

REPORT NUMBER: SPNCAP-KAR-15-011

**NEW CAR ASSESSMENT PROGRAM (NCAP)
SIDE IMPACT POLE TEST**

**TOYOTA MOTOR MANUFACTURING, TEXAS, INC.
2015 TOYOTA TACOMA PRERUNNER DOUBLE CAB 4-DOOR TRUCK**

NHTSA No: M20155302

**PREPARED BY:
KARCO ENGINEERING, LLC.
9270 HOLLY ROAD
ADELANTO, CA 92301**



NOVEMBER 13, 2014

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE: NVS-111
1200 NEW JERSEY AVE, SE, ROOM W43-410
WASHINGTON, D.C. 20590**

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. SPNCAP-KAR-15-011	2. Government Accession No.	3. Recipient's Catalog No.																												
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Pole Testing of a 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302		5. Report Date November 13, 2014																												
		6. Performing Organization Code KAR																												
7. Authors Mr. Balbino A. Beltran, Project Engineer, KARCO Mr. Frank Richardson, Program Manager, KARCO		8. Performing Organization Report No. TR-P34004-05-NC																												
9. Performing Organization Name and Address KARCO Engineering, LLC. 9270 Holly Rd. Adelanto, CA 92301		10. Work Unit No.																												
		11. Contract or Grant No. DTNH22-09-D-00122																												
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NVS-111) 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C. 20590		13. Type of Report and Period Covered Final Test Report, Oct. 30 - Nov. 13, 2014																												
		14. Sponsoring Agency Code NVS-111																												
15. Supplementary Notes																														
16. Abstract A 32.2 km/h (20 mph) 75° oblique impact Side NCAP Test was conducted on the subject 2015 Toyota Tacoma Prerunner Double Cab 4-door truck in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on October 30, 2014. The impact velocity was 32.71 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 21.7° C. The target vehicle's maximum post-test static crush was 476 mm located at level 3. The test vehicle's occupant performance data is as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Driver ATD (SID-IIs)</th> </tr> <tr> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>349.2</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82</td> <td>55</td> </tr> <tr> <td>Total Pelvic Force (Sum of Acetabular and Iliac Forces)</td> <td>N</td> <td>5525</td> <td>4413</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38</td> <td>23</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45</td> <td>33</td> </tr> </tbody> </table> The doors on the struck side of the vehicle did not separate from the body at the hinges or latches. The opposite doors did not open during the side impact event.				Measurement Description	Driver ATD (SID-IIs)			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	349.2	Resultant Lower Spine Acceleration	g	82	55	Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	4413	Maximum Thoracic Rib Deflection	mm	38	23	Maximum Abdominal Rib Deflection	mm	45	33
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17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. Technical Information Services Division, NPO-411 1200 New Jersey Ave., SE Washington, DC 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																												
19. Security Classification of this report UNCLASSIFIED	20. Security Classification of this page UNCLASSIFIED	21. No. of Pages 106	22. Price																											

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SECTION 1

TEST PURPOSE AND PROCEDURE

This side impact test is part of the MY 2015 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number DTNH22-09-D-00122. The purpose of this test is to generate comparative side impact performance in a 2015 Toyota Tacoma Prerunner Double Cab 4-door truck. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated September 2013.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2015 Toyota Tacoma Prerunner Double Cab 4-door truck. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.71 km/h. The test was conducted by KARCO Engineering, LLC. in Adelanto, California on October 30, 2014. Pre- and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated September 2013. Camera locations and other pertinent camera information are included in this report.

The Part 572V (SID-IIs) was instrumented accordingly:

- Primary and Redundant Head CG tri-axial accelerometers
- Thorax upper, middle and lower rib displacement potentiometers
- Abdomen upper and lower rib displacement potentiometers
- Lower spine (12) tri-axial accelerometers
- Iliac load cell
- Acetabulum load cell

Appendix B contains the vehicle and dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report. Appendix D contains the test equipment and instrumentation calibration data.

Injury readings for the SID-IIs dummy were recorded as follows:

Measurement Description	Units	Passenger ATD (SID-IIs)	
		IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	349.2
Lower Spine (T12) Resultant Acceleration	g	82	55
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4413
Maximum Thoracic Rib Deflection	mm	38*	23
Maximum Abdominal Rib Deflection	mm	45*	33

*Proposed IARV

Supplemental restraint information is given below:

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No		No	
Side Airbag 1 (Curtain)	Yes	Yes	Yes	Yes
Side Airbag 2 (Torso)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	
Other	Yes	No	No	

GENERAL COMMENTS

The doors on the struck side of the vehicle remained closed and latched. There was no separation at the hinges or latches. The doors on the non-struck side remained closed and latched. There was no ATD injury value that exceeded its limit.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14

CONVERSION FACTORS

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	miles/hr	km/hr	1.609344
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.574
Pressure	Tire Pressures	lbf/in ²	kPa	6.895
Temperature	General Use	°F	°C	$=(T_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf-ft	N•m	1.355

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	M20155302
Model Year	2015
Make	Toyota
Model	Tacoma Prerunner Double Cab
Body Style	4-Door Truck
VIN	5TFJX4GN8FX038505
Body Color	Red
Odometer Reading (km / mi)	311 / 193
Engine Displacement (L)	2.7
Type / No. of Cylinders	Inline 4
Engine Placement	Longitudinal
Transmission Type	Automatic
Transmission Speeds	4
Overdrive	Yes
Final Drive	Rear
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes

Traction Control System (TCS)	Yes
Auto-Leveling System	No
Automatic Door Locks	No
Power Window Auto-Reverse	Yes
Other Optional Feature	No
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	Yes
Driver Torso/Pelvis Airbag	No
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Rear Pass. Curtain Airbag	Yes
Rear Pass. Head/Torso Airbag	No
Rear Pass. Torso Airbag	No
Rear Pass. Torso/Pelvis Airbag	No
Rear Pass. Pelvis Airbag	No
Driver Seat Belt Pretensioner	Yes
Rear Pass. Seat Belt Pretensioner	No
Driver Load Limiter	Yes
Rear Pass. Load Limiter	No
Other Safety Restraint	

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

N/A

DATA FROM CERTIFICATION LABEL

Manufactured By	Toyota Motor Manufacturing, Texas, Inc.
Date of Manufacture	Sep-14
Vehicle Type	Truck

GVWR (kg)	2380
GAWR Front (kg)	1245
GAWR Rear (kg)	1410

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity	2	3		5
Capacity Weight (VCW) (kg)				583.0
DSC x 68.04 (kg)				340.2
Cargo Weight (RCLW) (kg)				136.0

A

B

A-B

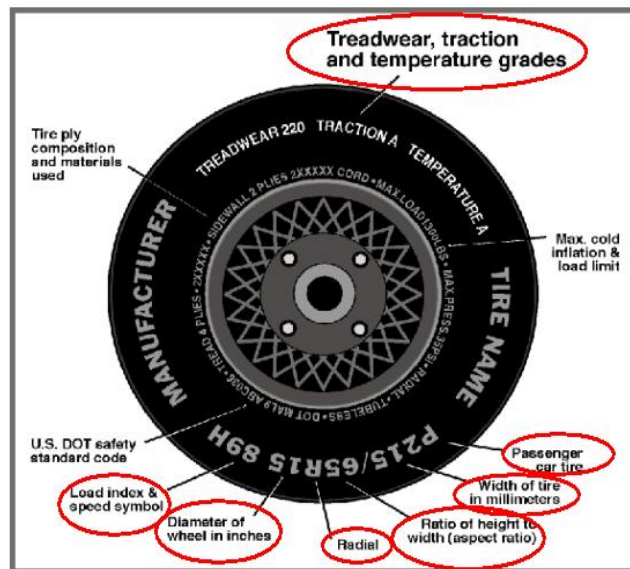
VEHICLE SEAT TYPE

Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable w/ Lever	w/ Knob
Front Seat	Yes					Yes	
Rear or Second Row Seat		Yes			Yes		
Third Row Seat							

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302
 Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14



Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	350	350
Cold Pressure (kPa)	210	210
Recommended Tire Size	P245/75R16	P245/75R16
Tire Size on Vehicle	P245/75R16	P245/75R16
Tire Manufacturer	Dunlop	Dunlop
Tire Model	Grandtrek	Grandtrek
Treadware	300	300
Traction Grade	B	B
Temperature Grade	B	B
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 2 Steel, 1 Nylon	2 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	109S	109S
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Left	M670 C8ER 3314	M670 C8ER 3314
DOT Safety Code Right	M670 C8ER 3314	M670 C8ER 3314

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302
 Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	200	200	200	200
Tire Placard	kPa	210	210	210	210
Owner's Manual	kPa	210	210	210	210
As Tested	kPa	210	210	210	210

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	484.0	419.0		508.5	497.0		513.0	497.5	
Right	kg	471.5	391.5		474.5	465.5		472.5	465.0	
Ratio	%	54.1%	45.9%	100.0%	50.5%	49.5%	100.0%	50.6%	49.4%	100.0%
Total	kg	955.5	810.5	1766.0	983.0	962.5	1945.5	985.5	962.5	1948.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1766.0	A
Actual Weight of 1 P572 O ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	136.0	C
Calculated Vehicle Target Wt (TVTW)	kg	1951.0	A+B+C

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e.

Calculated Test Vehicle Target Weight -4.5 kg to -9.0 kg)? ☒ Yes ☐ No

TEST VEHICLE ATTITUDE AND CG

Measurement Description	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	°	-0.2	0.0	0.1	Yes
Front Passenger Sill Angle (front-to-rear)*	°	-0.4	-0.3	-0.3	Yes
Front Bumper-Line Angle (left-to-right)**	°	-0.4	-0.2	-0.1	Yes
Rear Bumper-Line Angle (left-to-right)**	°	-0.1	-0.1	-0.1	Yes
Vehicle CG (Aft of Front Axle)	mm	1489	1605	1603	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	18	27	30	

*ND=Nose Down (-), NU=Nose Up (+) **LD=Left Down (-), LU=Left Up (+)

***The "As Tested" vehicle attitude angle measurements must be within "As Delivered" and the "Fully Loaded" vehicle attitude measurements at each location. Indicate "Yes" or "No" for "Meets Requirement"

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Spare Tire Tools	3.5
Ballast / Equipment Added	131.5

Test Height Adjustable Setting (If Applicable)	
--	--

DATA SHEET NO. 2**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA**Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14**SEAT POSITIONING**

The driver's seat, front center seat (if applicable), and front passenger's seat should be set to the forward most, mid-height, mid-angle position. The struck side rear passenger's seat, rear center seat, and non-struck side rear passenger's seat should be set to the rear most, lowest, mid-angle position.

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	Fixed	Fixed	Fixed
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle	As Tested SCRP Height	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid Fore/Aft	Forwardmost
Driver Seat	Fixed	815	Max	793	803	815
			Mid	793	803	815
			Min	793	803	815
Front Passenger Seat	Fixed	803	Max	783	793	803
			Mid	783	793	803
			Min	783	793	803
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

DATA SHEET NO. 2 ... (CONTINUED)

SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck

NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test

Test Date: 10/30/14

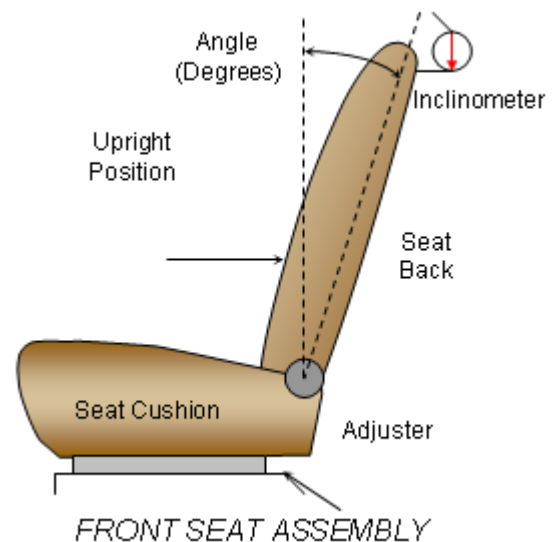
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	240	17	0	0
Front Passenger Seat	240	17	0	0
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

*Detent zero (0) is the forward most detent

SEAT BACK ADJUSTMENT

The driver's seat back is positioned such that the dummy's head is level. The front center and front passenger's seat backs are positioned in a similar manner to the driver's seat. The struck side rear passenger seat back is positioned in accordance with the information provided by the manufacturer in Form 1 for the 5th percentile female dummy in a Side NCAP MDB Test. The rear center and non-struck side rear passenger's seat back is set to match the struck side rear seat back. Seat back angle is measured at the headrest post.



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/Seated Dummy	49.8	26	4.3	0
Front Passenger Seat	49.8	26	4.9	0
Front Center Seat				
Struck Side Rear Seat w/Seated Dummy	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

*Detent zero (0) is the forward most detent

DATA SHEET NO. 2 ... (CONTINUED)

SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1. The positions are marked H, M1, ..., L from top to bottom.

	Total No. of Positions	Placed in Position
Driver Seat	4	H

HEAD RESTRAINT ADJUSTMENT

The driver's head restraint is adjusted to the lowest and most full forward in-use position.

	Total No. of Positions	Placed in Position
Driver Seat	4	Full Down

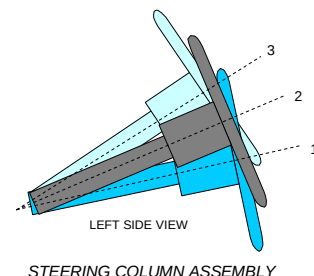
DATA SHEET NO. 2 ... (CONTINUED)

SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302
 Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14

STEERING COLUMN ADJUSTMENT

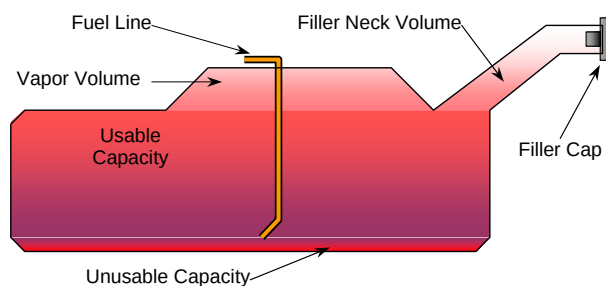
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of the geometric locus it describes when it moves through its full range of motion.



	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	24.3	88
Geometric Center - Position 2	25.9	96
Uppermost - Position 3	27.5	103
Telescoping Steering Wheel Travel		15
Test Position	25.9	96

FUEL PUMP

The vehicle is equipped with an electric fuel pump. The fuel pump is activated when the ignition is turned on.



FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	79.86
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	74.27
Actual amount of Solvent Used in Test	74.26
1/3 of Usable Capacity	26.62

Is the Actual Amount of Solvent Used in the test equal to 93% $\pm$ 1% of the Usable Capacity stated in the Form No. 1? ☒ Yes ☐ No

DATA SHEET NO. 3

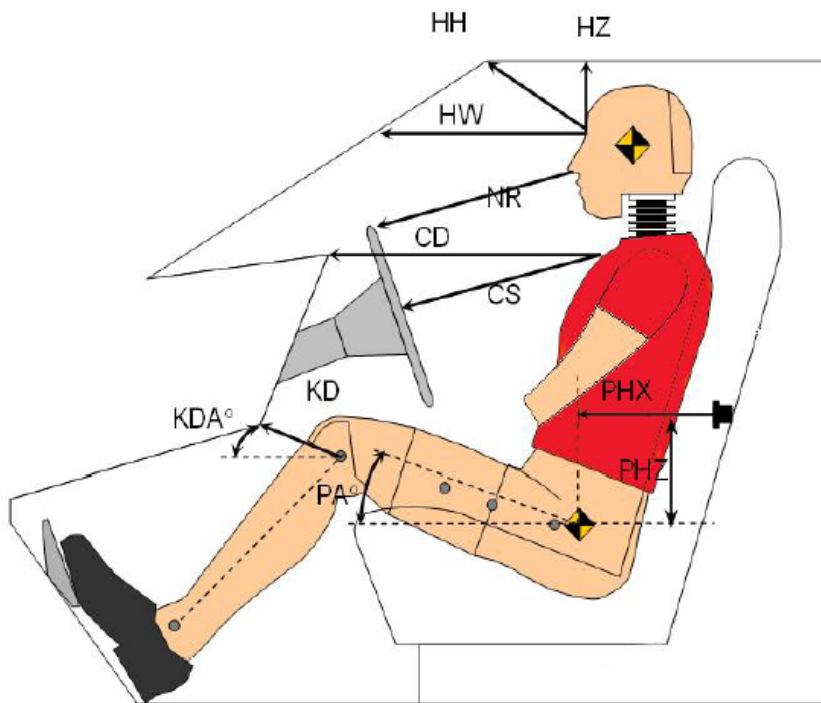
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck

NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test

Test Date: 10/30/14



Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	333	
HW	Head to Windshield	565	
HZ	Head to Roof	252	
NR	Nose to Rim	272	
CD	Chest to Dash	431	
CS	Chest to Steering Wheel	209	
KD(L)/KDA(L)°	Left Knee to Dash	122	40.1
KD(R)/KDA(R)°	Right Knee to Dash	100	35.7
PAX°	Pelvic Tilt Angle (x-axis)		20.0
PAY°	Pelvic Tilt Angle (y-axis)		0.3
PHX	Hip Point to Striker (x-axis)	342	
PHZ	Hip Point to Striker (z-axis)	145	

DATA SHEET NO. 4

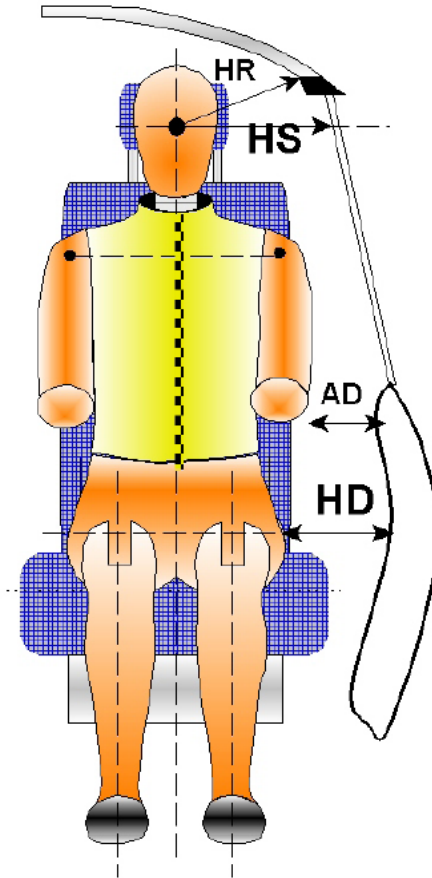
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck

NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test

Test Date: 10/30/14



Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	275
HS	Head to Side Window	mm	379
AD	Arm to Door	mm	169
HD	Hip Point to Door	mm	152

DATA SHEET NO. 5

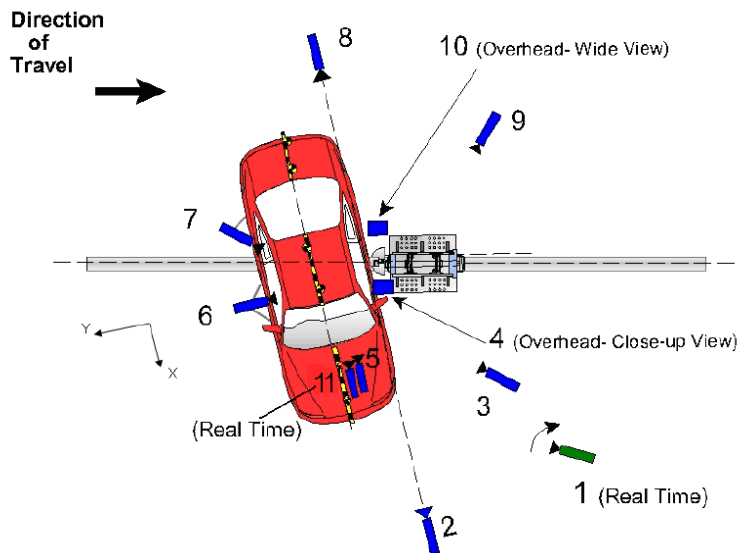
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck

NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test

Test Date: 10/30/14



Reference from Point of Impact for X and Y; from Ground for Z):
+X = Forward of Vehicle, +Y = Right of Vehicle, +Z = Down

Camera No.	View	Coordinates (m)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real Time Pan View of Impact	8.89	46.57	-3.04		30
2	Front Ground Level - Impact View	8.34	-0.05	-0.93	24	1000
3	Impact Side 45° - Forward Pole View	4.10	-2.15	-1.15	8.5	1000
4	Overhead Close-Up View of Impact	0.00	0.00	-5.79	12.5	1000
5	On-Board - Dummy Front View	1.52	0.60	-1.69	35	1000
6	On-Board - Dummy Side View	0.00	1.72	-1.26	14	1000
7	On-Board - Dummy Rear Oblique View	-0.92	1.74	-1.29	20	1000
8	Rear Ground Level - Impact View	-6.12	-6.23	-0.96	24	1000
9	Impact Side 45° - Rearward Pole View	-8.02	0.04	-1.01	35	1000
10	Overhead Wide View of Impact	-0.06	0.22	-5.79	14	1000
11	Real Time Dummy Front View	1.54	0.70	-1.69		30

