

**FINAL REPORT NUMBER: SINCAP-TRC-16-002**

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

**Ford Motor Company  
2016 Ford F-250 SuperCab Pickup Truck  
NHTSA NUMBER: M20160204**

**PREPARED BY:  
Transportation Research Center Inc.  
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P. O. Box B-67  
East Liberty, OH 43319**



**Report Date: December 7, 2015**

**FINAL REPORT**

**PREPARED FOR:  
U.S. DEPARTMENT OF TRANSPORTATION  
National Highway Traffic Safety Administration  
Office of Crashworthiness Standards  
Mail Code: NVS-111  
1200 New Jersey Ave, SE, Room W43-410  
Washington, D.C. 20590**

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Report Prepared By: ILO Project Operations Group



Report Approved By: \_\_\_\_\_

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Approval Date: December 7, 2015

FINAL REPORT ACCEPTANCE BY OCWS:

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

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

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

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

Technical Report Documentation Page

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| 7. Author(s)<br>Melinda Lackey, Project Manager                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                               |                                                                                                                                                                                                                                                                                                                           | 8. Performing Organization<br>Report Number<br>151023                                                   |           |
| 9. Performing Organization Name and Address<br>Transportation Research Center Inc.<br>10820 State Route 347<br>East Liberty, OH 43319                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                               |                                                                                                                                                                                                                                                                                                                           | 10. Work Unit No.                                                                                       |           |
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| 15. Supplemental Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                               |                                                                                                                                                                                                                                                                                                                           |                                                                                                         |           |
| 16. Abstract<br>This 55 / 28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2016 Ford F-250 SuperCab Pickup Truck, in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on October 23, 2015.<br>The impact velocity of the Moving Deformable Barrier (MDB) was 62.08 km/h, and the ambient temperature at the struck (left) side of the target vehicle at the time of impact was 20° C. The target vehicle post-test maximum crush was 314 mm at Level 1. The test vehicle's performance was as follows: |  |                                                               |                                                                                                                                                                                                                                                                                                                           |                                                                                                         |           |
| <b>Driver ATD (ES-2re)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                               |                                                                                                                                                                                                                                                                                                                           |                                                                                                         |           |
| <b>Measurement Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | <b>Units</b>                                                  | <b>IARV</b>                                                                                                                                                                                                                                                                                                               | <b>Result</b>                                                                                           |           |
| Head Injury Criteria (HIC <sub>36</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | N/A                                                           | 1000                                                                                                                                                                                                                                                                                                                      | 32                                                                                                      |           |
| Maximum Thoracic Rib Deflection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | mm                                                            | 44                                                                                                                                                                                                                                                                                                                        | 20.5                                                                                                    |           |
| Total Abdominal Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | N                                                             | 2500                                                                                                                                                                                                                                                                                                                      | 254.4                                                                                                   |           |
| Pubic Symphysis Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | N                                                             | 6000                                                                                                                                                                                                                                                                                                                      | 868.6                                                                                                   |           |
| <b>Passenger ATD (SID-IIs)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                               |                                                                                                                                                                                                                                                                                                                           |                                                                                                         |           |
| <b>Measurement Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | <b>Units</b>                                                  | <b>IARV</b>                                                                                                                                                                                                                                                                                                               | <b>Result</b>                                                                                           |           |
| Head Injury Criteria (HIC <sub>36</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | N/A                                                           | 1000                                                                                                                                                                                                                                                                                                                      | 87                                                                                                      |           |
| Lower Spine Resultant Acceleration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | g's                                                           | 82                                                                                                                                                                                                                                                                                                                        | 25.3                                                                                                    |           |
| Total Pelvic Force (sum of acetabular and iliac forces)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | N                                                             | 5525                                                                                                                                                                                                                                                                                                                      | 789.3                                                                                                   |           |
| Maximum Thoracic Rib Deflection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | mm                                                            | 38*                                                                                                                                                                                                                                                                                                                       | 14.1                                                                                                    |           |
| Maximum Abdominal Rib Deflection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | mm                                                            | 45*                                                                                                                                                                                                                                                                                                                       | 25.3                                                                                                    |           |
| * Proposed IARV<br>The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                               |                                                                                                                                                                                                                                                                                                                           |                                                                                                         |           |
| 17. Key Words<br>New Car Assessment Program (NCAP)<br>Side Impact<br>MDB<br>ES-2re<br>SID-IIs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                               | 18. Distribution Statement<br>Copies of this report are available from:<br>National Highway Traffic Safety Administration<br>Technical Information Services Division, NPO-411<br>1200 New Jersey Ave, SE<br>Washington, DC 20590<br>e-mail: <a href="mailto:tis@nhtsa.dot.gov">tis@nhtsa.dot.gov</a><br>FAX: 202-493-2833 |                                                                                                         |           |
| 19. Security Classification<br>(of this report)<br>Unclassified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | 20. Security Classification<br>(of this page)<br>Unclassified |                                                                                                                                                                                                                                                                                                                           | 21. Number of<br>Pages<br>213                                                                           | 22. Price |

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

**TEST PURPOSE AND PROCEDURE**

This moving deformable barrier side impact test was conducted as part of the MY 2016 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-14-D-00354. The purpose of this test is to generate comparative side impact performance in a 2016 Ford F-250 SuperCab Pickup Truck. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated September 2013.

**SECTION 2**  
**SUMMARY OF TEST RESULTS**

A 2016 Ford F-250 SuperCab Pickup Truck was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.08 km/h (38.57 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Transportation Research Center Inc. in East Liberty, Ohio, on October 23, 2015. Pre-test and post-test photographs of the test vehicle and the MDB and the dummies (ES-2-re and SID-IIs) are included in this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated September 2013. The side impact event was documented by 11 cameras. Camera locations are included in this report.

The dummies were instrumented in the following manner:

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

- Primary and redundant head CG tri-axial accelerometers
- Chest upper rib, middle rib, and lower rib y-axis displacement potentiometers
- Abdomen forward, middle, and rear y-axis load cells
- Lower spine (T12) tri-axial accelerometers
- Pubic symphysis y-axis load cell

**PASSENGER ATD (SID-IIs)**

- Primary and redundant head CG triaxial accelerometers
- Chest upper rib, middle rib, and lower rib y-axis displacement potentiometers
- Abdomen upper rib and lower rib y-axis displacement potentiometers
- Lower spine (T12) tri-axial accelerometers
- Acetabulum and iliac wing y-axis load cells

APPENDIX B contains the vehicle and dummy response data. Dummy configuration and performance verification data can be found in APPENDIX C of this report.

Dummy injury readings were recorded as follows:

| Measurement Description                   | Driver ATD (ES-2-re) |           |        |
|-------------------------------------------|----------------------|-----------|--------|
|                                           | Units                | Threshold | Result |
| Head Injury Criteria (HIC <sub>36</sub> ) | N/A                  | 1000      | 32     |
| Maximum Thoracic Rib Deflection           | mm                   | 44        | 20.5   |
| Combined Abdominal Force                  | N                    | 2500      | 254.4  |
| Pubic Symphysis Force                     | N                    | 6000      | 868.6  |

| Measurement Description                                    | Passenger ATD (SID-IIs) |           |        |
|------------------------------------------------------------|-------------------------|-----------|--------|
|                                                            | Units                   | Threshold | Result |
| Head Injury Criteria (HIC <sub>36</sub> )                  | N/A                     | 1000      | 87     |
| Lower Spine (T12) Resultant Acceleration                   | G                       | 82        | 25.3   |
| Total Pelvic Force<br>(sum of acetabular and iliac forces) | N                       | 5525      | 789.3  |
| Maximum Thoracic Rib Deflection                            | mm                      | 38*       | 14.1   |
| Maximum Abdominal Rib Deflection                           | mm                      | 45*       | 25.3   |

\* Proposed IARV

Supplemental Restraint Information is given below:

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

### GENERAL COMMENTS

All doors remained closed throughout the test. No fuel spillage occurred during the impact or the static rollover test which followed. Injury values for both ATDs were within the established performance thresholds. The restraint system performed as expected.

**SECTION 3**  
**OCCUPANT AND VEHICLE INFORMATION**



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

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck NHTSA No.: M20160204  
 Test Program: NCAP Side Impact Test Date: 10/23/15

**TEST VEHICLE INFORMATION AND OPTIONS**

|                          |                           |
|--------------------------|---------------------------|
| NHTSA No.                | M20160204                 |
| Model Year               | 2016                      |
| Make                     | Ford                      |
| Model                    | F-250                     |
| Body Style               | Extended Cab Pickup Truck |
| VIN                      | 1FT7X2A62GEA02841         |
| Body Color               | Caribou                   |
| Odometer Reading (km/mi) | 15.0 mi                   |
| Engine Displacement (L)  | 6.2                       |
| Type/No. Cylinders       | Gas/8                     |
| Engine Placement         | Front/Longitudinal        |
| Transmission Type        | Automatic                 |
| Transmission Speeds      | 6 Speed                   |
| Overdrive                | Yes                       |
| Final Drive              | RWD                       |
| Roof Rack                | No                        |
| Sunroof/T-Top            | No                        |
| Running Boards           | No                        |
| Tilt Steering Wheel      | Yes                       |
| Power Seats              | Yes                       |
| Anti-Lock Brakes (ABS)   | Yes                       |

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

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

**DATA FROM CERTIFICATION LABEL**

|                     |                    |
|---------------------|--------------------|
| Manufactured By     | Ford Motor Company |
| Date of Manufacture | 05/15              |
| Vehicle Type        | Truck              |

|                 |      |
|-----------------|------|
| GVWR (kg)       | 4536 |
| GAWR Front (kg) | 1860 |
| GAWR Rear (kg)  | 2812 |

**VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION**

| Measured Parameter                    | Front | Rear | Third | Total  |
|---------------------------------------|-------|------|-------|--------|
| Designated Seating Capacity (DSC)     | 2     | 3    | N/A   | 5      |
| Capacity Weight (VCW) (kg)            |       |      |       | 1576   |
| DSC x 68.04 (kg)                      |       |      |       | 340.2  |
| Cargo Weight (RCLW) (kg) <sup>1</sup> |       |      |       | 1235.8 |

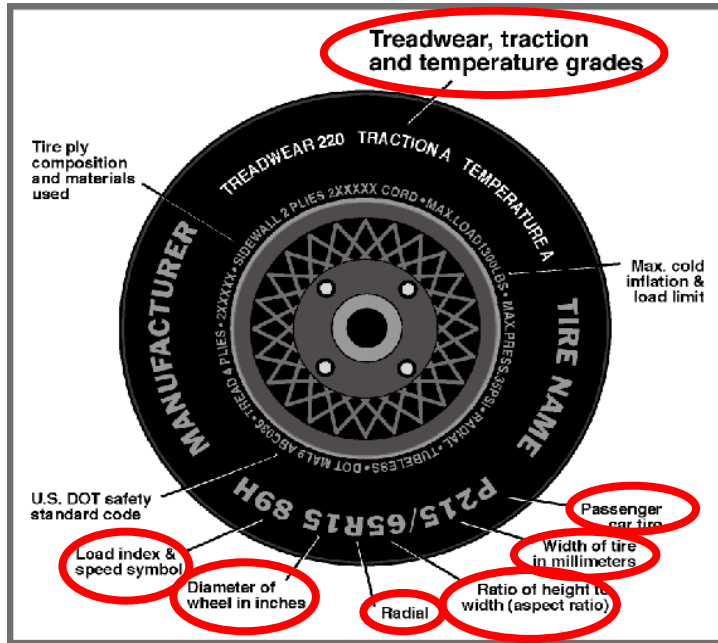
**VEHICLE SEAT TYPE**

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

<sup>1</sup> Rated cargo and luggage weight is limited to 136.0 kg or 300 lbs.

