FINAL REPORT NUMBER: SPNCAP-TRC-18-002

NEW CAR ASSESSMENT PROGRAM (NCAP)
SIDE IMPACT POLE TEST

FORD MOTOR CO.
2018 Ford F-150 SuperCab
NHTSA NUMBER: M20180210

PREPARED BY:
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East Liberty, OH 43319

Report Date: February 22, 2018

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 Prepared By: ILO Project Operations Group

Report Approved By: 

John Shultz

Approval Date: February 22, 2018

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

FINAL REPORT ACCEPTANCE BY OCWS:

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NHTSA, Office of Crashworthiness Standards

Date: _____

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16. Abstract

A 32.2 km/h (20 mph), 75° oblique impact Side NCAP Test was conducted on the subject vehicle, a 2018 Ford F-150 SuperCab, 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 November 15, 2017.

The impact velocity was 31.94 km/h, and the ambient temperature at the struck (left) side of the target vehicle at the time of impact was 20.4° C. The test vehicle's post-test maximum crush was 387 mm at Level 2 and 3.

The test or target vehicle's performance is given below:

	Unit	Threshold	Front SID-IIs
Head Injury Criteria (HIC_{36}):	NA	1000	448
Resultant Lower Spine Acceleration:	g's	82	36.6
Total Pelvic Force: (sum of acetabular and iliac forces)	N	5525	2161.0
Maximum Thoracic Rib Deflection	mm	38*	21.6
Maximum Abdomen Rib Deflection	mm	45*	18.1

* Proposed IARV

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

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

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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 18 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 2018 Ford F-150 SuperCab manufactured by FORD MOTOR CO.. 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 2018 Ford F-150 SuperCab. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 31.94 km/h. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, OH, on November 15, 2017. 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 Trisxial 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	448
Lower Spine Acceleration Resultant	G	82	36.6
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2161.0
Maximum Thoracic Rib Deflection	mm	38*	21.6
Maximum Abdominal Rib Deflection	mm	45*	18.1

* 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	No	N/A		
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	Unknown	Yes	Unknown
Other Safety Restraint	No	N/A	No	N/A

GENERAL COMMENTS

Left A-Post at Sill Y; No valid data after 43ms

Left Mid A-Post Y; No valid data after 43ms

Right Roof Y; No valid data throughout

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20180210
Model Year	2018
Make	Ford
Model	F-150 SuperCab
Body Style	Truck
VIN	1FTEX1CB3JFA48191
Body Color	Magnetic
Odometer Reading (km/mi)	11 mi
Engine Displacement (L)	3.3
Type/No. Cylinders	V/6
Engine Placement	Front/Longitudinal
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	RWD
Roof Rack	No
Sunroof/T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes

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

Does owner's manual provide instructions to turn off automatic door locks? Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	FORD MOTOR CO.
Date of Manufacturer	08/17
Vehicle Type	Truck

GVWR (kg)	2858
GAWR Front (kg)	1429
GAWR Rear (kg)	1520

VEHICLE SEATING AND WEIGHT CAPACITY DATA

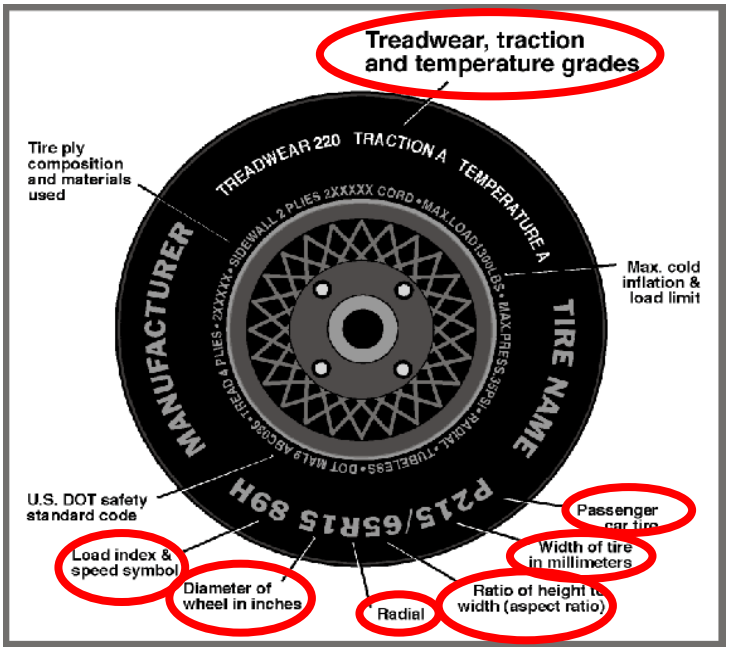
	Front	Rear	Third	Total
Designated Seating Capacity (DSC)	3	3	N/A	6
Vehicle Capacity Weight (VCW) (kg)				829
DSC X 68.04 kg				408.24
Rated Cargo and Luggage Weight (RCLW) (kg)				420.76

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	N/A	Yes	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: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	250	250
Recommended Tire Size	245/70R17	245/70R17
Tire Size on Vehicle	245/70R17	245/70R17
Tire Manufacturer	Michelin	Michelin
Tire Model	LTX M/S^2	LTX M/S^2
Treadwear	720	720
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2	2
Tire Plies Body	2	2
Load Index/Speed Symbol	110T	110T
Tire Material	Polyester, Steel, Polyamide	Polyester, Steel, Polyamide
DOT Safety Code Left	M3X6 00AX 3017	M3X6 00AX 3017
DOT Safety Code Right	M3X6 00AX 3017	M3X6 00AX 3017

DATA SHEET NO. 1 (CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	220	220	220	220
Tire Placard	kPa	250	250	250	250
Owner's Manual	kPa	N/A	N/A	N/A	N/A
As Tested	kPa	250	250	250	250

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	587.4	430.6		627.8	491.2		604.8	505.4	
Right	kg	600.0	422.0		604.8	494.8		619.6	495.2	
Ratio	%	58.2	41.8		55.6	44.4		55.0	45.0	
Totals	kg	1187.4	852.6	2040.0	1232.6	985.8	2218.4	1224.4	1000.6	2225.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total As Delivered Weight (UVW)	kg	2040.0	(A)
Actual Weight of 1 P572V ATD (SID-IIs) Dummy Used	kg	49.0	(B)
Rated Cargo/Luggage Weight (RCLW) [1]	kg	136.0	(C)
Calculated Vehicle Target Weight (TVTW)	kg	2225.0	(A+B+C)

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to 9 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.	-0.9	-0.5	-0.4	Yes
Front Passenger Sill Angle (front-to-rear)*	Deg.	-0.9	-0.7	-0.4	Yes
Front Bumper-Line Angle (left-to-right)**	Deg.	0	-0.2	-0.2	Yes
Rear Bumper-Line Angle (left-to-right)**	Deg.	0.1	0.0	0.0	Yes
Vehicle CG (Aft of Front Axle)	mm	1540	1638	1658	
Vehicle CG (Left (+) / Right (-) from longitudinal Centerline)	mm	-3	+8	-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: Steel plate mounted in cargo area	56.2
Components removed: None	0.0

Test height adjustable suspension setting, if applicable: N/A

[1] Rated cargo and luggage weight limited to 136.0 kg or 300.0 lbs.

DATA SHEET NO. 2

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

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17

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	Fixed	Fixed	17.0
Front Passenger Seat	Fixed	Fixed	17.0
Front Center Seat*	Fixed	Fixed	9.3
Struck Side Rear Seat	Fixed	Fixed	15.7
Non-Struck Side Rear Seat	Fixed	Fixed	14.2
Rear Center Seat*	Fixed	Fixed	15.8

* 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	17.0	338	Max	N/A	N/A	N/A
			Mid	318	333	338
			Min	N/A	N/A	N/A
Front Passenger Seat	17.0	338	Max	N/A	N/A	N/A
			Mid	318	333	338
			Min	N/A	N/A	N/A
Front Center Seat*	9.3	264	Max	N/A	N/A	N/A
			Mid	Fixed	264	Fixed
			Min	N/A	N/A	N/A
Struck Side Rear Seat	15.7	272	Max	N/A	N/A	N/A
			Mid	Fixed	272	Fixed
			Min	N/A	N/A	N/A
Non-Struck Side Rear Seat	14.2	271	Max	N/A	N/A	N/A
			Mid	Fixed	271	Fixed
			Min	N/A	N/A	N/A
Rear Center Seat*	15.8	262	Max	N/A	N/A	N/A
			Mid	Fixed	262	Fixed
			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: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17

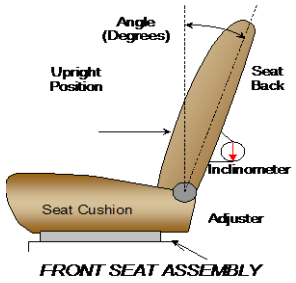
SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position from Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	254	38	0	0
Front Passenger Seat	254	38	0	0
Front Center Seat*	Fixed	Fixed	Fixed	Fixed
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat*	Fixed	Fixed	Fixed	Fixed

* 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	52	27	5.6 FWD	5
Front Passenger Seat	52	27	5.3 FWD	5
Front Center Seat*	Fixed	Fixed	14.8	Fixed
Struck Side Rear Seat	Fixed	Fixed	20.2	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	20.3	Fixed
Rear Center Seat*	Fixed	Fixed	20.2	Fixed

* 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	4, numbered from 0 to 3	0, Lowermost

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	2, numbered from 0 to 1	0, Lowermost

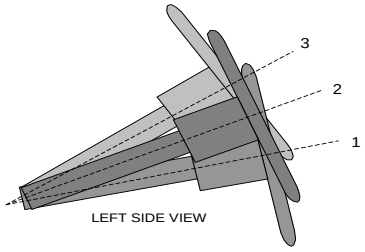
DATA SHEET NO. 2 (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17

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	21.9	133
Geometric Center, Position No. 2	23.9	154.5
Uppermost, Position No. 3	26.0	176
Telescoping Steering Wheel Travel		43
Test Position	23.9	154.5

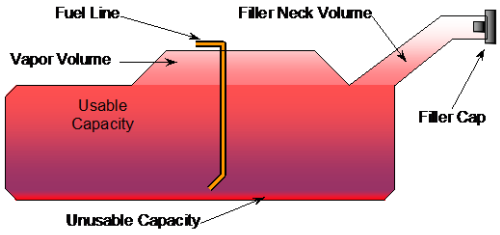


STEERING COLUMN ASSEMBLY

FUEL PUMP

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

The electric fuel pump operates for 3 seconds to pressurize the fuel system following the actuation of the ignition. If no attempt has been made to start the engine within 3 seconds following ignition actuation the fuel pump will shut off. The fuel pump operates continuously while the engine is running. If the engine stalls, the fuel pump deactivates. In addition, a fuel pump shut-off switch is provided, designed to stop fuel flow to the engine if the vehicle sustains an impact above a certain magnitude.



VEHICLE FUEL TANK ASSEMBLY

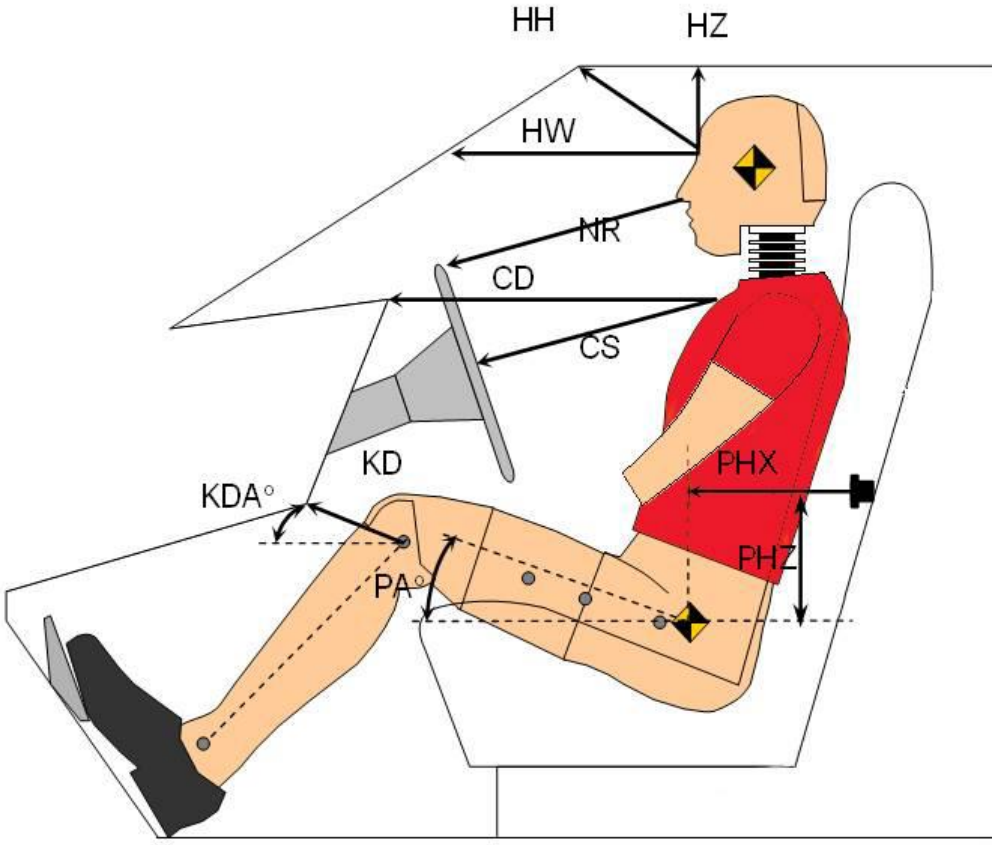
FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	90.8
Usable Capacity of "Optional" Tank (see Form No. 1)	136.3
Usable Capacity of Standard Tank (see Owner's Manual)	87.1
Usable Capacity of Optional Tank (see Owner's Manual)	136.3
93% of Usable Capacity	84.5
Actual Amount of Solvent Used in Test	85.5
1/3 of Usable Capacity	30.3

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

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

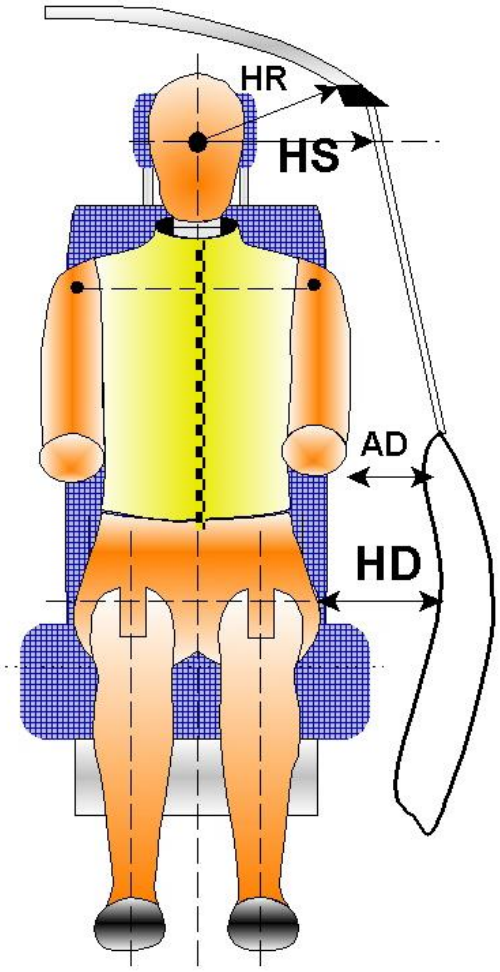
Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17



Code	Measurement Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	392	
HW	Head to Windshield	694	
HZ	Head to Visor	263	
NR	Nose to Rim	269	
CD	Chest to Dashboard	477	
CS	Chest to Steering Wheel	216	
KDL/KDLA°	Left Knee to Dash	94	26.4
KDR/KDRA°	Right Knee to Dash	92	26.4
PAX°	Pelvic Tilt Angle (X-axis)		0.0
PAY°	Pelvic Tilt Angle (Y-axis)		21.0
PHX	Hip Point to Striker (X-Axis)	467	
PHZ	Hip Point to Striker (Z-Axis)	40	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

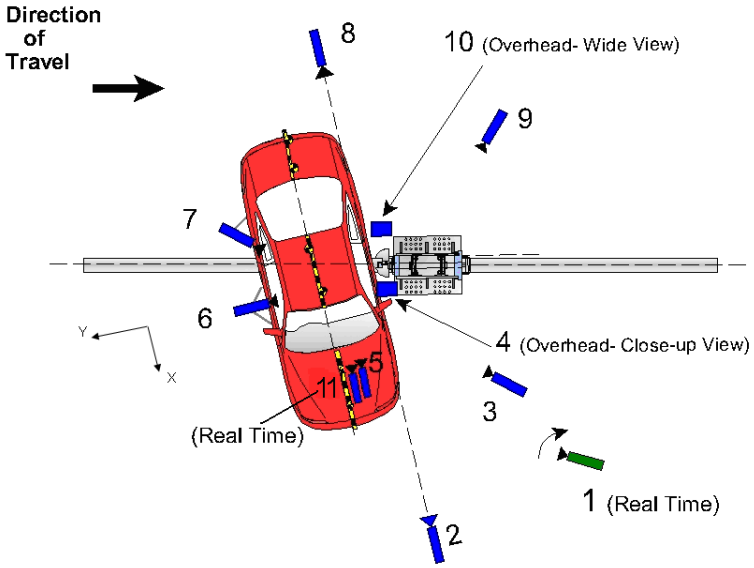
Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17



Code	Measurement Description	Length (mm)
HR	Head to Side Header	281
HS	Head to Side Window	388
AD	Arm to Door	171
HD	Hip Point to Door	170

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17



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	0	5039	1398	20	1000
3	Impact side 45° – forward pole view	-1353	3135	1690	20	1000
4	Overhead Close-up view of impact	0	0	5763	25	1000
5	Onboard – dummy front view				25	1000
6	Onboard – dummy side view				12.5	1000
7	Onboard – dummy rear oblique view				12.5	1000
8	Rear ground level – impact view	0	6416	1565	20	1000
9	Impact side 45° – rearward pole view	3148	5155	1395	20	1000
10	Overhead wide view of impact	456	0	5763	18	1000
11	Real time dummy front view				Zoom	30

All measurements accurate to +/- 6 mm.

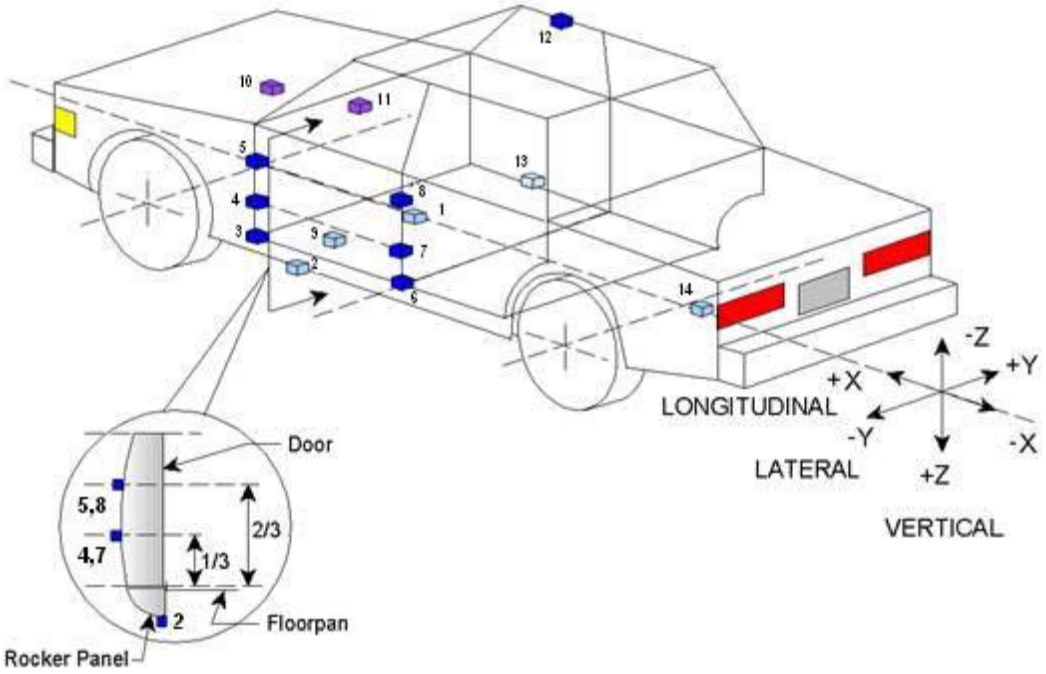
NOTE: Vehicle was at a 75° angle to the rigid pole.
If applicable, explain why camera(s) did not run: Not Applicable

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: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17



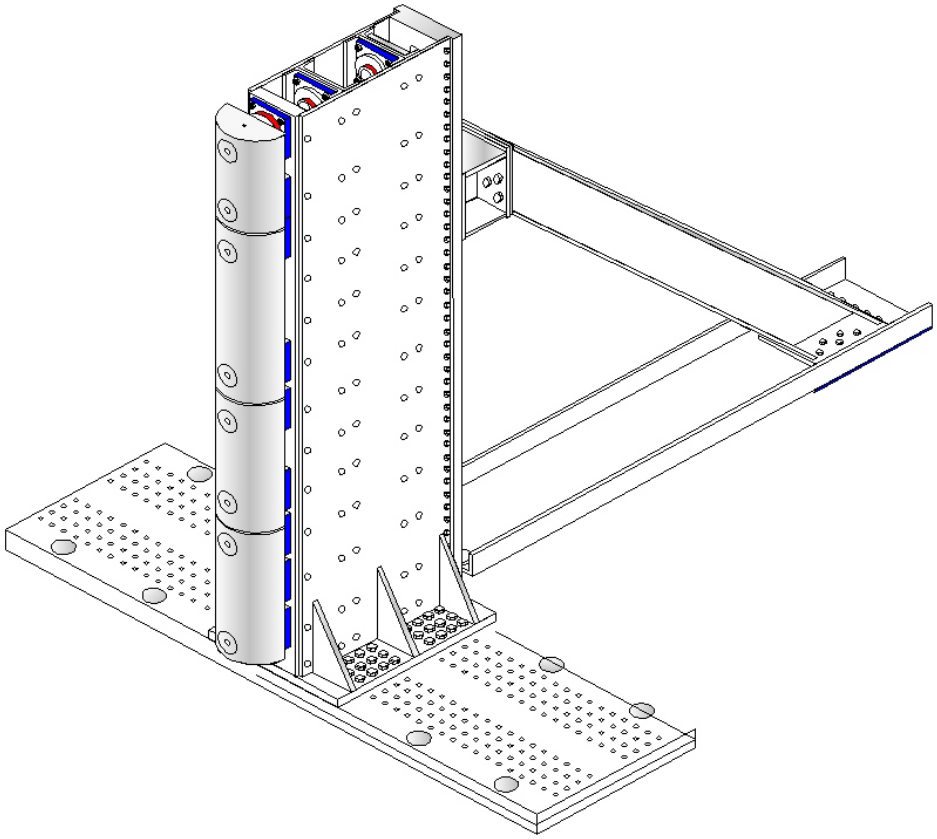
	Accelerometer/Sensor Location			
	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	3845	0	702
2	Left Floor Sill	3865	750	542
3	A-Pillar Sill	4098	830	630
4	A-Pillar Low	4250	-920	620
5	A-Pillar Mid	4275	-932	1124
6	B-Pillar Sill	3095	-875	559
7	B-Pillar Low	3150	-845	838
8	B-Pillar Mid	3150	-845	1092
9	Driver Seat Track	3450	-680	663
10	Engine Top	4751	-70	993
11	Firewall	4711	0	1223
12	Right Roof	3450	730	1865
13	Right Floor Sill	3905	690	537
14	Rear Floorpan	1005	0	820

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: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17

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: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver SID-IIs Dummy
Face	SCAB
Top of Head	SCAB
Left Side of Head	SCAB
Back of Head	None
Left Shoulder	SAB, SCAB
Upper Torso	Seatback bolster, SAB
Lower Torso	Seatback bolster, SAB
Left Hip	Seat cushion bolster, 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	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	No
Latch or Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	No
Disengaged from Latched Position	No	No	No	No	No
Latch Separated from Striker	No	No	No	No	No
Jammed Shut	Yes	Yes	No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)	N/A	N/A	N/A	N/A	N/A

* 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	No	No	No
Seat Back Collapse	No	No	No	No

* Indicate “Yes”, “No”, or “NA”.

