

**REPORT NUMBER: SINCAP-KAR-15-008**

**NEW CAR ASSESSMENT PROGRAM (NCAP)  
MOVING DEFORMABLE BARRIER SIDE IMPACT TEST**

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

**NHTSA No: M20155303**

**PREPARED BY:  
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9270 HOLLY ROAD  
ADELANTO, CA 92301**



**NOVEMBER 10, 2014**

**FINAL REPORT**

**PREPARED FOR:  
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\_\_\_\_\_  
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NHTSA, Office of Crashworthiness Standards

Date: \_\_\_\_\_

\_\_\_\_\_  
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NHTSA, Office of Crashworthiness Standards

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## TECHNICAL REPORT DOCUMENTATION PAGE

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### 16. Abstract

A 55/28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2015 Toyota Tacoma Prerunner Double Cab 4-door truck in accordance with the specifications of the Office of Crash Worthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on October 27, 2014.

The impact velocity of the Moving Deformable Barrier was 62.43 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 28.9° C. The target vehicle's maximum post-test static crush was 315 mm located at level 2. The test vehicle's occupant performance data is as follows:

Measurement Description	Driver ATD (ES-2re)		
	Units	IARV	Result
Head Injury Criteria (HC <sub>36</sub> )		1000	65.1
Maximum Thoracic Rib Deflection	mm	44	28
Total Abdominal Force	N	2500	628
Pubic Symphysis Force	N	6000	2508

Measurement Description	Passenger ATD (SID-IIs)		
	Units	IARV	Result
Head Injury Criteria (HC <sub>36</sub> )		1000	117.2
Resultant Lower Spine Acceleration	g	82	45
Total Pelvic Force (Sum of Acetabular and Iliac Forces)	N	5525	2711
Maximum Thoracic Rib Deflection	mm	38*	14
Maximum Abdominal Rib Deflection	mm	45*	17

The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches. The opposite side doors did not open during the side impact event.

\* Proposed IARV

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**SECTION 1**  
**TEST PURPOSE AND PROCEDURE**

This moving deformable barrier side impact test is part of the MY2015 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 2015 Toyota Tacoma Prerunner Double Cab 4-door truck 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 62.43 km/h (38.79 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by KARCO Engineering, LLC. in Adelanto, California, on October 27, 2014. Pre- and post-test photographs of the test vehicle, the MDB and the dummies (ES-2re and SID-IIs) are included in Appendix A of this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated September 2013. The side impact event was documented by 11 cameras. Camera locations are included in Data Sheet No. 5 of this report.

The dummy was instrumented in the following manner:

#### DRIVER ATD (ES-2re)

Primary and redundant head CG tri-axial accelerometers

Chest upper rib, middle rib and lower rib y-axis displacement potentiometers

Abdomen forward, middle, and rear y-axis load cells

Lower spine (12) tri-axial accelerometers

Pubic symphysis y-axis load cell

#### PASSENGER ATD (SID-IIs)

Primary and redundant head CG tri-axial accelerometers

Chest upper rib, middle rib and lower rib y-axis displacement potentiometers

Abdomen upper rib and lower rib y-axis displacement potentiometers

Lower spine (12) tri-axial accelerometers

Acetabulum and iliac wing y-axis load cells

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 of this report contains the test equipment and instrumentation calibration data.

Dummy injury readings were recorded as follows:

Measurement Description	Units	Driver ATD (ES-2re)	
		Threshold	Result
Head Injury Criteria (HIC <sub>36</sub> )		1000	65.1
Maximum Thoracic Rib Deflection	mm	44	28
Combined Abdominal Force	N	2500	628
Pubic Symphysis Force	N	6000	2508

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC <sub>36</sub> )		1000	117.2
Lower Spine (T12) Resultant Acceleration	g	82	45
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2711
Maximum Thoracic Rib Deflection	mm	38*	14
Maximum Abdominal Rib Deflection	mm	45*	17

\*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	Yes	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	

### GENERAL COMMENTS

The two 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 were no ATD values that exceeded limits.

### SECTION 3

#### OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303

Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

#### 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 <sup>2</sup>	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. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

**TEST VEHICLE INFORMATION AND OPTIONS**

NHTSA Number	M20155303
Model Year	2015
Make	Toyota
Model	Tacoma Prerunner Double Cab
Body Style	4-Door Truck
VIN	5TFJX4GN8FX038486
Body Color	Silver Sky Metallic
Odometer Reading (km / mi)	259 / 161
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	No

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

**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

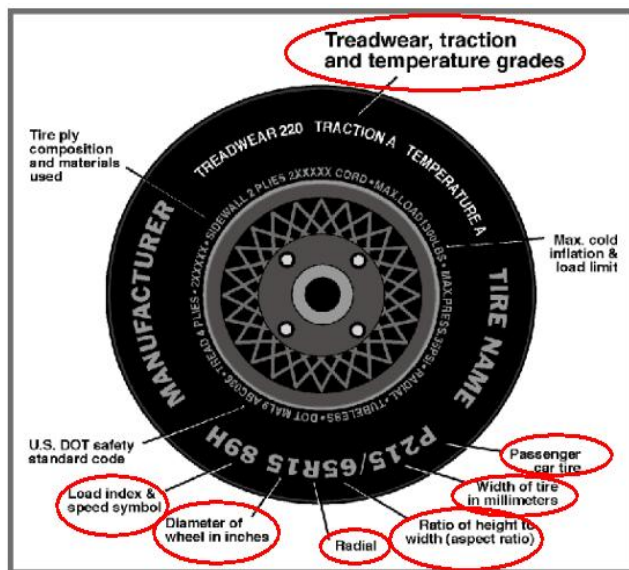
**VEHICLE SEAT TYPE**

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			Fixed		
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. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14



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 3214	M670 C8ER 3214
DOT Safety Code Right	M670 C8ER 3214	M670 C8ER 3214

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

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

**TIRE PRESSURES**

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

**MDB TIRE SPECIFICATIONS**

	Units	Requirement	LF	RF	LR	RR
Tire Size		P205/75R15	P205/75R15	P205/75R15	P205/75R15	P205/75R15
Tire Pressure	kPa	200 ± 21	200	200	200	200

**TEST VEHICLE AXLE WEIGHTS**

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	481.5	413.5		526.0	530.0		524.5	524.5	
Right	kg	473.5	387.0		470.0	485.5		483.5	483.5	
Ratio	%	54.4%	45.6%	100.0%	49.5%	50.5%	100.0%	50.0%	50.0%	100.0%
Total	kg	955.0	800.5	1755.5	996.0	1015.5	2011.5	1008.0	1008.0	2016.0

**TARGET TEST WEIGHT CALCULATION**

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1755.5	A
Actual Weight of 2 P572 ATDs Used	kg	125.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	136.0	C
Calculated Vehicle Target Wt (TVT <sub>W</sub> )	kg	2016.5	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	Fully Loaded	As Tested	Meets Requirement***
LF	mm	879	879	Yes
RF	mm	886	886	Yes
LR	mm	894	891	Yes
RR	mm	902	893	Yes
Vehicle CG (Aft of Front Axle)	mm	1624	1640	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	33	40	

\*\*\*The "As Tested" vehicle attitude measurements must be equal to or within ±10 mm of the "Fully Loaded" vehicle attitude measurements at each wheel well. 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. M20155303  
Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

**WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW**

Component Description	Weight (kg)
Non-Struck Side Door Panels	7.0
Spare Tire Tools	4.0
Ballast / Equipment Added	141.0

Test Height Adjustable Setting (If Applicable)	
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**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. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

**SEAT POSITIONING**

The driver's seat, front center seat (if applicable), and right front passenger's seat should be set to the mid-track, lowest, mid-angle position. The struck side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rearmost, 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	673	Max	663	673	683
			Mid	663	673	683
			Min	663	673	683
Front Passenger Seat	Fixed	770	Max	760	770	780
			Mid	760	770	780
			Min	760	770	780
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. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

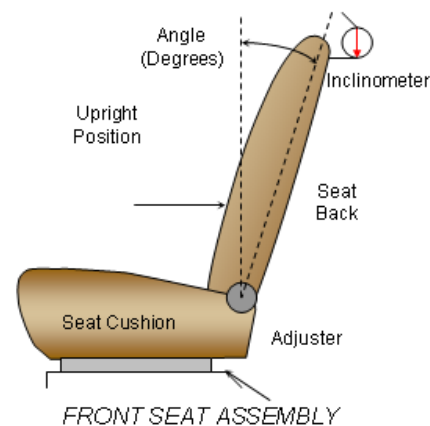
**SEAT FORE/AFT POSITION**

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	240	17	120	8
Front Passenger Seat	240	17	120	8
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 to the manufacturer's designated design angle. The right front passenger's seat back is positioned in a similar manner as the driver's seat back. The struck side rear seat back is positioned such that the dummy's head is level. The rear center and non-struck side rear outboard seat backs are positioned in a similar manner as the struck side rear seat back. Seat back angle is measured at the headrest post.



**SEAT BACK POSITION**

Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/Seated Dummy	50.4	26	1.1	4
Front Passenger Seat	51.7	26	2.0	4
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. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

#### 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
Rear Seat	Fixed	Fixed

#### HEAD RESTRAINT ADJUSTMENT

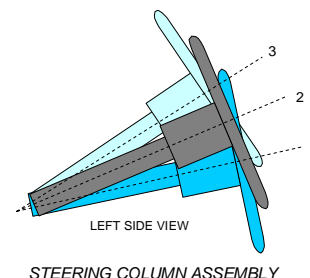
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total No. of Positions	Placed in Position
Driver Seat	4	Full Up
Rear Seat	Fixed	Fixed

#### 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	24.4	79
Geometric Center - Position 2	26.3	90
Uppermost - Position 3	28.2	101
Telescoping Steering Wheel Travel		22
Test Position	26.3	90



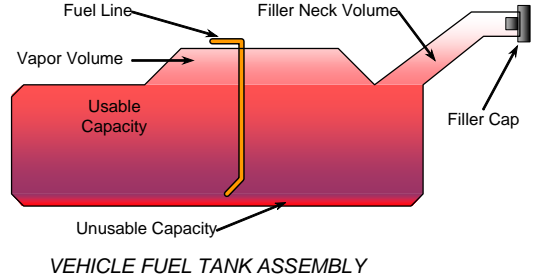
**DATA SHEET NO. 2 ... (CONTINUED)**

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

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

**FUEL PUMP**

The vehicle is equipped with an electric fuel pump.  
 The fuel pump operates for a few seconds after the ignition is switched to the "ON" position. The fuel pump will continue to operate only while the engine is running.



**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	74.26
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% ± 1% of the Usable Capacity stated in the Form No. 1?  Yes  No

### DATA SHEET NO. 3

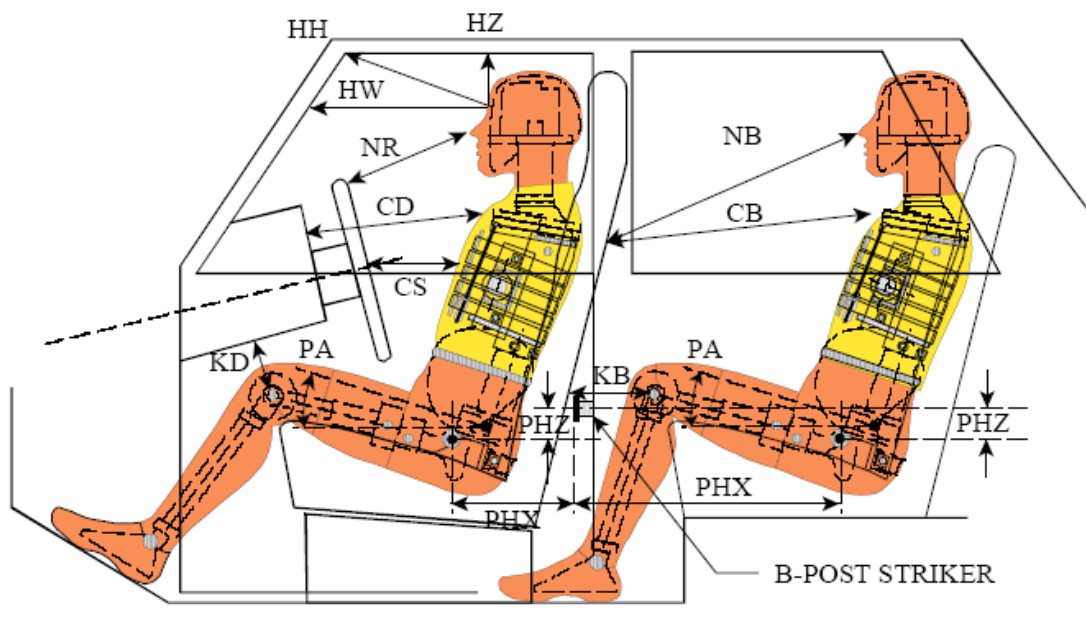
### DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

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

NHTSA No. M20155303

Test Program: NCAP MDB Side Impact Test

Test Date: 10/27/14



**LEFT SIDE VIEW**

NOTE: 2-DOOR VEHICLE SHOWN.  
REAR DUMMY PHX & PHZ  
MEASUREMENTS FOR A 4-DOOR  
VEHICLE WOULD USE THE C-POST  
STRIKER AS A REFERENCE POINT

### DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	411			
HW		Head to Windshield	604			
HZ	HZ	Head to Roof	185		271	
NR	NB	Nose to Rim/Seat Back	469		515	
CD	CB	Chest to Dash/Seat Back	583		495	
CS		Chest to Steering Wheel	316			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	164	27.6	235	15.5
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	154	19.2	246	18.2
PAX°	PAX°	Pelvic Tilt Angle X		15.3		22.0
	PAY°	Pelvic Tilt Angle Y		0.0		0.0
PHX	PHX	Hip Point to Striker (x-axis)	198		261	
PHZ	PHZ	Hip Point to Striker (z-axis)	144		200	

## DATA SHEET NO. 4

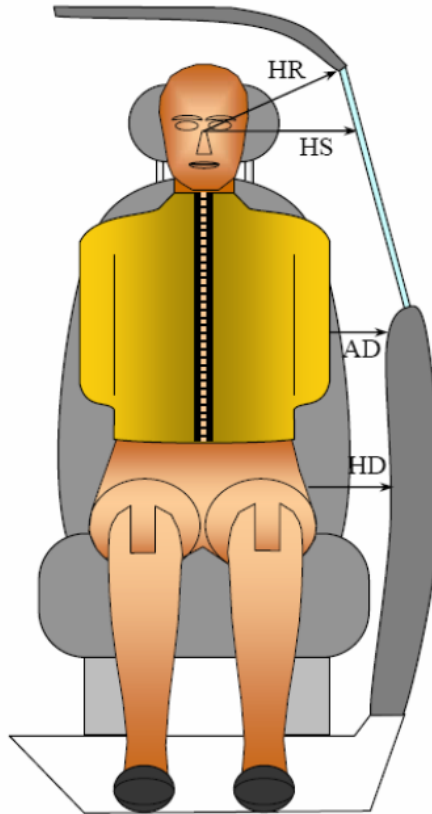
### DUMMY LATERAL CLEARANCE DIMENSIONS

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

NHTSA No. M20155303

Test Program: NCAP MDB Side Impact Test

Test Date: 10/27/14



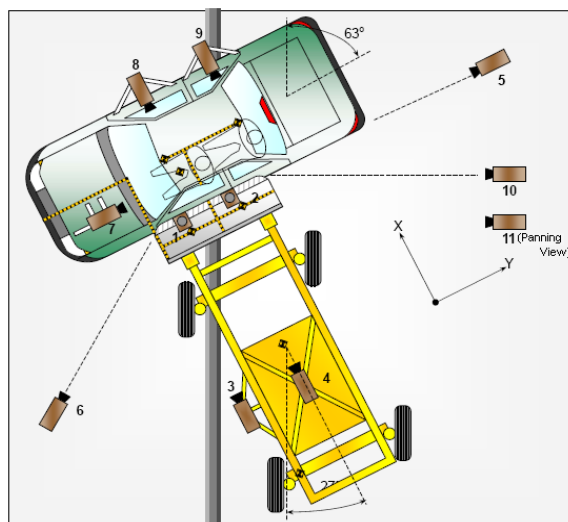
### DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	214	260
HS	Head to Side Window	mm	339	353
AD	Arm to Door	mm	120	156
HD	H-Point to Door	mm	126	158

## DATA SHEET NO. 5

### CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck      NHTSA No. M20155303  
 Test Program: NCAP MDB Side Impact Test      Test Date: 10/27/14



#### CAMERA LOCATIONS AND DATA

No.	View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	1220	2287	-5486	14	1000
2	Overhead Close-Up	609	2287	-5102	35	1000
3	Left Impact Point (MDB)	-2134	0	-1143	25	1000
4	Side Overall (MDB)	-3912	838	-1829	12.5	1000
5	Rear	-64	2485	-1348	85	1000
6	Left Front	-2266	-3564	-1475	24	1000
7	Driver Front (On-Board)	670	-863	-769	24	1000
8	Driver Side (On-Board)	1830	671	-421	12	1000
9	Passenger Side (On-Board)	1818	1487	-411	12	1000
10	Real Time Overall				Zoom	30
11	Real Time Inrun				Zoom	30

Reference: Impact Point Projected to Ground; +X = To Front of MDB, +Y = To Right of MDB, +Z = Down

\*All measurements accurate to  $\pm 6$  mm

#### INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	16
Vehicle Structure Accelerometers	23
MDB Accelerometers	5
<b>Total</b>	<b>60</b>

**DATA SHEET NO. 6**

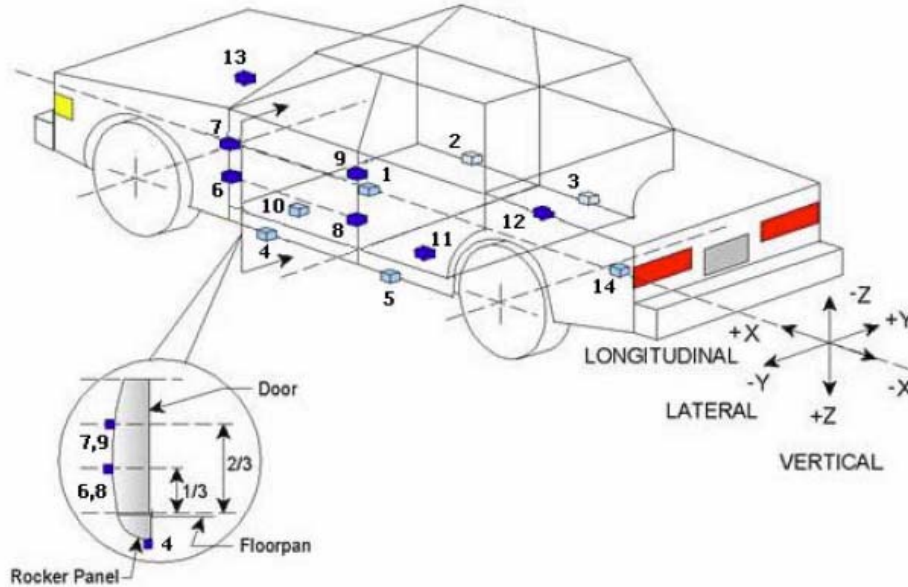
**TEST VEHICLE ACCELEROMETER LOCATIONS**

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

NHTSA No. M20155303

Test Program: NCAP MDB Side Impact Test

Test Date: 10/27/14



**VEHICLE ACCELEROMETER PRE-TEST LOCATIONS**

Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2608	0	-640
2	Right Sill at Front Seat	3363	713	-542
3	Right Sill at Rear Seat	2352	716	-534
4	Left Sill at Front Door	3140	-769	-442
5	Left Sill at Rear Door	2346	-767	-445
6	A-Pillar Lower	3830	-778	-757
7	A-Pillar Middle	3830	-778	-1009
8	B-Pillar Lower	2761	-732	-850
9	B-Pillar Middle	2761	-732	-1020
10	Front Seat Track	3085	-206	-596
11	Rear Seat Structure	2496	-494	-676
12	Right Rear Occupant Compartment	2645	312	-571
13	Engine Block	4637	51	-964
14	Rear Floorpan Above Axle	1243	0	-799

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

**DATA SHEET NO. 7**

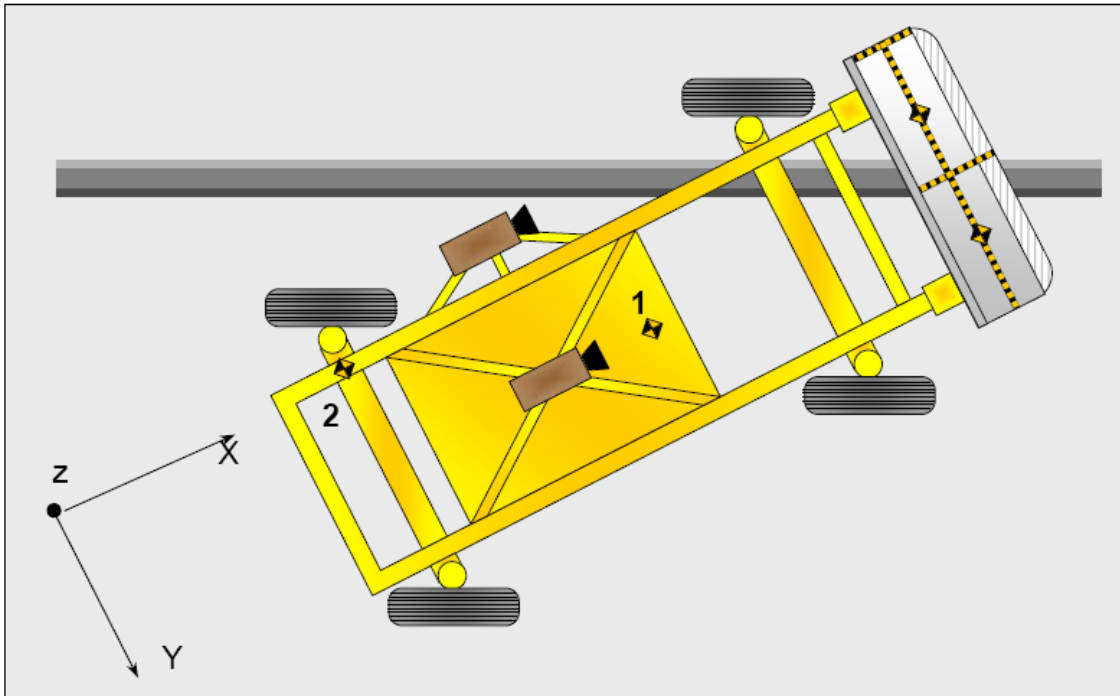
**MDB ACCELEROMETER LOCATIONS**

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

NHTSA No. M20155303

Test Program: NCAP MDB Side Impact Test

Test Date: 10/27/14



**MDB ACCELEROMETER LOCATIONS**

Loc. No.	Accelerometer Location	Measurement		
		X	Y	Z
1	MDB CG	-1195	0	-430
2	MDB Rear	-2642	-593	-608

Reference:  
 X – Face of MDB (+ forward)  
 Y – MDB centerline (+ to right)  
 Z – Ground plane (+ down)

**DATA SHEET NO. 8**  
**POST-TEST OBSERVATIONS**

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

**TEST DUMMY INFORMATION AND CONTACT POINTS**

Dummy Body Part	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	None	None
Top of Head	Curtain Airbag	Curtain Airbag, Side Header
Left Side of Head	Curtain Airbag, Side Header	Curtain Airbag, Side Header
Back of Head	Curtain Airbag, Side Header, Headrest	Curtain Airbag, Side Header, Headrest, Center Seat Headrest
Left Shoulder	Torso Airbag, Curtain Airbag	Door Panel
Upper Torso	Seat, Torso Airbag	None
Lower Torso	Seat, Torso Airbag	Seat, Door Panel
Left Hip	Seat, Door Panel	Seat, Door Panel
Left Knee	Door Panel, Right Knee	Door Panel, Right Knee

**POST-TEST DOOR PERFORMANCE**

Description	Struck Side		Non-Struck Side		Rear Hatch/Other
	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

**DATA SHEET NO. 8 ... (CONTINUED)**

**POST-TEST OBSERVATIONS**

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303  
Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

**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
Sill Separation	No separation
Windshield Damage	None
Side Window Damage	Left Rear 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. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	Yes	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
Vehicle Wheel Base	mm		3248
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		507
Actual Impact Point (Aft of Front Axle)	mm		499
Horizontal Offset (+ forward / - rearward)	mm	± 50 of Intended Impact Point	8
Vertical Offset (+ down / - up)	mm	± 20 of Intended Impact Point	9

**DATA SHEET NO. 9**  
**MDB SUMMARY OF RESULTS**

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

**MDB SPECIFICATIONS**

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1251
Overall Length including Honeycomb Face	4023
Wheel Base of Framework Carriage	2595
CG location aft of Front Axle	1118

**MDB WEIGHTS**

	Units	Front Axle	Rear Axle	Total
Left	kg	401.8	298.0	699.8
Right	kg	376.9	291.6	668.5
Ratio	%	56.9%	43.1%	100.0%
Totals	kg	778.7	589.6	1368.3

**SPEED AND IMPACT DATA**

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.43
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.45
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.1
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	62.6
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.5

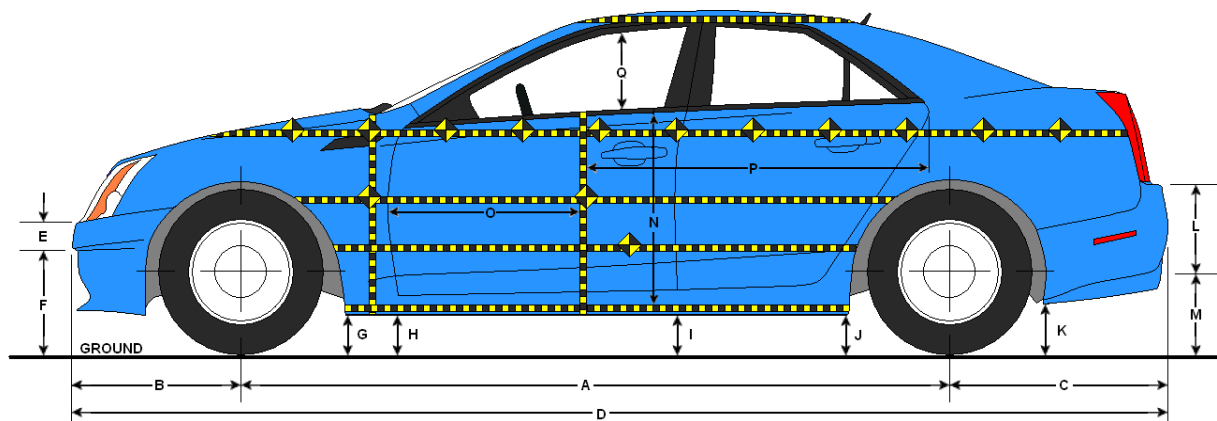
**MAXIMUM STATIC CRUSH OF HONEYCOMB FACE**

Vertical Location			From Centerline		Max. Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	800	Right	120
B	Top of Bumper	533	800	Right	133
C	Mid Level	686	800	Right	192
D	Top of Stack	813	800	Right	198

## DATA SHEET NO. 10

### TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14



**LEFT SIDE VIEW**

#### VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

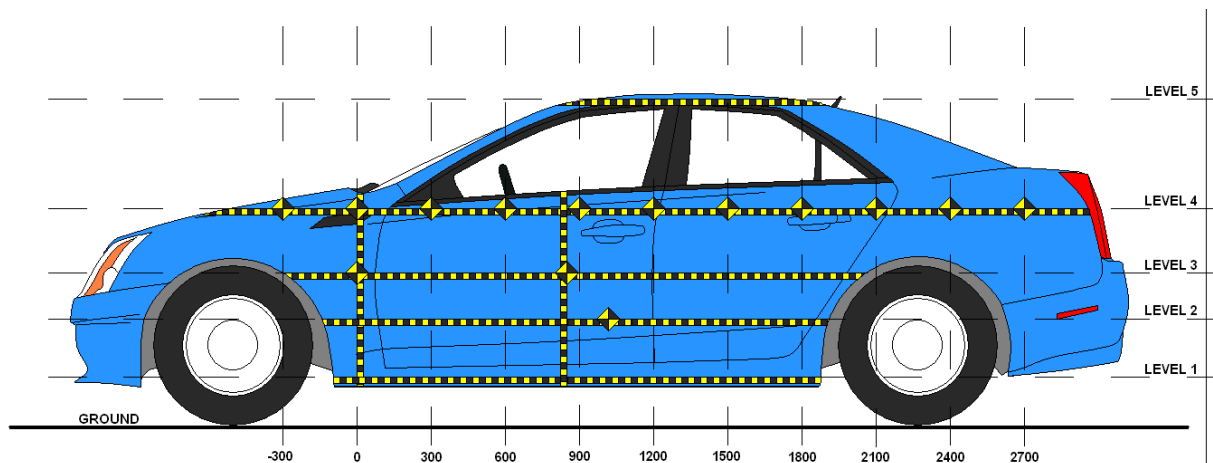
Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3248	3244	-4
B	Front Axle to FSOV	845	878	33
C	Rear Axle to RSOV	1190	1140	-50
D	Total Length at Centerline	5284	5262	-22
E	Front Bumper Thickness	137	137	0
F	Front Bumper Bottom to Ground	710	702	-8
G	Sill Height at Front Wheel Well	457	432	-25
H	Sill Height at Front Door Leading Edge	465	494	29
I	Sill Height at B-Pillar	482	488	6
J1	Sill Height at Rear Wheel Well	463	467	4
J2	Pinch Weld Height at Rear Wheel Well	439	429	-10
K	Sill Height Aft of Rear Wheel Well	503	529	26
L	Rear Bumper Thickness	140	139	-1
M	Rear Bumper Bottom to Ground	502	452	-50
N	Sill Height to Bottom of Front Window Sill	691	660	-31
O	Front Door Leading Edge to Impact CL	756	751	-5
P	Rear Door Trailing Edge to Impact CL	1230	1180	-50
Q	Front Window Opening	447	482	35
R	Right Side Length	4438	4415	-23
S	Left Side Length	4432	4410	-22
T	Vehicle Width at B-Pillar	1809	1675	-134

All measurements in mm with tolerance of  $\pm 3$ mm

## DATA SHEET NO. 11

### TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck      NHTSA No. M20155303  
 Test Program: NCAP MDB Side Impact Test      Test Date: 10/27/14



**LEFT SIDE VIEW**

### MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	515	308	1200
2	Occupant H-Point	826	315	1500
3	Mid-Door	864	308	1500
4	Window Sill	1176	214	1650
5	Window Top	1696	97	1950

**DATA SHEET NO. 11 ... (CONTINUED)**

**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303

Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14

**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															
-750															
-600															
-450															
-300				682					719					37	
-150		556	558	673			641	641	717			85	83	44	
0	600	585	591	665		686	671	674	720		86	86	83	55	
150	642	612	610	659		863	774	756	688		221	162	146	29	
300	646	606	609	653		890	808	800	697		244	202	191	44	
450	648	604	607	649		903	841	827	711		255	237	220	62	
600	646	608	606	645	853	913	851	832	728	919	267	243	226	83	66
750	642	607	605	643	848	924	856	836	746	916	282	249	231	103	68
900	647	607	605	640	849	934	861	843	765	920	287	254	238	125	71
1050	646	606	605	639	848	942	876	852	786	924	296	270	247	147	76
1200	642	606	604	637	848	950	899	887	815	926	308	293	283	178	78
1350	645	607	605	636	848	935	921	909	824	928	290	314	304	188	80
1500	645	608	606	636	847	907	923	914	841	931	262	315	308	205	84
1650	646	609	607	636	847	861	885	879	850	935	215	276	272	214	88
1800	650	610	609	637	845	827	838	832	787	938	177	228	223	150	93
1950	650	612	611	639	845	770	774	769	746	942	120	162	158	107	97
2100	666	616	614	642		823	753	749	759		157	137	135	117	
2250	615	595	599	655		570	553	557	618		-45	-42	-42	-37	
2400		560	562	656			523	525	624			-37	-37	-32	
2550				657					633					-24	
2700				659					641					-18	
2850				661					650					-11	

DATA SHEET NO. 11 ... (CONTINUED)

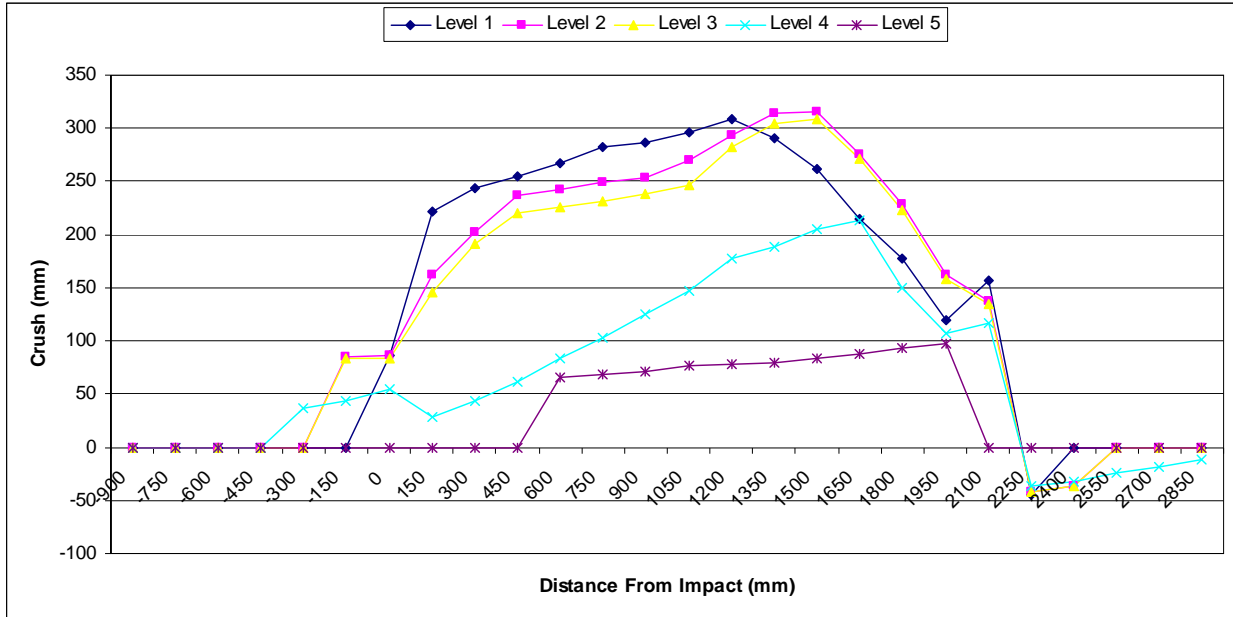
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

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

NHTSA No. M20155303

Test Program: NCAP MDB Side Impact Test

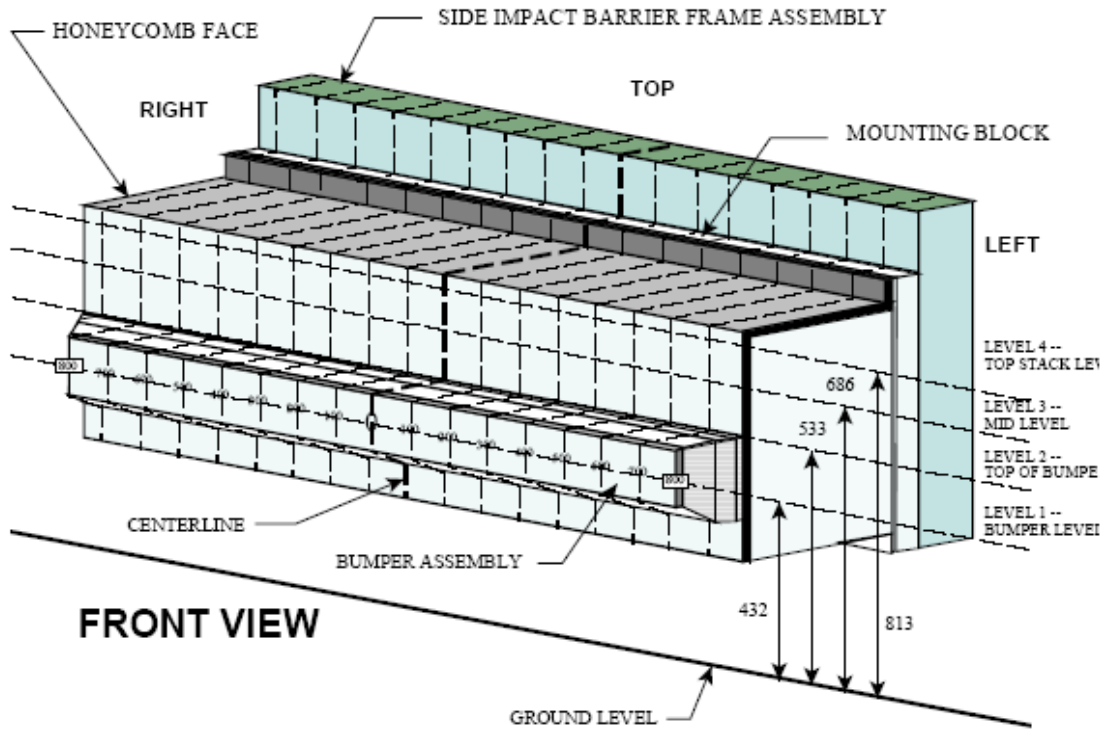
Test Date: 10/27/14



**DATA SHEET NO. 12**

**MDB EXTERIOR STATIC CRUSH MEASUREMENTS**

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14



NOTE: Dimensions are shown in millimeters, mm

**DEFORMABLE BARRIER STATIC CRUSH**

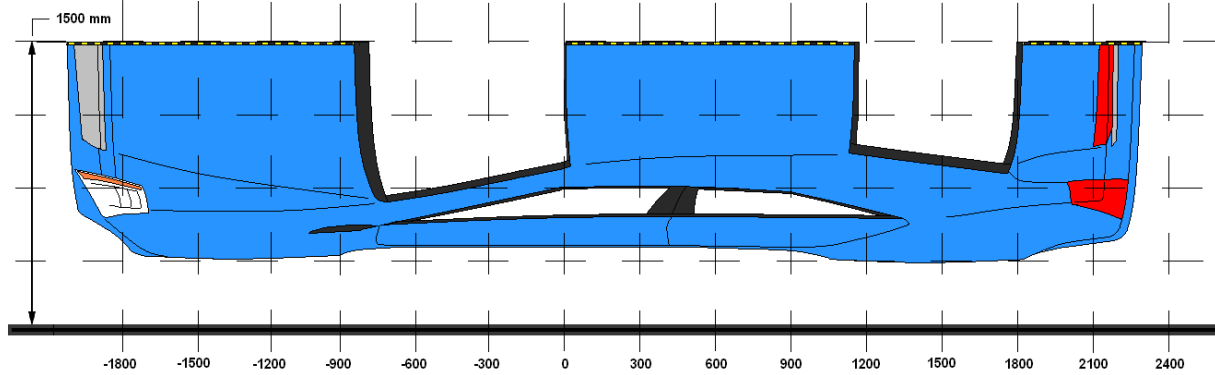
Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		0	100	200	300	400	500	600	700
1	120	91	73	59	53	55	59	59	63	69	69	71	76	80	82	89	106
2	133	90	70	51	48	46	43	47	51	57	62	69	74	79	84	91	95
3	192	141	96	64	45	44	66	83	67	63	60	60	65	71	77	89	111
4	198	149	109	81	68	65	104	98	92	90	89	90	94	106	112	133	149

All dimensions in millimeters.

