

Report Number: NCAP-KAR-24-005

**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

**SUBARU CORPORATION
2025 SUBARU FORESTER 5-DOOR MPV**

NHTSA NUMBER: O20255500

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



DECEMBER 3, 2024

FINAL REPORT

**U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE : NRM-100
1200 NEW JERSEY AVE, SE
WASHINGTON, DC 20590**


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Prepared By:  _____

Mr. Rushlan Amin, Project Engineer
Applus+ IDIADA KARCO Engineering, LLC.

Reviewed By:  _____

Mr. René Molina Serrano, Laboratory Manager
Applus+ IDIADA KARCO Engineering, LLC.

Approved By:  _____

Mr. Michael L. Dunlap, Director of Operations
Applus+ IDIADA KARCO Engineering, LLC.

Approval Date: _____ December 3, 2024 _____

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

COTR, New Car Assessment Program
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| 7. Authors Mr. Rushlan Amin, Project Engineer, Applus+ IDIADA KARCO Engineering LLC. Mr. René Molina Serrano, Laboratory Manager, Applus+ IDIADA KARCO Engineering LLC. | | 8. Performing Organization Report No. TR-P44316-01-NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | 15. Supplementary Notes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16. Abstract A 56.3 km/h NCAP Frontal Impact Test was conducted on a 2025 Subaru Forester 5-Door MPV in accordance with the specifications of the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure. The test was conducted at the Applus+ IDIADA KARCO Engineering, LLC. facility in Adelanto, California on November 19, 2024. The impact velocity of the vehicle was 56.59 km/h and the ambient temperature at the barrier face at the time of impact was 14.5°C. The target vehicle's post-test maximum crush was 636 mm at the vehicle's centerline. The test vehicle's performance is as follows: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th rowspan="2">Units</th> <th colspan="2">Driver ATD</th> <th colspan="2">Passenger ATD</th> </tr> <tr> <th>Threshold</th> <th>Result</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₁₅)</td> <td>N/A</td> <td>700</td> <td>198.054</td> <td>700</td> <td>211.225</td> </tr> <tr> <td>Maximum Chest Compression</td> <td>mm</td> <td>63</td> <td>20.445</td> <td>52</td> <td>14.773</td> </tr> <tr> <td>Nij</td> <td>N/A</td> <td>1</td> <td>0.244</td> <td>1</td> <td>0.331</td> </tr> <tr> <td>Neck Tension</td> <td>N</td> <td>4170</td> <td>1168.412</td> <td>2620</td> <td>1078.034</td> </tr> <tr> <td>Neck Compression</td> <td>N</td> <td>4000</td> <td>171.885</td> <td>2520</td> <td>236.911</td> </tr> <tr> <td>Left Femur Force</td> <td>N</td> <td>10008</td> <td>1229.209</td> <td>6805</td> <td>1051.544</td> </tr> <tr> <td>Right Femur Force</td> <td>N</td> <td>10008</td> <td>1219.341</td> <td>6805</td> <td>1000.537</td> </tr> </tbody> </table> | | | | Measurement Description | Units | Driver ATD | | Passenger ATD | | Threshold | Result | Threshold | Result | Head Injury Criteria (HIC ₁₅) | N/A | 700 | 198.054 | 700 | 211.225 | Maximum Chest Compression | mm | 63 | 20.445 | 52 | 14.773 | Nij | N/A | 1 | 0.244 | 1 | 0.331 | Neck Tension | N | 4170 | 1168.412 | 2620 | 1078.034 | Neck Compression | N | 4000 | 171.885 | 2520 | 236.911 | Left Femur Force | N | 10008 | 1229.209 | 6805 | 1051.544 | Right Femur Force | N | 10008 | 1219.341 | 6805 | 1000.537 |
| Measurement Description | Units | Driver ATD | | | | Passenger ATD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Threshold | Result | Threshold | Result | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Head Injury Criteria (HIC ₁₅) | N/A | 700 | 198.054 | 700 | 211.225 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maximum Chest Compression | mm | 63 | 20.445 | 52 | 14.773 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nij | N/A | 1 | 0.244 | 1 | 0.331 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Neck Tension | N | 4170 | 1168.412 | 2620 | 1078.034 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Neck Compression | N | 4000 | 171.885 | 2520 | 236.911 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Right Femur Force | N | 10008 | 1219.341 | 6805 | 1000.537 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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SECTION 1

PURPOSE AND SUMMARY OF TEST

PURPOSE

This 56.3 km/h frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program, sponsored by the National Highway Traffic Safety Administration (NHTSA) under contract number 693JJ919D000004. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

The 56.3 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Procedure dated May 2018 for NCAP Full Frontal Rigid Barrier Impact Testing.

SUMMARY

A load cell barrier consisting of 176 load cells was impacted by a 2025 Subaru Forester 5-Door MPV at a velocity of 56.59 km/h. The test was performed at Applus+ IDIADA KARCO Engineering, LLC. on November 19, 2024. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A of this report.

One (1) real-time camera and sixteen (16) high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in Data Sheet 6 of this report.

One Part 572E HIII 50th percentile male anthropomorphic test device (ATD) was placed in the driver seating position and one Part 572O HIII 5th percentile female ATD was placed in the right-front passenger seating position according to dummy placement instructions specified in the Laboratory Procedure for NCAP Full Frontal Rigid Barrier Impact Testing.

Both ATDs were fully instrumented with head, chest and pelvis tri-axial accelerometers, chest displacement potentiometers, upper neck force transducers, right / left femur load cells, and lower leg instrumentation.

The driver (position 1) ATD (Serial No. 360) and the right-front passenger (position 2) ATD (Serial No. DH1644) were qualified prior to this test. Certification details, along with instrumentation calibration data, are found in Appendix C of this report.

The 106 channels of dummy and vehicle response data were recorded on an on-board data acquisition system. Appendix B contains the dummy response data traces. Appendix D contains a complete list of instrumentation used for dummies and the vehicle.

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the event.

The maximum static crush of the test vehicle was 636 mm at the vehicle's centerline. Both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: the driver ATD's head contacted the frontal air bag, and headrest. The upper and lower torso contacted the frontal air bag. Both left and right knees contacted the knee air bag.

The passenger's visible contact points were as follows: the passenger ATD's head contacted the frontal air bag and headrest. The upper and lower torso contacted the frontal air bag. Both left and right knees contacted the knee bolster.

The occupant data is summarized below:

| ATD Position | HIC ₁₅ | Nij | Neck Tension (N) | Neck Comp. (N) | 3ms Chest Clip (g) | Chest Disp. (mm) | Left Femur (N) | Right Femur (N) |
|------------------------|-------------------|-------|------------------|----------------|--------------------|------------------|----------------|-----------------|
| Driver (50th Male) | 198.054 | 0.244 | 1168.412 | 171.885 | 39.072 | 20.445 | 1229.209 | 1219.341 |
| Passenger (5th Female) | 211.225 | 0.331 | 1078.034 | 236.911 | 32.902 | 14.773 | 1051.544 | 1000.537 |

GENERAL COMMENTS:

None.

SECTION 2

OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

CONVERSION FACTORS

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

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

TEST VEHICLE INFORMATION AND OPTIONS

| | |
|-----------------------------|--------------------|
| NHTSA Number | O20255500 |
| Model Year | 2025 |
| Make | Subaru |
| Model | Forester |
| Body Style | 5-Door MPV |
| VIN | JF2SLDAC5SH455190 |
| Body Color | Horizon Blue Pearl |
| Odometer Reading (km / mi) | 18/11 |
| Engine Displacement (L) | 2.5 |
| Type / No. of Cylinders | 4 Cylinder |
| Engine Placement | Inline |
| Transmission Type | Lineartronic CVT |
| Transmission Speeds | 8 |
| Overdrive | Yes |
| Final Drive | AWD |
| Roof Rack | No |
| Sunroof / T-Top | No |
| Running Boards | No |
| Tilt Steering Wheel | Yes |
| Power Seats | No |
| Anti-Lock Brakes (ABS) | Yes |
| Automatic Door Locks (ADLs) | Yes |

| | |
|------------------------------------|------|
| Traction Control System | Yes |
| Power Steering | Yes |
| Power Window Auto-Reverse | Yes |
| Driver Frontal Airbag | Yes |
| Driver Curtain Airbag | Yes |
| Driver Head/Torso Airbag | No |
| Driver Torso Airbag | No |
| Driver Torso/Pelvis Airbag | Yes |
| Driver Pelvis Airbag | No |
| Driver Knee Airbag | Yes |
| Front Pass. Frontal Airbag | Yes |
| Front Pass. Curtain Airbag | Yes |
| Front Pass. Head/Torso Airbag | No |
| Front Pass. Torso Airbag | No |
| Front Pass. Torso/Pelvis Airbag | Yes |
| Front Pass. Pelvis Airbag | No |
| Front Pass. Knee Airbag | No |
| Driver Seat Belt Pretensioner | Yes |
| Driver Load Limiter | Yes |
| Front Pass. Seat Belt Pretensioner | Yes |
| Front Pass. Load Limiter | Yes |
| Other Safety Restraint | None |

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

Yes; Page 231

DATA FROM CERTIFICATION LABEL

| | |
|---------------------|--------------------|
| Manufactured By | Subaru Corporation |
| Date of Manufacture | Jul-24 |

| | |
|-----------------|------|
| GVWR (kg) | 2223 |
| GAWR Front (kg) | 1302 |
| GAWR Rear (kg) | 1130 |

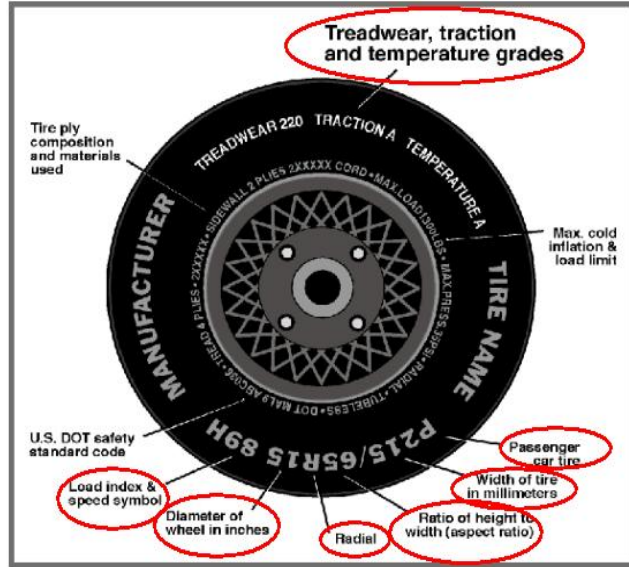
VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

| Measured Parameter | Front | Rear | Third | Total | |
|-----------------------------|--------|-------------|-------|-------|-----|
| Type of Seats | Bucket | Split Bench | | | |
| Designated Seating Capacity | 2 | 3 | | 5 | |
| Capacity Weight (VCW) (kg) | | | | 408.0 | A |
| DSC x 68.0 (kg) | | | | 340.0 | B |
| Cargo Weight (RCLW) (kg) | | | | 68.0 | A-B |

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024



VEHICLE TIRE INFORMATION

| Measured Parameter | Front | Rear |
|---------------------------|-------------------------------|-------------------------------|
| Max. Tire Pressure (kPa) | 350 | 350 |
| Cold Pressure (kPa) | 230 | 220 |
| Recommended Tire Size | 225/60 R17 | 225/60 R17 |
| Tire Size on Vehicle | 225/60 R17 | 225/60 R17 |
| Tire Manufacturer | Yokohama | Yokohama |
| Tire Model | Geolandar | Geolandar |
| Treadwear | 280 | 280 |
| Traction | B | B |
| Temperature Grades | A | A |
| Tire Plies Sidewall | 1 Polyester | 1 Polyester |
| Tire Plies Body | 1 Polyester, 2 Steel, 1 Nylon | 1 Polyester, 2 Steel, 1 Nylon |
| Load Index / Speed Symbol | 94H | 94H |
| Tire Material | Rubber | Rubber |
| DOT Safety Code Left | 1FD - FCYL16 2824 | 1FD - FCYL16 2824 |
| DOT Safety Code Right | 1FD - FCYL16 2824 | 1FD - FCYL16 2824 |

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

TEST VEHICLE WEIGHTS

| | Units | As Delivered Weights (UWV) | | | As Tested Weights (ATW) | | |
|-------|-------|----------------------------|-----------|--------|-------------------------|-----------|--------|
| | | Front Axle | Rear Axle | Total | Front Axle | Rear Axle | Total |
| Left | kg | 469.0 | 337.5 | | 509.5 | 417.5 | |
| Right | kg | 453.0 | 324.5 | | 474.5 | 384.0 | |
| Ratio | % | 58.2% | 41.8% | 100.0% | 55.1% | 44.9% | 100.0% |
| Total | kg | 922.0 | 662.0 | 1584.0 | 984.0 | 801.5 | 1785.5 |

TARGET TEST WEIGHT CALCULATION

| Measured Parameter | Units | Value | |
|---|-------|--------|-------|
| Total Delivered Weight (UWV) | kg | 1584.0 | A |
| Weight of 1 P572E ATD & 1 P572O ATD | kg | 141.0 | B |
| Rated Cargo/Luggage Weight (RCLW) | kg | 68.0 | C |
| Calculated Vehicle Target Weight (TVTW) | kg | 1793.0 | A+B+C |

TEST VEHICLE ATTITUDES

| Condition | Units | LF | RF | LR | RR | CG Aft of Front Axle |
|--------------|-------|-----|-----|-----|-----|----------------------|
| As Delivered | mm | 780 | 789 | 800 | 803 | 1115 |
| As Tested | mm | 765 | 765 | 780 | 784 | 1198 |
| Post-Test | mm | N/A | N/A | 774 | 772 | |

GENERAL TEST VEHICLE DATA

| Measurement Description | Units | Value |
|---|-------|-------|
| Total Vehicle Wheelbase | mm | 2669 |
| Total Vehicle Length at Left Side | mm | 4529 |
| Total Vehicle Length at Centerline | mm | 4654 |
| Total Vehicle Length at Right Side | mm | 4530 |
| Weight of Ballast in Cargo Area | kg | 0.0 |
| Weight of Vehicle Components Removed | kg | 18.5 |
| Amount of Stoddard Solvent in Fuel Tank | L | 58.29 |

VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:

Spare tire with tools (14.5 kg), and rear trim (4.0 kg).

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

TARGET VEHICLE STRUCTURAL MEASUREMENTS

| No. | Description | Pre-Test |
|-----|---------------------------------------|----------|
| 1 | Total Length | 4654 |
| 2 | Total Width | 1852 |
| 3 | Bumper Top Height | 618 |
| 4 | Bumper Bottom Height | 472 |
| 5 | Longitudinal Member Top Height | 620 |
| 6 | Distance Between Longitudinal Members | 922 |
| 7 | Longitudinal Member Width | 68 |
| 8 | Engine Top Height | 910 |
| 9 | Engine Bottom Height | 327 |
| 10 | Engine and Gearbox Width | 646 |
| 11 | Front Bumper to Engine Distance | 537 |
| 12 | Front Shock Absorber Fixing Height | 956 |
| 13 | Bonnet Leading Edge Height | 902 |
| 14 | Front Shock Absorber Fixing Width | 1158 |
| 15 | Front Bumper to Front Axle Distance | 989 |
| 16 | Front Axle to A-Pillar Distance | 758 |
| 17 | A-Pillar to B-Pillar Distance | 1024 |
| 18 | B-Pillar to Rear Axle Distance | 1115 |
| 19 | B-Pillar to C-Pillar Distance | 964 |
| 20 | Roof Sill Bottom Height | 1615 |
| 21 | Roof Sill Top Height | 1662 |
| 22 | Floor Sill Bottom Height | 352 |
| 23 | Floor Sill Top Height | 435 |

All measurements in millimeters.

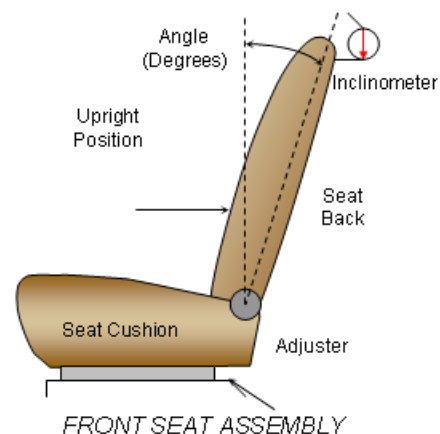
DATA SHEET NO. 2

SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

NOMINAL DESIGN RIDING POSITION

The procedure for the driver is as follows: the seat back is set to the manufacturer’s designated angle. The procedure for the passenger is as follows: the seat back is set to position the transverse instrumentation platform of the dummy’s head at $0^\circ \pm 0.5^\circ$. Seat back angle is measured at the headrest post.

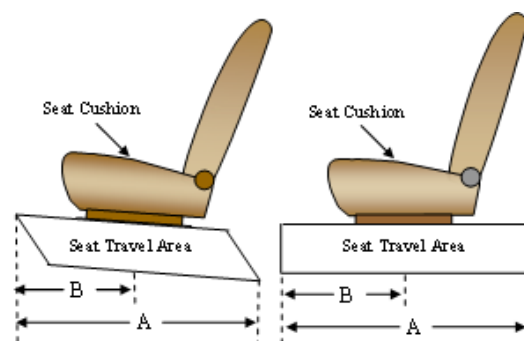


SEAT BACK ANGLE

| Seating Position | Degrees |
|---------------------------|---------|
| Driver Seat Back Angle | 3.8 |
| Passenger Seat Back Angle | 2.4 |

SEAT FORE / AFT POSITIONING

The total seat travel is measured from the forward most possible position to the rear most possible position. The driver’s seat is set to the middle of the fore-aft travel. The passenger’s seat is set to the forward most position where the ATD will not contact any interior panels.



SEAT FORE/AFT POSITIONS

| Seating Position | Total Fore-Aft Travel | Placed in Position |
|------------------|-----------------------|--------------------|
| Driver Seat | 304 | 152 |
| Passenger Seat | 304 | 0 |

SEAT BELT UPPER ANCHORAGE

The seat belt upper anchorage is positioned to the manufacturer’s design position for a 50th percentile adult male ATD for the driver, and a 5th percentile adult female ATD for the passenger. Position “L” is the lowermost position, followed by position “M1”. Position “H” is the uppermost position.

SEAT BELT UPPER ANCHORAGES

| Seating Position | Total No. of Positions | Placed in Position |
|------------------|------------------------|--------------------|
| Driver Seat | 4 | M1 |
| Passenger Seat | 4 | M1 |

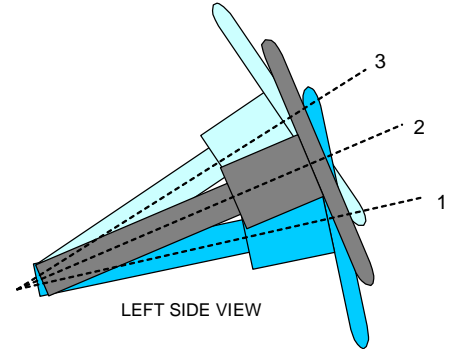
DATA SHEET NO. 2 ... (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. A digital inclinometer is used to measure a plate which is placed across the rim of the steering wheel for angular measurements.



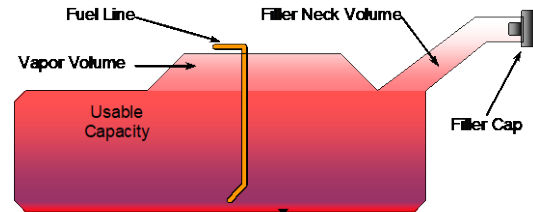
LEFT SIDE VIEW
STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONING

| | Degrees | Fore-Aft Position (mm) |
|-----------------------------------|---------|------------------------|
| Lowermost Position, No. 1 | 26.0 | 80 |
| Geometric Center Position, No. 2 | 27.6 | 105.5 |
| Uppermost Position, No. 3 | 29.2 | 131 |
| Telescoping Steering Wheel Travel | | 51 |
| Test Position | 27.6 | 105.5 |

FUEL PUMP

The vehicle is equipped with an electric fuel pump. The pump will work at "ignition on" until pressure in the system has reached working pressure in the system; then it will stop pumping fuel until the engine has been started.



VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY

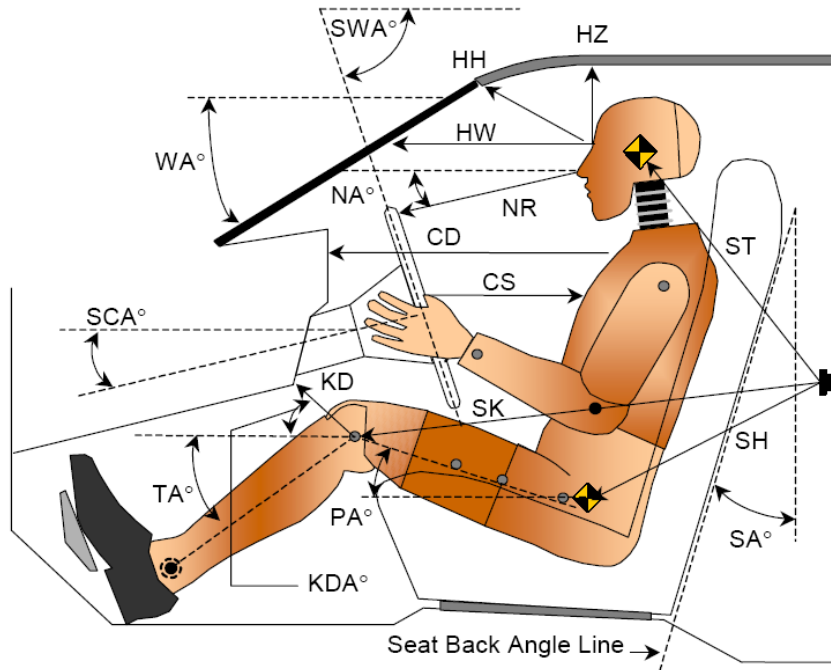
| Description | Liters |
|---|--------|
| Usable Capacity of "Standard Tank" (see Form No. 1) | 62.84 |
| Usable Capacity of "Optional Tank" (see Form No. 1) | |
| Usable Capacity of "Standard Tank" (see Owner's Manual) | 62.84 |
| Usable Capacity of "Optional Tank" (see Owner's Manual) | |
| 93% of Usable Capacity | 58.29 |
| Actual Amount of Solvent Used in Test | 58.29 |
| 1/3 of Usable Capacity | 20.95 |

Is the Actual Amount of Solvent Used in the test equal to 93% ± 1% of the Usable Capacity stated in the Form No. 1? Yes No

DATA SHEET NO. 3

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024



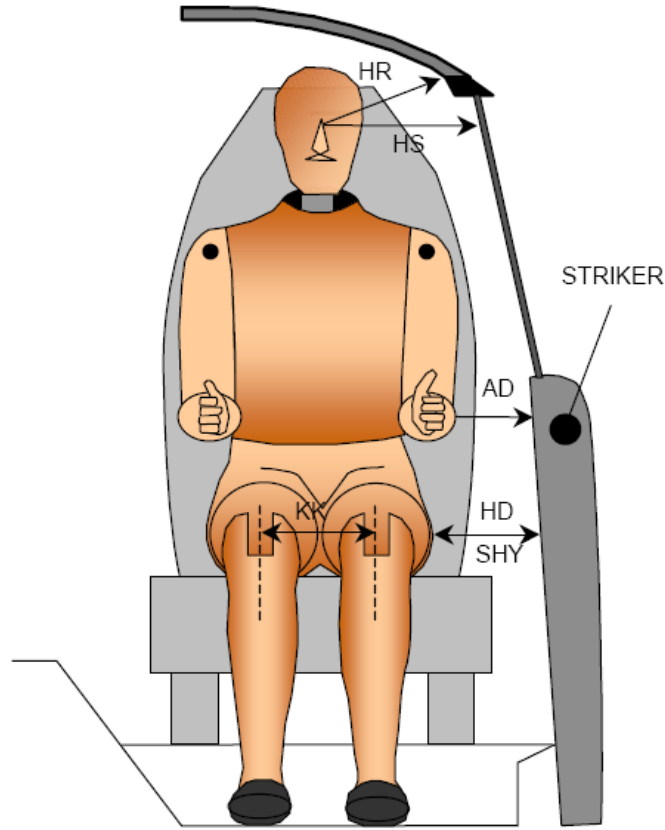
LEFT SIDE VIEW

| Code | Measurement Description | Driver | | Passenger | |
|------|------------------------------------|-------------|-----------|-------------|-----------|
| | | Length (mm) | Angle (°) | Length (mm) | Angle (°) |
| WA° | Windshield Angle | | 34.3 | | |
| SWA° | Steering Wheel Angle | | 63.3 | | |
| SCA° | Steering Column Angle | | 26.7 | | |
| SA° | Seat Back Angle (On Seatback Post) | | 3.8 | | 2.4 |
| HZ | Head to Roof | 254 | 90.0 | 260 | 90.0 |
| HH | Head to Header | 414 | 26.0 | 364 | 45.4 |
| HW | Head to Windshield | 698 | 0.0 | 715 | 0.0 |
| NR | Nose to Rim | 445 | 5.6 | 455 | 34.3 |
| CD | Chest to Dash | 549 | 7.8 | 402 | 10.8 |
| CS | Chest to Steering Hub | 317 | 0.0 | | |
| RA | Rim to Abdomen | 210 | 0.0 | | |
| KDL | Left Knee to Dash | 185 | 18.3 | 130 | 26.8 |
| KDR | Right Knee to Dash | 155 | 20.5 | 135 | 28.7 |
| PA° | Pelvic Angle | | 23.7 | | 19.1 |
| TA° | Tibia Angle | | 43.3 | | 61.5 |
| SK | Striker to Knee | 688 | 12.2 | 773 | 13.2 |
| ST | Striker to Head | 567 | 74.4 | 554 | 57.8 |
| SH | Striker to H-Point | 361 | 45.6 | 411 | 29.1 |

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

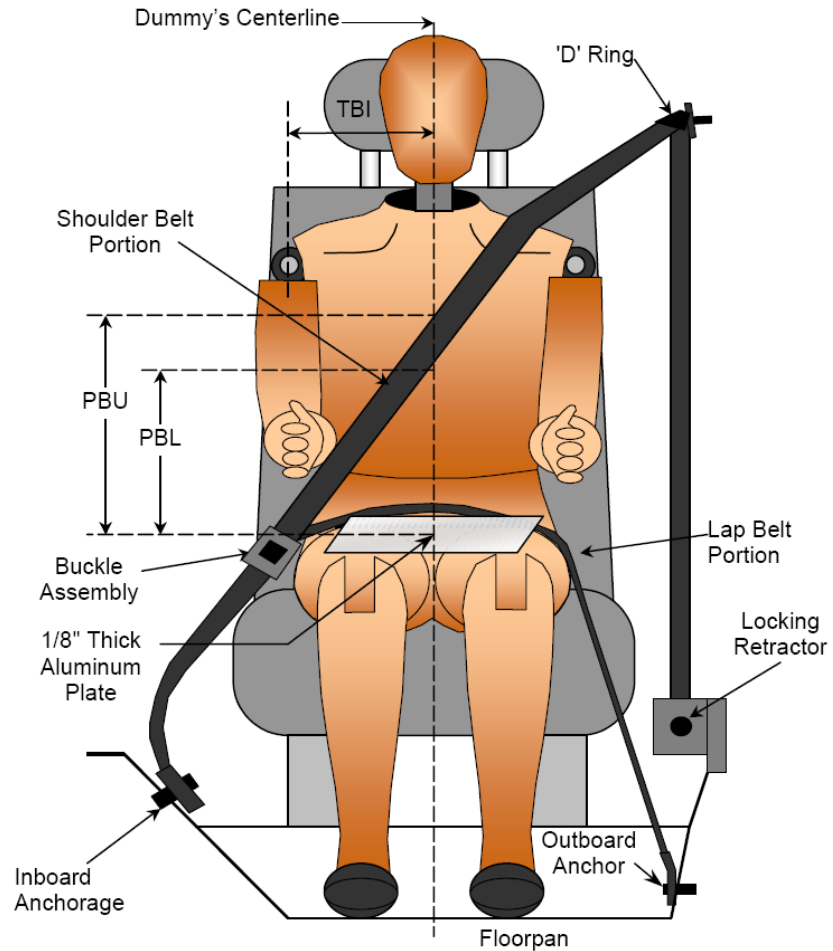
Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024



| Code | Description | Driver (mm) | Passenger (mm) |
|------|---------------------|-------------|----------------|
| AD | Arm to Door | 136 | 92 |
| HD | H-Point to Door | 154 | 172 |
| HR | Head to Side Header | 280 | 339 |
| HS | Head to Side Window | 360 | 370 |
| KK | Knee to Knee | 375 | 170 |
| AA | Ankle to Ankle | 375 | 175 |

DATA SHEET NO. 5
SEAT BELT POSITIONING DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024



FRONT VIEW OF DUMMY

SEAT BELT POSITIONING MEASUREMENTS

| Code | Measurement Description | Units | Driver | Passenger |
|------|--|-------|--------|-----------|
| PBU | Top Surface of Aluminum Plate to Belt Upper Edge | mm | 140 | 270 |
| PBL | Top Surface of Aluminum Plate to Belt Lower Edge | mm | 110 | 180 |

BELT LENGTH DATA

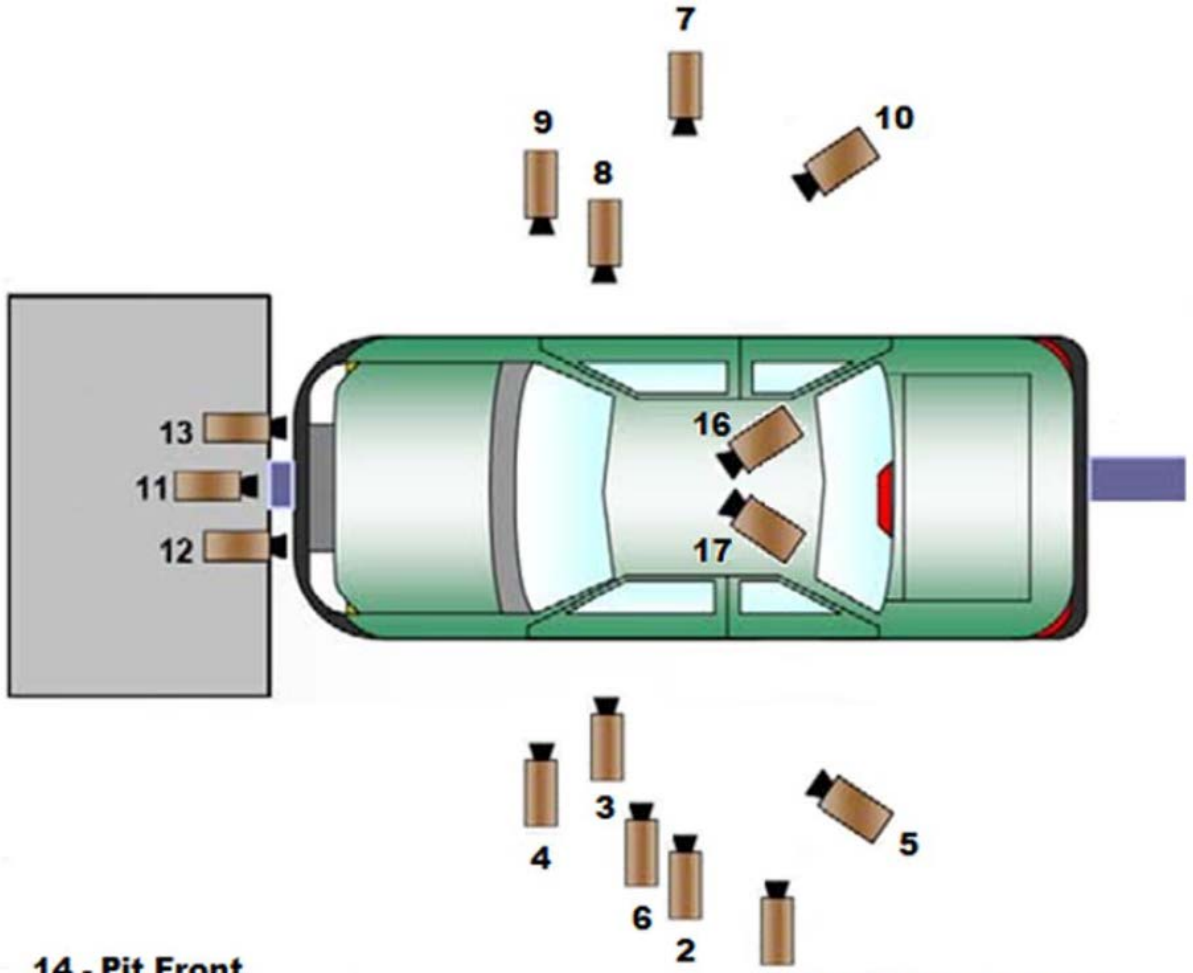
| Measurement Description | Units | Driver | Passenger |
|--|-------|--------|-----------|
| Shoulder Belt Length as Measured on ATD | mm | 825 | 960 |
| Lap Belt Length as Measured on ATD | mm | 610 | 860 |
| Remainder of Belt on Reel | mm | 880 | 915 |
| Total Belt Length for Continuous Webbing Systems | mm | 2315 | 2735 |

DATA SHEET NO. 6

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

CAMERA POSITIONS FOR FRONTAL IMPACTS



- 14 - Pit Front**
- 15 - Pit Rear**
- 16 & 17 - Driver and Passenger Onboard**

1- Real Time Camera

***Camera locations are approximate and not to scale*

DATA SHEET NO. 6 ... (CONTINUED)

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

CAMERA LOCATIONS

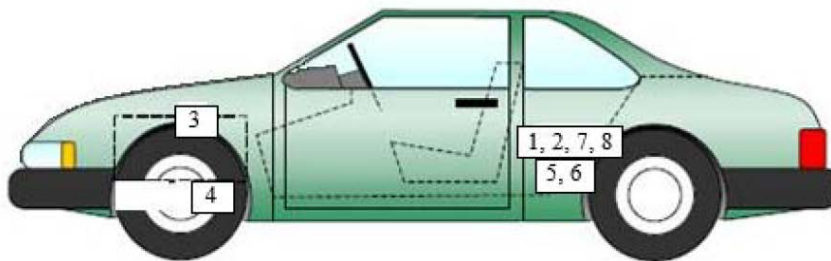
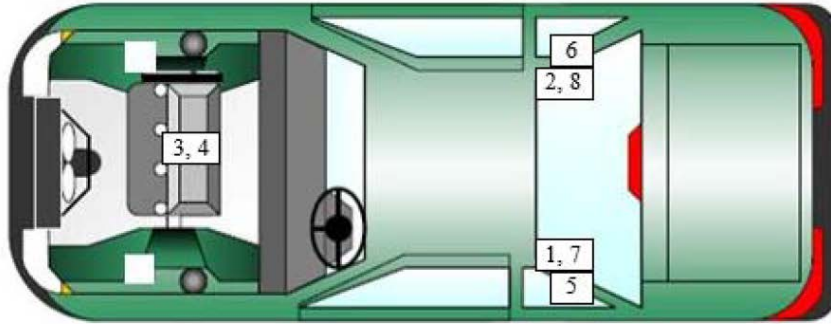
| No. | Description | Location (mm) | | | Lens (mm) | Speed (fps) |
|-----|------------------------|---------------|--------|-------|-----------|-------------|
| | | X | Y | Z | | |
| 1 | Real-Time Left Overall | -11412 | -8150 | -1484 | | 30 |
| 2 | Left Overall | -2456 | -7975 | -1025 | 20 | 1000 |
| 3 | Driver Close-Up | -2590 | -7950 | -1371 | 50 | 1000 |
| 4 | Left Front Half | -1701 | -6197 | -1701 | 35 | 1000 |
| 5 | Left Angle | -6696 | -10308 | -3211 | 105 | 1000 |
| 6 | Steering Column | -1966 | -10412 | -3688 | 35 | 1000 |
| 7 | Right Overall | -2336 | 7569 | -1012 | 20 | 1000 |
| 8 | Passenger Close-Up | -1733 | 7581 | -1408 | 50 | 1000 |
| 9 | Right Front Half | -1600 | 8214 | -1811 | 35 | 1000 |
| 10 | Right Angle | -6217 | 9516 | -4830 | 85 | 1000 |
| 11 | Windshield | -354 | 0 | -5749 | 28 | 1000 |
| 12 | Driver Windshield | 297 | -366 | -2460 | 24 | 1000 |
| 13 | Passenger Windshield | 297 | 366 | -2460 | 24 | 1000 |
| 14 | Pit Front | -756 | 0 | 1495 | 21 | 1000 |
| 15 | Pit Rear | -3398 | 0 | 1495 | 15 | 1000 |
| 16 | Driver Onboard | -1250 | -275 | -1510 | 8 | 1000 |
| 17 | Passenger Onboard | -1250 | 275 | -1510 | 8 | 1000 |

Coordinates: +X = forward impact plane
 +Y = right of monorail center
 +Z = into ground

DATA SHEET NO. 7

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

| No. | Description | Location | | |
|-----|--|----------|------|-----|
| | | X | Y | Z |
| 1 | Left Rear Accelerometer X-Direction | 1689 | -737 | 457 |
| 2 | Right Rear Accelerometer X-Direction | 1689 | 737 | 457 |
| 3 | Engine Top X | 3937 | 0 | 660 |
| 4 | Engine Bottom X | 3942 | 0 | 381 |
| 5 | Left Rear Accelerometer Z-Direction | 1689 | -737 | 457 |
| 6 | Right Rear Accelerometer Z-Direction | 1689 | 737 | 457 |
| 7 | Left Rear Accelerometer X-Direction Redundant | 1689 | -737 | 457 |
| 8 | Right Rear Accelerometer X-Direction Redundant | 1689 | 737 | 457 |

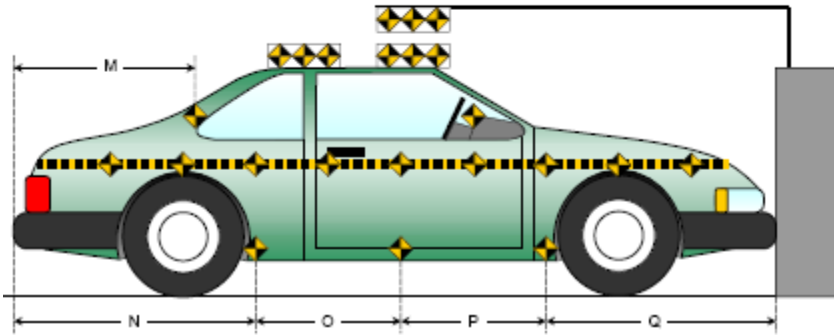
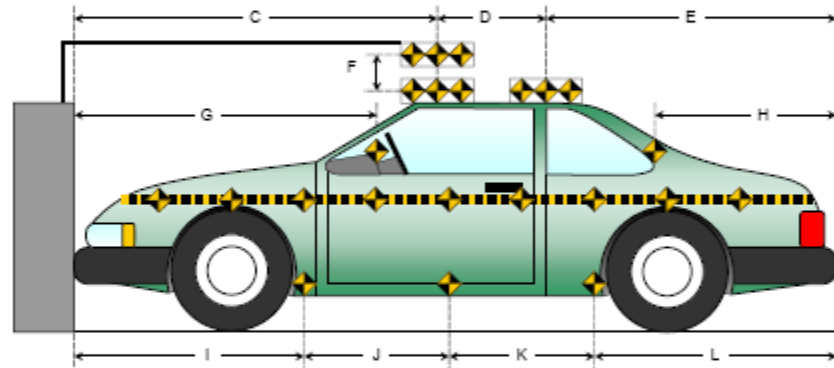
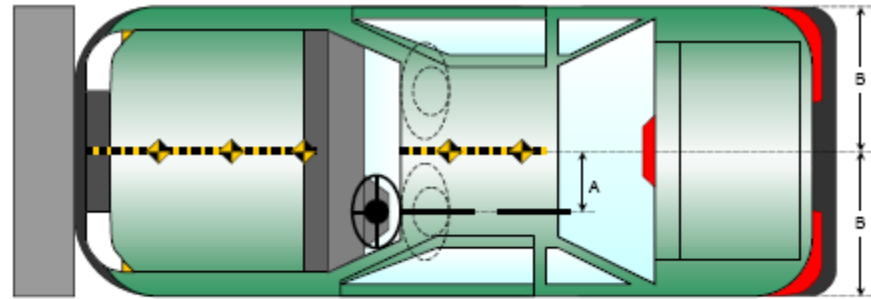
Reference Points: X – Rear Surface of Vehicle (+ forward)
 Y – Vehicle Centerline (+ to right)
 Z – Ground Plane (+ down)

DATA SHEET NO. 8

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

| Item | Value |
|------|-------|
| A | 370 |
| B | 926 |
| C | 2293 |
| D | 573 |
| E | 1788 |
| F | 314 |
| G | 1860 |
| H | 507 |
| I | 1552 |
| J | 863 |
| K | 874 |
| L | 1365 |
| M | 507 |
| N | 1365 |
| O | 874 |
| P | 863 |
| Q | 1552 |

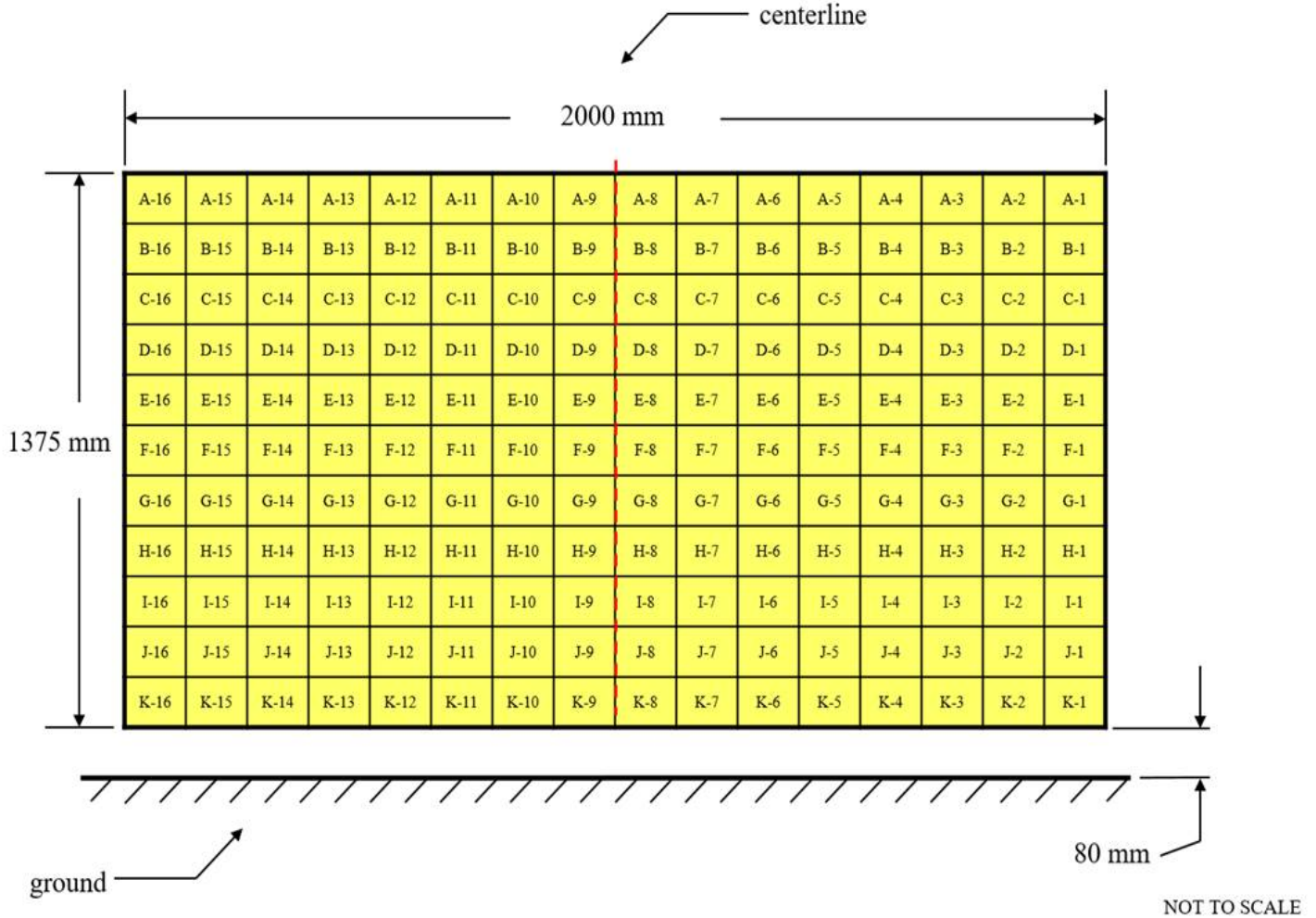


All measurements in millimeters.