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

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck      NHTSA No.: M20160204  
 Test Program: NCAP Side Impact      Test Date: 10/23/15



**DATA FROM TIRE PLACARD**

| Measured Parameter          | Front                        | Rear                         |
|-----------------------------|------------------------------|------------------------------|
| Maximum Tire Pressure (kPa) | 550                          | 550                          |
| Cold Pressure (kPa)         | 420                          | 520                          |
| Recommended Tire Size       | LT275/65R18                  | LT275/65R18                  |
| Tire Size on Vehicle        | LT275/65R18                  | LT275/65R18                  |
| Tire Manufacturer           | Continental                  | Continental                  |
| Tire Model                  | Contitrac                    | Contitrac                    |
| Treadwear                   | N/A                          | N/A                          |
| Traction                    | N/A                          | N/A                          |
| Temperature Grades          | N/A                          | N/A                          |
| Tire Plies Sidewall         | 2                            | 2                            |
| Tire Plies Body             | 6                            | 6                            |
| Load Index/Speed Symbol     | 123/120 S                    | 123/120 S                    |
| Tire Material               | Polyester, steel & polyamide | Polyester, steel & polyamide |
| DOT Safety Code Left        | A3B9 HOOR 0615               | A3B9 HOOR 0715               |
| DOT Safety Code Right       | A3B9 HOOR 0715               | A3B9 HOOR 0715               |

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

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck NHTSA No.: M20160204  
 Test Program: NCAP Side Impact Test Date: 10/23/15

**TIRE PRESSURES**

|                | Units | LF  | RF  | LR  | RR  |
|----------------|-------|-----|-----|-----|-----|
| As Delivered   | kPa   | 469 | 496 | 469 | 489 |
| Tire Placard   | kPa   | 420 | 420 | 520 | 520 |
| Owner's Manual | kPa   | N/A | N/A | N/A | N/A |
| As Tested      | kPa   | 420 | 420 | 520 | 520 |

**MDB TIRE SPECIFICATIONS**

|               | Units | Requirement | LF         | RF         | LR         | RR         |
|---------------|-------|-------------|------------|------------|------------|------------|
| Tire Size     |       | P205/75R15  | P205/75R15 | P205/75R15 | P205/75R15 | P205/75R15 |
| Tire Pressure | kPa   | 207         | 207        | 207        | 207        | 207        |

**TEST VEHICLE AXLE WEIGHTS**

|        | Units | As Delivered (UVW) |           |        | As Tested (ATW) |           |        | Fully Loaded |           |        |
|--------|-------|--------------------|-----------|--------|-----------------|-----------|--------|--------------|-----------|--------|
|        |       | Front Axle         | Rear Axle | Total  | Front Axle      | Rear Axle | Total  | Front Axle   | Rear Axle | Total  |
| Left   | kg    | 804.2              | 665.2     |        | 868.2           | 770.0     |        | 860.4        | 773.4     |        |
| Right  | kg    | 819.6              | 618.0     |        | 810.0           | 713.0     |        | 829.0        | 705.4     |        |
| Ratio  | %     | 55.9               | 44.1      |        | 53.1            | 46.9      |        | 53.3         | 46.7      |        |
| Totals | kg    | 1623.8             | 1283.2    | 2907.0 | 1678.2          | 1483.0    | 3161.2 | 1689.4       | 1478.8    | 3168.2 |

**TARGET TEST WEIGHT CALCULATION**

| Measured Parameter                                | Units | Value  |         |
|---------------------------------------------------|-------|--------|---------|
| Total As Delivered Weight (UVW)                   | kg    | 2907.0 | (A)     |
| Actual Weight of 1 P572V ATD (SID-IIs) Dummy Used | kg    | 125.0  | (B)     |
| Rated Cargo/Luggage Weight (RCLW) <sup>1</sup>    | kg    | 136.0  | (C)     |
| Calculated Vehicle Target Weight (TVTW)           | kg    | 3168.0 | (A+B+C) |

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to 9 kg)?  YES  NO

**TEST VEHICLE ATTITUDES AND CG**

| Measurement Description                                   | Units | Fully Loaded | As Tested | Meets Requirement |
|-----------------------------------------------------------|-------|--------------|-----------|-------------------|
| LF                                                        | mm    | 937          | 931       | Yes               |
| RF                                                        | mm    | 946          | 944       | Yes               |
| RR                                                        | mm    | 1005         | 1004      | Yes               |
| LR                                                        | mm    | 990          | 990       | Yes               |
| Vehicle CG (Aft of Front Axle)                            | mm    | 1690         | 1698      |                   |
| Vehicle CG (Left+)/Right(-) from Longitudinal Centerline) | mm    | +27          | +32       |                   |

\*\*\*The "As Tested" vehicle attitude measurements must be equal to or within  $\pm 10$  mm of the "Fully Loaded" vehicle attitude measurements at each wheel well. Indicate "Yes" or "No" for "Meets Requirement".

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

| Component Description               | Weight (kg) |
|-------------------------------------|-------------|
| Ballast: 82.6 kg steel plate in bed | 82.6        |
| Removed: None.                      | 0.0         |

<sup>1</sup>RCLW is limited to 136.0 kg

**DATA SHEET NO. 2**

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

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck    NHTSA No.: M20160204  
 Test Program: NCAP Side Impact    Test Date: 10/23/15

**SEAT POSITIONING**

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

**SCRL ANGLE RANGE**

| Seat                      | SCRL(°) |      |      |
|---------------------------|---------|------|------|
|                           | Max.    | Min. | Mid  |
| Driver Seat               | 22.0    | 11.3 | 16.6 |
| Front Passenger Seat      | 21.5    | 10.6 | 16.0 |
| Front Center Seat*        | N/A     | N/A  | N/A  |
| Struck Side Rear Seat     | Fixed   | N/A  | N/A  |
| Non-Struck Side Rear Seat | Fixed   | N/A  | N/A  |
| Rear Center Seat*         | Fixed   | N/A  | N/A  |

\* If applicable.

**SEAT HEIGHT AND ANGLE**

| Seat                      | As Tested SCRL Angle (Mid) (°) | As Tested SCRP Height (mm) | SCRP Height Position | SCRP Height (mm) |              |              |
|---------------------------|--------------------------------|----------------------------|----------------------|------------------|--------------|--------------|
|                           |                                |                            |                      | Rearmost         | Mid-Fore/Aft | Forward-Most |
| Driver Seat               | 16.6                           | 366                        | Max                  | 423              | 426          | 430          |
|                           |                                |                            | Mid                  | 392              | 396          | 400          |
|                           |                                |                            | Min                  | 362              | 366          | 370          |
| Front Passenger Seat      | 16.0                           | 355                        | Max                  | 411              | 413          | 415          |
|                           |                                |                            | Mid                  | 381              | 385          | 388          |
|                           |                                |                            | Min                  | 352              | 355          | 357          |
| Front Center Seat*        | N/A                            | N/A                        | Max                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Mid                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Min                  | N/A              | N/A          | N/A          |
| Struck Side Rear Seat     | 9.4                            | Fixed                      | Max                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Mid                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Min                  | N/A              | N/A          | N/A          |
| Non-Struck Side Rear Seat | 9.4                            | Fixed                      | Max                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Mid                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Min                  | N/A              | N/A          | N/A          |
| Rear Center Seat*         | 9.3                            | Fixed                      | Max                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Mid                  | N/A              | N/A          | N/A          |
|                           |                                |                            | Min                  | N/A              | N/A          | N/A          |

\* If applicable.

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

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

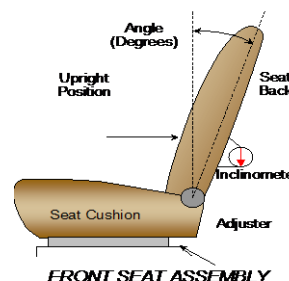
Test Vehicle: 2016 Ford F-250 SuperCrabPickup Truck    NHTSA No.: M20160204  
 Test Program: NCAP Side Impact    Test Date: 10/23/15

**SEAT FORE/AFT POSITION**

| Seat                      | Total Fore/Aft Travel |         | Test Position from Forwardmost Position |        |
|---------------------------|-----------------------|---------|-----------------------------------------|--------|
|                           | mm                    | Detents | mm                                      | Detent |
| Driver Seat               | 215                   | N/A     | 107                                     | N/A    |
| Front Passenger Seat      | 214                   | N/A     | 107                                     | N/A    |
| Front Center Seat*        | N/A                   | N/A     | N/A                                     | N/A    |
| Struck Side Rear Seat     | Fixed                 | N/A     | Fixed                                   | N/A    |
| Non-Struck Side Rear Seat | Fixed                 | N/A     | Fixed                                   | N/A    |
| Rear Center Seat*         | Fixed                 | N/A     | Fixed                                   | N/A    |

**SEAT BACK ANGLE ADJUSTMENT**

The driver's seat back is positioned to the manufacturer's designated seat back angle. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck side rear seat back is positioned such that the dummy's head is level. The rear center and non-struck side rear outboard seat backs are positioned in a similar manner as the struck-side rear seat back.



