

FINAL REPORT NUMBER: SPNCAP-TRC-17-002

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

**General Motors LLC
2017 Chevrolet Camaro 2DR Coupe
NHTSA NUMBER: M20170114**

**PREPARED BY:
Transportation Research Center Inc.
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P. O. Box B-67
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Report Date: November 11, 2016

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
Mail Code: NRM-110
1200 New Jersey Ave, SE
Room W43-410
Washington, D.C. 20590**

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Report Approved By: *Melinda Lackey*
Melinda Lackey

Approval Date: November 11, 2016

FINAL REPORT ACCEPTANCE BY OCWS:

Division Chief, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

FINAL REPORT ACCEPTANCE BY OCWS:

COTR, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

Technical Report Documentation Page

1. Report No. SPNCAP-TRC-17-002	2. Government Accession No.	3. Recipient's Catalog No.																									
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Pole Testing of 2017 Chevrolet Camaro 2DR Coupe NHTSA No.: M20170114		5. Report Date November 11, 2016																									
		6. Performing Organization Code TRC Inc.																									
7. Author(s) Melinda Lackey, Project Manager		8. Performing Organization Report No. 161005																									
9. Performing Organization Name and Address Transportation Research Center Inc. 10820 State Route 347 East Liberty, OH 43319		10. Work Unit No.																									
		11. Contract or Grant No. DTNH22-14-D-00354																									
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards Mail Code NRM-110 1200 New Jersey Ave, SE, Room W43-410 Washington, DC 20590		13. Type of Report and Period Covered Final Test Report October 5, 2016 – November 11, 2016																									
		14. Sponsoring Agency Code NRM-110																									
15. Supplemental Notes																											
16. Abstract A 32.2 km/h (20 mph), 75° oblique impact Side NCAP Test was conducted on the subject vehicle, a 2017 Chevrolet Camaro 2DR Coupe, in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on October 5, 2016. The impact velocity was 32.19 km/h, and the ambient temperature at the struck (left) side of the target vehicle at the time of impact was 22° C. The test vehicle's post-test maximum crush was 283 mm at Level 3. The test or target vehicle's performance is given below: <table border="1"> <thead> <tr> <th></th><th>Unit</th><th>Threshold</th><th>Front SID-IIs</th></tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆):</td><td>NA</td><td>1000</td><td>237</td></tr> <tr> <td>Resultant Lower Spine Acceleration:</td><td>g's</td><td>82</td><td>41.9</td></tr> <tr> <td>Total Pelvic Force: (sum of acetabular and iliac forces)</td><td>N</td><td>5525</td><td>3430.8</td></tr> <tr> <td>Maximum Thoracic Rib Deflection</td><td>mm</td><td>38*</td><td>20.6</td></tr> <tr> <td>Maximum Abdomen Rib Deflection</td><td>mm</td><td>45*</td><td>21.1</td></tr> </tbody> </table> * Proposed IARV The door on the struck side did not separate from the body at the hinges or latches and the opposite door did not open during the side impact event.					Unit	Threshold	Front SID-IIs	Head Injury Criteria (HIC ₃₆):	NA	1000	237	Resultant Lower Spine Acceleration:	g's	82	41.9	Total Pelvic Force: (sum of acetabular and iliac forces)	N	5525	3430.8	Maximum Thoracic Rib Deflection	mm	38*	20.6	Maximum Abdomen Rib Deflection	mm	45*	21.1
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17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave Washington, DC 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																									
19. Security Classification (of this report) Unclassified	20. Security Classification (of this page) Unclassified	21. Number of Pages 123	22. Price																								

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SECTION 1
TEST PURPOSE AND PROCEDURE

TEST PURPOSE AND PROCEDURE

This side impact test was conducted as part of the MY 17 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-14-D-00354. The purpose of this test is to generate comparative side impact performance in a 2017 Chevrolet Camaro 2DR Coupe manufactured by General Motors LLC. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated October 2015.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a model year 2017 Chevrolet Camaro 2DR Coupe. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.19 km/h. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, OH, on October 5, 2016. Pre-test and post-test photographs of the test vehicle and the side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated October 2015. Camera locations and other pertinent camera information are included in this report.

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

- Primary and Redundant Head CG Triaxial Accelerometers
- Thorax Upper, Middle, and Lower Rib Displacement Potentiometers
- Abdomen Upper and Lower Rib Displacement Potentiometers
- Lower Spine (T12) Triaxial Accelerometers
- Iliac Load Cell
- Acetabulum Load Cell

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

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

Measurement Description	Driver ATD (SID-IIs)		
	Units	IARV	Result
Head Injury Criteria (HIC ₃₆)	NA	1000	237
Lower Spine Acceleration Resultant	G	82	41.9
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3430.8
Maximum Thoracic Rib Deflection	mm	38*	20.6
Maximum Abdominal Rib Deflection	mm	45*	21.1

* Proposed IARV

Supplemental restraint information is given below:

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

GENERAL COMMENTS

None

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20170114
Model Year	2017
Make	Chevrolet
Model	Camaro
Body Style	Coupe
VIN	1G1FA1RXXH0116310
Body Color	Hyper Blue Metallic
Odometer Reading (km/mi)	73 mi
Engine Displacement (L)	2.0T
Type/No. Cylinders	Inline/4
Engine Placement	Front/Longitudinal
Transmission Type	Manual
Transmission Speeds	6
Overdrive	Yes
Final Drive	RWD
Roof Rack	No
Sunroof/T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes

Traction Control System (TCS)	Yes
Auto-Leveling System	No
Automatic Door Locks (ADL)	Yes
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	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	Yes
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?

No

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors LLC
Date of Manufacturer	07/16
Vehicle Type	Passenger Car

GVWR (kg)	1865
GAWR Front (kg)	868
GAWR Rear (kg)	997

VEHICLE SEATING AND WEIGHT CAPACITY DATA

	Front	Rear	Third	Total
Designated Seating Capacity (DSC)	2	2	N/A	4
Vehicle Capacity Weight (VCW) (kg)				328
DSC X 68.04 kg				272.16
Rated Cargo and Luggage Weight (RCLW) (kg)				55.84

VEHICLE SEAT TYPE

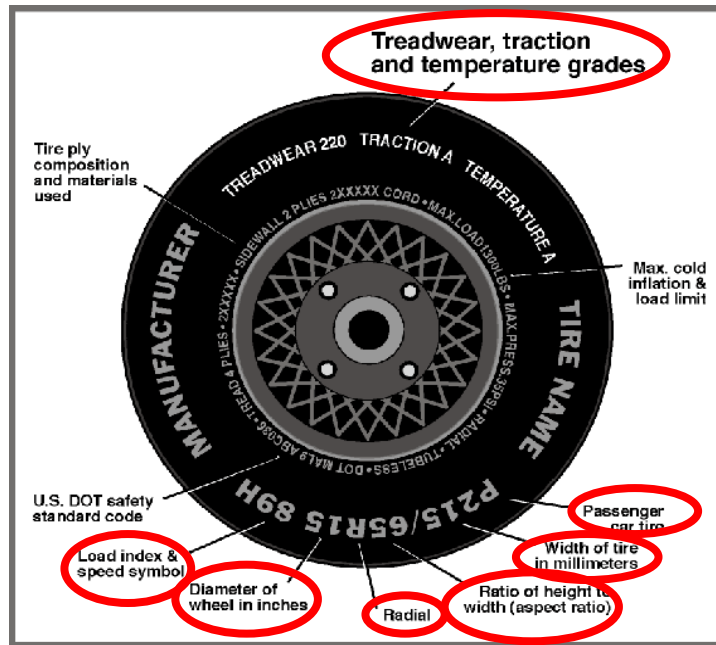
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						W/ Lever	W/ Knob
Front Seat	Yes	N/A	N/A		N/A	Yes	N/A
Rear or Second Row Seat	N/A	Yes	N/A	Yes	Yes	N/A	N/A
Third row seat	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET NO. 1 (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
Test Date: 10/5/16



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	220	220
Recommended Tire Size	245/50R18	245/50R18
Tire Size on Vehicle	245/50R18	245/50R18
Tire Manufacturer	Goodyear	Goodyear
Tire Model	Eagle Sport	Eagle Sport
Treadwear	560	560
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2	2
Tire Plies Body	5	5
Load Index/Speed Symbol	100V	100V
Tire Material	Polyester, Steel & Polyamide	Polyester, Steel & Polyamide
DOT Safety Code Left	M6JW JU1R 2016	M6JW JU1R 1816
DOT Safety Code Right	M6JW JU1R 2016	M6JW JU1R 1816

DATA SHEET NO. 1 (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe

NHTSA No.: M20170114

Test Program: SPNCAP Side Impact

Test Date: 10/5/16

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	205	205	245	225
Tire Placard	kPa	220	220	220	220
Owner's Manual	kPa	N/A	N/A	N/A	N/A
As Tested	kPa	220	220	220	220

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	392.6	363.6		412.6	385.6		399.6	409.8	
Right	kg	387.0	364.8		399.0	407.2		388.8	414.8	
Ratio	%	51.7	48.3		50.6	49.4		48.9	51.9	
Totals	kg	779.6	728.4	1508.0	811.6	792.8	1604.4	788.4	824.6	1613.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total As Delivered Weight (UVW)	kg	1508.0	(A)
Actual Weight of 1 P572V ATD (SID-11s) Dummy Used	kg	49.0	(B)
Rated Cargo/Luggage Weight (RCLW) ¹	kg	55.84	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1612.84	(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 kg)? ☒ YES ☐ NO

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement***
Driver Door Sill Angle (front-to-rear)*	Deg.	+0.8	+0.8	+0.4	Yes
Front Passenger Sill Angle (front-to-rear)*	Deg.	+0.7	+0.5	+0.4	Yes
Front Bumper-Line Angle (left-to-right)**	Deg.	-0.4	-0.2	-0.2	Yes
Rear Bumper-Line Angle (left-to-right)**	Deg.	-0.1	-0.2	-0.2	Yes
Vehicle CG (Aft of Front Axle)	mm	1363	1394	1464	
Vehicle CG (Left (+) / Right (-) from longitudinal Centerline)	mm	+9	-4	+3	

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

*** The "As Tested" vehicle attitude measurements must be equal to or between the "As Delivered" and "Fully Loaded" vehicle attitude measurements. Indicate "Yes" or "No" for "Meets Requirements".

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Ballast: None	0.0
Components removed: Muffler, tail lights, rear fascia, passenger door speaker and mirror	27.4

Test height adjustable suspension setting, if applicable:

N/A

DATA SHEET NO. 2

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

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe

NHTSA No.: M20170114

Test Program: SPNCAP Side Impact

Test Date: 10/5/16

SEAT POSITIONING

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

SCRL ANGLE RANGE

Seat	SCRL(°)		
	Max.	Min.	Mid
Driver Seat	24.8	14.1	19.5
Front Passenger Seat	22.0	16.7	19.4
Front Center Seat*	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	N/A	22.0
Non-Struck Side Rear Seat	Fixed	N/A	21.4
Rear Center Seat*	N/A	N/A	N/A

* If applicable.

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid-Fore/Aft	Forward-Most
Driver Seat	19.5	104	Max	129	133	137
			Mid	95	99	104
			Min	67	69	71
Front Passenger Seat	19.4	81	Max	N/A	N/A	N/A
			Mid	70	75	81
			Min	N/A	N/A	N/A
Front Center Seat*	N/A	N/A	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Struck Side Rear Seat	22.0	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Non-Struck Side Rear Seat	21.4	Fixed	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A
Rear Center Seat*	N/A	N/A	Max	N/A	N/A	N/A
			Mid	N/A	N/A	N/A
			Min	N/A	N/A	N/A

* If applicable.

DATA SHEET NO. 2 (CONTINUED)

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

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16

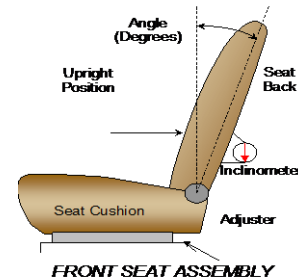
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position from Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	190	N/A	0	N/A
Front Passenger Seat	190	N/A	0	N/A
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	N/A	N/A	N/A
Non-Struck Side Rear Seat	Fixed	N/A	N/A	N/A
Rear Center Seat*	N/A	N/A	N/A	N/A

* If applicable.

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned such that the dummy's head is level. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck-side rear passenger seat back is positioned in accordance with the information provided by the manufacturer on Form No. 1. For the 5th percentile female dummy in a Side NCAP MDB test. The rear center and non-struck side rear passenger's seat back is set to match the struck-side rear seat back.



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degrees	Detent*
Driver Seat w/ Seated Dummy	24.0	N/A	29.3	N/A
Front Passenger Seat	24.0	N/A	29.3	N/A
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	N/A	N/A	N/A
Non-Struck Side Rear Seat	Fixed	N/A	N/A	N/A
Rear Center Seat*	N/A	N/A	N/A	N/A

* If applicable.

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted with the information provided by the manufacturer on Form No. 1

	Total # of Positions	Placed in Position #
Driver Seat	1, Fixed	1, Fixed

HEAD RESTRAINT ADJUSTMENT

Head restraints are adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	4, numbered from 0 to 3	0, Lowermost

DATA SHEET NO. 2 (CONTINUED)

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

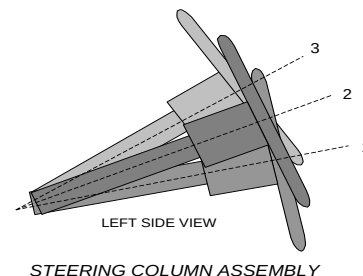
Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel geometric locus it describes when moved through its full range of motion.

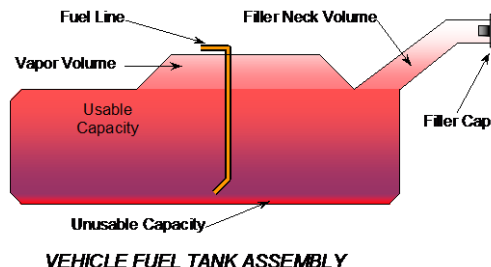
	Degrees	Fore/Aft Position, mm
Lowermost, Position No. 1	14.2	N/A
Geometric Center, Position No. 2	16.4	N/A
Uppermost, Position No. 3	18.7	N/A
Telescoping Steering Wheel Travel		40
Test Position	16.4	20



FUEL PUMP

Describe the fuel pump type, details about how it operates and the location of the fuel filler neck:

The ECM supplies voltage to the fuel pump control module when the ECM detects that the ignition is ON. The voltage from the ECM to the fuel pump control module remains active for 2 seconds, unless the engine is in Crank or Run.



FUEL TANK CAPACITY

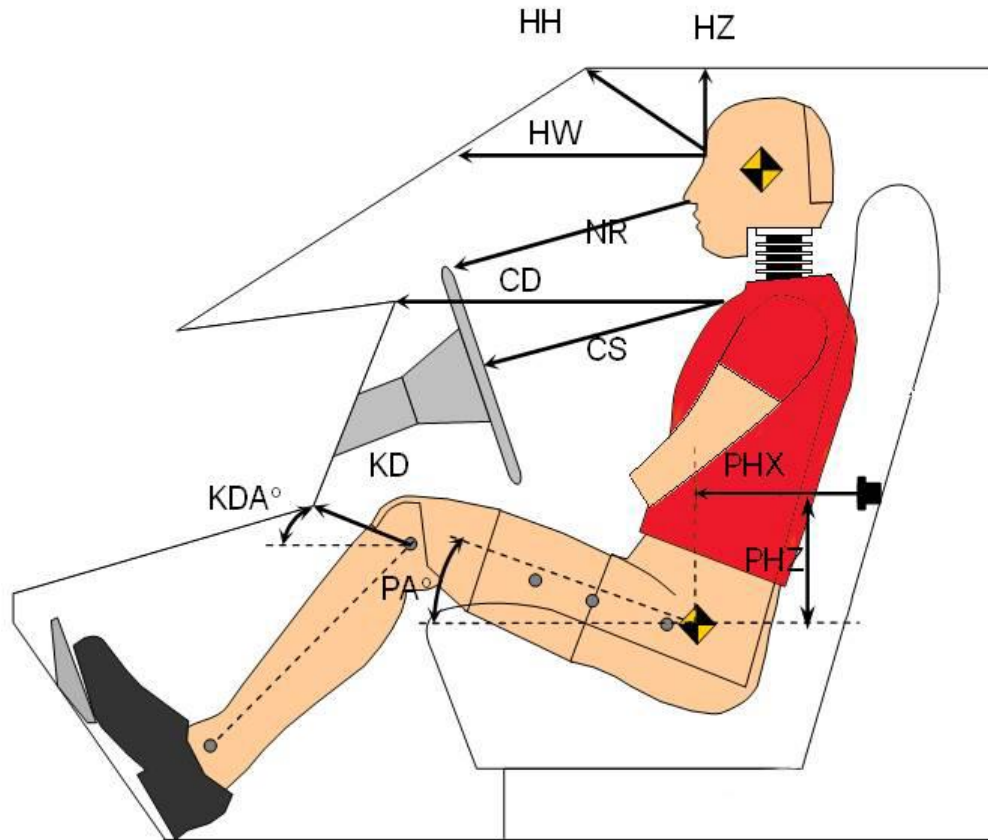
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	71.9
Usable Capacity of "Optional" Tank (see Form No. 1)	N/A
Usable Capacity of Standard Tank (see Owner's Manual)	72.0
Usable Capacity of Optional Tank (see Owner's Manual)	N/A
93% of Usable Capacity	67.0
Actual Amount of Solvent Used in Test	67.0
1/3 of Usable Capacity	24.0

Is the Actual Amount of Solvent Used in the test equal to 93% +/- 1% of the Usable Capacity stated on Form No. 1? ☒ YES ☐ NO

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16

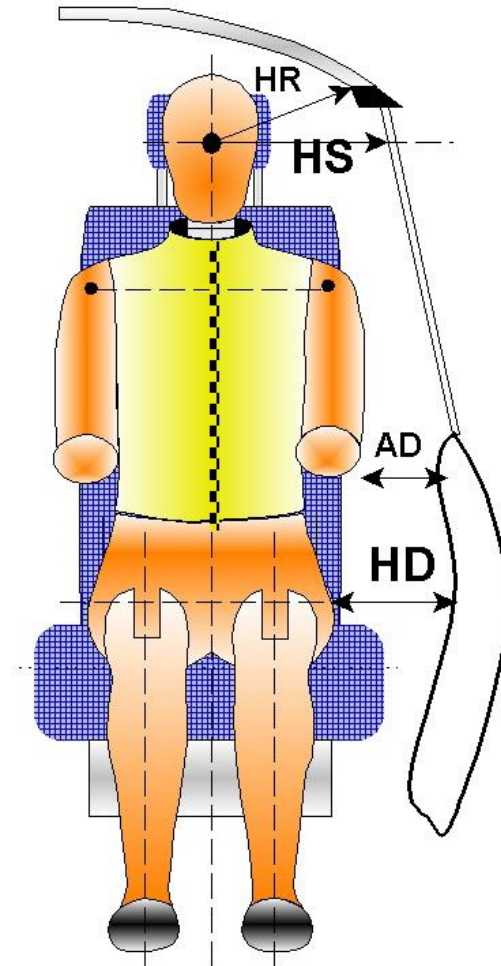


Code	Measurement Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	316	
HW	Head to Windshield	583	
HZ	Head to Visor	173	
NR	Nose to Rim	228	
CD	Chest to Dashboard	408	
CS	Chest to Steering Wheel	189	
KDL/KDLA°	Left Knee to Dash	156	47.2
KDR/KDRA°	Right Knee to Dash	158	49.6
PAX°	Pelvic Tilt Angle (X-axis)		-0.2
PAY°	Pelvic Tilt Angle (Y-axis)		21.2
PHX	Hip Point to Striker (X-Axis)	582	
PHZ	Hip Point to Striker (Z-Axis)	195	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
Test Date: 10/5/16

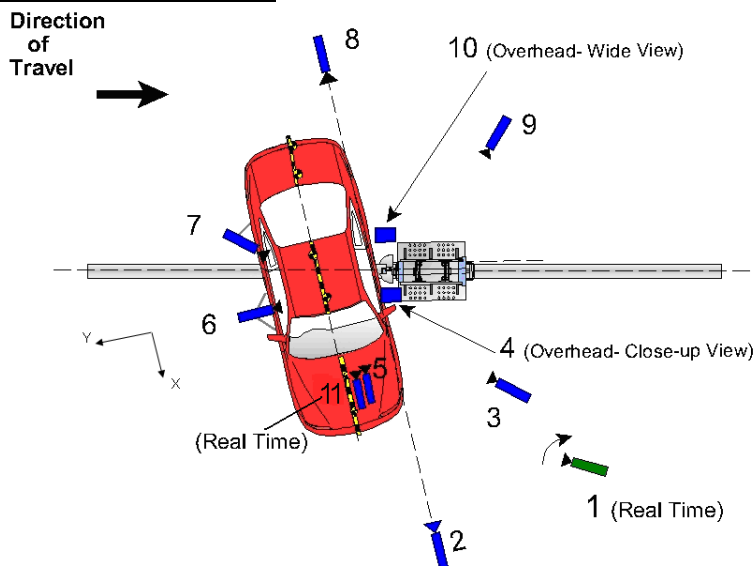


Code	Measurement Description	Length (mm)
HR	Head to Side Header	213
HS	Head to Side Window	340
AD	Arm to Door	137
HD	Hip Point to Door	162

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16



REFERENCE: (from point of impact for X and Y; from ground for Z)
 + X = Forward of vehicle, + Y = Right of vehicle, + Z = Down

Camera No.	View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Real time (24-30 fps) pan view of impact				Zoom	30
2	Front ground level – impact view	-1192	5008	1190	20	1000
3	Impact side 45° – forward pole view	-1955	3770	1210	28	1000
4	Overhead Close-up view of impact	0	0	5700	50	1000
5	Onboard – dummy front view				25	1000
6	Onboard – dummy side view				12.5	1000
7	Onboard – dummy rear oblique view				8.5	1000
8	Rear ground level – impact view	0	4865	1310	20	1000
9	Impact side 45° – rearward pole view	-1622	-4068	1320	20	1000
10	Overhead wide view of impact	-150	410	5703	18	1000
11	Real time dummy front view				Zoom	30

All measurements accurate to +/- 6 mm.

NOTE: Vehicle was at a 75° angle to the rigid pole.

