm

**LEFT SIDE VIEW**

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

| Level | Measurement Description | Height Above Ground |
|---|---|---|
| 1 | Sill Top | 413 |
| 2 | Occupant H-Point | 665 |
| 3 | Mid Door | 780 |
| 4 | Window Sill | 1102 |
| 5 | Window Top | 1650 |

**DATA SHEET NO. 9**

**VEHICLE EXTERIOR CRUSH PROFILES**

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

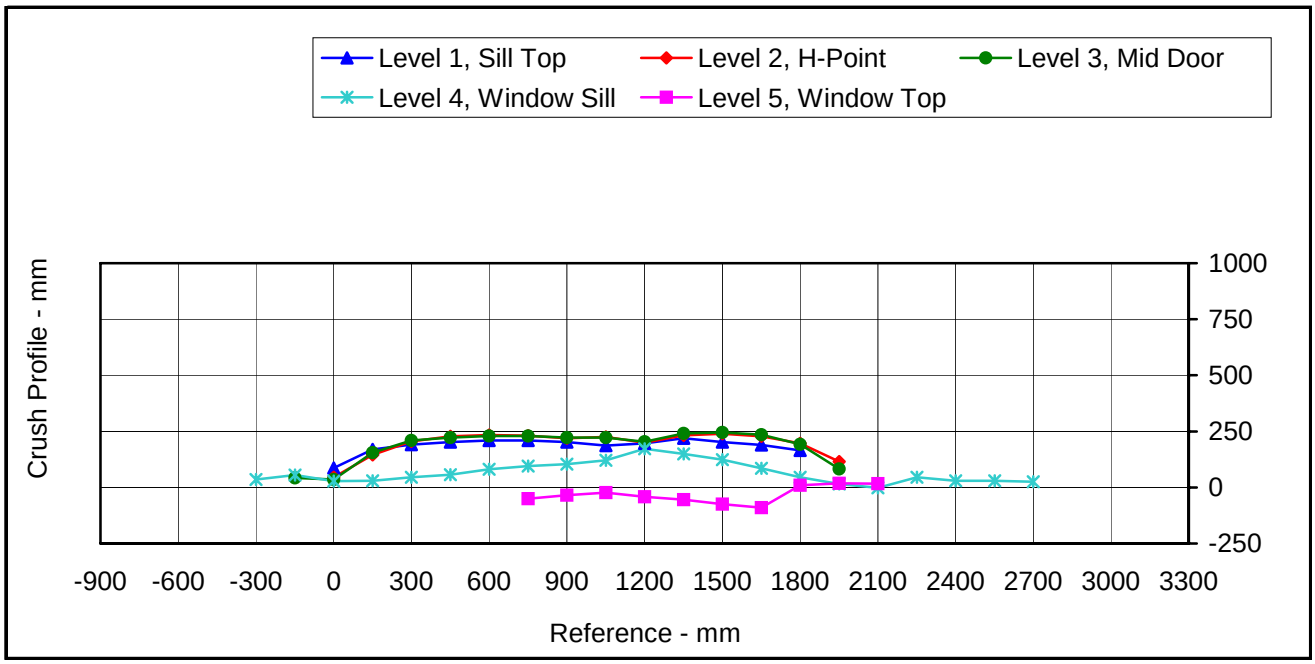
| | Pre-Test | | | | | Post-Test | | | | | Difference | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| -900 | | | | | | | | | | | | | | | |
| -750 | | | | | | | | | | | | | | | |
| -600 | | | | 666 | | | | | 679 | | | | | 13 | |
| -450 | | | | 651 | | | | | 676 | | | | | 25 | |
| -300 | | | | 646 | | | | | 681 | | | | | 35 | |
| -150 | | 586 | 584 | 632 | | | 632 | 627 | 688 | | | 46 | 43 | 56 | |
| 0 | 631 | 596 | 596 | 631 | | 718 | 641 | 632 | 659 | | 87 | 45 | 36 | 28 | |
| 150 | 631 | 596 | 596 | 626 | | 801 | 741 | 751 | 656 | | 170 | 145 | 155 | 30 | |
| 300 | 631 | 596 | 591 | 621 | | 822 | 801 | 801 | 666 | | 191 | 205 | 210 | 45 | |
| 450 | 632 | 593 | 588 | 616 | | 835 | 821 | 811 | 673 | | 203 | 228 | 223 | 57 | |
| 600 | 631 | 591 | 586 | 606 | 839 | 840 | 825 | 816 | 687 | 881 | 209 | 234 | 230 | 81 | 42 |
| 750 | 631 | 591 | 588 | 606 | 841 | 840 | 822 | 818 | 701 | 791 | 209 | 231 | 230 | 95 | -50 |
| 900 | 631 | 591 | 586 | 611 | 841 | 834 | 811 | 809 | 715 | 806 | 203 | 220 | 223 | 104 | -35 |
| 1050 | 631 | 591 | 586 | 611 | 846 | 818 | 816 | 809 | 732 | 823 | 187 | 225 | 223 | 121 | -23 |
| 1200 | 632 | 596 | 591 | 614 | 836 | 828 | 796 | 795 | 786 | 795 | 196 | 200 | 204 | 172 | -41 |
| 1350 | 632 | 596 | 591 | 614 | 831 | 851 | 829 | 832 | 764 | 776 | 219 | 233 | 241 | 150 | -55 |
| 1500 | 636 | 596 | 591 | 615 | 831 | 838 | 836 | 836 | 739 | 756 | 202 | 240 | 245 | 124 | -75 |
| 1650 | 636 | 598 | 591 | 611 | 831 | 826 | 826 | 826 | 696 | 741 | 190 | 228 | 235 | 85 | -90 |
| 1800 | 636 | 601 | 593 | 611 | 841 | 801 | 798 | 786 | 656 | 851 | 165 | 197 | 193 | 45 | 10 |
| 1950 | 646 | 591 | 586 | 616 | 841 | 676 | 706 | 668 | 632 | 859 | 30 | 115 | 82 | 16 | 18 |
| 2100 | | 591 | 579 | 620 | 843 | | 659 | 633 | 619 | 860 | | 68 | 54 | -1 | 17 |
| 2250 | | | | 621 | 841 | | | | 666 | 866 | | | | 45 | 25 |
| 2400 | | | | 636 | 841 | | | | 665 | 876 | | | | 29 | 35 |
| 2550 | | | | 641 | | | | | 671 | | | | | 30 | |
| 2700 | | | | 646 | | | | | 671 | | | | | 25 | |
| 2850 | | | | 646 | | | | | 670 | | | | | 24 | |
| 3000 | | | | 656 | | | | | 671 | | | | | 15 | |

## DATA SHEET NO. 9…(CONTINUED)

## VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05



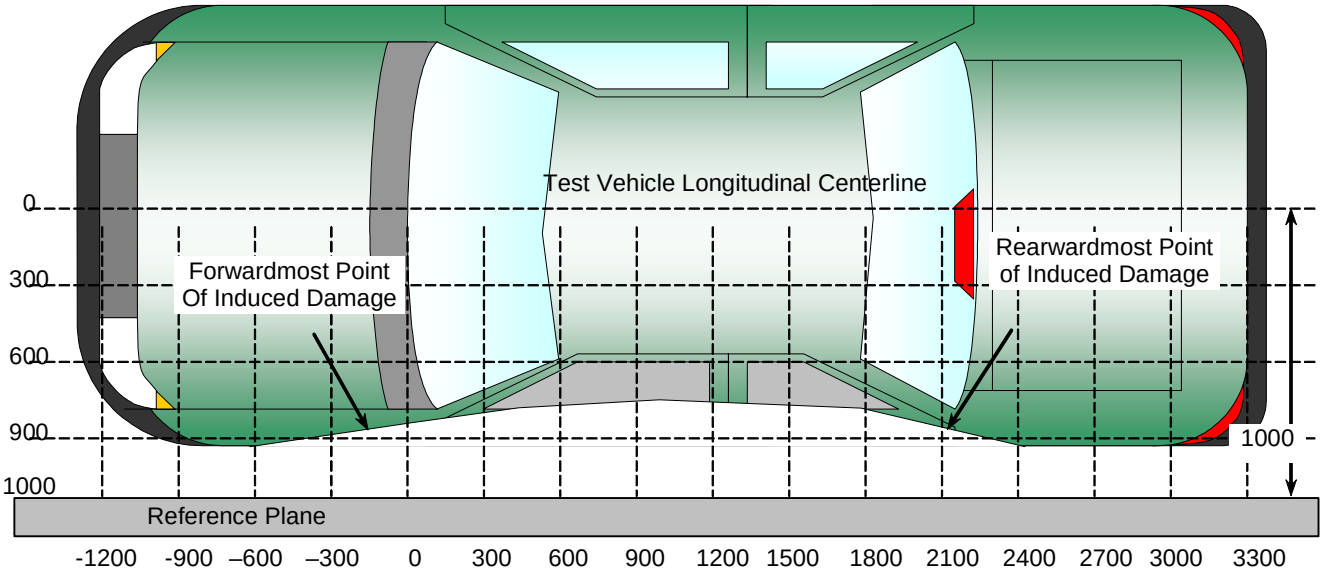

| | Units | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|---|---|---|---|---|---|
| Maximum Crush | mm | 219 | 240 | 245 | 172 | 42 |
| Distance from Impact | mm | 1350 | 1500 | 1500 | 1200 | 600 |

**DATA SHEET NO. 10**

**VEHICLE DAMAGE PROFILE DISTANCES**

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05




All Dimensions Shown in millimeters

**TOP VIEW**

**DAMAGE PROFILE DISTANCES**

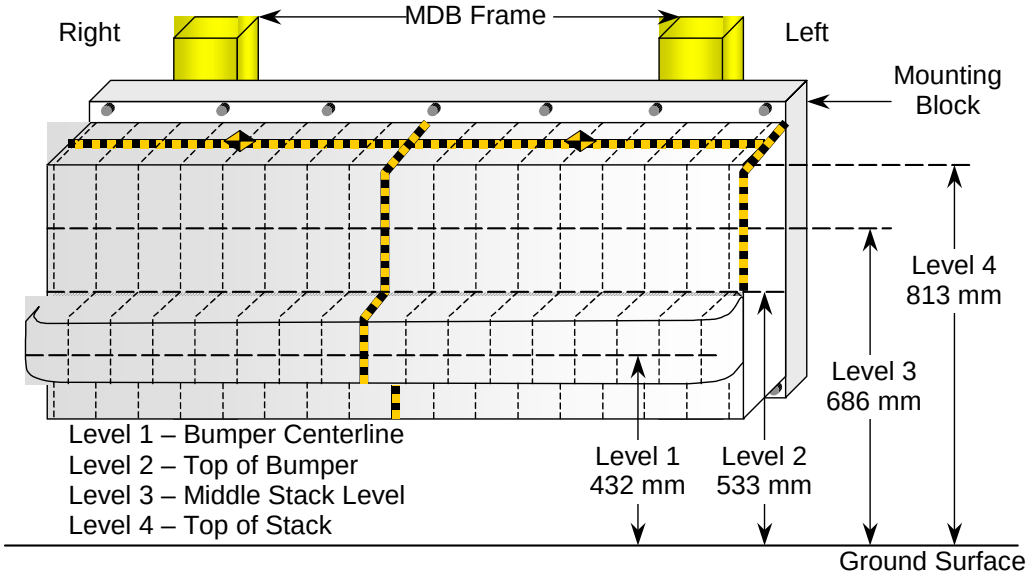
| DPD | Distance From Impact Point in mm | Level | Pre-Test (mm) | Post-Test (mm) | Max. Static Crush (mm) |
|---|---|---|---|---|---|
| 1 | -600 | 4 | 666 | 679 | 13 |
| 2 | 0 | 1 | 631 | 718 | 87 |
| 3 | 600 | 2 | 591 | 825 | 234 |
| 4 | 1200 | 3 | 591 | 795 | 204 |
| 5 | 1800 | 2 | 601 | 798 | 197 |
| 6 | 2400 | 5 | 841 | 876 | 35 |

## DATA SHEET NO. 11

## DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05




### DEFORMABLE BARRIER STATIC CRUSH

| Stack Level | Distance Right of Center | | | | | | | | C/L | Distance Left of Center | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 800 | 700 | 600 | 500 | 400 | 300 | 200 | 100 | 0 | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
| 1 | 791 | 766 | 758 | 756 | 751 | 746 | 738 | 738 | 722 | 711 | 708 | 706 | 703 | 698 | 696 | 704 | 711 |
| 2 | 811 | 806 | 798 | 794 | 787 | 781 | 768 | 771 | 761 | 756 | 751 | 748 | 743 | 741 | 736 | 731 | 736 |
| 3 | 756 | 731 | 726 | 726 | 732 | 751 | 739 | 726 | 717 | 712 | 706 | 705 | 701 | 712 | 722 | 736 | 792 |
| 4 | 786 | 756 | 731 | 727 | 737 | 766 | 741 | 724 | 718 | 716 | 706 | 706 | 711 | 721 | 741 | 766 | 826 |

All Dimensions in mm

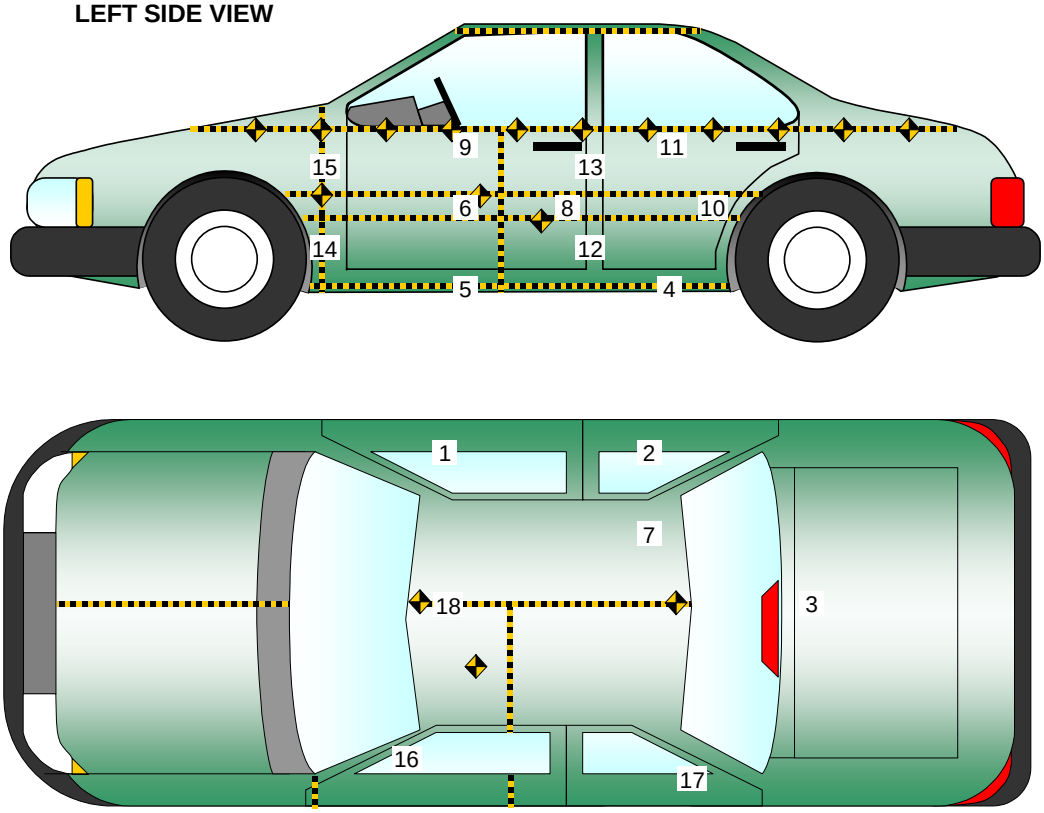
**DATA SHEET NO. 12**

**VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

**LEFT SIDE VIEW**




| No. | Location |
|---|---|
| 1 | Right Sill at Front Seat |
| 2 | Right Sill at Rear Seat |
| 3 | Rear Floorpan Above Axle |
| 4 | Left Sill at Rear Door |
| 5 | Left Sill at Front Door |
| 6 | Left Front Door Centerline |
| 7 | Right Rear Occupant Compartment |
| 8 | Left Front Door Mid-Rear |
| 9 | Left Front Door Upper Centerline |

| No. | Location |
|---|---|
| 10 | Left Rear Door Mid-Rear |
| 11 | Left Rear Door Upper Centerline |
| 12 | Left Lower B-Post |
| 13 | Left Middle B-Post |
| 14 | Left Lower A-Post |
| 15 | Left Middle A-Post |
| 16 | Front Seat Track |
| 17 | Rear Seat Track or Structure |
| 18 | Vehicle CG |