DATA SHEET NO. 9

LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024



DATA SHEET NO. 10

TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

INSTRUMENTATION

| | |
|----------------------------------|-----|
| Driver Dummy Sensors | 47 |
| Passenger Dummy Sensors | 47 |
| Vehicle Structure Accelerometers | 8 |
| Seat Belt Load Cells | 0 |
| Load Cell Barrier | 528 |
| Total | 630 |

CAMERA COVERAGE

| | |
|-----------------------------|----|
| High-Speed Vehicle On Board | 2 |
| High-Speed Off Board | 14 |
| Real Time | 1 |
| Total | 17 |

DATA SHEET NO. 11
POST-TEST OBSERVATIONS

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

TEST DUMMY INFORMATION AND CONTACT LOCATIONS

| Description | Driver | Passenger |
|-----------------------|-------------------------------------|---|
| Dummy Type/Serial No. | HIII 50th Percentile Male ATD / 360 | HIII 5th Percentile Female ATD / DH1644 |
| Head Contact | Frontal Airbag, Headrest | Frontal Airbag, Headrest |
| Upper Torso Contact | Frontal Airbag | Frontal Airbag |
| Lower Torso Contact | Frontal Airbag | Frontal Airbag |
| Left Knee Contact | Knee Airbag | Knee Bolster |
| Right Knee Contact | Knee Airbag | Knee Bolster |

DOOR OPENING, TRUNK OPENING, AND SEAT TRACK INFORMATION

| Description | Driver | Passenger |
|--|---|---|
| Locked / Unlocked Doors | Unlocked | Unlocked |
| Front Door Opening | Remained closed, latched, and operational | Remained closed, latched, and operational |
| Rear Door Opening | Remained closed, latched, and operational | Remained closed, latched, and operational |
| Trunk/Hatch/Tailgate Opening | Remained closed, latched, and operational | |
| Seat Track Shift (mm) | N/A | N/A |
| Seat Back Movement from Initial Position | None | None |

OTHER VEHICLE POST-TEST OBSERVATIONS

| Critical Areas of Performance | Observations and Conclusions |
|-------------------------------|------------------------------|
| Windshield Damage | None |
| Window Damage | None |
| Other Notable Effects | None |

VEHICLE REBOUND FROM BARRIER

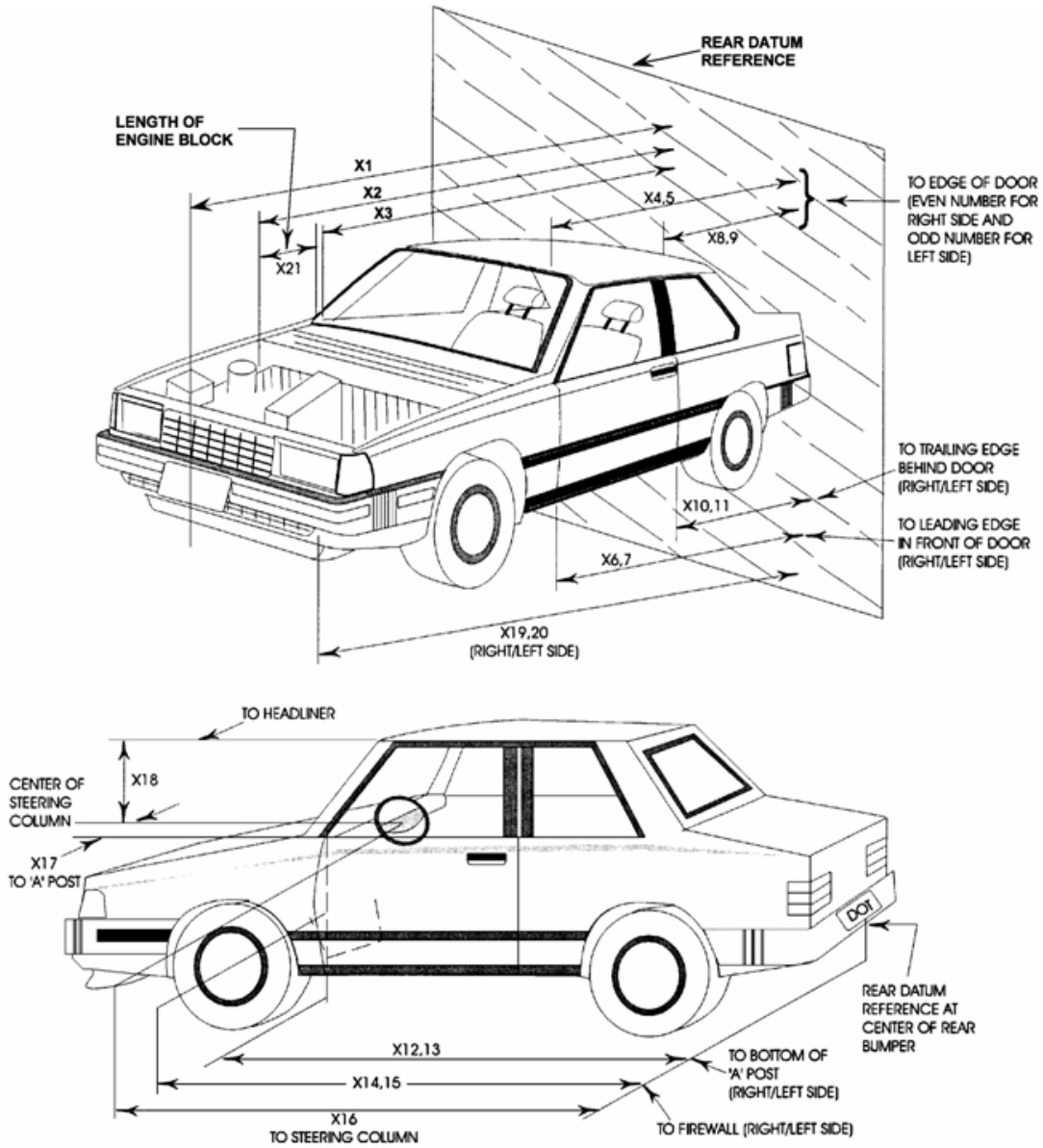
| Measured Parameter | Units | Value |
|--------------------|-------|-------|
| Left Side | mm | 2250 |
| Center | mm | 1853 |
| Right Side | mm | 2134 |
| Average | mm | 2079 |

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

| Restraint Type | Driver | | Passenger | |
|------------------------------|-----------|----------|-----------|----------|
| | Installed | Operated | Installed | Operated |
| Front Airbag | Yes | Yes | Yes | Yes |
| Side Airbag 1 (Curtain) | Yes | No | Yes | No |
| Side Airbag 2 (Torso/Pelvis) | Yes | No | Yes | No |
| Knee Airbag | Yes | Yes | No | |
| Seat Belt Pretensioner | Yes | Yes | Yes | Yes |
| Seat Belt Load Limiter | Yes | Yes | Yes | Yes |

DATA SHEET NO. 12
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024



DATA SHEET NO. 12 ... (CONTINUED)

VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

| No. | Description | Pre-Test | Post-Test | Change |
|-----|--|----------|-----------|--------|
| 1 | Total Length of Vehicle at Centerline | 4654 | 4019 | -636 |
| 2 | Rear Surface of Vehicle to Front of Engine | 4108 | 3995 | -113 |
| 3 | RSOV to Firewall | 3451 | 3448 | -3 |
| 4 | RSOV to Upper Leading Edge of Right Door | 3189 | 3191 | 2 |
| 5 | RSOV to Upper Leading Edge of Left Door | 3190 | 3174 | -16 |
| 6 | RSOV to Lower Leading Edge of Right Door | 3167 | 3167 | 0 |
| 7 | RSOV to Lower Leading Edge of Left Door | 3167 | 3153 | -14 |
| 8 | RSOV to Upper Trailing Edge of Right Door | 2066 | 2066 | 0 |
| 9 | RSOV to Upper Trailing Edge of Left Door | 2065 | 2050 | -15 |
| 10 | RSOV to Lower Trailing Edge of Right Door | 2118 | 2118 | 0 |
| 11 | RSOV to Lower Trailing Edge of Left Door | 2119 | 2105 | -14 |
| 12 | RSOV to Bottom of A-Pillar, Right Side | 3136 | 3138 | 2 |
| 13 | RSOV to Bottom of A-Pillar, Left Side | 3126 | 3127 | 1 |
| 14 | RSOV to Firewall, Right Side | 3458 | 3458 | 0 |
| 15 | RSOV to Firewall, Left Side | 3459 | 3448 | -11 |
| 16 | RSOV to Steering Column | 2698 | 2744 | 46 |
| 17 | Center of Steering Column to A-Pillar | 428 | 383 | -45 |
| 18 | Center of Steering Column to Headliner | 582 | 596 | 14 |
| 19 | RSOV to Right Side of Front Bumper | 4539 | 3984 | -555 |
| 20 | RSOV to Left Side of Front Bumper | 4540 | 3990 | -550 |
| 21 | Length of Engine Block | 476 | 362 | -114 |
| RD | RSOV to Right Side of Dash Panel | 2913 | 2910 | -3 |
| CD | RSOV to Center of Dash Panel | 2862 | 2864 | 2 |
| LD | RSOV to Left Side of Dash Panel | 2912 | 2901 | -11 |

All measurements in millimeters.

DATA SHEET NO. 13

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

VEHICLE INFORMATION

VIN: JF2SLDAC5SH455190 Wheelbase (mm): 2669
 Vehicle Size Category: MPV Test Weight (kg): 1785.5

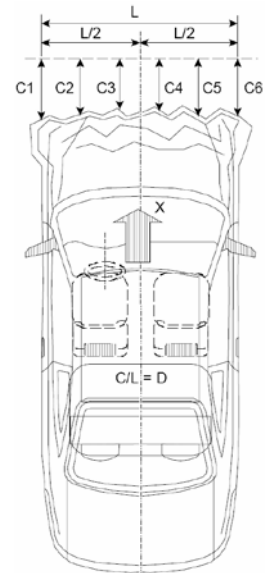
ACCELEROMETER DATA

Accelerometer Locations: Left Rear Crossmember
 Cal. Procedure/Interval: Vibration Test / 6 months
 Integration Algorithm: NHTSA Standard
 Impact Velocity (km/h): 56.59
 Velocity Change (km/h): 65.8
 Time of Separation (msec): 66.7

Linearity: Good

CRUSH PROFILE

Collision Deformation Classification: 12FDEW2
 Midpoint of Damage: Vehicle Centerline
 Damage Region Length (mm): 1107
 Impact Mode: Full Frontal



| No. | Measurement Description | Units | Pre-Test | Post-Test | Crush |
|-----|----------------------------|-------|----------|-----------|-------|
| C1 | Crush Zone 1 at Left Side | mm | 125 | 667 | 542 |
| C2 | Crush Zone 2 at Left Side | mm | 18 | 648 | 630 |
| C3 | Crush Zone 3 at Left Side | mm | 5 | 635 | 630 |
| C4 | Crush Zone 4 at Right Side | mm | 3 | 639 | 636 |
| C5 | Crush Zone 5 at Right Side | mm | 12 | 641 | 629 |
| C6 | Crush Zone 6 at Right Side | mm | 116 | 673 | 557 |
| L | C1 to C6 | mm | 1107 | | |

DATA SHEET NO. 14

VEHICLE INTRUSION MEASUREMENTS

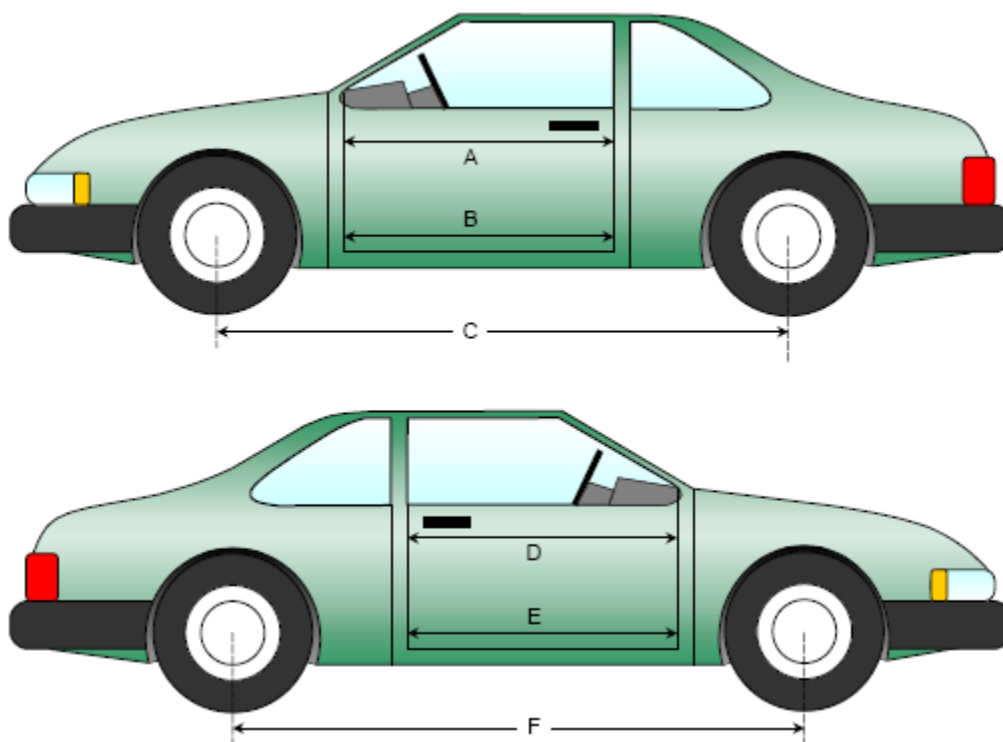
Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

DOOR OPENING WIDTH

| Item | Description | Units | Pre-Test | Post-Test | Change |
|------|------------------|-------|----------|-----------|--------|
| A | Left Side Upper | mm | 1124 | 1124 | 0 |
| B | Left Side Lower | mm | 1050 | 1048 | -2 |
| D | Right Side Upper | mm | 1124 | 1124 | 0 |
| E | Right Side Lower | mm | 1049 | 1049 | 0 |

WHEELBASE MEASUREMENTS

| Item | Description | Units | Pre-Test | Post-Test | Change |
|------|----------------------|-------|----------|-----------|--------|
| C | Left Side Wheelbase | mm | 2669 | 2651 | -18 |
| F | Right Side Wheelbase | mm | 2668 | 2647 | -21 |



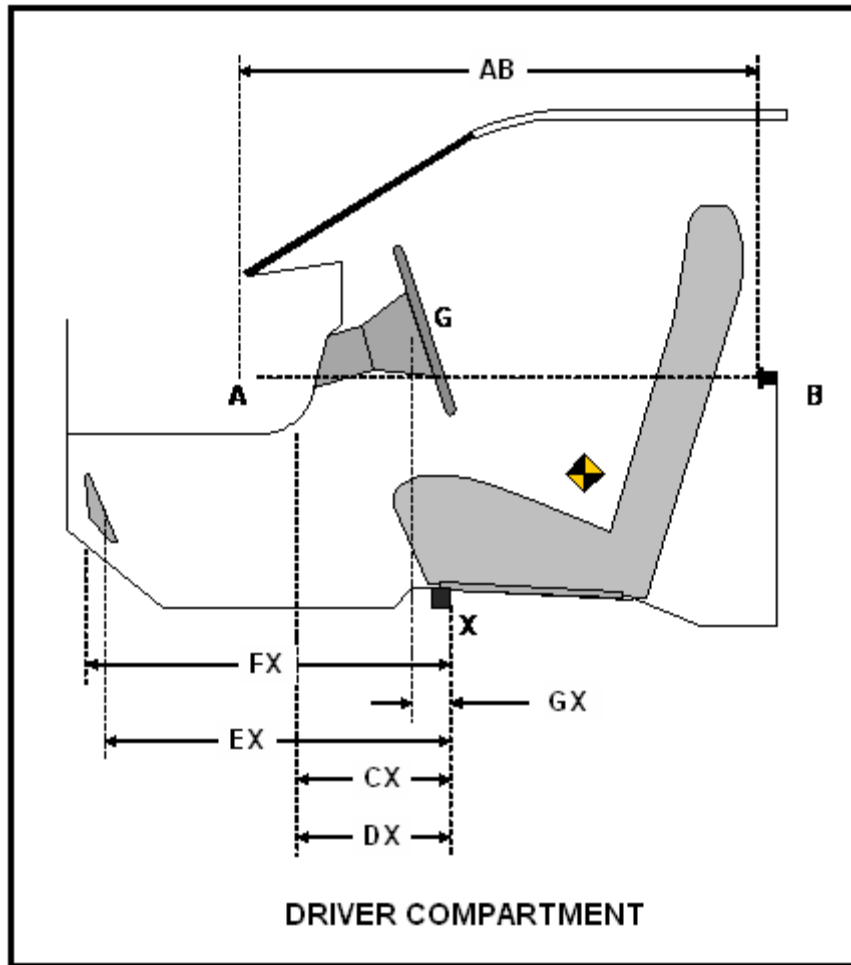
DATA SHEET NO. 14 ... (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

DRIVER COMPARTMENT INTRUSION

| Item | Description | Units | Pre-Test | Post-Test | Change |
|------|-----------------------------------|-------|----------|-----------|--------|
| AB | Door Opening (Inside Window Jam) | mm | 1033 | 1033 | 0 |
| CX | Left Knee Bolster to X | mm | 299 | 303 | 4 |
| DX | Right Knee Bolster to X | mm | 287 | 283 | -4 |
| EX | Brake Pedal to X | mm | 554 | 543 | -11 |
| FX | Foot Rest to X | mm | 549 | 529 | -20 |
| GX | Center of Steering Wheel Hub to X | mm | 47 | 90 | 43 |

X = Front of Seat Track (Stationary)



DATA SHEET NO. 15

SUMMARY OF INDICANT FMVSS 212 AND 219 (PARTIAL) DATA

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

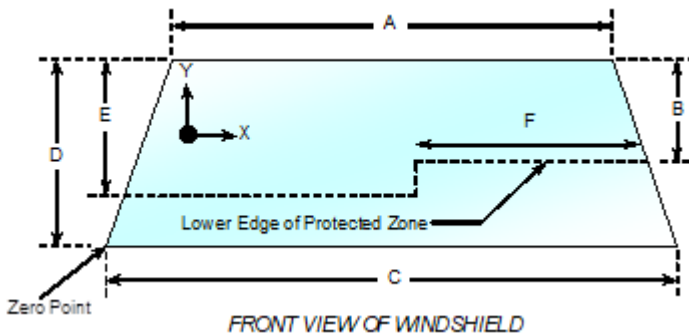
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with an adhesive and rubber molding.

The standard requires that the post-test retention measurement be a minimum of 75% of the pre-test total periphery measurement for vehicles not equipped with occupant passive restraints and 50% for each side of the windshield for vehicles which are equipped with occupant passive restraints.

Temperature of windshield molding during test: 14.5°C

WINDSHIELD PERIPHERY MEASUREMENTS

| Measurement | Pre-Test (mm) | Post-Test (mm) | % Retention |
|-------------|---------------|----------------|-------------|
| Left Side | 2255 | 2255 | 100.0% |
| Right Side | 2255 | 2255 | 100.0% |
| Total | 4510 | 4510 | 100.0% |



| Item | Units | Value |
|------|-------|-------|
| A | mm | 1215 |
| B | mm | 513 |
| C | mm | 1495 |
| D | mm | 900 |
| E | mm | 574 |
| F | mm | 565 |

AREAS OF PROTECTED ZONE FAILURES

A. Provide Coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one that is normally in contact with the windshield.

| X | Y |
|---|---|
| | |
| | |
| | |

B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

| X | Y |
|---|---|
| | |
| | |
| | |

DATA SHEET NO. 16

FMVSS 301 BARRIER IMPACT AND STATIC ROLLOVER RESULTS

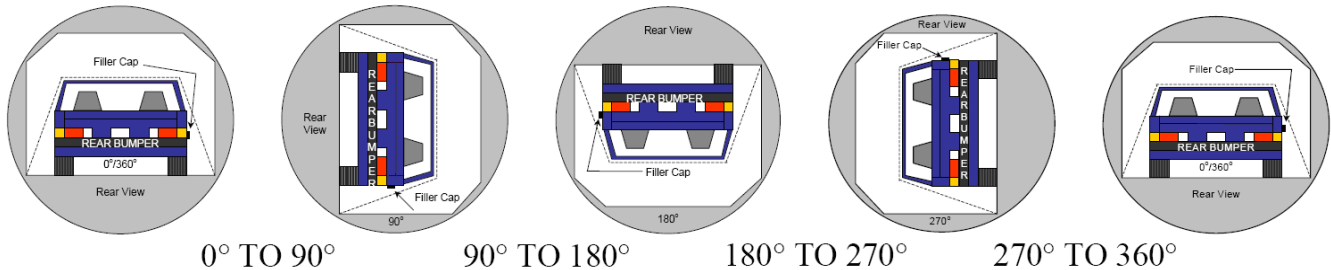
Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 14.5°C Test Time: 1:15 PM

Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: N/A oz.
(Maximum allowable = 1 oz.)
- B. For the 5 minute period after motion ceases: N/A oz.
(Maximum allowable = 5 oz.)
- C. For the following 25 minutes: N/A oz.
(Maximum allowable = 1 oz./minute)
- D. Spillage: _____



- The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
- The position hold time at each position is 300 seconds (minimum).
- Details of Stoddard solvent spillage: N/A

SOLVENT COLLECTION TIME TABLE IN SECONDS

| Test Phase | Rotation Time | Hold Time | Total Time |
|--------------|---------------|-----------|------------|
| 0° To 90° | 80 | 300 | 380 |
| 90° To 180° | 81 | 300 | 381 |
| 180° To 270° | 80 | 300 | 380 |
| 270° To 360° | 82 | 300 | 382 |

DATA SHEET NO. 16 ... (CONTINUED)

FMVSS 301 BARRIER IMPACT AND STATIC ROLLOVER RESULTS

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500

Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024

FMVSS 301 SPILLAGE TABLE

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

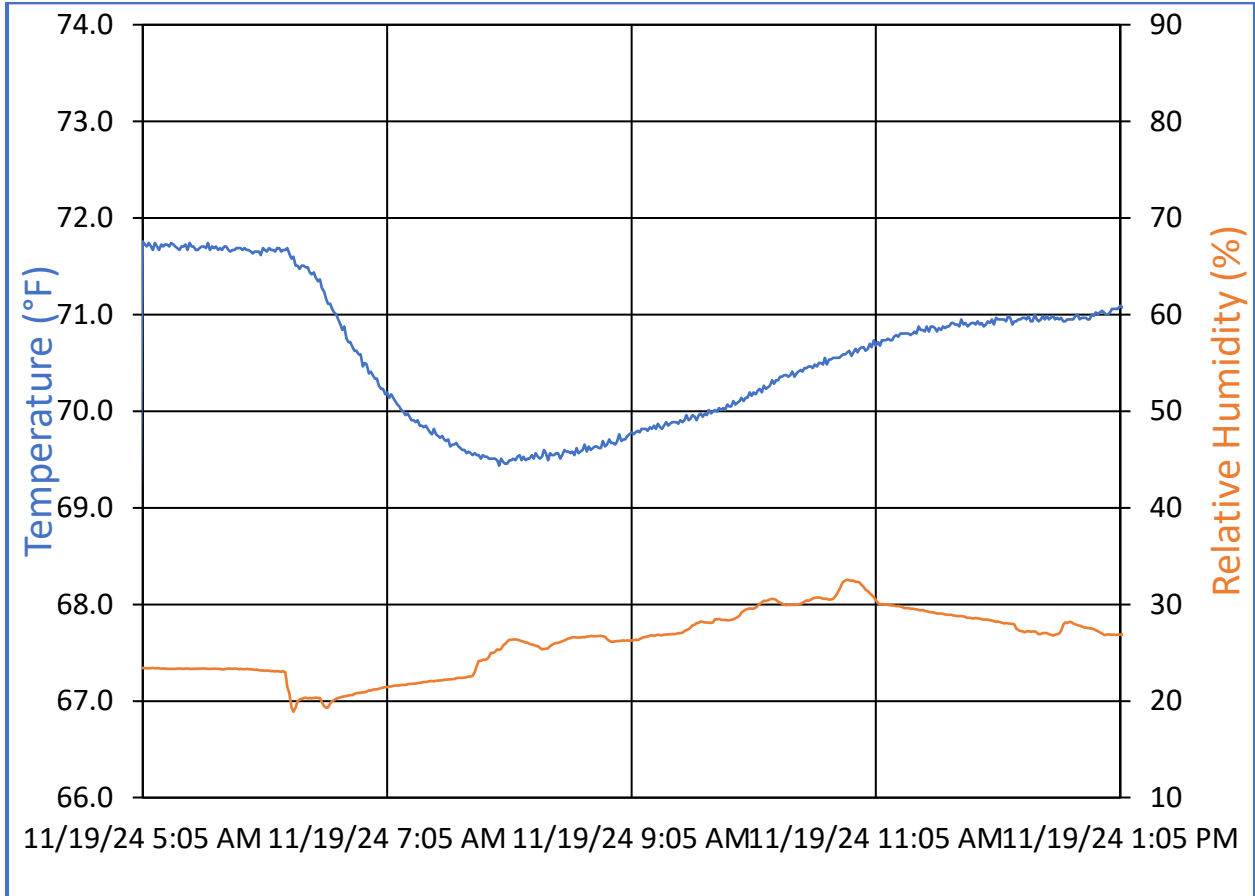
SOLVENT SPILLAGE LOCATION TABLE

| Test Phase | Spillage Location |
|--------------|-------------------|
| 0° To 90° | |
| 90° To 180° | |
| 180° To 270° | |
| 270° To 360° | |

DATA SHEET NO. 17

DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART

Test Vehicle: 2025 Subaru Forester 5-Door MPV NHTSA No.: O20255500
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 11/19/2024



APPENDIX A
PHOTOGRAPHIC DOCUMENTATION

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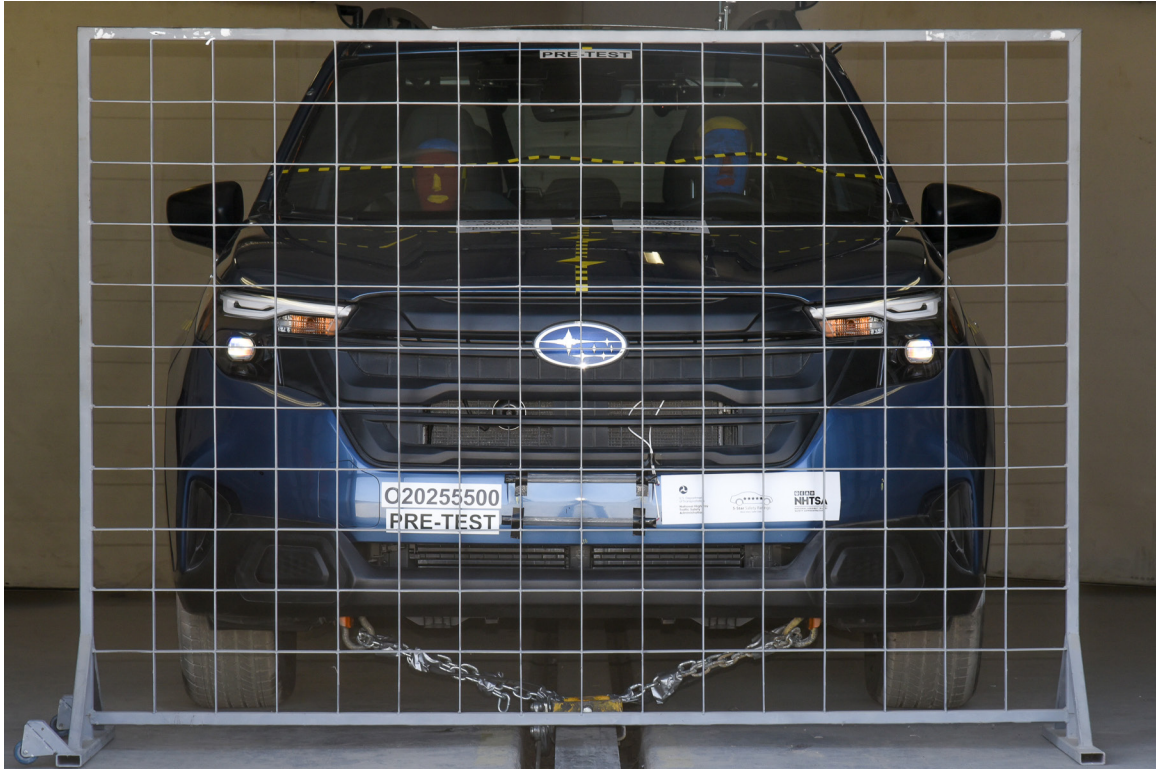