| Seat                                  | Total Seat Back Angle Range |         | Test Position from Most Upright |        |
|---------------------------------------|-----------------------------|---------|---------------------------------|--------|
|                                       | Degrees                     | Detents | Degrees                         | Detent |
| Driver Seat w/ Seated Dummy           | 60.5                        | N/A     | 27.0                            | N/A    |
| Front Passenger Seat                  | 61.4                        | N/A     | 27.0                            | N/A    |
| Front Center Seat*                    | N/A                         | N/A     | N/A                             | N/A    |
| Struck Side Rear Seat w/ Seated Dummy | Fixed                       | N/A     | Fixed                           | N/A    |
| Non-Struck Side Rear Seat             | Fixed                       | N/A     | Fixed                           | N/A    |
| Rear Center Seat*                     | Fixed                       | N/A     | Fixed                           | N/A    |

**SEAT BELT ANCHORAGE ADJUSTMENT**

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

|             | Total # of Positions    | Placed in Position # |
|-------------|-------------------------|----------------------|
| Driver Seat | 4, Numbered from 0 to 3 | 0, Uppermost         |
| Rear Seat   | 1, Fixed                | 1                    |

**HEAD RESTRAINT ADJUSTMENT**

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

|             | Total # of Positions    | Placed in Position # |
|-------------|-------------------------|----------------------|
| Driver Seat | 3, Numbered from 0 to 2 | 0, Uppermost         |
| Rear Seat   | 1, Fixed                | 1                    |

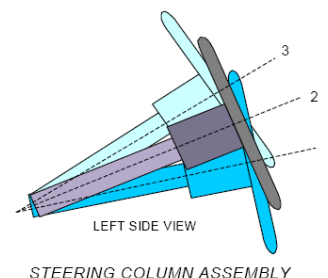
**DATA SHEET NO. 2 (CONTINUED)**

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

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck    NHTSA No.: M20160204  
 Test Program: NCAP Side Impact    Test Date: 10/23/15

**STEERING COLUMN ADJUSTMENT**

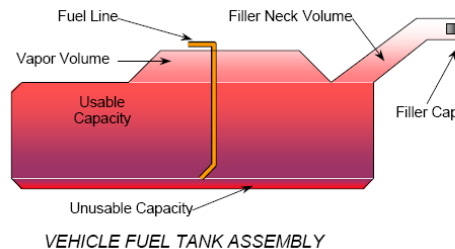
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of its geometric locus it describes when it moves through its full range of motion.



|                                   | Degrees | Fore/Aft Position (mm) |
|-----------------------------------|---------|------------------------|
| Lowermost, Position No. 1         | 62.9    | 300                    |
| Geometric Center, Position No. 2  | 64.8    | 300                    |
| Uppermost, Position No. 3         | 66.7    | 300                    |
| Telescoping Steering Wheel Travel |         | 24                     |
| Test Position                     | 64.8    | 312                    |

**FUEL PUMP**

Pump operates a few seconds after ignition switch is turned ON. After that, pump operates only while engine is running.



**FUEL TANK CAPACITY**

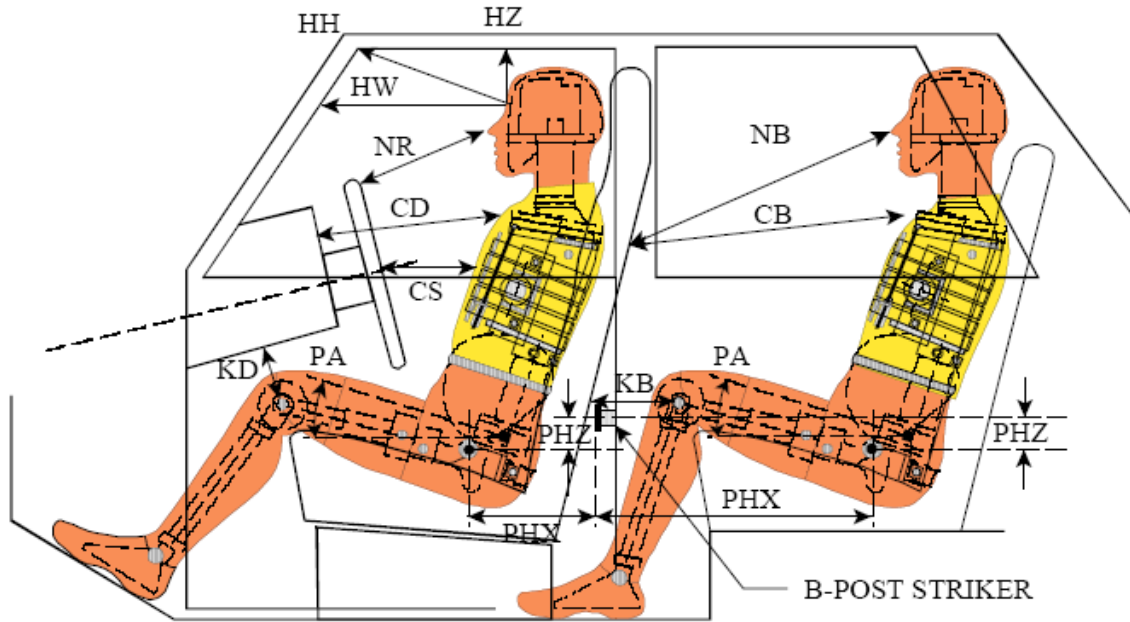
|                                                       | Liters |
|-------------------------------------------------------|--------|
| Usable Capacity of "Standard Tank" (see Form No. 1)   | 132.5  |
| Usable Capacity of "Optional Tank" (see Form No. 1)   | N/A    |
| Usable Capacity of Standard Tank (see Owner's Manual) | 132    |
| Usable Capacity of Optional Tank (see Owner's Manual) | N/A    |
| 93% of Usable Capacity                                | 123.2  |
| Actual Amount of Solvent Used in Test                 | 123.2  |
| 1/3 of Usable Capacity                                | 41.1   |

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

**DATA SHEET NO. 3  
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Side Impact

NHTSA No.: M20160204  
 Test Date: 10/23/15



**LEFT SIDE VIEW**

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

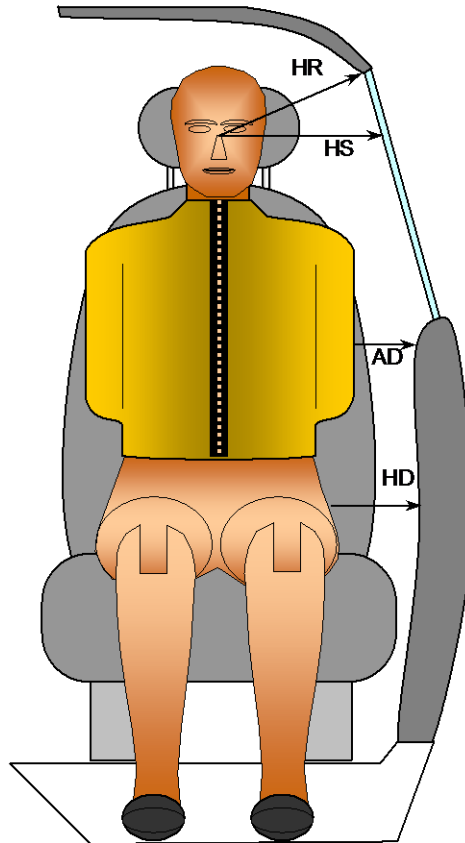
**DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION**

| Driver Code               | Pass. Code                | Measurement Description       | Driver      |       | Passenger   |       |
|---------------------------|---------------------------|-------------------------------|-------------|-------|-------------|-------|
|                           |                           |                               | Length (mm) | Angle | Length (mm) | Angle |
| HH                        |                           | Header to Header              | 495         |       |             |       |
| HW                        |                           | Header to Windshield          | 653         |       |             |       |
| HZ                        | HZ                        | Head to Roof Liner            | 197         |       | 277         |       |
| NR                        | NB                        | Nose to Rim/Seat Back         | 453         |       | 336         |       |
| CD                        | CB                        | Chest to Dash/Seat Back       | 598         |       | 330         |       |
| CS                        |                           | Chest to Steering Wheel       | 381         |       |             |       |
| KD(L)/KDA(L) <sup>o</sup> | KB(L)/KBA(L) <sup>o</sup> | Left Knee to Dash/Seat Back   | 176         | 27.0  | 112         | 18.0  |
| KD(R)/KDA(R) <sup>o</sup> | KB(R)/KBA(R) <sup>o</sup> | Right Knee to Dash/Seat Back  | 190         | 22.0  | 112         | 18.0  |
| PAX <sup>o</sup>          | PAX <sup>o</sup>          | Pelvic Tilt Angle X           |             | 0.5   |             | 0.5   |
|                           | PAY <sup>o</sup>          | Pelvic Tilt Angle Y           |             |       |             | 14.1  |
| PHX                       | PHX                       | Hip Point to Striker (X-Axis) | 330         |       | 428         |       |
| PHZ                       | PHZ                       | Hip Point to Striker (Z-Axis) | -24         |       | -34         |       |

**DATA SHEET NO. 4  
DUMMY LATERAL CLEARANCE DIMENSIONS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Side Impact

NHTSA No.: M20160204  
 Test Date: 10/23/15



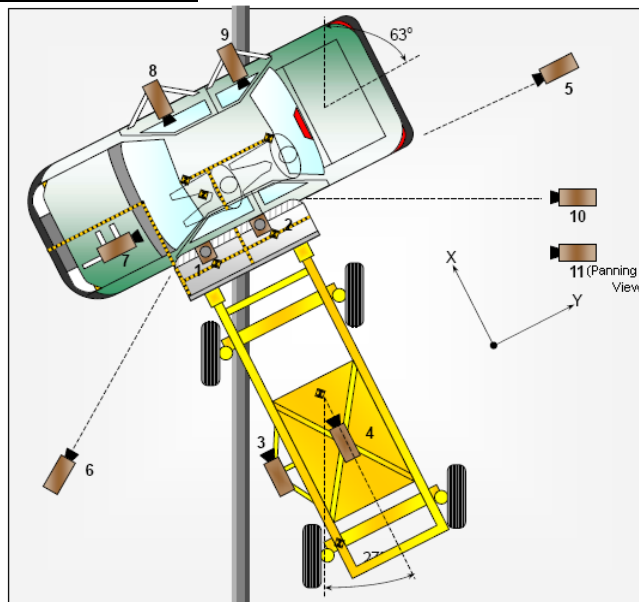
**FRONT VIEW OF DUMMY**

| Code | Description         | Units | Driver | Passenger |
|------|---------------------|-------|--------|-----------|
| HR   | Head to Side Header | mm    | 208    | 230       |
| HS   | Head to Side Window | mm    | 309    | 247       |
| AD   | Arm to Door         | mm    | 138    | 128       |
| HD   | H-Point to Door     | mm    | 233    | 167       |