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

## VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

| Loc. No. | Accelerometer Location | Measurements (mm) | | | |
|---|---|---|---|---|---|
| | | X | Y | Z | |
| 1 | Right Sill at Front Seat | 2990 | 603 | 533 | |
| 2 | Right Sill at Rear Seat | 2103 | 603 | 533 | |
| 3 | Rear Floorpan Above Axle | 1005 | 335 | 779 | |
| 4 | Left Sill at Rear Door | 1942 | -580 | 213 | |
| 5 | Left Sill at Front Door | 2506 | -580 | 213 | |
| 6 | Front Door Centerline | | | | 1 |
| 7 | Rt. Rear Occ. Compartment | 2103 | 355 | 533 | |
| 8 | Front Door Mid-Rear | | | | 1 |
| 9 | Front Door Upper Centerline | | | | 1 |
| 10 | Rear Door Mid-Rear | | | | 1 |
| 11 | Rear Door Upper Centerline | | | | 1 |
| 12 | B-Post Lower | 2273 | -720 | 900 | |
| 13 | B-Post Middle | 2273 | -720 | 1050 | |
| 14 | A-Post Lower | 3163 | -823 | 780 | |
| 15 | A-Post Middle | 3163 | -823 | 963 | |
| 16 | Front Seat Track | 2780 | -590 | 590 | |
| 17 | Rear Seat Structure | | | | |
| 18 | Vehicle CG | 2994 | 315 | 533 | |

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

1.) Not installed

**DATA SHEET NO. 13**

**MDB ACCELEROMETER LOCATIONS**

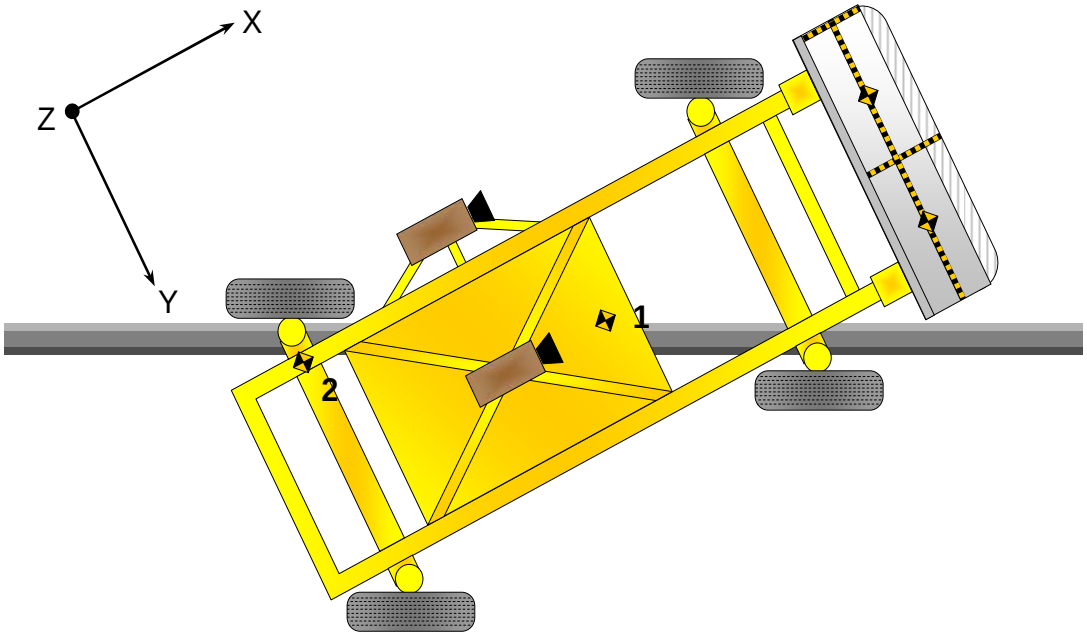
Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

**MDB ACCELEROMETER LOCATIONS**

| Loc. No. | Accelerometer Locations | Measurements (mm) | | |
|---|---|---|---|---|
| | | X | Y | Z |
| 1 | MDB CG | -1195 | 0 | 430 |
| 2 | MDB Rear | -2642 | -593 | 608 |

Reference Points: X - MDB Front Axle
Y - MDB Centerline
Z - Ground Plane

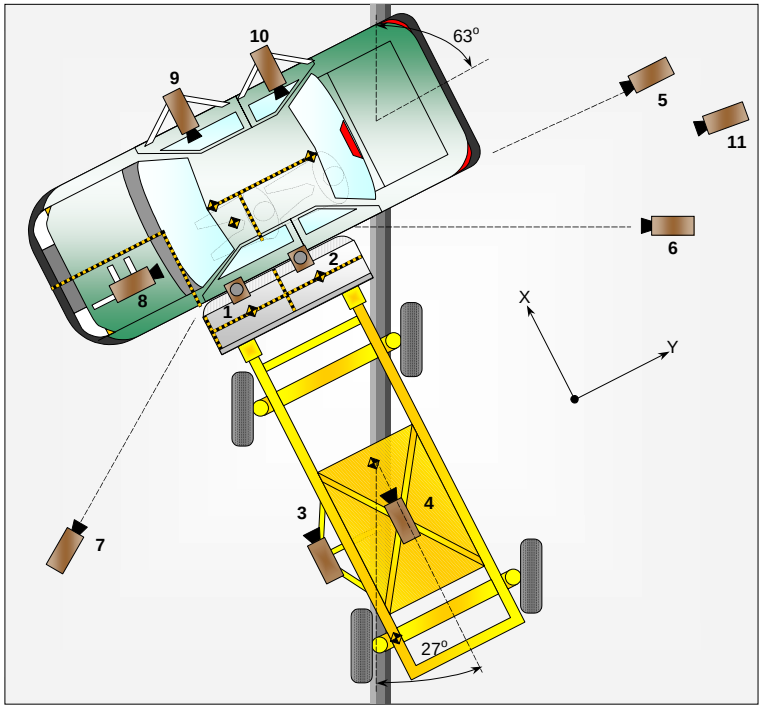


## DATA SHEET NO. 14

## HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05




| No. | Camera View | Location (mm) | | | Angle (deg.) | Lens (mm) | Film Speed (fps) |
|---|---|---|---|---|---|---|---|
| | | X | Y | Z | | | |
| Doc | Real Time Digital | 3658 | 22861 | -1727 | -5 | | 30 |
| 1 | Overhead Overall | 1220 | 2287 | -5486 | -90 | 14 | 1000 |
| 2 | Overhead Close Up | 609 | 2287 | -5486 | -90 | 22 | 1000 |
| 3 | Left Impact Point | -2134 | 0 | -1143 | -7 | 25 | 1000 |
| 4 | Side Overall | -3912 | 838 | -1829 | -11 | 12 | 1000 |
| 5 | Rear | 236 | 15545 | -1371 | -1 | 25 | 1000 |
| 6 | Left Rear | -2137 | 1302 | -939 | -4 | 24 | 1000 |
| 7 | Left Front | -2666 | -3549 | -1473 | -4 | 24 | 1000 |
| 8 | Driver Front | 533 | -214 | -1219 | -20 | 35 | 1000 |
| 9 | Driver Side | 1889 | 336 | -1203 | -2 | 20 | 1000 |
| 10 | Passenger Side | 1889 | 945 | -1203 | -2 | 20 | 1000 |
| 11 | Inline | 38148 | 38148 | -1304 | 0 | 75 | 1000 |
| Doc | Real Time Digital | -2790 | -3520 | -1473 | -1 | | 1000 |
| 6b | Left Rear | -7100 | 16459 | -839 | 0 | 40 | 30 |

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

## DATA SHEET NO. 15

## FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

Test Time: 1:49 PM Temperature: 18.3 Deg. C.

**Stoddard Solvent Spillage Measurements**

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

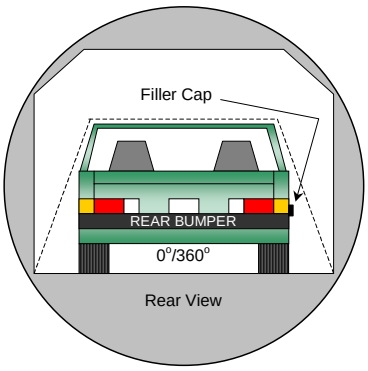
B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)

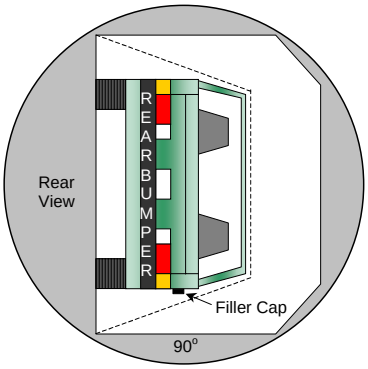
C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)

D. Spillage Details: No leakage occurred

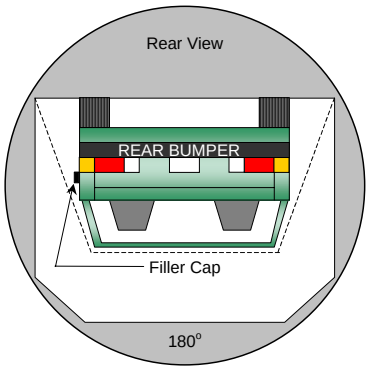
**DATA SHEET NO. 16**
**FMVSS 301 STATIC ROLLOVER DATA**

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201
Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

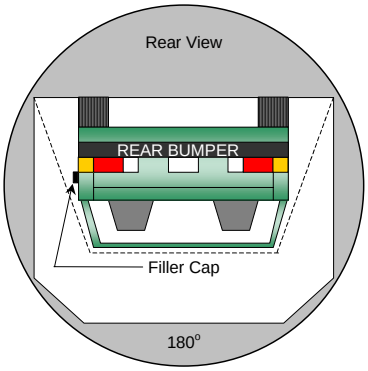


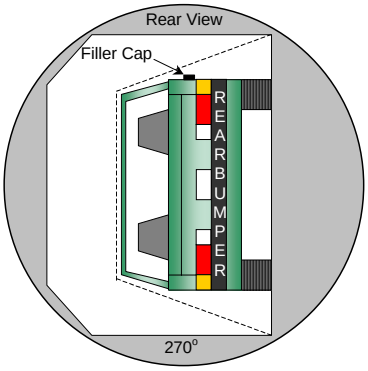

**0° to 90°**

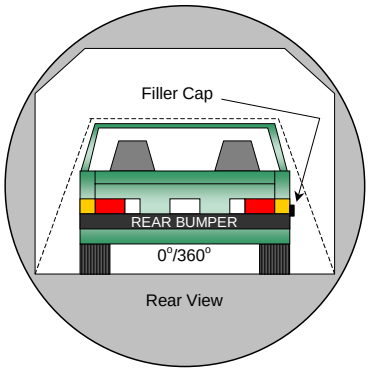



**90° to 180°**




**180° to 270°**




**270° to 360°**

1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage locations.

   No solvent leakage occurred during static rollover testing.

## FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2006 Ford Explorer 4-Door MPV NHTSA No.: M60201

Test Program: 55/28 km/h Side Impact NCAP Test Date: 11/29/05

### SOLVENT COLLECTION TIME TABLE IN SECONDS

| Test Phase | Rotation Time | Hold Time | Total Time |
|---|---|---|---|
| 0° to 90° | 83 | 300 | 383 |
| 90° to 180° | 79 | 300 | 379 |
| 180° to 270° | 80 | 300 | 380 |
| 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 |

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

### SOLVENT SPILLAGE LOCATION TABLE

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

**APPENDIX A**
**PHOTOGRAPHS**

LIST OF PHOTOGRAPHS

LIST OF PHOTOGRAPHS…(CONTINUED)