If applicable, explain why camera(s) did not run: Not Applicable

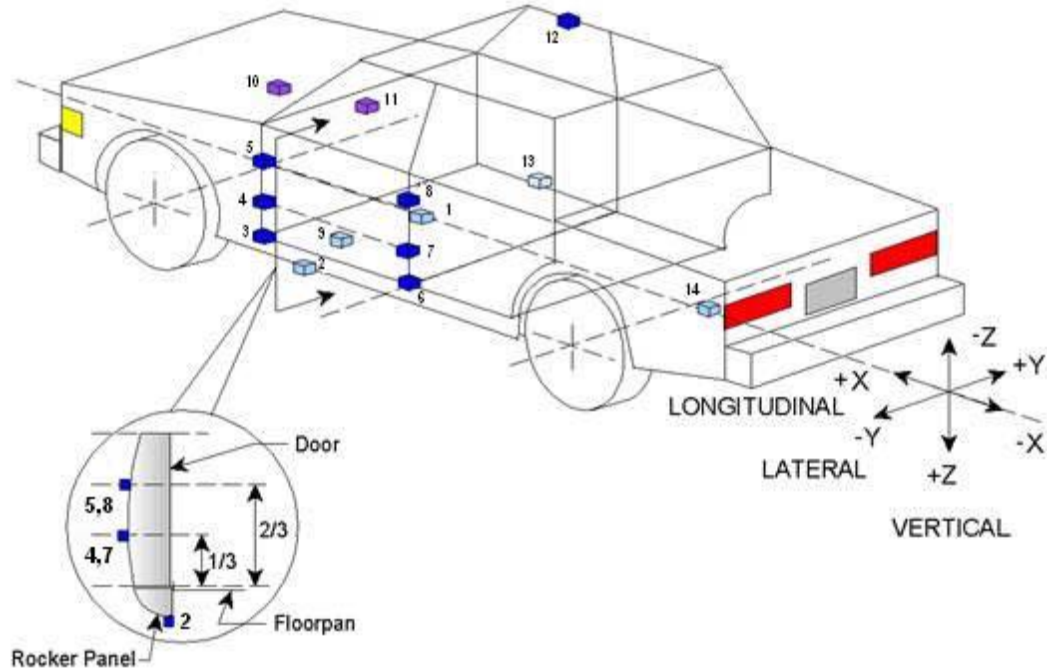
INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Vehicle Structure	18
Pole Load Cells	8
TOTAL	42

DATA SHEET NO. 6
VEHICLE ACCELEROMETER DATA

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16



Accelerometer/Sensor Location				
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2673	145	-305
2	Left Floor Sill	2595	-695	-219
3	A-Pillar Sill	3015	-705	-445
4	A-Pillar Low	3050	-785	-523
5	A-Pillar Mid	3055	-785	-920
6	B-Pillar Sill	1992	-715	-405
7	B-Pillar Low	1790	-740	-615
8	B-Pillar Mid	1790	-740	-883
9	Driver Seat Track	2245	-590	-221
10	Engine Top	3895	0	-864
11	Firewall	3474	0	-888
12	Right Roof	1792	620	-1332
13	Right Floor Sill	2003	715	-395
14	Rear Floorpan	762	0	-527

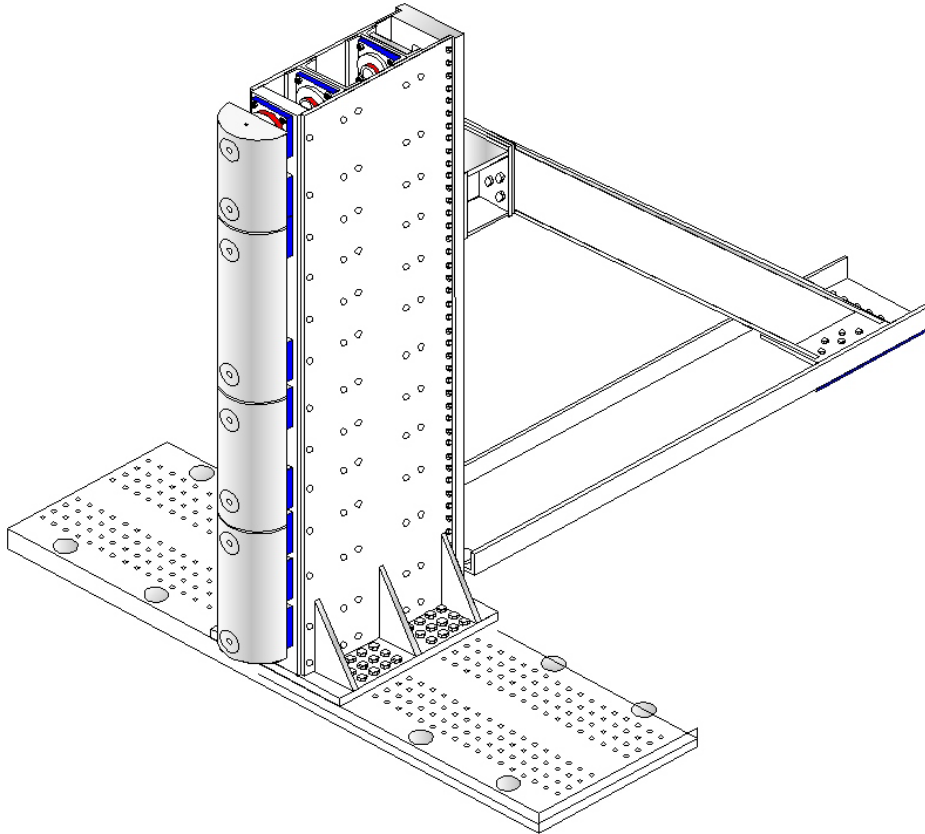
Reference: X - Test Vehicle Rear Bumper (+ forward)
 Y - Test Vehicle Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
Test Date: 10/5/16

FOIL 300K RIGID POLE



Load Cell Locations	
ID	Height From Top of Carrier (mm)
1	87
2	468
3	648
4	978
5	1168
6	1651
7	1816
8	2057

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
Test Date: 10/5/16

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver SID-IIs Dummy
Face	SCAB
Top of Head	Head Liner, SCAB
Left Side of Head	SCAB
Back of Head	None
Left Shoulder	SAB
Upper Torso	SAB, Seatback bolster
Lower Torso	SAB, Seatback bolster
Left Hip	SAB, Door panel
Left Knee	Door panel

POST-TEST DOOR PERFORMANCE

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

* Indicate "Yes", "No", or "NA".

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	N/A	No	N/A
Seat Disengagement from Floor pan	No	N/A	No	N/A
Seat Back Movement from Initial Position	No	N/A	No	N/A
Seat Back Collapse	No	N/A	No	N/A

* Indicate "Yes", "No", or "NA".

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Moderate Deformation
Sill Separation	None
Windshield Damage	Broken down A pillar and across top
Side Window Damage	Driver door broken out
Other Notable Effects	Rear window shattered

DATA SHEET NO. 8 (CONTINUED)
POST-TEST OBSERVATIONS

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side (Driver)		Struck Side (Rear Passenger)	
	Mounted	Deployed	Mounted	Deployed
Front Airbag	Yes	No		
Knee Airbag	Yes	No		
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	N/A
Side Torso Airbag	No	N/A	No	N/A
Seat Belt Pretensioner	Yes	Yes	No	N/A
Seat Belt Load Limiter	Yes	Yes	No	N/A
Other	No	N/A	No	N/A

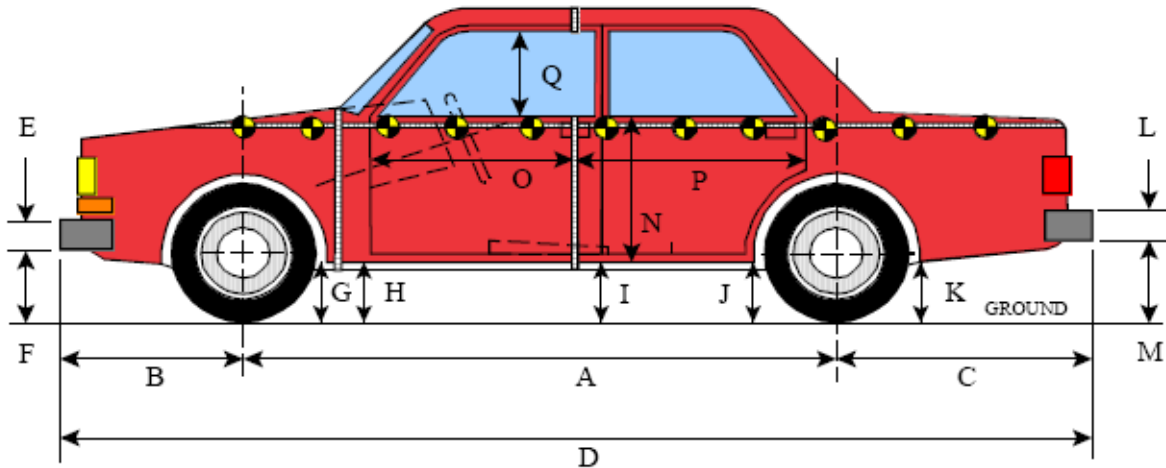
VEHICLE SPEED, VEHICLE ANGLE AT IMPACT AND IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		1400
Actual Impact Point (Aft of Front Axle)	mm		1404
Horizontal Offset (+ forward / - rearward)	mm	+/- 38 of Intended Impact point	-4
Angle Between Vehicle's Longitudinal Centerline and Line of Motion	degrees	75 +/- 3	75
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.19
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.21

DATA SHEET NO. 9
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16



LEFT SIDE VIEW

All MEASUREMENTS IN (mm) WITH TOLERANCE OF ± 3 mm

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

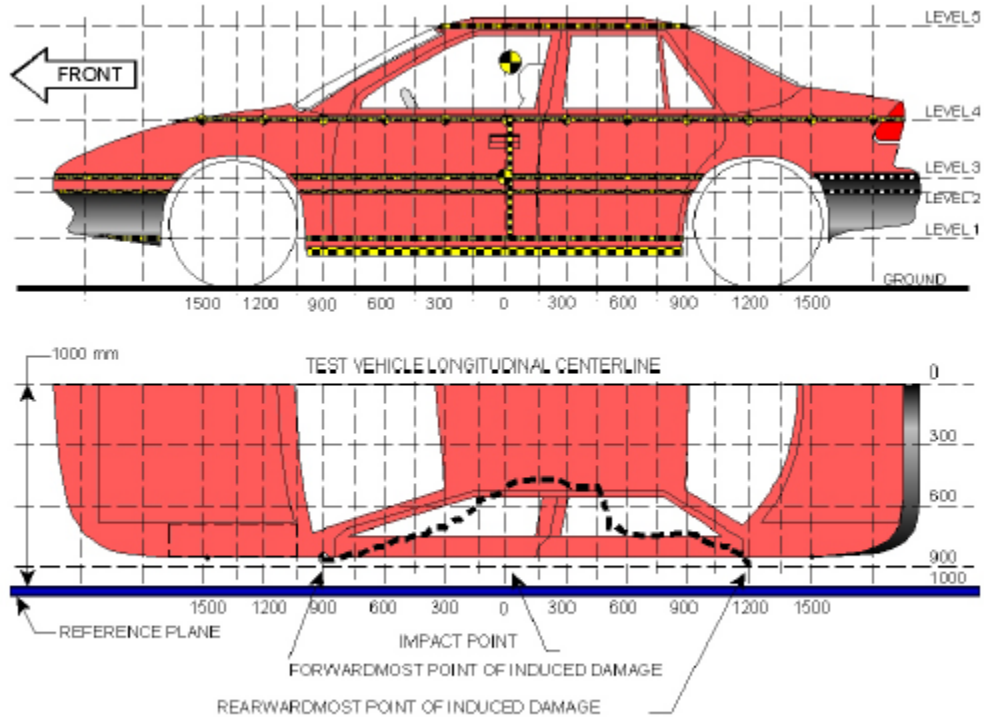
Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2821	2270	551
B	Front Axle to Front Surface of Vehicle	961	978	-17
C	Rear Axle to Rear Surface of Vehicle	982	982	0
D	Total Length at Centerline	4774	4748	26
E	Front Bumper Thickness	73	73	0
F	Front Bumper Bottom to Ground	508	544	-36
G	Sill Height at Front Wheel Well	314	304	10
H	Sill Height at Front Door Leading Edge	320	325	-5
I	Sill Height at B-Pillar	375	423	-48
J1	Sill Height at Rear Wheel Well	379	441	-62
J2	Pinch Weld Height at Rear Wheel Well	183	236	-53
K	Sill Height Aft of Rear Wheel Well	298	324	-26
L	Rear Bumper Thickness	200	200	0
M	Rear Bumper Bottom to Ground	515	509	6
N	Sill Height to Bottom of Front Window Sill	761	749	12
O	Front Door Leading Edge to Impact CL	640	532	108
P	Rear Door Trailing Edge to Impact CL	785	673	112
Q	Front Window Opening	293	250	43
R	Right Side Length	4583	4585	-2
S	Left Side Length	4588	4545	43
T ¹	Vehicle Width at B-Pillars	1802	1825	-23

¹ maximum width not at B-Pillars; maximum width = 1896 mm

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16



NOTE: All measurements are in millimeters (mm)

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	375	278	0
2	Occupant H-Point	497	268	0
3	Mid-Door	636	283	0
4	Window Sill	948	215	0
5	Window Top	1284	79	0

NOTE: The above measurements should be taken along the vertical impact reference line. Vehicle measurements forward of the vertical impact reference line are negative.

DATA SHEET NO. 10 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16

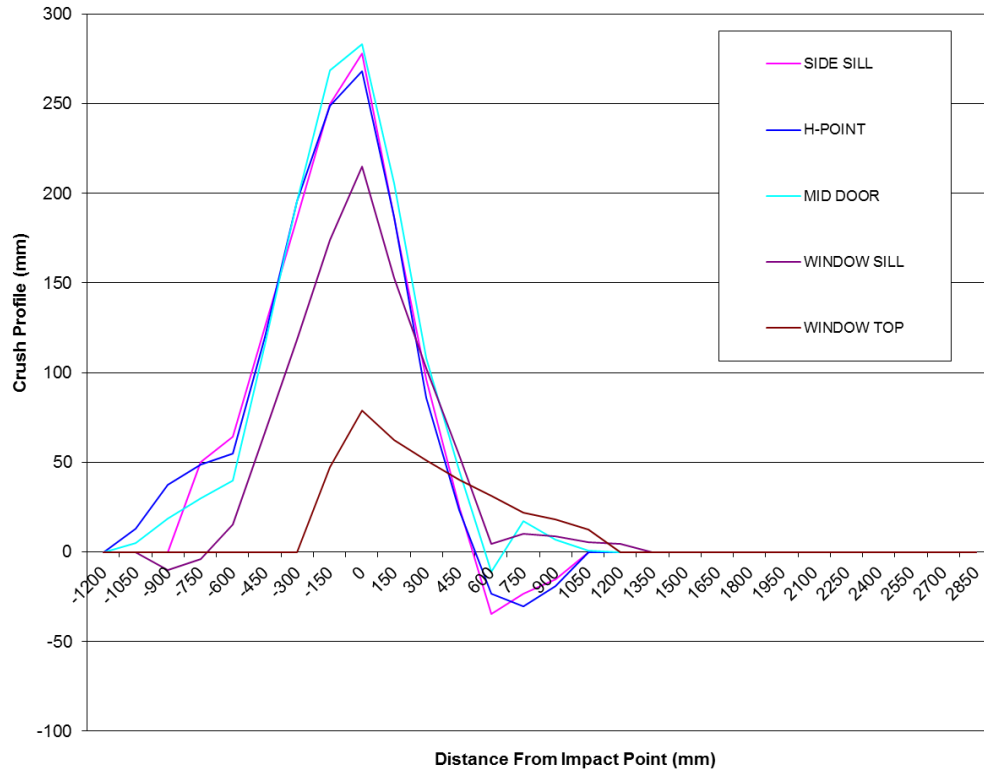
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1200	0	0	939	0	0	0	0	944	0	0	0	0	-5	0	0
-1050	925	927	919	0	0	925	914	914	0	0	0	13	5	0	0
-900	902	907	908	789	0	882	869	889	799	0	20	38	19	-10	0
-750	886	893	905	799	0	835	844	875	803	0	51	49	30	-4	0
-600	889	891	904	803	0	825	836	865	788	0	64	55	39	15	0
-450	893	890	904	808	0	767	770	788	741	0	126	120	116	67	0
-300	896	889	903	812	0	709	693	707	694	0	187	196	196	118	0
-150	898	887	901	816	624	648	638	633	642	577	250	249	268	174	47
0	900	886	899	819	620	622	618	616	604	541	278	268	283	215	79
150	902	886	897	820	619	716	699	692	667	556	186	187	205	153	63
300	903	885	895	821	617	807	799	787	718	566	96	86	108	103	51
450	902	885	893	819	616	877	862	848	766	576	25	23	45	53	40
600	899	887	892	817	611	933	910	903	813	579	-34	-23	-11	4	32
750	898	898	900	814	598	922	929	883	804	576	-24	-31	17	10	22
900	925	932	926	848	577	940	951	919	839	559	-15	-19	7	9	18
1050	0	0	950	861	554	0	0	949	855	542	0	0	1	6	12
1200	0	0	0	868	0	0	0	0	864	0	0	0	0	4	0
1350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to the test based on an estimated impact point. The final distance from impact is determined after the final dummy positioning and the pole is aligned with the center of gravity of the dummy's head.

DATA SHEET NO. 10 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
Test Program: SPNCAP Side Impact

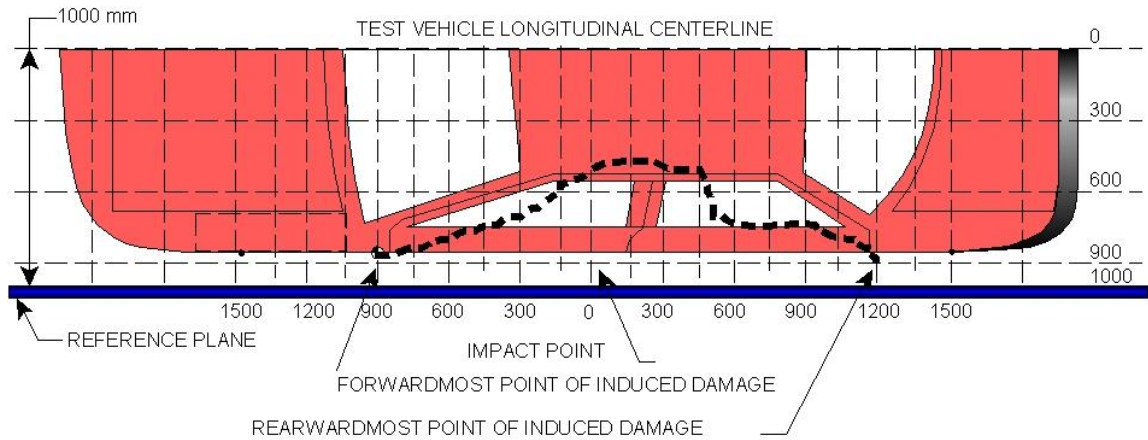
NHTSA No.: M20170114
Test Date: 10/5/16



DATA SHEET NO. 11
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
 Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
 Test Date: 10/5/16



VEHICLE DAMAGE PROFILE DISTANCES¹

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	1200	4	864	868	0
2	750	5	576	598	22
3	300	4	718	821	103
4	-150	3	633	901	268
5	-600	1	825	889	64
6	-1050	2	914	927	0

¹ DPD 1 and 6 defined as zero crush since the crush does not extend to the end of the vehicle.

DATA SHEET NO. 12

FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe

NHTSA No.: M20170114

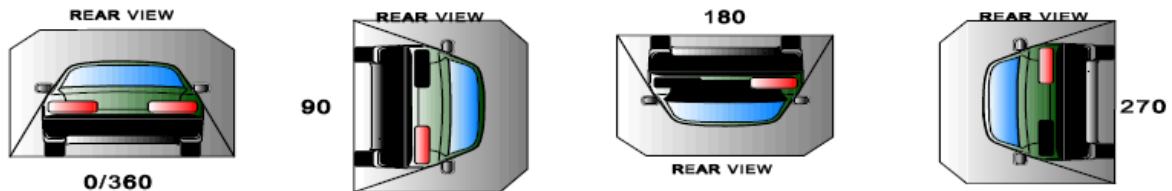
Test Program: SPNCAP Side Impact

Test Date: 10/5/16

Test Time: 15:42 Temperature: 21.0°C

- A. From impact until vehicle motion ceases: 0 oz.
(Maximum allowable is 1 ounce)
- B. For the 5 minute period after motion ceases: 0
(Maximum allowable is 5 ounces)
- C. For the following 25 minutes: 0
(Maximum allowable is 1 ounce/minute)
- D. Spillage Data1LS: None

FMVSS 301 STATIC ROLLOVER DATA



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0 to 90	90	330	420
90 to 180	90	330	840
180 to 270	90	330	1260
270 to 360	90	330	1680

FMVSS NO. 301 ROLLOVER SPILLAGE TABLE

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

ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

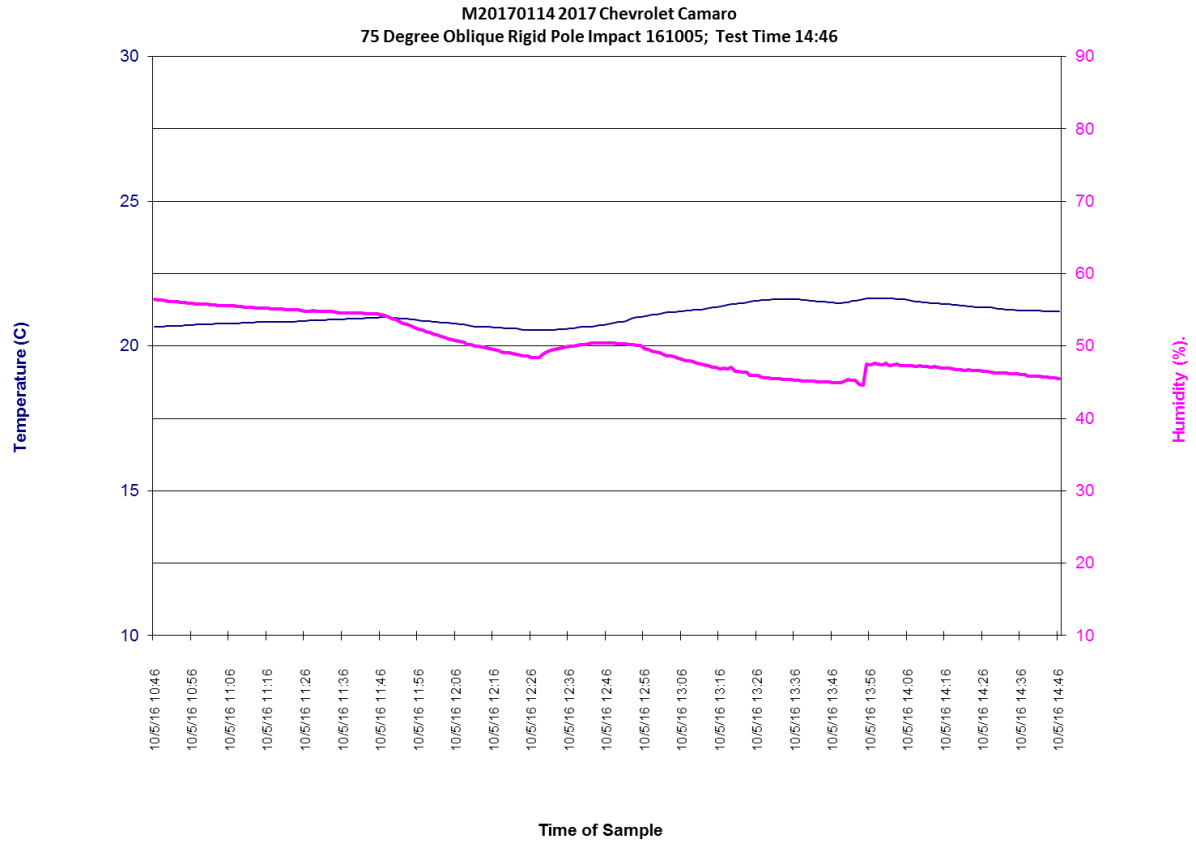
Test Phase	Spillage Location
0 to 90	None
90 to 180	None
180 to 270	None
270 to 360	None

DATA SHEET NO. 13

DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2017 Chevrolet Camaro 2DR Coupe
Test Program: SPNCAP Side Impact

NHTSA No.: M20170114
Test Date: 10/5/16



APPENDIX A
PHOTOGRAPHS

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4	Post-Test Frontal View of Test Vehicle	A-5
5	Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle	A-6
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7	Pre-Test Left Side View of Test Vehicle	A-7
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9	Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle	A-8
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17	Pre-Test Left Side View of Pole Positioned Against Side of Vehicle	A-12
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20	Post-Test Close-Up View of Impact Point Target Showing Impact Location	A-13
21	Pre-Test Front Close-Up View of Dummy Head and Chest	A-14
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24	Pre-Test Left Side View of Dummy Shoulder and Door Top View	A-16
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26	Pre-Test Front View of Seat Back Prior to Dummy Positioning	A-17
27	Pre-Test Front View of Dummy Head and Shoulders in Relation to Head Restraint	A-17
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34	Pre-Test Left Side View of Steering Wheel	A-21

