

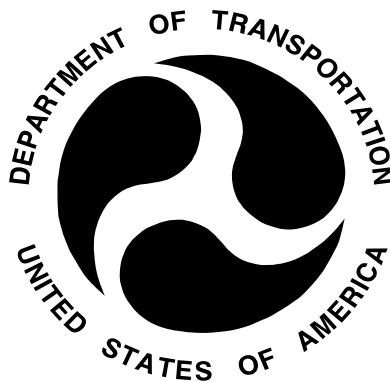
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

LABORATORY TEST PROCEDURE

FOR

FMVSS 118

**Power-Operated Window, Partition,
and Roof Panel Systems**



ENFORCEMENT
Office of Vehicle Safety Compliance
Room 6115, NVS-220
400 Seventh Street, SW
Washington, DC 20590

**OVSC LABORATORY TEST PROCEDURE NO. 118
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**REVISION CONTROL LOG
FOR OVSC LABORATORY
TEST PROCEDURES**

TP118-06
POWER-OPERATED WINDOW, PARTITION, AND ROOF PANEL
SYSTEMS

TEST PROCEDURE		FMVSS 118		DESCRIPTION
REV. No.	DATE	AMENDMENT	EFFECTIVE DATE	
00	Dec. 15, 1978	----	----	Original Issue
01	Mar. 24, 1983	----	----	Added Door Option
02	Feb. 8, 1989	----	----	Added Light Trucks and "Close"
03	April 8, 1994	58FR16782 3/31/93	4/30/93	Final Rule – Response to Petitions for Reversal Requirements
04	Sept. 15, 2004	69FR55517 9/15/04	11/15/04 *	Final Rule – Actuation Device Operation and Test Requirements
05	Mar. 24, 2005	69FR55531 9/15/04	9/1/05	Final Rule – Auto Reversal for Infrared Reflectance Systems
06	Apr. 12, 2006	71FR18673 4/12/06	6/12/06 *	Final Rule – Response to Petitions - modification of actuation device to steel sphere and added requirement for pull up or pull out switches for power-operated windows

* Vehicles manufactured before 10/1/2008 need not meet the new requirements of S6 of the standard.

1. PURPOSE AND APPLICATION

The Office of Vehicle Safety Compliance (OVSC) provides contractor laboratories with Laboratory Test Procedures as guidelines for obtaining compliance test data. The data are used to determine if a specific vehicle or item of motor vehicle equipment meets the minimum performance requirements of the subject Federal Motor Vehicle Safety Standard (FMVSS). The purpose of the OVSC Laboratory Test Procedures is to present a uniform testing and data recording format, and provide suggestions for the use of specific equipment and procedures. These Laboratory Test Procedures do not constitute an endorsement or recommendation for use of any product or method. If any contractor views any part of an OVSC Laboratory Test Procedure to be in conflict with a FMVSS or observes deficiencies in a Laboratory Test Procedure, the contractor is required to advise the Contracting Officer's Technical Representative (COTR) and resolve the discrepancy prior to the start of compliance testing.

The OVSC Laboratory Test Procedures are not intended to limit or restrain a contractor from developing or utilizing any testing techniques or equipment which will assist in procuring the required compliance test data. However, the application of any such testing technique or equipment is subject to prior approval of the COTR.

NOTE: The OVSC Laboratory Test Procedures, prepared for the limited purpose of use by independent laboratories under contract to conduct compliance tests for the OVSC, are not rules, regulations or NHTSA interpretations regarding the meaning of a FMVSS. The Laboratory Test Procedures are not intended to limit the requirements of the applicable FMVSS(s). In some cases, the OVSC Laboratory Test Procedures do not include all of the various FMVSS minimum performance requirements. Recognizing applicable test tolerances, the Laboratory Test Procedures may specify test conditions that are less severe than the minimum requirements of the standard. In addition, the Laboratory Test Procedures may be modified by the OVSC at any time without notice, and the COTR may direct or authorize contractors to deviate from these procedures, as long as the tests are performed in a manner consistent with the standard itself and within the scope of the contract. Laboratory Test Procedures may not be relied upon to create any right or benefit in any person. Therefore, compliance of a vehicle or item of motor vehicle equipment is not necessarily guaranteed if the manufacturer limits its certification tests to those described in the OVSC Laboratory Test Procedures.

2. GENERAL REQUIREMENTS

FMVSS 118 requires that passenger cars, multipurpose passenger vehicles and trucks with a gross vehicle weight rating (GVWR) of 4,536 kg (10,000 lb) or **less**, equipped with power-operated window (includes vent window), partition and roof panel (**WPRP**) systems, meet the requirements as specified below in order to minimize the likelihood of death or injury from accidental operation.

Unless the vehicle meets the requirements for an automatic reversal system stated below, WPRP systems may be **CLOSED** only in the following circumstances (S4):

- A. When the key that controls activation of the vehicle's engine is in the "ON" "START", or "ACCESSORY" position;
- B. By muscular force unassisted by a vehicle supplied power;
- C. Upon continuous activation by a locking system on the exterior of the vehicle;
- D. Upon continuous activation of a remote actuation device, provided that the remote actuation device shall be incapable of closing the WPRP from a distance of more than 6 meters from the vehicle;
- E. During the interval between the time the locking device which controls the activation of the vehicle's engine is turned off and the opening of either of a two-door vehicle's doors or, in the case of a vehicle with more than two doors, the opening of either of its front doors;
- F. If the WPRP is in a static position before starting to close and in that position creates an opening so small that a 4 mm diameter semi-rigid cylindrical rod cannot be placed through the opening at any location around its edge; or
- G. Upon continuous activation of a remote actuation device, provided that the remote actuation device shall be incapable of closing the WPRP if the device and the vehicle are separated by an opaque surface and provided that the remote actuation device shall be incapable of closing the WPRP from a distance of more than 11 meters from the vehicle.

Unless the vehicle meets the requirements for an automatic reversal system stated below, an additional requirement for WPRP systems is that they may **NOT BEGIN TO CLOSE** when tested as follows (S6(a) and(b)) (**Vehicles manufactured before 10/1/2008 need not meet this requirement, but optional early compliance is permitted**):

- H. **Sphere Test** - When any part of a stainless steel sphere having a surface finish between 8 and 4 micro inches and a radius of 20 mm +/- 0.2 mm, is applied on or over any power-operated window, partition, or roof panel actuation device mounted in the occupant compartment, and a force not to exceed 135 Newtons (30 lb) is applied. This requirement does not apply to actuation devices that are mounted in a vehicle's roof, headliner, or overhead console that can close WPRP only by continuous rather than momentary actuation.

An additional requirement, applicable only to **Power-Operated Window** (includes vent windows) actuation devices, is as follows (S6c) **(Vehicles manufactured before 10/1/2008 need not meet this requirement, but optional early compliance is permitted):**

- I. **Pull Up or Pull Out Test** - Any actuation device for closing a power-operated window (regardless of mounting location or meeting paragraph S5 (automatic reversal)) must operate by pulling away from the surface in the vehicle on which the device is mounted. An actuation device must operate only when pulled vertically up (if horizontally mounted), or out (if vertically mounted), or in a direction perpendicular to the surrounding surface if mounted in a sloped orientation, in order to cause the window to move in the closing direction.

Requirements for WPRP with an **automatic reversal system**, as certified by the vehicle manufacturer to those requirements, shall:

- J. S5.1 - Be equipped with a reversal system which shall stop and reverse direction either before contacting a specified test rod, or before exerting a squeezing force of 100 Newtons on the test rod when such test rod is placed through the window, partition, or roof panel opening at any location as illustrated an the end of section 12 of this test procedure.
- K. S5.2 - Upon reversal, the power-operated window, partition, or roof panel system must open to one of the following positions, at the manufacturer's option:
1. A position that is at least as open as the position at the time closing was initiated;
 2. A position that is not less than 125 millimeters more open than the position at the time the window reversed direction; or
 3. A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening at the same location as the test rod.

- L. S5.3 - If a vehicle uses proximity detection by infrared reflection to stop and reverse a power-operated window, partition, or roof panel, the infrared source shall project infrared light at a wavelength of not less than 850 nm and not more than 1050 nm. The system shall meet the requirements in J. and K. in all ambient light conditions from total darkness to 64,500 lux (6,000 foot candles) incandescent light intensity.