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


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

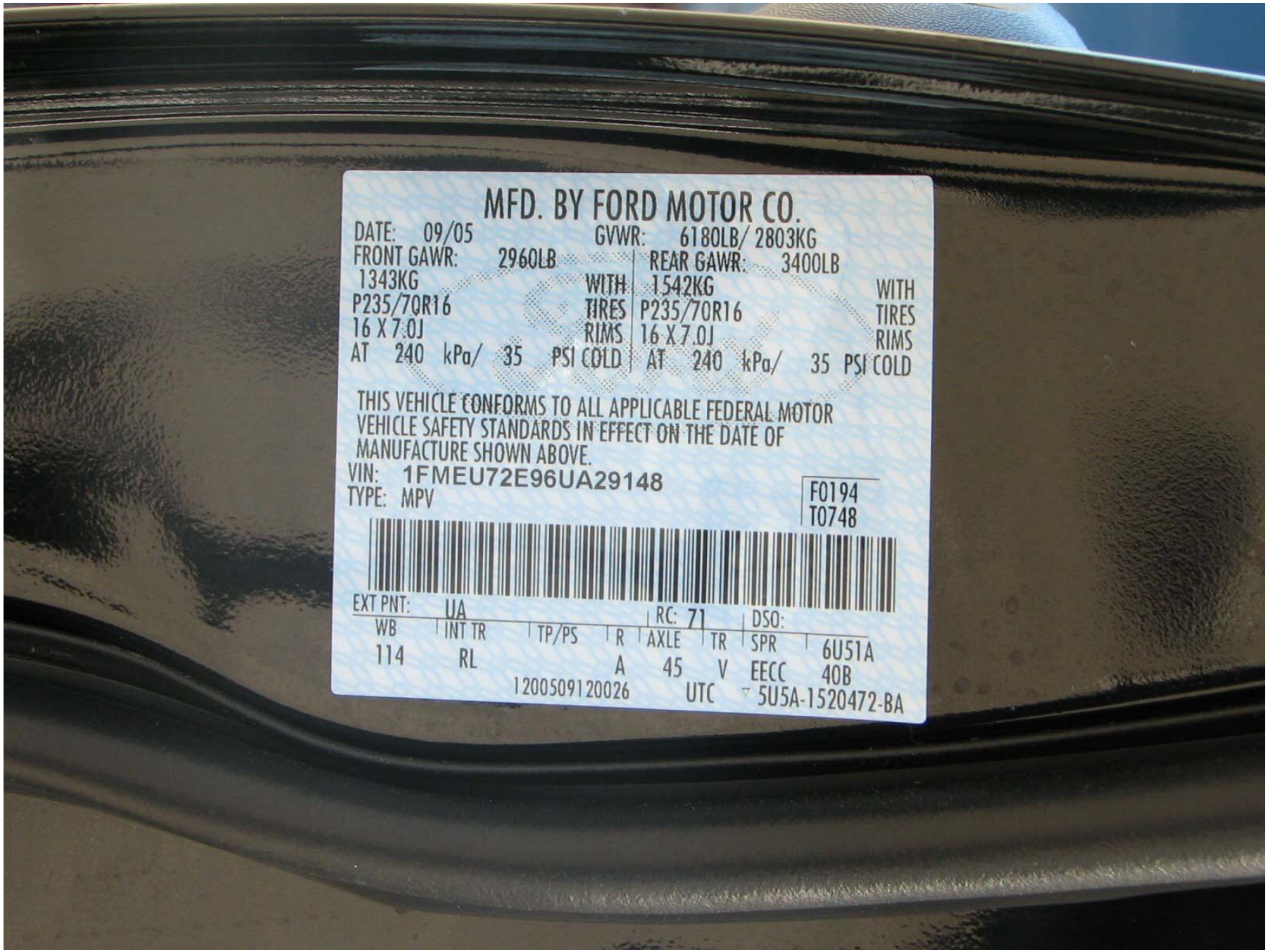



Figure A-3: Manufacturer's Label


Figure A-4: Tire Placard


Figure A-5: Pre-Test Front View


Figure A-6: Post-Test Front View


Figure A-7: Pre-Test Left Front ¾ View


Figure A-8: Post-Test Left Front ¾ View


Figure A-9: Pre-Test Left Side View


Figure A-10: Post-Test Left Side View


Figure A-11: Pre-Test Left Rear ¾ View


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


Figure A-13: Pre-Test Rear View


Figure A-14: Post-Test Rear View


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


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


Figure A-17: Pre-Test Right Side View


Figure A-18: Post-Test Right Side View


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


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


Figure A-21: Pre-Test Overhead View


Figure A-22: Post-Test Overhead View

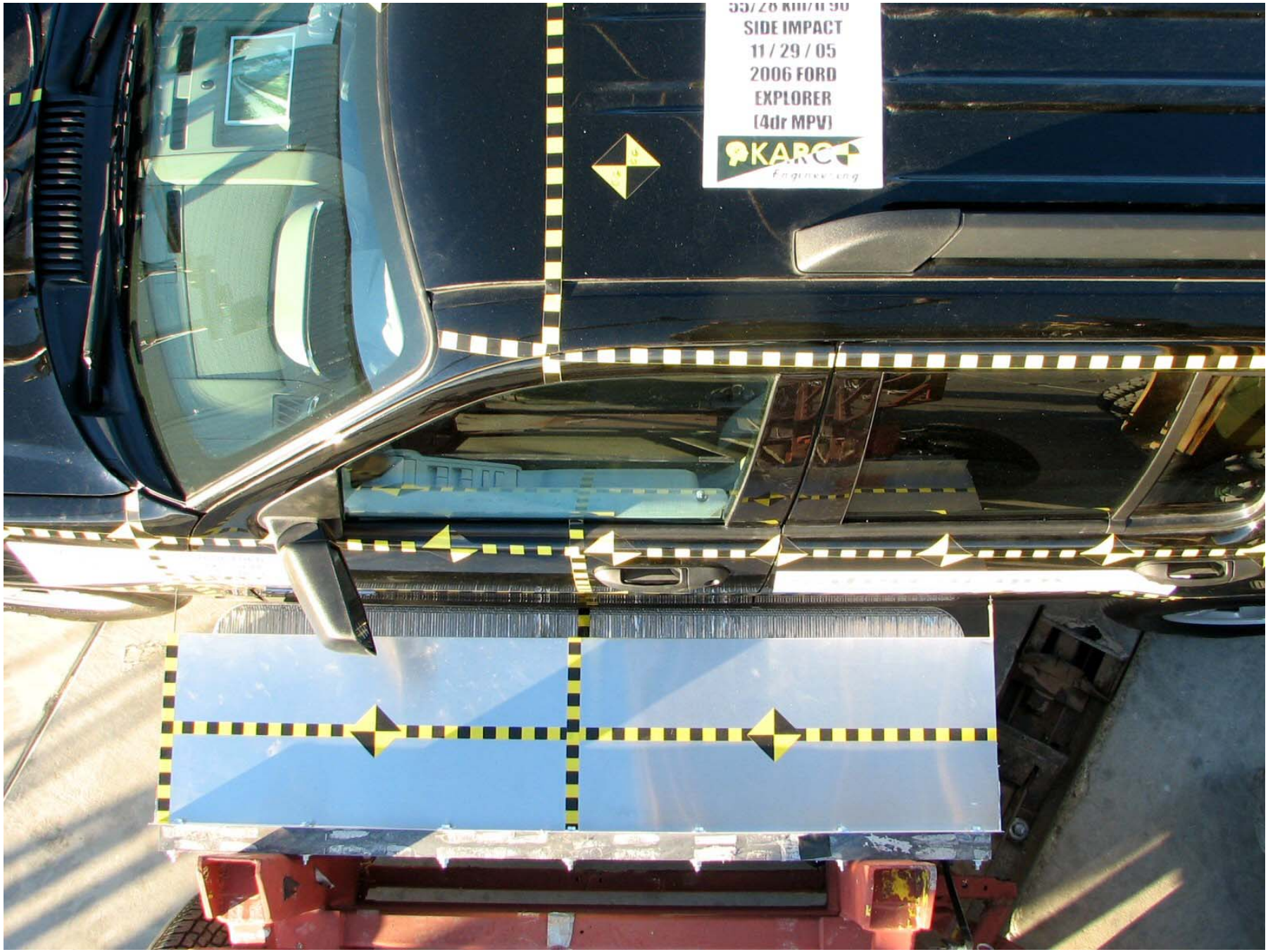



Figure A-23: Pre-Test Overhead Close-up View


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


Figure A-25: Pre-Test Left Impact Point

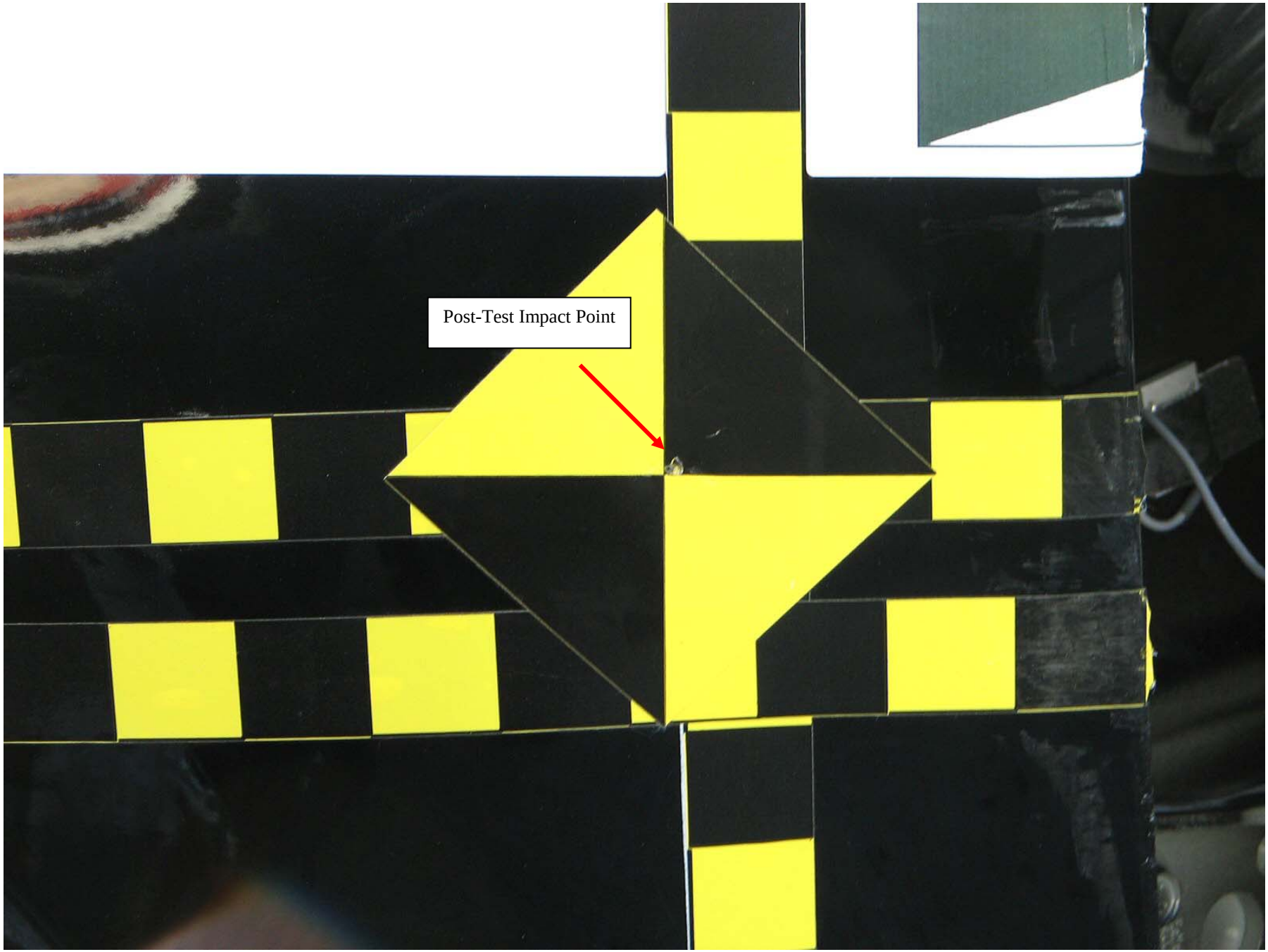



Figure A-26: Post-Test Left Impact Point

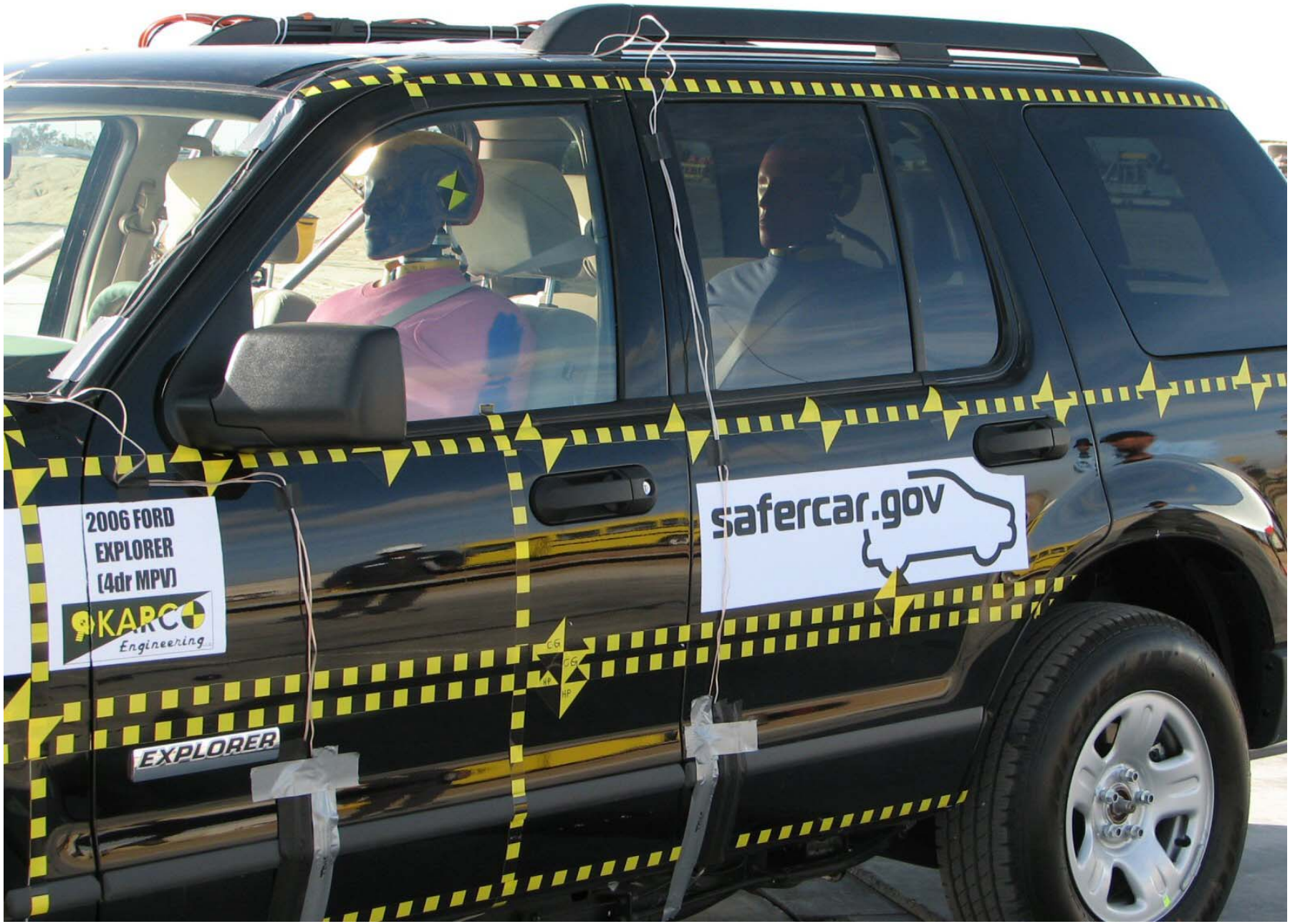



Figure A-27: Pre-Test Front ¾ View of Left Side Doors


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


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


Figure A-30: Post-Test Rear ¾ View of Left Side Doors


Figure A-31: Pre-Test Left Front Door

Figure A-32: Post-Test Left Front Door

Figure A-33: Pre-Test Left Rear Door

Figure A-34: Post-Test Left Rear Door


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

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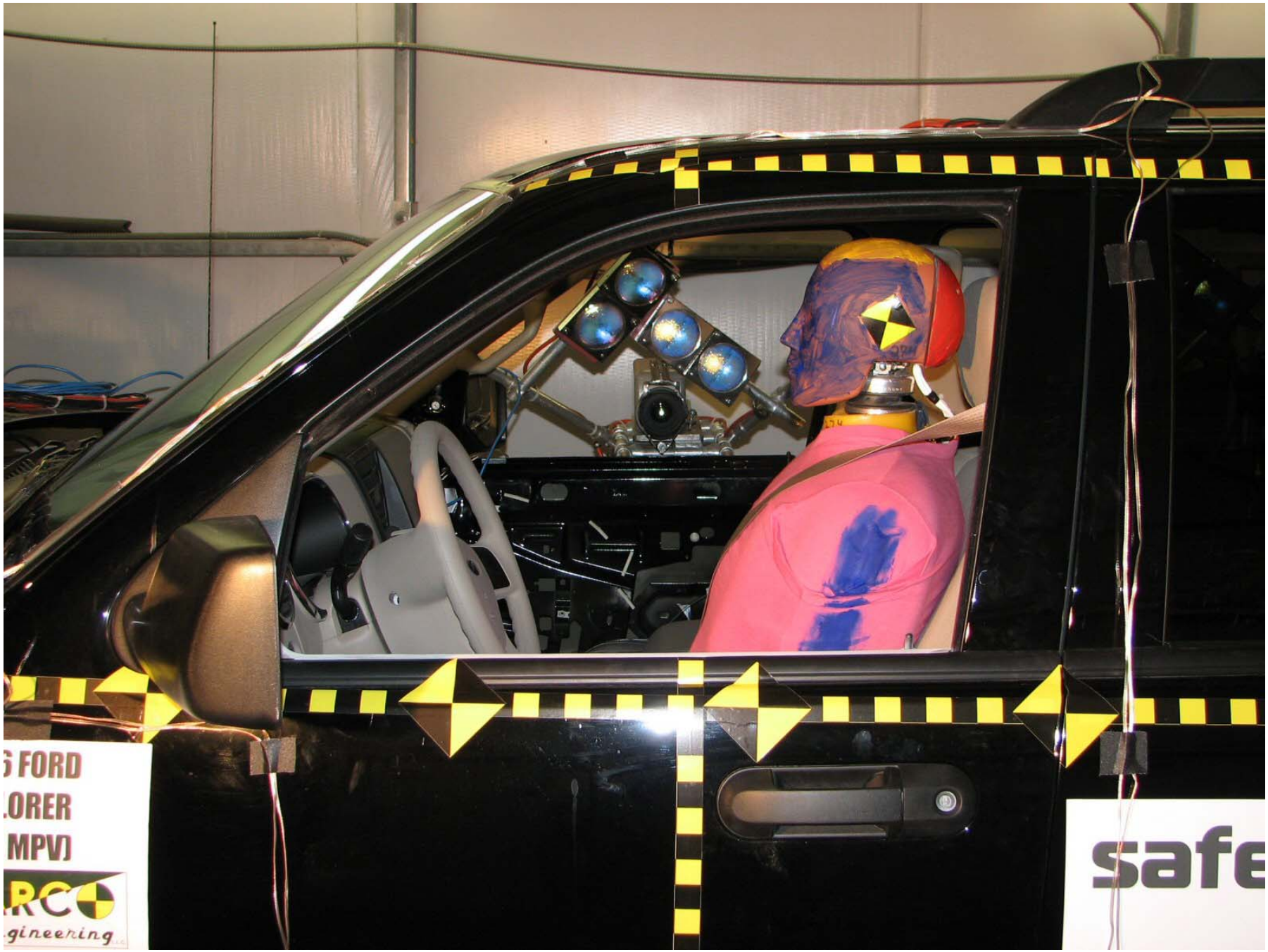


Figure A-36: Pre-Test Driver Dummy (Through Window)


Figure A-37: Post-Test Driver Dummy (Through Window)


Figure A-38: Pre-Test Driver Dummy Clearance From Door


Figure A-39: Post-Test Driver Dummy Clearance From Door


Figure A-40: Pre-Test Driver Dummy Right Side View


Figure A-41: Post-Test Driver Dummy Right Side View

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


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

Figure A-44: Pre-Test Passenger Dummy Left Side (Door Open)