**DATA SHEET NO. 13**

**VEHICLE AND MDB DAMAGE PROFILE DISTANCES**

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14



**VEHICLE DAMAGE PROFILE DISTANCES**

DPD	Distance From Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	2850	4	661	650	-11
2	2100	1	666	823	157
3	1500	2	608	923	315
4	900	1	647	934	287
5	300	1	646	890	244
6	-300	4	682	719	37

**MDB DAMAGE PROFILE DISTANCES**

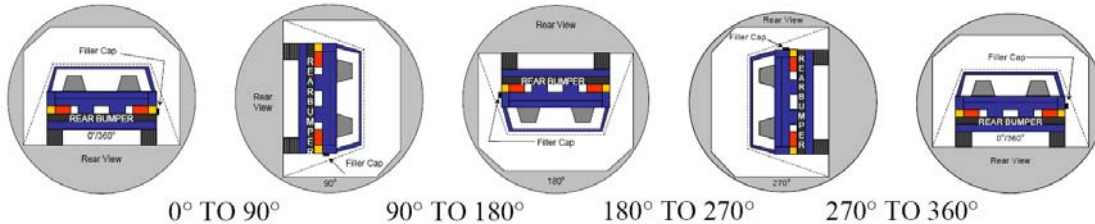
DPD	From MDB Centerline		Level	Crush (mm)
	Distance (mm)	Direction		
1	800	Left	4	149
2	500	Left	4	106
3	200	Left	4	89
4	200	Right	4	104
5	500	Right	4	81
6	800	Right	4	198

**DATA SHEET NO. 14**

**FMVSS NO. 301 STATIC ROLLOVER RESULTS**

Test Vehicle: 2015 Toyota Tacoma Prerunner Double Cab 4-Door Truck NHTSA No. M20155303  
 Test Program: NCAP MDB Side Impact Test Test Date: 10/27/14  
 Temperature at Time of Impact: 28.9° C Test Time: 12:31 PM

- 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°	83	300	383
90° To 180°	80	300	380
180° To 270°	79	300	379
270° To 360°	81	300	381

**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°	N/A
90° To 180°	N/A
180° To 270°	N/A
270° To 360°	N/A

DATA SHEET NO. 15

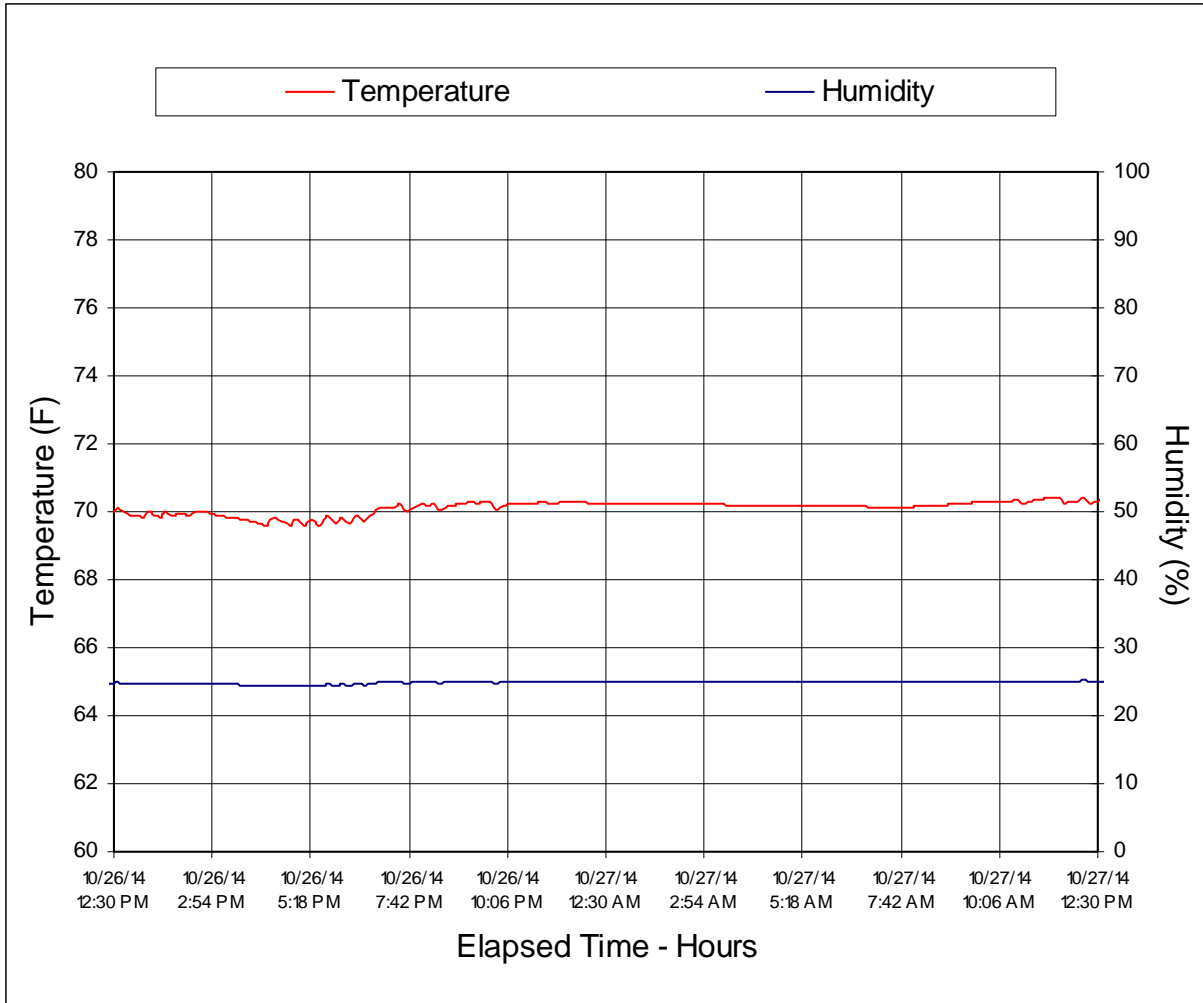
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

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

NHTSA No. M20155303

Test Program: NCAP MDB Side Impact Test

Test Date: 10/27/14



**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

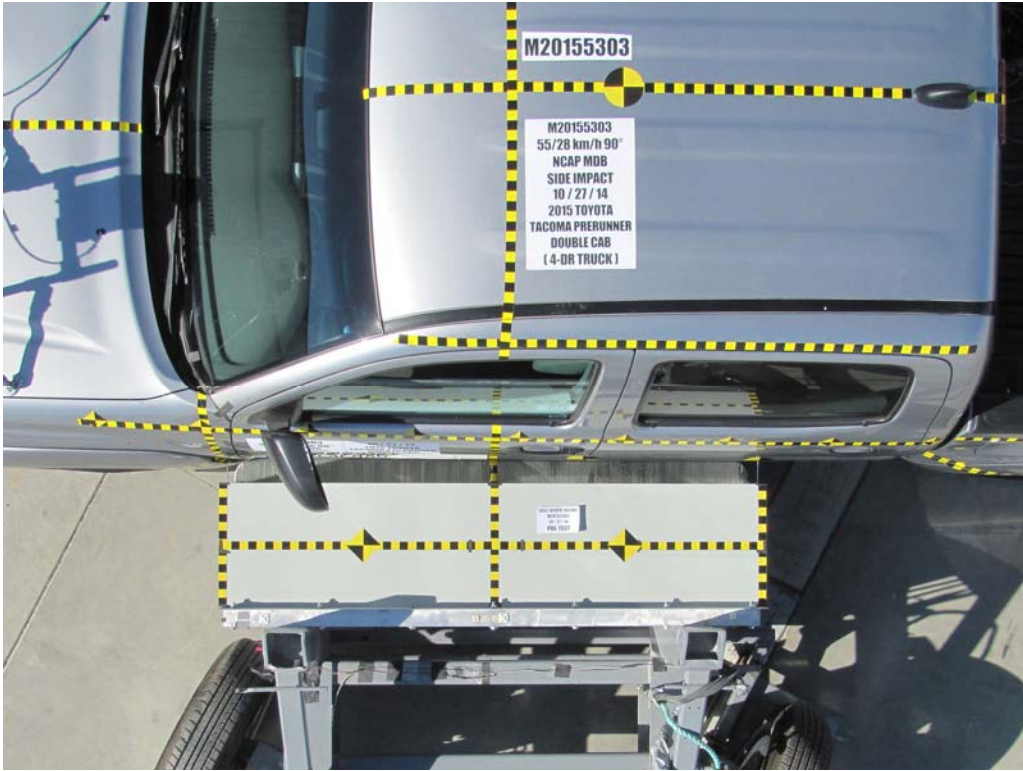


FIGURE 15. Pre-Test Overhead View of Test Area



FIGURE 16. Post-Test Overhead View of Test Area



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



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



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

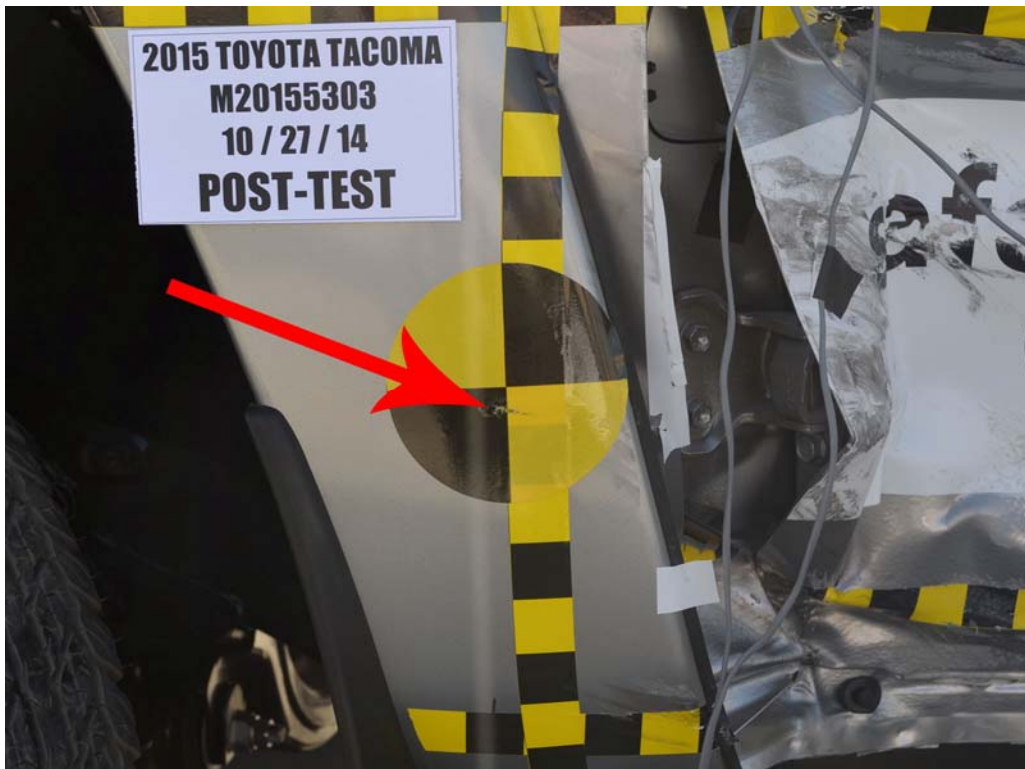


FIGURE 20. Post-Test Close-Up View of Impact Point Target



FIGURE 21. Pre-Test Left Front Door Latch Close-Up



FIGURE 22. Post-Test Left Front Door Latch Close-Up



FIGURE 23. Pre-Test Left Rear Door Latch Close-Up

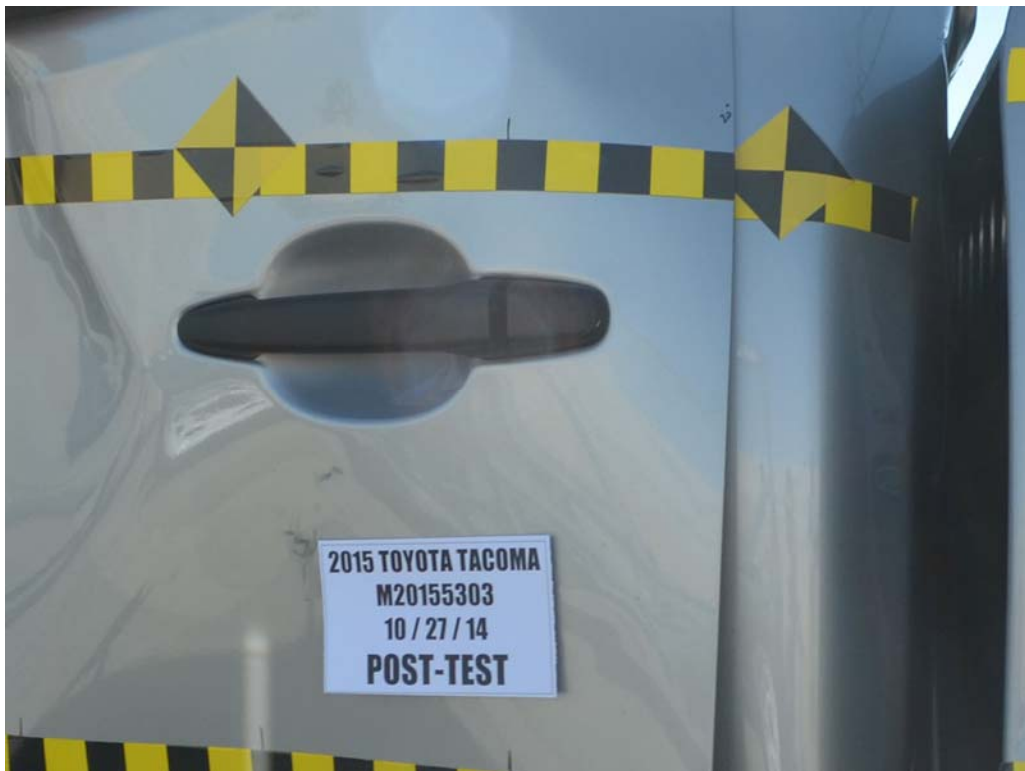


FIGURE 24. Post-Test Left Rear Door Latch Close-Up



FIGURE 25. Pre-Test Front Close-Up View of Driver Dummy



FIGURE 26. Post-Test Front Close-Up View of Driver Dummy



FIGURE 27. Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking



FIGURE 28. Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View



FIGURE 29. Post-Test Left Side View of Driver Dummy Shoulder and Door Top View



FIGURE 30. Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



FIGURE 31. Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



FIGURE 32. Pre-Test Overhead View of Driver Seat Pan Prior to Dummy Positioning



FIGURE 33. Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan



FIGURE 34. Pre-Test Placement of Driver Dummy's Feet



FIGURE 35. Pre-Test View of Belt Anchorage for Driver Dummy

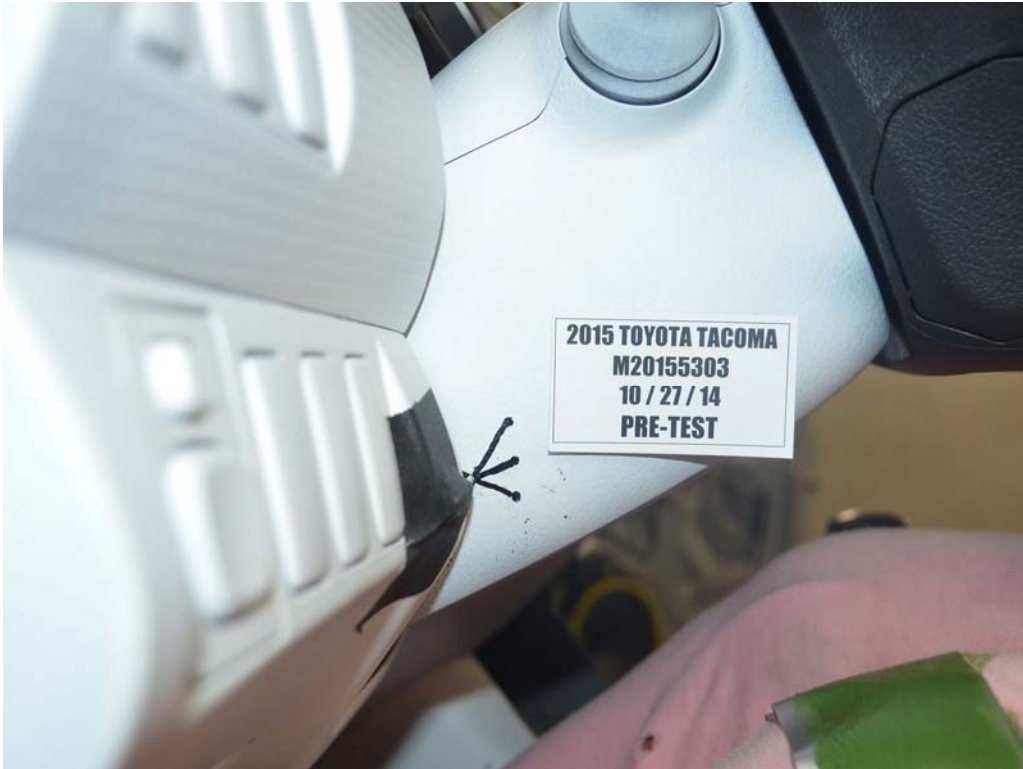


FIGURE 36. Pre-Test Left Side View of Steering Wheel



FIGURE 37. View of Disengaged Parking Brake



FIGURE 38. Pre-Test View of Parking Brake



FIGURE 39. Pre-Test Close-Up Left Side View of Driver Seat Track



FIGURE 40. Pre-Test Close-Up Left Side View of Driver Seat Back



FIGURE 41. Pre-Test Close-Up View of Driver Seat Back or Head Restraint



FIGURE 42. Pre-Test Driver Dummy and Door Clearance View



FIGURE 43. Post-Test Driver Dummy and Door Clearance View



FIGURE 44. Pre-Test Right Side View of Driver Dummy and Front Seat Occupant Compartment



FIGURE 45. Post-Test Right Side View of Driver Dummy and Front Seat Occupant Compartment



FIGURE 46. Pre-Test Driver Inner Door Panel View



FIGURE 47. Post-Test Driver Inner Door Panel View  
Showing Driver Dummy Contact Locations



FIGURE 48. Post-Test Driver Dummy Close-Up Head Contact  
with Vehicle Interior View



FIGURE 49. Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View



FIGURE 50. Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View



FIGURE 51. Post-Test Driver Dummy Close-Up Torso Contact with Side Airbag View



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

# Photograph Not Applicable

## No Driver Dummy Pelvis Contact with Side Airbag

FIGURE 53. Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View



FIGURE 54. Post-Test Driver Dummy Close-Up Knee Contact View



FIGURE 55. Pre-Test Left Side View of Rear Passenger Dummy Showing Belt and Chalking



FIGURE 56. Pre-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View



FIGURE 57. Post-Test Left Side View of Rear Passenger Dummy  
Shoulder and Door Top View



FIGURE 58. Pre-Test Frontal View of Rear Passenger Seat Back  
Prior to Dummy Positioning



FIGURE 59. Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint



FIGURE 60. Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning



FIGURE 61. Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



FIGURE 62. Pre-Test View of Rear Passenger Dummy's Neck  
Showing Position of Adjustable Neck Bracket



FIGURE 63. Pre-Test View of Rear Passenger Dummy's Head  
Showing Dummy's Head is Level



FIGURE 64. Pre-Test Placement of Rear Passenger Dummy's Feet



FIGURE 65. Pre-Test View of Belt Anchorage for Rear Passenger Dummy

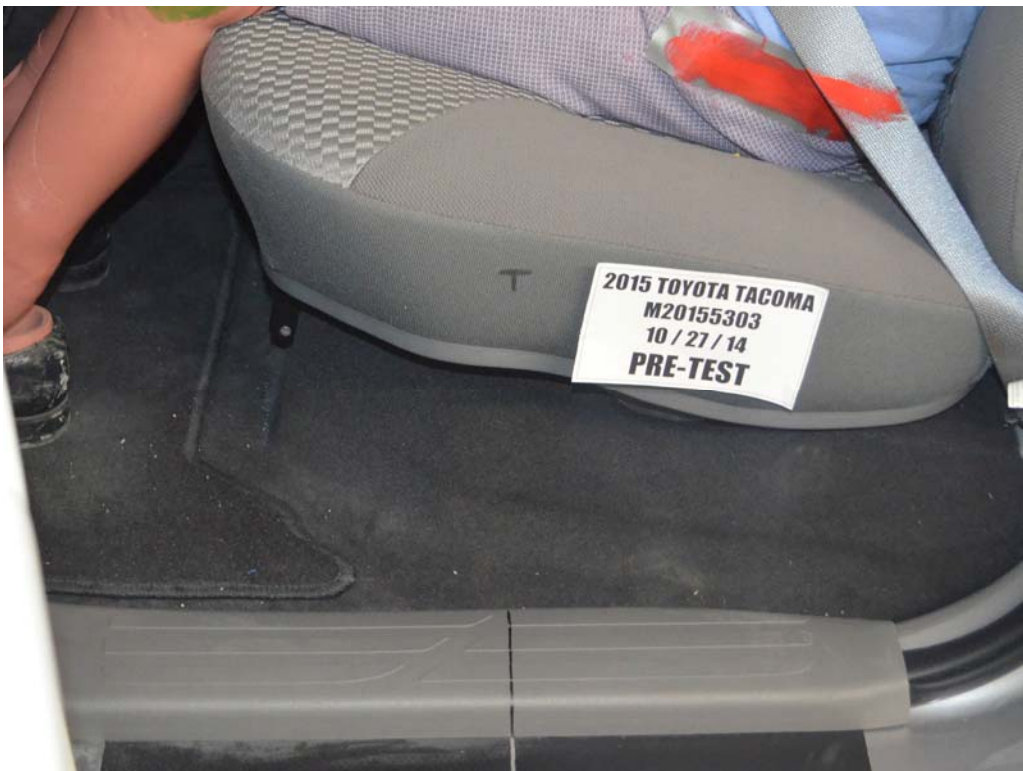


FIGURE 66. Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



FIGURE 67. Pre-Test Close-Up Left Side View of Rear Passenger Seat Back



FIGURE 68. Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint



FIGURE 69. Pre-Test Rear Passenger Dummy and Door Clearance View



FIGURE 70. Post-Test Rear Passenger Dummy and Door Clearance View



FIGURE 71. Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



FIGURE 72. Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



FIGURE 73. Pre-Test Rear Passenger Inner Door Panel View



FIGURE 74. Post-Test Rear Passenger Inner Door Panel View  
Showing Rear Passenger Dummy Contact Locations



FIGURE 75. Post-Test Rear Passenger Dummy Close-Up  
Head Contact with Vehicle Interior View



FIGURE 76. Post-Test Rear Passenger Dummy Close-Up  
Head Contact with Side Airbag View



FIGURE 77. Post-Test Rear Passenger Dummy Close-Up  
Torso Contact with Vehicle Interior View

**Photograph Not Applicable**

**Vehicle Not Equipped with  
Rear Passenger Side Airbag**

FIGURE 78. Post-Test Rear Passenger Dummy Close-Up  
Torso Contact with Side Airbag View



FIGURE 79. Post-Test Rear Passenger Dummy Close-Up  
Pelvis Contact with Vehicle Interior View

# Photograph Not Applicable

# Vehicle Not Equipped with Rear Passenger Side Airbag

FIGURE 80. Post-Test Rear Passenger Dummy Close-Up  
Pelvis Contact with Side Airbag View



FIGURE 81. Post-Test Rear Passenger Dummy Close-Up Knee Contact View



FIGURE 82. Pre-Test View of Fuel Filler Cap or Fuel Filler Neck

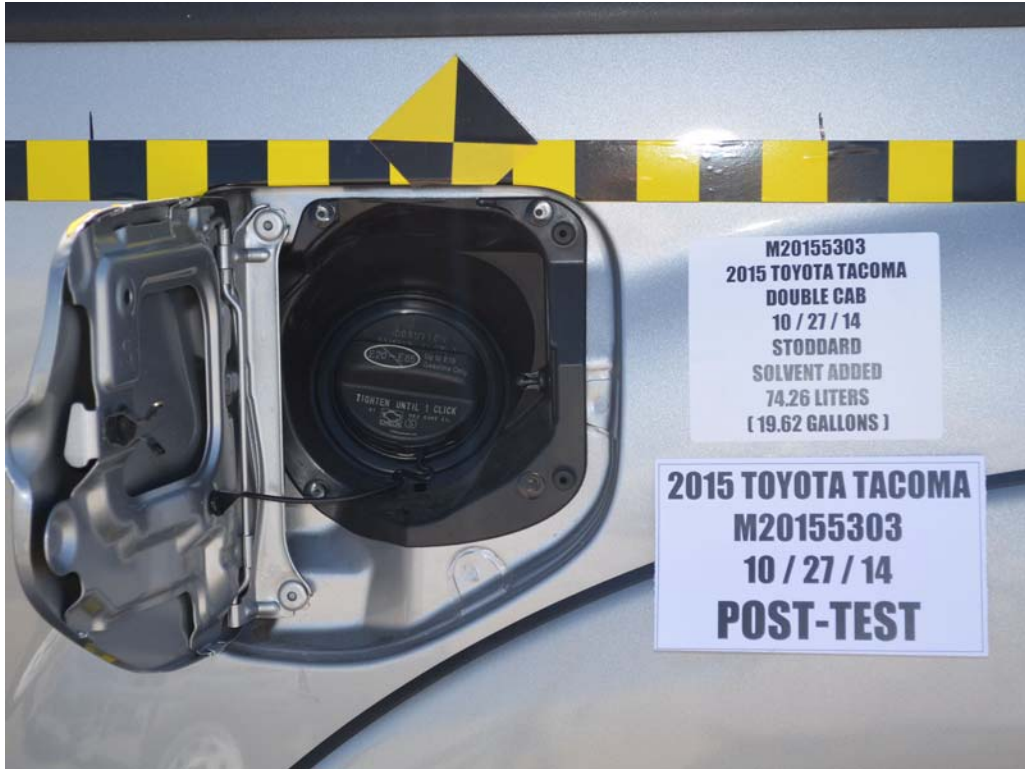


FIGURE 83. Post-Test View of Fuel Filler Cap or Fuel Filler Neck



FIGURE 84. Pre-Test Front View of MDB Impactor Face



FIGURE 85. Post-Test Front View of MDB Impactor Face

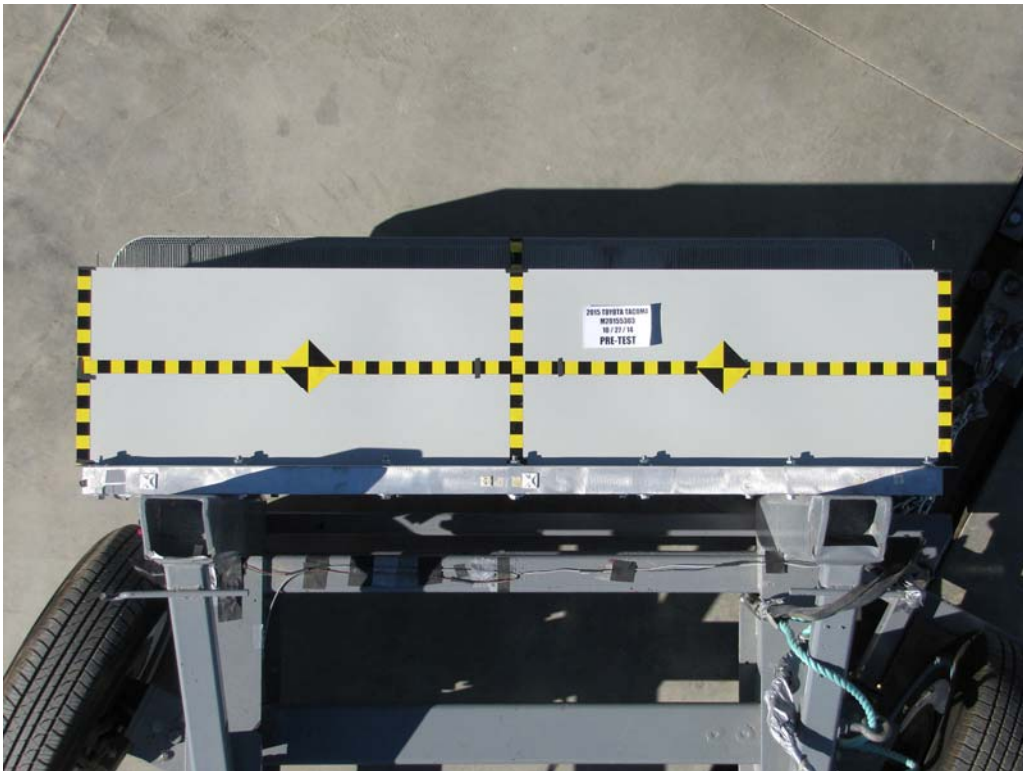


FIGURE 86. Pre-Test Top View of MDB Impactor Face



FIGURE 87. Post-Test Top View of MDB Impactor Face



FIGURE 88. Pre-Test Left Side View of MDB Impactor Face



FIGURE 89. Post-Test Left Side View of MDB Impactor Face



FIGURE 90. Pre-Test Right Side View of MDB Impactor Face



FIGURE 91. Post-Test Right Side View of MDB Impactor Face

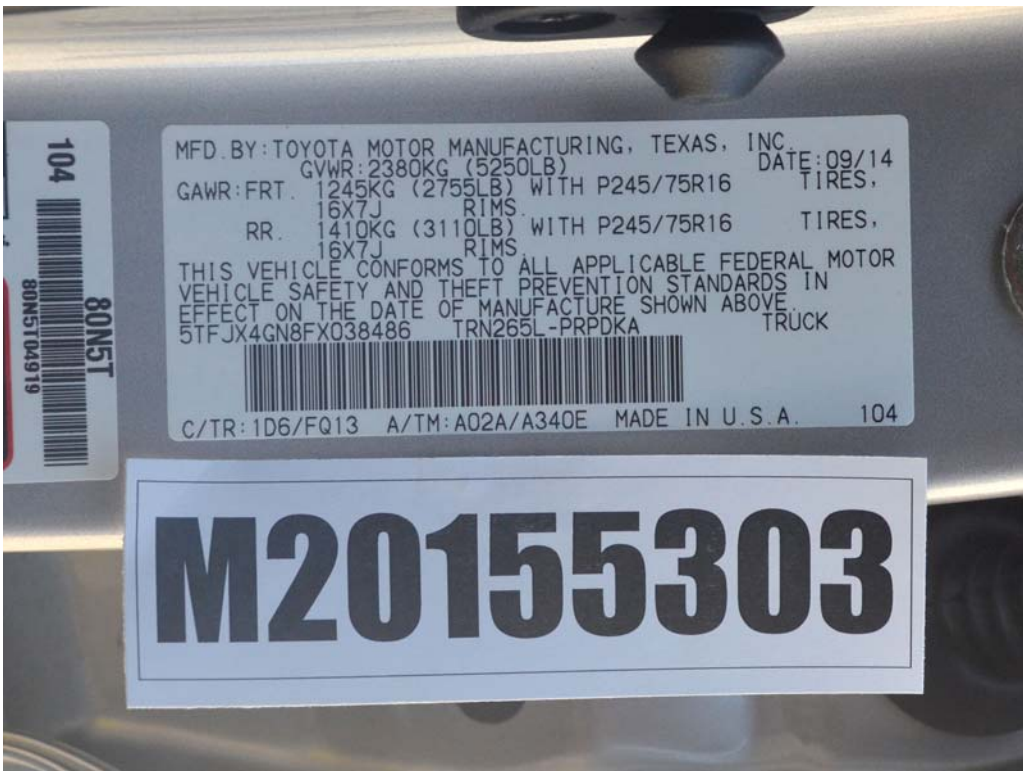


FIGURE 92. Close-Up View of Vehicle's Certification Label



FIGURE 92a. Close-Up View of Vehicle's Reduced Load Carrying Capacity Label

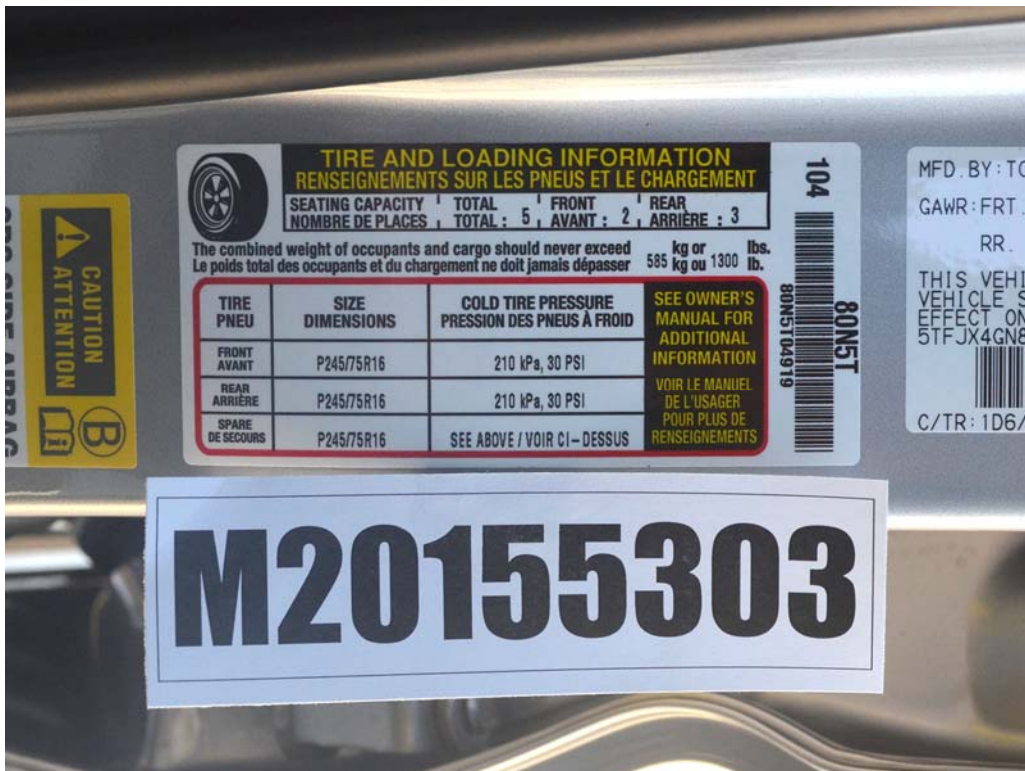


FIGURE 93. Close-Up View of Vehicle's Tire Information Placard or Label



FIGURE 94. Pre-Test Ballast View



FIGURE 95. Post-Test Primary and Redundant Speed Trap Read-Out



FIGURE 96. FMVSS No. 301 Static Rollover 0 Degrees



FIGURE 97. FMVSS No. 301 Static Rollover 90 Degrees



FIGURE 98. FMVSS No. 301 Static Rollover 180 Degrees



FIGURE 99. FMVSS No. 301 Static Rollover 270 Degrees



FIGURE 100. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 101. Impact Event