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Good
Sill Separation	None
Windshield Damage	Shattered
Side Window Damage	Driver glass broken but intact
Other Notable Effects	None

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

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

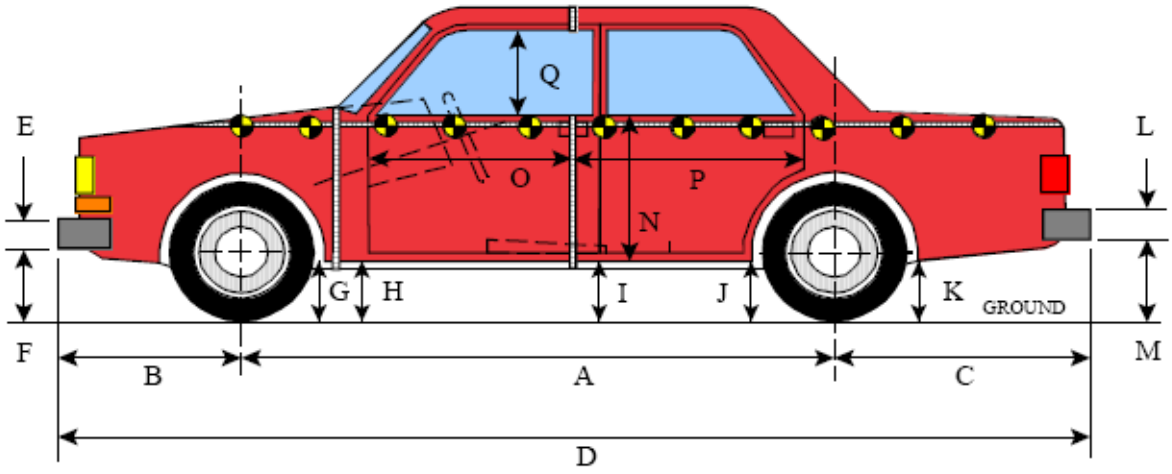
Restraint Type	Struck Side (Driver)		Struck Side (Rear Passenger)	
	Mounted	Deployed	Mounted	Deployed
Front Airbag	Yes	No		
Knee Airbag	No	N/A		
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	N/A
Side Torso Airbag	No	N/A	No	N/A
Seat Belt Pretensioner	Yes	Yes	No	N/A
Seat Belt Load Limiter	Yes	Unknown	Yes	Unknown
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		1302
Actual Impact Point (Aft of Front Axle)	mm		1304
Horizontal Offset (+ forward / - rearward)	mm	+/- 38 of Intended Impact point	-2
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	31.94
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	31.96

DATA SHEET NO. 9
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17



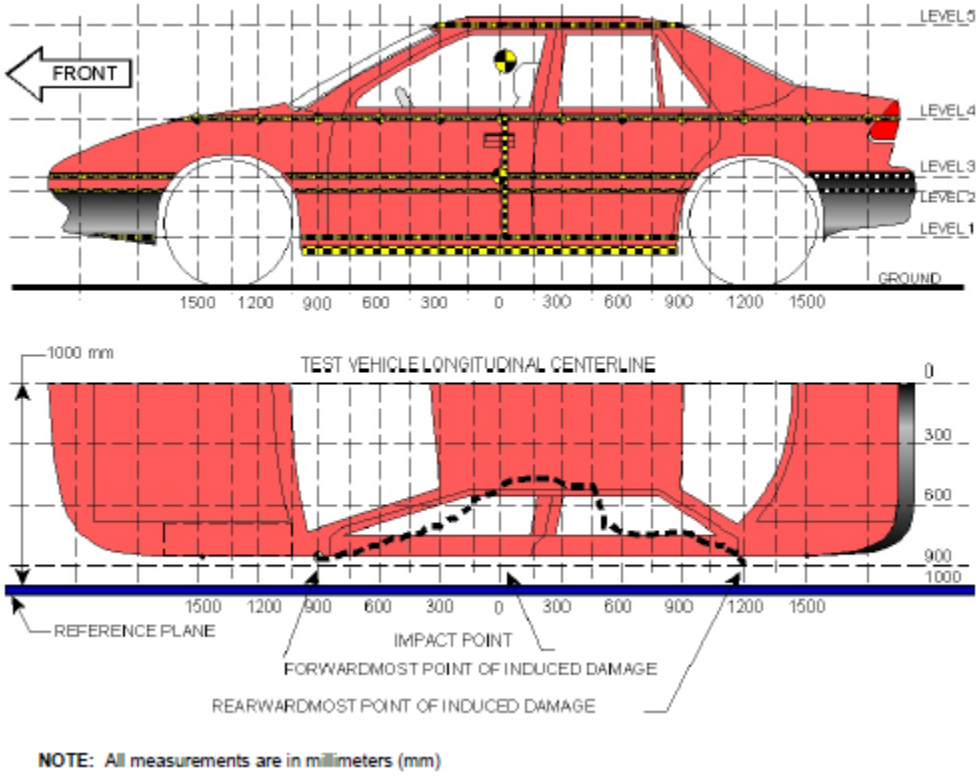
LEFT SIDE VIEW
All MEASUREMENTS IN (mm) WITH TOLERANCE OF ± 3mm

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	3685	3620	65
B	Front Axle to Front Surface of Vehicle	953	1006	-53
C	Rear Axle to Rear Surface of Vehicle	1240	1234	6
D	Total Length at Centerline	5878	5860	18
E	Front Bumper Thickness	180	180	0
F	Front Bumper Bottom to Ground	450	472	-22
G	Sill Height at Front Wheel Well	440	446	-6
H	Sill Height at Front Door Leading Edge	445	447	-2
I	Sill Height at B-Pillar	460	495	-35
J1	Sill Height at Rear Wheel Well	470	521	-51
J2	Pinch Weld Height at Rear Wheel Well	410	455	-45
K	Sill Height Aft of Rear Wheel Well	530	591	-61
L	Rear Bumper Thickness	170	170	0
M	Rear Bumper Bottom to Ground	480	517	-37
N	Sill Height to Bottom of Front Window Sill	880	880	0
O	Front Door Leading Edge to Impact CL	680	536	144
P	Rear Door Trailing Edge to Impact CL	1250	1202	48
Q	Front Window Opening	500	485	15
R	Right Side Length	5788	5740	48
S	Left Side Length	5790	5730	60
T	Vehicle Width at B-Pillars	2030	1980	50

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17



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	488	371	0
2	Occupant H-Point	910	387	0
3	Mid-Door	822	387	0
4	Window Sill	1153	364	0
5	Window Top	1819	75	300

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

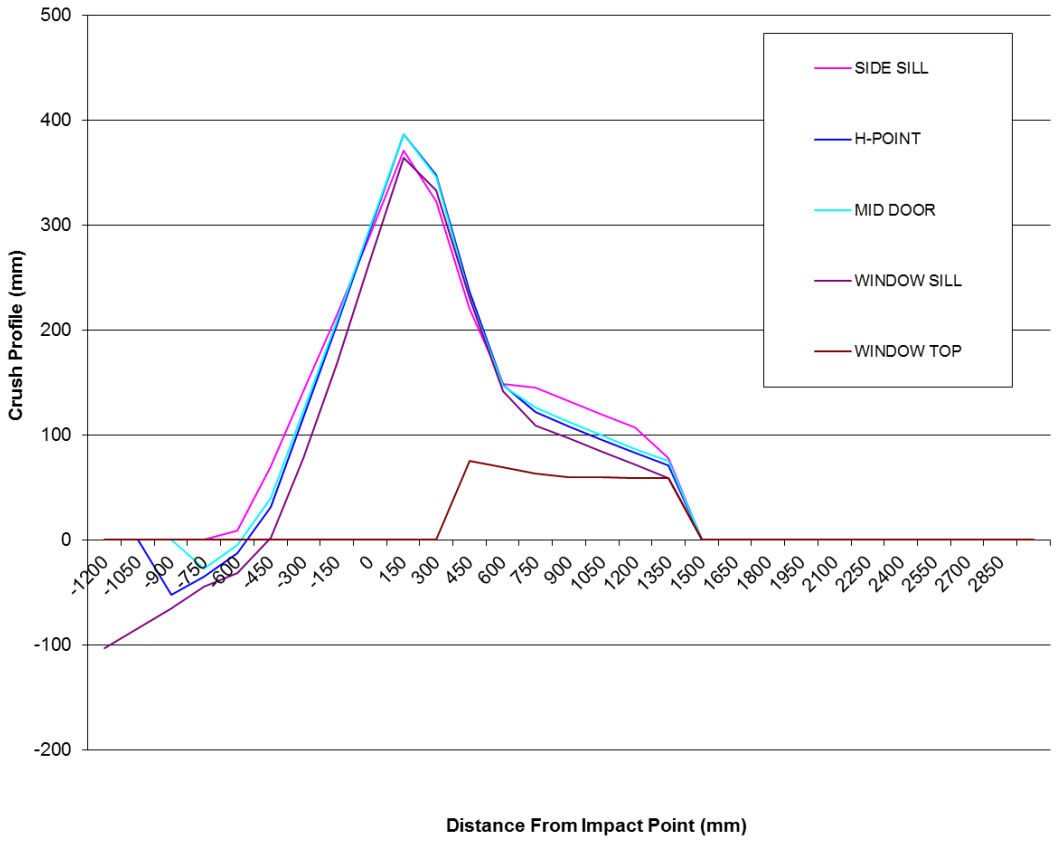
Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1350	0	0	0	884	0	0	0	0	987	0	0	0	0	-103	0
-1200	0	950	0	899	0	0	1020	0	983	0	0	-70	0	-84	0
-1050	0	955	0	911	0	0	1007	0	976	0	0	-52	0	-65	0
-900	0	947	957	922	0	0	982	984	966	0	0	-35	-27	-44	0
-750	943	953	951	929	0	935	966	957	960	0	8	-13	-6	-31	0
-600	937	960	958	936	0	867	929	918	934	0	70	31	40	2	0
-450	942	966	964	944	0	800	850	841	866	0	142	116	123	78	0
-300	946	972	969	952	0	732	767	760	785	0	214	205	209	167	0
-150	951	977	974	960	0	660	680	675	693	0	291	297	299	267	0
0	956	982	979	966	0	585	595	592	602	0	371	387	387	364	0
150	960	987	984	973	0	638	639	637	640	0	322	348	347	333	0
300	965	992	988	978	698	744	755	757	748	623	221	237	231	230	75
450	969	997	993	984	708	821	849	846	842	639	148	148	147	142	69
600	976	997	994	987	715	831	875	867	878	652	145	122	127	109	63
750	979	1000	997	990	722	848	891	884	894	662	131	109	113	96	60
900	984	1003	1000	994	728	864	907	901	909	668	120	96	99	85	60
1050	987	1006	1003	997	732	880	923	916	925	673	107	83	87	72	59
1200	972	1008	1005	1000	729	894	937	929	940	670	78	71	76	60	59

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.

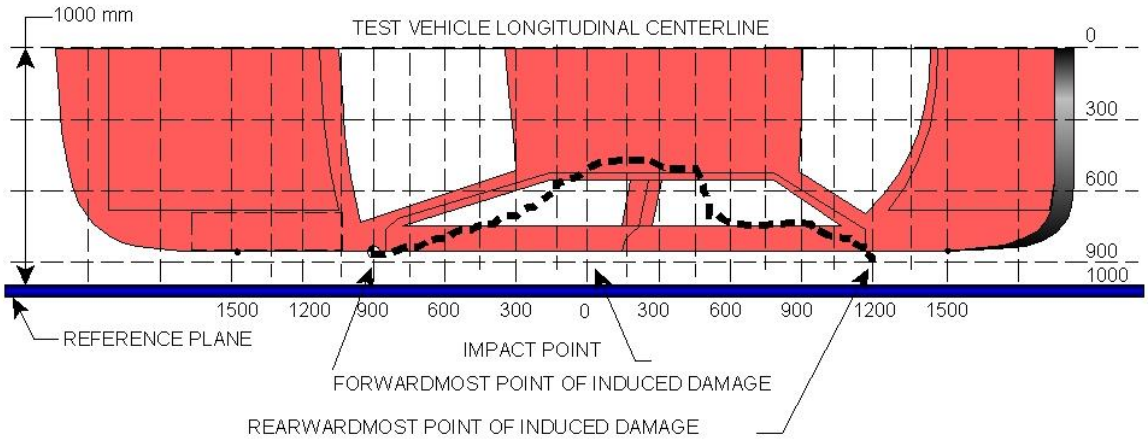
DATA SHEET NO. 10 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17



DATA SHEET NO. 11
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	1200	1	894	972	78
2	750	1	848	979	131
3	450	1	821	969	148
		2	849	997	148
4	0	2	595	982	387
		3	592	979	387
5	-300	1	732	946	214
6[1]	-750	1	935	943	0

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

DATA SHEET NO. 12

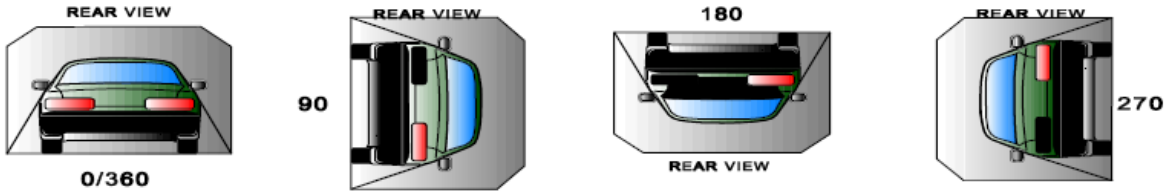
FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17

Test Time: 18:45 **Temperature:** 20.4ºC

A. From impact until vehicle motion ceases: 0 oz.
(Maximum allowable is 1 ounce)
B. For the 5 minute period after motion ceases: 0 oz.
(Maximum allowable is 5 ounces)
C. For the following 25 minutes: 0 oz.
(Maximum allowable is 1 ounce/minute)
D. Spillage Details: 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

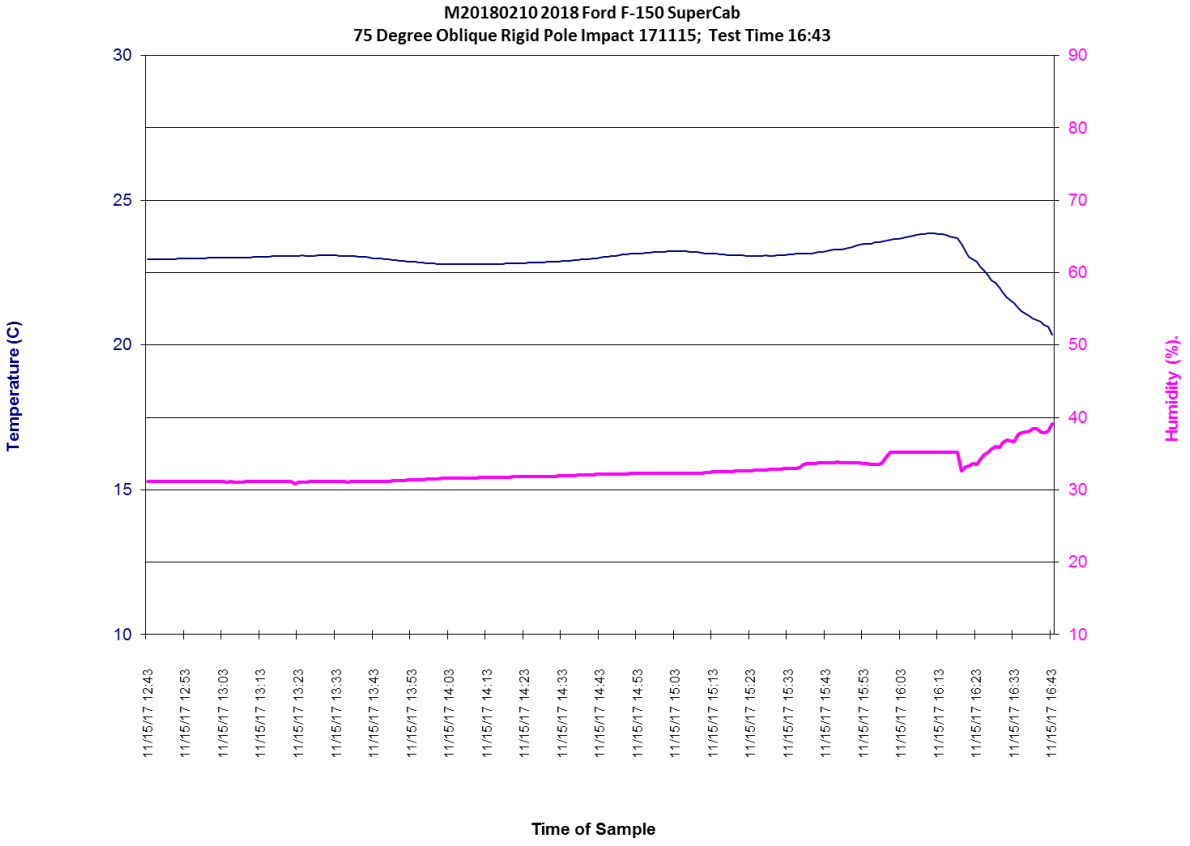
Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0 to 90	0	0	0	0
90 to 180	0	0	0	0
180 to 270	0	0	0	0
270 to 360	0	0	0	0

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: 2018 Ford F-150 SuperCab NHTSA No.: M20180210
Test Program: SPNCAP Side Impact Test Date: 11/15/17



APPENDIX A
PHOTOGRAPHS

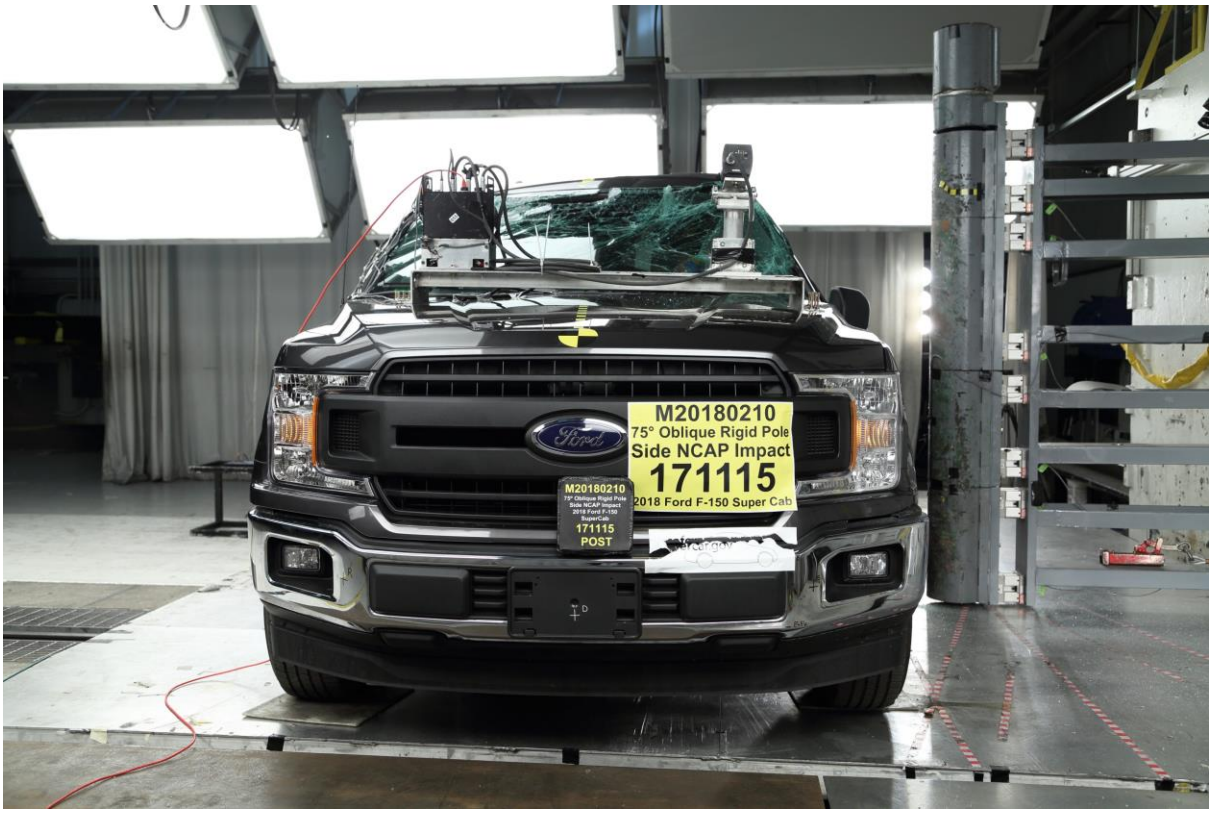
TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS (CONTINUED)

No. 001 As Delivered Right Front ¾ View of Test Vehicle

No. 002 As Delivered Left Rear ¾ View of Test Vehicle

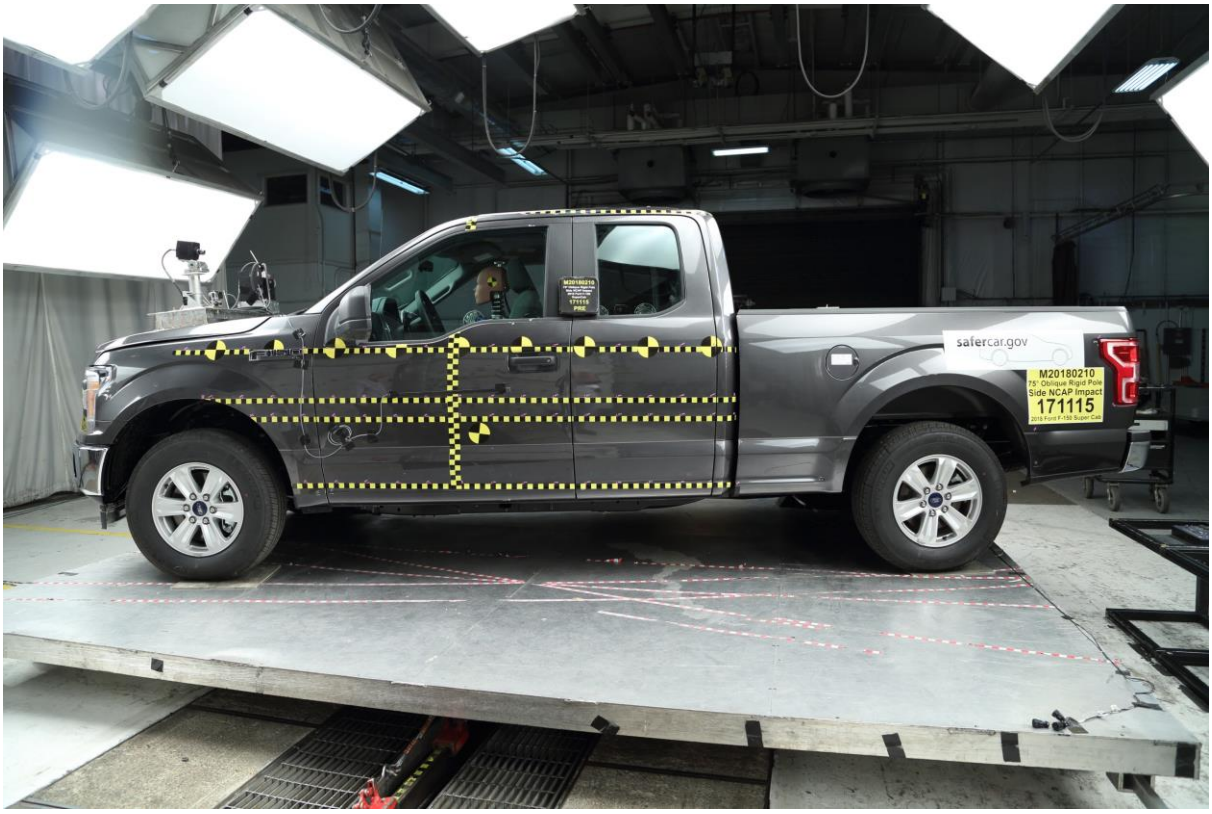
No. 003 Pre-Test Frontal View of Test Vehicle



No. 004 Post-Test Frontal View of Test Vehicle

No. 005 Pre-Test Left Front ¾ View of Test Vehicle

No. 006 Post-Test Left Front ¾ 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 ¾ View of Test Vehicle

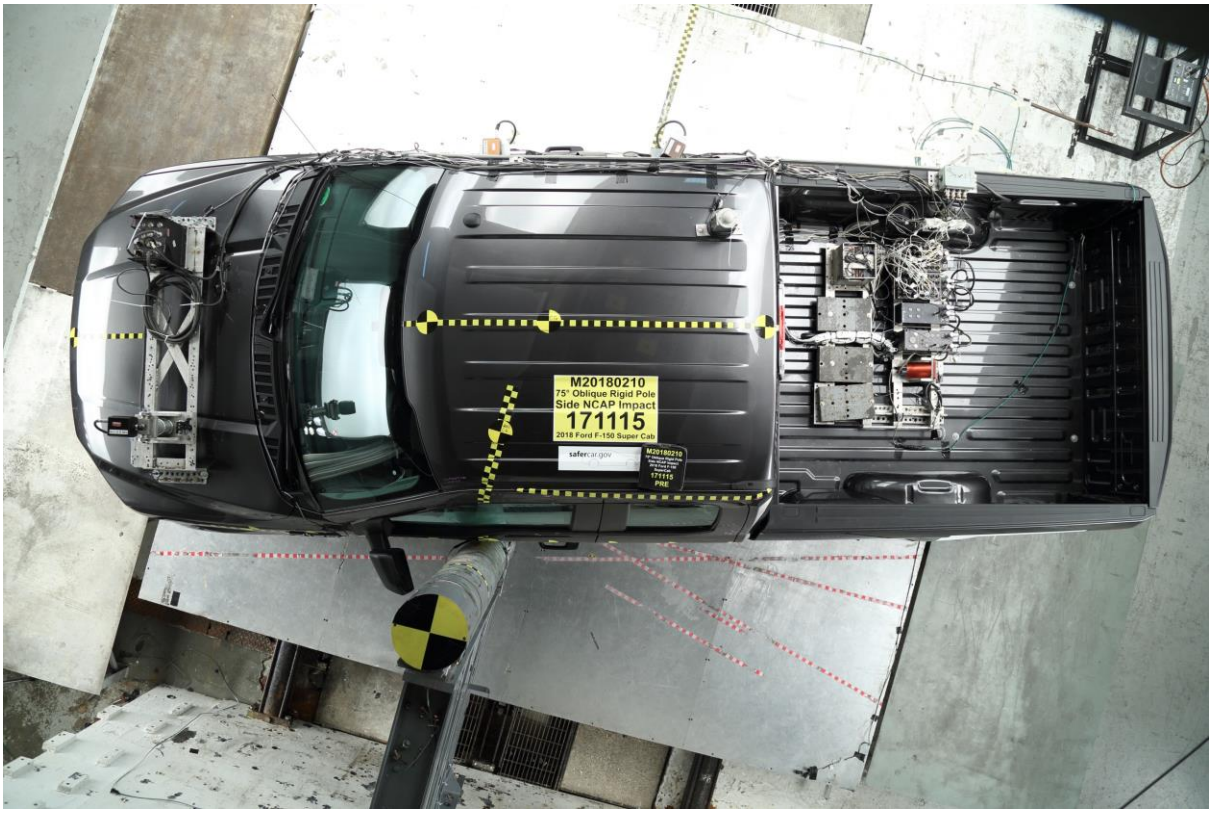
No. 010 Post-Test Left Rear ¾ View of Test Vehicle