3. SECURITY

The contractor shall provide appropriate security measures to protect the OVSC test vehicles and parts during the entire compliance testing program. The contractor is also financially responsible for any acts of theft and/or vandalism which occur during the storage of test vehicles. Security problems which arise shall be reported by telephone to the COTR and the Industrial Property Manager (IPM), Office of Contracts and Procurement (OCP), within 2 working days after the incident. A letter containing specific details of the security problem shall be sent to the IPM (with copy to the COTR) within 4 working days. The contractor shall protect and segregate all photographs and data that evolve from compliance testing. No information concerning the vehicle safety compliance testing program shall be released to anyone except the COTR, unless specifically authorized by the COTR or the COTR's Branch or Division Chief.

NO INDIVIDUALS, OTHER THAN CONTRACTOR PERSONNEL DIRECTLY INVOLVED IN THE COMPLIANCE TESTING PROGRAM, SHALL BE ALLOWED TO WITNESS ANY VEHICLE COMPLIANCE TEST UNLESS SPECIFICALLY AUTHORIZED BY THE COTR.

4. GOOD HOUSEKEEPING

Contractors shall maintain the entire vehicle compliance testing area, test fixtures and instrumentation in a neat, clean and painted condition with test instruments arranged in an orderly manner consistent with good test laboratory housekeeping practices.

5. TEST SCHEDULING AND MONITORING

The contractor shall submit a test schedule to the COTR prior to testing. Tests shall be completed as required in the contract. Scheduling shall be adjusted to permit sample motor vehicles to be tested to other FMVSS as may be required by the OVSC. All testing shall be coordinated to allow monitoring by the FMVSS No. 118 COTR.

6. TEST DATA DISPOSITION

The contractor shall make all vehicle preliminary compliance test data available to the COTR on location within 4 hours after the test. Final test data shall be furnished to the COTR within 5 working days. Additionally, the contractor shall analyze the preliminary test results as directed by the COTR. All backup data sheets, technical notes, etc., shall be either sent to the COTR or destroyed at the conclusion of each delivery order, purchase order, etc.

7. GOVERNMENT FURNISHED PROPERTY (GFP)

ACCEPTANCE OF TEST VEHICLES

The Contractor has the responsibility of accepting each test vehicle whether delivered by a new vehicle dealership or another vehicle transporter. In both instances, the contractor acts in the OVSC's behalf when signing an acceptance of the test vehicle delivery. When a vehicle is delivered, the contractor must check to verify the following:

- A. All options listed on the "window sticker" are present,
- B. Tires and wheels are new and the same as listed,
- C. There are no dents or other interior or exterior flaws,
- D. The vehicle has been properly prepared and is in running condition, and
- E. Owner's manual, warranty document, consumer information, and extra set of keys are present.

A Vehicle Condition form will be supplied to the contractor when the test vehicle is transferred from a new vehicle dealership or between test contracts. The contractor must complete a Vehicle Condition form for each vehicle and deliver it to the COTR with the Final Test Report or the report will not be accepted for payment.

NOTIFICATION OF COTR

The COTR must be notified within 24 hours after a vehicle has been delivered. In addition, if any discrepancy or damage is found at the time of delivery, a copy of the Vehicle Condition form shall be sent to the COTR immediately.

8. CALIBRATION OF TEST INSTRUMENTS

Before the contractor initiates the safety compliance test program, a test instrumentation calibration system shall be implemented and maintained in accordance with established calibration practices. The calibration system shall be set up and maintained as follows:

- A. Standards for calibrating the measuring and test equipment will be stored and used under appropriate environmental conditions to assure their accuracy and stability.
- B. All measuring instruments and standards shall be calibrated by the contractor, or a commercial facility, against a higher order standard at periodic intervals NOT TO EXCEED TWELVE (12) MONTHS! Records, showing the calibration traceability to the National Institute of Standards and Technology (NIST), shall be maintained for all measuring and test equipment.
- C. All measuring and test equipment and measuring standards will be labeled with the following information:
 - (1) Date of calibration
 - (2) Date of next scheduled calibration
 - (3) Name of the technician who calibrated the equipment
- D. A written calibration procedure shall be provided by the contractor which includes as a minimum the following information for all measurement and test equipment:
 - (1) Type of equipment, manufacturer, model number, etc.
 - (2) Measurement range
 - (3) Accuracy
 - (4) Calibration interval
 - (5) Type of standard used to calibrate the equipment (calibration traceability of the standard must be evident)
- E. Records of calibration for all test instrumentation shall be kept by the contractor in a manner which assures the maintenance of established calibration schedules. All such records shall be readily available for inspection when requested by the COTR. The calibration system will need the acceptance of the COTR before the test program commences.

Further guidance is provided in the International Standard ISO 10012-1, "Quality Assurance Requirements for Measuring Equipment" and American National Standard ANSI/NCSS Z540-1, "Calibration Laboratories and Measuring and Test Equipment - General Requirements".

9. PHOTOGRAPHIC DOCUMENTATION

Photographs for test reports shall be 8 x 10 inches, and clearly illustrate the intended features. A tag, label, or placard identifying the test vehicle model and NHTSA number shall appear in each photograph and be legible. Each photograph shall be labeled as to subject matter and actuation device photographs shall properly identify device location. As a minimum, the following photographs shall be included, as applicable:

- A. 3/4 frontal view from right side of vehicle
- B. 3/4 rear view from left side of vehicle
- C. Close-up view of vehicle's certification label
- D. Close-up view of vehicle's tire information placard
- E. Close-up views of vehicle's interior locking system and exterior power window control locks
- F. Close-up view of each unique power window, partition, and roof panel actuation device
- G. Close-up view of power window master control panel
- H. Close-up view of remote control device
- I. Close-up view of remote control receiver(s)
- J. Close-up view of automatic reversal system transmitter/receiver(s)
- K. Photos of test instrumentation used in conducting this test (may be a composite photograph with instrumentation removed from vehicle)
- L. Test instrumentation installed on vehicle
- M. Close-up view of sphere being applied to actuation switches
- N. Close-up of all test failure areas and components

10. DEFINITIONS

Actuation Device – A switch, device, controller or other component that controls the power window, partition or roof panel.

Express-up capability – One-touch activation in closing direction, i.e. without continuous activation.

Infrared reflectance - The ratio of the intensity of infrared light reflected and scattered by a flat sample of the test rod material to the intensity of infrared light reflected and scattered by a mirror that reflects 99.99 percent of the infrared radiation incident on its surface.

Interior Locking System – The key-locking system located in the occupant compartment and controls the activation of the vehicle's engine.

Power-Operated Roof Panel Systems - Moveable panels in the vehicle roof which close by vehicle supplied power either by a sliding or hinged motion, and do not include convertible top systems.

WPRP – Power-Operated Window, Partition, and Roof Panel

11. PRETEST REQUIREMENTS

IN-HOUSE COMPLIANCE TEST PROCEDURE

Prior to conducting any compliance tests, contractors are required to submit a detailed in-house compliance test procedure and equipment list to the COTR that includes a step-by-step description of the methodology to be used and a detailed check-off list. Written approval must be obtained from the COTR before commencing testing so that all parties are in agreement. There shall be no contradiction between the OVSC Laboratory Test Procedure and the contractor's in-house test procedure. The list of test equipment shall include instrument make, model, range, resolution and accuracy.

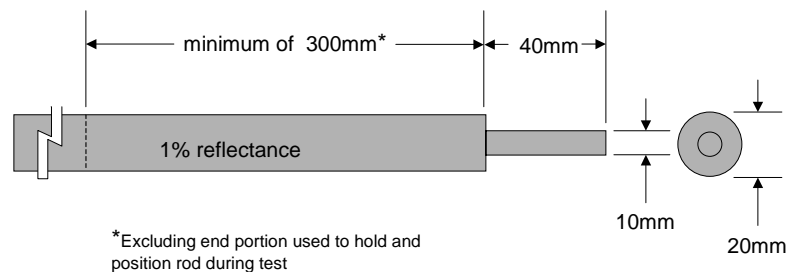
TEST DATA LOSS

A compliance test is not to be conducted unless all of the various test conditions specified in the applicable OVSC Laboratory Test Procedure have been met. Failure of a contractor to obtain the required test data and to maintain acceptable limits on test parameters in the manner outlined in the applicable OVSC Laboratory Test Procedure may require a retest at the expense of the contractor. The retest costs will include all costs associated with conducting the retest.