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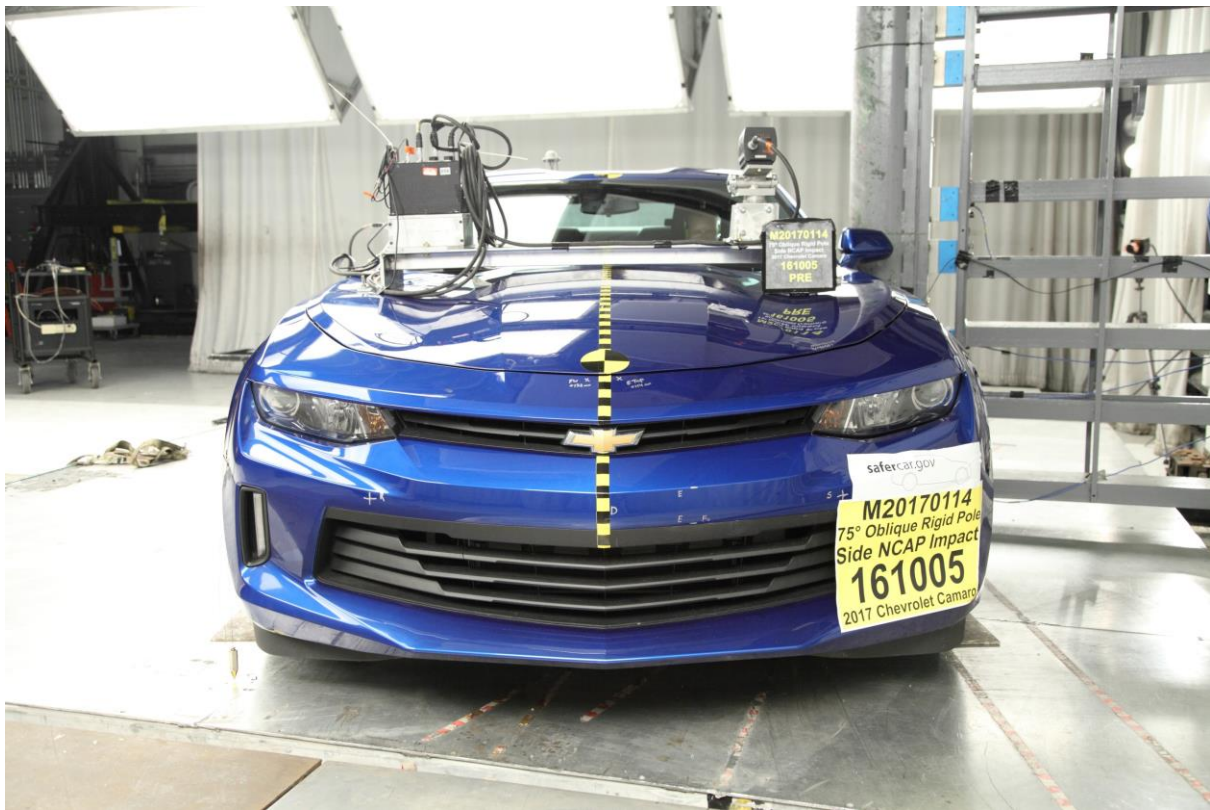
No.	Description	Page
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36	Pre-Test View of Parking Brake	A-22
37	Pre-Test Close-Up Left Side View of Driver Seat Track	A-22
38	Pre-Test Close-Up Left Side View of Driver Seat Back	A-23
39	Pre-Test Close-Up View of Driver Seat Back or Head Restraint	A-23
40	Pre-Test Dummy and Door Clearance View	A-24
41	Post-Test Dummy and Door Clearance View	A-24
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43	Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment	A-25
44	Pre-Test Inner Driver Door Panel View	A-26
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50	Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View	A-29
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53	Pre-Test View of Fuel Filler Cap or Fuel Filler Neck	A-31
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58	Post-Test Pole Barrier Front View	A-33
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69	Monroney Label	A-39
70	Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-39
71	Post-Test View of Shattered Vehicle Inner Door Panel	A-40



No. 001 As Delivered Right Front $\frac{3}{4}$ View of Test Vehicle



No. 002 As Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle



No. 003 Pre-Test Frontal View of Test Vehicle



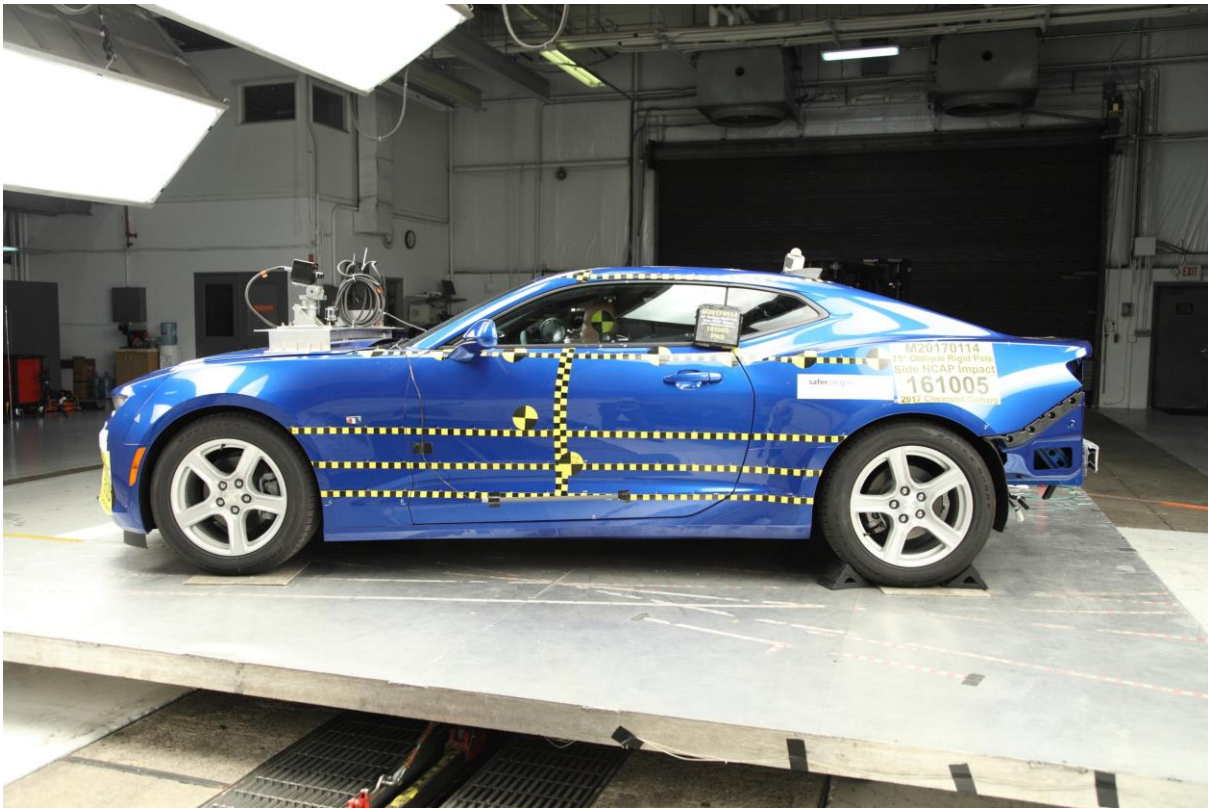
No. 004 Post-Test Frontal View of Test Vehicle

PHOTO NOT AVAILABLE

No. 005 Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle



No. 006 Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle



No. 007 Pre-Test Left Side View of Test Vehicle



No. 008 Post-Test Left Side View of Test Vehicle



No. 009 Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



No. 010 Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



No. 011 Pre-Test Rear View of Test Vehicle



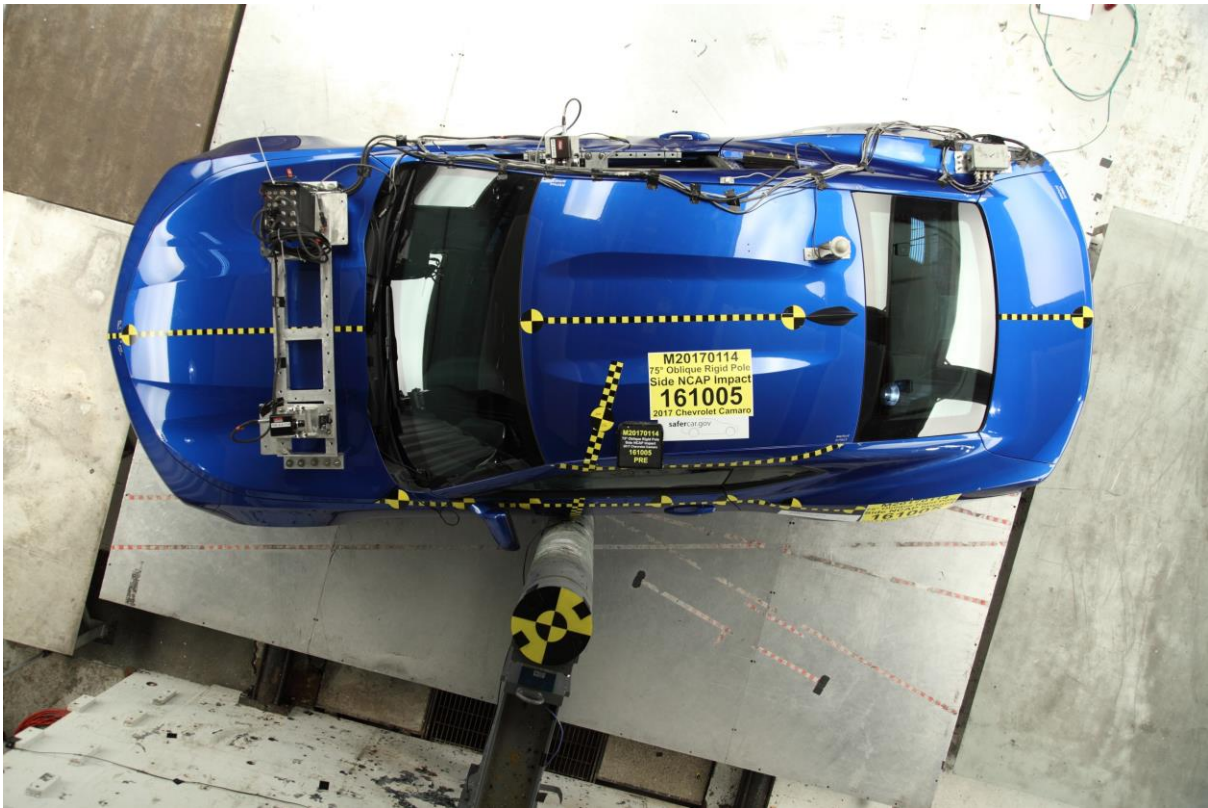
No. 012 Post-Test Rear View of Test Vehicle



No. 013 Pre-Test Right Side View of Test Vehicle



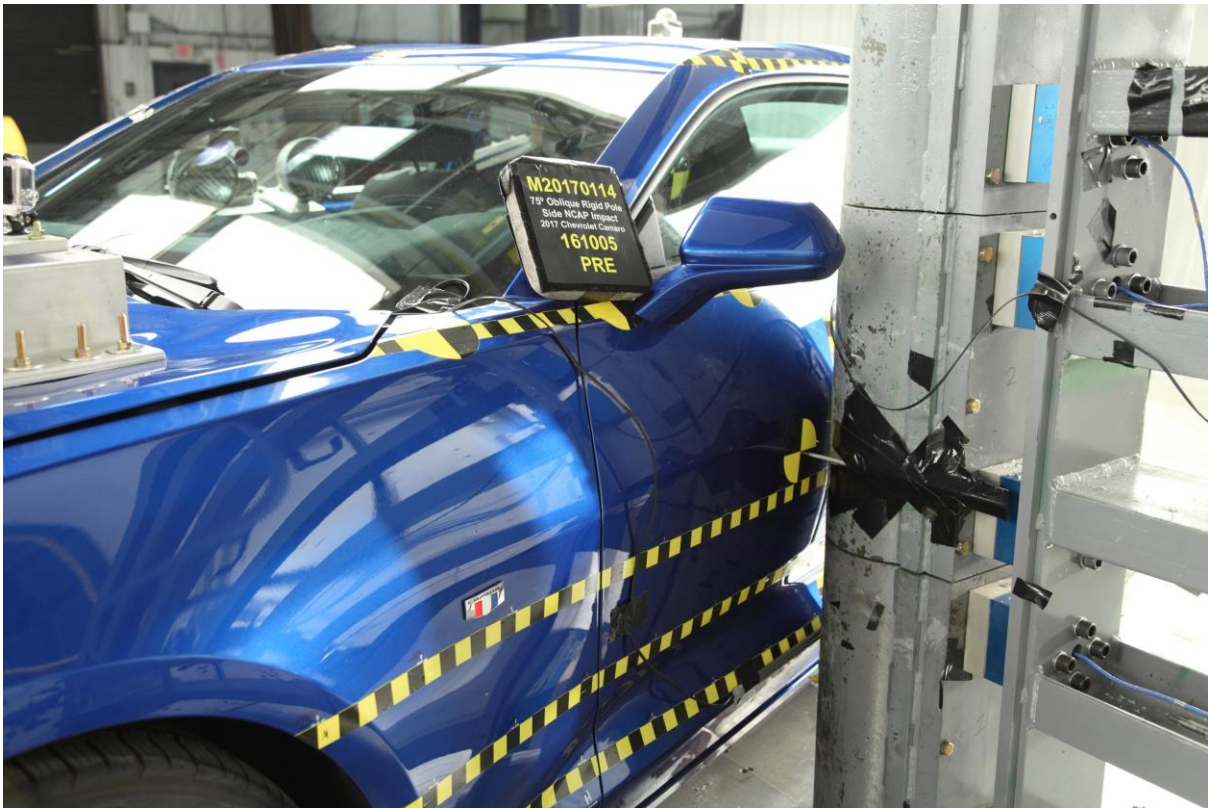
No. 014 Post-Test Right Side View of Test Vehicle



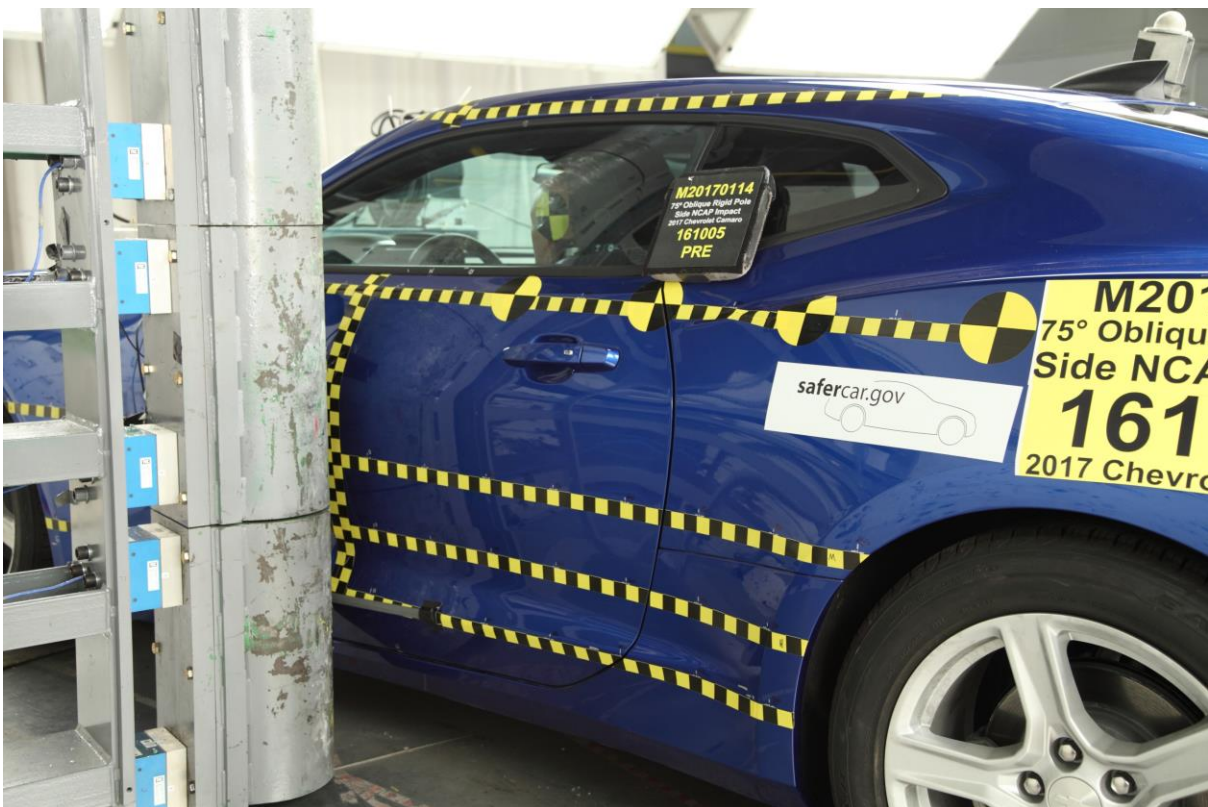
No. 015 Pre-Test Overhead View of Test Area



No. 016 Post-Test Overhead View of Test Area



No. 017 Pre-Test Left Side View of Pole Positioned Against Side of Vehicle



No. 018 Pre-Test Right Side View of Pole Positioned Against Side of Vehicle



No. 019 Pre-Test Close-Up View of Impact Point Target



No. 020 Post-Test Close-Up View of Impact Point Target Showing Impact Location



No. 021 Pre-Test Front Close-Up View of Dummy Head and Chest

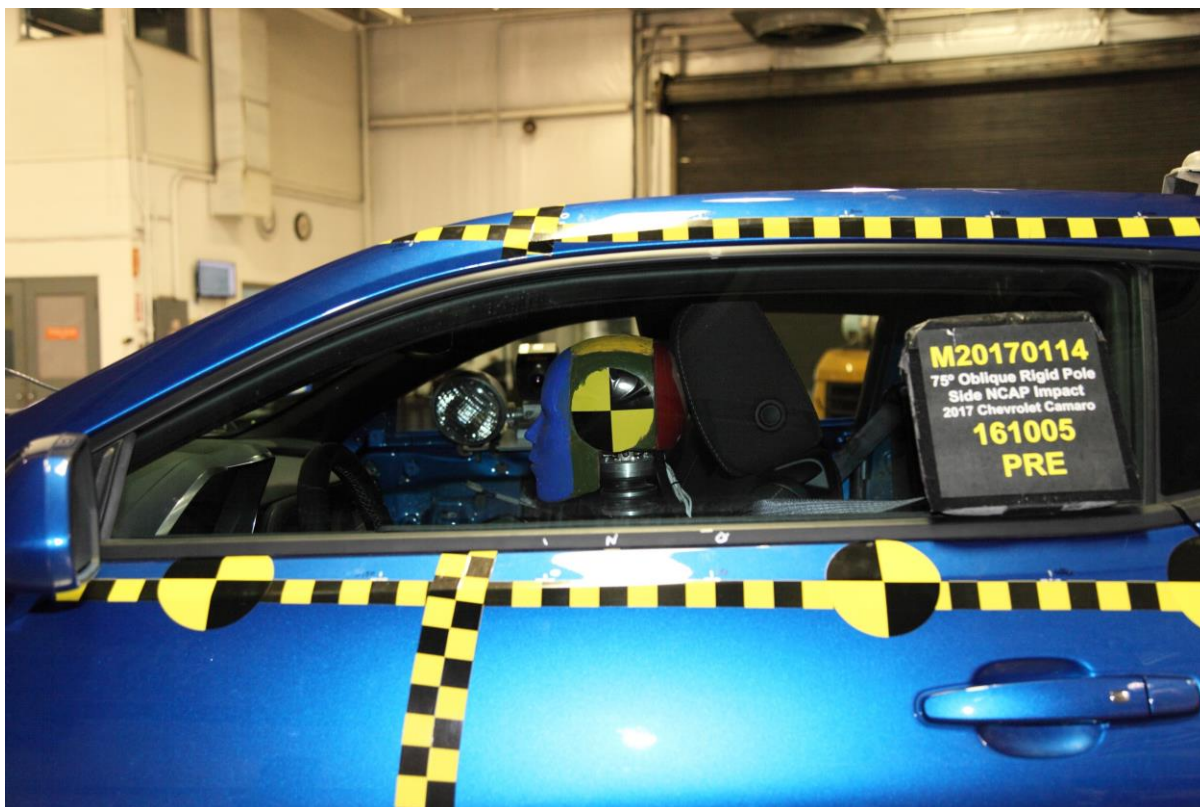


No. 022 Post-Test Front Close-Up View of Dummy



No. 023 Pre-Test Left Side View of Dummy Showing Belt and Chalking

Intentionally Left Blank



No. 024 Pre-Test Left Side View of Dummy Shoulder and Door Top View



No. 025 Post-Test Left Side View of Dummy Shoulder and Door Top View



No. 026 Pre-Test Front View of Seat Back Prior to Dummy Positioning



No. 027 Pre-Test Front Close-Up View of Dummy Head and Shoulders in Relation to Head Restraint



No. 028 Pre-Test Front View of Seat Pan Prior to Dummy Positioning



No. 029 Pre-Test Overhead View of Dummy Thighs on Seat Pan



No. 030 Pre-Test Left Side View of Dummy Neck Showing Position of Adjustable Neck Bracket



No. 031 Pre-Test Left Side View of Dummy Head Showing Dummy Head is Level



No. 032 Pre-Test Placement of Dummy Feet



No. 033 Pre-Test View of Belt Anchorage for Dummy



No. 034 Pre-Test Left Side View of Steering Wheel



No. 035 Pre-Test View of Disengaged Parking Brake



No. 036 Pre-Test View of Parking Brake



No. 037 Pre-Test Close-Up Left Side View of Driver Seat Track



No. 038 Pre-Test Close-Up Left Side View of Driver Seat Back



No. 039 Pre-Test Close-Up View of Driver Seat Back or Head Restraint



No. 040 Pre-Test Dummy and Door Clearance View



No. 041 Post-Test Dummy and Door Clearance View



No. 042 Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



No. 043 Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



No. 044 Pre-Test Inner Door Panel View



No. 045 Post-Test Inner Door Panel View Showing Dummy Contact Location



No. 046 Post-Test Dummy Close-Up Head Contact with Vehicle Interior View

Intentionally Left Blank



No. 047 Post-Test Dummy Close-Up Head Contact with Side Airbag View



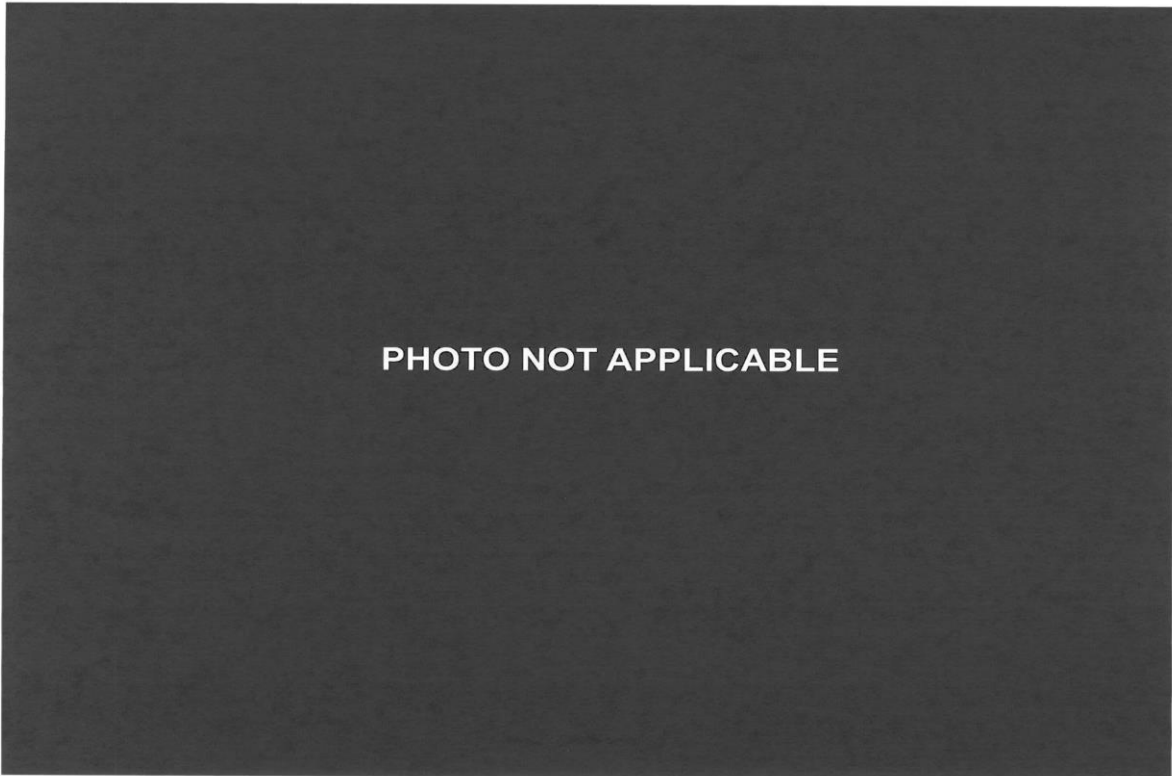
No. 048 Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