No. 011 Pre-Test Rear View of Test Vehicle

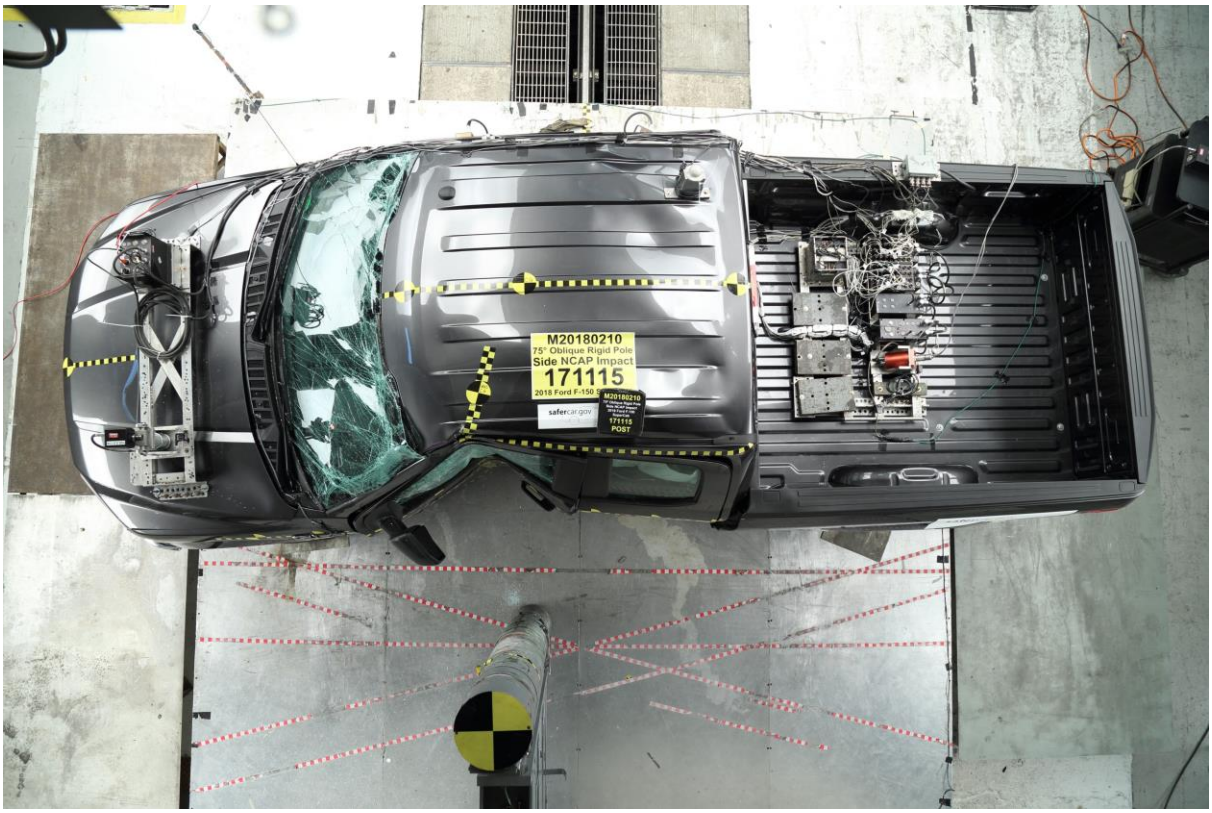
No. 012 Post-Test Rear View of Test Vehicle

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

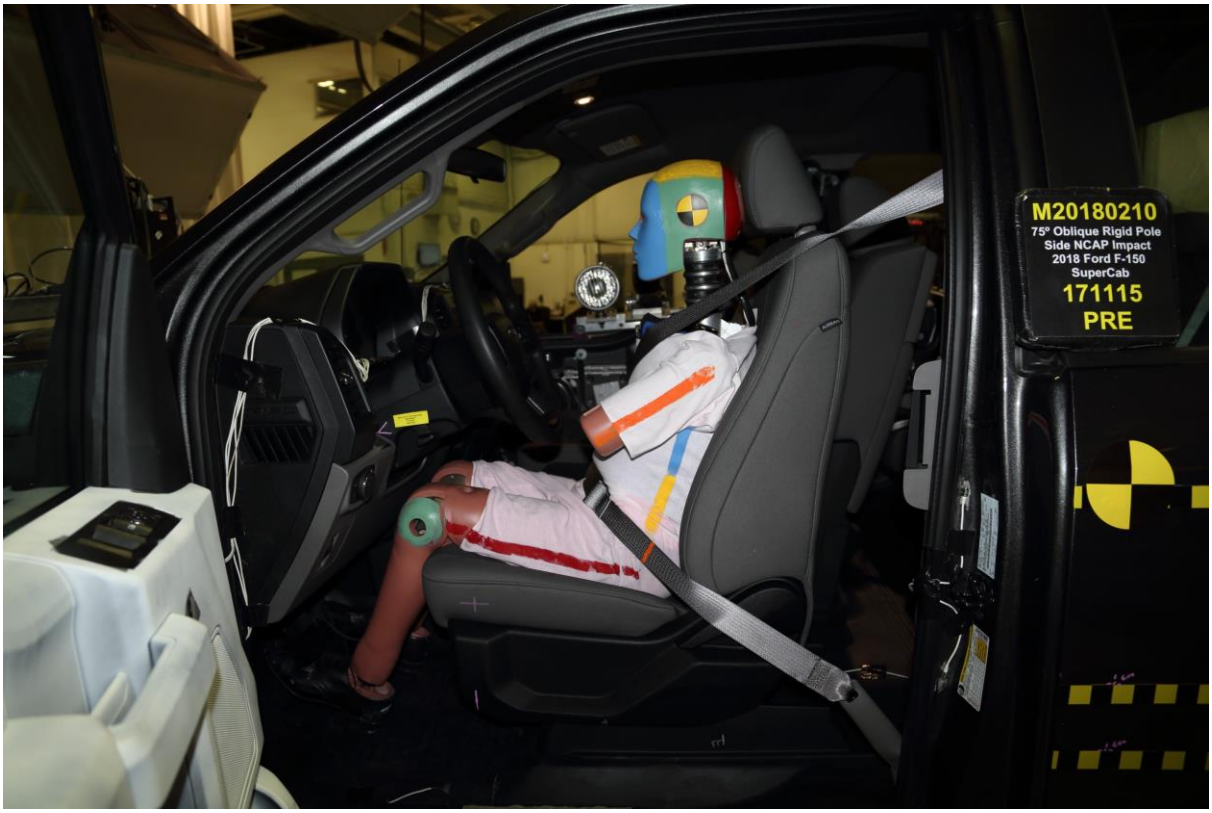
No. 018 Pre-Test Right Side View of Pole Positioned Against Side of Vehicle

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

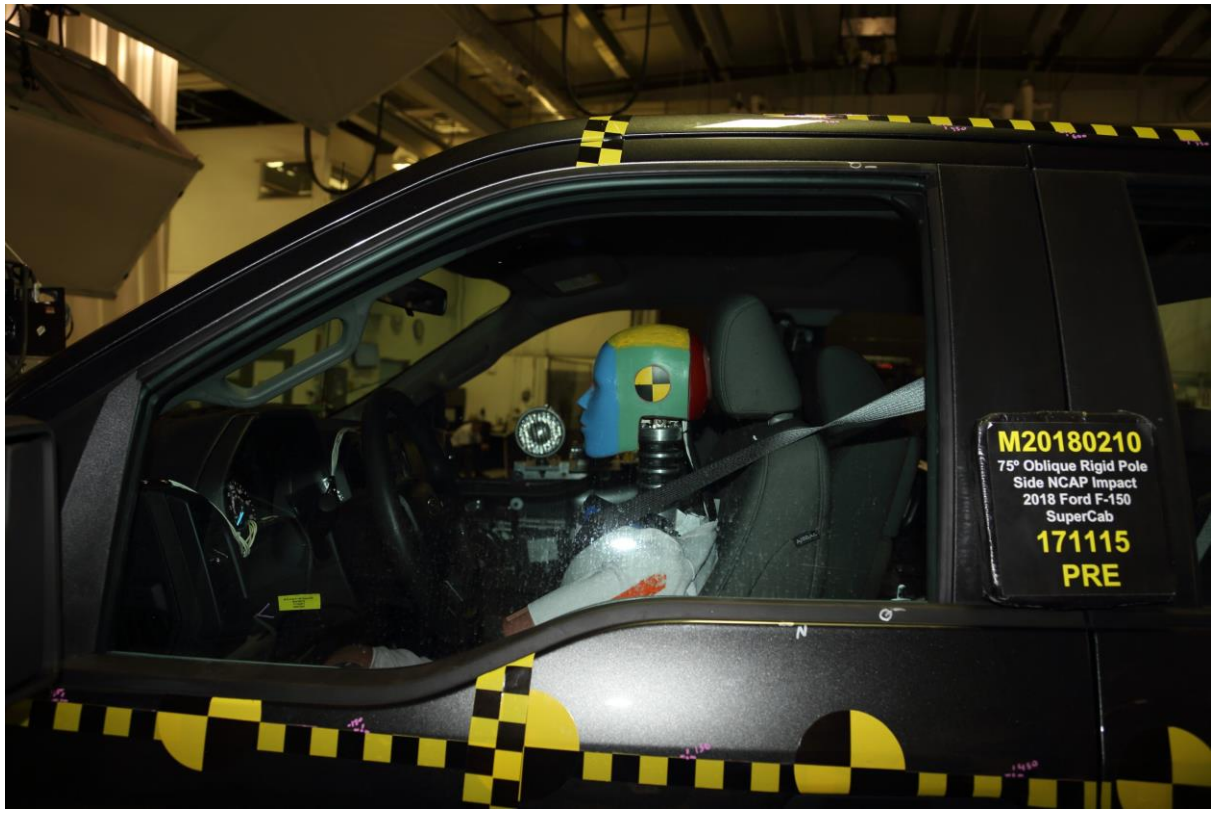
No. 021 Pre-Test Front Close-Up View of Dummy Head and Chest

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



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

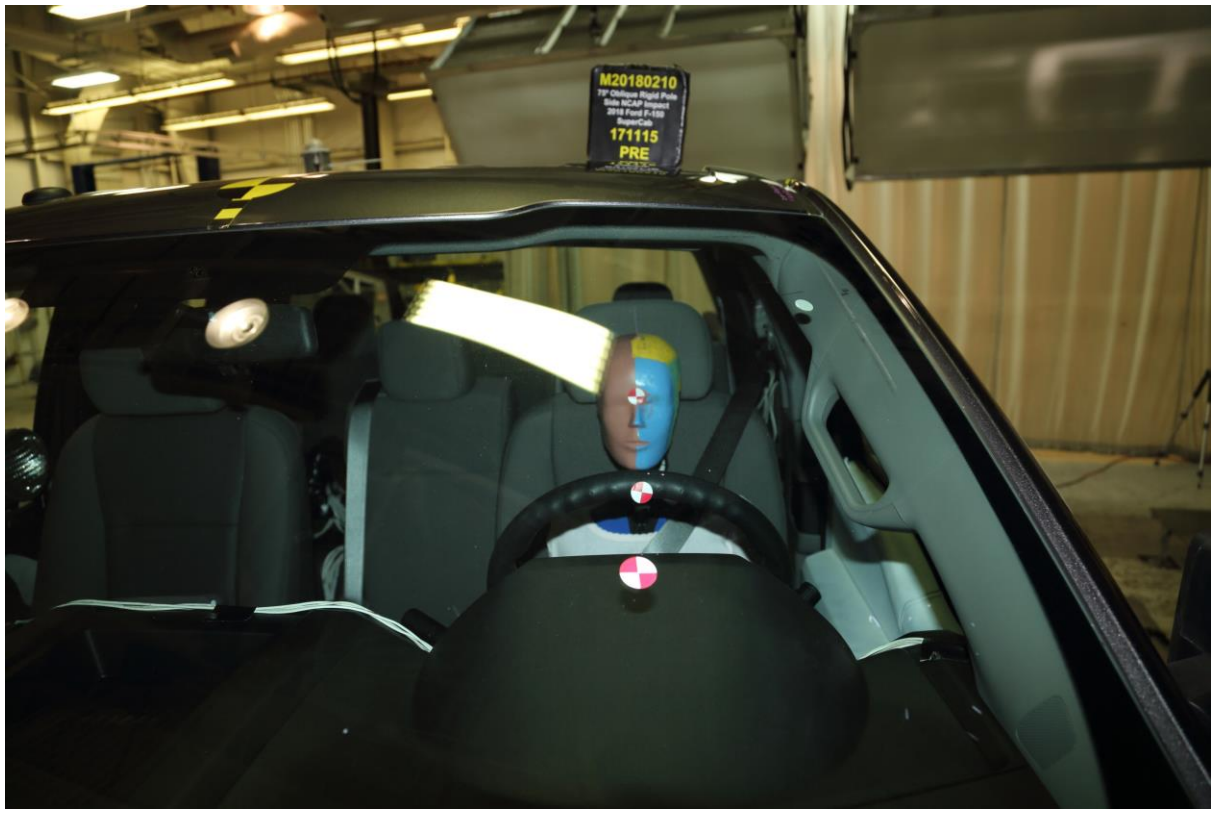
Intentionally Left Blank



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

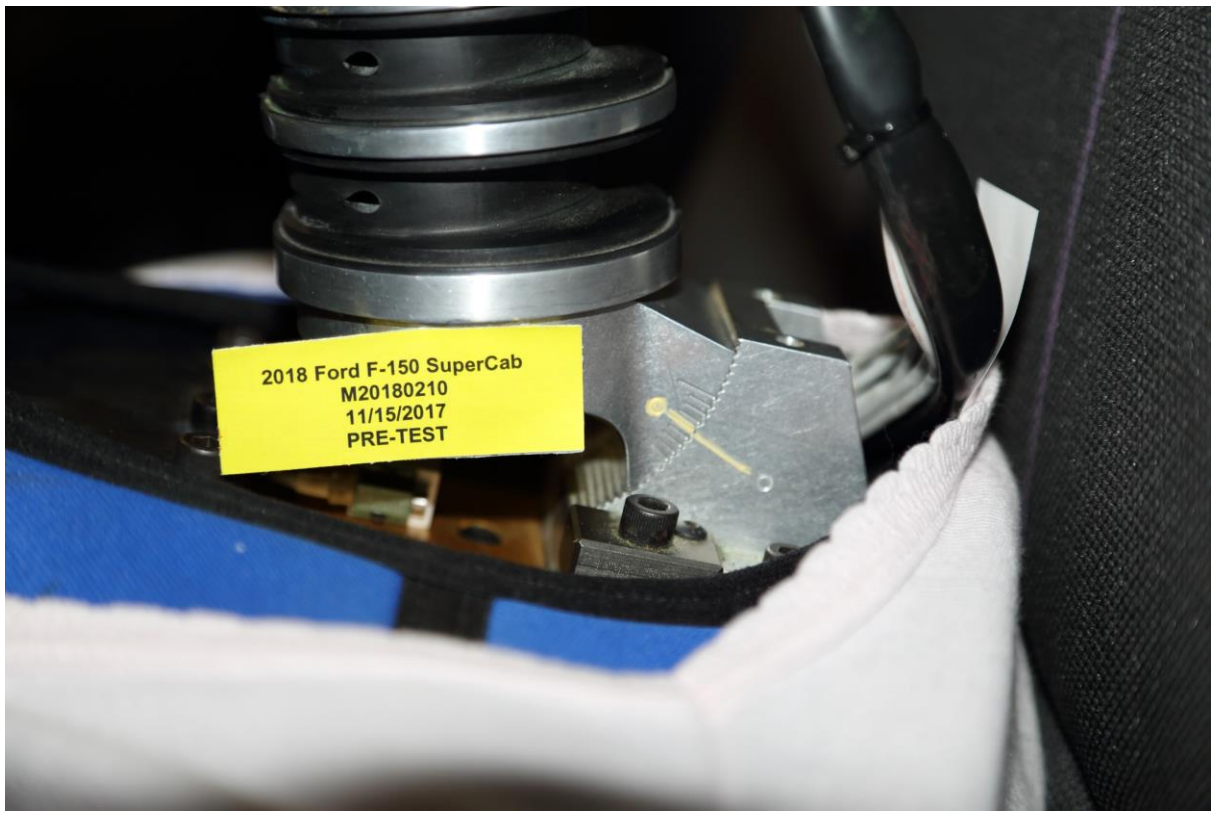
No. 026 Pre-Test Front View of Seat Back Prior to Dummy Positioning



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

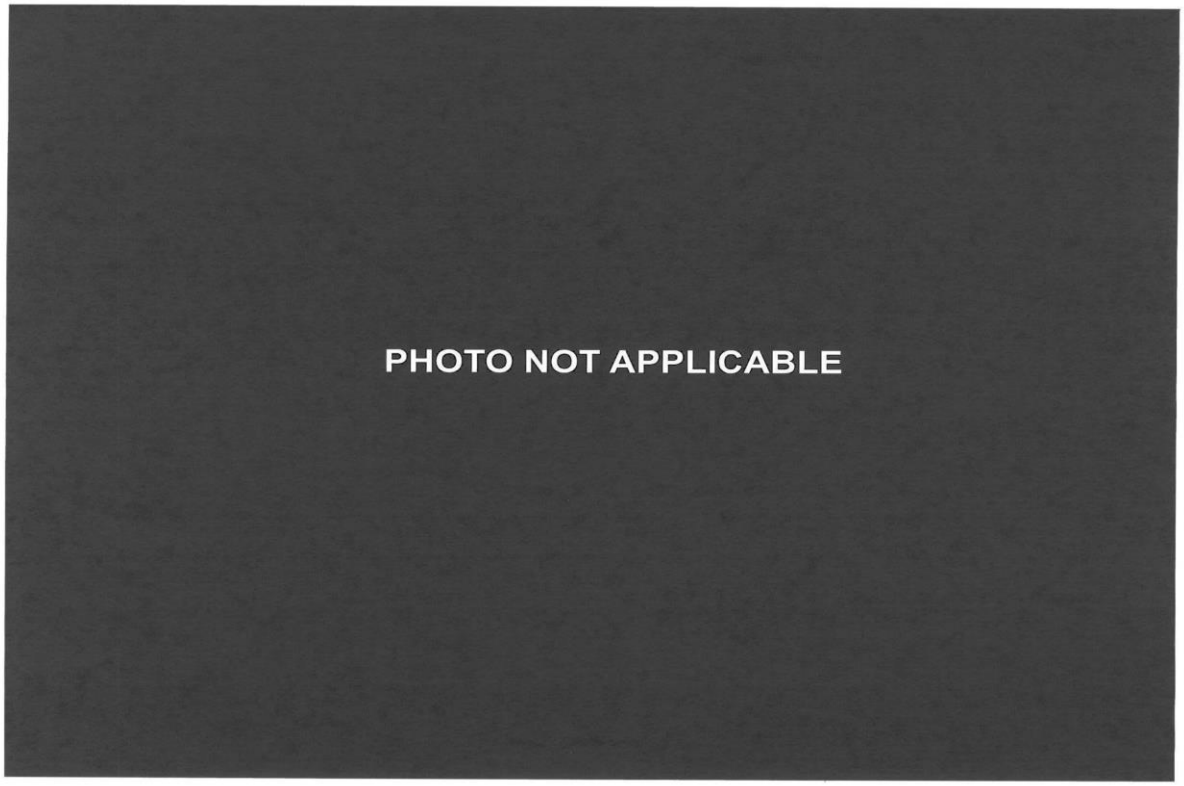
No. 041 Post-Test Dummy and Door Clearance View

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

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

Intentionally Left Blank

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

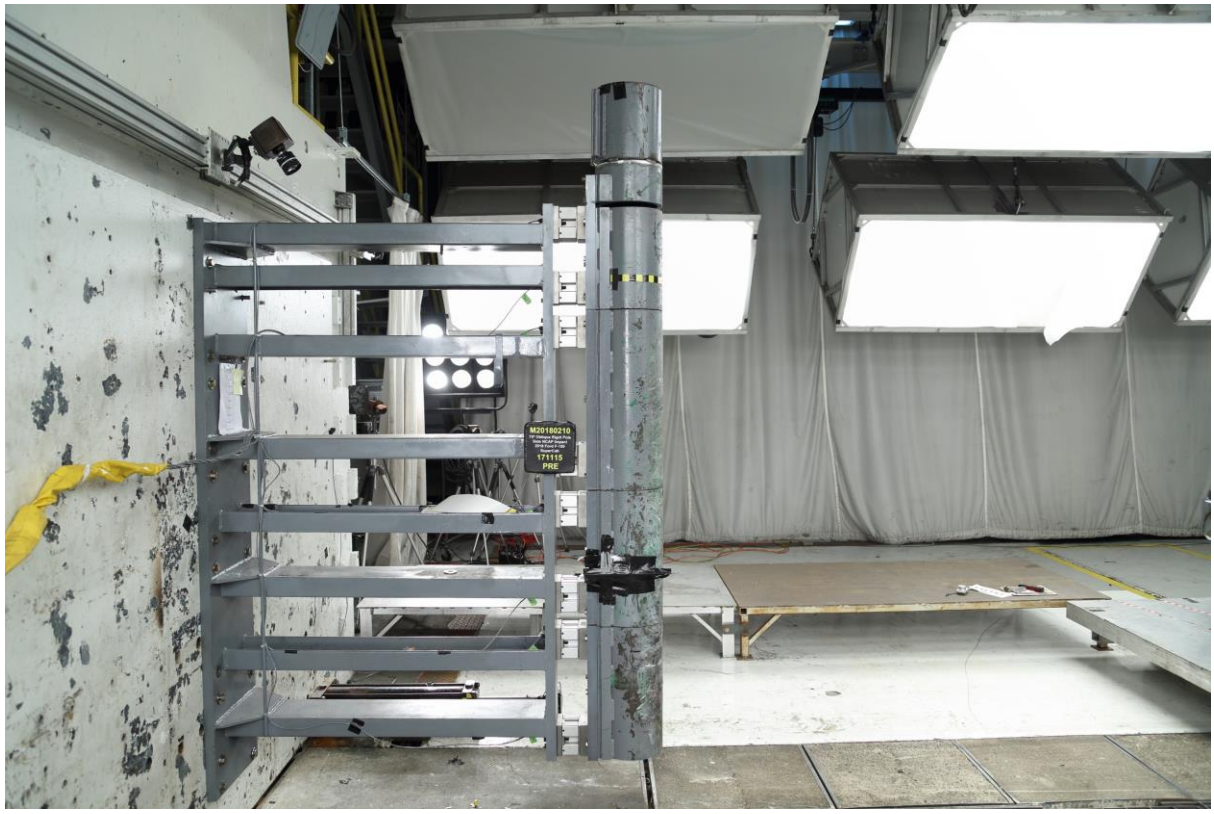
No. 054 Post-Test View of Fuel Filler Cap or Fuel Filler Neck

No. 055 Close-Up View of Vehicle Certification Label

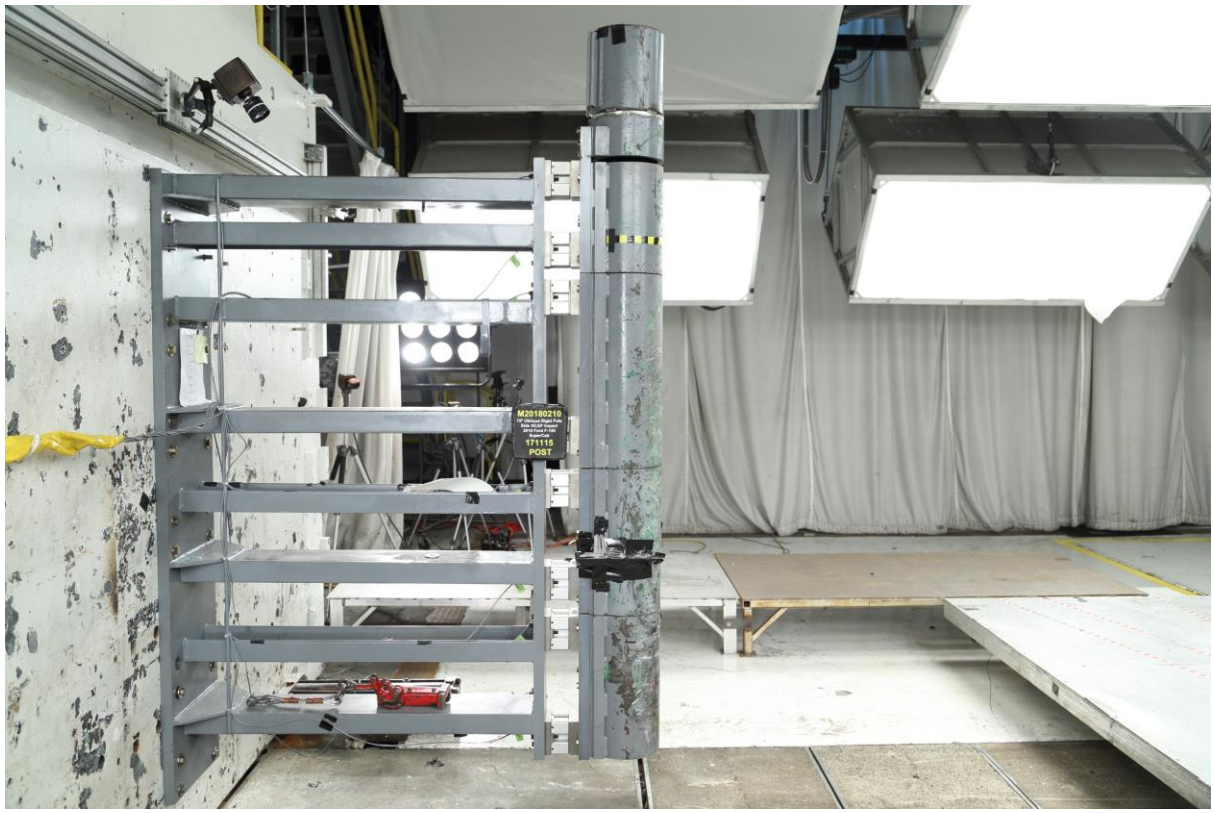
No. 056 Close-Up View of Vehicle Tire Information Placard or Label