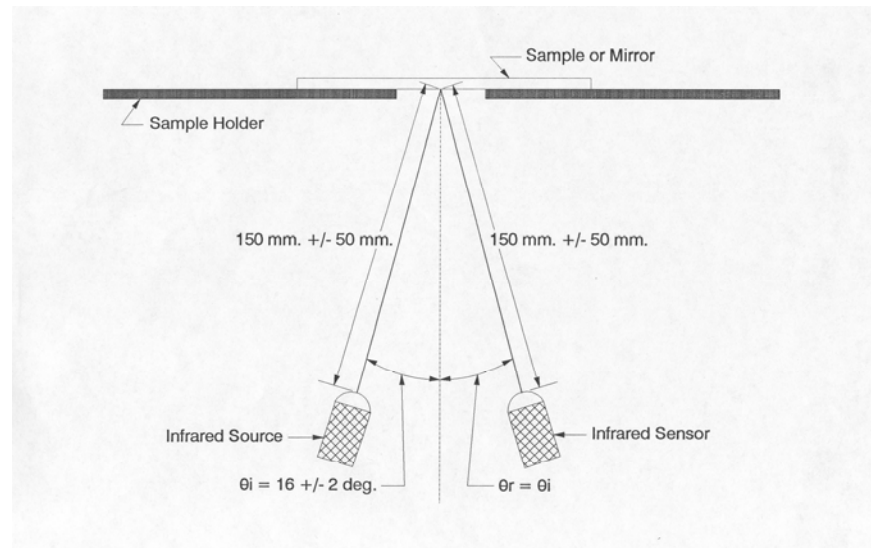
The Contracting Officer of NHTSA is the only NHTSA official authorized to notify the contractor that a retest is required. The retest shall be completed within two (2) weeks after receipt of notification by the Contracting Officer that a retest is required. If a retest is conducted, no test report is required for the original test.

REQUIRED TEST EQUIPMENT

- A. A stainless steel sphere and force gauge assembly for contacting window, partition and roof panel actuation devices. The stainless steel sphere shall have a surface finish between 8 and 4 micro inches and a radius of 20 mm \pm 0.2 mm. The force gauge shall be attached to the sphere in a manner that will apply force through the geometric center of the sphere. The force gauge shall have a range of 200 Newtons, a resolution of 1 Newton and an accuracy of \pm 0.5% of full scale.
- B. Three (3) test rods for testing systems designed to detect obstructions by physical contact shall be of cylindrical shape and sufficient length that they can be hand-held with only the test rod making any contact with any part of the window, partition, or roof panel or mating surfaces. Test rod diameters shall be 5 mm, 100 mm and 200 mm diameter (\pm 2/-0 mm). Each test rod shall have a force-deflection ratio of not less than 65 N/mm for rods up to 25 mm diameter, and not less than 20 N/mm for larger diameter rods.
- C. Three (3) test rods for testing systems designed to detect obstructions by light beam interruption shall be the same shape and dimensions as above. In addition, they shall be opaque to infrared, visible and ultraviolet light. They are not required to have the same force-deflection ratios as above.
- D. One test rod for testing systems designed to detect proximity of obstructions using infrared reflections shall have the shape and dimensions as shown below.



The entire test rod surface shall have an infrared reflectance of not more than 1.0 percent when measured by the apparatus shown below.



The infrared reflectance of the rod surface material is measured using a flat sample of the material and an infrared light source and sensor operating at a wavelength of $950 \pm 100 \text{ nm}$.

The intensity of the incident infrared light is determined using a reference mirror of nominally 100 percent reflectance mounted in place of the sample in the Infrared reflectance measuring apparatus (refer to suggested test equipment section above).

Infrared reflectance measurements of each sample of test rod surface material and of the reference mirror are connected to remove the contribution of infrared light reflected and scattered by the sample holder and other parts of the apparatus before computation of the infrared reflectance ratio.

- E. Force measuring instrumentation to measure window squeezing forces in range from 10 Newtons to 150 N with accuracy of $\pm 1.5 \text{ N @ } 75\text{N}$, maximum nonlinearity of $\pm 3 \text{ N}$ over the range and resolution of 1.5 Newtons.
- F. Incandescent lighting that projects 64,500 lux (6000 foot candles) for testing infrared reflectance power window reversal systems.
- G. Light meter for measuring incandescent light levels from 0 to 70,000 lux while testing infrared reflectance power window reversal systems.

- H. Infrared light wavelength meter to measure the system output(s) in range from 850 to 1050 nm similar to WaveMate Wavelength meter manufactured by Coherent.
- I. Position transducer or equivalent to measure window, partition, or roof panel opening distance, 300 mm range with accuracy of +/- 1mm in 100mm and visual output resolution of .01 mm.
- J. Continuous recorder to provide permanent, supplemental records of window, partition, and roof panel force, distance and speed versus time. When electrical input signals to the recorder are simulated, the accuracy of that instrument's recorded data must be verified by at least one physical check, with the entire instrumentation system connected.

SUPERVISORY REVIEW

The contractor's responsible laboratory supervisor shall verify the following steps in preparation for each safety compliance test:

- A. COTR approval of contractor's detailed in-house test procedure including check-off sheets,
- B. Test personnel are trained for and thoroughly familiar with the above test procedure, use of the test equipment and laboratory safety precautions, and
- C. Calibration of all measuring and test equipment has been performed within the required intervals.

TEST AREA

A clean, dry, level surface for parking during the test is required. The area must have sufficient space in every direction from the vehicle to test a remote WPRP closing control if it is so equipped. Refer to Section 12.3 of this test procedure for details.

VEHICLE IDENTIFICATION AND PRE-OPERATIONAL CHECK

Each vehicle shall be visually inspected to identify all power windows, partitions and roof panels (WPRP) and corresponding actuation devices. A pre-operational check shall be conducted to ensure each WPRP appears to operate in accordance with manufacturer's specifications outlined in the Vehicle Owner's Manual. Record data on the WPRP Pre-Operational Check sheet.

- A. Thoroughly review contents of vehicle owner's manual or equivalent documentation paying particular attention to sections discussing internal and external locks, manual and remote control, operating instructions and automatic reversal features.
- B. Identify all vehicle installed power WPRPs. (If necessary, modify the list of vehicle installed power WPRPs on the Pre-Operational Check sheet and applicable data sheets.)
- C. Identify all interior individual and master control actuation devices.
- D. Identify WPRPs operable by a remote control actuation device, and/or exterior locking system.
- E. Identify WPRPs equipped with Express-Up and/or Auto-Reverse capabilities.
- F. Describe location(s) of the master control panel and exterior control locks.
- G. Identify all interior locking system key positions.
- H. Use remote activation device at a distance of approximately 3 meters from the vehicle in conjunction with an opaque surface to verify whether it is a **Line-of Sight or Non-Line of-Sight** control type. Verify the remote closing function of each WPRP.
- I. Turn the interior locking system to the "ON" position. Using the master control and individual actuation devices, operate each WPRP through 1 complete open-close cycle.

NOTE: One open-close cycle consists of starting with the WPRP in the fully closed position, moving the WPRP to fully open and back to fully closed.
- j. Turn the interior locking system to the "Accessory" position. Using the master control and individual actuation devices, operate each WPRP through 1 complete open-close cycle.
- k. If vehicle is equipped with an automatic reversal system, use any suitable obstruction (not necessarily a prescribed test rod) to verify its function on each WPRP. Further, if the system uses infrared reflection to stop and reverse WPRP, conduct this part of the pre-test in an ambient light condition between total darkness and 10,000 lux (929 foot candles).

The testing laboratory will contact the COTR to resolve any matters of WPRPs failing to operate properly before proceeding with further testing of the vehicle.

12. COMPLIANCE TEST EXECUTION

NOTE: (Prior to 10/1/2008) A VEHICLE MUST MEET THE REQUIREMENTS OF SECTIONS 12.1, 12.2, and 12.3, OR, IT MUST MEET THE AUTOMATIC REVERSAL REQUIREMENTS OF SECTION 12.5.

NOTE: (After 10/1/2008) A VEHICLE MUST MEET THE REQUIREMENTS OF SECTIONS 12.1, 12.2, 12.3, and 12.4.1 (sphere test), OR, IT MUST MEET THE REVERSAL REQUIREMENTS OF SECTION 12.5.
IT MUST MEET 12.4.2 (Pull-Up or Pull-Out Test)

Any Power-operated WPRP may be closed if the WPRP is in a static position before starting to close and in that position creates an opening so small that a 4 mm diameter semi-rigid cylindrical rod cannot be placed through the opening at any location around its edge (excluding power-operated windows which must have pull up or pull out switches).