**DATA SHEET NO. 5  
CAMERA AND INSTRUMENTATION DATA**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck      NHTSA No.: M20160204  
 Test Program: NCAP Side Impact      Test Date: 10/23/15



**CAMERA LOCATIONS AND DATA**

| No. | Camera View             | Coordinates (mm) |       |       | Lens Length (mm) | Operating Frame Rate (fps) |
|-----|-------------------------|------------------|-------|-------|------------------|----------------------------|
|     |                         | X                | Y     | Z     |                  |                            |
| 1   | Overhead Overall        | 110              | 850   | -5741 | 8.5              | 1000                       |
| 2   | Overhead Close-up       | 110              | 470   | -5741 | 25               | 1000                       |
| 3   | Left Impact Point (MDB) | -1750            | -870  | -833  | 12.5             | 1000                       |
| 4   | Side Overall (MDB)      | -2432            | 0     | -1438 | 8.5              | 1000                       |
| 5   | Rear                    | -95              | 7982  | -1221 | 20               | 1000                       |
| 6   | Left Front              | -2139            | -3571 | -1259 | 20               | 1000                       |
| 7   | Driver Front (OB)       |                  |       |       | 25               | 1000                       |
| 8   | Driver Side (OB)        |                  |       |       | 12.5             | 1000                       |
| 9   | Passenger Side (OB)     |                  |       |       | 12.5             | 1000                       |
| 10  | Real-time Left Rear     |                  |       |       | Zoom             | 30                         |
| 11  | Real-time Inrun         |                  |       |       | Zoom             | 30                         |

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

\*All measurements accurate to ± 6 mm.

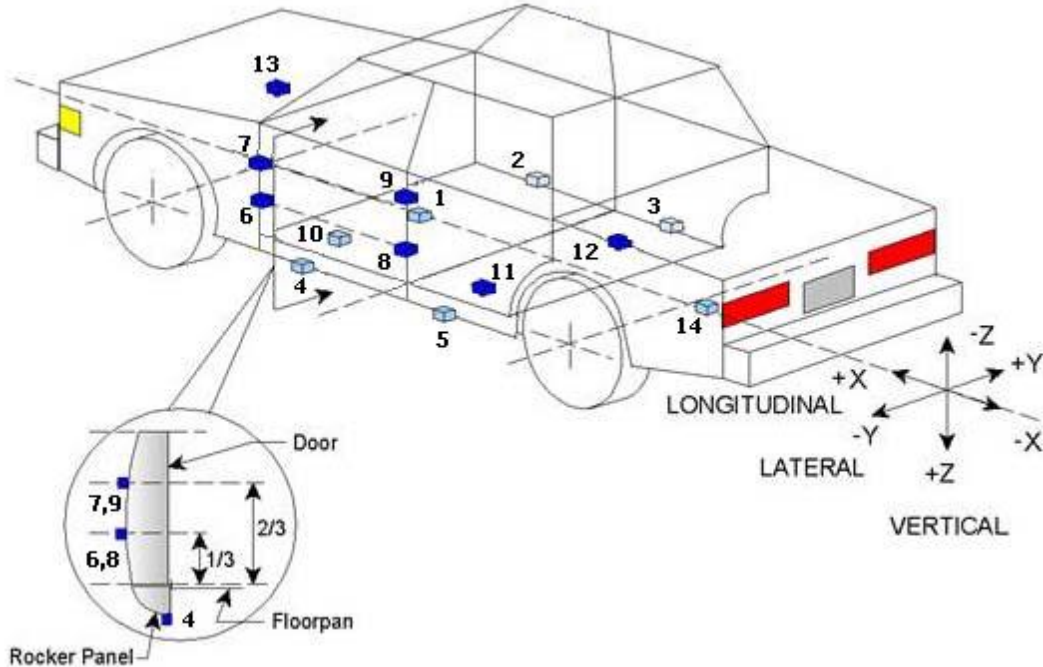
If applicable, explain why camera(s) did not operate as intended:

**INSTRUMENTATION**

|                                  |           |
|----------------------------------|-----------|
| Driver Dummy Channels            | 16        |
| Passenger Dummy Channels         | 16        |
| Vehicle Structure Accelerometers | 23        |
| MBD Accelerometers               | 7         |
| <b>TOTAL</b>                     | <b>62</b> |

**DATA SHEET NO. 6  
TEST VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck      NHTSA No.: M20160204  
 Test Program: NCAP Side Impact      Test Date: 10/23/15



**TEST VEHICLE ACCELEROMETER LOCATIONS**

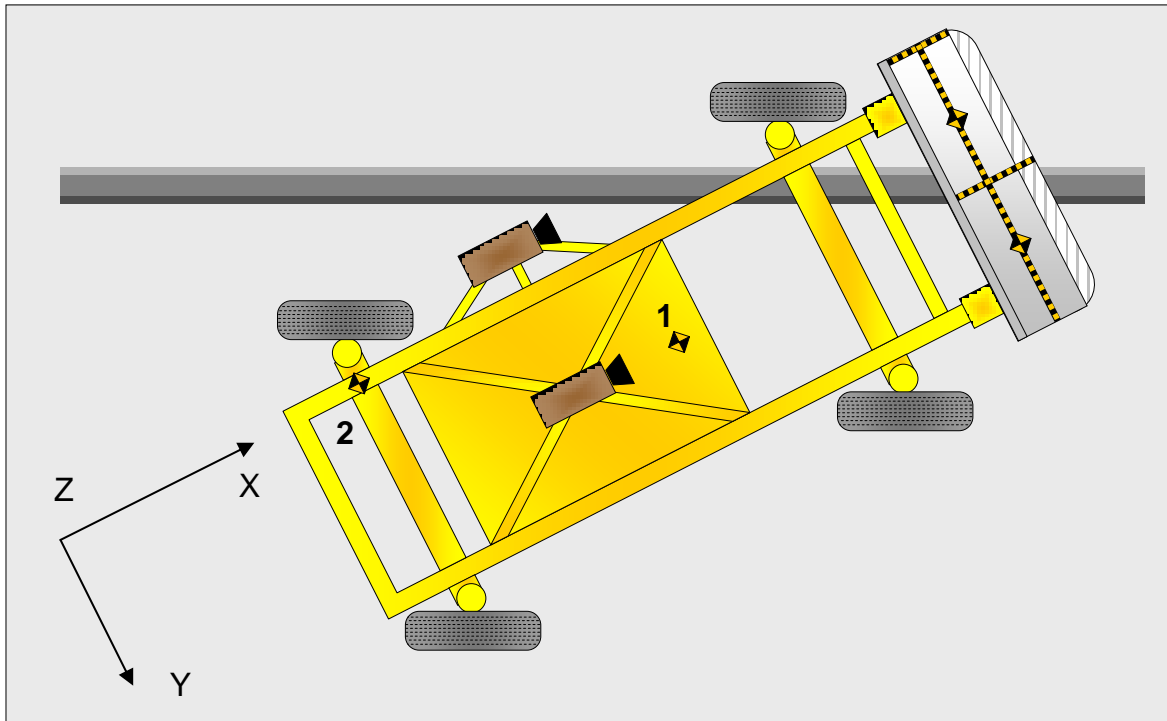
| Loc. No. | Accelerometer Location      | Coordinates (mm) |      |       |
|----------|-----------------------------|------------------|------|-------|
|          |                             | X                | Y    | Z     |
| 1        | Vehicle CG                  | 3888             | 196  | -719  |
| 2        | Right Sill at Front Seat    | 3693             | 725  | -614  |
| 3        | Right Sill at Rear Seat     | 2951             | 725  | -618  |
| 4        | Left Sill at Front Door     | 3982             | -725 | -585  |
| 5        | Left Sill at Rear Door      | 2941             | -725 | -618  |
| 6        | A-Post Lower                | 4223             | -875 | -742  |
| 7        | A-Post Middle               | 4243             | -875 | -1115 |
| 8        | B-Post Lower                | 3094             | -865 | -874  |
| 9        | B-Post Middle               | 3110             | -863 | -1155 |
| 10       | Front Seat Track            | 3407             | -690 | -750  |
| 11       | Rear Seat Structure         | 2759             | -595 | -650  |
| 12       | Right Rear Occ. Compartment | 2800             | 535  | -673  |
| 13       | Engine Block                | 4108             | 290  | -1068 |
| 14       | Rear Above Axle             | 1153             | 0    | -765  |

Reference: X - Rear surface of vehicle (+ forward)  
 Y - Vehicle Centerline (+ to right)  
 Z - Ground Plane (+ down)

**DATA SHEET NO. 7**  
**MDB ACCELEROMETER LOCATIONS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
Test Program: NCAP Side Impact

NHTSA No.: M20160204  
Test Date: 10/23/15



**MDB ACCELEROMETER LOCATIONS**

| Loc. No. | Accelerometer Location | Coordinates (mm) |      |      |
|----------|------------------------|------------------|------|------|
|          |                        | X                | Y    | Z    |
| 1        | MDB CG                 | -2179            | 0    | -505 |
| 2        | MDB Rear               | -3648            | -650 | -618 |

Reference : X - Face of MDB (+ forward)  
Y - MDB Centerline (+ to right)  
Z - Ground Plane (+ down)

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

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck      NHTSA No.: M20160204  
 Test Program: NCAP Side Impact      Test Date: 10/23/15

**TEST DUMMY INFORMATION AND CONTACT POINTS**

| Dummy Body Part   | Front Seat Dummy (ES2-re) | Rear Seat Dummy (SID- |
|-------------------|---------------------------|-----------------------|
| Face              | Headliner                 | SCAB                  |
| Top of Head       | Headliner                 | None                  |
| Left Side of Head | Headliner                 | None                  |
| Back of Head      | Headliner                 | None                  |
| Left Shoulder     | SCAB                      | None                  |
| Upper Torso       | None                      | None                  |
| Lower Torso       | None                      | None                  |
| Left Hip          | None                      | None                  |
| Left Knee         | None                      | Door Panel            |