**TOYOTA**  
Let's Go Places

DESC: **TACOMA PRERUNNER DOUBLE CAB 4X2**  
VIN: **5TFJX4GN6FX038486**

YR/M/DL: 2015/7/188A  
CLR: SILVER SKY METALLIC/013 (01D613)  
PORT/PLANT: San Antonio, TX/TMMTX RAILHEAD:

**STANDARD EQUIPMENT**

**MECHANICAL & PERFORMANCE**

- 2.7L COC 164CV VTEC 4-Cyl. Engine
- 4-Speed ECT 4 Automatic Transmission
- Automatic Limited-Slip Differential
- Call-Spring Double Wishbone Front Susp
- Rear Leaf Spring Susp w/ Shock Absorbers
- Custom-Engineered L-rod Shock Absorbers
- Front Stabilizer Bar
- Variable Power Steering & Power Steering
- Power-Assisted Fr Disc/Drum Brakes
- 16" Solid Steel Wheels, P145/70R16 Tires

**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)
- Brake Power Steering Light On
- Dr & Fr Pass Advanced Airbag System
- Seat-Advanced Side & Side Curtain Airbags
- 3-Point Seatbelts for All Seating Positions, Over-the-Shoulder & LATCH on All Pass Sits, Dr & Fr Pass Active Front Seat-Integrated Door Beams
- Low Pressure Monitor System (TPMS)

**EXTERIOR**

- Black Chrome Inset, Six Door Handles, Mirrors, Front/Rear Bumpers
- TRC (Tire Pressure Monitoring System), Storage, Mail Caps & Removable Tailgate
- Deck Rail System w/ AC, The Open Cages

**INTERIOR**

- Air Conditioning
- Power Windows / Door Locks / Mirrors
- Custom Bucket Fr Seats w/ Frig. Fronts
- Driver Seat w/ Adj. Lumbar Support
- 60/40 Split Fr Bench Seat w/ Adj. Headrests
- 6-17 Touch-Jockey, AM/FM CD, 6 Spks, BT
- USB, Aux Jack, Hands-Free Phone Capable
- 16" Multi-Spoke Steering Wheel
- 2-Speed Windshield Wipers
- Dual 12V Aux Power Outlets

**MANUFACTURER'S SUGGESTED RETAIL PRICE \$23,425.00**

**OPTIONAL EQUIPMENT**

FE 50 State Emissions  
Entire Audio Plus:  
Includes the Entire Multimedia Bundle (6.1 in High Resolution Touch-Screen Display, AM/FM CD Player, MP3/MP4 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 Areas)  
680.00

SL SR5 Extra Value Package:  
Remote Keyless Entry System, Cruise Control, Variable Inter-Steer Windshield Wipers, Chrome grille Surround & Rear Bumper, Color-Keyed Front Bumper & Overlays, Smiling Rear Viewmirror w/ Privacy Glass, Bucket Seats, SR5 Fabric Trim, Metallic Tone Instrument Panel Trim, Leather-Trimmed Steering Wheel with Audio Controls & Shifted, Dual Sunroofs w/ Mirrors & Extenders, Tailgate-Handle Integrated Backup Camera, SR5 Badge  
1,775.00

CF Carpet Floor Mats & Door Sill Protector  
195.00

DELIVERY PROCESSING AND HANDLING FEE 895.00  
SUB-TOTAL BEFORE DISCOUNT \$29,960.00

EXTRA VALUE PACKAGE MSRP DISCOUNT -\$350.00

**TOTAL \$26,610.00**

Dealer Name & Address: 0434  
3300 LUNA TORCOSA  
8888 AUTO CENTER DRIVE  
VENTURA, CA 93003

FIGURE 102. Monroney Label

1-3. Adjustable components (seats, mirrors, steering wheel)

**Head restraints**

Head restraints are provided for all seats.

**Adjusting the head restraints**

**Front seat**

Up: Pull the head restraints up.  
Down: Push the head restraint down while pushing the lock release button.

**Rear seat (Double Cab models only)**

Up: Pull the head restraints up.  
Down: Push the head restraint down while pushing the lock release button.

**Removing the front head restraints**

Pull the head restraint up while pushing the lock release button.

**Removing the rear head restraints (Double Cab models only)**

Pull the head restraint up while pushing the lock release button.

**Installing the front head restraints**

Align the head restraint with the installation holes and push it down to the lock position. Press and hold the lock release button when lowering the head restraint.

**Installing the rear head restraints (Double Cab models only)**

Align the head restraint with the installation holes and push it down to the lock position. Press and hold the lock release button when lowering the head restraint.

**When installed the rear outboard head restraints to opposite direction (Double Cab models only)**

1: Push a flathead screwdriver into the slot. The slot is located on the left side of the right head restraint anchor.

2: While pressing in the screwdriver, pull up the head restraint.

**Adjusting the height of the head restraints**

Make sure that the head restraints are adjusted so that the center of the head restraint is closest to the top of your ears.

**Adjusting the rear center seat head restraints (Double Cab models)**

Always raise the head restraint one level from the stowed position when using.

**CAUTION**

**Head restraint precautions**

Observe the following precautions regarding the head restraints. Failure to do so may result in death or serious injury.

- Use the head restraints designed for each respective seat.
- Adjust the head restraints to the correct position at all times.
- After adjusting the head restraints, push down on them and make sure they are locked in position.
- Do not drive with the head restraints removed.

FIGURE 103. Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

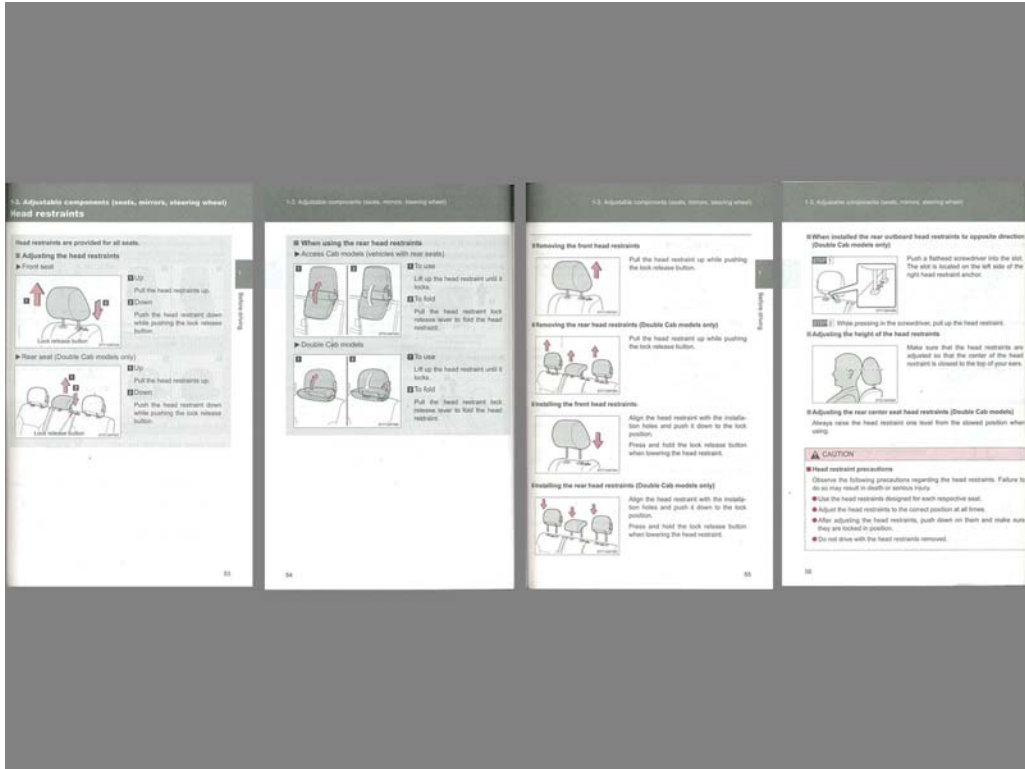


FIGURE 104. Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

**APPENDIX B**  
**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 Upper Thorax Rib Deflection (Y) vs. Time	B-2
6	Driver Middle Thorax Rib Deflection (Y) vs. Time	B-2
7	Driver Lower Thorax Rib Deflection (Y) vs. Time	B-2
8	Driver Thorax Rib Deflection Maximum vs. Time	B-2
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12	Driver Total Abdominal Force (Y) vs. Time	B-3
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14	Passenger Head Acceleration (X) vs. Time Primary	B-5
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16	Passenger Head Acceleration (Z) vs. Time Primary	B-5
17	Passenger Head Resultant Acceleration Primary vs. Time	B-5
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19	Passenger Lower Spine T12 Acceleration (Y) vs. Time	B-6
20	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-6
21	Passenger Lower Spine T12 Resultant Acceleration vs. Time	B-6
22	Passenger Iliac Force on Impact Side (Y) vs. Time	B-7
23	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-7
24	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-7

**The following additional data for this test can be obtained from the Research and Development section of the NHTSA website ([www.NHTSA.dot.gov](http://www.NHTSA.dot.gov))**

### Additional Driver & Passenger Dummy Instrumentation Data

Driver Lower Spine T12 Acceleration (X)  
Driver Lower Spine T12 Acceleration (Y)  
Driver Lower Spine T12 Acceleration (Z)  
Passenger Upper Thorax Rib Deflection (Y)  
Passenger Middle Thorax Rib Deflection (Y)  
Passenger Lower Thorax Rib Deflection (Y)

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

### **Vehicle Instrumentation Data**

Vehicle Center of Gravity Acceleration (X)  
Vehicle Center of Gravity Acceleration (Y)  
Vehicle Center of Gravity Acceleration (Z)  
Right Side Sill at Front Seat Acceleration (X)  
Right Side Sill at Front Seat Acceleration (Y)  
Right Side Sill at Front Seat Acceleration (Z)  
Right Side Sill at Rear Seat Acceleration (X)  
Right Side Sill at Rear Seat Acceleration (Y)  
Right Side Sill at Rear Seat Acceleration (Z)  
Left Side Sill at Front Seat Acceleration (Y)  
Left Side Sill at Rear Seat Acceleration (Y)  
Lower A-Post Acceleration (Y)  
Middle A-Post Acceleration (Y)  
Lower B-Post Acceleration (Y)  
Middle B-Post Acceleration (Y)  
Front Seat Track Acceleration (Y)  
Rear Seat Structure Acceleration (Y)  
Right Rear Occupant Compartment Acceleration (Y)  
Engine Block (X)  
Engine Block (Y)  
Rear Floorpan Above Axle Acceleration (X)  
Rear Floorpan Above Axle Acceleration (Y)  
Rear Floorpan Above Axle Acceleration (Z)

### **MDB Instrumentation Data**

MDB Center of Gravity Acceleration (X)

MDB Center of Gravity Acceleration (Y)

MDB Center of Gravity Acceleration (Z)

MDB Rear Acceleration (X)

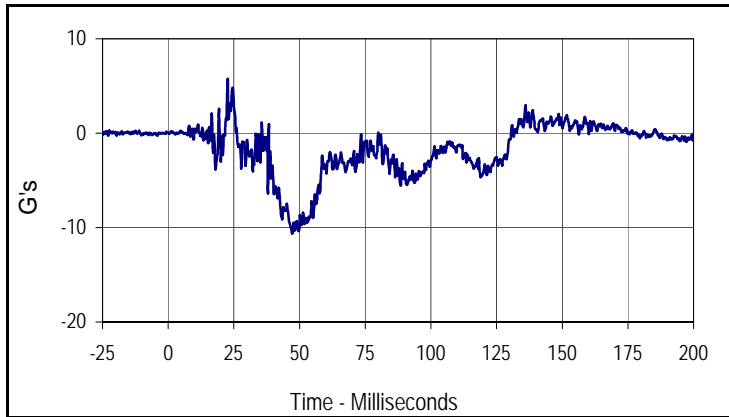
MDB Rear Acceleration (Y)

Left MDB Contact Switch

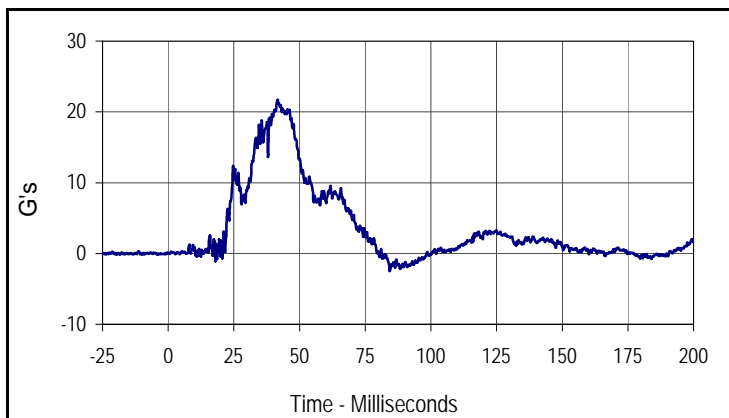
Right MDB Contact Switch

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

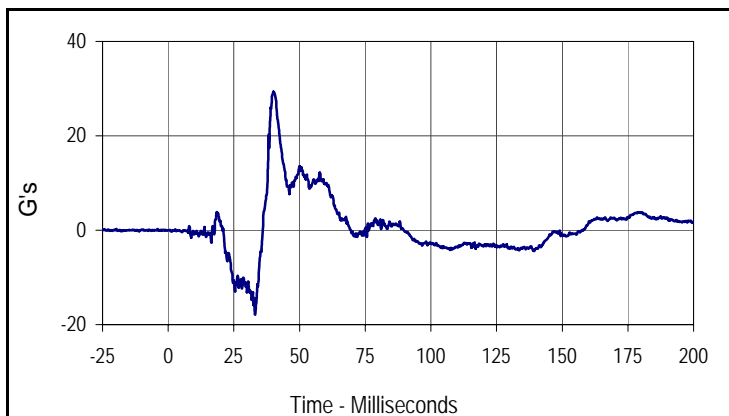
NHTSA No.: M20155303  
 Test Date: 10/27/14



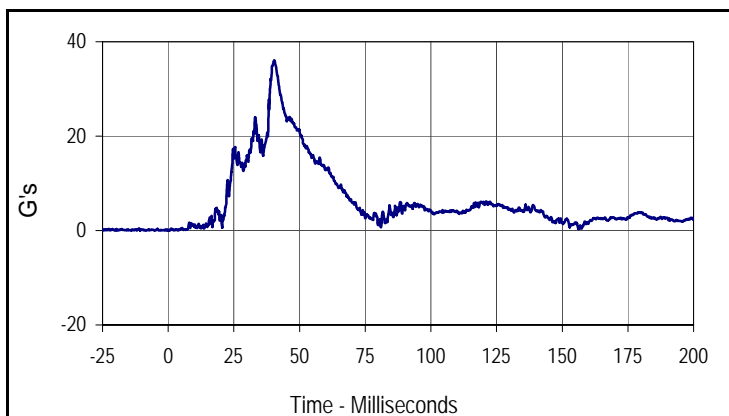
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Driver Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
5.8	22.6	-10.6	47.2



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
21.7	41.6	-2.5	84.3



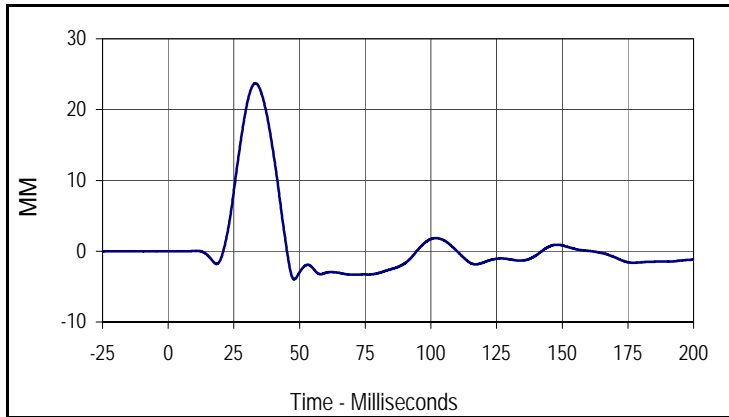
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
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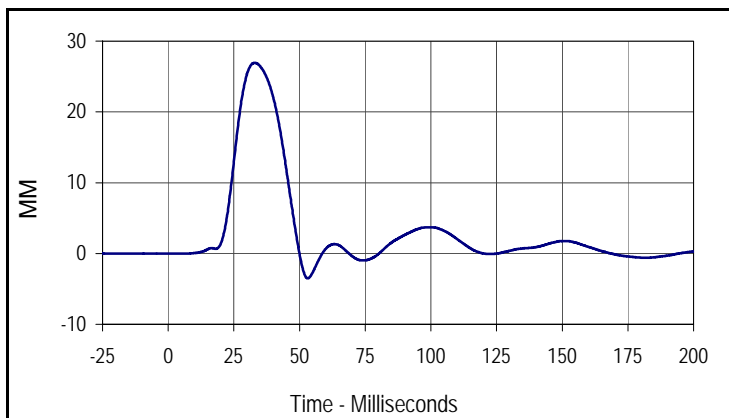
Curve Description			
Driver Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
36.0	40.4	0.0	0.2

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

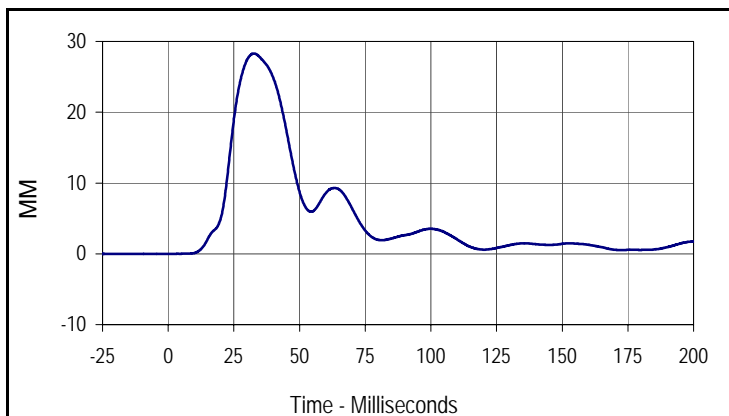
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 Test Date: 10/27/14



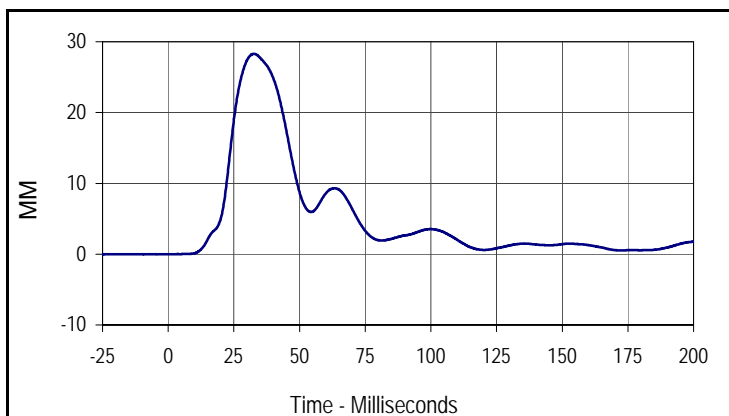
Curve Description			
Driver Upper Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
005	FIL	180	MM
Max	Time	Min	Time
23.7	33.2	-4.0	47.9



Curve Description			
Driver Middle Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
006	FIL	180	MM
Max	Time	Min	Time
26.9	32.9	-3.5	53.1



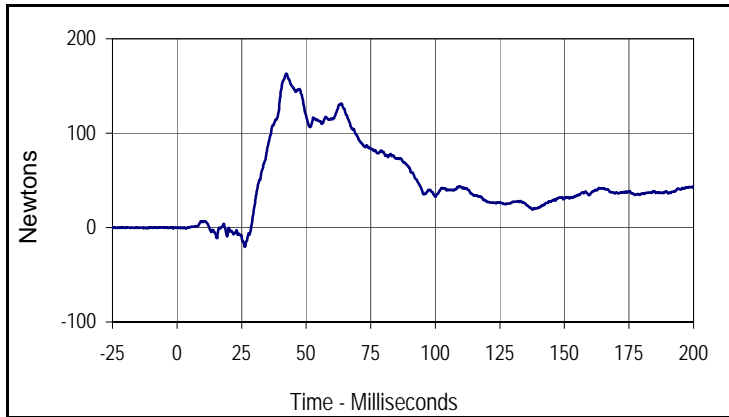
Curve Description			
Driver Lower Thorax Rib Deflection Y			
Plot No.	Type	SAE Class	Units
007	FIL	180	MM
Max	Time	Min	Time
28.3	32.6	0.0	2.3



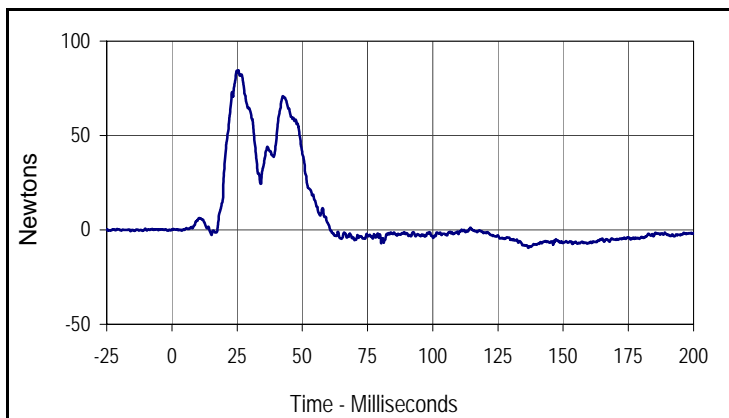
Curve Description			
Driver Thorax Rib Deflection Maximum			
Plot No.	Type	SAE Class	Units
010	FIL	180	MM
Max	Time	Min	Time
28.3	32.6	0.0	2.3

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

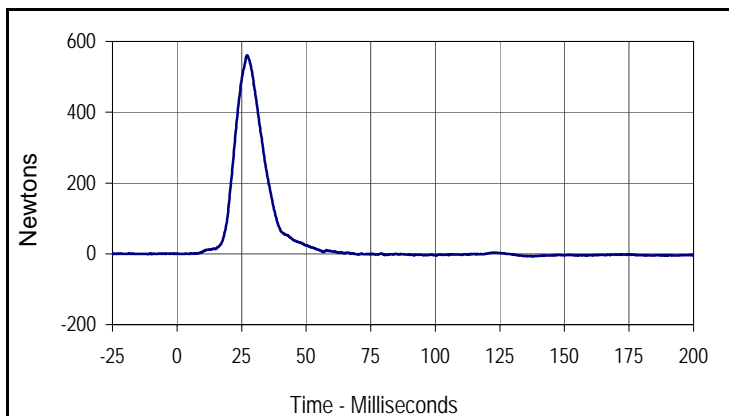
NHTSA No.: M20155303  
 Test Date: 10/27/14



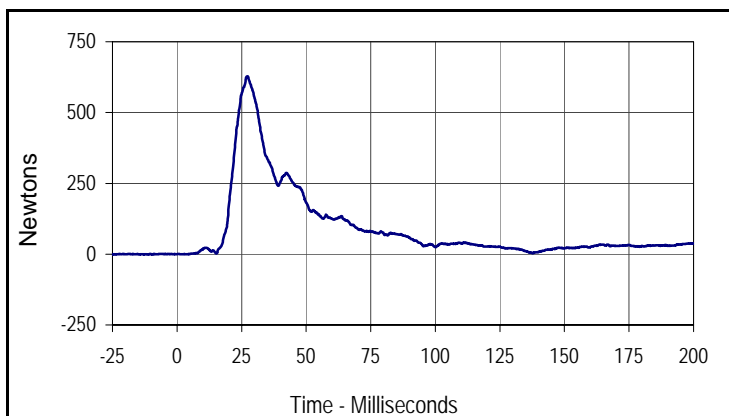
Curve Description			
Driver Anterior Abdominal Force Y			
Plot No.	Type	SAE Class	Units
008	FIL	600	Newtons
Max	Time	Min	Time
163.1	42.3	-20.4	26.3



Curve Description			
Driver Middle Abdominal Force Y			
Plot No.	Type	SAE Class	Units
009	FIL	600	Newtons
Max	Time	Min	Time
84.5	24.9	-9.5	136.7



Curve Description			
Driver Posterior Abdominal Force Y			
Plot No.	Type	SAE Class	Units
011	FIL	600	Newtons
Max	Time	Min	Time
560.9	27.2	-7.2	137.8



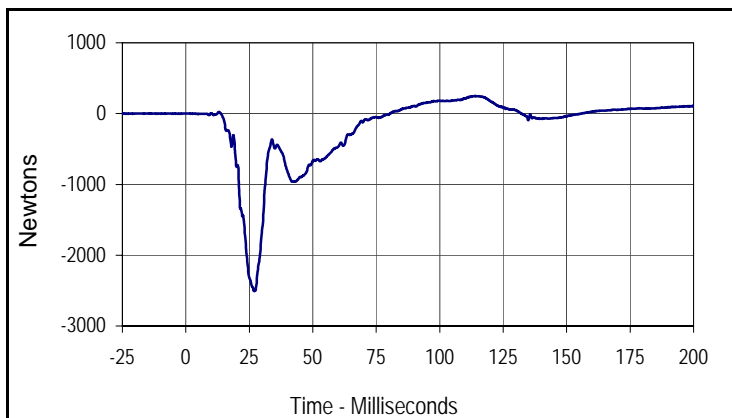
Curve Description			
Driver Total Abdominal Force			
Plot No.	Type	SAE Class	Units
012	SUM	600	Newtons
Max	Time	Min	Time
628.4	27.3	-0.8	3.4

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

NHTSA No.: M20155303

Test Program: NCAP MDB Side Impact Test

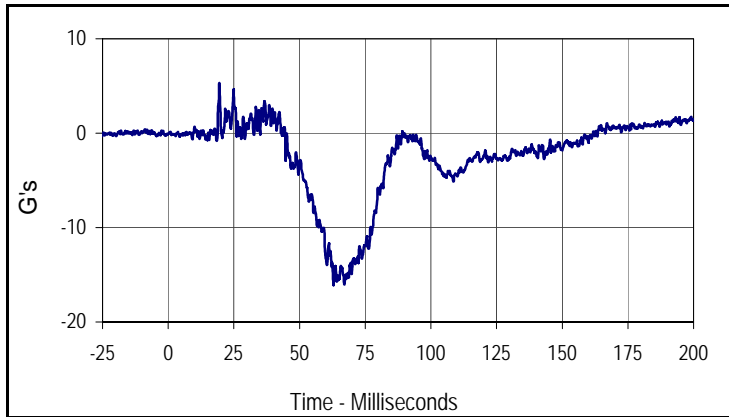
Test Date: 10/27/14



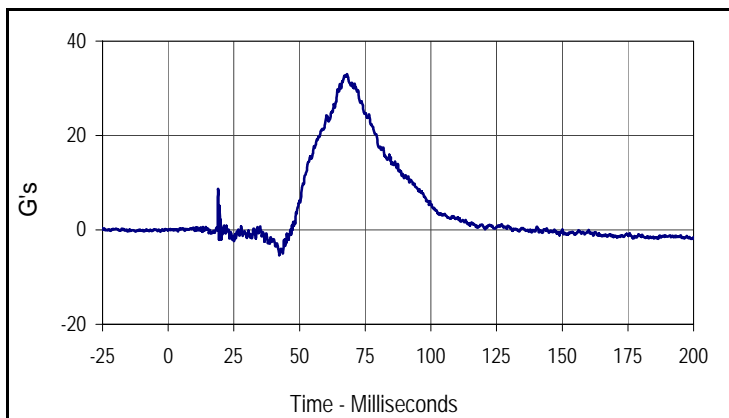
Curve Description			
Driver Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
013	FIL	600	Newtons
Max	Time	Min	Time
247.9	114.0	-2507.6	27.0

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

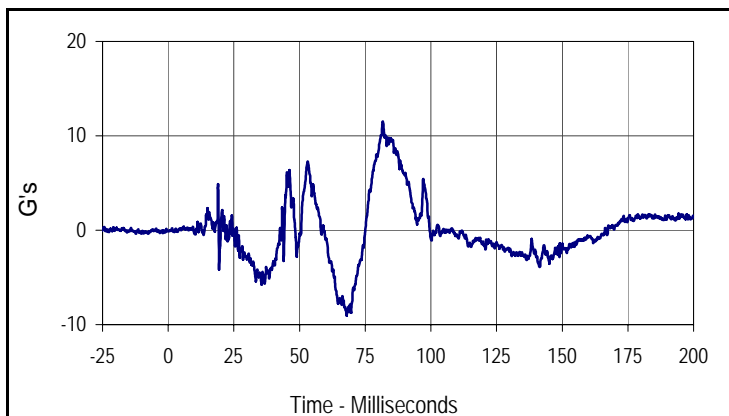
NHTSA No.: M20155303  
 Test Date: 10/27/14



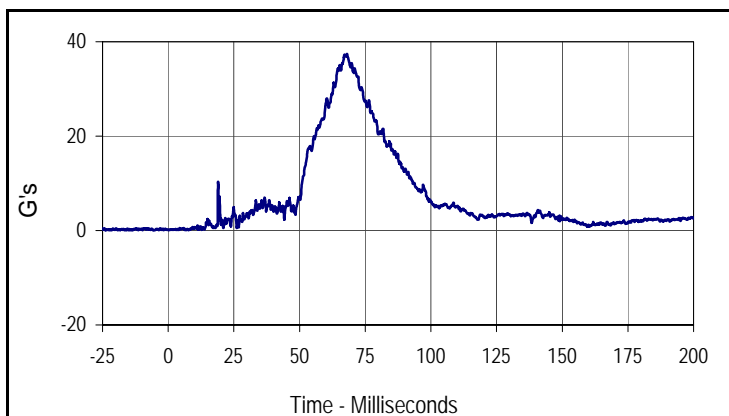
Curve Description			
Passenger Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
014	FIL	1000	G's
Max	Time	Min	Time
5.3	19.5	-16.1	62.9



Curve Description			
Passenger Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
015	FIL	1000	G's
Max	Time	Min	Time
33.0	68.1	-5.4	42.3



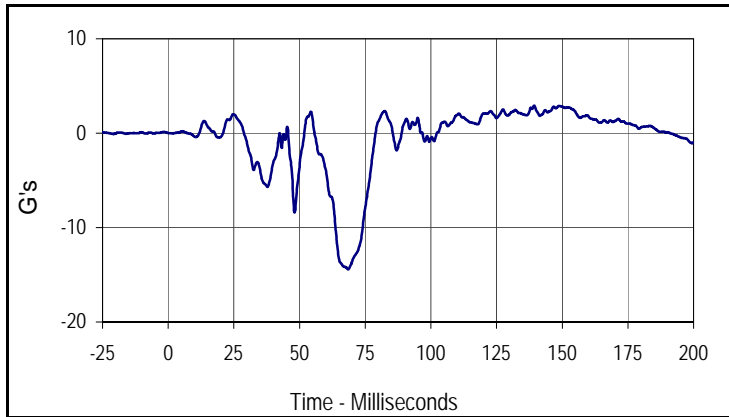
Curve Description			
Passenger Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
016	FIL	1000	G's
Max	Time	Min	Time
11.5	81.7	-9.1	68.0



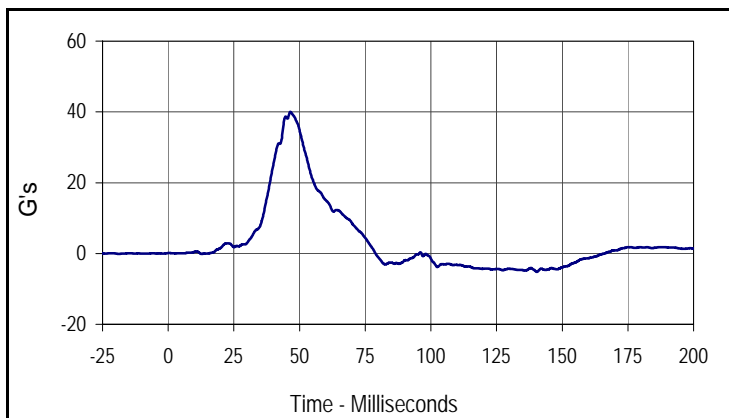
Curve Description			
Passenger Head Acceleration Resultant Primary			
Plot No.	Type	SAE Class	Units
017	RES	1000	G's
Max	Time	Min	Time
37.4	68.1	0.1	0.2