12.1 Interior Locking System Test (S4(e)).

Power-operated WPRP systems may be closed during the interval between the time the locking device which controls the activation of the vehicle's engine is turned off and the opening of either of a two-door vehicle's doors or, in the case of a vehicle with more than two doors, the opening of either of its front doors.

- A. Locking System in "LOCK" and other off positions [Data Sheet 1]
- (1) Close all doors and turn locking system to the "ON" position. Open all WPRPs and then turn the locking system to the "LOCK" position. Attempt to close each WPRP using the master and individual actuation devices. Record the results indicating whether the master and individual actuation devices are operable for **Doors Closed**. For any actuation device checked as inoperable in this section record a pass in the adjacent data sheet column. If any actuation device is checked as operable, re-open the respective WPRP and continue testing that particular device to the door open option test procedure in paragraph (2) of this section.
 - (2) Open the left front door. Attempt to close each WPRP using the master and the individual actuation devices. Record the results indicating whether the master and individual actuation devices are operable under **Left Door Open**. **Repeat the above test (steps (1) and (2)) with the right front door open and the left front door closed**. Record a pass if checked inoperable; and a fail if checked operable.
 - (3) Repeat steps (1) and (2) above for all other locking system positions excluding "ON", "ACCESSORY", or "START." For each

additional locking system position tested a separate data sheet shall be completed.

- (4) Repeat steps (1) through (3) starting with the locking system in the "ACCESSORY" position. Skip this step if the WPRPs are not operable with the locking system in the "ACCESSORY" position.

B. Locking System With The Key Removed [Data Sheet 2]

- (1) Close all doors, turn locking system to the "ON" position, and open all WPRPs. Remove the key from the locking system and attempt to close each WPRP using the master and individual actuation devices. Record the results indicating whether the master and individual actuation devices are operable. For any device checked as inoperable, record a pass in the adjacent data sheet column. If any actuation device is checked as operable, re-open the respective WPRP and continue testing that particular device to the door open test procedure in paragraph (2) of this section.
- (2) Open the left front door. Attempt to close each WPRP using the master and the individual actuation devices. Record the results indicating whether the master and individual actuation devices are operable under **Left Door Open. Repeat the above test (steps (1) and (2)) with the right front door open.** Record a pass if checked inoperable and a fail if checked operable.
- (3) Repeat steps (1) and (2) starting with the locking system in the "ACCESSORY" position. Skip this step if the WPRPs are not operable with the locking system in the "ACCESSORY" position.

12.2 Exterior Locking System Test (S4(c))

Power-operated WPRP systems may be closed upon continuous activation by a locking system on the exterior of the vehicle. Record data in Data Sheet 3.

- A. If the vehicle is not equipped with an exterior locking system skip to section 12.3 of this procedure.
- B. Describe the location(s) of the exterior lock(s) and how the system is activated.
- C. Remove key from interior locking system.
- D. Activate the exterior locking system through at least 2 complete open-close cycles, pausing at intermediate points of travel, and identify locations of operable WPRPs. Determine whether continuous activation of the exterior locking system is required to close the operable WPRPs. For each operable WPRP record a pass if the WPRP only closes while the activation is continuous, or fail if it closes in an express-up mode.

12.3 Remote Actuation Device Test (S4(d) and (g))

Power-operated WPRP systems may be closed upon continuous activation of a remote actuation device provided that the device shall be incapable of closing any WPRP from a non line-of-site distance of more than 6 meters, or a line-of-site distance of more than 11 meters from the vehicle. Record data in Data Sheet 4.

A. If the vehicle is not equipped with a remote actuation device skip to section 12.4 of this procedure.

B. Identify type of remote actuation device installed on vehicle. Separate the remote actuation device and vehicle mounted receivers by an opaque surface and attempt to activate the system from distances of approximately 3 meters in each direction shown on Data Sheet 4. Repeat at distances of approximately 9 meters. If the system does not function, the vehicle is equipped with a "Line-of-Sight" remote actuation device, proceed to paragraph D below, otherwise, the vehicle is equipped with a "Non Line-of-Sight" remote actuation device, proceed to paragraph C below.

C. Non Line-of-Sight

With key removed, doors closed and all WPRP open at least half way, determine the maximum operating distance of the remote actuation device. The range of operation shall not exceed six meters in any direction from the vehicle and continuous activation of the remote actuation device is required until all operable WPRPs are completely closed. If the system operates as required record a pass and the maximum distances that the control can function, otherwise indicate a fail.

D. Line-of-Sight

With key removed, doors closed and all WPRP open at least half way, determine the maximum operating distance of the remote actuation device. The range of operation shall not exceed eleven meters in any direction from the vehicle and continuous activation of the remote actuation device is required until all operable WPRPs are completely closed. If the system operates as required record a pass and the maximum distances that the control can function, otherwise indicate a fail.

E. Repeat test with interior locking system "ON".

12.4 Occupant Compartment Actuation Device Test (S6)

(Vehicles manufactured before 10/1/2008 are not required to meet the Sphere Test and the Pull Up or Pull Out Test) Record results on Data Sheet 5 and 6.

12.4.1 Sphere Test (S6a and b) - Any actuation device that is mounted in the occupant compartment of a vehicle and can be used to close a power-operated WPRP shall **not** cause such WPRP to begin closing from any open position when contacted by the spherical surface of a stainless steel sphere having a surface finish between 8 and 4 micro inches and a radius of 20mm +/- 0.2 mm and tested as specified below.

This requirement does not apply to actuation devices that are:

- mounted in a vehicle's roof, headliner, or overhead console and that can close a WPRP only by continuous rather than momentary switch actuation or
 - comply with the reversing requirements of FMVSS 118, S5.
- A. Close all doors and turn locking system to the "ON" position. Cycle each WPRP, leaving each WPRP in its fully open position.
 - B. Identify each actuation device that shall be tested to this requirement.
 - C. Using the stainless steel sphere and force gauge assembly, attempt to close each WPRP by contacting each master control panel actuation device and individual actuation device with the spherical surface. Apply a force of 135 Newtons to the geometric center of the sphere. The force may be applied at any angle with respect to the actuation device. For actuation devices that cannot be contacted by the sphere prior to application of the force, apply a force not to exceed 135 Newtons at any angle in an attempt to make contact with the actuation device. The sphere shall be directionally applied in such a manner that, if unimpeded, it would make contact with the actuation device.
 - D. Repeat the test sequence with each WPRP in at least one intermediate open position where a 5 mm diameter or larger test rod can be placed through the opening around its edge.
 - E. Record the results indicating whether any applicable master or individual actuation device is capable of closing any WPRP when subjected to the applied force. For any actuation device that did not cause the WPRP to begin closing record a pass, otherwise record a fail in the adjacent column on the data sheet.

Record results on Data Sheet 5.

12.4.2 POWER-OPERATED WINDOW switches: Pull UP or Pull OUT Test (S6(c))

An actuation device may operate to cause a power-operated window (does not include roof panel or partition) to move in the closing direction **only** when:

- pulled vertically up (if horizontally mounted), or
- pulled out (if vertically mounted), or
- pulled in a direction perpendicular to and away from the surrounding surface if mounted in a sloped orientation.

- A. Place the vehicle ignition in a position where the power window actuation devices are enabled. For any actuation device for closing a power-operated window, apply a force to the device in a direction away from the surface in the vehicle on which the device is mounted. For a horizontally mounted device pull vertically **up**, on a vertically mounted device pull **out**, and for a device mounted on a sloped orientation, pull in a direction perpendicular and away from the surrounding surface on which the device is mounted. Verify that the power-operated windows can only close with forces applied to the actuation device in the direction as specified above. The requirement becomes effective on vehicles manufactured on or after 1 October 2008 but a manufacturer may comply earlier.

NOTE This requirement for power-operated windows must be complied with regardless of the ability of the device to comply with the sphere test (S6) above or if automatic reversal equipped (S5).

Record results on Data Sheet 6.

12.5 Automatic Reversal Systems Tests (S5, S7 and S8)

A power-operated WPRP may close under any operational condition if it can stop and reverse direction either:

- before contacting, or
- before exerting a squeezing force of 100 Newtons or more on a specified cylindrical test rod, when such test rod is placed through the WPRP opening at any location as illustrated at the end of this test procedure.