FIGURE 1. Load Cell Location

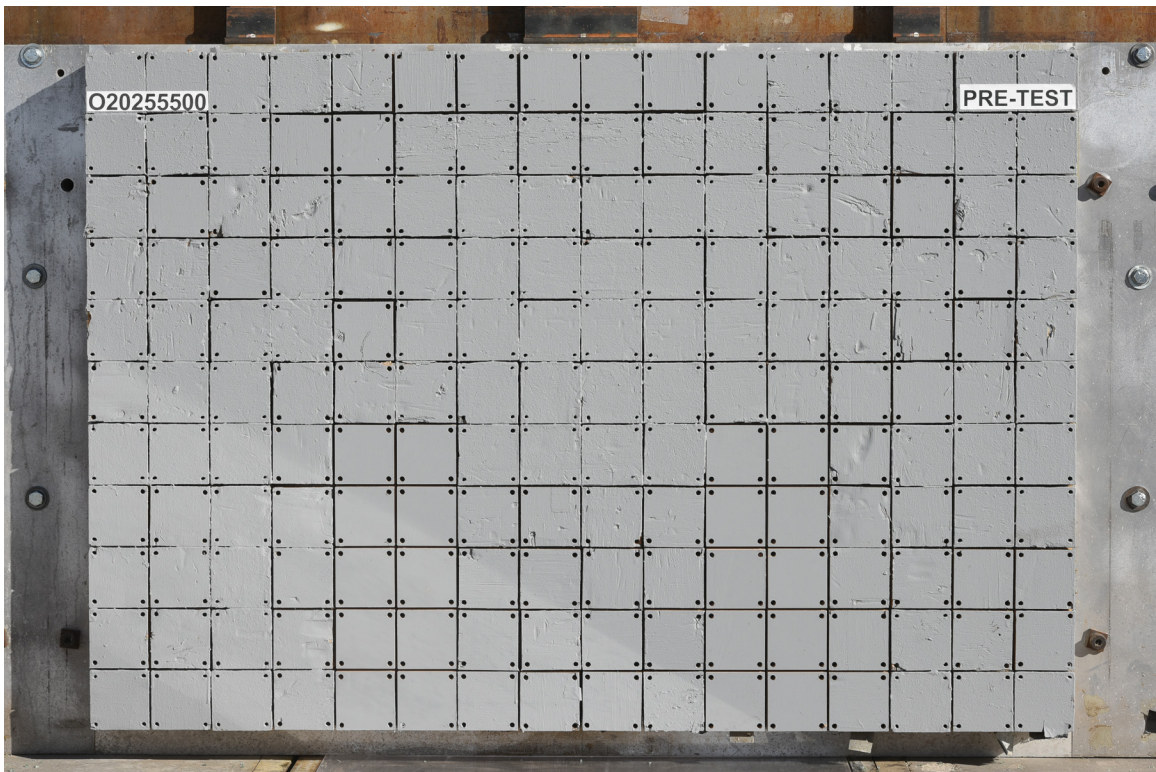


FIGURE 2. Pre-Test Load Cell Wall

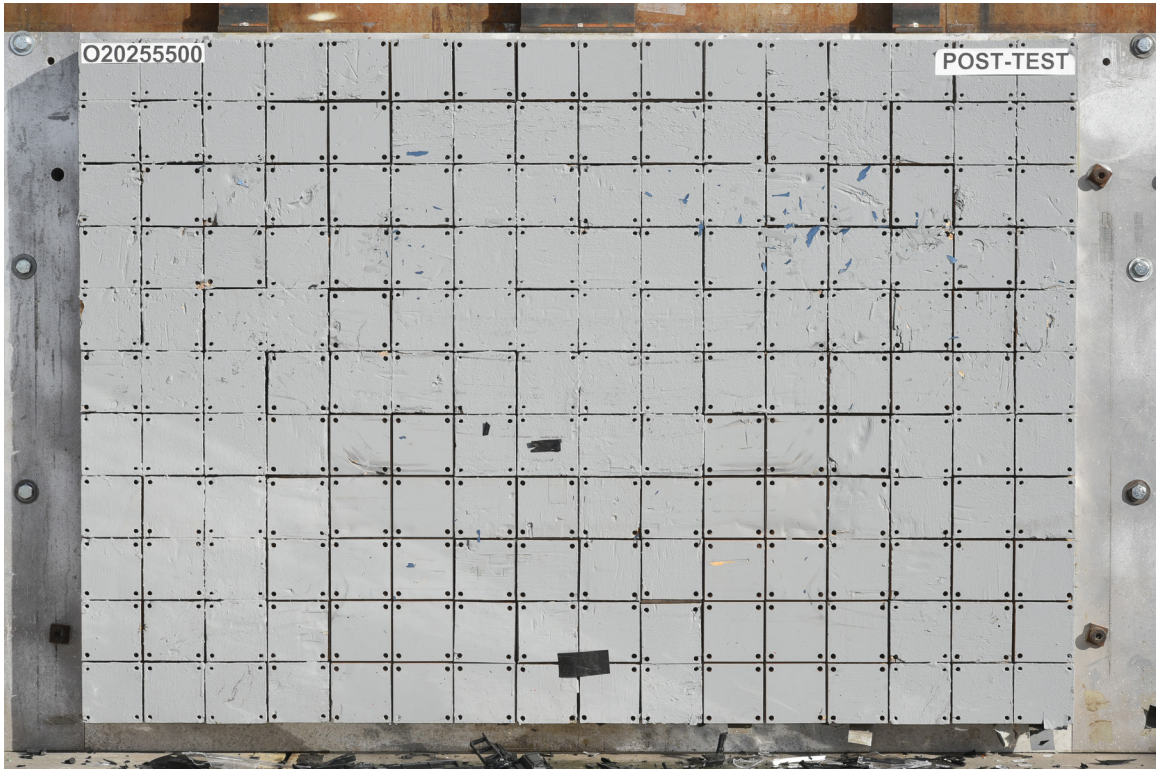


FIGURE 3. Post-Test Load Cell Wall



FIGURE 4. Manufacturer's Label



FIGURE 5. Tire Placard



FIGURE 6. 2025 Subaru Forester Frontal As Delivered



FIGURE 7. Left Rear 3/4 View, As Received



FIGURE 8. Pre-Test Front View of Test Vehicle



FIGURE 9. Post-Test Front View of Test Vehicle



FIGURE 10. Pre-Test Left View of Test Vehicle



FIGURE 11. Post-Test Left View of Test Vehicle



FIGURE 12. Pre-Test Right View of Test Vehicle



FIGURE 13. Post-Test Right Vehicle of Test Vehicle



FIGURE 14. Pre-Test Right Front 3/4 View



FIGURE 15. Post-Test Right Front 3/4 View



FIGURE 16. Pre-Test Left Rear 3/4 View



FIGURE 17. Post-Test Left Rear 3/4 View



FIGURE 18. Pre-Test Windshield View



FIGURE 19. Post-Test Windshield View



FIGURE 20. Pre-Test Engine Compartment View



FIGURE 21. Post-Test Engine Compartment View



FIGURE 22. Pre-Test Fuel Filler Cap View



FIGURE 23. Post-Test Fuel Filler Cap View

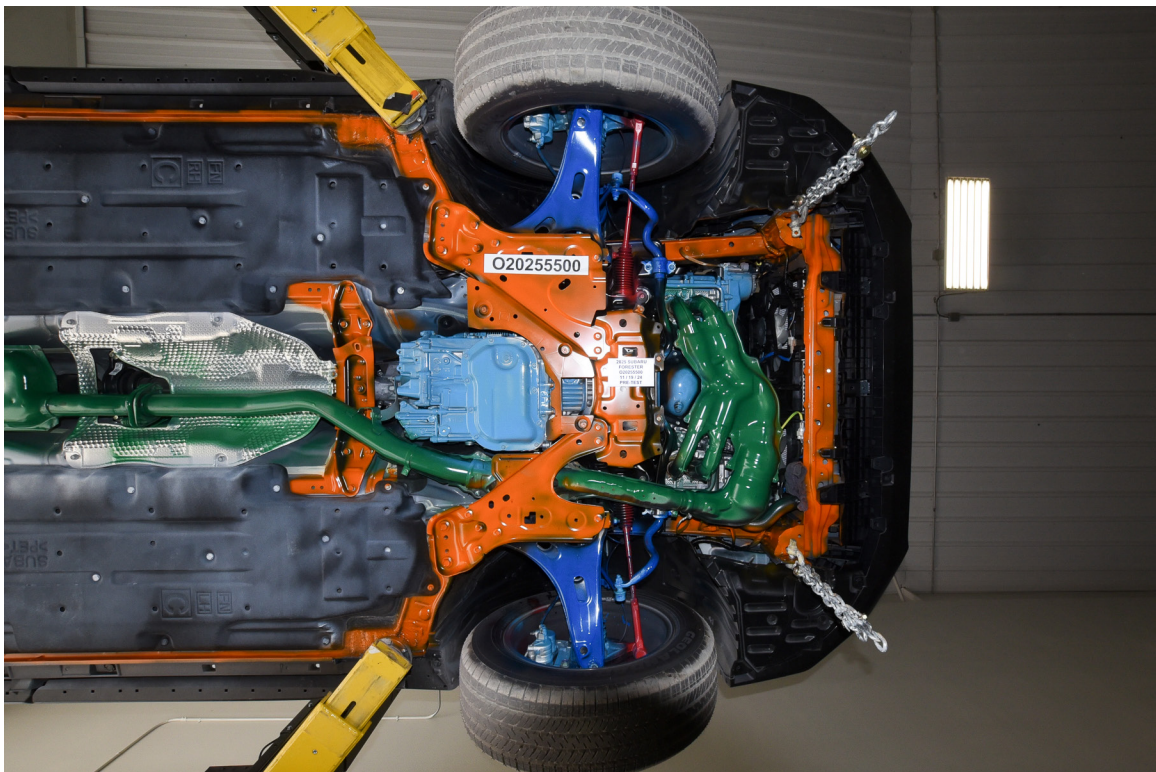


FIGURE 24. Pre-Test Front Underbody View

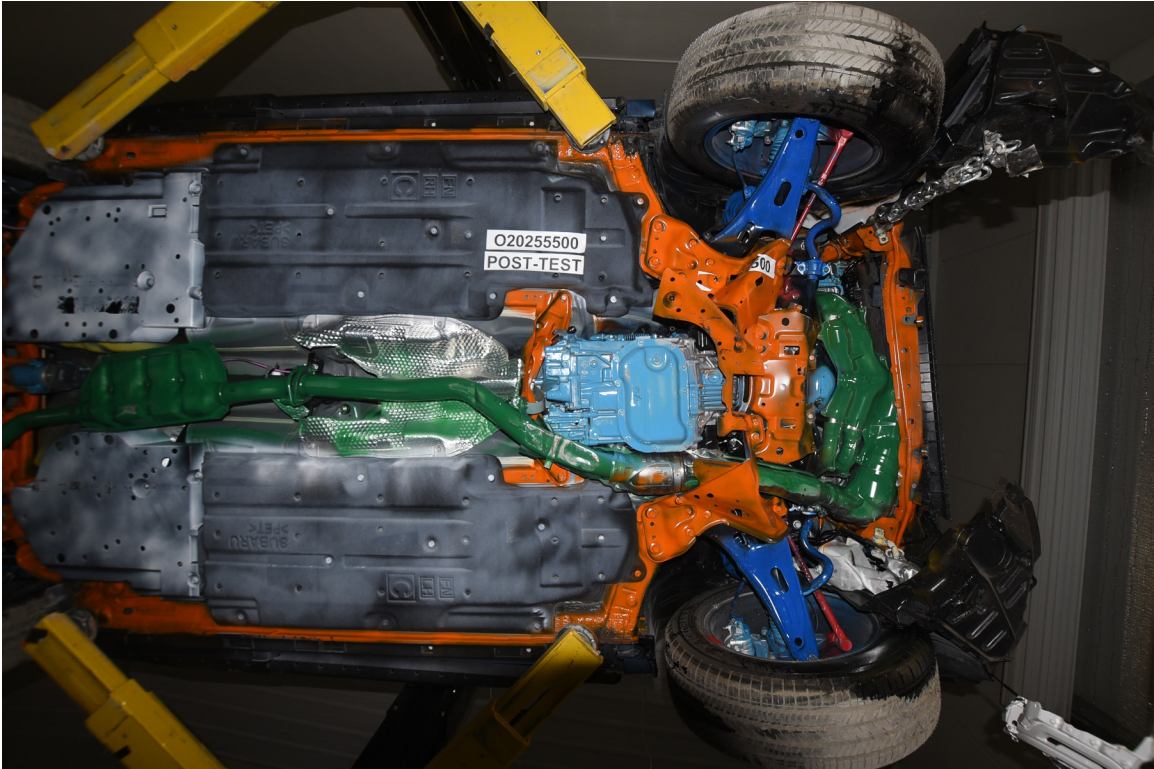


FIGURE 25. Post-Test Front Underbody View

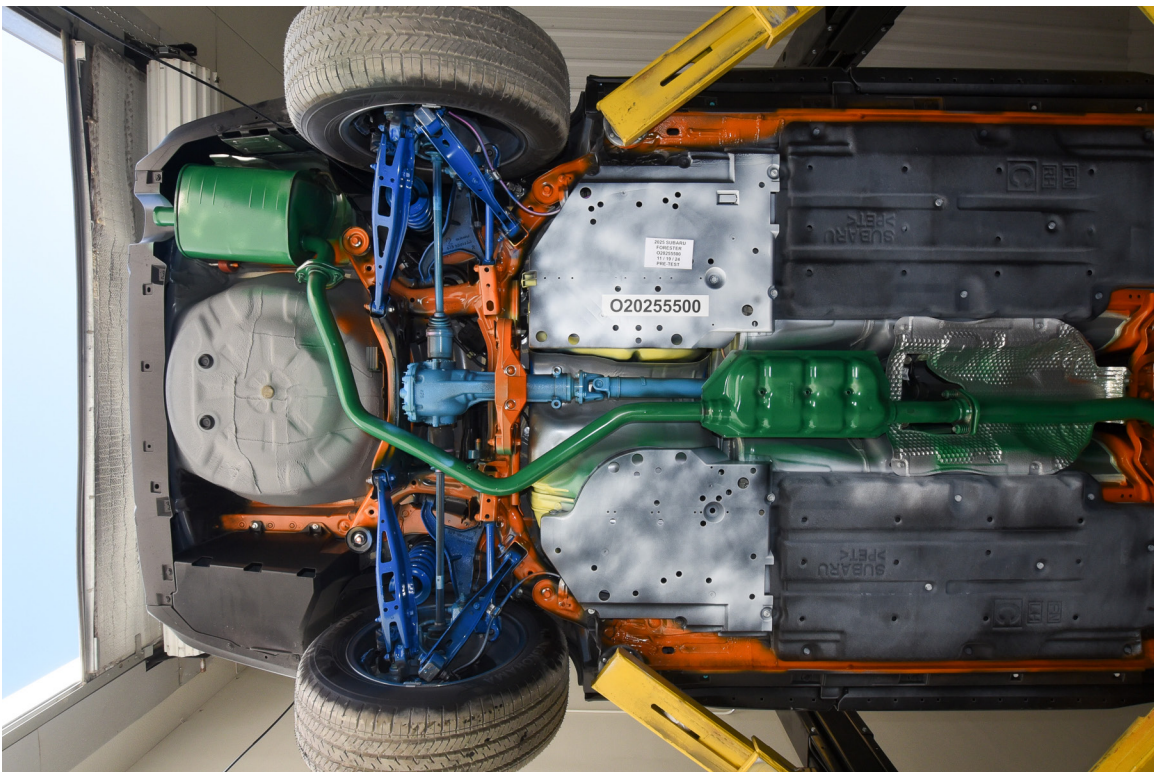


FIGURE 26. Pre-Test Rear Underbody View

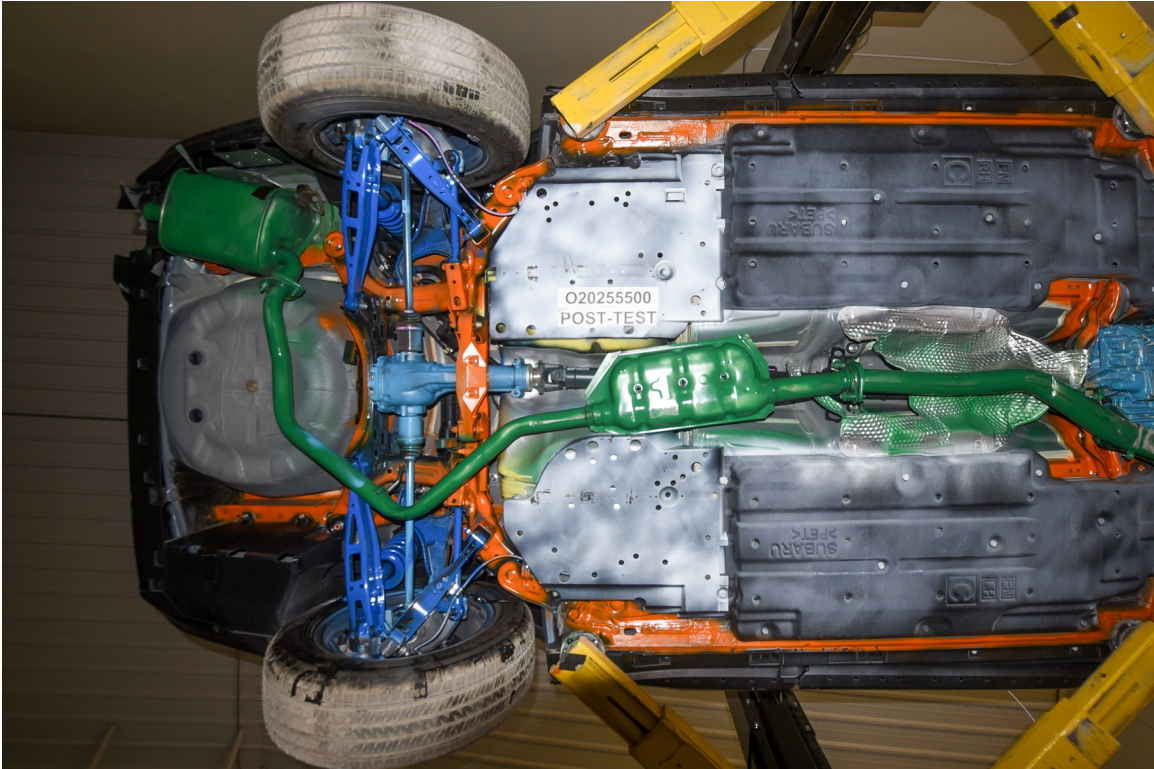


FIGURE 27. Post-Test Rear Underbody View



FIGURE 28. Pre-Test Dummy Cable Routing



FIGURE 29. Post-Test Dummy Cable Routing



FIGURE 30. Pre-Test Driver Dummy Front View



FIGURE 31. Post-Test Driver Dummy Front View



FIGURE 32. Pre-Test Driver Dummy Window View



FIGURE 33. Post-Test Driver Dummy Window View



FIGURE 34. Pre-Test Driver Dummy and Vehicle Interior View



FIGURE 35. Post-Test Driver Dummy and Vehicle Interior View



FIGURE 36. Pre-Test Driver's Seat Fore-Aft Markings



FIGURE 37. Post-Test Driver's Seat Fore-Aft Markings



FIGURE 38. Pre-Test View of Belt Anchorage for Driver Dummy



FIGURE 39. Post-Test View of Belt Anchorage for Driver Dummy



FIGURE 40. Pre-Test View of Belt Buckle and Latch Plate for Driver Dummy



FIGURE 41. Post-Test View of Belt Buckle and Latch Plate for Driver Dummy

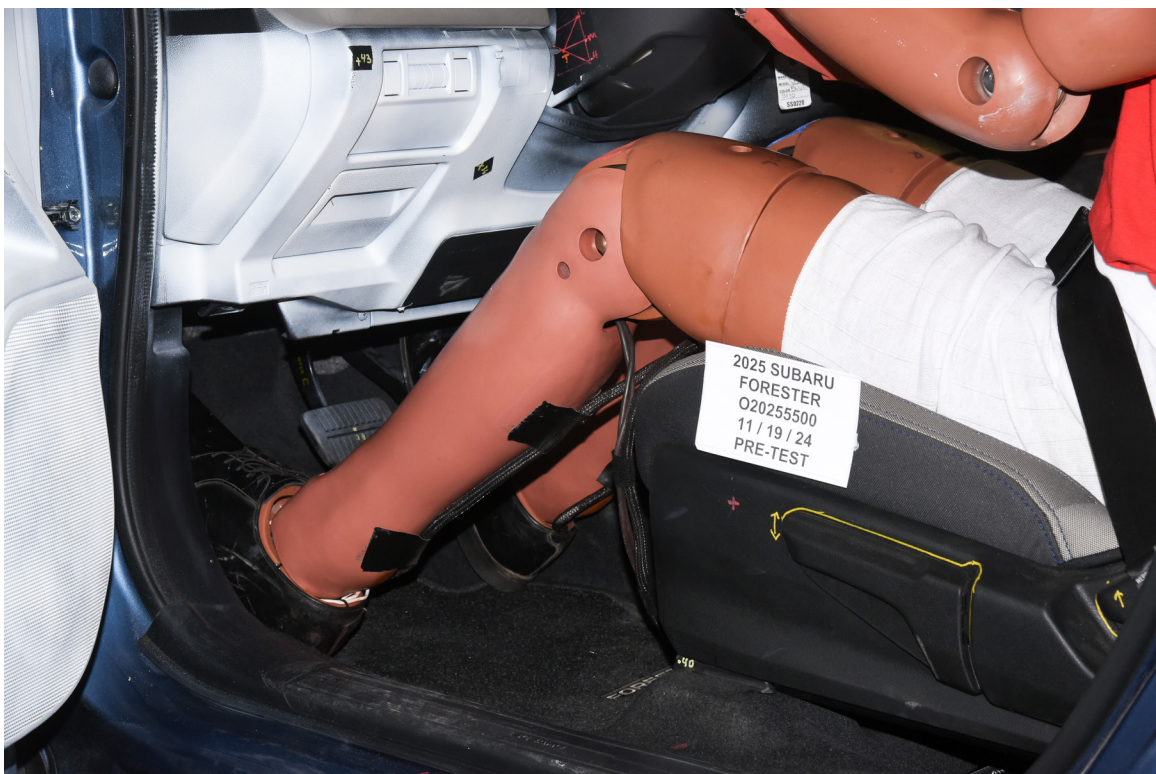


FIGURE 42. Pre-Test Driver Dummy Feet



FIGURE 43. Post-Test Driver Dummy Feet



FIGURE 44. Pre-Test Driver's Side Knee Bolster



FIGURE 45. Post-Test Driver's Side Knee Bolster



FIGURE 46. Pre-Test Driver's Side Floorpan



FIGURE 47. Post-Test Driver's Side Floorpan



FIGURE 48. Post-Test Driver Dummy Face



FIGURE 49. Post-Test Driver Dummy Contact with Air Bag

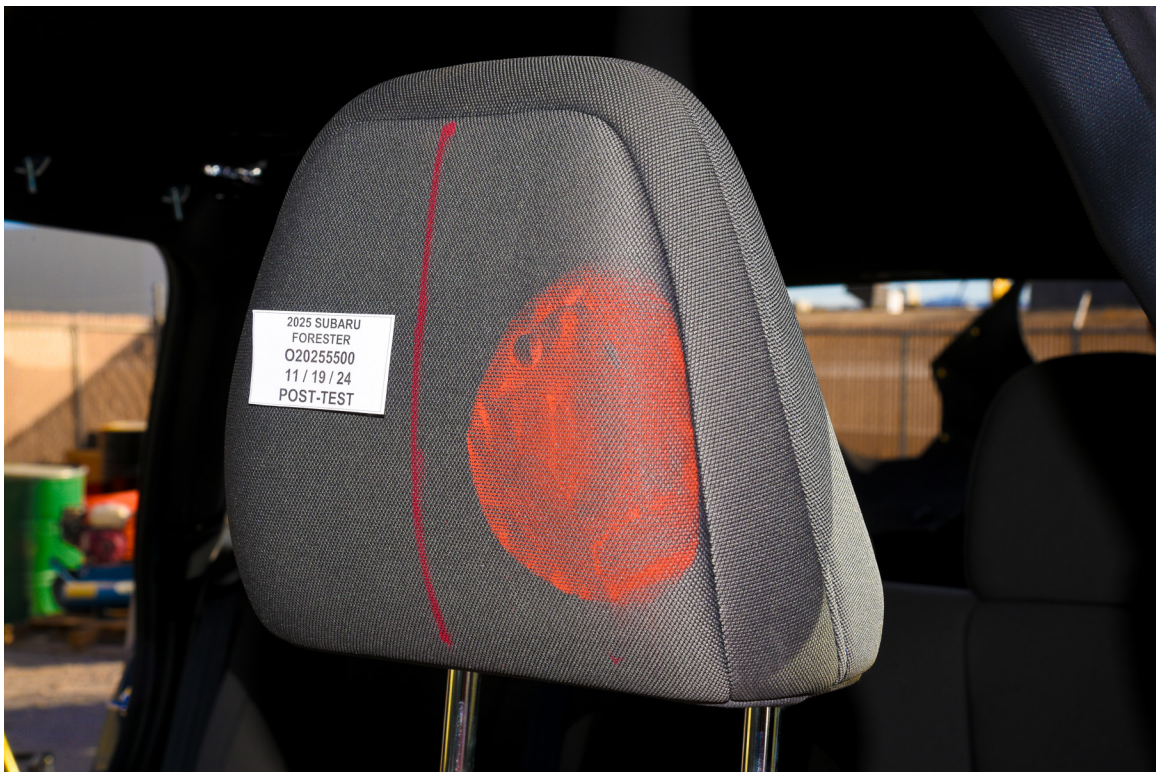


FIGURE 50. Post-Test Driver Dummy Contact with Headrest



FIGURE 50a. Post-Test Driver Dummy Contact with Knee Air Bag

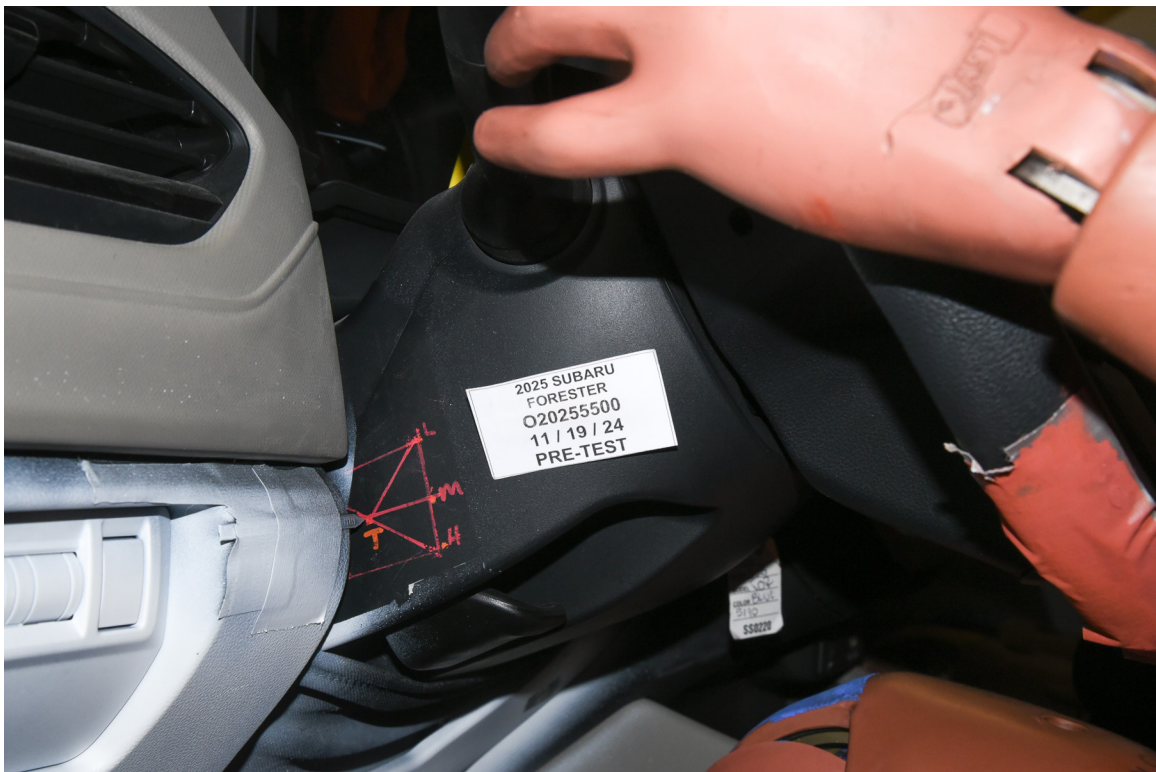


FIGURE 51. Pre-Test View of the Steering Wheel



FIGURE 52. Post-Test View of the Steering Wheel



FIGURE 53. Pre-Test Passenger Dummy Front View



FIGURE 54. Post-Test Passenger Dummy Front View



FIGURE 55. Pre-Test Passenger Dummy Window View



FIGURE 56. Post-Test Passenger Dummy Window View



FIGURE 57. Pre-Test Passenger Dummy and Vehicle Interior View



FIGURE 58. Post-Test Passenger Dummy and Vehicle Interior View



FIGURE 59. Pre-Test Passenger's Seat Fore-Aft Markings



FIGURE 60. Post-Test Passenger's Seat Fore-Aft Markings



FIGURE 61. Pre-Test View of Belt Anchorage for Passenger Dummy



FIGURE 62. Post-Test View of Belt Anchorage for Passenger Dummy



FIGURE 63. Pre-Test View of Belt Buckle and Latch Plate for Passenger Dummy



FIGURE 64. Post-Test View of Belt Buckle and Latch Plate for Passenger Dummy



FIGURE 65. Pre-Test Passenger Dummy Feet



FIGURE 66. Post-Test Passenger Dummy Feet



FIGURE 67. Pre-Test Passenger's Side Knee Bolster



FIGURE 68. Post-Test Passenger's Side Knee Bolster



FIGURE 69. Pre-Test Passenger's Side Floorpan



FIGURE 70. Post-Test Passenger's Side Floorpan



FIGURE 71. Post-Test Passenger Dummy Face



FIGURE 72. Post-Test Passenger Dummy Contact with Air Bag



FIGURE 73. Post-Test Passenger Dummy Contact with Headrest

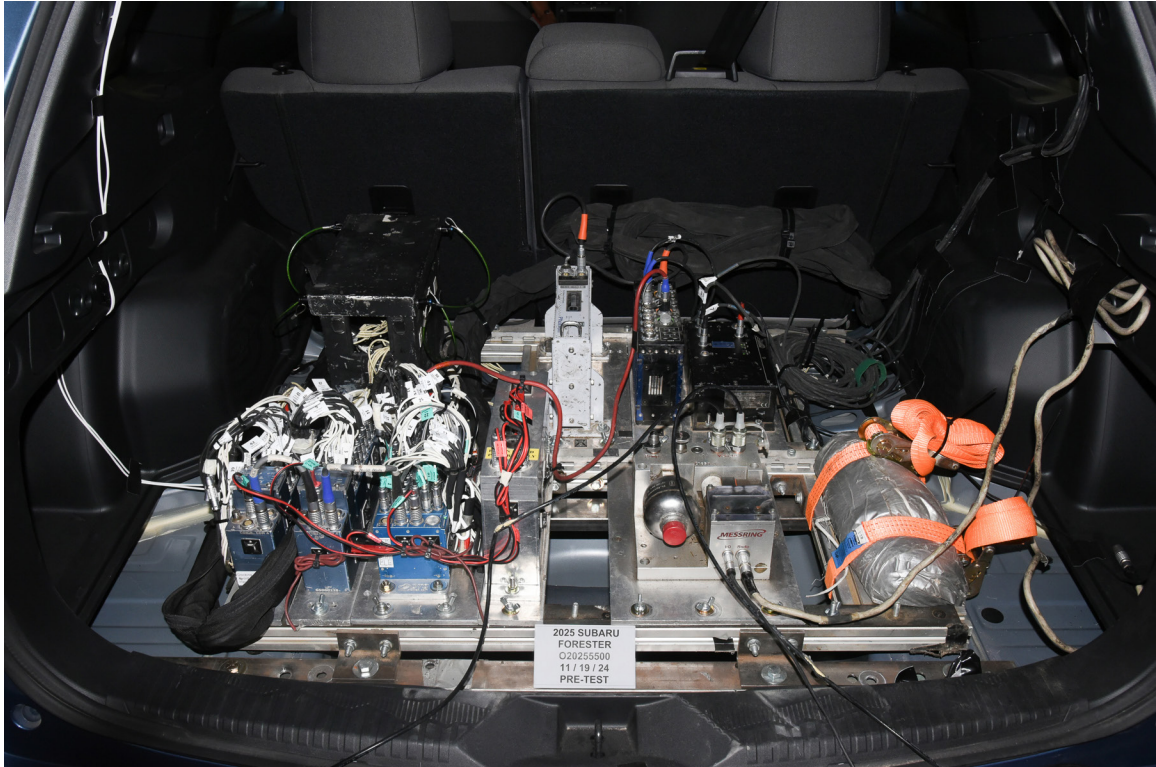


FIGURE 74. Photograph of Ballast Installed in Vehicle

**Photograph Not Applicable
No Stoddard Solvent Spillage**

FIGURE 75. Post-Test Stoddard Solvent Spillage Location View



FIGURE 76. Post-Test Speed Trap Read-Out



FIGURE 77. Vehicle at 0° on Static Rollover Device



FIGURE 78. Vehicle at 90° on Static Rollover Device

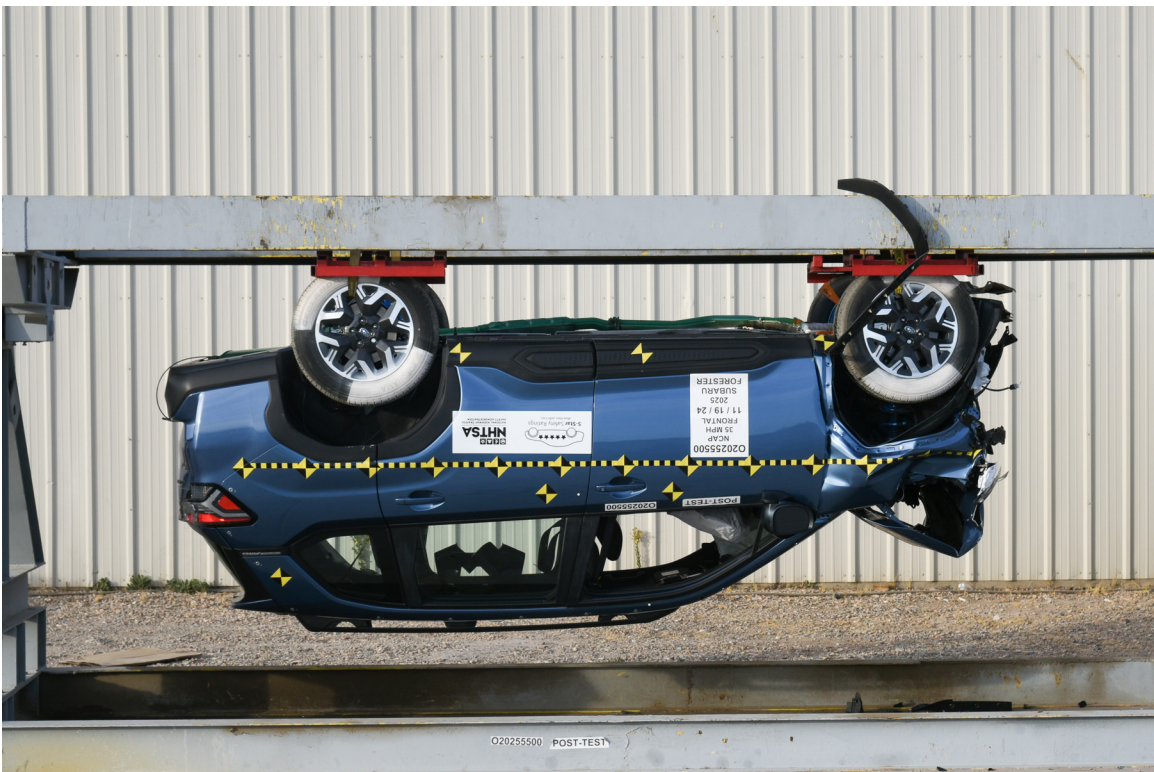


FIGURE 79. Vehicle at 180° on Static Rollover Device

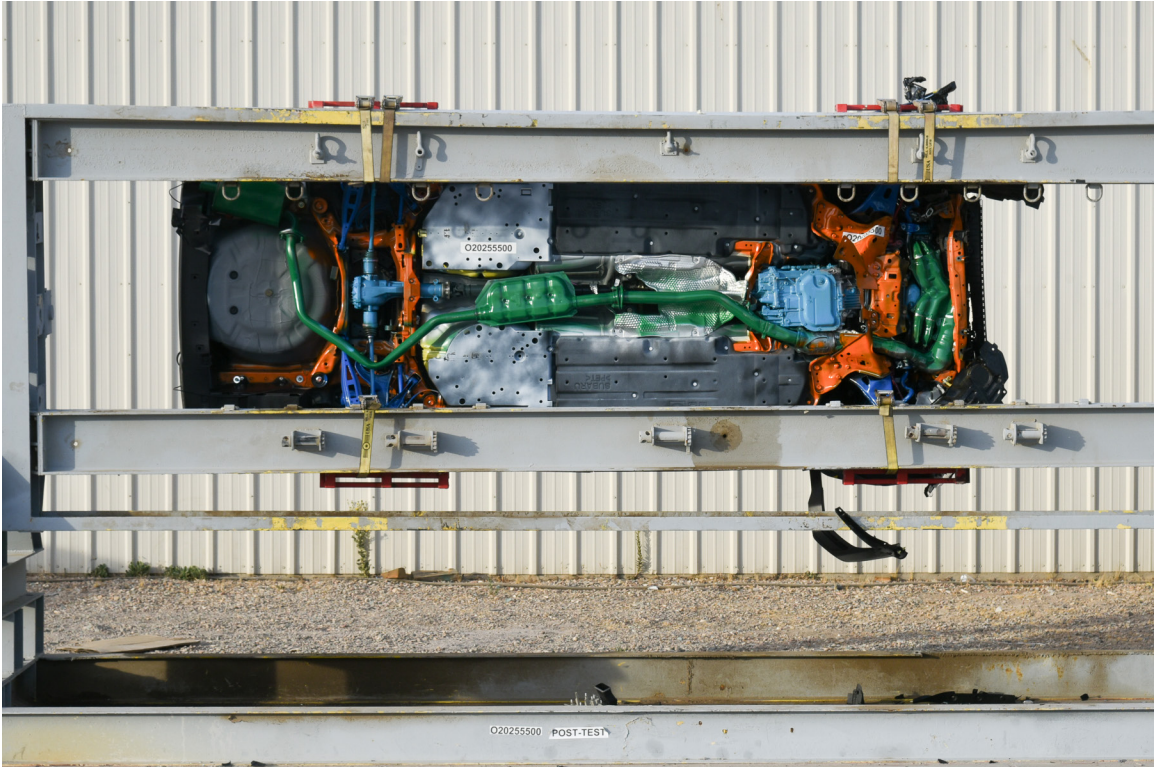


FIGURE 80. Vehicle at 270° on Static Rollover Device



FIGURE 81. Vehicle at 360° on Static Rollover Device



FIGURE 82. 2025 Subaru Forester Frontal Impact Event

FORESTER

VIN: JF2SLDACSH455190
 Model/Code: 2025 SUBARU FORESTER SFB
 Port/Assembly: HUENEME
 Dealer by Center: HILUCK/458

SHIP TO: 090796
 SUBARU OF GLENDALE
 1508 S BRAND BLVD
 GLENDALE CA 91204

SOLD TO: 090796
 SUBARU OF GLENDALE
 1508 S BRAND BLVD
 GLENDALE CA 91204

SUBARU

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 Passenger | Not Rated |
| <small>Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.</small> | | |
| Side Crash | Front seat Rear seat | Not Rated |
| <small>Based on the risk of injury in a side impact.</small> | | |
| Rollover | | Not Rated |
| <small>Based on the risk of rollover in a single-vehicle crash.</small> | | |

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

Subaru Added Security
The Only Extended Service Agreement Backed By Subaru

- Protection designed to fit your driving needs, up to 16 years/100,000 miles of coverage
- We only use Genuine Subaru replacement parts
- We use Subaru-trained technicians - those who know your vehicle best
- Towing and rental car reimbursements during covered events
- Transferable coverage to the next owner

Scan the QR code or ask your sales representative for more details.

STANDARD EQUIPMENT

SAFETY
 Symmetrical All-Wheel Drive (AWD)
 Vehicle Dynamics Control (VDC)
 EyeSight Driver-Assist System
 Subaru Advanced Frontal Airbag System
 Side-Curtain Airbags w/ Rollover Sensor
 Driver's Side Knee Airbag & Front Seat Side-Impact Airbags
 Whiplash Protection Front Seats
 4-Wheel Disc Brakes w/ Brake Assist
 Anti-Lock Braking System (ABS)
 Electronic Brake-Force Distribution
 Brake Override System & Safety Pedal System
 Daytime Running Lights (DRL)
 Anti-Theft Alarm & Immobilizer System
 Rear Vision Camera w/ Dynamic Guidelines

PERFORMANCE & EXTERIOR
 2.5L DOHC SUBARU BOXER Engine w/ Auto Start Stop
 Lineartronic CVT w/ Low Shift Mode / SI-DRIVE
 Four-Wheel Independent Raised Suspension
 8.7" Ground Clearance
 17" Alloy Wheels, Dark Metallic M Machine Finish
 225/60 R17 All-Season Tires
 Variable Intermittent Windshield Wipers
 Dual-Pinion Electric Power-Assisted Steering
 Black Folding Power Mirrors
 Roof Rails: Raised Ladder Type w/ 700lb Static Load Capacity
 LED Steering Responsive Headlights w/ High Beam Assist
 Rear Roof Spoiler

COMFORT, CONVENIENCE & INTERIOR
 Dual-Zone Automatic Climate Control w/ Air Filtration System
 SUBARU STARLINK Dual 7.0" Multimedia Audio System
 USB Port
 Apple CarPlay & Android Auto
 Bluetooth Hands-Free Phone Connectivity
 Tilt/Telescopic Steering Wheel w/ Bluetooth & Audio Switches
 Advanced Adaptive Cruise Control w/ Lane Centering
 Power Door Locks w/ Automatic Lock/Unlock System
 Remote Keyless Entry System
 Power Windows w/ Driver's Auto Up/Down
 Retained Accessory Power for Audio System & Power Driver's Window
 60/40 Split Fold-Down Rear Seatback
 LED Dome Light / LED Front Map Lights / LED Cargo Area Light
 Cargo Area Utility Hook Screw-In Anchor Points
 Multi-Function Display

LIMITED WARRANTY/ROADSIDE ASSISTANCE
 3 Years / 36,000 Miles Basic
 5 Years / 60,000 Miles Powertrain
 5 Years / Unlimited Mileage Rust Perforation
 3 Years / 36,000 24/7 Roadside Assistance
 See Owner Info Kit/Warranty For Details

EPA DOT Fuel Economy and Environment Gasoline Vehicle

Fuel Economy
29 MPG
Small SUVs range from 14 to 118 MPG. The best vehicle rates 140 MPG.
 26 33
combined city/highway city highway
 3.4 gallons per 100 miles

Annual fuel COST
\$1,800

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 28 MPG and costs \$9,500 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.50 per gallon. MPG is miles per gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fuel economy.gov
Calculate personalized estimates and compare vehicles

You save \$500 in fuel costs over 5 years compared to the average new vehicle.

Fuel Economy & Greenhouse Gas Rating (tailpipe only) **Smog Rating** (tailpipe only)

This vehicle emits 310 grams CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also creates emissions, learn more at fuel economy.gov.

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE: U.S./CANADIAN PARTS CONTENT: 0% MAJOR SOURCES OF FOREIGN PARTS CONTENT: JAPAN: 85%

FOR THIS VEHICLE: FINAL ASSEMBLY POINT: OTA, GUNMA, JAPAN COUNTRY OF ORIGIN: ENGINE: JAPAN TRANSMISSION: JAPAN

Note: Parts content does not include final assembly distribution or other non-parts costs

Destination and Delivery **\$1,420.00**
 Total Suggested Retail Price **\$31,528.00**

THIS LABEL HAS BEEN APPLIED PURSUANT TO FEDERAL LAW, AND DOES NOT REMOVE OBLIGATION PRIOR TO THE DELIVERY TO

FIGURE 83. Monroney Label Photograph

APPENDIX B
DUMMY RESPONSE DATA TRACES

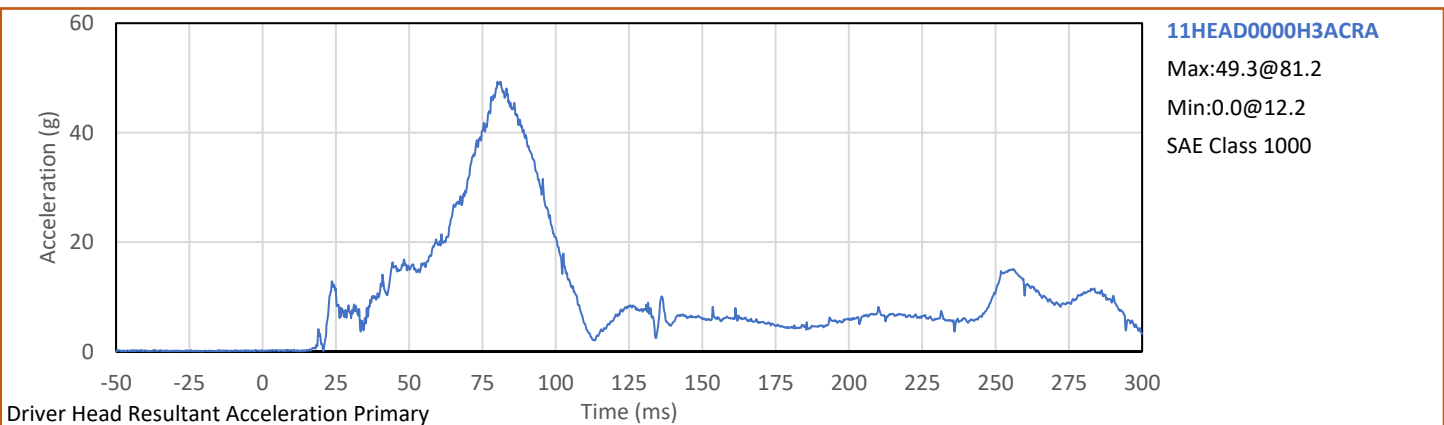
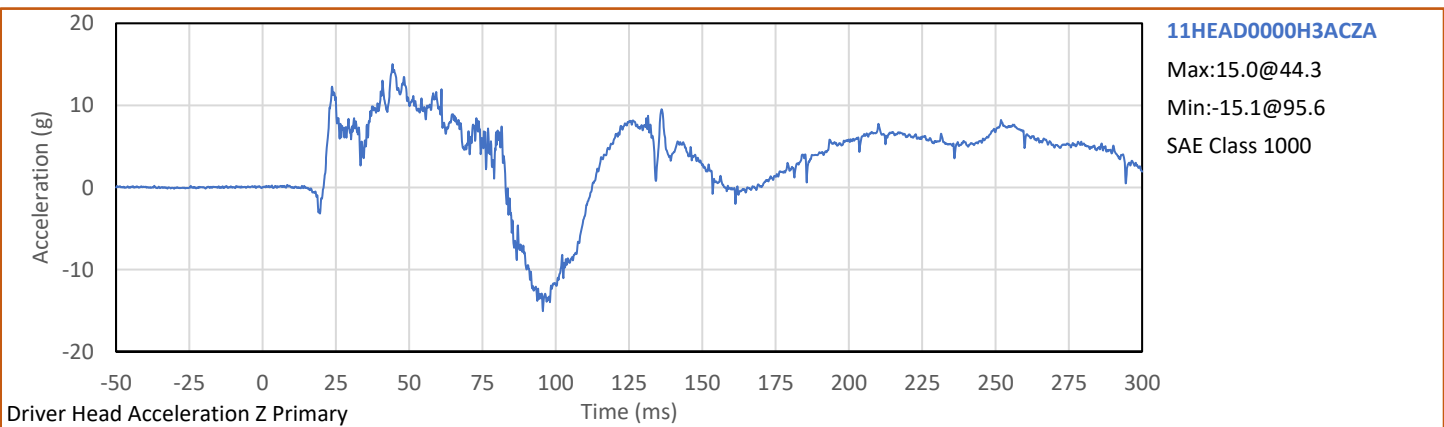
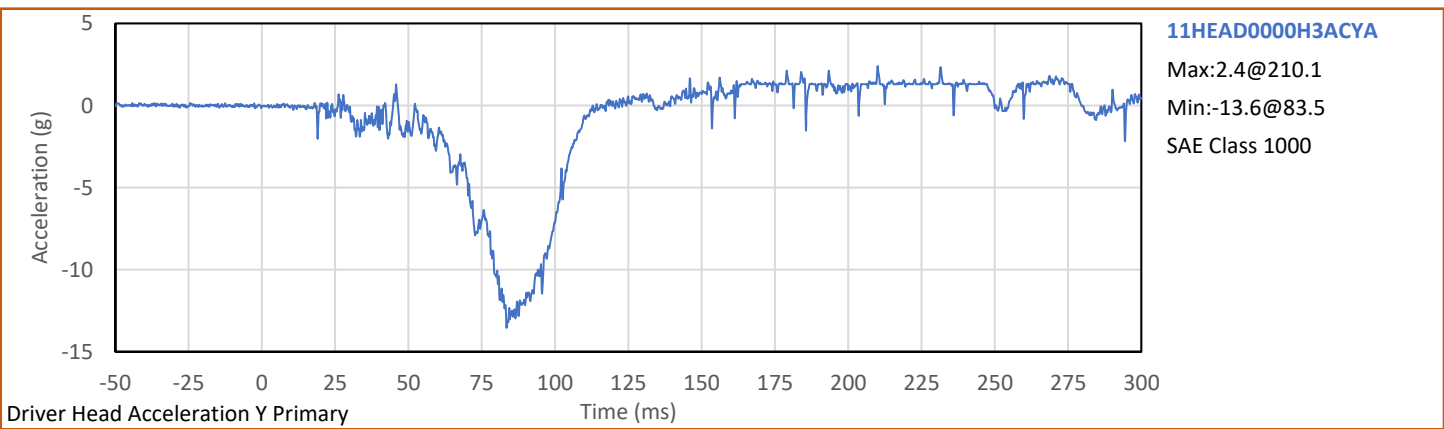
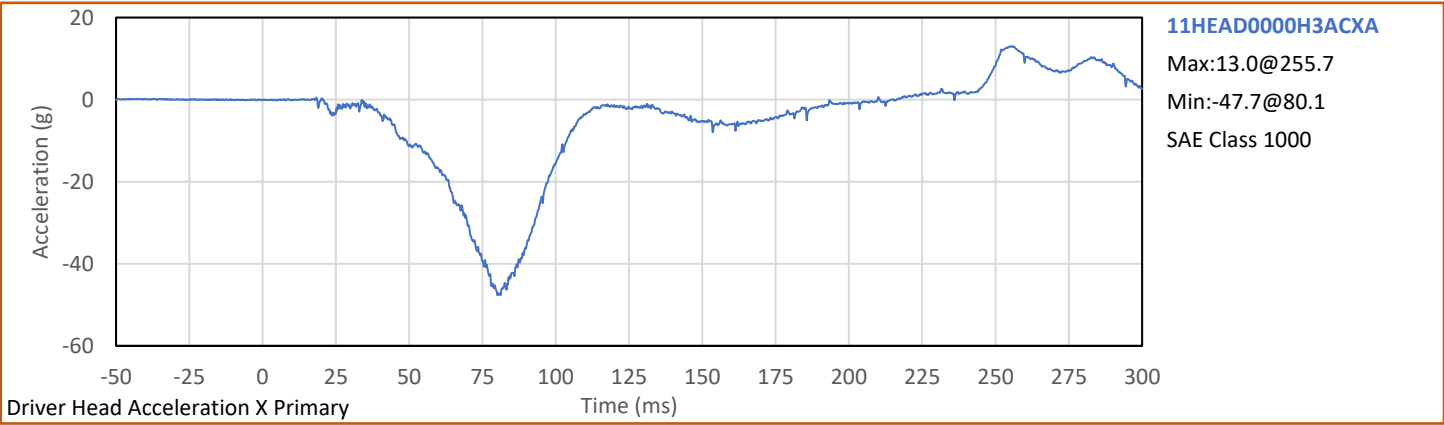
TABLE OF DATA PLOTS

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| 2 | Driver Head Acceleration Y Primary | B-1 |
| 3 | Driver Head Acceleration Z Primary | B-1 |
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| 6 | Driver Upper Neck Force X | B-3 |
| 7 | Driver Upper Neck Force Z | B-3 |
| 8 | Driver Upper Neck Moment Y | B-3 |
| 9 | Driver Nij | B-3 |
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| 11 | Driver Chest Acceleration Y Primary | B-4 |
| 12 | Driver Chest Acceleration Z Primary | B-4 |
| 13 | Driver Chest Resultant Acceleration Primary | B-4 |
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| 17 | Passenger Head Acceleration Y Primary | B-6 |
| 18 | Passenger Head Acceleration Z Primary | B-6 |
| 19 | Passenger Head Resultant Acceleration Primary | B-6 |
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| 26 | Passenger Chest Acceleration Y Primary | B-9 |
| 27 | Passenger Chest Acceleration Z Primary | B-9 |
| 28 | Passenger Chest Resultant Acceleration Primary | B-9 |
| 29 | Passenger Left Femur Force Z | B-10 |
| 30 | Passenger Right Femur Force Z | B-10 |

The following additional dummy and vehicle response data can be found in the R&D section of the NHTSA website at www.nhtsa.gov

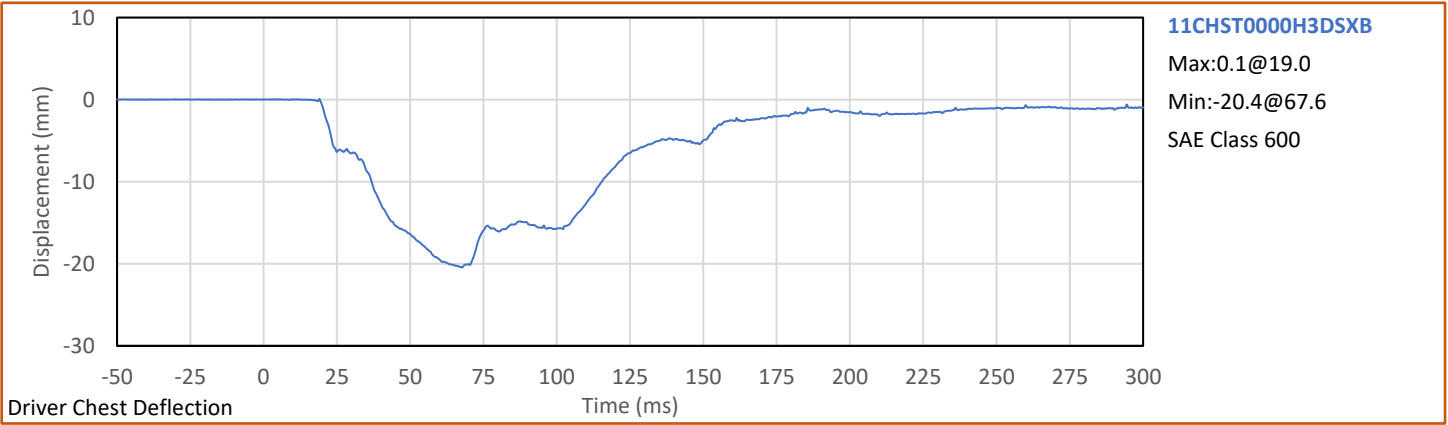
Driver Head X Acceleration Redundant
Driver Head Y Acceleration Redundant
Driver Head Z Acceleration Redundant
Driver Upper Neck Force Y
Driver Upper Neck Moment X
Driver Upper Neck Moment Z
Driver Chest X Acceleration Redundant
Driver Chest Y Acceleration Redundant
Driver Chest Z Acceleration Redundant
Driver Pelvis X
Driver Pelvis Y
Driver Pelvis Z
Driver Left Femur Force Z Redundant
Driver Right Femur Force Z Redundant
Driver Left Upper Tibia Moment X
Driver Left Upper Tibia Moment Y
Driver Left Upper Tibia Force Z
Driver Left Lower Tibia Moment X
Driver Left Lower Tibia Moment Y
Driver Left Lower Tibia Force Z
Driver Right Upper Tibia Moment X
Driver Right Upper Tibia Moment Y
Driver Right Upper Tibia Force Z
Driver Right Lower Tibia Moment X
Driver Right Lower Tibia Moment Y
Driver Right Lower Tibia Force Z
Driver Left Foot Fore Z
Driver Left Foot Aft X
Driver Left Foot Aft Z
Driver Right Foot Fore Z
Driver Right Foot Aft X
Driver Right Foot Aft Z
Driver Shoulder Belt Force
Driver Lap Belt Force
Driver Head Angular Velocity X
Driver Head Angular Velocity Y
Driver Head Angular Velocity Z
Passenger Head X Acceleration Redundant
Passenger Head Y Acceleration Redundant
Passenger Head Z Acceleration Redundant
Passenger Upper Neck Force X
Passenger Upper Neck Force Z
Passenger Upper Neck Moment Y

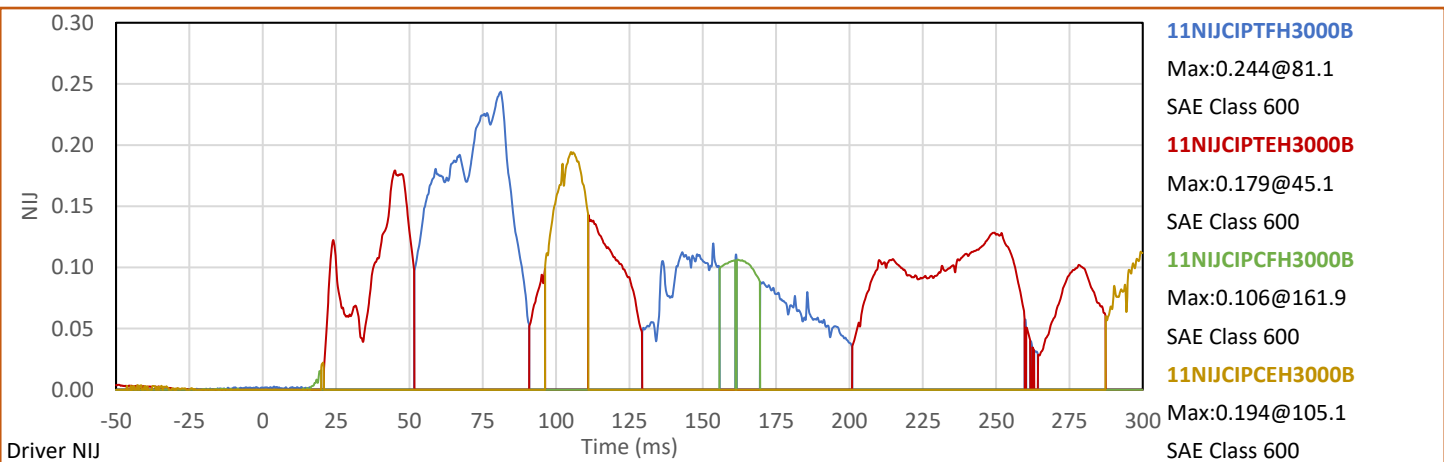
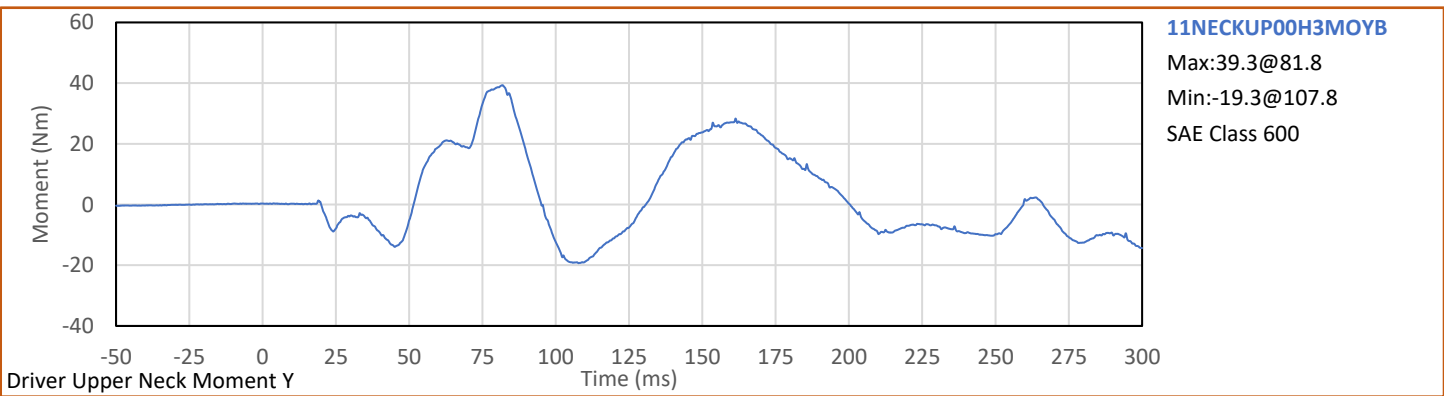
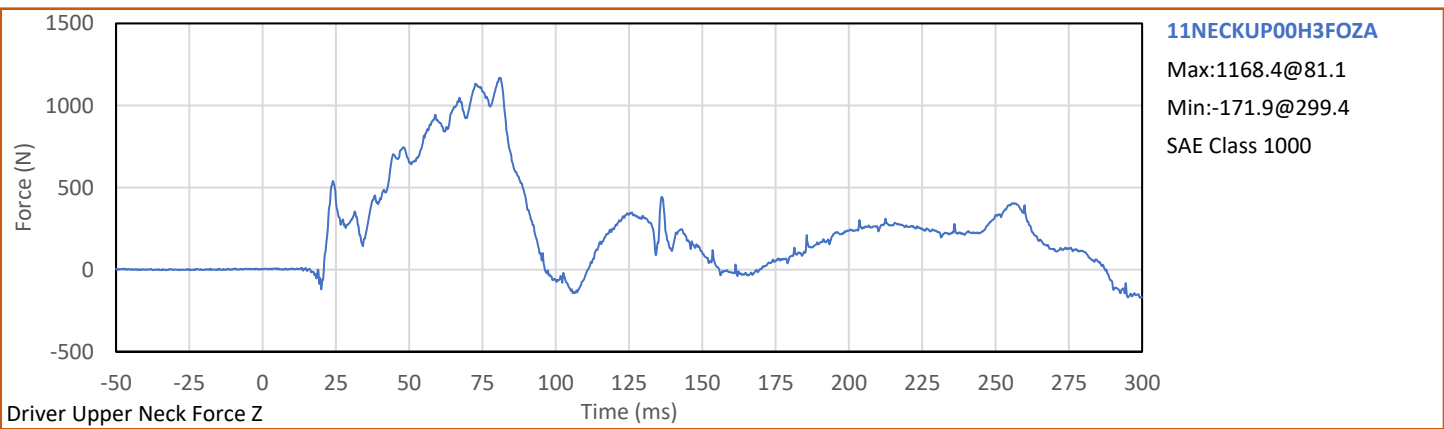
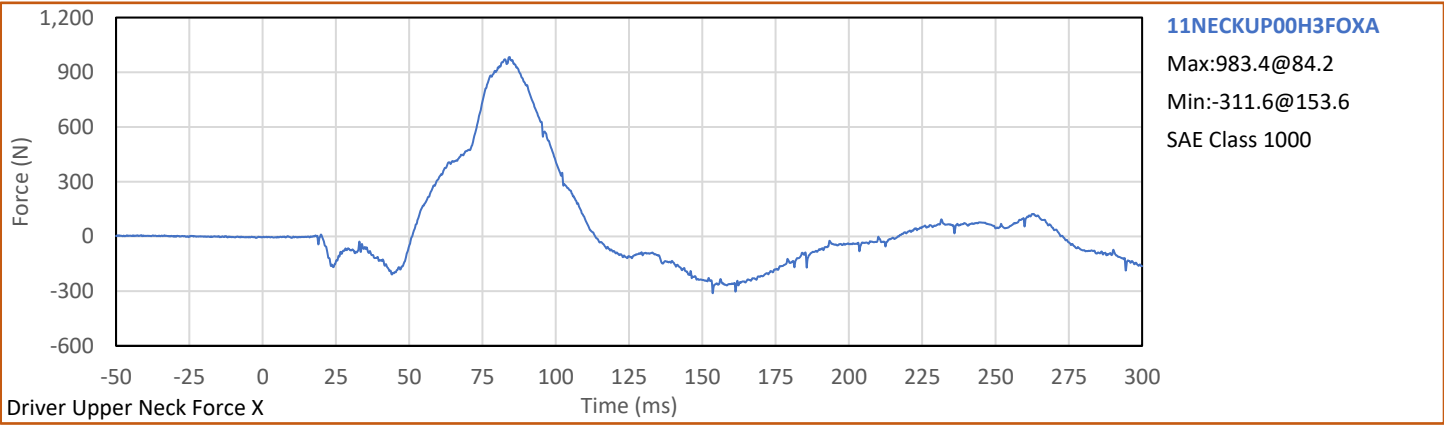
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Passenger Chest Y Acceleration Redundant
Passenger Chest Z Acceleration Redundant
Passenger Pelvis X
Passenger Pelvis Y
Passenger Pelvis Z
Passenger Left Femur Force Redundant
Passenger Right Femur Force Redundant
Passenger Left Upper Tibia Moment X
Passenger Left Upper Tibia Moment Y
Passenger Left Upper Tibia Force Z
Passenger Left Lower Tibia Moment X
Passenger Left Lower Tibia Moment Y
Passenger Left Lower Tibia Force Z
Passenger Right Upper Tibia Moment X
Passenger Right Upper Tibia Moment Y
Passenger Right Upper Tibia Force Z
Passenger Right Lower Tibia Moment X
Passenger Right Lower Tibia Moment Y
Passenger Right Lower Tibia Force Z
Passenger Left Foot Fore Z
Passenger Left Foot Aft X
Passenger Left Foot Aft Z
Passenger Right Foot Fore Z
Passenger Right Foot Aft X
Passenger Right Foot Aft Z
Passenger Shoulder Belt Force
Passenger Lap Belt Force
Passenger Head Angular Velocity X
Passenger Head Angular Velocity Y
Passenger Head Angular Velocity Z
Left Rear Seat Crossmember X
Left Rear Seat Crossmember Z
Right Rear Seat Crossmember X
Right Rear Seat Crossmember Z
Left Rear Seat Crossmember X Redundant
Right Rear Seat Crossmember X Redundant
Vehicle Engine Top X
Vehicle Engine Bottom X
Load Cell Barrier Forces

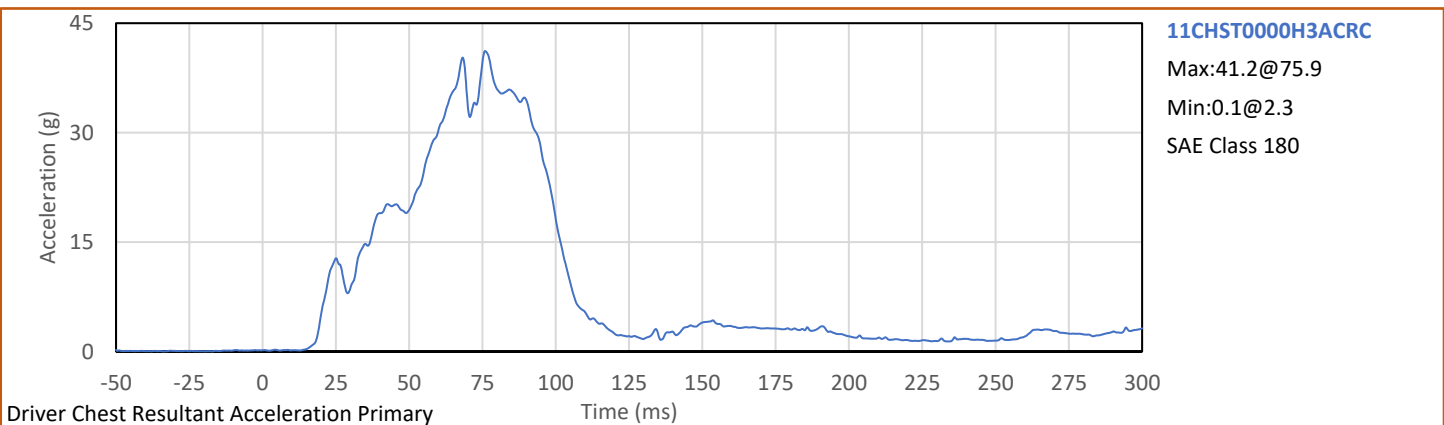
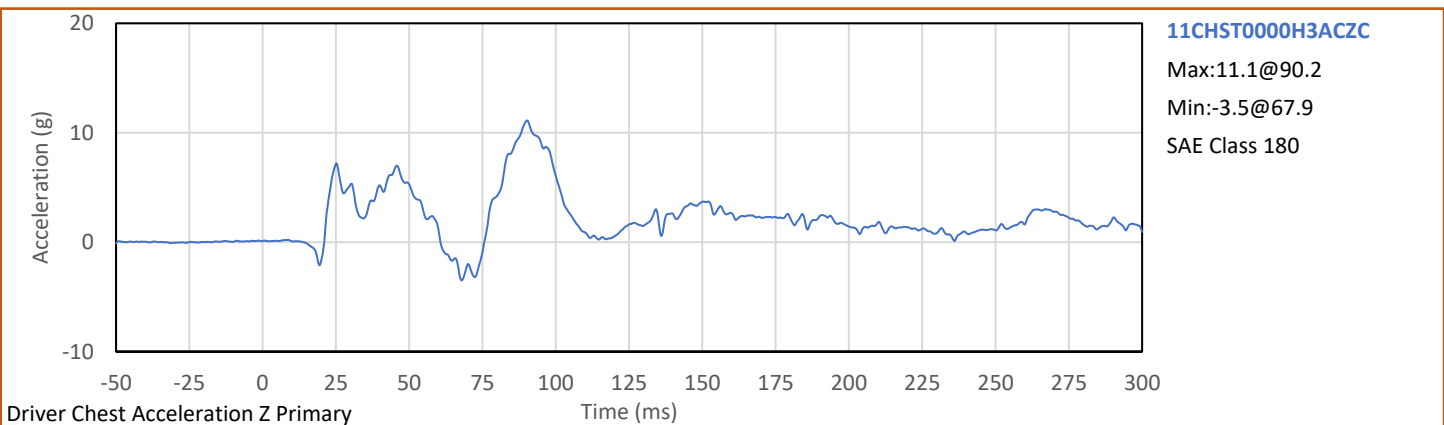
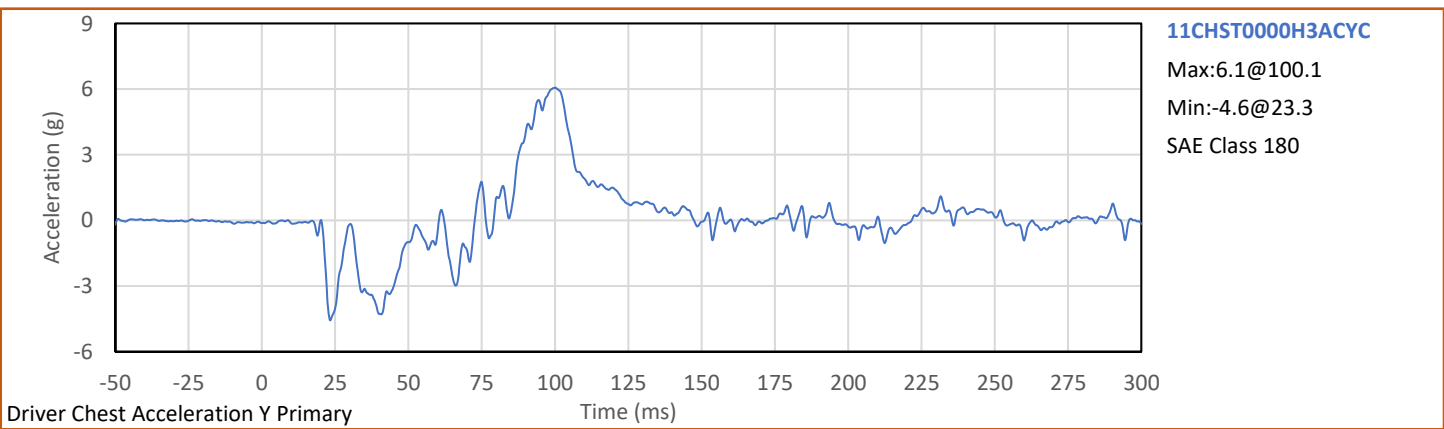
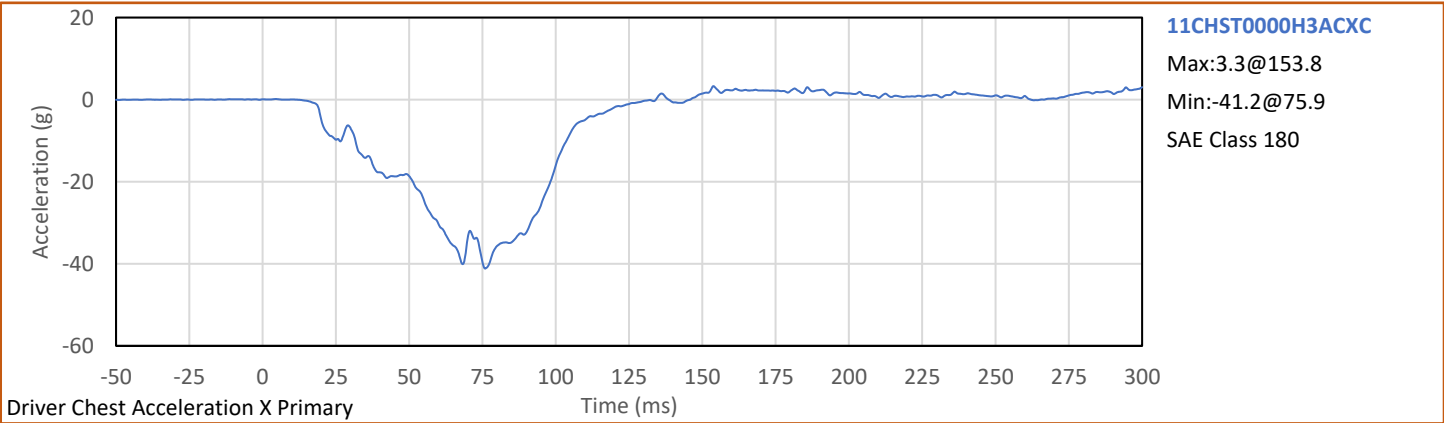