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

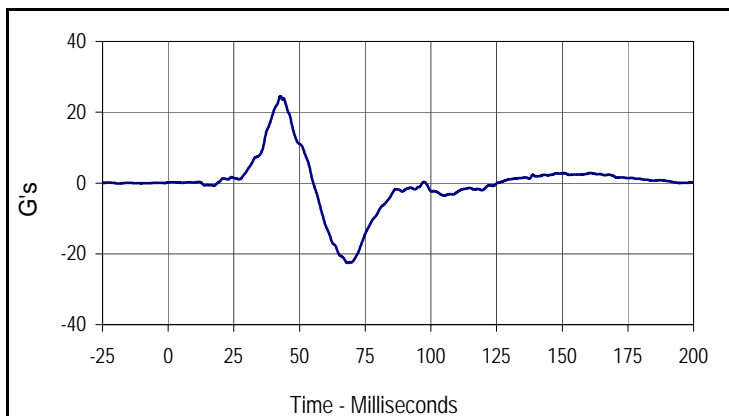
NHTSA No.: M20155303  
 Test Date: 10/27/14



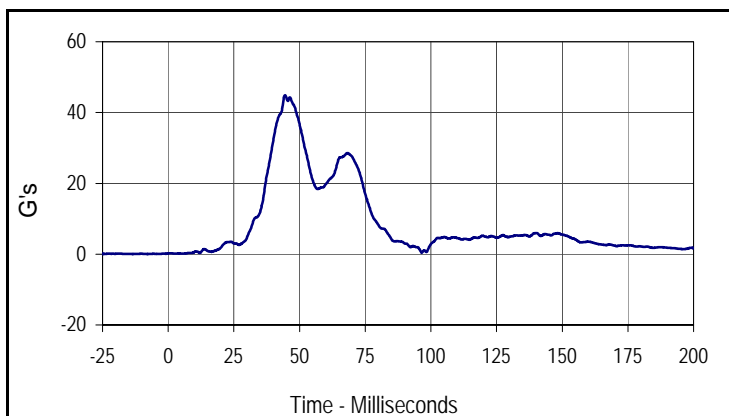
Curve Description			
Passenger Lower Spine T12 Acceleration X			
Plot No.	Type	SAE Class	Units
019	FIL	180	G's
Max	Time	Min	Time
2.9	139.3	-14.4	68.5



Curve Description			
Passenger Lower Spine T12 Acceleration Y			
Plot No.	Type	SAE Class	Units
020	FIL	180	G's
Max	Time	Min	Time
40.0	46.5	-5.2	140.3



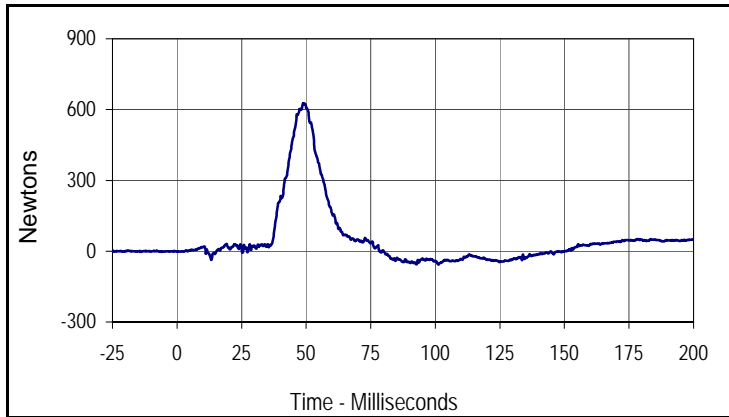
Curve Description			
Passenger Lower Spine T12 Acceleration Z			
Plot No.	Type	SAE Class	Units
021	FIL	180	G's
Max	Time	Min	Time
24.6	42.8	-22.6	68.2



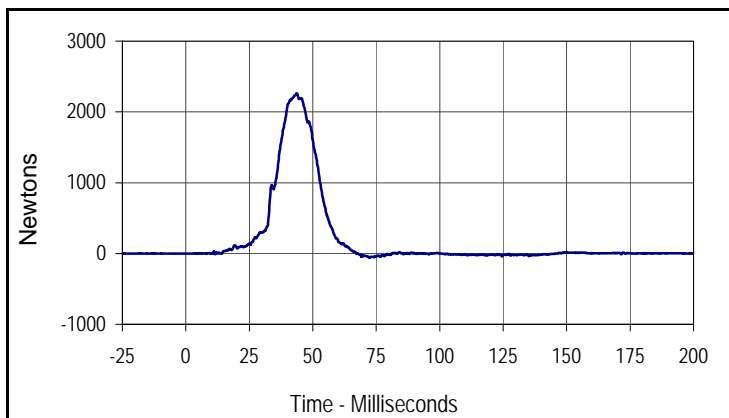
Curve Description			
Passenger Lower Spine T12 Acceleration Res.			
Plot No.	Type	SAE Class	Units
022	RES	180	G's
Max	Time	Min	Time
44.9	44.5	0.2	3.1

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

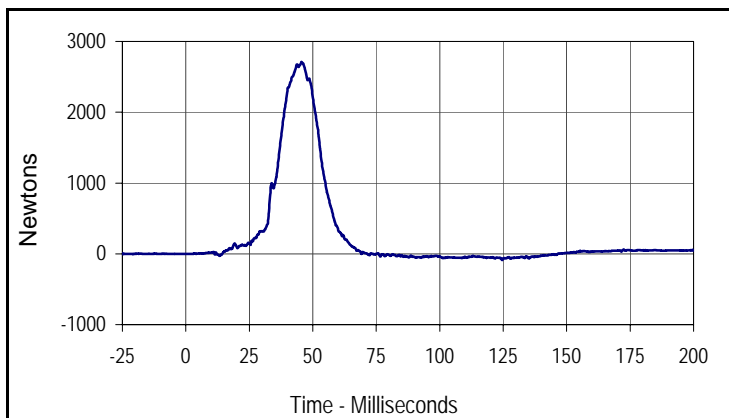
NHTSA No.: M20155303  
 Test Date: 10/27/14



Curve Description			
Passenger Iliac Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
023	FIL	600	Newtons
Max	Time	Min	Time
627.1	48.8	-56.7	101.2



Curve Description			
Passenger Acetabulum Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
024	FIL	600	Newtons
Max	Time	Min	Time
2262.9	43.7	-60.8	72.4



Curve Description			
Passenger Total Pelvic Force			
Plot No.	Type	SAE Class	Units
018	SUM	600	Newtons
Max	Time	Min	Time
2710.9	45.6	-85.8	124.6

**APPENDIX C**  
**DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

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

Test Program: ES2re External Measurements

Test Date: 10/23/14



ATD Serial No.: F037

Test I.D.: N/A

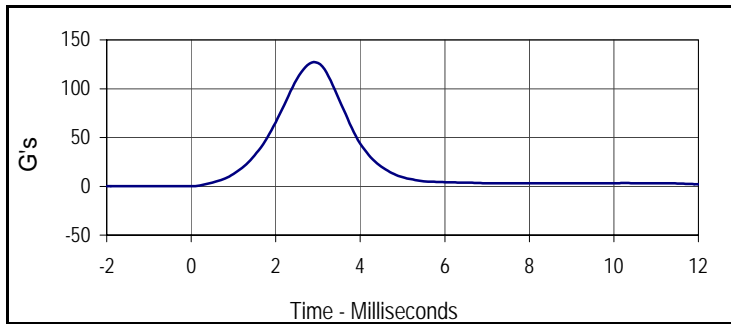
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	30.0	Pass
1 Sitting Height	mm	900 - 918	909	Pass
2 Seat to Shoulder Joint	mm	558 - 572	564	Pass
3 Seat to Lower Face of Thoracic Spine Box	mm	346 - 356	350	Pass
4 Seat to Hip Joint (Center of Bolt)	mm	97 - 103	99	Pass
5 Sole to Seat, Sitting	mm	333 - 451	395	Pass
6 Head Width	mm	152 - 158	156	Pass
7 Shoulder / Arm Width	mm	461 - 479	470	Pass
8 Thorax Width	mm	322 - 332	326	Pass
9 Abdomen Width	mm	273 - 287	280	Pass
10 Pelvis Lap Width	mm	359 - 373	363	Pass
11 Head Depth	mm	196 - 206	201	Pass
12 Thorax Depth	mm	262 - 272	270	Pass
13 Abdomen Width	mm	194 - 204	199	Pass
14 Pelvis Depth	mm	235 - 245	240	Pass
15 Back of Buttocks to Hip Joint (Center of Bolt)	mm	150 - 160	155	Pass
16 Back of Buttocks to Front Knee	mm	597 - 615	608	Pass
Overall Test Results				Pass

Test Program: ES2re Head Drop Test  
 ATD Serial No.: F037

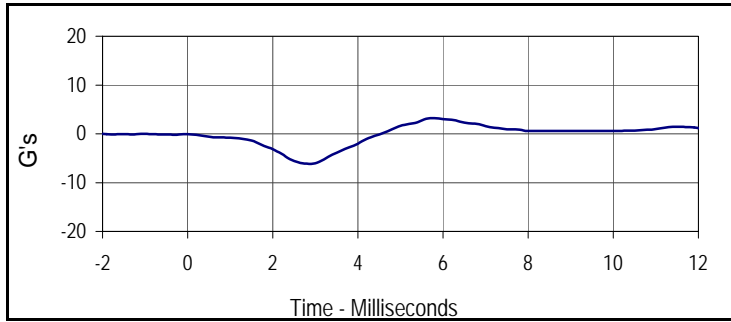
Test Date: 10/23/14  
 Test I.D.: F037HD064



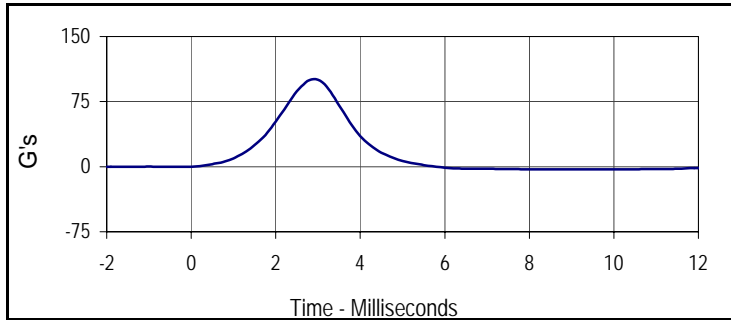
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	250	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	21.9	Pass
	Min		21.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.1	Pass
Peak Head Resultant Acceleration	G's	125 to 155	127.3	Pass
Peak Head X Acceleration	G's	≤15	6.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	7.3	Pass
Overall Test Results				Pass



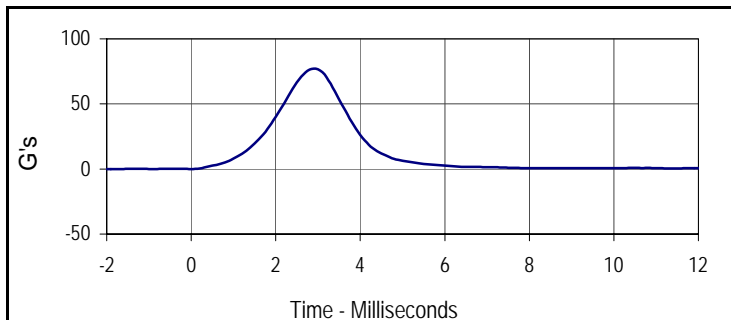
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
127.3	2.9	0.0	-2.0



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.2	5.7	-6.1	2.9



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
101.1	2.9	-3.2	10.2



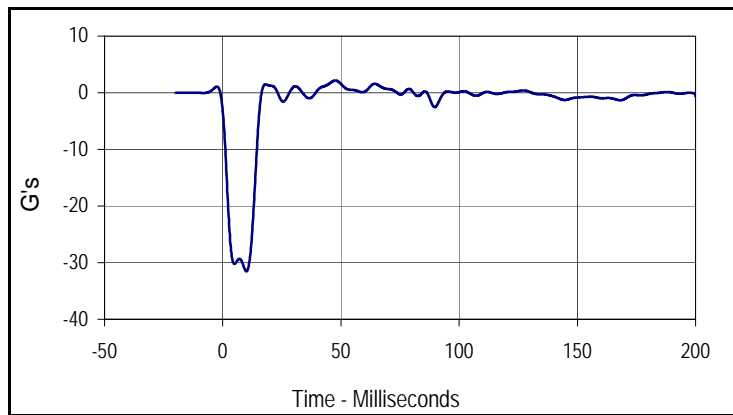
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
77.2	2.9	-0.1	-1.7

Test Program: ES2re Neck Flexion Test  
 ATD Serial No.: F037

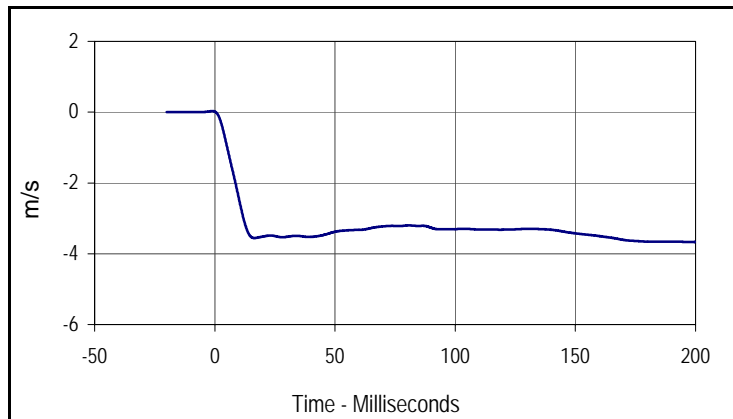
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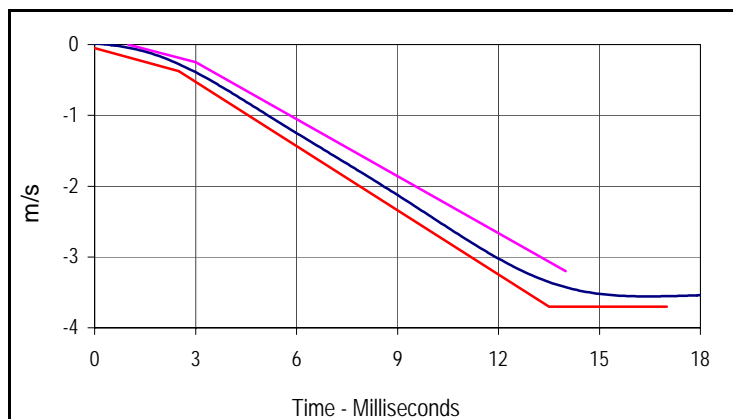
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	285	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	21.9	Pass
	Min		21.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.2	Pass
Pendulum Velocity	m/s	3.3 to 3.5	3.41	Pass
Headform Flexion	Max	49 to 59	56.4	Pass
	Time	54 to 66	55.6	Pass
Headform Flexion Decay (Peak to Zero)	msec	53 to 88	67.4	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
2.2	47.7	-31.5	10.0



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.1	-3.7	199.9



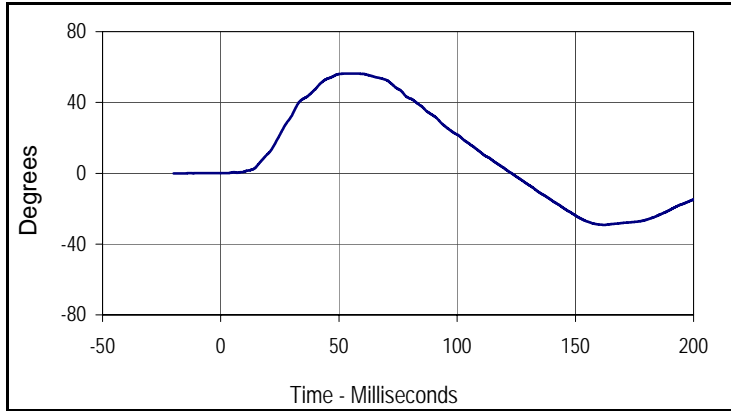
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.1	-3.7	199.9

Velocity Corridors

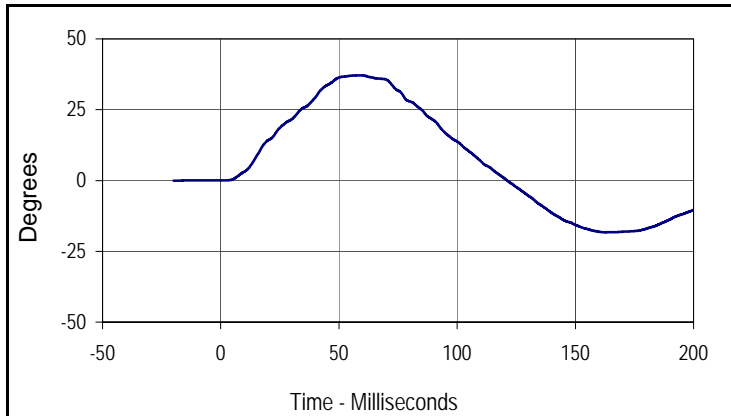
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.03	2.5	-0.375
14.0	-3.20	13.5	-3.70
		17.0	-3.70

Test Program: ES2re Neck Flexion Test  
 ATD Serial No.: F037

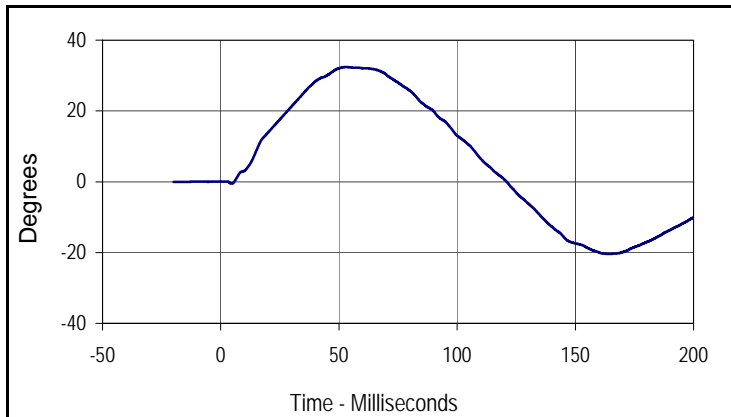
Test Date: 10/23/14  
 Test I.D.: F037NB064



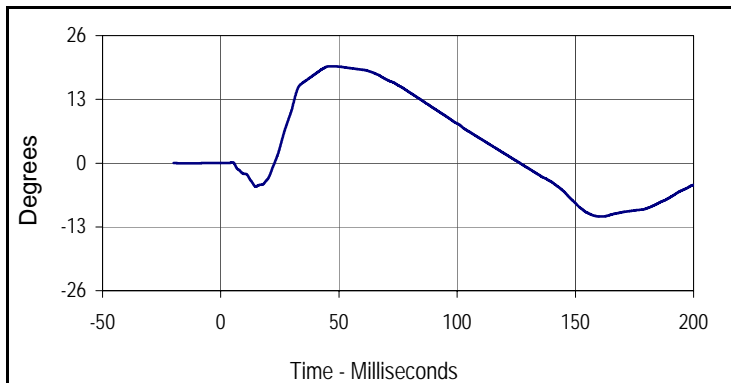
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
56.4	55.6	-29.2	162.2



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
37.1	59.8	-18.3	162.7



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
32.4	52.9	-20.4	164.1



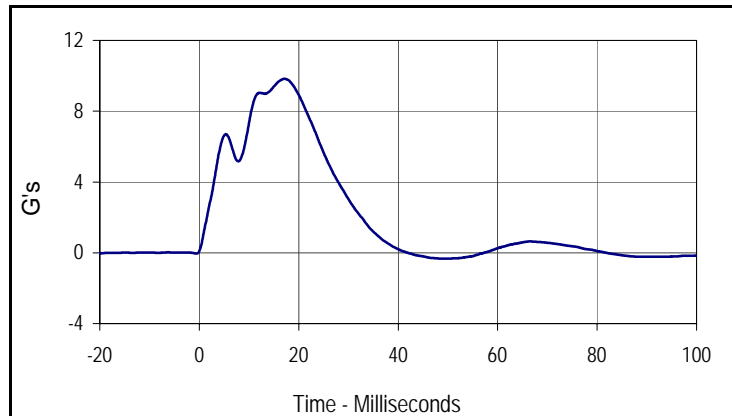
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
19.7	45.7	-10.9	160.0

Test Program: ES2re Shoulder Impact Test  
 ATD Serial No.: F037

Test Date: 10/23/14  
 Test I.D.: F037SH064



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	350	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	21.9	Pass
	Min		21.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.3	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.30	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	9.8	Pass
Overall Test Results				Pass



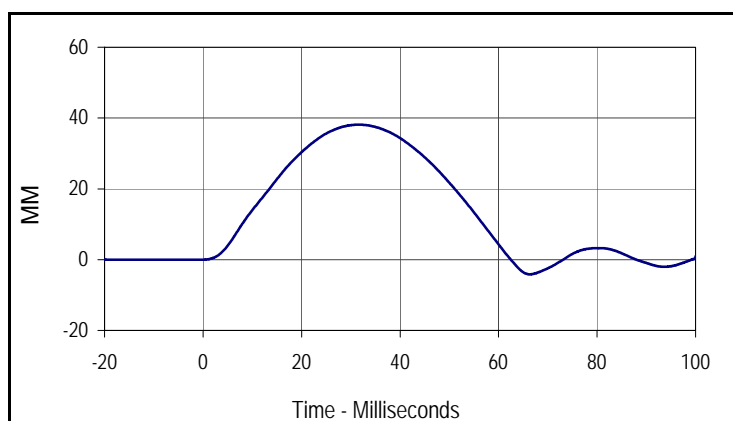
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
9.8	17.2	-0.3	48.8

Test Program: ES2re Thorax - Rib Drop Test  
 ATD Serial No.: F037 Rib # 1

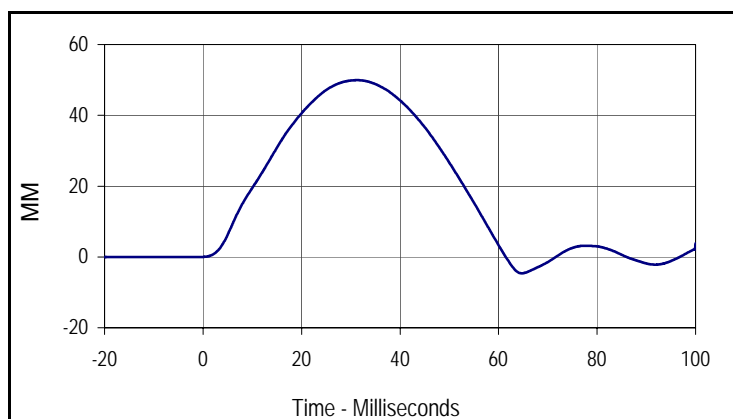
Test Date: 10/23/14  
 Test I.D.: F037RB1064



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	405	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	21.9	Pass
	Min		21.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.3	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.1	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	49.9	Pass
Overall Test Results				Pass



Curve Description			
Upper Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.1	31.6	-4.2	66.3



Curve Description			
Upper Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
49.9	31.3	-4.6	64.7

Test Program: ES2re Thorax - Rib Drop Test

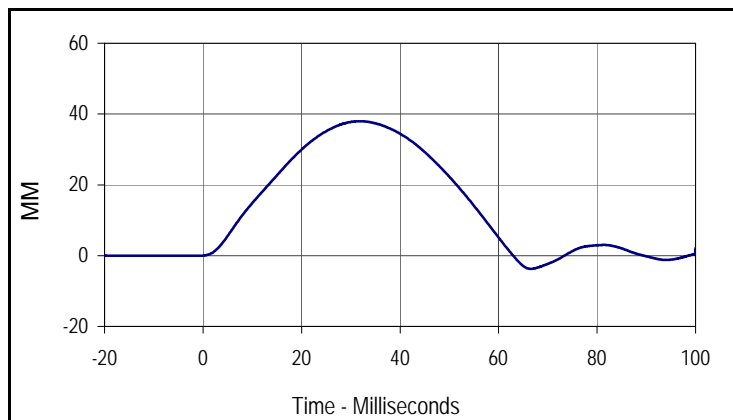
Test Date: 10/23/14



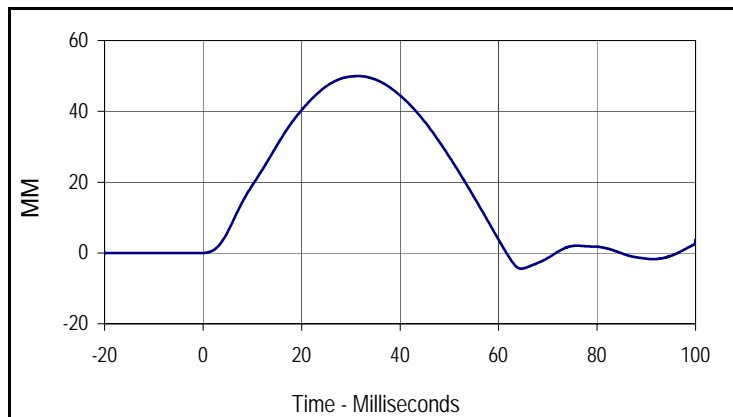
ATD Serial No.: F037 Rib # 2

Test I.D.: F037RB2064

Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	450	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	21.9	Pass
	Min		21.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.3	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	37.9	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	50.0	Pass
Overall Test Results				Pass



Curve Description			
Middle Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
37.9	31.9	-3.7	66.6



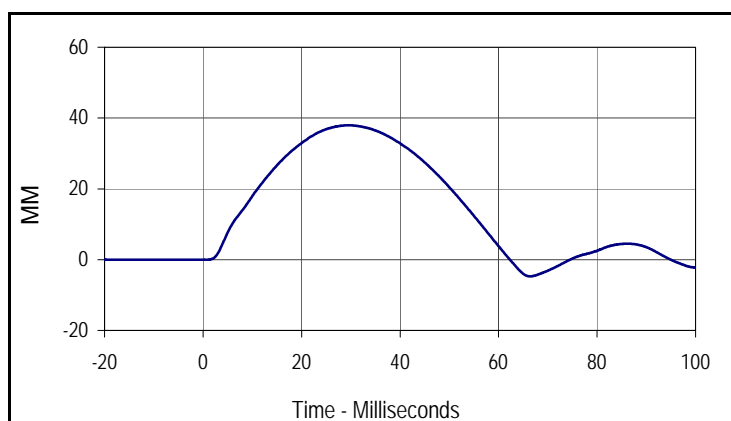
Curve Description			
Middle Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
50.0	31.4	-4.4	64.6

Test Program: ES2re Thorax - Rib Drop Test  
 ATD Serial No.: F037 Rib # 3

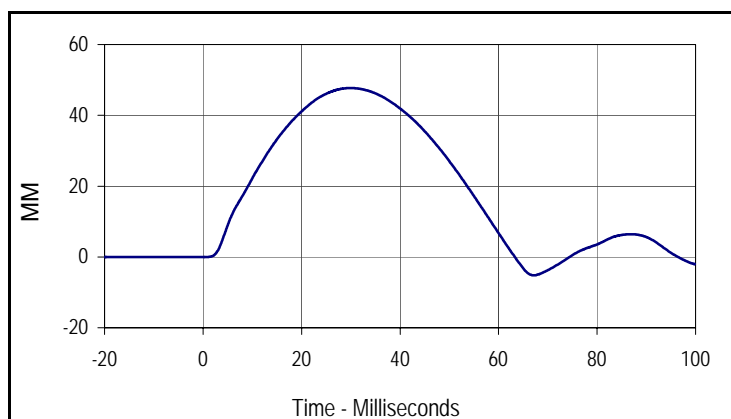
Test Date: 10/23/14  
 Test I.D.: F037RB3064



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	495	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	21.9	Pass
	Min		21.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.4	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.0	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	47.7	Pass
Overall Test Results				Pass



Curve Description			
Lower Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.0	29.6	-4.7	66.4



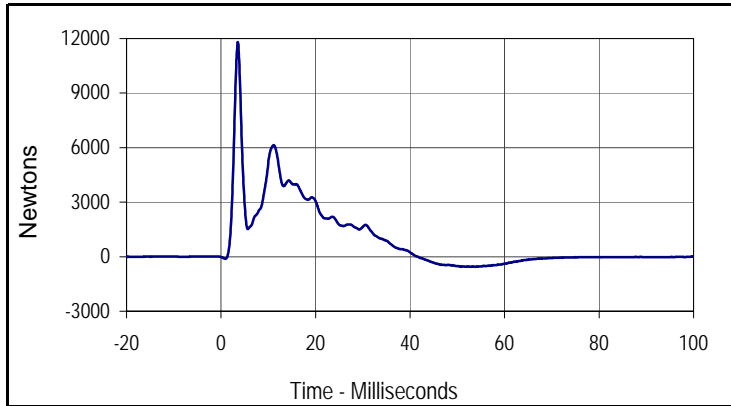
Curve Description			
Lower Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
47.7	29.9	-5.2	67.1

Test Program: ES2re Thorax - Full Body Impact Test  
 ATD Serial No.: F037

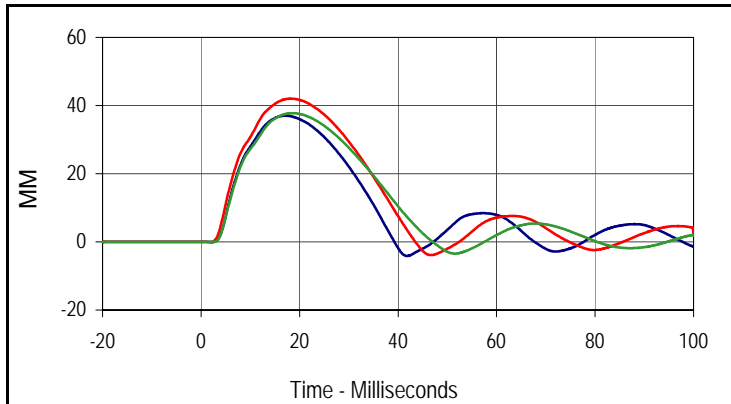
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 Test I.D.: F037TH064



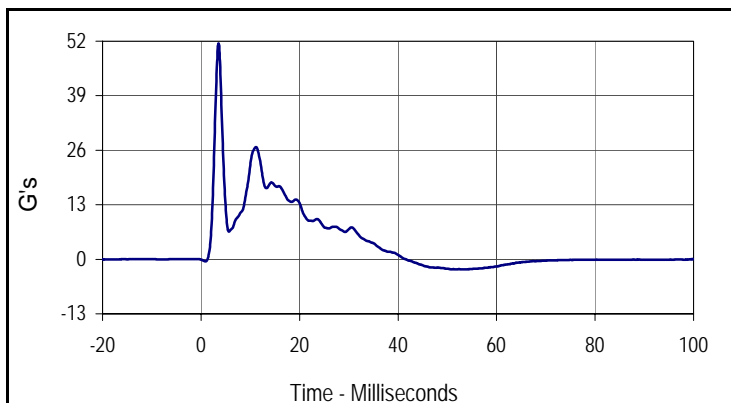
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	540	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	21.9	Pass
	Min		21.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.4	Pass
Peak Impactor Velocity	m/s	5.4 to 5.6	5.49	Pass
Peak Impactor Force	N	5100 to 6200	6132.3	Pass
	msec	> 6.0 msec	11.1	Pass
Peak Upper Rib Deflection	mm	34 to 41	37.0	Pass
Peak Middle Rib Deflection	mm	37 to 45	42.0	Pass
Peak Lower Rib Deflection	mm	37 to 44	37.8	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
11797.7	3.6	-554.5	53.9



Curve Description			
Upper, Middle, Lower Rib Deflections			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
37.0	17.1	-4.1	41.8
Max (Middle)	Time	Min (Middle)	Time
42.0	18.2	-3.9	46.7
Max (Lower)	Time	Min (Lower)	Time
37.8	18.6	-3.4	51.5



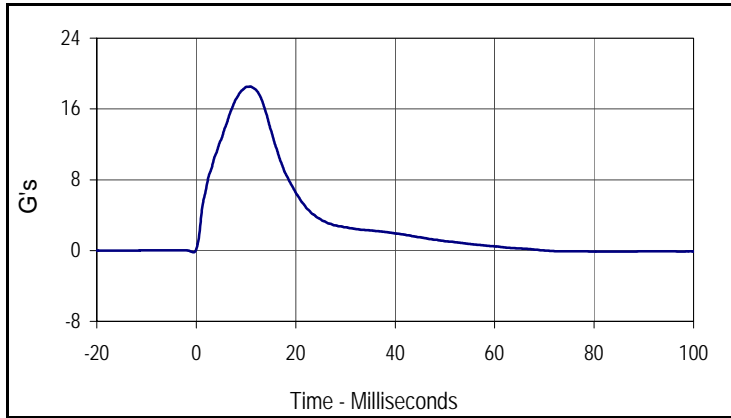
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
51.5	3.6	-2.4	53.9

Test Program: ES2re Abdomen Impact Test  
 ATD Serial No.: F037

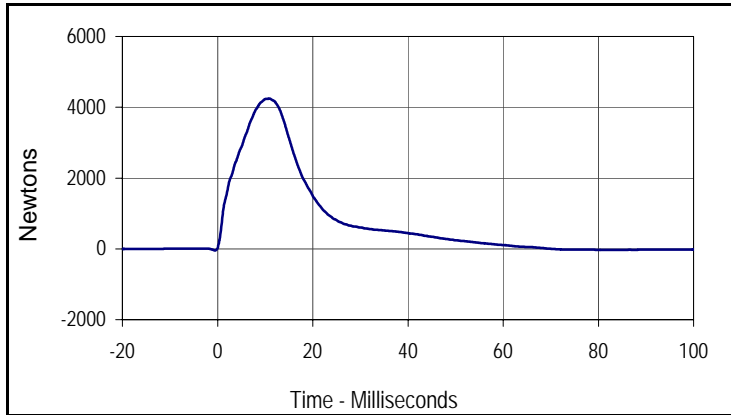
Test Date: 10/23/14  
 Test I.D.: F037ABD064



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	610	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	21.9	Pass
	Min		21.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.9	Pass
Probe Velocity	m/s	3.9 to 4.1	4.00	Pass
Peak Impactor Force	N	4000 to 4800	4244.1	Pass
	msec	10.6 to 13.0	10.9	Pass
Sum of Abdominal Forces	N	2200 to 2700	2515.5	Pass
	msec	10.0 to 12.3	10.8	Pass
Overall Test Results				Pass



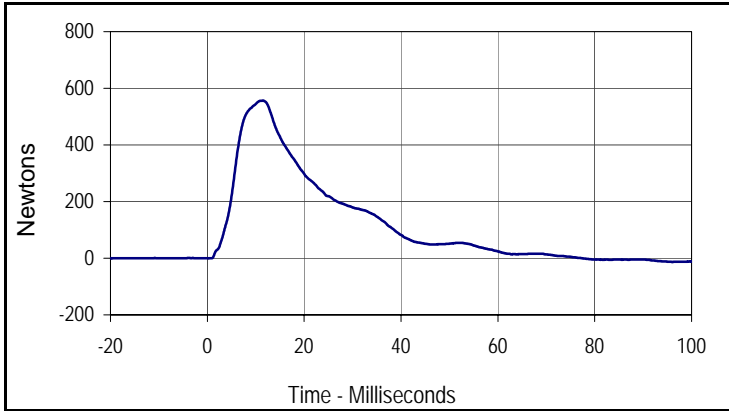
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
18.5	10.9	-0.2	-0.6