No. 057 Pre-Test Pole Barrier Front View

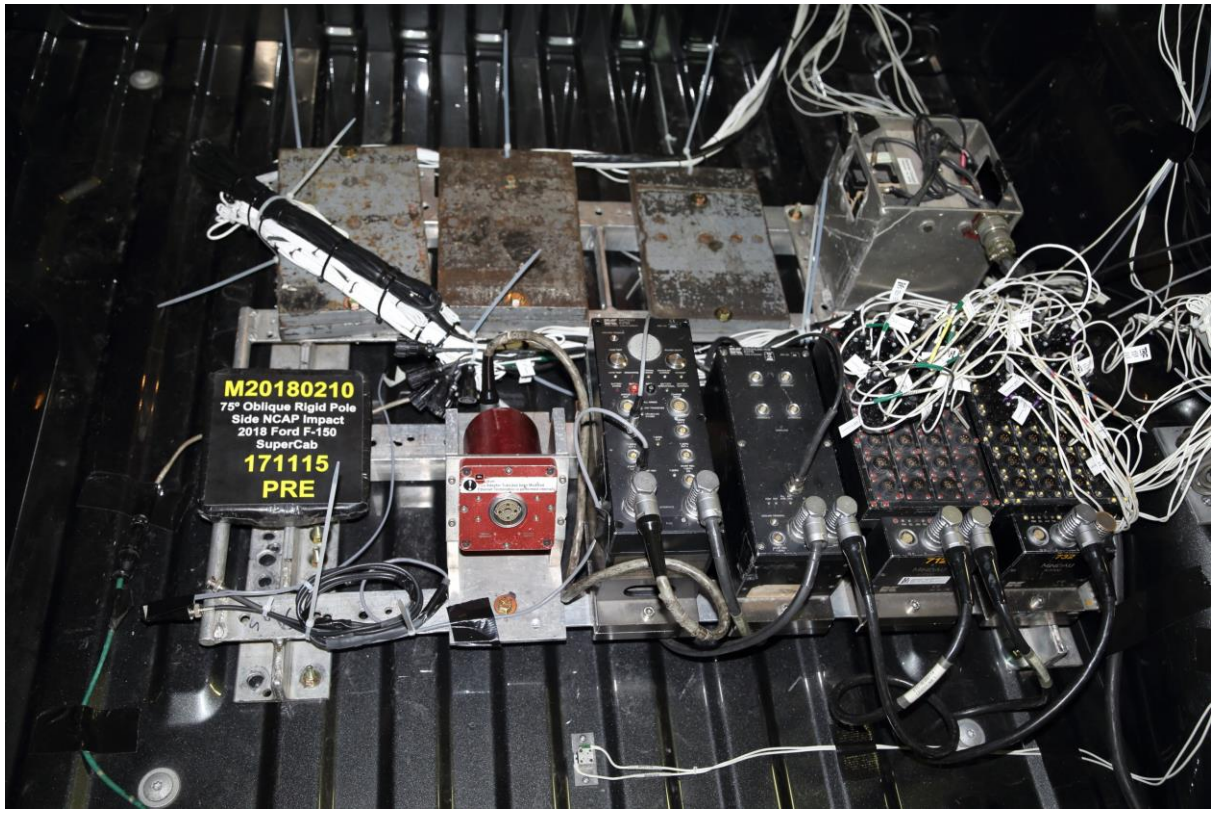
No. 058 Post-Test Pole Barrier Front View



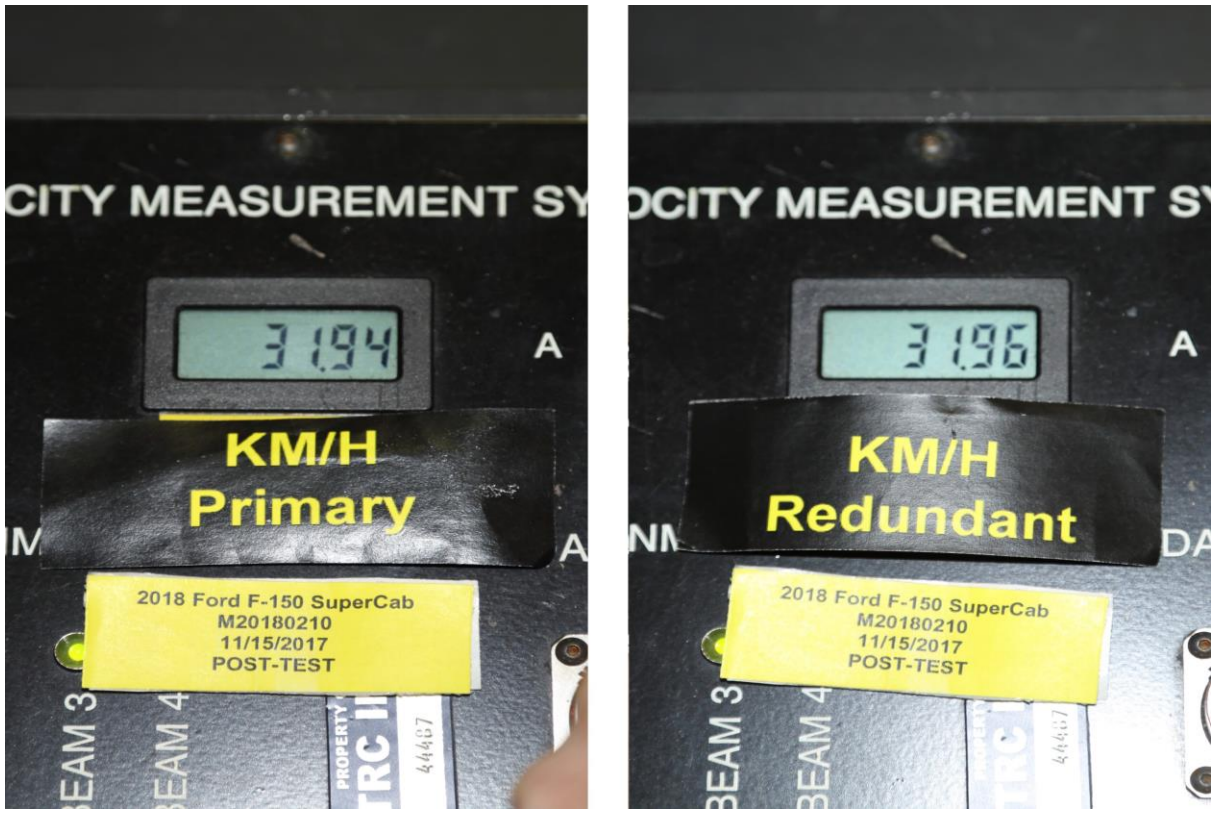
No. 059 Pre-Test Pole Barrier Side View



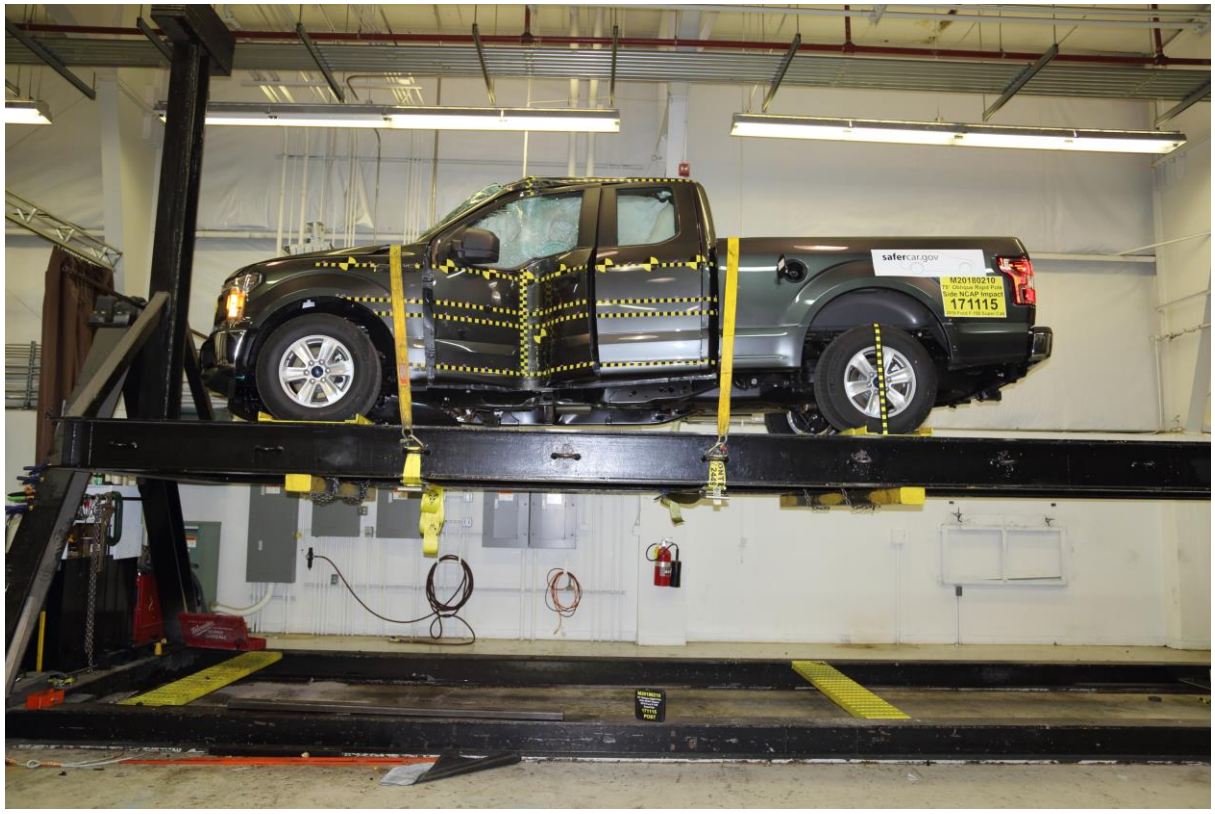
No. 060 Post-Test Pole Barrier Side View



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

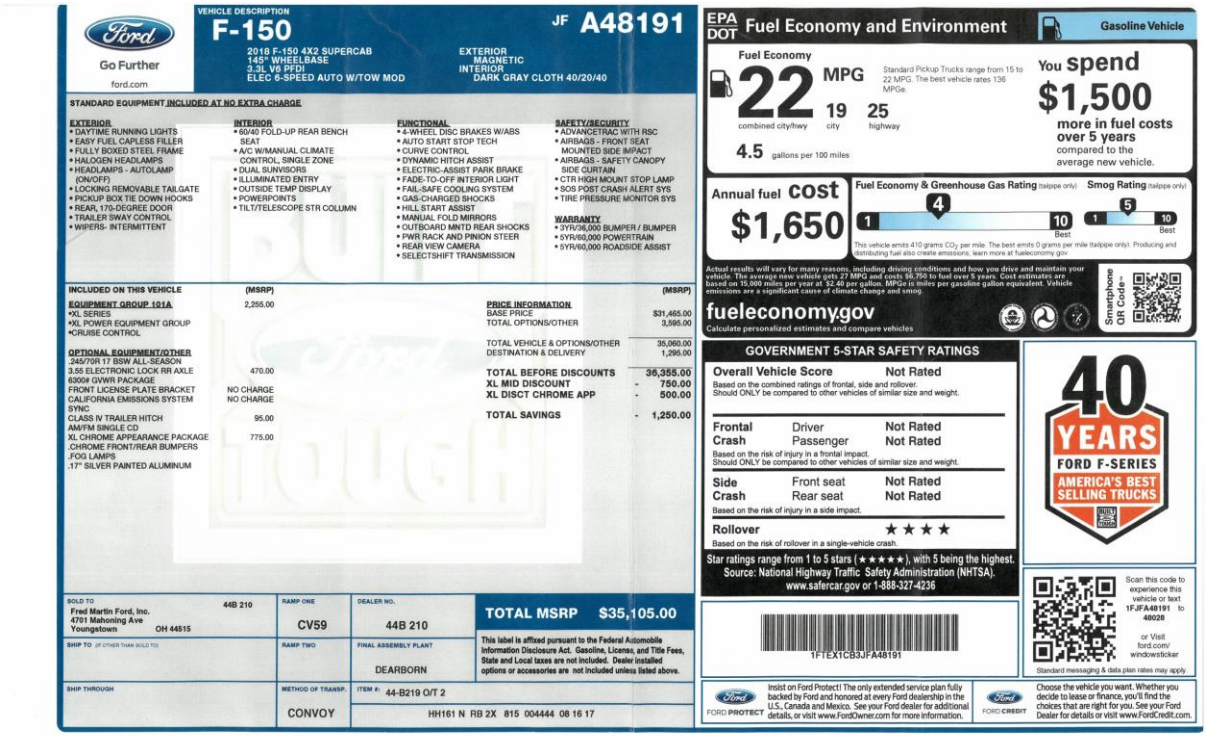
No. 065 FMVSS No. 301 Static Rollover 180 Degrees

PHOTO NOT AVAILABLE

No. 066 FMVSS No. 301 Static Rollover 270 Degrees

No. 067 FMVSS No. 301 Static Rollover 360 Degrees

No. 068 Impact Event



Ford
Go Further
ford.com

VEHICLE DESCRIPTION
F-150
2018 F-150 4X2 SUPERCAB
145" WHEELBASE
3.3L V6 PFDI
ELEC 6-SPEED AUTO W/TOW MOD

JF **A48191**

EXTERIOR
MAGNETIC
INTERIOR
DARK GRAY CLOTH 40/20/40

STANDARD EQUIPMENT INCLUDED AT NO EXTRA CHARGE

EXTERIOR
- DAYTIME RUNNING LIGHTS
- EASY FUEL CAPLESS FILLER
- FULLY BOXED STEEL FRAME
- HALOGEN HEADLAMPS
- HEADLAMPS - AUTOLAMP (ON/OFF)
- LOCKING REMOVABLE TAILGATE
- PICKUP BOX TIE DOWN HOOKS
- REAR, 170-DEGREE DOOR
- TRAILER SWAY CONTROL
- WIPERS- INTERMITTENT

INTERIOR
- 60/40 FOLD-UP REAR BENCH SEAT
- A/C W/MANUAL CLIMATE CONTROL, SINGLE ZONE
- DUAL SUNVISORS
- ILLUMINATED ENTRY
- OUTSIDE TEMP DISPLAY
- POWERPOINTS
- TILT/TELESCOPE STR COLUMN

FUNCTIONAL
- 4-WHEEL DISC BRAKES W/ABS
- AUTO START STOP TECH
- CURVE CONTROL
- DYNAMIC HITCH ASSIST
- ELECTRIC-ASSIST PARK BRAKE
- FADE-TO-OFF INTERIOR LIGHT
- FAIL-SAFE COOLING SYSTEM
- GAS-CHARGED SHOCKS
- HILL START ASSIST
- MANUAL FOLD MIRRORS
- OUTBOARD MNTD REAR SHOCKS
- PWR RACK AND PINION STEER
- REAR VIEW CAMERA
- SELECTSHIFT TRANSMISSION

SAFETY/SECURITY
- ADVANCETRAC WITH RSC
- AIRBAGS - FRONT SEAT MOUNTED SIDE IMPACT
- AIRBAGS - SAFETY CANOPY SIDE CURTAIN
- CTR HIGH MOUNT STOP LAMP
- SOS POST CRASH ALERT SYS
- TIRE PRESSURE MONITOR SYS

WARRANTY
- 3YR/36,000 BUMPER / BUMPER
- 5YR/60,000 POWERTRAIN
- 5YR/60,000 ROADSIDE ASSIST

INCLUDED ON THIS VEHICLE	(MSRP)
EQUIPMENT GROUP 101A	2,255.00
•XL SERIES	
•XL POWER EQUIPMENT GROUP	
•CRUISE CONTROL	
OPTIONAL EQUIPMENT/OTHER	
.245/70R 17 BSW ALL-SEASON	
3.55 ELECTRONIC LOCK RR AXLE	470.00
630W GVWR PACKAGE	
FRONT LICENSE PLATE BRACKET	NO CHARGE
CALIFORNIA EMISSIONS SYSTEM	NO CHARGE
SYNC	
CLASS IV TRAILER HITCH	95.00
AM/FM SINGLE CD	
XL CHROME APPEARANCE PACKAGE	775.00
.CHROME FRONT/REAR BUMPERS	
.FOG LAMPS	
.17" SILVER PAINTED ALUMINUM	

PRICE INFORMATION	(MSRP)
BASE PRICE	$31,465.00
TOTAL OPTIONS/OTHER	3,595.00
TOTAL VEHICLE & OPTIONS/OTHER	35,060.00
DESTINATION & DELIVERY	1,295.00
TOTAL BEFORE DISCOUNTS	36,355.00
XL MID DISCOUNT	- 750.00
XL DISCT CHROME APP	- 500.00
TOTAL SAVINGS	- 1,250.00

SOLD TO
Fred Martin Ford, Inc.
4701 Mahoning Ave
Youngstown OH 44515
44B 210

SHIP TO (IF OTHER THAN SOLD TO)

SHIP THROUGH

RAMP ONE: CV59
RAMP TWO:
METHOD OF TRANSP.: CONVOY
DEALER NO.: 44B 210
FINAL ASSEMBLY PLANT: DEARBORN
ITEM #: 44-B219 O/T 2

TOTAL MSRP $35,105.00

This label is affixed pursuant to the Federal Automobile Information Disclosure Act. Gasoline, License, and Title Fees, State and Local taxes are not included. Dealer installed options or accessories are not included unless listed above.

HH161 N RB 2X 815 004444 08 16 17

EPA DOT **Fuel Economy and Environment**

Gasoline Vehicle

Fuel Economy
22 MPG
19 city / 25 highway
4.5 gallons per 100 miles

Standard Pickup Trucks range from 15 to 22 MPG. The best vehicle rates 136 MPGe.

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

Annual fuel cost **$1,650**

Fuel Economy & Greenhouse Gas Rating (tailpipe only): 4 (1 – 10 Best)
Smog Rating (tailpipe only): 5 (1 – 10 Best)

This vehicle emits 410 grams CO_2 per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also create emissions; learn more at fueleconomy.gov

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 27 MPG and costs $6,750 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at $2.40 per gallon. MPGe is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fueleconomy.gov
Calculate personalized estimates and compare vehicles

Smartphone QR Code™

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score		Not Rated
Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.		
Frontal Crash	Driver	Not Rated
	Passenger	Not Rated
Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.		
Side Crash	Front seat	Not Rated
	Rear seat	Not Rated
Based on the risk of injury in a side impact.		
Rollover		★★★★
Based on the risk of rollover in a single-vehicle crash.		

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

1FTEX1CB3JFA48191

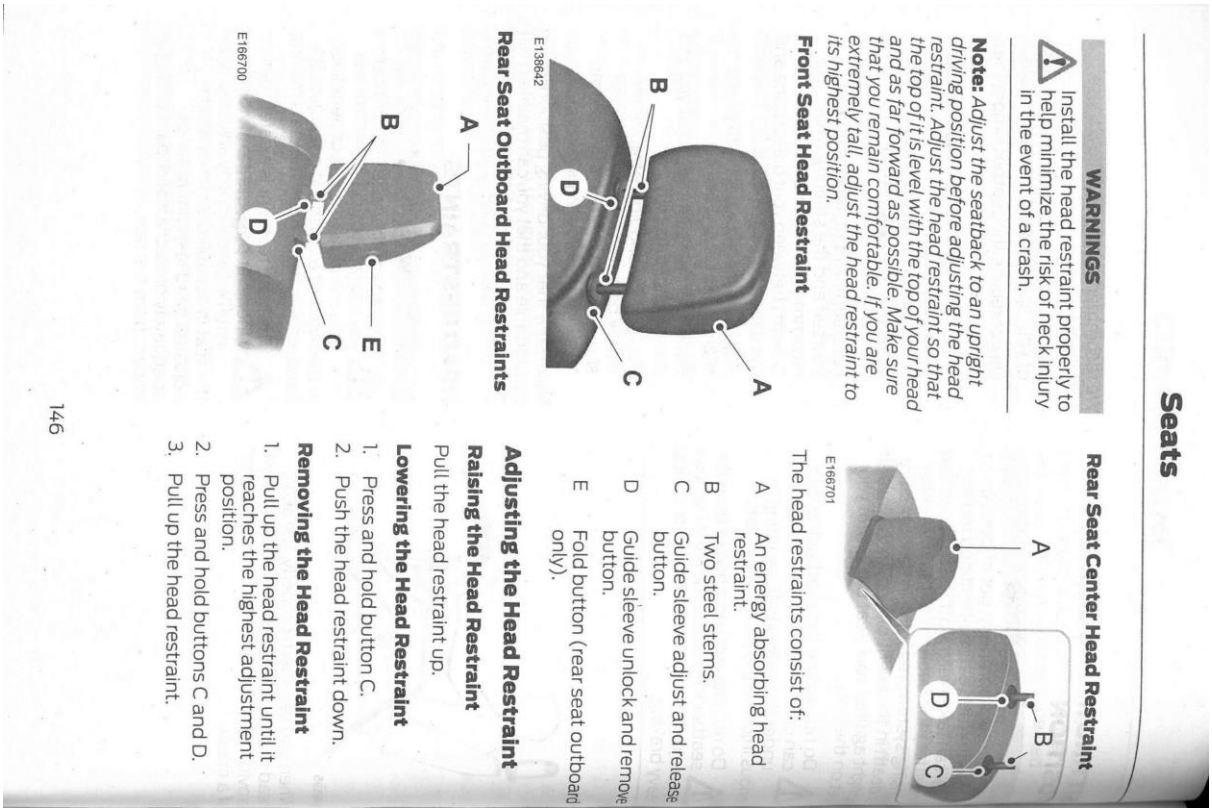
40 YEARS FORD F-SERIES AMERICA'S BEST SELLING TRUCKS

Scan this code to experience this vehicle or text 1FJFA48191 to 48028
or Visit ford.com/windowsticker
Standard messaging & data plan rates may apply

FORD PROTECT: Insist on Ford Protect! The only extended service plan fully backed by Ford and honored at every Ford dealership in the U.S., Canada and Mexico. See your Ford dealer for additional details, or visit www.FordOwner.com for more information.

FORD CREDIT: Choose the vehicle you want. Whether you decide to lease or finance, you'll find the choices that are right for you. See your Ford Dealer for details or visit www.FordCredit.com.

No. 069 Monroney Label



Seals

WARNINGS

Install the head restraint properly to help minimize the risk of neck injury in the event of a crash.

Note: *Adjust the seatback to an upright driving position before adjusting the head restraint. Adjust the head restraint so that the top of it is level with the top of your head and as far forward as possible. Make sure that you remain comfortable. If you are extremely tall, adjust the head restraint to its highest position.*

Front Seat Head Restraint

E138842

Rear Seat Outboard Head Restraints

E166700

Rear Seat Center Head Restraint

E166701

The head restraints consist of:

A An energy absorbing head restraint.
B Two steel stems.
C Guide sleeve adjust and release button.
D Guide sleeve unlock and remove button.
E Fold button (rear seat outboard only).

Adjusting the Head Restraint

Raising the Head Restraint

Pull the head restraint up.

Lowering the Head Restraint

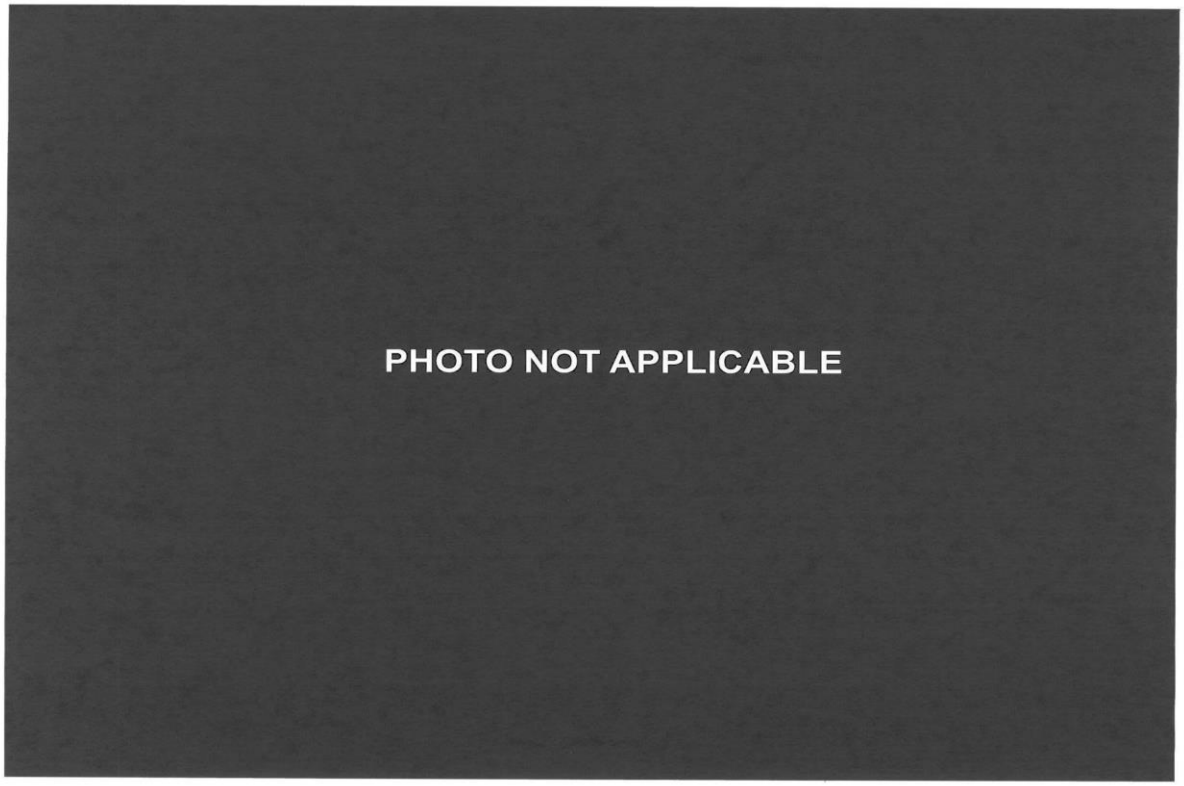
1. Press and hold button C.
2. Push the head restraint down.

Removing the Head Restraint

1. Pull up the head restraint until it reaches the highest adjustment position.
2. Press and hold buttons C and D.
3. Pull up the head restraint.