Test Vehicle: 2025 Subaru Forester 5-Door MPV
Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: O20255500
Test Date: 11/19/2024

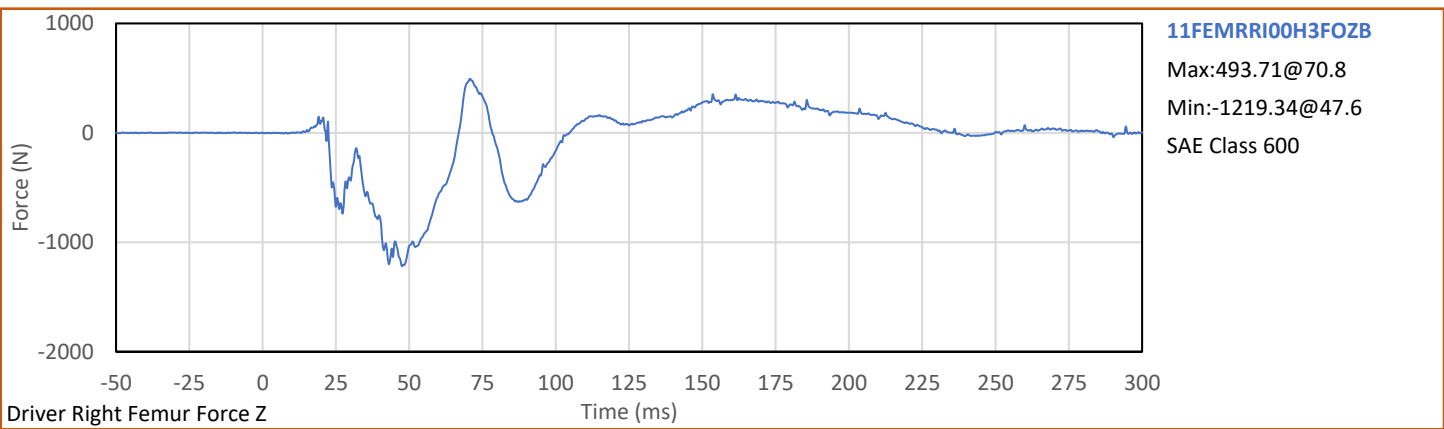
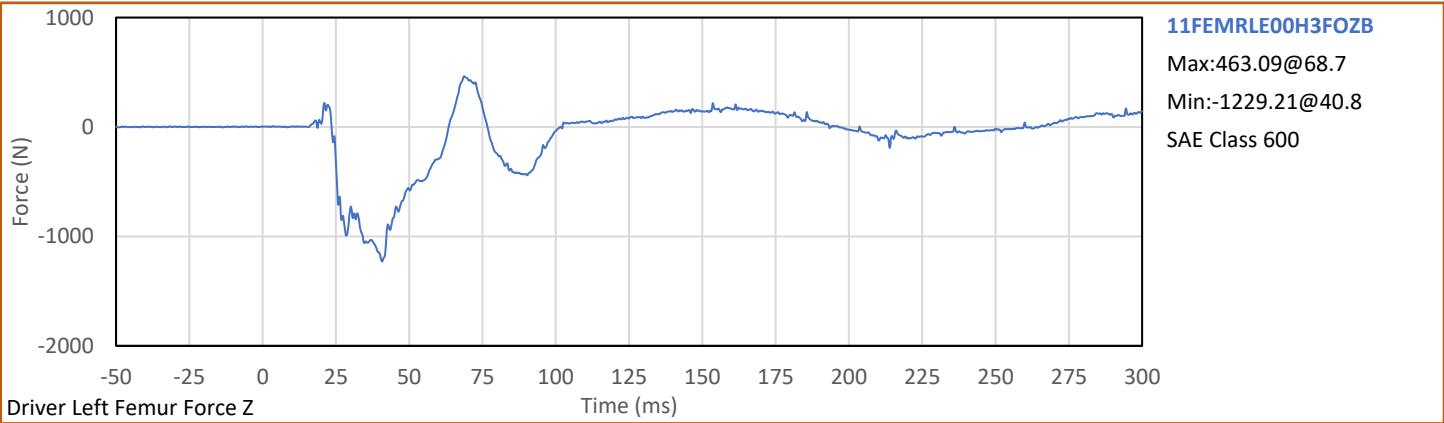


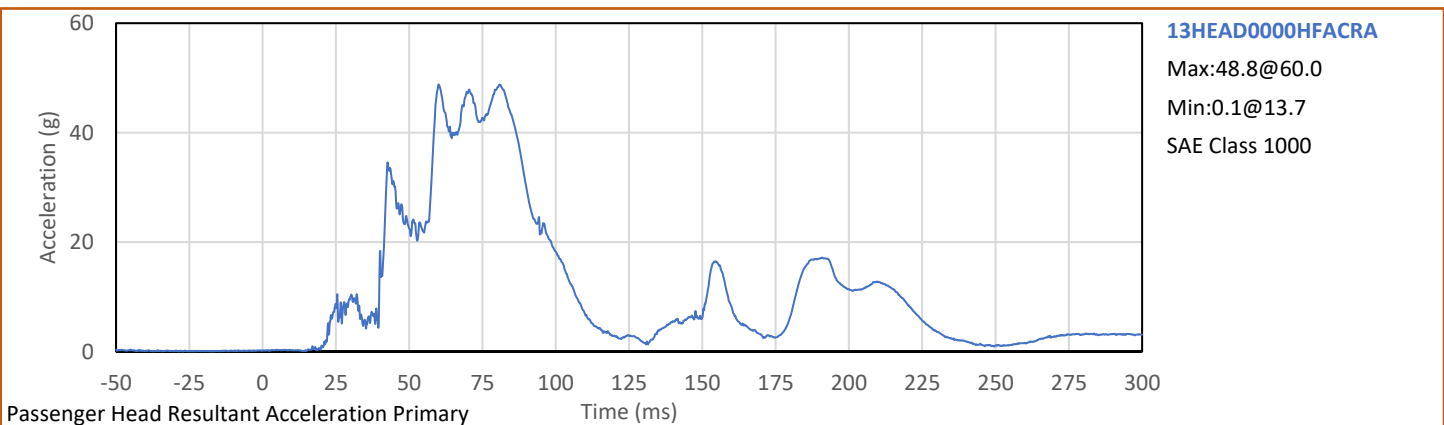
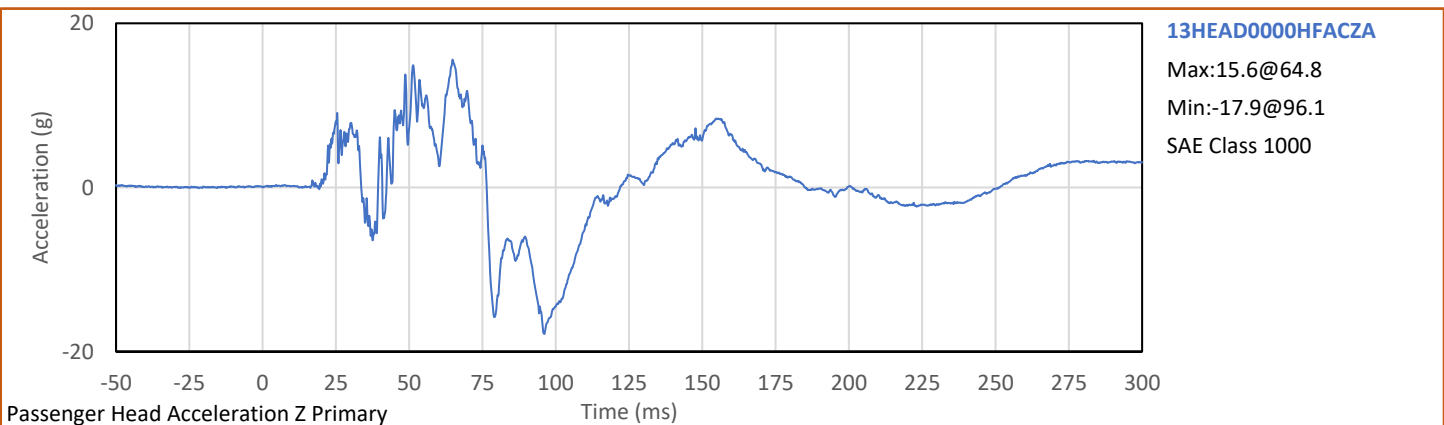
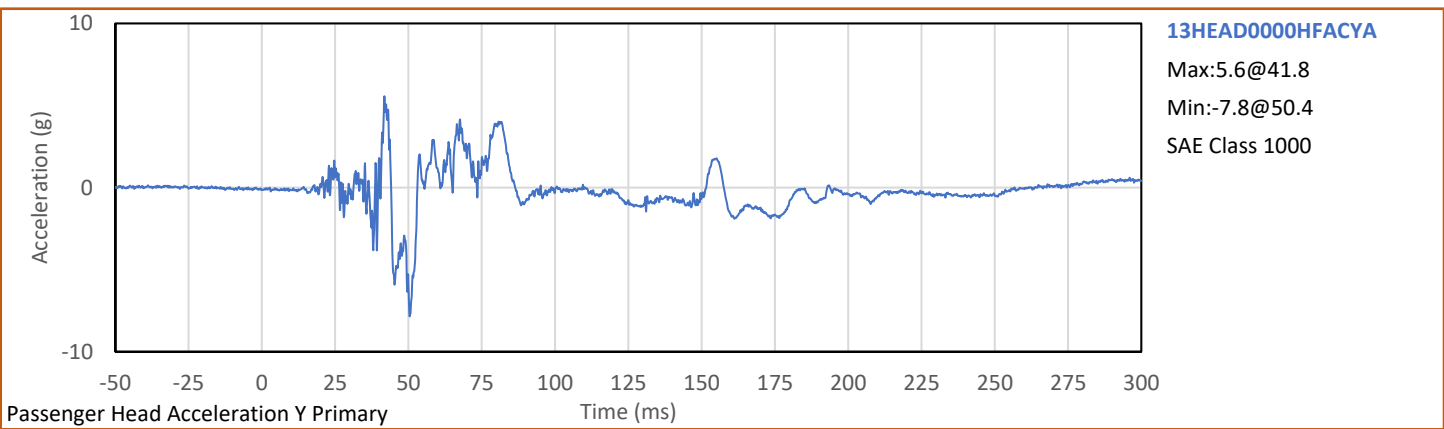
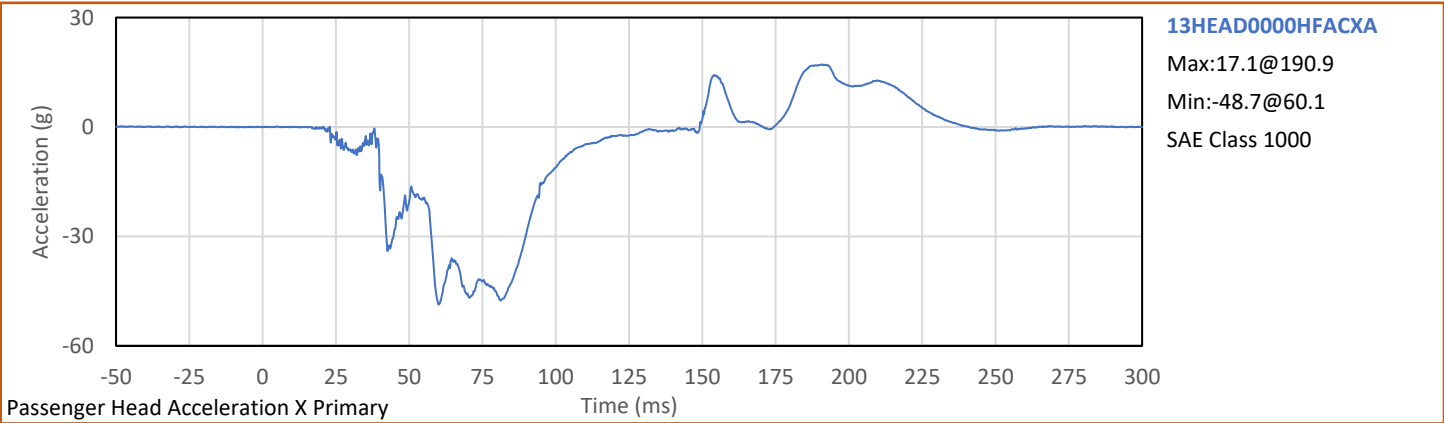




Test Vehicle: 2025 Subaru Forester 5-Door MPV
Test Program: 56.3 km/h Frontal Impact NCAP Test

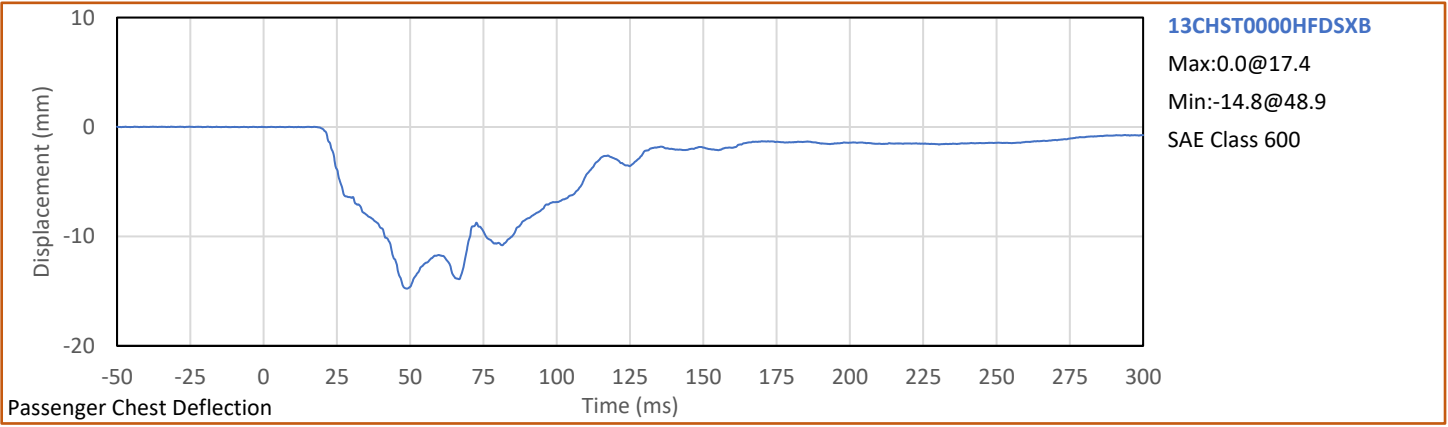
NHTSA No.: O20255500
Test Date: 11/19/2024

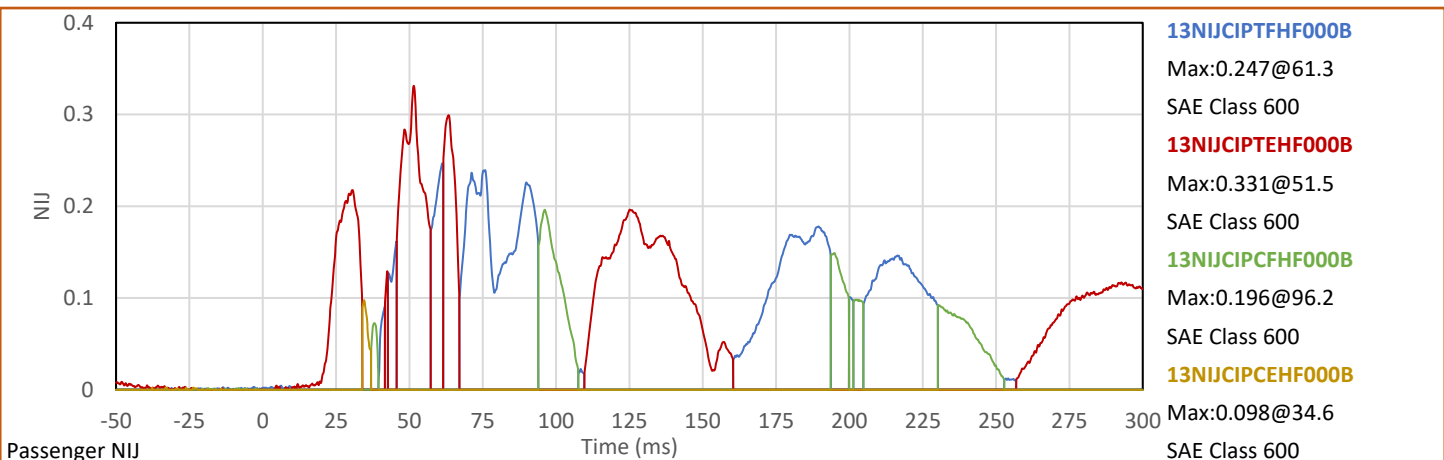
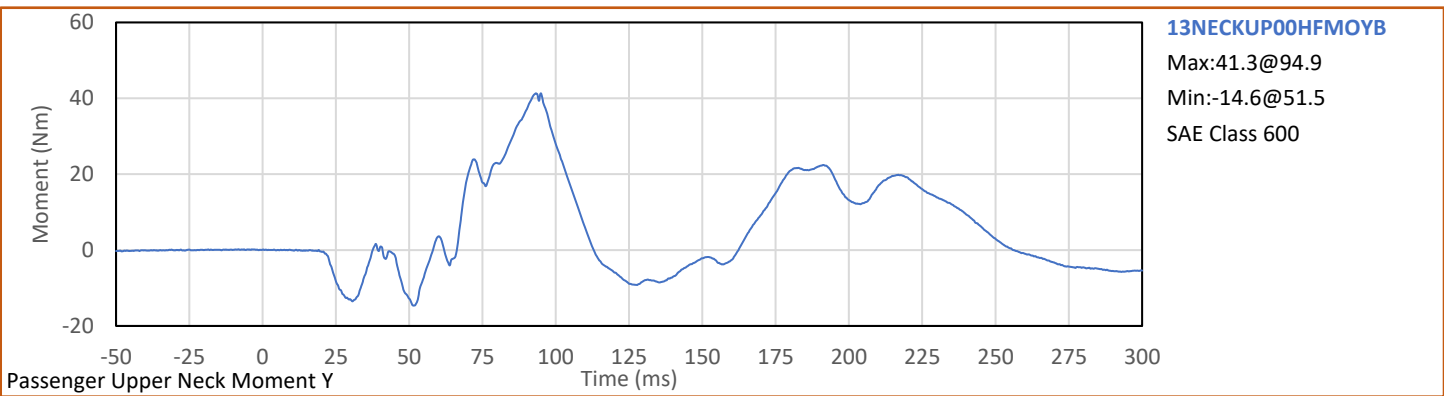
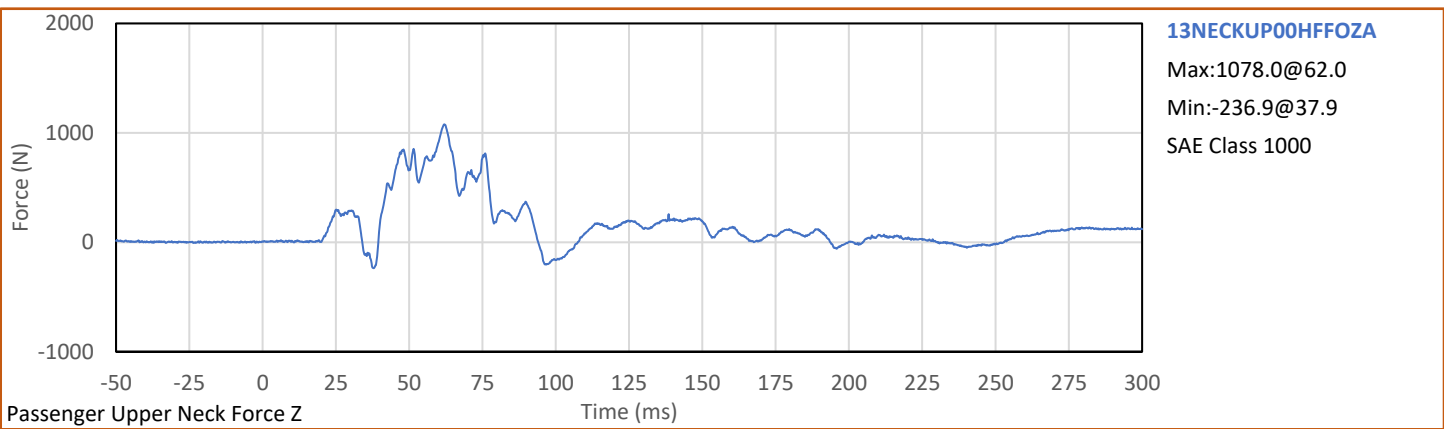
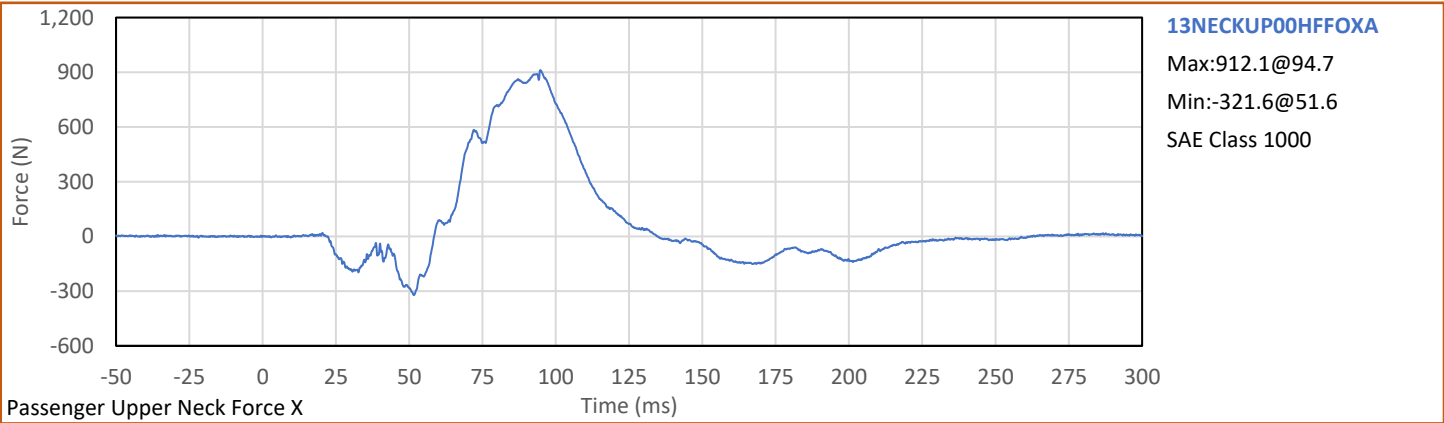


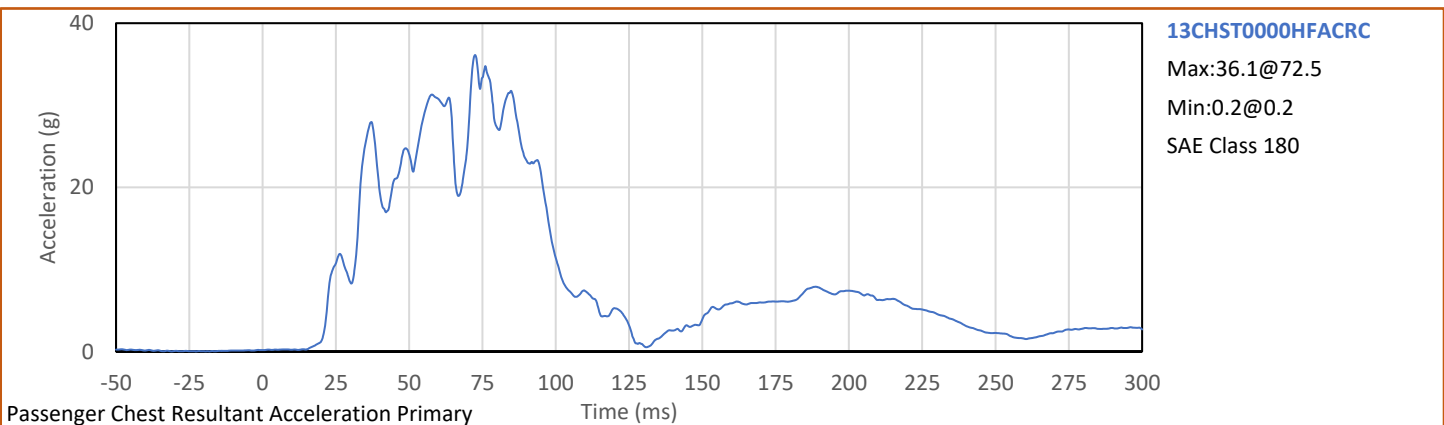
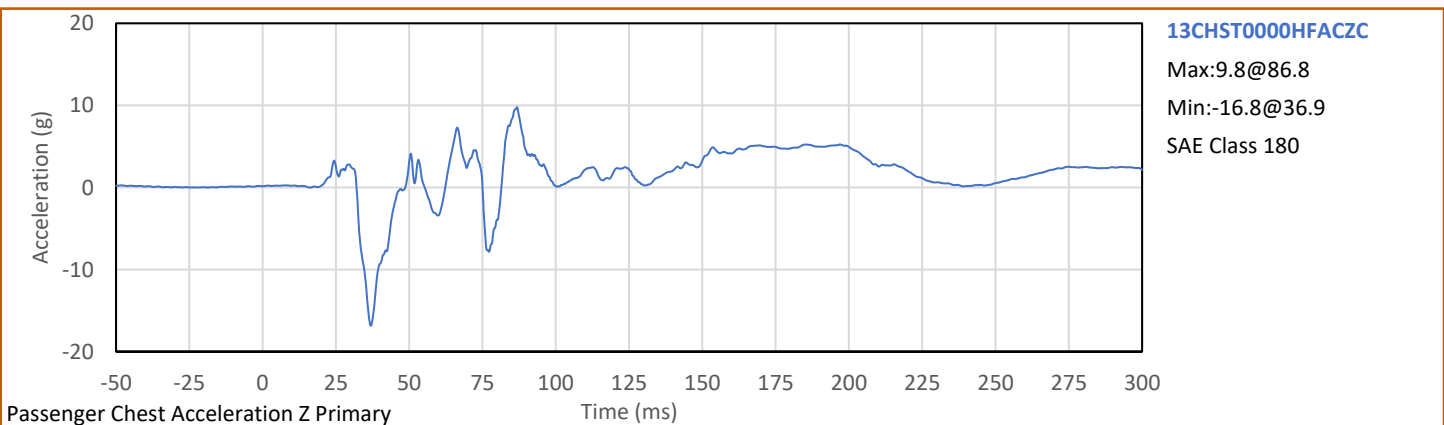
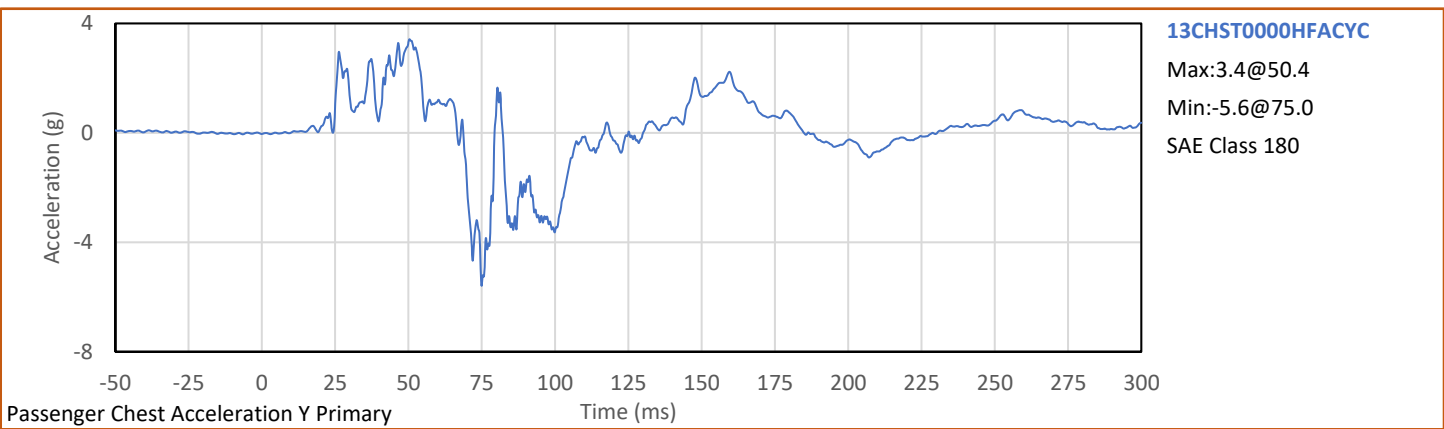
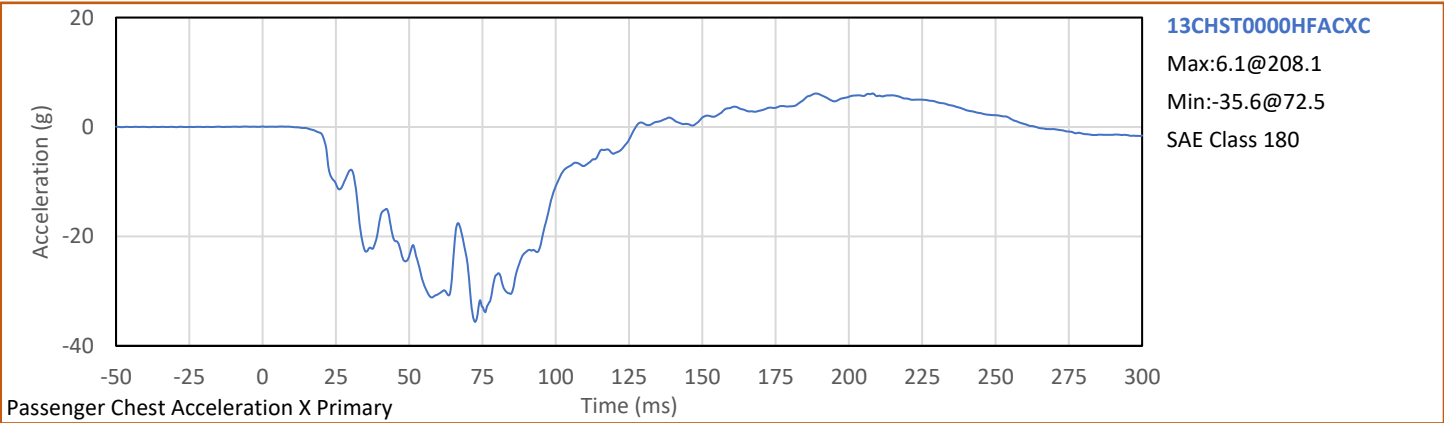


Test Vehicle: 2025 Subaru Forester 5-Door MPV
Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: O20255500
Test Date: 11/19/2024

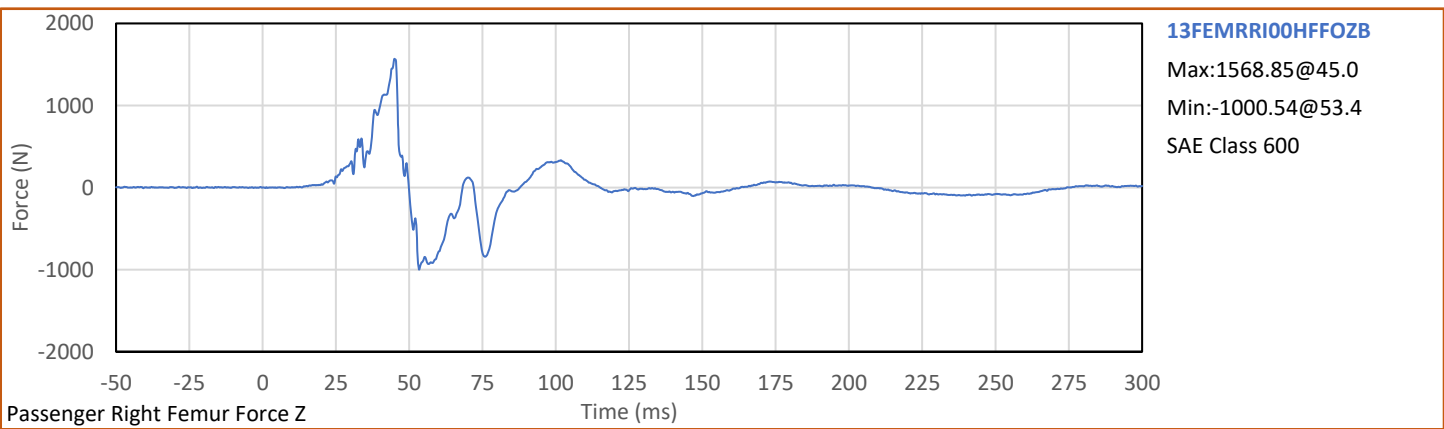
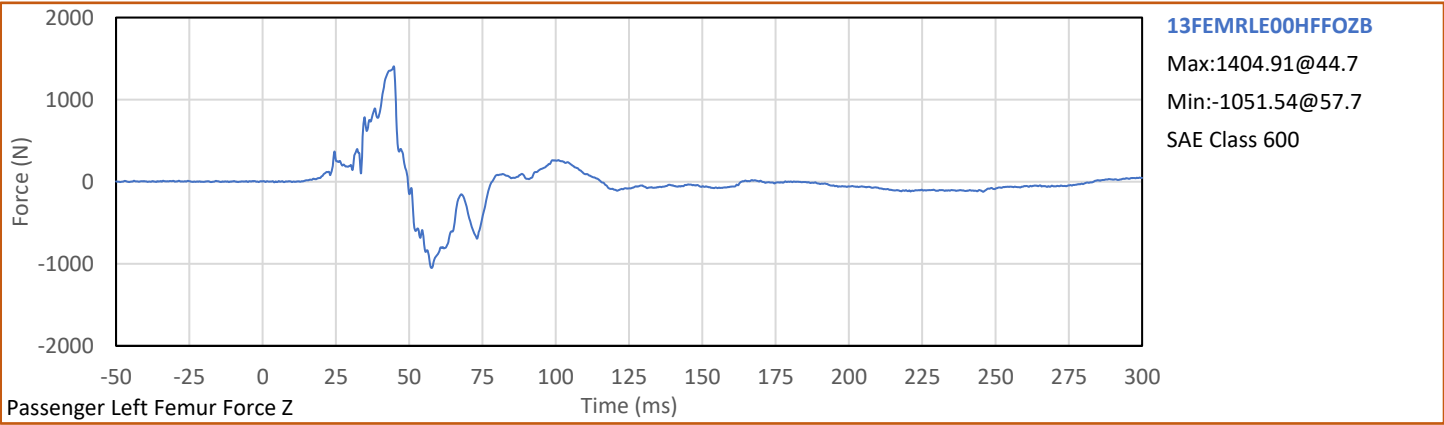






Test Vehicle: 2025 Subaru Forester 5-Door MPV
Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: O20255500
Test Date: 11/19/2024



APPENDIX C
DUMMY QUALIFICATION AND PERFORMANCE VERIFICATION DATA

APPENDIX C
Pre-Test ATD Qualification and Performance Verification
Hybrid III 50th Percentile Male ATD
S/N: 360

ATD Serial No.: 360

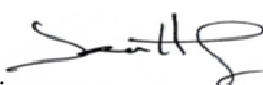
Test Date: 2024-11-07

| Dummy Item | Inspect for | Comments | Damage | OK |
|------------------------|---|----------|--------|----|
| Entire ATD | Perform general cleaning | | | ✓ |
| Outer Skin | Gashes, rips, cracks | | | ✓ |
| Head | Ballast secure | | | ✓ |
| | General appearance | | | ✓ |
| Neck bracket | Upper neck firmly attached to lower bracket | | | ✓ |
| Neck | Broken or cracked rubber | | | ✓ |
| | Looseness at the condyle joint | | | ✓ |
| Nodding block | Cracked or out of position | | | ✓ |
| Lumbar Spine | Broken or cracked rubber | | | ✓ |
| Ribs | Broken or bent ribs | | | ✓ |
| | Broken or bent rib supports | | | ✓ |
| | Damping material separated or cracked | | | ✓ |
| | Rubber bumpers in place | | | ✓ |
| Chest Displ. Assembly | Bent shaft | | | ✓ |
| | Slider arm riding in track | | | ✓ |
| Sensors | Check cables for cuts, tears | | | ✓ |
| | Check for damaged insulation | | | ✓ |
| Accelerometer Mounting | Head mounting secure | | | ✓ |
| | Chest mounting secure | | | ✓ |
| Knees | Skin condition | | | ✓ |
| | Insert (do not remove) | | | ✓ |
| | Casting | | | ✓ |
| Limbs | Normal movement and adjustment | | | ✓ |
| Knee Sliders | Wires intact | | | ✓ |
| | Rubber returned to "resting" position | | | ✓ |
| Pelvis | Broken | | | ✓ |
| Other | Describe below as needed | | | ✓ |

Describe any repairs or replacement of parts or other findings:

No Problems Found


Technician: 
J. Coronel

Approved By: 
J. Hernandez

| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.3 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| A - Total sitting height | mm | 879 | 889 | 882 | Pass |
| B - Shoulder pivot height | mm | 505 | 521 | 516 | Pass |
| C - 'H' point height | mm | 84 | 89 | 87 | Pass |
| D - 'H' point location from backline | mm | 135 | 140 | 138 | Pass |
| E - Shoulder pivot from backline | mm | 84 | 94 | 89 | Pass |
| F - Thigh clearance | mm | 140 | 155 | 148 | Pass |
| G - Back of elbow to wrist pivot | mm | 290 | 305 | 298 | Pass |
| H - Head back to backline | mm | 41 | 46 | 44 | Pass |
| I - Shoulder to elbow length | mm | 330 | 345 | 338 | Pass |
| J - Elbow rest height | mm | 190 | 211 | 203 | Pass |
| K - Buttock to knee length | mm | 579 | 604 | 598 | Pass |
| L - Popliteal length | mm | 429 | 455 | 443 | Pass |
| M - Knee pivot height | mm | 485 | 500 | 496 | Pass |
| N - Buttock popliteal length | mm | 452 | 477 | 462 | Pass |
| O - Chest depth without jacket | mm | 213 | 229 | 227 | Pass |
| P - Foot length | mm | 251 | 267 | 258 | Pass |
| V - Shoulder breadth | mm | 422 | 437 | 428 | Pass |
| W - Foot breadth | mm | 91 | 107 | 102 | Pass |
| Y - Chest circum. (w/chest jacket) | mm | 970 | 1001 | 979 | Pass |
| Z - Waist circum. | mm | 836 | 866 | 849 | Pass |
| AA - Location for chest circum. | mm | 429 | 434 | 430 | Pass |
| BB - Location for waist circum. | mm | 226 | 231 | 230 | Pass |
| Overall Test Results | | | | | Pass |

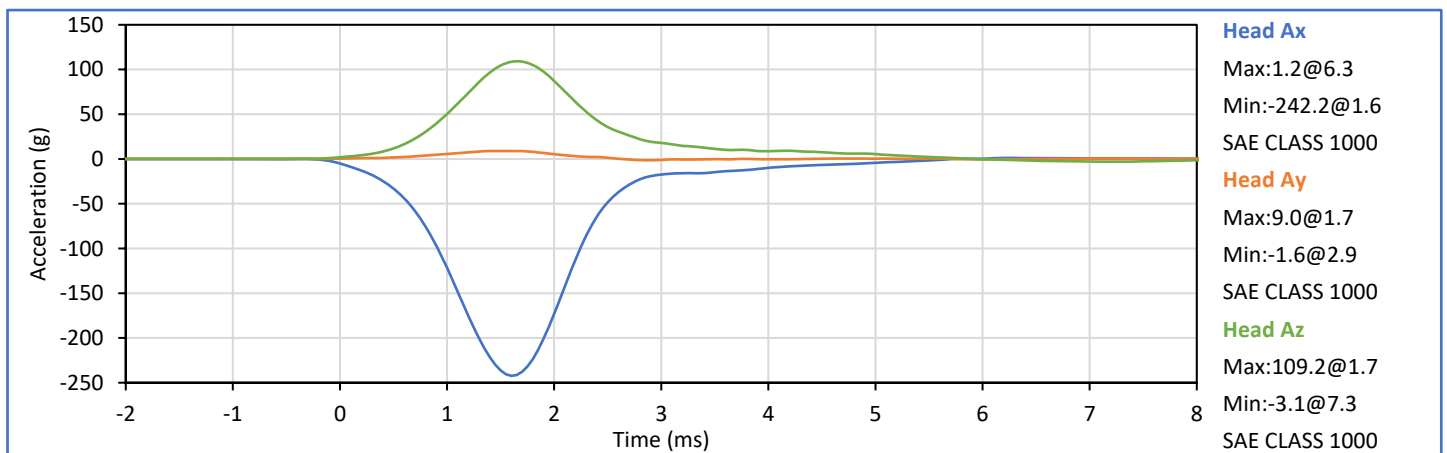
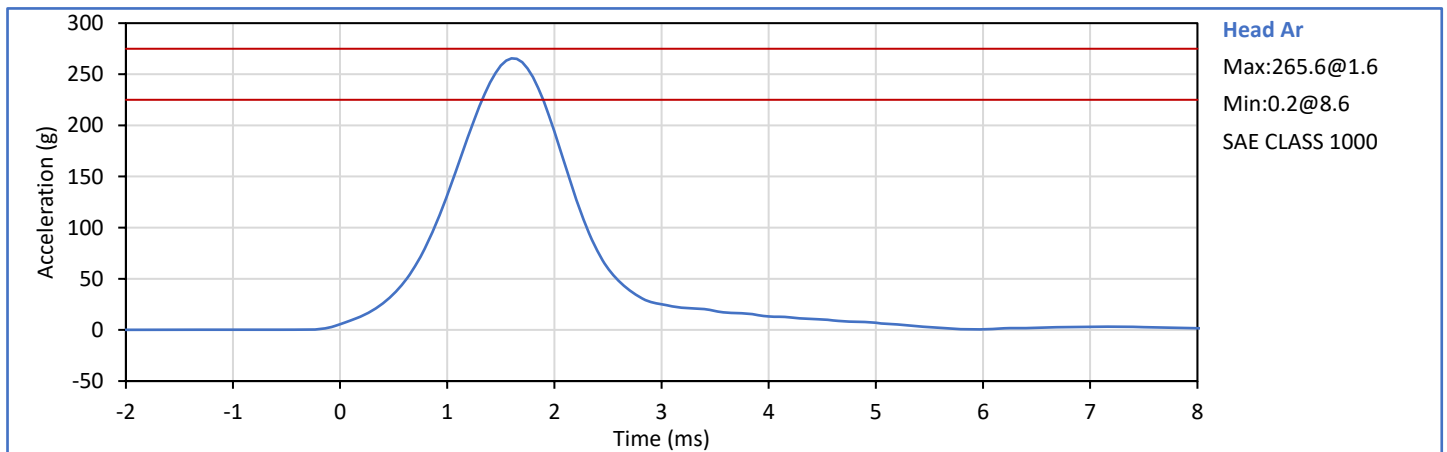
Technician: 

 J. Coronel

Approved By: 