Record results in Data Sheet 7, 8 or 9 (as applicable).

After the automatic reversal tests are conducted, the results shall be compared with the other test data sheets to ensure that automatic reversal performance does compensate for the failures of all WPRPs that did not pass any alternative test.

12.5.1 Physical Contact Reversal Systems (Data Sheet 7)

- A. Close all doors and turn locking system to the "ON" position. Ensure power to each front door window, leaving each in an approximately half open position.

- B. On one of the front door windows, place temporary reference marks on the glass and the window frame for measuring reversal distance relative to original opening dimension. Record window open dimension.
- C. On the same window, place a 5mm diameter test rod at the front edge of the window as shown at the end of this test procedure. Rod must be placed through the window from inside the vehicle.
- D. Utilizing any applicable actuation device provided in the vehicle, close the window onto the test rod and measure the squeeze force applied before the system reverses direction. Repeat this step with the test rod in at least 1 additional position.
- E. After the window reverses and comes to a stop, measure the distance it has reversed from the point of contact with the test rod and the open dimension in relation to the original open dimension measurement.
- F. Using the same power window, repeat above test sequence with 100mm and 200mm diameter test rods.
- G. With the vehicle doors still closed, turn locking system to the "OFF" or "LOCK" position. Again, ensure power to each front door window, leaving each window in its half open position. Repeat steps A. through F. utilizing the opposite front door window and the test rod placed at the top edge of the window and at least 1 other location such that the cylindrical surface of the test rod contacts any part of the structure with which the window mates. Describe these locations on the data sheet.
- H. Repeat steps A. through G. for rear door or rear quarter panel windows.
- I. With doors closed and the locking system "ON," repeat steps A. through F. with each test rod placed in at least 2 different edge positions around the power-operated partition(s).
- J. Repeat step I. with the locking system in the "OFF" or "LOCK" position.
- K. With doors closed and the locking system "ON," repeat steps A. through F. with each test rod placed in at least 2 different positions on all edges of the power-operated roof panel(s). If a roof panel travels in 3 or more modes (such as up-down hinged and forward-back slide) perform this step in all modes.
- L. Repeat step K. above with the locking system in the "OFF" or "LOCK" position.
- M. For each WPRP tested report a pass or fail in the data sheet in the adjacent column. The squeezing force exerted cannot exceed 100 newtons.

12.5.2 Light Beam Interruption Reversal Systems (Data Sheet 8)

- A. Close all doors and turn locking system to the "ON" position. Ensure power to each front door window, leaving each approximately half open.
- B. On one of the front door windows, place temporary reference marks on the glass and the window frame for measuring reversal distance relative to original opening dimension. Record window open dimension.
- C. On the same window, place a 5mm diameter opaque cylindrical test rod at the front edge of the window as shown in the figure below. Rod must be placed through the window from inside the vehicle.
- D. Utilizing any applicable actuation device provided in the vehicle, attempt to close the window onto the test rod. Repeat with the test rod in at least 1 additional position.
- E. After each trial, note if the window does not begin to close. If the window begins to close and then reverses before contacting the test rod, measure the distance it has reversed from the point the window came to a stop and began to open, and the re-opened dimension in relation to the original open dimension measurement. If the test rod is contacted, measure the squeezing force.
- F. Using the same window, repeat above test sequence with 100mm and 200mm diameter opaque test rods.
- G. With the vehicle doors still closed, turn locking system to the "OFF" or "LOCK" position. Again, ensure power to each front door window, leaving each window in its half open position. Repeat steps A. through F. utilizing the opposite front door window and the test rod placed at the top edge of the window and at least 1 other location such that the cylindrical surface of the test rod contacts any part of the structure with which the window mates. Describe these locations on the data sheet. Rod must be placed through the window from inside the vehicle.
- H. Repeat steps A. through G. for rear door or rear quarter panel windows.
- I. Repeat steps A. through F. with each test rod placed in at least 2 different positions around the power-operated partition(s).
- J. Repeat step I. with the locking system in the "OFF" or "LOCK" position.
- K. Repeat steps A. through F. with each test rod placed in at least 2 different positions on all opening edges of the power-operated roof panel(s).

- L. Repeat step K. with the locking system in the “OFF” or “LOCK” position.
- M. For each WPRP tested report a pass or fail in the data sheet in the adjacent column. With the test rod placed in the WPRP the applicable WPRP shall not have begun to close upon activating the applicable actuation device or if the WPRP did begin to close it shall have reversed to one of the positions specified below:
- (1) A position that is at least as open as the position at the time closing was initiated;
 - (2) A position that is not less than 125 millimeters more open than the position at the time the window reversed direction;
or
 - (3) A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening.

If a WPRP contacts a test rod the squeezing force shall not exceed 100 newtons.

12.5.3 Infrared Reflectance Reversal Systems (Data Sheet 9)

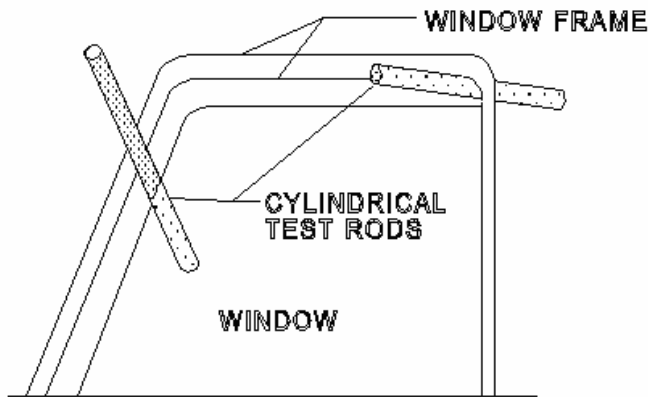
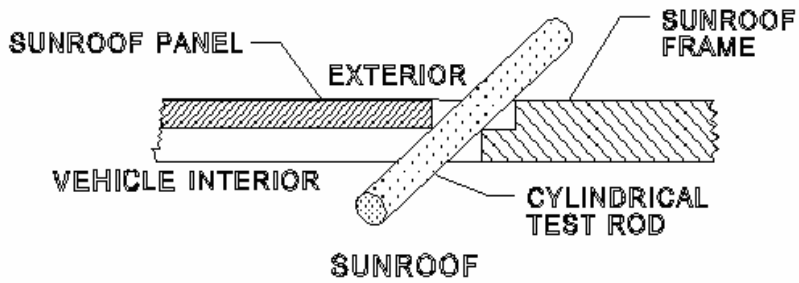
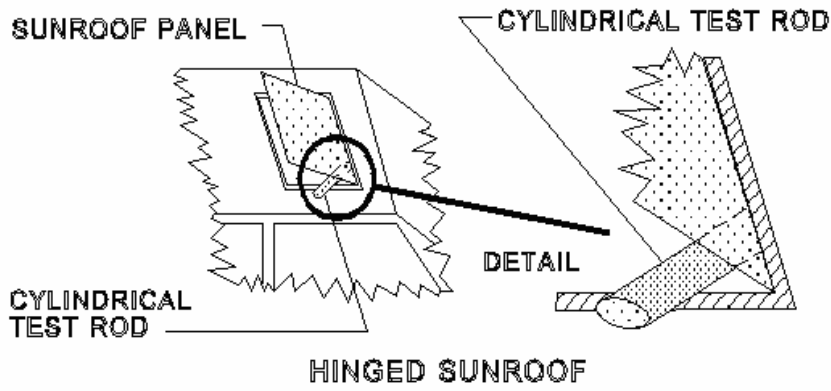
- A. Place the test vehicle under incandescent lighting that projects 64,500 lux (6,000 foot candles) onto the infrared sensor. The light is projected onto the infrared sensor by aiming the optical axis of a light source outside the vehicle as perpendicular as possible to the lens of the infrared sensor. The intensity of light is measured perpendicular to the plane of the lens of the infrared sensor, as close as possible to the center of the lens of the infrared sensor.
- B. Close all doors and turn locking system to the "ON" position. Ensure power to each front door window, leaving each approximately half open.
- C. On one of the front door windows, place temporary reference marks on the glass and the window frame for measuring reversal distance relative to original opening dimension. Record window re-opening dimension.
- D. On the same window, place a test rod of the type specified for infrared reflectance in the window at the front edge of the window as shown in the figure below. The rod must be placed through the window from inside the vehicle.
- E. Utilizing any applicable actuation device, and while keeping the rod stationary, attempt to close the window onto the test rod. Repeat the test with the test rod in at least 1 additional position.
- F. After each trial, note if the window does not begin to close. If the window begins to close and then reverses before contacting the test rod, measure the distance it has reversed from the point the window came to a stop and began to re-open, and the re-opened dimension in relation to the original open dimension measurement. If the test rod is contacted, measure the squeezing force.
- G. Fully open the same window and then begin to close it. While the window is closing, move the test rod so that it approaches and ultimately extends through (if necessary) the window in any orientation from the interior of the vehicle. Repeat while moving the test rod into a different area in the path of the closing window.
- H. If the window begins to close and then reverses before contacting the test rod, measure the distance it has reversed from the point the window came to a stop and began to open, and the re-opened dimension in relation to the original open dimension measurement. If the test rod is contacted, measure the squeezing force.
- I. With the vehicle doors still closed, turn locking system to the "OFF" or

"LOCK" position. Again, ensure power to each front door power window, leaving each window in its half open position. Repeat steps A. through H. utilizing the opposite front door power window and the infrared reflectance test rod placed at the top edge of the window and at least 1 other location. Describe these locations on the data sheet.