*All measurements accurate to ± 6 mm

INSTRUMENTATION

Driver Dummy Channels	16
Vehicle Structure Accelerometers	18
Pole Load Cells	8
Total	42

DATA SHEET NO. 6

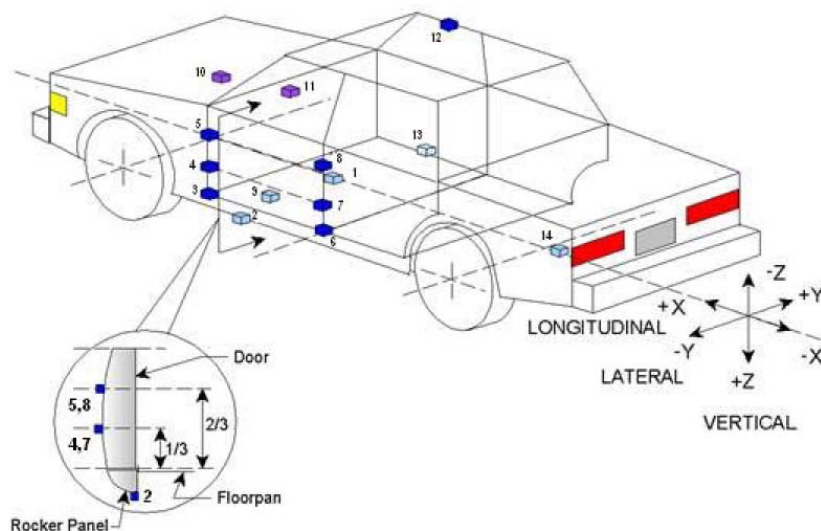
TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck

NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test

Test Date: 10/30/14



Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2573	0	-606
2	Left Floor Sill	3587	-776	-446
3	A-Pillar Sill	3756	-828	-575
4	A-Pillar Low	3756	-828	-810
5	A-Pillar Mid	3756	-828	-1102
6	B-Pillar Sill	2768	-760	-560
7	B-Pillar Low	2768	-760	-810
8	B-Pillar Mid	2768	-760	-1120
9	Driver Seat Track	3195	-206	-584
10	Engine Top	4620	110	-1039
11	Firewall	4005	-70	-1161
12	Right Roof	2845	494	-1728
13	Right Floor Sill	2725	716	-565
14	Rear Floorpan	1182	0	-772

Reference: X – Rear surface of vehicle (+ forward)
Y – Vehicle centerline (+ to right)
Z – Ground plane (+ down)

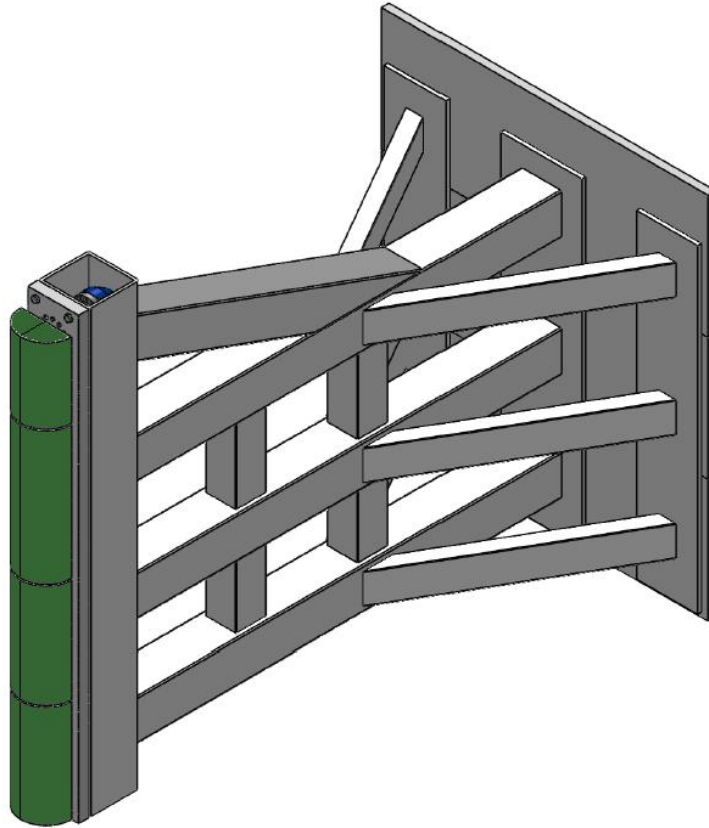
DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck

NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test

Test Date: 10/30/14



ID	Units	Height From Ground
1	mm	87
2	mm	468
3	mm	648
4	mm	978
5	mm	1168
6	mm	1651
7	mm	1816
8	mm	2057

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302
Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver SID-IIs Dummy
Face	Curtain Airbag
Top of Head	Curtain Airbag
Left Side of Head	Curtain Airbag
Back of Head	Curtain Airbag, Headrest
Left Shoulder	Seat, Torso Airbag
Upper Torso	Seat, Torso Airbag
Lower Torso	Seat, Torso Airbag
Left Hip	Seat, Torso Airbag, Door Panel
Left Knee	Door Panel

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Rear Hatch/Other Door
	Front	Rear	Front	Rear	
Remained Closed and Operational	No	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	No
Latch or Hinge System Pulled Out of Their Anchorages	No	No	No	No	No
Disengaged from Latched Position	No	No	No	No	No
Latch Separated from Striker	No	No	No	No	No
Jammed Shut	Yes	Yes	No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)	N/A	N/A	N/A	N/A	N/A

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	No	No	No
Seat Disengagement from Floor Pan	No	No	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No separation occurred
Sill Separation	No separation occurred
Windshield Damage	Broken
Side Window Damage	Left front window broken
Other Notable Effects	None

DATA SHEET NO. 8 ... (CONTINUED)**POST-TEST OBSERVATIONS**Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No		No	
Side Airbag 1 (Curtain)	Yes	Yes	Yes	Yes
Side Airbag 2 (Torso)	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	
Other	No		No	

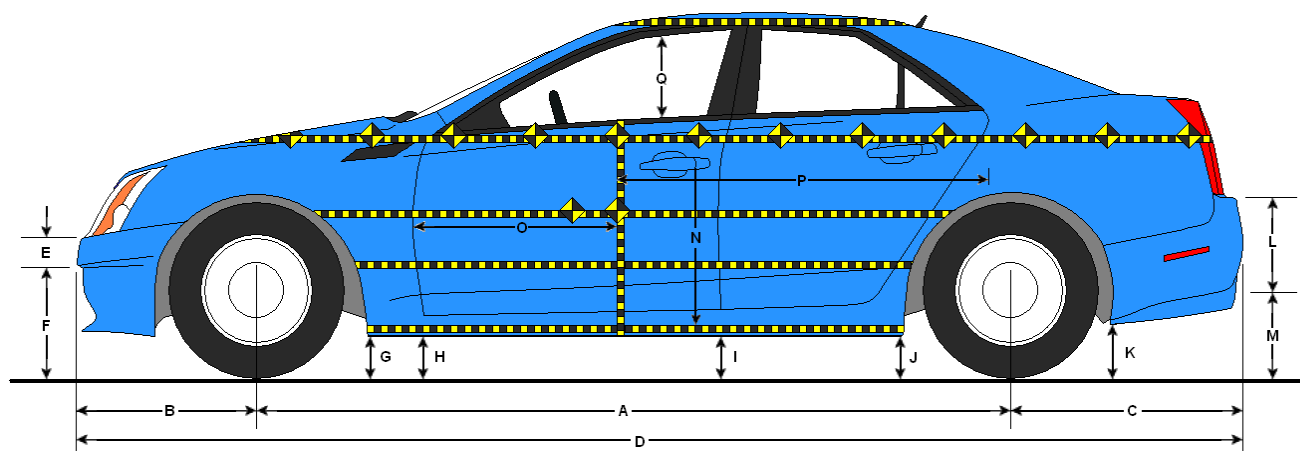
IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		1183
Actual Impact Point (Aft of Front Axle)	mm		1205
Horizontal Offset (+ forward / - rearward)	mm	± 38 of Intended Impact Point	-22
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	°	75 ± 3	76.2
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.71
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.73

DATA SHEET NO. 9

TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302
 Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14



LEFT SIDE VIEW

All measurements in mm with tolerance of $\pm 3\text{mm}$

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

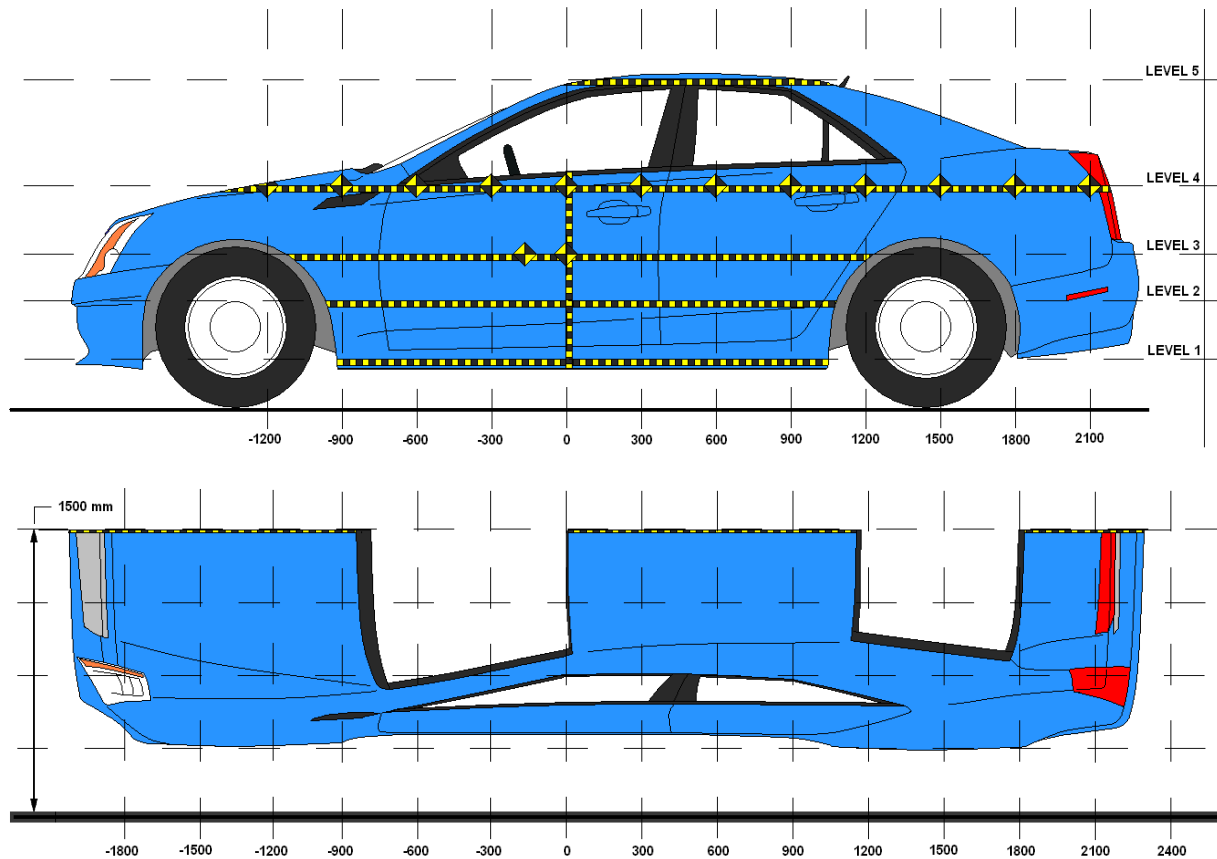
Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3245	3246	1
B	Front Axle to FSOV	844	853	9
C	Rear Axle to RSOV	1197	1160	-37
D	Total Length at Centerline	5281	5259	-22
E	Front Bumper Thickness	135	133	-2
F	Front Bumper Bottom to Ground	700	731	31
G	Sill Height at Front Wheel Well	439	439	0
H	Sill Height at Front Door Leading Edge	447	448	1
I	Sill Height at B-Pillar	467	466	-1
J1	Sill Height at Rear Wheel Well	449	479	30
J2	Pinch Weld Height at Rear Wheel Well	429	449	20
K	Sill Height Aft of Rear Wheel Well	497	553	56
L	Rear Bumper Thickness	191	191	0
M	Rear Bumper Bottom to Ground	505	497	-8
N	Sill Height to Bottom of Front Window Sill	691	689	-2
O	Front Door Leading Edge to Impact CL	594	458	-136
P	Rear Door Trailing Edge to Impact CL	1391	1275	-116
Q	Front Window Opening	452	466	14
R	Right Side Length	4435	4415	-20
S	Left Side Length	4431	4348	-83
T	Vehicle Width at B-Pillar	1807	1650	-157

DATA SHEET NO. 10

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14



NOTE: All measurements in mm with tolerance of ± 3 mm

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	501	419	0
2	Occupant H-Point	797	473	0
3	Mid-Door	835	476	0
4	Window Sill	1150	460	150
5	Window Top	1691	316	150

DATA SHEET NO. 10 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck

NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test

Test Date: 10/30/14

EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

	Pre-Test (mm)					Post-Test (mm)					Difference (mm)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900				659					728					69	
-750		557	559	652			651	652	733			94	93	81	
-600	623	595	598	647		729	723	721	742		106	128	123	95	
-450	645	608	606	644		839	794	792	791		194	186	186	147	
-300	643	601	605	640		911	881	883	884		268	280	278	244	
-150	645	606	604	637	845	978	980	980	985	1003	333	374	376	348	158
0	642	605	603	635	847	1061	1078	1079	1088	1095	419	473	476	453	248
150	644	605	602	633	853	1036	1061	1065	1093	1169	392	456	463	460	316
300	645	605	602	631	859	931	955	957	976	1116	286	350	355	345	257
450	644	605	603	631	858	869	835	834	863	1085	225	230	231	232	227
600	642	606	603	631	861	839	807	806	839	1057	197	201	203	208	196
750	642	606	604	631	859	811	779	777	810	1032	169	173	173	179	173
900	645	608	605	631	858	783	752	750	782	1009	138	144	145	151	151
1050	646	609	607	632	859	754	723	722	755	988	108	114	115	123	129
1200	650	611	609	634	859	729	697	696	728	968	79	86	87	94	109
1350	653	613	610	637	860	706	671	669	702	950	53	58	59	65	90
1500	646	651	645	665		617	696	693	724		-29	45	48	59	
1650		568	576	651			558	568	658			-10	-8	7	
1800		553	554	653			547	548	662			-6	-6	9	
1950				656					670					14	
2100				656					675					19	
2250															
2400															
2550															
2700															
2850															

DATA SHEET NO. 10 ... (CONTINUED)

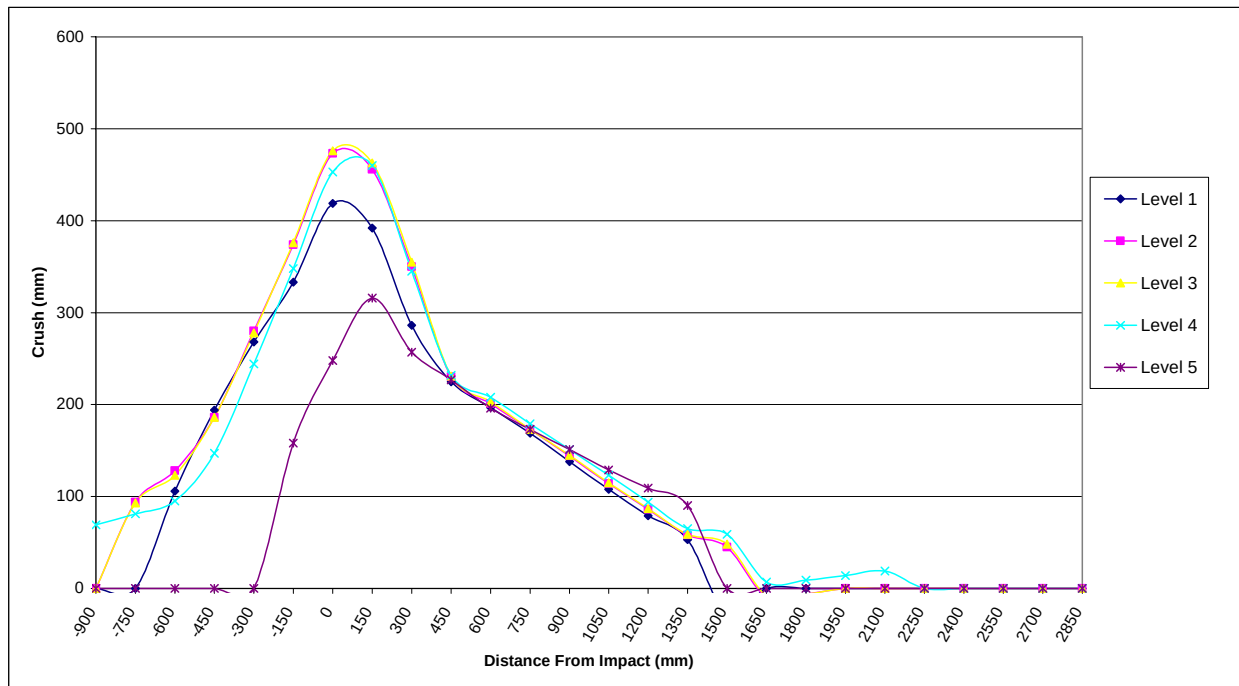
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck

NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test

Test Date: 10/30/14

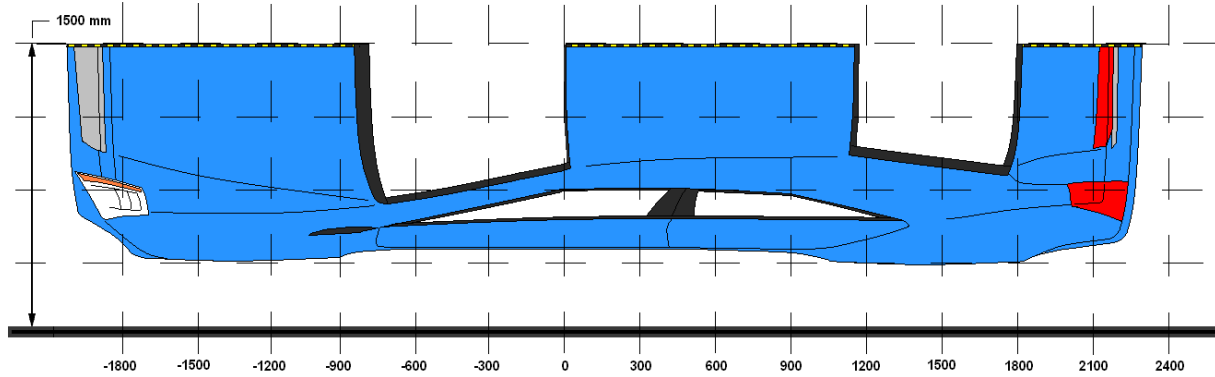


DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14



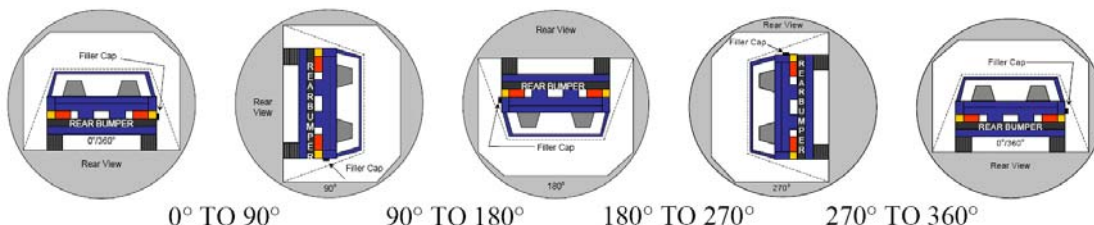
DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	2100	4	656	675	19
2	1500	4	665	724	59
3	900	4	631	782	151
4	300	3	602	957	355
5	-300	2	601	881	280
6	-900	4	659	728	69

DATA SHEET NO. 12

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155302
 Test Program: NCAP Side Pole Impact Test Test Date: 10/30/14
 Temperature at Time of Impact: 21.7° C Test Time: 10:23 AM

- A. From impact until vehicle motion ceases: 0 oz.
 (Maximum allowable = 1 oz.)
- B. For the 5 minute period after motion ceases: 0 oz.
 (Maximum allowable = 5 oz.)
- C. For the following 25 minutes: 0 oz.
 (Maximum allowable = 1 oz./minute)
- D. Spillage Details: There was no Stoddard solvent spillage.