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


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

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

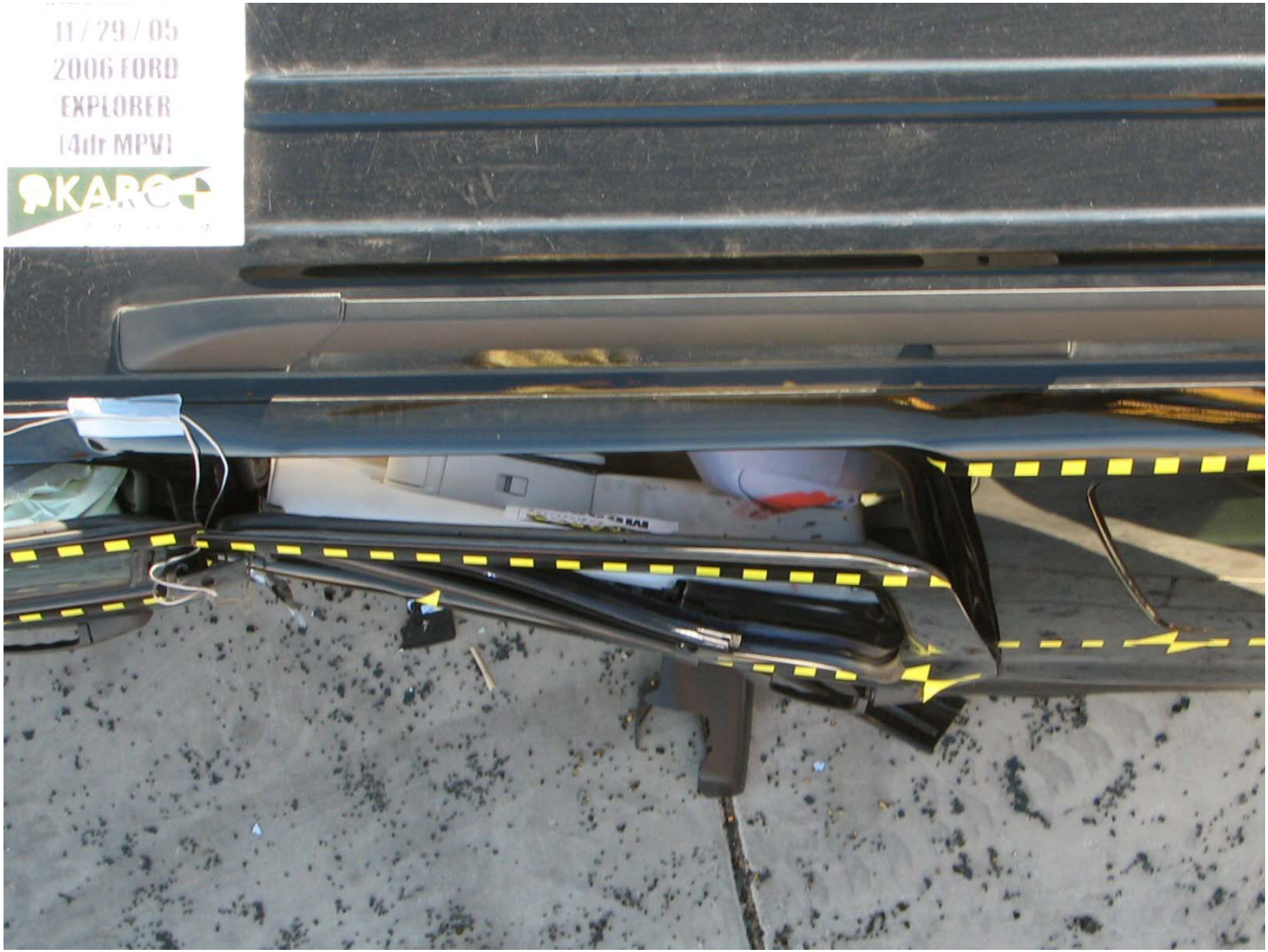



Figure A-48: Post-Test Passenger Dummy Clearance From Door


Figure A-49: Pre-Test Passenger Dummy Right Side View


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

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


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

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

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

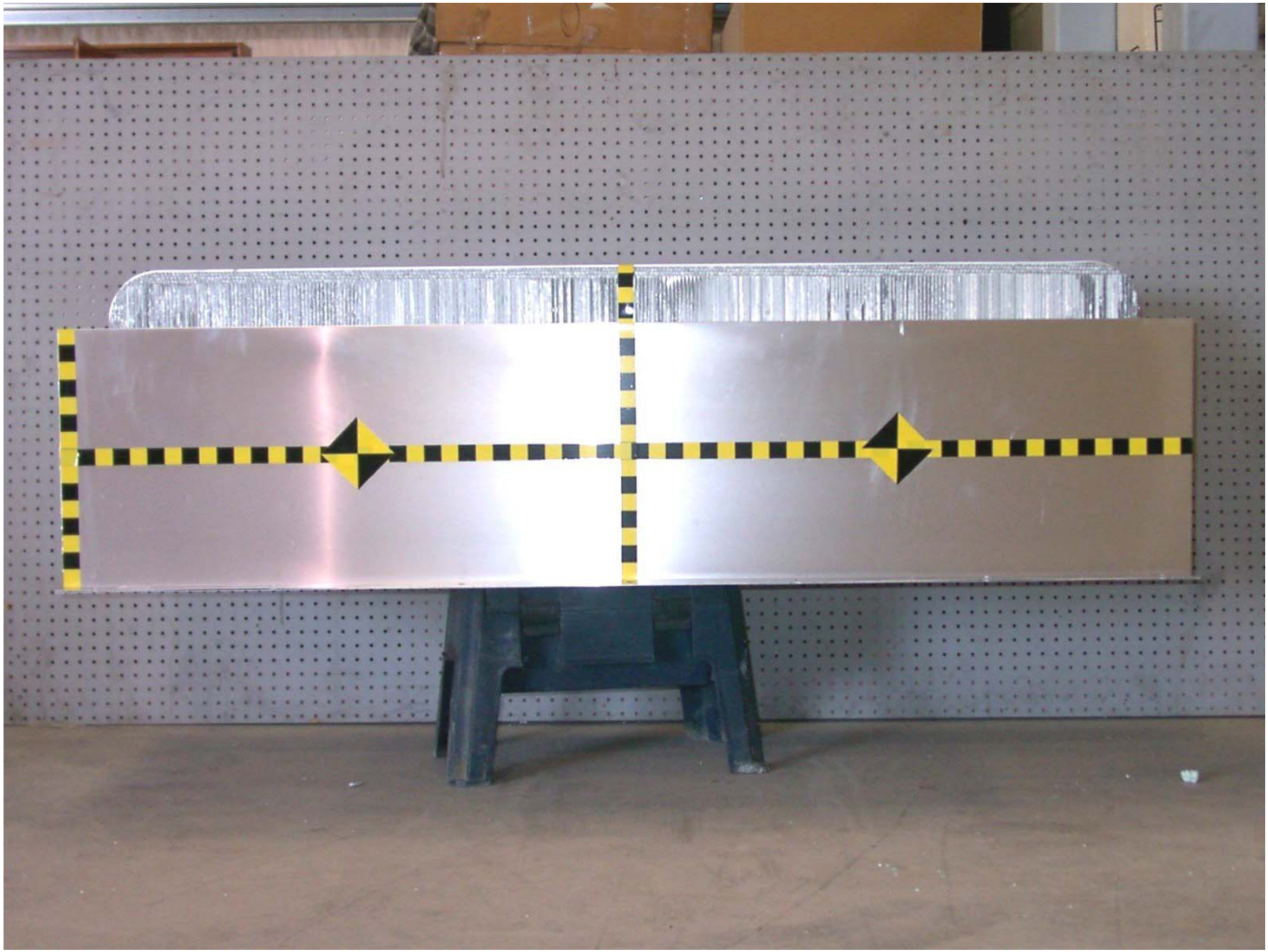


Figure A-55: Pre-Test Top View of Deformable Barrier

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

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

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

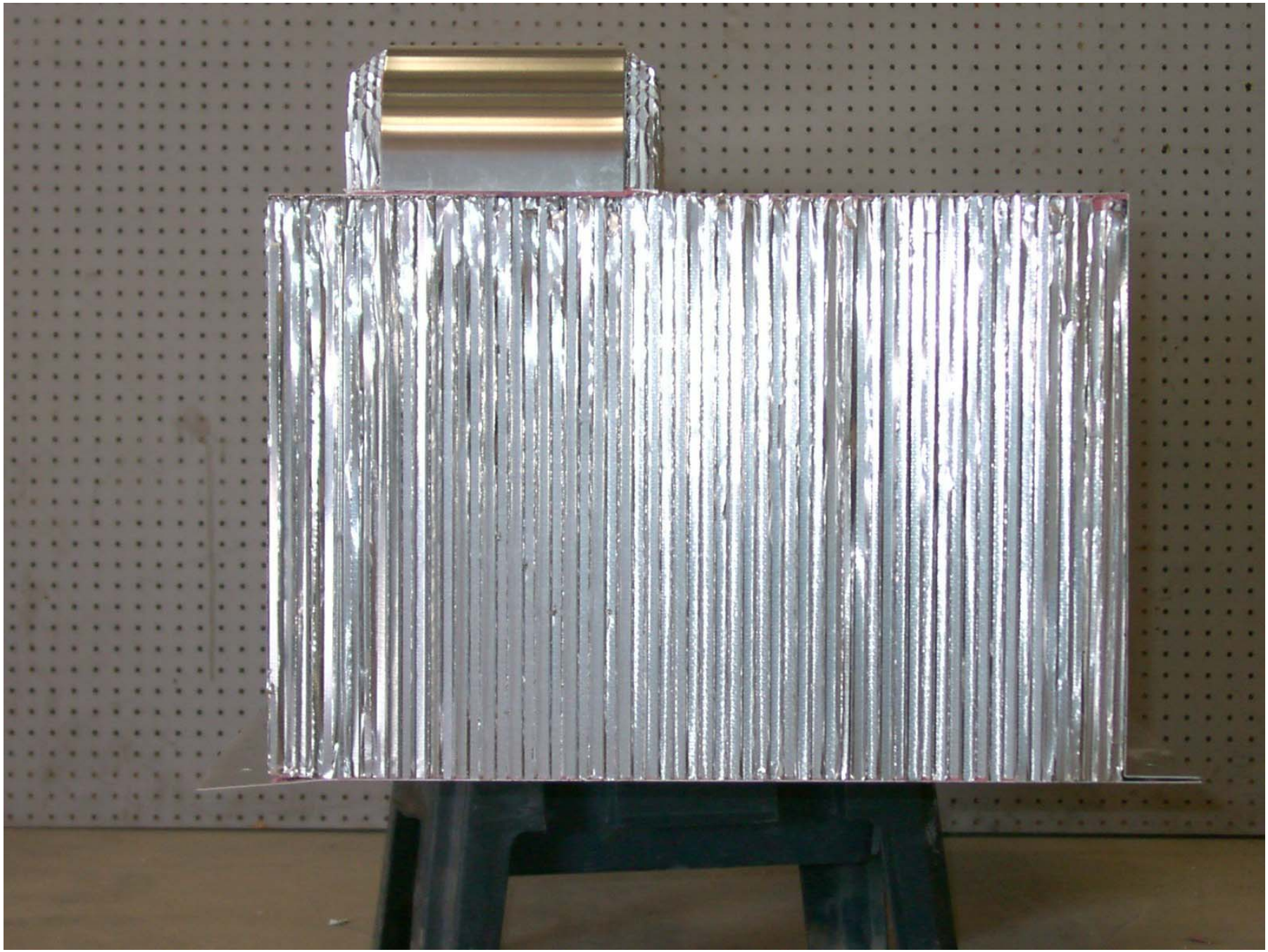


Figure A-59: Pre-Test Left Side View of Deformable Barrier

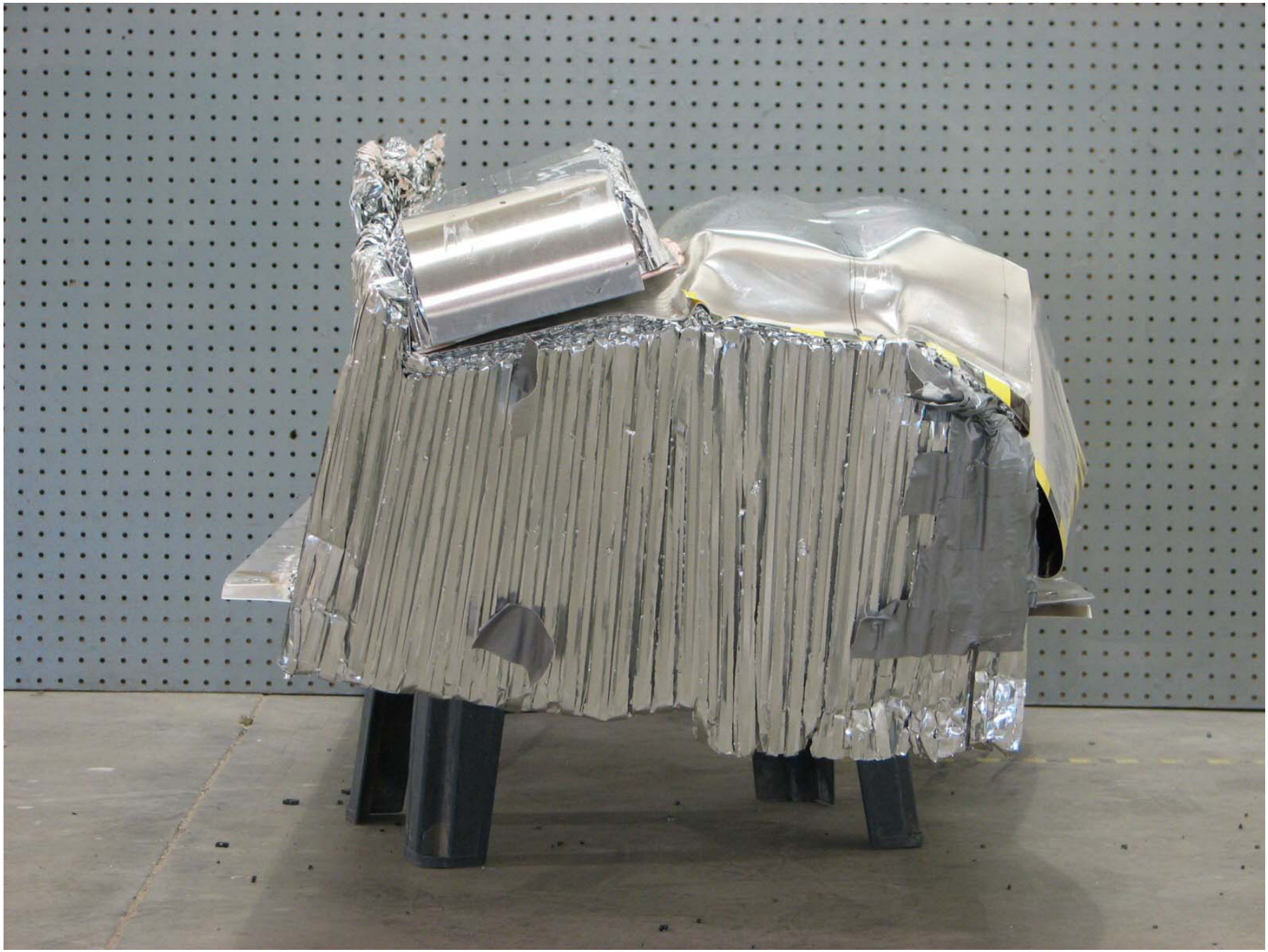


Figure A-60: Post-Test Left Side View of Deformable Barrier


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


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


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

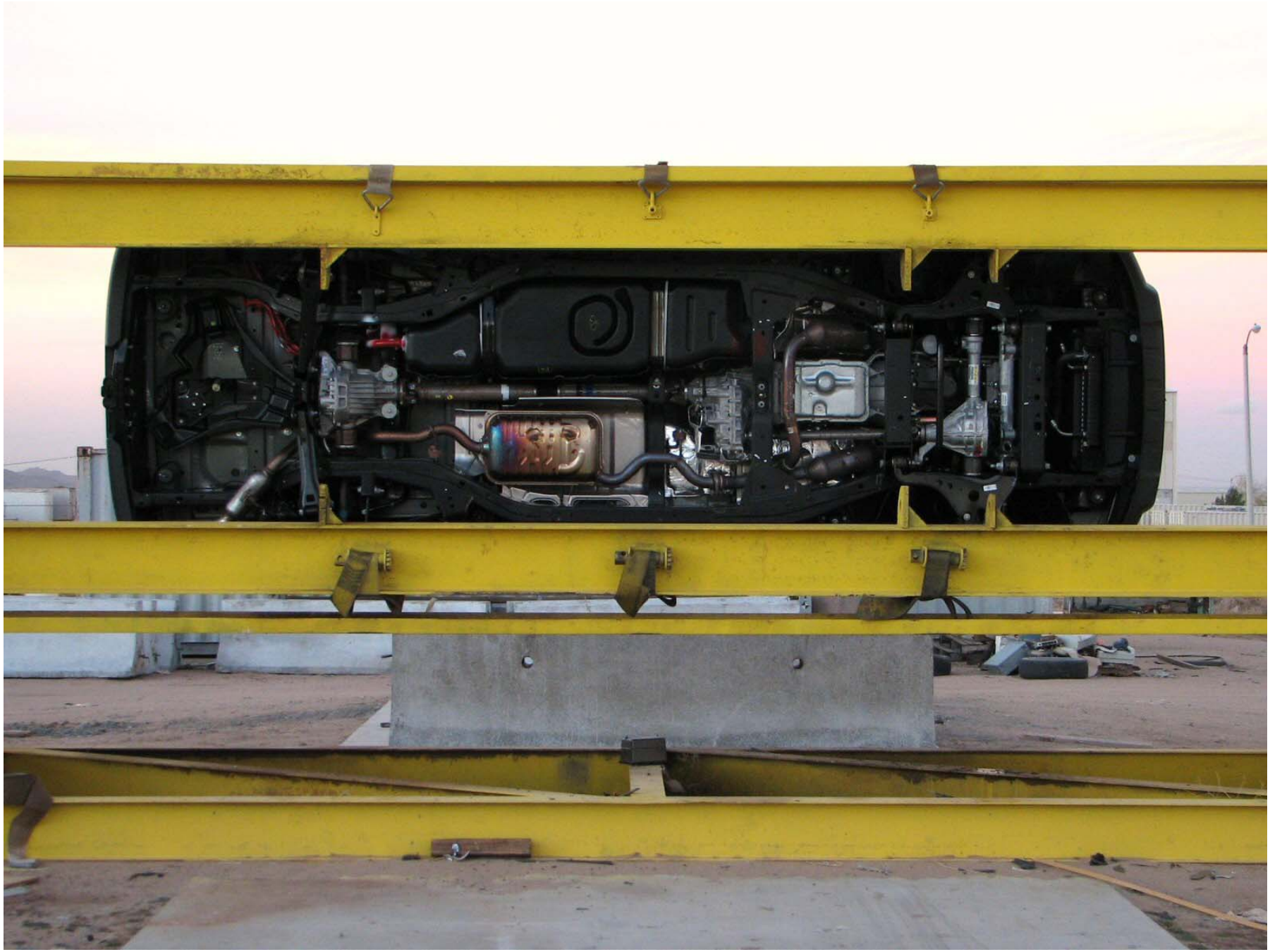


Figure A-64: Vehicle on Rollover Device (270°)