No. 049 Post-Test Dummy Close-Up Torso Contact with Side Airbag View



No. 050 Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View



No. 051 Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View



No. 052 Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View



No. 053 Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



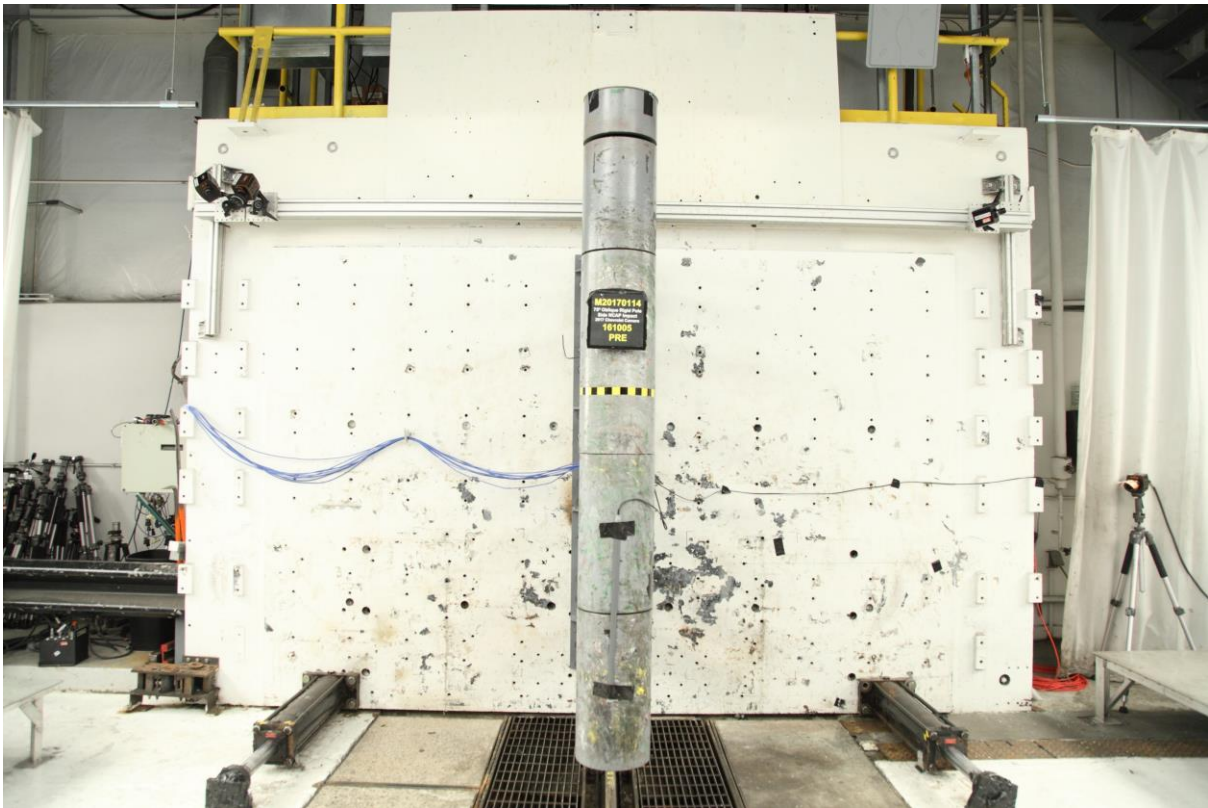
No. 054 Post-Test View of Fuel Filler Cap or Fuel Filler Neck



No. 055 Close-Up View of Vehicle Certification Label



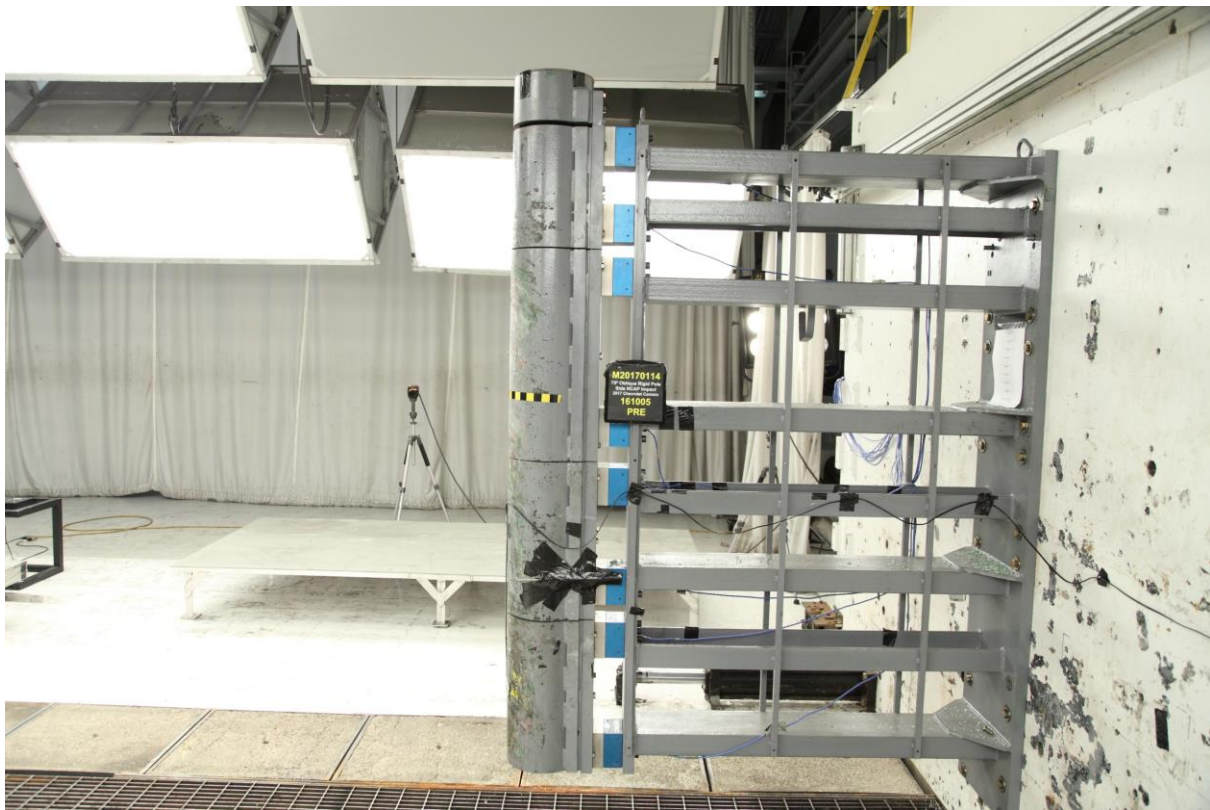
No. 056 Close-Up View of Vehicle Tire Information Placard or Label



No. 057 Pre-Test Pole Barrier Front View



No. 058 Post-Test Pole Barrier Front View



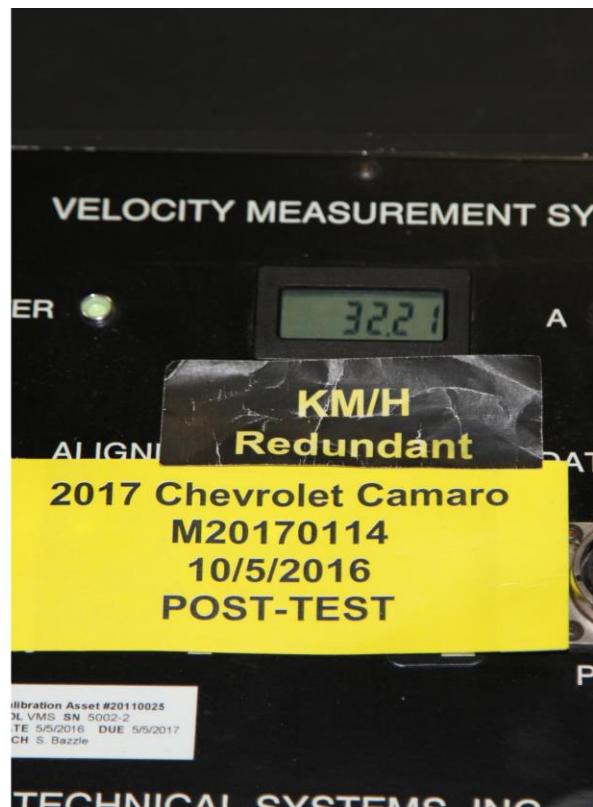
No. 059 Pre-Test Pole Barrier Side View



No. 060 Post-Test Pole Barrier Side View



No. 061 Pre-Test Ballast View



No. 062 Post-Test Primary and Redundant Speed Trap Read Out



No. 063 FMVSS No. 301 Static Rollover 0 Degrees



No. 064 FMVSS No. 301 Static Rollover 90 Degrees



No. 065 FMVSS No. 301 Static Rollover 180 Degrees



No. 066 FMVSS No. 301 Static Rollover 270 Degrees



No. 067 FMVSS No. 301 Static Rollover 360 Degrees



No. 068 Impact Event



CHEVROLET

2017 CAMARO 1LT COUPE



EXTERIOR: HYPER BLUE METALLIC
INTERIOR: JET BLACK

ENGINE: 2.0L TURBO, 4-CYL
6-SPEED MANUAL TRANSMISSION

Visit us at www.chevy.com

STANDARD EQUIPMENT Items highlighted below are included at an extra charge in the standard vehicle price shown. - CHEVROLET COMPLETE CARE - SEE WWW.CHEVY.COM OR DEALER FOR TERMS, DETAILS & LIMITS - TWO MAINTENANCE VISITS - OIL & FILTER CHANGE 4-WHEEL TIRE ROTATION 27 POINT INSPECTION 3 YR/36,000 MILES BUMPER-TO-BUMPER WARRANTY 5 YR/60,000 MILES POWERTRAIN LIMITED WARRANTY - ROADSIDE ASSISTANCE - COURTESY TRANSPORTATION MECHANICAL - ENGINE, 2.0L TURBO, 4-CYL - SIX, VVT 6 SPEED MANUAL TRANSMISSION - SPORT SUSPENSION - TIRE SEALANT AND INFLATOR KIT - PWR STEERING, ELECTRIC	- DRIVER MODE SELECTOR - CAPLESS FUELING SAFETY & SECURITY - STABILITY CONTROL, INCLUDES TRACTION CONTROL - AIR BAGS, DRIVER AND FRONT PASSENGER DUAL STAGE FRONTAL, THORAX SIDE-IMPACT, KNEE, AND HEAD CURTAIN SIDE-IMPACT - ANTI LOCK BRAKE SYSTEM, 4-WHEEL DISC - REAR CHILD SEAT LATCH ANCHORS - BATTERY RUNDOWN PROTECTION - THEFT DETERRENT SYSTEM - REAR VISION CAMERA EXTERIOR - HEADLAMPS, HALOGEN PROJECTOR - DAYTIME RUNNING LAMPS, LED - WHEELS, 18" SILVER PAINTED ALUMINUM - POWER OUTSIDE ADJUSTABLE MIRRORS	- EXHAUST, DUAL TIPS INTERIOR - KEYLESS OPEN AND START 8-WAY POWER DRIVER SEAT 6-WAY POWER PASSENGER SEAT - AIR CONDITIONING, SINGLE ZONE AUTOMATIC - WINDOWS, POWER WITH EXPRESS UP/DOWN - LEATHER WRAP STEERING WHEEL - LEATHER TRIMMED SHIFT KNOB - COLOR DRIVER INFORMATION CTR - TRUNK RELEASE, POWER - COMPASS DISPLAY - STEERING COLUMN, MANUAL RACE AND TELESCOPING - REAR SEAT, FOLDING - GLOVEBOX, LOCKABLE - FLOOR MATS, FRONT CONNECTIVITY FEATURES - CHEVROLET MYLINK AUDIO SYSTEM 7" DIAGONAL COLOR TOUCHSCREEN	SELECT BLUETOOTH STREAMING, APPLE CARPLAY CAPABILITY AND ANDROID AUTO CAPABILITY PROVIDED BY APPLE AND GOOGLE AVAILABLE WITH COMPATIBLE SMARTPHONES - XM RADIO + SERVICE SUBSCRIPTION SOLD SEPARATELY BY XM/SPIN AFTER 12 MTHS - ONSTAR/INR INCLUDES 5 YR BASIC PLAN PLUS 6 MTH SERVICE/ W/ AUTOMATIC CRASH RESPONSE, NAVIGATION & MORE. (SUBJECT TO TERMS SEE ONSTAR.COM) 4G LTE Wi-Fi/HOTSPOT WITH LIMITED DATA TRIAL AND MORE. (SUBJECT TO TERMS SEE ONSTAR.COM) - BLUETOOTH FOR PHONE OPTIONS & PRICING	MANUFACTURER'S SUGGESTED RETAIL PRICE STANDARD VEHICLE PRICE \$26,305.00 OPTIONAL EQUIPMENT INSTALLED BY THE MANUFACTURER (MSRP) REPLACES STANDARD EQUIPMENT (SHOWN) HYPER BLUE METALLIC 395.00 TOTAL OPTIONS \$395.00 TOTAL VEHICLE & OPTIONS \$26,700.00 DESTINATION CHARGE 995.00 TOTAL VEHICLE PRICE* \$27,695.00
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EPA Fuel Economy and Environment These estimates reflect new EPA methods beginning with 2017 models. Fuel Economy 23 MPG combined city/hwy 4.3 gallons per 100 miles Subcompact cars range from 15 to 119 MPG. The best vehicle rates 119 MPG. You spend \$1,000 more in fuel costs over 5 years compared to the average new vehicle.	Gasoline Vehicle Annual fuel cost \$1,600 Fuel Economy & Greenhouse Gas Rating (tailpipe only) 5 Smog Rating (tailpipe only) 6 This vehicle emits 380 grams CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also create emissions, seen most at fuelconomy.gov.	GOVERNMENT 5-STAR SAFETY RATINGS This vehicle has not been rated by the government for overall vehicle score, frontal crash, side crash or rollover risk. Source: National Highway Traffic Safety Administration (NHTSA) www.safercar.gov or 1-888-327-4236	PARTS CONTENT INFORMATION FOR VEHICLES IN THIS CARLINE: U.S./CANADIAN PARTS CONTENT: 60% MAJOR SOURCES OF FOREIGN PARTS CONTENT: MEXICO 17% NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS. FOR THIS VEHICLE: FINAL ASSEMBLY POINT: LANSING, MI U.S.A. COUNTRY OF ORIGIN: ENGINE: UNITED STATES TRANSMISSION: UNITED STATES This label has been applied pursuant to Federal law. Do not remove prior to delivery to the ultimate end-user. Technology and equipment are subject to change without notice. Dealer retains responsibility for correct parts content. Local laws or license laws. © 2016 General Motors, LLC. GM, Buick, Pontiac, Opel, Saturn, and Vauxhall are trademarks of General Motors.
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Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 26 MPG and costs \$7,000 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$2.45 per gallon. MPG is miles per gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fuelconomy.gov
Calculate personalized estimates and compare vehicles

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Wi-Fi

ORDER NO. TYPICAL SALES MODEL CODE 1M07
VEHICLE TYPE
FINAL ASSEMBLY
LANSING, MI U.S.A.
VIN 1G1FA1R0X0H0116310
DEALER TO WHOM DELIVERED
GAULT CHEVROLET CO., INC.
2507 NORTH ST
ENDICOTT, NY 13760-6105
LY
1G1A1233183

No. 069 Monroney Label

Seats and Restraints 57

Head Restraints

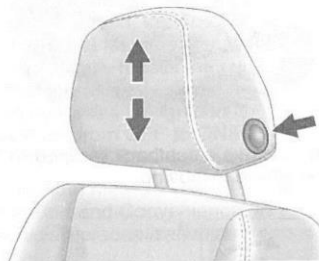
The vehicle's front seats have adjustable head restraints in the outboard seating positions.

Warning

With head restraints that are not installed and adjusted properly, there is a greater chance that occupants will suffer a neck/spinal injury in a crash. Do not drive until the head restraints for all occupants are installed and adjusted properly.



Adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chance of a neck injury in a crash.



To raise or lower the head restraint, press the button located on the side of the head restraint, and pull up or push the head restraint down, and release the button. Pull and push on the head restraint after the button is released to make sure that it is locked in place.

The front outboard head restraints are not removable.

Front Seats

Power Seat Adjustment



To adjust a power seat:

- Move the seat forward or rearward by sliding the horizontal control forward or rearward.
- Raise or lower the front part of the seat cushion by moving the front of the horizontal control up or down.
- Raise or lower the entire seat by moving the entire horizontal control up or down.

No. 070 Head Restraint Use and Adjustment Information from Vehicle Owner Manual

PHOTO NOT APPLICABLE

No. 071 Post-Test View of Shattered Vehicle Inner Door Panel

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

No.	Description	Page
1	Driver Head Acceleration (X) vs. Time	B-4
2	Driver Head Acceleration (Y) vs. Time	B-4
3	Driver Head Acceleration (Z) vs. Time	B-4
4	Driver Head Acceleration Resultant vs. Time	B-4
5	Driver Lower Spine T12 Acceleration (X) vs. Time	B-5
6	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-5
7	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-5
8	Driver Lower Spine T12 Acceleration Resultant vs. Time	B-5
9	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-6
10	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-6
11	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-6

The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at:

www.nhtsa.dot.gov.

Additional Driver Dummy Instrumentation Data

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

Vehicle Instrumentation Data

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

Pole Instrumentation Data

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

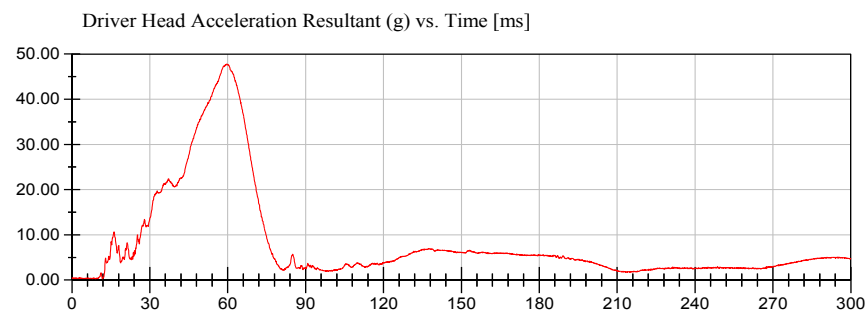
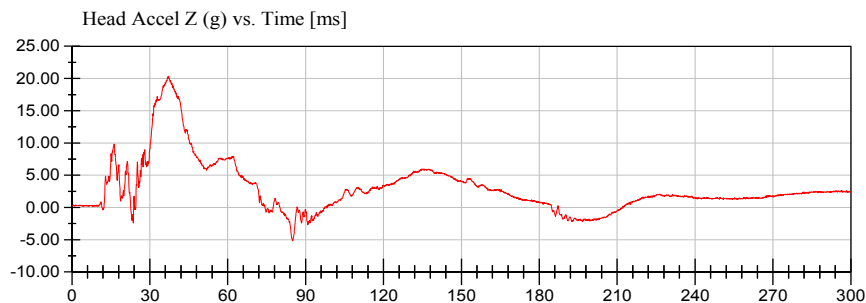
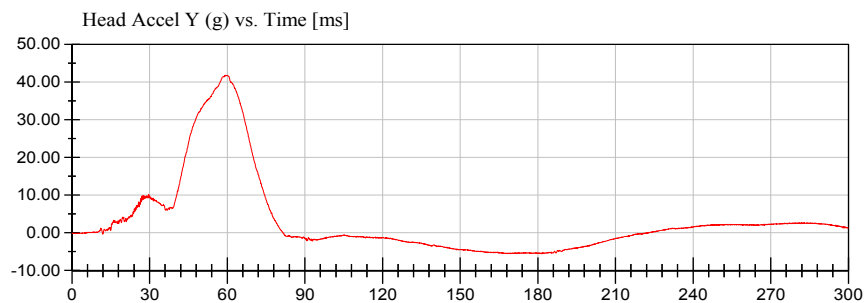
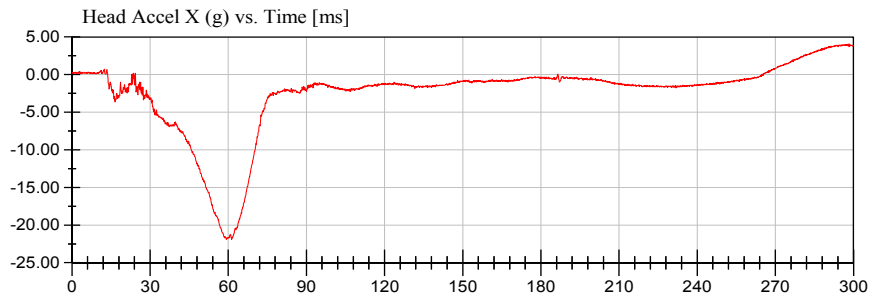
NHTSA

Position #1 SID IIs Dummy (297)

Test Date: 10/05/2016

Test Lab: Transportation Research Center, Inc.

Test Number: 161005 (M20170114)



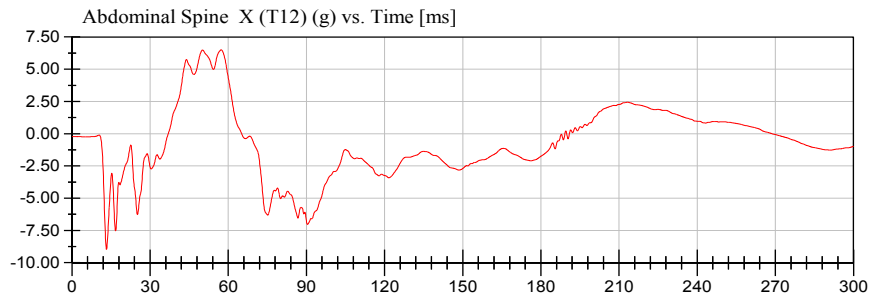
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Position #1 SID IIs Dummy (297)

Test Date: 10/05/2016

Test Lab: Transportation Research Center, Inc.

Test Number: 161005 (M20170114)



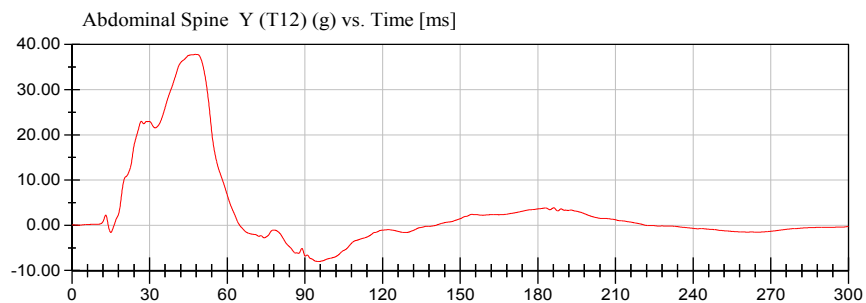
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6.50 g at 57.28 ms

<Min>

-8.97 g at 13.28 ms

CFC_180



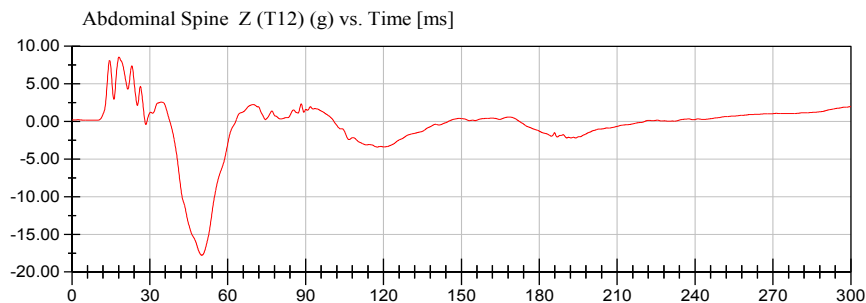
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37.81 g at 47.68 ms

<Min>

-8.02 g at 95.36 ms

CFC_180



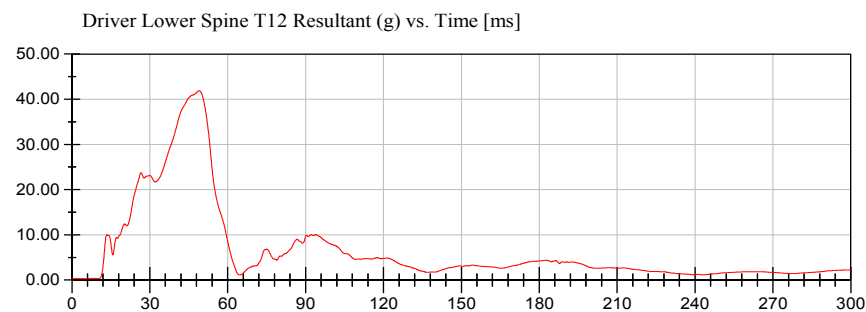
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8.55 g at 18.08 ms

<Min>

-17.77 g at 50.00 ms

CFC_180



<Max>

41.89 g at 49.04 ms

<Min>

0.30 g at 10.08 ms

CFC_180



NHTSA

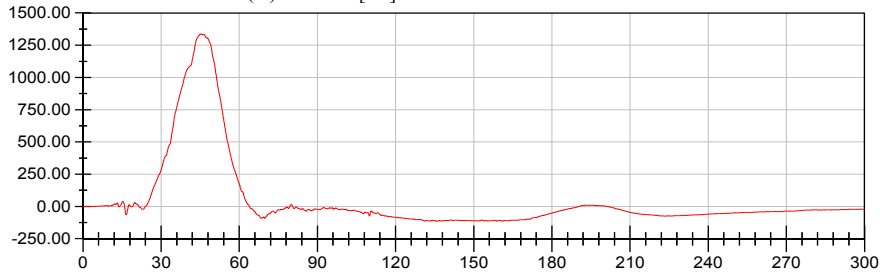
Position #1 SID IIs Dummy (297)

Test Date: 10/05/2016

Test Lab: Transportation Research Center, Inc.