 J. Hernandez

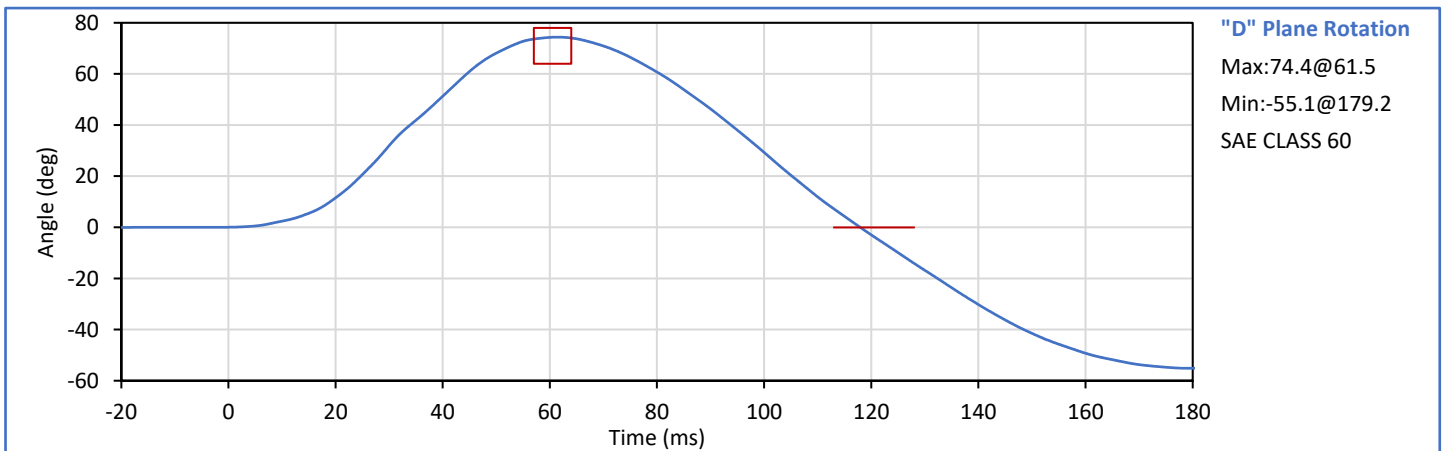
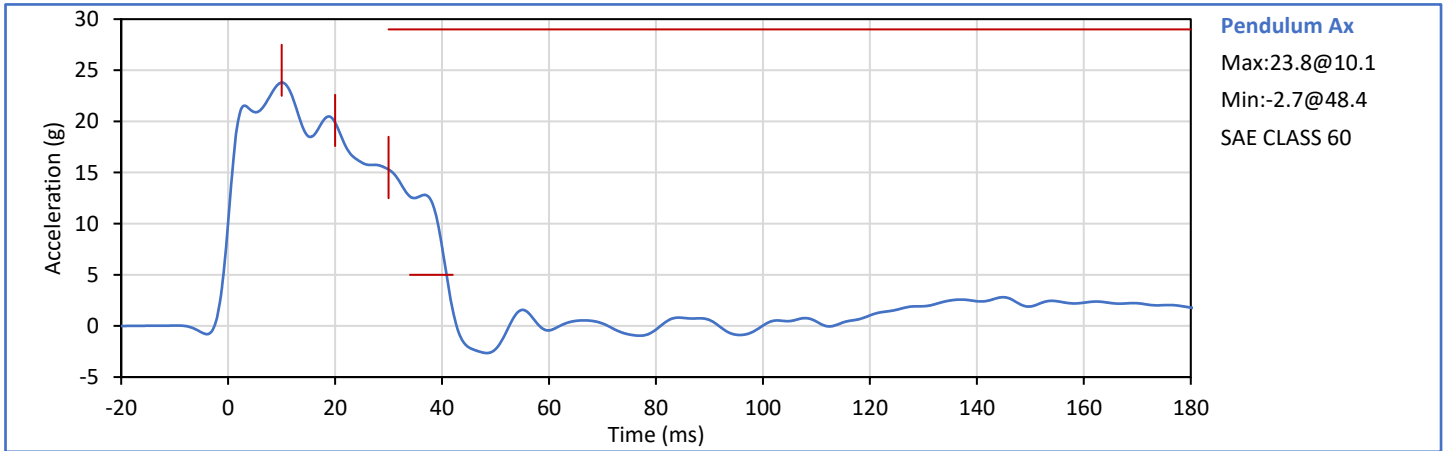
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|-------------------------------|--------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.7 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Peak Resultant Acceleration | g | 225.0 | 275.0 | 265.6 | Pass |
| Peak Lateral Acceleration | g | -15.0 | 15.0 | 9.0 | Pass |
| Oscillations After Main Pulse | % | 0.0 | 10.0 | 0.0 | Pass |
| Is Acceleration Unimodal? | Yes/No | Yes | | Yes | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel
J. Coronel

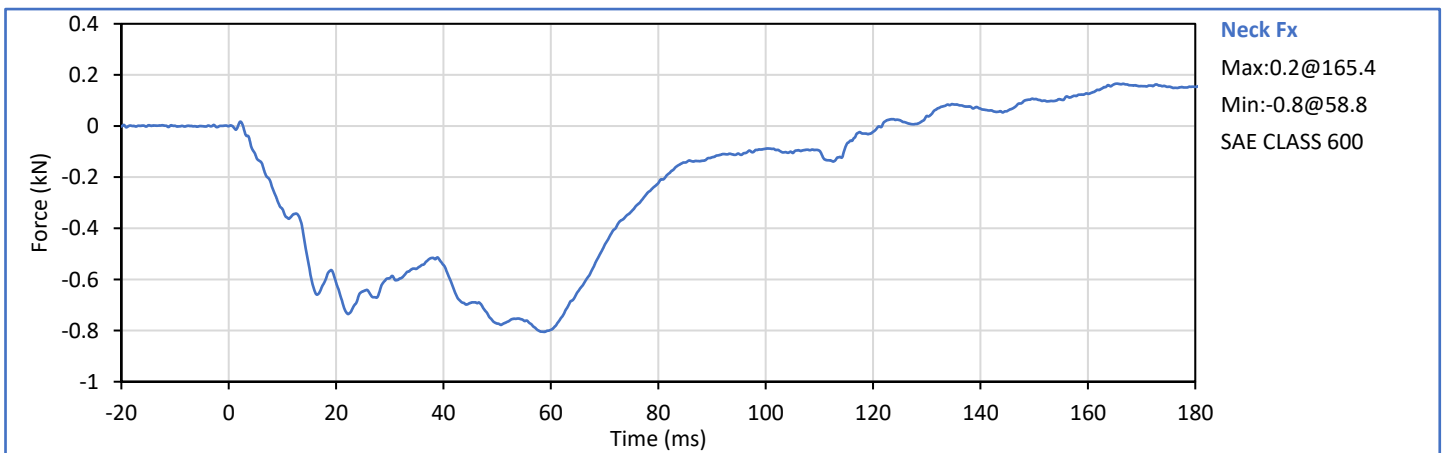
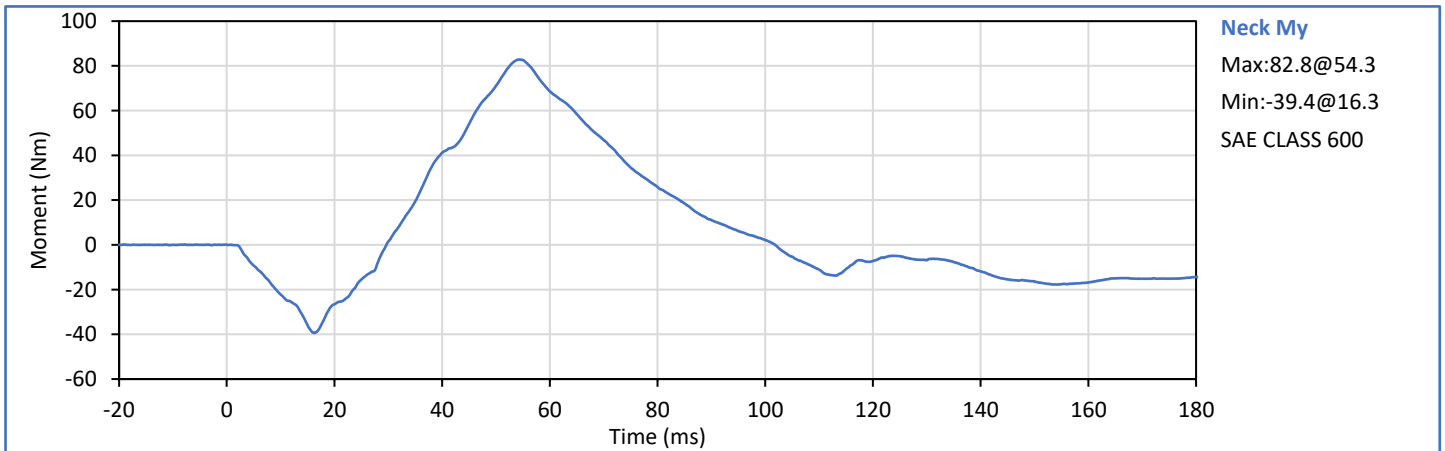
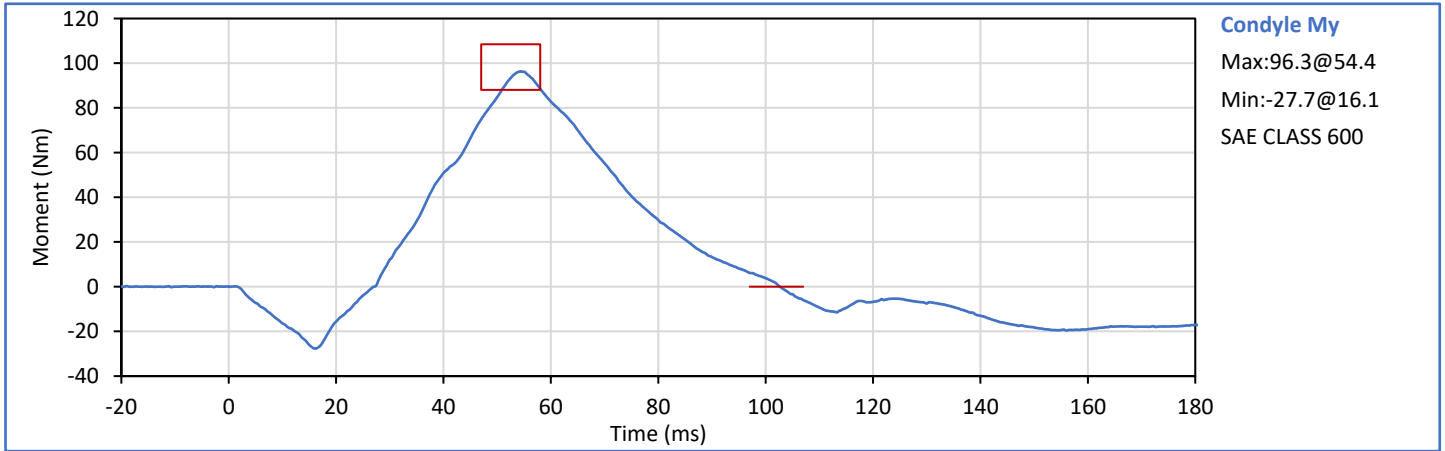
Approved By: J. Hernandez
J. Hernandez

| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|----------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.3 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 44 | Pass |
| Pendulum Velocity | m/s | 6.89 | 7.13 | 7.05 | Pass |
| Pendulum Deceleration at 10 ms | g | 22.5 | 27.5 | 23.8 | Pass |
| Pendulum Deceleration at 20 ms | g | 17.6 | 22.6 | 19.9 | Pass |
| Pendulum Deceleration at 30 ms | g | 12.5 | 18.5 | 15.3 | Pass |
| Peak Pendulum Decel After 30 ms | g | 0.0 | 29.0 | 15.3 | Pass |
| Deceleration Decay to Cross 5g | ms | 34.0 | 42.0 | 40.8 | Pass |
| "D" Plane Rotation peak | deg | 64.0 | 78.0 | 74.4 | Pass |
| | ms | 57.0 | 64.0 | 61.5 | Pass |
| "D" Plane Rotation Decay to Zero | ms | 113.0 | 128.0 | 118.0 | Pass |
| Moment About Occipital Condyle | Nm | 88.1 | 108.5 | 96.3 | Pass |
| | ms | 47.0 | 58.0 | 54.4 | Pass |
| Moment Decay, Peak to Zero | ms | 97.0 | 107.0 | 102.7 | Pass |
| Overall Test Results | | | | | Pass |

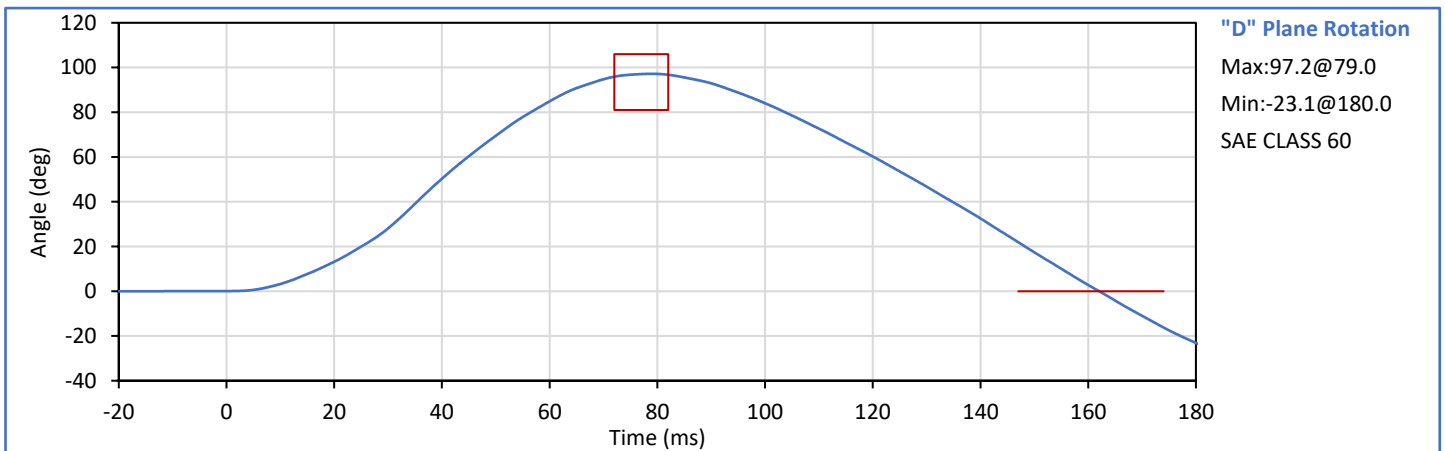
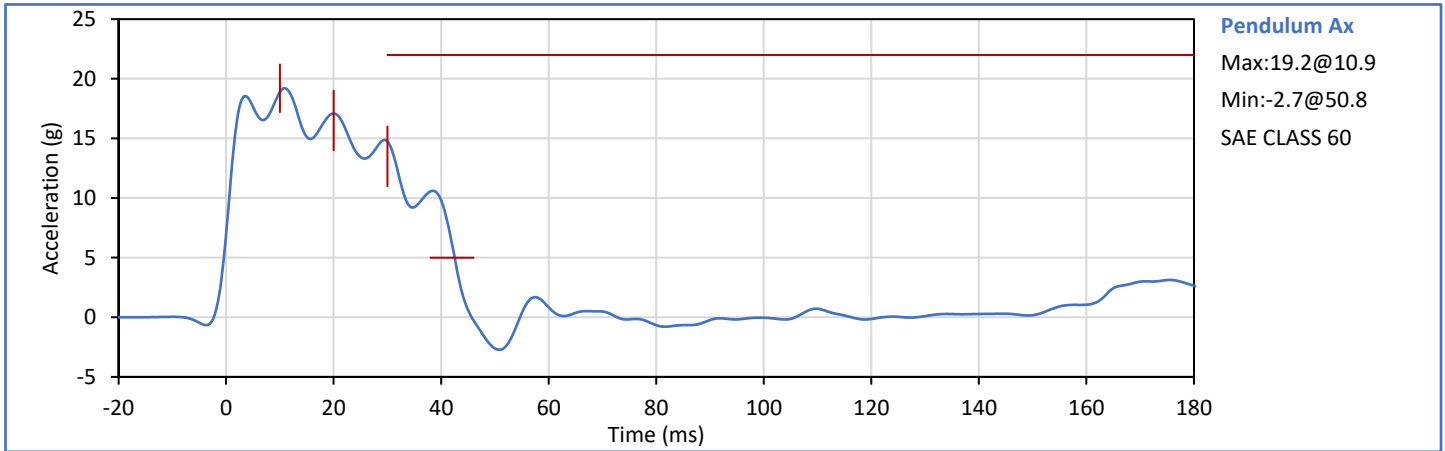


Technician: J. Coronel

Approved By: J. Hernandez

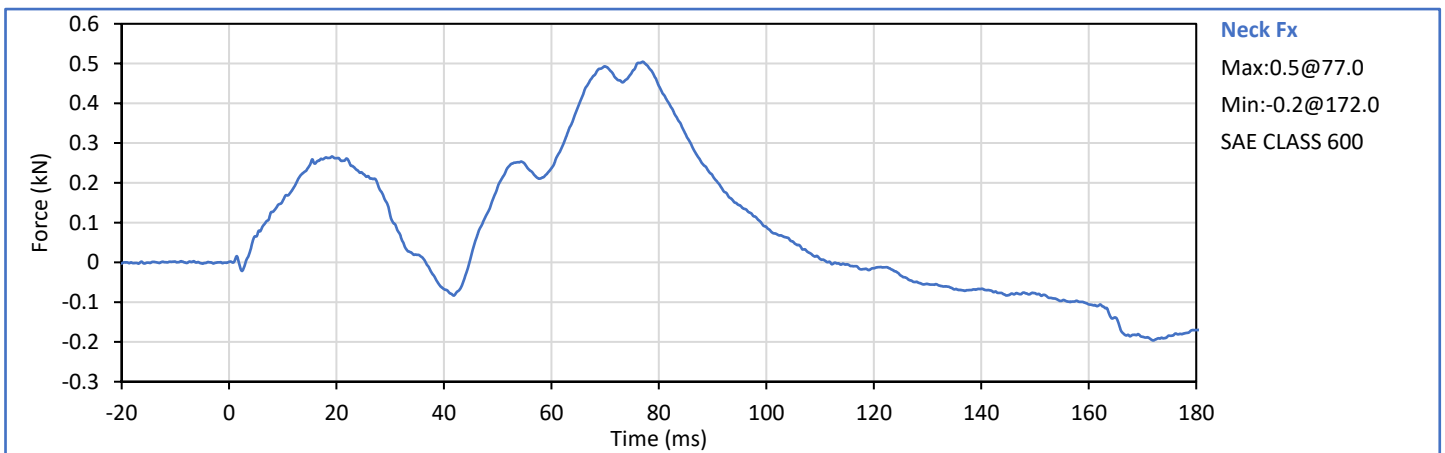
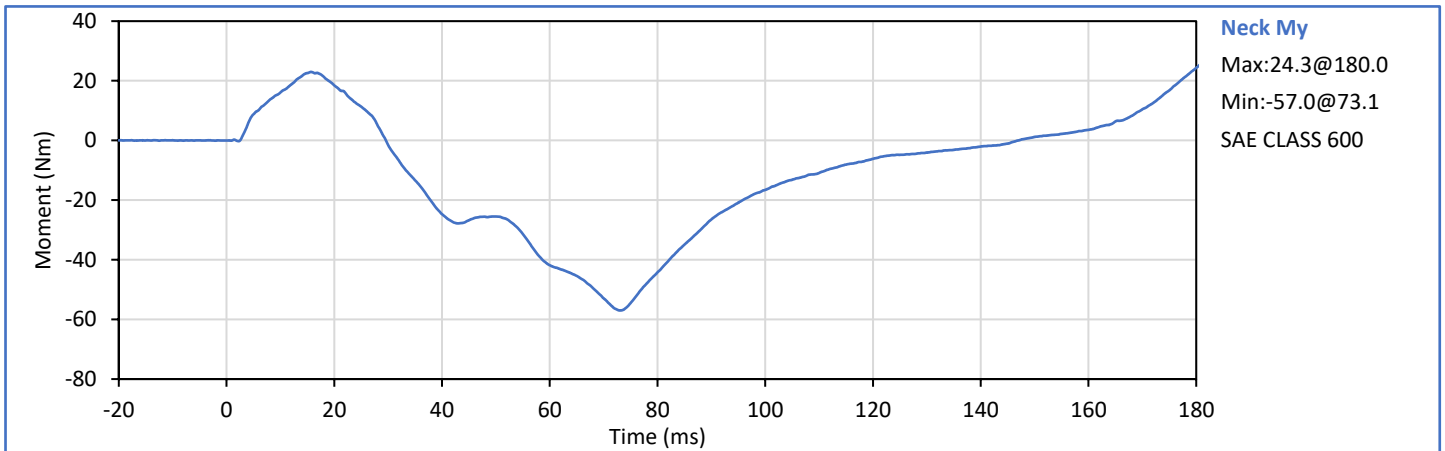
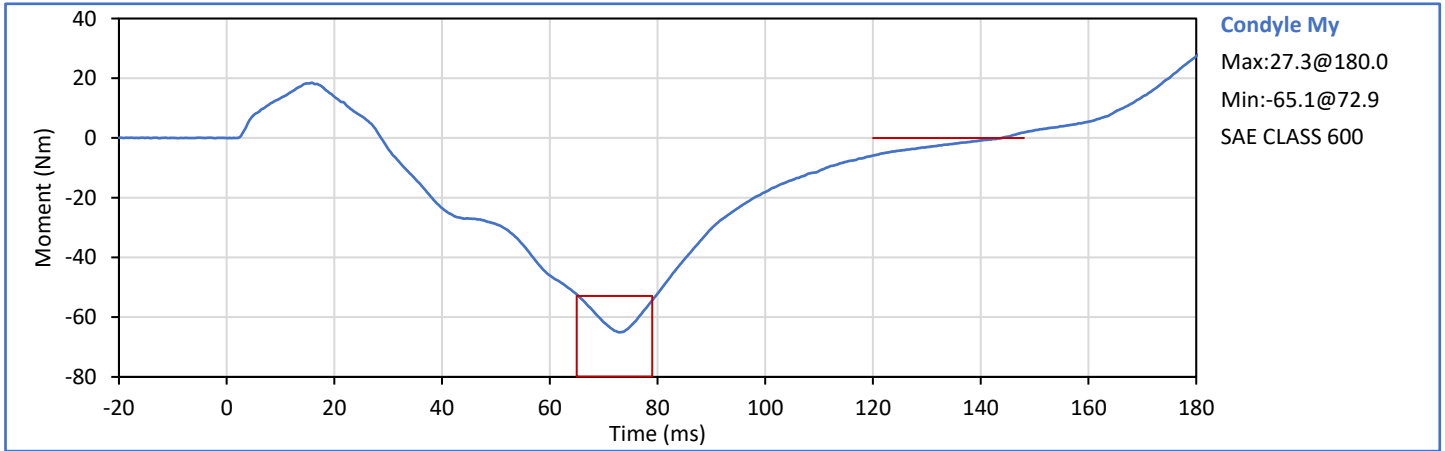


| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|----------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Pendulum Velocity | m/s | 5.94 | 6.19 | 6.05 | Pass |
| Pendulum Deceleration at 10 ms | g | 17.2 | 21.2 | 18.9 | Pass |
| Pendulum Deceleration at 20 ms | g | 14.0 | 19.0 | 17.1 | Pass |
| Pendulum Deceleration at 30 ms | g | 11.0 | 16.0 | 14.7 | Pass |
| Peak Pendulum Decel After 30 ms | g | 0.0 | 22.0 | 14.7 | Pass |
| Deceleration Decay to Cross 5g | ms | 38.0 | 46.0 | 42.5 | Pass |
| "D" Plane Rotation peak | deg | 81.0 | 106.0 | 97.2 | Pass |
| | ms | 72.0 | 82.0 | 79.0 | Pass |
| "D" Plane Rotation Decay to Zero | ms | 147.0 | 174.0 | 162.1 | Pass |
| Moment About Occipital Condyle | Nm | -79.9 | -52.9 | -65.1 | Pass |
| | ms | 65.0 | 79.0 | 72.9 | Pass |
| Moment Decay, Peak to Zero | ms | 120.0 | 148.0 | 144.0 | Pass |
| Overall Test Results | | | | | Pass |

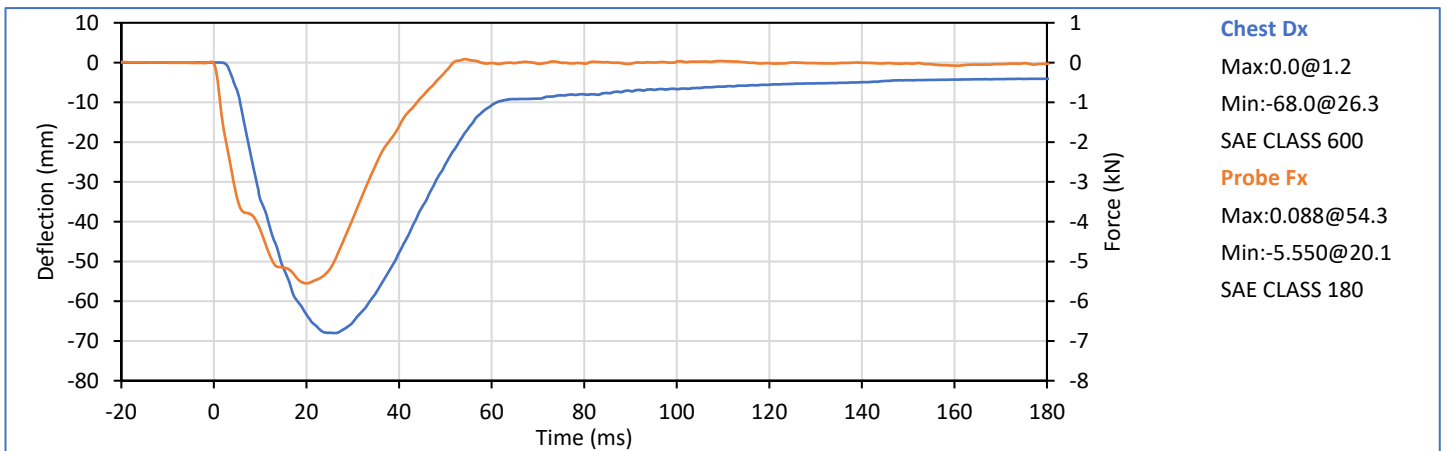
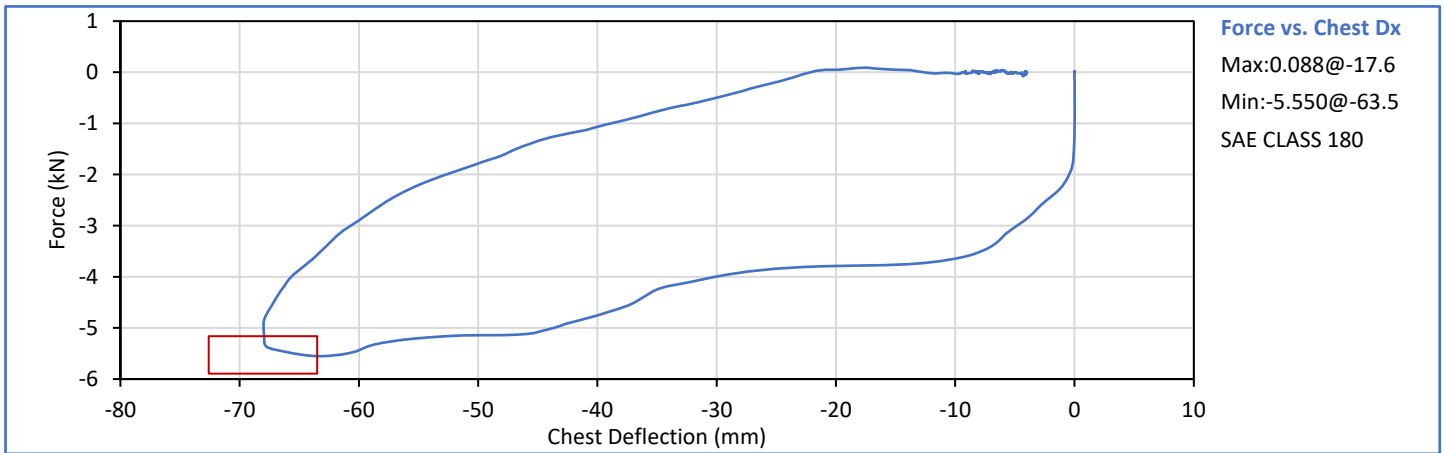


Technician: J. Coronel

Approved By: J. Hernandez



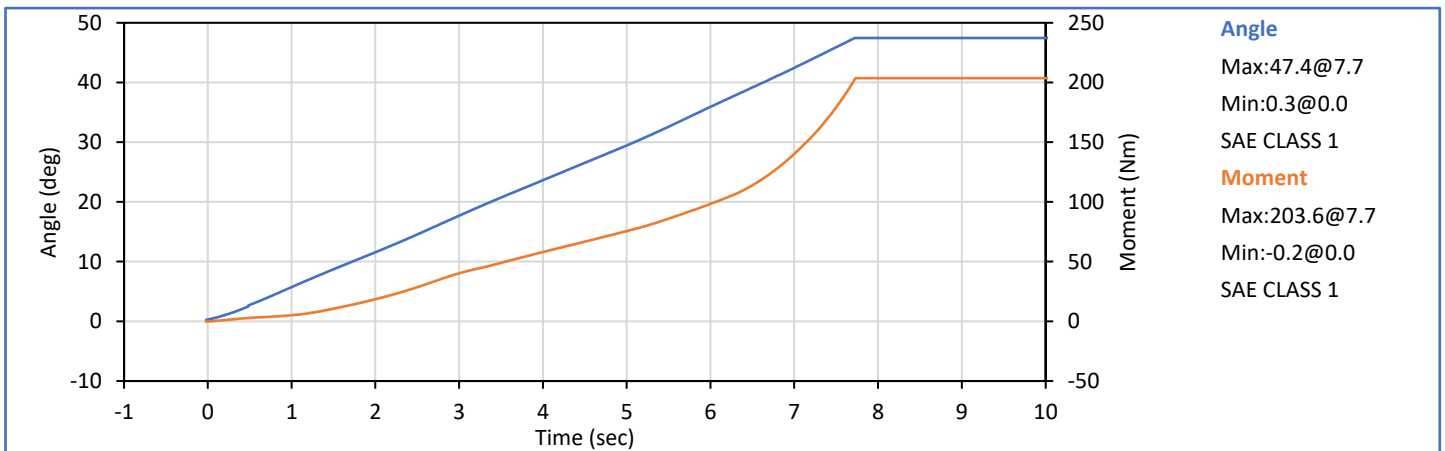
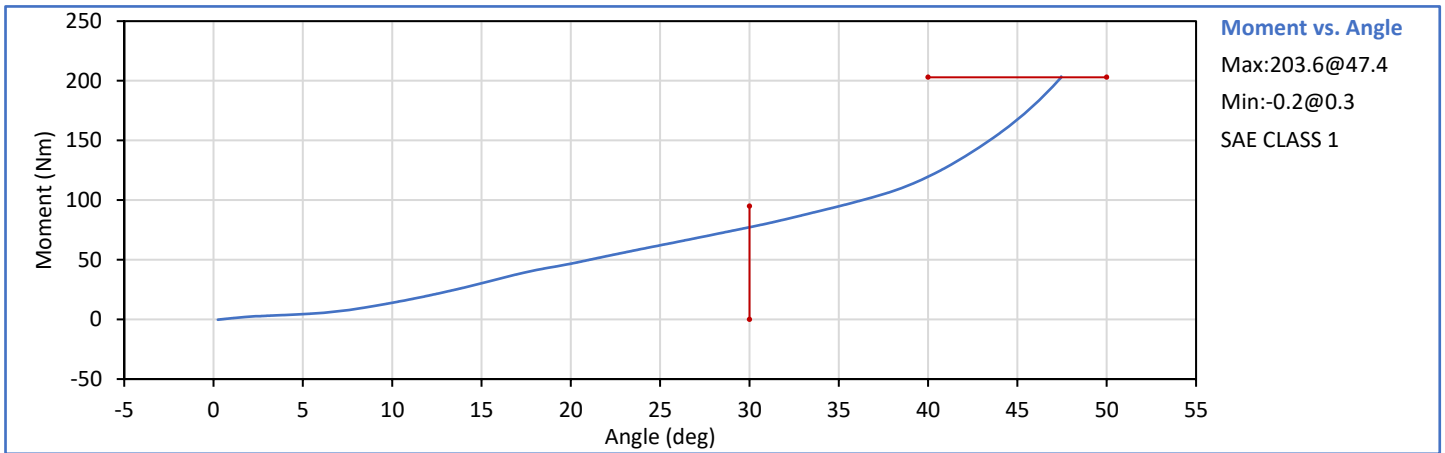
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 34 | Pass |
| Probe Velocity | m/s | 6.58 | 6.82 | 6.79 | Pass |
| Peak Chest Deflection | mm | -72.6 | -63.5 | -68.0 | Pass |
| Peak Probe Force | kN | -5.893 | -5.159 | -5.550 | Pass |
| Internal Hysteresis | % | 69.0 | 85.0 | 74.3 | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel

Approved By: J. Hernandez

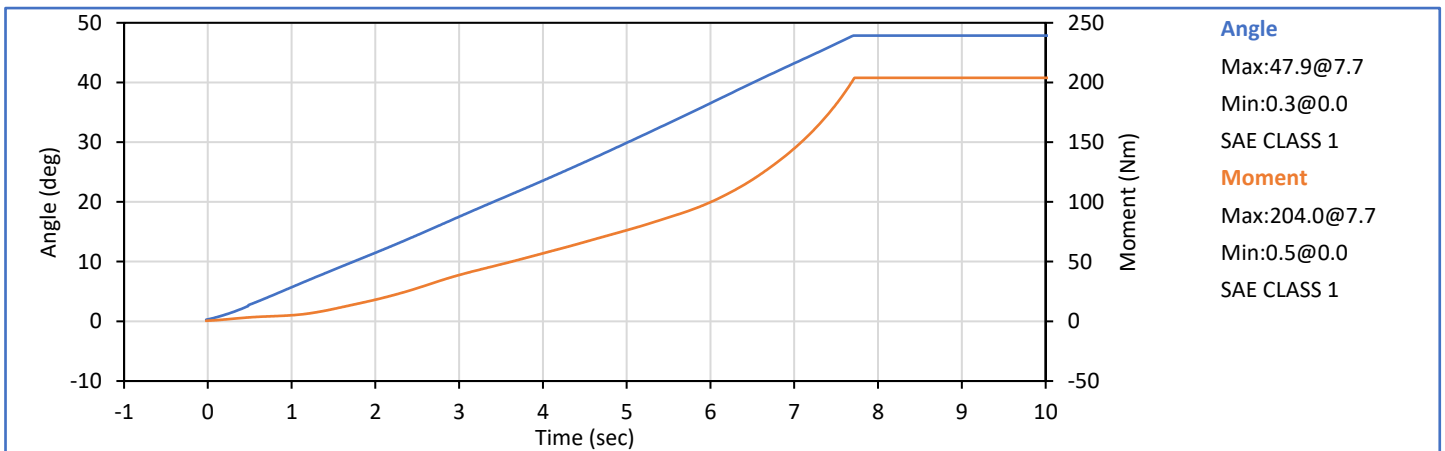
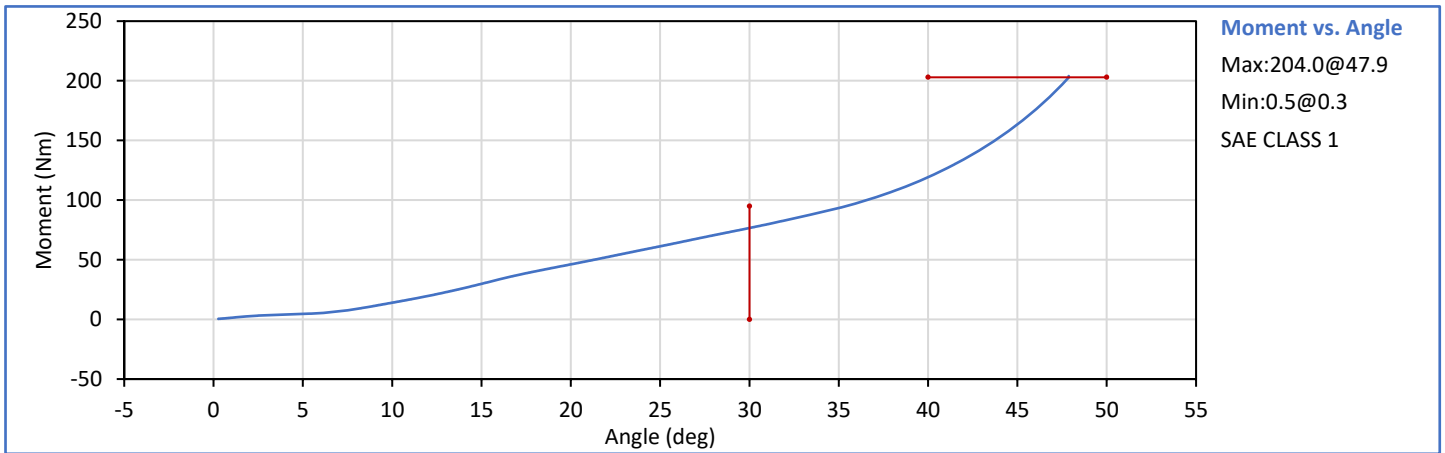
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.2 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Left Hip Rotation Rate | deg/s | 5.0 | 10.0 | 6.1 | Pass |
| Left Femur Torque at 30° | Nm | 0.0 | 95.0 | 77.2 | Pass |
| Left Hip Rotation at 203 Nm | deg | 40.0 | 50.0 | 47.4 | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel

Approved By: J. Hernandez

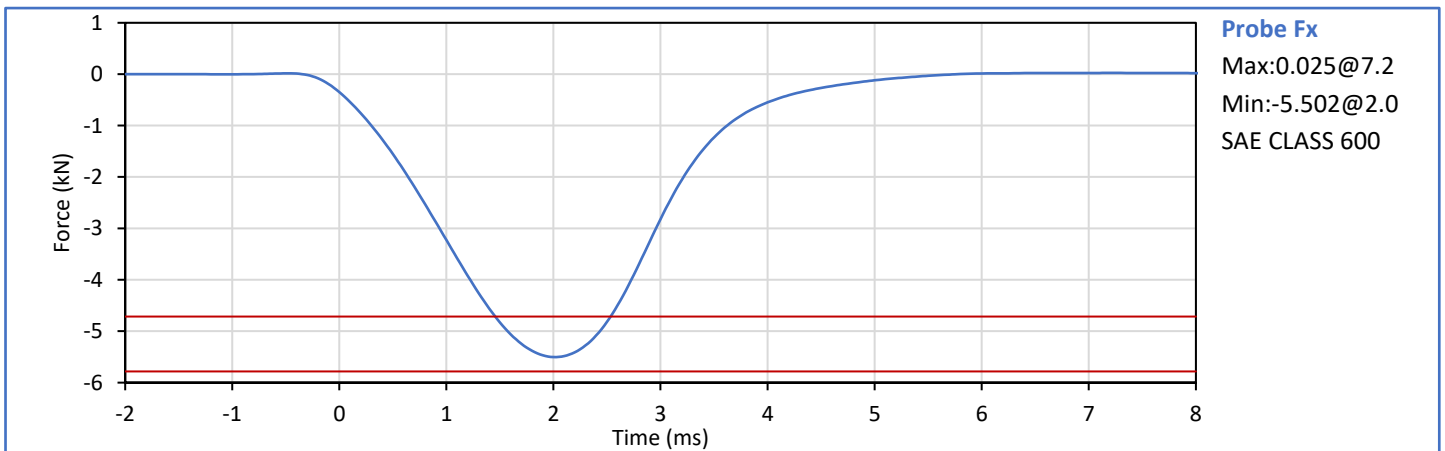
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Right Hip Rotation Rate | deg/s | 5.0 | 10.0 | 6.2 | Pass |
| Right Femur Torque at 30° | Nm | 0.0 | 95.0 | 76.6 | Pass |
| Right Hip Rotation at 203 Nm | deg | 40.0 | 50.0 | 47.9 | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel

Approved By: J. Hernandez

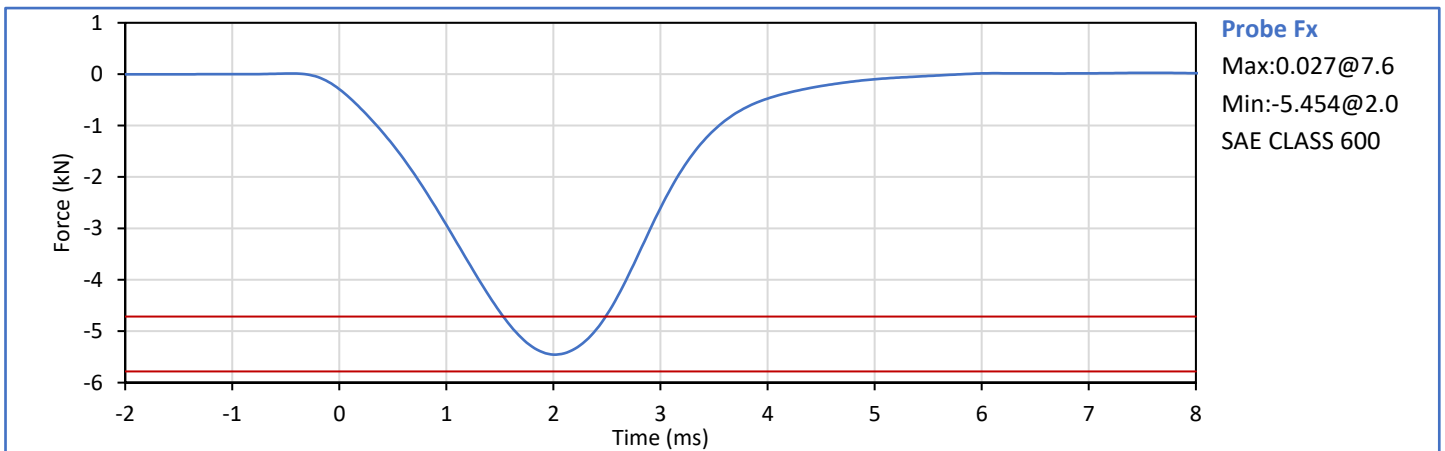
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.2 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Probe Velocity | m/s | 2.070 | 2.130 | 2.109 | Pass |
| Peak Resistive Force | kN | -5.782 | -4.715 | -5.502 | Pass |
| Overall Test Results | | | | | Pass |



Technician: *J. Coronel*
J. Coronel

Approved By: *J. Hernandez*
J. Hernandez

| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.2 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 40 | Pass |
| Probe Velocity | m/s | 2.070 | 2.130 | 2.101 | Pass |
| Peak Resistive Force | kN | -5.782 | -4.715 | -5.454 | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel

Approved By: J. Hernandez

APPENDIX C
Pre-Test ATD Qualification and Performance Verification
Hybrid III 5th Percentile Female ATD
S/N: DH1644

| Dummy Item | Inspect for | Comments | Damage | Okay |
|------------------------|---|----------|--------|------|
| Entire ATD | Perform general cleaning | | | ✓ |
| Outer Skin | Gashes, rips, cracks | | | ✓ |
| Head | Ballast secure | | | ✓ |
| | General appearance | | | ✓ |
| Neck bracket | Upper neck firmly attached to lower bracket | | | ✓ |
| Neck | Broken or cracked rubber | | | ✓ |
| | Looseness at the condyle joint | | | ✓ |
| Nodding block | Cracked or out of position | | | ✓ |
| Lumbar Spine | Broken or cracked rubber | | | ✓ |
| Ribs | Broken or bent ribs | | | ✓ |
| | Broken or bent rib supports | | | ✓ |
| | Damping material separated or cracked | | | ✓ |
| | Rubber bumpers in place | | | ✓ |
| Chest Displ. Assembly | Bent shaft | | | ✓ |
| | Slider arm riding in track | | | ✓ |
| Sensors | Check cables for cuts, tears | | | ✓ |
| | Check for damaged insulation | | | ✓ |
| Accelerometer Mounting | Head mounting secure | | | ✓ |
| | Chest mounting secure | | | ✓ |
| Knees | Skin condition | | | ✓ |
| | Insert (do not remove) | | | ✓ |
| | Casting | | | ✓ |
| Limbs | Normal movement and adjustment | | | ✓ |
| Knee Sliders | Wires intact | | | ✓ |
| | Rubber returned to "resting" position | | | ✓ |
| Pelvis | Broken | | | ✓ |
| Other | Describe below as needed | | | ✓ |

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician:



J. Coronel

Approved By:



J. Hernandez

| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.2 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 40 | Pass |
| A - Total sitting height | mm | 775 | 800 | 789 | Pass |
| B - Shoulder pivot height | mm | 432 | 457 | 448 | Pass |
| C - 'H' point height | mm | 81 | 86 | 86 | Pass |
| D - 'H' point location from backline | mm | 145 | 150 | 147 | Pass |
| E - Shoulder pivot from backline | mm | 69 | 84 | 78 | Pass |
| F - Thigh clearance | mm | 119 | 135 | 128 | Pass |
| G - Back of elbow to wrist pivot | mm | 244 | 259 | 252 | Pass |
| H - Head back to backline | mm | 41 | 46 | 45 | Pass |
| I - Shoulder to elbow length | mm | 277 | 297 | 290 | Pass |
| J - Elbow rest height | mm | 183 | 203 | 198 | Pass |
| K - Buttock to knee length | mm | 521 | 546 | 530 | Pass |
| L - Popliteal length | mm | 356 | 376 | 369 | Pass |
| M - Knee pivot height | mm | 394 | 419 | 409 | Pass |
| N - Buttock popliteal length | mm | 414 | 439 | 435 | Pass |
| O - Chest depth without jacket | mm | 175 | 191 | 180 | Pass |
| P - Foot length | mm | 219 | 234 | 230 | Pass |
| R - Buttock to Knee Pivot Length | mm | 457 | 483 | 464 | Pass |
| S - Head Breadth | mm | 137 | 147 | 144 | Pass |
| T - Head Depth | mm | 178 | 188 | 187 | Pass |
| U - Hip Breadth | mm | 300 | 315 | 306 | Pass |
| V - Shoulder breadth | mm | 351 | 366 | 360 | Pass |
| W - Foot breadth | mm | 79 | 94 | 84 | Pass |
| X - Head circum. | mm | 528 | 549 | 540 | Pass |
| Y - Chest circum. (w/chest jacket) | mm | 851 | 881 | 865 | Pass |
| Z - Waist circum. | mm | 760 | 790 | 773 | Pass |
| AA - Location for chest circum. | mm | 333 | 358 | 338 | Pass |
| BB - Location for waist circum. | mm | 160 | 170 | 164 | Pass |
| Overall Test Results | | | | | Pass |

Technician:



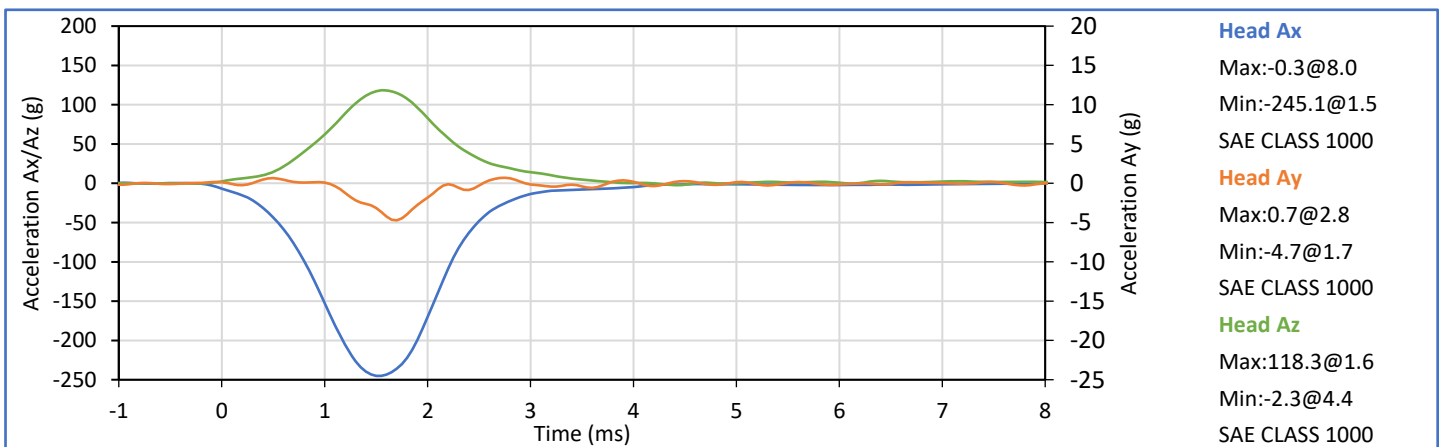
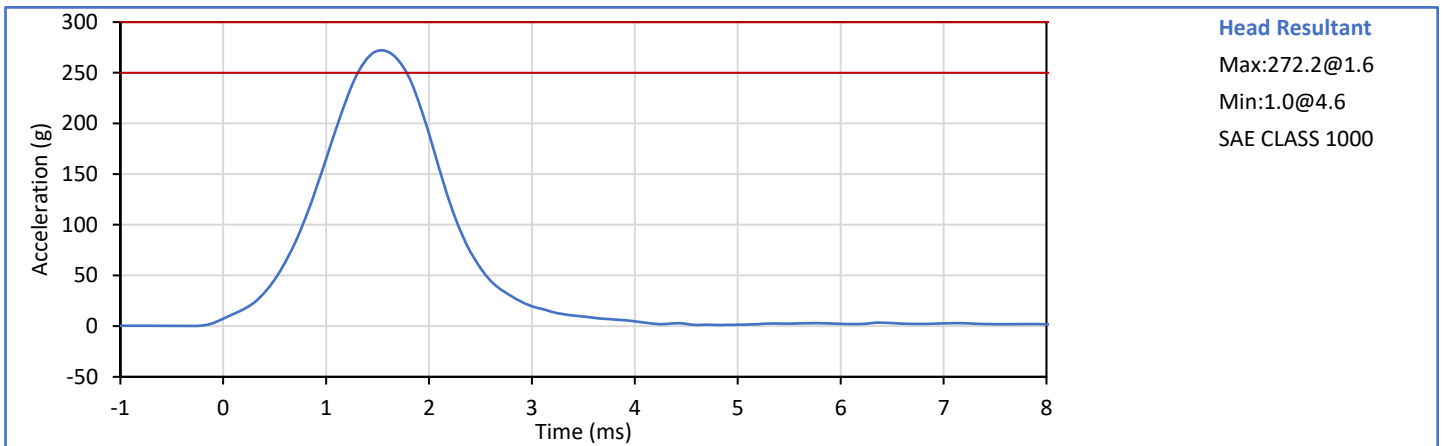
J. Coronel