**POST TEST DOOR PERFORMANCE**

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

**POST TEST SEAT PERFORMANCE**

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

**POST TEST STRUCTURAL OBSERVATIONS**

| Critical Areas of Performance | Observations and Conclusions |
|-------------------------------|------------------------------|
| Pillar Performance            | N/A No B-Pillar              |
| Sill Separation               | None Visible                 |
| Windshield Damage             | None                         |
| Side Window Damage            | None                         |
| Other Notable Effects         | Parking brake disengaged     |

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

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck      NHTSA No.: M20160204  
 Test Program: NCAP Side Impact      Test Date: 10/23/15

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

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

**IMPACT POINT LOCATION DATA**

| Measured Parameter                                                         | Units | Tolerance                       | Value |
|----------------------------------------------------------------------------|-------|---------------------------------|-------|
| Vehicle Wheel Base                                                         | mm    |                                 | 3620  |
| Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point) | mm    |                                 | 508   |
| Actual Impact Point (Aft of Front Axle)                                    | mm    |                                 | 530   |
| Horizontal Offset ( + forward / - rearward)                                | mm    | +/- 50 of Intended Impact point | -22   |
| Vertical Offset (+ down / - up)                                            | mm    | +/- 20 of Intended Impact point | -9    |

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

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck      NHTSA No.: M20160204  
 Test Program: NCAP Side Impact      Test Date: 10/23/15

**MDB SPECIFICATIONS**

| Measurement Description                 | Length (mm) |
|-----------------------------------------|-------------|
| Overall Width of Framework Carriage     | 1252        |
| Overall Length Including Honeycomb Face | 4115        |
| Wheel Base of Framework Carriage        | 2591        |
| C.G. Location aft of Front Axle         | 1096        |

**MDB WEIGHTS**

|        | Units | Front Axle | Rear Axle | Total  |
|--------|-------|------------|-----------|--------|
| Left   | kg    | 415.0      | 272.8     | 687.8  |
| Right  | kg    | 374.0      | 305.8     | 679.8  |
| Ratio  | %     | 57.7       | 42.3      | 100    |
| Totals | kg    | 789.0      | 578.6     | 1367.6 |

**SPEED AND IMPACT ANGLE DATA**

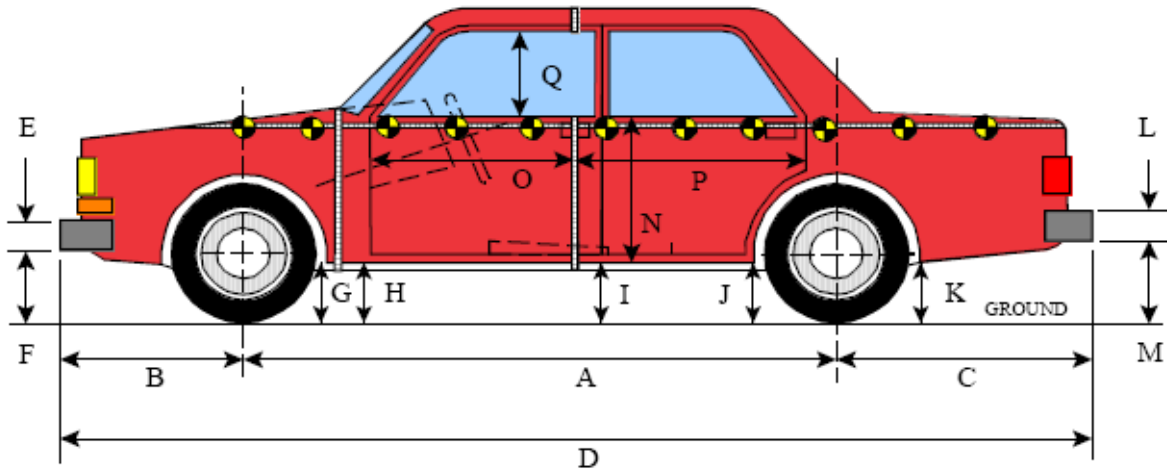
| Measured Parameter                              | Units   | Requirement  | Value |
|-------------------------------------------------|---------|--------------|-------|
| Trap No. 1 Velocity (Primary)                   | km/h    | 61.1 to 62.7 | 62.08 |
| Trap No. 2 Velocity (Redundant)                 | km/h    | 61.1 to 62.7 | 62.10 |
| MDB CL to Target Vehicle CL                     | degrees | 88.5 to 91.5 | 90    |
| MDB Forward Line of Motion to Target Vehicle CL | degrees | 62.5 to 63.5 | 63    |
| MDB Crabbed Angle to MDB Forward Line of Motion | degrees | 26 to 28     | 27    |

**MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE**

| Vertical Location |                  |        | From Centerline |           | Maximum Crush |
|-------------------|------------------|--------|-----------------|-----------|---------------|
| Row               | Description      | Height | Distance        | Direction |               |
| A                 | Center of Bumper | 432    | 700             | Left      | 40            |
| B                 | Top of Bumper    | 533    | 800             | Right     | 123           |
| C                 | Mid-Level        | 686    | 700             | Right     | 385           |
| D                 | Top of Stack     | 813    | 800             | Right     | 263           |

**DATA SHEET NO. 10  
TEST VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck      NHTSA No.: M20160204  
 Test Program: NCAP Side Impact      Test Date: 10/23/15



**LEFT SIDE VIEW**

All MEASUREMENTS IN (mm) WITH TOLERANCE OF  $\pm 3$ mm

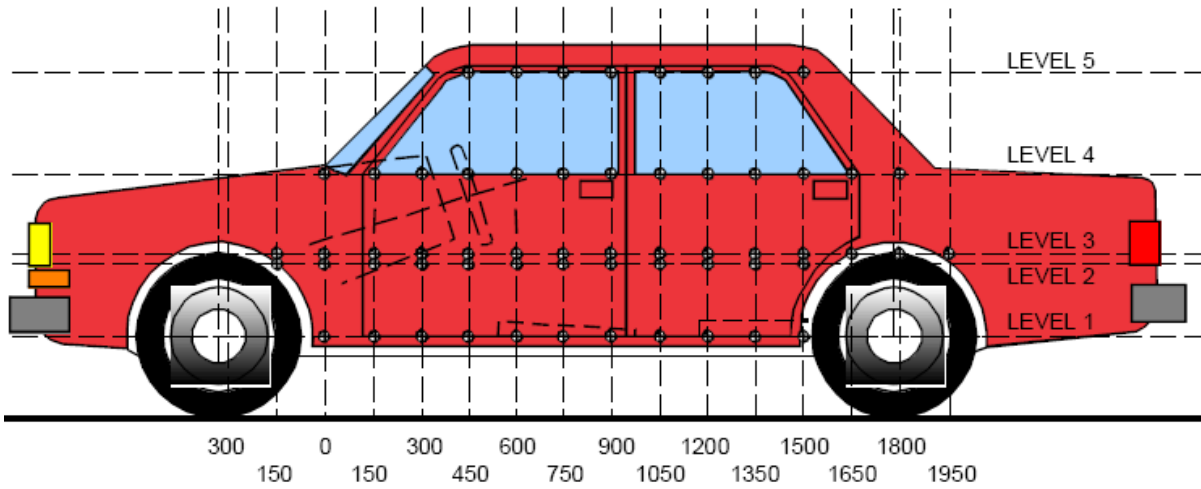
**VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION**

| Code | Measurement Description                | Pre-Test | Post-Test | Difference |
|------|----------------------------------------|----------|-----------|------------|
| A    | Wheelbase                              | 3620     | 3590      | 30         |
| B    | Front Axle to Front Surface of Vehicle | 995      | 970       | 25         |
| C    | Rear Axle to Rear Surface of Vehicle   | 1330     | 1330      | 0          |
| D    | Total Length at Centerline             | 5945     | 5923      | 22         |
| E    | Front Bumper Thickness                 | 215      | 215       | 0          |
| F    | Front Bumper Bottom to Ground          | 390      | 384       | 6          |
| G    | Sill Height at Front Wheel Well        | 461      | 491       | -30        |
| H    | Sill Height at Front Door Leading Edge | 464      | 537       | -73        |
| I    | Sill Height at B-Pillar                | 464      | 513       | -49        |
| J1   | Sill Height at Rear Wheel Well         | 530      | 466       | 64         |
| J2   | Pinch Weld Height at Rear Wheel Well   | 403      | 566       | -163       |
| K    | Sill Height Aft of Rear Wheel Well     | 592      | 630       | -38        |
| L    | Rear Bumper Thickness                  | 200      | 200       | 0          |
| M    | Rear Bumper Bottom to Ground           | 507      | 544       | -37        |
| N    | Sill Height to Window Bottom Sill      | 900      | 888       | 12         |
| O    | Front Door Leading Edge to Impact CL   | 725      | 740       | -15        |
| P    | Rear Door Trailing Edge to Impact CL   | 1105     | 1050      | 55         |
| Q    | Front Window Opening                   | 537      | 537       | 0          |
| R    | Right Side Length                      | 5805     | 5800      | 5          |
| S    | Left Side Length                       | 5805     | 5830      | -25        |
| T    | Vehicle Width                          | 2034     | 2025      | 9          |
|      | Maximum Vehicle Width at B-Pillars     | 2034     | 2025      | 9          |

**DATA SHEET NO. 11**  
**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck  
 Test Program: NCAP Side Impact

NHTSA No.: M20160204  
 Test Date: 10/23/15



**LEFT SIDE VIEW**

**MAXIMUM EXTERIOR CRUSH MEASUREMENTS**

| Level          | Measurement Description | Height Above Ground | Maximum Exterior Static Crush | Distance From Impact |
|----------------|-------------------------|---------------------|-------------------------------|----------------------|
| 1              | Sill Top                | 577                 | 314                           | 1200                 |
| 2              | Driver Hip Point        | 973                 | 160                           | 1650                 |
| 3 <sup>1</sup> | Mid-Door                | 855                 | 194                           | 1650                 |
| 4              | Window Sill             | 1193                | 58                            | 1500                 |
| 5 <sup>2</sup> | Window Top              | 1861                | 243                           | 900                  |

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

<sup>1</sup> A maximum exterior static crush of 194 was achieved at three locations; 750, 1050 and 1650.

<sup>2</sup> A maximum exterior static crush of 243 was achieved at two locations; 750 and 900.