146

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



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

APPENDIX B
VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

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

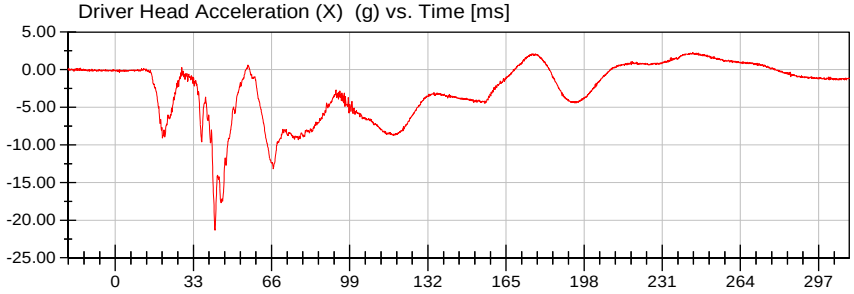
Test Date: 11/15/2017

Position #1 SID IIs Dummy (297)

Test Lab: CTF

Test Number: 171115 (M20180210)

Driver Head Acceleration (X) (g) vs. Time [ms]



<Max>

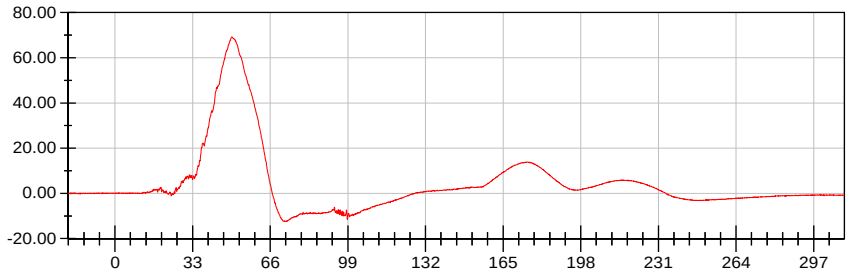
2.26 g at 243.76 ms

<Min>

-21.33 g at 42.08 ms

CFC_1000

Driver Head Acceleration (Y) (g) vs. Time [ms]



<Max>

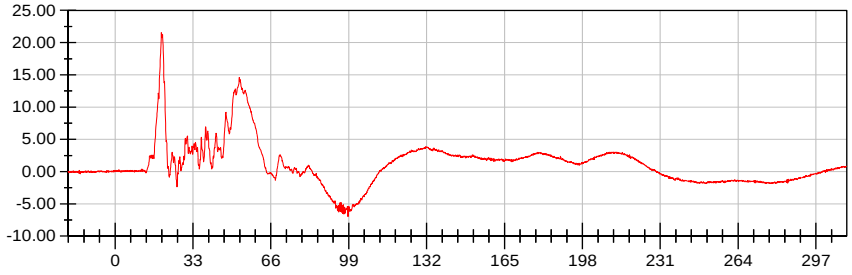
69.26 g at 49.68 ms

<Min>

-12.44 g at 72.16 ms

CFC_1000

Driver Head Acceleration (Z) (g) vs. Time [ms]



<Max>

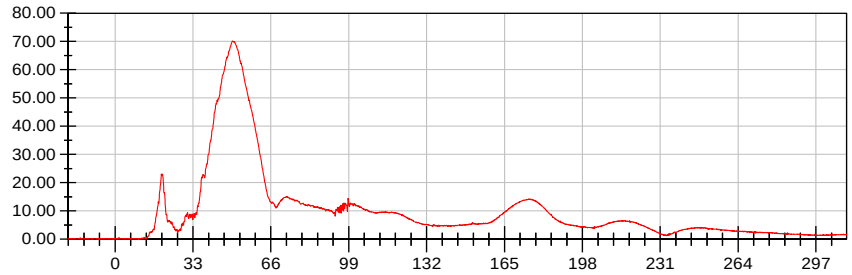
21.55 g at 19.60 ms

<Min>

-6.98 g at 98.72 ms

CFC_1000

Driver Head Acceleration Resultant (g) vs. Time [ms]



<Max>

70.17 g at 49.76 ms

<Min>

0.02 g at -18.08 ms

CFC_1000

NHTSA

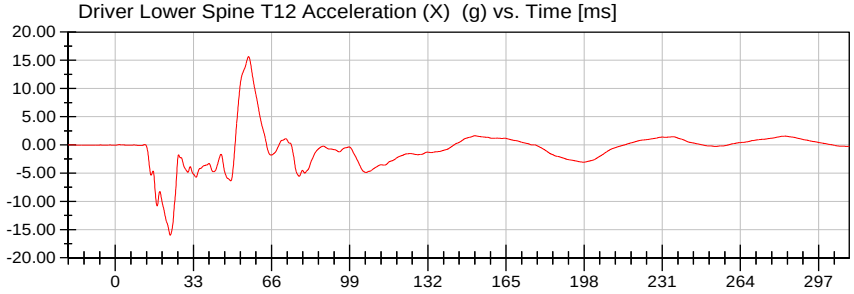
Test Date: 11/15/2017

Position #1 SID IIs Dummy (297)

Test Lab: CTF

Test Number: 171115 (M20180210)

Driver Lower Spine T12 Acceleration (X) (g) vs. Time [ms]



<Max>

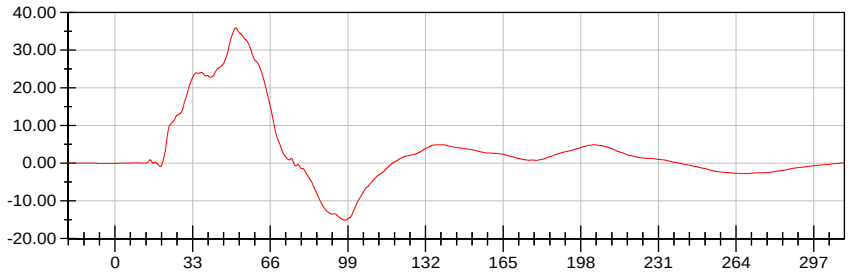
15.63 g at 56.24 ms

<Min>

-16.00 g at 23.20 ms

CFC_180

Driver Lower Spine T12 Acceleration (Y) (g) vs. Time [ms]



<Max>

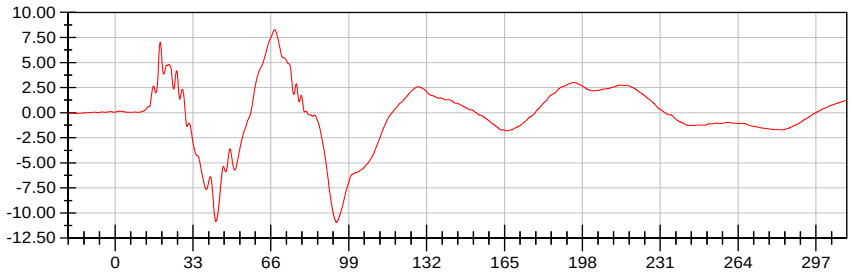
35.92 g at 51.28 ms

<Min>

-15.10 g at 97.68 ms

CFC_180

Driver Lower Spine T12 Acceleration (Z) (g) vs. Time [ms]



<Max>

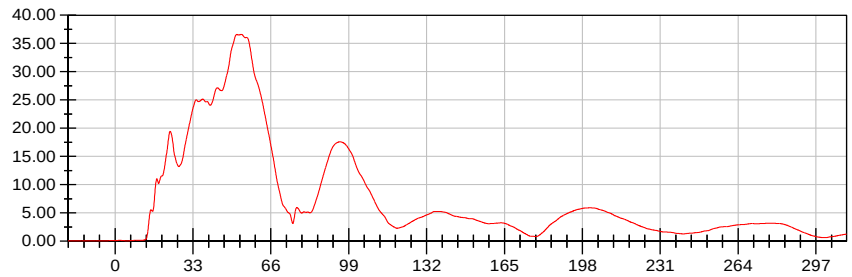
8.27 g at 67.60 ms

<Min>

-10.93 g at 93.76 ms

CFC_180

Driver Lower Spine T12 Acceleration Resultant (g) vs. Time [ms]



<Max>

36.62 g at 53.44 ms

<Min>

0.05 g at -6.72 ms

CFC_180

NHTSA

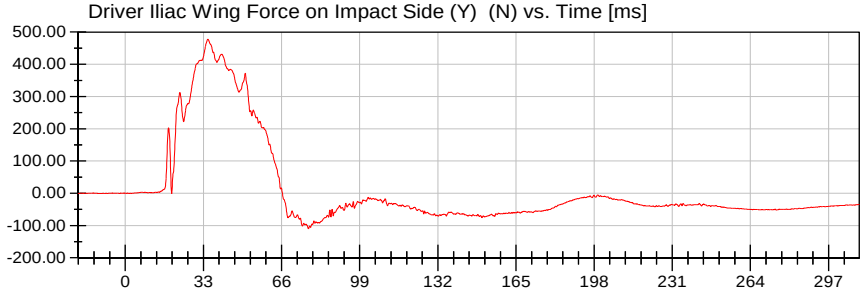
Test Date: 11/15/2017

Position #1 SID IIs Dummy (297)

Test Lab: CTF

Test Number: 171115 (M20180210)

Driver Iliac Wing Force on Impact Side (Y) (N) vs. Time [ms]



<Max>

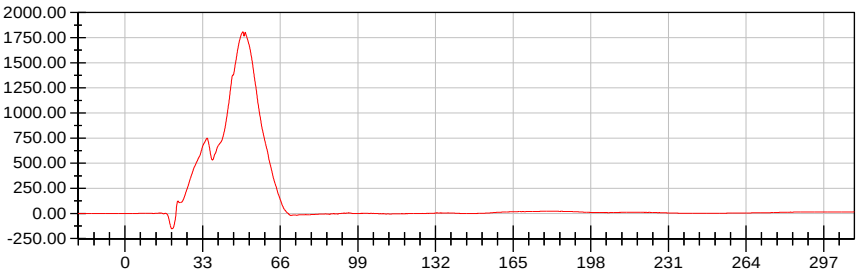
477.82 N at 34.88 ms

<Min>

-109.76 N at 77.36 ms

CFC_600

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



<Max>

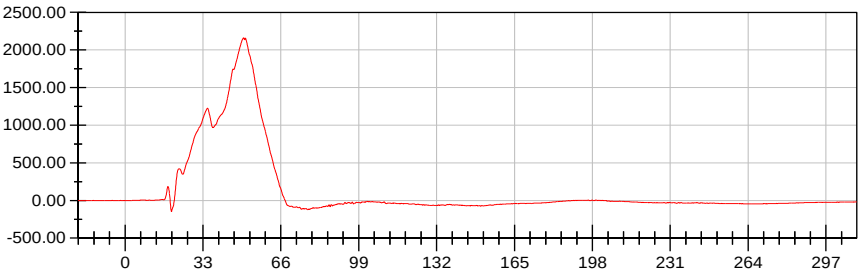
1,809.03 N at 50.16 ms

<Min>

-152.77 N at 20.00 ms

CFC_600

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



<Max>

2,161.00 N at 50.24 ms

<Min>

-144.93 N at 19.68 ms

CFC_600

APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

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

Pre-Test Calibration Sheets
Driver S/N 297

Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. 297 Calibration No.20

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	780	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	101	Yes
F	Thigh Clearance	119.0 - 135.0	130	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	202	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	872	Yes
Z	Waist Circumference	761.0 - 791.0	780	Yes

Revised 9/29/2005

Transportation Research Center Inc.

Left Lateral Head Drop
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 ºC	21.3 ºC	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	132.5 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-3.4 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

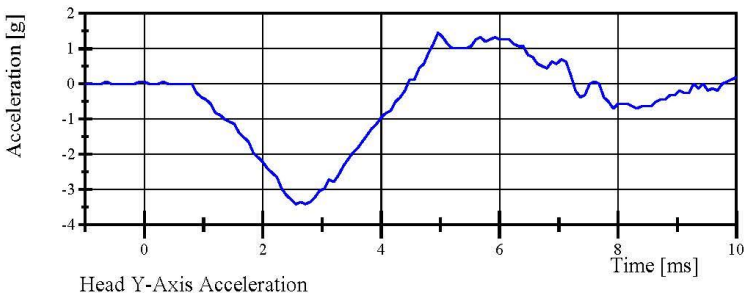
Condition: Used

Comments:
Skull S/N: N/A
Head Skin S/N: 1330

Transportation Research Center Inc.

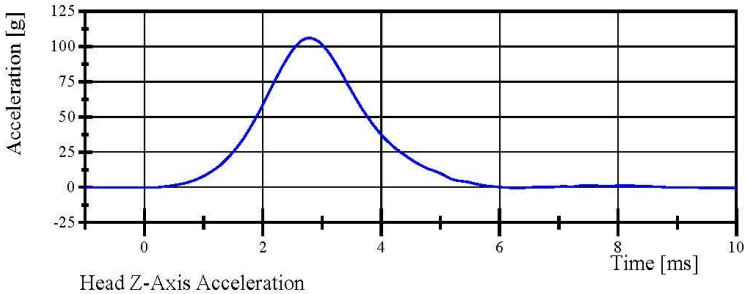
Left Lateral Head Drop
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Head X-Axis Acceleration



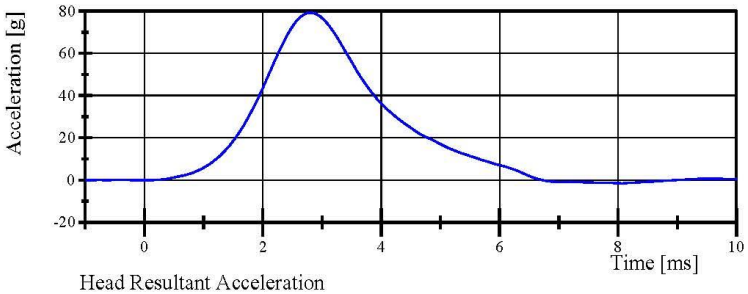
Filter Class: CFC_1000
Max: 1.5 g at 5.0 ms
Min: -3.4 g at 2.6 ms

Head Y-Axis Acceleration



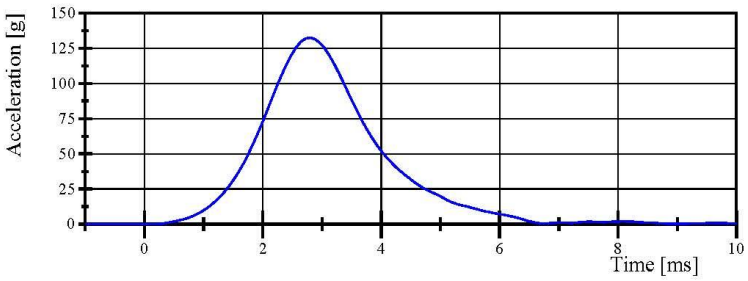
Filter Class: CFC_1000
Max: 106.1 g at 2.8 ms
Min: -0.7 g at 6.3 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 79.3 g at 2.8 ms
Min: -1.5 g at 8.1 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 132.5 g at 2.8 ms
Min: 0.0 g at -0.4 ms

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

10.08.2017 07:41:12 231

Transportation Research Center Inc.

Left Lateral Neck
SID IIs Serial No. 297 Certification No. 20-2
Test Date: 10/7/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.616 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	2.20 - 2.80 m/s	2.394 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.552 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	4.723 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.679 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.764 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-80.4 deg	Yes
Time of Peak	50 - 70 ms	60.9 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	39.5 N·m	Yes
Total Neck Occipital Condyles Moment Decay Time to 0 N·m	102 - 126 ms	116.8 ms	Yes

Test meets specifications.

Condition: Used

Comments:
Neck S/N: ABS241
Neck Cable S/N: N/A

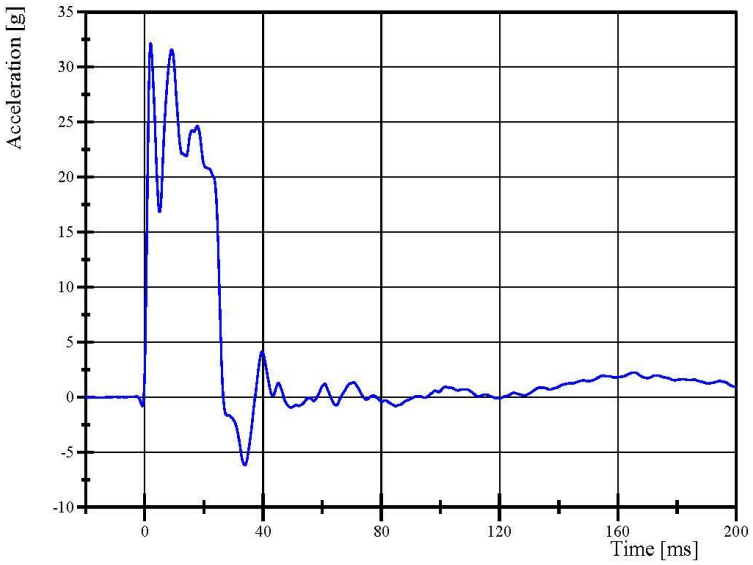
Specification Source: CFR49 Part 572 Subpart V with Polarity in accordance with J211

10.08.2017 07:49:13 751

Transportation Research Center Inc.

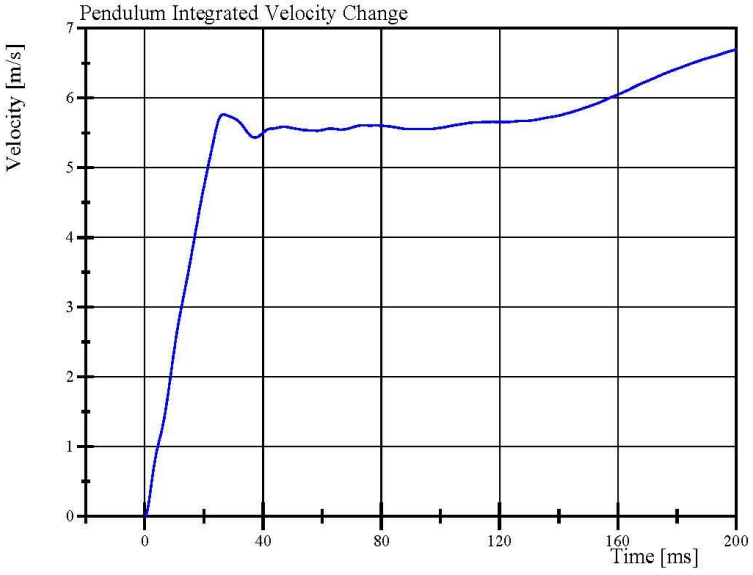
Left Lateral Neck
SID IIs Serial No. 297 Certification No. 20-2
Test Date: 10/7/2017

Pendulum Acceleration



Filter Class: CFC_180
Max: 32.1 g at 2.0 ms
Min: -6.2 g at 33.8 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180
Max: 6.7 m/s at 200.0 ms
Min: 0.0 m/s at 0.0 ms

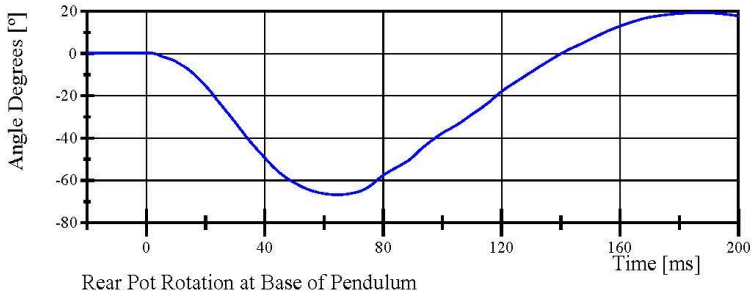
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.08.2017 07:50:07 751

Transportation Research Center Inc.

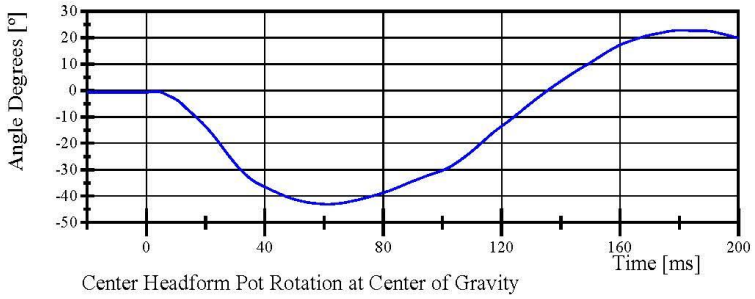
Left Lateral Neck
SID IIs Serial No. 297 Certification No. 20-2
Test Date: 10/7/2017

Forward Pot Rotation at Base of Pendulum



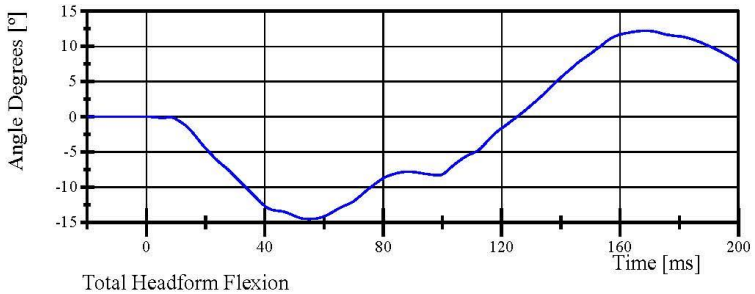
Filter Class: CFC_60
Max: 19.4 ° at 187.9 ms
Min: -66.8 ° at 64.6 ms

Rear Pot Rotation at Base of Pendulum



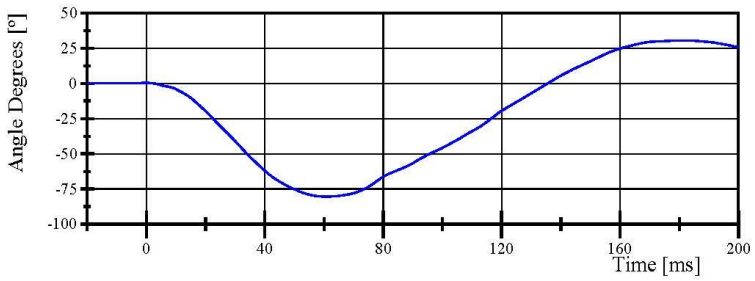
Filter Class: CFC_60
Max: 22.8 ° at 180.5 ms
Min: -43.0 ° at 61.3 ms

Center Headform Pot Rotation at Center of Gravity



Filter Class: CFC_60
Max: 12.2 ° at 168.6 ms
Min: -14.5 ° at 55.0 ms

Total Headform Flexion



Filter Class: CFC_60
Max: 30.5 ° at 181.5 ms
Min: -80.4 ° at 60.9 ms

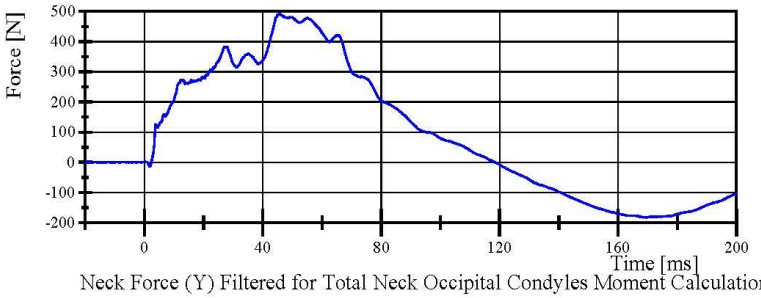
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.08.2017 07:50:08 751

Transportation Research Center Inc.

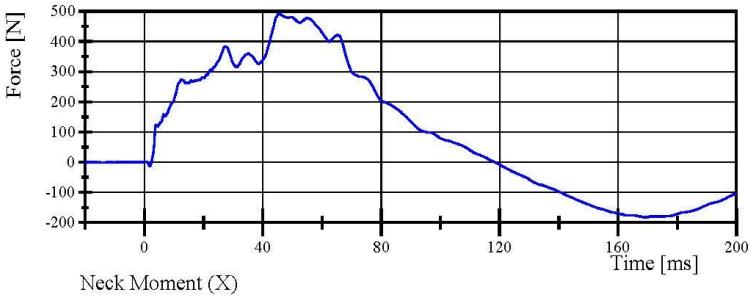
Left Lateral Neck
SID IIs Serial No. 297 Certification No. 20-2
Test Date: 10/7/2017

Neck Force (Y)



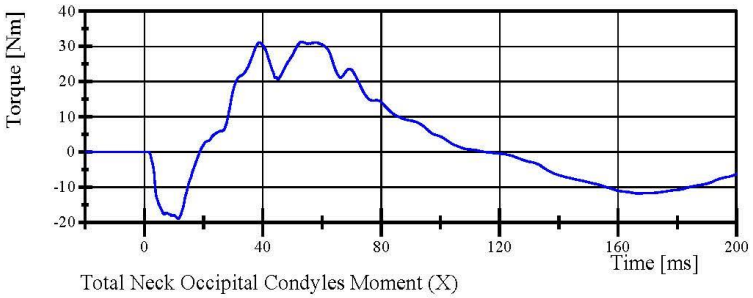
Filter Class: CFC_1000
Max: 491.8 N at 45.5 ms
Min: -182.8 N at 169.5 ms

Neck Force (Y) Filtered for Total Neck Occipital Condyles Moment Calculation



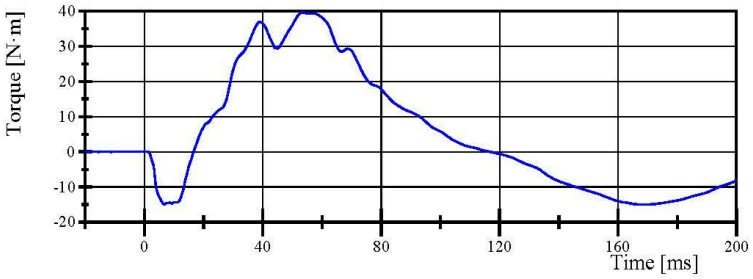
Filter Class: CFC_600
Max: 491.8 N at 45.6 ms
Min: -182.5 N at 169.5 ms

Neck Moment (X)



Filter Class: CFC_600
Max: 31.3 Nm at 53.1 ms
Min: -18.9 Nm at 11.4 ms

Total Neck Occipital Condyles Moment (X)



Filter Class: Without_(Constar
Max: 39.5 N·m at 53.4 ms
Min: -15.0 N·m at 168.4 ms

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

10.08.2017 07:50:09 751

Transportation Research Center Inc.