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	84	300	384
90° To 180°	82	300	382
180° To 270°	78	300	378
270° To 360°	82	300	382

FMVSS 301 SPILLAGE TABLE

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

SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° To 90°	No Spillage Occurred
90° To 180°	No Spillage Occurred
180° To 270°	No Spillage Occurred
270° To 360°	No Spillage Occurred

DATA SHEET NO. 13

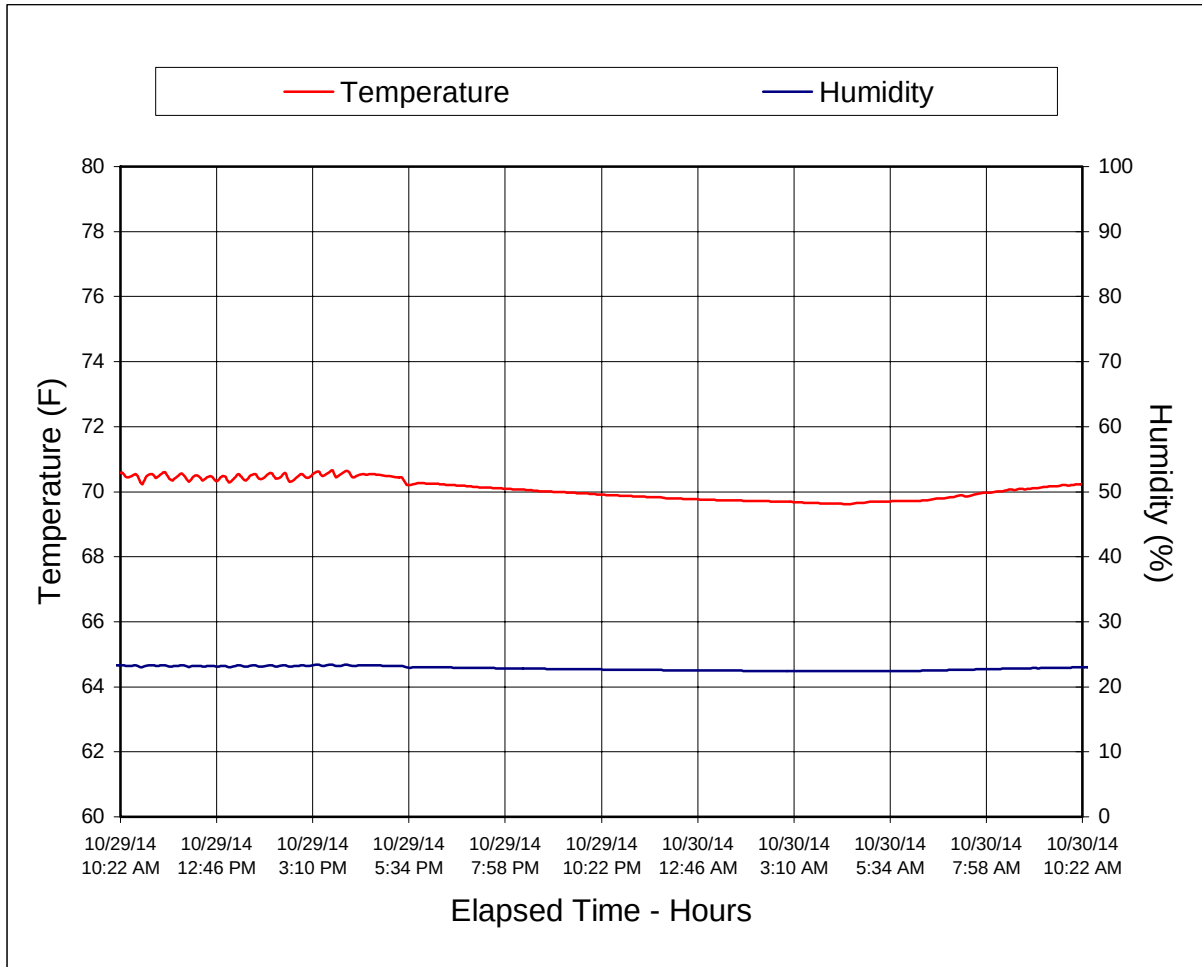
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck

NHTSA No. M20155302

Test Program: NCAP Side Pole Impact Test

Test Date: 10/30/14



APPENDIX A
PHOTOGRAPHS

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FIGURE 1. As-Delivered Right Front $\frac{3}{4}$ View of Test Vehicle



FIGURE 2. As-Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle



FIGURE 3. Pre-Test Frontal View of Test Vehicle

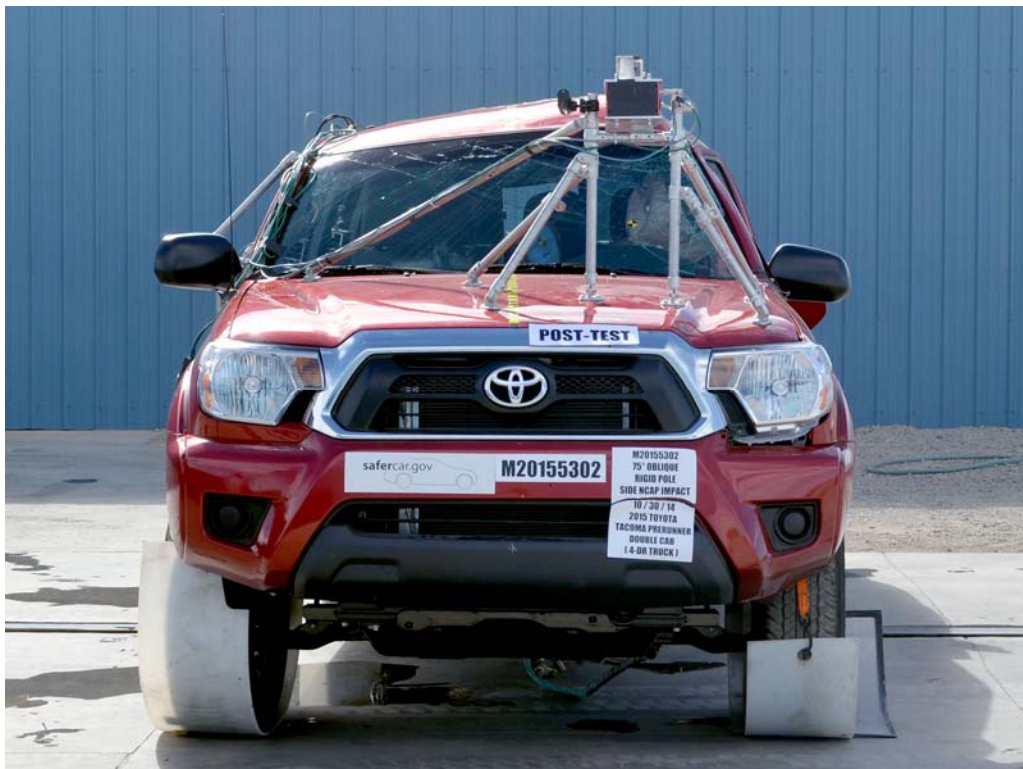


FIGURE 4. Post-Test Frontal View of Test Vehicle



FIGURE 5. Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle



FIGURE 6. Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle



FIGURE 7. Pre-Test Left Side View of Test Vehicle



FIGURE 8. Post-Test Left Side View of Test Vehicle



FIGURE 9. Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



FIGURE 10. Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



FIGURE 13. Pre-Test Right Side View of Test Vehicle



FIGURE 14. Post-Test Right Side View of Test Vehicle



FIGURE 15. Pre-Test Overhead View of Test Area



FIGURE 16. Post-Test Overhead View of Test Area



FIGURE 17. Pre-Test Left Side View of Pole
Positioned Against Side of Vehicle



FIGURE 18. Pre-Test Right Side View of Pole
Positioned Against Side of Vehicle



FIGURE 19. Pre-Test Close-Up View of Impact Point Target



FIGURE 20. Post-Test Close-Up View of Impact Point Target
Showing Impact Location



FIGURE 21. Pre-Test Front Close-Up View of Dummy Head and Chest



FIGURE 22. Post-Test Front Close-Up View of Dummy



FIGURE 23. Pre-Test Left Side View of Dummy
Showing Belt and Chalking



FIGURE 24. Pre-Test Left Side View of Dummy Shoulder and Door Top View



FIGURE 25. Post-Test Left Side View of Dummy Shoulder and Door Top View



FIGURE 26. Pre-Test Frontal View of Seat Back Prior to Dummy Positioning



FIGURE 27. Pre-Test Frontal Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint



FIGURE 28. Pre-Test Overhead View of Seat Pan Prior to Dummy Positioning



FIGURE 29. Pre-Test Overhead View of Dummy Thighs on Seat Pan



FIGURE 30. Pre-Test Left Side View of Dummy's Neck
Showing Position of Adjustable Neck Bracket



FIGURE 31. Pre-Test Left Side View of Dummy's Head Showing Head is Level

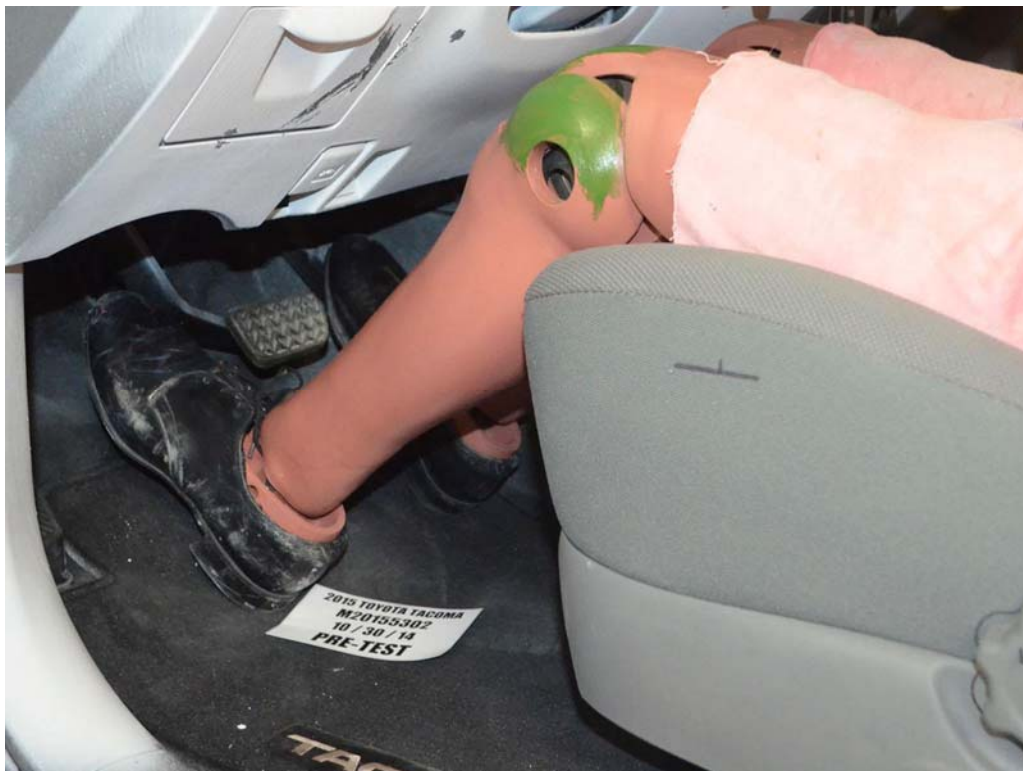


FIGURE 32. Pre-Test Placement of Dummy's Feet



FIGURE 33. Pre-Test View of Belt Anchorage for Dummy



FIGURE 34. Pre-Test Left Side View of Steering Wheel



FIGURE 35. View of Disengaged Parking Brake



FIGURE 36. Pre-Test View of Parking Brake



FIGURE 37. Pre-Test Close-Up Left Side View of Driver Seat Track



FIGURE 38. Pre-Test Close-Up Left Side View of Driver Seat Back



FIGURE 39. Pre-Test Close-Up View of Driver Seat Back or Head Restraint



FIGURE 40. Pre-Test Dummy and Door Clearance View



FIGURE 41. Post-Test Dummy and Door Clearance View



FIGURE 42. Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



FIGURE 43. Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



FIGURE 44. Pre-Test Inner Door Panel View



FIGURE 45. Post-Test Inner Door Panel View
Showing Dummy Contact Locations



FIGURE 46. Post-Test Dummy Close-Up Head Contact with Vehicle Interior View

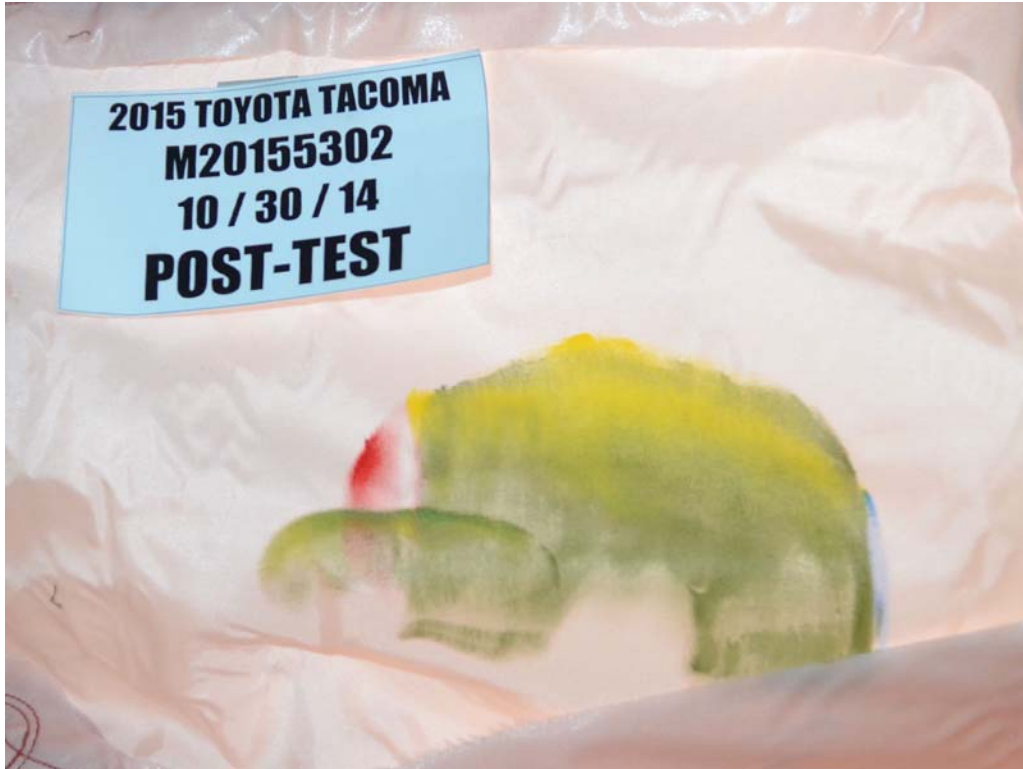


FIGURE 47. Post-Test Dummy Close-Up Head Contact With Side Airbag View



FIGURE 48. Post-Test Dummy Close-Up Torso Contact With Vehicle Interior View

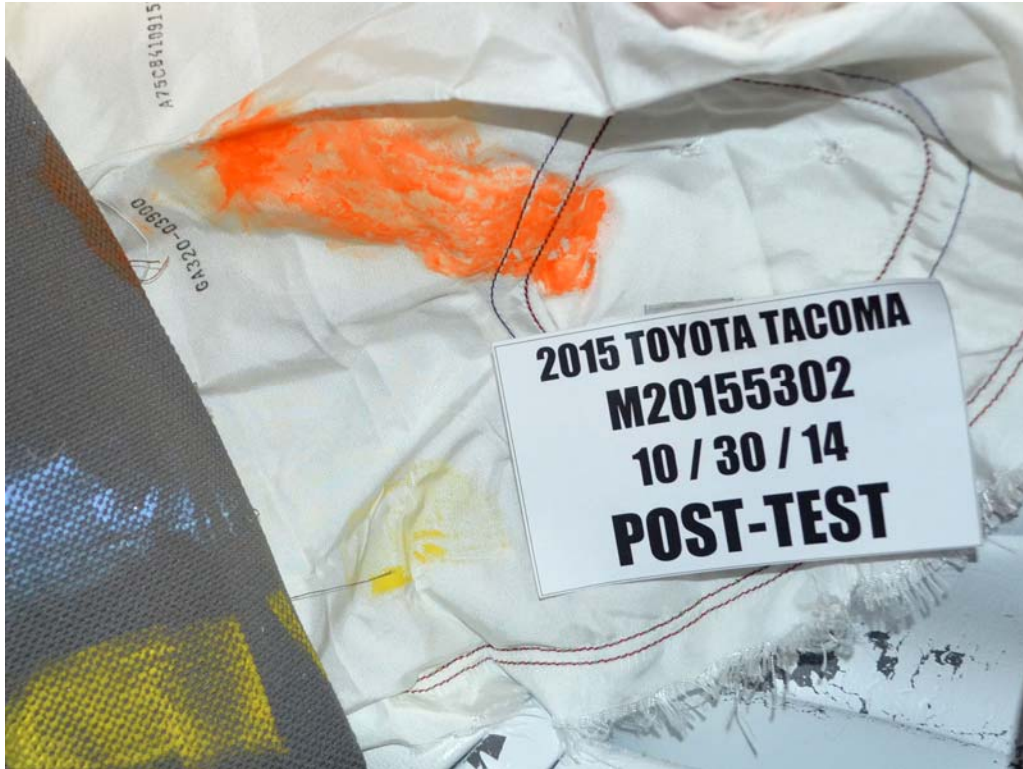


FIGURE 49. Post-Test Dummy Close-Up Torso Contact With Side Airbag View



FIGURE 50. Post-Test Dummy Close-Up Pelvis Contact With Vehicle Interior View

Photograph Not Applicable

No Driver Dummy Pelvis Contact with Side Airbag

FIGURE 51. Post-Test Dummy Close-Up Pelvis Contact With Side Airbag View



FIGURE 52. Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View



FIGURE 53. Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 54. Post-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 55. Close-Up View of Vehicle's Certification Label