Test Number: 161005 (M20170114)

Left Iliac Force Y (N) vs. Time [ms]



<Max>

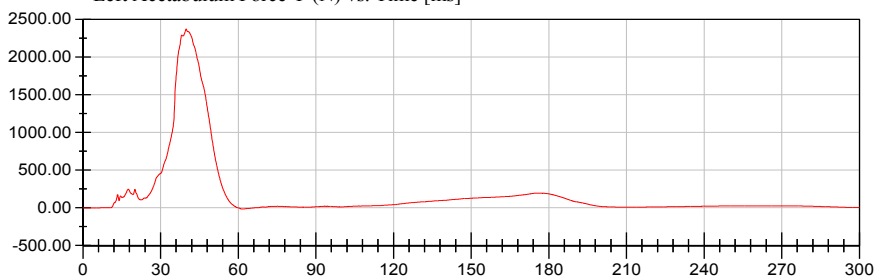
1,337.43 N at 45.28 ms

<Min>

-114.51 N at 161.04 ms

CFC_600

Left Acetabulum Force Y (N) vs. Time [ms]



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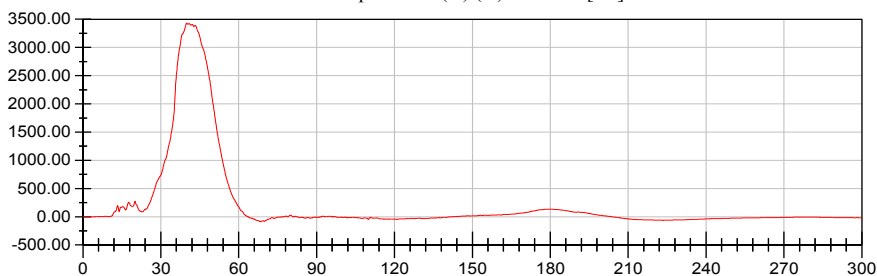
2,372.58 N at 39.84 ms

<Min>

-15.79 N at 61.36 ms

CFC_600

Driver Total Pelvis Force on Impact Side (Y) (N) vs. Time [ms]



<Max>

3,430.81 N at 39.92 ms

<Min>

-86.82 N at 68.24 ms

CFC_600



APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

TABLE OF CALIBRATION MEASUREMENTS AND PLOTS
SID-IIs (Driver) Dummy
Description

Table 1. External Measurements

Table 2. Head Drop Test

Resultant Head Acceleration (G's) vs. Time (ms)
Head (X) Acceleration (G's) vs. Time (ms)
Head (Y) Acceleration (G's) vs. Time (ms)
Head (Z) Acceleration (G's) vs. Time (ms)

Table 3. Lateral Neck Pendulum Test

Pendulum Velocity (m/s) vs. Time (ms)
Flexion Angle (°) vs. Time (ms)
Moment About Occipital Condyle (Nm) vs. Time (ms)

Table 4. Shoulder Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Shoulder Displacement (mm) vs. Time (ms)
Upper Spine Acceleration (G's) vs. Time (ms)

Table 5. Thorax (With Arm) Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Shoulder Displacement (mm) vs. Time (ms)
Upper Rib Displacement (mm) vs. Time (ms)
Middle Rib Displacement (mm) vs. Time (ms)
Lower Rib Displacement (mm) vs. Time (ms)
Upper Spine Acceleration (G's) vs. Time (ms)
Lower Spine Acceleration (G's) vs. Time (ms)

Table 6. Thorax (Without Arm) Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Upper Rib Displacement (mm) vs. Time (ms)
Middle Rib Displacement (mm) vs. Time (ms)
Lower Rib Displacement (mm) vs. Time (ms)
Upper Spine Acceleration (G's) vs. Time (ms)
Lower Spine Acceleration (G's) vs. Time (ms)

Table 7. Abdomen Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Upper Abdominal Rib Displacement (mm) vs. Time (ms)
Lower Abdominal Rib Displacement (mm) vs. Time (ms)
Lower Spine Acceleration (G's) vs. Time (ms)

Table 8. Pelvis Plug Quasi-Static Test (Optional*)

Table 9. Pelvis Acetabulum Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Pelvis (Y) Acceleration (G's) vs. Time (ms)
Acetabulum Force (N) vs. Time (ms)

Table 10. Pelvis Iliac Impact Test

Impactor Acceleration (G's) vs. Time (ms)
Pelvis (Y) Acceleration (G's) vs. Time (ms)
Iliac Force (N) vs. Time (ms)

Pre-Test Calibration Sheets
Driver S/N 297

Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. 297 Calibration No.10

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	781	Yes
B	Shoulder Pivot Height	437.0 - 453.0	448	Yes
C	H-Point Height	79.0 - 89.0	85	Yes
D	H-Point from Seat Back	141.0 - 151.0	146	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	102	Yes
F	Thigh Clearance	119.0 - 135.0	128	Yes
G	Head Breadth	140.0 - 148.0	145	Yes
H	Head Back from Backline	40.0 - 46.0	44	Yes
I	Head Depth	178.0 - 188.0	182	Yes
J	Head Circumference	541.0 - 551.0	545	Yes
K	Buttock to Knee Length	514.0 - 540.0	528	Yes
L	Popliteal Height	343.0 - 369.0	355	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	400	Yes
N	Buttock Popliteal Length	416.0 - 442.0	430	Yes
O	Chest Depth without Jacket	195.0 - 211.0	203	Yes
P	Foot Length (right)	216.0 - 232.0	221	Yes
P	Foot Length (left)	216.0 - 232.0	221	Yes
Q	Hip Breadth	313.0 - 323.0	319	Yes
R	Arm Length	249.0 - 259.0	254	Yes
S	Knee Joint to seat Back	478.0 - 493.0	487	Yes
V	Shoulder Width (only one arm installed)	341.0 - 357.0	347	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
W	Foot Width (left)	78.0 - 94.0	84	Yes
Y	Chest Circumference with Jacket	851.0 - 881.0	869	Yes
Z	Waist Circumference	761.0 - 791.0	778	Yes

Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. 297 Certification No. 10-1

Test Date: 9/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	125.6 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	2.3 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 17:41:14 234

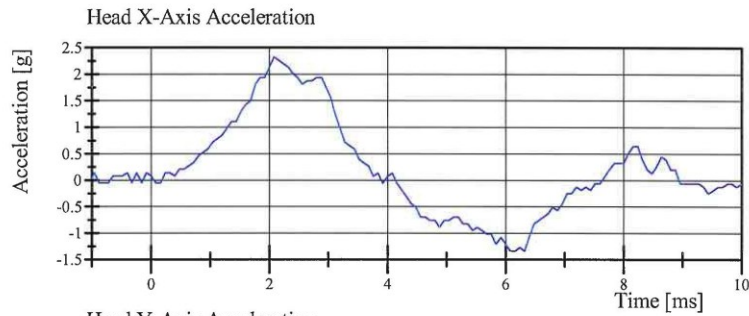


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. 297 Certification No. 10-1

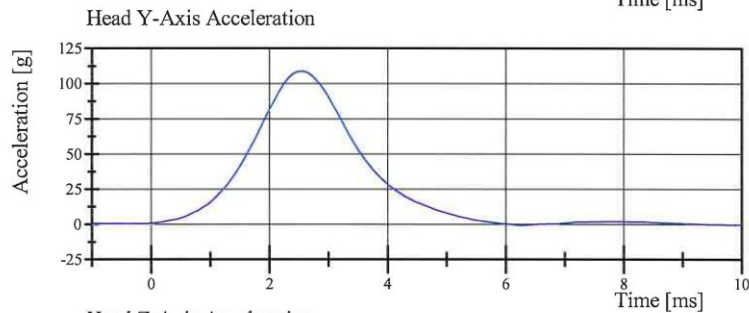
Test Date: 9/2/2016



Filter Class: CFC_1000

Max: 2.3 g at 2.1 ms

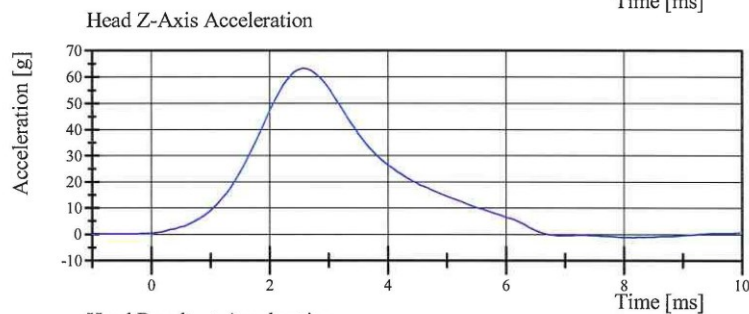
Min: -1.3 g at 6.1 ms



Filter Class: CFC_1000

Max: 108.6 g at 2.6 ms

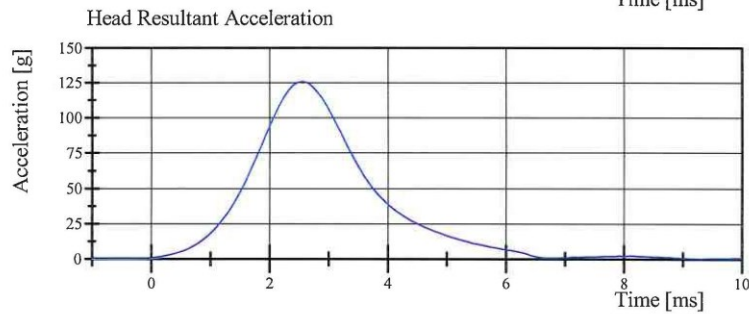
Min: -1.0 g at 6.3 ms



Filter Class: CFC_1000

Max: 63.2 g at 2.6 ms

Min: -1.2 g at 8.2 ms



Filter Class: CFC_1000

Max: 125.6 g at 2.6 ms

Min: 0.1 g at -0.3 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 17:41:21 234



Transportation Research Center Inc.

Left Lateral Neck
SID IIs Serial No. 297 Certification No. 10-1
Test Date: 9/6/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.618 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.347 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.502 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	4.752 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.701 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.784 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-74.3 deg	Yes
Time of Peak	50 - 70 ms	61.5 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	40.4 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	102 - 126 ms	112.5 ms	Yes

Test meets specifications.

Comments:

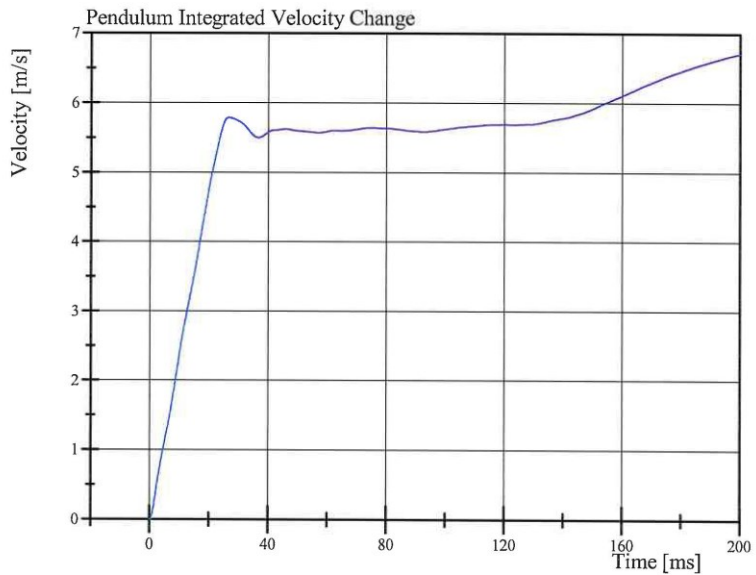
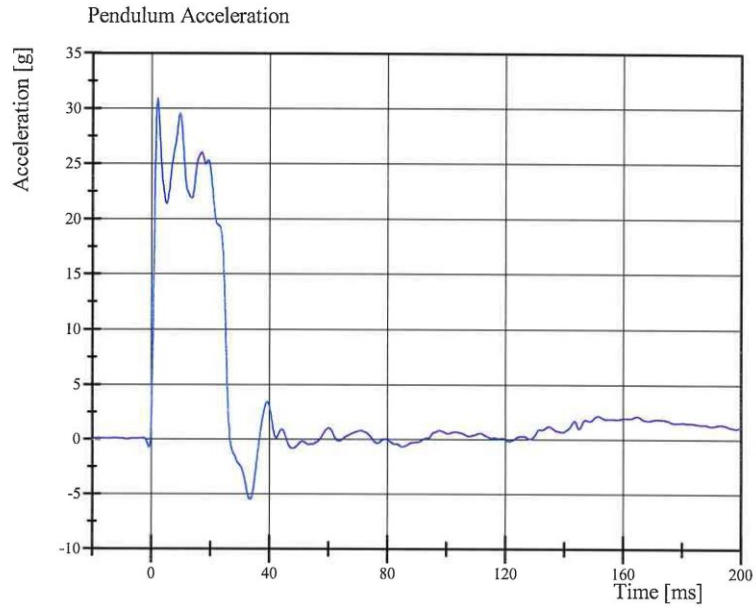
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.06.2016 08:32:40 745



Transportation Research Center Inc.

Left Lateral Neck
SID IIs Serial No. 297 Certification No. 10-1
Test Date: 9/6/2016



Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.06.2016 08:32:50 745

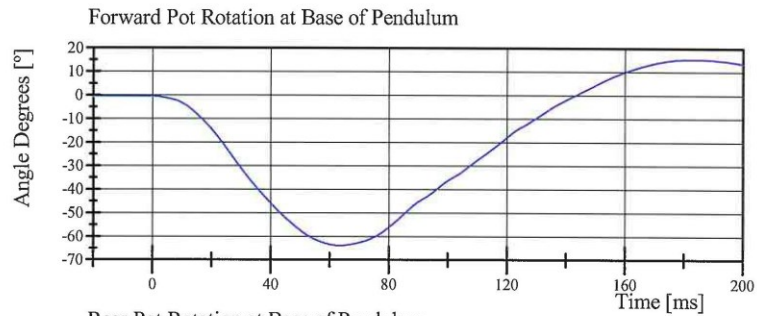


Transportation Research Center Inc.

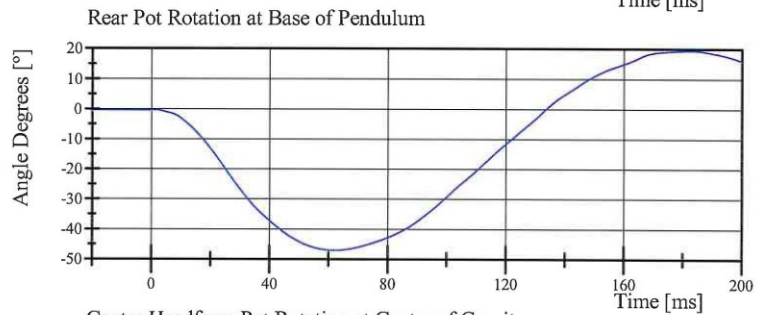
Left Lateral Neck

SID IIs Serial No. 297 Certification No. 10-1

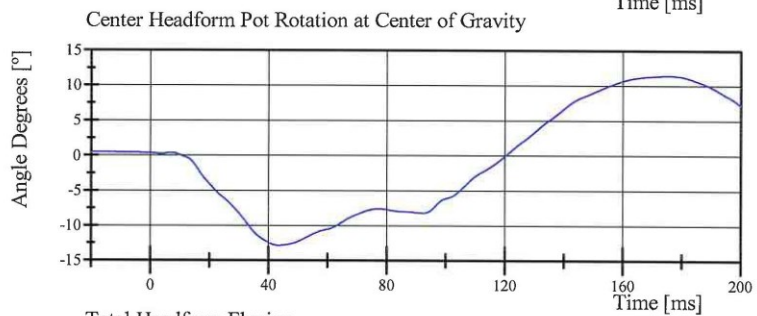
Test Date: 9/6/2016



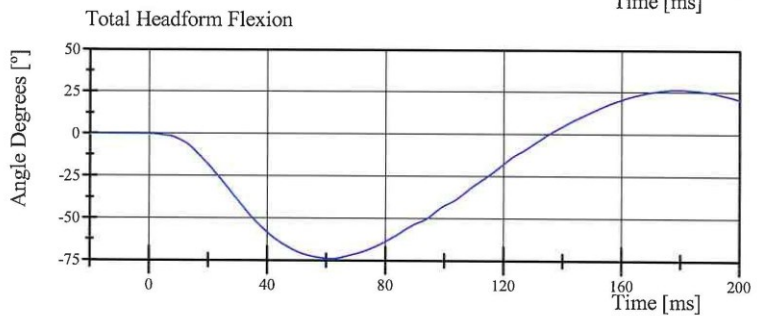
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Min: -64.1 ° at 63.4 ms



Filter Class: CFC_60
Max: 19.4 ° at 183.0 ms
Min: -47.2 ° at 62.3 ms



Filter Class: CFC_60
Max: 11.4 ° at 175.4 ms
Min: -12.9 ° at 43.4 ms



Filter Class: CFC_60
Max: 26.6 ° at 179.1 ms
Min: -74.3 ° at 61.5 ms

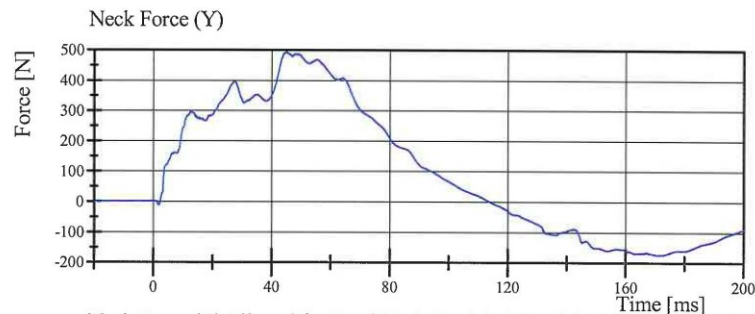
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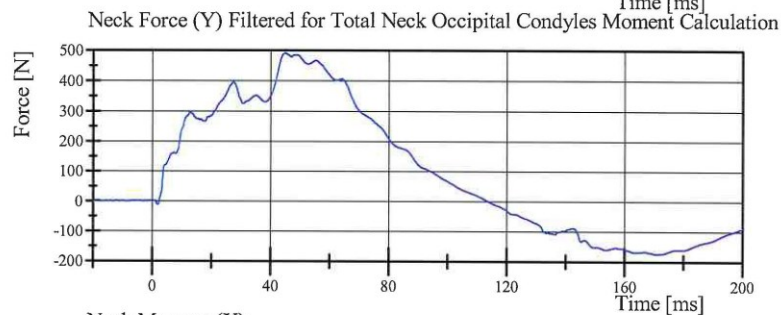


Transportation Research Center Inc.

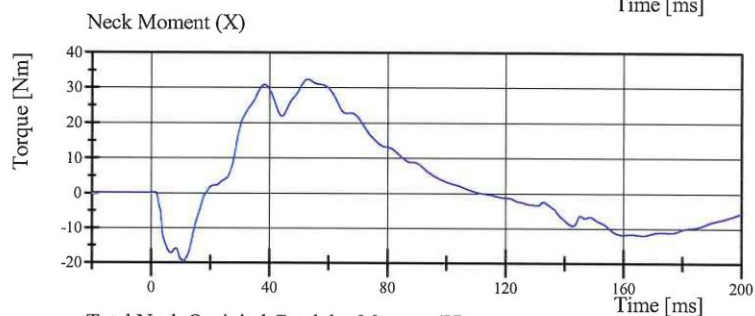
Left Lateral Neck
SID IIs Serial No. 297 Certification No. 10-1
Test Date: 9/6/2016



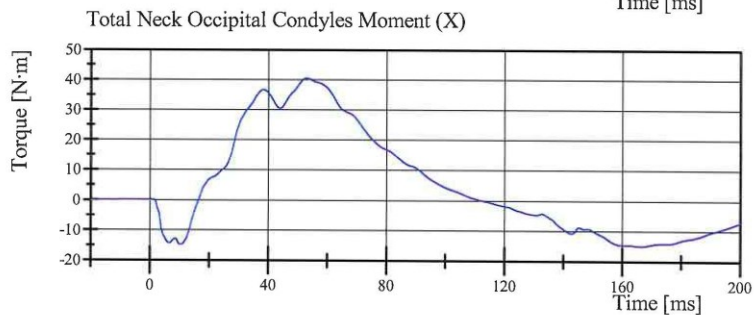
Filter Class: CFC_1000
Max: 491.6 N at 45.0 ms
Min: -174.4 N at 170.6 ms



Filter Class: CFC_600
Max: 491.0 N at 45.0 ms
Min: -174.2 N at 170.7 ms



Filter Class: CFC_600
Max: 32.3 Nm at 52.9 ms
Min: -19.7 Nm at 11.0 ms



Filter Class: Without_(Consta
Max: 40.4 N·m at 52.9 ms
Min: -14.9 N·m at 166.6 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.06.2016 08:32:52 745



Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. 297 Certification No. 10-1

Test Date: 9/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.35 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-15.6 g	Yes
Shoulder Displacement	28 - 37 mm	31.0 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	20.7 g	Yes

Test meets specifications.

Comments:

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 17:10:27 877

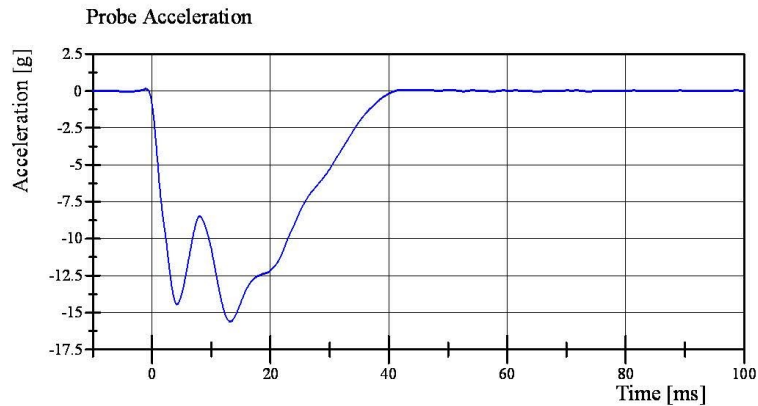


Transportation Research Center Inc.