Left Lateral Shoulder
SID IIs Serial No. 297 Certification No. 20-2
Test Date: 10/5/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.28 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-15.2 g	Yes
Shoulder Displacement	28 - 37 mm	31.4 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	19.3 g	Yes

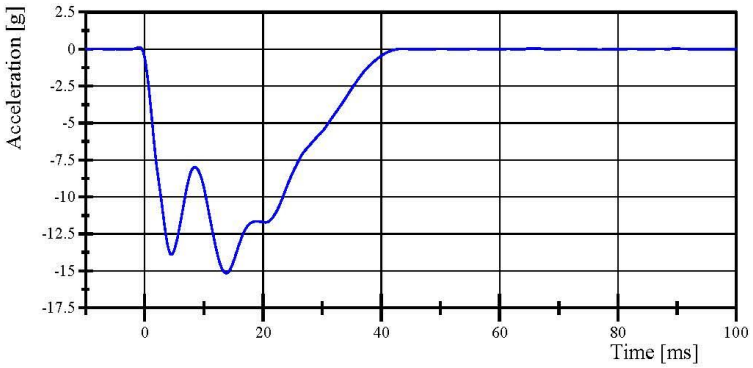
Test meets specifications.

Condition: Used
Comments:
Arm Assembly S/N: 940L
Jacket S/N: N/A

Transportation Research Center Inc.

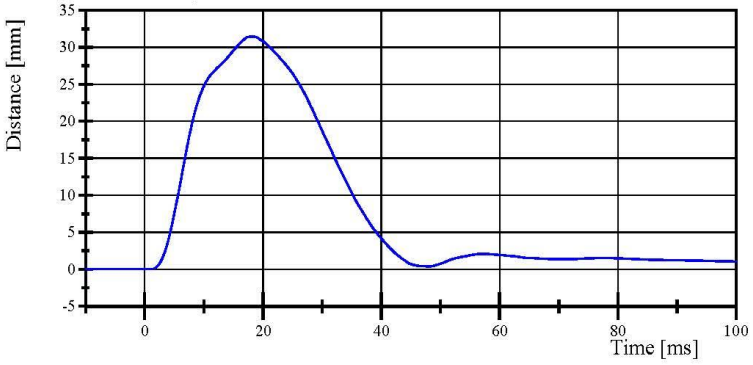
Left Lateral Shoulder
SID IIs Serial No. 297 Certification No. 20-2
Test Date: 10/5/2017

Probe Acceleration



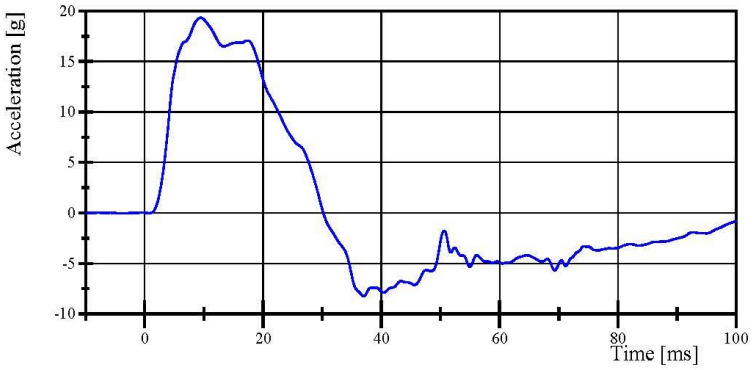
Filter Class: CFC_180
Max: 0.1 g at -1.0 ms
Min: -15.2 g at 13.8 ms

Shoulder Displacement



Filter Class: CFC_600
Max: 31.4 mm at 18.0 ms
Min: -0.0 mm at -3.7 ms

Upper Spine Acceleration (Y)



Filter Class: CFC_180
Max: 19.3 g at 9.4 ms
Min: -8.3 g at 37.0 ms

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

10.08.2017 07:35:45 856

Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 20-7
Test Date: 10/7/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.758 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-33.1 g	Yes
Shoulder Displacement	31 - 40 mm	36.0 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	27.5 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	32.2 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	35.0 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	36.2 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	36.5 g	Yes

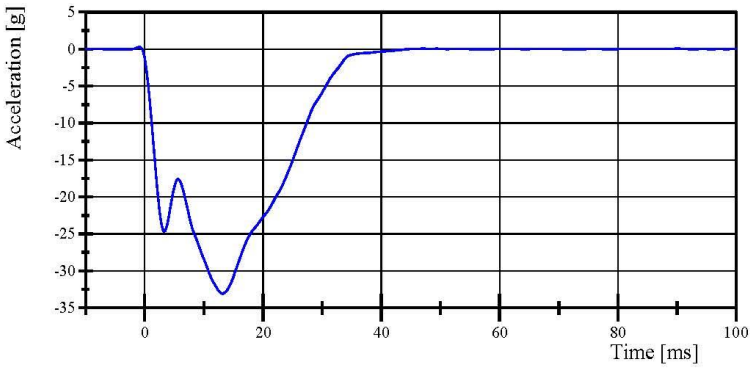
Test meets specifications.

Condition: Used
Comments:
Shoulder Rib Module S/N: 485-259
Arm Assembly S/N: 940L
Jacket S/N: N/A

Transportation Research Center Inc.

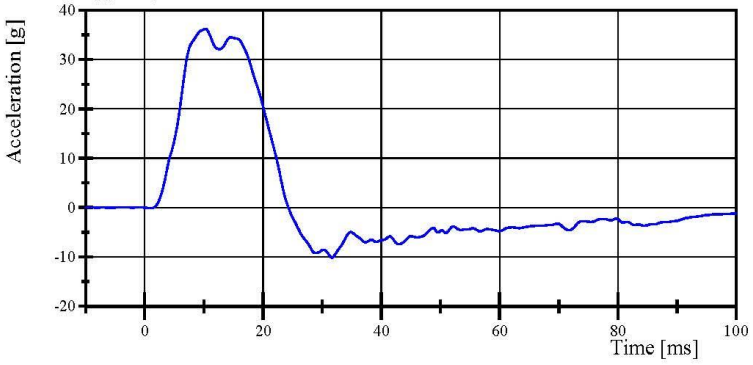
Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 20-7
Test Date: 10/7/2017

Probe Acceleration



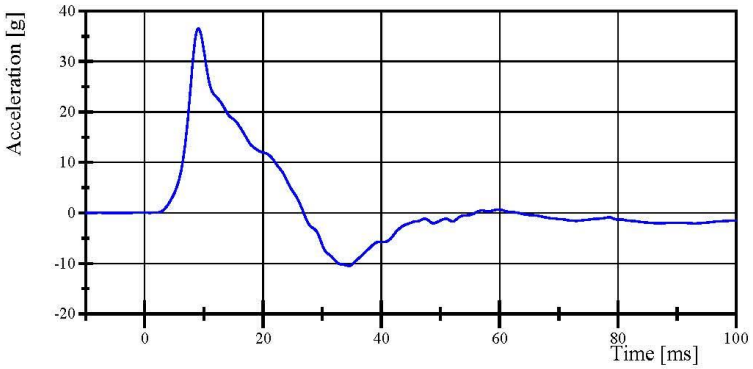
Filter Class: CFC_180
Max: 0.3 g at -0.9 ms
Min: -33.1 g at 13.1 ms

Upper Spine Acceleration



Filter Class: CFC_180
Max: 36.2 g at 10.2 ms
Min: -10.1 g at 31.6 ms

Lower Spine Acceleration



Filter Class: CFC_180
Max: 36.5 g at 9.0 ms
Min: -10.5 g at 34.5 ms

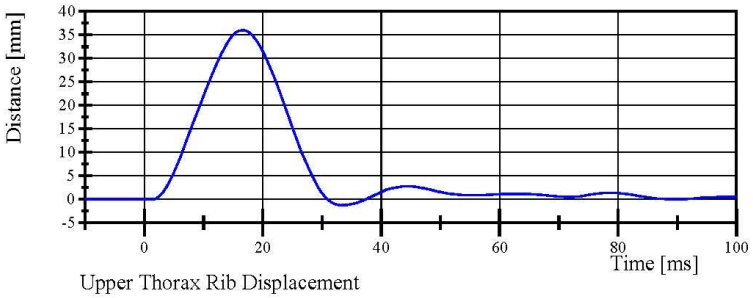
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.08.2017 07:33:43 631

Transportation Research Center Inc.

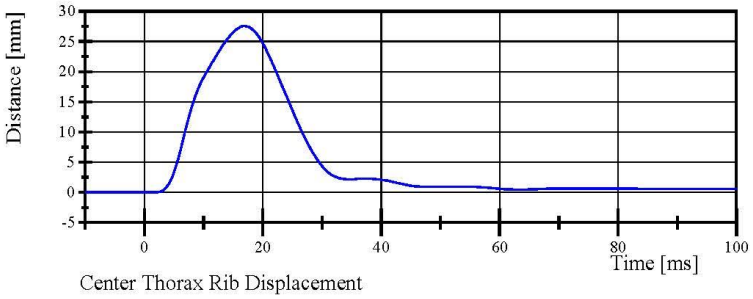
Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 20-7
Test Date: 10/7/2017

Shoulder Rib Displacement



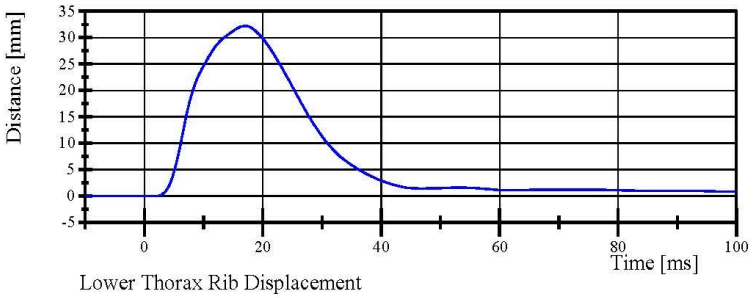
Filter Class: CFC_600
Max: 36.0 mm at 16.7 ms
Min: -1.3 mm at 33.3 ms

Upper Thorax Rib Displacement



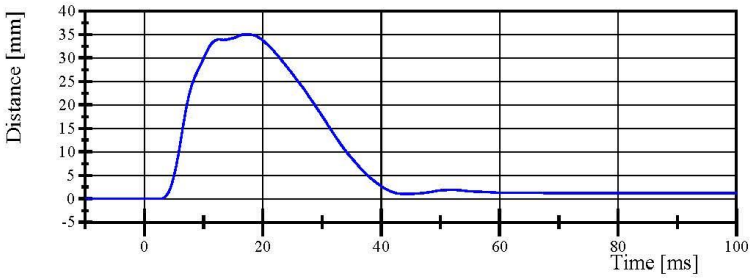
Filter Class: CFC_600
Max: 27.5 mm at 16.9 ms
Min: -0.0 mm at -4.4 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 32.2 mm at 17.0 ms
Min: -0.0 mm at 1.7 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 35.0 mm at 17.1 ms
Min: -0.0 mm at 2.6 ms

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

10.08.2017 07:33:44 631

Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.315 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-15.8 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	36.2 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	41.4 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	39.3 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	14.6 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	9.6 g	Yes

Test meets specifications.

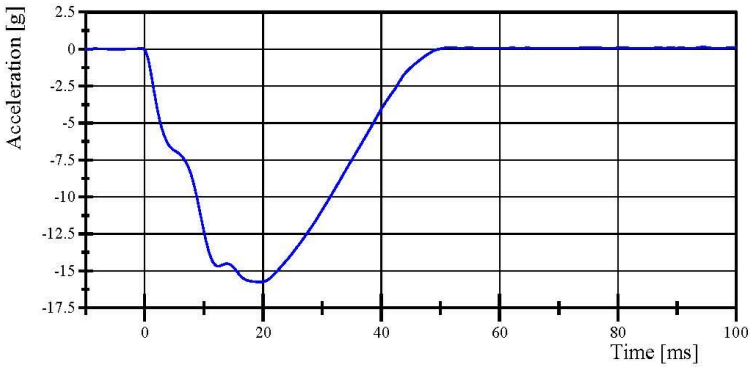
Condition: Used

Comments:
Upper Thorax Rib #1 S/N: 2009
Middle Thorax Rib #2 S/N: 2010
Lower Thorax Rib #3 S/N: 2029
Jacket S/N: N/A

Transportation Research Center Inc.

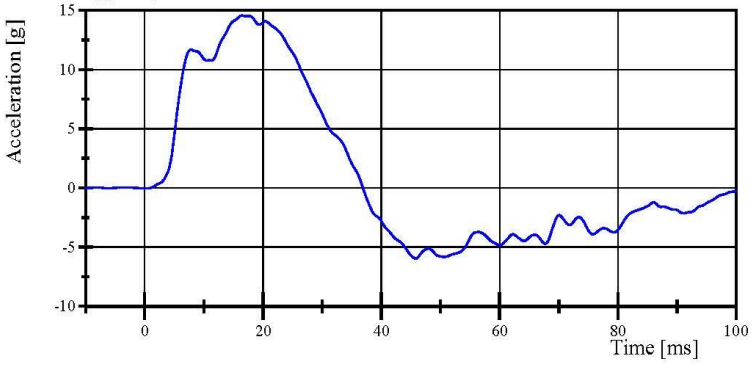
Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Probe Acceleration



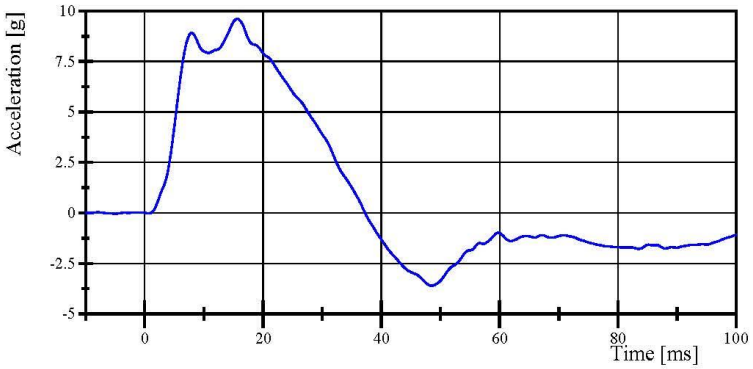
Filter Class: CFC_180
Max: 0.1 g at 94.4 ms
Min: -15.8 g at 19.5 ms

Upper Spine Acceleration



Filter Class: CFC_180
Max: 14.6 g at 16.4 ms
Min: -6.0 g at 45.8 ms

Lower Spine Acceleration



Filter Class: CFC_180
Max: 9.6 g at 15.6 ms
Min: -3.6 g at 48.5 ms

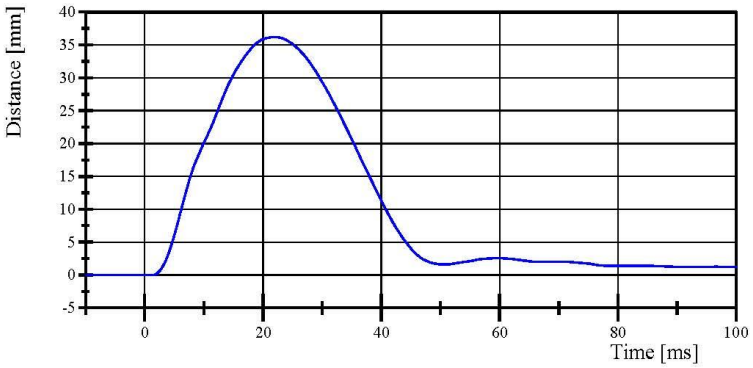
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

10.08.2017 07:39:12 885

Transportation Research Center Inc.

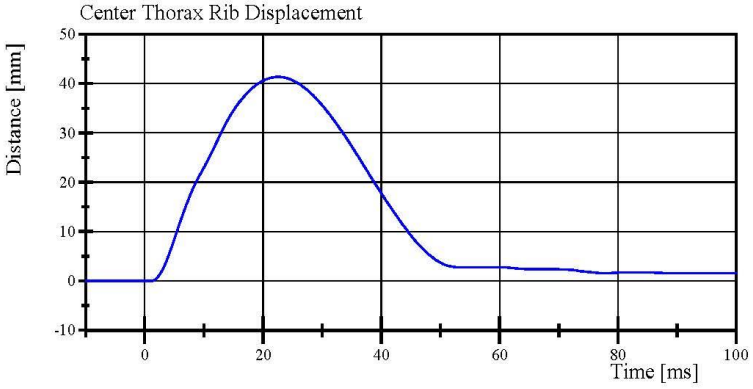
Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Upper Thorax Rib Displacement



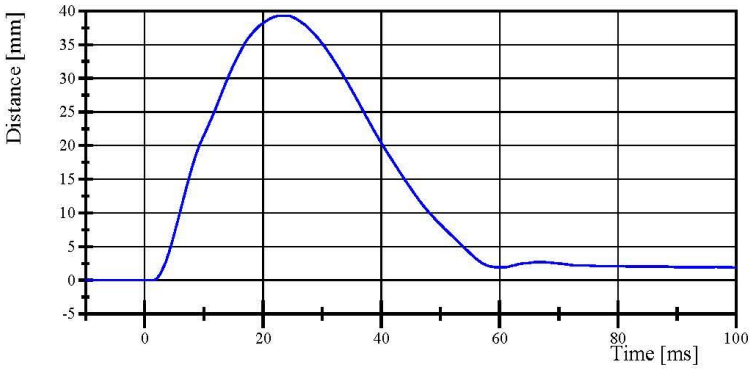
Filter Class: CFC_600
Max: 36.2 mm at 21.8 ms
Min: -0.0 mm at -3.7 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 41.4 mm at 22.6 ms
Min: -0.0 mm at -7.6 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 39.3 mm at 23.4 ms
Min: -0.0 mm at 1.4 ms

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

10.08.2017 07:39:13 885

Transportation Research Center Inc.

Left Lateral Abdomen
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.31 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.6 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	42.1 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	36.8 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	10.56 g	Yes

Test meets specifications.

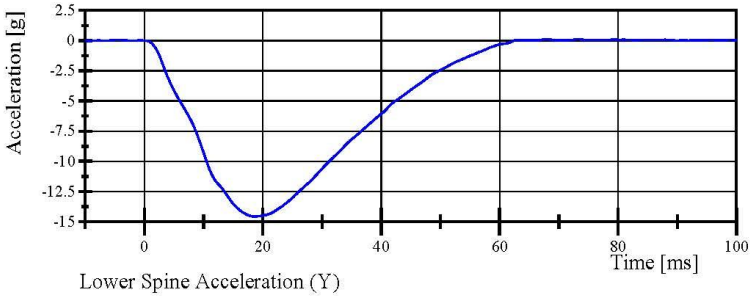
Condition: Used

Comments:
Abdomen Rib #1 S/N: 1747
Abdomen Rin #2 S/N: 1748
Rib Foam S/N: N/A

Transportation Research Center Inc.

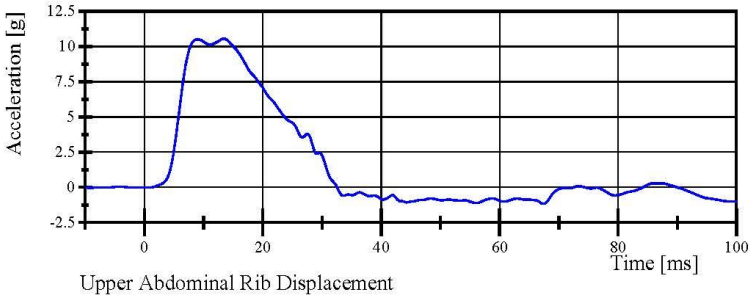
Left Lateral Abdomen
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Probe Acceleration



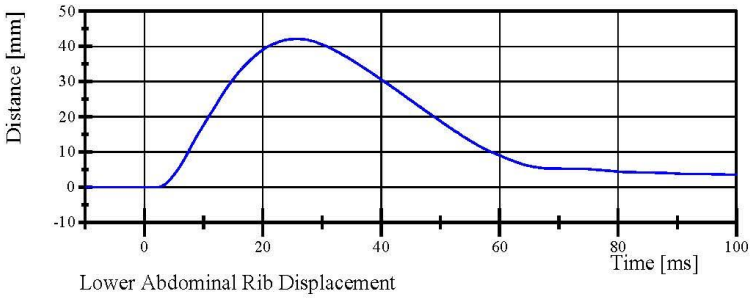
Filter Class: CFC_180
Max: 0.1 g at 73.2 ms
Min: -14.6 g at 18.6 ms

Lower Spine Acceleration (Y)



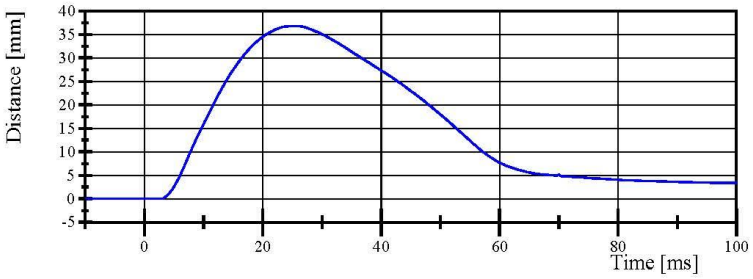
Filter Class: CFC_180
Max: 10.6 g at 13.4 ms
Min: -1.2 g at 67.4 ms

Upper Abdominal Rib Displacement



Filter Class: CFC_600
Max: 42.1 mm at 25.8 ms
Min: -0.0 mm at 2.2 ms

Lower Abdominal Rib Displacement



Filter Class: CFC_600
Max: 36.8 mm at 25.8 ms
Min: -0.0 mm at 2.8 ms

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

10.08.2017 07:30:28 662

Transportation Research Center Inc.

Left Lateral Iliac
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.28 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-40.7 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	28.8 g	Yes
Iliac Force	4,100 - 5,100 N	4,499.5 N	Yes

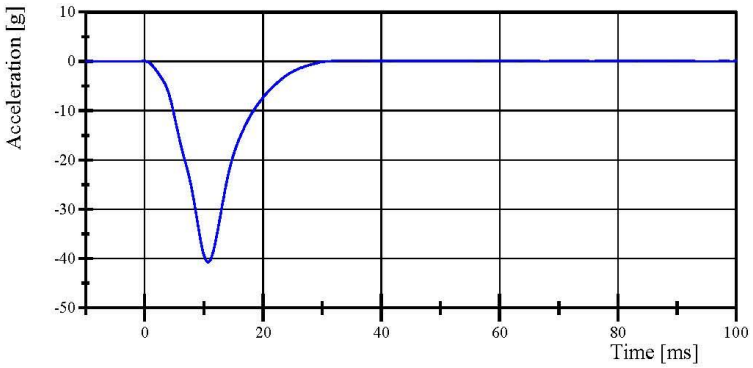
Test meets specifications.

Condition: Used
Comments:
Pelvis Skin S/N: N/A

Transportation Research Center Inc.

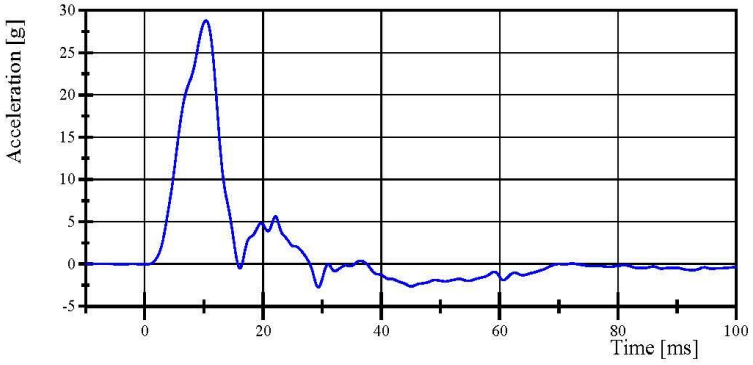
Left Lateral Iliac
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Probe Acceleration



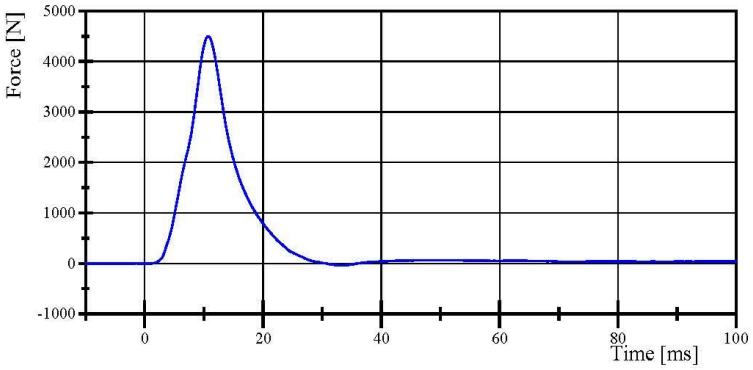
Filter Class: CFC_180
Max: 0.2 g at 35.2 ms
Min: -40.7 g at 10.7 ms

Pelvis Y-Axis Acceleration



Filter Class: CFC_180
Max: 28.8 g at 10.3 ms
Min: -2.8 g at 29.4 ms

Iliac Y-Axis Force



Filter Class: CFC_600
Max: 4,499.5 N at 10.7 ms
Min: -41.7 N at 33.3 ms

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

10.08.2017 07:44:24 702

Transportation Research Center Inc.

Left Lateral Pelvis
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.62 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-46.29 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	40.9 g	Yes
Acetabulum Force	3,600 - 4,300 N	4,095.0 N	Yes

Test meets specifications.

Condition: Used
Comments:
Pelvis Skin S/N: N/A

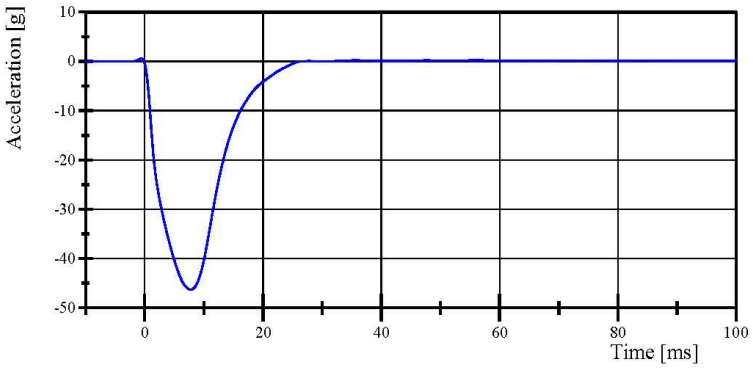
Specification Source: CFR49 Part 572 Subpart V with Polarity in accordance with J211

10.08.2017 07:42:11 459

Transportation Research Center Inc.