Figure A-65: Vehicle Impact

**APPENDIX B**

**SID/HIII, VEHICLE AND MDB RESPONSE DATA**

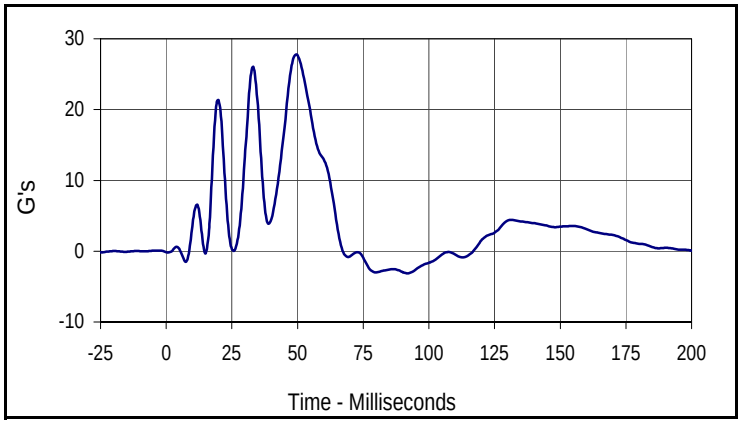
LIST OF DATA PLOTS

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

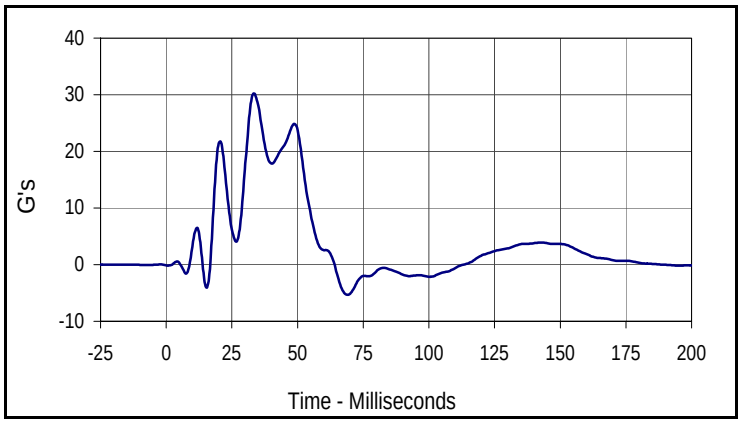
LIST OF DATA PLOTS…(CONTINUED)

Driver Head X Primary
Driver Head Y Primary
Driver Head Z Primary
Driver Head Resultant Primary
Driver Head Primary X Velocity
Driver Head Primary Y Velocity
Driver Head Primary Z Velocity
Driver Head X Redundant
Driver Head Y Redundant
Driver Head Z Redundant
Driver Head Resultant Redundant
Driver Head Redundant X Velocity
Driver Head Redundant Y Velocity
Driver Head Redundant Z Velocity
Driver Upper Neck Force X
Driver Upper Neck Force Y
Driver Upper Neck Force Z
Driver Upper Neck Force Resultant
Driver Upper Neck Moment X
Driver Upper Neck Moment Y
Driver Upper Neck Moment Z
Driver Upper Neck Moment Resultant
Driver Upper Rib Primary Y Velocity
Driver Lower Rib Primary Y Velocity
Driver Lower Spine Primary Y Velocity
Driver Pelvis Primary Y Velocity
Driver Upper Rib Redundant Y
Driver Lower Rib Redundant Y
Driver Lower Spine Redundant Y
Driver Pelvis Redundant Y

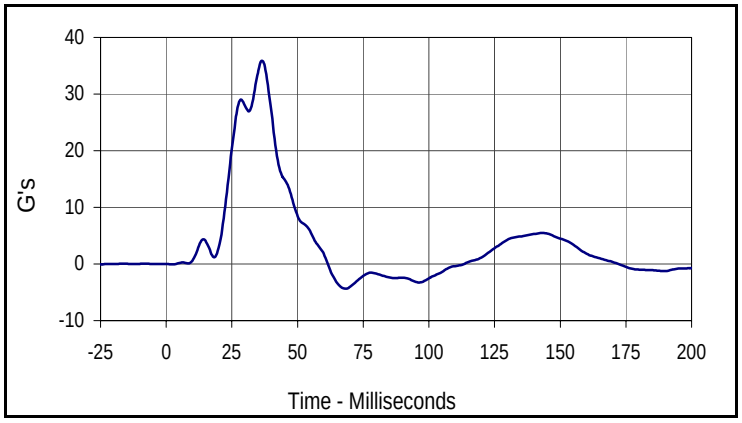
| | | | |
|---|---|---|---|
| Test Vehicle: | 2006 Ford Explorer 4-Door MPV | Test Date: | 11/29/05 |
| Test Program: | 55/28 km/h Side Impact NCAP | NHTSA No.: | M60201 |



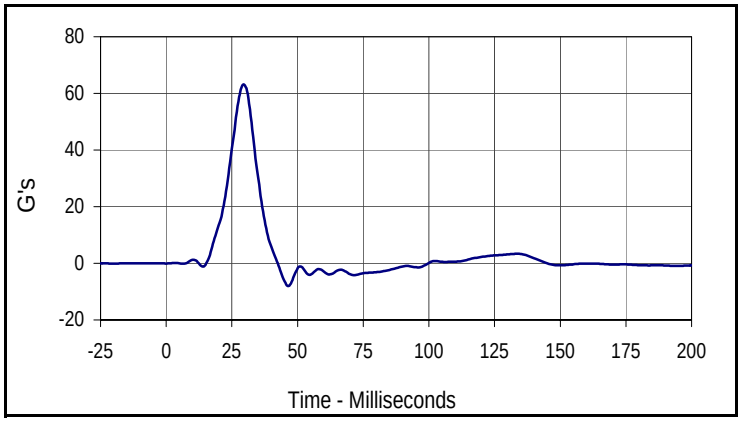

| Curve Description | | | |
|---|---|---|---|
| Driver Upper Rib Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIR | FIR100 | G's |
| Max | Time | Min | Time |
| 27.8 | 49.4 | -3.1 | 91.9 |




| Curve Description | | | |
|---|---|---|---|
| Driver Lower Rib Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 002 | FIR | FIR100 | G's |
| Max | Time | Min | Time |
| 30.2 | 33.1 | -5.3 | 69.4 |

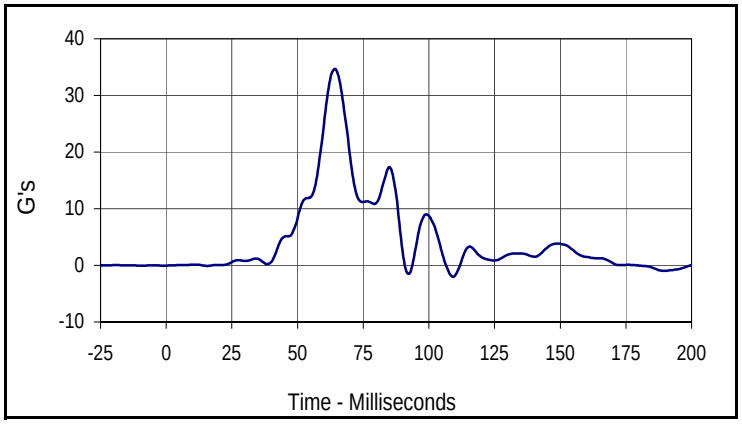



| Curve Description | | | |
|---|---|---|---|
| Driver Lower Spine Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 003 | FIR | FIR100 | G's |
| Max | Time | Min | Time |
| 35.9 | 36.3 | -4.4 | 68.1 |

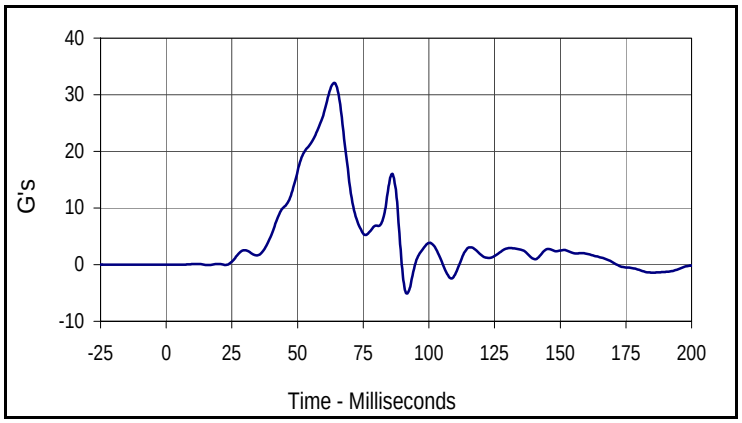



| Curve Description | | | |
|---|---|---|---|
| Driver Pelvis Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 004 | FIR | FIR100 | G's |
| Max | Time | Min | Time |
| 63.2 | 29.4 | -8.0 | 46.3 |

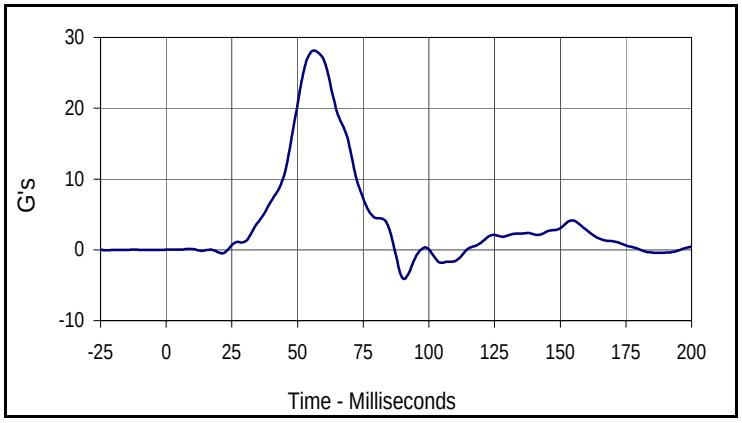
| | | | |
|---|---|---|---|
| Test Vehicle: | 2006 Ford Explorer 4-Door MPV | Test Date: | 11/29/05 |
| Test Program: | 55/28 km/h Side Impact NCAP | NHTSA No.: | M60201 |



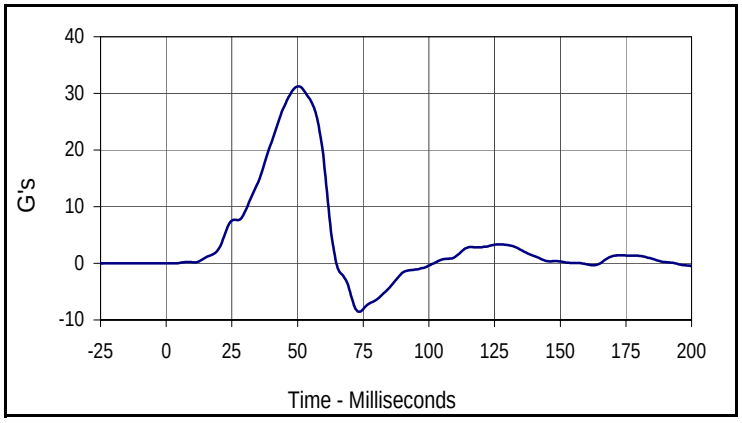

| Curve Description | | | |
|---|---|---|---|
| Passenger Upper Rib Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 005 | FIR | FIR100 | G's |
| Max | Time | Min | Time |
| 34.7 | 64.4 | -2.0 | 109.4 |




| Curve Description | | | |
|---|---|---|---|
| Passenger Lower Rib Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 006 | FIR | FIR100 | G's |
| Max | Time | Min | Time |
| 32.1 | 63.8 | -5.1 | 91.9 |




| Curve Description | | | |
|---|---|---|---|
| Passenger Lower Spine Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 007 | FIR | FIR100 | G's |
| Max | Time | Min | Time |
| 28.2 | 56.3 | -4.1 | 90.6 |




| Curve Description | | | |
|---|---|---|---|
| Passenger Pelvis Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 008 | FIR | FIR100 | G's |
| Max | Time | Min | Time |
| 31.3 | 50.0 | -8.5 | 73.8 |

# APPENDIX C
# SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

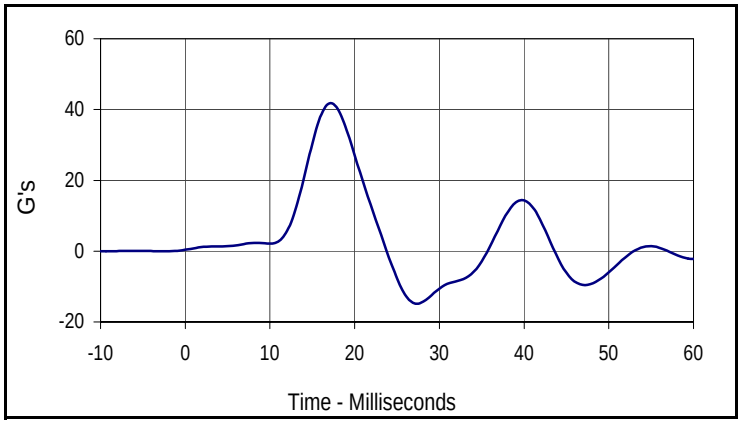
# APPENDIX C
# PRE-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII External Measurements | Test Date: | 10/26/05 |
| ATD Serial No.: | 274 | Test I.D.: | N/A |

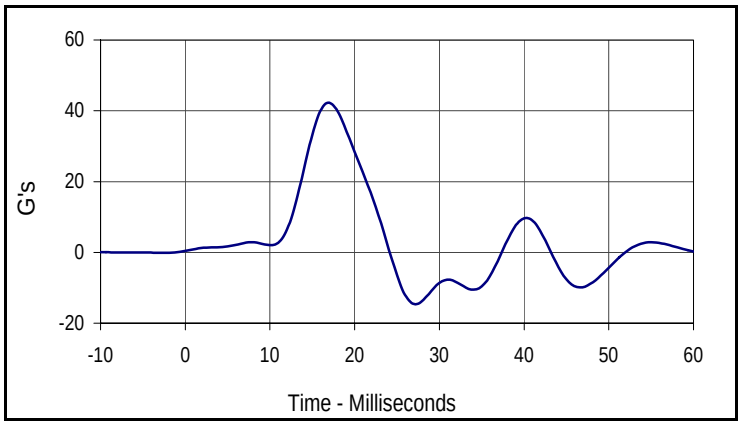
| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| SH- Seated Height | mm | 889 to 909 | 900 | Pass |
| HP- Hip Point Height | mm | 99 (reference) | 99 | Pass |
| RH- Rib Height | mm | 502 to 520 | 507 | Pass |
| KH- Knee Pivot From Back Line | mm | 511 to 526 | 517 | Pass |
| KV- Knee Pivot From Floor | mm | 490 to 505 | 496 | Pass |
| HW- Hip Width | mm | 356 to 391 | 366 | Pass |
| | | Overall Test Results | | Pass |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Thorax Lateral Impact | Test Date: | 10/24/05 |
| ATD Serial No.: | 274 | Test I.D.: | TH10A |

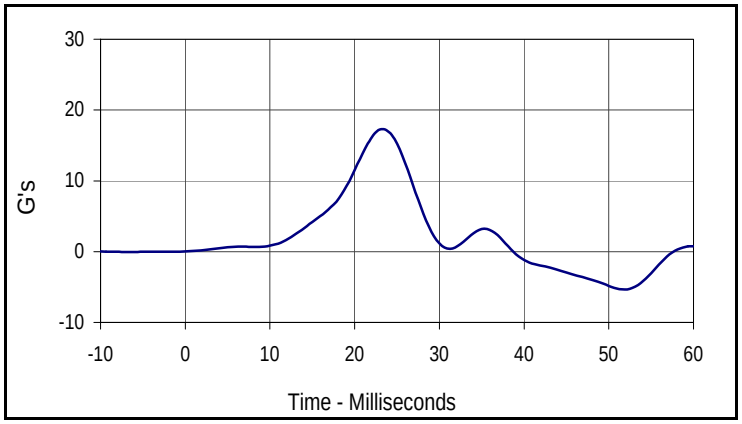
| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Probe Velocity | m/s | 4.21 to 4.33 | 4.26 | Pass |
| Upper Rib Acceleration | G's | 37.0 to 46.0 | 41.6 | Pass |
| Lower Rib Acceleration | G's | 37.0 to 46.0 | 42.3 | Pass |
| Thoracic Spine Acceleration | G's | 15.0 to 22.0 | 17.3 | Pass |
| | | Overall Test Results | | Pass |




| Curve Description | | | |
|---|---|---|---|
| Upper Rib Primary | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 41.6 | 16.9 | -14.8 | 27.5 |



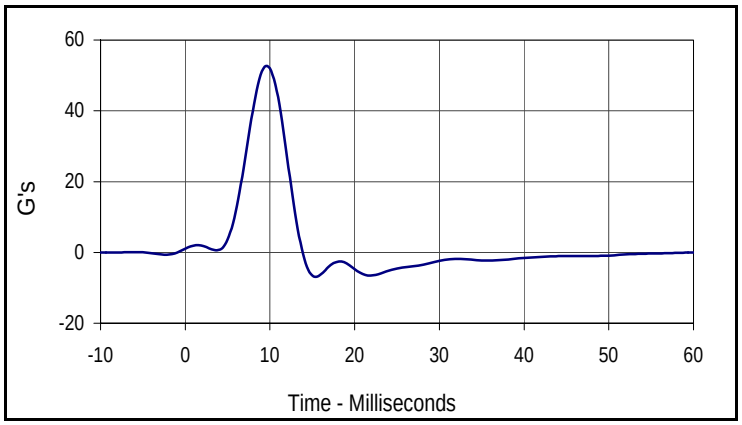

| Curve Description | | | |
|---|---|---|---|
| Lower Rib Primary | | | |
| CURNO | Type | SAE Class | Units |
| 002 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 42.3 | 16.9 | -14.5 | 26.9 |




| Curve Description | | | |
|---|---|---|---|
| Lower Spine Primary | | | |
| CURNO | Type | SAE Class | Units |
| 003 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 17.3 | 23.1 | -5.4 | 51.9 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Pelvis Lateral Impact | Test Date: | 10/24/05 |
| ATD Serial No.: | 274 | Test I.D.: | PI10A |