FIGURE 55a. Close-Up View of Vehicle's Reduced Load Carrying Capacity Label

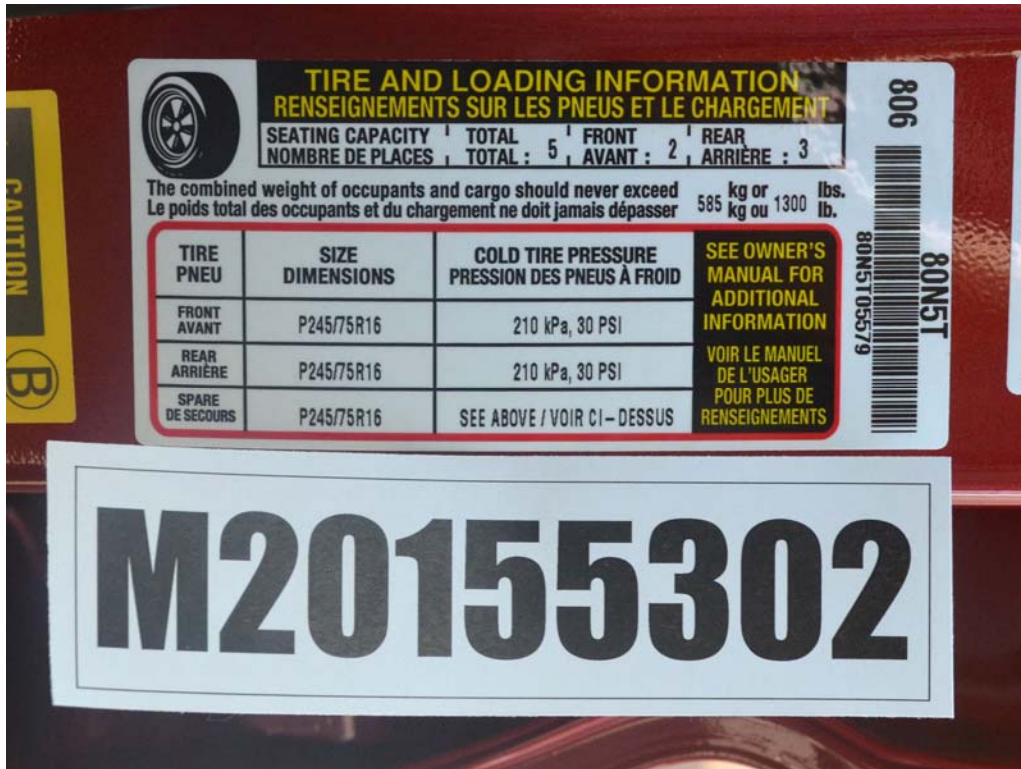


FIGURE 56. Close-Up View of Vehicle's Tire Information Placard or Label



FIGURE 57. Pre-Test Pole Barrier Front View



FIGURE 58. Post-Test Pole Barrier Front View



FIGURE 59. Pre-Test Pole Barrier Side View



FIGURE 60. Post-Test Pole Barrier Side View



FIGURE 61. Pre-Test Ballast View



FIGURE 62. Post-Test Primary and Redundant Speed Trap Read-Out



FIGURE 63. FMVSS No. 301 Static Rollover 0 Degrees



FIGURE 64. FMVSS No. 301 Static Rollover 90 Degrees



FIGURE 65. FMVSS No. 301 Static Rollover 180 Degrees

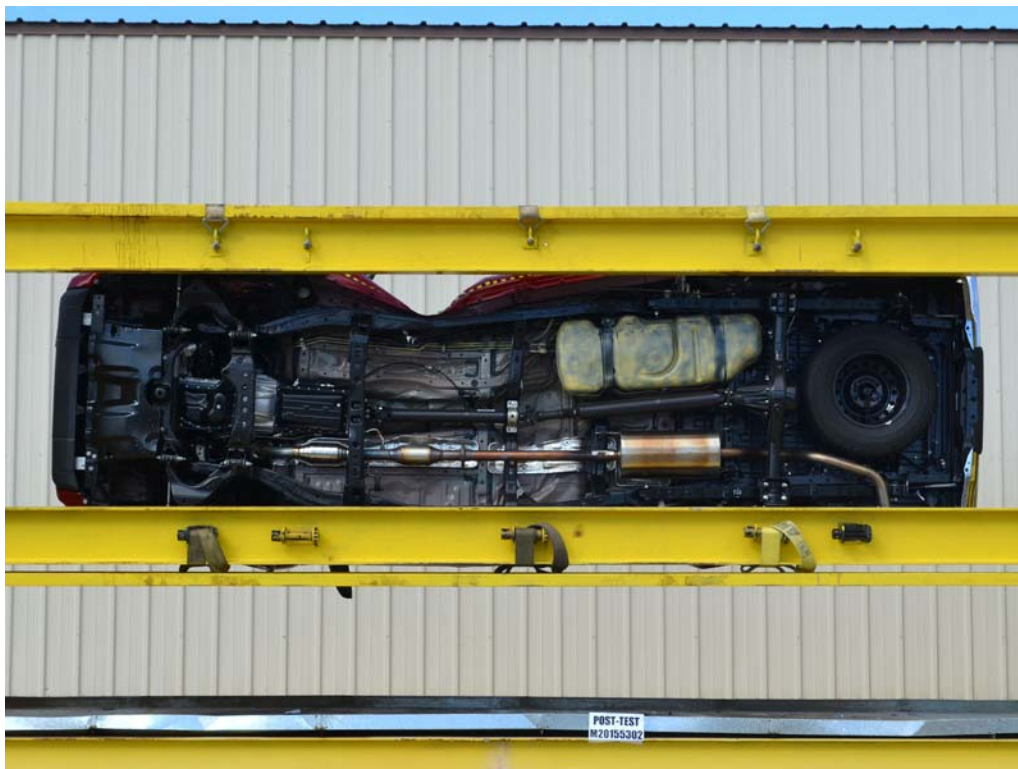


FIGURE 66. FMVSS No. 301 Static Rollover 270 Degrees



FIGURE 67. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 68. Impact Event

TOYOTA
Let's Go Places

DESC: **TACOMA PRERUNNER DOUBLE CAB 4X2**
VIN: **5TFJX4GN8FX038505**

YR/MO/L: 2015/7/186A
CLR: BANCALONA RED MET P-013
PORT/PLANT: San Antonio, TX/TMMTX

(SRS/13)
RAILHEAD:

GOVERNMENT 5-STAR SAFETY RATINGS

This vehicle has not been rated by the government for overall vehicle score, frontal crash, side crash or rollover risk.

Star ratings range from 1 to 5 stars (★ ★ ★ ★ ★) with 5 being the highest.
Source: National Highway Traffic Safety Administration (NHTSA)
www.safercar.gov or 1-888-327-4236

STANDARD EQUIPMENT

MECHANICAL & PERFORMANCE

- 2.7L D4CH 18V 4cy VVT-i 158HP Engine
- 4-Speed ECT-i Automatic Transmission
- Automatic Limited Slip Differential
- Coil-Spring Double Wishbone Front Susp
- Rear Leaf Spring Susp with Staggered
- Coil-Over Shock Absorbers
- 17" x 7.5J x 16" Alloy Wheel
- 18" x 7.5J x 16" Alloy Wheel
- 18" x 7.5J x 16" Alloy Wheel
- 18" x 7.5J x 16" Alloy Wheel

SAFETY & CONVENIENCE

- Star Safety System- includes Vehicle Stability Control, Traction Control, Anti-lock Brake System (ABS), Electronic Brake Force Distribution, Brake Assist, & Smart Stop Technology (SST)
- 8 Air Bags- Advanced Air Bag System
- Side-Mounted Side & Side Curtain Airbags
- 3-Point Seatbelts for All Seating Positions
- Driver-Side (SRS) & Passenger-Side (SRS) Air Bags
- Side-Impact Door Beams
- Tire Pressure Monitor System (TPMS)

EXTENSION

- Rack, Bikes, Bikes, Bikes
- SMC Inner Bed w/Steel Outer Panels
- Storage, Bed Cages & Removable Tarpaulin
- Deck Rail System with Aid Tie-Down Cables

INTERIOR

- Air Conditioning
- Power Windows / Door Locks / Mirrors
- Cloth Bucket Seats w/ Fabric Floor Mats
- Driver Seat w/ Adj. Lumbar Support
- 6.1" Touch-Screen, AM/FM CD, 8 Speakers, BT
- USB, Aux Jack, Hands-Free Phone Capability
- 150-Watt Stereo System
- 2-Speed Windshield Wipers
- Dual 12V Aux Power Outlets
- 17" x 7.5J x 16" Alloy Wheel

MANUFACTURER'S SUGGESTED RETAIL PRICE \$23,425.00

OPTIONAL EQUIPMENT

FE	50 State Emissions	
ED	Entire Audio Pack	640.00
	Includes the Entire Multimedia Bundle (8.1 in High Resolution Touch-Screen Display, AM/FM CD Player, MP3/WMA Playback Capability, Auxiliary Audio-Jack, USB 2.0 Port with iPod Connectivity and Control, Advanced Voice Recognition, Hands-Free Phone Capability, Phone Book Access and Music Streaming via Bluetooth Wireless Technology), SiriusXM All Access Radio with 3-month Complimentary Trial, HD Radio, HD Traffic and Weather in Major Metro	
SL	SRS Extra Value Package	1,775.00
	Remote Keyless Entry System, Cruise Control, Variable Intermittent Windshield Wipers, Chrome Grille Surround & Rear Bumper, Color-Keyed Front Bumper & Overlenders, Sliding Rear Window w/ Privacy Glass, Bucket Seats, SRS Fabric Trim, Metallic Tone Instrument Panel Trim, Leather-Trimmed Steering Wheel with Audio Controls & Shifter, Dual Sunroofs w/ Mirrors & Extenders, Tailgate Handle, Integrated Backup Camera, SRS Badge	
CF	Carpet Floor Mats & Door Sill Protector	195.00

Fuel Economy and Environment

Fuel Economy

21 MPG combined city/hwy

19 city **24 highway**

4.8 gallons per 100 miles

You spend \$1,500 more in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost \$2,500

Fuel Economy & Greenhouse Gas Rating

5 (Best)

Smog Rating (Best)

5 (Best)

Annual fuel cost \$2,500

fuel economy.gov

Calculate personalized estimates and compare vehicles

DELIVERY PROCESSING AND HANDLING FEE 885.00

SUB-TOTAL BEFORE DISCOUNT \$26,960.00

EXTRA VALUE PACKAGE MSRP DISCOUNT -\$350.00

TOTAL \$26,610.00

Dealer Name / Address: 04135 Ship to
L33 TORCH
75-582 VARIER ROAD
INDO CAG209

QR Code

Barcode

FIGURE 69. Monroney Label

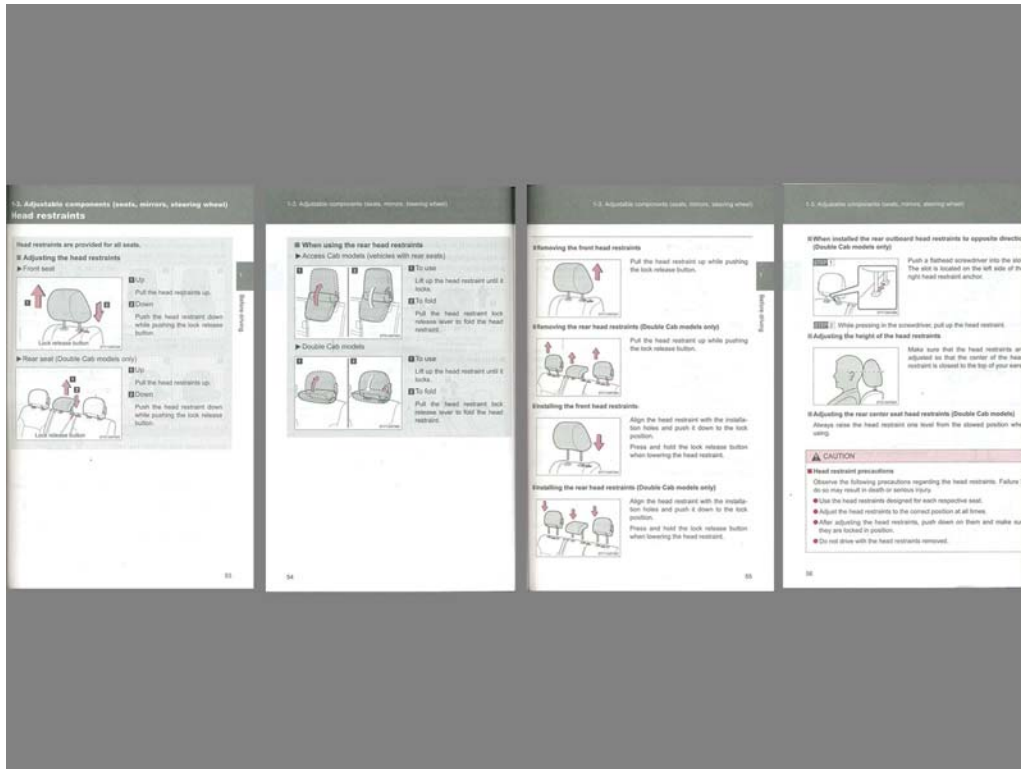


FIGURE 70. Head Restraint Use and Adjustment
Information from Vehicle Owner's Manual

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA

TABLE OF DATA PLOTS

Plot		Page
1	Driver Head Acceleration (X) Primary vs. Time	B-1
2	Driver Head Acceleration (Y) Primary vs. Time	B-1
3	Driver Head Acceleration (Z) Primary vs. Time	B-1
4	Driver Head Resultant Acceleration Primary vs. Time	B-1
5	Driver Lower Spine T12 Acceleration (X) vs. Time	B-2
6	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-2
7	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-2
8	Driver Lower Spine T12 Resultant Acceleration vs. Time	B-2
9	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-3
10	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-3
11	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-3

The following additional data 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

Additional Driver Dummy Instrumentation Data

Driver Head Acceleration Redundant (X)
Driver Head Acceleration Redundant (Y)
Driver Head Acceleration Redundant (Z)
Driver Upper Thorax Rib Deflection (Y)
Driver Middle Thorax Rib Deflection (Y)
Driver Lower Thorax Rib Deflection (Y)
Driver Upper Abdomen Rib Deflection (Y)
Driver Lower Abdomen Rib Deflection (Y)

Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Left Floor Sill Acceleration (Y)
Left A-Pillar Sill Acceleration (Y)
Left Lower A-Pillar Acceleration (Y)
Left Mid A-Pillar Acceleration (Y)

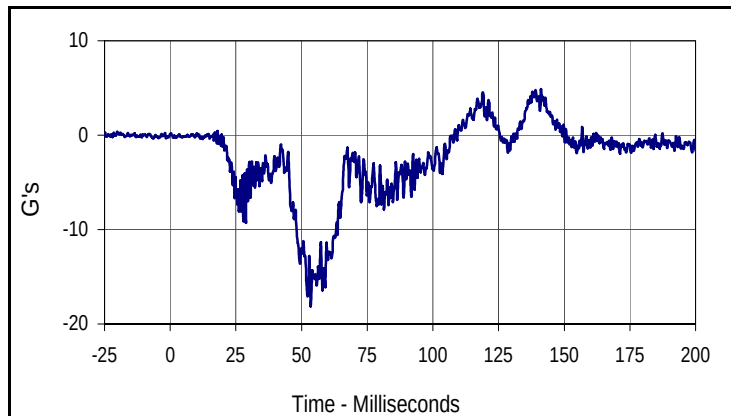
Left B-Pillar Sill Acceleration
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy Hip Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration (Y)
Right Sill at Vertical Impact Reference Line Acceleration (Y)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)

Pole Instrumentation Data

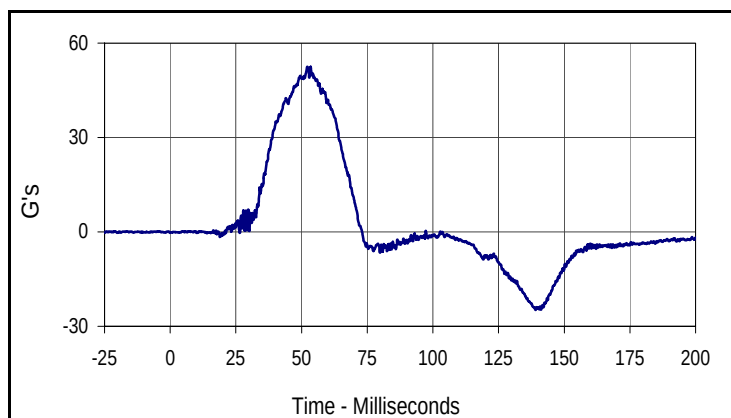
Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck
 Test Program: NCAP Side Pole Impact Test

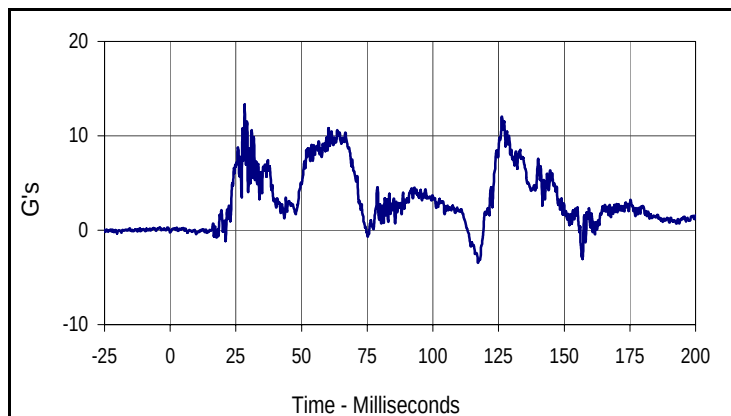
Test Date: 10/30/14
 NHTSA No.: M20155302



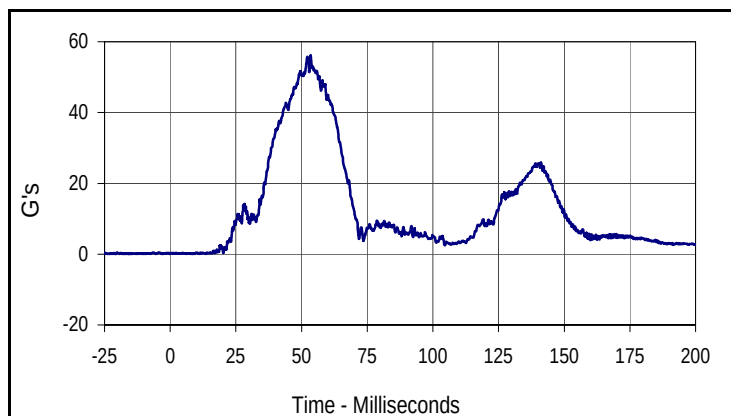
Curve Description			
Driver Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
4.9	141.2	-18.1	53.5



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
52.5	52.2	-24.9	139.1



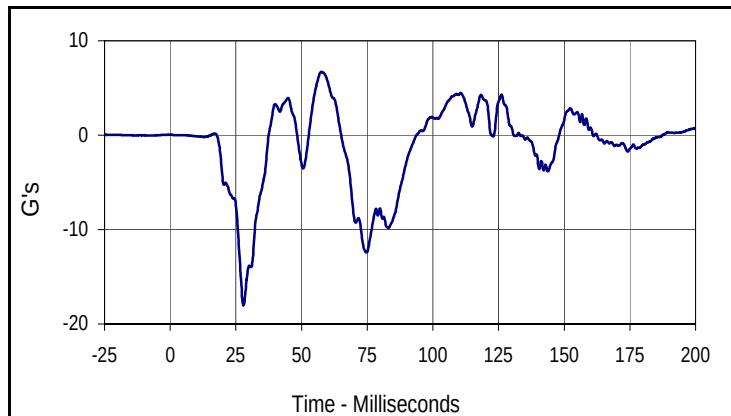
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
13.3	28.4	-3.4	117.2



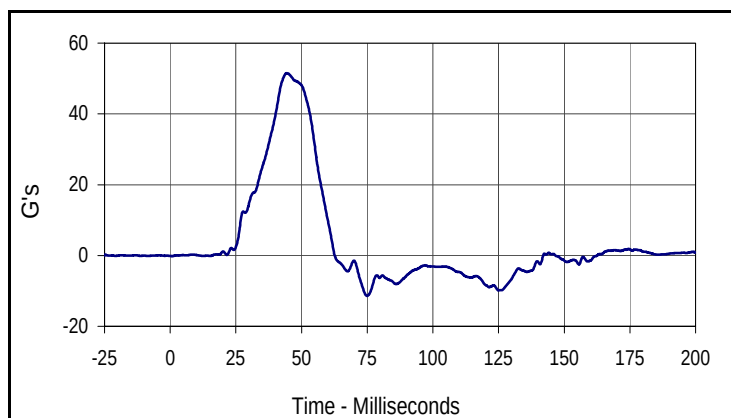
Curve Description			
Driver Head Acceleration Primary Res.			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
56.1	53.5	0.1	7.9

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck
 Test Program: NCAP Side Pole Impact Test

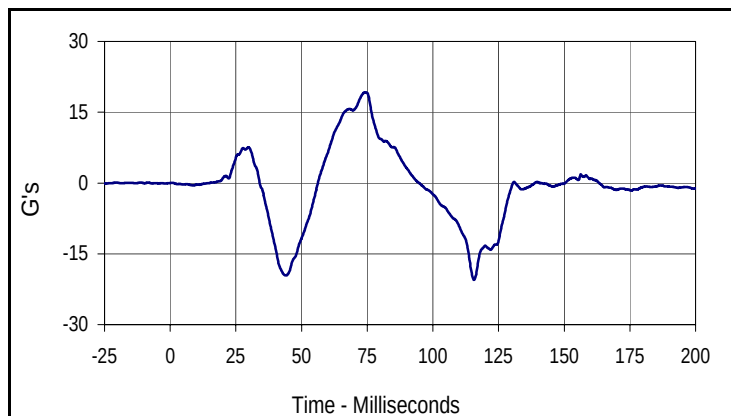
Test Date: 10/30/14
 NHTSA No.: M20155302



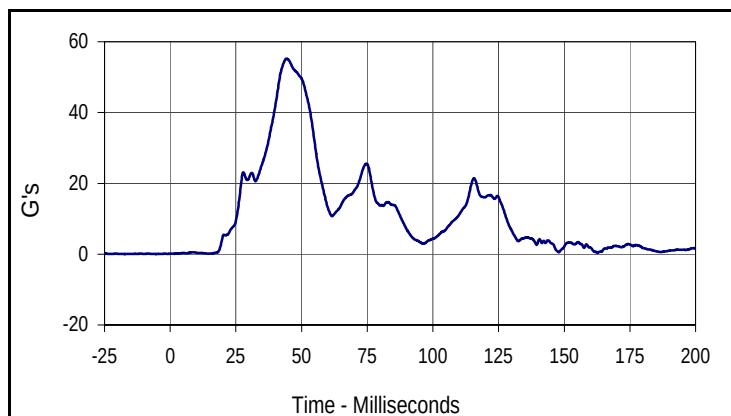
Curve Description			
Driver Lower Spine T12 Acceleration X			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
6.7	57.6	-18.0	27.9



Curve Description			
Driver Lower Spine T12 Acceleration Y			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
51.5	44.4	-11.4	74.9