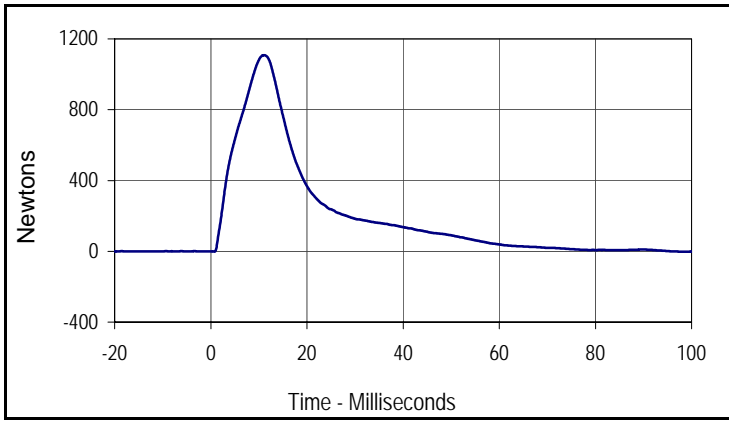
Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4244.1	10.9	-43.6	-0.6

Test Program: ES2re Abdomen Impact Test  
 ATD Serial No.: F037

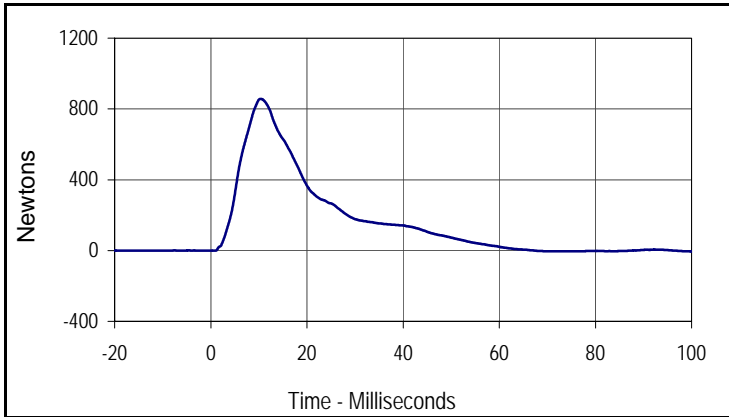
Test Date: 10/23/14  
 Test I.D.: F037ABD064



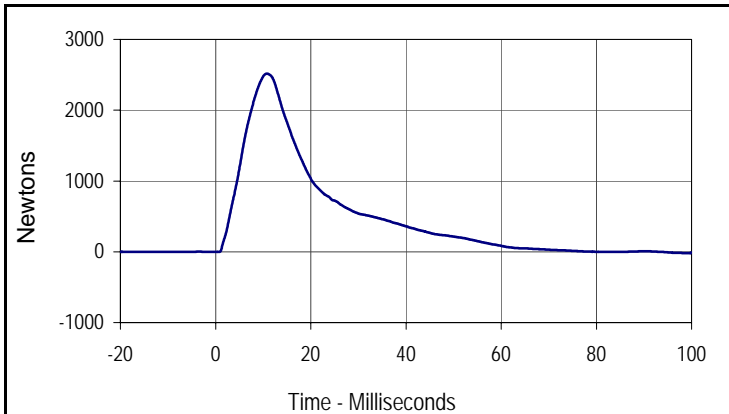
Curve Description			
Front Abdomen Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
556.5	11.5	-13.4	96.0



Curve Description			
Middle Abdomen Force			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtons
Max	Time	Min	Time
1107.5	11.1	-2.5	99.0



Curve Description			
Rear Abdomen Force			
Plot No.	Type	SAE Class	Units
005	FIL	600	Newtons
Max	Time	Min	Time
856.6	10.4	-6.3	170.0



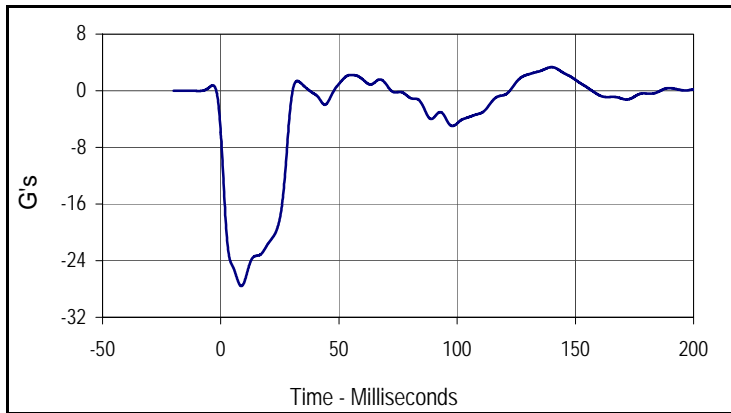
Curve Description			
Abdomen Sum Resultant			
Plot No.	Type	SAE Class	Units
006	RES	600	Newtons
Max	Time	Min	Time
2515.5	10.8	-19.0	99.0

Test Program: ES2re Lumbar Flexion Test  
 ATD Serial No.: F037

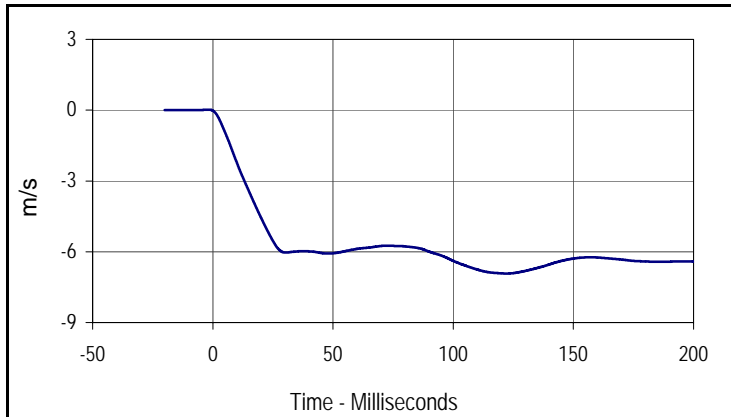
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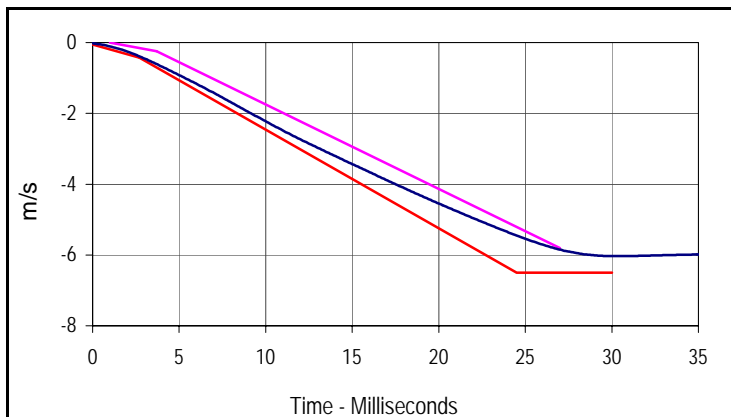
Tested Parameter	Units	Specification	Result	Pass/Fail
Lumbar Spine Assembly Soak Time	Minutes	≥240	685	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	21.9	Pass
	Min		21.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.7	Pass
Pendulum Velocity	m/s	5.95 to 6.15	6.05	Pass
Headform Rotation	Max	45 to 55	49.4	Pass
	Time	39 to 53	44.8	Pass
Time of Decay to Zero Angle from Peak	msec	37 to 57	41.5	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
3.3	140.6	-27.6	9.3



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.3	-6.9	122.9



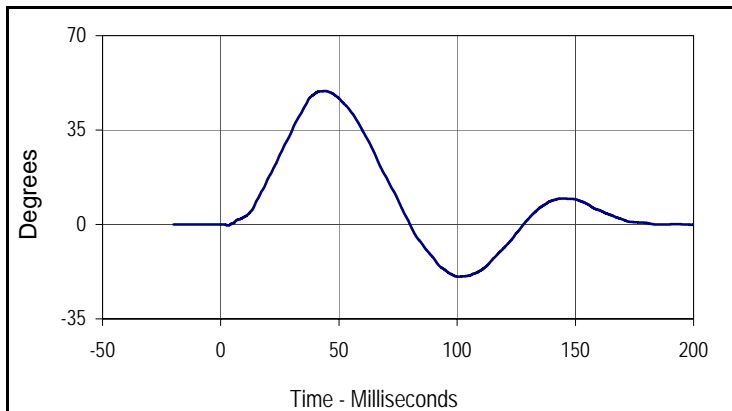
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.3	-6.9	122.9

Velocity Corridors

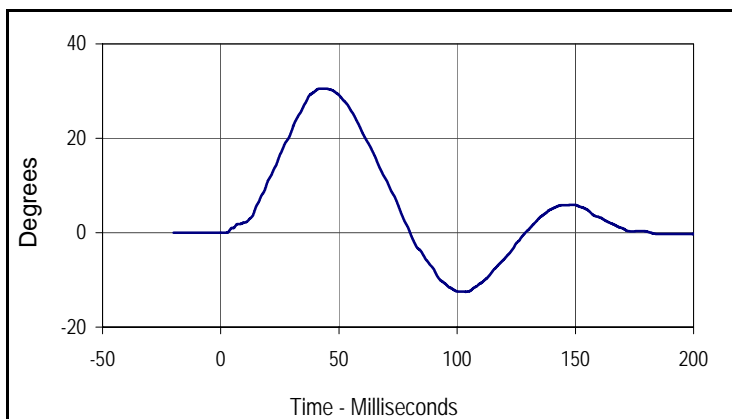
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.50
		30.0	-6.50

Test Program: ES2re Lumbar Flexion Test  
 ATD Serial No.: F037

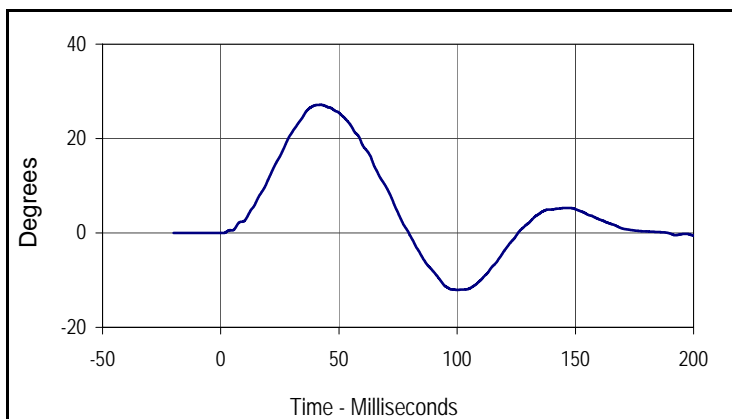
Test Date: 10/23/14  
 Test I.D.: F037LB064



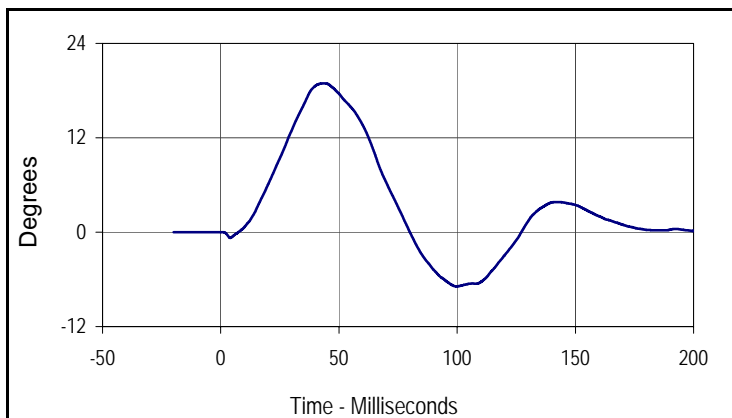
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
49.4	44.8	-19.4	101.0



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
30.5	45.0	-12.5	104.3



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
27.2	42.8	-12.1	100.6



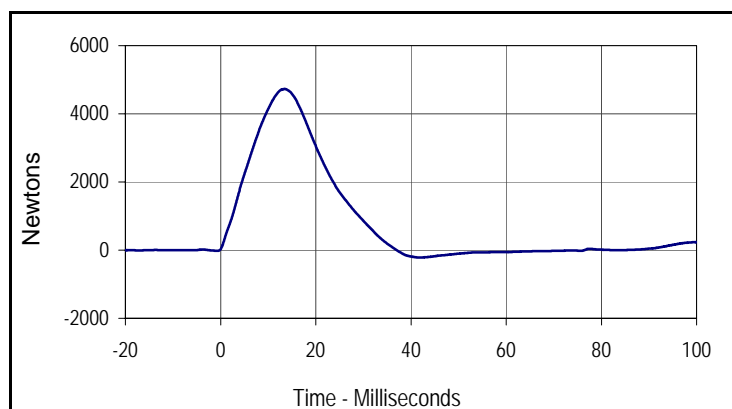
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
18.9	44.4	-6.9	100.4

Test Program: ES2re Pelvis Impact Test  
 ATD Serial No.: F037

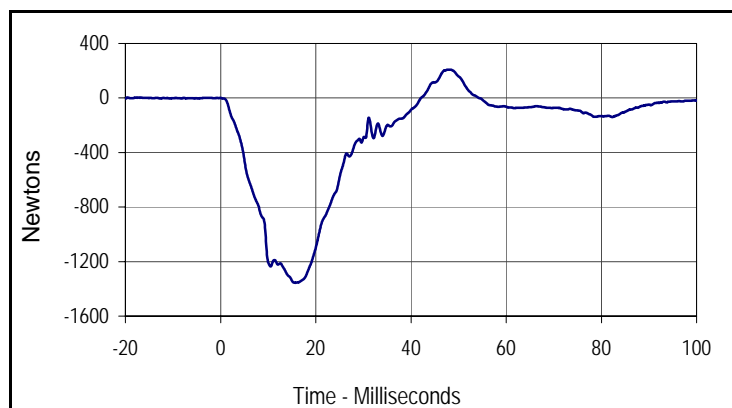
Test Date: 10/23/14  
 Test I.D.: F037PL064



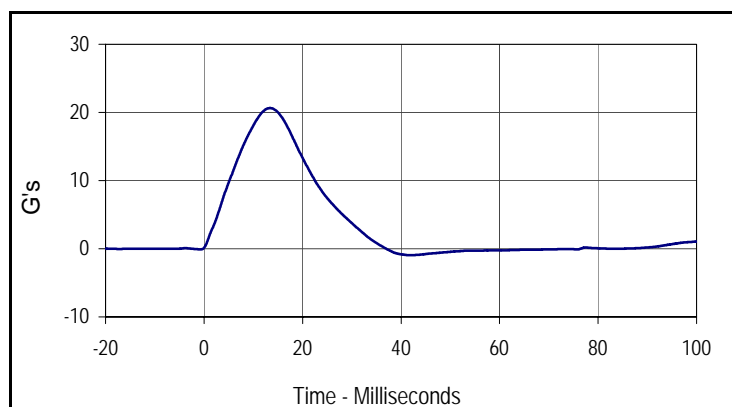
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	740	Pass
Temperature During Soak	Max	20.6 to 22.2	21.2	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	21.9	Pass
	Min		21.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	21.9	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.29	Pass
Peak Impactor Force	N	4700 to 5400	4728.1	Pass
	msec	11.8 to 16.1	13.4	Pass
Peak Pubic Symphysis Load	N	-1230 to -1590	-1354.8	Pass
	msec	12.2 to 17.0	15.7	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4728.1	13.4	-217.5	41.8



Curve Description			
Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
208.6	48.3	-1354.8	15.7



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
20.6	13.4	-0.9	41.8

Test Program: SID IIs External Measurements

Test Date: 10/24/14



ATD Serial No.: 307

Test I.D.: N/A

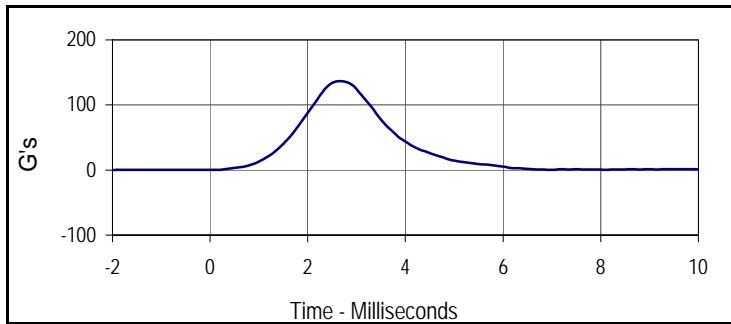
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
A Sitting Height	mm	772 - 788	778	Pass
B Shoulder Pivot Height	mm	437 - 453	443	Pass
C H-Point Height	mm	79 - 89	85	Pass
D H-Point from Seatback	mm	141 - 151	144	Pass
E Shoulder Pivot from Backline	mm	97 - 107	102	Pass
F Thigh Clearance	mm	119 - 135	128	Pass
G Head Breadth	mm	140 - 148	145	Pass
H Head Back from Backline	mm	40 - 46	43	Pass
I Head Depth	mm	178 - 188	185	Pass
J Head Circumference	mm	541 - 551	546	Pass
K Buttock to Knee Length	mm	514 - 540	525	Pass
L Popliteal Height	mm	343 - 369	351	Pass
M Knee Pivot to Floor Height	mm	392 - 409	400	Pass
N Buttock Popliteal Length	mm	416 - 442	432	Pass
O Chest Depth w/o Jacket	mm	195 - 211	205	Pass
P Foot Length	mm	216 - 232	223	Pass
Q Hip Breadth with Pelvic Plug	mm	313 - 323	319	Pass
R Arm Length	mm	249 - 259	254	Pass
S Knee Joint to Seatback	mm	477 - 493	483	Pass
V Shoulder Width	mm	341 - 357	351	Pass
W Foot Width	mm	78 - 94	89	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.: 307

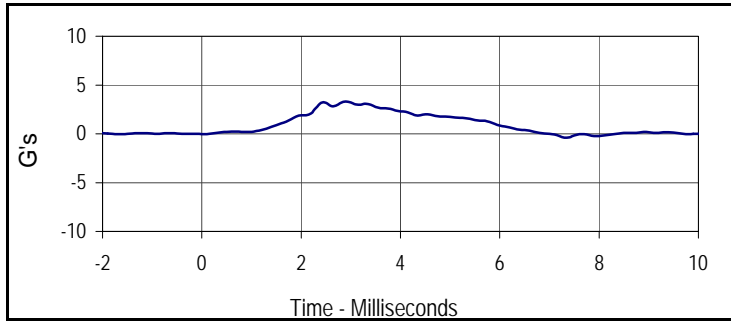
Test Date: 10/24/14  
 Test I.D.: 307HD072



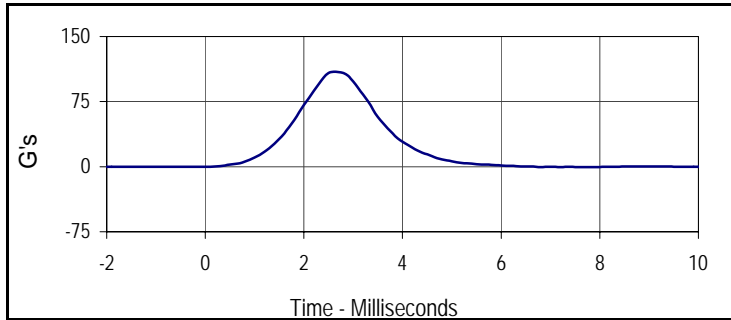
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	300	Pass
Temperature During Soak	Max	18.9 to 25.6	21.3	Pass
	Min		21.0	Pass
Humidity During Soak	Max	10.0 to 70.0	20.4	Pass
	Min		20.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.3	Pass
Peak Head Resultant Acceleration	G's	115 to 137	136.7	Pass
Peak Head X Acceleration	G's	<15	3.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	1.0	Pass
<b>Overall Test Results</b>				<b>Pass</b>



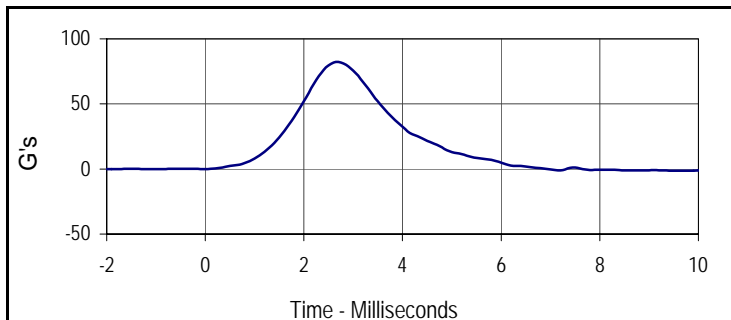
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
136.7	2.6	0.1	-2.0



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.3	2.9	0.0	-1.6



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
109.5	2.6	-0.7	7.9



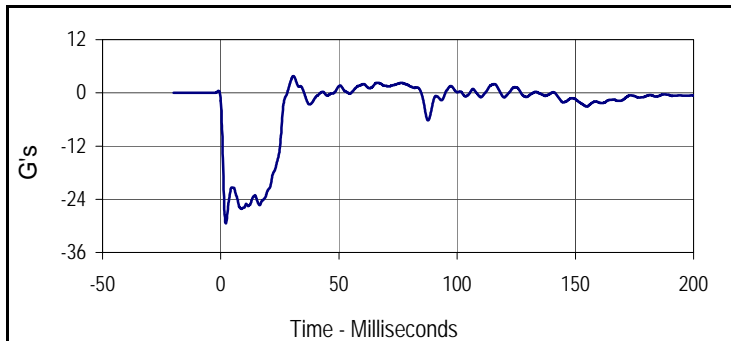
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
82.3	2.7	-1.4	9.7

Test Program: SID IIs Neck Flexion Test  
 ATD Serial No.: 307

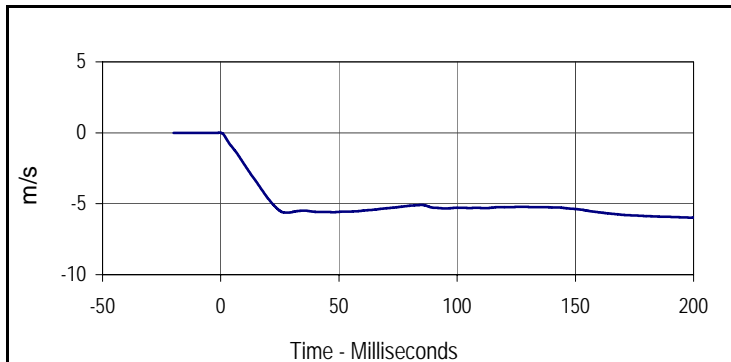
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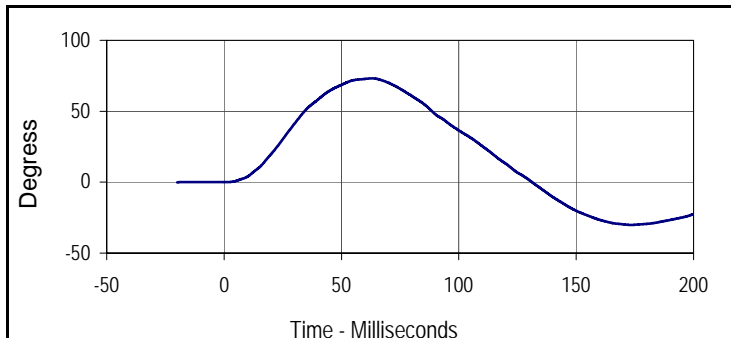
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	375	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass	
	Min		21.0	Pass	
Humidity During Soak	Max	10.0 to 70.0	20.4	Pass	
	Min		20.1	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	20.3	Pass	
Pendulum Velocity	m/s	5.51 to 5.63	5.57	Pass	
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.24	Pass
	15 msec	m/s	-3.30 to -4.10	-3.44	Pass
	20 msec	m/s	-4.40 to -5.40	-4.62	Pass
	25 msec	m/s	-5.40 to -6.10	-5.50	Pass
	25-100 msec	m/s	-5.50 to -6.20	-5.63	Pass
D-Plane Rotation	Max	Degrees	71 to 81	73.2	Pass
	Time	msec	50 to 70	63.0	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-39.4	Pass	
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	112.7	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
3.8	0.0	-29.5	0.0



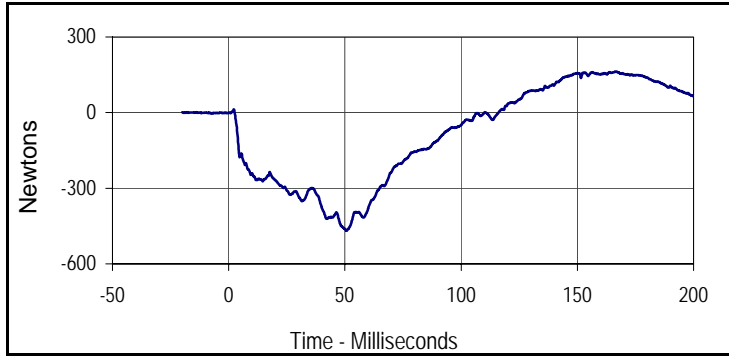
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.4	-6.0	200.0



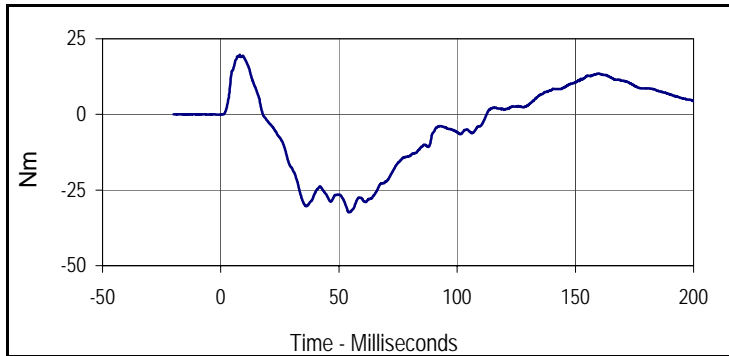
Curve Description			
D-Plane Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degress
Max	Time	Min	Time
73.2	63.0	-30.1	173.4

Test Program: SID IIs Neck Flexion Test  
 ATD Serial No.: 307

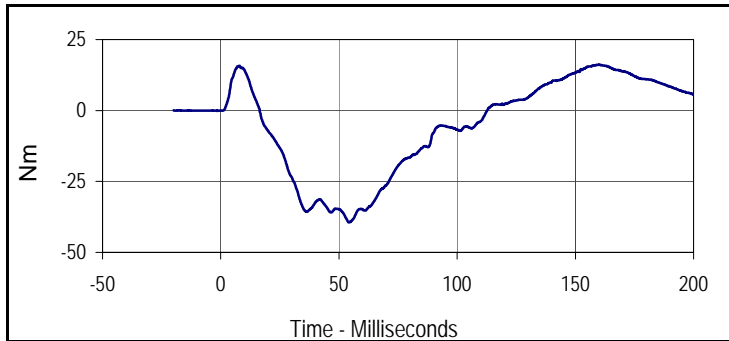
Test Date: 10/24/14  
 Test I.D.: 307NB072



Curve Description			
Neck Force Y			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtons
Max	Time	Min	Time
163.2	166.6	-467.7	50.6



Curve Description			
Neck Moment X			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
19.7	8.0	-32.4	54.2



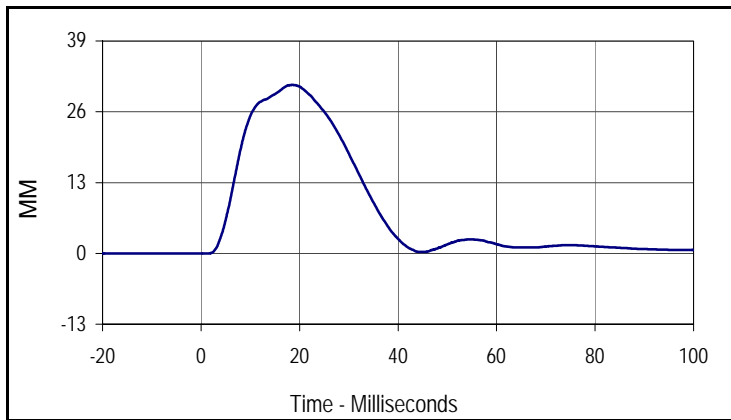
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
006	FIL	600	Nm
Max	Time	Min	Time
16.2	160.0	-39.4	54.2

Test Program: SID IIs Shoulder Impact Test  
 ATD Serial No.: 307

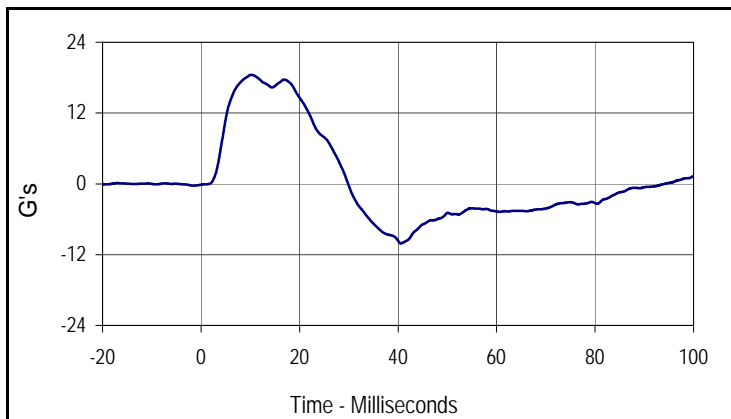
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 Test I.D.: 307SH072



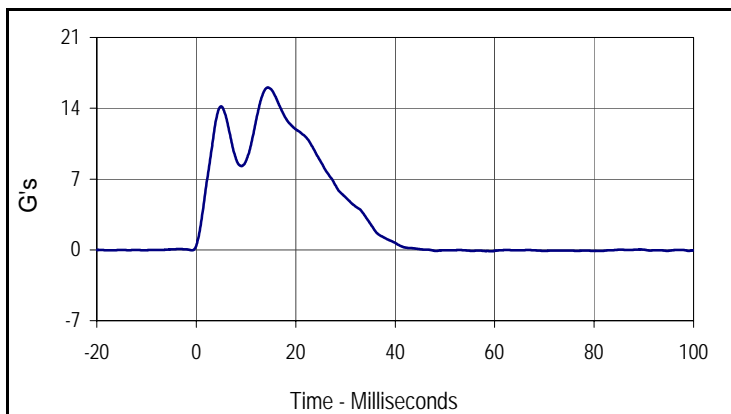
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	430	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.0	Pass
Humidity During Soak	Max	10.0 to 70.0	20.4	Pass
	Min		20.1	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.2	Pass
Impactor Velocity	m/s	4.20 to 4.40	4.27	Pass
Peak Shoulder Deflection	mm	28 to 37	30.9	Pass
Peak Lateral Spine Acceleration Y	G's	17 to 22	18.5	Pass
Peak Impactor Acceleration	G's	13 to 18	16.1	Pass
Overall Test Results				Pass



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
30.9	18.5	0.0	-16.3



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.5	10.2	-10.1	40.6



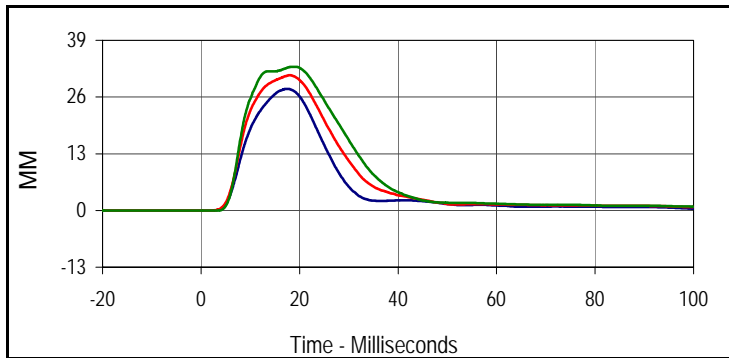
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
16.1	14.4	-0.2	0.0

Test Program: SID IIs Thorax with Arm Impact Test  
 ATD Serial No.: 307

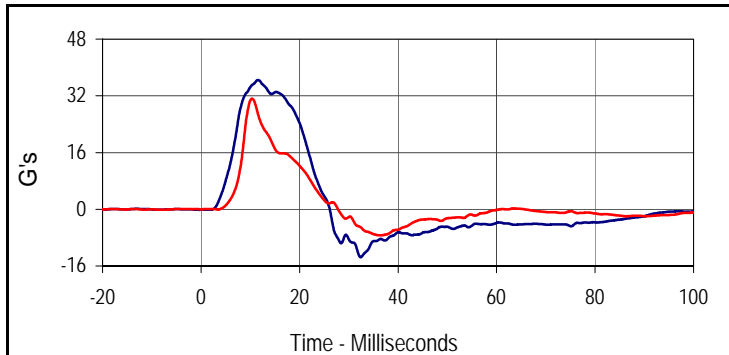
Test Date: 10/24/14  
 Test I.D.: 307TWA072



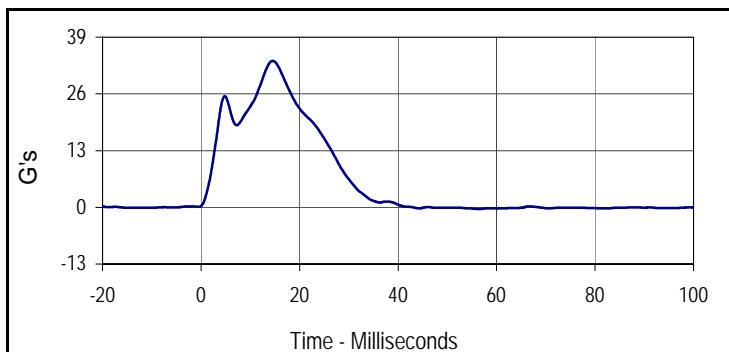
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	475	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.0	Pass
Humidity During Soak	Max	10.0 to 70.0	20.4	Pass
	Min		20.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.1	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.74	Pass
Peak Shoulder Deflection	mm	31 to 40	35.9	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.9	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.0	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	32.9	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	36.4	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	31.2	Pass
Peak Impactor Acceleration	G's	30 to 36	33.5	Pass
<b>Overall Test Results</b>				<b>Pass</b>



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.9	17.5	0.0	-13.2
Middle Thorax Deflection			
Max	Time	Min	Time
31.0	18.0	0.0	-14.4
Lower Thorax Deflection			
Max	Time	Min	Time
32.9	18.6	0.0	-4.8



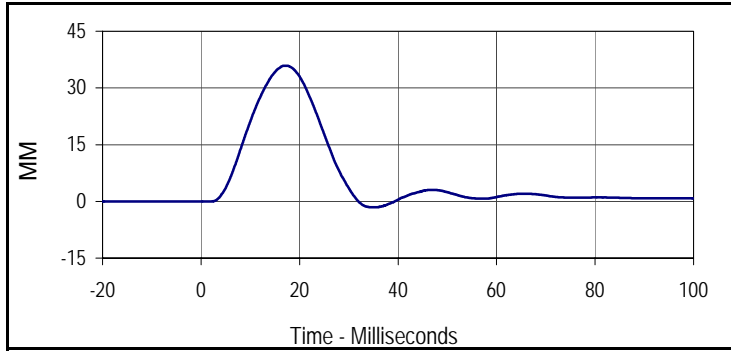
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
36.4	11.6	-13.5	32.4
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
31.2	10.4	-7.3	36.3