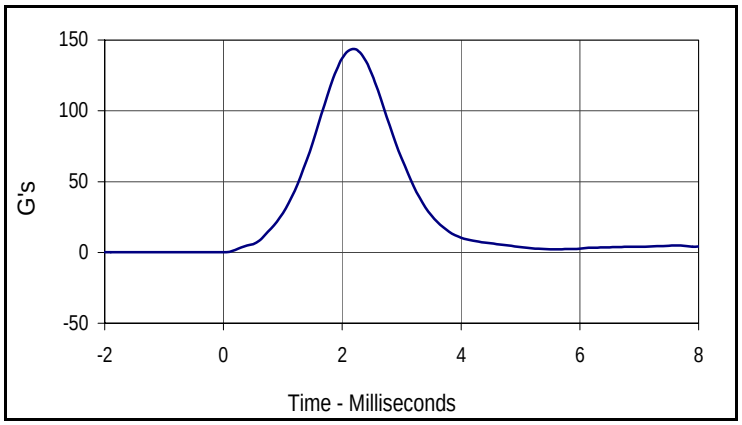
| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Probe Velocity | m/s | 4.21 to 4.33 | 4.26 | Pass |
| Peak Pelvis Acceleration | G's | 40.0 to 60.0 | 52.5 | Pass |
| Acceleration Time Above 20 G's | Msec. | 3.0 to 7.0 | 5.63 | Pass |
| | | Overall Test Results | | Pass |



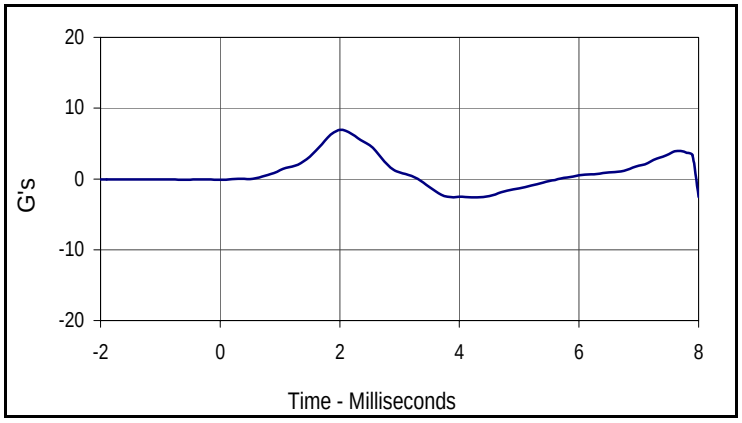

| Curve Description | | | |
|---|---|---|---|
| Pelvis Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 52.5 | 9.4 | -6.8 | 15.6 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Head Drop Lateral Impact Test | Test Date: | 10/25/05 |
| ATD Serial No.: | 274 | Test I.D.: | HD10A |

| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Peak Resultant Acceleration | G's | 120.0 to 150.0 | 143.7 | Pass |
| Peak Longitudinal Acceleration | G's | ≤15.0 | 6.9 | Pass |
| Is Acceleration Unimodal? | Yes/No | Yes | Yes | Pass |
| Oscillations After Main Pulse | % | <15 | 2.8 | Pass |
| | | Overall Test Results | | Pass |



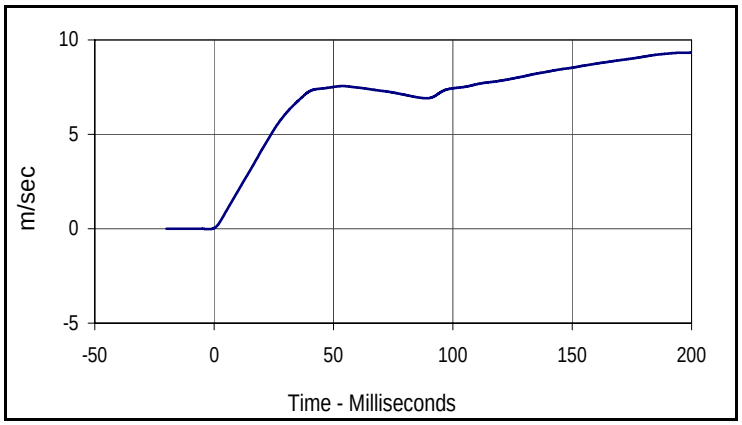

| Curve Description | | | |
|---|---|---|---|
| Head Resultant | | | |
| CURNO | Type | SAE Class | Units |
| 001 | RES | 1000 | G's |
| Max | Time | Min | Time |
| 143.7 | 2.2 | 0.1 | -0.9 |



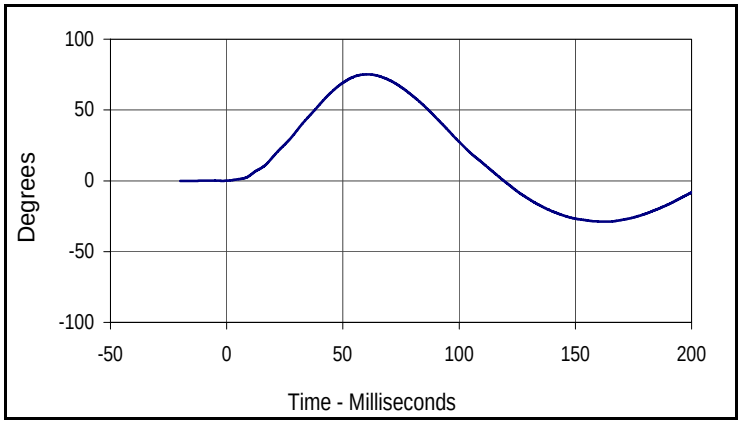

| Curve Description | | | |
|---|---|---|---|
| Head X | | | |
| CURNO | Type | SAE Class | Units |
| 002 | FIL | 1000 | G's |
| Max | Time | Min | Time |
| 6.9 | 2.0 | -2.6 | 4.2 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Neck Pendulum Lateral Test | Test Date: | 10/25/05 |
| ATD Serial No.: | 274 | Test I.D.: | NB10A |

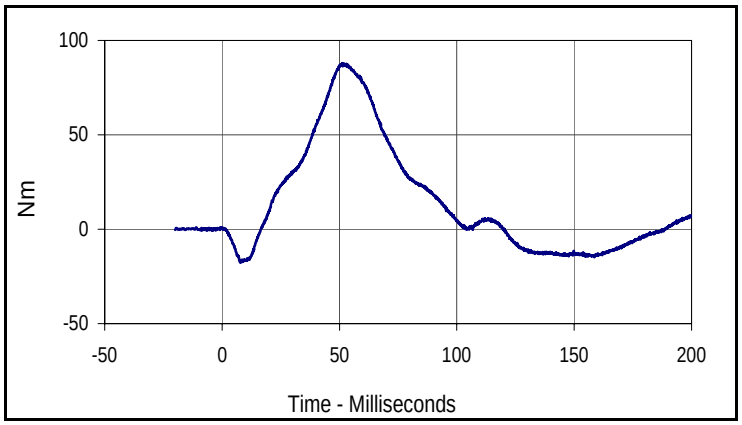
| Tested Parameter | | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|---|
| Laboratory Temperature | | °C | 20.6 to 22.2 | 21.1 | Pass |
| Laboratory Relative Humidity | | % | 10 to 70 | 30 | Pass |
| Pendulum Velocity | | m/sec | 6.89 to 7.13 | 6.93 | Pass |
| Pendulum Deceleration | 10 Msec. | m/sec | 1.96 to 2.55 | 2.01 | Pass |
| | 20 Msec. | m/sec | 4.12 to 5.10 | 4.18 | Pass |
| | 30 Msec. | m/sec | 5.73 to 7.01 | 6.10 | Pass |
| | 40 to 70 | m/sec | 6.27 to 7.64 | 7.56 | Pass |
| "D" Plane Rotation | Max | Degrees | 66.0 to 82.0 | 75.2 | Pass |
| Max Rotation Time After Peak Moment | | Msec. | 2.0 to 16.0 | 9.3 | Pass |
| Rotation Time From Peak to Zero Angle | | Msec. | 58.0 to 67.0 | 58.8 | Pass |
| Moment About Occipital Condyle | | Nm | 73.0 to 88.0 | 87.9 | Pass |
| Positive Moment Decay, Time To 0 Nm | | Msec. | 49.0 to 64.0 | 52.9 | Pass |
| | | | Overall Test Results | | Pass |




| Curve Description | | | |
|---|---|---|---|
| Pendulum Velocity | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | 180 | m/sec |
| Max | Time | Min | Time |
| 9.3 | 200.0 | 0.0 | -2.0 |




| Curve Description | | | |
|---|---|---|---|
| "D" Plane Rotation | | | |
| CURNO | Type | SAE Class | Units |
| 003 | FIL | 60 | Degrees |
| Max | Time | Min | Time |
| 75.2 | 60.5 | -28.9 | 163.8 |



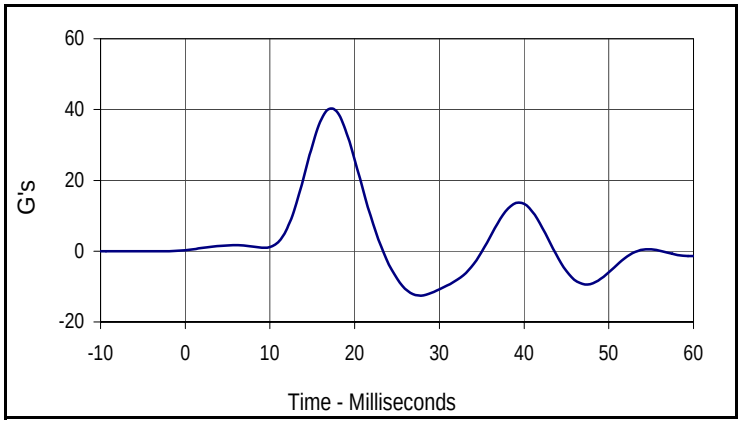

| Curve Description | | | |
|---|---|---|---|
| Moment About Occipital Condyle | | | |
| CURNO | Type | SAE Class | Units |
| 004 | FIL | 600 | Nm |
| Max | Time | Min | Time |
| 87.9 | 51.2 | -17.6 | 8.1 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII External Measurements | Test Date: | 10/26/05 |
| ATD Serial No.: | 275 | Test I.D.: | N/A |

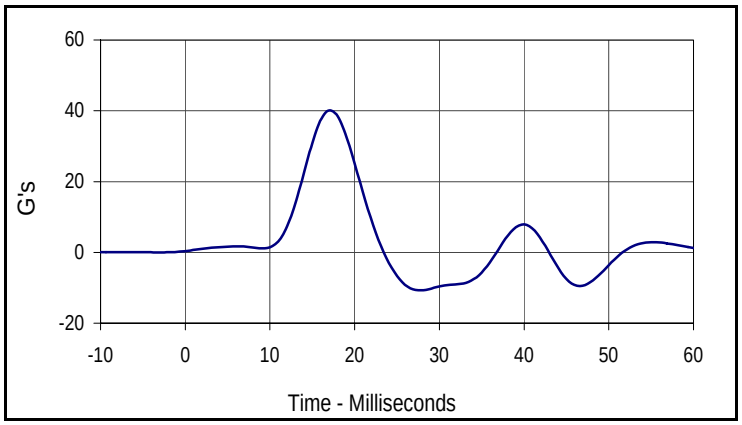
| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| SH- Seated Height | mm | 889 to 909 | 902 | Pass |
| HP- Hip Point Height | mm | 99 (reference) | 99 | Pass |
| RH- Rib Height | mm | 502 to 520 | 505 | Pass |
| KH- Knee Pivot From Back Line | mm | 511 to 526 | 515 | Pass |
| KV- Knee Pivot From Floor | mm | 490 to 505 | 500 | Pass |
| HW- Hip Width | mm | 356 to 391 | 370 | Pass |
| | | Overall Test Results | | Pass |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Thorax Lateral Impact | Test Date: | 10/24/05 |
| ATD Serial No.: | 275 | Test I.D.: | TH10B |

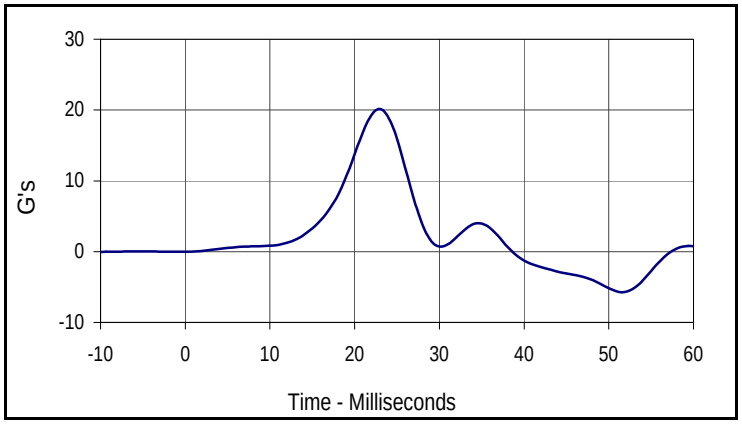
| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Probe Velocity | m/s | 4.21 to 4.33 | 4.26 | Pass |
| Upper Rib Acceleration | G's | 37.0 to 46.0 | 40.2 | Pass |
| Lower Rib Acceleration | G's | 37.0 to 46.0 | 40.0 | Pass |
| Thoracic Spine Acceleration | G's | 15.0 to 22.0 | 20.1 | Pass |
| | | Overall Test Results | | Pass |




| Curve Description | | | |
|---|---|---|---|
| Upper Rib Primary | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 40.2 | 17.5 | -12.5 | 27.5 |



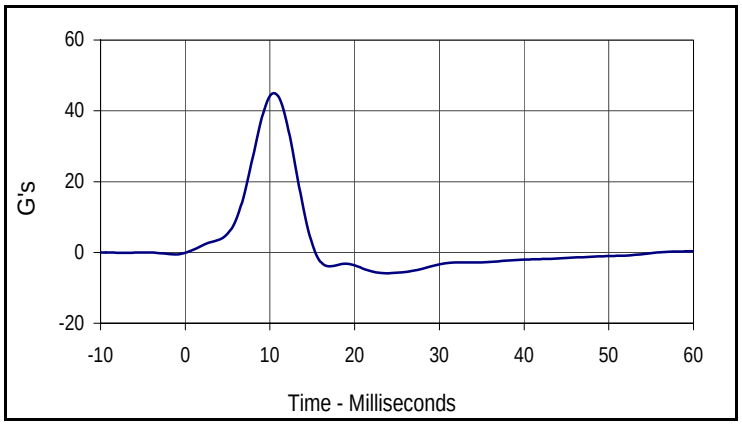

| Curve Description | | | |
|---|---|---|---|
| Lower Rib Primary | | | |
| CURNO | Type | SAE Class | Units |
| 002 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 40.0 | 16.9 | -10.7 | 27.5 |




| Curve Description | | | |
|---|---|---|---|
| Lower Spine Primary | | | |
| CURNO | Type | SAE Class | Units |
| 003 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 20.1 | 23.1 | -5.7 | 51.3 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Pelvis Lateral Impact | Test Date: | 10/24/05 |
| ATD Serial No.: | 275 | Test I.D.: | PI10B |

| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Probe Velocity | m/s | 4.21 to 4.33 | 4.27 | Pass |
| Peak Pelvis Acceleration | G's | 40.0 to 60.0 | 44.9 | Pass |
| Acceleration Time Above 20 G's | Msec. | 3.0 to 7.0 | 6.25 | Pass |
| | | Overall Test Results | | Pass |

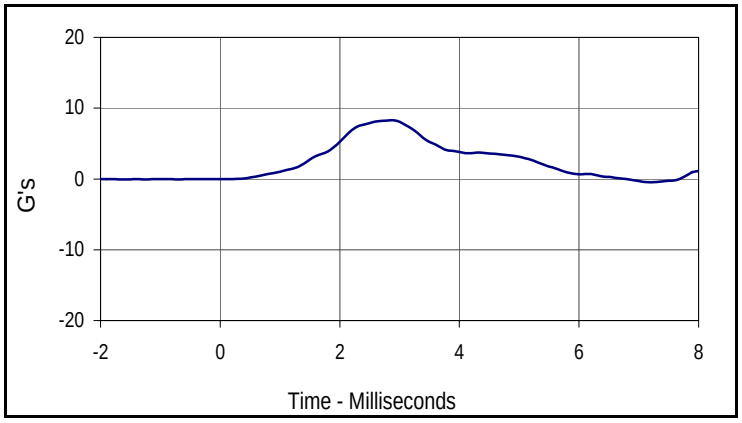



| Curve Description | | | |
|---|---|---|---|
| Pelvis Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 44.9 | 10.6 | -5.9 | 23.8 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Head Drop Lateral Impact Test | Test Date: | 10/25/05 |
| ATD Serial No.: | 275 | Test I.D.: | HD10B |

| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Peak Resultant Acceleration | G's | 120.0 to 150.0 | 136.6 | Pass |
| Peak Longitudinal Acceleration | G's | ≤15.0 | 8.3 | Pass |
| Is Acceleration Unimodal? | Yes/No | Yes | Yes | Pass |
| Oscillations After Main Pulse | % | <15 | 3.9 | Pass |
| | | Overall Test Results | | Pass |