- J. Repeat steps A. through I. for rear door or rear quarter panel windows.
- K. Repeat steps A. through H. with the test rod placed in at least 2 different edge positions around the power-operated partition(s).
- L. Repeat step K. with the locking system in the "OFF" or "LOCK" position.
- M. Repeat steps A. through H. with the test rod placed in at least 2 different positions on all opening edges of the power-operated roof panel(s).
- N. Repeat step M. with the locking system in the "OFF" or "LOCK" position.
- O. For each WPRP tested report a pass or fail in the data sheet in the adjacent column. With the test rod placed in the WPRP, the applicable WPRP shall not have begun to close upon activating the applicable actuation device or if the WPRP did begin to close shall have reversed to one of the positions specified below. When the test rod was moved towards the WPRP while the WPRP was closing the WPRP shall have stopped and reversed to one of the positions specified below.
 - (1) A position that is at least as open as the position at the time closing was initiated;
 - (2) A position that is not less than 125 millimeters more open than the position at the time the window reversed direction;
or
 - (3) A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening.

If a WPRP contacts the test rod the squeezing force shall not exceed 100 newtons.

TYPICAL CYLINDRICAL TEST RODS PROTRUDING THROUGH SUNROOF AND WINDOW DAYLIGHT OPENINGS



13. POST TEST REQUIREMENTS

After the required tests are completed, the contractor shall:

Verify all instrumentation, test data records and photographs;

Restore the vehicle to its original configuration, if necessary;

Complete the Vehicle Condition Report form including word description of the vehicle's post test condition;

Copy applicable pages of the vehicle Owner's Manual for attachment to the final test report;

Move the test vehicle to a secure area; and

Place all original records in a secure and organized file awaiting test data disposition.

14. REPORTS

14.1 MONTHLY STATUS REPORTS

The contractor shall submit a monthly Test Status Report and a Vehicle Status Report to the FMVSS 118 COTR. The Vehicle Status report shall be submitted until all FMVSS 118 vehicles are transferred to another FMVSS or otherwise disposed of. Samples of the required reports are found in the report forms section.

14.2 APPARENT TEST FAILURE

Any indication of an test failure shall be communicated by telephone or to the COTR within 24 hours with written notification mailed within 48 hours (Saturday and Sunday hours excluded). A Notice of Test Failure (see report forms section) with a copy of the particular compliance test data sheet(s) and preliminary data plot(s) shall be included.

If possible, repeat that portion of the test where the failure was noted to ensure that there is a test failure.

In the event of a test failure, a post test calibration check of some critically sensitive test equipment and instrumentation (if applicable) may be required for verification of accuracy. The necessity for the calibration shall be at the COTR's discretion and shall be performed without additional costs to the OVSC.

14.3 FINAL TEST REPORTS

14.3.1 COPIES

In the case of an apparent test failure, 7 copies of the Final Test Report shall be submitted to the COTR for acceptance within 3 weeks of test completion.

Where there has been no indication of an apparent noncompliance, 3 copies of each Final Test Report shall be submitted to the COTR for acceptance within 3 weeks of test completion. No payment of contractor's invoices for conducting compliance tests will be made prior to the Final Test Report acceptance by the COTR. Contractors are requested to NOT submit invoices before the COTR is provided with copies of the Final Test Report.

Contractors are required to submit the first Final Test Report in draft form within 1 week after the compliance test is conducted. The contractor and the COTR will then be able to discuss the details of both test conduct and report content early in the compliance test program.

Contractors are required to PROOF READ all Final Test Reports before submittal to the COTR. The OVSC will not act as a report quality control office for contractors. Reports containing a significant number of errors will be returned to the contractor for correction, and a "hold" will be placed on invoice payment for the particular test.

14.3.2 REQUIREMENTS

The Final Test Report, associated documentation (including photographs), are relied upon as the chronicle of the compliance test. The Final Test Report will be released to the public domain after review and acceptance by the COTR. For these reasons, each final report must be a complete document capable of standing by itself.

The contractor should use **detailed** descriptions of all compliance test events. Any events that are not directly associated with the standard but are of technical interest should also be included. The contractor should include as much **detail** as possible in the report.

Instructions for the preparation of the first three pages of the final test report are provided for standardization.

14.3.3 FIRST THREE PAGES

A. FRONT COVER

A heavy paperback cover (or transparency) shall be provided for the protection of the final report. The information required on the cover is as follows:

- (1) Final Report Number such as 118-ABC-0X-001 where
 118 is the FMVSS tested
 ABC are the initials for the laboratory
 0X is the Fiscal Year of the test program
 001 is the Group Number (001 for the 1st test,
 002 for the 2nd test, etc.)

- (2) Final Report Title And Subtitle such as

COMPLIANCE TESTING FOR FMVSS 118
 Power-Operated Window, Partition and Roof Panel Systems
 * * * * *

XYZ Motor Co.
 200X Deluxe 4-door sedan
 NHTSA No. CX0101

- (3) Contractor's Name and Address such as

ABC LABORATORIES
 405 Main Street
 Detroit, Michigan 48070

NOTE: DOT SYMBOL WILL BE PLACED BETWEEN ITEMS (3) AND (4)

- (4) Date of Final Report completion
- (5) The words "**FINAL REPORT**"
- (6) The sponsoring agency's name and address as follows

U. S. DEPARTMENT OF TRANSPORTATION
 National Highway Traffic Safety Administration
 Enforcement
 Office of Vehicle Safety Compliance
 400 Seventh Street, SW
 Room 6111 (NVS-220)
 Washington, DC 20590

B. FIRST PAGE AFTER FRONT COVER

A disclaimer statement and an acceptance signature block for the COTR shall be provided as follows:

This publication is distributed by the U. S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By:

Approved By:

Approval Date:

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By:

Acceptance Date:

- C. **SECOND PAGE AFTER FRONT COVER**
A completed Technical Report Documentation Page (Form DOT F1700.7) shall be completed for those items that are applicable with the other spaces left blank. Sample data for the applicable block numbers of the title page follows.

Block 1 — REPORT NUMBER

118-ABC-0X-001

Block 2 — GOVERNMENT ACCESSION NUMBER

Leave blank

Block 3 — RECIPIENT'S CATALOG NUMBER

Leave blank

Block 4 — TITLE AND SUBTITLE

Final Report of FMVSS 118 Compliance Testing of 200X XYZ
Deluxe 4-door sedan, NHTSA No. CX0101

Block 5 — REPORT DATE

March 1, 200X

Block 6 — PERFORMING ORGANIZATION CODE

ABC

Block 7 — AUTHOR(S)

John Smith, Project Manager / Bill Doe, Project Engineer

Block 8 — PERFORMING ORGANIZATION REPORT NUMBER

ABC-DOT-XXX-001

Block 9 — PERFORMING ORGANIZATION NAME AND ADDRESS

ABC Laboratories
405 Main Street
Detroit, Michigan 48070

Block 10 — WORK UNIT NUMBER

Leave blank

Block 11 — CONTRACT OR GRANT NUMBER

DTNH22-9X-D-12345

Block 12 — SPONSORING AGENCY NAME AND ADDRESS

US Department of Transportation
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
400 Seventh Street, SW, Room 6111 (NVS-220)
Washington, DC 20590

Block 13 — TYPE OF REPORT AND PERIOD COVERED

Final Test Report
Feb. 15 to Mar. 15, 200X

Block 14 — SPONSORING AGENCY CODE

NVS-220

Block 15 — SUPPLEMENTARY NOTES

Leave blank

Block 16 — ABSTRACT

Compliance tests were conducted on the subject 200X XYZ Deluxe 4-door sedan in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-118-0X for the determination of FMVSS 118 compliance.