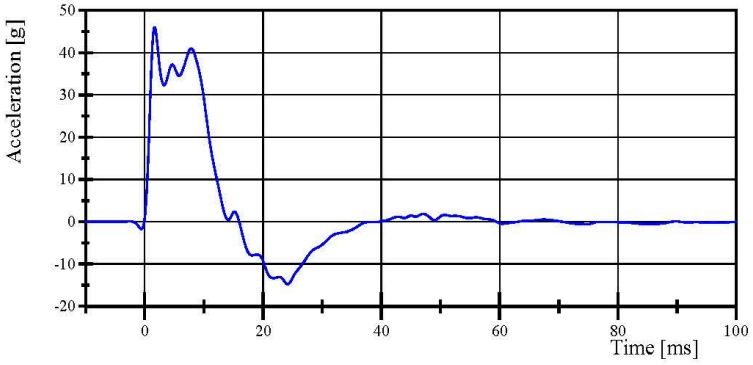
Left Lateral Pelvis
SID IIs Serial No. 297 Certification No. 20-1
Test Date: 10/5/2017

Probe Acceleration



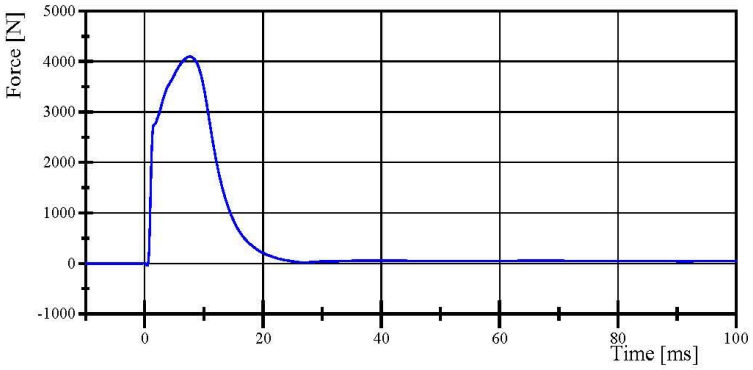
Filter Class: CFC_180
Max: 0.6 g at -0.6 ms
Min: -46.3 g at 7.8 ms

Pelvis Y-Axis Acceleration



Filter Class: CFC_180
Max: 46.0 g at 1.7 ms
Min: -14.8 g at 24.2 ms

Acetabulum Y-Axis Force



Filter Class: CFC_600
Max: 4,095.0 N at 7.6 ms
Min: -44.1 N at 0.4 ms

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

10.08.2017 07:42:47 459

Post-Test Calibration Sheets
Driver S/N 297

Transportation Research Center Inc.
SIDIIs Dummy - Level D
External Dimensions
Serial No. 297 Calibration No.21

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	781	Yes
B	Shoulder Pivot Height	437.0 - 453.0	447	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	100	Yes
F	Thigh Clearance	119.0 - 135.0	131	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	202	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	874	Yes
Z	Waist Circumference	761.0 - 791.0	780	Yes

Transportation Research Center Inc.

Left Lateral Head Drop
SID IIs Serial No. 297 Certification No. 21-2
Test Date: 11/16/2017

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Peak Head Resultant Acceleration	115 - 137 g	129.2 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	2.8 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

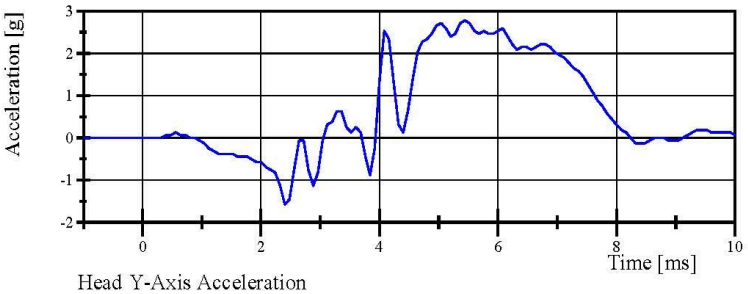
Condition: Used

Comments:
Head Skin S/N: 1330
Skull S/N: 180/1001/C

Transportation Research Center Inc.

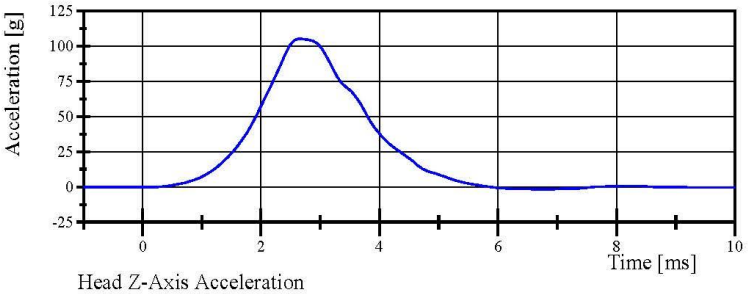
Left Lateral Head Drop
SID IIs Serial No. 297 Certification No. 21-2
Test Date: 11/16/2017

Head X-Axis Acceleration



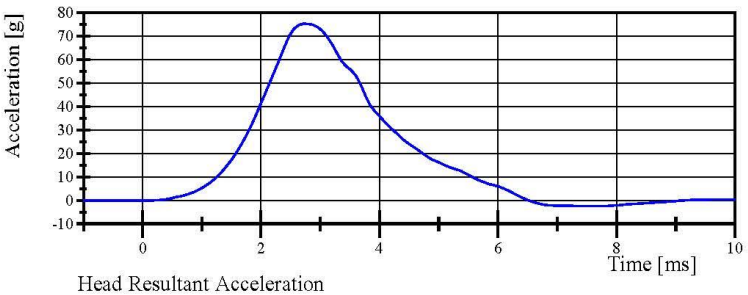
Filter Class: CFC_1000
Max: 2.8 g at 5.4 ms
Min: -1.6 g at 2.4 ms

Head Y-Axis Acceleration



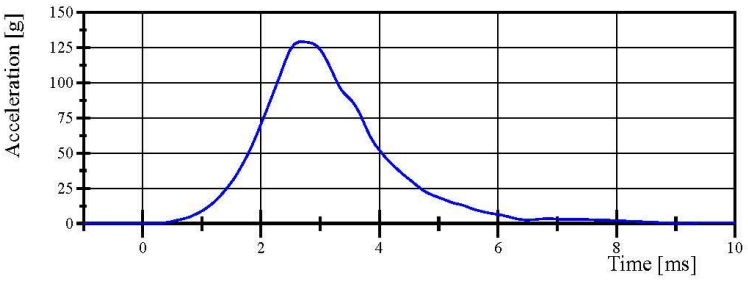
Filter Class: CFC_1000
Max: 105.3 g at 2.6 ms
Min: -1.8 g at 6.7 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 75.3 g at 2.7 ms
Min: -2.5 g at 7.4 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 129.2 g at 2.6 ms
Min: 0.0 g at -0.9 ms

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

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Transportation Research Center Inc.

Left Lateral Neck
SID IIs Serial No. 297 Certification No. 21-3
Test Date: 11/16/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Pendulum Velocity	(-5.51) - (-5.63) m/s	-5.615 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	2.20 - 2.80 m/s	2.304 m/s	Yes
Change at 15 ms	3.30 - 4.10 m/s	3.407 m/s	Yes
Change at 20 ms	4.40 - 5.40 m/s	4.681 m/s	Yes
Change at 25 ms	5.40 - 6.10 m/s	5.593 m/s	Yes
Change at 25 to 100 ms	5.50 - 6.20 m/s	5.626 m/s	Yes
Maximum Headform Flexion occurring between 50ms and 70ms.			
Peak	(-71) - (-81) deg	-75.9 deg	Yes
Time of Peak	50 - 70 ms	68.3 ms	Yes
Total Neck Occipital Condyles Moment	36 - 44 N·m	39.8 N·m	Yes
Total Neck Occipital Condyles Moment Decay Time to 0 N·m	102 - 126 ms	121.3 ms	Yes

Test meets specifications.

Condition: Used

Comments:
Neck S/N: 180-2001 AB8241
Neck Cable S/N: N/A
Nodding Blocks:
Front S/N: N/A
Rear S/N: N/A

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

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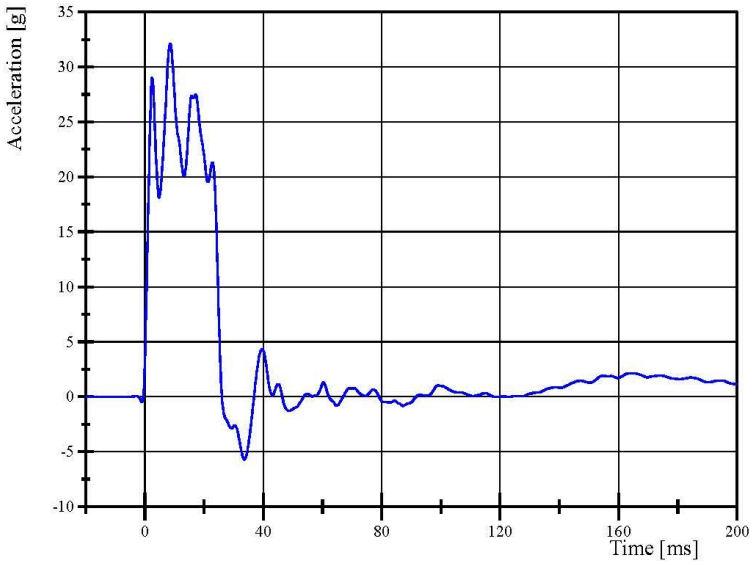
Transportation Research Center Inc.

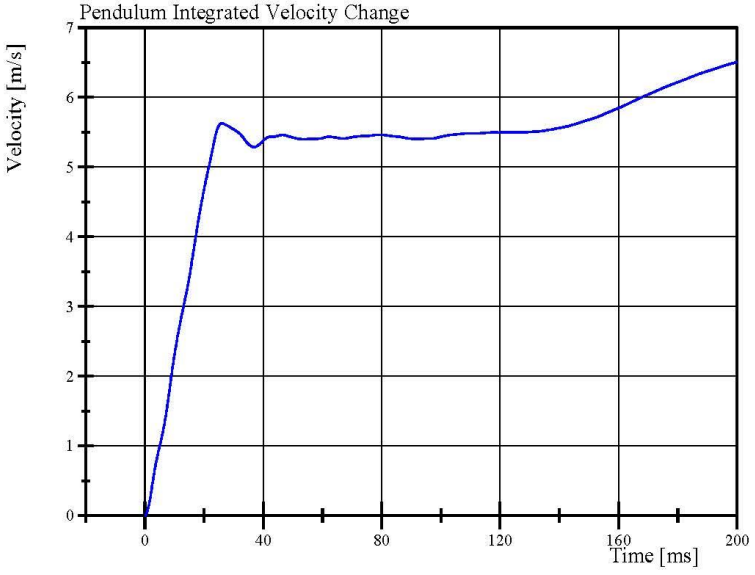
Left Lateral Neck
SID IIs Serial No. 297 Certification No. 21-3
Test Date: 11/16/2017

Pendulum Acceleration



Filter Class: CFC_180
Max: 32.1 g at 8.6 ms
Min: -5.7 g at 33.6 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180
Max: 6.5 m/s at 200.0 ms
Min: 0.0 m/s at 0.0 ms

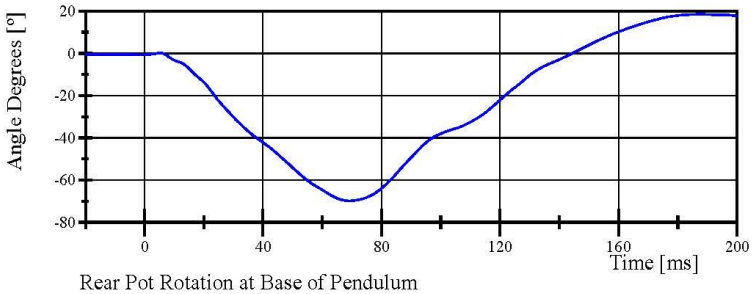
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

11.16.2017 10:33:45 718

Transportation Research Center Inc.

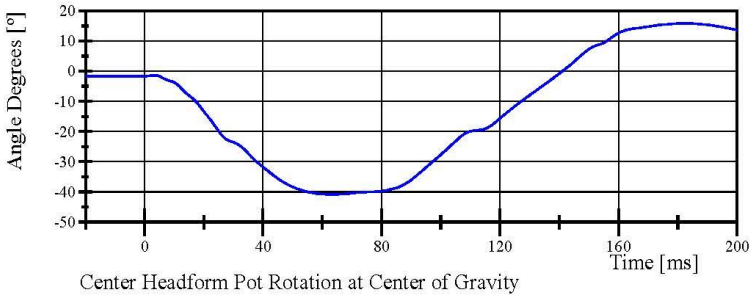
Left Lateral Neck
SID IIs Serial No. 297 Certification No. 21-3
Test Date: 11/16/2017

Forward Pot Rotation at Base of Pendulum



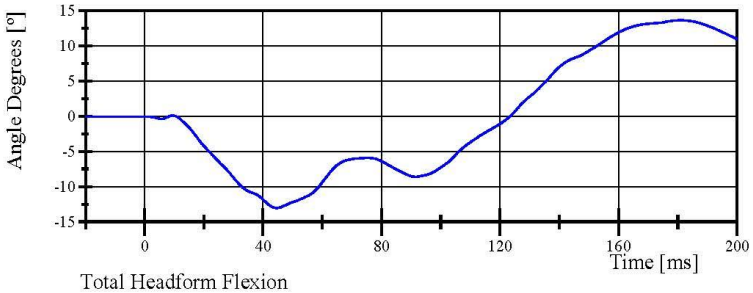
Filter Class: CFC_60
Max: 18.6 ° at 187.8 ms
Min: -69.8 ° at 69.1 ms

Rear Pot Rotation at Base of Pendulum



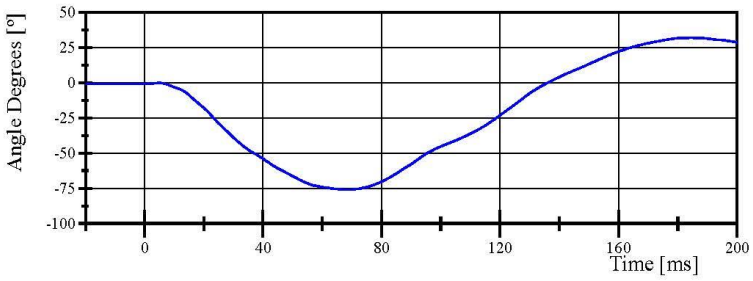
Filter Class: CFC_60
Max: 15.9 ° at 182.2 ms
Min: -40.8 ° at 63.5 ms

Center Headform Pot Rotation at Center of Gravity



Filter Class: CFC_60
Max: 13.6 ° at 181.0 ms
Min: -13.0 ° at 44.5 ms

Total Headform Flexion



Filter Class: CFC_60
Max: 32.0 ° at 184.4 ms
Min: -75.9 ° at 68.3 ms

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

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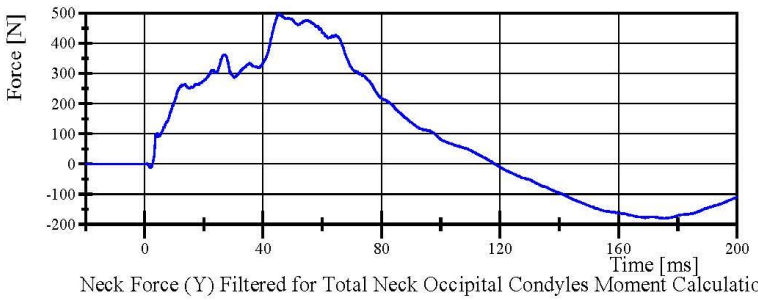
Transportation Research Center Inc.

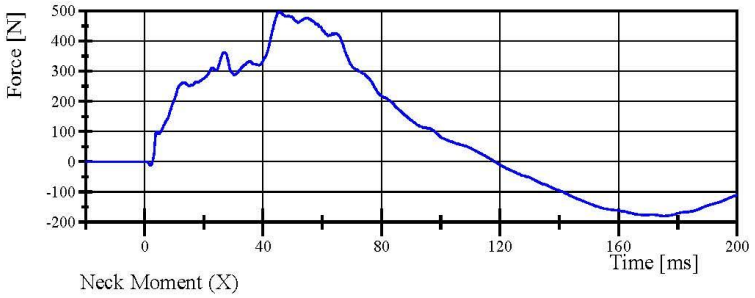
Left Lateral Neck
SID IIs Serial No. 297 Certification No. 21-3
Test Date: 11/16/2017

Neck Force (Y)



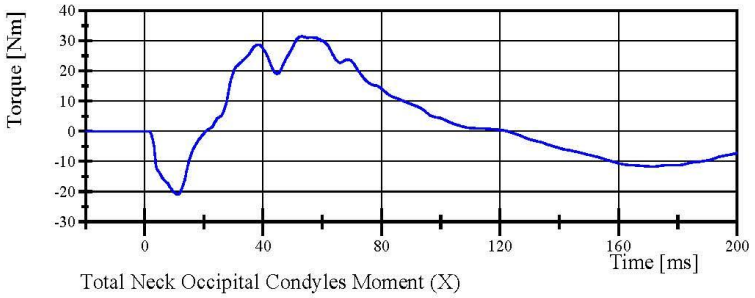
Filter Class: CFC_1000
Max: 497.1 N at 45.6 ms
Min: -180.1 N at 175.6 ms

Neck Force (Y) Filtered for Total Neck Occipital Condyles Moment Calculation



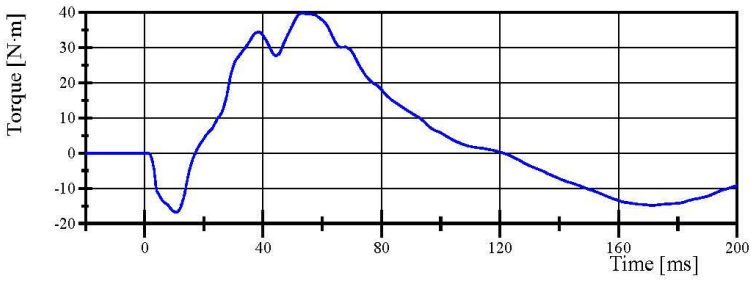
Filter Class: CFC_600
Max: 496.2 N at 45.4 ms
Min: -179.7 N at 175.5 ms

Neck Moment (X)



Filter Class: CFC_600
Max: 31.5 Nm at 53.0 ms
Min: -21.0 Nm at 11.1 ms

Total Neck Occipital Condyles Moment (X)



Filter Class: Without_(Constar
Max: 39.8 N·m at 53.1 ms
Min: -16.8 N·m at 10.9 ms

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

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Transportation Research Center Inc.

Left Lateral Shoulder
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.29 m/s	Yes
Impactor Acceleration	(-13) - (-18) g	-15.4 g	Yes
Shoulder Displacement	28 - 37 mm	32.4 mm	Yes
Upper Spine Lateral Acceleration	17 - 22 g	18.6 g	Yes

Test meets specifications.

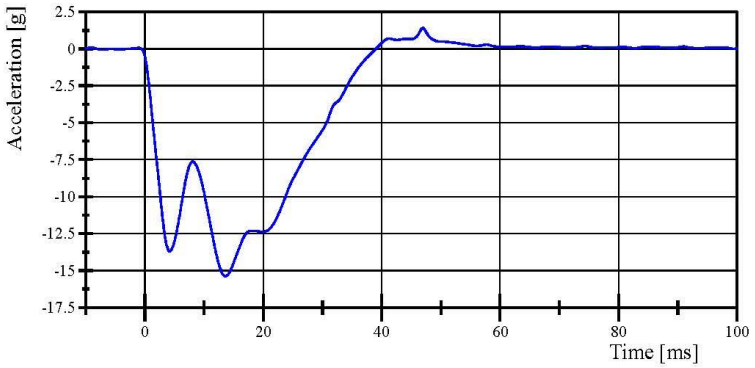
Condition: Used

Comments:
Left Arm S/N: 940L
Shoulder Rib S/N: 180-3366 259

Transportation Research Center Inc.

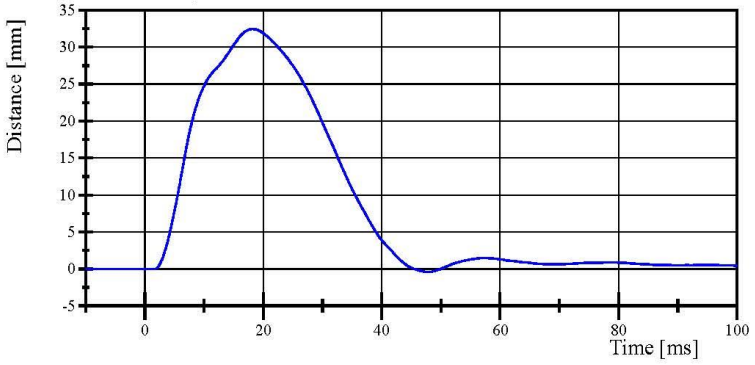
Left Lateral Shoulder
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Probe Acceleration



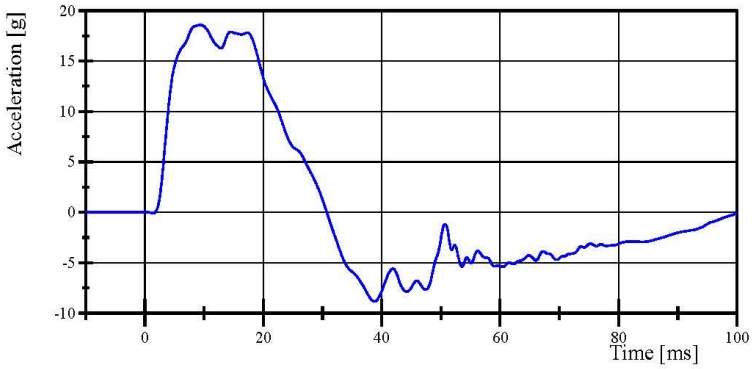
Filter Class: CFC_180
Max: 1.4 g at 47.0 ms
Min: -15.4 g at 13.6 ms

Shoulder Displacement



Filter Class: CFC_600
Max: 32.4 mm at 18.2 ms
Min: -0.4 mm at 47.6 ms

Upper Spine Acceleration (Y)



Filter Class: CFC_180
Max: 18.6 g at 9.4 ms
Min: -8.8 g at 38.8 ms

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

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Transportation Research Center Inc.

Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Impactor Velocity	6.60 - 6.80 m/s	6.732 m/s	Yes
Impactor Acceleration	(-30) - (-36) g	-33.6 g	Yes
Shoulder Displacement	31 - 40 mm	34.3 mm	Yes
Upper Thorax Rib Displacement	25 - 32 mm	26.8 mm	Yes
Center Thorax Rib Displacement	30 - 36 mm	32.2 mm	Yes
Lower Thorax Rib Displacement	32 - 38 mm	36.2 mm	Yes
Upper Spine Lateral Acceleration	34 - 43 g	36.4 g	Yes
Lower Spine Lateral Acceleration	29 - 37 g	35.4 g	Yes

Test meets specifications.

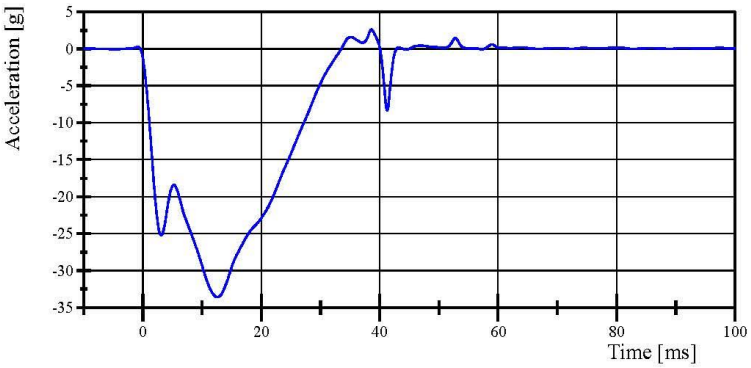
Condition: Used

Comments:
Left Arm S/N: 940L
Shoulder Rib S/N: 180-3366 259
Upper Thorax Rib #1 S/N: 2009
MiddleThorax Rib #2 S/N: 2010
LowerThorax Rib #3 S/N: 2029
Thorax Pad S/N: N/A
Jacket S/N: N/A

Transportation Research Center Inc.

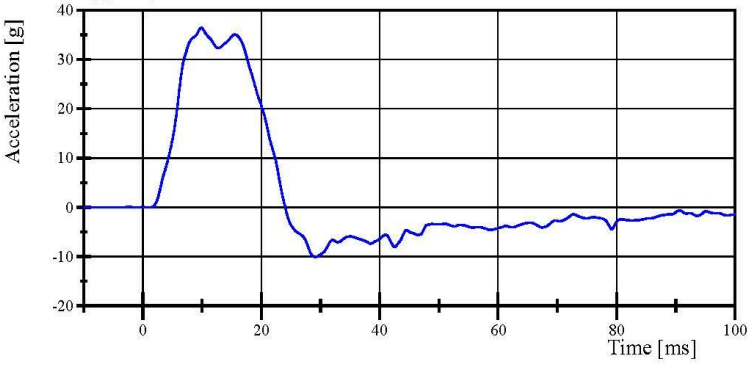
Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Probe Acceleration



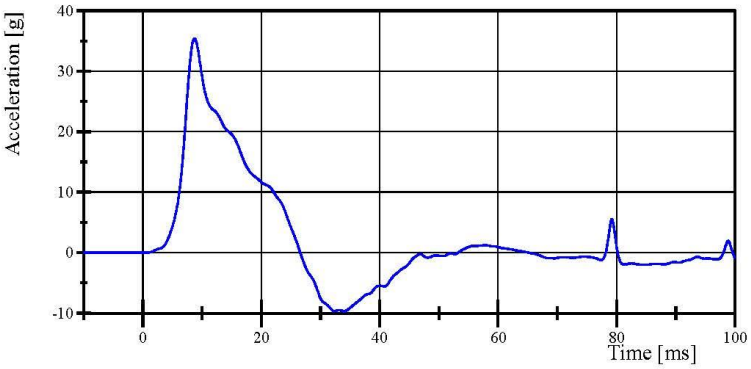
Filter Class: CFC_180
Max: 2.6 g at 38.6 ms
Min: -33.6 g at 12.6 ms

Upper Spine Acceleration



Filter Class: CFC_180
Max: 36.4 g at 9.8 ms
Min: -10.1 g at 29.1 ms

Lower Spine Acceleration



Filter Class: CFC_180
Max: 35.4 g at 8.7 ms
Min: -9.7 g at 34.0 ms

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

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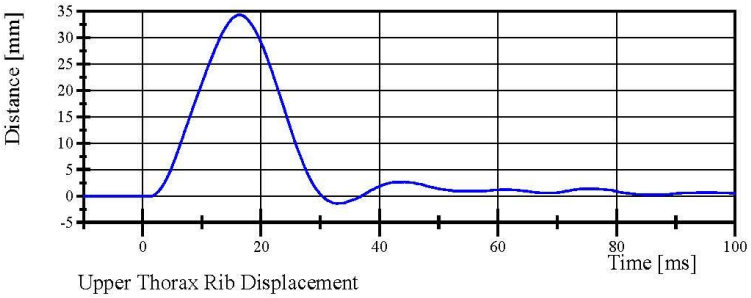
Transportation Research Center Inc.