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
33.5	14.5	-0.4	56.4

Test Program: SID IIs Thorax with Arm Impact Test  
 ATD Serial No.: 307

Test Date: 10/24/14  
 Test I.D.: 307TWA072



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
35.9	17.1	-1.6	35.0

Test Program: SID IIs Thorax without Arm Impact Test

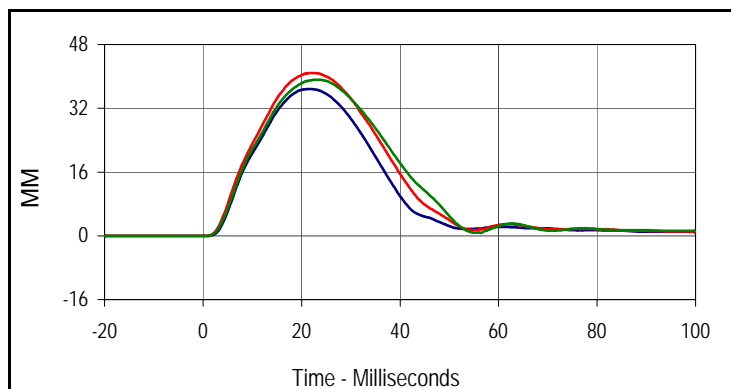
Test Date: 10/24/14



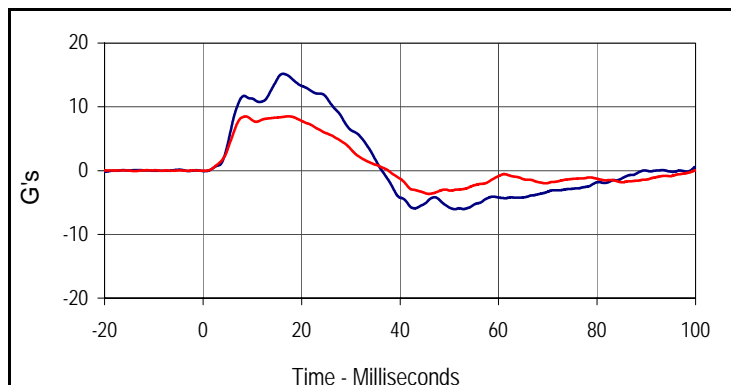
ATD Serial No.: 307

Test I.D.: 307TWOA072

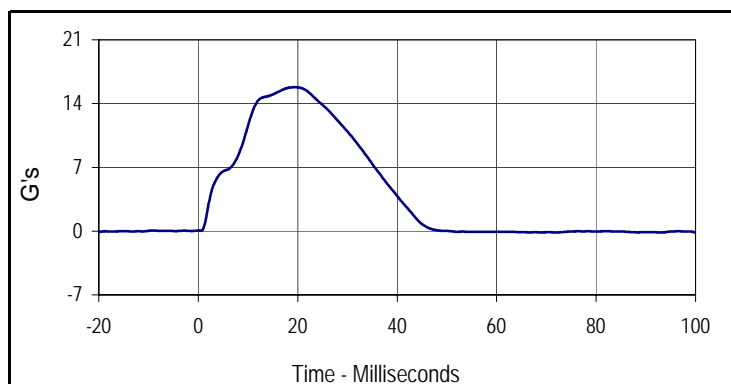
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	525	Pass
Temperature During Soak	Max	18.9 to 25.6	21.3	Pass
	Min		21.0	Pass
Humidity During Soak	Max	10.0 to 70.0	20.4	Pass
	Min		20.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.1	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.34	Pass
Peak Upper Thorax Rib Deflection	mm	32 to 40	36.8	Pass
Peak Middle Thorax Rib Deflection	mm	39 to 45	40.9	Pass
Peak Lower Thorax Rib Deflection	mm	35 to 43	39.2	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.2	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	8.5	Pass
Peak Impactor Acceleration	G's	14 to 18	15.8	Pass
Overall Test Results				Pass



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
36.8	21.7	0.0	-13.2
Middle Thorax Deflection			
Max	Time	Min	Time
40.9	22.2	0.0	-19.7
Lower Thorax Deflection			
Max	Time	Min	Time
39.2	23.2	0.0	-11.6



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.2	16.3	-6.1	51.1
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.5	17.3	-3.7	45.8



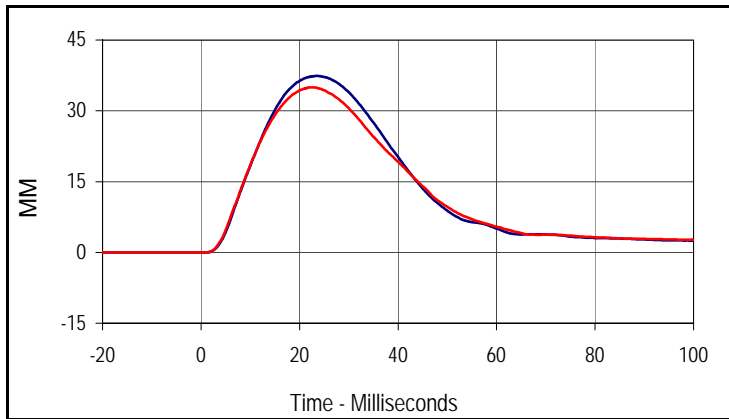
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
15.8	19.3	-0.2	93.3

Test Program: SID IIs Abdomen Impact Test  
 ATD Serial No.: 307

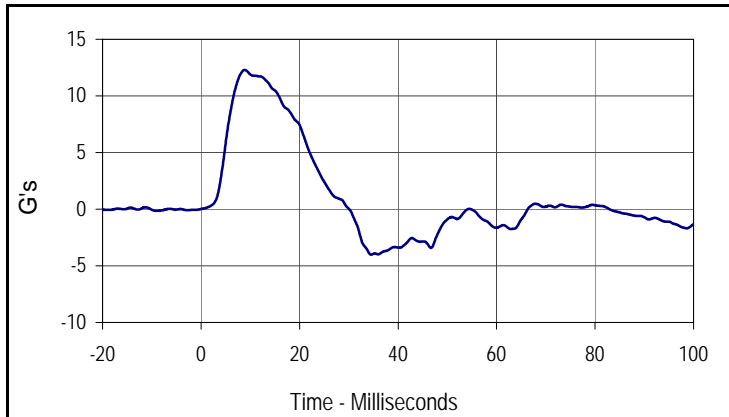
Test Date: 10/24/14  
 Test I.D.: 307ABD072



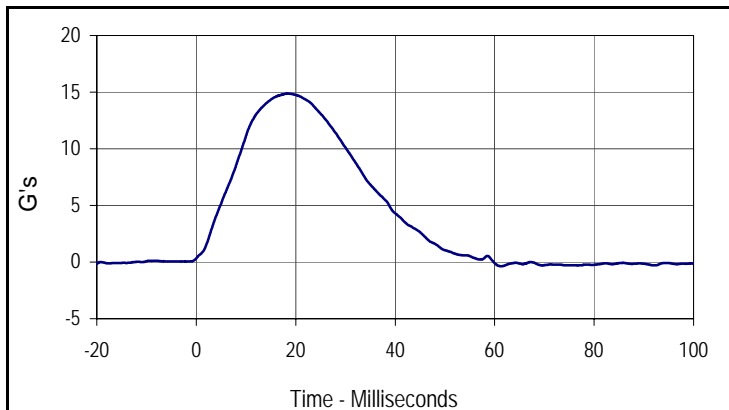
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	560	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.0	Pass
Humidity During Soak	Max	10.0 to 70.0	20.4	Pass
	Min		20.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.2	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.30	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	37.4	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	35.0	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.3	Pass
Peak Impactor Acceleration	G's	12 to 16	14.9	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
37.4	23.5	0.0	-18.9



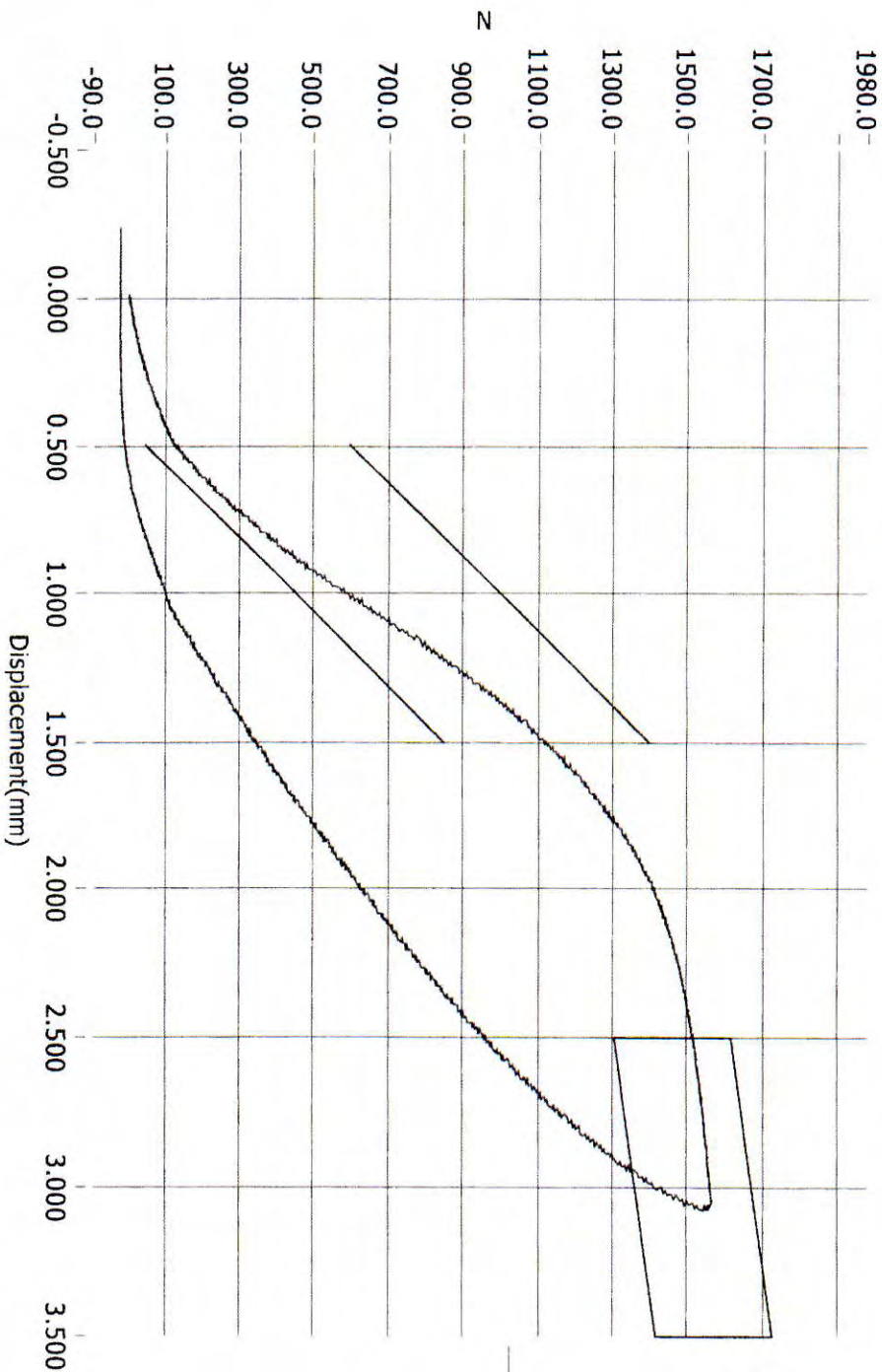
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
35.0	22.6	0.0	-14.5



Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.3	8.9	-4.0	34.5

Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
14.9	18.4	-0.4	61.3

# Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

<u>Test ID</u>	<u>Part Serial Number</u>	<u>Test Date</u>	<u>Test Time</u>
	48902	12/5/2011	7:50 PM
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
	N/A	SIDIIs	

**M20155303 PRE TEST**

Current Date : 12/5/2011

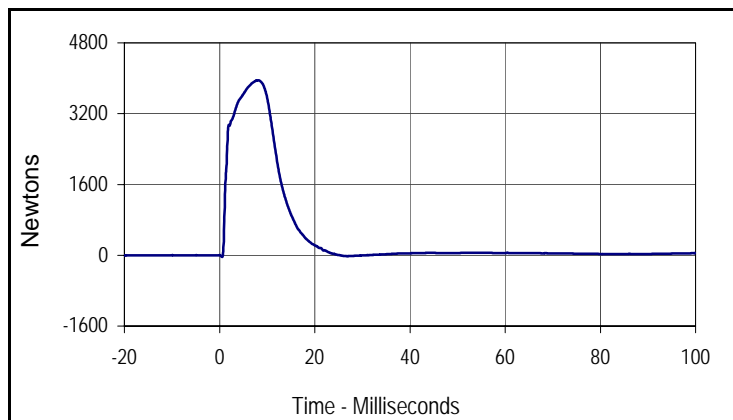
Current Time : 19:51:13

Test Program: SID IIs Pelvis Acetabulum Impact Test  
 ATD Serial No.: 307

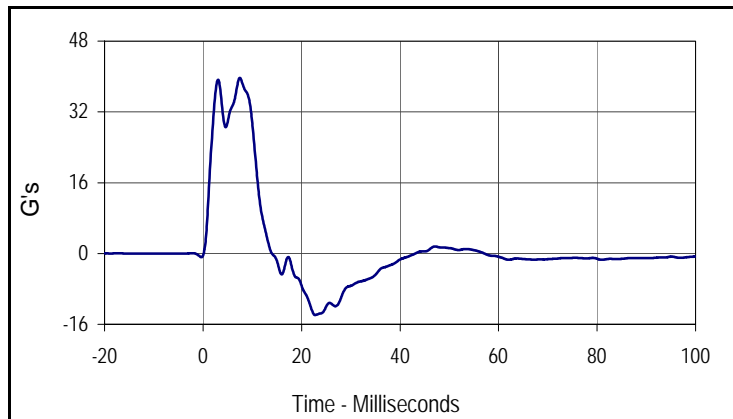
Test Date: 10/24/14  
 Test I.D.: 307ACET072



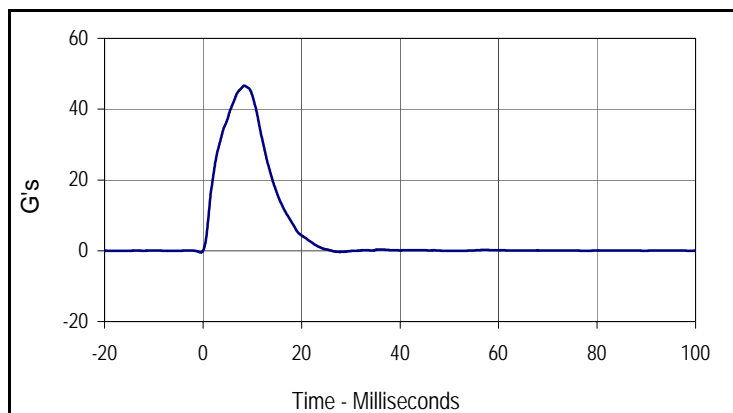
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	605	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.0	Pass
Humidity During Soak	Max	10.0 to 70.0	20.4	Pass
	Min		20.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.2	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.78	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	3955.4	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	39.7	Pass
Peak Impactor Acceleration	G's	38 to 47	46.6	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3955.4	8.1	-41.0	0.6



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
39.7	7.5	-13.9	22.8



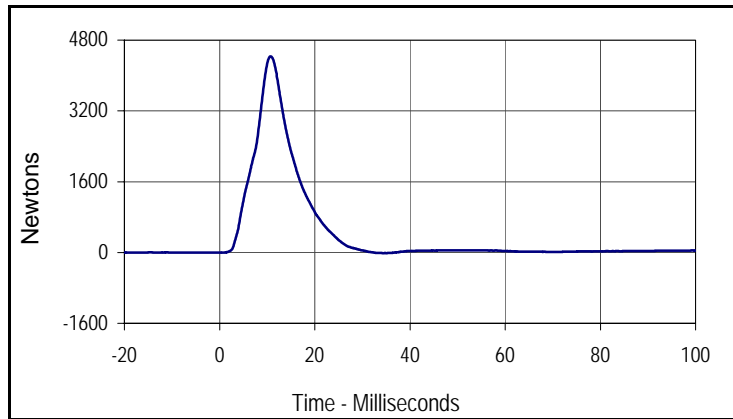
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
46.6	8.4	-0.5	-0.5

Test Program: SID IIs Pelvis Iliac Calibration  
 ATD Serial No.: 307

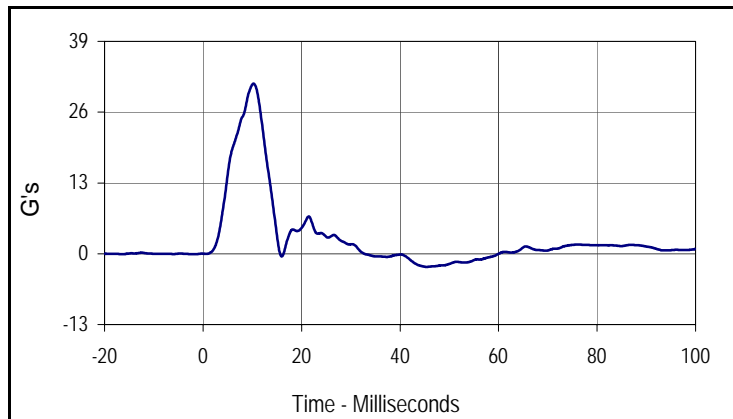
Test Date: 10/24/14  
 Test I.D.: 307PL072



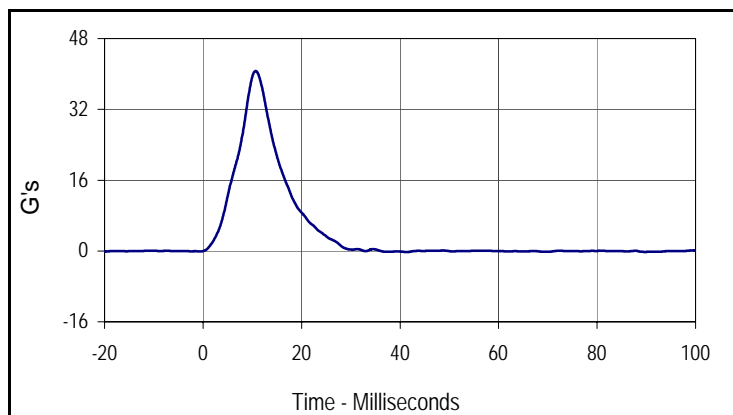
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	675	Pass
Temperature During Soak	Max	20.6 to 22.2	21.3	Pass
	Min		21.0	Pass
Humidity During Soak	Max	10.0 to 70.0	20.4	Pass
	Min		20.1	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.0	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	20.2	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.28	Pass
Peak Iliac Force	Newtons	4100 to 5100	4431.6	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	31.2	Pass
Peak Impactor Acceleration	G's	36 to 45	40.7	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Iliac Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4431.6	10.7	-14.4	34.3



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
31.2	10.3	-2.4	45.4



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
40.7	10.7	-0.3	41.4

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

Test Program: ES2re External Measurements

Test Date: 10/28/14



ATD Serial No.: F037

Test I.D.: N/A

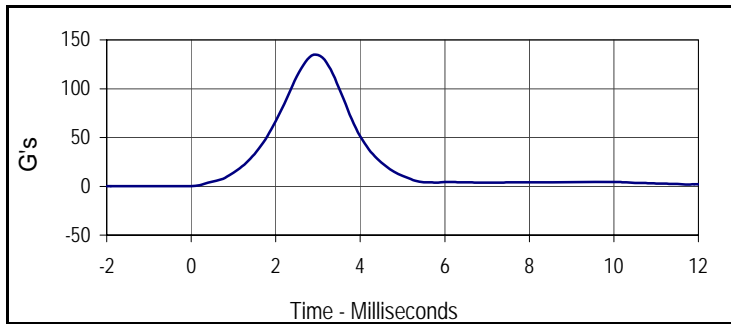
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	30.0	Pass
1 Sitting Height	mm	900 - 918	909	Pass
2 Seat to Shoulder Joint	mm	558 - 572	564	Pass
3 Seat to Lower Face of Thoracic Spine Box	mm	346 - 356	350	Pass
4 Seat to Hip Joint (Center of Bolt)	mm	97 - 103	99	Pass
5 Sole to Seat, Sitting	mm	333 - 451	395	Pass
6 Head Width	mm	152 - 158	156	Pass
7 Shoulder / Arm Width	mm	461 - 479	470	Pass
8 Thorax Width	mm	322 - 332	326	Pass
9 Abdomen Width	mm	273 - 287	280	Pass
10 Pelvis Lap Width	mm	359 - 373	363	Pass
11 Head Depth	mm	196 - 206	201	Pass
12 Thorax Depth	mm	262 - 272	270	Pass
13 Abdomen Width	mm	194 - 204	199	Pass
14 Pelvis Depth	mm	235 - 245	240	Pass
15 Back of Buttocks to Hip Joint (Center of Bolt)	mm	150 - 160	155	Pass
16 Back of Buttocks to Front Knee	mm	597 - 615	608	Pass
Overall Test Results				Pass

Test Program: ES2re Head Drop Test  
 ATD Serial No.: F037

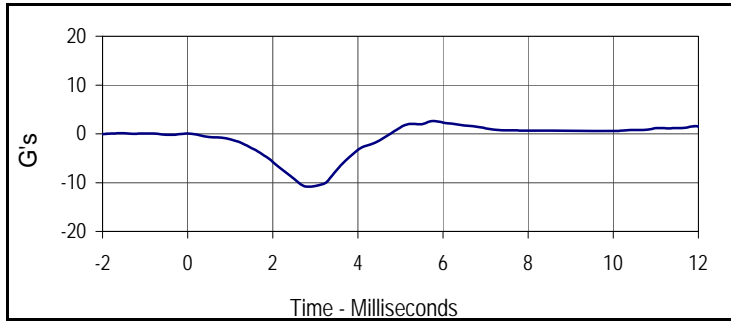
Test Date: 10/28/14  
 Test I.D.: F037HD065



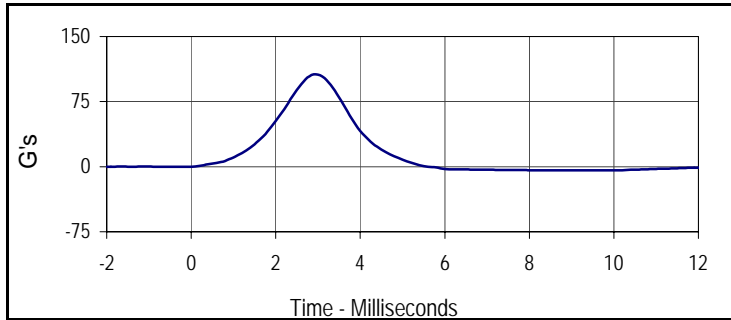
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	354	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	39.9	Pass
	Min		39.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	39.0	Pass
Peak Head Resultant Acceleration	G's	125 to 155	134.8	Pass
Peak Head X Acceleration	G's	≤15	10.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	7.9	Pass
<b>Overall Test Results</b>				<b>Pass</b>



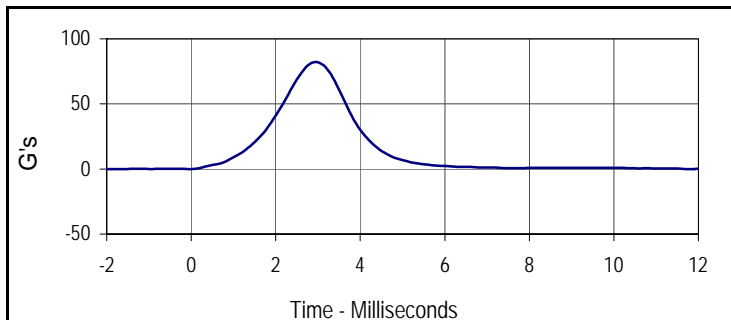
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
134.8	2.9	0.0	-0.1



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.6	5.8	-10.8	2.9



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
106.4	2.9	-4.2	10.1



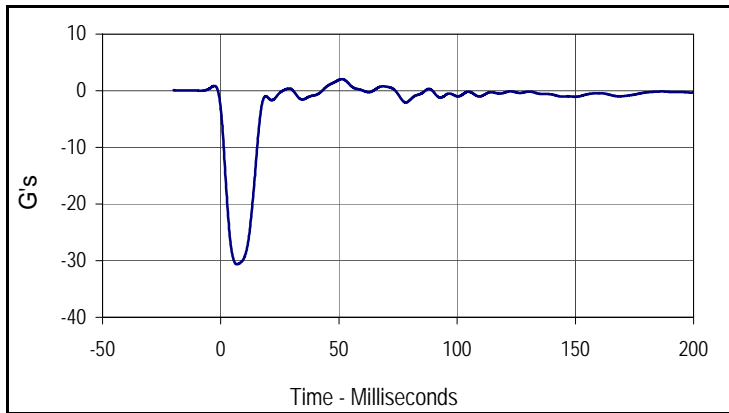
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
82.1	2.9	-0.1	-2.0

Test Program: ES2re Neck Flexion Test  
 ATD Serial No.: F037

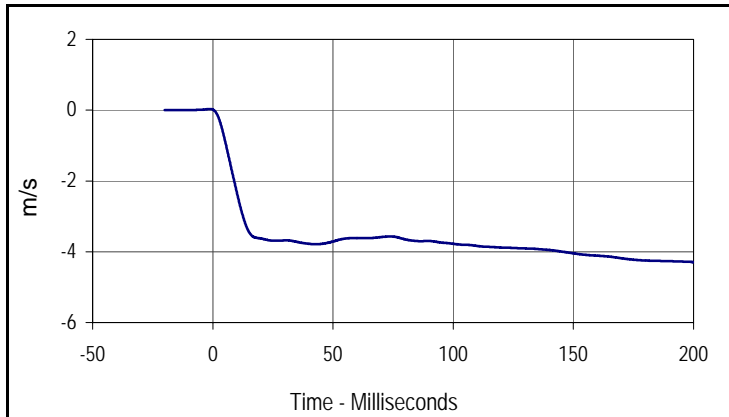
Test Date: 10/28/14  
 Test I.D.: F037NB065



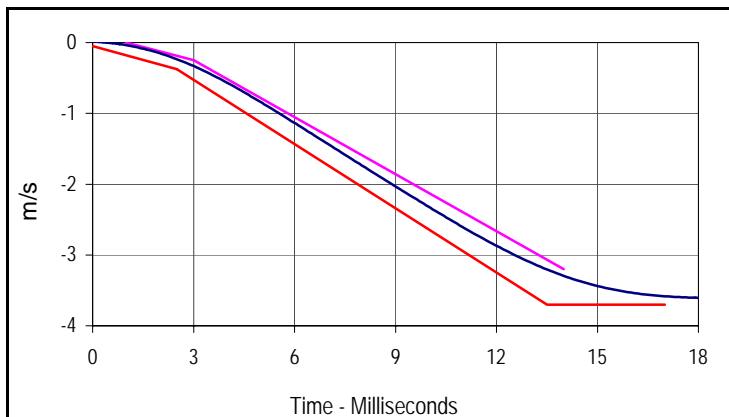
Tested Parameter	Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time	Minutes	≥240	389	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	39.9	Pass
	Min		39.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	39.0	Pass
Pendulum Velocity	m/s	3.3 to 3.5	3.31	Pass
Headform Flexion	Max	49 to 59	54.6	Pass
	Time	54 to 66	61.0	Pass
Headform Flexion Decay (Peak to Zero)	msec	53 to 88	62.4	Pass
Overall Test Results				Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
2.1	51.2	-30.6	6.9



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.2	-4.3	200.0



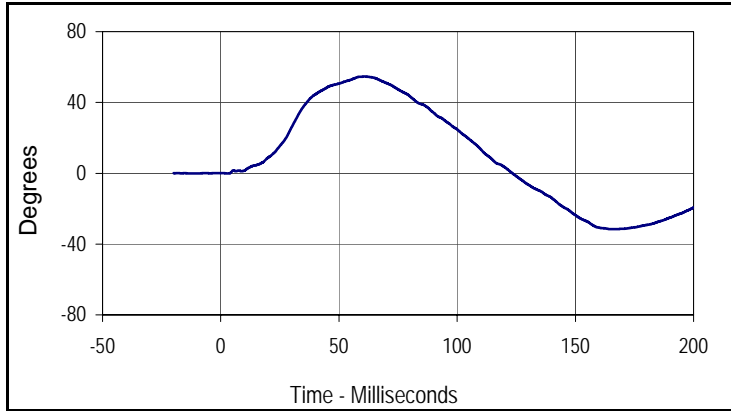
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.2	-4.3	200.0

Velocity Corridors

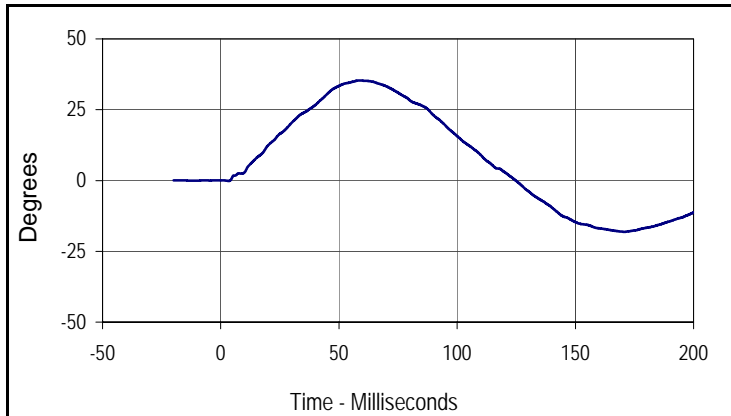
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.0	-0.03	2.5	-0.375
14.0	-3.20	13.5	-3.70
		17.0	-3.70

Test Program: ES2re Neck Flexion Test  
 ATD Serial No.: F037

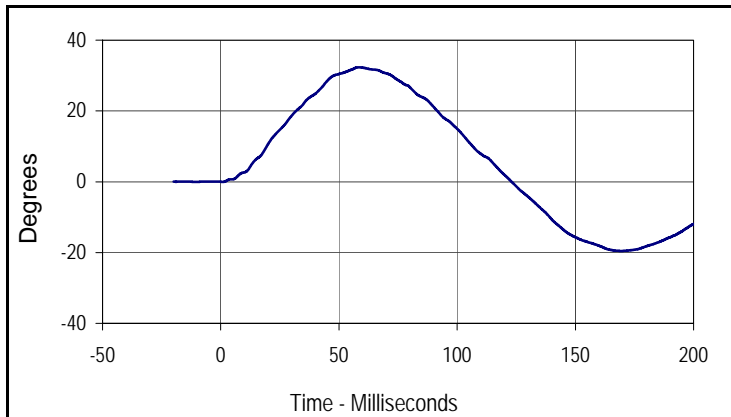
Test Date: 10/28/14  
 Test I.D.: F037NB065



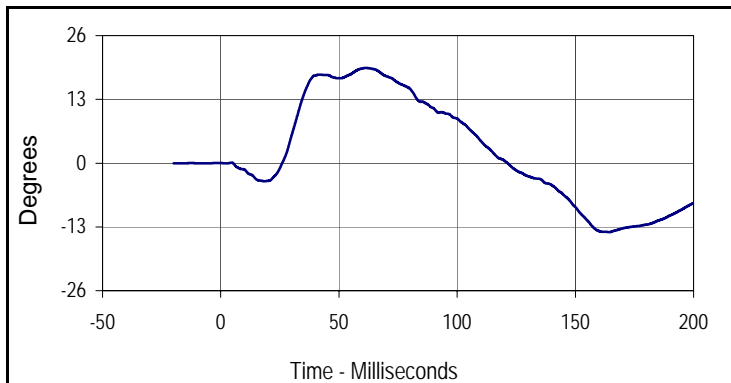
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
54.6	61.0	-31.6	164.9



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
35.3	58.6	-18.1	170.7



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
32.4	58.3	-19.5	169.4



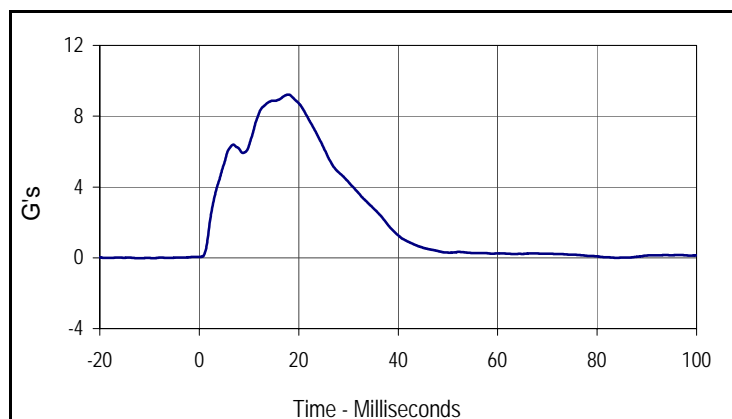
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
19.4	61.2	-14.1	164.3

Test Program: ES2re Shoulder Impact Test  
 ATD Serial No.: F037

Test Date: 10/28/14  
 Test I.D.: F037SH065



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	454	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	39.9	Pass
	Min		39.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	39.3	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.32	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	9.2	Pass
Overall Test Results				Pass



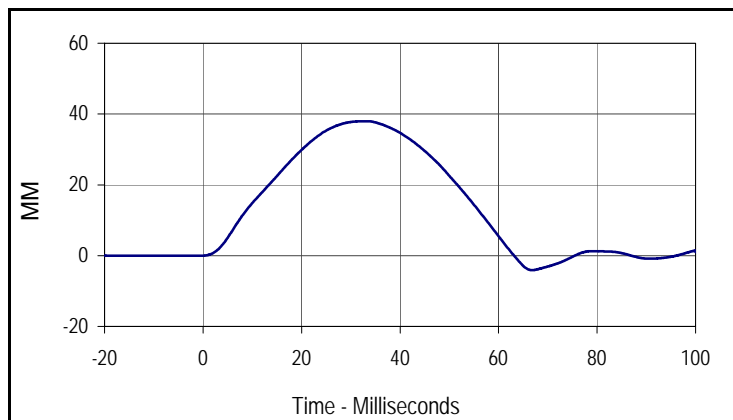
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
9.2	17.9	0.0	-12.4

Test Program: ES2re Thorax - Rib Drop Test  
 ATD Serial No.: F037 Rib # 1

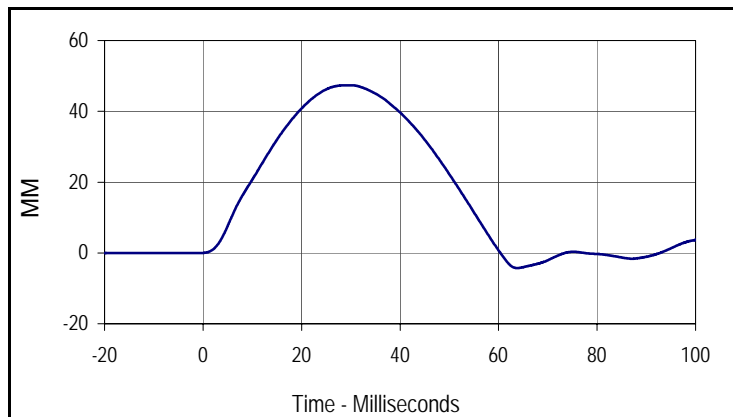
Test Date: 10/28/14  
 Test I.D.: F037RB1065



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	509	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	39.9	Pass
	Min		39.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	39.4	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.0	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	47.4	Pass
Overall Test Results				Pass



Curve Description			
Upper Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.0	33.5	-4.1	66.8



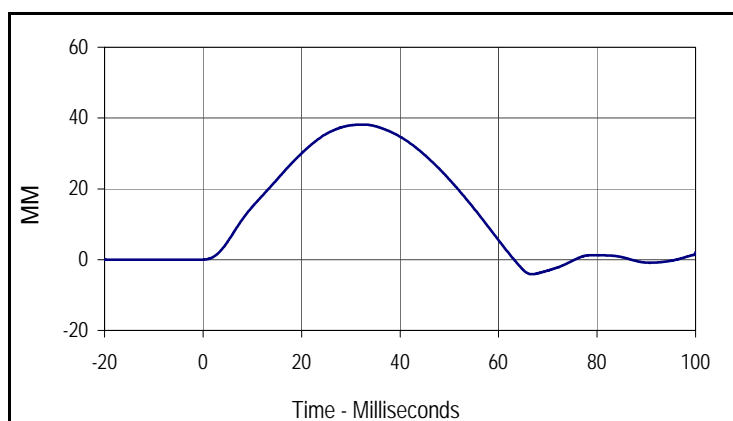
Curve Description			
Upper Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
47.4	29.9	-4.3	63.7