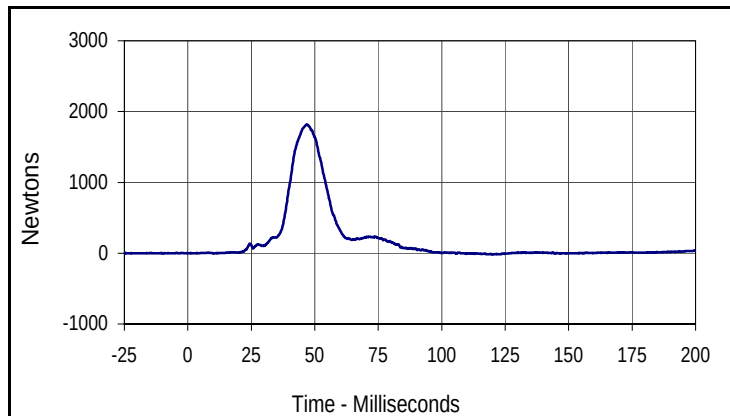
Curve Description			
Driver Lower Spine T12 Acceleration Z			
Plot No.	Type	SAE Class	Units
007	FIL	180	G's
Max	Time	Min	Time
19.2	74.6	-20.5	115.7



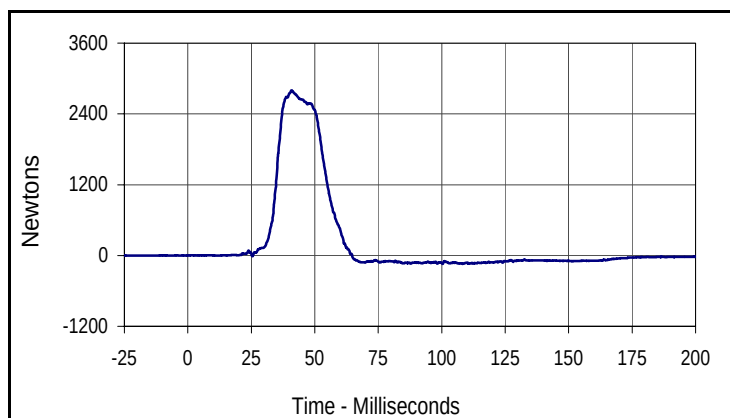
Curve Description			
Driver Lower Spine T12 Acceleration Res.			
Plot No.	Type	SAE Class	Units
008	RES	180	G's
Max	Time	Min	Time
55.2	44.3	0.1	1.6

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck
 Test Program: NCAP Side Pole Impact Test

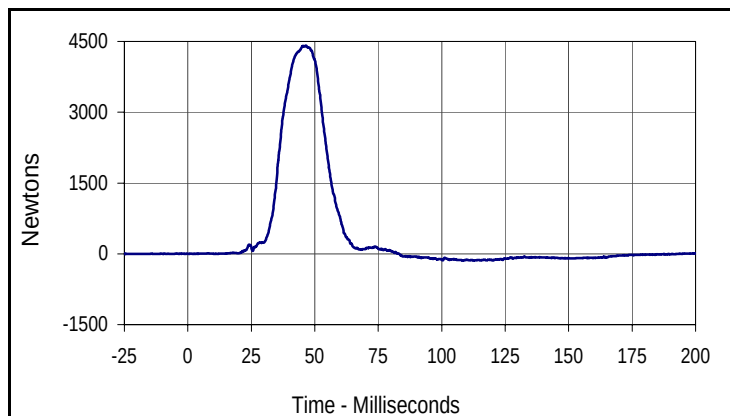
Test Date: 10/30/14
 NHTSA No.: M20155302



Curve Description			
Driver Iliac Wing Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
009	FIL	600	Newtons
Max	Time	Min	Time
1818.6	46.8	-18.7	119.8



Curve Description			
Driver Acetabulum Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
010	FIL	600	Newtons
Max	Time	Min	Time
2794.6	40.9	-141.6	100.4



Curve Description			
Driver Total Pelvic Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
011	SUM	600	Newtons
Max	Time	Min	Time
4413.4	46.5	-143.1	112.6

APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

APPENDIX C
PRE-TEST / ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: SID IIs External Measurements
 ATD Serial No.: 299

Test Date: 10/29/14
 Test I.D.: N/A



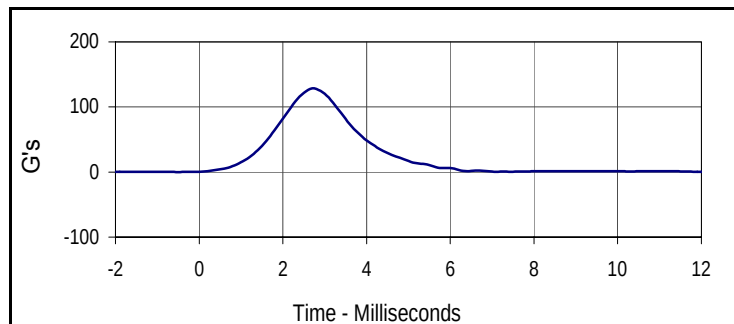
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity		%	10 to 70	45	Pass
A	Sitting Height	mm	772 - 788	780	Pass
B	Shoulder Pivot Height	mm	437 - 453	445	Pass
C	H-Point Height	mm	79 - 89	85	Pass
D	H-Point from Seatback	mm	141 - 151	145	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	102	Pass
F	Thigh Clearance	mm	119 - 135	125	Pass
G	Head Breadth	mm	140 - 148	145	Pass
H	Head Back from Backline	mm	40 - 46	44	Pass
I	Head Depth	mm	178 - 188	184	Pass
J	Head Circumference	mm	541 - 551	545	Pass
K	Buttock to Knee Length	mm	514 - 540	527	Pass
L	Popliteal Height	mm	343 - 369	352	Pass
M	Knee Pivot to Floor Height	mm	392 - 409	401	Pass
N	Buttock Popliteal Length	mm	416 - 442	432	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	202	Pass
P	Foot Length	mm	216 - 232	221	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	315	Pass
R	Arm Length	mm	249 - 259	252	Pass
S	Knee Joint to Seatback	mm	477 - 493	481	Pass
V	Shoulder Width	mm	341 - 357	352	Pass
W	Foot Width	mm	78 - 94	86	Pass
Y	Chest Circumference with Jacket	mm	851 - 881	872	Pass
Z	Waist Circumference	mm	760 - 791	774	Pass
Overall Test Results					Pass

Test Program: SID IIs Head Drop Test
 ATD Serial No.: 299

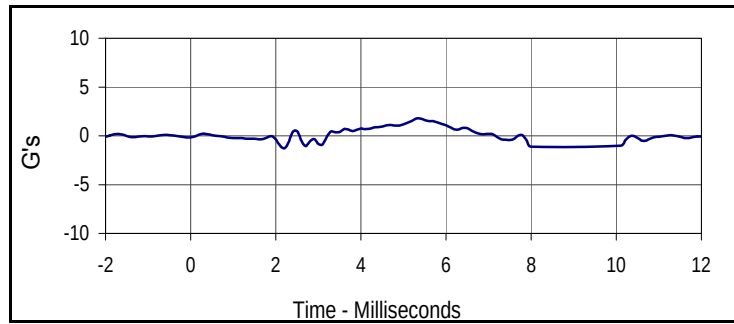
Test Date: 10/29/14
 Test I.D.: 299HD077



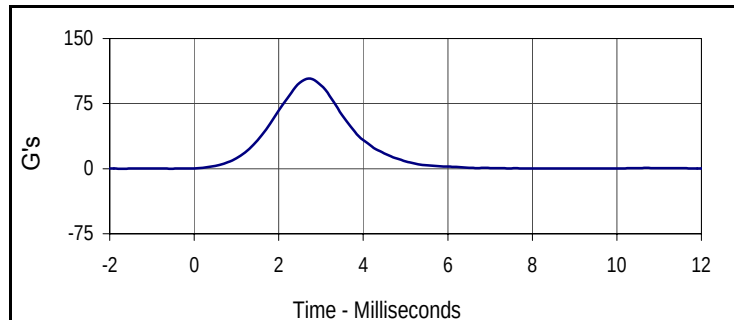
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	354	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	45.8	Pass
	Min		45.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	45.6	Pass
Peak Head Resultant Acceleration	G's	115 to 137	128.5	Pass
Peak Head X Acceleration	G's	<15	1.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	1.0	Pass
Overall Test Results				Pass



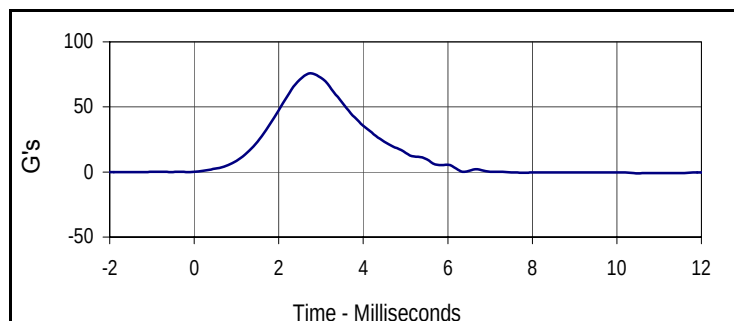
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
128.5	2.7	0.1	-0.5



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.8	5.4	-1.3	2.2



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
103.9	2.7	0.0	-1.7



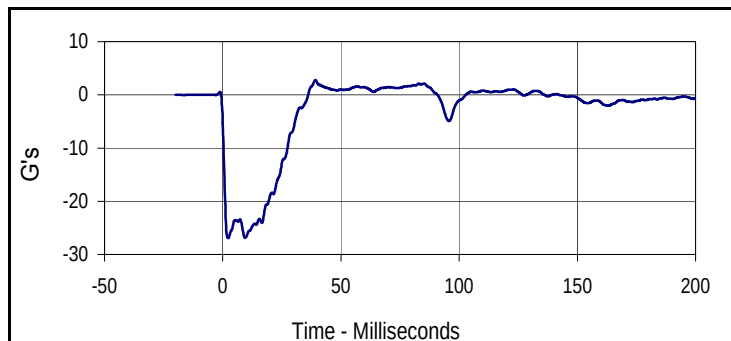
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
75.7	2.8	-1.1	10.5

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 299

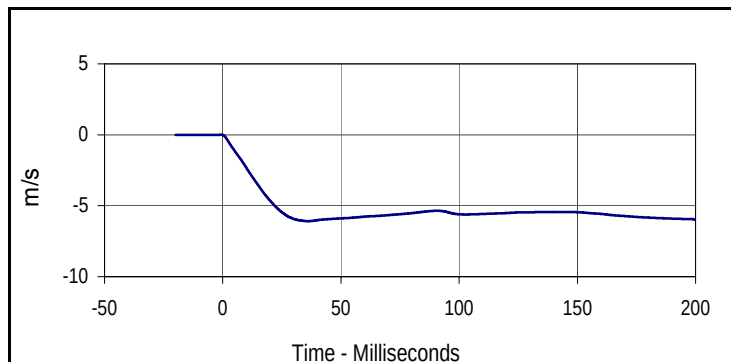
Test Date: 10/29/14
 Test I.D.: 299NB077



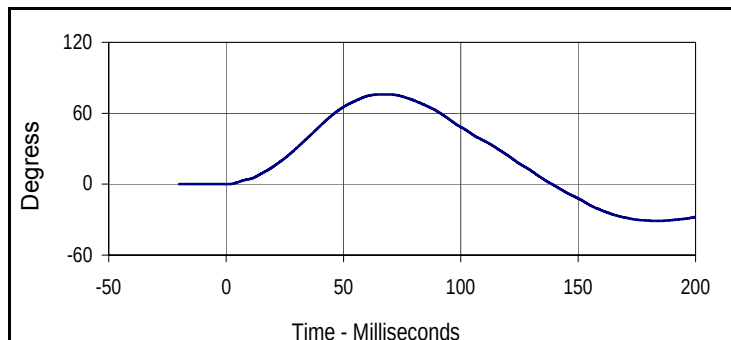
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	329	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	45.8	Pass
	Min		45.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	45.6	Pass
Pendulum Velocity	m/s	5.51 to 5.63	5.57	Pass
Pendulum Deceleration	10 msec	-2.20 to -2.80	-2.33	Pass
	15 msec	-3.30 to -4.10	-3.56	Pass
	20 msec	-4.40 to -5.40	-4.64	Pass
	25 msec	-5.40 to -6.10	-5.46	Pass
	25-100 msec	-5.50 to -6.20	-6.09	Pass
D-Plane Rotation	Max	71 to 81	76.0	Pass
	Time	50 to 70	65.6	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-40.2	Pass
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	114.9	Pass
Overall Test Results			Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
2.8	0.0	-26.9	0.0



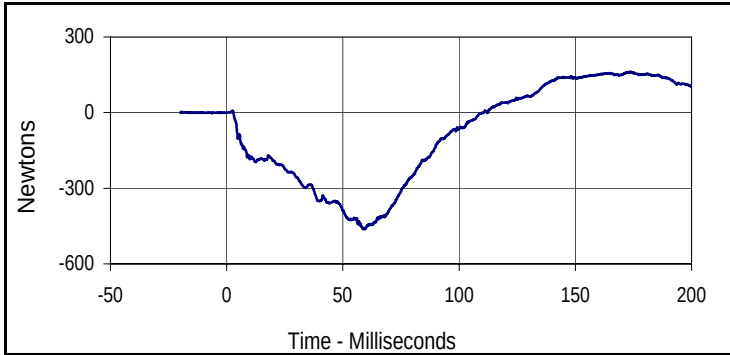
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.7	-6.1	36.1



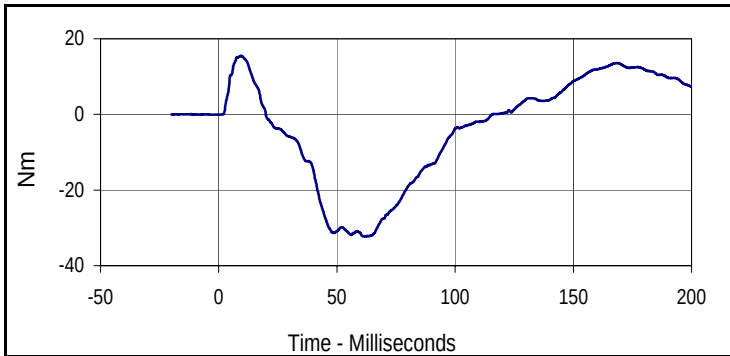
Curve Description			
D-Plane Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degress
Max	Time	Min	Time
76.0	65.6	-31.1	183.4

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 299

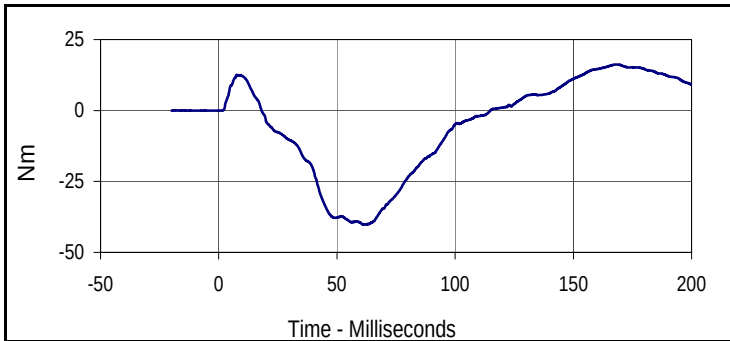
Test Date: 10/29/14
 Test I.D.: 299NB077



Curve Description			
Neck Force Y			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
162.6	173.8	-462.5	59.0



Curve Description			
Neck Moment X			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
15.5	9.5	-32.3	62.2



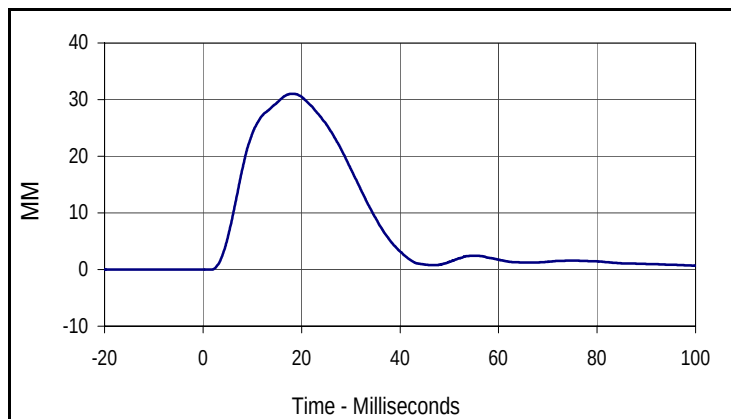
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
006	FIL	600	Nm
Max	Time	Min	Time
16.2	168.5	-40.2	62.0

Test Program: SID IIs Shoulder Impact Test
 ATD Serial No.: 299

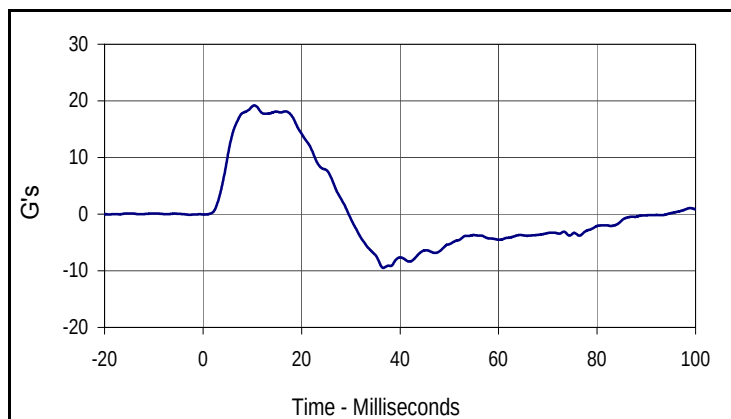
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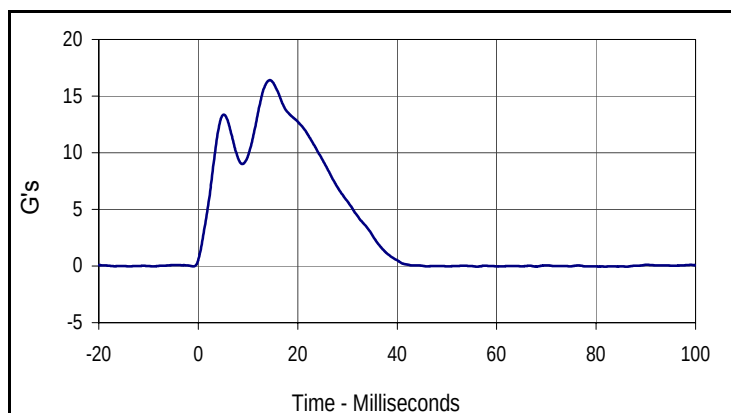
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	404	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.5	Pass
	Min	°C		21.3	Pass
Humidity During Soak	Max	%	10.0 to 70.0	45.8	Pass
	Min	%		45.3	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	45.3	Pass
Impactor Velocity		m/s	4.20 to 4.40	4.27	Pass
Peak Shoulder Deflection		mm	28 to 37	31.0	Pass
Peak Lateral Spine Acceleration Y		G's	17 to 22	19.2	Pass
Peak Impactor Acceleration		G's	13 to 18	16.4	Pass
Overall Test Results				Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
31.0	18.3	0.0	-14.6



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.2	10.4	-9.5	36.6



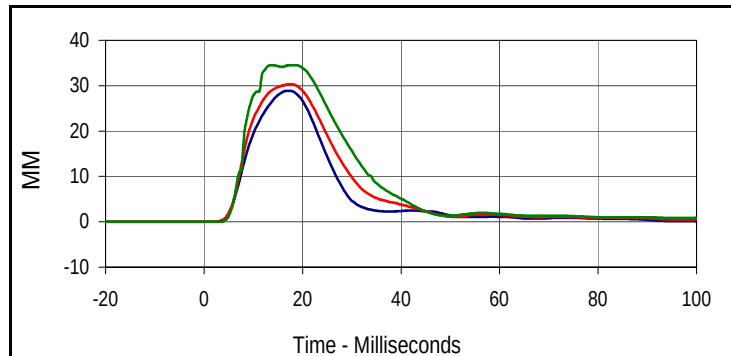
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
16.4	14.4	-0.1	56.1

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 299

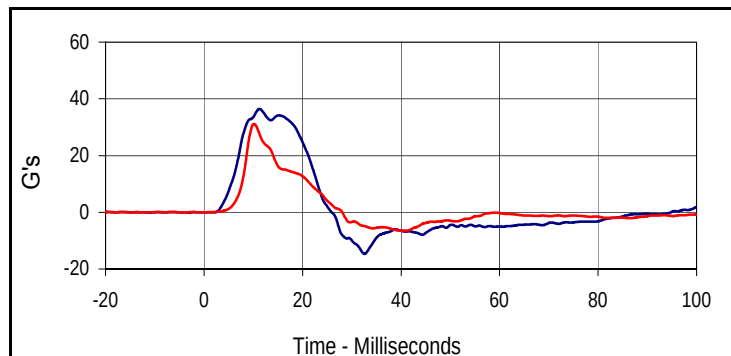
Test Date: 10/29/14
 Test I.D.: 299TWA077