Left Lateral Shoulder

SID IIs Serial No. 297 Certification No. 10-1

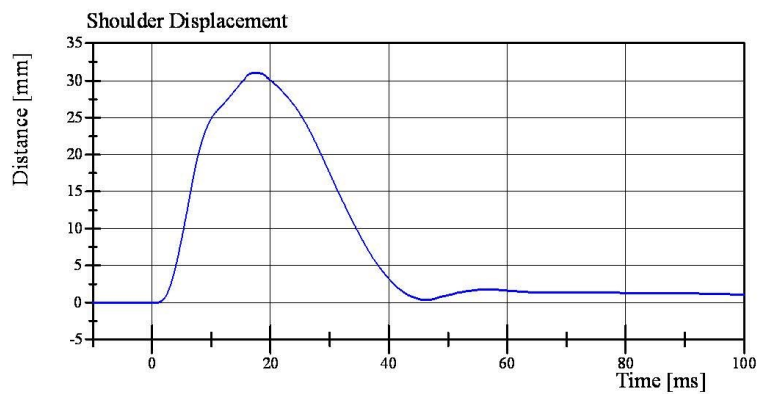
Test Date: 9/2/2016



Filter Class: CFC_180

Max: 0.1 g at -1.0 ms

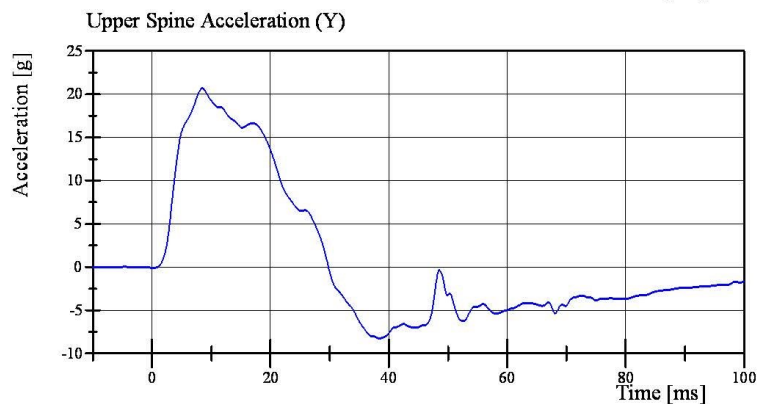
Min: -15.6 g at 13.2 ms



Filter Class: CFC_600

Max: 31.0 mm at 17.6 ms

Min: -0.0 mm at 0.8 ms



Filter Class: CFC_180

Max: 20.7 g at 8.5 ms

Min: -8.3 g at 38.4 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 17:10:37 877



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 10-1
Test Date: 9/2/2016

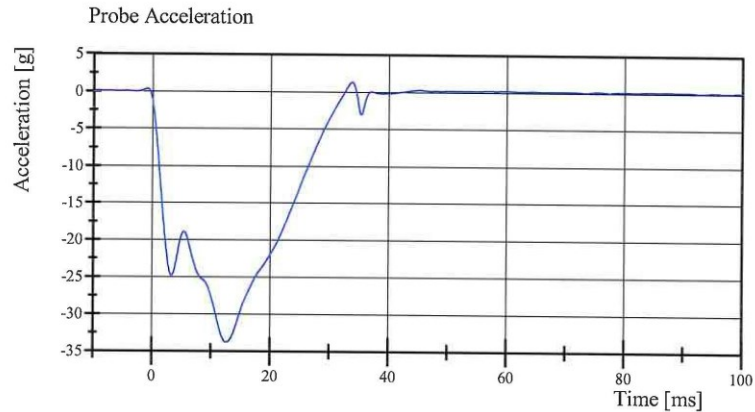
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.714 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-33.9 g	Yes
Shoulder Displacement	31 - 40 mm	33.2 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	26.4 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	31.3 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	34.5 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	37.2 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	35.2 g	Yes

Test meets specifications.

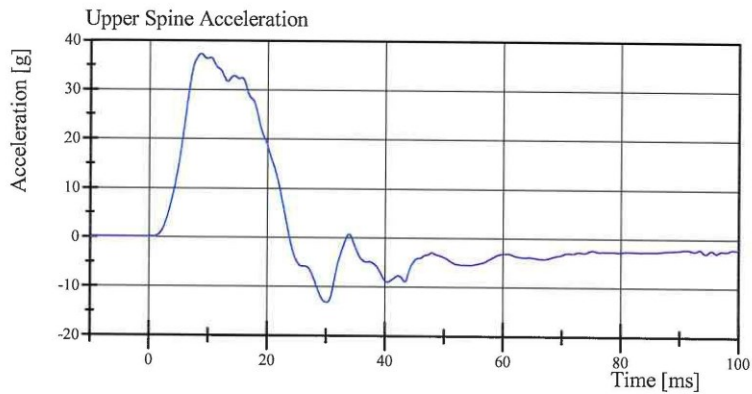
Comments:

Transportation Research Center Inc.

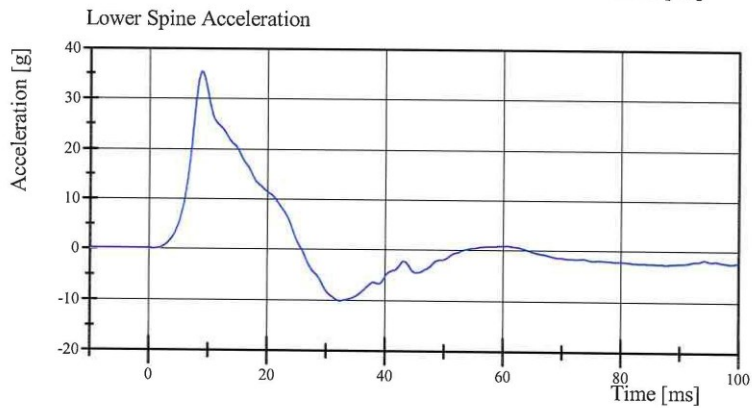
Left Lateral Thorax with Arm
SID II_s Serial No. 297 Certification No. 10-1
Test Date: 9/2/2016



Filter Class: CFC_180
Max: 1.3 g at 33.8 ms
Min: -33.9 g at 12.6 ms



Filter Class: CFC_180
Max: 37.2 g at 8.6 ms
Min: -13.2 g at 30.2 ms



Filter Class: CFC_180
Max: 35.2 g at 8.9 ms
Min: -10.1 g at 32.3 ms

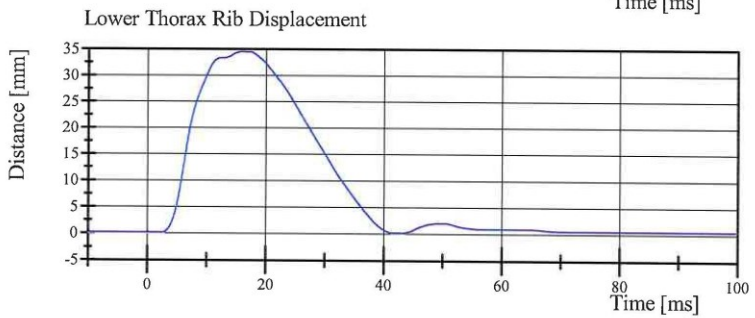
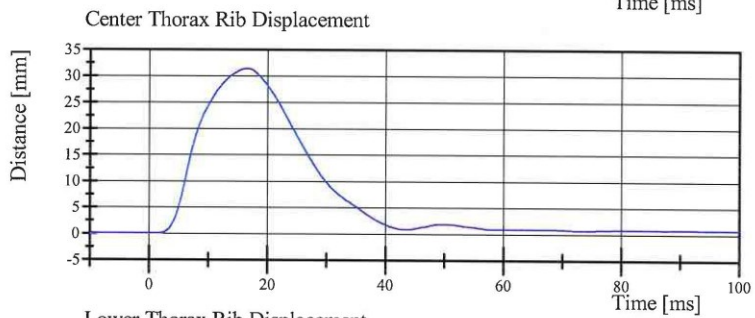
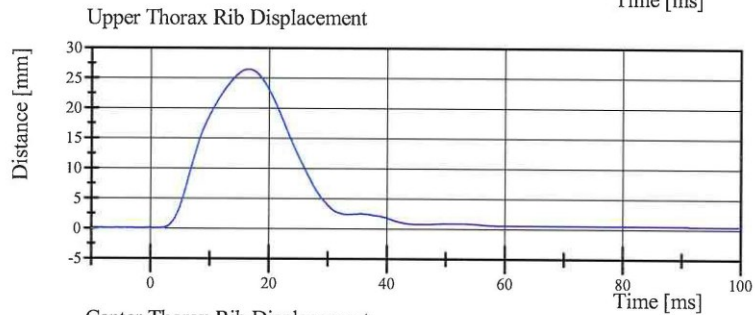
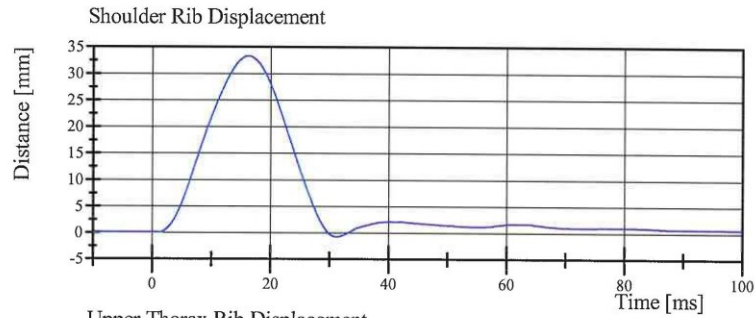
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 18:06:57 640



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 10-1
Test Date: 9/2/2016



Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 18:06:57 640



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 10-1
Test Date: 9/2/2016

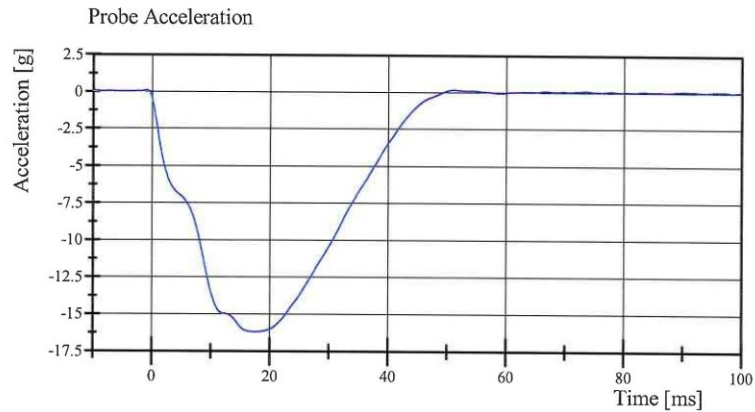
Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.359 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-16.2 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	33.7 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	40.0 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	38.9 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	14.6 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	10.3 g	Yes

Test meets specifications.

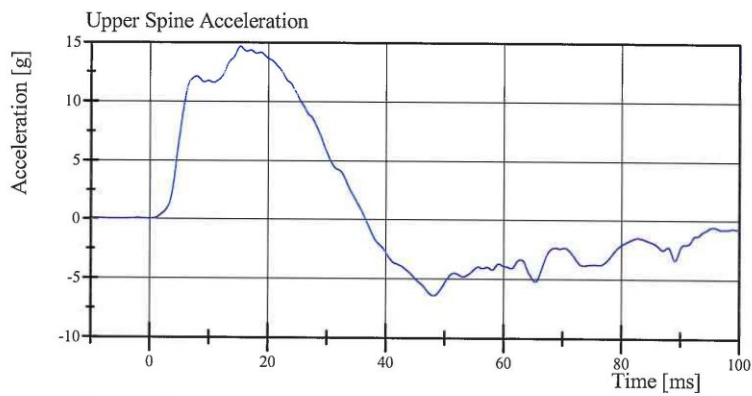
Comments:

Transportation Research Center Inc.

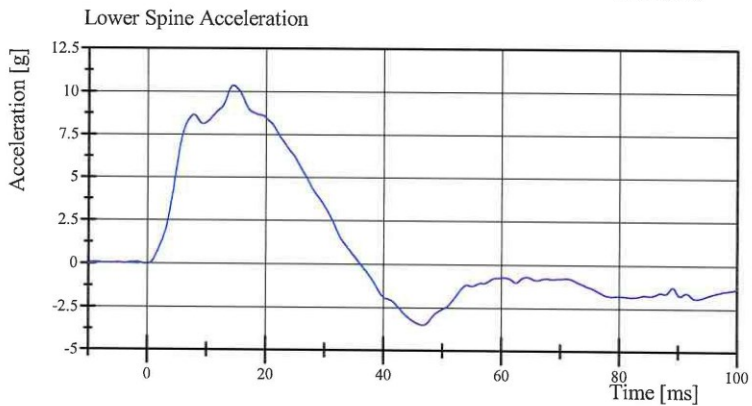
Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 10-1
Test Date: 9/2/2016



Filter Class: CFC_180
Max: 0.1 g at 51.0 ms
Min: -16.2 g at 17.5 ms



Filter Class: CFC_180
Max: 14.6 g at 15.3 ms
Min: -6.4 g at 48.2 ms



Filter Class: CFC_180
Max: 10.3 g at 14.5 ms
Min: -3.5 g at 46.7 ms

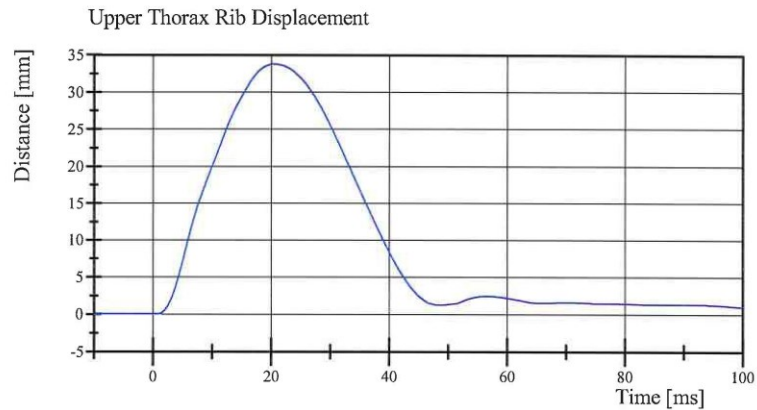
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 17:31:59 873

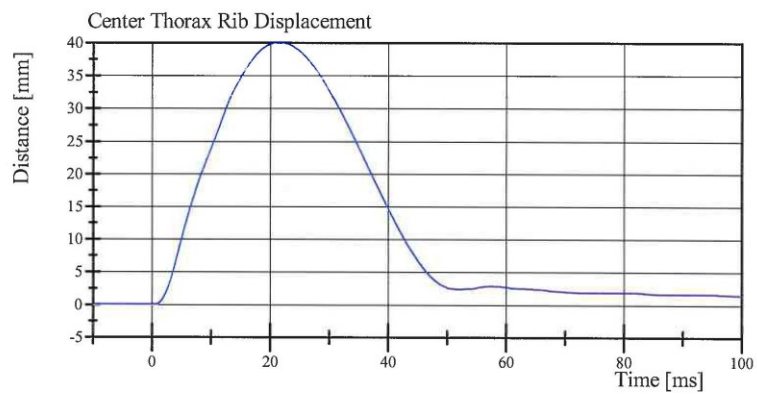


Transportation Research Center Inc.

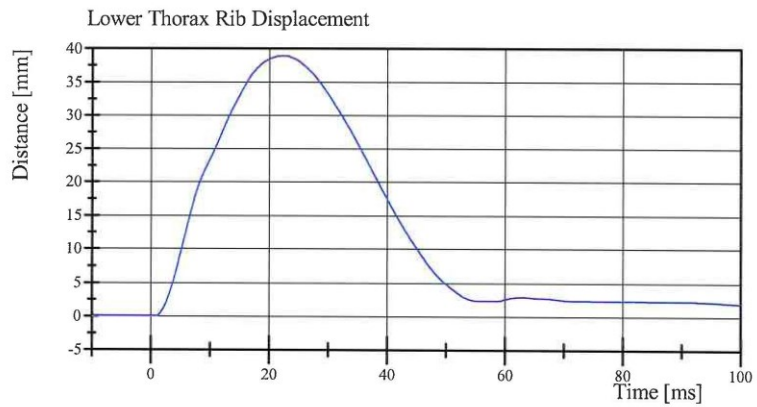
Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 10-1
Test Date: 9/2/2016



Filter Class: CFC_600
Max: 33.7 mm at 20.5 ms
Min: -0.0 mm at 0.9 ms



Filter Class: CFC_600
Max: 40.0 mm at 21.5 ms
Min: -0.0 mm at 0.6 ms



Filter Class: CFC_600
Max: 38.9 mm at 22.7 ms
Min: -0.0 mm at 0.6 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 17:32:00 873



Transportation Research Center Inc.

Left Lateral Abdomen

SID IIs Serial No. 297 Certification No. 10-1

Test Date: 9/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.38 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.6 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	42.2 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	39.2 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	10.74 g	Yes

Test meets specifications.

Comments:

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 17:18:55 703

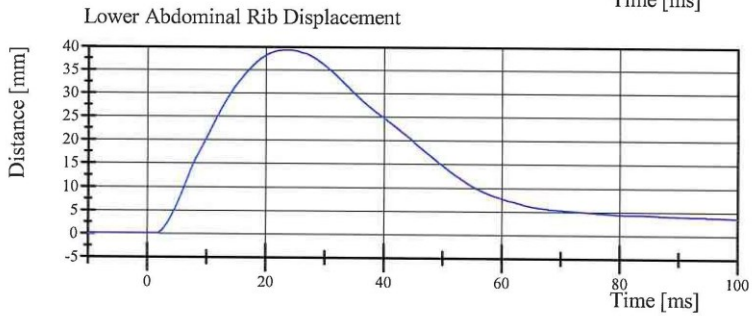
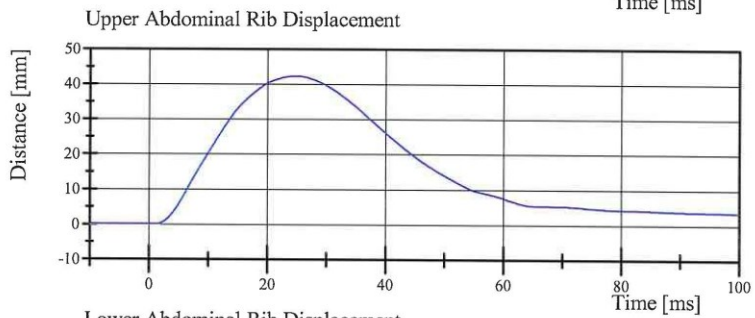
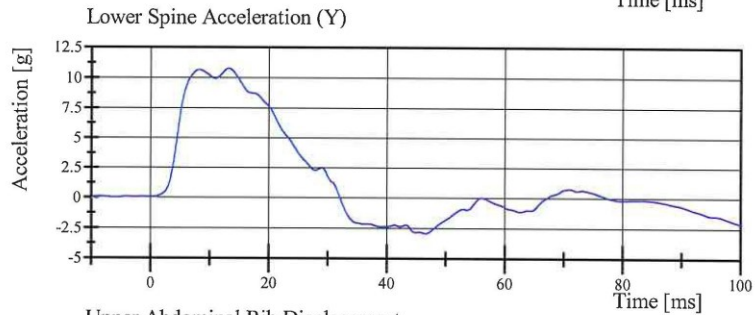
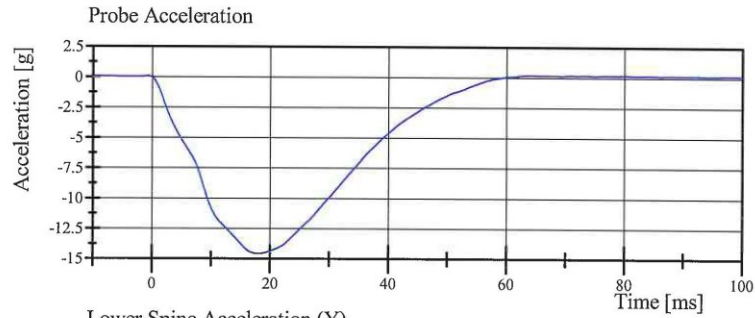


Transportation Research Center Inc.

Left Lateral Abdomen

SID II's Serial No. 297 Certification No. 10-1

Test Date: 9/2/2016



Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 17:19:04 703



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. 297 Certification No. 10-1

Test Date: 9/6/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.65 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-46.25 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	41.1 g	Yes
Acetabulum Force	3,600 - 4,300 N	3,839.8 N	Yes

Test meets specifications.

Comments:

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.06.2016 08:01:36 474

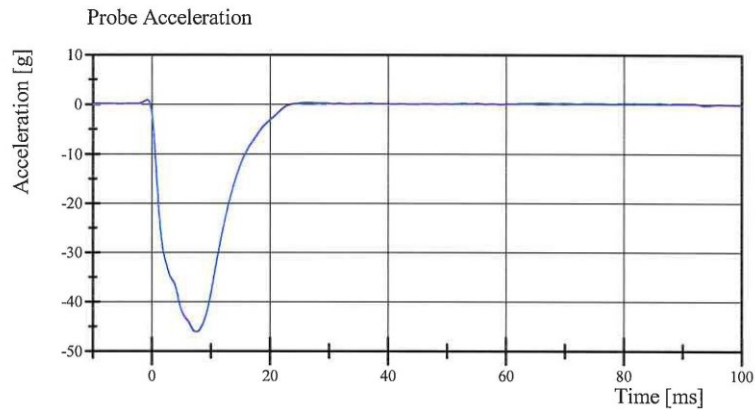


Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. 297 Certification No. 10-1

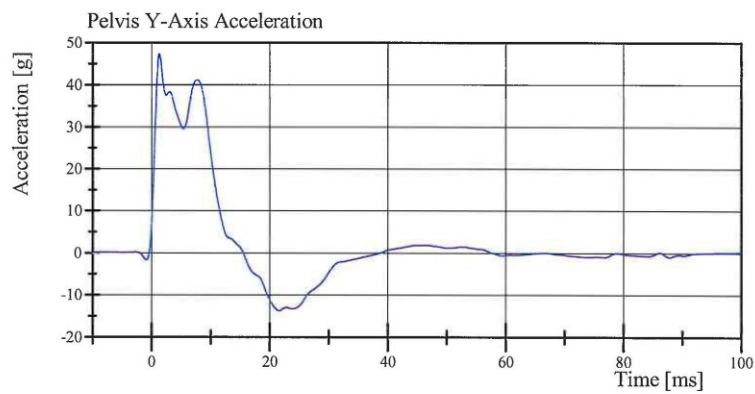
Test Date: 9/6/2016



Filter Class: CFC_180

Max: 0.7 g at -0.8 ms

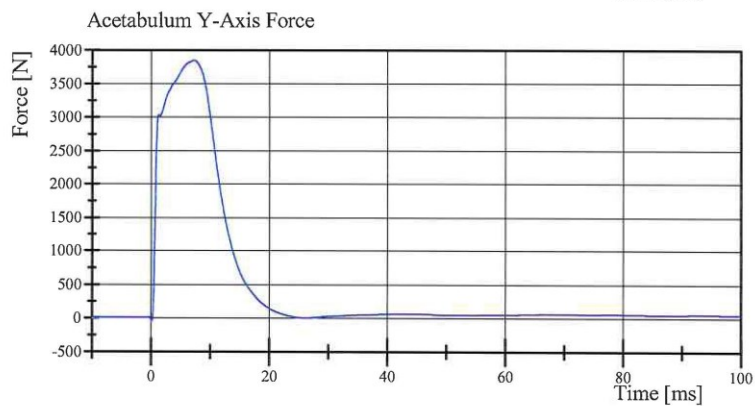
Min: -46.2 g at 7.5 ms



Filter Class: CFC_180

Max: 47.3 g at 1.3 ms

Min: -13.8 g at 21.6 ms



Filter Class: CFC_600

Max: 3,839.8 N at 7.2 ms

Min: -58.5 N at 0.2 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.06.2016 08:01:48 474



Transportation Research Center Inc.

Left Lateral Iliac

SID IIs Serial No. 297 Certification No. 10-1

Test Date: 9/2/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.38 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-43.6 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	29.7 g	Yes
Iliac Force	4,100 - 5,100 N	4,937.0 N	Yes

Test meets specifications.

Comments:

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 16:57:30 670

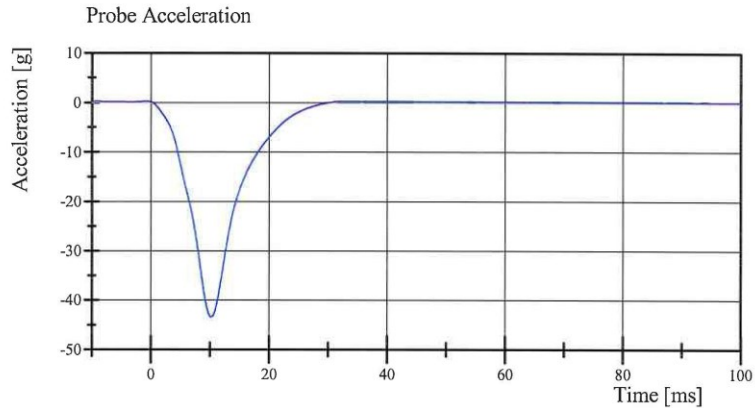


Transportation Research Center Inc.