Test Program: ES2re Thorax - Rib Drop Test  
 ATD Serial No.: F037 Rib # 2

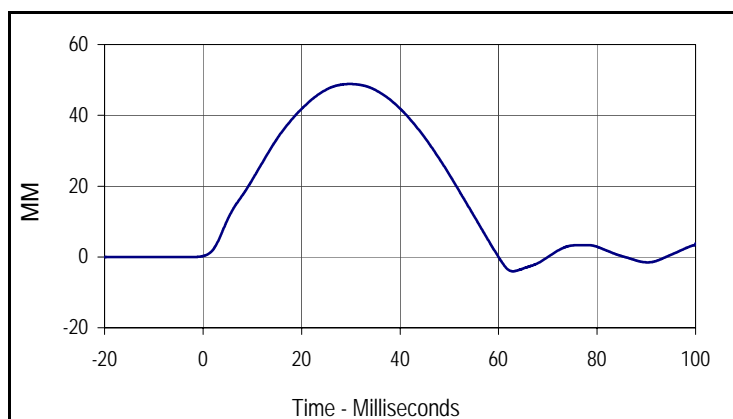
Test Date: 10/28/14  
 Test I.D.: F037RB2065



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	554	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	39.9	Pass
	Min		39.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	39.4	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.1	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	48.9	Pass
Overall Test Results				Pass



Curve Description			
Middle Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.1	32.6	-4.1	66.8



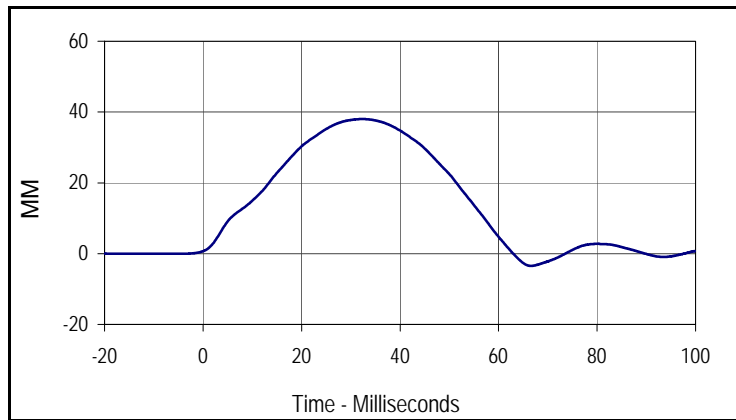
Curve Description			
Middle Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
48.9	29.8	-4.1	62.9

Test Program: ES2re Thorax - Rib Drop Test  
 ATD Serial No.: F037 Rib # 3

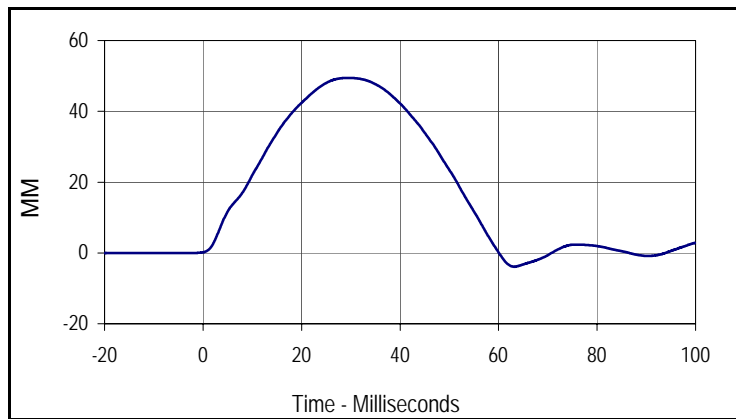
Test Date: 10/28/14  
 Test I.D.: F037RB3065



Tested Parameter	Units	Specification	Result	Pass/Fail
Rib Module Soak Time	Minutes	≥240	599	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	39.9	Pass
	Min		39.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	39.5	Pass
Peak Rib Deflection at 459 +/- 5 mm Drop Height	mm	36 to 40	38.0	Pass
Peak Rib Deflection at 815 +/- 8 mm Drop Height	mm	46 to 51	49.4	Pass
Overall Test Results				Pass



Curve Description			
Lower Rib Deflection (459 mm Drop Height)			
Plot No.	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.0	32.3	-3.5	66.6



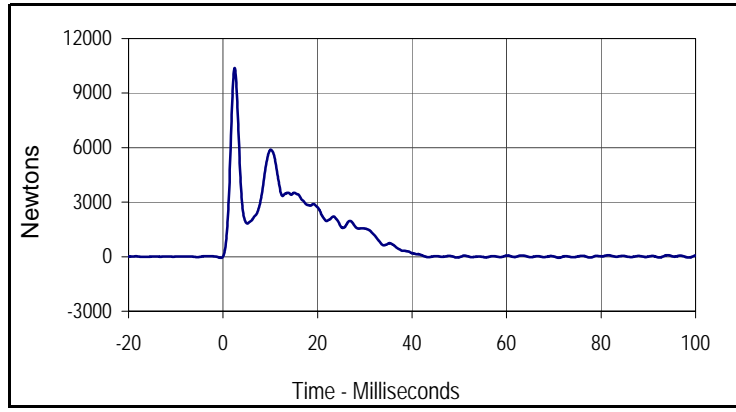
Curve Description			
Lower Rib Deflection (815 mm Drop Height)			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max	Time	Min	Time
49.4	29.5	-3.9	63.2

Test Program: ES2re Thorax - Full Body Impact Test  
 ATD Serial No.: F037

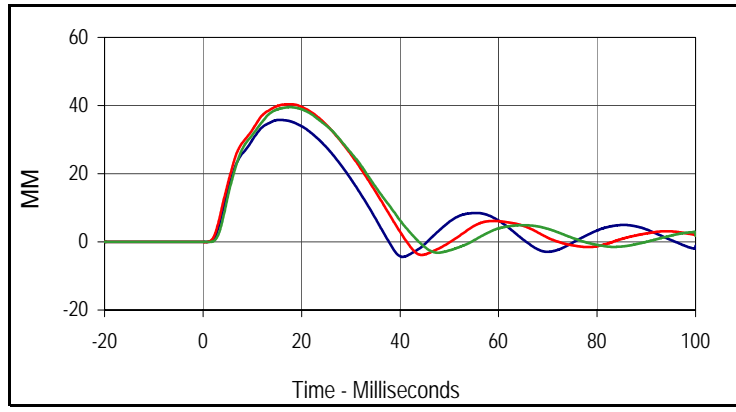
Test Date: 10/28/14  
 Test I.D.: F037TH065



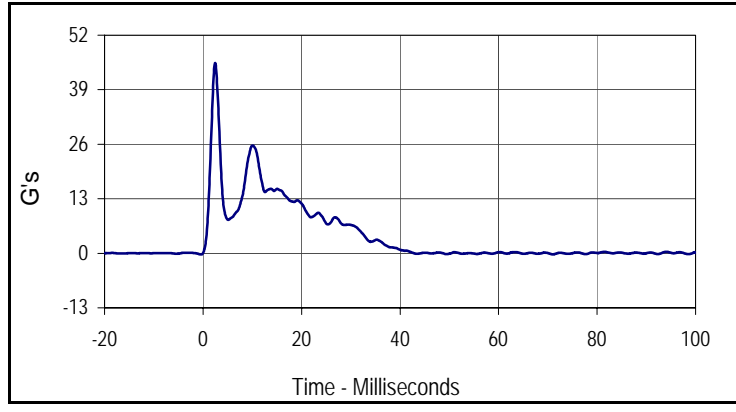
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	644	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	39.9	Pass
	Min		39.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	39.7	Pass
Peak Impactor Velocity	m/s	5.4 to 5.6	5.54	Pass
Peak Impactor Force	N	5100 to 6200	5887.2	Pass
	msec	> 6.0 msec	10.1	Pass
Peak Upper Rib Deflection	mm	34 to 41	35.8	Pass
Peak Middle Rib Deflection	mm	37 to 45	40.4	Pass
Peak Lower Rib Deflection	mm	37 to 44	39.5	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
10386.1	2.5	-67.3	-0.4



Curve Description			
Upper, Middle, Lower Rib Deflections			
Plot No.	Type	SAE Class	Units
002	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
35.8	15.6	-4.4	40.5
Max (Middle)	Time	Min (Middle)	Time
40.4	17.7	-3.8	44.4
Max (Lower)	Time	Min (Lower)	Time
39.5	17.7	-3.2	47.7



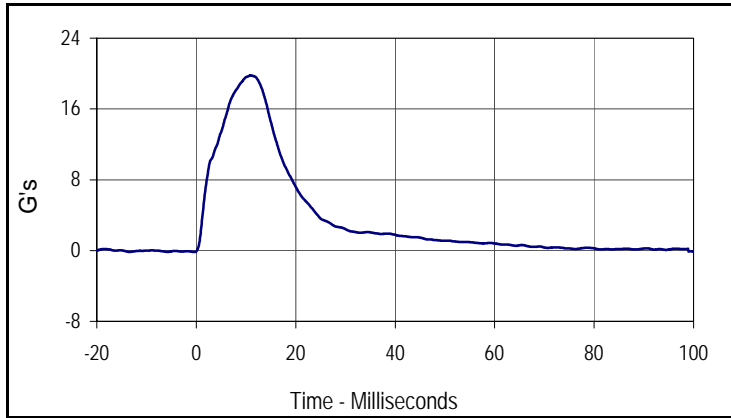
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
45.3	2.5	-0.3	-0.4

Test Program: ES2re Abdomen Impact Test  
 ATD Serial No.: F037

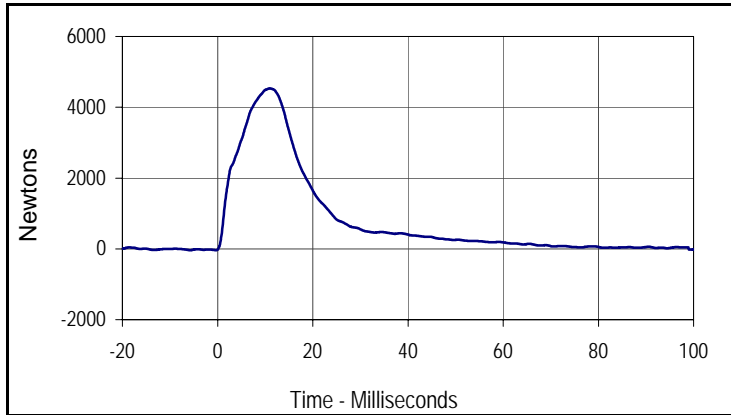
Test Date: 10/28/14  
 Test I.D.: F037ABD065



Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	714	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	39.9	Pass
	Min		39.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	39.7	Pass
Probe Velocity	m/s	3.9 to 4.1	4.05	Pass
Peak Impactor Force	N	4000 to 4800	4533.5	Pass
	msec	10.6 to 13.0	10.9	Pass
Sum of Abdominal Forces	N	2200 to 2700	2509.4	Pass
	msec	10.0 to 12.3	10.8	Pass
<b>Overall Test Results</b>				<b>Pass</b>



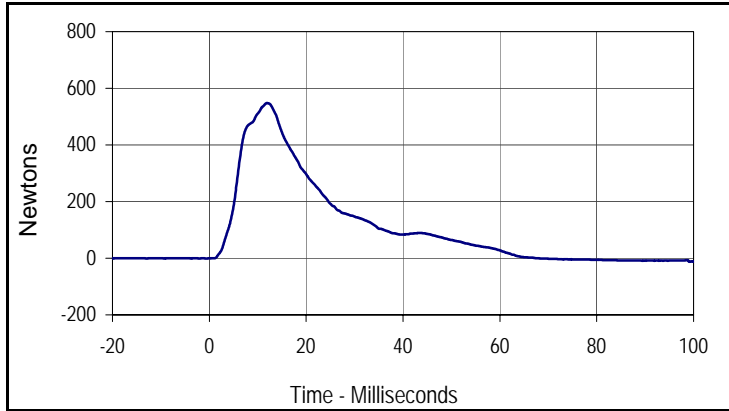
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
19.8	10.9	-0.2	-0.4



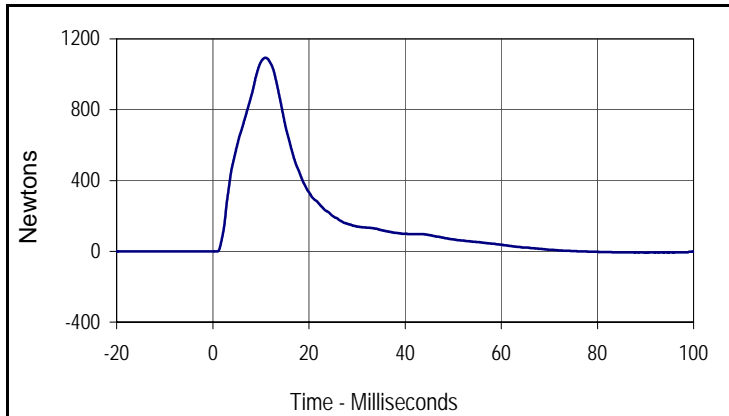
Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4533.5	10.9	-38.8	-0.4

Test Program: ES2re Abdomen Impact Test  
 ATD Serial No.: F037

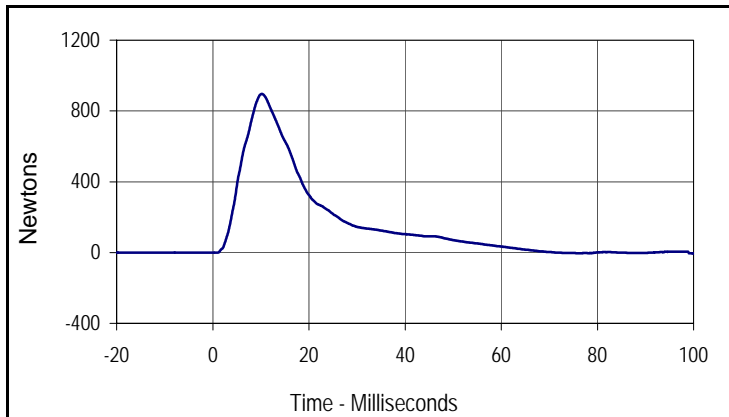
Test Date: 10/28/14  
 Test I.D.: F037ABD065



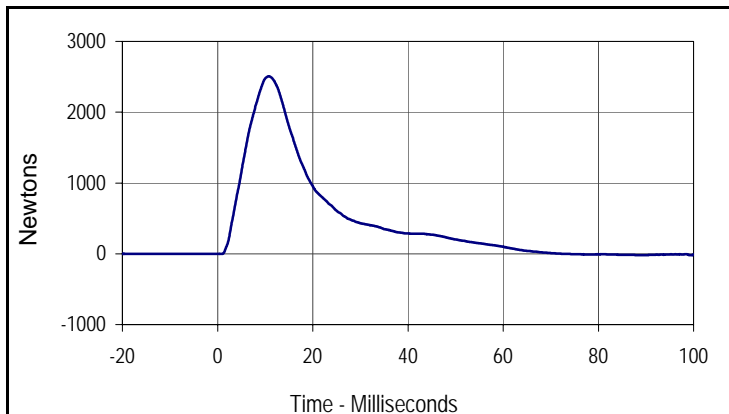
Curve Description			
Front Abdomen Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
547.7	11.9	-12.5	99.0



Curve Description			
Middle Abdomen Force			
Plot No.	Type	SAE Class	Units
004	FIL	600	Newtons
Max	Time	Min	Time
1094.1	10.9	-7.7	92.8



Curve Description			
Rear Abdomen Force			
Plot No.	Type	SAE Class	Units
005	FIL	600	Newtons
Max	Time	Min	Time
896.1	10.2	-6.3	170.0



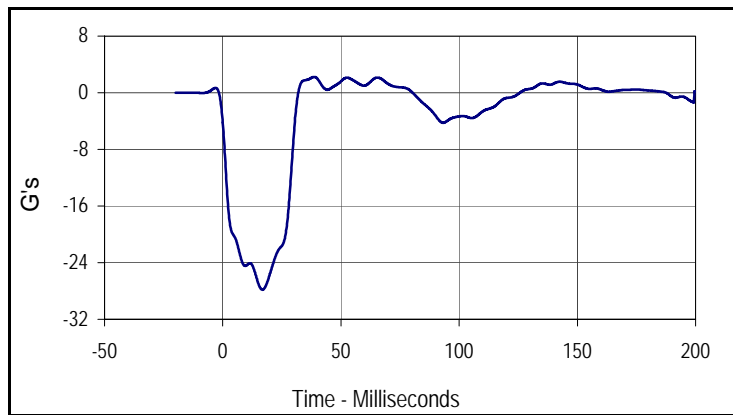
Curve Description			
Abdomen Sum Resultant			
Plot No.	Type	SAE Class	Units
006	RES	600	Newtons
Max	Time	Min	Time
2509.4	10.8	-19.0	99.0

Test Program: ES2re Lumbar Flexion Test  
 ATD Serial No.: F037

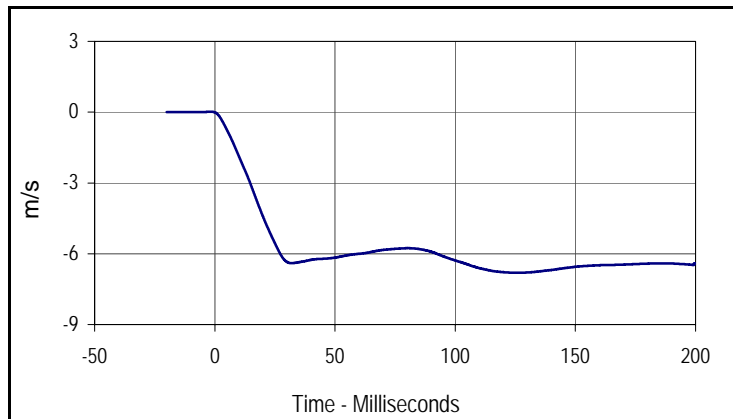
Test Date: 10/28/14  
 Test I.D.: F037LB065



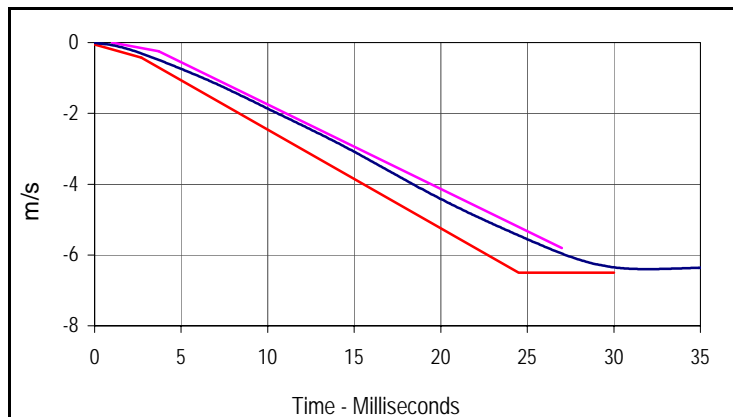
Tested Parameter	Units	Specification	Result	Pass/Fail	
Lumbar Spine Assembly Soak Time	Minutes	≥240	789	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass	
	Min		21.1	Pass	
Humidity During Soak	Max	10.0 to 70.0	39.9	Pass	
	Min		39.0	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	39.6	Pass	
Pendulum Velocity	m/s	5.95 to 6.15	6.01	Pass	
Headform Rotation	Max	Degrees	45 to 55	48.6	Pass
	Time	msec	39 to 53	43.3	Pass
Time of Decay to Zero Angle from Peak	msec	37 to 57	43.0	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
2.2	39.3	-27.8	17.4



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-6.8	126.3



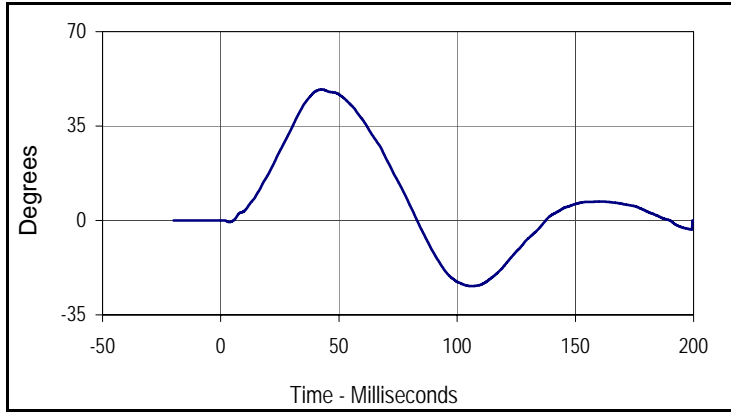
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-6.8	126.3

Velocity Corridors

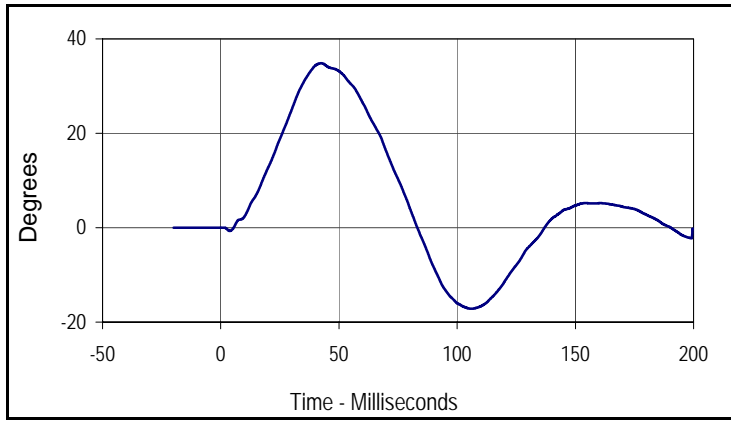
Upper Boundary		Lower Boundary	
Time (msec)	Velocity (m/s)	Time (msec)	Velocity (m/s)
1.0	0.00	0.0	-0.05
3.7	-0.24	2.7	-0.425
27.0	-5.80	24.5	-6.50
		30.0	-6.50

Test Program: ES2re Lumbar Flexion Test  
 ATD Serial No.: F037

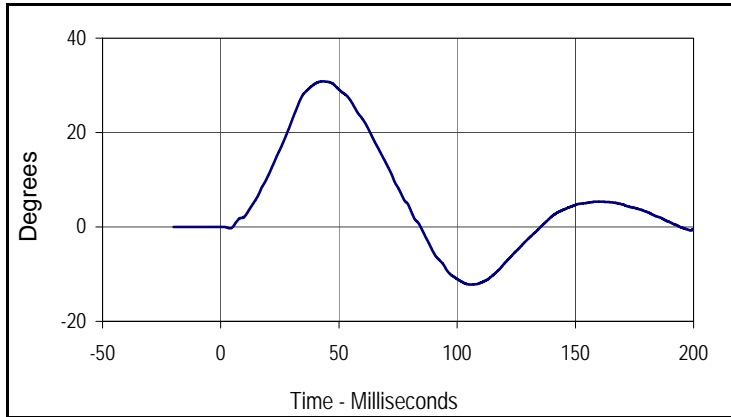
Test Date: 10/28/14  
 Test I.D.: F037LB065



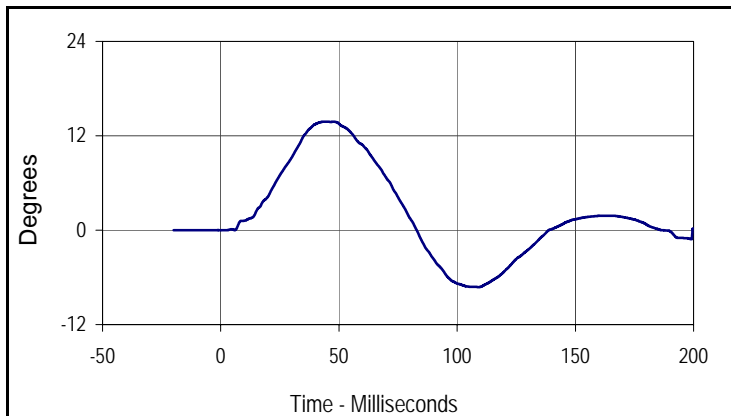
Curve Description			
Headform Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	180	Degrees
Max	Time	Min	Time
48.6	43.3	-24.4	106.7



Curve Description			
Potentiometer A			
Plot No.	Type	SAE Class	Units
004	FIL	180	Degrees
Max	Time	Min	Time
34.8	43.0	-17.2	106.6



Curve Description			
Potentiometer B			
Plot No.	Type	SAE Class	Units
005	FIL	180	Degrees
Max	Time	Min	Time
30.8	43.6	-12.2	106.4



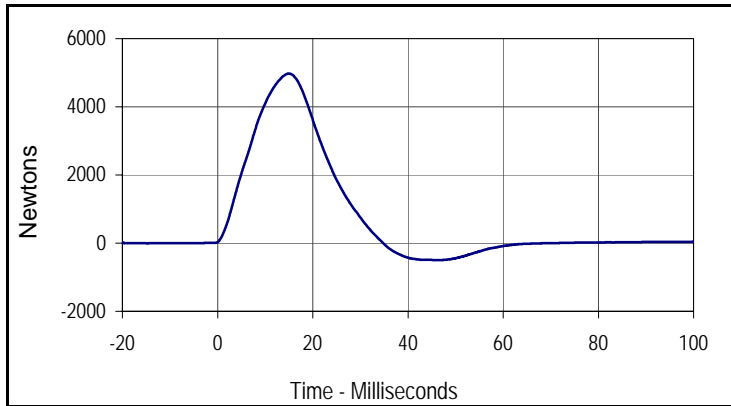
Curve Description			
Potentiometer C			
Plot No.	Type	SAE Class	Units
006	FIL	180	Degrees
Max	Time	Min	Time
13.8	44.2	-7.2	109.8

Test Program: ES2re Pelvis Impact Test  
 ATD Serial No.: F037

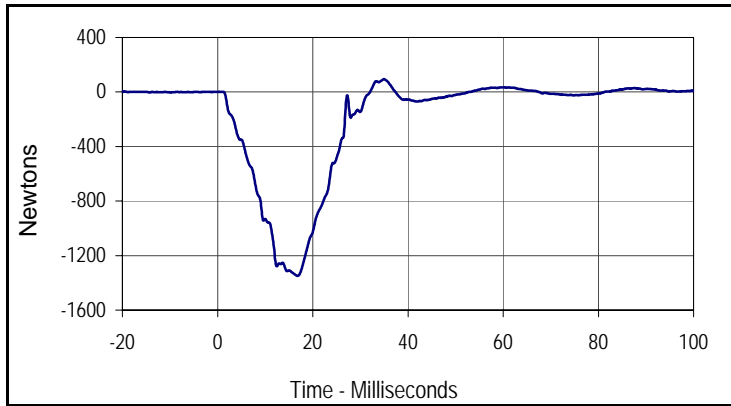
Test Date: 10/28/14  
 Test I.D.: F037PL065



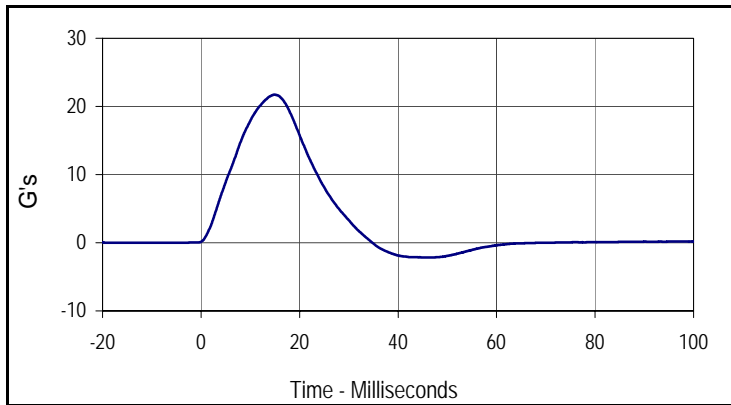
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	844	Pass
Temperature During Soak	Max	20.6 to 22.2	21.4	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	39.9	Pass
	Min		39.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	39.9	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.32	Pass
Peak Impactor Force	N	4700 to 5400	4975.3	Pass
	msec	11.8 to 16.1	14.9	Pass
Peak Pubic Symphysis Load	N	-1230 to -1590	-1349.1	Pass
	msec	12.2 to 17.0	16.8	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
Plot No.	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4975.3	14.9	-499.4	46.2



Curve Description			
Pubic Symphysis Force Y			
Plot No.	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
94.9	35.0	-1349.1	16.8



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
21.7	14.9	-2.2	46.2

Test Program: SID IIs External Measurements

Test Date: 10/28/14



ATD Serial No.: 307

Test I.D.: N/A

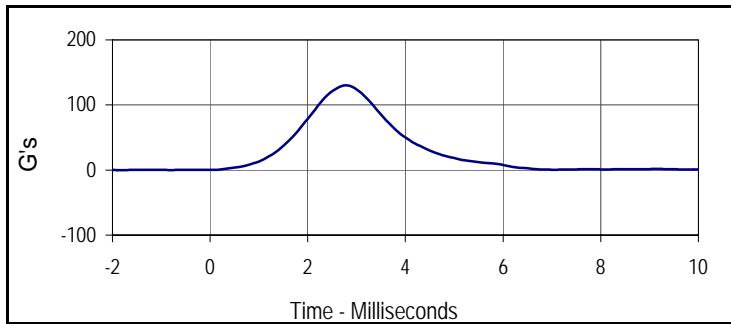
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	41	Pass
A Sitting Height	mm	772 - 788	778	Pass
B Shoulder Pivot Height	mm	437 - 453	443	Pass
C H-Point Height	mm	79 - 89	85	Pass
D H-Point from Seatback	mm	141 - 151	144	Pass
E Shoulder Pivot from Backline	mm	97 - 107	102	Pass
F Thigh Clearance	mm	119 - 135	128	Pass
G Head Breadth	mm	140 - 148	145	Pass
H Head Back from Backline	mm	40 - 46	43	Pass
I Head Depth	mm	178 - 188	185	Pass
J Head Circumference	mm	541 - 551	546	Pass
K Buttock to Knee Length	mm	514 - 540	525	Pass
L Popliteal Height	mm	343 - 369	351	Pass
M Knee Pivot to Floor Height	mm	392 - 409	400	Pass
N Buttock Popliteal Length	mm	416 - 442	432	Pass
O Chest Depth w/o Jacket	mm	195 - 211	205	Pass
P Foot Length	mm	216 - 232	223	Pass
Q Hip Breadth with Pelvic Plug	mm	313 - 323	319	Pass
R Arm Length	mm	249 - 259	254	Pass
S Knee Joint to Seatback	mm	477 - 493	483	Pass
V Shoulder Width	mm	341 - 357	351	Pass
W Foot Width	mm	78 - 94	89	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.: 307

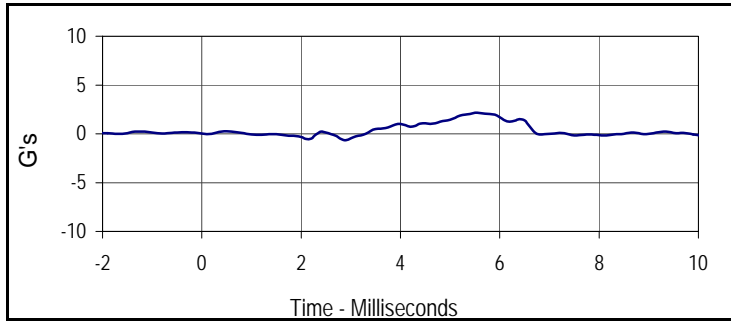
Test Date: 10/28/14  
 Test I.D.: 307HD073



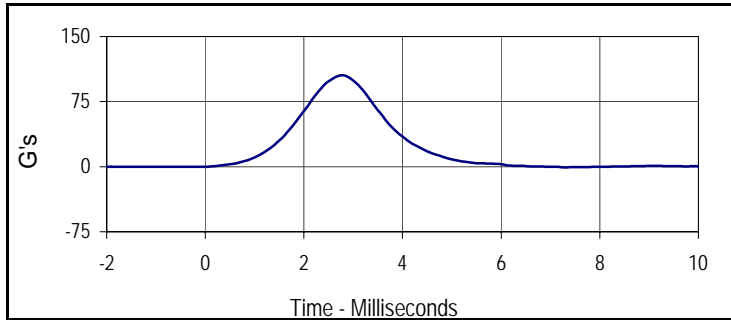
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	365	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	41.4	Pass
	Min		40.9	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	40.9	Pass
Peak Head Resultant Acceleration	G's	115 to 137	130.0	Pass
Peak Head X Acceleration	G's	<15	2.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	1.3	Pass
<b>Overall Test Results</b>				<b>Pass</b>



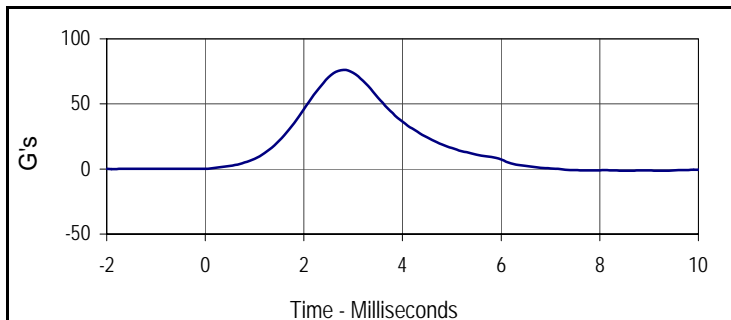
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
130.0	2.8	0.0	-1.8



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.2	5.5	-0.7	2.9



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
105.3	2.8	-0.8	7.3



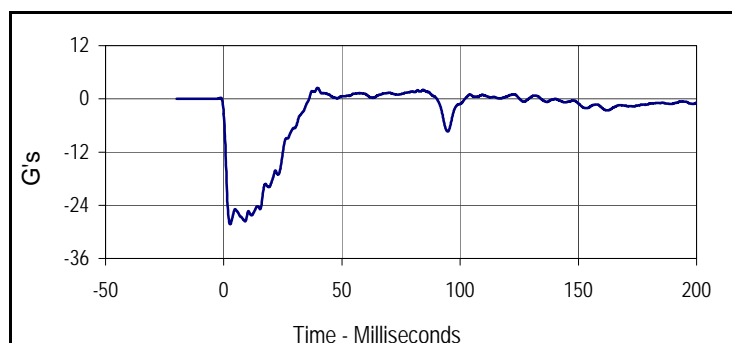
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
76.2	2.8	-1.3	8.6