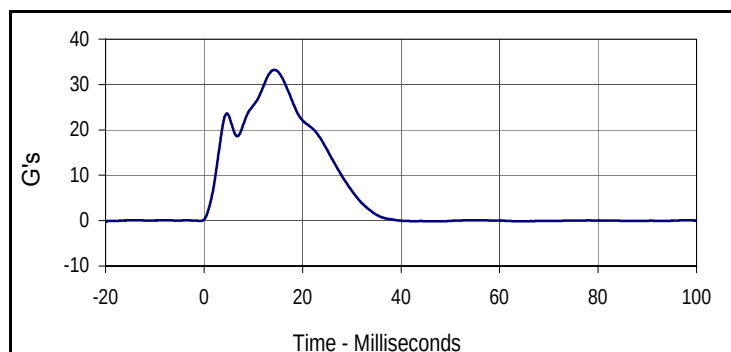
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	454	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	45.8	Pass
	Min		45.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	45.5	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.71	Pass
Peak Shoulder Deflection	mm	31 to 40	35.2	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	28.9	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	30.3	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	34.5	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	36.4	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	31.1	Pass
Peak Impactor Acceleration	G's	30 to 36	33.2	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
28.9	17.0	0.0	-0.5
Middle Thorax Deflection			
Max	Time	Min	Time
30.3	17.5	0.0	-18.3
Lower Thorax Deflection			
Max	Time	Min	Time
34.5	17.8	0.0	-0.9



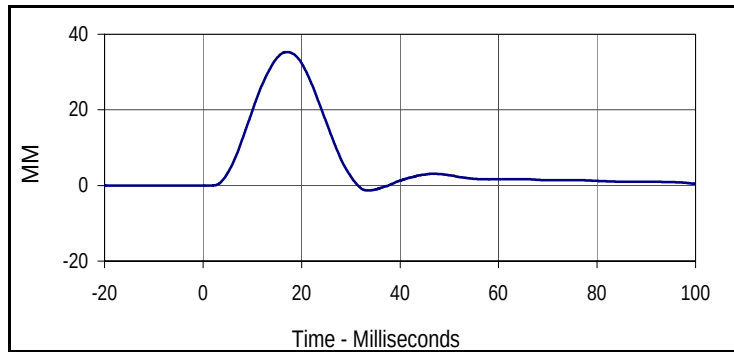
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
36.4	11.3	-14.7	32.6
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
31.1	10.1	-6.5	40.3



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
33.2	14.3	-0.1	47.5

Test Program: SID IIs Thorax with Arm Impact Test
ATD Serial No.: 299

Test Date: 10/29/14
Test I.D.: 299TWA077



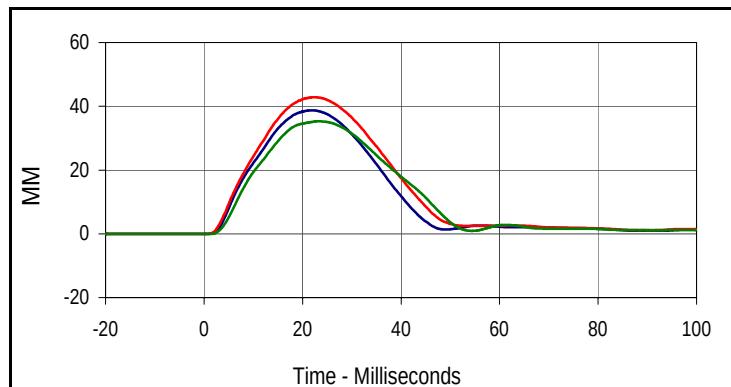
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
35.2	17.4	-1.3	33.6

Test Program: SID IIs Thorax without Arm Impact Test
 ATD Serial No.: 299

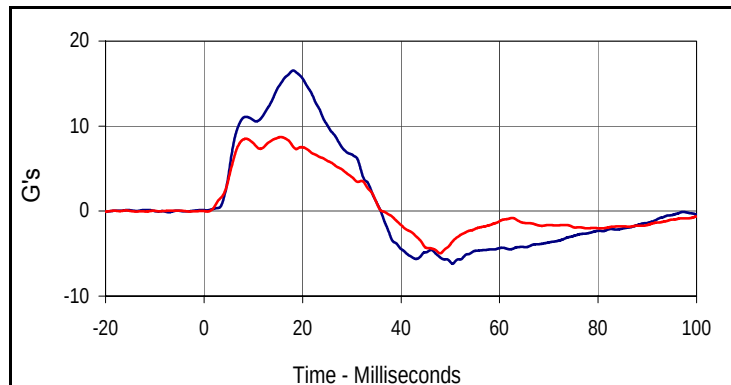
Test Date: 10/29/14
 Test I.D.: 299TWOA077



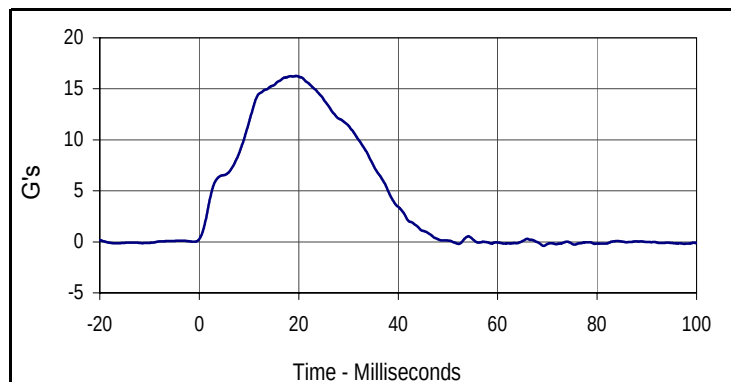
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	509	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.5	Pass
	Min	°C		21.3	Pass
Humidity During Soak	Max	%	10.0 to 70.0	45.8	Pass
	Min	%		45.3	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	45.6	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.35	Pass
Peak Upper Thorax Rib Deflection		mm	32 to 40	38.7	Pass
Peak Middle Thorax Rib Deflection		mm	39 to 45	42.9	Pass
Peak Lower Thorax Rib Deflection		mm	35 to 43	35.3	Pass
Peak Upper Spine Y Acceleration		G's	13 to 17	16.5	Pass
Peak Lower Spine Y Acceleration		G's	7 to 11	8.7	Pass
Peak Impactor Acceleration		G's	14 to 18	16.3	Pass
Overall Test Results				Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
38.7	22.0	0.0	-11.7
Middle Thorax Deflection			
Max	Time	Min	Time
42.9	22.5	0.0	-11.6
Lower Thorax Deflection			
Max	Time	Min	Time
35.3	22.9	0.0	-17.1



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
16.5	18.1	-6.2	50.5
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.7	15.5	-5.0	47.9



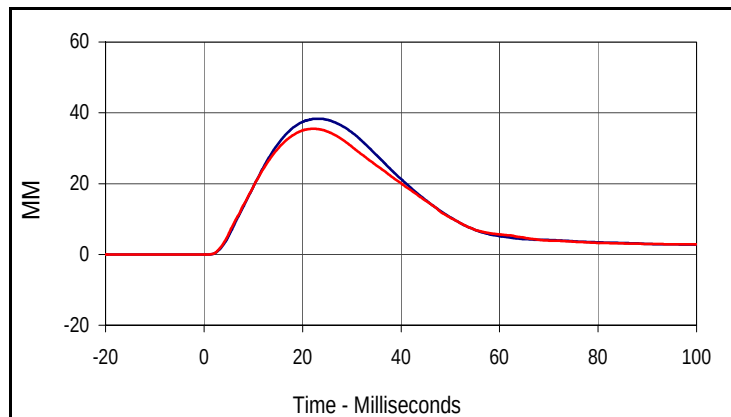
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.3	19.5	-0.4	69.2

Test Program: SID IIs Abdomen Impact Test
 ATD Serial No.: 299

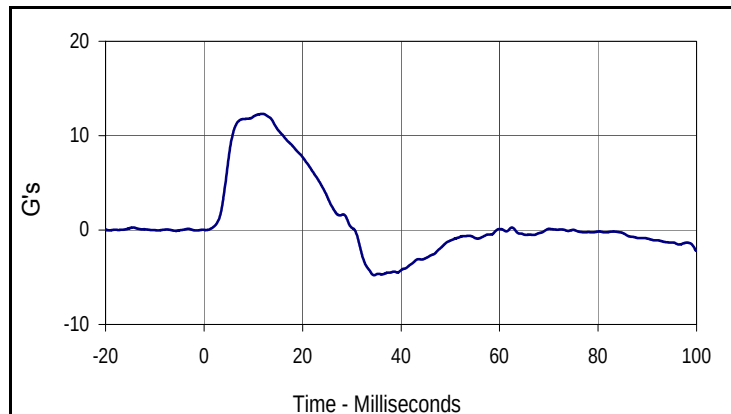
Test Date: 10/29/14
 Test I.D.: 299ABD077



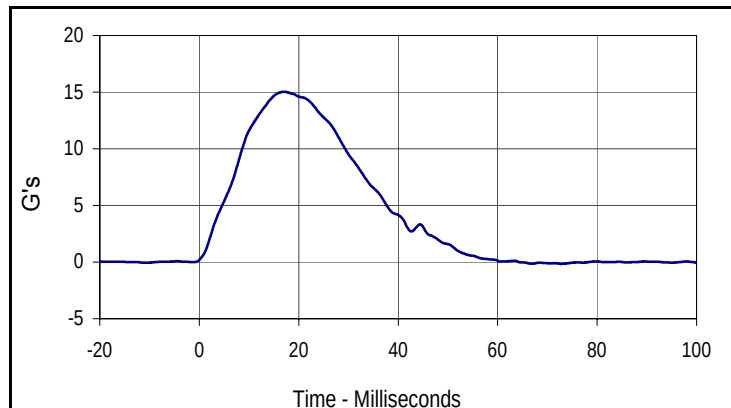
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	569	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	45.8	Pass
	Min		45.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	45.7	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.33	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	38.3	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	35.5	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.3	Pass
Peak Impactor Acceleration	G's	12 to 16	15.0	Pass
Overall Test Results			Pass	



Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
38.3	23.2	0.0	-8.9
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
35.5	22.2	0.0	-8.1

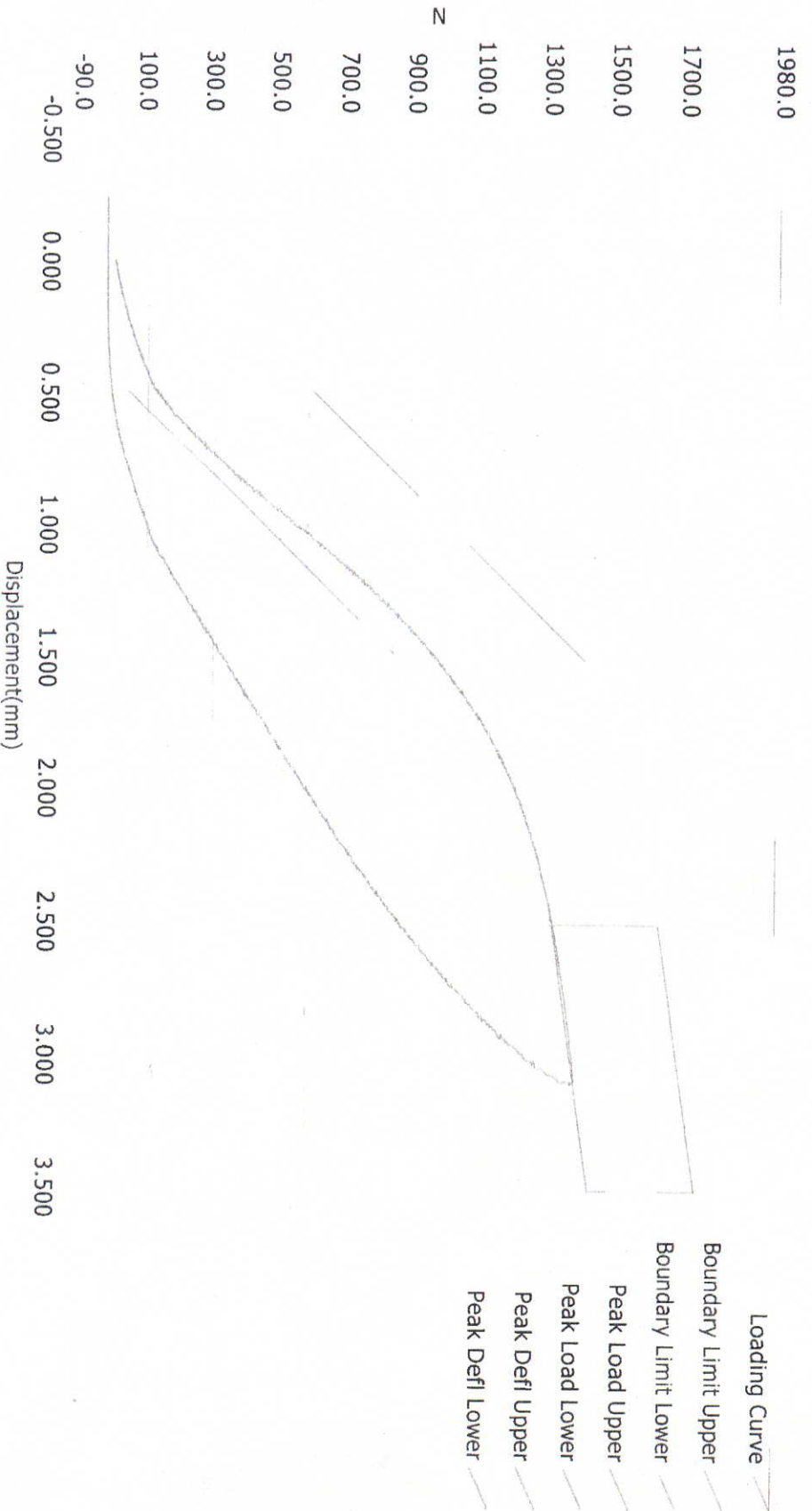


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.3	11.8	-4.8	34.5



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.0	17.0	-0.2	72.8

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
47693	47693	10/27/2011	11:32 PM
Cert ID	ATD Serial Number	ATD Type	
N/A	N/A	SIDIIs	

Current Date : 10/27/2011

Current Time : 23:33:02

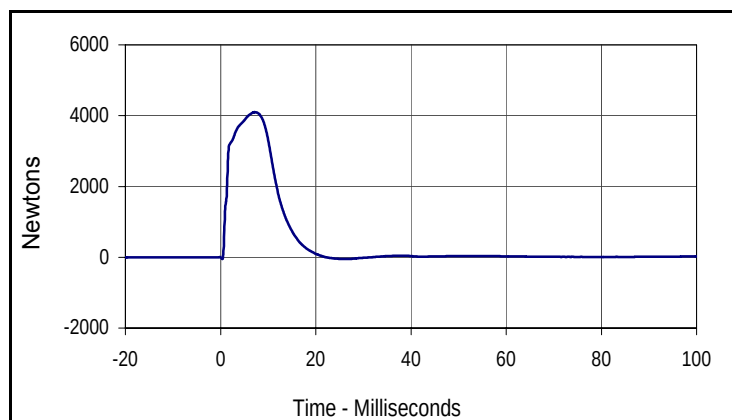
M20155302 PRE TEST

Test Program: SID IIs Pelvis Acetabulum Impact Test
 ATD Serial No.: 299

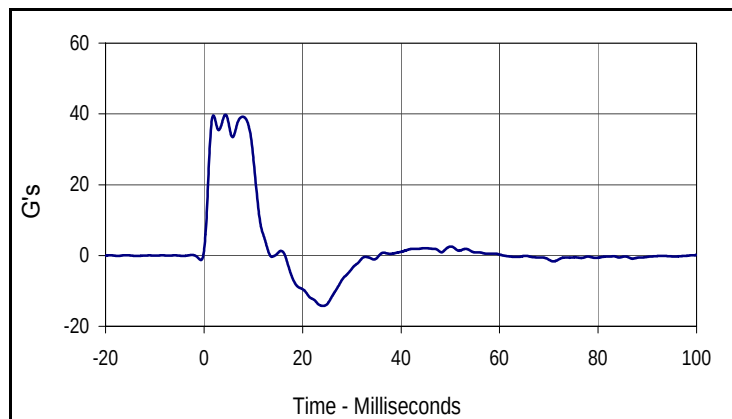
Test Date: 10/29/14
 Test I.D.: 299ACET077



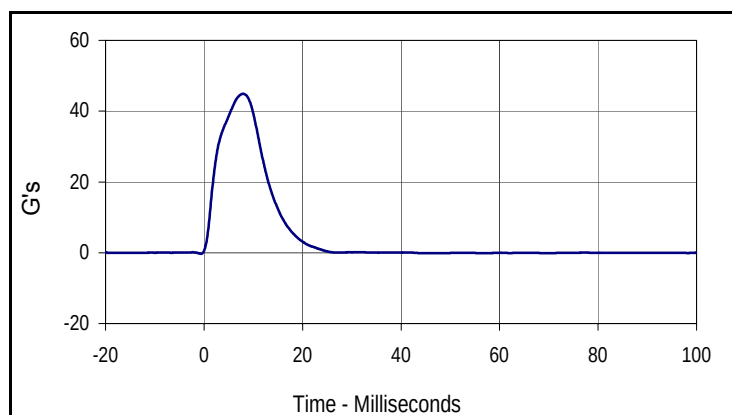
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	644	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	45.8	Pass
	Min		45.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	45.7	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.72	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	4097.9	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	39.2	Pass
Peak Impactor Acceleration	G's	38 to 47	44.9	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4097.9	7.1	-50.2	26.3



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
39.8	4.4	-14.2	24.2



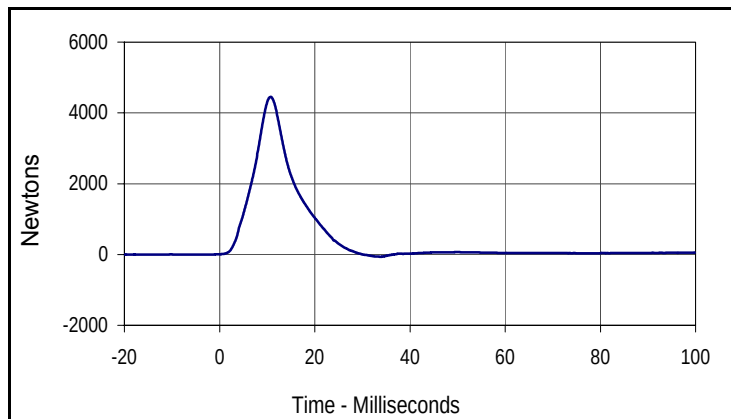
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
44.9	7.9	-0.3	-0.6

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 299

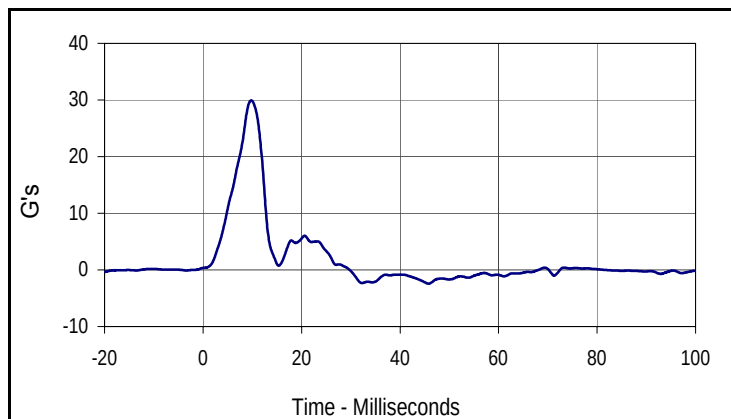
Test Date: 10/29/14
 Test I.D.: 299PL077



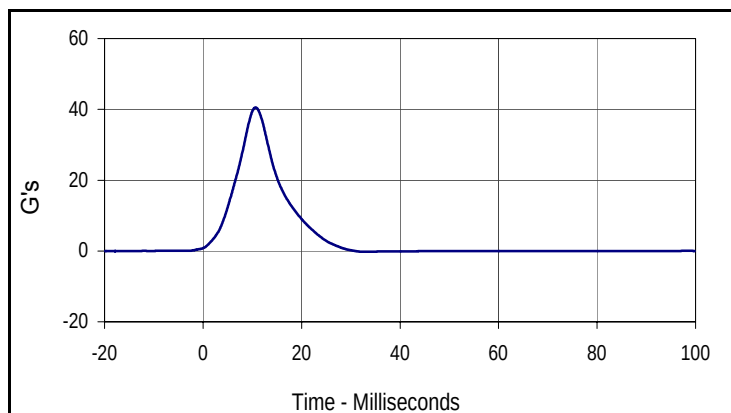
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	709	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	45.8	Pass
	Min		45.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	45.8	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.36	Pass
Peak Iliac Force	Newtons	4100 to 5100	4453.7	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	29.9	Pass
Peak Impactor Acceleration	G's	36 to 45	40.5	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4453.7	10.7	-63.1	34.0



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
29.9	9.8	-2.4	45.8



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
40.5	10.7	-0.2	32.5

APPENDIX C
POST-TEST / ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: SID IIs External Measurements
 ATD Serial No.: 299