Test failures identified were as follows:

None

NOTE: Above wording must be shown with appropriate changes made for a particular compliance test. Any questions should be resolved with the COTR.

Block 17 — KEY WORDS

Compliance Testing
Safety Engineering
FMVSS 118

Block 18 — DISTRIBUTION STATEMENT

Copies of this report are available from —
National Highway Traffic Safety Administration
Technical Information Services (NPO-405)
400 Seventh Street, SW, Room 2336
Washington, DC 20590
e-mail: tis@nhtsa.dot.gov
FAX: 202-493-2833

Block 19 — SECURITY CLASSIFICATION OF REPORT

Unclassified

Block 20 — SECURITY CLASSIFICATION OF PAGE

Unclassified

Block 21 — NUMBER OF PAGES

Add appropriate number

Block 22 — PRICE

Leave blank

14.3.4 TABLE OF CONTENTS

Final test report Table of Contents shall include the following:

- A. Section 1 — Purpose of Compliance Test
- B. Section 2 — Test Procedure and Discussion of Results
- C. Section 3 — Test Data
- D. Section 4 — Test Equipment List and Calibration Information
- E. Section 5 — Photographs
- F. Section 6 — Copy of Test Vehicle Owner's Manual or other document
- G. Section 7 — Notice of Test Failure (if applicable)

15. DATA SHEETS

**FMVSS 118
COMPLIANCE DATA SUMMARY SHEET**

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

VEHICLE TYPE: _____ DATE OF MANUFACTURE: _____

LABORATORY: _____ TEST DATE: _____

REQUIREMENT	PASS	FAIL	NOT APPLICABLE
S4 Interior Locking System in Off Position(s)			
S4 Interior Locking System With Key Removed			
S4 Exterior Locking System			
S4 Remote Actuation Device			
S6 Occupant Compartment Actuation Devices (Sphere Test/Pull Up or Pull Out Test)			
S5 Automatic Reversal System			

REMARKS:

WPRP PRE-OPERATIONAL CHECK

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

LABORATORY: _____ TEST DATE: _____

Identify power-operated WPRP and WPRP actuation devices.

	LEFT FRONT	LEFT REAR	RIGHT FRONT	RIGHT REAR	TAIL GATE	PARTITION	ROOF PANEL
Power WPRP Installed							
Individual Interior Actuation Devices							
Master Control Panel Actuation Devices							
WPRP Operated by Exterior Locking System							
WPRP Operated by Remote Control							
WPRP with Auto-Reverse Capability							
WPRP with Express-Up Capability							

Master Control Panel Location: _____

Exterior Locking System Location: _____

Remote Control Type: () Line-of-Sight () Non-line-of-Sight:

WPRP Actuation Device Design [Toggle, Rocker, Push/Pull (Lever), or describe other]:

Master Control Panel _____

Individual Window _____

Roof Panel _____

Partition _____

Interior Locking System Key Positions (clockwise): _____

All WPRP open/close cycles are satisfactory with key in "ON" position:

() YES () NO If NO, compliance test shall not proceed.

All WPRP open/close cycles are satisfactory with key in "ACCESSORY" position:

() YES () Not Applicable - No power to WPRPs

REMARKS:

RECORDED BY: _____ DATE: _____

APPROVED BY: _____

**DATA SHEET 1
INTERIOR LOCKING SYSTEM TEST**

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

LABORATORY: _____ TEST DATE: _____

Key lock position at start of test execution. () ON () ACCESSORY
Key lock off position during test execution. () LOCK () OFF () OTHER

ACTUATION DEVICES	DOORS CLOSED		LEFT DOOR OPEN		RIGHT DOOR OPEN		PASS /FAIL
	INOP.	OPER.	INOP.	OPER.	INOP.	OPER.	
MASTER CONTROL PANEL ACTUATION DEVICES							
Left Front (LF)							
Right Front (RF)							
Left Rear (LR)							
Right Rear (RR)							
Vent Window(s)							
Tail Gate (TG)							
Partition (P)							
Roof Panel (RP)							
INDIVIDUAL ACTUATION DEVICES							
Left Front (LF)							
Right Front (RF)							
Left Rear (LR)							
Right Rear (RR)							
Vent Window(s)							
Tail Gate (TG)							
Partition (P)							
Roof Panel (RP)							

REMARKS:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

**DATA SHEET 2
INTERIOR LOCKING SYSTEM WITH KEY REMOVED TEST**

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

LABORATORY: _____ TEST DATE: _____

Key lock position at start of test execution. () ON () ACCESSORY

ACTUATION DEVICES	DOORS CLOSED		LEFT DOOR OPEN		RIGHT DOOR OPEN		PASS /FAIL
	INOP.	OPER.	INOP.	OPER.	INOP.	OPER.	
MASTER CONTROL PANEL ACTUATION DEVICES							
Left Front (LF)							
Right Front (RF)							
Left Rear (LR)							
Right Rear (RR)							
Tail Gate (TG)							
Vent Window(s)							
Partition (P)							
Roof Panel (RP)							
INDIVIDUAL ACTUATION DEVICES							
Left Front (LF)							
Right Front (RF)							
Left Rear (LR)							
Right Rear (RR)							
Vent Window(s)							
Tail Gate (TG)							
Partition (P)							
Roof Panel (RP)							

REMARKS:
RECORDED BY: _____

DATE: _____

APPROVED BY: _____

**DATA SHEET 3
EXTERIOR LOCKING SYSTEM TEST**

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

LABORATORY: _____ TEST DATE: _____

Is vehicle equipped with an exterior locking system that can close any of the power windows, partitions or roof panels? () YES () NO

Location of exterior locking system: _____

Describe how the exterior locking system is activated: _____

Identify the windows, partitions or roof panels that can be closed by the exterior locking system. Also, in each case, identify whether continuous activation of the locking system is required.

WINDOW, PARTITION AND ROOF PANEL IDENTIFICATION	EXTERIOR LOCKING SYSTEM		EXTERIOR LOCKING SYSTEM (PASS/FAIL)*
	OPERABLE (YES/NO)	CONTINUOUS ACTIVATION REQUIRED (YES/NO)	
LEFT FRONT (LF)			
RIGHT FRONT (RF)			
LEFT REAR (LR)			
RIGHT REAR (RR)			
VENT WINDOW(s)			
PARTITION (P)			
ROOF PANEL (RP)			
TAIL GATE (TG)			

* **NOTE:** Continuous Activation of the locking system is required for each WPRP to pass the exterior locking system safety standard requirement.

REMARKS:
RECORDED BY: _____ DATE: _____

APPROVED BY: _____

DATA SHEET 4 REMOTE ACTUATION DEVICE

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

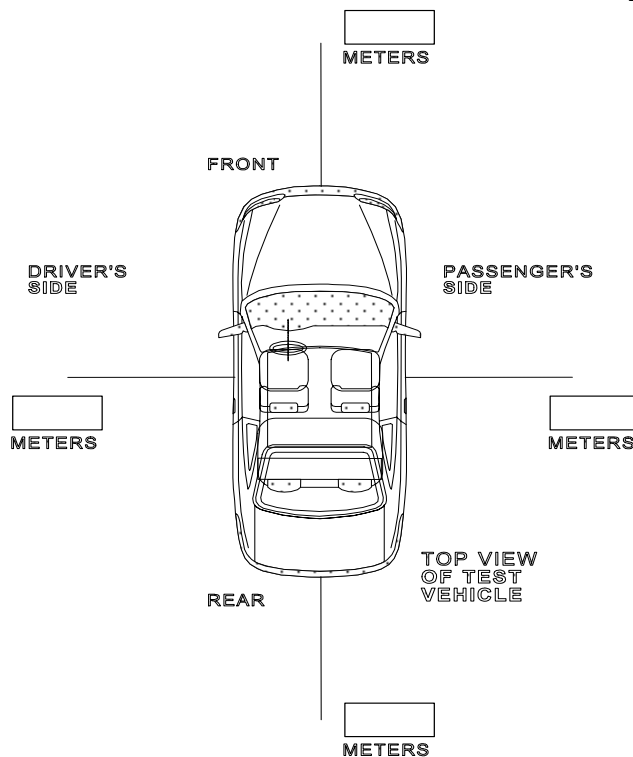
LABORATORY: _____ TEST DATE: _____

Type of remote actuation device installed on vehicle (check one):
 Non Line-of-Site Line-of-Site

Measured Range of Operation:

Record the maximum operating distance of the remote actuation device in the boxes below. The range of operation shall not exceed six meters for a **Non Line-of-Site Device** or eleven meters for a **Line-of-Site Device** in any measured direction and continuous activation of the remote actuation device is required until all operable windows, partitions or roof panels are completely closed.