Test Program: SID IIs Neck Flexion Test  
 ATD Serial No.: 307

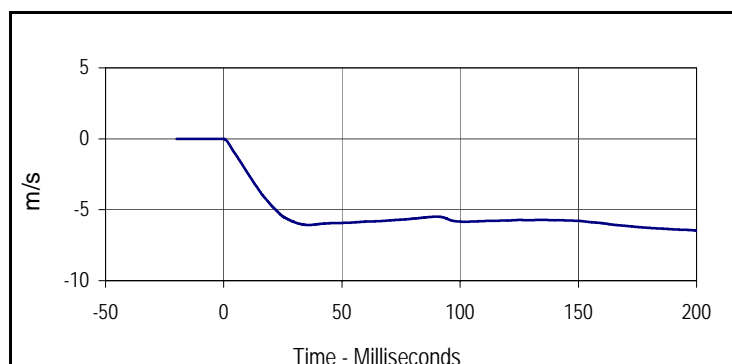
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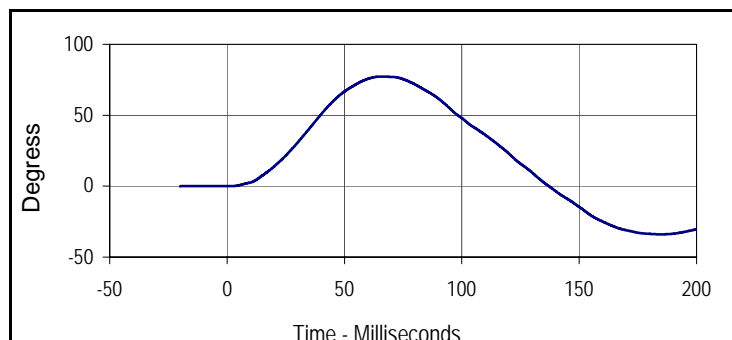
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	440	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	41.4	Pass	
	Min		40.9	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	40.9	Pass	
Pendulum Velocity	m/s	5.51 to 5.63	5.54	Pass	
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.40	Pass
	15 msec	m/s	-3.30 to -4.10	-3.64	Pass
	20 msec	m/s	-4.40 to -5.40	-4.67	Pass
	25 msec	m/s	-5.40 to -6.10	-5.47	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.08	Pass
D-Plane Rotation	Max	Degrees	71 to 81	77.3	Pass
	Time	msec	50 to 70	65.5	Pass
Peak Occipital Condyle Moment	Nm	-36 to -44	-38.7	Pass	
Decaying Moment Time to Cross 0 Nm	msec	102 to 126	115.4	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
2.5	0.0	-28.3	0.0



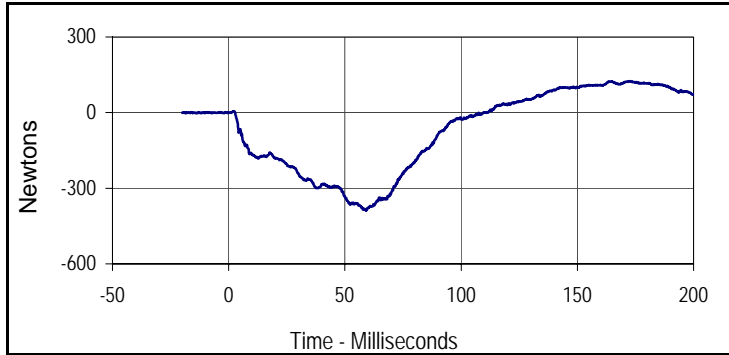
Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
002	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.9	-6.5	200.0



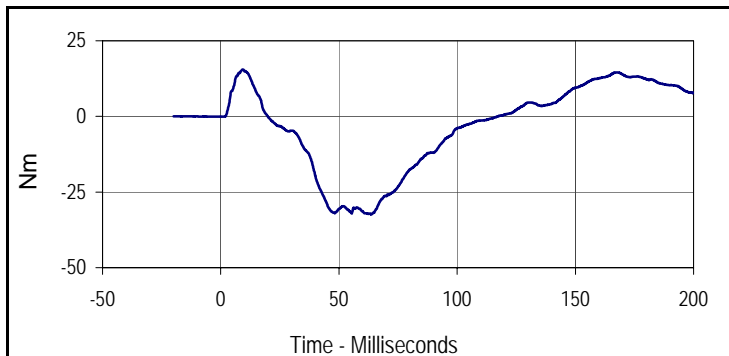
Curve Description			
D-Plane Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degress
Max	Time	Min	Time
77.3	65.5	-33.9	184.8

Test Program: SID IIs Neck Flexion Test  
 ATD Serial No.: 307

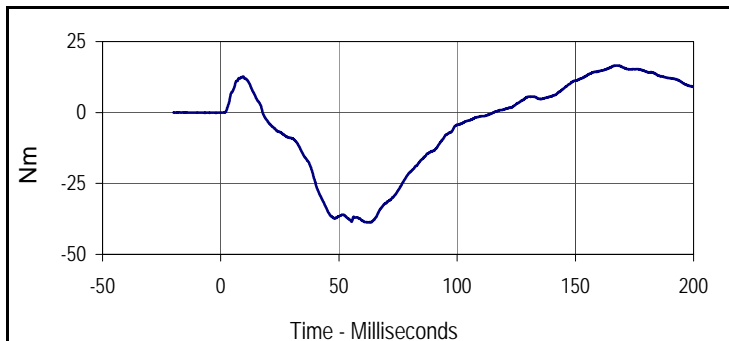
Test Date: 10/28/14  
 Test I.D.: 307NB073



Curve Description			
Neck Force Y			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
124.7	172.7	-387.5	59.1



Curve Description			
Neck Moment X			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
15.5	9.5	-32.4	63.7



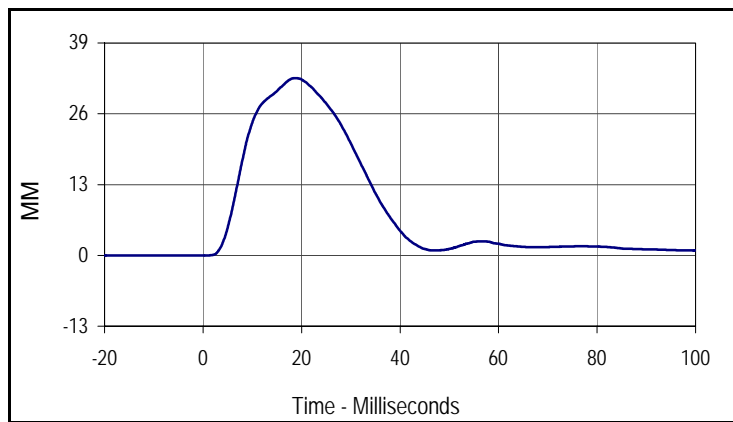
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
006	FIL	600	Nm
Max	Time	Min	Time
16.6	167.2	-38.7	62.5

Test Program: SID IIs Shoulder Impact Test  
 ATD Serial No.: 307

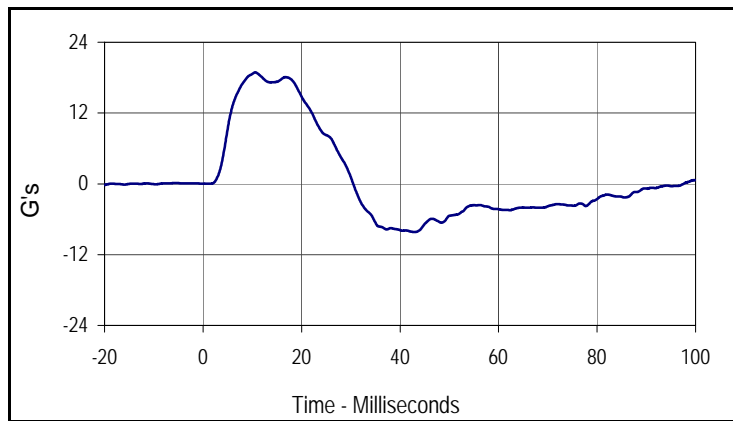
Test Date: 10/28/14  
 Test I.D.: 307SH073



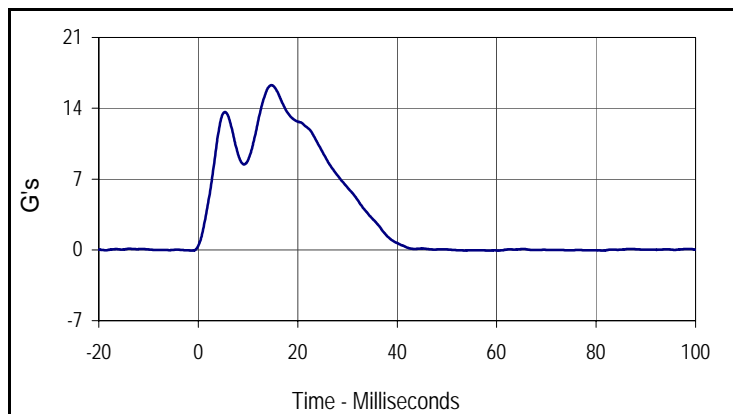
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	495	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	41.4	Pass
	Min		40.9	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	41.0	Pass
Impactor Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Shoulder Deflection	mm	28 to 37	32.5	Pass
Peak Lateral Spine Acceleration Y	G's	17 to 22	18.9	Pass
Peak Impactor Acceleration	G's	13 to 18	16.3	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
32.5	18.4	0.0	-5.3



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.9	10.6	-8.2	43.0



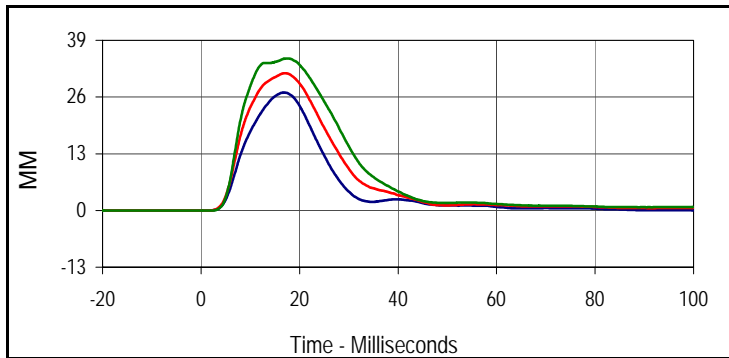
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
16.3	14.7	-0.2	0.0

Test Program: SID IIs Thorax with Arm Impact Test  
 ATD Serial No.: 307

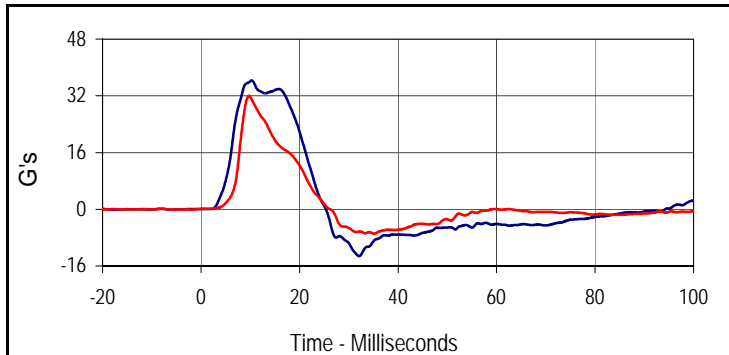
Test Date: 10/28/14  
 Test I.D.: 307TWA073



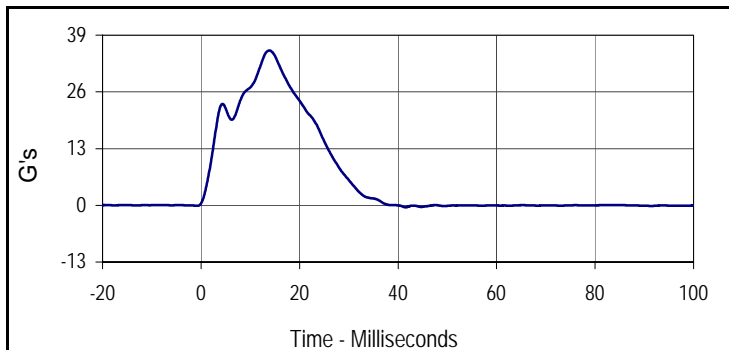
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	540	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	41.4	Pass
	Min		40.9	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	41.1	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.63	Pass
Peak Shoulder Deflection	mm	31 to 40	33.3	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.0	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	31.5	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	34.8	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	36.3	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	32.0	Pass
Peak Impactor Acceleration	G's	30 to 36	35.5	Pass
<b>Overall Test Results</b>				<b>Pass</b>



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.0	16.9	0.0	-0.7
Middle Thorax Deflection			
Max	Time	Min	Time
31.5	17.0	0.0	-5.3
Lower Thorax Deflection			
Max	Time	Min	Time
34.8	17.5	0.0	1.1



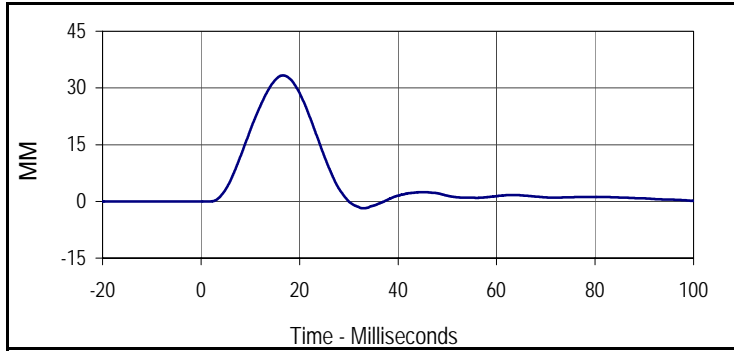
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
36.3	10.3	-13.2	32.1
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
32.0	9.7	-6.9	35.1



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
35.5	13.9	-0.4	41.5

Test Program: SID IIs Thorax with Arm Impact Test  
 ATD Serial No.: 307

Test Date: 10/28/14  
 Test I.D.: 307TWA073



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
33.3	16.6	-1.8	33.0

Test Program: SID IIs Thorax without Arm Impact Test

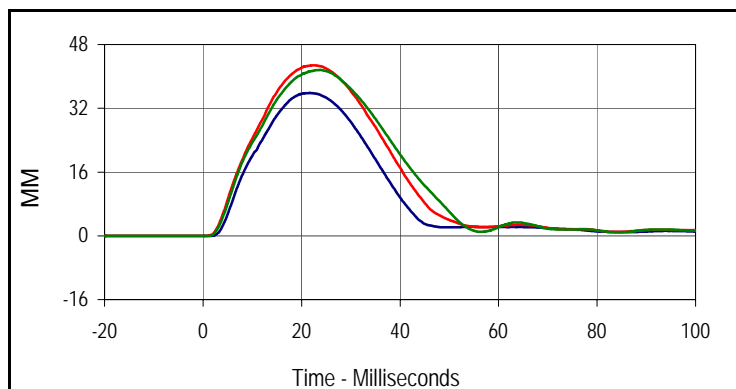
Test Date: 10/28/14



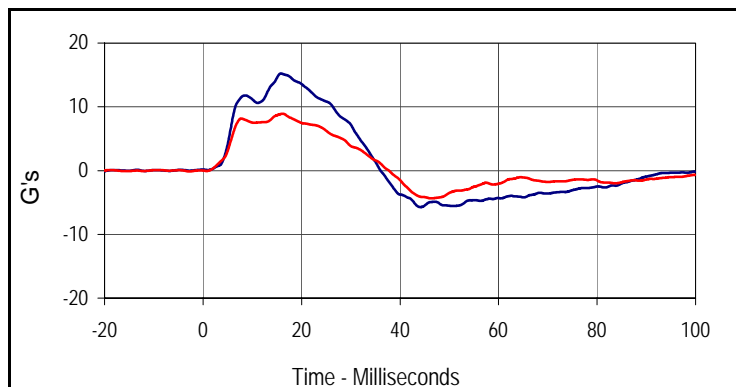
ATD Serial No.: 307

Test I.D.: 307TWOA073

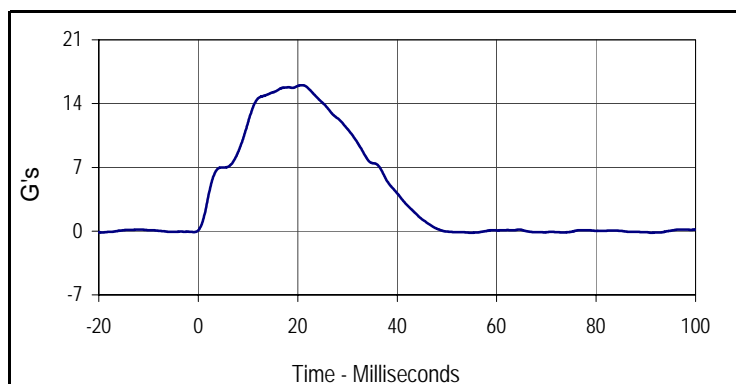
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	590	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	41.4	Pass
	Min		40.9	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	41.3	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.32	Pass
Peak Upper Thorax Rib Deflection	mm	32 to 40	35.8	Pass
Peak Middle Thorax Rib Deflection	mm	39 to 45	42.8	Pass
Peak Lower Thorax Rib Deflection	mm	35 to 43	41.6	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.2	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	8.9	Pass
Peak Impactor Acceleration	G's	14 to 18	16.0	Pass
Overall Test Results				Pass



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
35.8	21.7	0.0	-19.6
Middle Thorax Deflection			
Max	Time	Min	Time
42.8	22.4	0.0	-18.8
Lower Thorax Deflection			
Max	Time	Min	Time
41.6	23.8	0.0	-7.3



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.2	15.8	-5.7	44.2
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.9	16.2	-4.3	46.4



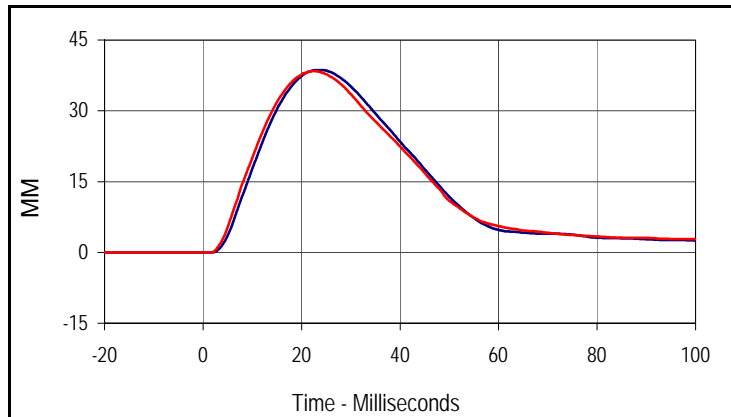
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.0	20.8	-0.2	91.1

Test Program: SID IIs Abdomen Impact Test  
 ATD Serial No.: 307

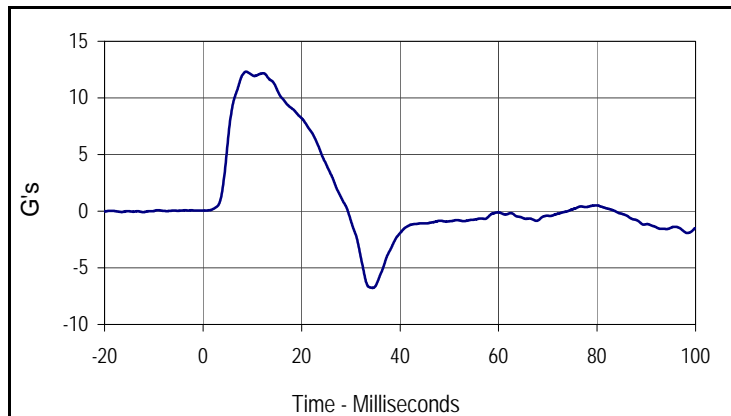
Test Date: 10/28/14  
 Test I.D.: 307ABD073



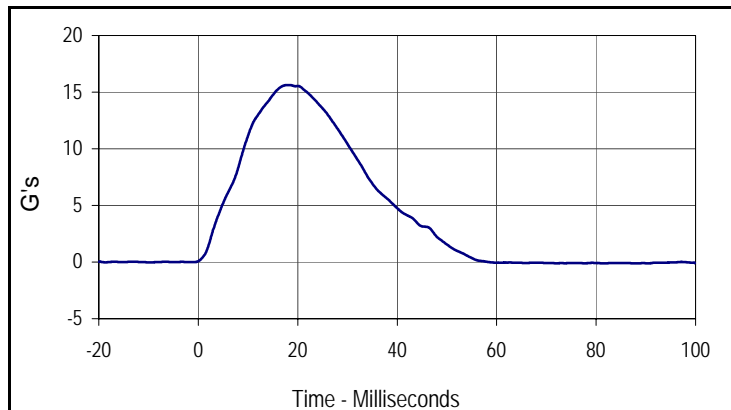
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	625	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	41.4	Pass
	Min		40.9	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	41.4	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.32	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	38.6	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	38.4	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	12.3	Pass
Peak Impactor Acceleration	G's	12 to 16	15.6	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
38.6	23.5	0.0	0.7



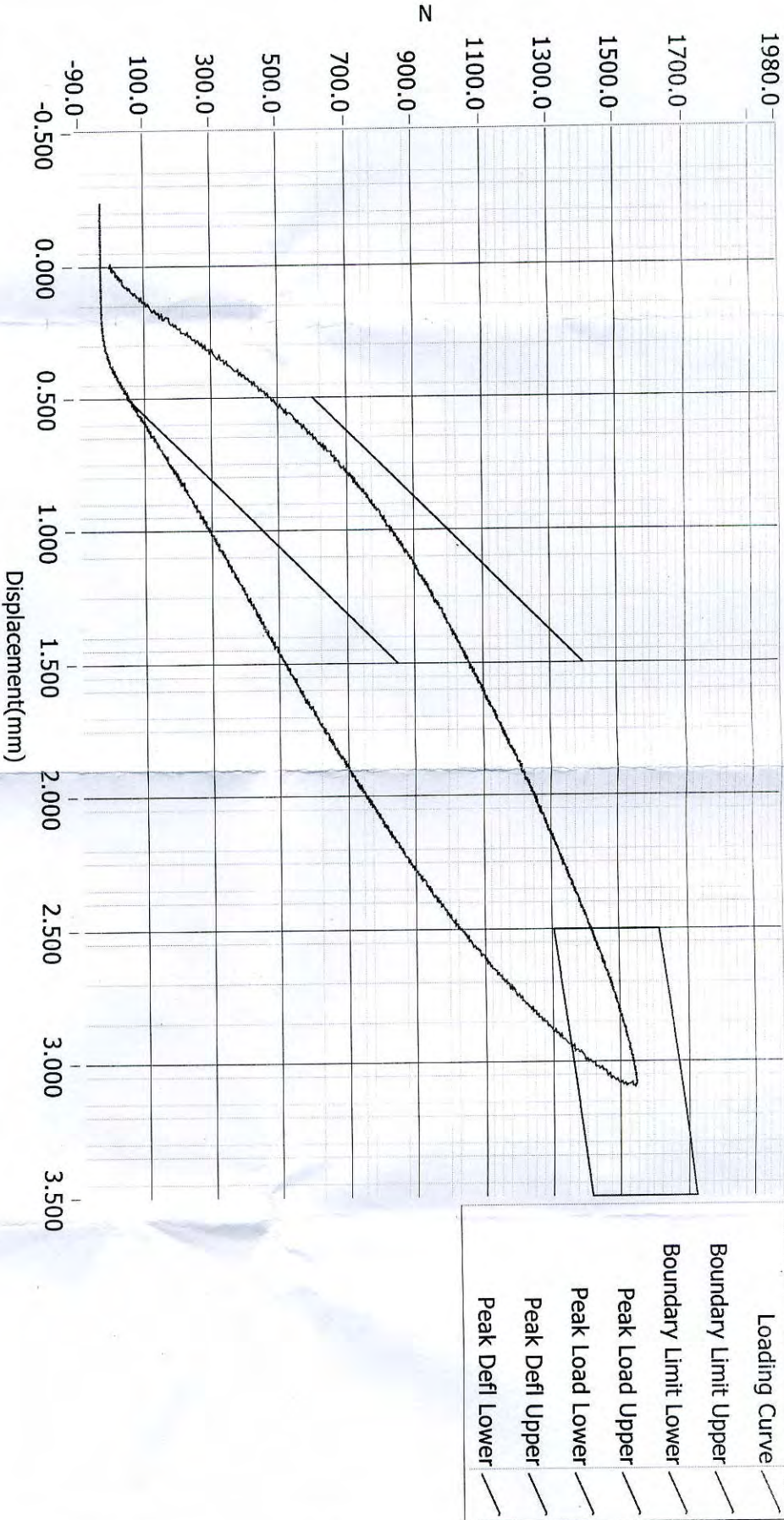
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
38.4	22.5	0.0	-3.7



Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
12.3	8.7	-6.8	34.4

Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.6	18.3	-0.1	88.3

# Resilient Data - SIDIIS Plug Compression



ATD Calibration Lab

<u>Test ID</u>	<u>Part Serial Number</u>	<u>Test Date</u>	<u>Test Time</u>
	72831	2/8/2014	1:10 PM
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
	N/A	SIDIIS	

**M20155303 POST TEST**

Current Date : 2/8/2014

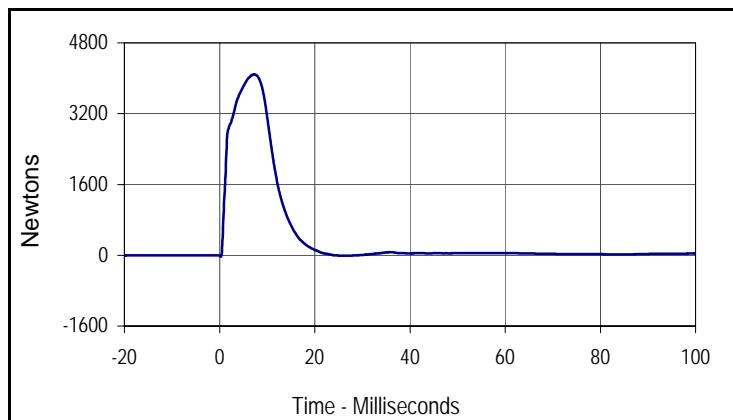
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Test Program: SID IIs Pelvis Acetabulum Impact Test  
 ATD Serial No.: 307

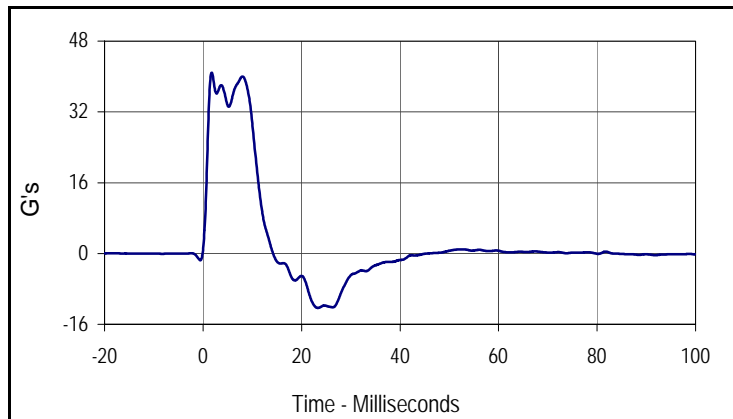
Test Date: 10/28/14  
 Test I.D.: 307ACET073



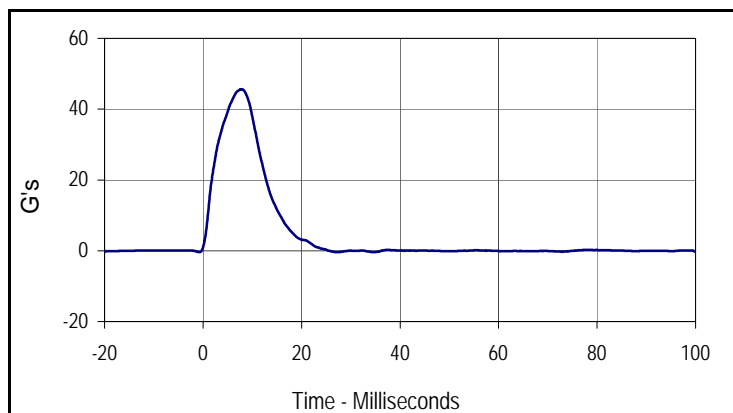
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	670	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	41.4	Pass
	Min		40.9	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	41.4	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.61	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	4088.2	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	40.0	Pass
Peak Impactor Acceleration	G's	38 to 47	45.6	Pass
Overall Test Results				Pass



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4088.2	7.3	-29.6	0.3



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
40.9	1.8	-12.3	23.3



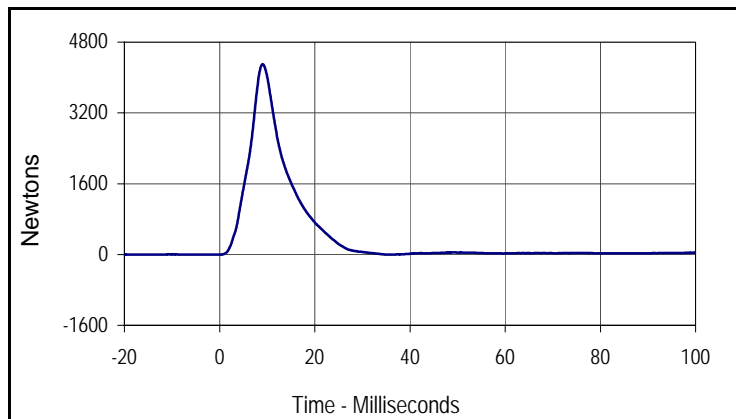
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
45.6	7.8	-0.4	34.4

Test Program: SID IIs Pelvis Iliac Calibration  
 ATD Serial No.: 307

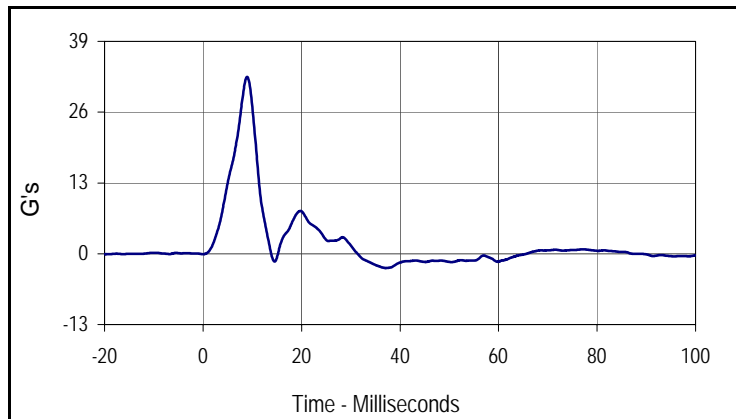
Test Date: 10/28/14  
 Test I.D.: 307PL073



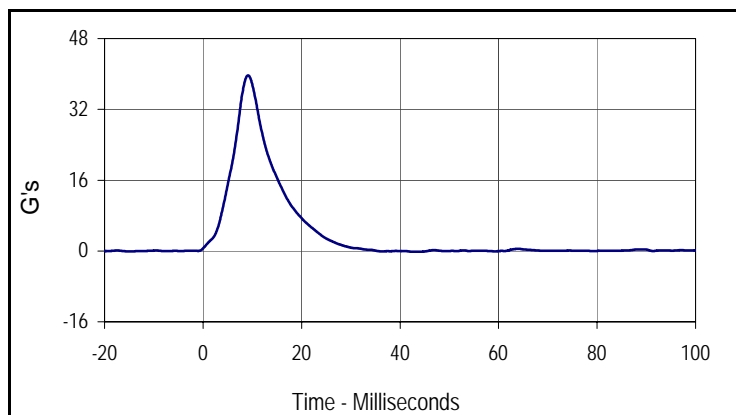
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	740	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	41.4	Pass
	Min		40.9	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	41.4	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.32	Pass
Peak Iliac Force	Newtons	4100 to 5100	4299.0	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	32.5	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
4299.0	9.1	-3.0	-19.6



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
32.5	8.9	-2.6	37.1



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
39.7	9.1	-0.2	44.2

**APPENDIX D**  
**TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA**

**TABLE 1 – Dummy Instrumentation (ES-2re)**

			ES-2re S/N F037		
			Serial Number	Manufacturer	Calibration
Head Accelerometers	Primary	X	P58858	Endevco	10/11/14
		Y	P58865	Endevco	10/11/14
		Z	P58867	Endevco	10/11/14
	Redundant	X	P58859	Endevco	10/11/14
		Y	P58866	Endevco	10/11/14
		Z	P58873	Endevco	10/11/14
Thorax Rib Displacement Potentiometers	Upper	Y	209	FTSS	10/12/14
	Middle	Y	210	FTSS	10/12/14
	Lower	Y	207	FTSS	10/12/14
Abdomen Load Cells	Forward	Y	1504	Denton	5/1/14
	Middle	Y	1505	Denton	5/1/14
	Rear	Y	1506	Denton	5/1/14
Lower Spine Accelerometers (T12)		X	P16336	Endevco	10/11/14
		Y	P58876	Endevco	10/11/14
		Z	P58877	Endevco	10/11/14
Pubic Symphysis Load Cell		Y	DG6834	Denton	5/3/14

**TABLE 2 – Dummy Instrumentation (SID-IIs)**

			SID-IIs S/N 307			
			Serial Number	Manufacturer	Calibration	
Head Accelerometers	Primary	X	P58900	Endevco	9/29/14	
		Y	P58902	Endevco	9/29/14	
		Z	P58983	Endevco	9/29/14	
	Redundant	X	P58901	Endevco	9/29/14	
		Y	P58906	Endevco	9/29/14	
		Z	P58989	Endevco	9/29/14	
Displacement Potentiometers	Thoracic Rib	Upper	Y	1249	FTSS	9/30/14
		Middle	Y	1265	FTSS	9/30/14
		Lower	Y	1277	FTSS	9/30/14
	Abdominal Rib	Upper	Y	1286	FTSS	9/30/14
		Lower	Y	1290	FTSS	9/30/14
Lower Spine Accelerometers (T12)		X	P59007	Endevco	9/30/14	
		Y	P59015	Endevco	9/30/14	
		Z	P58995	Endevco	9/30/14	
Acetabulum Load Cell		Y	260	Denton	5/8/14	
Iliac Wing Load Cell		Y	272	Denton	4/4/14	
Pelvis Plug (Struck Side)			72604	FTSS	2/1/14	
Pelvis Plug (Non-Struck Side)			72941	FTSS	2/8/14	

**TABLE 3 – Vehicle Instrumentation**

Vehicle Instrumentation			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	J22040	Endevco	9/26/14
	Vehicle Center of Gravity	Y	AAKE2	Endevco	9/26/14
	Vehicle Center of Gravity	Z	J27513	Endevco	9/10/14
2	Right Sill at Front Seat	X	A145514	MSI	9/23/14
	Right Sill at Front Seat	Y	A145449	MSI	9/23/14
	Right Sill at Front Seat	Z	A145461	MSI	9/23/14
3	Right Sill at Rear Seat	X	A145522	MSI	8/13/14
	Right Sill at Rear Seat	Y	A145526	MSI	8/13/14
	Right Sill at Rear Seat	Z	A145450	MSI	8/13/14
4	Left Sill at Front Door	Y	13474	MSI	9/28/14
5	Left Sill at Rear Door	Y	13722	MSi	9/19/14
6	Left A-Post Lower	Y	A145493	MSI	8/13/14
7	Left A-Post Middle	Y	12276	MSI	8/8/14
8	Left B-Post Lower	Y	12271	MSI	8/8/14
9	Left B-Post Middle	Y	12245	MSI	8/8/14
10	Front Seat Track	Y	A145525	MSI	8/13/14
11	Rear Seat Structure	Y	A136710	MSI	9/30/14
12	Right Rear Occ. Compartment	Y	A136735	MSI	9/28/14
13	Engine Block	X	A145469	MSI	9/23/14
	Engine Block	Y	A145448	MSI	8/13/14
14	Rear Floorpan Above Axle	X	J24567	MSI	9/26/14
	Rear Floorpan Above Axle	Y	ACCF3	MSI	9/28/14
	Rear Floorpan Above Axle	Z	J36629	Endevco	9/28/14

**TABLE 4 – MDB Instrumentation**

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	A124098	MSI	10/3/14
MDB Center of Gravity	Y	A128039	MSI	10/3/14
MDB Center of Gravity	Z	A124104	MSI	10/3/14
Left Frame at Rear Axle Centerline	X	A128036	MSI	10/3/14
Left Frame at Rear Axle Centerline	Y	A127957	MSI	10/3/14