Test Date: 11/4/14
 Test I.D.: N/A



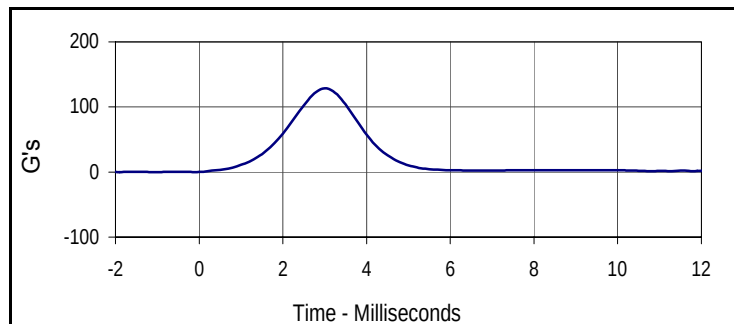
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.5	Pass
Laboratory Relative Humidity		%	10 to 70	22	Pass
A	Sitting Height	mm	772 - 788	780	Pass
B	Shoulder Pivot Height	mm	437 - 453	445	Pass
C	H-Point Height	mm	79 - 89	85	Pass
D	H-Point from Seatback	mm	141 - 151	145	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	102	Pass
F	Thigh Clearance	mm	119 - 135	125	Pass
G	Head Breadth	mm	140 - 148	145	Pass
H	Head Back from Backline	mm	40 - 46	44	Pass
I	Head Depth	mm	178 - 188	184	Pass
J	Head Circumference	mm	541 - 551	545	Pass
K	Buttock to Knee Length	mm	514 - 540	527	Pass
L	Popliteal Height	mm	343 - 369	352	Pass
M	Knee Pivot to Floor Height	mm	392 - 409	401	Pass
N	Buttock Popliteal Length	mm	416 - 442	432	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	202	Pass
P	Foot Length	mm	216 - 232	221	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	315	Pass
R	Arm Length	mm	249 - 259	252	Pass
S	Knee Joint to Seatback	mm	477 - 493	481	Pass
V	Shoulder Width	mm	341 - 357	352	Pass
W	Foot Width	mm	78 - 94	86	Pass
Y	Chest Circumference with Jacket	mm	851 - 881	872	Pass
Z	Waist Circumference	mm	760 - 791	774	Pass
Overall Test Results					Pass

Test Program: SID IIs Head Drop Test
 ATD Serial No.: 299

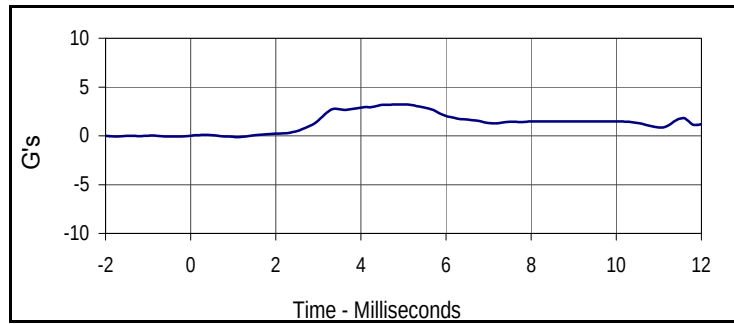
Test Date: 11/4/14
 Test I.D.: 299HD078



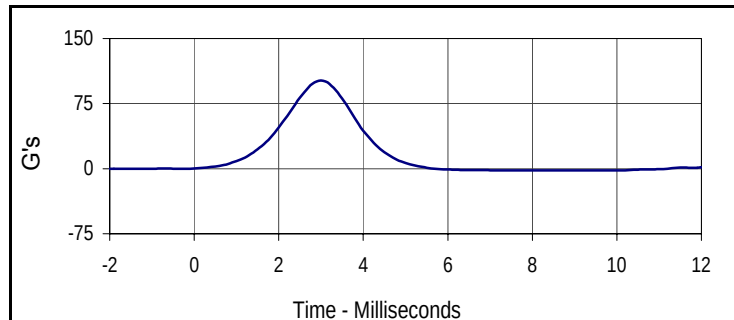
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	300	Pass
Temperature During Soak	Max	18.9 to 25.6	21.8	Pass
	Min		21.5	Pass
Humidity During Soak	Max	10.0 to 70.0	22.0	Pass
	Min		21.7	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.7	Pass
Peak Head Resultant Acceleration	G's	115 to 137	128.5	Pass
Peak Head X Acceleration	G's	<15	3.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	2.5	Pass
Overall Test Results				Pass



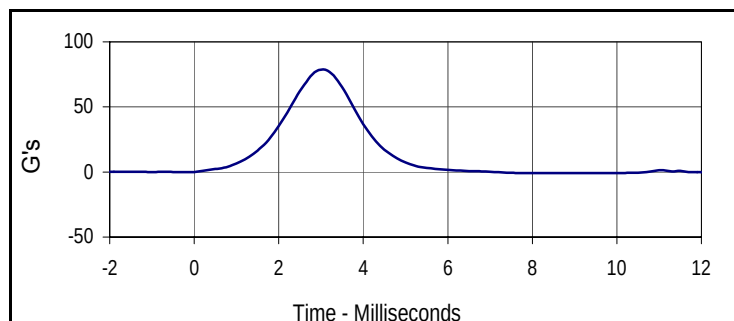
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
128.5	3.0	0.0	-1.1



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.2	5.0	-0.1	1.1



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
101.6	3.0	-2.1	7.4



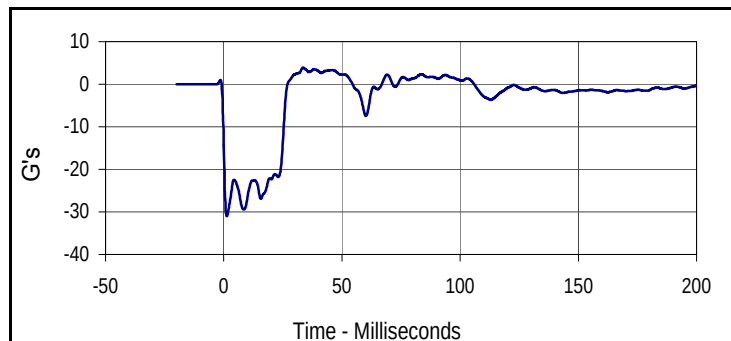
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
78.7	3.0	-0.9	7.7

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 299

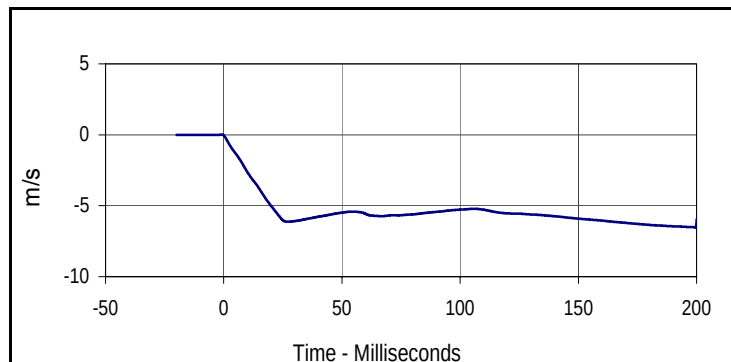
Test Date: 11/4/14
 Test I.D.: 299NB078



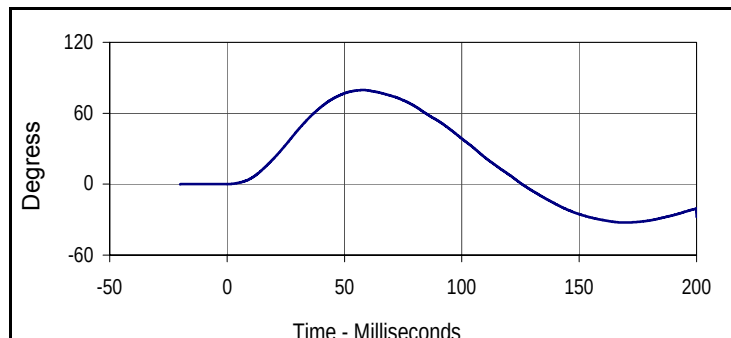
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	345	Pass
Temperature During Soak	Max	20.6 to 22.2	21.8	Pass
	Min		21.5	Pass
Humidity During Soak	Max	10.0 to 70.0	22.0	Pass
	Min		21.7	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.9	Pass
Pendulum Velocity	m/s	5.51 to 5.63	5.53	Pass
Pendulum Deceleration	10 msec	-2.20 to -2.80	-2.64	Pass
	15 msec	-3.30 to -4.10	-3.79	Pass
	20 msec	-4.40 to -5.40	-5.01	Pass
	25 msec	-5.40 to -6.10	-6.02	Pass
	25-100 msec	-5.50 to -6.20	-6.13	Pass
D-Plane Rotation	Max	71 to 81	79.6	Pass
	Time	50 to 70	58.0	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-42.6	Pass
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	107.1	Pass
Overall Test Results			Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
3.9	0.0	-31.0	0.0



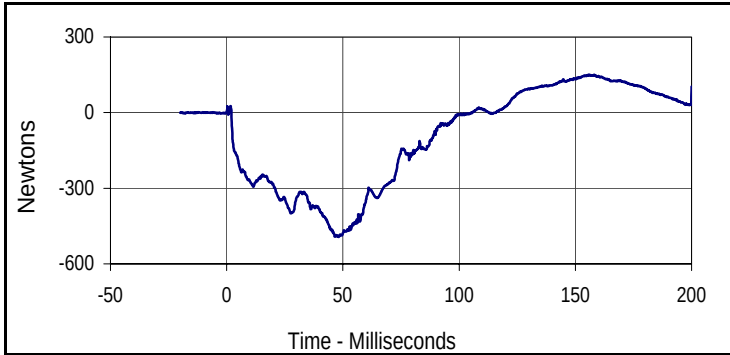
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.9	-6.5	199.9



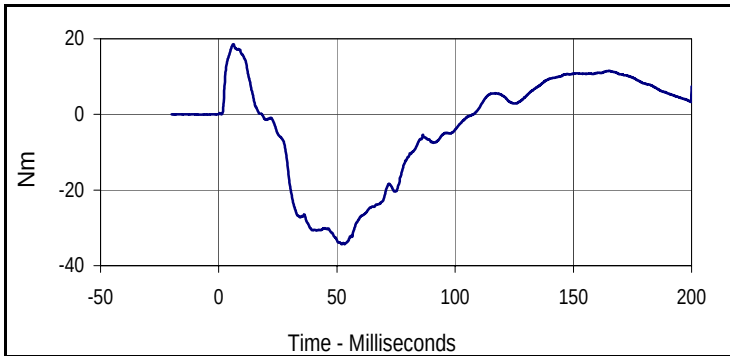
Curve Description			
D-Plane Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degress
Max	Time	Min	Time
79.6	58.0	-32.5	169.4

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 299

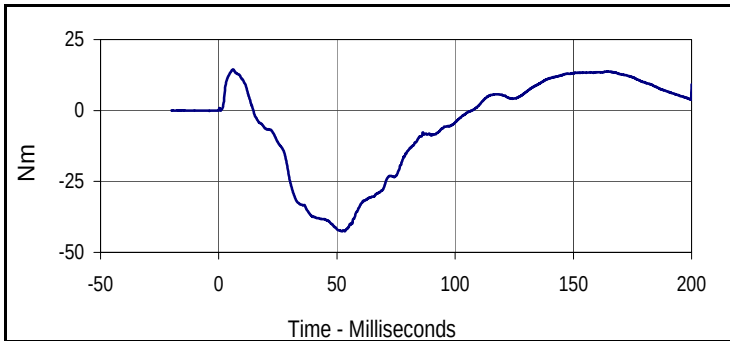
Test Date: 11/4/14
 Test I.D.: 299NB078



Curve Description			
Neck Force Y			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
149.9	158.0	-493.5	48.2



Curve Description			
Neck Moment X			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
18.6	6.2	-34.3	53.2



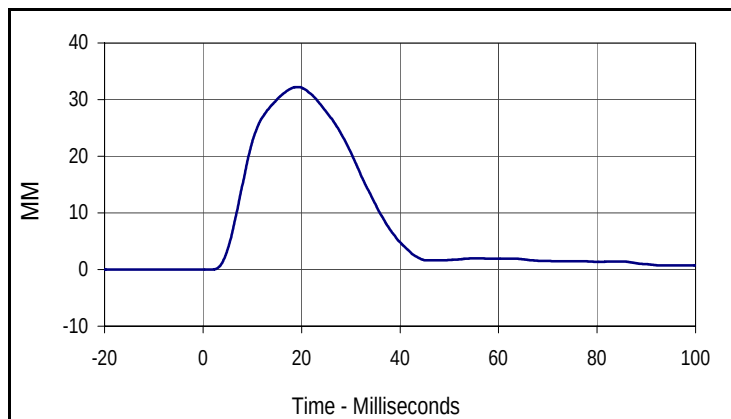
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
006	FIL	600	Nm
Max	Time	Min	Time
14.5	6.1	-42.6	53.3

Test Program: SID IIs Shoulder Impact Test
 ATD Serial No.: 299

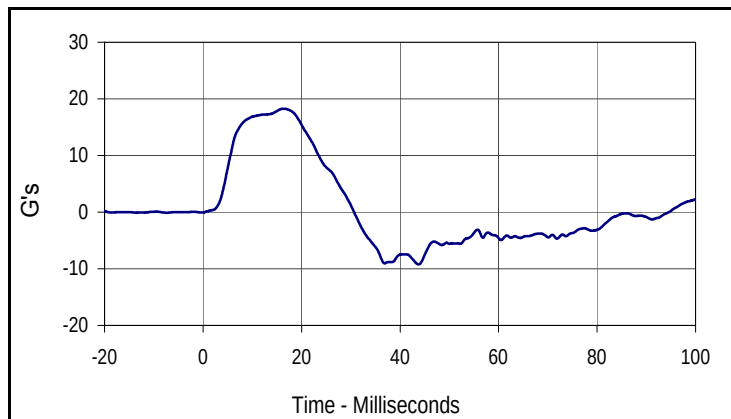
Test Date: 11/4/14
 Test I.D.: 299SH078



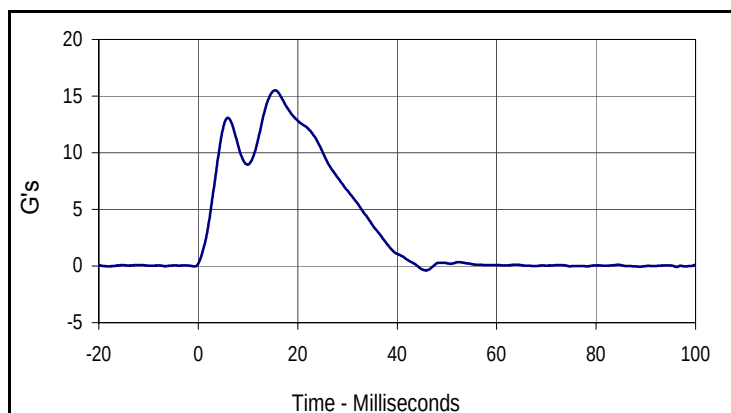
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	390	Pass
Temperature During Soak	Max °C	20.6 to 22.2	21.8	Pass
	Min °C		21.5	Pass
Humidity During Soak	Max %	10.0 to 70.0	22.0	Pass
	Min %		21.7	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.6	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.9	Pass
Impactor Velocity	m/s	4.20 to 4.40	4.33	Pass
Peak Shoulder Deflection	mm	28 to 37	32.2	Pass
Peak Lateral Spine Acceleration Y	G's	17 to 22	18.3	Pass
Peak Impactor Acceleration	G's	13 to 18	15.5	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
32.2	19.5	0.0	-2.3



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.3	16.4	-9.2	43.8



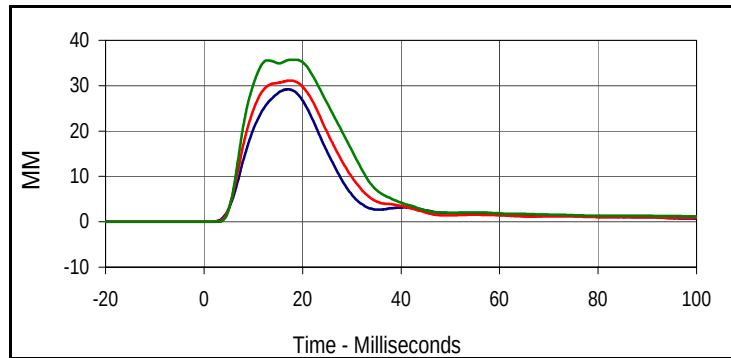
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.5	15.5	-0.4	45.7

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 299

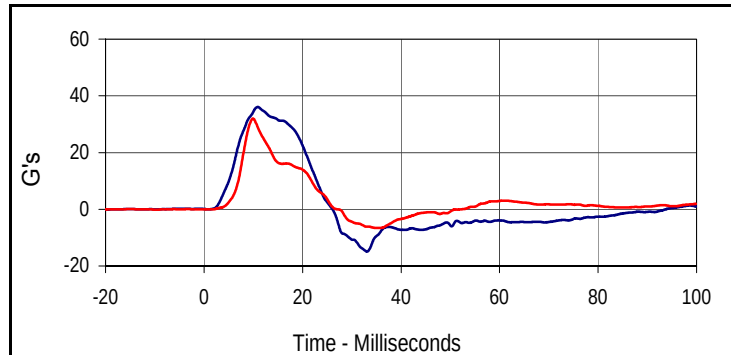
Test Date: 11/4/14
 Test I.D.: 299TWA078



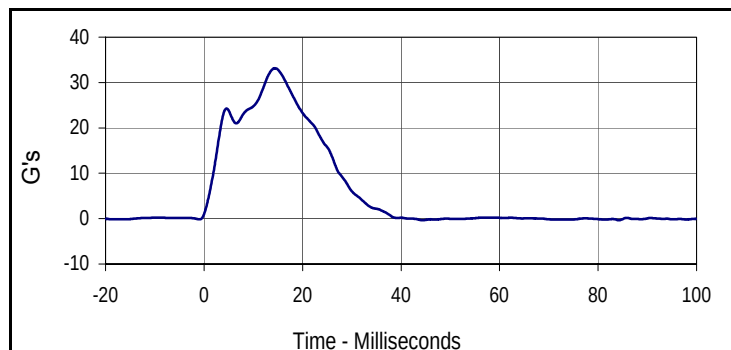
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	435	Pass
Temperature During Soak	Max	20.6 to 22.2	21.8	Pass
	Min		21.5	Pass
Humidity During Soak	Max	10.0 to 70.0	22.0	Pass
	Min		21.7	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.7	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.9	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.61	Pass
Peak Shoulder Deflection	mm	31 to 40	37.6	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	29.2	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.1	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	35.7	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	36.1	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	32.0	Pass
Peak Impactor Acceleration	G's	30 to 36	33.1	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
29.2	17.1	0.0	-2.1
Middle Thorax Deflection			
Max	Time	Min	Time
31.1	17.5	0.0	-18.6
Lower Thorax Deflection			
Max	Time	Min	Time
35.7	17.7	0.0	-16.5



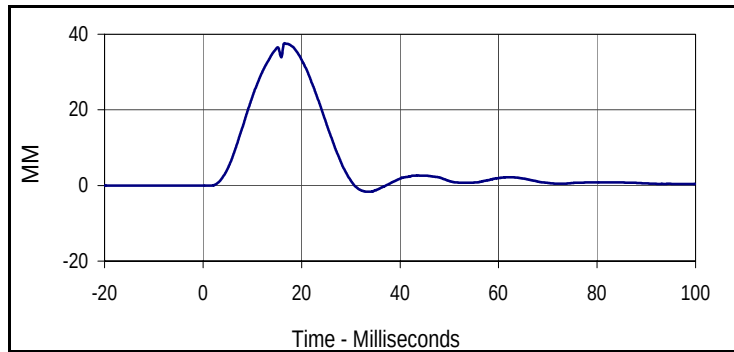
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
36.1	10.9	-14.9	33.1
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
32.0	9.9	-6.6	35.8



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
33.1	14.4	-0.4	84.2

Test Program: SID IIs Thorax with Arm Impact Test
ATD Serial No.: 299

Test Date: 11/4/14
Test I.D.: 299TWA078



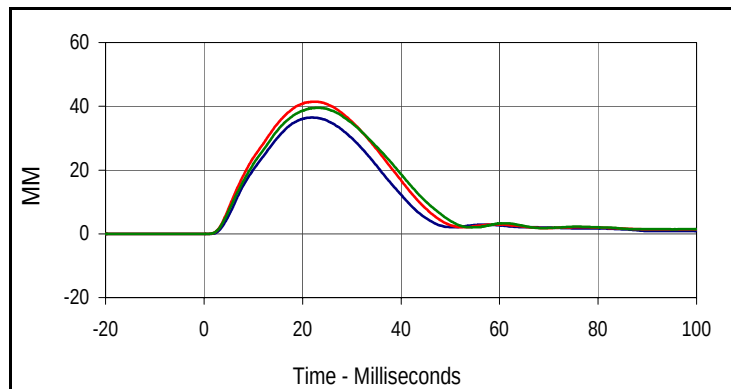
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
37.6	16.5	-1.7	33.4