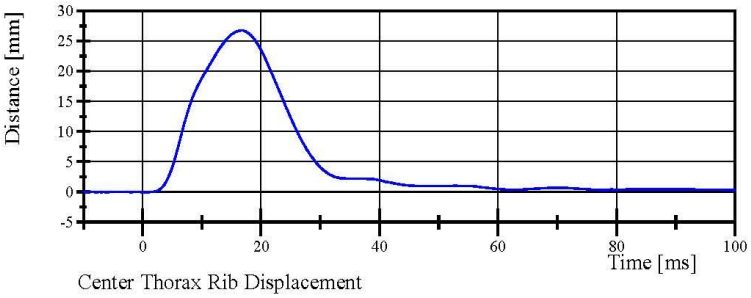
Left Lateral Thorax with Arm
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Shoulder Rib Displacement



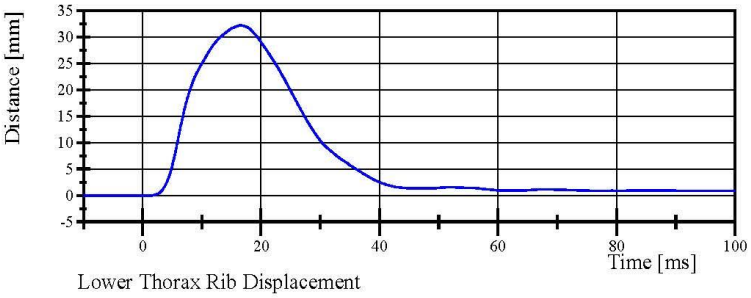
Filter Class: CFC_600
Max: 34.3 mm at 16.4 ms
Min: -1.4 mm at 32.9 ms

Upper Thorax Rib Displacement



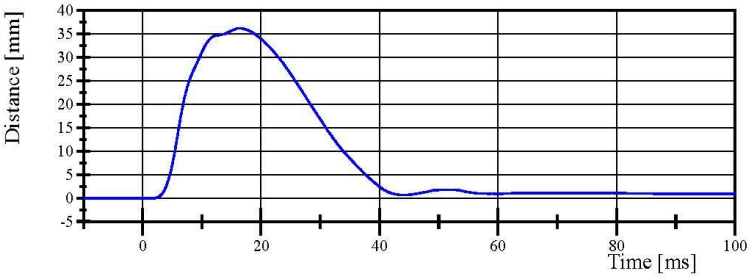
Filter Class: CFC_600
Max: 26.8 mm at 16.7 ms
Min: -0.0 mm at -6.2 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 32.2 mm at 16.6 ms
Min: -0.0 mm at -5.0 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 36.2 mm at 16.2 ms
Min: -0.0 mm at 1.8 ms

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

11.17.2017 07:42:54 615

Transportation Research Center Inc.

Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	37 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.315 m/s	Yes
Impactor Acceleration	(-14) - (-18) g	-15.9 g	Yes
Upper Thorax Rib Displacement	32 - 40 mm	35.1 mm	Yes
Center Thorax Rib Displacement	39 - 45 mm	40.8 mm	Yes
Lower Thorax Rib Displacement	35 - 43 mm	38.9 mm	Yes
Upper Spine Lateral Acceleration	13 - 17 g	14.9 g	Yes
Lower Spine Lateral Acceleration	7 - 11 g	9.4 g	Yes

Test meets specifications.

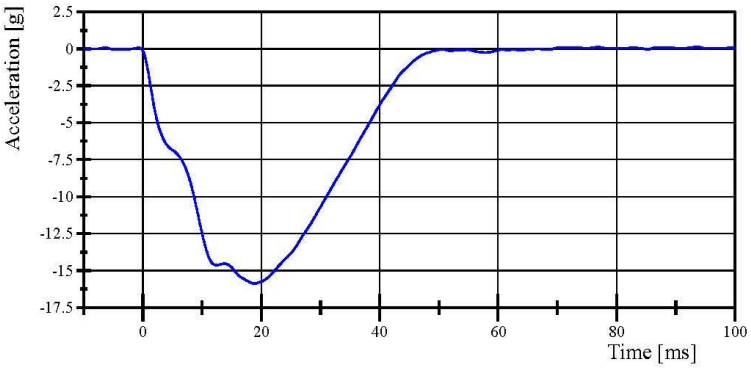
Condition: Used

Comments:
Upper Thorax Rib #1 S/N: 2009
MiddleThorax Rib #2 S/N: 2010
LowerThorax Rib #3 S/N: 2029
Thorax Pad S/N: N/A
Jacket S/N: N/A

Transportation Research Center Inc.

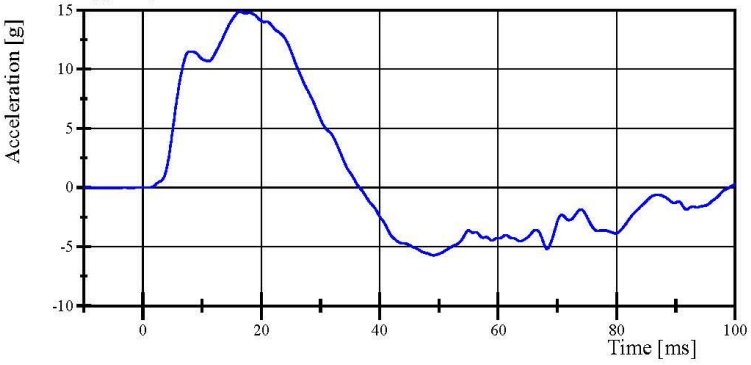
Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Probe Acceleration



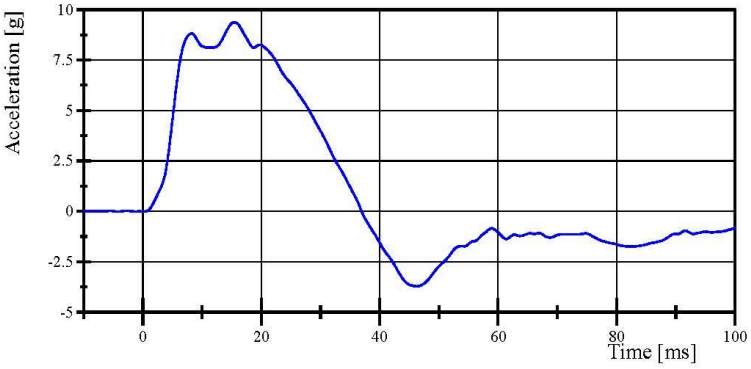
Filter Class: CFC_180
Max: 0.1 g at 93.6 ms
Min: -15.9 g at 18.8 ms

Upper Spine Acceleration



Filter Class: CFC_180
Max: 14.9 g at 16.4 ms
Min: -5.7 g at 49.0 ms

Lower Spine Acceleration



Filter Class: CFC_180
Max: 9.4 g at 15.5 ms
Min: -3.7 g at 46.2 ms

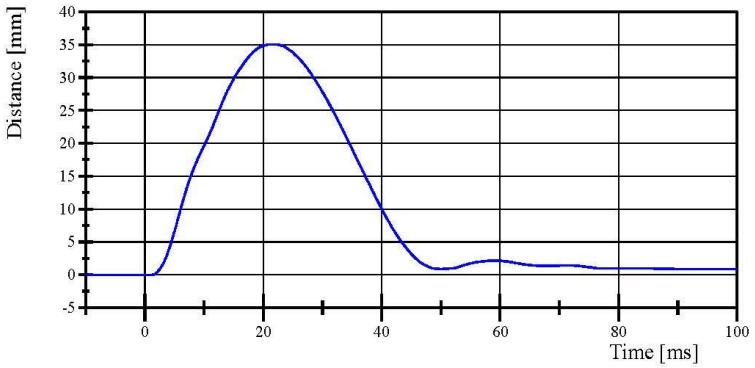
Specification Source: CFR49 Part 572 Subpart V
with Polarity in accordance with J211

11.17.2017 07:44:44 791

Transportation Research Center Inc.

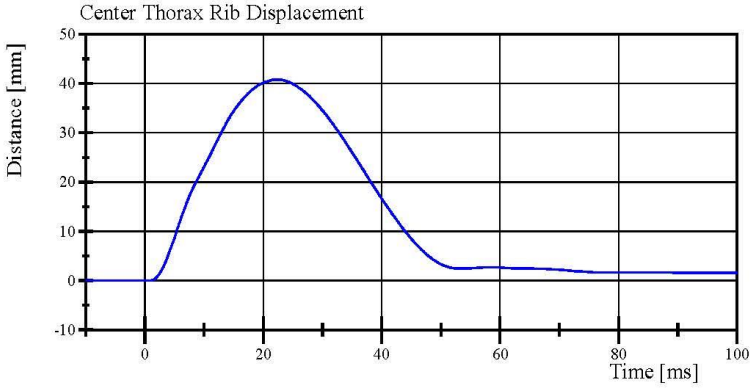
Left Lateral Thorax without Arm
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Upper Thorax Rib Displacement



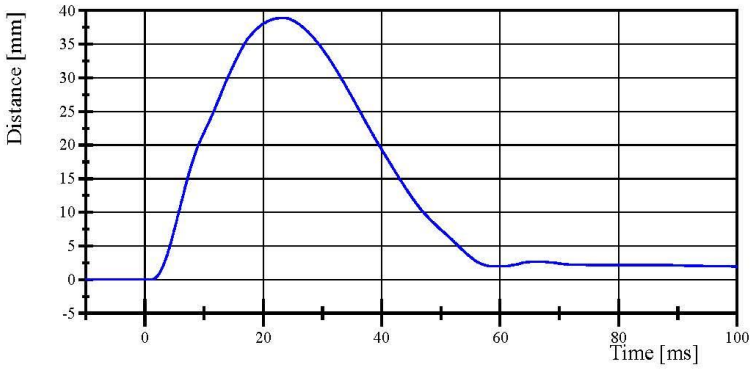
Filter Class: CFC_600
Max: 35.1 mm at 21.6 ms
Min: -0.0 mm at -3.9 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 40.8 mm at 22.3 ms
Min: -0.0 mm at -4.5 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 38.9 mm at 23.0 ms
Min: -0.0 mm at 1.0 ms

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

11.17.2017 07:44:45 791

Transportation Research Center Inc.

Left Lateral Abdomen
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.32 m/s	Yes
Impactor Acceleration	(-12) - (-16) g	-14.2 g	Yes
Upper Abdominal Rib Displacement	36 - 47 mm	40.0 mm	Yes
Lower Abdominal Rib Displacement	33 - 44 mm	38.0 mm	Yes
Lower Spine Lateral Acceleration	9 - 14.0 g	10.94 g	Yes

Test meets specifications.

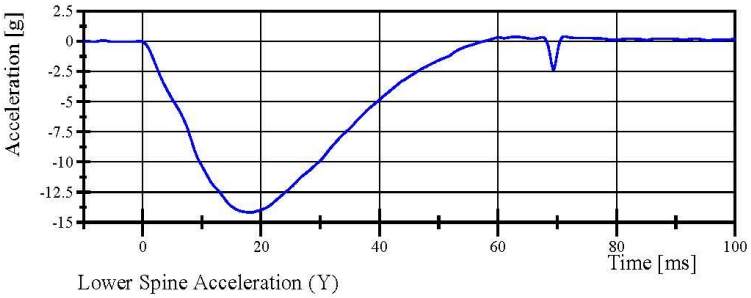
Condition: Used

Comments:
Upper Abdominal Rib S/N: N/A
Lower Abdominal Rib S/N: N/A
Abdominal Pad S/N: N/A

Transportation Research Center Inc.

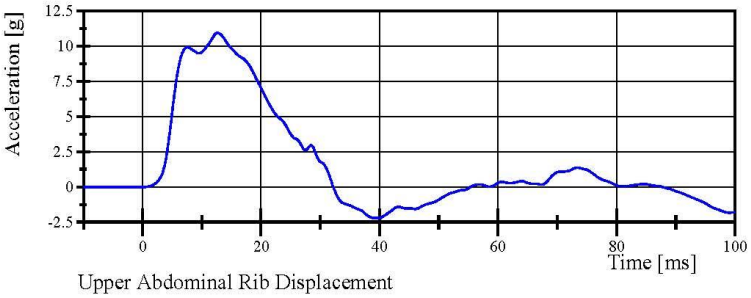
Left Lateral Abdomen
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Probe Acceleration



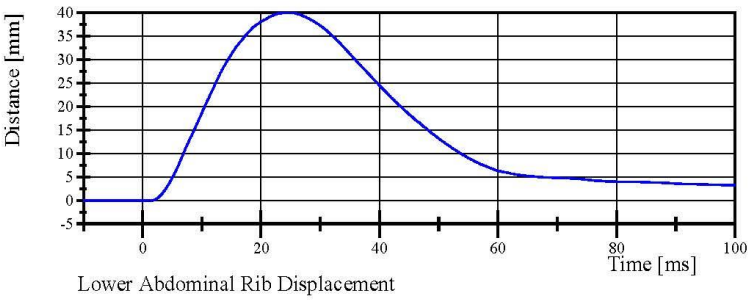
Filter Class: CFC_180
Max: 0.4 g at 71.3 ms
Min: -14.2 g at 18.2 ms

Lower Spine Acceleration (Y)



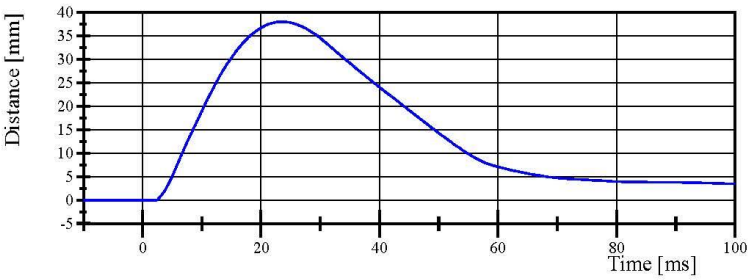
Filter Class: CFC_180
Max: 10.9 g at 12.6 ms
Min: -2.2 g at 39.8 ms

Upper Abdominal Rib Displacement



Filter Class: CFC_600
Max: 40.0 mm at 24.6 ms
Min: -0.0 mm at 1.4 ms

Lower Abdominal Rib Displacement



Filter Class: CFC_600
Max: 38.0 mm at 23.4 ms
Min: -0.0 mm at 2.2 ms

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

11.16.2017 12:08:06 641

Transportation Research Center Inc.

Left Lateral Iliac
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	33 %	Yes
Pendulum Velocity	4.2 - 4.4 m/s	4.30 m/s	Yes
Impactor Acceleration	(-36) - (-45) g	-41.5 g	Yes
Peak Pelvis Lateral Acceleration	28 - 39 g	29.4 g	Yes
Iliac Force	4,100 - 5,100 N	4,654.3 N	Yes

Test meets specifications.

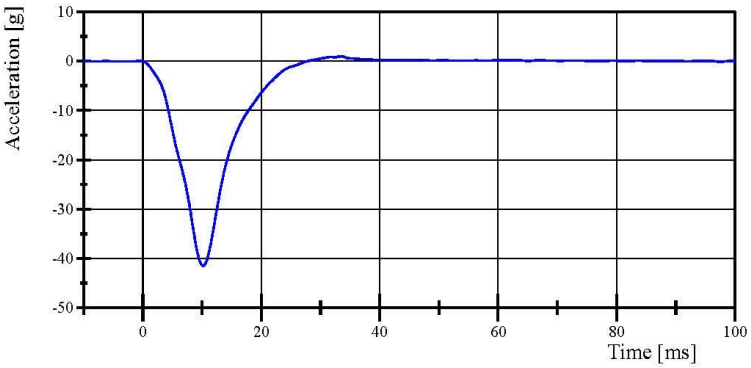
Condition: Used

Comments:
Pelvis S/N: DY5517

Transportation Research Center Inc.

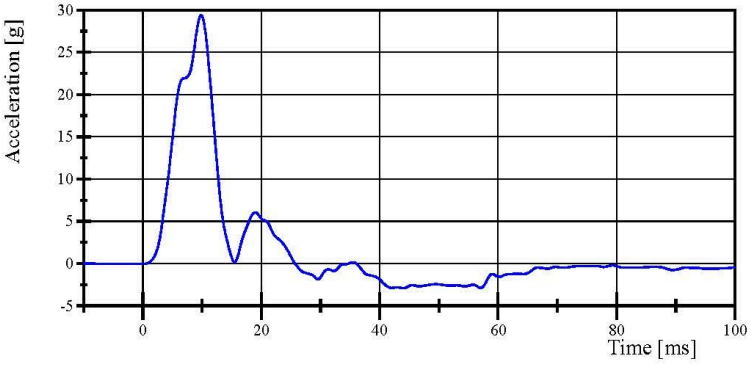
Left Lateral Iliac
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Probe Acceleration



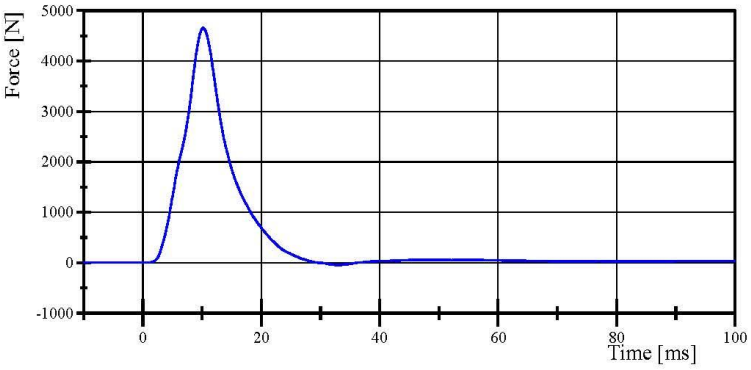
Filter Class: CFC_180
Max: 1.0 g at 33.4 ms
Min: -41.5 g at 10.2 ms

Pelvis Y-Axis Acceleration



Filter Class: CFC_180
Max: 29.4 g at 9.8 ms
Min: -2.9 g at 44.0 ms

Iliac Y-Axis Force



Filter Class: CFC_600
Max: 4,654.3 N at 10.2 ms
Min: -46.2 N at 32.7 ms

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

11.16.2017 14:28:28 658

Transportation Research Center Inc.

Left Lateral Pelvis
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Pendulum Velocity	6.6 - 6.8 m/s	6.61 m/s	Yes
Impactor Acceleration	(-38.0) - (-47.0) g	-46.25 g	Yes
Peak Pelvis Lateral Acceleration after 6ms	34 - 42 g	41.2 g	Yes
Acetabulum Force	3,600 - 4,300 N	3,739.8 N	Yes

Test meets specifications.

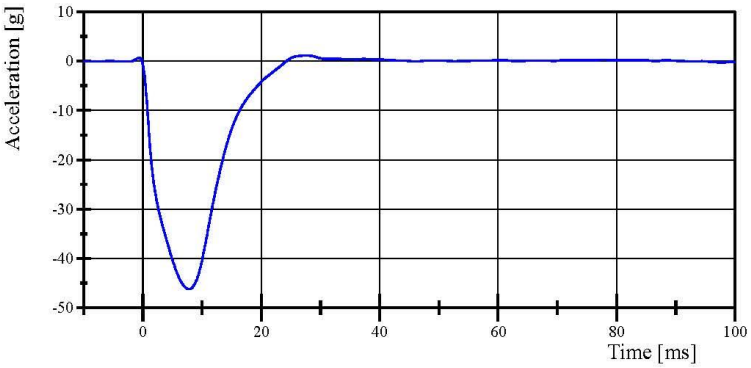
Condition: Used

Comments:
Pelvis Skin S/N: DY5517
Pelvis Plug Info:
Manufacturer: Saco
S/N: 11144
Cal Date: 20160418

Transportation Research Center Inc.

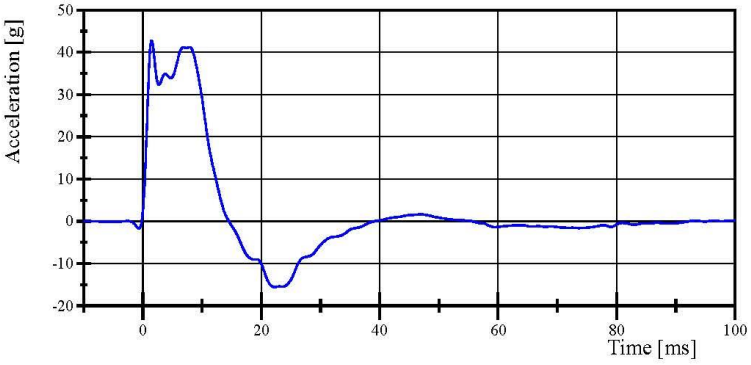
Left Lateral Pelvis
SID IIs Serial No. 297 Certification No. 21-1
Test Date: 11/16/2017

Probe Acceleration



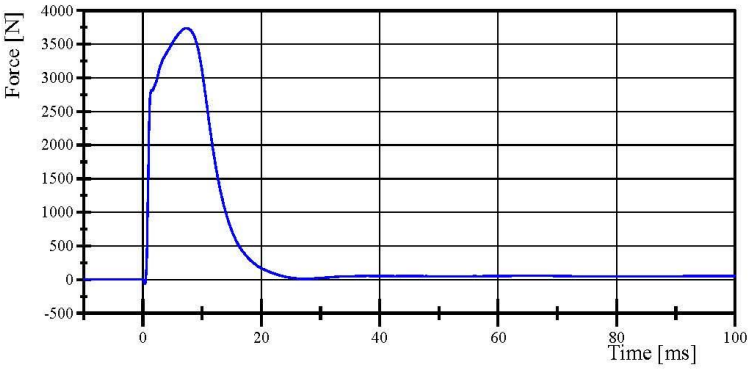
Filter Class: CFC_180
Max: 1.2 g at 27.6 ms
Min: -46.3 g at 7.8 ms

Pelvis Y-Axis Acceleration



Filter Class: CFC_180
Max: 42.8 g at 1.5 ms
Min: -15.5 g at 22.2 ms

Acetabulum Y-Axis Force



Filter Class: CFC_600
Max: 3,739.8 N at 7.4 ms
Min: -58.6 N at 0.4 ms

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

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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-2017
			Y	P93549	Endevco	29-Sep-2017
			Z	P93776	Endevco	29-Sep-2017
Displacement Potentiometers	Shoulder		Y	N/A	N/A	N/A
	Thoracic Rib	Upper	Y	047	Servo	28-Sep-2017
		Middle	Y	01815	Servo	28-Sep-2017
		Lower	Y	043	Servo	28-Sep-2017
	Abdominal Rib	Upper	Y	01811	Servo	28-Sep-2017
		Lower	Y	051	Servo	28-Sep-2017
Lower Spine Accelerometers (T12)			X	P94425	Endevco	29-Sep-2017
			Y	P91522	Endevco	29-Sep-2017
			Z	P91511	Endevco	29-Sep-2017
Acetabulum Load Cell			Y	235-FY	FTSS	28-Sep-2017
Iliac Wing Load Cell			Y	113-FY	FTSS	28-Sep-2017
Pelvis Plug (struck side)				11142	SACO	18-Apr-2016
Pelvis Plug (non-struck side)				36505	FTSS	24-Aug-2010

TABLE 2 – Vehicle Instrumentation

Vehicle Instrumentation		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P29093	Endevco	3-Oct-2017
Vehicle Center of Gravity	Y	P94489	Endevco	3-Oct-2017
Vehicle Center of Gravity	Z	P29109	Endevco	3-Oct-2017
Left Floor Sill	Y	P46005	Endevco	28-Jul-2017
A-Pillar Sill	Y	P97245	Endevco	2-Oct-2017
A-Pillar Low	Y	P87164	Endevco	12-Sep-2017
A-Pillar Mid	Y	P94512	Endevco	12-Sep-2017
B-Pillar Sill	Y	T10346	Endevco	3-Oct-2017
B-Pillar Low	Y	P97621	Endevco	2-Oct-2017
B-Pillar Mid	Y	P97633	Endevco	2-Oct-2017
Driver Seat	Y	P81034	Endevco	26-Sep-2017
Engine Top	X	P97717	Endevco	2-Oct-2017
Engine Top	Y	P97631	Endevco	2-Oct-2017
Firewall	Y	P34250	Endevco	2-Oct-2017
Right Roof	Y	P94727	Endevco	13-Sep-2017
Right Floor Sill	Y	P87100	Endevco	23-May-2017
Rear Floor Pan	X	P97716	Endevco	26-Sep-2017
Rear Floor Pan	Y	P97875	Endevco	26-Sep-2017

TABLE 3 – Pole Instrumentation

Pole Instrumentation	Serial Number	Manufacturer	Calibration Date
Load Cell 1	DK7091S	Humanetics	07-Dec-2016
Load Cell 2	DK7120S	Humanetics	07-Dec-2016
Load Cell 3	DK7118S	Humanetics	07-Dec-2016
Load Cell 4	DK7124S	Humanetics	07-Dec-2016
Load Cell 5	DK7111S	Humanetics	07-Dec-2016
Load Cell 6	DK7126S	Humanetics	07-Dec-2016
Load Cell 7	DK7112S	Humanetics	07-Dec-2016
Load Cell 8	DK7074S	Humanetics	07-Dec-2016