PASS/FAIL _____



Denote places on the vehicle where signals from the remote device are received. Add directions and distances to other places where remote device does not comply.
 REMARKS:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATA SHEET 5
OCCUPANT COMPARTMENT ACTUATION DEVICE TEST
SPHERE TEST

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

LABORATORY: _____ TEST DATE: _____

ACTUATION DEVICE	APPLICABLE (YES/NO) *	SPHERE ACTIVATED ACTUATION DEVICE CLOSES WPRP (YES/NO)	TEST RESULT (PASS/FAIL)	COMPLIANCE REQUIRED (Y/N) **
MASTER CONTROL PANEL ACTUATION DEVICES				
Left Front (LF)				
Right Front (RF)				
Left Rear (LR)				
Right Rear (RR)				
Tail Gate (TG)				
Vent Window (s)				
Partition (P)				
Roof Panel (RP)				
INDIVIDUAL ACTUATION DEVICES				
Left Front (LF)				
Right Front (RF)				
Left Rear (LR)				
Right Rear (RR)				
Vent Window (s)				
Tail Gate (TG)				
Partition (P)				
Roof Panel (RP)				

* This requirement does not apply to actuation devices that are mounted in a vehicle's roof, headliner, or overhead console and that can close a window, partition, or roof panel only by continuous rather than momentary switch actuation, or actuation devices that comply with the reversing requirements of FMVSS 118, S5.

** Requirement is effective 1 October 2008. Early compliance is voluntary and test results are used for information only.

REMARKS:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATA SHEET 6
OCCUPANT COMPARTMENT ACTUATION DEVICE TEST
FOR POWER-OPERATED WINDOWS ONLY
PULL UP OR PULL OUT TEST

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

LABORATORY: _____ TEST DATE: _____

ACTUATION DEVICE	Switch Orientation a. Horizontal b. Vertical c. Angled	Closes power- operated window ONLY IF: Pull Up or Pull out	TEST RESULT (PASS/FAIL)	COMPLIANCE REQUIRED (Y/N) **
MASTER CONTROL PANEL ACTUATION DEVICES				
Left Front (LF)				
Right Front (RF)				
Left Rear (LR)				
Right Rear (RR)				
Vent Window (s)				
INDIVIDUAL ACTUATION DEVICES				
Left Front (LF)				
Right Front (RF)				
Left Rear (LR)				
Right Rear (RR)				
Vent Window (s)				

** Requirement is effective 1 October 2008. Early compliance is voluntary and test results are used for information only.

REMARKS:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATA SHEET 7
WPRP PHYSICAL CONTACT REVERSAL CAPABILITY

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

LABORATORY: _____ TEST DATE: _____

WPRPs equipped with reversal capability: _____

WPRPs that must meet reversal requirements: _____

Locking System Position:

WINDOW, PARTITION, ROOF PANEL	TEST ROD PLACEMENT IN WINDOW, PARTITION OR ROOF PANEL	TEST ROD SIZE (mm)	WINDOW, PARTITION OR ROOF PANEL OPENING BEFORE/AFTER CLOSING (mm)	MAXIMUM FORCE MEASURED ON TEST ROD (NEWTONS)	WINDOW, PARTITION, OR ROOF PANEL REVERSING DISTANCE (mm)	PASS/FAIL *
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			

* WPRP must reverse direction before contacting or exerting a squeezing force of 100 Newtons. Upon such reversal, the WPRP must open to one of the following positions.

- A. A position that is at least as open as the position at the time closing was initiated,
- B. A position that is not less than 125 mm more open than the position at the time the window reversed direction, or
- C. A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening at the same contact point(s) used in 12.5.

REMARKS:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATA SHEET 8
WPRP NON-CONTACT LIGHT BEAM INTERRUPTION REVERSAL CAPABILITY

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

LABORATORY: _____ TEST DATE: _____

WPRPs equipped with reversal capability: _____

WPRPs that must meet reversal requirements: _____

Locking System Position:

WINDOW, PARTITION, ROOF PANEL	TEST ROD PLACEMENT IN WINDOW, PARTITION OR ROOF PANEL	TEST ROD SIZE (mm)	WINDOW, PARTITION OR ROOF PANEL OPENING BEFORE/AFTER CLOSING (mm)	WPRP BEGINS TO CLOSE UPON ACTIVATION OF ACTUATION DEVICE? (YES/NO)	WINDOW, PARTITION, OR ROOF PANEL REVERSING DISTANCE (mm)	PASS/FAIL *
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			

* WPRP must not begin to close upon activation of the applicable actuation device or if the WPRP does begin to close shall reverse to one of the following positions.

- A. A position that is at least as open as the position at the time closing was initiated,
- B. A position that is not less than 125 mm more open than the position at the time the window reversed direction, or
- C. A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening at the same contact point(s) used in 12.5.

REMARKS:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATA SHEET 9
WPRP NON-CONTACT INFRARED REFLECTANCE REVERSAL CAPABILITY

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

LABORATORY: _____ TEST DATE: _____

WPRPs equipped with reversal capability: _____

WPRPs that must meet reversal requirements: _____

Measured Test Rod Infrared Reflectance: _____ (Not more than 1%)

Intensity of Exterior Incandescent Light Source _____ lux

Intensity of Exterior Light at Vehicle Infrared Sensor _____ lux (64,000 lux max).

Locking System Position: _____

WINDOW, PARTITION, ROOF PANEL	TEST ROD PLACEMENT IN WINDOW, PARTITION OR ROOF PANEL	WINDOW, PARTITION OR ROOF PANEL OPENING BEFORE/AFTER CLOSING (mm)	WPRP BEGINS TO CLOSE UPON ACTIVATION OF ACTUATION DEVICE? (YES/NO)	WINDOW, PARTITION, OR ROOF PANEL REVERSING DISTANCE (mm)	PASS/FAIL *
		/			
		/			
		/			
		/			
		/			
		/			

* WPRP must not begin to close upon activation of the applicable actuation device or if the WPRP does begin to close shall reverse to one of the following positions.

- A. A position that is at least as open as the position at the time closing was initiated,
- B. A position that is not less than 125 mm more open than the position at the time the window reversed direction, or
- C. A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening at the same contact point(s) used in 12.5.

REMARKS:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

16. FORMS

LABORATORY NOTICE OF TEST FAILURE TO OVSC

FMVSS NO.: 118 TEST DATE: _____

LABORATORY: _____

CONTRACT NO.: _____ ; DELV. ORDER NO.: _____

LABORATORY PROJECT ENGINEER'S NAME: _____

TEST VEHICLE DESCRIPTION: _____

VEHICLE NHTSA NO.: _____ ; VIN: _____

VEHICLE MANUFACTURER: _____

TEST FAILURE DESCRIPTION: _____

STD. REQUIREMENT, PARAGRAPH S : _____

NOTIFICATION TO NHTSA (COTR): _____

DATE: _____ ; BY: _____

REMARKS:

MONTHLY TEST STATUS REPORT
FMVSS 118
DATE OF REPORT:

NO.	VEHICLE NHTSA NO., MAKE & MODEL	COMPLIANCE TEST DATE	PASS/ FAIL	DATE REPORT SUBMITTED	DATE INVOICE SUBMITTED	INVOICE PAYMENT DATE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

MONTHLY VEHICLE STATUS REPORT
FMVSS 118
DATE OF REPORT:

NO.	VEHICLE NHTSA NO., MAKE & MODEL	DATE OF DELIVERY	ODOMETER READING	TEST COMPLETE DATE	VEHICLE SHIPMENT DATE	ODOMETER READING
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						