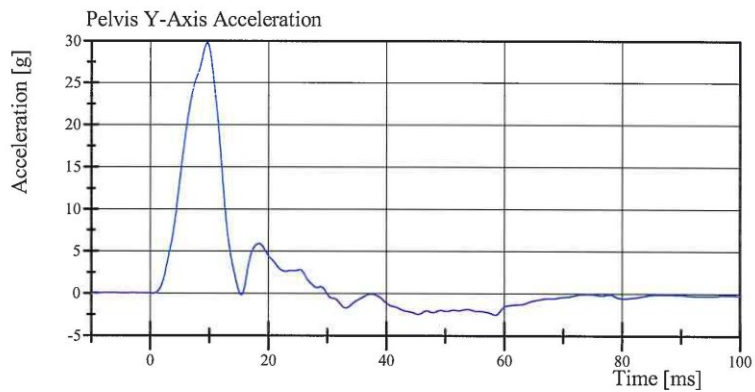
Left Lateral Iliac

SID IIs Serial No. 297 Certification No. 10-1

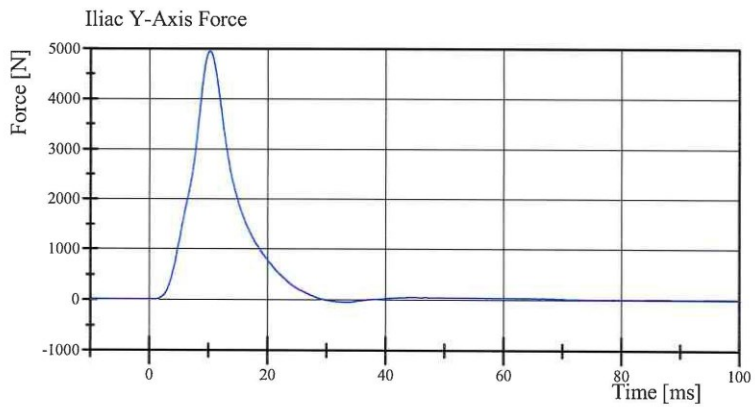
Test Date: 9/2/2016



Filter Class: CFC_180
Max: 0.1 g at 32.7 ms
Min: -43.6 g at 10.2 ms



Filter Class: CFC_180
Max: 29.7 g at 9.6 ms
Min: -2.6 g at 58.4 ms



Filter Class: CFC_600
Max: 4,937.0 N at 10.2 ms
Min: -52.6 N at 33.3 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

09.02.2016 16:57:40 670



Post-Test Calibration Sheets
Driver S/N 297

Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. 297 Calibration No.11

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	781	Yes
B	Shoulder Pivot Height	437.0 - 453.0	448	Yes
C	H-Point Height	79.0 - 89.0	85	Yes
D	H-Point from Seat Back	141.0 - 151.0	146	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	102	Yes
F	Thigh Clearance	119.0 - 135.0	128	Yes
G	Head Breadth	140.0 - 148.0	145	Yes
H	Head Back from Backline	40.0 - 46.0	44	Yes
I	Head Depth	178.0 - 188.0	182	Yes
J	Head Circumference	541.0 - 551.0	545	Yes
K	Buttock to Knee Length	514.0 - 540.0	528	Yes
L	Popliteal Height	343.0 - 369.0	355	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	400	Yes
N	Buttock Popliteal Length	416.0 - 442.0	430	Yes
O	Chest Depth without Jacket	195.0 - 211.0	203	Yes
P	Foot Length (right)	216.0 - 232.0	221	Yes
P	Foot Length (left)	216.0 - 232.0	221	Yes
Q	Hip Breadth	313.0 - 323.0	319	Yes
R	Arm Length	249.0 - 259.0	254	Yes
S	Knee Joint to seat Back	478.0 - 493.0	487	Yes
V	Shoulder Width (only one arm installed)	341.0 - 357.0	347	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
W	Foot Width (left)	78.0 - 94.0	84	Yes
Y	Chest Circumference with Jacket	851.0 - 881.0	869	Yes
Z	Waist Circumference	761.0 - 791.0	778	Yes

Transportation Research Center Inc.

Left Lateral Head Drop
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	124.8 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	4.1 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 11:32:37 232

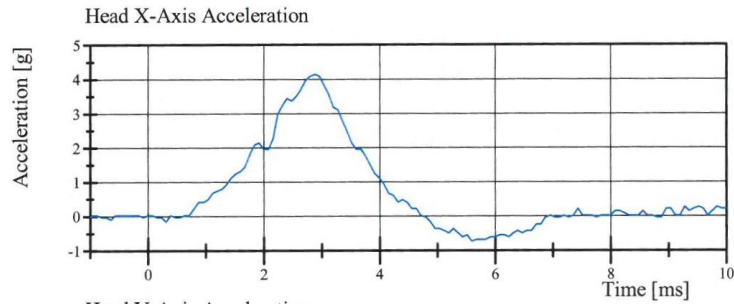


Transportation Research Center Inc.

Left Lateral Head Drop

SID IIs Serial No. 297 Certification No. 11-1

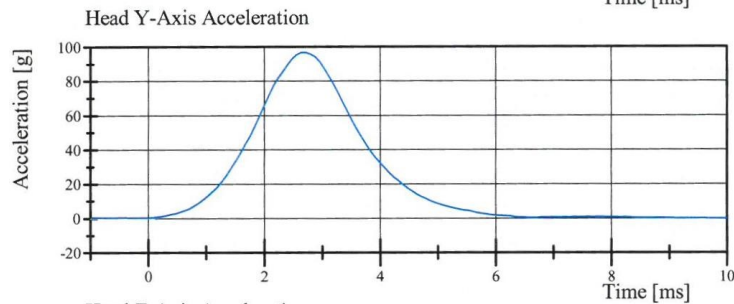
Test Date: 10/6/2016



Filter Class: CFC_1000

Max: 4.1 g at 2.9 ms

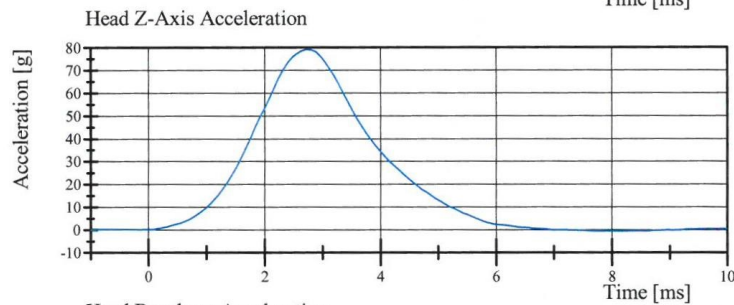
Min: -0.8 g at 5.6 ms



Filter Class: CFC_1000

Max: 96.7 g at 2.6 ms

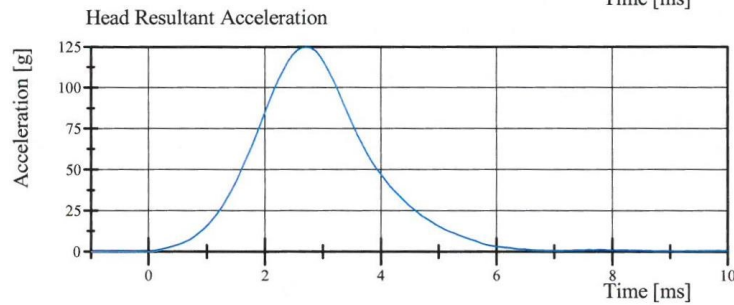
Min: -0.2 g at 9.8 ms



Filter Class: CFC_1000

Max: 78.9 g at 2.7 ms

Min: -0.6 g at 8.0 ms



Filter Class: CFC_1000

Max: 124.8 g at 2.7 ms

Min: 0.0 g at 9.2 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 11:32:47 232



Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. 297 Certification No. 11-3

Test Date: 10/6/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.597 m/s	Yes
Pendulum Integrated Velocity			
Change at 10 ms	2.20 - 2.80 m/s	2.573 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.894 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	5.199 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.720 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.748 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-73.7 deg	Yes
Time of Peak	50 - 70 ms	58.0 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	40.1 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	102 - 126 ms	111.4 ms	Yes

Test meets specifications.

Comments:

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 14:21:12 659

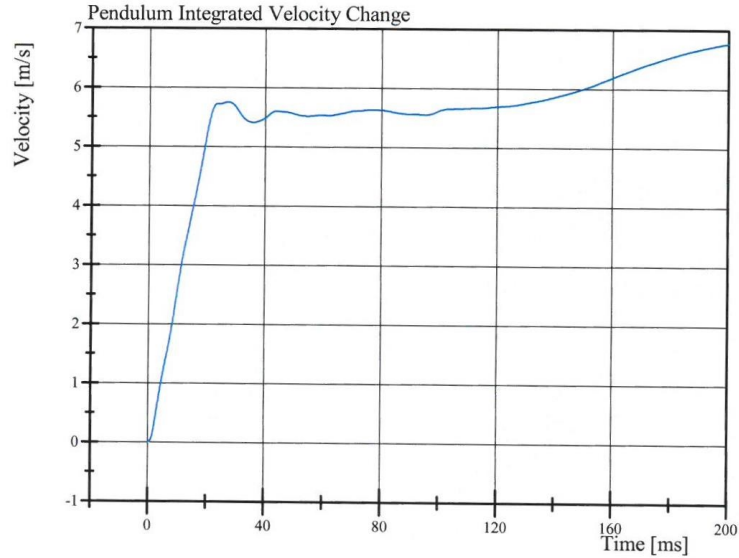
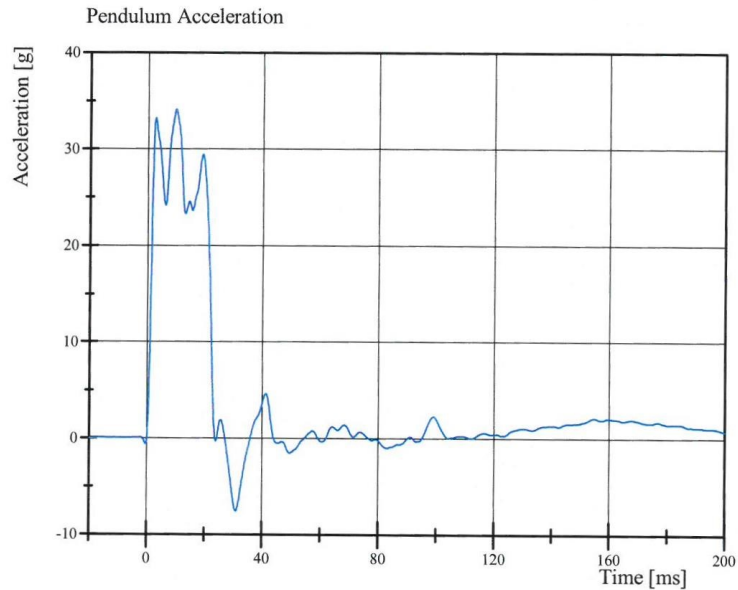


Transportation Research Center Inc.

Left Lateral Neck

SID IIs Serial No. 297 Certification No. 11-3

Test Date: 10/6/2016



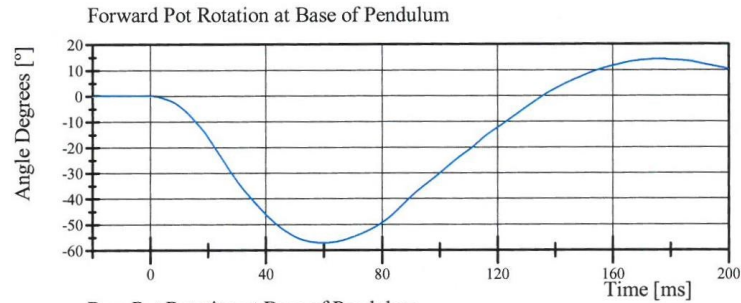
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 14:21:26 659

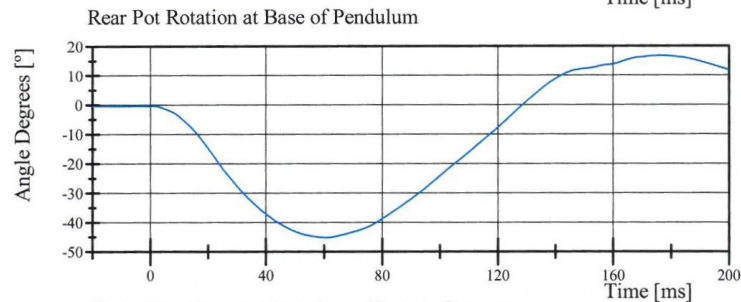


Transportation Research Center Inc.

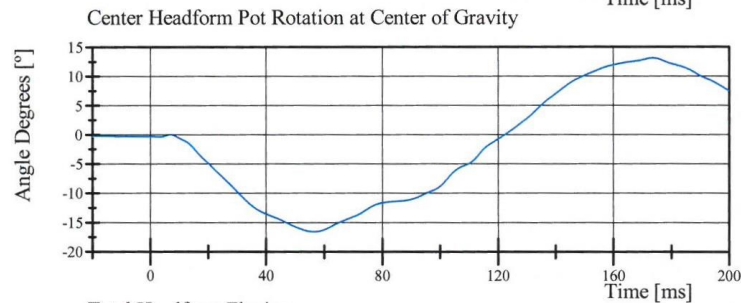
Left Lateral Neck
SID IIs Serial No. 297 Certification No. 11-3
Test Date: 10/6/2016



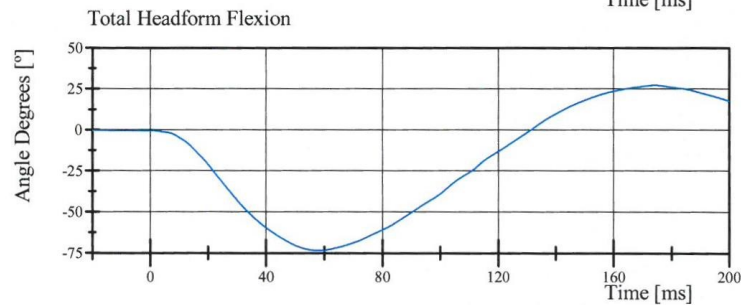
Filter Class: CFC_60
Max: 14.2 ° at 176.1 ms
Min: -57.2 ° at 59.8 ms



Filter Class: CFC_60
Max: 16.7 ° at 176.3 ms
Min: -45.2 ° at 60.8 ms



Filter Class: CFC_60
Max: 13.1 ° at 173.6 ms
Min: -16.6 ° at 56.6 ms



Filter Class: CFC_60
Max: 27.2 ° at 174.3 ms
Min: -73.7 ° at 58.0 ms

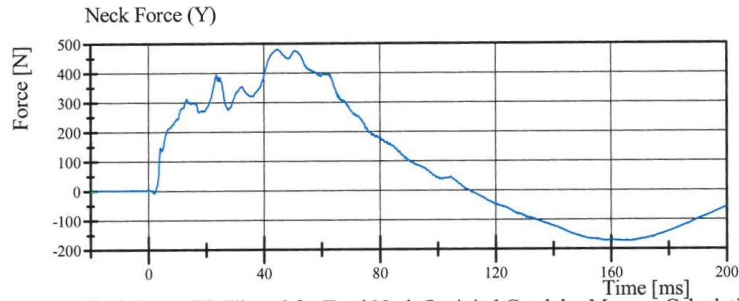
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 14:21:28 659

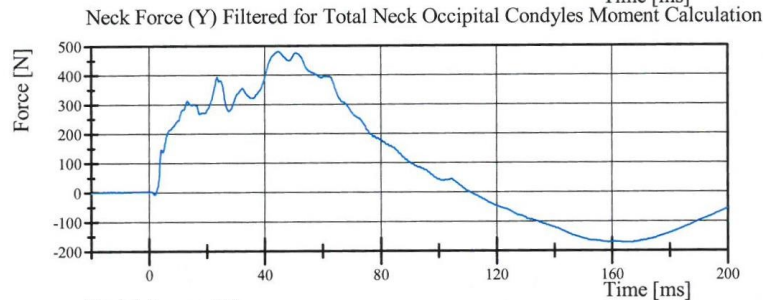


Transportation Research Center Inc.

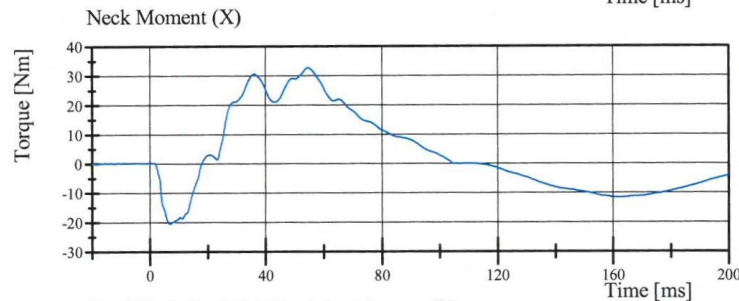
Left Lateral Neck
SID IIs Serial No. 297 Certification No. 11-3
Test Date: 10/6/2016



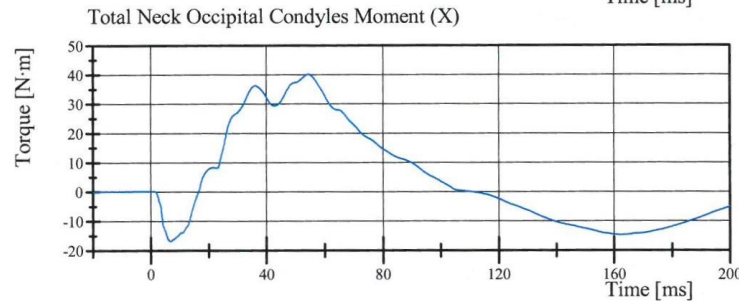
Filter Class: CFC_1000
Max: 480.2 N at 44.9 ms
Min: -172.7 N at 167.0 ms



Filter Class: CFC_600
Max: 479.6 N at 44.9 ms
Min: -172.2 N at 167.0 ms



Filter Class: CFC_600
Max: 32.6 Nm at 54.7 ms
Min: -20.7 Nm at 6.9 ms



Filter Class: Without_(Consta
Max: 40.1 N·m at 54.5 ms
Min: -17.0 N·m at 6.8 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 14:21:29 659



Transportation Research Center Inc.

Left Lateral Shoulder
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.36 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-15.8 g	Yes
Shoulder Displacement	28 - 37 mm	31.3 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	19.7 g	Yes

Test meets specifications.

Comments:

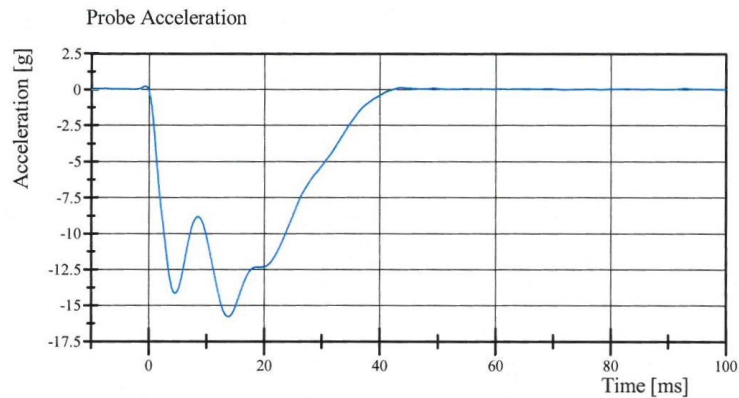
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 08:03:59 806

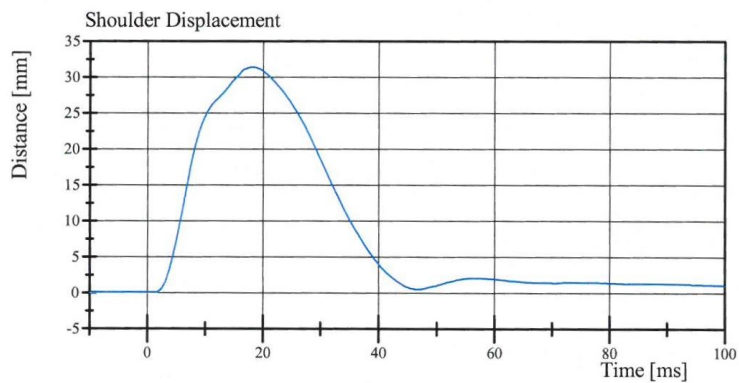


Transportation Research Center Inc.

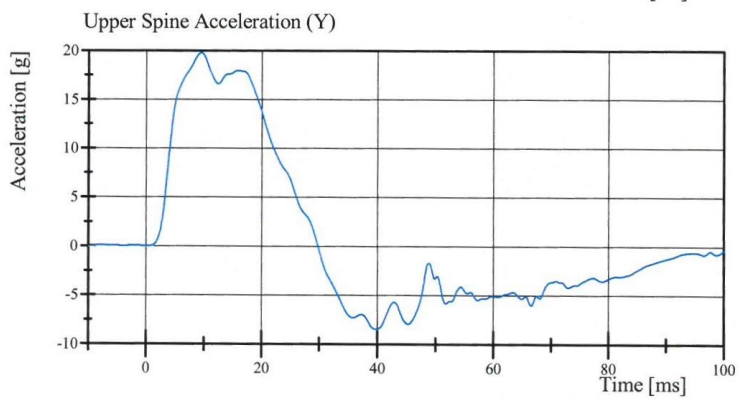
Left Lateral Shoulder
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016



Filter Class: CFC_180
Max: 0.2 g at -0.6 ms
Min: -15.8 g at 13.8 ms



Filter Class: CFC_600
Max: 31.3 mm at 18.1 ms
Min: -0.0 mm at 1.4 ms



Filter Class: CFC_180
Max: 19.7 g at 9.5 ms
Min: -8.5 g at 39.8 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 08:04:10 806



Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.735 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-33.8 g	Yes
Shoulder Displacement	31 - 40 mm	34.6 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	27.0 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	31.5 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	34.4 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	36.7 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	35.5 g	Yes

Test meets specifications.

Comments:

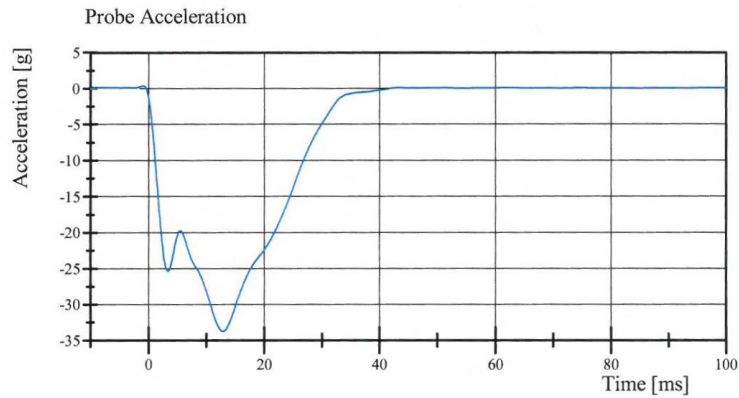
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 09:25:58 630

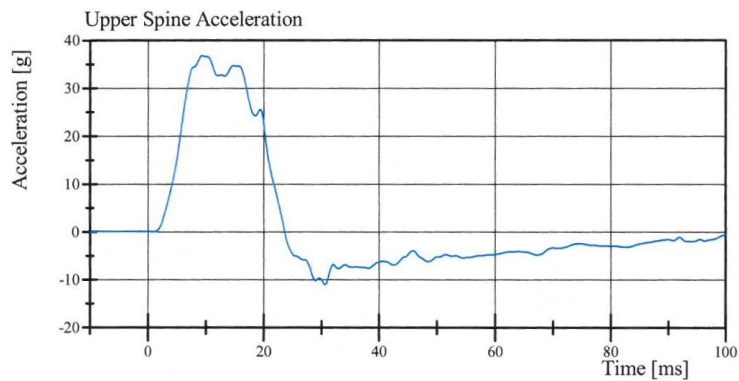


Transportation Research Center Inc.