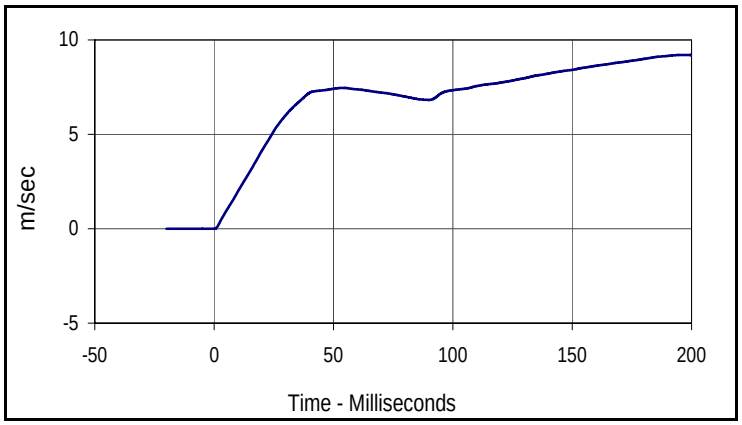

| Curve Description | | | |
|---|---|---|---|
| Head Resultant | | | |
| CURNO | Type | SAE Class | Units |
| 001 | RES | 1000 | G's |
| Max | Time | Min | Time |
| 136.6 | 2.4 | 0.0 | -0.2 |



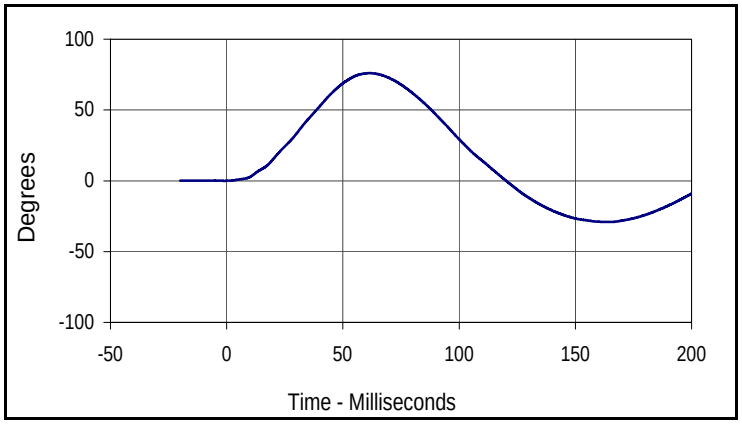

| Curve Description | | | |
|---|---|---|---|
| Head X | | | |
| CURNO | Type | SAE Class | Units |
| 002 | FIL | 1000 | G's |
| Max | Time | Min | Time |
| 8.3 | 2.9 | -0.1 | -1.6 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Neck Pendulum Lateral Test | Test Date: | 10/25/05 |
| ATD Serial No.: | 275 | Test I.D.: | NB10B |

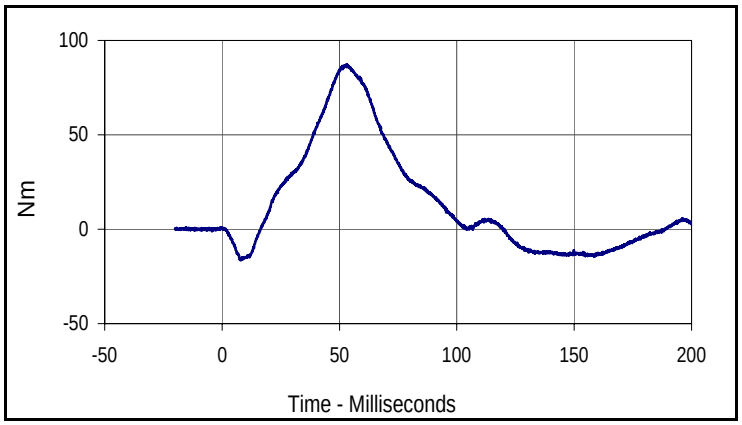
| Tested Parameter | | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|---|
| Laboratory Temperature | | °C | 20.6 to 22.2 | 21.1 | Pass |
| Laboratory Relative Humidity | | % | 10 to 70 | 30 | Pass |
| Pendulum Velocity | | m/sec | 6.89 to 7.13 | 6.93 | Pass |
| Pendulum Deceleration | 10 Msec. | m/sec | 1.96 to 2.55 | 1.99 | Pass |
| | 20 Msec. | m/sec | 4.12 to 5.10 | 4.13 | Pass |
| | 30 Msec. | m/sec | 5.73 to 7.01 | 6.02 | Pass |
| | 40 to 70 | m/sec | 6.27 to 7.64 | 7.46 | Pass |
| "D" Plane Rotation | Max | Degrees | 66.0 to 82.0 | 76.0 | Pass |
| Max Rotation Time After Peak Moment | | Msec. | 2.0 to 16.0 | 8.3 | Pass |
| Rotation Time From Peak to Zero Angle | | Msec. | 58.0 to 67.0 | 58.7 | Pass |
| Moment About Occipital Condyle | | Nm | 73.0 to 88.0 | 87.2 | Pass |
| Positive Moment Decay, Time To 0 Nm | | Msec. | 49.0 to 64.0 | 50.9 | Pass |
| | | | Overall Test Results | | Pass |




| Curve Description | | | |
|---|---|---|---|
| Pendulum Velocity | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | 180 | m/sec |
| Max | Time | Min | Time |
| 9.2 | 200.0 | 0.0 | -0.1 |




| Curve Description | | | |
|---|---|---|---|
| "D" Plane Rotation | | | |
| CURNO | Type | SAE Class | Units |
| 003 | FIL | 60 | Degrees |
| Max | Time | Min | Time |
| 76.0 | 61.5 | -29.1 | 164.8 |




| Curve Description | | | |
|---|---|---|---|
| Moment About Occipital Condyle | | | |
| CURNO | Type | SAE Class | Units |
| 004 | FIL | 60 | Nm |
| Max | Time | Min | Time |
| 87.2 | 53.2 | -16.4 | 8.1 |

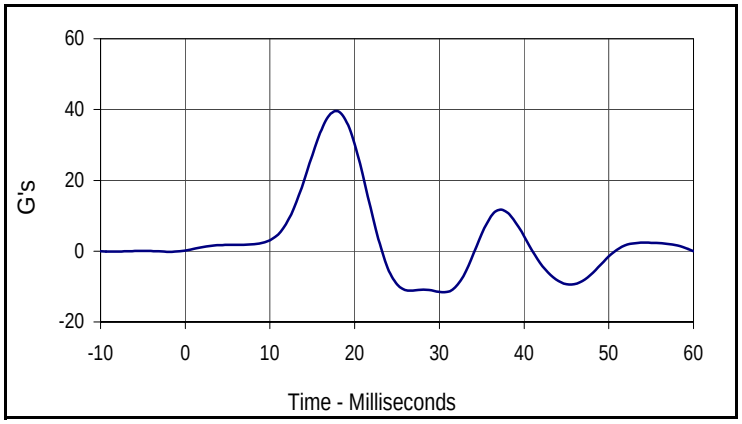
# APPENDIX C
# POST-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII External Measurements | Test Date: | 12/2/05 |
| ATD Serial No.: | 274 | Test I.D.: | N/A |

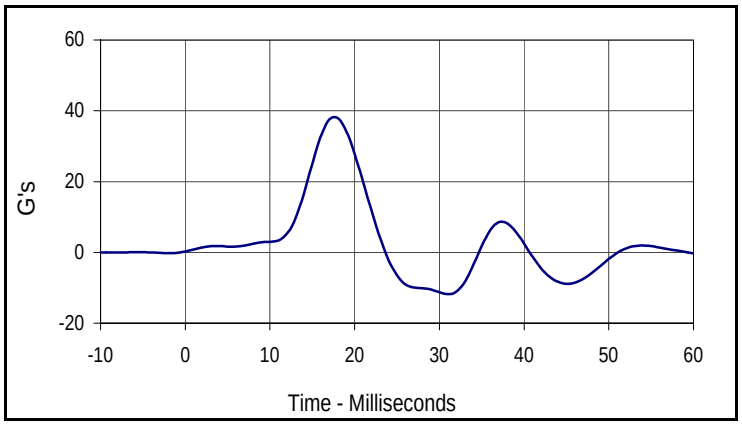
| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| SH- Seated Height | mm | 889 to 909 | 895 | Pass |
| HP- Hip Point Height | mm | 99 (reference) | 99 | Pass |
| RH- Rib Height | mm | 502 to 520 | 510 | Pass |
| KH- Knee Pivot From Back Line | mm | 511 to 526 | 515 | Pass |
| KV- Knee Pivot From Floor | mm | 490 to 505 | 495 | Pass |
| HW- Hip Width | mm | 356 to 391 | 382 | Pass |
| | | Overall Test Results | | Pass |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Thorax Lateral Impact | Test Date: | 11/30/05 |
| ATD Serial No.: | 274 | Test I.D.: | TH11A |

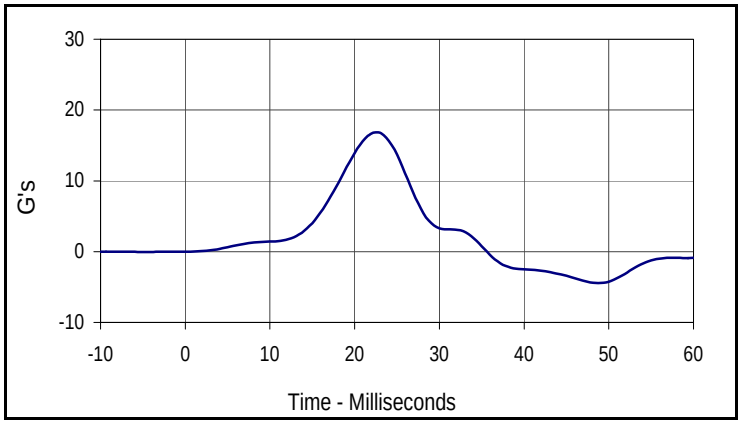
| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Probe Velocity | m/s | 4.21 to 4.33 | 4.22 | Pass |
| Upper Rib Acceleration | G's | 37.0 to 46.0 | 39.4 | Pass |
| Lower Rib Acceleration | G's | 37.0 to 46.0 | 38.3 | Pass |
| Thoracic Spine Acceleration | G's | 15.0 to 22.0 | 16.9 | Pass |
| | | Overall Test Results | | Pass |




| Curve Description | | | |
|---|---|---|---|
| Upper Rib Primary | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 39.4 | 17.5 | -11.6 | 30.6 |



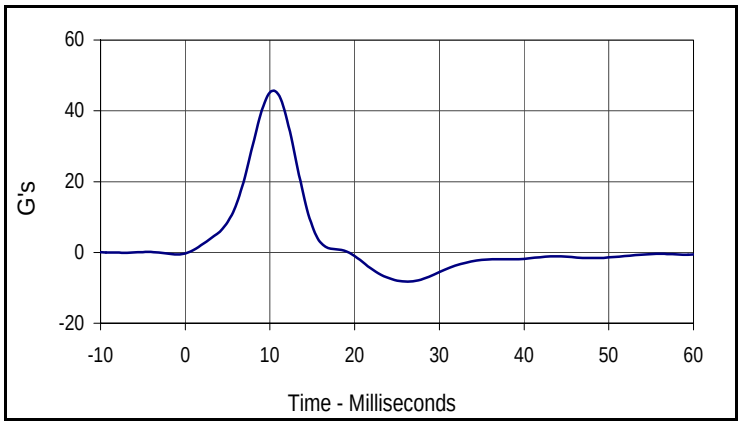

| Curve Description | | | |
|---|---|---|---|
| Lower Rib Primary | | | |
| CURNO | Type | SAE Class | Units |
| 002 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 38.3 | 17.5 | -11.8 | 31.3 |




| Curve Description | | | |
|---|---|---|---|
| Lower Spine Primary | | | |
| CURNO | Type | SAE Class | Units |
| 003 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 16.9 | 22.5 | -4.5 | 48.8 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Pelvis Lateral Impact | Test Date: | 11/30/05 |
| ATD Serial No.: | 274 | Test I.D.: | PL11A |

| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Probe Velocity | m/s | 4.21 to 4.33 | 4.24 | Pass |
| Peak Pelvis Acceleration | G's | 40.0 to 60.0 | 45.6 | Pass |
| Acceleration Time Above 20 G's | Msec. | 3.0 to 7.0 | 6.25 | Pass |
| | | Overall Test Results | | Pass |

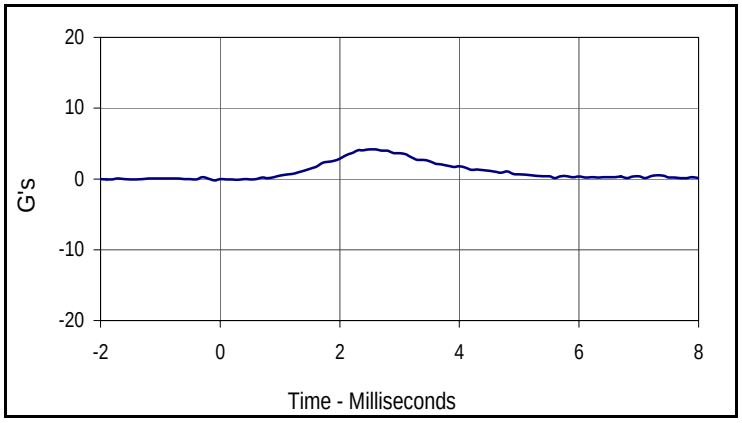



| Curve Description | | | |
|---|---|---|---|
| Pelvis Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 45.6 | 10.6 | -8.3 | 26.3 |

| Test Program: | SID / HIII Head Drop Lateral Impact Test | Test Date: | 11/30/05 |
|---|---|---|---|
| ATD Serial No.: | 274 | Test I.D.: | HD12A |

| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Peak Resultant Acceleration | G's | 120.0 to 150.0 | 128.0 | Pass |
| Peak Longitudinal Acceleration | G's | ≤15.0 | 4.2 | Pass |
| Is Acceleration Unimodal? | Yes/No | Yes | Yes | Pass |
| Oscillations After Main Pulse | % | <15 | 1.2 | Pass |
| | | Overall Test Results | | Pass |

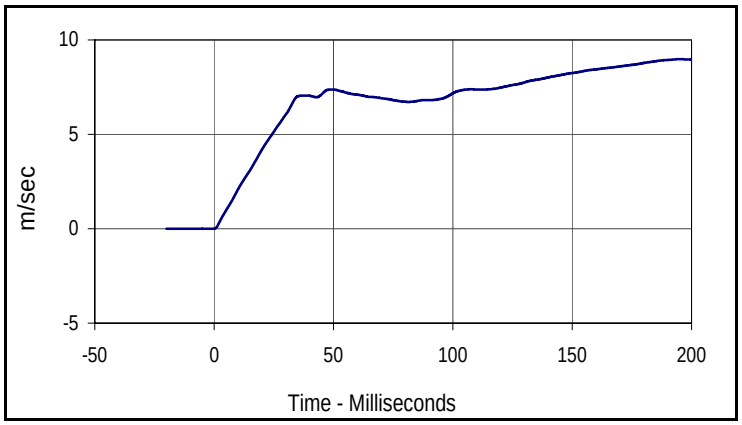

| Curve Description | | | |
|---|---|---|---|
| Head Resultant | | | |
| CURNO | Type | SAE Class | Units |
| 001 | RES | 1000 | G's |
| Max | Time | Min | Time |
| 128.0 | 2.3 | 0.0 | -1.6 |



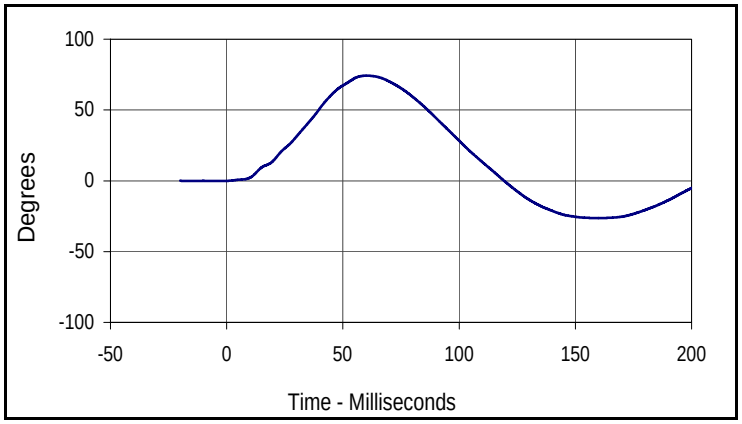

| Curve Description | | | |
|---|---|---|---|
| Head X | | | |
| CURNO | Type | SAE Class | Units |
| 002 | FIL | 1000 | G's |
| Max | Time | Min | Time |
| 4.2 | 2.5 | -0.2 | -0.1 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Neck Pendulum Lateral Test | Test Date: | 12/1/05 |
| ATD Serial No.: | 274 | Test I.D.: | NB12A |