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

**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck      NHTSA No.: M20160204  
 Test Program: NCAP Side Impact                                      Test Date: 10/23/15

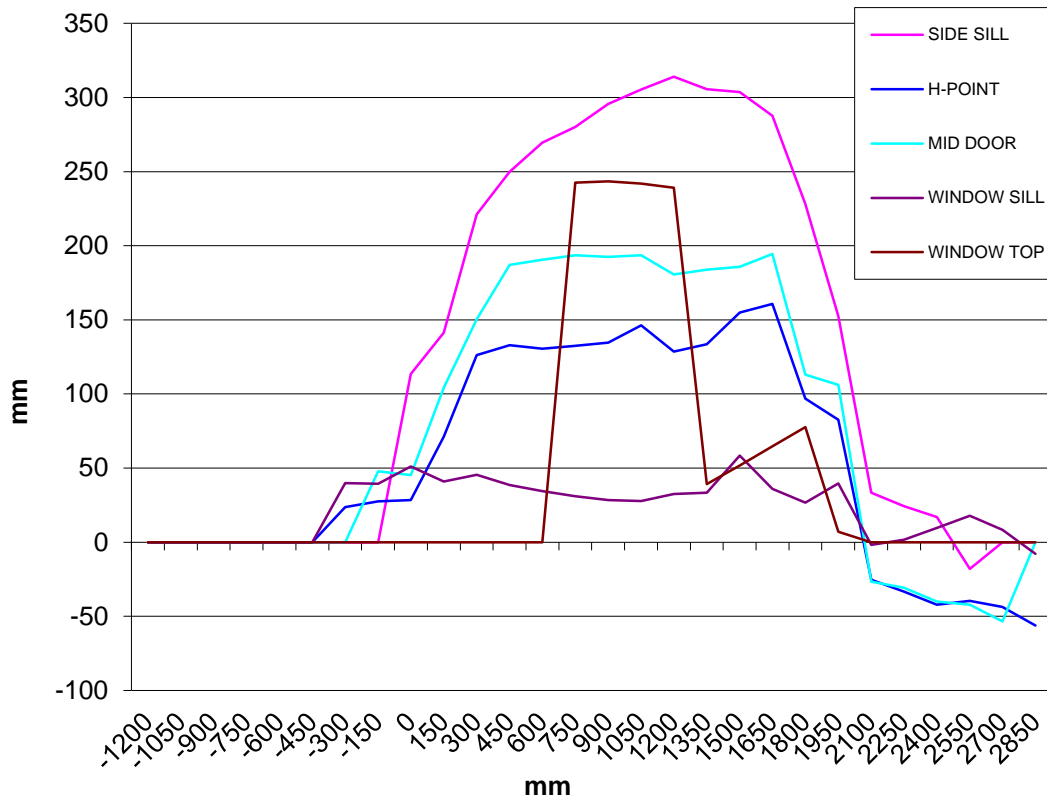
**EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL**

|             | Pre-Test |    |    |    |     | Post-Test |      |      |     |     | Difference |     |     |    |     |
|-------------|----------|----|----|----|-----|-----------|------|------|-----|-----|------------|-----|-----|----|-----|
|             | 1        | 2  | 3  | 4  | 5   | 1         | 2    | 3    | 4   | 5   | 1          | 2   | 3   | 4  | 5   |
| <b>-900</b> | 0        | 0  | 0  | 0  | 0   | 0         | 0    | 0    | 0   | 0   | 0          | 0   | 0   | 0  | 0   |
| <b>-750</b> | 0        | 0  | 0  | 0  | 0   | 0         | 0    | 0    | 0   | 0   | 0          | 0   | 0   | 0  | 0   |
| <b>-600</b> | 0        | 0  | 0  | 0  | 0   | 0         | 0    | 0    | 0   | 0   | 0          | 0   | 0   | 0  | 0   |
| <b>-450</b> | 0        | 0  | 0  | 0  | 0   | 0         | 0    | 0    | 0   | 0   | 0          | 0   | 0   | 0  | 0   |
| <b>-300</b> | 0        | 31 | 0  | 17 | 0   | 0         | -4   | 0    | -22 | 0   | 0          | 24  | 0   | 39 | 0   |
| <b>-150</b> | 0        | 24 | 30 | 16 | 0   | 0         | -16  | -18  | -23 | 0   | 0          | 28  | 48  | 39 | 0   |
| <b>0</b>    | -5       | 13 | 13 | 21 | 0   | -119      | -58  | -32  | -30 | 0   | 114        | 29  | 45  | 51 | 0   |
| <b>150</b>  | 4        | 13 | 8  | 18 | 0   | -137      | -110 | -96  | -23 | 0   | 141        | 71  | 104 | 41 | 0   |
| <b>300</b>  | 4        | 16 | 9  | 13 | 0   | -217      | -116 | -142 | -32 | 0   | 221        | 126 | 151 | 45 | 0   |
| <b>450</b>  | 4        | 17 | 10 | 9  | 0   | -246      | -113 | -177 | -29 | 0   | 250        | 133 | 187 | 38 | 0   |
| <b>600</b>  | 4        | 18 | 10 | 6  | 0   | -265      | -115 | -180 | -28 | 0   | 269        | 131 | 190 | 34 | 0   |
| <b>750</b>  | 5        | 18 | 11 | 3  | 255 | -275      | -117 | -183 | -28 | 12  | 280        | 133 | 194 | 31 | 243 |
| <b>900</b>  | 6        | 18 | 11 | 0  | 250 | -289      | -129 | -182 | -29 | 7   | 295        | 135 | 193 | 29 | 243 |
| <b>1050</b> | 8        | 17 | 11 | -3 | 247 | -297      | -112 | -183 | -31 | 5   | 305        | 146 | 194 | 28 | 242 |
| <b>1200</b> | 10       | 17 | 10 | -5 | 244 | -304      | -116 | -171 | -37 | 5   | 314        | 129 | 181 | 32 | 239 |
| <b>1350</b> | 11       | 18 | 10 | -4 | 241 | -294      | -137 | -174 | -38 | 202 | 305        | 134 | 184 | 34 | 39  |
| <b>1500</b> | 15       | 18 | 10 | -4 | 240 | -289      | -142 | -176 | -62 | 188 | 304        | 155 | 186 | 58 | 52  |
| <b>1650</b> | 16       | 18 | 10 | -4 | 239 | -272      | -79  | -184 | -40 | 174 | 288        | 160 | 194 | 36 | 65  |
| <b>1800</b> | 17       | 17 | 9  | -4 | 238 | -211      | -70  | -104 | -31 | 161 | 228        | 96  | 113 | 27 | 77  |
| <b>1950</b> | 19       | 13 | 6  | -1 | 245 | -133      | 26   | -100 | -41 | 238 | 152        | 83  | 106 | 40 | 7   |
| <b>2100</b> | 32       | 1  | -8 | 10 | 0   | -1        | 32   | 18   | 12  | 0   | 33         | -25 | -26 | -2 | 0   |
| <b>2250</b> | 32       | -1 | -7 | 11 | 0   | 7         | 42   | 23   | 9   | 0   | 25         | -33 | -30 | 2  | 0   |
| <b>2400</b> | 32       | -1 | -8 | 11 | 0   | 15        | 39   | 32   | 2   | 0   | 17         | -43 | -40 | 9  | 0   |
| <b>2550</b> | 19       | -1 | -2 | 13 | 0   | 37        | 58   | 41   | -5  | 0   | -18        | -40 | -43 | 18 | 0   |
| <b>2700</b> | 0        | 14 | 16 | 15 | 0   | 0         | 74   | 70   | 6   | 0   | 0          | -44 | -54 | 9  | 0   |
| <b>2850</b> | 0        | 18 | 0  | 16 | 0   | 0         | -4   | 0    | 24  | 0   | 0          | -56 | 0   | -8 | 0   |

**NOTE:** Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to the test based on an estimated impact point.

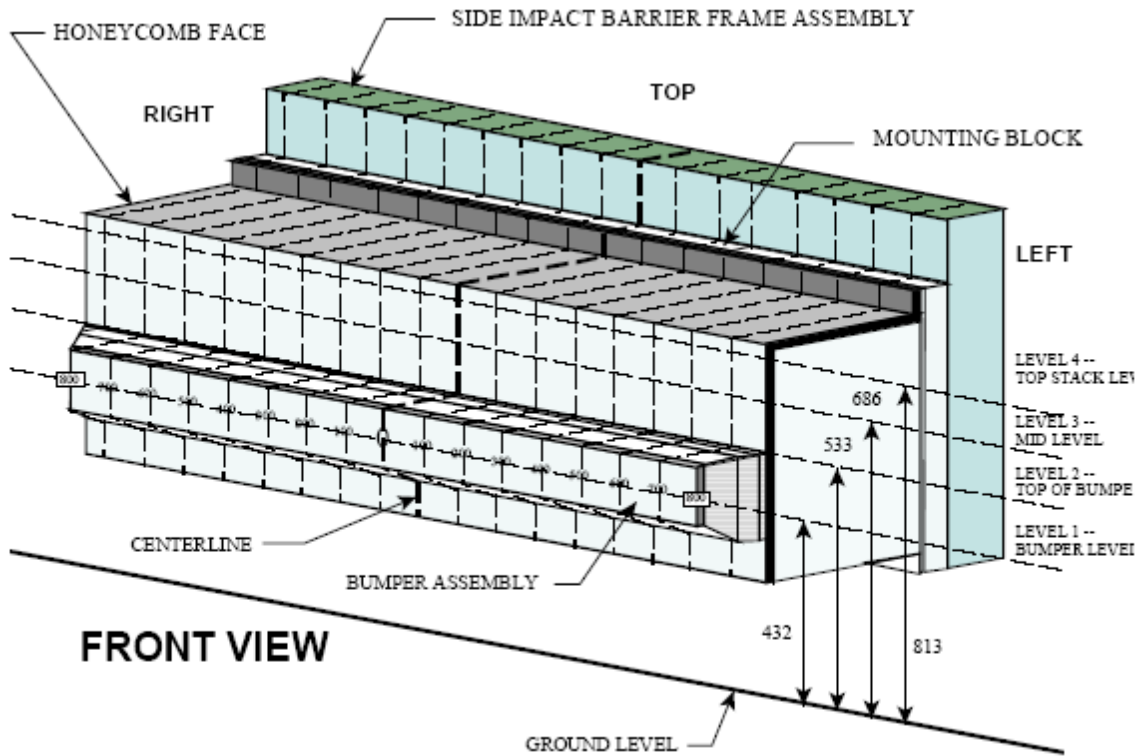
**DATA SHEET NO. 11 (CONTINUED)**  
**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck      NHTSA No.: M20160204  
Test Program: NCAP Side Impact      Test Date: 10/23/15