Approved By:




J. Hernandez

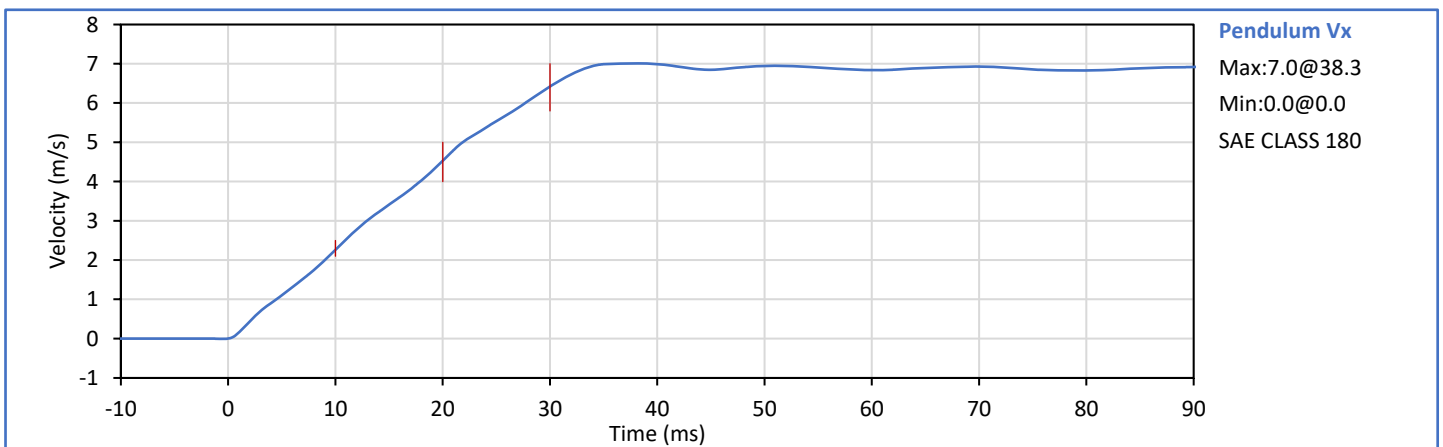
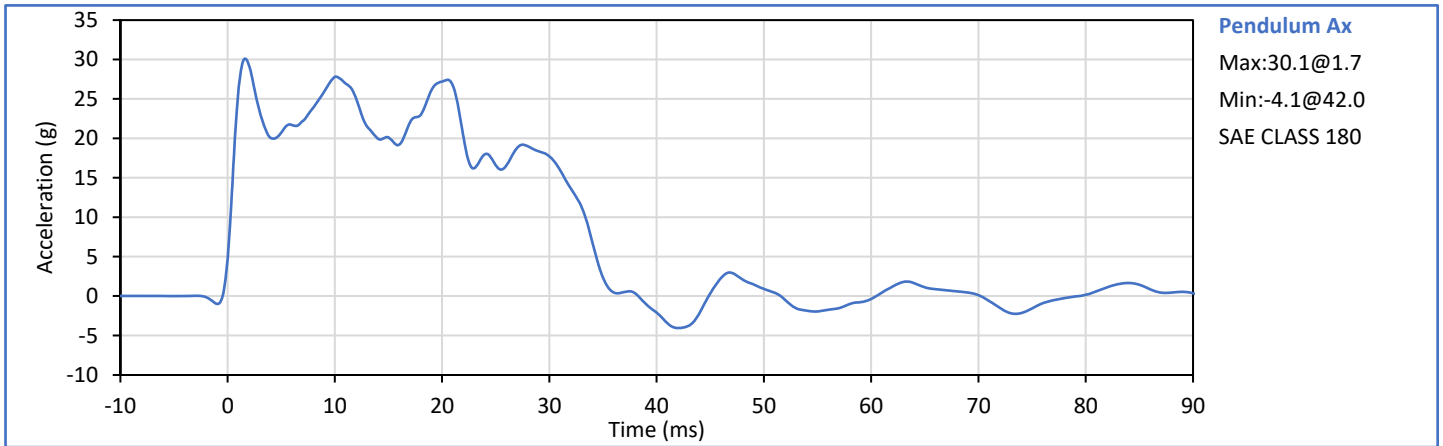
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|-------------------------------|--------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.7 | Pass |
| Laboratory Humidity | % | 10 | 70 | 38 | Pass |
| Peak Resultant Acceleration | g | 250.0 | 300.0 | 272.2 | Pass |
| Peak Lateral Acceleration | g | -15.0 | 15.0 | -4.7 | Pass |
| Oscillations After Main Pulse | % | 0.0 | 10.0 | 1.3 | Pass |
| Is Acceleration Unimodal? | Yes/No | Yes | | Yes | Pass |
| Overall Test Results | | | | | Pass |




Technician: 
J. Coronel

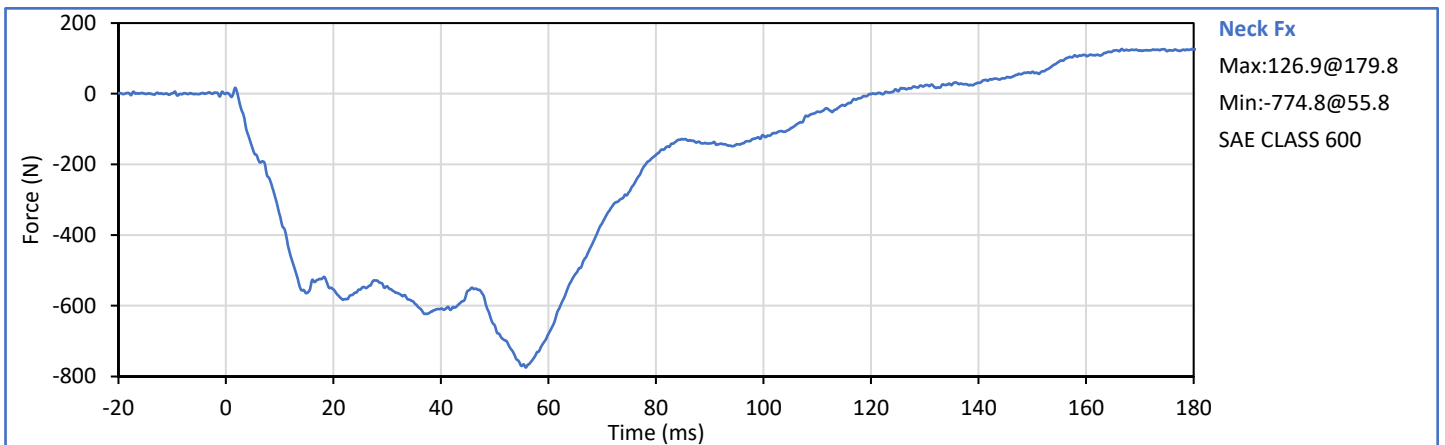
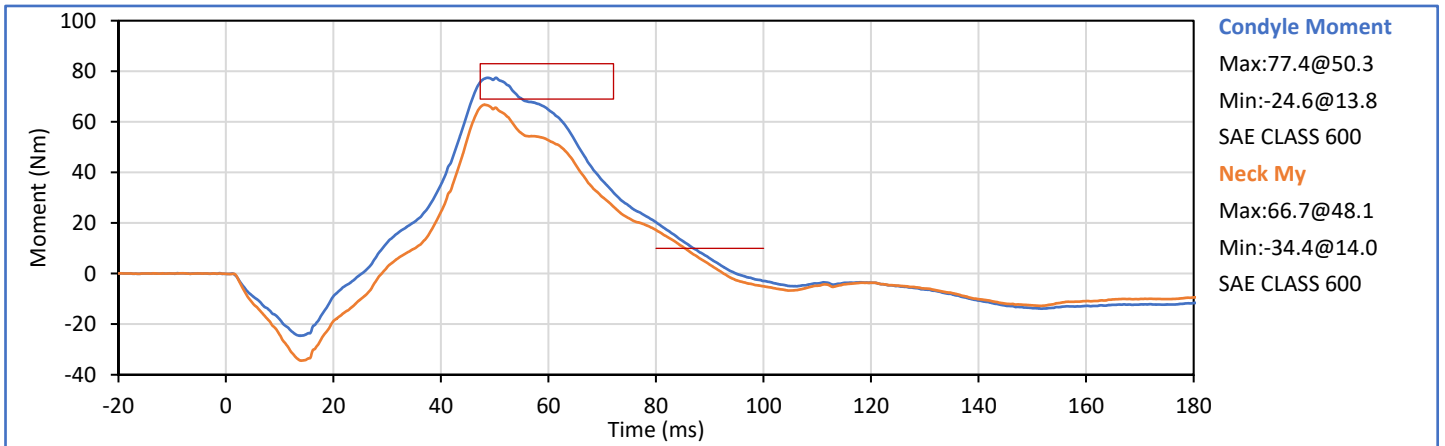
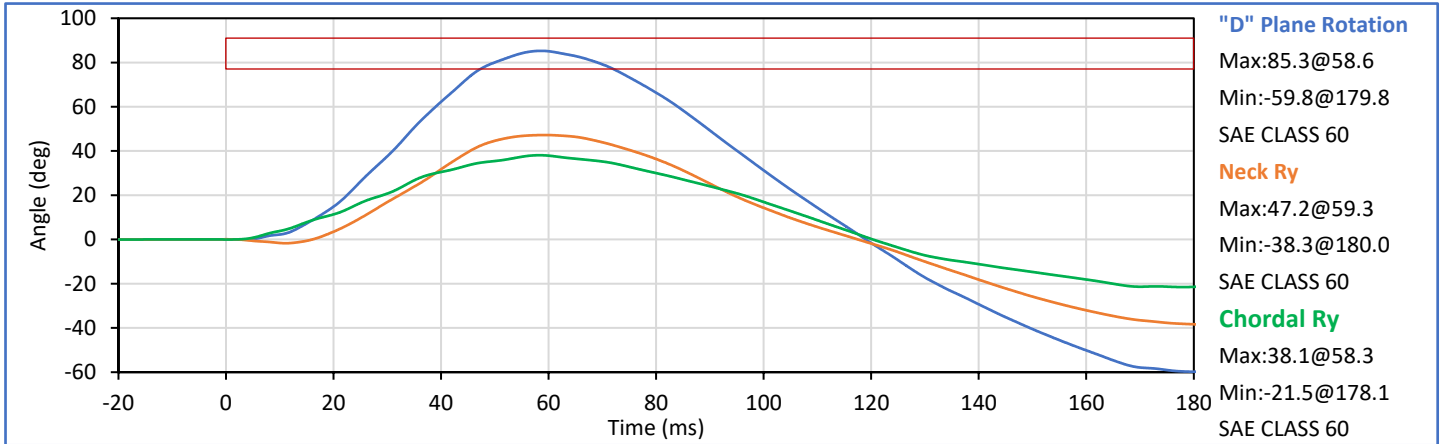
Approved By: 
J. Hernandez

| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.3 | Pass |
| Laboratory Humidity | % | 10 | 70 | 39 | Pass |
| Pendulum Velocity | m/s | 6.89 | 7.13 | 7.07 | Pass |
| Pendulum Velocity at 10 ms | m/s | 2.10 | 2.50 | 2.26 | Pass |
| Pendulum Velocity at 20 ms | m/s | 4.00 | 5.00 | 4.53 | Pass |
| Pendulum Velocity at 30 ms | m/s | 5.80 | 7.00 | 6.42 | Pass |
| Peak "D" Plane Rotation | deg | 77.0 | 91.0 | 85.3 | Pass |
| Peak Moment in Rotation | Nm | 69.0 | 83.0 | 77.4 | Pass |
| Positive Moment Decay to 10 Nm | ms | 80.0 | 100.0 | 87.0 | Pass |
| Overall Test Results | | | | | Pass |

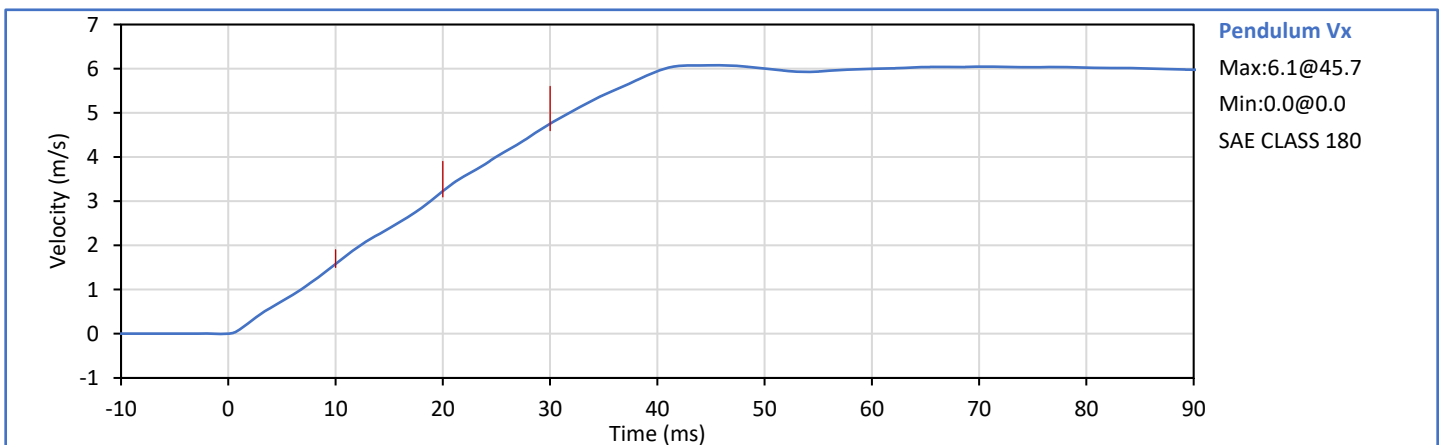
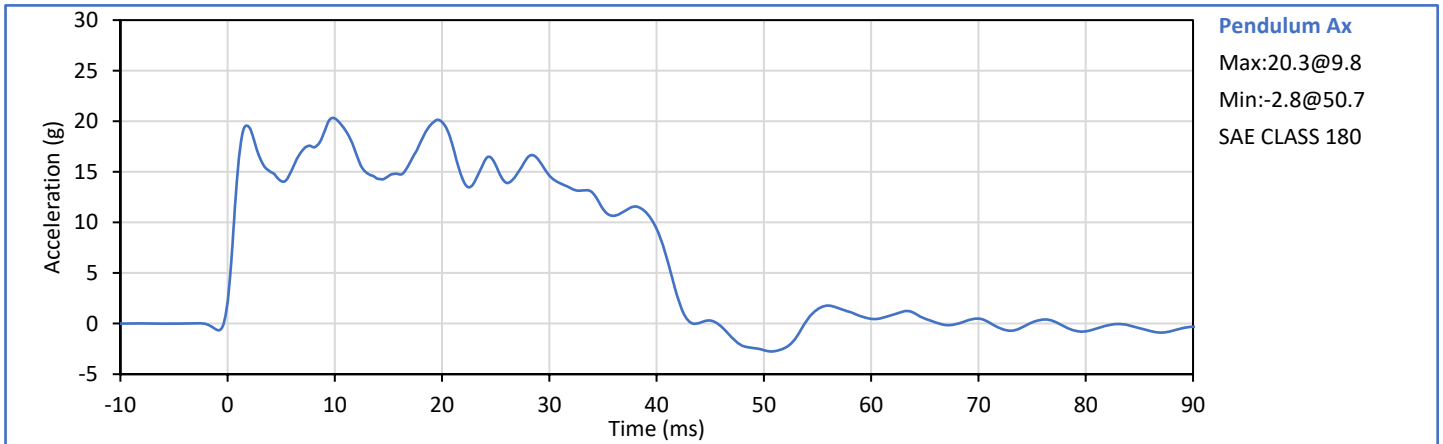


Technician: 
J. Coronel

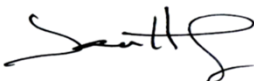
Approved By: 
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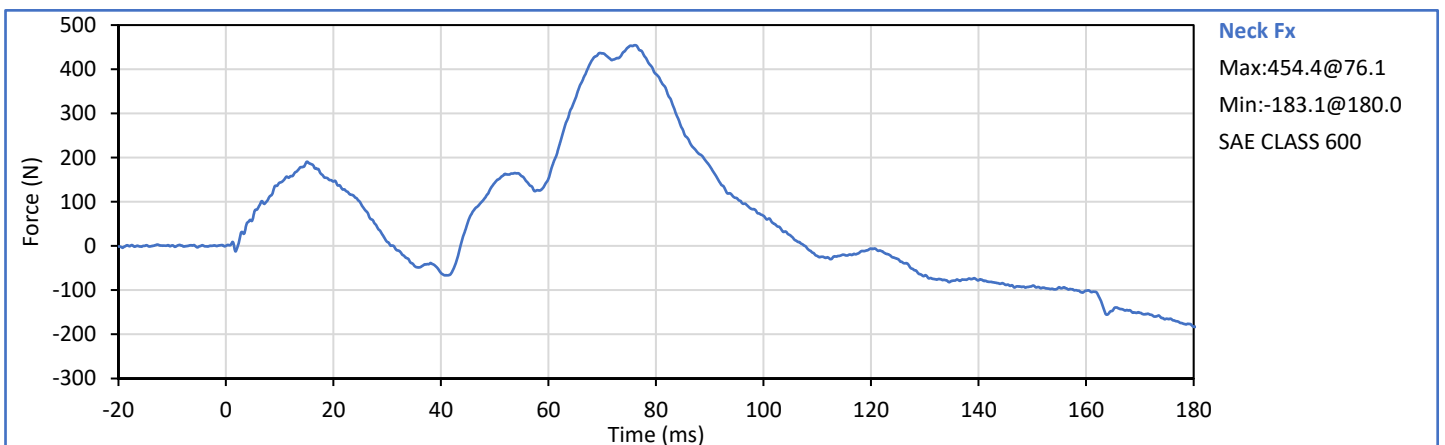
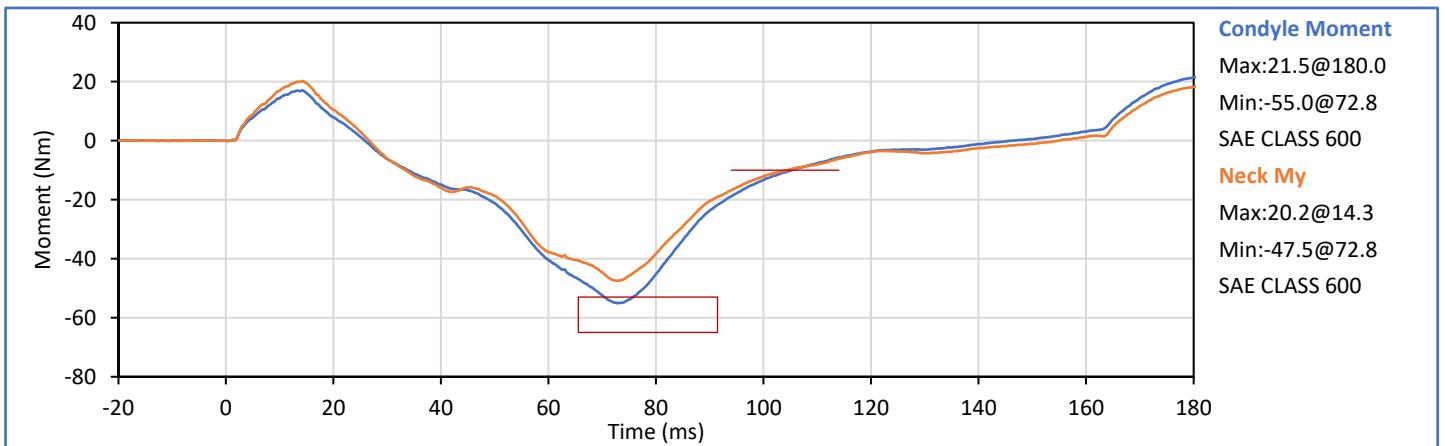
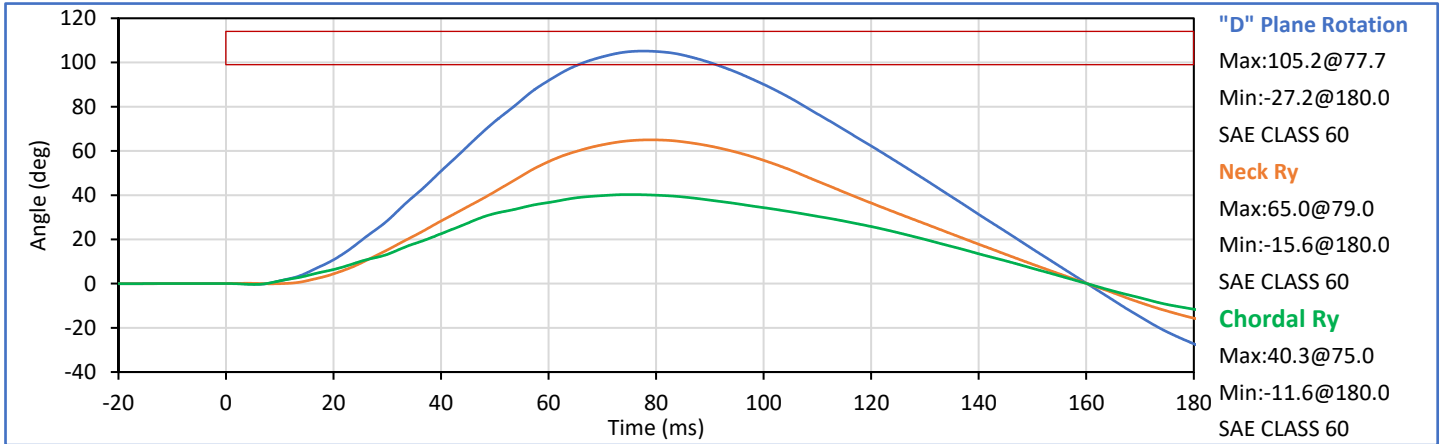


| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|---------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.3 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 39 | Pass |
| Pendulum Velocity | m/s | 5.95 | 6.19 | 6.13 | Pass |
| Pendulum Velocity at 10 ms | m/s | 1.50 | 1.90 | 1.58 | Pass |
| Pendulum Velocity at 20 ms | m/s | 3.10 | 3.90 | 3.22 | Pass |
| Pendulum Velocity at 30 ms | m/s | 4.60 | 5.60 | 4.75 | Pass |
| Peak "D" Plane Rotation | deg | 99.0 | 114.0 | 105.2 | Pass |
| Peak Moment in Rotation | Nm | -65.0 | -53.0 | -55.0 | Pass |
| Negative Moment Decay to -10 Nm | ms | 94.0 | 114.0 | 105.3 | Pass |
| Overall Test Results | | | | | Pass |

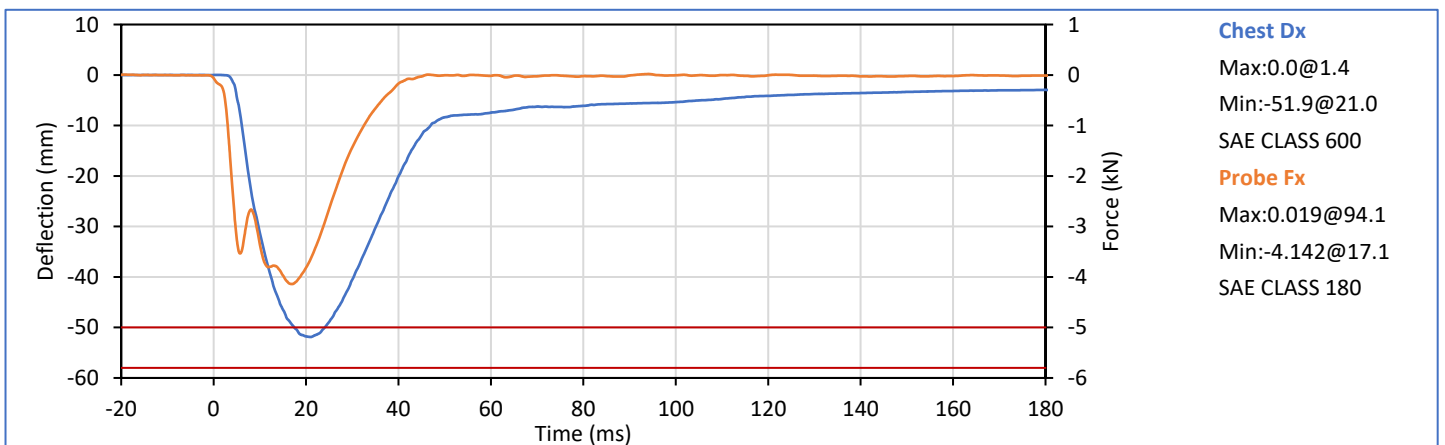
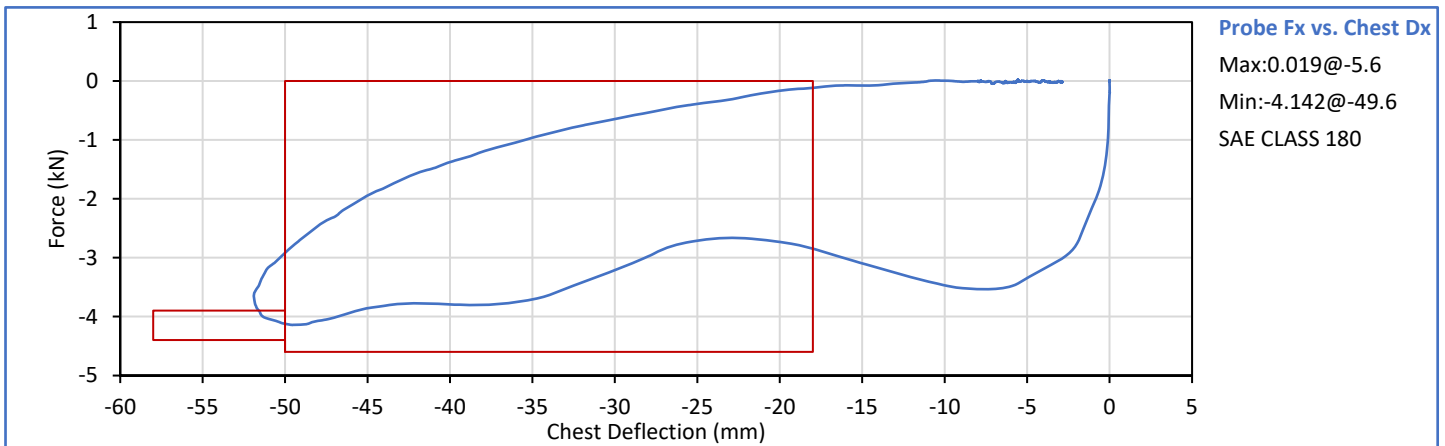


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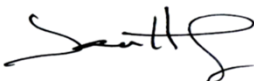
Approved By: 
J. Hernandez



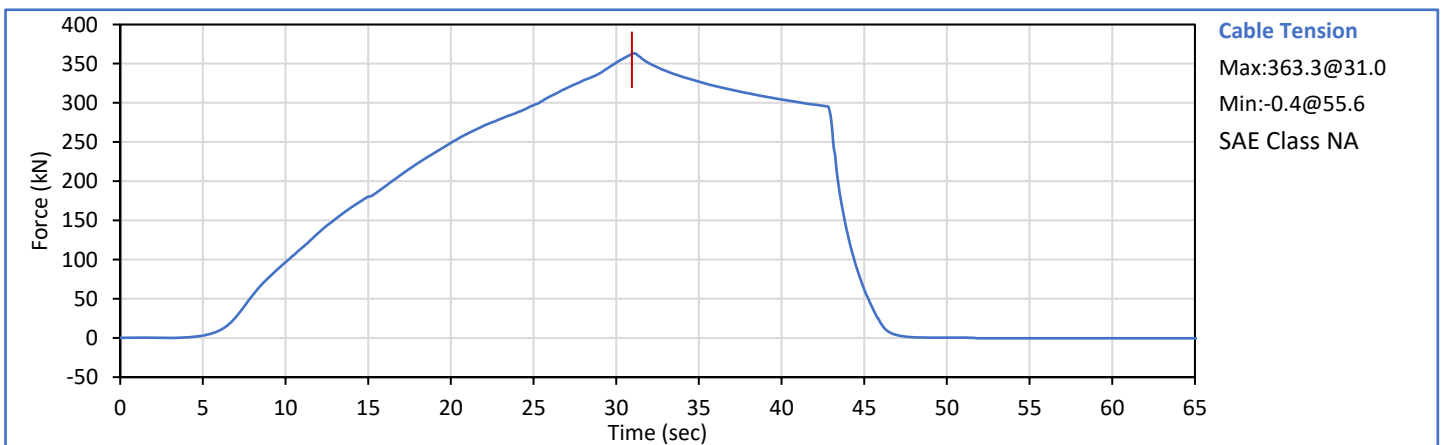
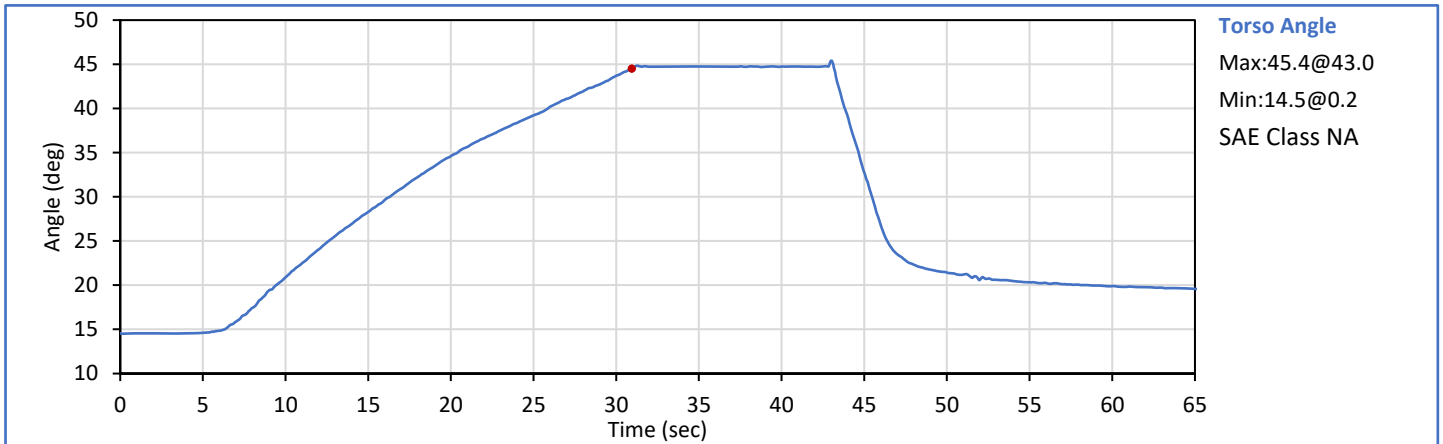
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.2 | Pass |
| Laboratory RelativeHumidity | % | 10 | 70 | 35 | Pass |
| Probe Velocity | m/s | 6.59 | 6.83 | 6.72 | Pass |
| Peak Chest Deflection | mm | -58.0 | -50.0 | -51.9 | Pass |
| Peak Probe Force, 50 and 58 mm | kN | -4.400 | -3.900 | -4.124 | Pass |
| Peak Probe Force, 18 and 50 mm | kN | -4.600 | 0.000 | -4.142 | Pass |
| Internal Hysteresis | % | 69.0 | 85.0 | 76.4 | Pass |
| Overall Test Results | | | | | Pass |



Technician: 
 J. Coronel

Approved By: 
 J. Hernandez

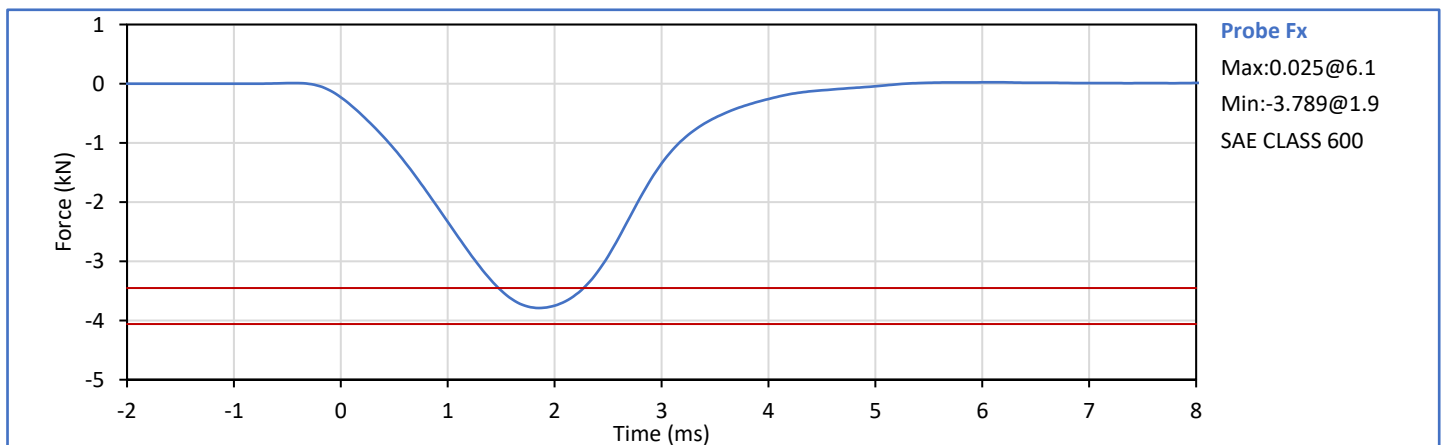
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|-----------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.1 | Pass |
| Laboratory Humidity | % | 10 | 70 | 34 | Pass |
| Orientation Angle | deg | 0.0 | 20.0 | 14.1 | Pass |
| Test Initial Angle | deg | 11.0 | 19.0 | 14.5 | Pass |
| Peak Force at 45° (+/-0.5°) | N | 320.0 | 390.0 | 362.3 | Pass |
| Torso Flexion Rate | deg/s | 0.50 | 1.50 | 1.21 | Pass |
| Final Reference Plane Angle | deg | -8.0 | 8.0 | 2.6 | Pass |
| Overall Test Results | | | | | Pass |



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J. Coronel

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J. Hernandez

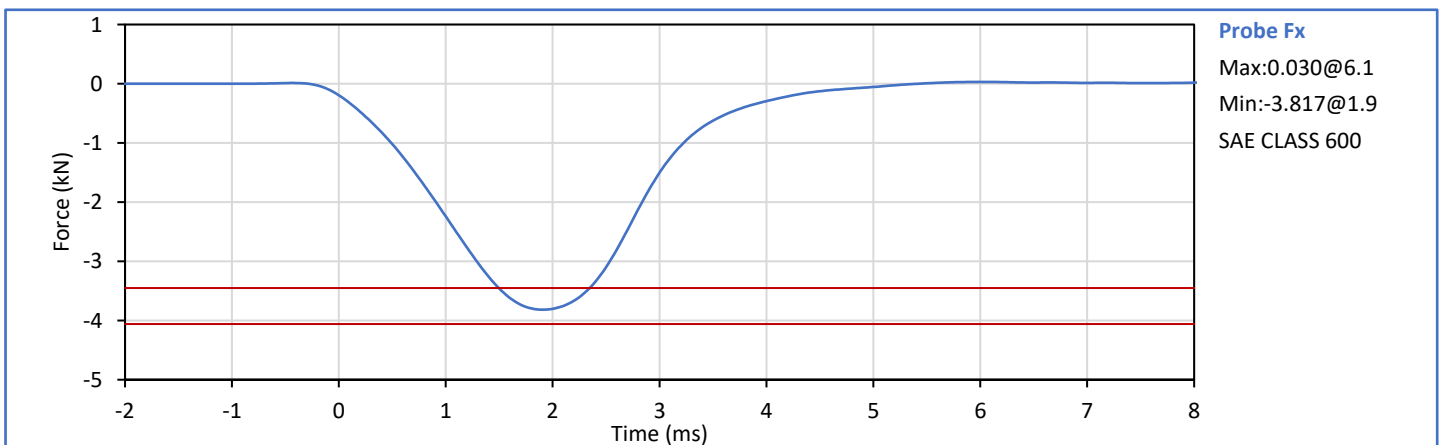
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.6 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Probe Velocity | m/s | 2.070 | 2.130 | 2.112 | Pass |
| Peak Resistive Force | kN | -4.060 | -3.450 | -3.789 | Pass |
| Overall Test Results | | | | | Pass |



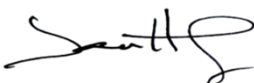
Technician: *J. Coronel*
J. Coronel

Approved By: *J. Hernandez*
J. Hernandez

| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Probe Velocity | m/s | 2.070 | 2.130 | 2.111 | Pass |
| Peak Resistive Force | kN | -4.060 | -3.450 | -3.817 | Pass |
| Overall Test Results | | | | | Pass |



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Approved By: 
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APPENDIX C
Post-Test ATD Qualification and Performance Verification
Hybrid III 50th Percentile Male ATD
S/N: 360

ATD Serial No.: 360

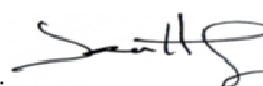
Test Date: 2024-11-22

| Dummy Item | Inspect for | Comments | Damage | OK |
|------------------------|---|----------|--------|----|
| Entire ATD | Perform general cleaning | | | ✓ |
| Outer Skin | Gashes, rips, cracks | | | ✓ |
| Head | Ballast secure | | | ✓ |
| | General appearance | | | ✓ |
| Neck bracket | Upper neck firmly attached to lower bracket | | | ✓ |
| Neck | Broken or cracked rubber | | | ✓ |
| | Looseness at the condyle joint | | | ✓ |
| Nodding block | Cracked or out of position | | | ✓ |
| Lumbar Spine | Broken or cracked rubber | | | ✓ |
| Ribs | Broken or bent ribs | | | ✓ |
| | Broken or bent rib supports | | | ✓ |
| | Damping material separated or cracked | | | ✓ |
| | Rubber bumpers in place | | | ✓ |
| Chest Displ. Assembly | Bent shaft | | | ✓ |
| | Slider arm riding in track | | | ✓ |
| Sensors | Check cables for cuts, tears | | | ✓ |
| | Check for damaged insulation | | | ✓ |
| Accelerometer Mounting | Head mounting secure | | | ✓ |
| | Chest mounting secure | | | ✓ |
| Knees | Skin condition | | | ✓ |
| | Insert (do not remove) | | | ✓ |
| | Casting | | | ✓ |
| Limbs | Normal movement and adjustment | | | ✓ |
| Knee Sliders | Wires intact | | | ✓ |
| | Rubber returned to "resting" position | | | ✓ |
| Pelvis | Broken | | | ✓ |
| Other | Describe below as needed | | | ✓ |

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician: 
J. Coronel

Approved By: 
J. Hernandez

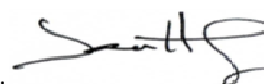
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.7 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 34 | Pass |
| A - Total sitting height | mm | 879 | 889 | 882 | Pass |
| B - Shoulder pivot height | mm | 505 | 521 | 516 | Pass |
| C - 'H' point height | mm | 84 | 89 | 87 | Pass |
| D - 'H' point location from backline | mm | 135 | 140 | 138 | Pass |
| E - Shoulder pivot from backline | mm | 84 | 94 | 89 | Pass |
| F - Thigh clearance | mm | 140 | 155 | 148 | Pass |
| G - Back of elbow to wrist pivot | mm | 290 | 305 | 298 | Pass |
| H - Head back to backline | mm | 41 | 46 | 44 | Pass |
| I - Shoulder to elbow length | mm | 330 | 345 | 338 | Pass |
| J - Elbow rest height | mm | 190 | 211 | 203 | Pass |
| K - Buttock to knee length | mm | 579 | 604 | 598 | Pass |
| L - Popliteal length | mm | 429 | 455 | 443 | Pass |
| M - Knee pivot height | mm | 485 | 500 | 496 | Pass |
| N - Buttock popliteal length | mm | 452 | 477 | 462 | Pass |
| O - Chest depth without jacket | mm | 213 | 229 | 227 | Pass |
| P - Foot length | mm | 251 | 267 | 258 | Pass |
| V - Shoulder breadth | mm | 422 | 437 | 428 | Pass |
| W - Foot breadth | mm | 91 | 107 | 102 | Pass |
| Y - Chest circum. (w/chest jacket) | mm | 970 | 1001 | 979 | Pass |
| Z - Waist circum. | mm | 836 | 866 | 849 | Pass |
| AA - Location for chest circum. | mm | 429 | 434 | 430 | Pass |
| BB - Location for waist circum. | mm | 226 | 231 | 230 | Pass |
| Overall Test Results | | | | | Pass |

Technician:



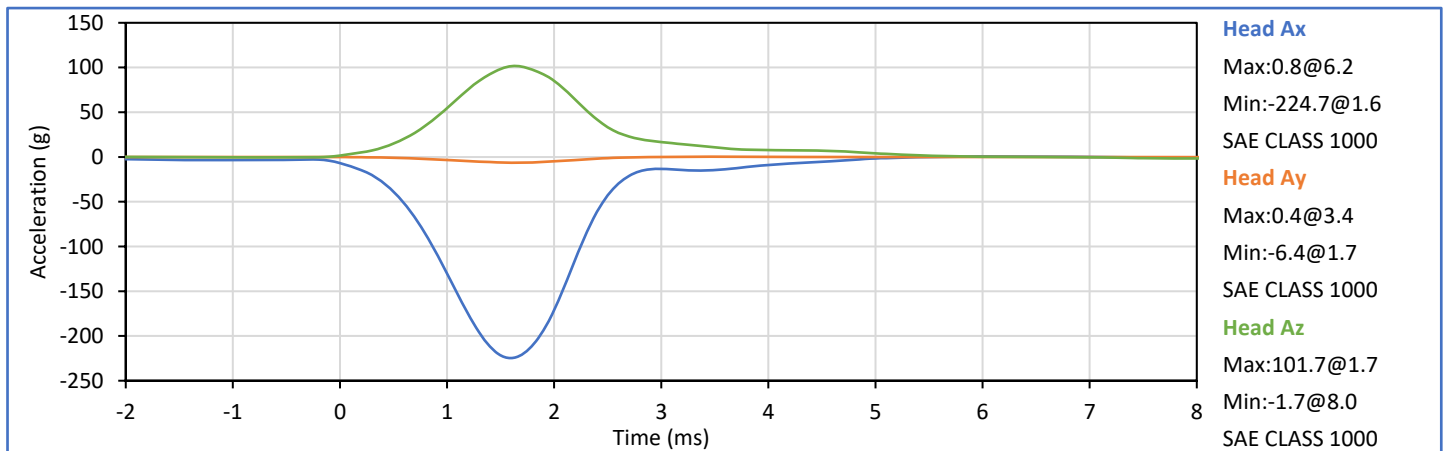
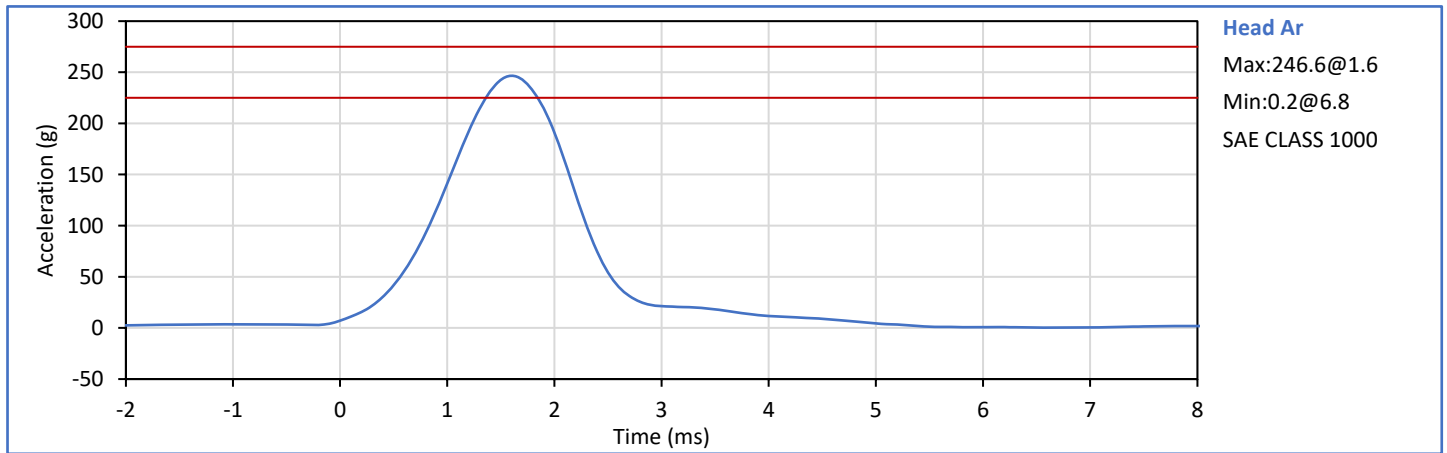
J. Coronel

Approved By:



J. Hernandez

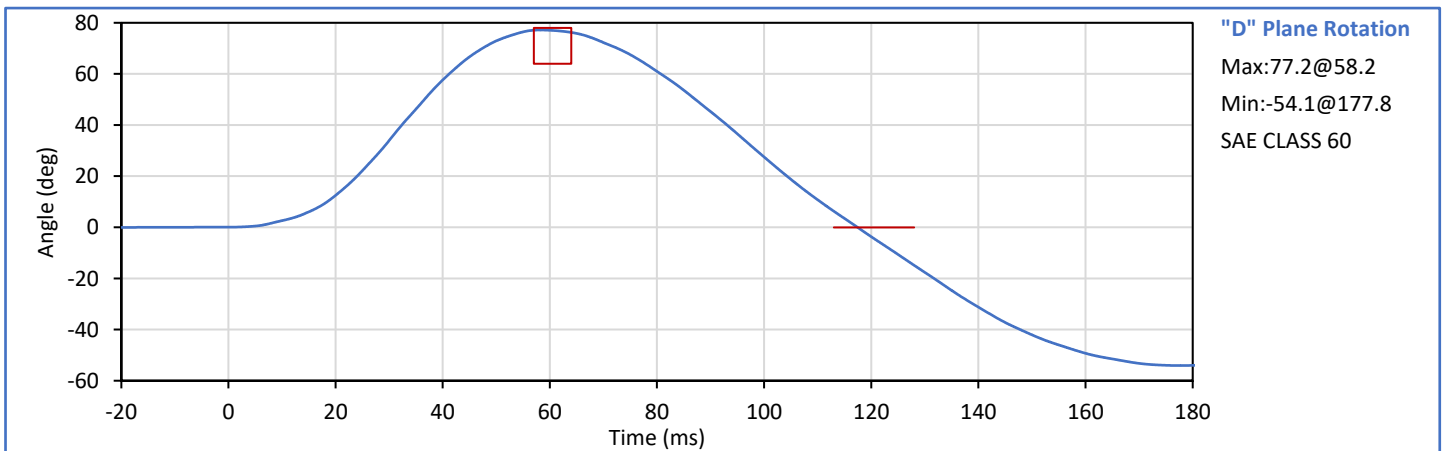
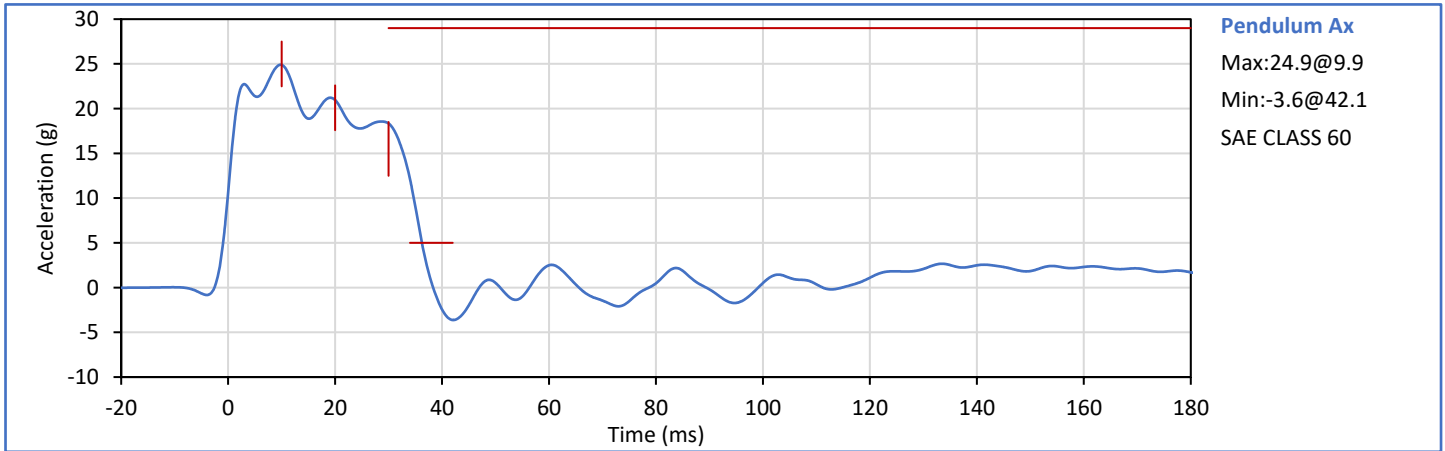
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|-------------------------------|--------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.6 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 34 | Pass |
| Peak Resultant Acceleration | g | 225.0 | 275.0 | 246.6 | Pass |
| Peak Lateral Acceleration | g | -15.0 | 15.0 | -6.4 | Pass |
| Oscillations After Main Pulse | % | 0.0 | 10.0 | 0.0 | Pass |
| Is Acceleration Unimodal? | Yes/No | Yes | | Yes | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel

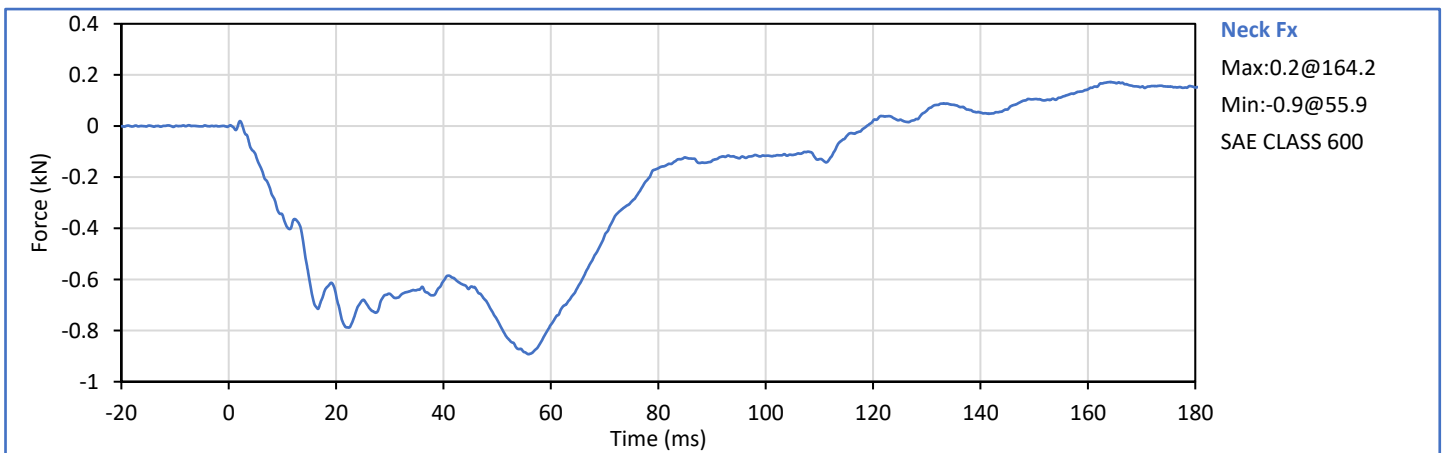
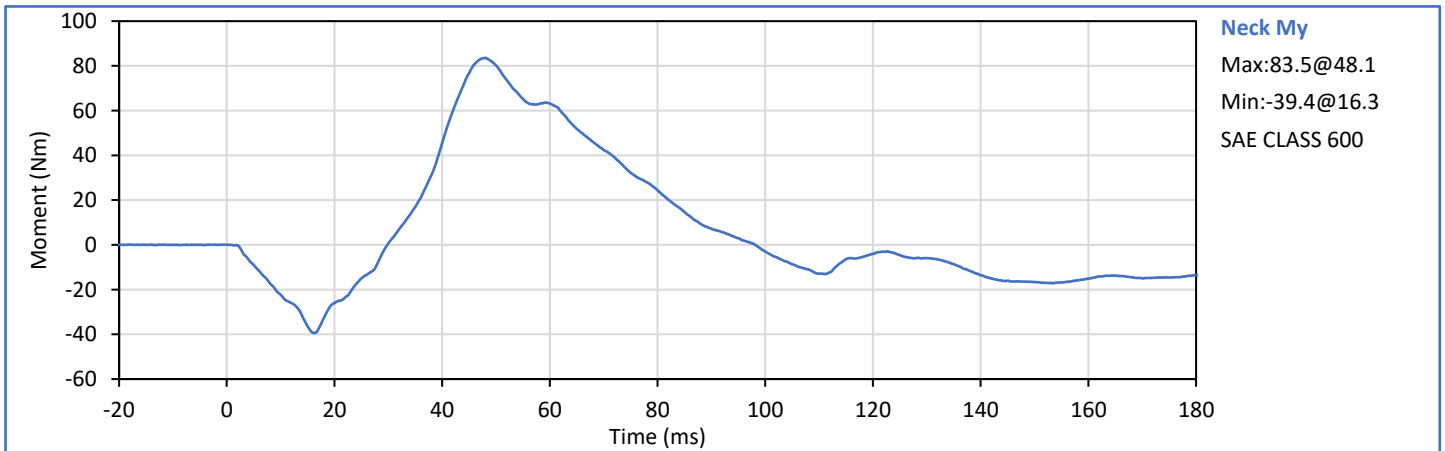
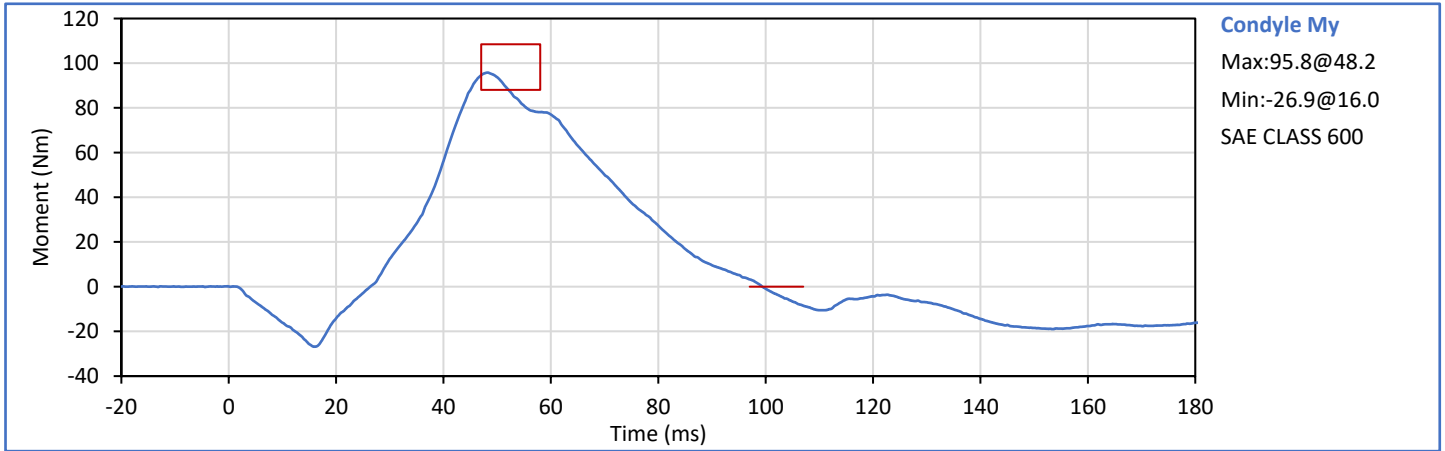
Approved By: J. Hernandez

| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|----------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.3 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 44 | Pass |
| Pendulum Velocity | m/s | 6.89 | 7.13 | 7.11 | Pass |
| Pendulum Deceleration at 10 ms | g | 22.5 | 27.5 | 24.9 | Pass |
| Pendulum Deceleration at 20 ms | g | 17.6 | 22.6 | 21.0 | Pass |
| Pendulum Deceleration at 30 ms | g | 12.5 | 18.5 | 18.3 | Pass |
| Peak Pendulum Decel After 30 ms | g | 0.0 | 29.0 | 18.3 | Pass |
| Deceleration Decay to Cross 5g | ms | 34.0 | 42.0 | 36.2 | Pass |
| "D" Plane Rotation peak | deg | 64.0 | 78.0 | 77.2 | Pass |
| | ms | 57.0 | 64.0 | 58.2 | Pass |
| "D" Plane Rotation Decay to Zero | ms | 113.0 | 128.0 | 117.5 | Pass |
| Moment About Occipital Condyle | Nm | 88.1 | 108.5 | 95.8 | Pass |
| | ms | 47.0 | 58.0 | 48.2 | Pass |
| Moment Decay, Peak to Zero | ms | 97.0 | 107.0 | 99.4 | Pass |
| Overall Test Results | | | | | Pass |

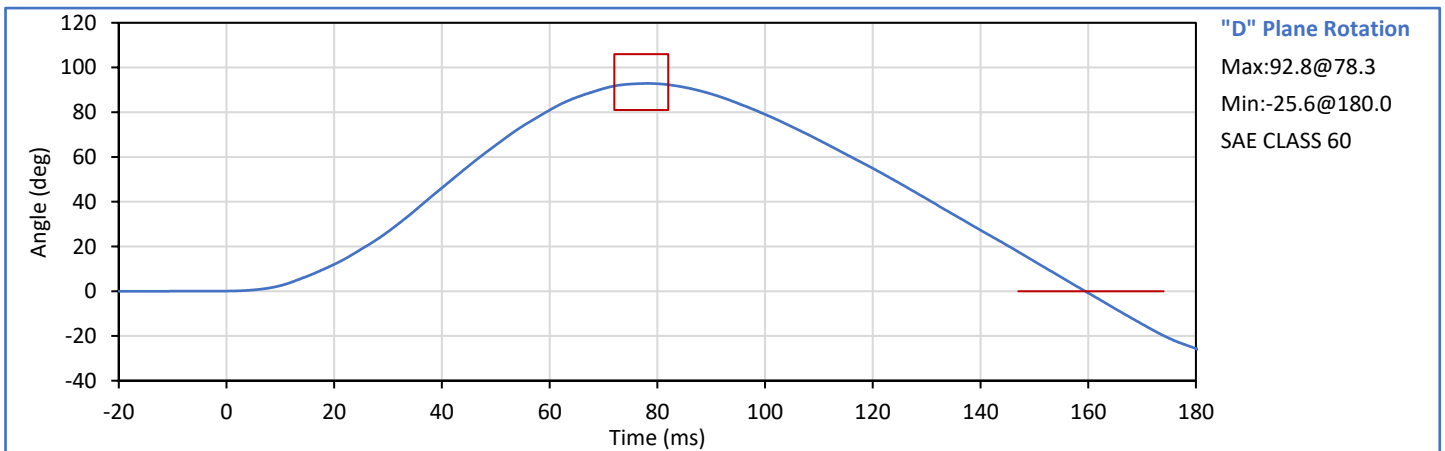
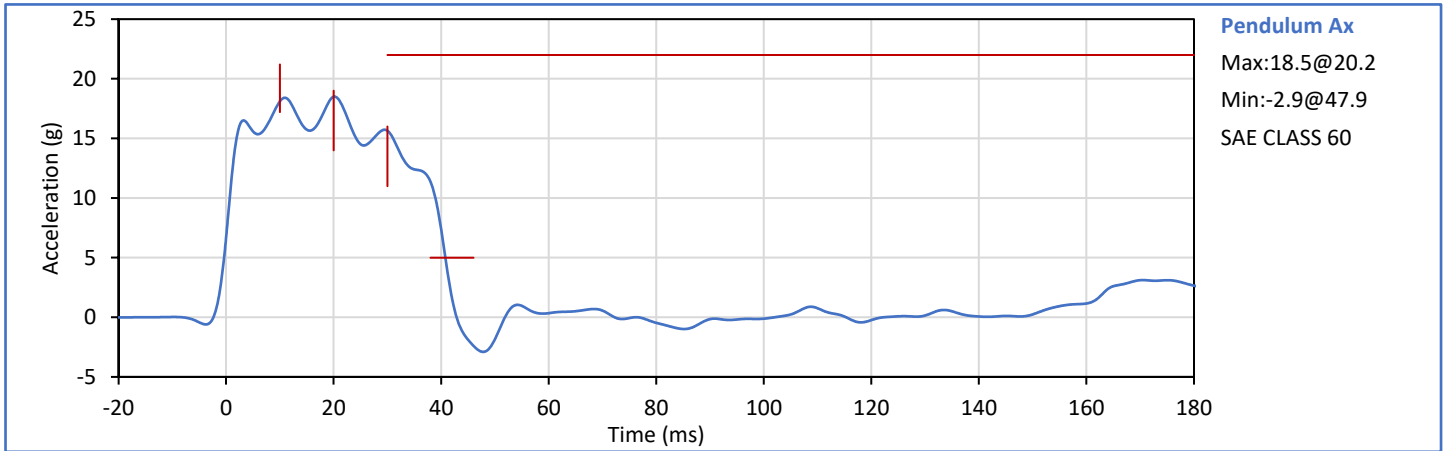


Technician: J. Coronel

Approved By: J. Hernandez

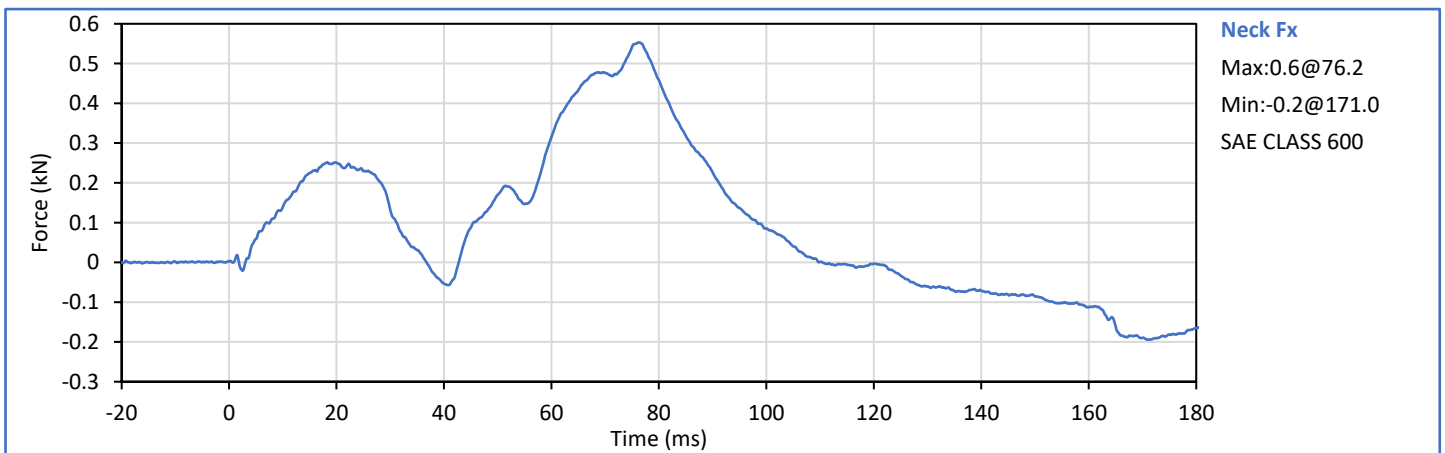
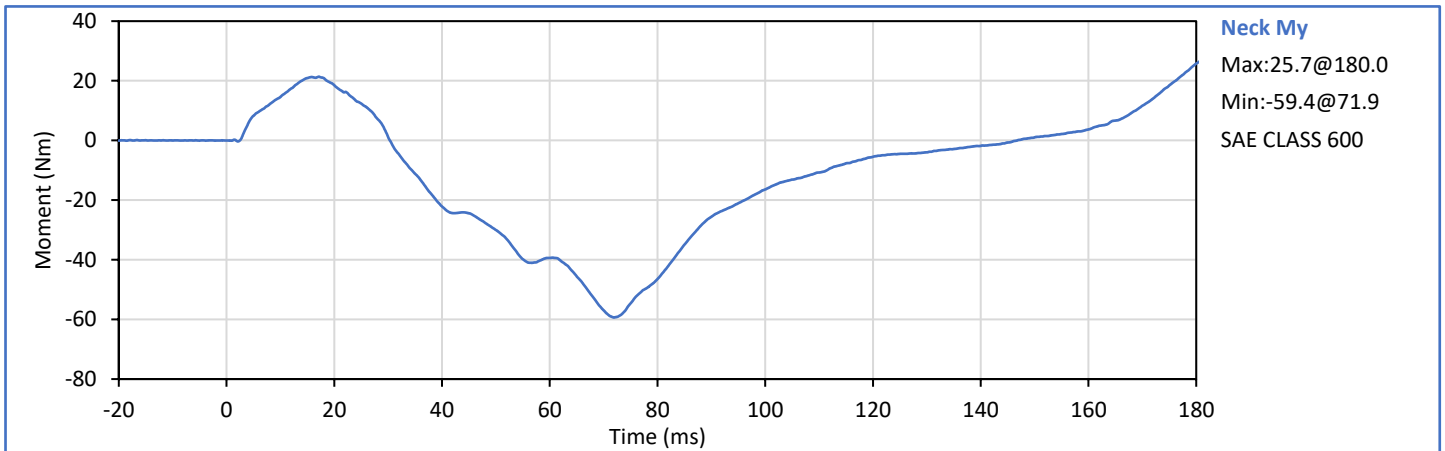
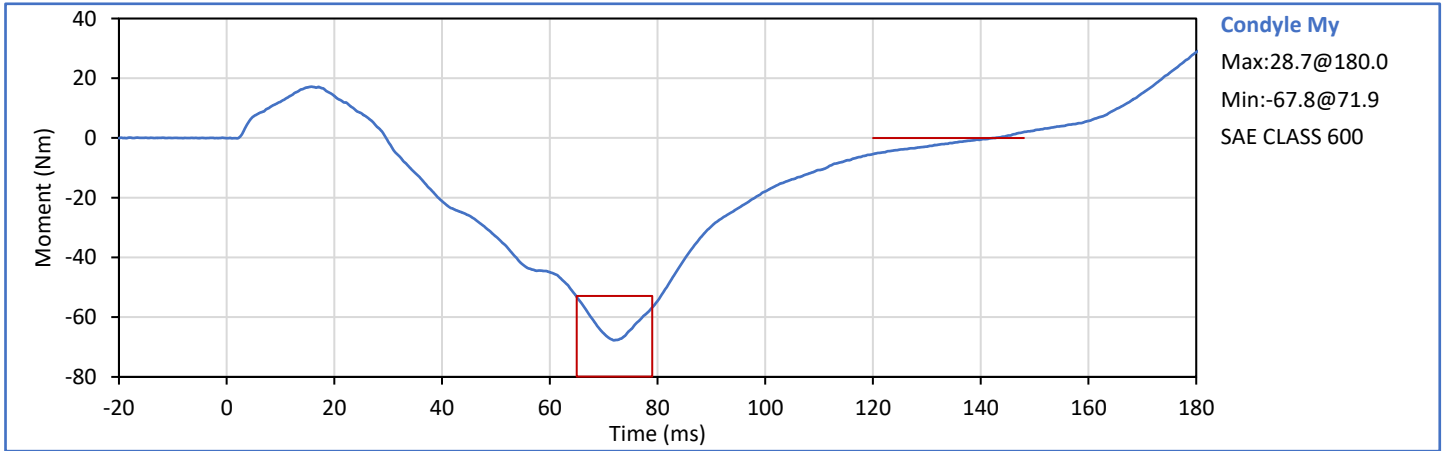


| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|----------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.7 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Pendulum Velocity | m/s | 5.94 | 6.19 | 6.05 | Pass |
| Pendulum Deceleration at 10 ms | g | 17.2 | 21.2 | 18.1 | Pass |
| Pendulum Deceleration at 20 ms | g | 14.0 | 19.0 | 18.5 | Pass |
| Pendulum Deceleration at 30 ms | g | 11.0 | 16.0 | 15.6 | Pass |
| Peak Pendulum Decel After 30 ms | g | 0.0 | 22.0 | 15.6 | Pass |
| Deceleration Decay to Cross 5g | ms | 38.0 | 46.0 | 40.8 | Pass |
| "D" Plane Rotation peak | deg | 81.0 | 106.0 | 92.8 | Pass |
| | ms | 72.0 | 82.0 | 78.3 | Pass |
| "D" Plane Rotation Decay to Zero | ms | 147.0 | 174.0 | 159.5 | Pass |
| Moment About Occipital Condyle | Nm | -79.9 | -52.9 | -67.8 | Pass |
| | ms | 65.0 | 79.0 | 71.9 | Pass |
| Moment Decay, Peak to Zero | ms | 120.0 | 148.0 | 142.8 | Pass |
| Overall Test Results | | | | | Pass |

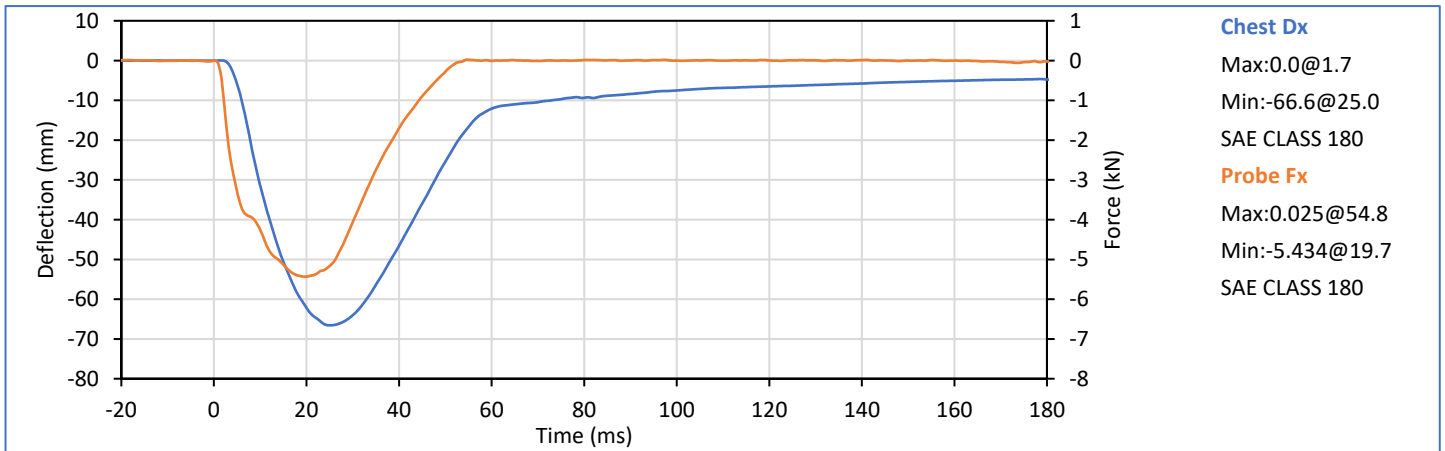
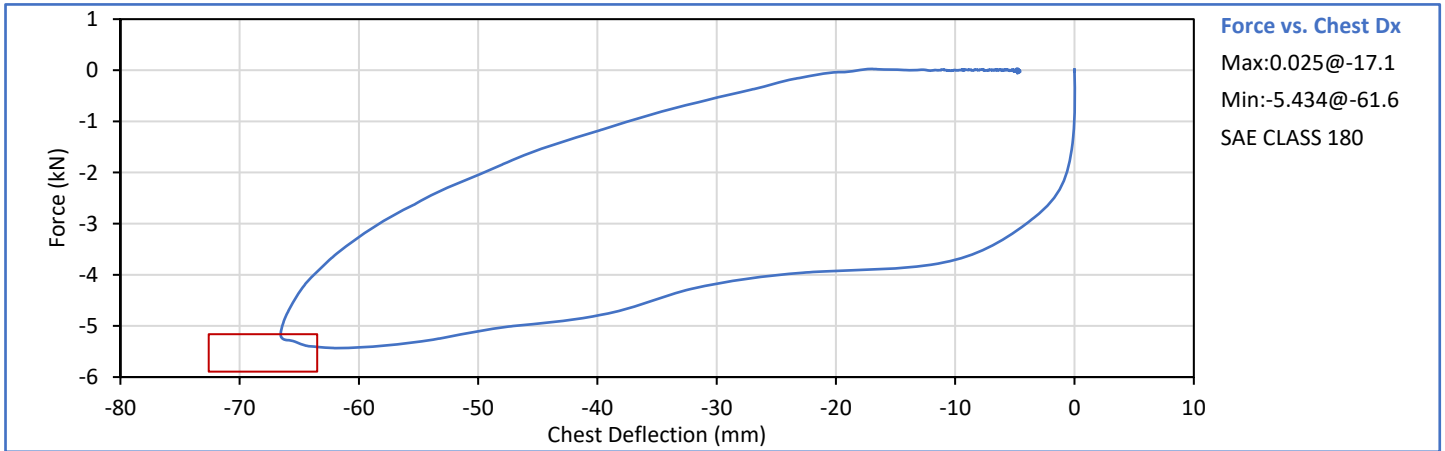


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Approved By: J. Hernandez



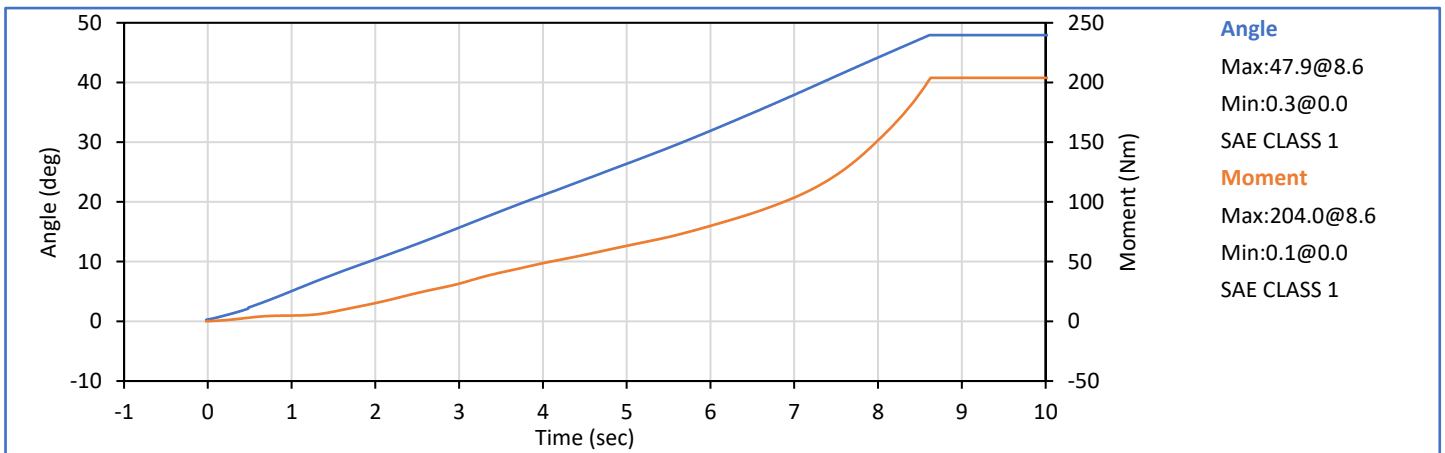
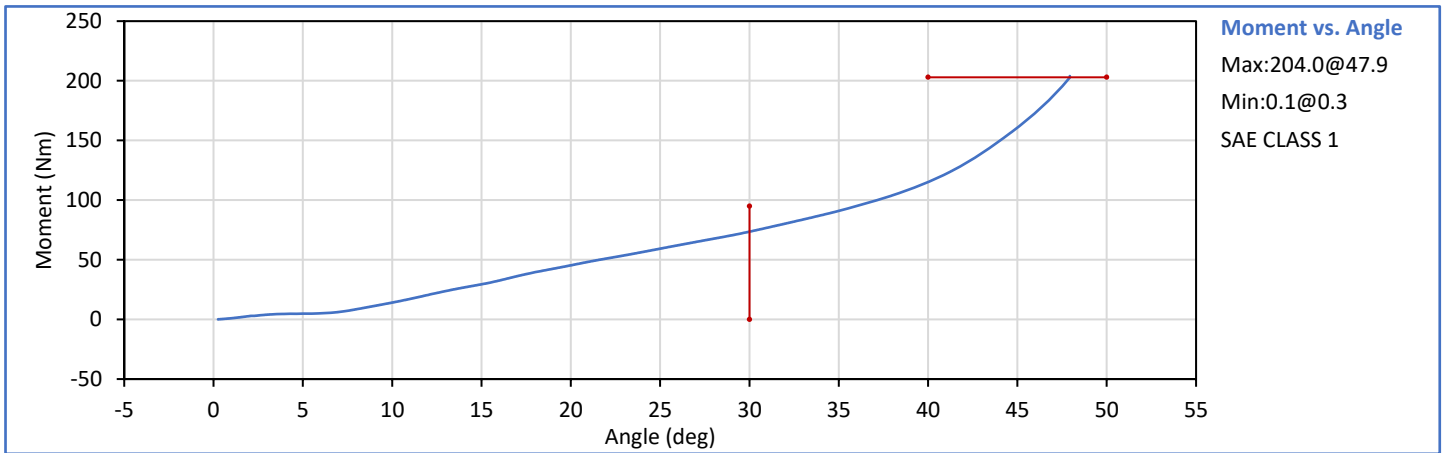
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.3 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Probe Velocity | m/s | 6.58 | 6.82 | 6.71 | Pass |
| Peak Chest Deflection | mm | -72.6 | -63.5 | -66.6 | Pass |
| Peak Probe Force | kN | -5.893 | -5.159 | -5.434 | Pass |
| Internal Hysteresis | % | 69.0 | 85.0 | 72.9 | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel

Approved By: J. Hernandez

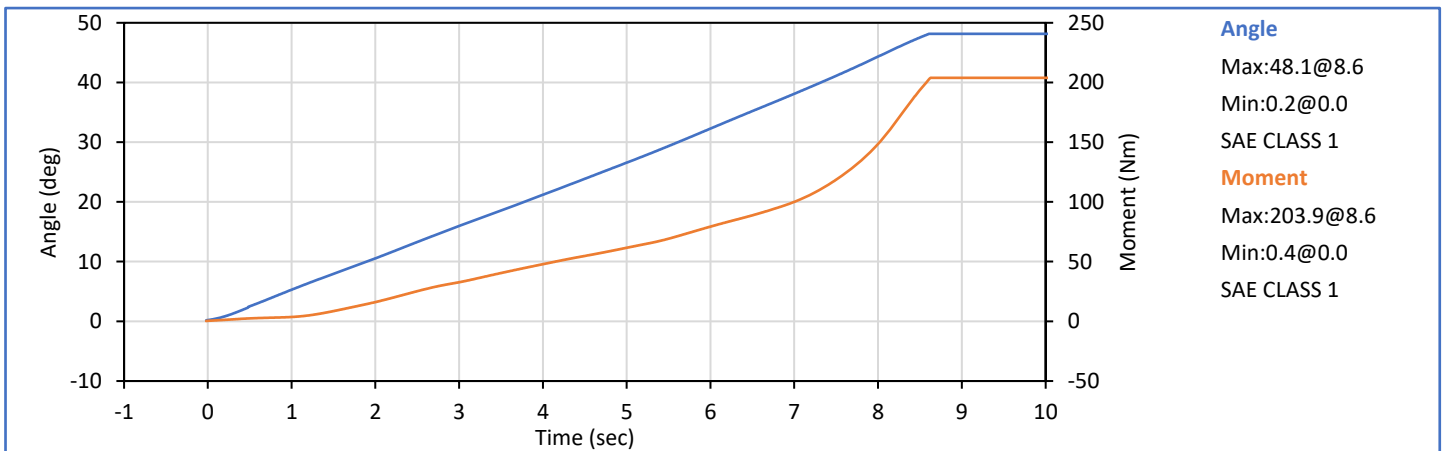
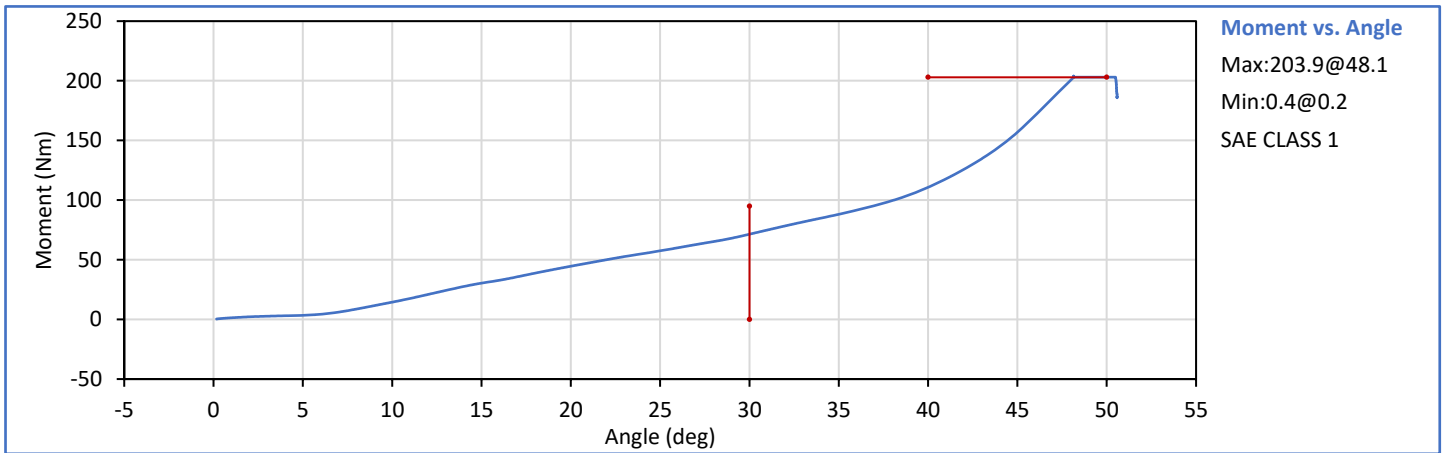
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.4 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Left Hip Rotation Rate | deg/s | 5.0 | 10.0 | 5.5 | Pass |
| Left Femur Torque at 30° | Nm | 0.0 | 95.0 | 73.5 | Pass |
| Left Hip Rotation at 203 Nm | deg | 40.0 | 50.0 | 47.9 | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel

Approved By: J. Hernandez

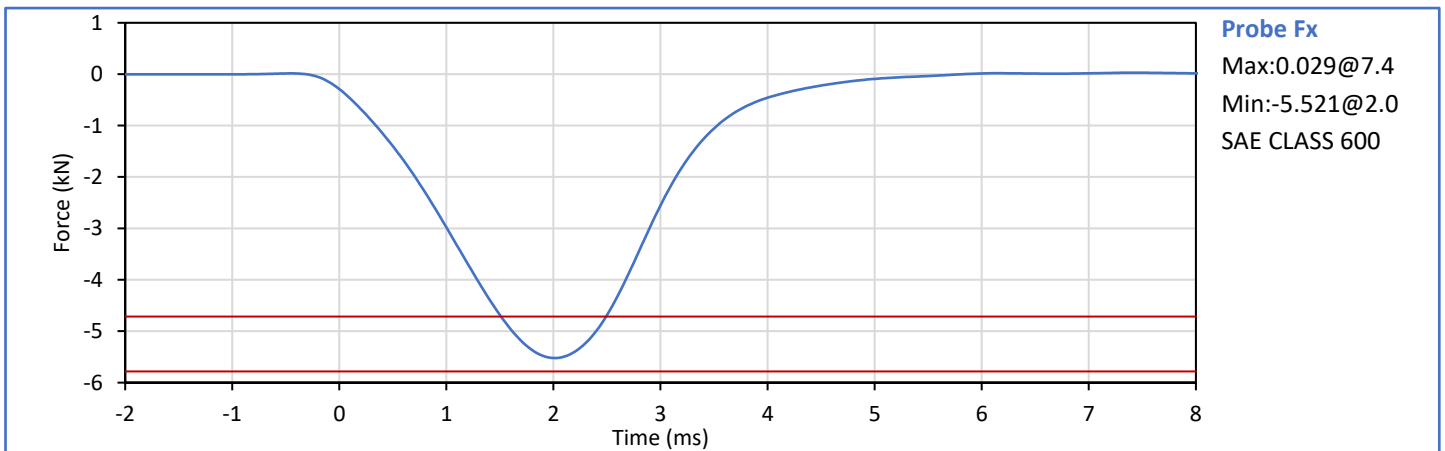
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.2 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| Right Hip Rotation Rate | deg/s | 5.0 | 10.0 | 5.5 | Pass |
| Right Femur Torque at 30° | Nm | 0.0 | 95.0 | 71.4 | Pass |
| Right Hip Rotation at 203 Nm | deg | 40.0 | 50.0 | 48.1 | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel

Approved By: J. Hernandez

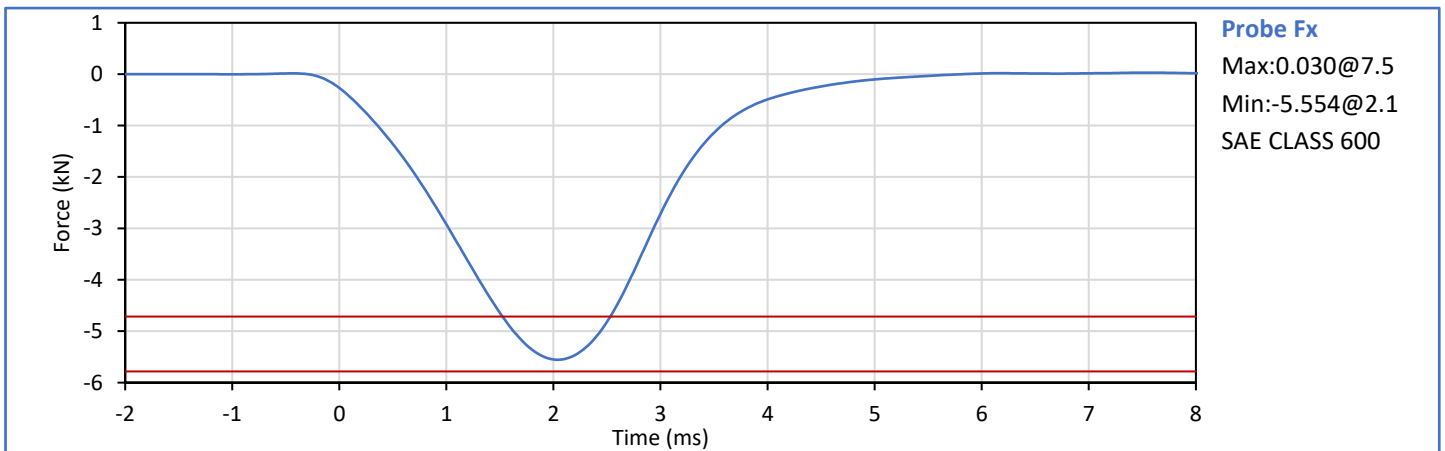
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.6 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 40 | Pass |
| Probe Velocity | m/s | 2.070 | 2.130 | 2.101 | Pass |
| Peak Resistive Force | kN | -5.782 | -4.715 | -5.521 | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel

Approved By: J. Hernandez

| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 39 | Pass |
| Probe Velocity | m/s | 2.070 | 2.130 | 2.098 | Pass |
| Peak Resistive Force | kN | -5.782 | -4.715 | -5.554 | Pass |
| Overall Test Results | | | | | Pass |



Technician: J. Coronel

Approved By: J. Hernandez

APPENDIX C
Post-Test ATD Qualification and Performance Verification
Hybrid III 5th Percentile Female ATD
S/N: DH1644

| Dummy Item | Inspect for | Comments | Damage | Okay |
|------------------------|---|----------|--------|------|
| Entire ATD | Perform general cleaning | | | ✓ |
| Outer Skin | Gashes, rips, cracks | | | ✓ |
| Head | Ballast secure | | | ✓ |
| | General appearance | | | ✓ |
| Neck bracket | Upper neck firmly attached to lower bracket | | | ✓ |
| Neck | Broken or cracked rubber | | | ✓ |
| | Looseness at the condyle joint | | | ✓ |
| Nodding block | Cracked or out of position | | | ✓ |
| Lumbar Spine | Broken or cracked rubber | | | ✓ |
| Ribs | Broken or bent ribs | | | ✓ |
| | Broken or bent rib supports | | | ✓ |
| | Damping material separated or cracked | | | ✓ |
| | Rubber bumpers in place | | | ✓ |
| Chest Displ. Assembly | Bent shaft | | | ✓ |
| | Slider arm riding in track | | | ✓ |
| Sensors | Check cables for cuts, tears | | | ✓ |
| | Check for damaged insulation | | | ✓ |
| Accelerometer Mounting | Head mounting secure | | | ✓ |
| | Chest mounting secure | | | ✓ |
| Knees | Skin condition | | | ✓ |
| | Insert (do not remove) | | | ✓ |
| | Casting | | | ✓ |
| Limbs | Normal movement and adjustment | | | ✓ |
| Knee Sliders | Wires intact | | | ✓ |
| | Rubber returned to "resting" position | | | ✓ |
| Pelvis | Broken | | | ✓ |
| Other | Describe below as needed | | | ✓ |

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician: _____



J. Coronel

Approved By: _____



J. Hernandez


| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.2 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 35 | Pass |
| A - Total sitting height | mm | 775 | 800 | 793 | Pass |
| B - Shoulder pivot height | mm | 432 | 457 | 440 | Pass |
| C - 'H' point height | mm | 81 | 86 | 86 | Pass |
| D - 'H' point location from backline | mm | 145 | 150 | 148 | Pass |
| E - Shoulder pivot from backline | mm | 69 | 84 | 80 | Pass |
| F - Thigh clearance | mm | 119 | 135 | 129 | Pass |
| G - Back of elbow to wrist pivot | mm | 244 | 259 | 255 | Pass |
| H - Head back to backline | mm | 41 | 46 | 44 | Pass |
| I - Shoulder to elbow length | mm | 277 | 297 | 284 | Pass |
| J - Elbow rest height | mm | 183 | 203 | 198 | Pass |
| K - Buttock to knee length | mm | 521 | 546 | 531 | Pass |
| L - Popliteal length | mm | 356 | 376 | 372 | Pass |
| M - Knee pivot height | mm | 394 | 419 | 410 | Pass |
| N - Buttock popliteal length | mm | 414 | 439 | 427 | Pass |
| O - Chest depth without jacket | mm | 175 | 191 | 185 | Pass |
| P - Foot length | mm | 219 | 234 | 231 | Pass |
| R - Buttock to Knee Pivot Length | mm | 457 | 483 | 468 | Pass |
| S - Head Breadth | mm | 137 | 147 | 146 | Pass |
| T - Head Depth | mm | 178 | 188 | 183 | Pass |
| U - Hip Breadth | mm | 300 | 315 | 309 | Pass |
| V - Shoulder breadth | mm | 351 | 366 | 360 | Pass |
| W - Foot breadth | mm | 79 | 94 | 88 | Pass |
| X - Head circum. | mm | 528 | 549 | 537 | Pass |
| Y - Chest circum. (w/chest jacket) | mm | 851 | 881 | 868 | Pass |
| Z - Waist circum. | mm | 760 | 790 | 772 | Pass |
| AA - Location for chest circum. | mm | 333 | 358 | 348 | Pass |
| BB - Location for waist circum. | mm | 160 | 170 | 166 | Pass |
| Overall Test Results | | | | | Pass |

Technician:



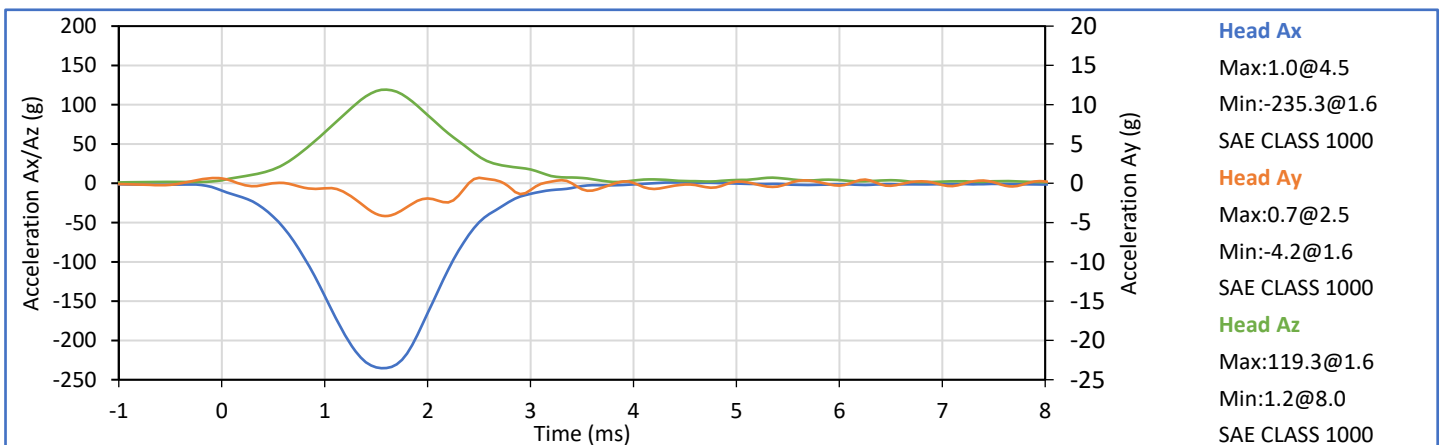
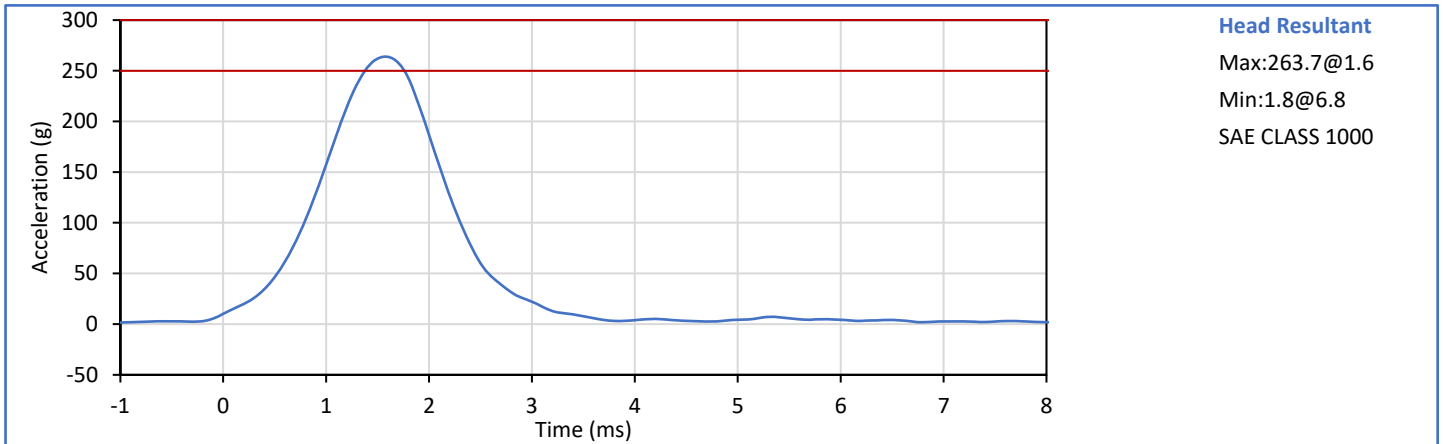
J. Coronel

Approved By:



J. Hernandez

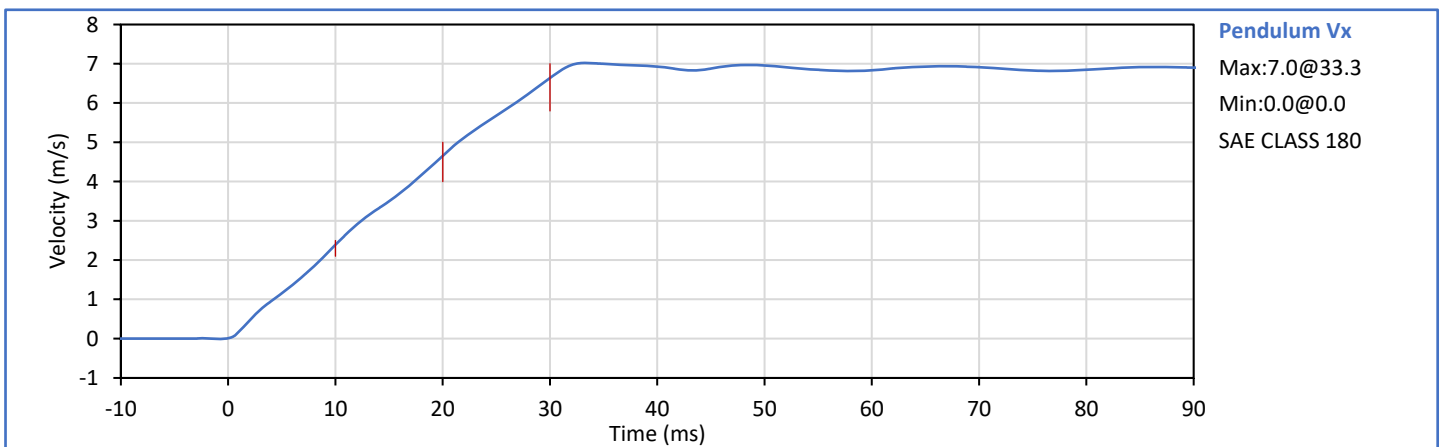
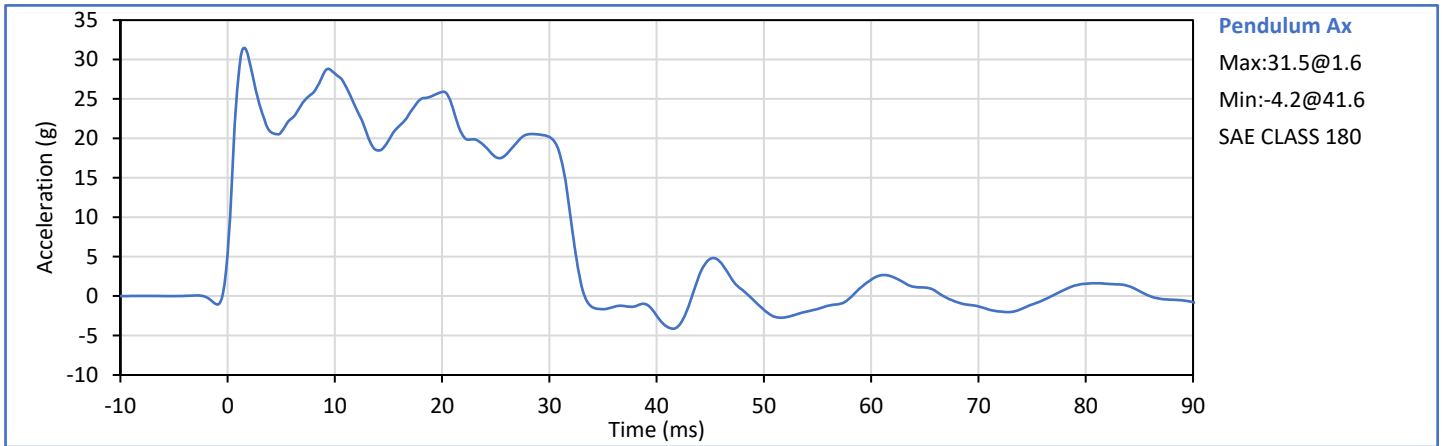
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|-------------------------------|--------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.4 | Pass |
| Laboratory Humidity | % | 10 | 70 | 35 | Pass |
| Peak Resultant Acceleration | g | 250.0 | 300.0 | 263.7 | Pass |
| Peak Lateral Acceleration | g | -15.0 | 15.0 | -4.2 | Pass |
| Oscillations After Main Pulse | % | 0.0 | 10.0 | 1.9 | Pass |
| Is Acceleration Unimodal? | Yes/No | Yes | | Yes | Pass |
| Overall Test Results | | | | | Pass |




Technician: J. Coronel

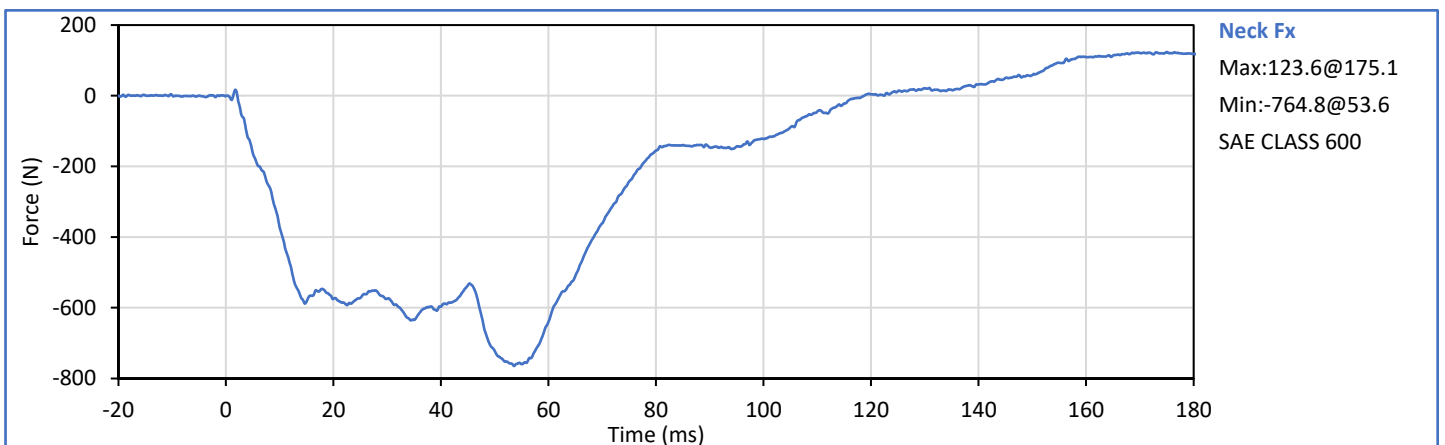
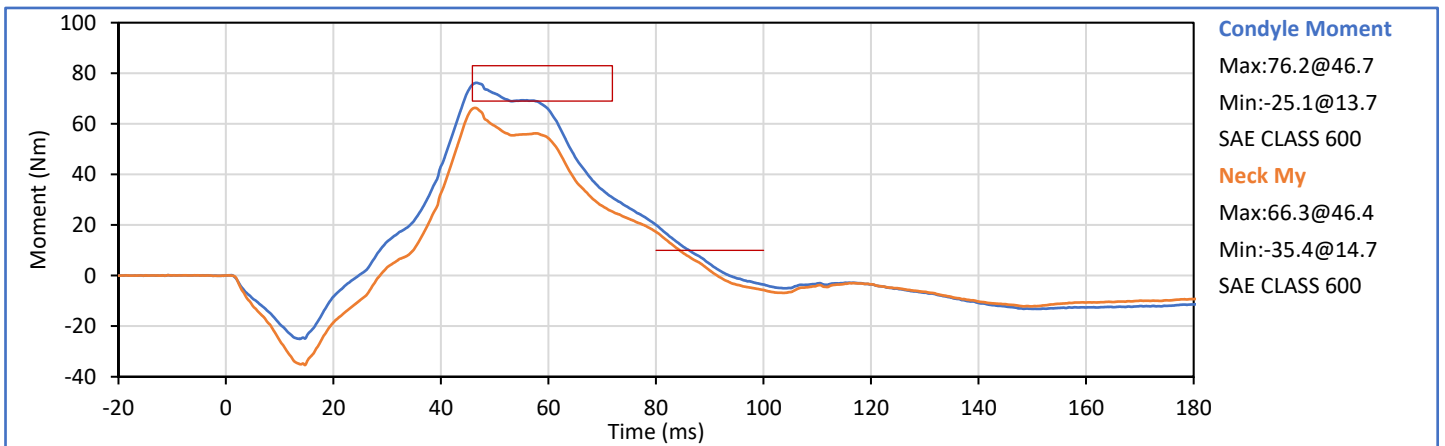
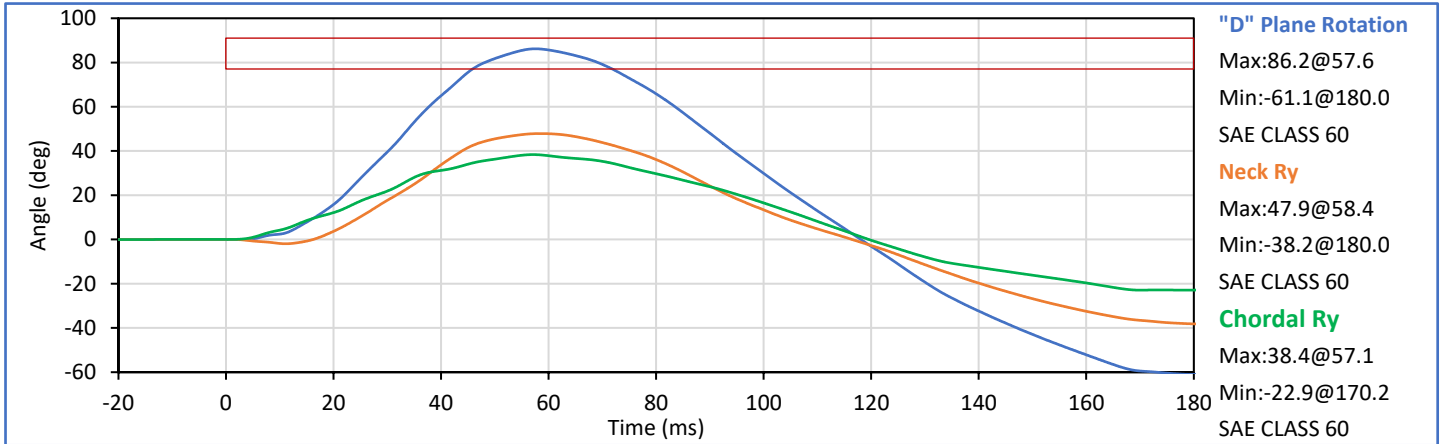
Approved By: J. Hernandez

| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.3 | Pass |
| Laboratory Humidity | % | 10 | 70 | 35 | Pass |
| Pendulum Velocity | m/s | 6.89 | 7.13 | 7.07 | Pass |
| Pendulum Velocity at 10 ms | m/s | 2.10 | 2.50 | 2.39 | Pass |
| Pendulum Velocity at 20 ms | m/s | 4.00 | 5.00 | 4.65 | Pass |
| Pendulum Velocity at 30 ms | m/s | 5.80 | 7.00 | 6.64 | Pass |
| Peak "D" Plane Rotation | deg | 77.0 | 91.0 | 86.2 | Pass |
| Peak Moment in Rotation | Nm | 69.0 | 83.0 | 76.2 | Pass |
| Positive Moment Decay to 10 Nm | ms | 80.0 | 100.0 | 86.2 | Pass |
| Overall Test Results | | | | | Pass |

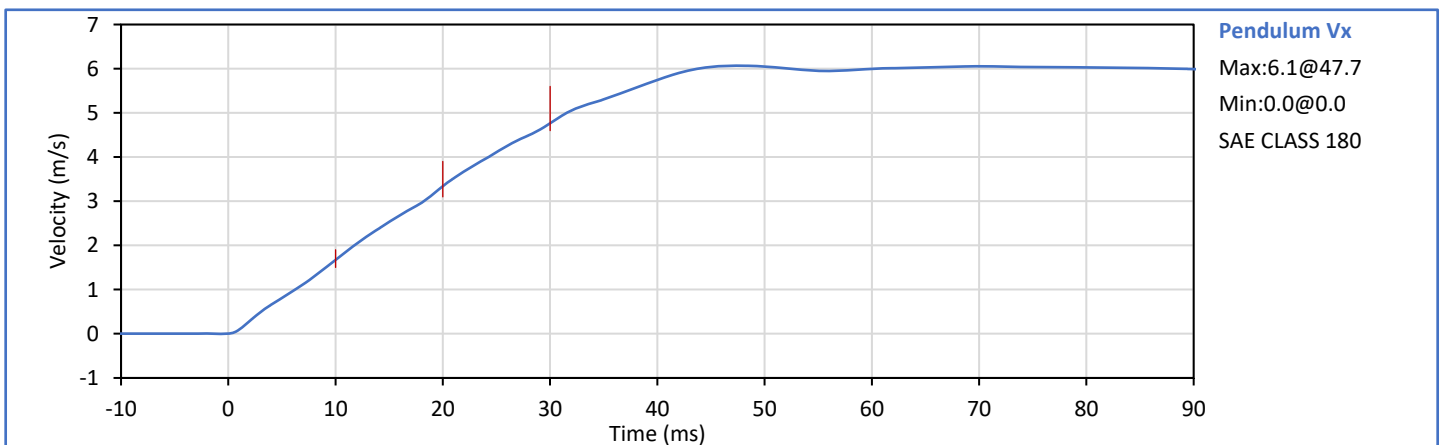
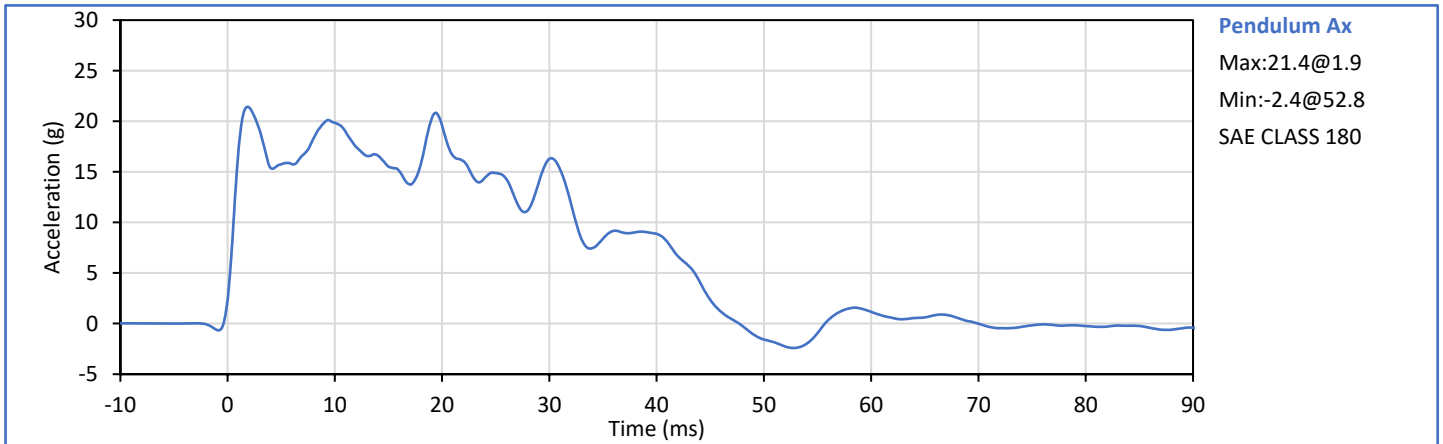


Technician: 
J. Coronel


Approved By: 
J. Hernandez

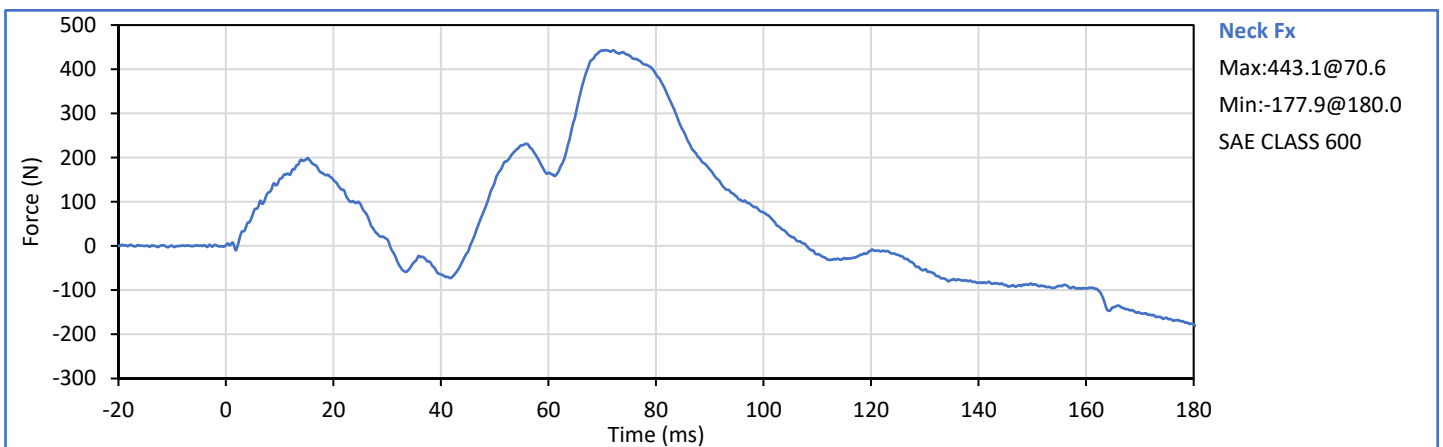
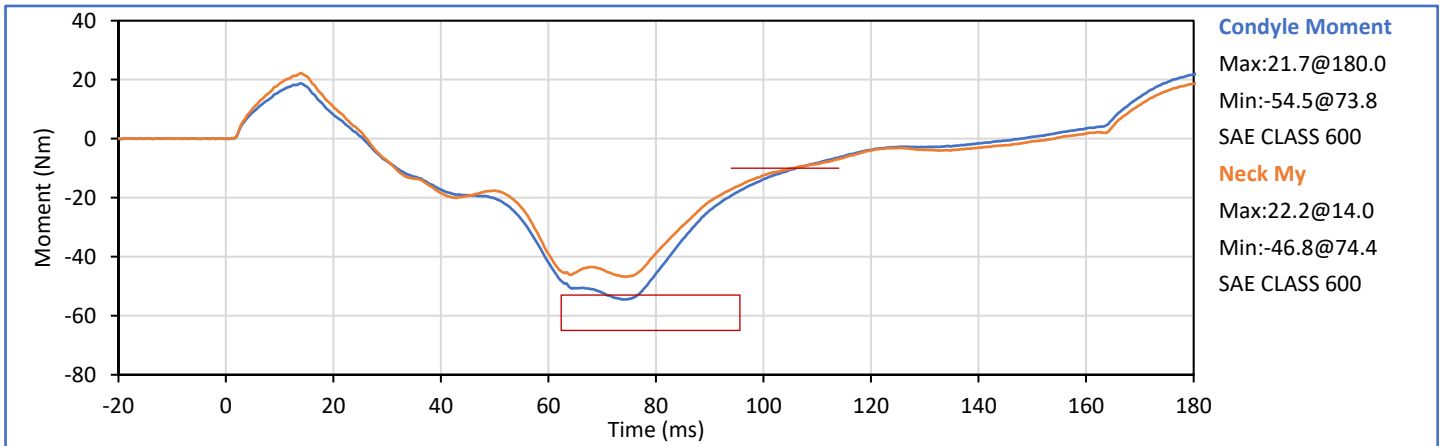
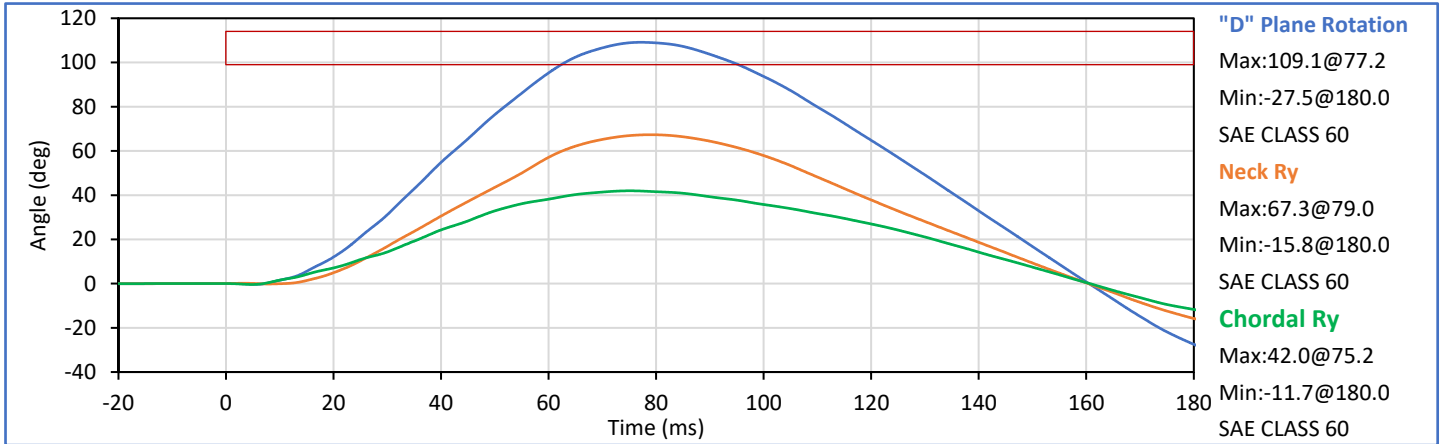


| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|---------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.3 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 39 | Pass |
| Pendulum Velocity | m/s | 5.95 | 6.19 | 6.15 | Pass |
| Pendulum Velocity at 10 ms | m/s | 1.50 | 1.90 | 1.67 | Pass |
| Pendulum Velocity at 20 ms | m/s | 3.10 | 3.90 | 3.34 | Pass |
| Pendulum Velocity at 30 ms | m/s | 4.60 | 5.60 | 4.76 | Pass |
| Peak "D" Plane Rotation | deg | 99.0 | 114.0 | 109.1 | Pass |
| Peak Moment in Rotation | Nm | -65.0 | -53.0 | -54.5 | Pass |
| Negative Moment Decay to -10 Nm | ms | 94.0 | 114.0 | 106.1 | Pass |
| Overall Test Results | | | | | Pass |

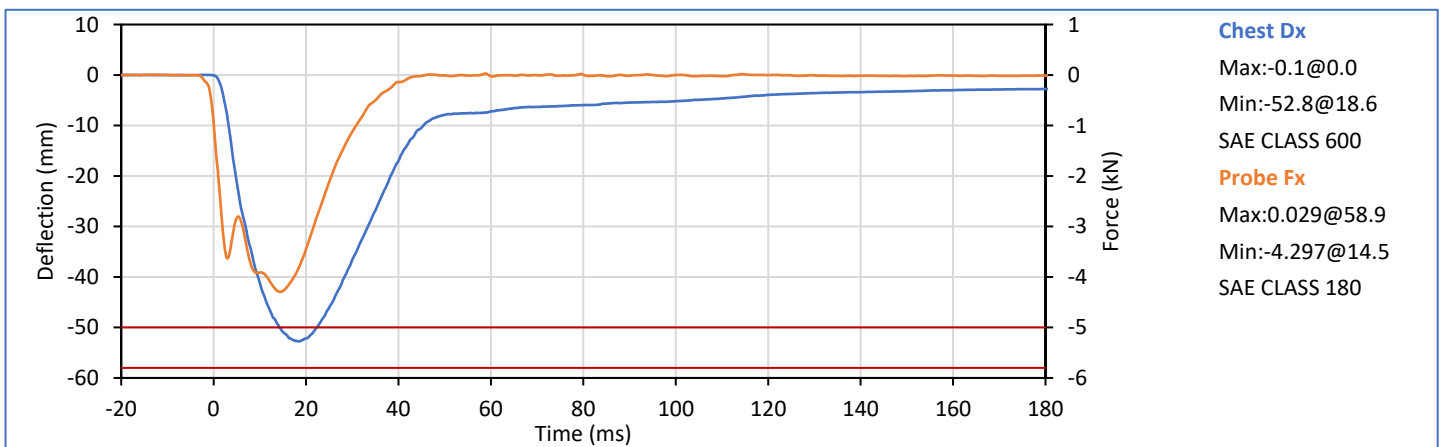
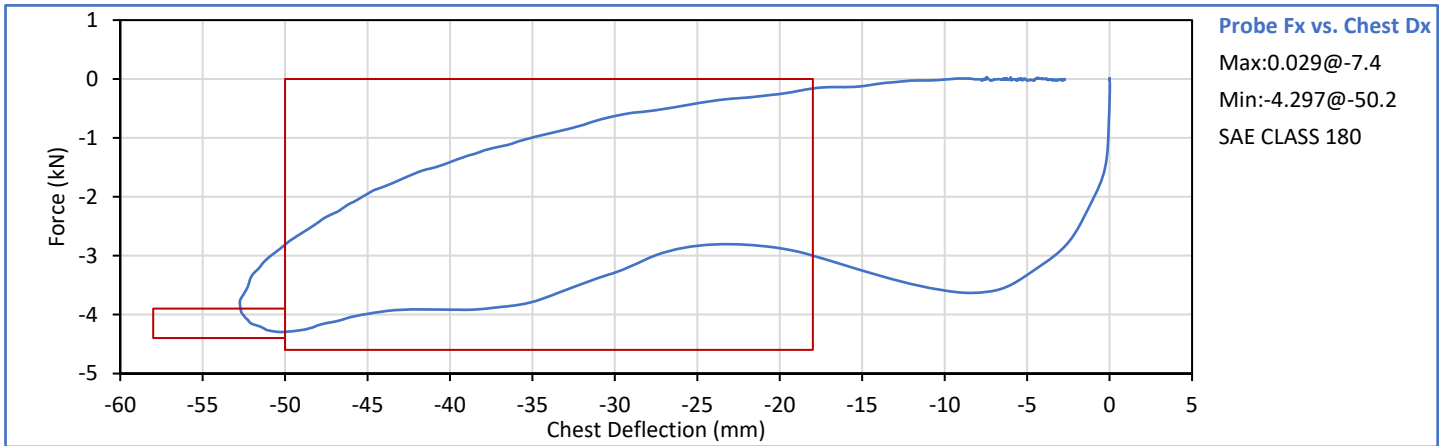


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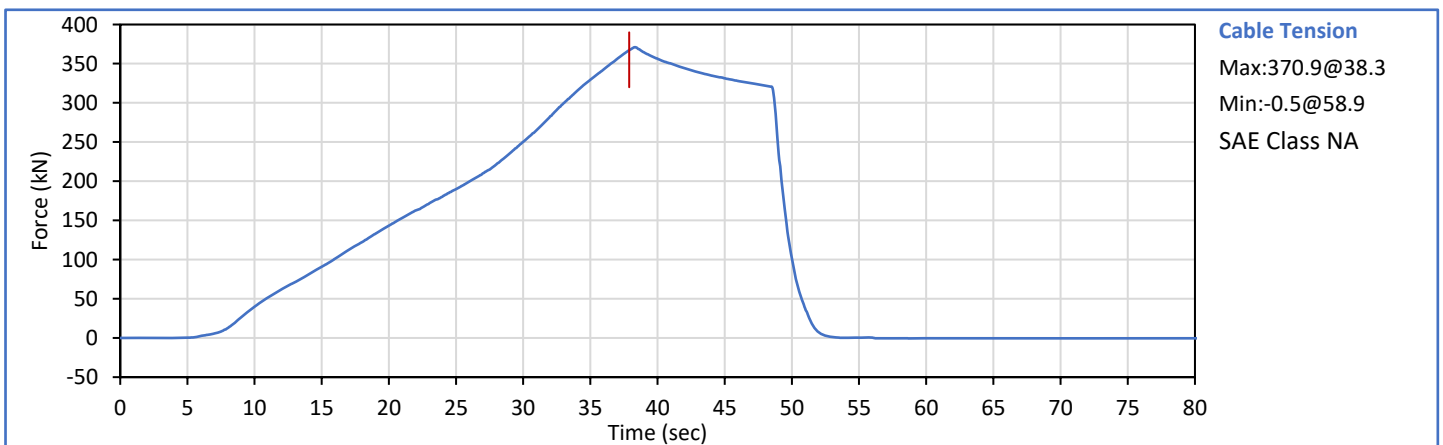
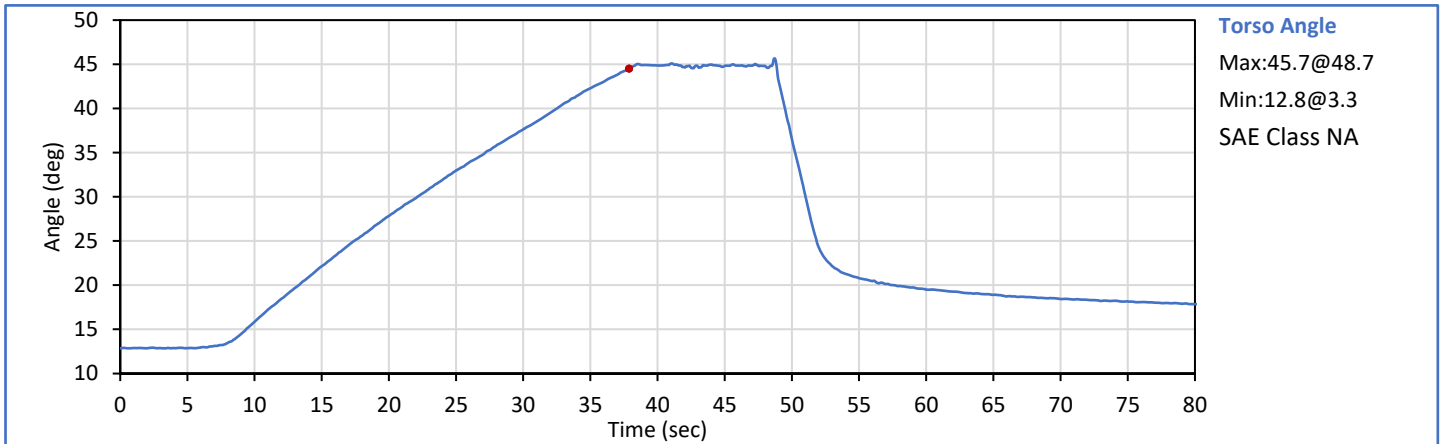
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 20.6 | 22.2 | 21.3 | Pass |
| Laboratory RelativeHumidity | % | 10 | 70 | 40 | Pass |
| Probe Velocity | m/s | 6.59 | 6.83 | 6.64 | Pass |
| Peak Chest Deflection | mm | -58.0 | -50.0 | -52.8 | Pass |
| Peak Probe Force, 50 and 58 mm | kN | -4.400 | -3.900 | -4.294 | Pass |
| Peak Probe Force, 18 and 50 mm | kN | -4.600 | 0.000 | -4.294 | Pass |
| Internal Hysteresis | % | 69.0 | 85.0 | 75.5 | Pass |
| Overall Test Results | | | | | Pass |



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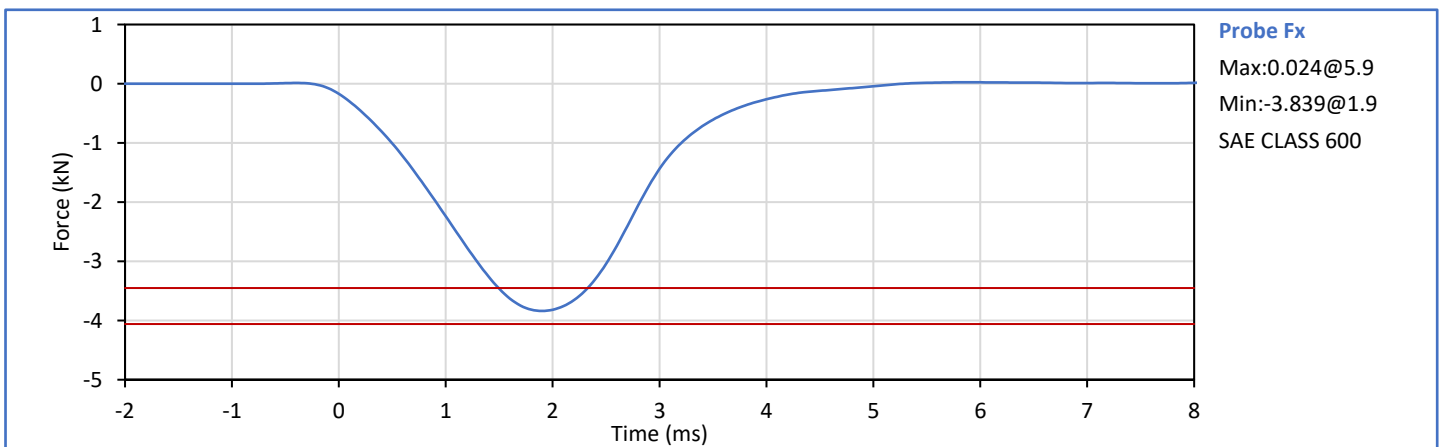
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|-----------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.1 | Pass |
| Laboratory Humidity | % | 10 | 70 | 41 | Pass |
| Orientation Angle | deg | 0.0 | 20.0 | 12.6 | Pass |
| Test Initial Angle | deg | 11.0 | 19.0 | 12.9 | Pass |
| Peak Force at 45° (+/-0.5°) | N | 320.0 | 390.0 | 367.1 | Pass |
| Torso Flexion Rate | deg/s | 0.50 | 1.50 | 1.06 | Pass |
| Final Reference Plane Angle | deg | -8.0 | 8.0 | 1.2 | Pass |
| Overall Test Results | | | | | Pass |



Technician: *J. Coronel*
J. Coronel

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J. Hernandez

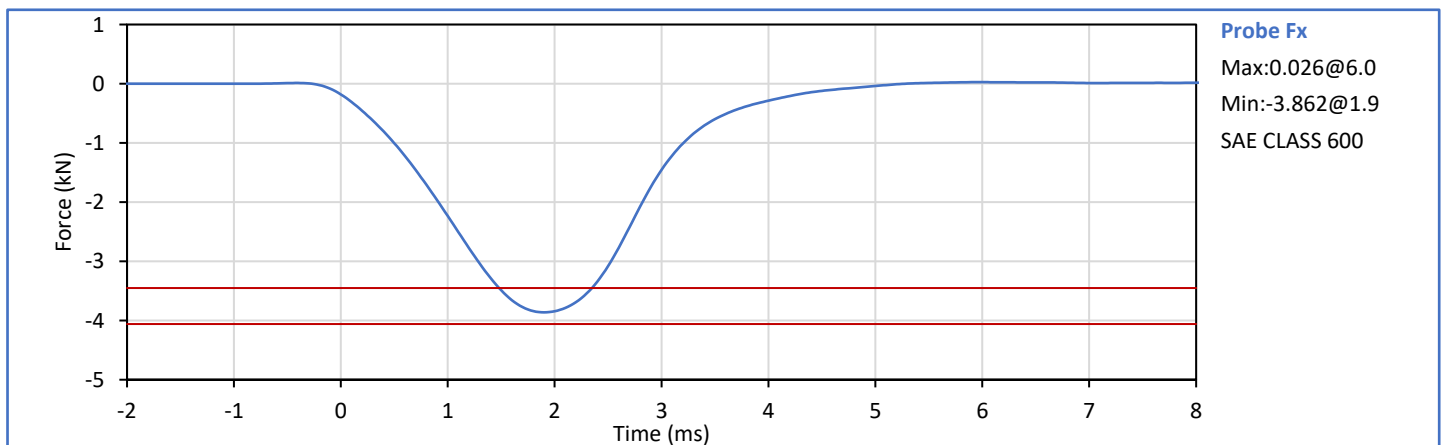
| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.6 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 34 | Pass |
| Probe Velocity | m/s | 2.070 | 2.130 | 2.109 | Pass |
| Peak Resistive Force | kN | -4.060 | -3.450 | -3.839 | Pass |
| Overall Test Results | | | | | Pass |



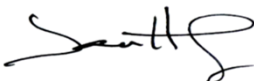
Technician: *J. Coronel*
J. Coronel

Approved By: *J. Hernandez*
J. Hernandez

| Tested Parameter | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-------------|
| Laboratory Temperature | °C | 18.9 | 25.6 | 21.1 | Pass |
| Laboratory Relative Humidity | % | 10 | 70 | 34 | Pass |
| Probe Velocity | m/s | 2.070 | 2.130 | 2.108 | Pass |
| Peak Resistive Force | kN | -4.060 | -3.450 | -3.862 | Pass |
| Overall Test Results | | | | | Pass |



Technician: 
J. Coronel

Approved By: 
J. Hernandez

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION

Table 1 - Driver ATD Instrumentation

| Sensor Location | Sensor S\N | Mfr | Model | Cal Date |
|--------------------------------|--------------|-------------|-------------------|------------|
| Head Acceleration X Primary | P49209 | Endevco | 7264C-2k | 2024-11-16 |
| Head Acceleration Y Primary | P49228 | Endevco | 7264C-2k | 2024-11-16 |
| Head Acceleration Z Primary | P50101 | Endevco | 7264C-2k | 2024-11-16 |
| Head Acceleration X Redundant | P50103 | Endevco | 7264C-2k | 2024-11-16 |
| Head Acceleration Y Redundant | P49210 | Endevco | 7264C-2k | 2024-11-16 |
| Head Acceleration Z Redundant | P58713 | Endevco | 7264C-2k | 2024-11-16 |
| Head Rotation Rate X | ARS7426 | DTS | ARS PRO-8k (2kHz) | 2024-07-26 |
| Head Rotation Rate Y | ARS7587 | DTS | ARS PRO-8k (2kHz) | 2024-07-31 |
| Head Rotation Rate Z | ARS7480 | DTS | ARS PRO-8k (2kHz) | 2024-07-31 |
| Upper Neck Force X | 1626 Fx | R.A. Denton | 1716ATF | 2024-01-05 |
| Upper Neck Force Y | 1626 Fy | R.A. Denton | 1716ATF | 2024-01-05 |
| Upper Neck Force Z | 1626 Fz | R.A. Denton | 1716ATF | 2024-01-05 |
| Upper Neck Moment X | 1626 Mx | R.A. Denton | 1716ATF | 2024-01-05 |
| Upper Neck Moment Y | 1626 My | R.A. Denton | 1716ATF | 2024-01-05 |
| Upper Neck Moment Z | 1626 Mz | R.A. Denton | 1716A | 2024-01-05 |
| Chest Acceleration X Primary | P52072 | Endevco | 7264C-2k | 2024-11-15 |
| Chest Acceleration Y Primary | P49208 | Endevco | 7264C-2k | 2024-11-15 |
| Chest Acceleration Z Primary | P51264 | Endevco | 7264C-2k | 2024-11-15 |
| Chest Acceleration X Redundant | P49461 | Endevco | 7264C-2k | 2024-11-15 |
| Chest Acceleration Y Redundant | P58774 | Endevco | 7264C-2k | 2024-11-15 |
| Chest Acceleration Z Redundant | P49168 | Endevco | 7264C-2k | 2024-11-15 |
| Chest Deflection | 0606 (H3) | Servo | 14CBI-3615 | 2024-11-16 |
| Pelvis Acceleration X | P49238 | Endevco | 7264C-2k | 2024-11-15 |
| Pelvis Acceleration Y | P51278 | Endevco | 7264C-2KTZ | 2024-11-15 |
| Pelvis Acceleration Z | P50087 | Endevco | 7264C-2k | 2024-11-15 |
| Left Femur Force Z | DS4138 (pri) | Humanetics | 3821JLN2 | 2024-01-08 |
| Right Femur Force Z | DS4136 (pri) | Humanetics | 3821JLN2 | 2024-01-08 |
| Left Femur Force Z Redundant | DS4138 (red) | Humanetics | 3821JLN2 | 2024-01-08 |
| Right Femur Force Z Redundant | DS4136 (red) | Humanetics | 3821JLN2 | 2024-01-08 |
| Left Upper Tibia Moment X | DH3309 Mx | FTSS | IF-857 | 2024-01-09 |
| Left Upper Tibia Moment Y | DH3309 My | FTSS | IF-857 | 2024-01-09 |
| Left Upper Tibia Force Z | DH3309 Fz | FTSS | IF-857 | 2024-01-09 |
| Left Lower Tibia Moment X | DI4186 Mx | FTSS | IF-853 | 2024-01-08 |
| Left Lower Tibia Moment Y | DI4186 My | FTSS | IF-853 | 2024-01-08 |
| Left Lower Tibia Force Z | DI4186 Fz | FTSS | IF-853 | 2024-01-08 |
| Right Upper Tibia Moment X | 481 Mx | R.A. Denton | 3643 | 2024-01-09 |
| Right Upper Tibia Moment Y | 481 My | R.A. Denton | 3643 | 2024-01-09 |
| Right Upper Tibia Force Z | 481 Fz | R.A. Denton | 3643 | 2024-01-09 |
| Right Lower Tibia Moment X | DI4188 Mx | FTSS | IF-853 | 2024-01-08 |
| Right Lower Tibia Moment Y | DI4188 My | FTSS | IF-853 | 2024-01-08 |
| Right Lower Tibia Force Z | DI4188 Fz | FTSS | IF-853 | 2024-01-08 |
| Left Ankle Acceleration X | 03E20-N09 | Entran | EGEB6Q-2k | 2024-11-16 |
| Left Ankle Acceleration Z | P68074 | Endevco | 7264C-2k | 2024-11-16 |
| Left Toe Acceleration Z | 03H07-Z10 | Entran | EGEB6Q-2k | 2024-11-16 |
| Right Ankle Acceleration X | 06E20-R08 | Entran | EGEB6Q-2k | 2024-11-16 |
| Right Ankle Acceleration Z | 06A07-R08 | Entran | EGEB6Q-2k | 2024-11-16 |
| Right Toe Acceleration Z | 02I10-N27 | Entran | EGEB6Q-2k | 2024-11-16 |
| Seat Belt Outside Lap Force | 313 | FTSS | IF-964 | 2024-03-27 |
| Seat Belt Upper Diagonal Force | 315 | FTSS | IF-964 | 2024-03-26 |

Table 2 - Right Front Passenger ATD Instrumentation

| Sensor Location | Sensor S\N | Mfr | Model | Cal Date |
|--------------------------------|------------|-------------|-------------------|------------|
| Head Acceleration X Primary | P51889 | Endevco | 7264C-2k | 2024-11-13 |
| Head Acceleration Y Primary | P51861 | Endevco | 7264C-2k | 2024-11-13 |
| Head Acceleration Z Primary | P52077 | Endevco | 7264C-2k | 2024-11-13 |
| Head Acceleration X Redundant | P58835 | Endevco | 7264C-2k | 2024-11-13 |
| Head Acceleration Y Redundant | P51703 | Endevco | 7264C-2k | 2024-11-13 |
| Head Acceleration Z Redundant | P52096 | Endevco | 7264C-2k | 2024-11-13 |
| Head Rotation Rate X | ARS7510 | DTS | ARS PRO-8k (2kHz) | 2024-07-31 |
| Head Rotation Rate Y | ARS7548 | DTS | ARS PRO-8k (2kHz) | 2024-07-31 |
| Head Rotation Rate Z | ARS7573 | DTS | ARS PRO-8k (2kHz) | 2024-07-31 |
| Upper Neck Force X | 287 Fx | FTSS | IF-205 | 2024-01-05 |
| Upper Neck Force Y | 287 Fy | FTSS | IF-205 | 2024-01-05 |
| Upper Neck Force Z | 287 Fz | FTSS | IF-205 | 2024-01-05 |
| Upper Neck Moment X | 287 Mx | FTSS | IF-205 | 2024-01-05 |
| Upper Neck Moment Y | 287 My | FTSS | IF-205 | 2024-01-05 |
| Upper Neck Moment Z | 287 Mz | FTSS | IF-205 | 2024-01-05 |
| Chest Acceleration X Primary | P58860 | Endevco | 7264C-2k | 2024-11-13 |
| Chest Acceleration Y Primary | P51724 | Endevco | 7264C-2k | 2024-11-13 |
| Chest Acceleration Z Primary | P58711 | Endevco | 7264C-2k | 2024-11-14 |
| Chest Acceleration X Redundant | P52049 | Endevco | 7264C-2k | 2024-11-14 |
| Chest Acceleration Y Redundant | P51862 | Endevco | 7264C-2k | 2024-11-14 |
| Chest Acceleration Z Redundant | P52048 | Endevco | 7264C-2k | 2024-11-14 |
| Chest Deflection | 0724 (HF) | Servo | 14CBI-3615 | 2024-11-15 |
| Pelvis Acceleration X | P52090 | Endevco | 7264C-2k | 2024-11-14 |
| Pelvis Acceleration Y | P58849 | Endevco | 7264C-2k | 2024-11-13 |
| Pelvis Acceleration Z | P58756 | Endevco | 7264C-2k | 2024-11-14 |
| Left Femur Force Z | 112 (pri) | R.A. Denton | 3821JTF | 2024-06-05 |
| Right Femur Force Z | 132 (pri) | R.A. Denton | 3821JTF | 2024-06-05 |
| Left Femur Force Z Redundant | 112 (red) | R.A. Denton | 3821JTF | 2024-06-05 |
| Right Femur Force Z Redundant | 132 (red) | R.A. Denton | 3821JTF | 2024-06-05 |
| Left Upper Tibia Moment X | 468 Mx | R.A. Denton | 3643 | 2024-05-10 |
| Left Upper Tibia Moment Y | 468 My | R.A. Denton | 3643 | 2024-05-10 |
| Left Upper Tibia Force Z | 468 Fz | R.A. Denton | 3643 | 2024-05-10 |
| Left Lower Tibia Moment X | 499 Mx | R.A. Denton | 3644 | 2024-05-10 |
| Left Lower Tibia Moment Y | 499 My | R.A. Denton | 3644 | 2024-05-10 |
| Left Lower Tibia Force Z | 499 Fz | R.A. Denton | 3644 | 2024-05-10 |
| Right Upper Tibia Moment X | DH3302 Mx | FTSS | IF-857 | 2024-05-10 |
| Right Upper Tibia Moment Y | DH3302 My | FTSS | IF-857 | 2024-05-10 |
| Right Upper Tibia Force Z | DH3302 Fz | FTSS | IF-857 | 2024-05-10 |
| Right Lower Tibia Moment X | 399 Mx | R.A. Denton | 3644 | 2024-05-10 |
| Right Lower Tibia Moment Y | 399 My | R.A. Denton | 3644 | 2024-05-10 |
| Right Lower Tibia Force Z | 399 Fz | R.A. Denton | 3644 | 2024-05-10 |
| Left Ankle Acceleration X | P58897 | Endevco | 7264C-2k | 2024-05-18 |
| Left Ankle Acceleration Z | P52057 | Endevco | 7264C-2k | 2024-11-12 |
| Left Toe Acceleration Z | P49224 | Endevco | 7264C-2k | 2024-11-12 |
| Right Ankle Acceleration X | P52019 | Endevco | 7264C-2k | 2024-11-12 |
| Right Ankle Acceleration Z | P58755 | Endevco | 7264C-2k | 2024-11-12 |
| Right Toe Acceleration Z | P52076 | Endevco | 7264C-2k | 2024-11-12 |
| Seat Belt Outside Lap Force | 251 | FTSS | IF-964 | 2024-03-27 |
| Seat Belt Upper Diagonal Force | 263 | FTSS | IF-964 | 2024-03-27 |

Table 3 - Vehicle Instrumentation

| Sensor Location | Sensor S\N | Mfr | Model | Cal Date |
|-------------------------|------------|---------|---------|------------|
| Left Rear Primary Ax | M13716 | Endevco | 758H-2k | 2024-07-31 |
| Right Rear Primary Ax | M11093 | Endevco | 758H-2k | 2024-07-29 |
| Engine Top Ax | A224577 | MSI | 52F-2k | 2024-10-08 |
| Engine Bottom Ax | A298324 | MSI | 52F-2k | 2024-10-08 |
| Left Rear Az | M11053 | Endevco | 758H-2k | 2024-07-11 |
| Right Rear Az | M13721 | Endevco | 758H-2k | 2024-07-30 |
| Left Rear Redundant Ax | M13708 | Endevco | 758H-2k | 2024-07-27 |
| Right Rear Redundant Ax | M13702 | Endevco | 758H-2k | 2024-07-24 |