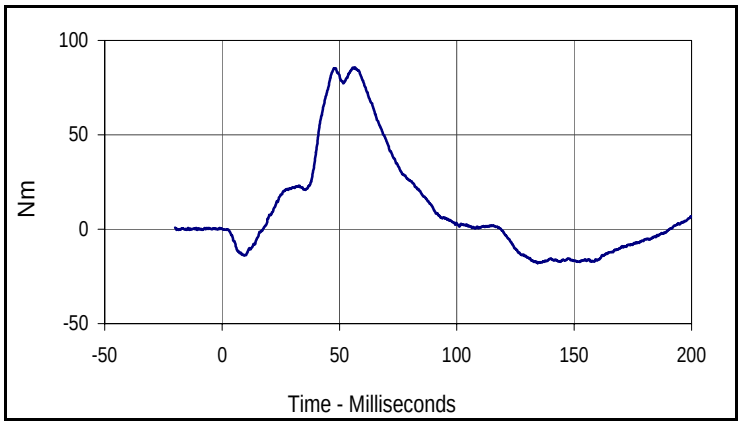
| Tested Parameter | | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|---|
| Laboratory Temperature | | °C | 20.6 to 22.2 | 21.1 | Pass |
| Laboratory Relative Humidity | | % | 10 to 70 | 30 | Pass |
| Pendulum Velocity | | m/sec | 6.89 to 7.13 | 7.06 | Pass |
| Pendulum Deceleration | 10 Msec. | m/sec | 1.96 to 2.55 | 2.09 | Pass |
| | 20 Msec. | m/sec | 4.12 to 5.10 | 4.19 | Pass |
| | 30 Msec. | m/sec | 5.73 to 7.01 | 6.04 | Pass |
| | 40 to 70 | m/sec | 6.27 to 7.64 | 7.38 | Pass |
| "D" Plane Rotation | Max | Degrees | 66.0 to 82.0 | 74.2 | Pass |
| Max Rotation Time After Peak Moment | | Msec. | 2.0 to 16.0 | 3.7 | Pass |
| Rotation Time From Peak to Zero Angle | | Msec. | 58.0 to 67.0 | 59.2 | Pass |
| Moment About Occipital Condyle | | Nm | 73.0 to 88.0 | 85.8 | Pass |
| Positive Moment Decay, Time To 0 Nm | | Msec. | 49.0 to 64.0 | 62.4 | Pass |
| | | | Overall Test Results | | Pass |




| Curve Description | | | |
|---|---|---|---|
| Pendulum Velocity | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | 180 | m/sec |
| Max | Time | Min | Time |
| 9.0 | 194.7 | 0.0 | -0.3 |




| Curve Description | | | |
|---|---|---|---|
| "D" Plane Rotation | | | |
| CURNO | Type | SAE Class | Units |
| 003 | FIL | 60 | Degrees |
| Max | Time | Min | Time |
| 74.2 | 60.2 | -26.3 | 159.3 |



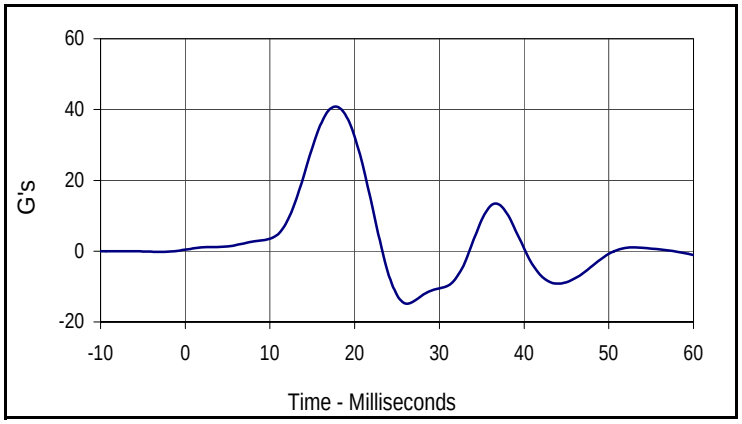

| Curve Description | | | |
|---|---|---|---|
| Moment About Occipital Condyle | | | |
| CURNO | Type | SAE Class | Units |
| 004 | FIL | 600 | Nm |
| Max | Time | Min | Time |
| 85.8 | 56.5 | -18.0 | 134.5 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII External Measurements | Test Date: | 12/2/05 |
| ATD Serial No.: | 275 | Test I.D.: | N/A |

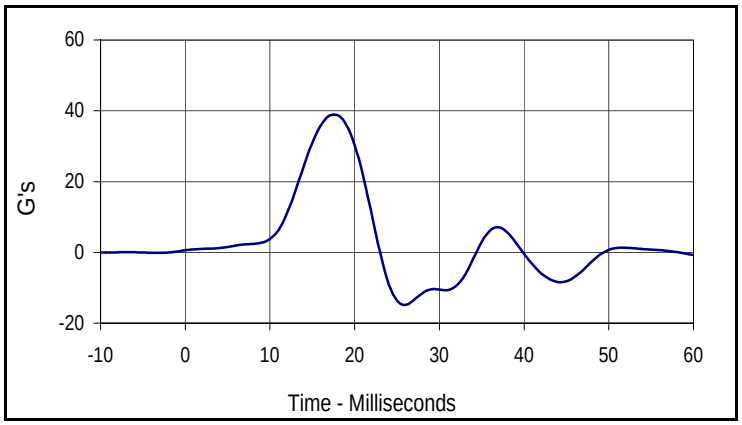
| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| SH- Seated Height | mm | 889 to 909 | 905 | Pass |
| HP- Hip Point Height | mm | 99 (reference) | 99 | Pass |
| RH- Rib Height | mm | 502 to 520 | 515 | Pass |
| KH- Knee Pivot From Back Line | mm | 511 to 526 | 520 | Pass |
| KV- Knee Pivot From Floor | mm | 490 to 505 | 500 | Pass |
| HW- Hip Width | mm | 356 to 391 | 375 | Pass |
| | | Overall Test Results | | Pass |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Thorax Lateral Impact | Test Date: | 11/30/05 |
| ATD Serial No.: | 275 | Test I.D.: | TH11B |

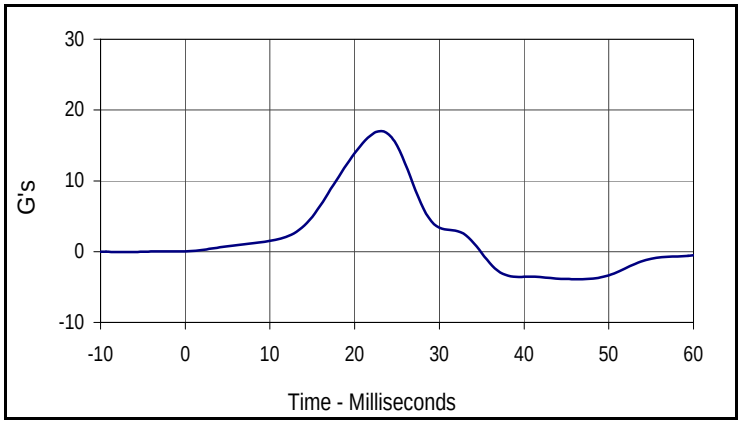
| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Probe Velocity | m/s | 4.21 to 4.33 | 4.23 | Pass |
| Upper Rib Acceleration | G's | 37.0 to 46.0 | 40.7 | Pass |
| Lower Rib Acceleration | G's | 37.0 to 46.0 | 39.0 | Pass |
| Thoracic Spine Acceleration | G's | 15.0 to 22.0 | 17.0 | Pass |
| | | Overall Test Results | | Pass |




| Curve Description | | | |
|---|---|---|---|
| Upper Rib Primary | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 40.7 | 17.5 | -14.8 | 26.3 |



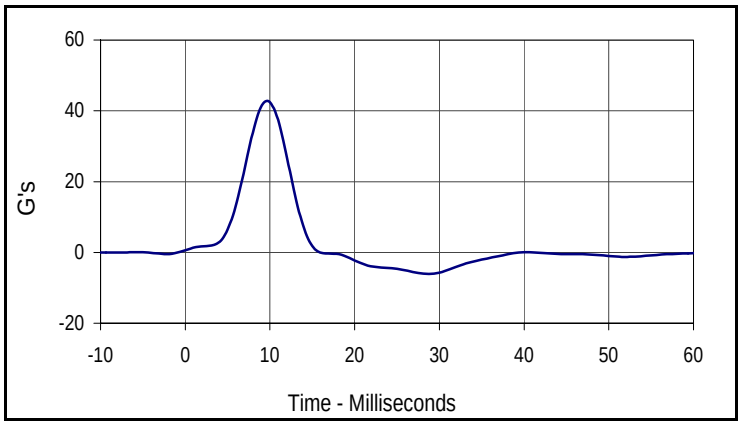

| Curve Description | | | |
|---|---|---|---|
| Lower Rib Primary | | | |
| CURNO | Type | SAE Class | Units |
| 002 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 39.0 | 17.5 | -14.8 | 25.6 |




| Curve Description | | | |
|---|---|---|---|
| Lower Spine Primary | | | |
| CURNO | Type | SAE Class | Units |
| 003 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 17.0 | 23.1 | -3.9 | 46.3 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Pelvis Lateral Impact | Test Date: | 11/30/05 |
| ATD Serial No.: | 275 | Test I.D.: | PI11B |

| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Probe Velocity | m/s | 4.21 to 4.33 | 4.29 | Pass |
| Peak Pelvis Acceleration | G's | 40.0 to 60.0 | 42.6 | Pass |
| Acceleration Time Above 20 G's | Msec. | 3.0 to 7.0 | 6.25 | Pass |
| | | Overall Test Results | | Pass |

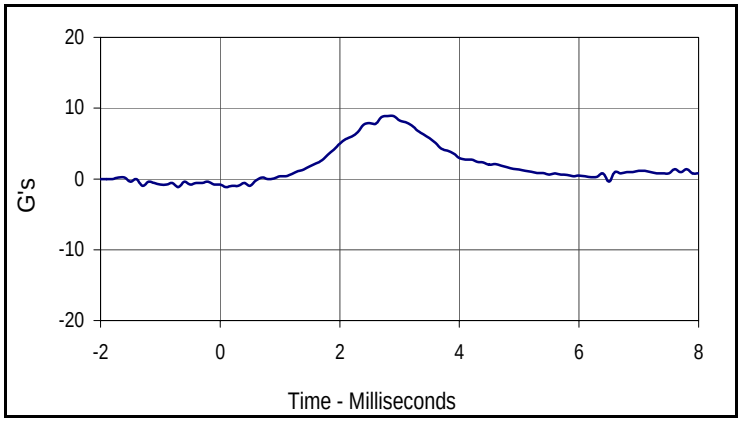



| Curve Description | | | |
|---|---|---|---|
| Pelvis Primary Y | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | FIR100 | G's |
| Max | Time | Min | Time |
| 42.6 | 9.4 | -6.1 | 28.8 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Head Drop Lateral Impact Test | Test Date: | 11/30/05 |
| ATD Serial No.: | 275 | Test I.D.: | HD12B |

| Tested Parameter | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|
| Laboratory Temperature | °C | 18.9 to 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 to 70 | 30 | Pass |
| Peak Resultant Acceleration | G's | 120.0 to 150.0 | 138.3 | Pass |
| Peak Longitudinal Acceleration | G's | ≤15.0 | 8.9 | Pass |
| Is Acceleration Unimodal? | Yes/No | Yes | Yes | Pass |
| Oscillations After Main Pulse | % | <15 | 2.0 | Pass |
| | | Overall Test Results | | Pass |

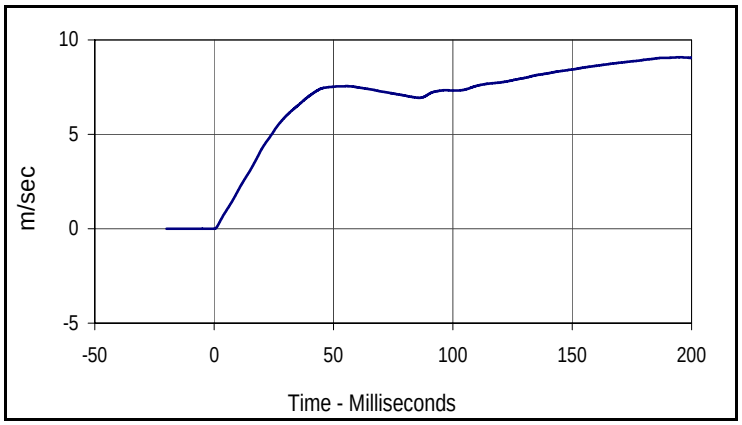

| Curve Description | | | |
|---|---|---|---|
| Head Resultant | | | |
| CURNO | Type | SAE Class | Units |
| 001 | RES | 1000 | G's |
| Max | Time | Min | Time |
| 138.3 | 2.6 | 0.0 | -1.9 |



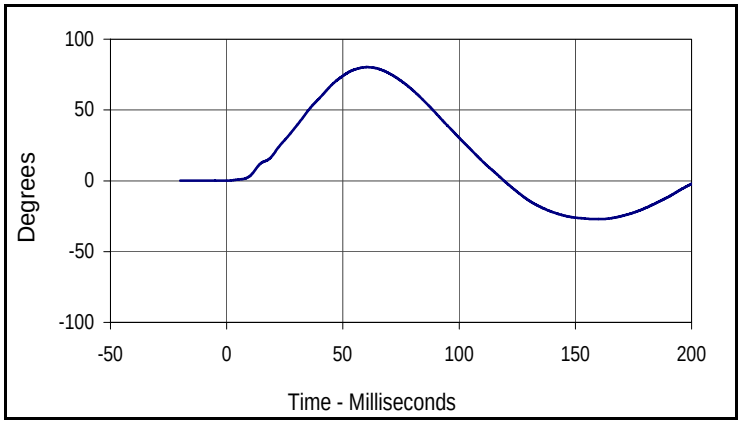

| Curve Description | | | |
|---|---|---|---|
| Head X | | | |
| CURNO | Type | SAE Class | Units |
| 002 | FIL | 1000 | G's |
| Max | Time | Min | Time |
| 8.9 | 2.8 | -1.2 | -0.7 |

| | | | |
|---|---|---|---|
| Test Program: | SID / HIII Neck Pendulum Lateral Test | Test Date: | 12/1/05 |
| ATD Serial No.: | 275 | Test I.D.: | NB12B |

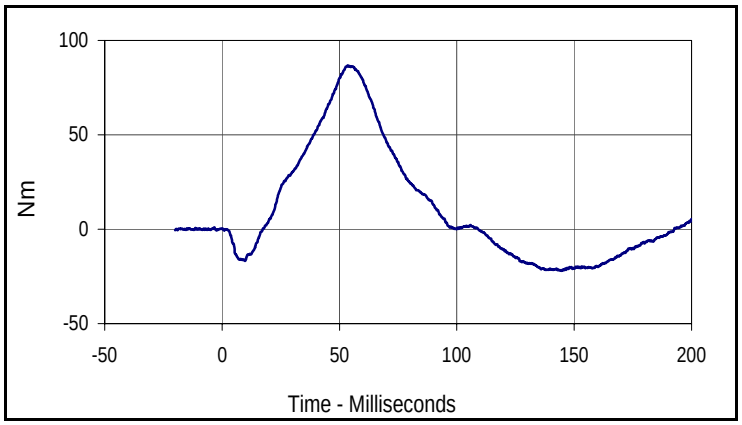
| Tested Parameter | | Units | Specification | Result | Pass/Fail |
|---|---|---|---|---|---|
| Laboratory Temperature | | °C | 20.6 to 22.2 | 21.1 | Pass |
| Laboratory Relative Humidity | | % | 10 to 70 | 30 | Pass |
| Pendulum Velocity | | m/sec | 6.89 to 7.13 | 7.10 | Pass |
| Pendulum Deceleration | 10 Msec. | m/sec | 1.96 to 2.55 | 2.02 | Pass |
| | 20 Msec. | m/sec | 4.12 to 5.10 | 4.24 | Pass |
| | 30 Msec. | m/sec | 5.73 to 7.01 | 5.96 | Pass |
| | 40 to 70 | m/sec | 6.27 to 7.64 | 7.55 | Pass |
| "D" Plane Rotation | Max | Degrees | 66.0 to 82.0 | 80.2 | Pass |
| Max Rotation Time After Peak Moment | | Msec. | 2.0 to 16.0 | 6.9 | Pass |
| Rotation Time From Peak to Zero Angle | | Msec. | 58.0 to 67.0 | 58.9 | Pass |
| Moment About Occipital Condyle | | Nm | 73.0 to 88.0 | 86.7 | Pass |
| Positive Moment Decay, Time To 0 Nm | | Msec. | 49.0 to 64.0 | 55.5 | Pass |
| | | | Overall Test Results | | Pass |




| Curve Description | | | |
|---|---|---|---|
| Pendulum Velocity | | | |
| CURNO | Type | SAE Class | Units |
| 001 | FIL | 180 | m/sec |
| Max | Time | Min | Time |
| 9.1 | 195.0 | 0.0 | -0.2 |




| Curve Description | | | |
|---|---|---|---|
| "D" Plane Rotation | | | |
| CURNO | Type | SAE Class | Units |
| 003 | FIL | 60 | Degrees |
| Max | Time | Min | Time |
| 80.2 | 60.5 | -27.1 | 159.9 |




| Curve Description | | | |
|---|---|---|---|
| Moment About Occipital Condyle | | | |
| CURNO | Type | SAE Class | Units |
| 004 | FIL | 600 | Nm |
| Max | Time | Min | Time |
| 86.7 | 53.6 | -22.0 | 144.6 |