**DATA SHEET NO. 12  
MDB EXTERIOR STATIC CRUSH MEASUREMENTS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck      NHTSA No.: M20160204  
 Test Program: NCAP Side Impact      Test Date: 10/23/15



NOTE: Dimensions are shown in millimeters, mm

**DEFORMABLE BARRIER STATIC CRUSH**

| Stack Level | Distance Right of Center |     |     |     |     |                 |                 |                 | C/L             | Distance Left of Center |     |     |     |     |     |     |     |
|-------------|--------------------------|-----|-----|-----|-----|-----------------|-----------------|-----------------|-----------------|-------------------------|-----|-----|-----|-----|-----|-----|-----|
|             | 800                      | 700 | 600 | 500 | 400 | 300             | 200             | 100             |                 | 100                     | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
| 1           | 263                      | 226 | 185 | 160 | 182 | 185             | 161             | 153             | 145             | 137                     | 143 | 140 | 149 | 161 | 180 | 202 | 228 |
| 2           | 123                      | 81  | 48  | 39  | 28  | -- <sup>1</sup> | -- <sup>1</sup> | -- <sup>1</sup> | -- <sup>1</sup> | 25                      | 25  | 30  | 34  | 39  | 46  | 61  | 83  |
| 3           | 385                      | 385 | 134 | 105 | 125 | 106             | 78              | 69              | 69              | 75                      | 81  | 85  | 93  | 103 | 122 | 139 | 170 |
| 4           | 263                      | 226 | 185 | 160 | 182 | 185             | 161             | 153             | 145             | 137                     | 143 | 140 | 149 | 161 | 180 | 202 | 228 |

<sup>1</sup> Missing points.

**DATA SHEET NO. 13**

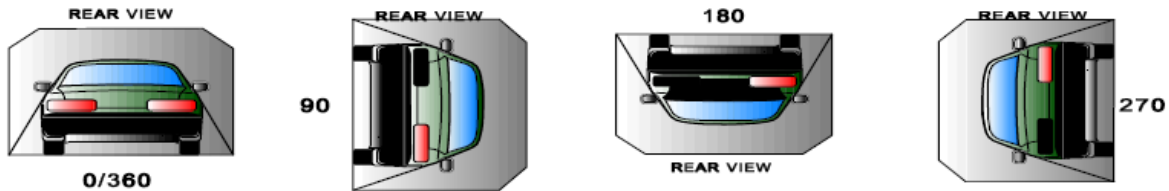
**FMVSS NO. 301 STATIC ROLLOVER RESULTS**

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck NHTSA No.: M20160204  
 Test Program: NCAP Side Impact Test Date: 10/23/15

Test Time: 17:09 Temperature: 20.7°C

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

**FMVSS 301 STATIC ROLLOVER DATA**



**ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS**

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

**FMVSS NO. 301 ROLLOVER SPILLAGE TABLE**

| Test Phase | First 5 Minutes | Sixth Minute | Seventh Minute | Eighth Minute |
|------------|-----------------|--------------|----------------|---------------|
| 0 to 90    | 0               | 0            | 0              | N/A           |
| 90 to 180  | 0               | 0            | 0              | N/A           |
| 180 to 270 | 0               | 0            | 0              | N/A           |
| 270 to 360 | 0               | 0            | 0              | N/A           |

**ROLLOVER SOLVENT SPILLAGE LOCATION TABLE**

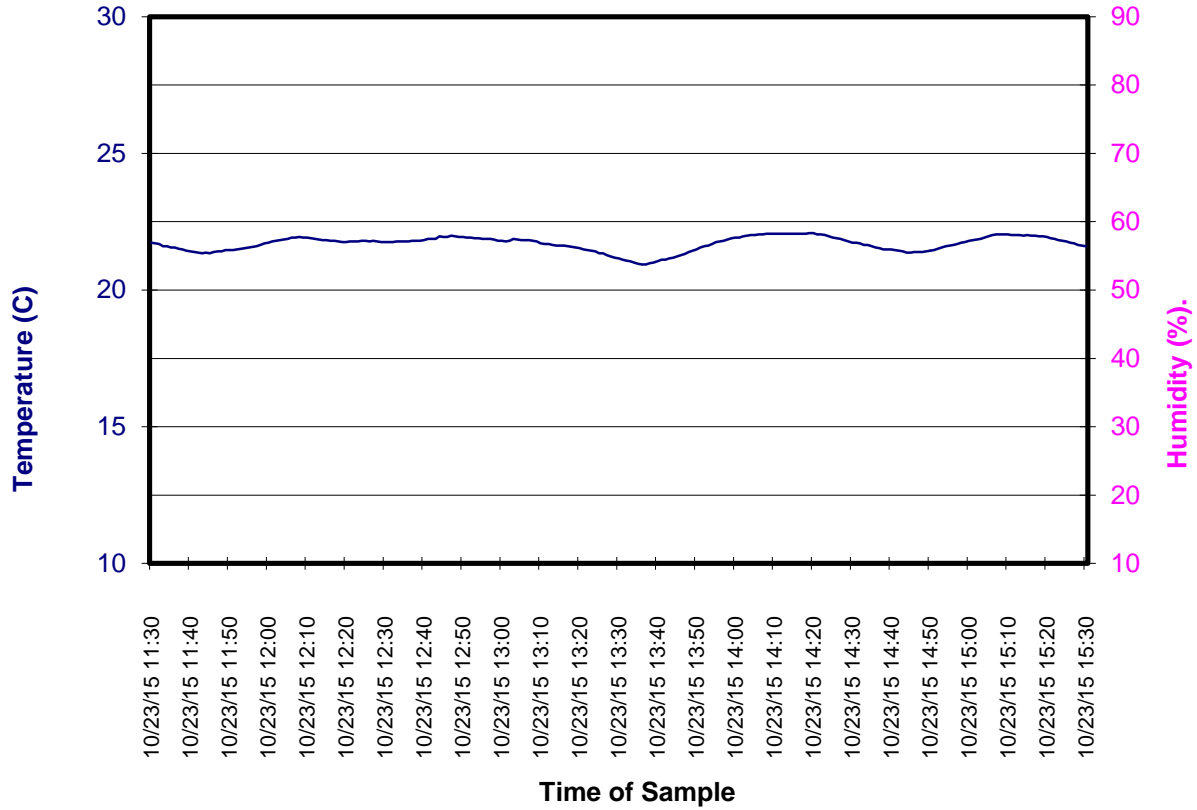
| Test Phase | Spillage Location |
|------------|-------------------|
| 0 to 90    | None              |
| 90 to 180  | None              |
| 180 to 270 | None              |
| 270 to 360 | None              |

DATA SHEET NO. 14<sup>1</sup>

DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2016 Ford F-250 SuperCab Pickup Truck NHTSA No.: M20160204  
Test Program: NCAP Side Impact Test Date: 10/23/15

M20160204 2016 Ford F-250 SuperCab Pickup Truck Left MDB Impact 151023: Test Time 15:30



<sup>1</sup> The humidity was not recorded for this test.

**APPENDIX A  
PHOTOGRAPHS**

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**APPENDIX B**  
**VEHICLE AND DUMMY RESPONSE DATA PLOTS**

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| 15         | Passenger Head Acceleration (Y) Primary vs. Time          | B-8         |
| 16         | Passenger Head Acceleration (Z) Primary vs. Time          | B-8         |
| 17         | Passenger Head Resultant Acceleration Primary vs. Time    | B-9         |
| 18         | Passenger Lower Spine T12 Acceleration (X) vs. Time       | B-9         |
| 19         | Passenger Lower Spine T12 Acceleration (Y) vs. Time       | B-9         |
| 20         | Passenger Lower Spine T12 Acceleration (Z) vs. Time       | B-9         |
| 21         | Passenger Lower Spine T12 Resultant Acceleration vs. Time | B-10        |
| 22         | Passenger Iliac Force on Impact Side (Y) vs. Time         | B-10        |
| 23         | Passenger Acetabulum Force on Impact Side (Y) vs. Time    | B-10        |
| 24         | Passenger Total Pelvic Force on Impact Side (Y) vs. Time  | B-10        |

The following additional data can be obtained from the Research and Development section of the NHTSA website (<http://www.nhtsa.dot.gov>)

### **Additional Driver & Passenger Dummy Instrumentation Data**

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

## Vehicle Instrumentation Data

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

## MDB Instrumentation Data

MDB Center of Gravity Acceleration (X)  
MDB Center of Gravity Acceleration (Y)  
MDB Center of Gravity Acceleration (Z)  
MDB Rear Acceleration (X)  
MDB Rear Acceleration (Y)  
Left MDB Contact Switch  
Right MDB Contact Switch

**APPENDIX C**  
**DUMMY PERFORMANCE CALIBRATION TEST DATA**

## TABLE OF CALIBRATION MEASUREMENTS AND PLOTS

### ES-2re (Driver) Dummy

#### Description

**Table 1.** External Measurements

**Table 2.** Head Drop Test

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

**Table 3** Neck Pendulum Test

- Pendulum Velocity (m/s) vs. Time (ms)
- Flexion Angle (°) vs. Time (ms)
- Potentiometer A (°) vs. Time (ms)
- Potentiometer B (°) vs. Time (ms)
- Potentiometer C (°) vs. Time (ms)

**Table 4.** Shoulder Impact Test

- Impactor Acceleration (G's) vs. Time (ms)

**Table 5.** Thorax – Upper Rib Drop Test

- Upper Rib Displacement @ 459 mm Drop Height (mm) vs. Time (ms)
- Upper Rib Displacement @ 815 mm Drop Height (mm) vs. Time (ms)

**Table 6.** Thorax – Middle Rib Drop Test

- Middle Rib Displacement @ 459 mm Drop Height (mm) vs. Time (ms)
- Middle Rib Displacement @ 815 mm Drop Height (mm) vs. Time (ms)

**Table 7.** Thorax – Lower Rib Drop Test

- Lower Rib Displacement @ 459 mm Drop Height (mm) vs. Time (ms)
- Lower Rib Displacement @ 815 mm Drop Height (mm) vs. Time (ms)

**Table 8.** Thorax – Full Body Impact Test

- Pendulum Acceleration (G's) vs. Time (ms)
- Impactor Force (kN) vs. Time (ms)
- Upper Rib Displacement (mm) vs. Time (ms)
- Middle Rib Displacement (mm) vs. Time (ms)
- Lower Rib Displacement (mm) vs. Time (ms)