Test Program: SID IIs Thorax without Arm Impact Test
 ATD Serial No.: 299

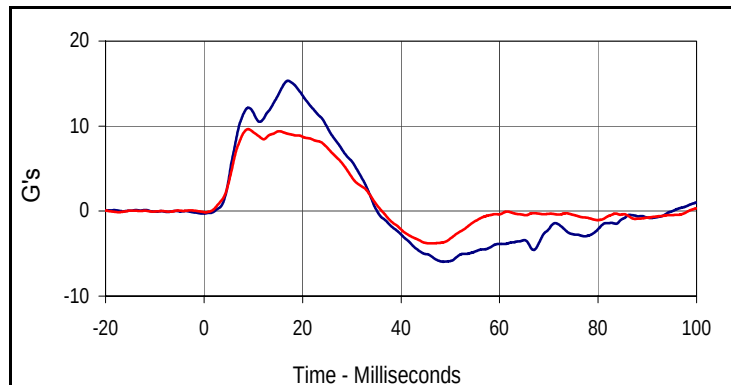
Test Date: 11/4/14
 Test I.D.: 299TWOA078



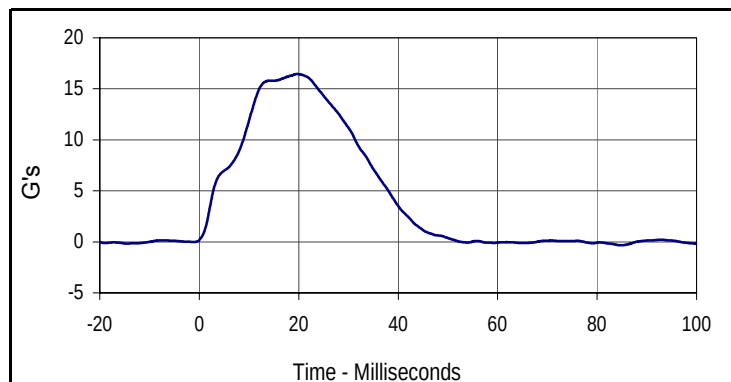
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	480	Pass
Temperature During Soak	Max	18.9 to 25.6	21.8	Pass
	Min		21.5	Pass
Humidity During Soak	Max	10.0 to 70.0	22.0	Pass
	Min		21.7	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.7	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	22.0	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.36	Pass
Peak Upper Thorax Rib Deflection	mm	32 to 40	36.5	Pass
Peak Middle Thorax Rib Deflection	mm	39 to 45	41.5	Pass
Peak Lower Thorax Rib Deflection	mm	35 to 43	39.5	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.3	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	9.6	Pass
Peak Impactor Acceleration	G's	14 to 18	16.4	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
36.5	21.8	0.0	-20.0
Middle Thorax Deflection			
Max	Time	Min	Time
41.5	22.5	0.0	-13.1
Lower Thorax Deflection			
Max	Time	Min	Time
39.5	23.3	0.0	-15.7



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.3	17.0	-6.0	48.6
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.6	9.0	-3.8	46.2



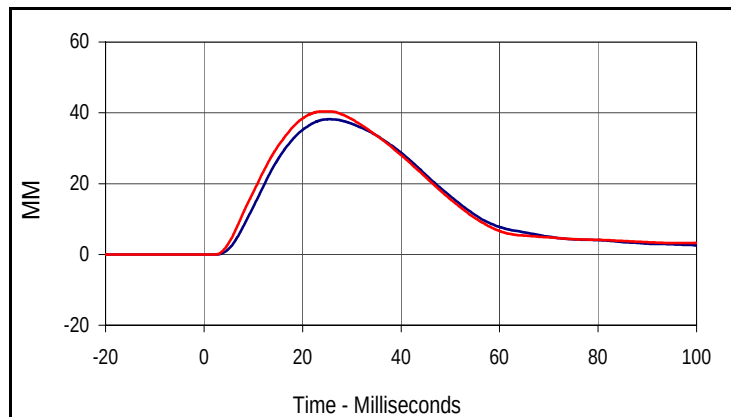
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.4	19.7	-0.3	84.7

Test Program: SID IIs Abdomen Impact Test
 ATD Serial No.: 299

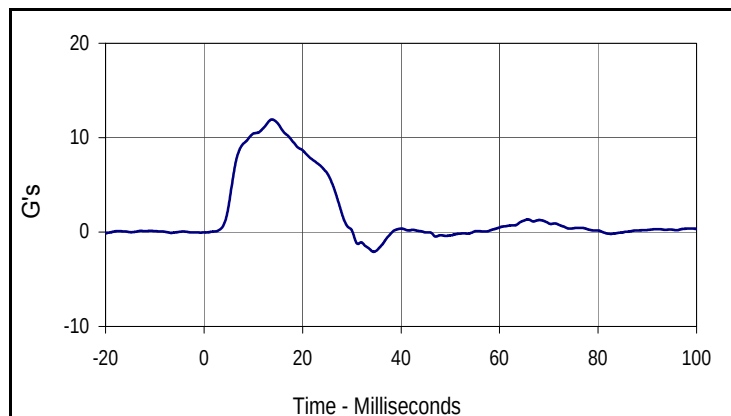
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 Test I.D.: 299ABD078



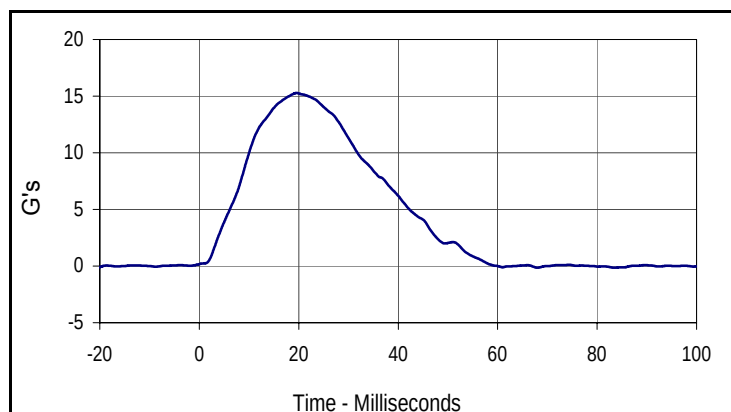
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	525	Pass
Temperature During Soak	Max °C	20.6 to 22.2	21.8	Pass
	Min °C		21.5	Pass
Humidity During Soak	Max %	10.0 to 70.0	22.0	Pass
	Min %		21.7	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.7	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	22.0	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.33	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	38.2	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	40.4	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	11.9	Pass
Peak Impactor Acceleration	G's	12 to 16	15.3	Pass
Overall Test Results			Pass	



Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
38.2	25.4	0.0	-8.8
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
40.4	24.8	0.0	-9.8

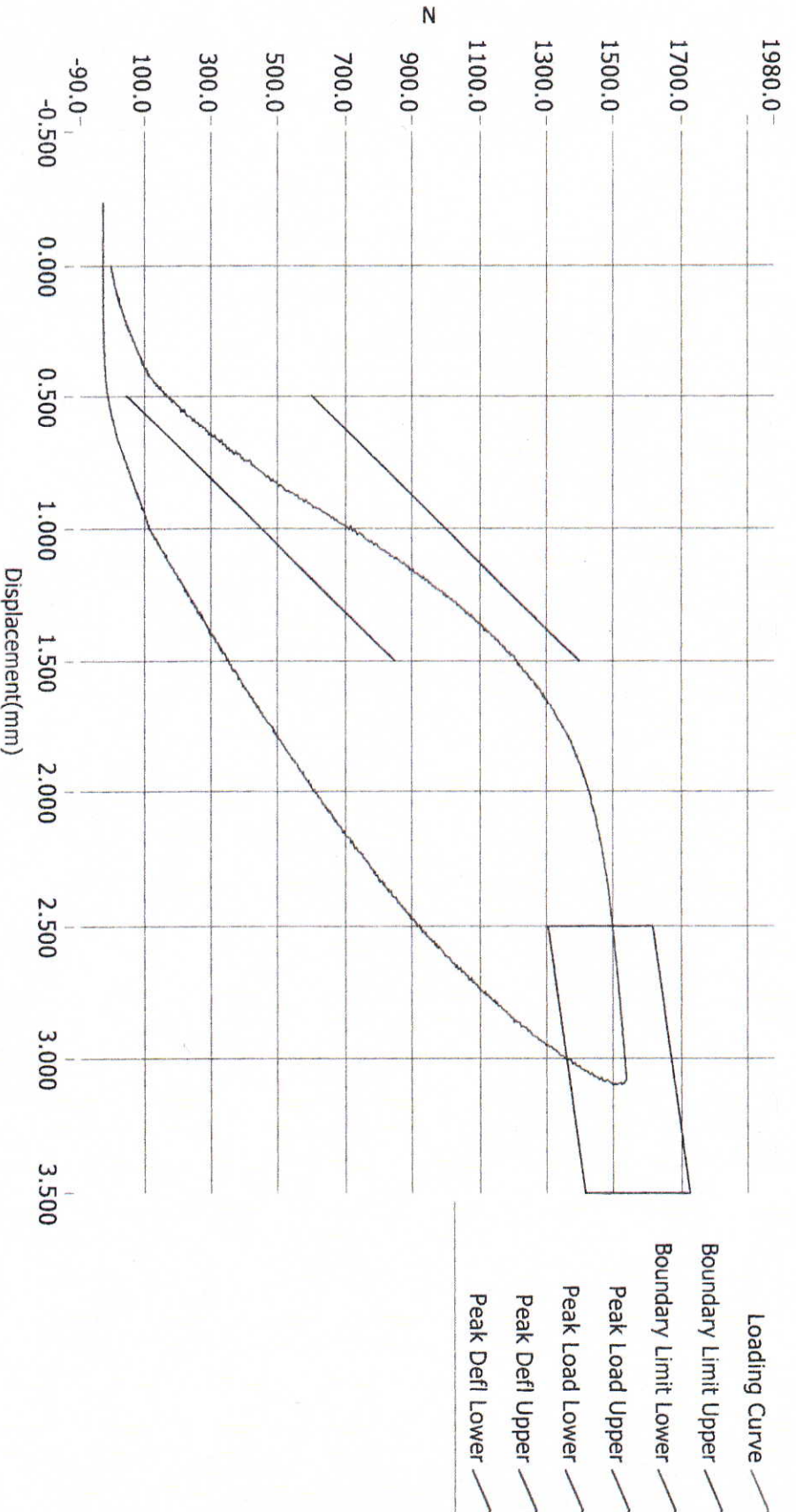


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.9	13.8	-2.1	34.5



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.3	19.5	-0.1	83.5

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID

Part Serial Number

Test Date

Test Time

48951

12/6/2011

8:37 PM

Cert ID

ATD Serial Number

ATD Type

N/A

SIDIIs

M20155302 POST TEST

Current Date : 12/6/2011

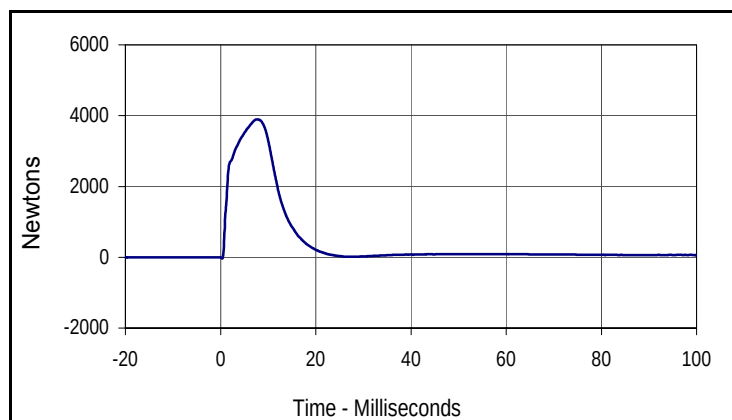
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Test Program: SID IIs Pelvis Acetabulum Impact Test
 ATD Serial No.: 299

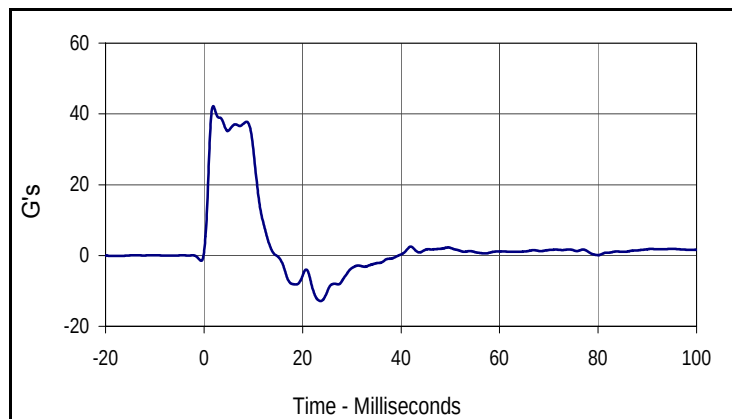
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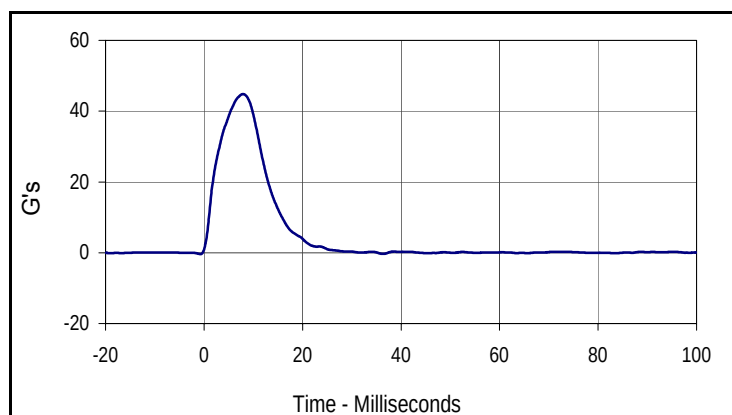
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	570	Pass
Temperature During Soak	Max	20.6 to 22.2	21.8	Pass
	Min		21.5	Pass
Humidity During Soak	Max	10.0 to 70.0	22.0	Pass
	Min		21.7	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.7	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.9	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.67	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	3894.1	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	37.8	Pass
Peak Impactor Acceleration	G's	38 to 47	44.8	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3894.1	7.7	-29.1	0.4



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
42.2	1.9	-12.9	23.7



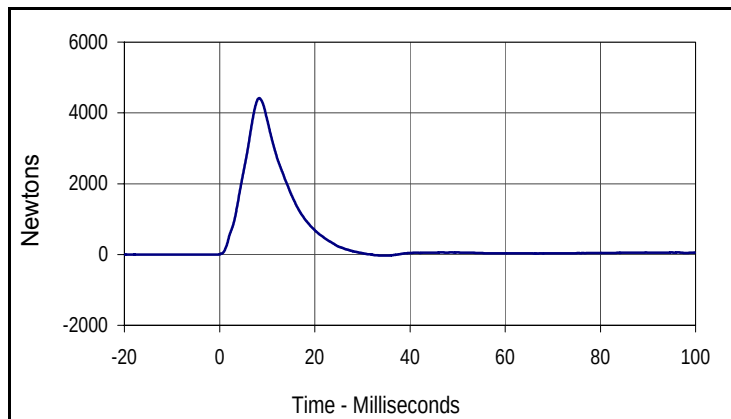
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
44.8	7.9	-0.4	-0.8

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 299

Test Date: 11/4/14
 Test I.D.: 299PL078



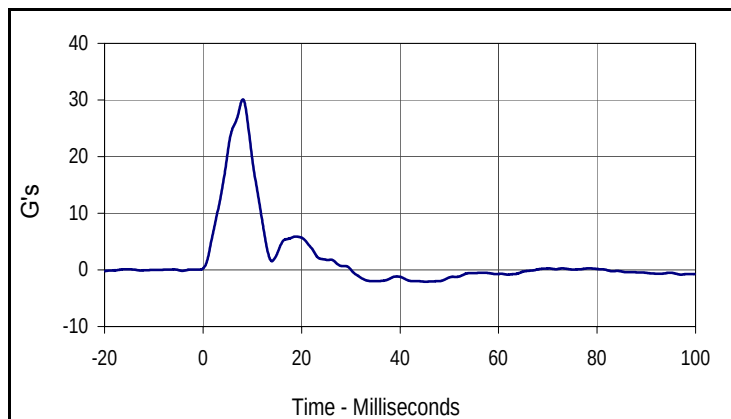
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	615	Pass
Temperature During Soak	Max	20.6 to 22.2	21.8	Pass
	Min		21.5	Pass
Humidity During Soak	Max	10.0 to 70.0	22.0	Pass
	Min		21.7	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.8	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	22.0	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.29	Pass
Peak Iliac Force	Newtons	4100 to 5100	4417.8	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	30.1	Pass
Peak Impactor Acceleration	G's	36 to 45	39.7	Pass
Overall Test Results			Pass	



Curve Description

Pelvis Iliac Force

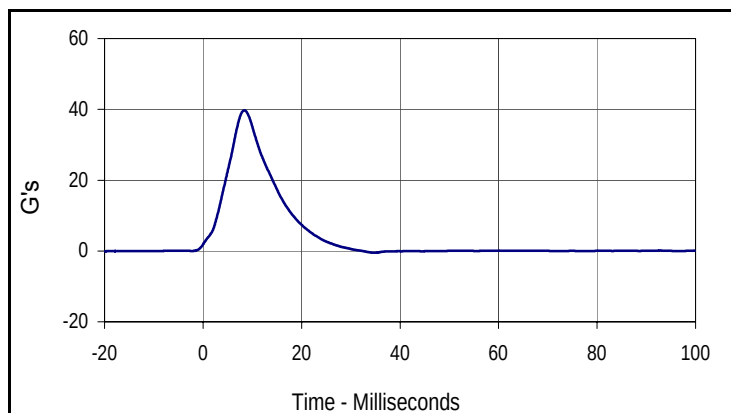
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4417.8	8.3	-33.3	35.0



Curve Description

Pelvis Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
30.1	8.1	-2.1	45.2



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
39.7	8.4	-0.5	34.8

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N 299		
				Serial Number	Manufacturer	Calibration
Head Accelerometers	Primary		X	P58736	Endevco	10/6/14
			Y	P51929	Endevco	10/6/14
			Z	P51934	Endevco	10/6/14
	Redundant		X	P68604	Endevco	10/6/14
			Y	P51931	Endevco	10/6/14
			Z	P51939	Endevco	10/6/14
Displacement Potentiometers	Thoracic Rib	Upper	Y	1143	FTSS	10/7/14
		Middle	Y	1160	FTSS	10/7/14
		Lower	Y	1213	FTSS	10/7/14
	Abdominal Rib	Upper	Y	1218	FTSS	10/7/14
		Lower	Y	1234	FTSS	10/7/14
Lower Spine Accelerometers (T12)			X	04I20-Z04	Endevco	10/7/14
			Y	06A07-R08	Endevco	10/7/14
			Z	P58795	Endevco	10/7/14
Acetabulum Load Cell			Y	272	Denton	5/1/14
Iliac Wing Load Cell			Y	284	Denton	5/1/14
Pelvis Plug (Struck Side)				72812	FTSS	2/8/14
Pelvis Plug (Non-Struck Side)				72596	FTSS	1/31/14

TABLE 2 – Vehicle Instrumentation

Vehicle Instrumentation		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	A136731	MSI	8/20/14
Vehicle Center of Gravity	Y	A136697	MSI	9/30/14
Vehicle Center of Gravity	Z	A136717	MSI	9/30/14
Left Floor Sill	Y	A136674	MSI	8/13/14
A-Pillar Sill	Y	A136718	MSI	8/16/14
A-Pillar Low	Y	A145530	MSI	8/13/14
A-Pillar Mid	Y	A145527	MSI	8/13/14
B-Pillar Sill	Y	12276	Endevco	8/8/14
B-Pillar Low	Y	A145489	MSI	8/13/14
B-Pillar Mid	Y	A145532	MSI	8/13/14
Driver Seat	Y	A140418	MSI	5/7/14
Engine Top	X	A145521	MSI	8/14/14
Engine Top	Y	A145477	MSI	8/13/14
Firewall	Y	A145533	MSI	8/14/14
Right Roof	Y	A145521	MSI	8/14/14
Right Floor Sill	Y	A145508	MSI	8/13/14
Rear Floorpan	X	A145529	MSI	8/14/14
Rear Floorpan	Y	A145460	MSI	8/13/14

TABLE 3 – Pole Instrumentation

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	131822A	Interface	5/20/14
Load Cell 2	132304A	Interface	5/20/14
Load Cell 3	19477	Interface	5/20/14
Load Cell 4	19325	Interface	5/20/14
Load Cell 5	131827A	Interface	5/20/14
Load Cell 6	132302A	Interface	5/21/14
Load Cell 7	19267	Interface	5/21/14
Load Cell 8	19321	Interface	5/21/14