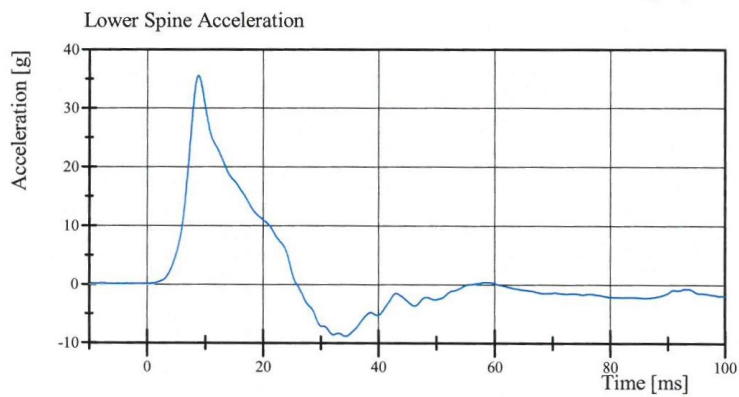
Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016



Filter Class: CFC_180
Max: 0.2 g at -0.9 ms
Min: -33.8 g at 12.9 ms



Filter Class: CFC_180
Max: 36.7 g at 9.4 ms
Min: -11.1 g at 30.6 ms



Filter Class: CFC_180
Max: 35.5 g at 8.9 ms
Min: -8.9 g at 34.3 ms

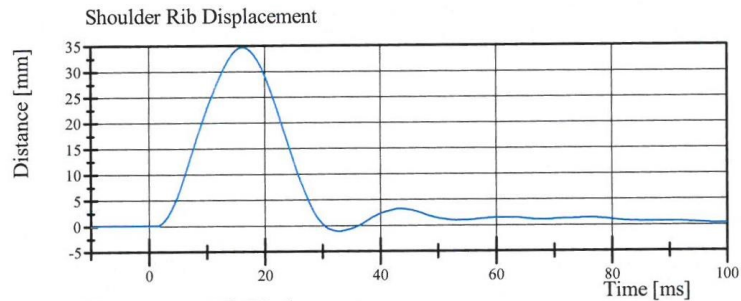
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 09:26:11 630

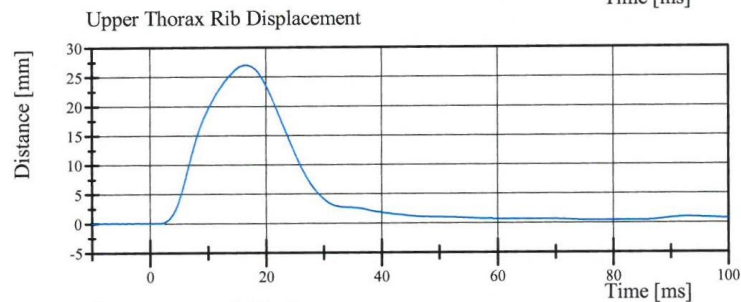


Transportation Research Center Inc.

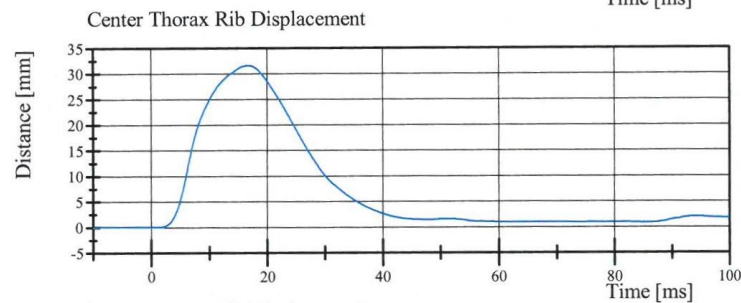
Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016



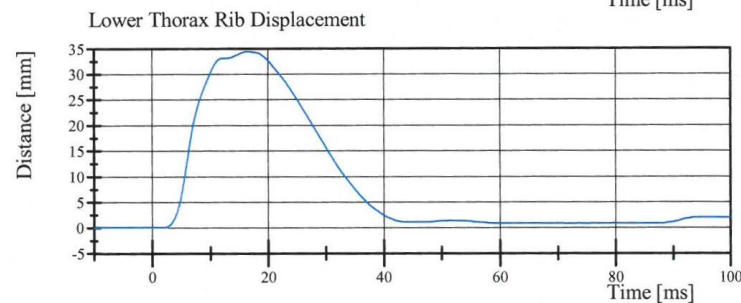
Filter Class: CFC_600
Max: 34.6 mm at 16.2 ms
Min: -1.1 mm at 33.0 ms



Filter Class: CFC_600
Max: 27.0 mm at 16.6 ms
Min: -0.0 mm at -7.1 ms



Filter Class: CFC_600
Max: 31.5 mm at 16.7 ms
Min: -0.0 mm at -0.6 ms



Filter Class: CFC_600
Max: 34.4 mm at 16.4 ms
Min: -0.0 mm at 2.1 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 09:26:12 630



Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.357 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-16.3 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	34.8 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	41.0 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	39.8 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	15.1 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	10.3 g	Yes

Test meets specifications.

Comments:

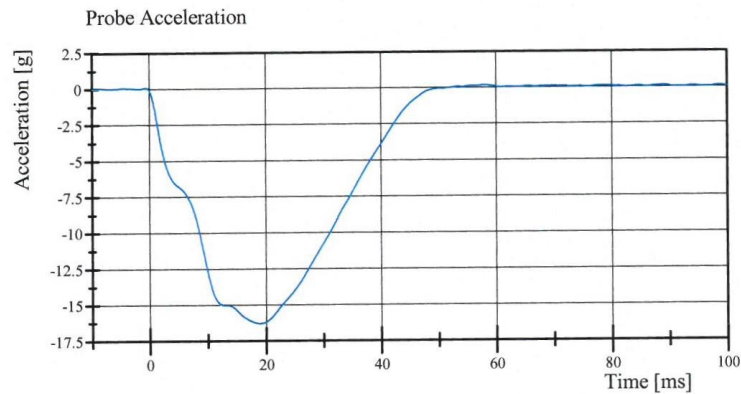
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 08:49:12 854

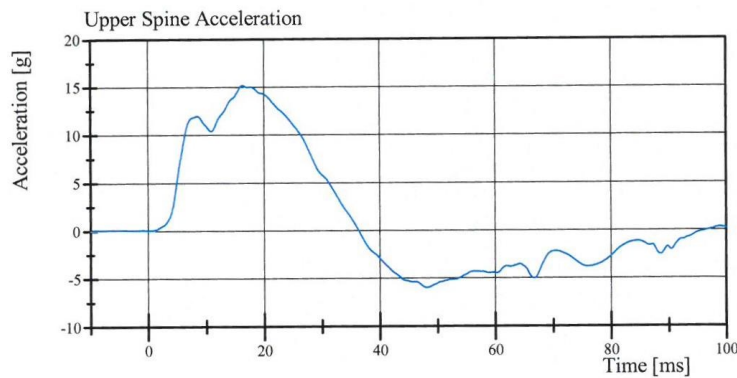


Transportation Research Center Inc.

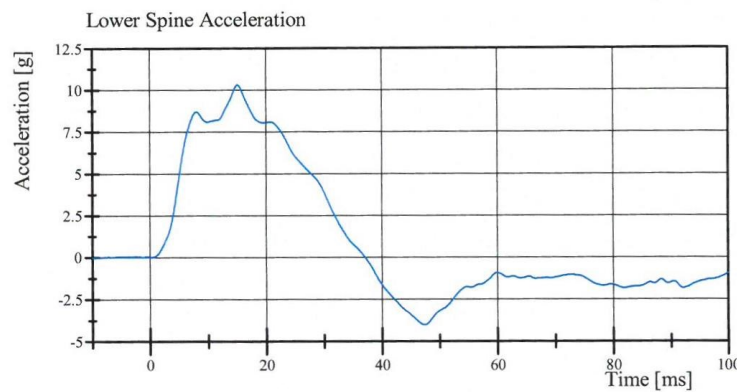
Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016



Filter Class: CFC_180
Max: 0.1 g at 58.1 ms
Min: -16.3 g at 19.0 ms



Filter Class: CFC_180
Max: 15.1 g at 16.3 ms
Min: -6.0 g at 48.2 ms



Filter Class: CFC_180
Max: 10.3 g at 15.1 ms
Min: -4.0 g at 47.4 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

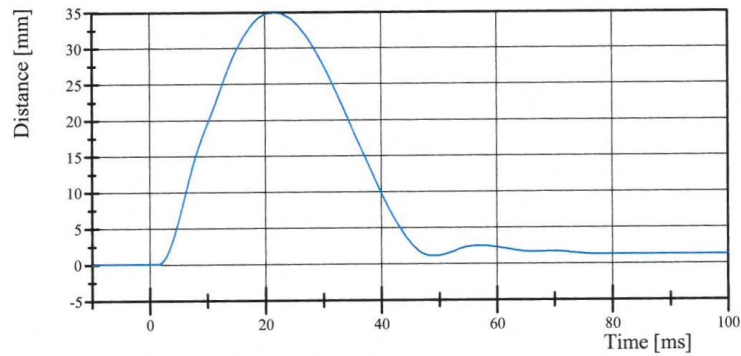
10.06.2016 08:49:37 854



Transportation Research Center Inc.

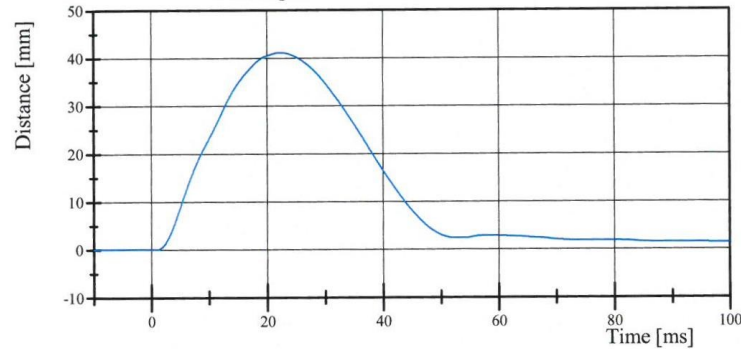
Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016

Upper Thorax Rib Displacement



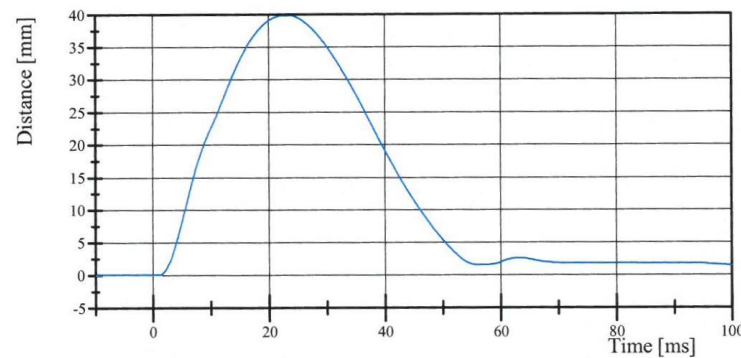
Filter Class: CFC_600
Max: 34.8 mm at 21.7 ms
Min: -0.0 mm at -6.9 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 41.0 mm at 22.3 ms
Min: -0.0 mm at 1.0 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 39.8 mm at 22.9 ms
Min: -0.0 mm at 1.2 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 08:49:38 854



Transportation Research Center Inc.

Left Lateral Abdomen
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.35 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.1 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	41.9 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	39.5 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	10.57 g	Yes

Test meets specifications.

Comments:

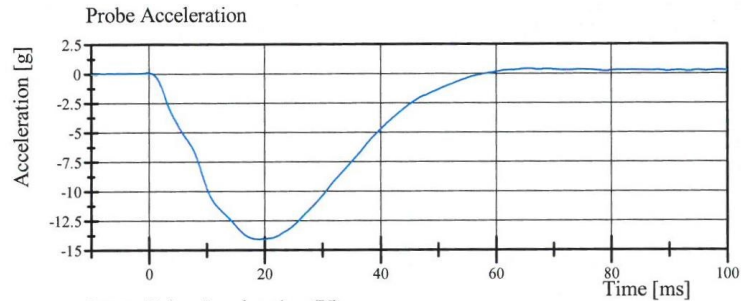
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 08:29:29 745

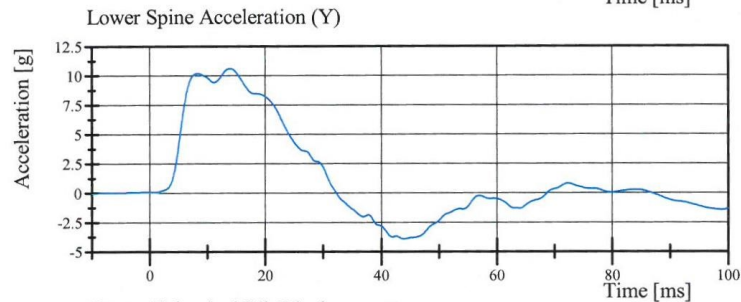


Transportation Research Center Inc.

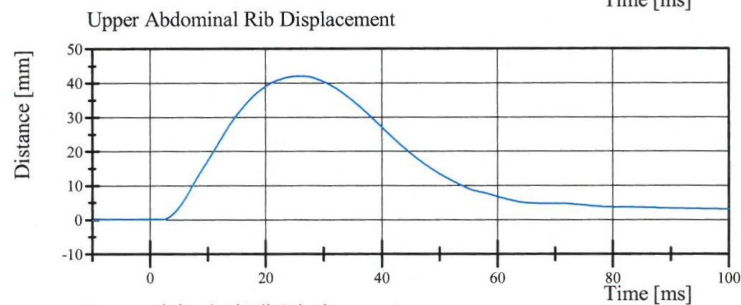
Left Lateral Abdomen
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016



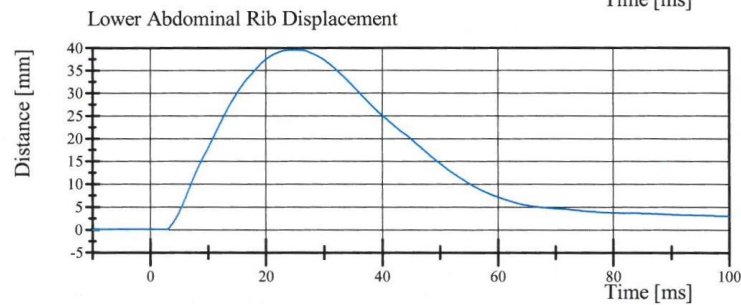
Filter Class: CFC_180
Max: 0.4 g at 65.5 ms
Min: -14.1 g at 19.0 ms



Filter Class: CFC_180
Max: 10.6 g at 14.0 ms
Min: -3.9 g at 43.9 ms



Filter Class: CFC_600
Max: 41.9 mm at 25.8 ms
Min: -0.0 mm at -5.3 ms



Filter Class: CFC_600
Max: 39.5 mm at 24.3 ms
Min: -0.0 mm at 2.8 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 08:29:40 745



Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. 297 Certification No. 11-4

Test Date: 10/6/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.64 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-45.83 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	40.9 g	Yes
Acetabulum Force	3,600 - 4,300 N	4,229.2 N	Yes

Test meets specifications.

Comments:

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 17:55:06 470

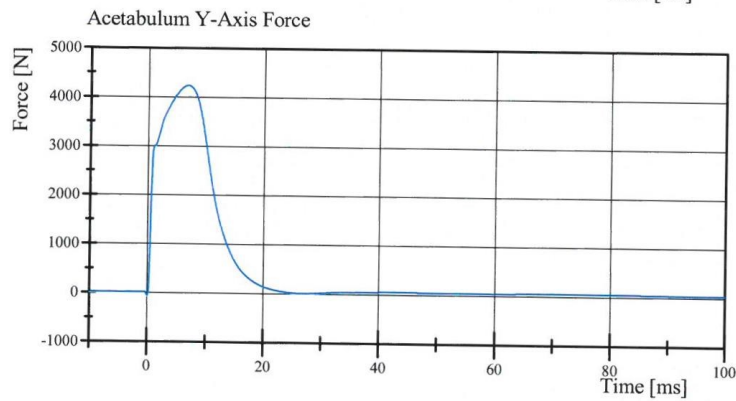
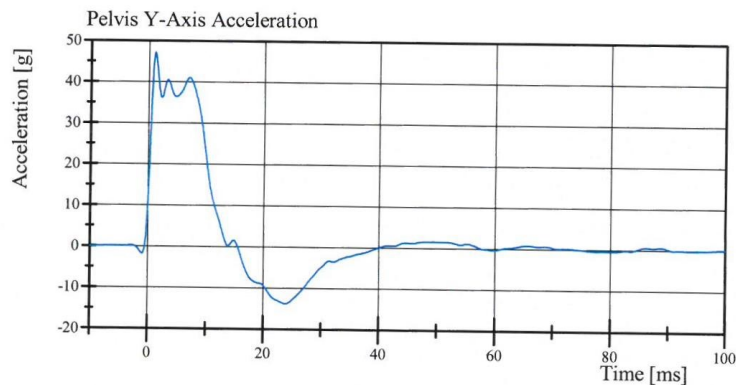
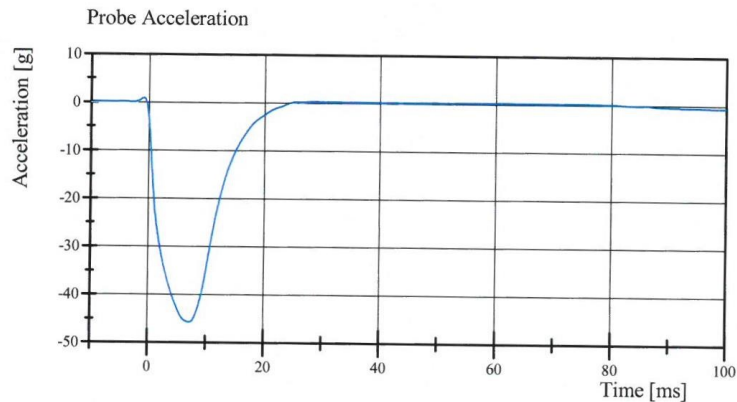


Transportation Research Center Inc.

Left Lateral Pelvis

SID IIs Serial No. 297 Certification No. 11-4

Test Date: 10/6/2016



Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 17:56:17 470



Transportation Research Center Inc.

Left Lateral Iliac
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.33 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-43.0 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	32.1 g	Yes
Iliac Force	4,100 - 5,100 N	4,787.9 N	Yes

Test meets specifications.

Comments:

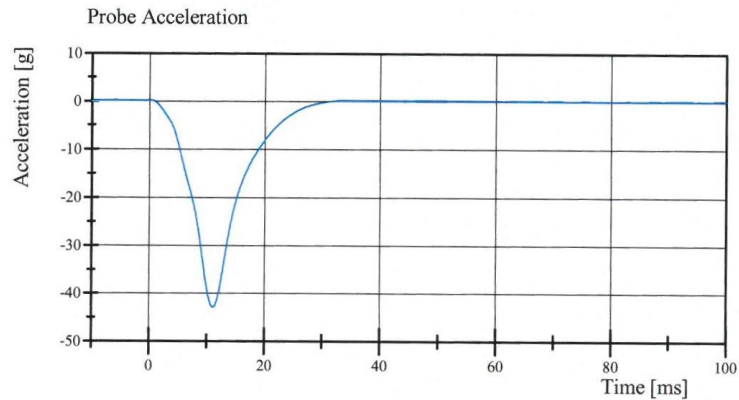
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 07:49:16 608

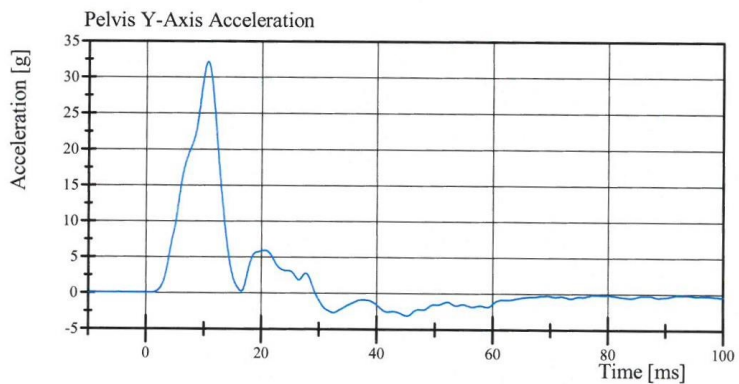


Transportation Research Center Inc.

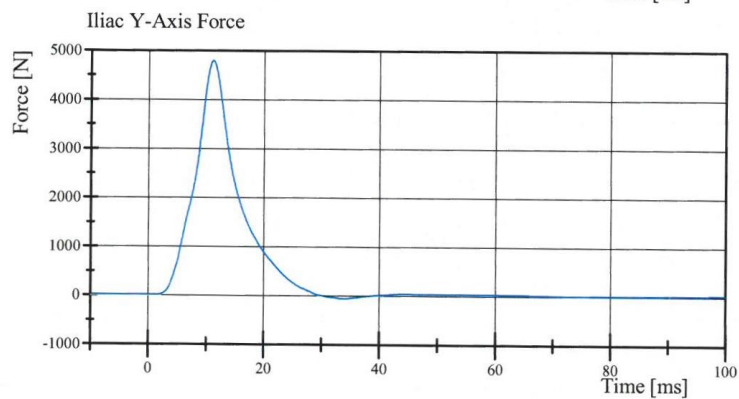
Left Lateral Iliac
SID IIs Serial No. 297 Certification No. 11-1
Test Date: 10/6/2016



Filter Class: CFC_180
Max: 0.1 g at 47.0 ms
Min: -43.0 g at 11.1 ms



Filter Class: CFC_180
Max: 32.1 g at 10.6 ms
Min: -3.1 g at 45.2 ms



Filter Class: CFC_600
Max: 4,787.9 N at 11.1 ms
Min: -61.6 N at 33.9 ms

Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.06.2016 07:49:26 608



APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N 297			
				Serial Number	Manufacturer	Calibration Date	
Head Accelerometers				X	P93539	Endevco	29-Sep-2016
				Y	P93549	Endevco	29-Sep-2016
				Z	P93776	Endevco	29-Sep-2016
Displacement Potentiometers	Shoulder			Y	N/A	N/A	N/A
	Thoracic Rib	Upper	Y	047	Servo	29-Sep-2016	
		Middle	Y	01815	Servo	29-Sep-2016	
		Lower	Y	043	Servo	29-Sep-2016	
	Abdominal Rib	Upper	Y	01811	Servo	29-Sep-2016	
		Lower	Y	051	Servo	29-Sep-2016	
Lower Spine Accelerometers (T12)				X	P94425	Endevco	23-Aug-2016
				Y	P91522	Endevco	22-Aug-2016
				Z	P91511	Endevco	21-Sep-2016
Acetabulum Load Cell				Y	235-FY	FTSS	17-Nov-2015
Iliac Wing Load Cell				Y	113-FY	FTSS	17-Nov-2015
Pelvis Plug (struck side)					80979	Humanetics	2-Dec-2014
Pelvis Plug (non-struck side)					36505	FTSS	24-Sep-2010

TABLE 2 – Vehicle Instrumentation

Vehicle Instrumentation		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P91179	Endevco	10-May-2016
Vehicle Center of Gravity	Y	P93770	Endevco	25-Jul-2016
Vehicle Center of Gravity	Z	P93467	Endevco	25-Jul-2016
Left Floor Sill	Y	P85273	Endevco	5-Jul-2016
A-Pillar Sill	Y	P54286	Endevco	30-Sep-2016
A-Pillar Low	Y	P91196	Endevco	30-Sep-2016
A-Pillar Mid	Y	P41252	Endevco	30-Sep-2016
B-Pillar Sill	Y	P94645	Endevco	30-Sep-2016
B-Pillar Low	Y	P91181	Endevco	10-May-2016
B-Pillar Mid	Y	P91180	Endevco	8-Aug-2016
Driver Seat	Y	P94658	Endevco	30-Sep-2016
Engine Top	X	P91474	Endevco	3-May-2016
Engine Top	Y	P93536	Endevco	13-Jun-2016
Firewall	Y	P91172	Endevco	22-Sep-2016
Right Roof	Y	P94487	Endevco	30-Sep-2016
Right Floor Sill	Y	P94650	Endevco	30-Sep-2016
Rear Floor Pan	X	P91484	Endevco	22-Sep-2016
Rear Floor Pan	Y	P93513	Endevco	22-Sep-2016

TABLE 3 – Pole Instrumentation

Pole Instrumentation	Serial Number	Manufacturer	Calibration Date
Load Cell 1	92-FX	Denton	29-Apr-2016
Load Cell 2	84-FX	Denton	29-Apr-2016
Load Cell 3	103-FX	Denton	28-Apr-2016
Load Cell 4	101-FX	Denton	28-Apr-2016
Load Cell 5	87-FX	Denton	29-Apr-2016
Load Cell 6	83-FX	Denton	5-Aug-2016
Load Cell 7	97-FX	Denton	29-Apr-2016
Load Cell 8	95-FX	Denton	26-Jul-2016