**Table 9.** Abdomen Impact Test

- Impactor Force (kN) vs. Time (ms)
- Total Abdomen Force (kN) vs. Time (ms)
- Front Abdomen Force (kN) vs. Time (ms)
- Middle Abdomen Force (kN) vs. Time (ms)
- Rear Abdomen Force (kN) vs. Time (ms)

**Table 10.** Lumbar Spine Flexion Test

- Pendulum Velocity (m/s) vs. Time (ms)
- Spine Flexion Angle (°) vs. Time (ms)
- Potentiometer A (°) vs. Time (ms)
- Potentiometer B (°) vs. Time (ms)
- Potentiometer C (°) vs. Time (ms)

**Table 11.** Pelvis Impact Test

- Pendulum Acceleration (G's) vs. Time (ms)
- Impactor Force (kN) vs. Time (ms)
- Pubic Symphysis (Y) Force (kN) vs. Time (ms)



## TABLE OF CALIBRATION MEASUREMENTS AND PLOTS

### SID-IIs (Rear Passenger) Dummy

#### Description

**Table 1.** External Measurements

**Table 2.** Head Drop Test

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

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

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

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

**Table 3.** Lateral Neck Pendulum Test

Pendulum Velocity (m/s) vs. Time (ms)

Flexion Angle (°) vs. Time (ms)

Moment About Occipital Condyle (Nm) vs. Time (ms)

**Table 4.** Shoulder Impact Test

Impactor Acceleration (G's) vs. Time (ms)

Shoulder Displacement (mm) vs. Time (ms)

Upper Spine Acceleration (G's) vs. Time (ms)

**Table 5.** Thorax (With Arm) Impact Test

Impactor Acceleration (G's) vs. Time (ms)

Shoulder Displacement (mm) vs. Time (ms)

Upper Rib Displacement (mm) vs. Time (ms)

Middle Rib Displacement (mm) vs. Time (ms)

Lower Rib Displacement (mm) vs. Time (ms)

Upper Spine Acceleration (G's) vs. Time (ms)

Lower Spine Acceleration (G's) vs. Time (ms)

**Table 6.** Thorax (Without Arm) Impact Test

Impactor Acceleration (G's) vs. Time (ms)

Upper Rib Displacement (mm) vs. Time (ms)

Middle Rib Displacement (mm) vs. Time (ms)

Lower Rib Displacement (mm) vs. Time (ms)

Upper Spine Acceleration (G's) vs. Time (ms)

Lower Spine Acceleration (G's) vs. Time (ms)

**Table 7.** Abdomen Impact Test

Impactor Acceleration (G's) vs. Time (ms)

Upper Abdominal Rib Displacement (mm) vs. Time (ms)

Lower Abdominal Rib Displacement (mm) vs. Time (ms)

Lower Spine Acceleration (G's) vs. Time (ms)

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

**Table 9.** Pelvis Acetabulum Impact Test

Impactor Acceleration (G's) vs. Time (ms)

Pelvis (Y) Acceleration (G's) vs. Time (ms)

Acetabulum Force (N) vs. Time (ms)

**Table 10.** Pelvis Iliac Impact Test

Impactor Acceleration (G's) vs. Time (ms)

Pelvis (Y) Acceleration (G's) vs. Time (ms)

Iliac Force (N) vs. Time (ms)

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

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

|                                          |        | ES-2re S/N F030 |              |                  |           |
|------------------------------------------|--------|-----------------|--------------|------------------|-----------|
|                                          |        | Serial Number   | Manufacturer | Calibration Date |           |
| Head Accelerometers                      | X      | P58890          | Endevco      | 29-Sep-15        |           |
|                                          | Y      | P51702          | Endevco      | 29-Sep-15        |           |
|                                          | Z      | P52083          | Endevco      | 29-Sep-15        |           |
| Redundant Head Accelerometers            | X      | P49190          | Endevco      | 29-Sep-15        |           |
|                                          | Y      | P52044          | Endevco      | 29-Sep-15        |           |
|                                          | Z      | P51717          | Endevco      | 29-Sep-15        |           |
| Thoracic Rib Displacement Potentiometers | Upper  | Y               | 111          | FTSS             | 29-Sep-15 |
|                                          | Middle | Y               | 174          | FTSS             | 29-Sep-15 |
|                                          | Lower  | Y               | 173          | FTSS             | 29-Sep-15 |
| Abdomen Load Cells                       | Front  | Y               | 1441         | Denton           | 7-Apr-15  |
|                                          | Middle | Y               | 1436         | Denton           | 7-Apr-15  |
|                                          | Rear   | Y               | 1437         | Denton           | 7-Apr-15  |
| Lower Spine Accelerometers (T12)         | X      | P51295          | Endevco      | 29-Sep-15        |           |
|                                          | Y      | P68599          | Endevco      | 29-Sep-15        |           |
|                                          | Z      | P59005          | Endevco      | 29-Sep-15        |           |
| Acetabulum Load Cell                     |        | Y               | N/A          | N/A              | N/A       |
| Pubic Symphysis Load Cell                |        | Y               | 457-FY       | Denton           | 7-Apr-15  |

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

|                                  |               |        | SID-IIs S/N 305 |              |                  |           |
|----------------------------------|---------------|--------|-----------------|--------------|------------------|-----------|
|                                  |               |        | Serial Number   | Manufacturer | Calibration Date |           |
| Head Accelerometers              |               |        | X               | P51719       | Endevco          | 1-Oct-15  |
|                                  |               |        | Y               | P51272       | Endevco          | 1-Oct-15  |
|                                  |               |        | Z               | P58862       | Endevco          | 1-Oct-15  |
| Redundant Head Accelerometers    |               |        | X               | P80926       | Endevco          | 1-Oct-15  |
|                                  |               |        | Y               | P50073       | Endevco          | 1-Oct-15  |
|                                  |               |        | Z               | P52098       | Endevco          | 1-Oct-15  |
| Displacement Potentiometers      | Shoulder      |        | Y               | N/A          | N/A              | N/A       |
|                                  | Thoracic Rib  | Upper  | Y               | 007          | Servo            | 1-Oct-15  |
|                                  |               | Middle | Y               | 1161         | Servo            | 1-Oct-15  |
|                                  |               | Lower  | Y               | 037          | Servo            | 1-Oct-15  |
|                                  | Abdominal Rib | Upper  | Y               | 1295         | Servo            | 1-Oct-15  |
|                                  |               | Lower  | Y               | 1136         | Servo            | 1-Oct-15  |
| Lower Spine Accelerometers (T12) |               |        | X               | P50068       | Endevco          | 1-Oct-15  |
|                                  |               |        | Y               | P52051       | Endevco          | 1-Oct-15  |
|                                  |               |        | Z               | P51710       | Endevco          | 1-Oct-15  |
| Acetabulum Load Cell             |               |        | Y               | D14283-FY    | FTSS             | 1-Oct-15  |
| Iliac Wing Load Cell             |               |        | Y               | 287-FY       | FTSS             | 1-Oct-15  |
| Pelvis Plug (struck side)        |               |        |                 | 71125        | FTSS             | 18-Dec-13 |
| Pelvis Plug (non-struck side)    |               |        |                 | 36473        | FTSS             | 23-Sep-10 |

**TABLE 3 – Vehicle Instrumentation**

| Vehicle Instrumentation |                                 |   | Serial Number | Manufacturer | Calibration Date |
|-------------------------|---------------------------------|---|---------------|--------------|------------------|
| 1                       | Vehicle Center of Gravity       | X | P34103        | Endevco      | 25-Aug-15        |
|                         | Vehicle Center of Gravity       | Y | P81534        | Endevco      | 3-Jun-15         |
|                         | Vehicle Center of Gravity       | Z | P81542        | Endevco      | 5-May-15         |
| 2                       | Right Sill at Front Seat        | X | P61285        | Endevco      | 3-Sep-15         |
|                         | Right Sill at Front Seat        | Y | P50463        | Endevco      | 13-May-15        |
|                         | Right Sill at Front Seat        | Z | P82047        | Endevco      | 8-Jul-15         |
| 3                       | Right Sill at Rear Seat         | X | P41252        | Endevco      | 21-Oct-15        |
|                         | Right Sill at Rear Seat         | Y | P49313        | Endevco      | 21-Oct-15        |
|                         | Right Sill at Rear Seat         | Z | P47512        | Endevco      | 21-Oct-15        |
| 4                       | Left Sill at Front Door         | Y | P87103        | Endevco      | 15-May-15        |
| 5                       | Left Sill at Rear Door          | Y | P57198        | Endevco      | 14-Oct-15        |
| 6                       | Left A-Post Lower               | Y | P90291        | Endevco      | 12-Oct-15        |
| 7                       | Left A-Post Middle              | Y | P61772        | Endevco      | 21-Oct-15        |
| 8                       | Left B-Post Lower               | Y | P88424        | Endevco      | 21-Oct-15        |
| 9                       | B-Post Middle                   | Y | P75519        | Endevco      | 21-Oct-15        |
| 10                      | Front Seat Track                | Y | P87156        | Endevco      | 18-Jun-15        |
| 11                      | Rear Seat Track or Structure    | Y | P82005        | Endevco      | 20-Jul-15        |
| 12                      | Right Rear Occupant Compartment | Y | P50473        | Endevco      | 21-Oct-15        |
| 13                      | Engine Block                    | X | P88543        | Endevco      | 7-Aug-15         |
|                         | Engine Block                    | Y | P61350        | Endevco      | 15-Oct-15        |
| 14                      | Rear Floorpan Above Axle        | X | P76405        | Endevco      | 9-Jun-15         |
|                         | Rear Floorpan Above Axle        | Y | P25261        | Endevco      | 5-May-15         |
|                         | Rear Floorpan Above Axle        | Z | P81616        | Endevco      | 10-Jul-15        |

**TABLE 4 – MDB Instrumentation**

| MDB Instrumentation                     |   | Serial Number | Manufacturer | Calibration Date |
|-----------------------------------------|---|---------------|--------------|------------------|
| MDB Center of Gravity                   | X | P88568        | Endevco      | 17-Jul-15        |
| MDB Center of Gravity                   | Y | P88423        | Endevco      | 17-Jul-15        |
| MDB Center of Gravity                   | Z | P84582        | Endevco      | 23-Jul-15        |
| Left Frame Rail at Rear Axle Centerline | X | P87153        | Endevco      | 26-Jun-15        |
| Left Frame Rail at Rear Axle Centerline | Y | P90862        | Endevco      | 12-Oct-15        |